# Industrial Ethernet – Active components
Catalogue 9

**Active components**

Introduction – Active components

Unmanaged Switches

Managed Switches

Industrial Security Router

u-link Remote Access Service

Media converter and protocol gateways

IoT-Gateways

Industrial WLAN

Accessories – Active components

# Industrial Ethernet – Passive components
Catalogue 9


**Passive components**

Introduction – Passive components

Single Pair Ethernet

IP20 plug-in connectors and mounting rail outlets

FrontCom® IP65 service interfaces

IP67 plug-in connectors

IP65 connection components / FreeCon connecting components

Contactless Transmission

Copper cabling solutions

Fibre-optic cabling solutions

Accessories – Passive components

**Appendix**

**Service and support**

**Index** Search according to type or order number

# Active components
## An overview of our portfolio

**Unmanaged Switches**
Fast Ethernet, Fast / Gigabit Ethernet, Gigabit Ethernet
Page B.4, B.11

**Unmanaged Power over Ethernet Switches / Injectors –** Fast Ethernet, Gigabit Ethernet
Page B.9, B.14

**Managed Switches**
Fast Ethernet, Fast / Gigabit Ethernet, Gigabit Ethernet
Page C.4

**Managed Power over Ethernet Switches**
Gigabit Ethernet
Page C.13

**Managed Switches IEC 61850-3**
Fast / Gigabit Ethernet, Gigabit Ethernet
Page C.14

**Modular Managed Switches IEC 61850-3**
Fast Ethernet, Gigabit Ethernet, 10-Gigabit Ethernet
Page C.18

**Media interface modules for modular switches**
Fast Ethernet, Gigabit Ethernet, 10-Gigabit Ethernet
Page C.20

**Industrial Security Routers**
Page D.4

**u-link Remote Access Service**
Page E.6

**Ethernet media converters (copper/fiber-optic)**
Page F.4

**Serial / Ethernet converters and Modbus TCP / RTU gateway**
Page F.5

**IoT-Gateways**
Page G.4

# Active components
## An overview of our portfolio

**Industrial WLAN**

Page H.4

**SFP transceiver**

Fast Ethernet, Gigabit Ethernet, 10-Gigabit Ethernet

Page I.4

**Configuration backup and restore module**

Page I.8

**Mounting kits for 19“ rack and wall**

Page I.10

# Passive components
## An overview of our portfolio

**Single Pair Ethernet**
Page K.2

**IP20 plug-in connectors**
Page L.5

**IP20 mounting rail outlets**
Page L.13

**IP65 service interface FrontCom®**
Page M.2

**IP67 plug-in connectors**
Page N.2

**IP65 connection components / connectivity components FreeCon**
Page O.2

**IP65 FreeCon Active PROFINET**
Page O.9

**IP65 Contactless Power Transmission FreeCon Contactless Power**
Page P.2

# Cabling solutions
## An overview of our portfolio

**Installation cables**
Page Q.6

**Connecting cables**
Page Q.8

**Dragline cables**
Page Q.14

**RJ45 patch cables**
Page Q.18

**System cables assembled**
Page Q.30

**FO connecting cables**
Page R.4

**FO patch cables**
Page R.5

**FO system cables**
Page R.11

# Passive components
## Accessories from a single source

**Cable connector**
Page S.3

**Tools Copper cabling**
Page S.4

**Tools Fibre-optic cabling**
Page S.10

**General tools**
Page S.16

**Cabtite®**
Page S.18

**Cable Bender**
Page S.23

**Protective caps**
Page S.24

**Inkjet printer**
Page S.25

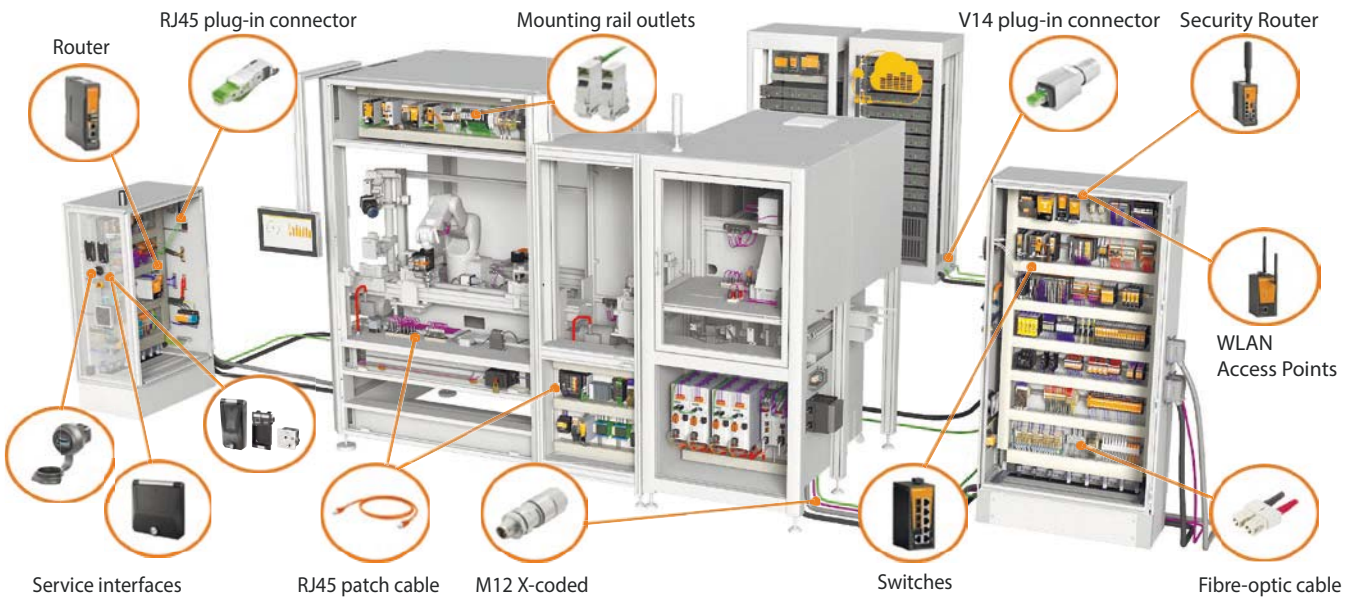
**Markers**
Page S.27

# Intended use for Industrial Ethernet

## A complete range of products for industrial communications infrastructure

The trend to network industrial plant components using Ethernet protocols was already apparent several years ago. Ethernet communication is now well established in all market segments; including automotive, general machine construction, process industry, transportation, energy and even Maritime. The requirements of these differ in terms of protocols, environmental conditions, certifications and standards. As well as being a leading provider of industrial connection and network products, Weidmüller embraces solutions for these differing requirements with a comprehensive and highquality product range of active and passive components for Ethernet communications.

The basic requirements of these industrial markets are high reliability, availability and safeguarding against failure. These are met by extremely high MTBF times of our network components. Using Weidmüller's high-quality STEADYTEC® connector system means that maximum reliability and simple operation is ensured. Indeed, Weidmüller's network components create a complete communications infrastructure for industrial applications in machine construction, process and plant engineering and energy.



**Automotive**
The automotive manufacturers of AIDA (Automation Initiative of the German Automotive Industry) are the drivers behind the use of the Industrial Ethernet in manufacturing. Extremely harsh environmental conditions place high demands on the components used: Cabling must be torsion-resistant and there are increased EMC requirements for connectors and active devices. For these areas of application, Weidmüller offers a complete product range consisting of copper and fibre optic connectors that are designed to meet the special needs of robot cabling.

**Machinery & Plant Engineering**
Machinery has to stand out from the competition with special services and a stronger customer focus. This results in a dynamic change in machinery and plant construction, demanding greater economic efficiency, quality, flexibility and performance from machines. The networking of machine segments and plant parts and their connection to higher-level office networks is playing an increasingly important role in this. Our products are perfectly adapted to these requirements and offer not only robustness and reliability, but are also easy to configure.

**Ships**
The shipbuilding industry is also experiencing disruptive market development in the face of rapidly advancing technological developments. Autonomous shipping, sustainability, networking, digitalisation concepts and advanced data analytics are the key topics in this respect. To meet the requirements of this industry, the various products in our portfolio include variants with a marine approval according to DNV GL

**Transmission & Distribution**
The energy market is booming – especially in the field of renewable energies. The products used here must often be able to withstand harsh environmental conditions. To ensure that power grids function reliably and stably, intelligent solutions are being integrated more and more in order to minimise downtimes and to reduce maintenance work. This requires uninterrupted communication. We support the energy sector with reliable components that are approved according to IEC 61850-3 and IEEE 1613 standards.

**Process industry**
In large-scale process plants, fibre optic media are often used for communication over long distances. However, for reliable data transmission in the field, the components used must be protected from harmful environmental influences. These include high temperature fluctuations, vibrations, dust exposure and electromagnetic influences. Our active and passive Ethernet components have ATEX approval and can reliably withstand these influences.

# Active components
## Introduction

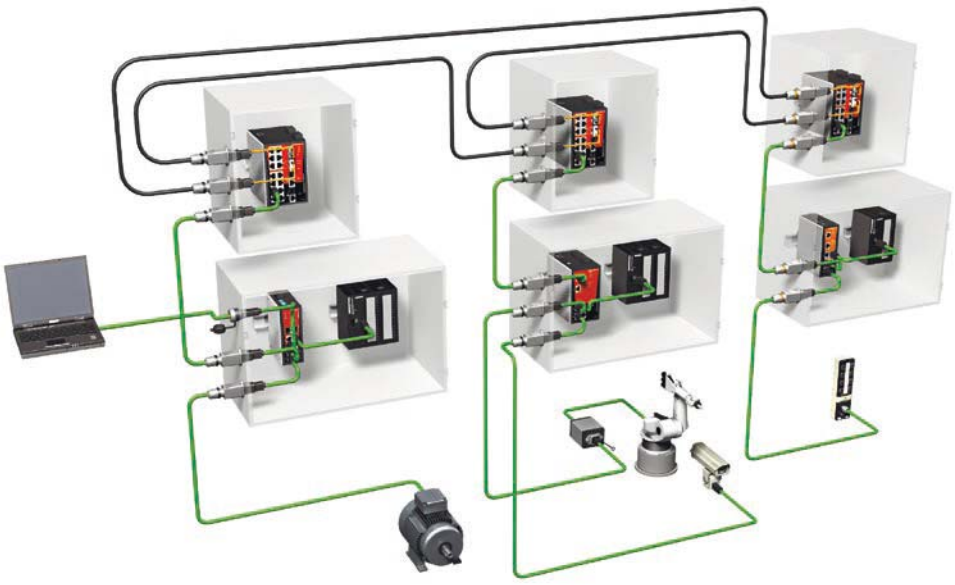
# Transfer data between devices in the network flexibly and reliably

## Active Industrial Ethernet – the perfect solution for countless applications

The Industrial Ethernet has proved itself in many areas of automation. With its high performance and flexibility, it opens up a multitude of design options for the network infrastructure. Our Industrial Ethernet components are the perfect connection solution for data communication between Ethernet-capable devices in industrial automation. They have various features and approvals, which is why they are ideally suited to many industrial applications.

As a complete supplier of industrial network infrastructures, we are active in machinery and plant engineering, shipbuilding, the process industry and energy, including traditional/renewable power generation, as well as transmission and distribution.
Our broad product range includes a variety of products with a wide range of approvals for individual requirements. These include Fast/Gigabit switches (unmanaged/managed including Power over Ethernet variants), routers, WLAN devices, IoT gateways, media converters and protocol gateways, as well as u-link, our remote maintenance solution. All our Ethernet components meet the highest demands and enable reliable, flexible Ethernet communication.
Thanks to the highly differentiated Eco, Basic, Value, Advanced, Premium and SubstationLine product lines, our switches are suitable for meeting a wide range of requirements. This allows us to guarantee optimal data transmission at all times – from simple communication structures to the complex data meshes of extensive systems.

As an ideal complement to this, we offer you a comprehensive passive product portfolio of RJ45 and fibre optic connectors and cables. This makes Weidmüller your perfect partner for Industrial Ethernet solutions.



u-link
Remote Access Service

# Always the best choice for your requirements

## Our switch product lines for all-round application-oriented solutions

Ethernet networks must allow the exchange of data packets between specific participants. For this purpose, the participants are connected to each other via Ethernet switches. Ethernet switches thus collect all data streams and distribute them to the respective participants to enable communication to take place. Since Ethernet switches have to meet very different requirements depending on the area of application, we offer a variety of product lines. They differ in terms of their properties, special features and technical highlights.

**EcoLine:**
Our unmanaged EcoLine switches are characterised by a rich variety of different models and high economic efficiency. They can be used in a uniquely wide temperature range of -40 to +75 °C, which enables them to be operated both inside production plants and in the field. The robust devices have 5 to 24 ports as well as a redundant voltage input. Their SFP ports allow especially flexible use, regardless of the available communication media and/or the required distance. Power over Ethernet switches are also available within the EcoLine in order to reduce the required cabling work.

**BasicLine:**
The BasicLine series consists of an extensive range of unmanaged plug and play switches. All devices were developed for use in harsh industrial environments and have numerous international approvals, such as cULus, Class I, Div. 2, ATEX and DNV/GL. This makes them ideal for use in many different industries. The devices are available with Fast Ethernet and Gigabit Ethernet ports. In addition, the series also includes individual variants with Power over Ethernet ports.

**ValueLine:**
Our ValueLine series features unmanaged and managed switches available with Fast Ethernet and Gigabit Ethernet ports. Our ValueLine managed switches support various industrial communication protocols, e.g. MODBUS/TCP, PROFINET/RT and ETHERNET/IP. This enables optimal integration into the most common automation networks. They also support a variety of helpful management functions, such as port mirroring and error messaging via e-mail or relay. All of these functions can be set up with ease via the web-based management interface. ValueLine switches also have numerous international approvals to ensure proper operation in a variety of industries (cULus, Class I Div. 2 / ATEX Zone 2, DNV GL).

**AdvancedLine:**
The managed switches of our AdvancedLine are characterised by a wide assortment of variants and economic efficiency. The different model variants designed for Fast Ethernet and Gigabit as well as integrating 5 to 24 ports and SFP slots ensure a high degree of flexibility. Their especially wide temperature range of -40 to +75 °C allows them to be used both in production plants and in the field. All switches in the series can be intuitively configured via a browser-based web interface. The comprehensive management tool can be used to set up various redundancy, monitoring, traffic filtering and security functions. The AdvancedLine ranges from full-managed switches for demanding applications to lite-managed switches for simpler requirements within a network and offers an excellent price-performance ratio. Power over Ethernet switches are also available in the AdvancedLine in order to reduce cabling work.

**PremiumLine:**
The managed switches of our PremiumLine are true high-end products. They are especially suitable for ambitious network solutions with high data volumes. The devices are available in a wide variety of versions. For example, customers can select the number of ports, transmission rate (Fast/Gigabit Ethernet) and connection variant. PremiumLine switches support various industrial application protocols, e.g. MODBUS/TCP, PROFINET RT and ETHERNET / IP. They also have numerous international approvals, such as cULus, Class I Div.2 / ATEX Zone 2 and DNV GL, making them a perfect choice for many different industries and applications.

**SubstationLine:**
The SubstationLine comprises managed Ethernet switches that comply with the IEC 61850-3 standard, making them robust enough for operation in harsh environments. All switches include a redundant power supply, and the series also includes variants with Fast Ethernet, Gigabit, all the way up to 10 Gigabit Ethernet, as well as sophisticated features like PTPv2 time synchronisation. All devices were designed for use in substations and other energy (T&D) systems, where electromagnetic interference is higher than in other industries.

# Unmanaged Switches
## Overview


| | | |
|---|---|---|
| **Unmanaged Switches** | Introduction – Unmanaged Switches | B.2 |
| | Unmanaged Switches Fast Ethernet | B.4 |
| | Unmanaged Power over Ethernet Switches Fast Ethernet | B.9 |
| | Unmanaged Switches Fast/Gigabit Ethernet | B.11 |
| | Unmanaged Switches Gigabit Ethernet | B.12 |
| | Unmanaged Power over Ethernet Switches Gigabit Ethernet | B.14 |
| | Power over Ethernet Injector Gigabit Ethernet | B.16 |

# The proven standard for active network components
## Unmanaged switches – adaptable and economical

Unmanaged switches require no configuration and are nevertheless adaptable. They use basic standardised protocols, such as autonegotiation, autocrossing and flow control, allowing them to adapt automatically to widely varying transmission speeds or connector assignments. In addition, the switches are protocol-transparent. Each port of a switch forms its own collision domain. All switches support the use of twisted pair cabling with RJ45 interface or fibre optic cable based on the interfaces specified in IEEE 802.3.

Our unmanaged switches are the simple and economical standard start-up solution for the Industrial Ethernet. We offer different versions with different features. In addition to the unmanaged switches of the EcoLine, BasicLine and ValueLine, we can also offer you Power over Ethernet variants within all lines that can significantly reduce your wiring work. This means you can also operate Ethernet devices in areas that are difficult to access – without a separate power supply cable.

**Your special advantage:**
- Wide variety of ports in terms of number and features to meet individual requirements
- Fast Ethernet and Gigabit versions available, including Power over Ethernet variants
- Rapid fault diagnosis thanks to the clearly visible LED display
- Robust housing for reliable long-term use in different environments

See chapter A for details about the product lines

**Variety of versions**
Variety of port numbers and media types for a wide range of applications (up to 24 ports)

**Design advantage**
Space-saving design for high economic efficiency

**Variety of models**
Numerous international approvals, such as cULus, KC, EAC, Class 1 Div. 2 / ATEX Zone 2 and DNV GL

**Variety of models**
Fast Ethernet | Gigabit and Power over Ethernet versions

## 5 and 8-Port unmanaged Fast Ethernet Switches

- Suitable for use in harsh industrial environment thanks to rugged design and wide operating temperature range of -40°C up to 75°C

## Technical data

| | | |
|---|---|---|
| **Technology** | | |
| Standards | IEEE 802.3 for 10BASE-T<br>IEEE 802.3u for 100BASE-TX and 100BASE-FX<br>IEEE 802.3x for flow control | |
| Processing type | Store and Forward | |
| Flow control | IEEE 802.3x flow control | |
| **Switch characteristics** | | |
| MAC table size | 1K | |
| Packet buffer Size | 448 Kbit | |
| **Interfaces** | | |
| RJ45 ports | 10/100BASE-T(X), auto negotiation, Full-/half-duplex mode, Auto MDI/MDI-X port | |
| Fibre optic ports | 100BASE-FX (SC-Duplex connector) | |
| **Fibre optic transceiver characteristics** | | |
| Transmission rate | 100 Mbps | |
| Connector type | SC-Duplex | |
| Transceiver type | Multimode | Singlemode |
| Fiber cable type | 50/125 µm<br>62.5/125 µm | 9/125 µm |
| Transmission distance, typical | 2 km | 30 km |
| Wavelength, typical | 1310 nm | |
| Optical power RX range | -31 to 0 dBm | -34 to 0 dBm |
| Optical power TX range | -23.5 to -14 dBm | -15 to -8 dBm |
| Link-budget | 7.5 dB | 19 dB |
| **Power supply** | | |
| Connection type | IE-SW-EL05-5TX: 1 removable 4-pin terminal block<br>IE-SW-EL08-8TX: 1 removable 4-pin terminal block<br>IE-SW-EL08-6TX-2SC: 1 removable 3-pin terminal block<br>IE-SW-EL08-6TX-2SCS: 1 removable 3-pin terminal block | |
| Input voltage | IE-SW-EL05-5TX: 24 V DC (12 - 48 V), 24 V AC (18 - 36 V), 2 redundant inputs<br>IE-SW-EL08-8TX: 24 V DC (12 - 48 V), 24 V AC (18 - 36 V), 2 redundant inputs<br>IE-SW-EL08-6TX-2SC: 24 V DC (10 - 30 V DC), 1 single input<br>IE-SW-EL08-6TX-2SCS: 24 V DC (10 - 30 V DC), 1 single input | |
| Current consumption at 24 V | IE-SW-EL05-5TX: 0.1 A<br>IE-SW-EL08-8TX: 0.14 A<br>IE-SW-EL08-6TX-2SC: 0.14 A<br>IE-SW-EL08-6TX-2SCS: 0.14 A | |
| Overload current protection | yes | |
| Reverse polarity protection | yes | |
| **Physical characteristics** | | |
| Housing main material | Metal | |
| Protection degree | IP30 | |
| Type of mounting | DIN rail | |
| Dimensions (W x H x D) | IE-SW-EL05-5TX: 26.1 x 95 x 70 mm (1.03 x 3.74 x 2.76 in)<br>IE-SW-EL08-8TX: 41 x 95 x 90 mm (1.61 x 3.74 x 3.54 in)<br>IE-SW-EL08-6TX-2SC: 41 x 115 x 84 mm (1.61 x 4.52 x 3.31 in)<br>IE-SW-EL08-6TX-2SCS: 41 x 115 x 84 mm (1.61 x 4.52 x 3.31 in) | |

| | |
|---|---|
| **Physical characteristics** | |
| Weight | IE-SW-EL05-5TX: 205 g<br>IE-SW-EL08-8TX: 334 g<br>IE-SW-EL08-6TX-2SC: 328 g<br>IE-SW-EL08-6TX-2SCS: 328 g |
| **Environmental conditions** | |
| Operating temperature | -40 to 75 °C (-40 to 167 °F) |
| Storage temperature | -40 to 85 °C (-40 to 185 °F) |
| Humidity | 5 to 95 % (non-condensing) |
| Operating altitude | ≤ 2000 m |
| **EMC conformity and approvals** | |
| EMC | EN 55032, EN 55024, CISPR 32, FCC Part 15 Subpart B Class A<br>IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV<br>IEC 61000-4-3 RS: 80 MHz bis 1 Ghz: 3 V/m<br>IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV<br>IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV<br>IEC 61000-4-6 CS: 3 Vrms |
| Safety | UL 61010-1, UL 61010-2-201 |
| Shock | IEC 60068-2-27 |
| Vibration | IEC 60068-2-6 |
| Free fall | IEC 60068-2-31 |
| **MTBF** | |
| Time | IE-SW-EL05-5TX: 2,638,236 hrs<br>IE-SW-EL08-8TX: 1,390,019 hrs<br>IE-SW-EL08-6TX-2SC: 595,597 hrs<br>IE-SW-EL08-6TX-2SCS: 609,551 hrs |
| Database | Telcordia SR332 |
| **Guarantee** | |
| Time interval | 5 years |

### Ordering Information

| Version | Model Type | Order No. |
|---|---|---|
| 5x RJ45 10/100 Mbit/s | IE-SW-EL05-5TX | **2682130000** |
| 8x RJ45 10/100 Mbit/s | IE-SW-EL08-8TX | **2682140000** |
| 6x RJ45 10/100 Mbit/s, 2x SC Multimode 100 Mbit/s | IE-SW-EL08-6TX-2SC | **2682170000** |
| 6x RJ45 10/100/Mbit/s, 2x SC Singlemode 100 Mbit/s | IE-SW-EL08-6TX-2SCS | **2682180000** |

### Accessories

| | Model Type | Order No. |
|---|---|---|
| 19" Rack Mounting Kit | RM-KIT | **1241440000** |

**16 and 24-Port unmanaged Fast Ethernet Switches**

- Suitable for use in harsh industrial environment thanks to rugged design and wide operating temperature range of -40°C up to 75°C
- Reliable operation due to redundant voltage inputs, fault relay and LED diagnostics
- SFP-ports for fiber optic transmission over long distances

## Technical data

| | |
|---|---|
| **Technology** | |
| Standards | IEEE 802.3 for 10BASE-T<br>IEEE 802.3u for 100BASE-TX and 100BASE-FX<br>IEEE 802.3x for flow control |
| Processing type | Store and Forward |
| Flow control | IEEE 802.3x flow control |
| **Switch characteristics** | |
| MAC table size | IE-SW-EL16-14TX-2FESFP: 4K<br>IE-SW-EL16-16TX: 8K<br>IE-SW-EL24-24TX: 8K |
| Packet buffer Size | IE-SW-EL16-14TX-2FESFP: 2.75 Mbit<br>IE-SW-EL16-16TX: 1 Mbit<br>IE-SW-EL24-24TX: 1 Mbit |
| **Interfaces** | |
| RJ45 ports | 10/100BASE-T(X), auto negotiation, Full-/half-duplex mode, Auto MDI/MDI-X port |
| Fibre optic ports | 100BaseSFP-slot |
| Relay Contact | 1 relay output with a current capacity of 1 A at 24 V DC |
| **Power supply** | |
| Connection type | 1 removable 6-pin terminal block |
| Input voltage | 24 V DC (12 - 48 V), 2 redundant inputs |
| Current consumption at 24 V | IE-SW-EL16-14TX-2FESFP: 0.34 A<br>IE-SW-EL16-16TX: 0.27 A<br>IE-SW-EL24-24TX: 0.39 A |
| Overload current protection | yes |
| Reverse polarity protection | yes |
| **Physical characteristics** | |
| Housing main material | Metal |
| Protection degree | IP30 |
| Type of mounting | DIN rail |
| Dimensions (W x H x D) | IE-SW-EL16-14TX-2FESFP: 74 x 170 x 140 mm (2.91 x 6.69 x 5.51 in)<br>IE-SW-EL16-16TX: 74.3 x 153.6 x 107.5 mm (2.93 x 6.05 x 4.2 in)<br>IE-SW-EL24-24TX: 96.4 x 154 x 108.5 mm (3.8 x 6.06 x 4.27 in) |
| Weight | IE-SW-EL16-14TX-2FESFP: 931 g<br>IE-SW-EL16-16TX: 931 g<br>IE-SW-EL24-24TX: 1056 g |
| **Environmental conditions** | |
| Operating temperature | -40 to 75 °C (-40 to 167 °F) |
| Storage temperature | -40 to 85 °C (-40 to 185 °F) |
| Humidity | 5 to 95 % (non-condensing) |
| Operating altitude | ≤ 2000 m |
| **EMC conformity and approvals** | |
| EMC | EN 55032, EN 55024, CISPR 32, FCC Part 15 Subpart B Class A<br>IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV<br>IEC 61000-4-3 RS: 80 MHz bis 1 Ghz: 3 V/m<br>IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV<br>IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV<br>IEC 61000-4-6 CS: 3 Vrms |
| Safety | UL 61010-1, UL 61010-2-201 |
| Shock | IEC 60068-2-27 |
| Vibration | IEC 60068-2-6 |

| | |
|---|---|
| **EMC conformity and approvals** | |
| Free fall | IEC 60068-2-31 |
| **MTBF** | |
| Time | IIE-SW-EL16-14TX-2FESFP: 719,800 hrs<br>IE-SW-EL16-16TX: 1,160.204 hrs<br>IE-SW-EL24-24TX: 959,803 hrs |
| Database | Telcordia SR332 |
| **Guarantee** | |
| Time interval | 5 years |

**Ordering Information**

| Version | Model Type | Order No. |
|---|---|---|
| 14x RJ45 10/100 Mbit/s, 2x SFP 100 Mbit/s | IE-SW-EL16-14TX-2FESFP | **2682160000** |
| 16x RJ45 10/100 Mbit/s | IE-SW-EL16-16TX | **2682150000** |
| 24x RJ45 10/100 Mbit/s | IE-SW-EL24-24TX | **2682190000** |

**Accessories**

| | Model Type | Order No. |
|---|---|---|
| 19" Rack Mounting Kit | RM-KIT | **1241440000** |

**Note**

Corresponding SFP modules for EcoLine switches, see page I.4.

## 5 and 8-Port unmanaged Fast Ethernet Switches

- Two redundant voltage inputs 12/24/48 V DC (9.6 to 60 V DC)
- IP30 aluminium housing
- Rugged hardware design well suited for hazardous locations (Class I Div. 2 /ATEX Zone 2) and maritime environments (DNV-GL)
- -40°C to 75°C operating temperature range (T models)

## Technical data

| | | | | |
|---|---|---|---|---|
| **Technology** | | | | |
| Standards | IEEE 802.3 for 10BaseT<br>IEEE 802.3u for 100BaseT (X) and 100BaseFX<br>IEEE 802.3x for Flow Control | | | |
| Processing Type | Store and Forward | | | |
| Flow Control | IEEE 802.3x flow control, back pressure flow control | | | |
| **Switch Properties** | | | | |
| MAC Table Size | IE-SW-BL05-Series: 1K / IE-SW-BL08-Series: 2K | | | |
| Packet Buffer Size | IE-SW-BL05-Series: 384 kbit / IE-SW-BL08-Series: 768 kbit | | | |
| **Interface** | | | | |
| Fibre Ports | 100BaseFX (SC/ST-duplex connection) | | | |
| RJ45 Ports | 10/100BaseT(X) auto negotiation speed, Full/Half duplex mode, and auto MDI/MDI-X connection | | | |
| DIP Switches | Enable/Disable broadcast storm protection | | | |
| **Specification optical fiber** | | | | |
| Transceiver Type | | 100Base FX | | |
| | | Multi-Mode | | Single-Mode |
| Fiber Cable Type | | 0M1 | 50/125 µm<br>800 MHz*km | G.652 |
| Typical Distance | | 4 km | 5 km | 40 km |
| Wave-length | Typical (nm) | 1300 | | 1310 |
| | TX Range (nm) | 1260 to 1360 | | 1280 to 1340 |
| | RX Range (nm) | 1100 to 1600 | | 1100 to 1600 |
| Optical Power | TX Range (dBm) | -10 to -20 | | 0 to -5 |
| | RX Range (dBm) | -3 to -32 | | -3 to -34 |
| | Link-Budget (dB) | 12 | | 29 |
| | Dispersion Penalty (dB) | 3 | | 1 |
| **Note:** When connecting a single-mode fiber transceiver over a short distance, we recommend using an attenuator to prevent the transceiver from being damaged by excessive optical power. | | | | |
| **Power Requirements** | | | | |
| Input Voltage | 12/24/48 V DC (9.6 to 60 V DC), two redundant inputs | | | |
| Input Current | IE-SW-BL05-5TX: 0.09 A at 24 V<br>IE-SW-BL05-4TX-1SC/1ST/1SCS: 0.1 A at 24 V<br>IE-SW-BL08-8TX: 0.11 A at 24 V<br>IE-SW-BL08-6TX-2SC/2ST/2SCS:: 0.15 A at 24 V<br>IE-SW-BL08-7TX-1SC: 0.11 A at 24 V | | | |
| Overload current protection | 1.1 A | | | |
| Connection | 1 removable 4-contact terminal block | | | |
| Reverse Polarity Protection | Present | | | |
| **Physical Characteristics** | | | | |
| Housing | Aluminum, IP30 protection | | | |
| Dimensions (W x H x D) | IE-SW-BL05-Series: 30 x 115 x 70 mm (1.18 x 4.52 x 2.76 in)<br>IE-SW-BL08-Series: 50 x 114 x 70 mm (1.96 x 4.52 x 2.76 in) | | | |
| Weight | IE-SW-BL05-5TX: 175 g / IE-SW-BL08-8TX: 275 g | | | |
| Type of mounting | DIN rail, wall (with optional mounting kit) | | | |
| **Environmental Limits** | | | | |
| Operating Temperature | Standard Models: -10 to 60 °C (14 to 140 °F)<br>Wide Temp. Models: -40 to 75 °C (-40 to 167 °F) | | | |
| Storage Temperature | -40 to 85 °C (-40 to 185 °F) | | | |
| Ambient Relative Humidity | 5 to 95 % (non-condensing) | | | |
| **Regulatory Approvals** | | | | |
| Safety | UL 508 | | | |

| | |
|---|---|
| **Regulatory Approvals** | |
| Hazardous Location | UL/cUL Class I, Division 2, Groups A, B, C and D;<br>ATEX Zone 2 Ex nA IIC T4 Gc |
| EMV | EN 55032/24 / CISPR 32<br>FCC Part 15B Class A<br>IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV<br>IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m<br>IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV<br>IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV<br>IEC 61000-4-6 CS: 10 V<br>IEC 61000-4-8 |
| Maritime | DNV-GL (not for 1412110000, 1412120000, 1412070000, 1412080000) |
| Shock | IEC 60068-2-27 |
| Freefall | IEC 60068-2-32 |
| Vibration | IEC 60068-2-6 |
| **MTBF (meantime between failures)** | |
| Time | IE-SW-BL05-Series: 3,040,784 hrs, IE-SW-BL08-Series: 2,701,531 hrs |
| Database | Telcordia (Bellcore), GB |
| **Warranty** | |
| Warranty Period | 5 years |

### Ordering Information

| Version | Model Type | Operating Temperature | Order No. |
|---|---|---|---|
| 5 * RJ45 | IE-SW-BL05-5TX | -10 to +60 °C | **1240840000** |
| | IE-SW-BL05T-5TX | -40 to +75 °C | **1240850000** |
| 4 * RJ45, 1 * SC-Multimode | IE-SW-BL05-4TX-1SC | -10 to +60 °C | **1240890000** |
| | IE-SW-BL05T-4TX-1SC | -40 to +75 °C | **1286550000** |
| 4 * RJ45, 1 * ST-Multimode | IE-SW-BL05-4TX-1ST | -10 to +60 °C | **1240880000** |
| | IE-SW-BL05T-4TX-1ST | -40 to +75 °C | **1286540000** |
| 4 * RJ45, 1 * SC-Singlemode | IE-SW-BL05-4TX-1SCS | -10 to +60 °C | **1240870000** |
| | IE-SW-BL05T-4TX-1SCS | -40 to +75 °C | **1286530000** |
| 8 * RJ45 | IE-SW-BL08-8TX | -10 to +60 °C | **1240900000** |
| | IE-SW-BL08T-8TX | -40 to +75 °C | **1286560000** |
| 6 * RJ45, 2 * SC-Multimode | IE-SW-BL08-6TX-2SC | -10 to +60 °C | **1240910000** |
| | IE-SW-BL08T-6TX-2SC | -40 to +75 °C | **1240920000** |
| 6 * RJ45, 2 * ST-Multimode | IE-SW-BL08-6TX-2ST | -10 to +60 °C | **1240930000** |
| | IE-SW-BL08T-6TX-2ST | -40 to +75 °C | **1286570000** |
| 6 * RJ45, 2 * SC-Singlemode | IE-SW-BL08-6TX-2SCS | -10 to +60 °C | **1412110000** |
| | IE-SW-BL08T-6TX-2SCS | -40 to +75 °C | **1412120000** |
| 7 * RJ45, 1 * SC-Multimode | IE-SW-BL08-7TX-1SC | -10 to +60 °C | **1412070000** |
| | IE-SW-BL08T-7TX-1SC | -40 to +75 °C | **1412080000** |

### Accessories

| | Model Type | Order No. |
|---|---|---|
| 19" Rack Mounting Kit | RM-KIT | **1241440000** |
| Wall mounting kit for IE-SW-BL05 series | IE-WALLMOUNT-KIT-30M | **1504450000** |

## 16-Port unmanaged Fast Ethernet Switches

- Two redundant voltage inputs 12/24/48 V DC (9.6 to 60 V DC)
- Warning of relay output in the event of power failure and port error
- Broadcast storm protection
- –40 °C to 75 °C operating temperature range (T models)

## Technical data

| | |
|---|---|
| **Technology** | |
| Standards | IEEE 802.3 for 10BaseT<br>IEEE 802.3u for 100BaseT(X)<br>IEEE 802.3x for Flow Control |
| Processing Type | Store and Forward |
| Flow Control | IEEE 802.3x flow control, back pressure flow control |
| **Switch Properties** | |
| MAC Table Size | 4K |
| Packet Buffer Size | 1.25 Mbit |
| **Interface** | |
| RJ45 Ports | 10/100BaseT(X) auto negotiation speed, Full/Half duplex mode, and auto MDI/MDI-X connection |
| DIP Switches | Port fault alarm<br>Broadcast storm protection enable/disable |
| Alarm Contact | 1 relay output with current carrying capacity of 1 A at 24 V DC |
| **Power Requirements** | |
| Input Voltage | 12/24/48 V DC (9.6 to 60 V DC), two redundant inputs |
| Input Current | 0.26 A at 24 V |
| Overload Current Protection | 1.6 A |
| Connection | 1 removable 6-pin terminal blocks |
| Reverse Polarity Protection | Present |
| **Physical Characteristics** | |
| Housing | Metal, IP30 protection |
| Dimensions (W x H x D) | 80.5 x 135 x 105 mm (3.16 x 5.31 x 4.13 in) |
| Weight | 1140 g |
| Type of mounting | DIN-Rail |
| **Environmental Limits** | |
| Operating Temperature | Standard Models: 0 to 60 °C (32 to 140 °F)<br>Wide Temp. Models: -40 to 75 °C<br>(-40 to 167 °F) |
| Storage Temperature | -40 to 85 °C (-40 to 185 °F) |
| Ambient Relative Humidity | 5 to 95 % (non-condensing) |
| **Regulatory Approvals** | |
| Safety | UL 508, UL 60950-1, EN 60950-1 |
| Hazardous Location | UL/cUL Class I, Division 2, Groups A, B, C and D; ATEX Zone 2 Ex nA nC IIC T4 Gc |
| EMC | EN 55032/24<br>CISPR 32, FCC Part 15B Class A<br>IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV<br>IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m<br>IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV<br>IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV<br>IEC 61000-4-6 CS: 10 V<br>IEC 61000-4-8 |
| Maritime | DNV-GL |
| Shock | IEC 60068-2-27 |
| Freefall | IEC 60068-2-32 |
| Vibration | IEC 60068-2-6 |

| | |
|---|---|
| **MTBF (mean time between failures)** | |
| Time | 2,290,506 hrs |
| Database | Telcordia (Bellcore), GB |
| **Warranty** | |
| Warranty Period | 5 years |

**Ordering Information**

| Version | Model Type | Operating Temperature | Order No. |
|---|---|---|---|
| 16 * RJ45 | IE-SW-VL16-16TX | 0 to +60 °C | **1241000000** |
| | IE-SW-VL16T-16TX | -40 to +75 °C | **1286590000** |

**Accessories**

| | Model Type | Order No. |
|---|---|---|
| 19" Rack Mounting Kit | RM-KIT | **1241440000** |

## 5-Port IP67 unmanaged Fast Ethernet Switches

- M12 connection system and IP67 protected housing
- 10/100BaseT (X), 4-pin M12 (D-coded)
- Full/half duplex mode and auto MDI/MDI-X
- Input voltage 12 to 45 V DC, 18 to 30 V AC

### Technical data

| | |
|---|---|
| **Technology** | |
| Standards | IEEE 802.3 for 10BaseT<br>IEEE 802.3u for 100BaseT (X)<br>IEEE 802.3x for Flow Control |
| Processing Type | Store and Forward |
| Flow Control | IEEE 802.3x flow control, back pressure flow control |
| **Switch Properties** | |
| MAC Table Size | 2 K |
| Packet Buffer Size | 384 Kbit |
| **Interface** | |
| M12-Ports | 10/100BaseT (X) auto negotiation, full/half duplex mode and auto MDI/MDI-X connection, 4-pin, D-coded |
| **Power Requirements** | |
| Input Voltage | 24/36 V DC (12 to 45 V DC), 18 to 30 V AC (47 to 63 Hz), one input |
| Input Current | 0.28 A to 24 V AC<br>0.10 A to 24 V DC<br>0.08 A to 36 V DC |
| Overload Current Protection | 1.1 A |
| Connection | 1 x M12 socket, A-coded |
| Reverse Polarity Protection | Present |
| **Physical Characteristics** | |
| Housing | Plastic, IP67 protection, encapsulated |
| Dimensions (W x H x D) | 60 x 125 x 29.6 mm (2.36 x 4.92 x 1.09 Zoll) |
| Weight | 270 g |
| Type of mounting | Wall mounting, screwed |
| **Environmental Limits** | |
| Operating Temperature | Standard Models: -25 to 60 °C (-13 to 140 °F)<br>Wide Temp. Models: -40 to 75 °C (-40 to 167 °F) |
| Storage Temperature | -40 to 85 °C (-40 to 185 °F) |
| Ambient Relative Humidity | 5 to 95 % (non-condensing) |

| | |
|---|---|
| **Regulatory Approvals** | |
| Safety | UL 508 |
| EMC | FCC Part 15B Class A<br>EN 55032 Class A<br>IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV<br>IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m<br>IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV<br>IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV<br>IEC 61000-4-6 CS: 10 V<br>IEC 61000-4-8 |
| Shock | IEC 60068-2-27 |
| Freefall | IEC 60068-2-32 |
| Vibration | IEC 60068-2-6 |
| **MTBF (mean time between failures)** | |
| Time | 3,451,678 hrs |
| Database | Telcordia (Bellcore), GB |
| **Warranty** | |
| Warranty Period | 5 years |

### Ordering data

| Version | Model Type | Operating Temperature | Order No. |
|---|---|---|---|
| 5 * M12 10/100BaseT(X) | IE-SW-IP67-5M12 | -25 to +60 °C | **1504410000** |
| | IE-SW-IP67T-5M12 | -40 to +75 °C | **1504420000** |

**6 and 8-Port unmanaged PoE+ Fast Ethernet Switches**

- IEEE 802.3af/at compliant PoE ports
- Fiber optic ports for communication links over long distances
- Reliable operation due to redundant voltage inputs, fault relay and LED diagnostics

## Technical data

| | |
|---|---|
| **Technology** | |
| Standards | IEEE 802.3 for 10BASE-T<br>IEEE 802.3u for 100BASE-TX and 100BASE-FX<br>IEEE 802.3x for flow control<br>IEEE 802.3at/af for Power-over-Ethernet |
| Processing type | Store and Forward |
| Flow control | IEEE 802.3x flow control |
| **Switch characteristics** | |
| MAC table size | 1K |
| Packet buffer Size | 448 Kbit |
| **Interfaces** | |
| RJ45 ports | 10/100BASE-T(X), auto negotiation, Full-/half-duplex mode, Auto MDI/MDI-X port |
| Fibre optic ports | 100BASE-FX (SC-Duplex connector) |
| Relay Contact | 1 relay output with a current capacity of 1 A at 24 V DC |
| DIP switches | 2x enabling/disabling power fault alarm via relay |
| **Fibre optic transceiver characteristics** | |
| Transmission rate | 100 Mbps |
| Connector type | SC-Duplex |
| Transceiver type | Multimode |
| Fiber cable type | 50/125 µm<br>62.5/125 µm |
| Transmission distance, typical | 2 km |
| Wavelength, typical | 1310 nm |
| Optical power RX range | -31 to 0 dBm |
| Optical power TX range | -23.5 to -14 dBm |
| Link-budget | 7.5 dB |
| **Power supply** | |
| Connection type | 1 removable 6-pin terminal block |
| Input voltage | IE-SW-EL08-8PoE: 12/24/48 V DC (12 - 57 V), 2 redundant inputs<br>IE-SW-EL06-4PoE-2SC: 24/48 V DC (24 - 57 V), 2 redundant inputs |
| Current consumption at 24 V (with PD consumption) | IE-SW-EL06-4PoE-2SC: 2.8 A<br>IE-SW-EL08-8PoE: 5.74 A |
| Overload current protection | yes |
| Reverse polarity protection | yes |
| **Power over Ethernet (PoE)** | |
| PoE pin assignment | Mode A: Pin 1, 2 (V+); Pin 3, 6 (V-); Alternative A; MDI |
| Total PoE power budget | IE-SW-EL06-4PoE-2SC: 60 W at 24 – 50 V DC; 120 W at 50 -57 V DC<br>IE-SW-EL08-8PoE: 60 W at 12 – 23 V DC; 120 W at 24 -57 V DC |
| **Physical characteristics** | |
| Housing main material | Metal |
| Protection degree | IP30 |
| Type of mounting | DIN rail |
| Dimensions (W x H x D) | 41 x 144.3 x 94.9 mm (1.61 x 5.68 x 3.74 in) |
| Weight | IE-SW-EL06-4PoE-2SC: 435 g<br>IE-SW-EL08-8PoE: 580 g |
| **Environmental conditions** | |
| Operating temperature | -40 to 75 °C (-40 to 167 °F) |
| Storage temperature | -40 to 85 °C (-40 to 185 °F) |
| Humidity | 5 to 95 % (non-condensing) |
| Operating altitude | ≤ 2000 m |

| | |
|---|---|
| **EMC conformity and approvals** | |
| EMC | EN 55032, EN 55024, CISPR 32, FCC Part 15 Subpart B Class A<br>IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV<br>IEC 61000-4-3 RS: 80 MHz bis 1 Ghz: 3 V/m<br>IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV<br>IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV<br>IEC 61000-4-6 CS: 3 Vrms |
| Safety | UL 61010-1, UL 61010-2-201 |
| Shock | IEC 60068-2-27 |
| Vibration | IEC 60068-2-6 |
| Free fall | IEC 60068-2-31 |
| **MTBF** | |
| Time | IE-SW-EL06-4PoE-2SC: 538,904 hrs<br>IE-SW-EL08-8PoE: 744,974 hrs |
| Database | Telcordia SR332 |
| **Guarantee** | |
| Time interval | 5 years |

**Ordering Information**

| Version | Model Type | Order No. |
|---|---|---|
| 4x RJ45 PoE+ 10/100 Mbit/s, 2x SC Multimode 100 Mbit/s | IE-SW-EL06-4PoE-2SC | **2682390000** |
| 8x RJ45 PoE+ 10/100 Mbit/s | IE-SW-EL08-8PoE | **2682380000** |

**Accessories**

| | Model Type | Order No. |
|---|---|---|
| 19" Rack Mounting Kit | RM-KIT | **1241440000** |

## 6-Port unmanaged Fast Ethernet PoE+ Switches

- 4x IEEE 802.3af/at konforme PoE-Ports
- Up to 30 watts per PoE port
- 12/24/48 V DC redundant wide-range power supply
- Integrated DC/DC converter can supply 48 V-PoE devices across the entire input voltage range of 12- 57 V DC
- Intelligent power consumption detection and classification
- Broadcast Storm Protection

### Technical data

| | |
|---|---|
| **Technology** | |
| Standards | IEEE 802.3 for 10BaseT<br>IEEE 802.3u for 100BaseT(X)<br>IEEE 802.3x for Flow Control<br>IEEE 802.3af for PoE<br>IEEE 802.3at for PoE+ |
| Processing Type | Store and Forward |
| Flow Control | IEEE 802.3x flow control, back pressure flow control |
| **Switch Properties** | |
| MAC table size | 2 K |
| Packet buffer size | 768 KB |
| **Interface** | |
| RJ45 Ports | 10/100BaseT(X) auto negotiation speed,<br>Full/Half duplex mode and auto MDI/MDI-X connection |
| DIP Switches | Enable/disable broadcast storm protection |
| **Power Requirements** | |
| Input Voltage | 12/24/48 V DC (12 to 57 V DC), two redundant inputs |
| Current consumption<br>(with PD consumption) | 6.19 A at 12 VDC<br>5.55 A at 24 VDC<br>2.71 A at 48 VDC |
| Inrush current | 64.56 A at 48 VDC (0.1 – 1 ms) |
| Power loss | 36.4 BTU/h |
| Connection | 1 removable 4-pole terminal block |
| Reverse polarity protection | Present |
| Overcurrent current protection | Present |
| **PoE** | |
| PoE power budget total | 62 W at 12 V DC (12-17 V DC)<br>120 W at 24/48 V DC (18-57 V DC) |
| PoE output voltage | 50 V DC at 12/24/48 V DC input voltage |
| PoE output power | 15.4 W at 802.3af, 30 W at 802.3at |
| PoE output current | 350 mA at 802.3af, 600 mA at 802.3at |
| PoE pinout | Mode A: wire pair 1, 2 (V+); wire pair 3,6 (V-) |
| **Physical Characteristics** | |
| Housing | Aluminium, IP30 protection |
| Dimensions (W x H x D) | 50 x 114 x 70 mm (1.96 x 4.53 x 2.76 in) |
| Weight | 375 g |
| Type of mounting | DIN-Rail |
| **Environmental Limits** | |
| Operating Temperature | Standard models: -10 to 60°C (14 to 140°F),<br>models with extended temperature range:<br>-40 to 75 °C (-40 to 167 °F) |
| Storage Temperature | -40 to 85 °C (-40 to 185 °F) |
| Ambient Relative Humidity | 5 to 95 % (non-condensing) |
| **Regulatory Approvals** | |
| Safety | UL 508 |

| | |
|---|---|
| **Regulatory Approvals** | |
| EMC | EN 55032/24<br>CISPR 32, FCC Part 15B Class A<br>IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV<br>IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m<br>IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV<br>IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV<br>IEC 61000-4-6 CS: 10 V<br>IEC 61000-4-8 |
| Shock | IEC 60068-2-27 |
| Freefall | IEC 60068-2-32 |
| Vibration | IEC 60068-2-6 |
| **MTBF (mean time between failures)** | |
| Time | 1,398,743 hrs |
| Datenbase | Telcordia (Bellcore), GB |
| **Warranty** | |
| Warranty Period | 5 years |

**Ordering data**

| Version | Type | Operating Temperature | Order No. |
|---|---|---|---|
| 2 * RJ45 10/100 BaseT(X), | IE-SW-BL06-2TX-4PoE | -10 to +60 °C | **1241380000** |
| 4 * RJ45 10/100 BaseT(X) PoE+ | IE-SW-BL06T-2TX-4PoE | -40 to +75 °C | **1286920000** |

**Accessories**

| | Type | Order No. |
|---|---|---|
| 19" Rack Mounting Kit | RM-KIT | **1241440000** |

**18-Port unmanaged Fast/Gigabit Ethernet Switches**

- Suitable for use in harsh industrial environment thanks to rugged design and wide operating temperature range of -40°C up to 75°C
- Reliable operation due to redundant voltage inputs, fault relay and LED diagnostics
- SFP-ports for fiber optic transmission over long distances

## Technical data

| | |
|---|---|
| **Technology** | |
| Standards | IEEE 802.3 for 10BASE-T<br>IEEE 802.3u for 100BASE-TX<br>IEEE 802.3ab for 1000BASE-T<br>IEEE 802.3z for 1000BASE-X<br>IEEE 802.3x for flow control |
| Processing type | Store and Forward |
| Flow control | IEEE 802.3x flow control |
| **Switch characteristics** | |
| MAC table size | 8K |
| Packet buffer Size | 1 Mbit |
| **Interfaces** | |
| RJ45 ports | 10/100BASE-T(X) or 10/100/1000BASE-T(X), auto negotiation, Full-/half-duplex mode, Auto MDI/MDI-X port |
| Fibre optic ports | 1000BaseSFP-slot |
| Relay Contact | 1 relay output with a current capacity of 1 A at 24 V DC |
| **Power supply** | |
| Connection type | 1 removable 6-pin terminal block |
| Input voltage | 24 V DC (12 - 48 V), 2 redundant inputs |
| Current consumption at 24 V | 0.35 A |
| Overload current protection | yes |
| Reverse polarity protection | yes |
| **Physical characteristics** | |
| Housing main material | Metal |
| Protection degree | IP30 |
| Type of mounting | DIN rail |
| Dimensions (W x H x D) | 96.4 x 154 x 108.5 mm (3.8 x 6.06 x 4.27 in) |
| Weight | 1044 g |
| **Environmental conditions** | |
| Operating temperature | -40 to 75 °C (-40 to 167 °F) |
| Storage temperature | -40 to 85 °C (-40 to 185 °F) |
| Humidity | 5 to 95 % (non-condensing) |
| Operating altitude | ≤ 2000 m |
| **EMC conformity and approvals** | |
| EMC | EN 55032, EN 55024, CISPR 32, FCC Part 15 Subpart B Class A<br>IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV<br>IEC 61000-4-3 RS: 80 MHz bis 1 Ghz: 3 V/m<br>IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV<br>IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV<br>IEC 61000-4-6 CS: 3 Vrms |
| Safety | UL 61010-1, UL 61010-2-201 |
| Shock | IEC 60068-2-27 |
| Vibration | IEC 60068-2-6 |
| Free fall | IEC 60068-2-31 |

| | |
|---|---|
| **MTBF** | |
| Time | 748,087 hrs |
| Database | Telcordia SR332 |
| **Guarantee** | |
| Time interval | 5 years |

**Ordering Information**

| Version | Model Type | Order No. |
|---|---|---|
| 16x RJ45 10/100 Mbit/s, 2x combo-ports usable as RJ45 10/100/1000 Mbit/s or SFP 1000Mbit/s) | IE-SW-EL18-16TX-2GC | **2682200000** |

**Accessories**

| | Model Type | Order No. |
|---|---|---|
| 19" Rack Mounting Kit | RM-KIT | **1241440000** |

**Note**

Corresponding SFP modules for EcoLine switches, see page I.5.

**5 to 10-Port unmanaged Gigabit Ethernet Switches**

- Gigabit Ethernet on all ports including Jumbo Frame support for applications with high demand on bandwidth and latency
- Reliable operation due to redundant voltage inputs, fault relay and LED diagnostics
- SFP-ports for fiber optic transmission over long distances

## Technical data

| | |
|---|---|
| **Technology** | |
| Standards | IEEE 802.3 for 10BASE-T<br>IEEE 802.3u for 100BASE-TX and 100BASE-FX<br>IEEE 802.3ab for 1000BASE-T<br>IEEE 802.3z for 1000BASE-X<br>IEEE 802.3x for flow control |
| Processing type | Store and Forward |
| Flow control | IEEE 802.3x flow control |
| **Switch characteristics** | |
| MAC table size | IE-SW-EL05-5GT: 4K<br>IE-SW-EL05-4GT-1GESFP: 1K<br>IE-SW-EL08-8GT-MINI: 4K<br>IE-SW-EL08-8GT: 4K<br>IE-SW-EL10-8GT-2GESFP: 4K |
| Packet buffer Size | IE-SW-EL05-5GT: 1 Mbit<br>IE-SW-EL05-4GT-1GESFP: 1 Mbit<br>IE-SW-EL08-8GT-MINI: 1.5 Mbit<br>IE-SW-EL08-8GT: 1.5 Mbit<br>IE-SW-EL10-8GT-2GESFP: 1.5 Mbit |
| Jumbo frame support | IE-SW-EL05-5GT: up to 9.72 KB<br>IE-SW-EL05-4GT-1GESFP: up to 10 KB<br>IE-SW-EL08-8GT-MINI: up to 9 KB<br>IE-SW-EL08-8GT: up to 9.2 KB<br>IE-SW-EL10-8GT-2GESFP: up to 9 KB |
| **Interfaces** | |
| RJ45 ports | 10/100/1000BASE-T(X), auto negotiation, Full-/half-duplex mode, Auto MDI/MDI-X port |
| Fibre optic ports | 100/1000BaseSFP-slot or 1000BaseSFP-slot |
| Relay Contact | IE-SW-EL05-4GT-1GESFP: 1 relay output with a current capacity of 1 A at 24 V DC<br>IE-SW-EL08-8GT-MINI: 1 relay output with a current capacity of 1 A at 24 V DC |
| DIP switches | IE-SW-EL05-4GT-1GESFP: 2x enabling/disabling power fault alarm via relay<br>IE-SW-EL08-8GT-MINI: 2x enabling/disabling power fault alarm via relay |
| **Power supply** | |
| Connection type | IE-SW-EL05-5GT: 1 removable 4-pin terminal block<br>IE-SW-EL05-4GT-1GESFP: 1 removable 6-pin terminal block<br>IE-SW-EL08-8GT-MINI: 1 removable 4-pin terminal block<br>IE-SW-EL08-8GT: 1 removable 6-pin terminal block<br>IE-SW-EL10-8GT-2GESFP: 1 removable 6-pin terminal block |
| Input voltage | 24 V DC (12 - 48 V), 2 redundant inputs |
| Current consumption at 24 V | IE-SW-EL05-5GT: 0.14 A<br>IE-SW-EL05-4GT-1GESFP: 0.18 A<br>IE-SW-EL08-8GT-MINI: 0.17 A<br>IE-SW-EL08-8GT: 0.20 A<br>IE-SW-EL10-8GT-2GESFP: 0.20 A |
| Overload current protection | yes |
| Reverse polarity protection | yes |
| **Physical characteristics** | |
| Housing main material | Metal |
| Protection degree | IP30 |
| Type of mounting | DIN rail |

| | |
|---|---|
| **Physical characteristics** | |
| Dimensions (W x H x D) | IE-SW-EL05-5GT: 26.1 x 95 x 70 mm (1.03 x 3.74 x 2.76 in)<br>IE-SW-EL05-4GT-1GESFP: 26.1 x 144.3 x 94.9 mm (1.03 x 5.68 x 3.74 in)<br>IE-SW-EL08-8GT-MINI: 41 x 95 x 90 mm (1.61 x 3.74 x 3.54 in)<br>IE-SW-EL08-8GT: 26.1 x 144.3 x 94.9 mm (1.03 x 5.68 x 3.74 in)<br>IE-SW-EL10-8GT-2GESFP: 96.4 x 154 x 108.5 mm (3.8 x 6.06 x 4.27 in) |
| Weight | IE-SW-EL05-5GT: 218 g<br>IE-SW-EL05-4GT-1GESFP: 305 g<br>IE-SW-EL08-8GT-MINI: 330 g<br>IE-SW-EL08-8GT: 335 g<br>IE-SW-EL10-8GT-2GESFP: 410 g |
| **Environmental conditions** | |
| Operating temperature | -40 to 75 °C (-40 to 167 °F) |
| Storage temperature | -40 to 85 °C (-40 to 185 °F) |
| Humidity | 5 to 95 % (non-condensing) |
| Operating altitude | ≤ 2000 m |
| **EMC conformity and approvals** | |
| EMC | EN 55032, EN 55024, CISPR 32, FCC Part 15 Subpart B Class A<br>IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV<br>IEC 61000-4-3 RS: 80 MHz bis 1 Ghz: 3 V/m<br>IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV<br>IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV<br>IEC 61000-4-6 CS: 3 Vrms |
| Safety | UL 61010-1, UL 61010-2-201 |
| Shock | IEC 60068-2-27 |
| Vibration | IEC 60068-2-6 |
| Free fall | IEC 60068-2-31 |
| **MTBF** | |
| Time | IE-SW-EL05-5GT: 2,556,319 hrs<br>IE-SW-EL05-4GT-1GESFP: 1,861,840 hrs<br>IE-SW-EL08-8GT-MINI: 1,742,238 hrs<br>IE-SW-EL08-8GT: 926,332 hrs<br>IE-SW-EL10-8GT-2GESFP: 748,087 hrs |
| Database | Telcordia SR332 |
| **Guarantee** | |
| Time interval | 5 years |

**Ordering Information**

| Version | Model Type | Order No. |
|---|---|---|
| 5x RJ45 10/100/1000 Mbit/s | IE-SW-EL05-5GT | **2682210000** |
| 4x RJ45 10/100/1000 Mbit/s, 1x SFP 1000 Mbit/s | IE-SW-EL05-4GT-1GESFP | **2682220000** |
| 8x RJ45 10/100/1000 Mbit/s | IE-SW-EL08-8GT-MINI | **2705000000** |
| 8x RJ45 10/100/1000 Mbit/s | IE-SW-EL08-8GT | **2682230000** |
| 8x RJ45 10/100/1000 Mbit/s, 2x SFP 100/1000 Mbit/s | IE-SW-EL10-8GT-2GESFP | **2682240000** |

**Accessories**

| | Model Type | Order No. |
|---|---|---|
| 19" Rack Mounting Kit | RM-KIT | **1241440000** |

**Note**

Corresponding SFP modules for EcoLine switches, see page I.4 – I.5.

## 5 and 8-Port unmanaged Gigabit Ethernet Switches

- Gigabit Ethernet on all ports
- Variants with slots for SFP transceivers
- Redundant dual 12/24/48 V DC power inputs
- Relay output warning for power failure and port break alarm
- Broadcast storm protection
- Supports jumbo frame transmission

## Technical data

| | |
|---|---|
| **Technology** | |
| Standards | IEEE 802.3 for 10BaseT<br>IEEE 802.3u for 100BaseT (X) and 100BaseFX<br>IEEE 802.3ab for 1000BaseT(X)<br>IEEE 802.3z for 1000BaseX<br>IEEE 802.3x for flow control<br>IEEE 802.3az for energy-efficient Ethernet |
| Processing Type | Store and Forward |
| Flow Control | IEEE 802.3x flow control, back pressure flow control |
| **Switch Properties** | |
| MAC Table Size | 8 K |
| Packet Buffer Size | IE-SW-BL05-4GT-Series: 1 Mbit<br>IE-SW-VL08-Series: 4 Mbit |
| Jumbo frame support | IE-SW-BL05-4GT-Series: 10 KByte<br>IE-SW-VL08-Series: 9.6 KByte |
| **Interface** | |
| Fibre Ports | 100/1000BaseSFP |
| RJ45 Ports | 10/100/1000BaseT(X) auto negotiation speed,<br>Full/Half duplex mode, and auto MDI/MDI-X connection |
| DIP Switches | Port fault alarm enable/disable<br>Broadcast storm protection enable/disable<br>Jumbo frame support enable/disable<br>IEEE 802.3az energy saving enable/disable<br>Switching between 100BaseSFP and 1000BaseSFP at SFP slot |
| Alarm Contact | 1 relay output with current carrying capacity of 1 A at 24 V DC |
| **Power Requirements** | |
| Input Voltage | 12/24/48 V DC (9.6 to 60 V DC), redundant dual inputs |
| Input Current | IE-SW-BL05-4GT-1GS: 0.14 A at 24 V<br>IE-SW-VL08-8GT: 0.29 A at 24 V<br>IE-SW-VL08-6GT-2GS: 0.31 A at 24 V |
| Connection | 1 removable 6-contact terminal block |
| Reverse Polarity Protection | Present |
| **Physical Characteristics** | |
| Housing | Metal, IP30 protection |
| Dimensions (W x H x D) | IE-SW-BL05-4GT-Serie: 29 x 135 x 105 mm (1.14 x 5.31 x 4.13 in)<br>IE-SW-VL08-xGT: 53.6 x 135 x 105 mm (2.11 x 5.31 x 4.13 in) |
| Weight | IE-SW-BL05-4GT-Series: 290 g<br>IE-SW-VL08-Series: 630 g |
| Type of mounting | DIN-Rail, wall (with optional mounting kit) |
| **Environmental Limits** | |
| Operating Temperature | Standard Models: -10 to 60 °C (14 to 140 °F)<br>Wide Temp. Models: -40 to 75 °C<br>(-40 to 167 °F) (on request) |
| Storage Temperature | -40 to 85 °C (-40 to 185 °F) |
| Ambient Relative Humidity | 5 to 95 % (non-condensing) |
| **Regulatory Approvals** | |
| Safety | UL 508 |
| Hazardous Location | UL/cUL Class I, Division 2, Groups A, B, C, and D;<br>ATEX Zone 2 Ex nA nC IIC T4 Gc |

| | |
|---|---|
| **Regulatory Approvals** | |
| EMC | EN 55032/24<br>CISPR 32, FCC Part 15B Class A<br>IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV<br>IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m<br>IEC 61000-4-4 EFT: Power: 4 kV; Signal: 2 kV<br>IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV<br>IEC 61000-4-6 CS: 10 V<br>IEC 61000-4-8 |
| Maritime | DNV-GL |
| Shock | IEC 60068-2-27 |
| Freefall | IEC 60068-2-32 |
| Vibration | IEC 60068-2-6 |
| **MTBF (mean time between failures)** | |
| Time | IE-SW-BL05-4GT-Serie: 2,823,446 hrs<br>IE-SW-VL08-Serie: 2,424,649 hrs |
| Database | Telcordia (Bellcore), GB |
| **Warranty** | |
| Warranty Period | 5 years |

**Ordering Information**

| Version | Model Type | Operating Temperature | Order No. |
|---|---|---|---|
| 4 * RJ45 10/100/1000BaseT(X) | IE-SW-BL05-4GT-1GS | -10 to +60 °C | **2435400000** |
| 1 * Combo Port (10/100/1000 BaseT(X) or 100/1000BaseSFP | IE-SW-BL05T-4GT-1GS | -40 to +75 °C | **2435410000** |
| 8 * RJ45 10/100/1000BaseT(X) | IE-SW-VL08-8GT | -10 to +60 °C | **1241270000** |
| | IE-SW-VL08T-8GT | -40 to +75 °C | **1286860000** |
| 6 * RJ45 10/100/1000BaseT(X), 2 * Combo Port (10/100/1000 BaseT(X) or 100/1000BaseSFP) | IE-SW-VL08-6GT-2GS | -10 to +60 °C | **1241280000** |
| | IE-SW-VL08T-6GT-2GS | -40 to +75 °C | **1286870000** |

**Accessories**

| | Model Type | Order No. |
|---|---|---|
| 19" Rack Mounting Kit | RM-KIT | **1241440000** |
| Wall mounting kit | IE-WALLMOUNT-KIT-30MM | **1504450000** |

**Hinweis**

Corresponding SFP modules for Basic/ValueLine switches, see page I.7

**8 and 10-Port unmanaged PoE+ Gigabit Ethernet Switches**

- IEEE 802.3af/at compliant PoE ports
- Integrated DC/DC converter for providing PoE voltage to PDs over the entire PSE input voltage range from 12 to 57 V DC
- Gigabit Ethernet on all ports including Jumbo Frame support for applications with high demand on bandwidth and latency
- Reliable operation due to redundant voltage inputs, fault relay and LED diagnostics

## Technical data

| | |
|---|---|
| **Technology** | |
| Standards | IEEE 802.3 for 10BASE-T<br>IEEE 802.3u for 100BASE-TX and 100BASE-FX<br>IEEE 802.3ab for 1000BASE-T<br>IEEE 802.3z for 1000BASE-X<br>IEEE 802.3x for flow control<br>IEEE 802.3at/af for Power-over-Ethernet |
| Processing type | Store and Forward |
| Flow control | IEEE 802.3x flow control |
| **Switch characteristics** | |
| MAC table size | IE-SW-EL08-8GTPoE: 4K<br>IE-SW-EL10-8GTPoE-2GESFP: 8K |
| Packet buffer Size | IE-SW-EL08-8GTPoE: 1.5 Mbit<br>IE-SW-EL10-8GTPoE-2GESFP:4 Mbit |
| Jumbo frame support | IE-SW-EL08-8GTPoE: up to 9.72 KB<br>IE-SW-EL10-8GTPoE-2GESFP: up to 9.6 KB |
| **Interfaces** | |
| RJ45 ports | 10/100/1000BASE-T(X), auto negotiation, Full-/half-duplex mode, Auto MDI/MDI-X port |
| Fibre optic ports | 100/1000BaseSFP-slot |
| Relay Contact | 1 relay output with a current capacity of 1 A at 24 V DC |
| DIP switches | IE-SW-EL08-8GTPoE: 2x enabling/disabling power fault alarm via relay<br>IE-SW-EL10-8GTPoE-2GESFP: 2x enabling/disabling power fault alarm via relay, 2x for Switching between 100BaseSFP and 1000BaseSFP on SFP port |
| **Power supply** | |
| Connection type | 1 removable 6-pin terminal block |
| Input voltage | 12/24/48 V DC (12 - 57 V), 2 redundant inputs |
| Current consumption at 24 V (with PD consumption) | IE-SW-EL08-8GTPoE: 5.86 A<br>IE-SW-EL10-8GTPoE-2GESFP: 6.13 A |
| Overload current protection | yes |
| Reverse polarity protection | yes |
| **Power over Ethernet (PoE)** | |
| PoE pin assignment | Mode A: Pin 1, 2 (V+); Pin 3, 6 (V-); Alternative A; MDI |
| Total PoE power budget | 60 W at 12 – 23 V DC; 120 W at 24 -57 V DC |
| **Physical characteristics** | |
| Housing main material | Metal |
| Protection degree | IP30 |
| Type of mounting | DIN rail |
| Dimensions (W x H x D) | IE-SW-EL08-8GTPoE: 41 x 144.3 x 94.9 mm (1.62 x 5.68 x 3.74 in)<br>IE-SW-EL10-8GTPoE-2GESFP: 54.3 x 145.1 x 108.3 mm (2.13 x 5.71 x 4.26 in) |
| Weight | IE-SW-EL08-8GTPoE: 590 g<br>IE-SW-EL10-8GTPoE-2GESFP: 729 g |
| **Environmental conditions** | |
| Operating temperature | -40 to 75 °C (-40 to 167 °F) |
| Storage temperature | -40 to 85 °C (-40 to 185 °F) |
| Humidity | 5 to 95 % (non-condensing) |
| Operating altitude | ≤ 2000 m |

| | |
|---|---|
| **EMC conformity and approvals** | |
| EMC | EN 55032, EN 55024, CISPR 32, FCC Part 15 Subpart B Class A<br>IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV<br>IEC 61000-4-3 RS: 80 MHz bis 1 Ghz: 3 V/m<br>IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV<br>IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV<br>IEC 61000-4-6 CS: 3 Vrms |
| Safety | UL 61010-1, UL 61010-2-201 |
| Shock | IEC 60068-2-27 |
| Vibration | IEC 60068-2-6 |
| Free fall | IEC 60068-2-31 |
| **MTBF** | |
| Time | IE-SW-EL08-8GTPoE: 532,527 hrs<br>IE-SW-EL10-8GTPoE-2GESFP: 537,330 hrs |
| Database | Telcordia SR332 |
| **Guarantee** | |
| Time interval | 5 years |

**Ordering Information**

| Version | Model Type | Order No. |
|---|---|---|
| 8x RJ45 PoE+ 10/100/1000 Mbit/s | IE-SW-EL08-8GTPoE | **2682400000** |
| 8x RJ45 PoE+ 10/100/1000 Mbit/s, 2x SFP 100/1000 Mbit/s | IE-SW-EL10-8GTPoE-2GESFP | **2682410000** |

**Accessories**

| | Model Type | Order No. |
|---|---|---|
| 19" Rack Mounting Kit | RM-KIT | **1241440000** |

**Note**

Corresponding SFP modules for EcoLine switches, see page I.4 – I.5.

### 5-Port unmanaged Gigabit Ethernet PoE+ Switches

- Gigabit Ethernet at all ports
- 4x IEEE 802.3af/at conform PoE ports
- Up to 36 Watt per PoE port
- 12/24/48 V DC redundant wide-range power supply
- Support for jumbo frames
- Intelligent power consumption detection and classification
- Intelligent PoE surge voltage and short-circuit protection

c UL us LISTED

## Technical data

| | |
|---|---|
| **Technology** | |
| Standards | IEEE 802.3 for 10BaseT<br>IEEE 802.3u for 100BaseT(X)<br>IEEE 802.3ab for 1000BaseT<br>IEEE 802.3x for Flow Control<br>IEEE 802.3af for PoE<br>IEEE 802.3at for PoE+<br>IEEE 802.3az for Energy-Efficient Ethernet |
| Processing Type | Store and Forward |
| Flow Control | IEEE 802.3x flow control, back pressure flow control |
| **Switch Properties** | |
| MAC table size | 8 K |
| Packet buffer size | 1 Mbit |
| Jumbo Frame support | 10 KB |
| **Interface** | |
| RJ45 Ports | 10/100/1000BaseT(X) auto negotiation speed,<br>Full/Half duplex mode and auto MDI/MDI-X connection |
| DIP Switches | Broadcast storm protection enable/disable<br>Jumbo Frame support enable/disable<br>IEEE 802.3az energy saving enable/disable<br>PoE High Power enable/disable |
| **Power Requirements** | |
| Input voltage | 12/24/48 V DC 12 to 57 V DC), two redundant inputs |
| Current consumption (with PD consumption) | 5.92 A at 12 VDC<br>5.65 A at 24 VDC<br>3.21 A at 48 VDC |
| Inrush current | 17.4 A at 24 VDC (0.1 – 1 ms) |
| Power loss | 36.4 BTU/h |
| Connection | 2 removable 2-pole terminal blocks |
| Reverse polarity protection | Present |
| Overcurrent current protection | Present |
| **PoE** | |
| PoE power budget total | 62 W at 12 V DC (12-17 V DC)<br>120 W at 24 V DC (18-35 V DC)<br>144 W at 48 V DC (36 to 57 VDC) |
| PoE output voltage | 53 V DC at 12/24/48 V DC input voltage |
| PoE output power | 15.4 W at 802.3af, 30 W at 802.3at, 36 W in high power mode |
| PoE output current | 350 mA at 802.3af, 600 mA at 802.3at, 720 mA in high power mode |
| PoE pinout | Mode A: wire pair 1, 2 (V+); wire pair 3, 6 (V-) |
| **Physical Characteristics** | |
| Housing | Aluminium, IP30 protection |
| Dimensions (W x H x D) | 29 x 135 x 105 mm (1.14 x 5.31 x 4.13 Zoll) |
| Weight | 300 g |
| Type of mounting | DIN-Rail, wall (with optional mounting kit) |
| **Environmental Limits** | |
| Operating Temperature | Standard Models: 0 to 60 °C (32 to 140 °F)<br>Wide Temp. Models: -40 to 75 °C (-40 to 167 °F) |
| Storage Temperature | -40 to 85 °C (-40 to 185 °F) |
| Ambient Relative Humidity | 5 to 95 % (non-condensing) |

| | |
|---|---|
| **Regulatory Approvals** | |
| Safety | UL 508 |
| EMC | EN 55032/24<br>CISPR 32, FCC Part 15B Class A<br>IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV<br>IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m<br>IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV<br>IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV<br>IEC 61000-4-6 CS: 10 V<br>IEC 61000-4-8 |
| Shock | IEC 60068-2-27 |
| Freefall | IEC 60068-2-32 |
| Vibration | IEC 60068-2-6 |
| **MTBF (mean time between failures)** | |
| Time | 1,564,608 hrs |
| Database | Telcordia (Bellcore), GB |
| **Warranty** | |
| Warranty Period | 5 years |

**Ordering data**

| Version | Type | Operating Temperature | Order No. |
|---|---|---|---|
| 1 * RJ45 10/100/1000 BaseT(X), | IE-SW-BL05-1GT-4GTPoE | 0 to +60 °C | **1504320000** |
| 4 * RJ45 10/100/1000 BaseT(X) PoE+ | IE-SW-BL05T-1GT-4GTPoE | -40 to +75 °C | **1504340000** |

**Accessories**

| | Type | Order No. |
|---|---|---|
| 19" Rack Mounting Kit | RM-KIT | **1241440000** |
| Wall mounting kit | IE-WALLMOUNT-KIT-30MM | **1504450000** |

**PoE+ Gigabit Ethernet Injector**

- IEEE 802.3af/at compliant PoE ports
- Integrated DC/DC converter for providing PoE voltage to PDs over the entire PSE input voltage range from 12 to 57 V DC

## Technical data

| | |
|---|---|
| **Technology** | |
| Standards | IEEE 802.3 for 10BASE-T<br>IEEE 802.3u for 100BASE-T(X)<br>IEEE 802.3ab for 1000BASE-T<br>IEEE 802.3at/af for Power-over-Ethernet |
| **Interfaces** | |
| RJ45 ports | 10/100/1000BASE-T(X), auto negotiation, Full-/half-duplex mode, Auto MDI/MDI-X port |
| **Power supply** | |
| Connection type | 1 removable 4-pin terminal block |
| Input voltage | 12/24/48 V DC (12 - 57 V), 1 single input |
| Current consumption at 24 V (with PD consumption) | 2.81 A |
| Overload current protection | yes |
| Reverse polarity protection | yes |
| **Power over Ethernet (PoE)** | |
| PoE pin assignment | Mode A: Pin 1, 2 (V+); Pin 3, 6 (V-); Alternative A; MDI-X |
| Total PoE power budget | 30 W at 12 – 23 V DC; 60 W at 24 -57 V DC |
| **Physical characteristics** | |
| Housing main material | Metal |
| Protection degree | IP30 |
| Type of mounting | DIN rail |
| Dimensions (W x H x D) | 41 x 95 x 70 mm (1.61 x 2.75 x 3.74 in) |
| Weight | 370 g |
| **Environmental conditions** | |
| Operating temperature | -40 to 75 °C (-40 to 167 °F) |
| Storage temperature | -40 to 85 °C (-40 to 185 °F) |
| Humidity | 5 to 95 % (non-condensing) |
| Operating altitude | ≤ 2000 m |
| **EMC conformity and approvals** | |
| EMC | EN 55032, EN 55024, CISPR 32, FCC Part 15 Subpart B Class A<br>IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV<br>IEC 61000-4-3 RS: 80 MHz bis 1 Ghz: 3 V/m<br>IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV<br>IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV<br>IEC 61000-4-6 CS: 3 Vrms |
| Safety | UL 61010-1, UL 61010-2-201 |
| Shock | IEC 60068-2-27 |
| Vibration | IEC 60068-2-6 |
| Free fall | IEC 60068-2-31 |
| **MTBF** | |
| Time | 3,165,390 hrs |
| Database | Telcordia SR332 |

| | |
|---|---|
| **Guarantee** | |
| Time interval | 5 years |

**Ordering Information**

| Version | Model Type | Order No. |
|---|---|---|
| 2x RJ45 10/100/1000 Mbit/s,<br>2x RJ45 PoE+ 10/100/1000 Mbit/s | IE-INJ-EL02-2GTPoE | **2682440000** |

**Accessories**

| | Model Type | Order No. |
|---|---|---|
| 19" Rack Mounting Kit | RM-KIT | **1241440000** |

# Managed Switches
## Overview


| | | |
|---|---|---|
| **Managed Switches** | Introduction – Managed Switches | C.2 |
| | Managed Switches Fast Ethernet | C.4 |
| | Managed Switches Fast / Gigabit Ethernet | C.9 |
| | Managed Switches Gigabit Ethernet | C.12 |
| | Managed Power over Ethernet Switches Gigabit Ethernet | C.13 |
| | Managed Switches, IEC 61850-3, DIN-rail mounting Fast / Gigabit Ethernet | C.14 |
| | Managed Switches, IEC 61850-3, DIN-rail mounting Gigabit Ethernet | C.15 |
| | Managed Switches, IEC 61850-3, 19" rack mounting Fast / Gigabit Ethernet | C.16 |
| | Managed Switches, IEC 61850-3, 19" rack mounting, modular Fast / Gigabit / 10-Gigabit Ethernet | C.18 |
| | Media interface modules for modular switch Fast / Gigabit Ethernet | C.20 |
| | Media interface modules for modular switch Gigabit / 10-Gigabit Ethernet | C.21 |

# Increased productivity through uninterrupted operation

## Managed switches – for optimal control and effective redundancy

In order to coordinate the different requirements of communication participants within an industrial network, managed switches feature extensive control mechanisms for data distribution and bandwidth management. Different configuration options are supported, e.g. web-based configuration, SNMP, Telnet console, command-line interface (CLI) and serial console connection.

In the industrial Ethernet infrastructures of today, system availability must be ensured through network redundancy. This prevents machine downtimes and production losses due to connection errors in the highly integrated systems. Weidmüller managed switches feature high-performance redundancy mechanisms in order to increase the availability of managed Ethernet networks.

In order to satisfy all the requirements of industrial networks, our managed switches are available in four different lines: ValueLine, AdvancedLine, PremiumLine and SubstationLine. This selection ensures the availability of the right product regardless of application-specific and industrial requirements. The lines offer both DIN rail and 19" rack models, Fast, Gigabit and up to 10 Gigabit interfaces, a broad selection of port numbers and types, Power over Ethernet variants, support for the most important industrial automation protocols and the necessary approvals for use in such demanding sectors as the process industry, transmission and distribution, and shipbuilding.

**Your special advantage:**

- Wide variety of ports in terms of number and features to meet individual requirements
- Models available with Fast Ethernet, Gigabit and up to 10 Gigabit interfaces
- Lite- to full-managed models, including Power over Ethernet variants
- Support of industrial protocols for optimal integration into the most common automation networks

See chapter A for details about the product lines

**Variety of models**
Lite- to full-managed models

**Support of a variety of communication protocols**
Industrial Ethernet protocols, such as PROFINET-RT, Ethernet/IP and Modbus/TCP

**Backup and restore function**
External backup and restore (EBR) module available

**Configuration**
Different configuration options supported

**Extensive approvals**
Numerous international approvals, such as CE, FCC, EAC cULus, Class 1 Div. 2, ATEX Zone 2, DNV-GL, IEC 61850-3 and IEEE 1613

## 5 and 6-Port managed Fast Ethernet Switches

- Extensive set of management features enable the set-up of various redundancy, monitoring, traffic filter and security functions
- Suitable for use in harsh industrial environment thanks to rugged design and wide operating temperature range of -40°C up to 75°C

## Technical data

| | | |
|---|---|---|
| **Technology** | | |
| Standards | IEEE 802.3 for 10BASE-T<br>IEEE 802.3u for 100BASE-TX and 100BASE-FX<br>IEEE 802.3x for flow control<br>IEEE 802.1D for the Spanning Tree protocol (STP)<br>IEEE 802.1w for Rapid Spanning Tree protocol (RSTP)<br>IEEE 802.1AB for Link Layer Discovery Protocol (LLDP) | |
| Processing type | Store and Forward | |
| Flow control | IEEE 802.3x flow control | |
| **Switch characteristics** | | |
| MAC table size | 2K | |
| Packet buffer Size | 1 Mbit | |
| **Management features** | | |
| Device configuration | Webbrowser (HTTP/HTTPS), SNMP v1/v2c/v3, Telnet console, CLI, Local serial console port, Upload of a configuration file via web-interface or TFTP-Server | |
| Monitoring function | SNMP v1/v2c/v3, LLDP, Port mirroring, Port statistics, Port monitoring, Syslog, RMON, Event based warning via E-Mail, relay, SNMP trap | |
| Network redundancy | STP, RSTP, MSTP, LACP, O-Ring, O-Chain,Fast recovery | |
| Network traffic filter | Quality of Service (QoS), Differentiated Services Code Point (DSCP), Port based VLAN, Tag based VLAN, IGMP v2/v3, Multicast VLAN Registration (MVR), Traffic Rate Limiting | |
| IP-address management | Static, DHCP-Client, DHCP-Server (port based, pool-based), DHCP-Relay | |
| Security functions | VLAN segmentation, Enable/disable ports, TACACS+ and IEEE 802.1X, User Authentication, Access control (Port based via IEEE 802.1X), Access Control List (IP-based, MAC-based), Management access security via secure IP-list and configuration of allowed access methods (web-interface, telnet, SSH), Loop protection | |
| Time synchronization management | SNTP client | |
| Industrial protocol support | Modbus/TCP slave | |
| **Interfaces** | | |
| RJ45 ports | 10/100BASE-T(X), auto negotiation, Full-/half-duplex mode, Auto MDI/MDI-X port | |
| Fibre optic ports | 100BASE-FX (SC-Duplex connector) | |
| Relay Contact | 1 relay output with a current capacity of 1 A at 24 V DC | |
| DIP switches | 1x enabling/disabling power fault alarm via relay<br>3x for ring redundancy settings | |
| Reset button | < 5 sec: System reboot ; > 5 sec: Factory default | |
| **Fibre optic transceiver characteristics** | | |
| Transmission rate | 100 Mbps | |
| Connector type | SC-Duplex | |
| Transceiver type | Multimode | Singlemode |
| Fiber cable type | 50/125 µm<br>62.5/125 µm | 9/125 µm |
| Transmission distance, typical | 2 km | 30 km |
| Wavelength, typical | 1310 nm | |
| Optical power RX rangey | -31 to 0 dBm | -34 to 0 dBm |
| Optical power TX range | -23.5 to -14 dBm | -15 to -8 dBm |
| Link-budget | 7.5 dB | 19 dB |

| | |
|---|---|
| **Power supply** | |
| Connection type | IE-SW-AL05LM-5TX: 1 removable 6-pin terminal block<br>IE-SW-AL06LM-4TX-2SC: 1 removable 7-pin terminal block<br>IE-SW-AL06LM-4TX-2SCS: 1 removable 7-pin terminal block |
| Input voltage | 24 V DC (12 - 48 V), 2 redundant inputs |
| Current consumption at 24 V | IE-SW-AL05LM-5TX: 0.25 A<br>IE-SW-AL06LM-4TX-2SC: 0.24 A<br>IE-SW-AL06LM-4TX-2SCS: 0.24 A |
| Overload current protection | yes |
| Reverse polarity protection | yes |
| **Physical characteristics** | |
| Housing main material | Metal |
| Protection degree | IP30 |
| Type of mounting | DIN rail |
| Dimensions (W x H x D) | IE-SW-AL05LM-5TX: 26.1 x 144.3 x 94.9 mm (1.03 x 5.68 x 3.74 in)<br>IE-SW-AL06LM-4TX-2SC: 54.2 x 145.4 x 107.1 mm (2.13 x 5.72 x 4.22 in)<br>IE-SW-AL06LM-4TX-2SCS: 54.2 x 145.4 x 107.1 mm (2.13 x 5.72 x 4.22 in) |
| Weight | IE-SW-AL05LM-5TX: 335 g<br>IE-SW-AL06LM-4TX-2SC: 649 g<br>IE-SW-AL06LM-4TX-2SCS: 649 g |
| **Environmental conditions** | |
| Operating temperature | -40 to 75 °C (-40 to 167 °F) |
| Storage temperature | -40 to 85 °C (-40 to 185 °F) |
| Humidity | 5 to 95 % (non-condensing) |
| Operating altitude | ≤ 2000 m |
| **EMC conformity and approvals** | |
| EMC | EN 55032, EN 55024, CISPR 32, FCC Part 15 Subpart B Class A<br>IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV<br>IEC 61000-4-3 RS: 80 MHz bis 1 Ghz: 3 V/m<br>IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV<br>IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV<br>IEC 61000-4-6 CS: 3 Vrms |
| Safety | UL 61010-1, UL 61010-2-201 |
| Shock | IEC 60068-2-27 |
| Vibration | IEC 60068-2-6 |
| Free fall | IEC 60068-2-31 |
| **MTBF** | |
| Time | IE-SW-AL05LM-5TX: 1,796,601 hrs<br>IE-SW-AL06LM-4TX-2SC: 595,597 hrs<br>IE-SW-AL06LM-4TX-2SCS: 609,551 hrs |
| Database | Telcordia SR332 |
| **Guarantee** | |
| Time interval | 5 years |

### Ordering Information

| Version | Model Type | Order No. |
|---|---|---|
| 5x RJ45 10/100 Mbit/s | IE-SW-AL05LM-5TX | **2682250000** |
| 4x RJ45 10/100 Mbit/s, 2x SC Multimode 100 Mbit/s | IE-SW-AL06LM-4TX-2SC | **2682260000** |
| 4x RJ45 10/100/Mbit/s, 2x SC Singlemode 100 Mbit/s | IE-SW-AL06LM-4TX-2SCS | **2682270000** |

### Accessories

| | Model Type | Order No. |
|---|---|---|
| 19" Rack Mounting Kit | RM-KIT | **1241440000** |

**8 to 24-Port managed Fast Ethernet Switches**

- Extensive set of management features enable the set-up of various redundancy, monitoring, traffic filter and security functions
- Suitable for use in harsh industrial environment thanks to rugged design and wide operating temperature range of -40°C up to 75°C

## Technical data

| | |
|---|---|
| **Technology** | |
| Standards | IEEE 802.3 for 10BASE-T<br>IEEE 802.3u for 100BASE-TX<br>IEEE 802.3x for flow control<br>IEEE 802.3ad for port trunk with LACP<br>IEEE 802.1D for the Spanning Tree protocol (STP)<br>IEEE 802.1w for Rapid Spanning Tree protocol (RSTP)<br>IEEE 802.1s for Multiple Spanning Tree Protocol (MSTP)<br>IEEE 802.1p for Class of Service<br>IEEE 802.1Q for VLAN Tagging<br>IEEE 802.1X for Authentication<br>IEEE 802.1AB for Link Layer Discovery Protocol (LLDP) |
| Processing type | Store and Forward |
| Flow control | IEEE 802.3x flow control |
| **Switch characteristics** | |
| MAC table size | 8K |
| Packet buffer Size | 1 Mbit |
| Priority queues | 4 |
| Number of available VLANs | 4095 (1 to 4094) |
| IGMP groups | IE-SW-AL08M-8TX:1024<br>IE-SW-AL16M-16TX: 256 per VLAN<br>IE-SW-AL24M-24TX: 256 per VLAN |
| **Management features** | |
| Device configuration | Webbrowser (HTTP/HTTPS), SNMP v1/v2c/v3, Telnet console, CLI, Local serial console port, Upload of a configuration file via web-interface or TFTP-Server |
| Monitoring function | SNMP v1/v2c/v3, Link Layer Discovery Protocol (LLDP), Port mirroring, Port statistics, Port monitoring, Syslog, RMON (Remote monitoring), Event based warning via E-Mail, Event based warning via relay, Event based warning via SNMP trap |
| Network redundancy | SNMP v1/v2c/v3, LLDP, Port mirroring, Port statistics, Port monitoring, Syslog, RMON, Event based warning via E-Mail, relay, SNMP trap |
| Network traffic filter | Quality of Service (QoS), Differentiated Services Code Point (DSCP), Port based VLAN, Tag based VLAN, IGMP v2/v3, Multicast VLAN Registration (MVR), Traffic Rate Limiting |
| IP-address management | Static, DHCP-Client, DHCP-Server (port based, pool-based), DHCP Option 82, DHCP-Relay |
| Security functions | VLAN segmentation, Enable/disable ports, TACACS+ and IEEE 802.1X, User Authentication, Access control (Port based via IEEE 802.1X), Access Control List (IP-based, MAC-based), Management access security via secure IP-list and configuration of allowed access methods (web-interface, telnet, SSH), Loop protection |
| Time synchronization management | NTP server<br>SNTP client |
| Industrial protocol support | PROFINET device acc. to conformance class A, Modbus/TCP slave |
| **Interfaces** | |
| RJ45 ports | 10/100BASE-T(X), auto negotiation, Full-/half-duplex mode, Auto MDI/MDI-X port |
| Serial console port | RS-232 (RJ45 connector) |
| Relay Contact | 1 relay output with a current capacity of 1 A at 24 V DC |
| Reset button | < 5 sec: System reboot ; > 5 sec: Factory default |
| **Power supply** | |
| Connection type | IE-SW-AL08M-8TX: 1 removable 7-pin terminal block<br>IE-SW-AL16M-16TX: 1 removable 6-pin terminal block<br>IE-SW-AL24M-24TX: 1 removable 6-pin terminal block |

| | |
|---|---|
| **Power supply** | |
| Input voltage | 24 V DC (12 - 48 V), 2 redundant inputs |
| Current consumption at 24 V | IE-SW-AL08M-8TX: 0.24 A<br>IE-SW-AL16M-16TX: 0.6 A<br>IE-SW-AL24M-24TX: 0.6A |
| Overload current protection | yes |
| Reverse polarity protection | yes |
| **Physical characteristics** | |
| Housing main material | Metal |
| Protection degree | IP30 |
| Type of mounting | DIN rail |
| Dimensions (W x H x D) | IE-SW-AL08M-8TX: 54.2 x 145.4 x 107.1 mm (2.13 x 5.72 x 4.21 in)<br>IE-SW-AL16M-16TX: 74.3 x 153.6 x 107.5 mm (2.93 x 6.05 x 4.2 in)<br>IE-SW-AL24M-24TX: 96.4 x 154 x 108.5 mm (3.8 x 6.06 x 4.27 in) |
| Weight | IE-SW-AL08M-8TX: 789 g<br>IE-SW-AL16M-16TX: 1148 g<br>IE-SW-AL24M-24TX: 1281 g |
| **Environmental conditions** | |
| Operating temperature | -40 to 75 °C (-40 to 167 °F) |
| Storage temperature | -40 to 85 °C (-40 to 185 °F) |
| Humidity | 5 to 95 % (non-condensing) |
| Operating altitude | ≤ 2000 m |
| **EMC conformity and approvals** | |
| EMC | EN 55032, EN 55024, CISPR 32, FCC Part 15 Subpart B Class A<br>IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV<br>IEC 61000-4-3 RS: 80 MHz bis 1 Ghz: 3 V/m<br>IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV<br>IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV<br>IEC 61000-4-6 CS: 3 Vrms |
| Safety | UL 61010-1, UL 61010-2-201 |
| Shock | IEC 60068-2-27 |
| Vibration | IEC 60068-2-6 |
| Free fall | IEC 60068-2-31 |
| **MTBF** | |
| Time | IE-SW-AL08M-8TX: 841,599 hrs<br>IE-SW-AL16M-16TX: 886,987 hrs<br>IE-SW-AL24M-24TX: 731,289 hrs |
| Database | Telcordia SR332 |
| **Guarantee** | |
| Time interval | 5 years |

**Ordering Information**

| Version | Model Type | Order No. |
|---|---|---|
| 8x RJ45 10/100 Mbit/s | IE-SW-AL08M-8TX | 2682280000 |
| 16x RJ45 10/100 Mbit/s | IE-SW-AL16M-16TX | 2682310000 |
| 24x RJ45 10/100 Mbit/s | IE-SW-AL24M-24TX | 2682320000 |

**Accessories**

| | Model Type | Order No. |
|---|---|---|
| 19" Rack Mounting Kit | RM-KIT | 1241440000 |

## 5-Port managed Fast Ethernet Switches

- Supports the automation protocols Modbus/TCP, PROFINET RT and EtherNet/IP
- Turbo Ring and Turbo Chain with fast recovery time (<20 ms for up to 250 switches)
- IGMP snooping, QoS, port- and tag-based VLAN
- Configurable error messages via SNMP trap, e-mail or relay output
- User-friendly, web-based configuration and management

## Technical data

| | |
|---|---|
| **Standards** | |
| IEEE 802.3 for 10BaseT ▪ IEEE 802.3u for 100BaseT(X) ▪ IEEE 802.3x for Flow Control ▪ IEEE 802.1D-2004 for Spanning Tree Protocol ▪ IEEE 802.1w for Rapid STP ▪ IEEE 802.1p for Class of Service ▪ IEEE 802.1Q for VLAN Tagging | |
| **Protocols** | |
| IGMPv1/v2 ▪ GMRP ▪ GVRP ▪ SNMPv1/v2c/v3 ▪ DHCP Server/Client ▪ TFTP ▪ SNTP ▪ SMTP ▪ RARP ▪ RMON ▪ HTTP ▪ Telnet ▪ Syslog ▪ DHCP Option 66/67/82 ▪ BootP ▪ LLDP ▪ Modbus/TCP ▪ PROFINET RT (PROFINET-IO device in compliance with Conformance Class B) ▪ EtherNet/IP (CIP support) ▪ IPv6 | |
| **MIB** | |
| MIB-II ▪ Ethernet-like MIB ▪ P-BRIDGE MIB ▪ Bridge MIB ▪ RSTP MIB ▪ RMON MIB Group 1, 2, 3, 9 ▪ Private MIB | |
| **Flow Control** | |
| IEEE 802.3x flow control ▪ back pressure flow control | |
| **Switch Properties** | |
| MAC Table Size | 2 K |
| Packet Buffer Size | 1 MBit |
| **Interface** | |
| RJ45 Ports | 10/100BaseT(X) auto negotiation speed, Full/Half duplex mode, and auto MDI/MDI-X connection |
| Console Port | RS 232 (RJ45 connector) |
| DIP Switches | Turbo Ring, Master, Coupler, Reserve |
| Alarm Contact | 1 relay output with current carrying capacity of 1 A at 24 V DC |
| **Power Requirements** | |
| Input Voltage | 12/24/48 V DC (9.6 to 60 V DC), two redundant inputs |
| Input Current | 0.24 A at 24 V |
| Overload Current Protection | Present |
| Connection | 1 removable 6-contact terminal block |
| Reverse Polarity Protection | Present |
| **Physical Characteristics** | |
| Housing | Metal, IP30 protection |
| Dimensions (W x H x D) | 53.6 x 135 x 105 mm (2.11 x 5.31 x 4.13 in) |
| Weight | 650 g |
| Type of mounting | DIN-Rail |
| **Environmental Limits** | |
| Operating Temperature | Standard models: -10 to 60 °C (14 to 140 °F)<br>Models with extended temperature range: -40 to 75 °C (-40 to 167 °F) |
| Storage Temperature | -40 to 85 °C (-40 to 185 °F) |
| Ambient Relative Humidity | 5 to 95 % (non-condensing) |
| **Regulatory Approvals** | |
| Safety | UL 508, UL 60950-1, CSA C22.2 No. 60950-1, EN60950-1 |
| Hazardous Location | UL/cUL Class I, Division 2, Groups A, B, C and D |
| EMC | EN 55032/24<br>CISPR 32, FCC Part 15B Class A<br>IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV<br>IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m<br>IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV<br>IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV<br>IEC 61000-4-6 CS: 10 V<br>IEC 61000-4-8 |
| Maritime | DNV-GL |
| Shock | IEC 60068-2-27 |

| | |
|---|---|
| **Regulatory Approvals** | |
| Freefall | IEC 60068-2-32 |
| Vibration | IEC 60068-2-6 |
| **MTBF (mean time between failures)** | |
| Time | 1,547,941 hrs |
| Database | Telcordia (Bellcore), GB |
| **Warranty** | |
| Warranty Period | 5 years |

**Ordering data**

| Version | Model Type | Operating Temperature | Order No. |
|---|---|---|---|
| 5 * RJ45 | IE-SW-VL05M-5TX | -10 to +60 °C | 1504280000 |
| 5 * RJ45 | IE-SW-VL05MT-5TX | -40 to +75 °C | 1504310000 |

**Accessories**

| | Model Type | Order No. |
|---|---|---|
| External Backup and Restore Module | EBR-Module RS232 | 1241430000 |
| 19" Rack Mounting Kit | RM-KIT | 1241440000 |

## 8-Port managed Fast Ethernet Switches

- Supports the automation protocols Modbus/TCP, PROFINET RT and EtherNet/IP
- Turbo Ring and Turbo Chain with fast recovery time (<20 ms for up to 250 switches)
- IGMP snooping, QoS, port- and tag-based VLAN
- Configurable error messages via SNMP trap, e-mail or relay output
- User-friendly, web-based configuration and management

## Technical data

| | |
|---|---|
| **Standards** | |
| IEEE 802.3 for 10BaseT ▪ IEEE 802.3u for 100BaseT(X) and 100BaseFX ▪ IEEE 802.3x for Flow Control ▪ IEEE 802.1D-2004 for Spanning Tree Protocol ▪ IEEE 802.1w for Rapid STP ▪ IEEE 802.1p for Class of Service ▪ IEEE 802.1Q for VLAN Tagging | |
| **Protocols** | |
| IGMPv1/v2 ▪ GMRP ▪ GVRP ▪ SNMPv1/v2c/v3 ▪ DHCP Server/Client ▪ TFTP ▪ SNTP ▪ SMTP ▪ RARP ▪ RMON ▪ HTTP ▪ Telnet ▪ Syslog ▪ DHCP Option 66/67/82 ▪ BootP ▪ LLDP ▪ Modbus/TCP ▪ PROFINET RT (PROFINET-IO device in compliance with Conformance Class B) ▪ EtherNet/IP (CIP support) ▪ IPv6 | |
| **MIB** | |
| MIB-II ▪ Ethernet-like MIB ▪ P-BRIDGE MIB ▪ Bridge MIB ▪ RSTP MIB ▪ RMON MIB Group 1, 2, 3, 9 ▪ Private MIB | |
| **Flow Control** | |
| IEEE 802.3x flow control ▪ back pressure flow control | |
| **Switch Properties** | |
| MAC Table Size | 8K |
| Packet Buffer Size | 1 MBit |
| **Interface** | |
| Fibre Ports | 100BaseFX (SC/ST-duplex connection) |
| RJ45 Ports | 10/100BaseT(X) auto negotiation speed, Full/Half duplex mode, and auto MDI/MDI-X connection |
| Console Port | RS 232 (RJ45 connector) |
| DIP Switches | Turbo Ring, Master, Coupler, Reserve |
| Alarm Contact | 1 relay output with current carrying capacity of 1 A at 24 V DC |
| **Specification optical fiber** | |

| Transceiver Type | | 100Base FX | | |
|---|---|---|---|---|
| | | Multi-Mode | | Single-Mode |
| Fiber Cable Type | | OM1 | 50/125 µm 800 MHz*km | G.652 |
| Typical Distance | | 4 km | 5 km | 40 km |
| Wave-length | Typical (nm) | 1300 | | 1310 |
| | TX Range (nm) | 1260 to 1360 | | 1280 to 1340 |
| | RX Range (nm) | 1100 to 1600 | | 1100 to 1600 |
| Optical Power | TX Range (dBm) | -10 to -20 | | 0 to -5 |
| | RX Range (dBm) | -3 to -32 | | -3 to -34 |
| | Link-Budget (dB) | 12 | | 29 |
| | Dispersion Penalty (dB) | 3 | | 1 |

**Note:** When connecting a single-mode fiber transceiver over a short distance, we recommend using an attenuator to prevent the transceiver from being damaged by excessive optical power.

| | |
|---|---|
| **Power Requirements** | |
| Input Voltage | 12/24/48 V DC (9.6 to 60 V DC), two redundant inputs |
| Input Current | IE-SW-VL08M-8TX: 0.18 A at 24 V<br>IE-SW-VL08M-6TX-2ST/2SC/2SCS: 0.30 A at 24 V<br>IE-SW-VL08MT-5TX-1SC-2SCS: 0.35 A at 24 V |
| Overload Current Protection | Present |
| Connection | 1 removable 6-contact terminal block |
| Reverse Polarity Protection | Present |
| **Physical Characteristics** | |
| Housing | Metal, IP30 protection |
| Dimensions (W x H x D) | 53.6 x 135 x 105 mm (2.11 x 5.31 x 4.13 in) |
| Weight | IE-SW-VL08MT-8TX/6TX-2SC/6TX-2ST/6TX-2SCS: 650 g<br>IE-SW-VL08MT-5TX-1SC-2SCS: 890 g |

| | |
|---|---|
| **Physical Characteristics** | |
| Type of mounting | DIN-Rail |
| **Environmental Limits** | |
| Operating Temperature | -40 to 75 °C (-40 to 167 °F) |
| Storage Temperature | -40 to 85 °C (-40 to 185 °F) |
| Ambient Relative Humidity | 5 to 95 % (non-condensing) |
| **Regulatory Approvals** | |
| Safety | UL 508, UL 60950-1* |
| Hazardous Location | UL/cUL Class I, Division 2, Groups A, B, C and D*;<br>ATEX Zone 2 Ex nA nC IIC T4 Gc* |
| EMC | EN 55032/24<br>CISPR 32, FCC Part 15B Class A<br>IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV<br>IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m<br>IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV<br>IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV<br>IEC 61000-4-6 CS: 10 V<br>IEC 61000-4-8 |
| Maritime | DNV-GL* |
| Shock | IEC 60068-2-27 |
| Freefall | IEC 60068-2-32 |
| Vibration | IEC 60068-2-6 |
| **MTBF (mean time between failures)** | |
| Time | 1,339,439 hrs / 1,253,072 hrs model IE-SW-VL08MT-5TX-1SC-2SCS |
| Database | Telcordia (Bellcore), GB |
| **Warranty** | |
| Warranty Period | 5 years |

### Ordering data

| Version | Model Type | Operating Temperature | Order No. |
|---|---|---|---|
| 8 * RJ45 | IE-SW-VL08MT-8TX | -40 to +75 °C | **1240940000** |
| 5 * RJ45, 1 * SC-Multimode, 2 * SC-Singlemode | IE-SW-VL08MT-5TX-1SC-2SCS | -40 to +75 °C | **1345240000** |
| 6 * RJ45, 2 * ST-Multimode | IE-SW-VL08MT-6TX-2ST | -40 to +75 °C | **1240990000** |
| 6 * RJ45, 2 * SC-Multimode | IE-SW-VL08MT-6TX-2SC | -40 to +75 °C | **1344770000** |
| 6 * RJ45, 2 * SC-Singlemode | IE-SW-VL08MT-6TX-2SCS | -40 to +75 °C | **1241020000** |

### Accessories

| | Model Type | Order No. |
|---|---|---|
| External Backup and Restore Module | EBR-Module RS232 | **1241430000** |
| 19" Rack Mounting Kit | RM-KIT | **1241440000** |

**Note**

* does not apply to model IE-SW-VL08MT-5TX-1SC-2SCS

## 16-Port managed Fast Ethernet Switches

- Supports the automation protocols Modbus/TCP, PROFINET RT and EtherNet/IP
- Plug-n-play Turbo Ring and Turbo Chain (<20 ms for up to 250 switches)
- IEEE 1588 PTP, Modbus/TCP, LLDP, SNMP Inform, QoS, IGMP snooping, VLAN, IEEE 802.1X, HTTPS, SNMPv3, and SSH supported

## Technical data

| | |
|---|---|
| **Standards** | |
| IEEE 802.3 for 10BaseT ▪ IEEE 802.3u for 100BaseT (X) ▪ IEEE 802.3x for Flow Control ▪ IEEE 802.1D-2004 for Spanning Tree Protocol ▪ IEEE 802.1w for Rapid STP ▪ IEEE 802.1Q for VLAN Tagging ▪ IEEE 802.1p for Class of Service ▪ IEEE 802.1X for Authentication ▪ IEEE 802.3ad for Port Trunk with LACP | |
| **Protocols** | |
| IGMPv1/v2 ▪ GVRP ▪ SNMPv1/v2c/v3 ▪ DHCP Server/Client ▪ BootP ▪ TFTP ▪ SNTP ▪ SMTP ▪ RARP ▪ GMRP ▪ LACP ▪ RMON ▪ HTTP ▪ HTTPS ▪ Telnet ▪ Syslog ▪ DHCP Option 66/67/82 ▪ SSH ▪ SNMP Inform ▪ Modbus/TCP ▪ PROFINET RT (PROFINET-IO device in compliance with Conformance Class B) ▪ EtherNet/IP (CIP support) ▪ LLDP ▪ IEEE 1588 PTP ▪ IPv6 | |
| **MIB** | |
| MIB-II ▪ Ethernet-Like MIB ▪ P-BRIDGE MIB ▪ Q-BRIDGE MIB ▪ Bridge MIB ▪ RSTP MIB ▪ RMON MIB Group 1, 2, 3, 9 ▪ Private MIB | |
| **Flow Control** | |
| IEEE 802.3x flow control ▪ back pressure flow control | |
| **Switch Properties** | |
| Priority Queues | 4 |
| Max. Number of Available VLANs | 64 |
| VLAN ID Range | VID 1 to 4094 |
| IGMP Groups | 256 |
| MAC Table Size | 8 K |
| Packet Buffer Size | 2 Mbit |
| **Interface** | |
| RJ45 Ports | 10/100BaseT(X) auto negotiation speed, Full/Half duplex mode, and auto MDI/MDI-X connection |
| Console Port | RS 232 (RJ45 connector) |
| Alarm Contact | 2 relay outputs with a current carrying capacity from 1 A at 24 V DC |
| Digital Inputs | 2 inputs with the same ground, electrically isolated<br>• +13 to +30 V for state "1"<br>• -30 to +3 V for state "0"<br>• Max. input current: 8 mA |
| **Power Requirements** | |
| Input Voltage | 24 V DC (12 to 45 V DC), two redundant inputs |
| Input Current | 0.41 A at 24 V |
| Overload Current Protection | Present |
| Connection | 2 removable 6-contact terminal blocks |
| Reverse Polarity Protection | Present |
| **Physical Characteristics** | |
| Housing | Metal, IP30 protection |
| Dimensions (W x H x D) | 94 x 135 x 142.7 mm (3.7 x 5.31 x 5.62 in) |
| Weight | 1586 g |
| Type of mounting | DIN-Rail |
| **Environmental Limits** | |
| Operating Temperature | Standard Models: 0 to 60 °C (32 to 140 °F)<br>Wide Temp. Models: -40 to 75 °C (-40 to 167 °F) |
| Storage Temperature | -40 to 85 °C (-40 to 185 °F) |
| Ambient Relative Humidity | 5 to 95 % (non-condensing) |
| **Regulatory Approvals** | |
| Safety | UL 508, UL 60950-1, CSA C22.2 No. 60950-1, EN60950-1 |

| | |
|---|---|
| **Regulatory Approvals** | |
| Hazardous Location | UL/cUL Class I, Division 2, Groups A, B, C and D;<br>ATEX Zone 2 Ex nA nC IIC T4 Gc |
| EMI | FCC Part 15, CISPR (EN55022) class A |
| EMC | EN61000-4-2 (ESD) level 2;<br>EN61000-4-3 (RS) level 3;<br>EN61000-4-4 (EFT) level 3;<br>EN61000-4-5 (Surge) level 3;<br>EN61000-4-6 (CS) level 3;<br>EN61000-4-8 |
| Maritime | DNV-GL |
| Shock | IEC 60068-2-27 |
| Freefall | IEC 60068-2-32 |
| Vibration | IEC 60068-2-6 |
| **MTBF (mean time between failures)** | |
| Time | 247,000 hrs |
| Database | Telcordia (Bellcore), GB |
| **Warranty** | |
| Warranty Period | 5 years |

**Ordering data**

| Version | Model Type | Operating Temperature | Order No. |
|---|---|---|---|
| 16 * RJ45 | IE-SW-PL16M-16TX | 0 to 60 °C | **1241100000** |
| | IE-SW-PL16MT-16TX | -40 to +75 °C | **1286820000** |

**8 to 18-Port managed Fast/Gigabit Ethernet Switches**

- Extensive set of management features enable the set-up of various redundancy, monitoring, traffic filter and security functions
- Suitable for use in harsh industrial environment thanks to rugged design and wide operating temperature range of -40°C up to 75°C
- SFP-ports for fiber optic transmission over long distances

## Technical data

| | |
|---|---|
| **Technology** | |
| Standards | IEEE 802.3 for 10BASE-T<br>IEEE 802.3u for 100BASE-TX and 100BASE-FX<br>IEEE 802.3ab for 1000BASE-T<br>IEEE 802.3z for 1000BASE-X<br>IEEE 802.3x for flow control<br>IEEE 802.3ad for port trunk with LACP<br>IEEE 802.1D for the Spanning Tree protocol (STP)<br>IEEE 802.1w for Rapid Spanning Tree protocol (RSTP)<br>IEEE 802.1s for Multiple Spanning Tree Protocol (MSTP)<br>IEEE 802.1p for Class of Service<br>IEEE 802.1Q for VLAN Tagging<br>IEEE 802.1X for Authentication<br>IEEE 802.1AB for Link Layer Discovery Protocol (LLDP) |
| Processing type | Store and Forward |
| Flow control | IEEE 802.3x flow control |
| **Switch characteristics** | |
| MAC table size | 8K |
| Packet buffer Size | 1 Mbit |
| Priority queues | 4 |
| Number of available VLANs | 4095 (1 to 4094) |
| IGMP groups | 1024 |
| **Management features** | |
| Device configuration | Webbrowser (HTTP/HTTPS), SNMP v1/v2c/v3, Telnet console, CLI, Local serial console port, Upload of a configuration file via web-interface or TFTP-Server |
| Monitoring function | SNMP v1/v2c/v3, LLDP, Port mirroring, Port statistics, Port monitoring, Syslog, RMON, Event based warning via E-Mail, relay, SNMP trap |
| Network redundancy | STP, RSTP, MSTP, LACP, O-Ring, O-Chain,Fast recovery |
| Network traffic filter | Quality of Service (QoS), Differentiated Services Code Point (DSCP), Port based VLAN, Tag based VLAN, IGMP v2/v3, Multicast VLAN Registration (MVR), Traffic Rate Limiting |
| IP-address management | Static, DHCP-Client, DHCP-Server (port based, pool-based), DHCP Option 82, DHCP-Relay |
| Security functions | VLAN segmentation, Enable/disable ports, TACACS+ and IEEE 802.1X, User Authentication, Access control (Port based via IEEE 802.1X), Access Control List (IP-based, MAC-based), Management access security via secure IP-list and configuration of allowed access methods (web-interface, telnet, SSH), Loop protection |
| Time synchronization management | NTP server, SNTP client |
| Industrial protocol support | PROFINET device acc. to conformance class A, Modbus/TCP slave |
| **Interfaces** | |
| RJ45 ports | 10/100BaseT(X) or 10/100/1000BaseT(X), auto negotiation, Full-/half-duplex mode, Auto MDI/MDI-X port |
| Fibre optic ports | 100/1000BaseSFP-slot |
| Serial console port | RS-232 (RJ45 connector) |
| Relay Contact | 1 relay output with a current capacity of 1 A at 24 V DC |
| Reset button | < 5 sec: System reboot ; > 5 sec: Factory default |
| **Power supply** | |
| Connection type | IE-SW-AL08M-6TX-2GT: 1 removable 7-pin terminal block<br>IE-SW-AL10M-8TX-2GC: 1 removable 6-pin terminal block<br>IE-SW-AL18M-16TX-2GC: 1 removable 6-pin terminal block |
| Input voltage | 24 V DC (12 - 48 V), 2 redundant inputs |
| Current consumption at 24 V | IE-SW-AL08M-6TX-2GT: 0.41 A<br>IE-SW-AL10M-8TX-2GC: 0.45 A<br>IE-SW-AL18M-16TX-2GC: 0.6A |

| | |
|---|---|
| **Power supply** | |
| Overload current protection | yes |
| Reverse polarity protection | yes |
| **Physical characteristics** | |
| Housing main material | Metal |
| Protection degree | IP30 |
| Type of mounting | DIN rail |
| Dimensions (W x H x D) | IE-SW-AL08M-6TX-2GT: 54.2 x 145.4 x 107.1 mm (2.13 x 5.72 x 4.21 in)<br>IE-SW-AL10M-8TX-2GC: 74.3 x 153.6 x 107.5 mm (2.93 x 6.05 x 4.2 in)<br>IE-SW-AL18M-16TX-2GC: 96.4 x 154 x 108.5 mm (3.8 x 6.06 x 4.27 in) |
| Weight | IE-SW-AL08M-6TX-2GT: 789 g<br>IE-SW-AL10M-8TX-2GC: 1140 g<br>IE-SW-AL18M-16TX-2GC: 1281 g |
| **Environmental conditions** | |
| Operating temperature | -40 to 75 °C (-40 to 167 °F) |
| Storage temperature | -40 to 85 °C (-40 to 185 °F) |
| Humidity | 5 to 95 % (non-condensing) |
| Operating altitude | ≤ 2000 m |
| **EMC conformity and approvals** | |
| EMC | EN 55032, EN 55024, CISPR 32, FCC Part 15 Subpart B Class A<br>IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV<br>IEC 61000-4-3 RS: 80 MHz bis 1 Ghz: 3 V/m<br>IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV<br>IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV<br>IEC 61000-4-6 CS: 3 Vrms |
| Safety | UL 61010-1, UL 61010-2-201 |
| Shock | IEC 60068-2-27 |
| Vibration | IEC 60068-2-6 |
| Free fall | IEC 60068-2-31 |
| **MTBF** | |
| Time | IE-SW-AL08M-6TX-2GT: 798,350 hrs<br>IE-SW-AL10M-8TX-2GC:366,529 hrs<br>IE-SW-AL18M-16TX-2GC: 600,504 hrs |
| Database | Telcordia SR332 |
| **Guarantee** | |
| Time interval | 5 years |

**Ordering Information**

| Version | Model Type | Order No. |
|---|---|---|
| 6x RJ45 10/100 Mbit/s, 2x RJ45 10/100/1000 Mbit/s | IE-SW-AL08M-6TX-2GT | 2682290000 |
| 8x RJ45 10/100 Mbit/s, 2x combo-ports usable as RJ45 10/100/1000 Mbit/s or SFP 100/1000Mbit/s) | IE-SW-AL10M-8TX-2GC | 2740420000 |
| 16x RJ45 10/100 Mbit/s, 2x combo-ports usable as RJ45 10/100/1000 Mbit/s or SFP 100/1000Mbit/s) | IE-SW-AL18M-16TX-2GC | 2682330000 |

**Accessories**

| | Model Type | Order No. |
|---|---|---|
| 19" Rack Mounting Kit | RM-KIT | 1241440000 |

**Note**

Corresponding SFP modules for AdvancedLine switches, see page I.4 – I.5.

## 10-Port managed Fast/Gigabit Ethernet Switches

- Supports the automation protocols Modbus/TCP, PROFINET RT and EtherNet/IP
- 2 Gigabit Ethernet ports for redundant ring and 1 Gigabit Ethernet port for uplink solution
- Ring redundancy with fast recovery time (< 20 ms for up to 250 switches)
- IEEE 1588 PTP, LLDP, SNMP Inform, QoS, IGMP snooping, VLAN, IEEE 802.1X, HTTPS, SNMPv3, and SSH supported

## Technical data

| | |
|---|---|
| **Standards** | |
| IEEE 802.3 for 10BaseT ▪ IEEE 802.3u for 100BaseT (X) ▪ IEEE 802.3ab for 1000BaseT(X) ▪ IEEE 802.3x for Flow Control ▪ IEEE 802.1D-2004 for Spanning Tree Protocol ▪ IEEE 802.1w for Rapid STP ▪ IEEE 802.1Q for VLAN Tagging ▪ IEEE 802.1p for Class of Service ▪ IEEE 802.1X for Authentication ▪ IEEE 802.3ad for Port Trunk with LACP | |
| **Protocols** | |
| IGMPv1/v2 ▪ GMRP ▪ GVRP ▪ SNMPv1/v2c/v3 ▪ DHCP Server/Client ▪ BootP ▪ TFTP ▪ SNTP ▪ SMTP ▪ RARP ▪ RMON ▪ HTTP ▪ HTTPS ▪ Telnet ▪ Syslog ▪ DHCP Option 66/67/82 ▪ SSH ▪ SNMP Inform ▪ Modbus/TCP ▪ PROFINET RT (PROFINET-IO device in compliance with Conformance Class B) ▪ EtherNet/IP (CIP support) ▪ LLDP ▪ IEEE 1588 PTP ▪ IPv6 | |
| **MIB** | |
| MIB-II ▪ Ethernet-Like MIB ▪ P-BRIDGE MIB ▪ Q-BRIDGE MIB ▪ Bridge MIB ▪ RSTP MIB ▪ RMON MIB Group 1, 2, 3, 9 ▪ Private MIB | |
| **Flow Control** | |
| IEEE 802.3x flow control ▪ back pressure flow control | |
| **Switch Properties** | |
| Priority Queues | 4 |
| Max. Number of Available VLANs | 64 |
| VLAN ID Range | VID 1 to 4094 |
| IGMP Groups | 256 |
| MAC Table Size | 8 K |
| Packet Buffer Size | 1 MBit |
| **Interface** | |
| RJ45 Ports | 10/100BaseT(X) oder 10/100/1000BaseT(X) auto negotiation |
| Console Port | RS 232 (RJ45 connector) |
| DIP Switches | Turbo-Ring, Master, Coupler, Reserve |
| Alarm Contact | 2 relay outputs with a current carrying capacity from 1 A at 24 V DC |
| Digital Inputs | 2 inputs with the same ground, but electrically isolated from the electronics<br>• +13 to +30 V for state "1"<br>• -30 to +3 V for state "0"<br>• Max. input current: 8 mA |
| **Power Requirements** | |
| Input Voltage | 24 V DC (12 to 45 V DC), two redundant inputs |
| Input Current | 0.48 A at 24 V |
| Overload Current Protection | Present |
| Connection | 2 removable 6-contact terminal blocks |
| Reverse Polarity Protection | Present |
| **Physical Characteristics** | |
| Housing | Metal, IP30 protection |
| Dimensions (W x H x D) | 80.2 x 135 x 105 mm (3.16 x 5.31 x 4.13 in) |
| Weight | 1170 g |
| Type of mounting | DIN-Rail |

| | |
|---|---|
| **Environmental Limits** | |
| Operating Temperature | Standard Models: -10 to 60 °C (32 to 140 °F);<br>Wide Temp. Models: -40 to 75 °C (-40 to 167 °F) |
| Storage Temperature | -40 to 85 °C (-40 to 185 °F) |
| Ambient Relative Humidity | 5 to 95 % (non-condensing) |
| **Regulatory Approvals** | |
| Safety | UL 508, UL 60950-1, CSA C22.2 No. 60950-1, EN60950-1 |
| Hazardous Location | UL/cUL Class I, Division 2, Groups A, B, C and D;<br>ATEX Zone 2 Ex nA nC IIC T4 Gc |
| EMC | EN 55032/24<br>CISPR 32, FCC Part 15B Class A<br>IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV<br>IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m<br>IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV<br>IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV<br>IEC 61000-4-6 CS: 10 V<br>IEC 61000-4-8 |
| Shock | IEC 60068-2-27 |
| Freefall | IEC 60068-2-32 |
| Vibration | IEC 60068-2-6 |
| **MTBF (mean time between failures)** | |
| Time | 977,099 hrs |
| Database | Telcordia (Bellcore), GB |
| **Warranty** | |
| Warranty Period | 5 years |

### Ordering data

| Version | Model Type | Operating Temperature | Order No. |
|---|---|---|---|
| 3 * RJ45 10/100/1000BaseT(X), | IE-SW-PL10M-3GT-7TX | -10 to 60 °C | **1241290000** |
| 7 * RJ45 10/100BaseT(X) | IE-SW-PL10MT-3GT-7TX | -40 to +75 °C | **1286930000** |

### Accessories

| | Model Type | Order No. |
|---|---|---|
| External Backup and Restore Module | EBR-Modul RS232 | **1241430000** |
| 19" Rack Mounting Kit | RM-KIT | **1241440000** |

### 18-Port managed Fast/Gigabit Ethernet Switches

- Supports the automation protocols Modbus/TCP, PROFINET RT and EtherNet/IP
- 2 Gigabit Ethernet ports plus 16 Fast Ethernet ports for copper and fibre
- Ring redundancy with rapid recovery time (< 20 ms for up to 250 switches)
- IEEE 1588 PTP, LLDP, SNMP Inform, QoS, IGMP snooping, VLAN, IEEE 802.1X, HTTPS, SNMPv3, and SSH supported

## Technical data

| | |
|---|---|
| **Standards** | |
| IEEE 802.3 for 10BaseT ▪ IEEE 802.3u for 100BaseT(X) ▪ IEEE 802.3ab for 1000BaseT(X) ▪ IEEE 802.3z for 1000BaseX IEEE 802.3x for Flow Control ▪ IEEE 802.1D-2004 for Spanning Tree Protocol ▪ IEEE 802.1w for Rapid STP ▪ IEEE 802.1Q for VLAN Tagging ▪ IEEE 802.1p for Class of Service ▪ IEEE 802.1X for Authentication ▪ IEEE 802.3ad for Port-Trunk mit LACP | |
| **Protocols** | |
| IGMPv1/v2 ▪ GMRP, GVRP ▪ SNMPv1/v2c/v3 ▪ DHCP Server/Client ▪ BootP ▪ TFTP ▪ SNTP ▪ SMTP ▪ RARP ▪ RMON ▪ HTTP ▪ HTTPS ▪ Telnet ▪ Syslog ▪ DHCP-Option 66/67/82 ▪ SSH ▪ SNMP Inform ▪ Modbus/TCP ▪ PROFINET RT (PROFINET-IO device in compliance with Conformance Class B) ▪ EtherNet/IP (CIP support) ▪ LLDP ▪ IEEE 1588 PTP ▪ IPv6 | |
| **MIB** | |
| MIB-II ▪ Ethernet-like MIB ▪ P-BRIDGE MIB ▪ Q-BRIDGE MIB ▪ Bridge MIB ▪ RSTP MIB ▪ RMON MIB Group 1, 2, 3, 9 ▪ Private MIB | |
| **Flow Control** | |
| IEEE 802.3x flow control ▪ back pressure flow control | |
| **Switch Properties** | |
| Priority Queues | 4 |
| Max. Number of Available VLANs | 64 |
| VLAN ID Range | VID 1 to 4094 |
| IGMP Groups | 256 |
| MAC Table Size | 8 K |
| Packet Buffer Size | 2 MBit |
| **Interface** | |
| Fibre Ports | 1000BaseSFP (100BaseSFP modules are not supported) |
| RJ45 Ports | 10/100BaseT(X) or 10/100/1000BaseT(X) auto negotiation |
| Console Port | RS 232 (RJ45 connector) |
| Alarm Contact | 2 relay outputs with a current carrying capacity from 1 A at 24 V DC |
| Digital Inputs | 2 inputs with the same ground, but electrically isolated from the electronics.<br>• +13 to +30 V for state "1"<br>• -30 to +3 V for state "0"<br>• Max. input current: 8 mA |
| **Power Requirements** | |
| Input Voltage | 24 V DC (12 to 45 V DC), redundant dual inputs |
| Input Current | 0.51 A at 24 V |
| Overload Current Protection | Present |
| Connection | 2 removable 6-contact terminal blocks |
| Reverse Polarity Protection | Present |
| **Physical Characteristics** | |
| Housing | Metal, IP30 protection |
| Dimensions (W x H x D) | 94 x 135 x 142.7 mm (3.7 x 5.31 x 5.62 in) |
| Weight | 1630 g |
| Type of mounting | DIN-Rail |

| | |
|---|---|
| **Environmental Limits** | |
| Operating Temperature | Standard Models: 0 to 60 °C (32 to 140 °F)<br>Wide Temp. Models: -40 to 75 °C (-40 to 167 °F) |
| Storage Temperature | -40 to 85 °C (-40 to 185 °F) |
| Ambient Relative Humidity | 5 to 95 % (non-condensing) |
| **Regulatory Approvals** | |
| Safety | UL 508, UL 60950-1, CSA C22.2 No. 60950-1, EN60950-1 |
| Hazardous Location | UL/cUL Class I, Division 2, Groups A, B, C and D; ATEX Zone 2 Ex nA nC IIC T4 Gc |
| EMC | FCC Part 15, CISPR (EN55022) Class A<br>EN61000-4-2 (ESD), level 2; EN61000-4-3 (RS), level 3;<br>EN61000-4-4 (EFT), level 2; EN61000-4-5 (Surge), level 3;<br>EN61000-4-6 (CS), level 3; EN61000-4-8; EN61000-4-12 |
| Maritime | DNV-GL |
| Shock | IEC 60068-2-27 |
| Freefall | IEC 60068-2-32 |
| Vibration | IEC 60068-2-6 |
| **MTBF (mean time between failures)** | |
| Time | 240,000 hrs |
| Database | Telcordia (Bellcore), GB |
| **Warranty** | |
| Warranty Period | 5 years |

**Ordering data**

| Version | Model Type | Operating Temperature | Order No. |
|---|---|---|---|
| 16 * RJ45 10/100BaseT(X), | IE-SW-PL18M-2GC-16TX | 0 to +60 °C | **1241320000** |
| 2 * Combo Port (10/100/1000BaseT(X) or 1000BaseSFP) | IE-SW-PL18MT-2GC-16TX | -40 to +75 °C | **1286970000** |
| 14 * RJ45 10/100BaseT(X), | IE-SW-PL18M-2GC14TX2SCS | 0 to +60 °C | **1241350000** |
| 2 * SC-Singlemode 100BaseFX, 2 * Combo Port (10/100/1000BaseT(X) or 1000BaseSFP) | IE-SW-PL18MT-2GC14TX2SCS | -40 to +75 °C | **1287010000** |

**Note**

Corresponding SFP modules for PremiumLine switches, see page I.7

**8 to 24-Port managed Gigabit Ethernet Switches**

- Extensive set of management features enable the set-up of various redundancy, monitoring, traffic filter and security functions
- Suitable for use in harsh industrial environment thanks to rugged design and wide operating temperature range of -40°C up to 75°C
- SFP-ports for fiber optic transmission over long distances
- Gigabit Ethernet including Jumbo Frame support for applications with high demand on bandwidth and latency

available Q3 2021

## Technical data

| | |
|---|---|
| **Technology** | |
| Standards | IEEE 802.3 for 10BASE-T<br>IEEE 802.3u for 100BASE-TX and 100BASE-FX<br>IEEE 802.3ab for 1000BASE-T<br>IEEE 802.3z for 1000BASE-X<br>IEEE 802.3x for flow control<br>IEEE 802.3ad for port trunk with LACP<br>IEEE 802.1D for the Spanning Tree protocol (STP)<br>IEEE 802.1w for Rapid Spanning Tree protocol (RSTP)<br>IEEE 802.1s for Multiple Spanning Tree Protocol (MSTP)<br>IEEE 802.1p for Class of Service<br>IEEE 802.1Q for VLAN Tagging<br>IEEE 802.1X for Authentication<br>IEEE 802.1AB for Link Layer Discovery Protocol (LLDP)<br>IEEE 1588 PTPv2 for time synchronization |
| Processing type | Store and Forward |
| Flow control | IEEE 802.3x flow control |
| **Switch characteristics** | |
| MAC table size | 8K |
| Packet buffer Size | 4 Mbit |
| Jumbo frame support | up to 9.6 KB |
| Priority queues | 8 |
| Number of available VLANs | 4096 (1 to 4095) |
| IGMP groups | 256 per VLAN |
| **Management features** | |
| Device configuration | Webbrowser (HTTP/HTTPS), SNMP v1/v2c/v3, Telnet console, CLI, Local serial console port, Upload of a configuration file via web-interface, TFTP-Server or external backup module |
| Monitoring function | SNMP v1/v2c/v3, LLDP, Port mirroring, Port statistics, Port monitoring, Syslog, RMON, Event based warning via E-Mail, relay, SNMP trap, Ethernet cable diagnostics on RJ-45 ports |
| Network redundancy | STP, RSTP, MSTP, LACP, O-Ring, O-Chain,Fast recovery |
| Network traffic filter | Quality of Service (QoS), Tag based VLAN, IGMP v2/v3, Traffic Rate Limiting |
| IP-address management | Static, DHCP-Client, DHCP-Server (port based, pool-based), DHCP Option 82, DHCP-Relay |
| Security functions | VLAN segmentation, Enable/disable ports, TACACS+ and IEEE 802.1X User Authentication, DoS/DDoS auto prevention, Access Control List (IP-based, MAC-based), Loop protection, Management access security via privilege level configuration for different user roles |
| Time synchronization management | SNTP server, SNTP client, PTPv2 (for IE-SW-AL14M-12GT-2GESFP and IE-SW-AL24M-16GT-8GESFP only) |
| Industrial protocol support | PROFINET device acc. to conformance class A, Modbus/TCP slave, EtherNet/IP |
| **Interfaces** | |
| RJ45 ports | 10/100/1000BaseT(X), auto negotiation, Full-/half-duplex mode, Auto MDI/MDI-X port |
| Fibre optic ports | 100/1000BaseSFP-slot |
| Serial console port | RS-232 (RJ45 connector) |
| Relay Contact | 1 relay output with a current capacity of 1 A at 24 V DC |
| Reset button | < 5 sec: System reboot ; > 5 sec: Factory default |
| **Power supply** | |
| Connection type | 1 removable 6-pin terminal block |
| Input voltage | 24 V DC (12 - 48 V), 2 redundant inputs |
| Current consumption at 24 V | IE-SW-AL08M-8GT: 0.55 A<br>IE-SW-AL12M-8GT-4GESFP: 0.54 A<br>IE-SW-AL14M-12GT-2GESFP: 0.53 A<br>IE-SW-AL24M-16GT-8GESFP: 0.84 A |

| | |
|---|---|
| **Power supply** | |
| Overload current protection | yes |
| Reverse polarity protection | yes |
| **Physical characteristics** | |
| Housing main material | Metal |
| Protection degree | IP30 |
| Type of mounting | DIN rail |
| Dimensions (W x H x D) | IE-SW-AL08M-8GT: 54.3 x 145.1 x 108.3 mm (2.13 x 5.71 x 4.26 in)<br>IE-SW-AL12M-8GT-4GESFP: 54.3 x 145.1 x 108.3 mm (2.13 x 5.71 x 4.26 in)<br>IE-SW-AL14M-12GT-2GESFP: 74.3 x 153.6 x 109.2 mm (2.93 x 6.05 x 4.3 in)<br>IE-SW-AL24M-16GT-8GESFP: 96.4 x 154.0 x 108.5 mm (3.8 x 6.06 x 4.27 in) |
| Weight | IE-SW-AL08M-8GT: 810 g<br>IE-SW-AL12M-8GT-4GESFP: 779 g<br>IE-SW-AL14M-12GT-2GESFP: 1039 g<br>IE-SW-AL24M-16GT-8GESFP: 1319 g |
| **Environmental conditions** | |
| Operating temperature | -40 to 75 °C (-40 to 167 °F) |
| Storage temperature | -40 to 85 °C (-40 to 185 °F) |
| Humidity | 5 to 95 % (non-condensing) |
| Operating altitude | ≤ 2000 m |
| **EMC conformity and approvals** | |
| EMC | EN 55032, EN 55024, CISPR 32, FCC Part 15 Subpart B Class A<br>IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV<br>IEC 61000-4-3 RS: 80 MHz bis 1 Ghz: 3 V/m<br>IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV<br>IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV<br>IEC 61000-4-6 CS: 3 Vrms |
| Safety | UL 61010-1, UL 61010-2-201 |
| Shock | IEC 60068-2-27 |
| Vibration | IEC 60068-2-6 |
| Free fall | IEC 60068-2-31 |
| **MTBF** | |
| Time | IE-SW-AL08M-8GT: 508,672 hrs<br>IE-SW-AL12M-8GT-4GESFP: 551,478 hrs<br>IE-SW-AL14M-12GT-2GESFP: 713,154 hrs<br>IE-SW-AL24M-16GT-8GESFP: 507,660 hrs |
| Database | Telcordia SR332 |
| **Guarantee** | |
| Time interval | 5 years |

**Ordering Information**

| Version | Model Type | Order No. |
|---|---|---|
| 8x RJ45 10/100/1000 Mbit/s | IE-SW-AL08M-8GT | **2682350000** |
| 8x RJ45 10/100/1000 Mbit/s, 4x SFP 100/1000 Mbit/s | IE-SW-AL12M-8GT-4GESFP | **2682340000** |
| 12x RJ45 10/100/1000 Mbit/s, 2x SFP 100/1000 Mbit/s | IE-SW-AL14M-12GT-2GESFP | **2682360000** |
| 16x RJ45 10/100/1000 Mbit/s, 8x SFP 100/1000 Mbit/s | IE-SW-AL24M-16GT-8GESFP | **2682370000** |

**Accessories**

| | Model Type | Order No. |
|---|---|---|
| 19" Rack Mounting Kit | RM-KIT | **1241440000** |
| Configuration backup and restore module | IE-EBR-MODULE-RS232-ALM | **2682610000** |

**Note**

Corresponding SFP modules for AdvancedLine switches, see page I.4 – I.5.

**6 and 8-Port managed PoE+ Gigabit Ethernet Switches**

- IEEE 802.3af/at compliant PoE ports
- Integrated DC/DC converter for providing PoE voltage to PDs over the entire PSE input voltage range from 12 to 57 V DC
- Gigabit Ethernet on all ports including Jumbo Frame support for applications with high demand on bandwidth and latency
- SFP-ports for fiber optic transmission over long distances
- Gigabit Ethernet including Jumbo Frame support for applications with high demand on bandwidth and latency

similar to illustration

verfügbar Q3 2021

## Technical data

| | |
|---|---|
| **Technology** | |
| Standards | IEEE 802.3 for 10BASE-T<br>IEEE 802.3u for 100BASE-TX and 100BASE-FX<br>IEEE 802.3ab for 1000BASE-T<br>IEEE 802.3z for 1000BASE-X<br>IEEE 802.3x for flow control<br>IEEE 802.3ad for port trunk with LACP<br>IEEE 802.1D for the Spanning Tree protocol (STP)<br>IEEE 802.1w for Rapid Spanning Tree protocol (RSTP)<br>IEEE 802.1s for Multiple Spanning Tree Protocol (MSTP)<br>IEEE 802.1p for Class of Service<br>IEEE 802.1Q for VLAN Tagging<br>IEEE 802.1X for Authentication<br>IEEE 802.1AB for Link Layer Discovery Protocol (LLDP)<br>IEEE 802.3at/af for Power-over-Ethernet |
| Processing type | Store and Forward |
| Flow control | IEEE 802.3x flow control |
| **Switch characteristics** | |
| MAC table size | 8K |
| Packet buffer Size | 4 Mbit |
| Jumbo frame support | up to 9.6 KB |
| Priority queues | 8 |
| Number of available VLANs | 4096 (1 to 4095) |
| IGMP groups | 256 per VLAN |
| **Management features** | |
| Device configuration | Webbrowser (HTTP/HTTPS), SNMP v1/v2c/v3, Telnet console, CLI, Local serial console port, Upload of a configuration file via web-interface, TFTP-Server or external backup module |
| Monitoring function | SNMP v1/v2c/v3, LLDP, Port mirroring, Port statistics, Port monitoring, Syslog, RMON, Event based warning via E-Mail, relay, SNMP trap, Ethernet cable diagnostics on RJ-45 ports |
| Network redundancy | STP, RSTP, MSTP, LACP, O-Ring, O-Chain,Fast recovery |
| Network traffic filter | Quality of Service (QoS), Tag based VLAN, IGMP v2/v3, Traffic Rate Limiting |
| IP-address management | Static, DHCP-Client, DHCP-Server (port based, pool-based), DHCP Option 82, DHCP-Relay |
| Security functions | VLAN segmentation, Enable/disable ports, TACACS+ and IEEE 802.1X User Authentication, DoS/DDoS auto prevention, Access Control List (IP-based, MAC-based), Loop protection, Management access security via privilege level configuration for different user roles |
| Time synchronization management | SNTP server, SNTP client |
| Industrial protocol support | PROFINET device acc. to conformance class A, Modbus/TCP slave, EtherNet/IP |
| **Interfaces** | |
| RJ45 ports | 10/100/1000BaseT(X), auto negotiation, Full-/half-duplex mode, Auto MDI/MDI-X port |
| Fibre optic ports | 100/1000BaseSFP-slot |
| Serial console port | RS-232 (RJ45 connector) |
| Relay Contact | 1 relay output with a current capacity of 1 A at 24 V DC |
| Reset button | < 5 sec: System reboot ; > 5 sec: Factory default |
| **Power supply** | |
| Connection type | 1 removable 6-pin terminal block |
| Input voltage | 12/24/48 V DC (12 - 57 V), 2 redundant inputs |

| | |
|---|---|
| **Power supply** | |
| Current consumption at 24 V (with PD consumption) | IE-SW-AL06M-4GTPoE-2GESFP: 5.4 A<br>IE-SW-AL08M-8GTPoE: 5.32 A |
| Overload current protection | yes |
| Reverse polarity protection | yes |
| **Power over Ethernet (PoE)** | |
| PoE pin assignment | Mode A: Pin 1, 2 (V+); Pin 3, 6 (V-); Alternative A; MDI |
| Total PoE power budget | 60 W at 12 – 23 V DC; 120 W at 24 -57 V DC |
| **Physical characteristics** | |
| Housing main material | Metal |
| Protection degree | IP30 |
| Type of mounting | DIN rail |
| Dimensions (W x H x D) | 54.3 x 145.1 x 108.5 (2.13 x 5.71 x 4.27 in) |
| Weight | IE-SW-AL06M-4GTPoE-2GESFP: 975 g<br>IE-SW-AL08M-8GTPoE: 985 g |
| **Environmental conditions** | |
| Operating temperature | -40 to 75 °C (-40 to 167 °F) |
| Storage temperature | -40 to 85 °C (-40 to 185 °F) |
| Humidity | 5 to 95 % (non-condensing) |
| Operating altitude | ≤ 2000 m |
| **EMC conformity and approvals** | |
| EMC | EN 55032, EN 55024, CISPR 32, FCC Part 15 Subpart B Class A<br>IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV<br>IEC 61000-4-3 RS: 80 MHz bis 1 Ghz: 3 V/m<br>IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV<br>IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV<br>IEC 61000-4-6 CS: 3 Vrms |
| Safety | UL 61010-1, UL 61010-2-201 |
| Shock | IEC 60068-2-27 |
| Vibration | IEC 60068-2-6 |
| Free fall | IEC 60068-2-31 |
| **MTBF** | |
| Time | IE-SW-AL06M-4GTPoE-2GESFP: 495,624 hrs<br>IE-SW-AL08M-8GTPoE: 495,670 hrs |
| Database | Telcordia SR332 |
| **Guarantee** | |
| Time interval | 5 years |

**Ordering Information**

| Version | Model Type | Order No. |
|---|---|---|
| 4x RJ45 PoE+ 10/100/1000 Mbit/s, 2x SFP 100/1000 Mbit/s | IE-SW-AL06M-4GTPoE-2GESFP | 2682430000 |
| 8x RJ45 PoE+ 10/100/1000 Mbit/s | IE-SW-AL08M-8GTPoE | 2682420000 |

**Accessories**

| | Model Type | Order No. |
|---|---|---|
| 19" Rack Mounting Kit | RM-KIT | 1241440000 |
| Configuration backup and restore module | IE-EBR-MODULE-RS232-ALM | 2682610000 |

**Note**

Corresponding SFP modules for AdvancedLine switches,, see page I.4 – I.5.

**10-Port managed Fast/Gigabit Ethernet Switches**

- Meets IEC 61850-3 / IEEE 1613 standards
- Redundant power supply modules
- Extensive set of management features enable the set-up of various redundancy, monitoring, traffic filter and security functions
- Suitable for use in harsh industrial environment thanks to rugged design and wide operating temperature range of -40°C up to 85°C
- SFP-ports for fiber optic transmission over long distances

available Q3 2021

IEC 61850-3 IEEE 1613

PROFINET INDUSTRIAL ETHERNET

ModbusTCP

## Technical data

| | |
|---|---|
| **Technology** | |
| Standards | IEEE 802.3 for 10BASE-T<br>IEEE 802.3u for 100BASE-TX and 100BASE-FX<br>IEEE 802.3ab for 1000BASE-T<br>IEEE 802.3z for 1000BASE-X<br>IEEE 802.3x for flow control<br>IEEE 802.3ad for port trunk with LACP<br>IEEE 802.1D for the Spanning Tree protocol (STP)<br>IEEE 802.1w for Rapid Spanning Tree protocol (RSTP)<br>IEEE 802.1D-2004 for Rapid Spanning Tree Protocol 2004 (RSTP:2004)<br>IEEE 802.1s for MSTP (Multiple Spanning Tree Protocol)<br>IEEE 802.1p for Class of Service<br>IEEE 802.1Q for VLAN Tagging<br>IEEE 802.1X for Authentication<br>IEEE 802.1AB for LLDP (Link Layer Discovery Protocol) |
| Processing type | Store and Forward |
| Flow control | IEEE 802.3x flow control |
| **Switch characteristics** | |
| MAC table size | 8K |
| Packet buffer size | 1 Mbit |
| Priority queues | 4 |
| Number of available VLANs | 4095 (1 to 4094) |
| IGMP groups | 1024 |
| **Management features** | |
| Device configuration | Webbrowser (HTTP/HTTPS), SNMP v1/v2c/v3, Telnet console, CLI, Local serial console port, Upload of a configuration file via web-interface or TFTP-Server |
| Monitoring function | SNMP v1/v2c/v3, LLDP, Port mirroring, Port statistics, Port monitoring, Syslog, RMON, Event based warning via E-Mail, relay, SNMP trap |
| Network redundancy | STP, RSTP, MSTP, LACP, O-Ring, O-Chain,Fast recovery |
| Network traffic filter | Quality of Service (QoS), Differentiated Services Code Point (DSCP), Port based VLAN, Tag based VLAN, IGMP v2/v3, Multicast VLAN Registration (MVR), Traffic Rate Limiting |
| IP-address management | Static, DHCP-Client, DHCP-Server (port based, pool-based), DHCP Option 82, DHCP-Relay |
| Security functions | VLAN segmentation, Enable/disable ports, TACACS+ and IEEE 802.1X, User Authentication, Access control (Port based via IEEE 802.1X), Access Control List (IP-based, MAC-based), Management access security via secure IP-list and configuration of allowed access methods (web-interface, telnet, SSH), Loop protection |
| Time synchronization management | NTP server, SNTP client |
| Industrial protocol support | PROFINET device acc. to conformance class A, Modbus/TCP slave |
| **Interfaces** | |
| RJ45 ports | 10/100BASE-T(X) or 10/100/1000BASE-T(X), auto negotiation, Full-/half-duplex mode, Auto MDI/MDI-X port |
| Fibre optic ports | 100/1000BaseSFP-slot |
| Serial console port | RS-232 (RJ45 connector) |
| Relay Contact | 1 relay output with a current capacity of 1 A at 24 V DC |
| Reset button | < 5 sec: System reboot ; > 5 sec: Factory default |
| **Power supply** | |
| Connection type | IE-SW-SL10M-7TX-3GC-HV: 2x 3-pin fork/ring lug connection<br>IE-SW-SL10M-7TX-3GC-LV: 2 removable 2-pin terminal blocks |

| | |
|---|---|
| **Power supply** | |
| Input voltage | IE-SW-SL10M-7TX-3GC-HV: 110/220 V DC (88 - 373 V), 110/220 V AC (85 - 264 V), 2 redundant isolated inputs<br>IE-SW-SL10M-7TX-3GC-LV: 48 V DC (12 - 52 V), 2 redundant inputs |
| Power consumption | 12 W (max.) |
| Overload current protection | yes |
| Reverse polarity protection | yes |
| **Physical characteristics** | |
| Housing main material | Metal |
| Protection degree | IP30 |
| Type of mounting | DIN rail |
| Dimensions (W x H x D) | 96.4 x 154 x 148.5 mm (3.8 x 6.06 x 5.85 in) |
| Weight | IE-SW-SL10M-7TX-3GC-HV: 1935 g<br>IE-SW-SL10M-7TX-3GC-LV: 1415 g |
| **Environmental conditions** | |
| Operating temperature | -40 to 85 °C (-40 to 185 °F) |
| Storage temperature | -40 to 85 °C (-40 to 185 °F) |
| Humidity | 5 to 95 % (non-condensing) |
| Operating altitude | ≤ 2000 m |
| **EMC conformity and approvals** | |
| EMC | EN 55032, EN 55024, CISPR 32, FCC Part 15 Subpart B Class A<br>IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV<br>IEC 61000-4-3 RS: 80 MHz to 1 Ghz: 10 V/m<br>IEC 61000-4-4 EFT: Power: 4 kV; Signal: 4 kV<br>IEC 61000-4-5 Surge: Power: 4 kV; Signal: 4 kV<br>IEC 61000-4-6 CS: 10 Vrms |
| Safety | EN 62368-1 |
| Substation compliance | IEC 61850-3, IEEE 1613 |
| Shock | IEC 60870-2-2 class Cm |
| Vibration | IEC 60870-2-2 class Cm and Class Bm |
| Free fall | IEC 60870-2-2 class Cm |
| **MTBF** | |
| Time | IE-SW-SL10M-7TX-3GC-HV: 599,113 hrs<br>IE-SW-SL10M-7TX-3GC-LV: 528,570 hrs |
| Database | Telcordia SR332 |
| **Guarantee** | |
| Time interval | 5 years |

**Ordering Information**

| Version | Model Type | Order No. |
|---|---|---|
| 7x RJ45 10/100 Mbit/s, 3x combo-ports usable as RJ45 10/100/1000 Mbit/s or SFP 100/1000Mbit/s), High Voltage | IE-SW-SL10M-7TX-3GC-HV | **2778950000** |
| 7x RJ45 10/100 Mbit/s, 3x combo-ports usable as RJ45 10/100/1000 Mbit/s or SFP 100/1000Mbit/s), Low Voltage | IE-SW-SL10M-7TX-3GC-LV | **2778960000** |

| Accessories | Model Type | Order No. |
|---|---|---|
| 19" Rack Mounting Kit | RM-KIT | **1241440000** |

**Note**

Corresponding SFP modules for SubstationLine switches, see page I.4 – I.5.

**20-Port managed Gigabit Ethernet Switches**

- Meets IEC 61850-3 / IEEE 1613 standards
- Redundant power supply modules
- Extensive set of management features enable the set-up of various redundancy, monitoring, traffic filter and security functions
- Suitable for use in harsh industrial environment thanks to rugged design and wide operating temperature range of -40°C up to 85°C
- SFP-ports for fiber optic transmission over long distances

available Q3 2021

IEC 61850-3 IEEE 1613

PROFINET INDUSTRIAL ETHERNET

EtherNet/IP ModbusTCP

## Technical data

| | |
|---|---|
| **Technology** | |
| Standards | IEEE 802.3 for 10BASE-T<br>IEEE 802.3u for 100BASE-TX and 100BASE-FX<br>IEEE 802.3ab for 1000BASE-T<br>IEEE 802.3z for 1000BASE-X<br>IEEE 802.3x for flow control<br>IEEE 802.3ad for port trunk with LACP<br>IEEE 802.1D for the Spanning Tree protocol (STP)<br>IEEE 802.1w for Rapid Spanning Tree protocol (RSTP)<br>IEEE 802.1s for Multiple Spanning Tree Protocol (MSTP)<br>IEEE 802.1p for Class of Service<br>IEEE 802.1Q for VLAN Tagging<br>IEEE 802.1X for Authentication<br>IEEE 802.1AB for LLDP (Link Layer Discovery Protocol)<br>IEEE 1588 PTPv2 for time synchronization |
| Processing type | Store and Forward |
| Flow control | IEEE 802.3x flow control |
| **Switch characteristics** | |
| MAC table size | 8K |
| Packet buffer Size | 4 Mbit |
| Jumbo frame support | up to 9.6 KB |
| Priority queues | 8 |
| Number of available VLANs | 4096 (1 to 4095) |
| IGMP groups | 256 per VLAN |
| **Management features** | |
| Device configuration | Webbrowser (HTTP/HTTPS), SNMP v1/v2c/v3, Telnet console, CLI, Local serial console port, Upload of a configuration file via web-interface, TFTP-Server or external backup module |
| Monitoring function | SNMP v1/v2c/v3, LLDP, Port mirroring, Port statistics, Port monitoring, Syslog, RMON, Event based warning via E-Mail, relay, SNMP trap, Ethernet cable diagnostics on RJ-45 ports |
| Network redundancy | STP, RSTP, MSTP, LACP, O-Ring, O-Chain,Fast recovery |
| Network traffic filter | Quality of Service (QoS), Tag based VLAN, IGMP v2/v3, Traffic Rate Limiting |
| IP-address management | Static, DHCP-Client, DHCP-Server (port based, pool-based), DHCP Option 82, DHCP-Relay |
| Security functions | VLAN segmentation, Enable/disable ports, TACACS+ and IEEE 802.1X User Authentication, DoS/DDoS auto prevention, Access Control List (IP-based, MAC-based), Loop protection, Management access security via privilege level configuration for different user roles |
| Time synchronization management | SNTP server, SNTP client, PTPv2 |
| Industrial protocol support | PROFINET device acc. to conformance class A, Modbus/TCP slave, EtherNet/IP |
| **Interfaces** | |
| RJ45 ports | 10/100/1000BASE-T(X), auto negotiation, Full-/half-duplex mode, Auto MDI/MDI-X port |
| Fibre optic ports | 100/1000BaseSFP-slot |
| Serial console port | RS-232 (RJ45 connector) |
| Relay Contact | 1 relay output with a current capacity of 1 A at 24 V DC |
| Reset button | < 5 sec: System reboot ; > 5 sec: Factory default |
| **Power supply** | |
| Connection type | IE-SW-SL20M-8GT-12GESFP-HV: 2x 3-pin fork/ring lug connection<br>IE-SW-SL20M-8GT-12GESFP-LV: 2 removable 2-pin terminal blocks |

| | |
|---|---|
| **Power supply** | |
| Input voltage | IE-SW-SL20M-8GT-12GESFP-HV: 110/220 V DC (88 - 373 V), 110/220 V AC (85 - 264 V), 2 redundant isolated inputs<br>IE-SW-SL20M-8GT-12GESFP-LV: 48 V DC (12 - 52 V), 2 redundant isolated inputs |
| Power consumption | 23 W (max.) |
| Overload current protection | yes |
| Reverse polarity protection | yes |
| **Physical characteristics** | |
| Housing main material | Metal |
| Protection degree | IP30 |
| Type of mounting | DIN rail |
| Dimensions (W x H x D) | 115 x 154 x 159 mm (4.5 x 6.06 x 6.26 in) |
| Weight | IE-SW-SL20M-8GT-12GESFP-HV: 1870 g<br>IE-SW-SL20M-8GT-12GESFP-LV: 1520 g |
| **Environmental conditions** | |
| Operating temperature | -40 to 85 °C (-40 to 185 °F) |
| Storage temperature | -40 to 85 °C (-40 to 185 °F) |
| Humidity | 5 to 95 % (non-condensing) |
| Operating altitude | ≤ 2000 m |
| **EMC conformity and approvals** | |
| EMC | EN 55032, EN 55024, CISPR 32, FCC Part 15 Subpart B Class A<br>IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV<br>IEC 61000-4-3 RS: 80 MHz to 1 Ghz: 10 V/m<br>IEC 61000-4-4 EFT: Power: 4 kV; Signal: 4 kV<br>IEC 61000-4-5 Surge: Power: 4 kV; Signal: 4 kV<br>IEC 61000-4-6 CS: 10 Vrms |
| Safety | EN 62368-1 |
| Substation compliance | IEC 61850-3, IEEE 1613 |
| Shock | IEC 60870-2-2 class Cm |
| Vibration | IEC 60870-2-2 class Cm and Class Bm |
| Free fall | IEC 60870-2-2 class Cm |
| **MTBF** | |
| Time | IE-SW-SL20M-8GT-12GESFP-HV: 421,961 hrs<br>IE-SW-SL20M-8GT-12GESFP-LV: 273,551 hrs |
| Database | Telcordia SR332 |
| **Guarantee** | |
| Time interval | 5 years |

**Ordering Information**

| Version | Model Type | Order No. |
|---|---|---|
| 8x RJ45 10/100/1000 Mbit/s, 12x SFP 100/1000 Mbit/s, High Voltage | IE-SW-SL20M-8GT-12GESFP-HV | **2778970000** |
| 8x RJ45 10/100/1000 Mbit/s, 12x SFP 100/1000 Mbit/s, Low Voltage | IE-SW-SL20M-8GT-12GESFP-LV | **2778980000** |

| Accessories | Model Type | Order No. |
|---|---|---|
| 19" Rack Mounting Kit | RM-KIT | **1241440000** |
| Configuration backup and restore module | IE-EBR-MODULE-RS232-ALM | **2682610000** |

**Note**

Corresponding SFP modules for SubstationLine switches, see page I.4 – I.5.

**26-Port 19" managed Fast/Gigabit Ethernet Switches**

- Meets IEC 61850-3 / IEEE 1613 standards
- Redundant power supply modules
- Extensive set of management features enable the set-up of various redundancy, monitoring, traffic filter and security functions
- Suitable for use in harsh industrial environment thanks to rugged design and wide operating temperature range of -40°C up to 85°C
- SFP-ports for fiber optic transmission over long distances

available Q3 2021

IEC 61850-3 IEEE 1613

PROFINET INDUSTRIAL ETHERNET

EtherNet/IP

ModbusTCP

## Technical data

| | |
|---|---|
| **Technology** | |
| Standards | IEEE 802.3 for 10BASE-T<br>IEEE 802.3u for 100BASE-TX and 100BASE-FX<br>IEEE 802.3ab for 1000BASE-T<br>IEEE 802.3z for 1000BASE-X<br>IEEE 802.3x for flow control<br>IEEE 802.3ad for port trunk with LACP<br>IEEE 802.1D for the Spanning Tree protocol (STP)<br>IEEE 802.1w for Rapid Spanning Tree protocol (RSTP)<br>IEEE 802.1s for Multiple Spanning Tree Protocol (MSTP)<br>IEEE 802.1p for Class of Service<br>IEEE 802.1Q for VLAN Tagging<br>IEEE 802.1X for Authentication<br>IEEE 802.1AB for LLDP (Link Layer Discovery Protocol)<br>IEEE 1588 PTPv2 for time synchronization |
| Processing type | Store and Forward |
| Flow control | IEEE 802.3x flow control |
| **Switch characteristics** | |
| MAC table size | 8K |
| Packet buffer Size | 4 Mbit |
| Priority queues | 8 |
| Number of available VLANs | 4095 (1 to 4094) |
| IGMP groups | 256 per VLAN |
| **Management features** | |
| Device configuration | Webbrowser (HTTP/HTTPS), SNMP v1/v2c/v3, Telnet console, CLI, Local serial console port, Upload of a configuration file via web-interface, TFTP-Server or external backup module |
| Monitoring function | SNMP v1/v2c/v3, LLDP, Port mirroring, Port statistics, Port monitoring, Syslog, RMON, Event based warning via E-Mail, relay, SNMP trap, Ethernet cable diagnostics on RJ-45 ports |
| Network redundancy | STP, RSTP, MSTP, LACP, O-Ring, O-Chain,Fast recovery |
| Network traffic filter | Quality of Service (QoS), Tag based VLAN, IGMP v2/v3, Traffic Rate Limiting |
| IP-address management | Static, DHCP-Client, DHCP-Server (port based, pool-based), DHCP Option 82, DHCP-Relay |
| Security functions | VLAN segmentation, Enable/disable ports, TACACS+ and IEEE 802.1X User Authentication, DoS/DDoS auto prevention, Access Control List (IP-based, MAC-based), Loop protection, Management access security via privilege level configuration for different user roles |
| Time synchronization management | SNTP server, SNTP client, PTPv2 |
| Industrial protocol support | PROFINET device acc. to conformance class A, Modbus/TCP slave, EtherNet/IP |
| **Interfaces** | |
| RJ45 ports | 10/100BASE-T(X) or 10/100/1000BASE-T(X), auto negotiation, Full-/half-duplex mode, Auto MDI/MDI-X port |
| Fibre optic ports | 100/1000BaseSFP-slot |
| Serial console port | RS-232 (RJ45 connector) |
| Relay Contact | 1 relay output with a current capacity of 1 A at 24 V DC |
| Reset button | < 5 sec: System reboot ; > 5 sec: Factory default |
| **Power supply** | |
| Connection type | 1x 10-pin fork/ring lug connection |

| | |
|---|---|
| **Power supply** | |
| Input voltage | IE-SW-SL26M-24TX-2GC-HV: 110/220 V DC (100 - 370 V), 110/220 V AC (100 - 240 V), 2 redundant isolated inputs<br>IE-SW-SL26M-24TX-2GC-LV: 48 V DC (24 - 72 V), 2 redundant isolated inputs |
| Power consumption | 23 W (max.) |
| Overload current protection | yes |
| Reverse polarity protection | yes |
| **Physical characteristics** | |
| Housing main material | Metal |
| Protection degree | IP30 |
| Type of mounting | 19" rack mounting |
| Dimensions (W x H x D) | 443.7 x 44 x 262.5 mm (17.46 x 1.73 x 10.33 in) |
| Weight | IE-SW-SL26M-24TX-2GC-HV: 4050 g<br>IE-SW-SL26M-24TX-2GC-LV: 3535 g |
| **Environmental conditions** | |
| Operating temperature | -40 to 85 °C (-40 to 185 °F) |
| Storage temperature | -40 to 85 °C (-40 to 185 °F) |
| Humidity | 5 to 95 % (non-condensing) |
| Operating altitude | ≤ 2000 m |
| **EMC conformity and approvals** | |
| EMC | EN 55032, EN 55024, CISPR 32, FCC Part 15 Subpart B Class A<br>IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV<br>IEC 61000-4-3 RS: 80 MHz to 1 Ghz: 10 V/m<br>IEC 61000-4-4 EFT: Power: 4 kV; Signal: 4 kV<br>IEC 61000-4-5 Surge: Power: 4 kV; Signal: 4 kV<br>IEC 61000-4-6 CS: 10 Vrms |
| Safety | EN 62368-1 |
| Substation compliance | IEC 61850-3, IEEE 1613 |
| Shock | IEC 60870-2-2 class Cm |
| Vibration | IEC 60870-2-2 class Cm and Class Bm |
| Free fall | IEC 60870-2-2 class Cm |
| **MTBF** | |
| Time | IE-SW-SL26M-24TX-2GC-HV: 262,968 hrs<br>IE-SW-SL26M-24TX-2GC-LV: 297,924 hrs |
| Database | Telcordia SR332 |
| **Guarantee** | |
| Time interval | 5 years |

**Ordering Information**

| Version | Model Type | Order No. |
|---|---|---|
| 24x RJ45 10/100 Mbit/s, 2x combo-ports usable as RJ45 10/100/1000 Mbit/s or SFP 100/1000 Mbit/s), High Voltage | IE-SW-SL26M-24TX-2GC-HV | **2778990000** |
| 24x RJ45 10/100 Mbit/s, 2x combo-ports usable as RJ45 10/100/1000 Mbit/s or SFP 100/1000 Mbit/s), Low Voltage | IE-SW-SL26M-24TX-2GC-LV | **2779000000** |

**Note**

Corresponding SFP modules for SubstationLine switches, see page I.4 – I.5.

**28-Port 19" modular managed Fast/Gigabit/10-Gigabit Ethernet Switches**

- Meets IEC 61850-3 / IEEE 1613 standards
- Modular design to allocate up to 28 ports with up to 10-GbE speed
- Extensive set of management features enable the set-up of various redundancy, monitoring, traffic filter and security functions
- Suitable for use in harsh industrial environment thanks to rugged design and wide operating temperature range of -40°C up to 85°C
- SFP-ports for fiber optic transmission over long distances

available Q3 2021

IEC 61850-3 IEEE 1613

PROFINET INDUSTRIAL ETHERNET

EtherNet/IP

ModbusTCP

## Technical data

| | |
|---|---|
| **Technology** | |
| Standards | IEEE 802.3 for 10BASE-T<br>IEEE 802.3u for 100BASE-TX and 100BASE-FX<br>IEEE 802.3ab for 1000BASE-T<br>IEEE 802.3z for 1000BASE-X<br>IEEE 802.3ae for 10-Gigabit Ethernet<br>IEEE 802.3x for flow control<br>IEEE 802.3ad for port trunk with LACP<br>IEEE 802.1D for the Spanning Tree protocol (STP)<br>IEEE 802.1w for Rapid Spanning Tree protocol (RSTP)<br>IEEE 802.1s for Multiple Spanning Tree Protocol (MSTP)<br>IEEE 802.1p for Class of Service<br>IEEE 802.1Q for VLAN Tagging<br>IEEE 802.1X for Authentication<br>IEEE 802.1AB for LLDP (Link Layer Discovery Protocol)<br>IEEE 1588 PTPv2 for time synchronization |
| Processing type | Store and Forward |
| Flow control | IEEE 802.3x flow control |
| **Switch characteristics** | |
| MAC table size | 8K |
| Packet buffer Size | 32 Mbit |
| Memory (Flash) | 16 MB |
| Memory (RAM) | 128 MB |
| Jumbo frame support | up to 10 KB |
| Priority queues | 8 |
| Number of available VLANs | 4095 (1 to 4094) |
| IGMP groups | 128 per VLAN |
| **Management features** | |
| Device configuration | Webbrowser (HTTP/HTTPS)<br>SNMP v1/v2c/v3<br>Telnet console, CLI<br>Local serial console port<br>Upload of a configuration file via web-interface<br>TFTP-Server or external backup module |
| Monitoring function | SNMP v1/v2c/v3<br>LLDP<br>Port mirroring<br>Port statistics<br>Port monitoring<br>Syslog<br>RMON<br>Event based warning via E-Mail<br>relay<br>SNMP trap<br>Ethernet cable diagnostics on RJ-45 ports |

| | |
|---|---|
| **Management features** | |
| Network redundancy | STP<br>RSTP<br>MSTP<br>LACP<br>O-Ring<br>O-Chain,Fast recovery |
| Network traffic filter | Quality of Service (QoS)<br>Tag based VLAN<br>IGMP v2/v3<br>Traffic Rate Limiting |
| IP-address management | Static<br>DHCP-Client<br>DHCP-Server (port based, pool-based)<br>DHCP Option 82<br>DHCP-Relay |
| Security functions | VLAN segmentation<br>Enable/disable ports<br>TACACS+ and IEEE 802.1X User Authentication<br>DoS/DDoS auto prevention<br>Access Control List (IP-based, MAC-based)<br>Loop protection<br>Management access security via privilege level configuration for different user roles |
| Time synchronization management | SNTP server<br>SNTP client<br>PTPv2 |
| Industrial protocol support | PROFINET device acc. to conformance class A, Modbus/TCP slave, EtherNet/IP |
| **Interfaces** | |
| Supported media interface modules at slots 1 - 3 | IE-SWM-SL08-8GT: 8 x 10/100/1000BASE-T(X) ports<br>IE-SWM-SL08-8GESFP: 8 x 100/1000BaseSFP ports<br>IE-SWM-SL04-4SC: 4 x 100Base-FX ports (SC-duplex, multimode)<br>IE-SWM-SL04-4SCS: 4 x 100BSE-FX ports (SC-duplex, singlemode)<br>IE-SWM-SL04-4ST: 4 x 100Base-FX ports (ST-duplex, multimode)<br>IE-SWM-SL04-4STS: 4 x 100Base-FX ports (ST-duplex, singlemode) |
| **Note:** Supported media interface modules for module slots 1-3, see page C.20 | |
| Supported media interface modules at slot 4 | IE-SWM-SL04-4GESFP: 4 x 1000BaseSFP slots<br>IE-SWM-SL02-2GESFP+: 2 x 10GBaseSFP+ slots<br>IE-SWM-SL04-4GESFP+: 4 x 10GBaseSFP+ slots |
| **Note:** Supported media interface modules for module slot 4, see page C.21 | |
| Serial console port | RS-232 (RJ45 connector) |
| Relay Contact | 1 relay output with a current capacity of 1 A at 24 V DC |
| Reset button | < 5 sec: System reboot ; > 5 sec: Factory default |

| | |
|---|---|
| **Power supply** | |
| Connection type | 1x 10-pin fork/ring lug connection |
| Input voltage | IE-SW-SL28M-HV: 110/220 V DC (100 - 370 V), 110/220 V AC (100 - 240 V), 2 redundant isolated inputs<br>IE-SW-SL28M-LV: 48 V DC (24 - 72 V), 2 redundant isolated inputs |
| Power consumption | 41 W (max.) |
| Overload current protection | yes |
| Reverse polarity protection | yes |
| **Physical characteristics** | |
| Housing main material | Metal |
| Protection degree | IP30 |
| Type of mounting | 19" rack mounting |
| Dimensions (W x H x D) | 440 x 44 x 325 mm (17.32 x 1.73 x 12.80 in) |
| Weight | IE-SW-SL28M-HV: 6600 g<br>IE-SW-SL28M-LV: 6450 g |
| **Environmental conditions** | |
| Operating temperature | -40 to 85 °C (-40 to 185 °F)<br>-20 to 60 ºC (-4 to 140 ºF) if 10G SFP+ module is used |
| Storage temperature | -40 to 85 °C (-40 to 185 °F) |
| Humidity | 5 to 95 % (non-condensing) |
| Operating altitude | ≤ 2000 m |
| **EMC conformity and approvals** | |
| EMC | EN 55032, EN 55024, CISPR 32, FCC Part 15 Subpart B Class A<br>IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV<br>IEC 61000-4-3 RS: 80 MHz to 1 Ghz: 10 V/m<br>IEC 61000-4-4 EFT: Power: 4 kV; Signal: 4 kV<br>IEC 61000-4-5 Surge: Power: 4 kV; Signal: 4 kV<br>IEC 61000-4-6 CS: 10 Vrms |
| Safety | EN 62368-1, UL 61010-1, UL 61010-2-201 (IE-SW-SL28M-HV only) |
| Substation compliance | IEC 61850-3, IEEE 1613 |
| Shock | IEC 60870-2-2 class Cm |
| Vibration | IEC 60870-2-2 class Cm and Class Bm |
| Free fall | IEC 60870-2-2 class Cm |
| **MTBF** | |
| Time | IE-SW-SL28M-HV: 647,420 hrs<br>IE-SW-SL28M-LV: 608,907 hrs |
| Database | Telcordia SR332 |
| **Guarantee** | |
| Time interval | 5 years |

**Ordering Information**

| Version | Model Type | Order No. |
|---|---|---|
| Modular 19" rack mounting switch with 4 media interface slots for up to 28 ports, High voltage | IE-SW-SL28M-HV | **2779010000** |
| Modular 19" rack mounting switch with 4 media interface slots for up to 28 ports, Low Voltage | IE-SW-SL28M-LV | **2779020000** |
| **Accessories** | **Model Type** | **Order No.** |
| Configuration backup and restore module | IE-EBR-MODULE-RS232-ALM | **2682610000** |

**Media interface modules for modular switch - Fast/Gigabit Ethernet**

- Modular design provides wide variety of media interface types (RJ-45, SFP, SC/ST-Duplex)

available Q3 2021

## Technical data

| | | |
|---|---|---|
| **Interfaces** | | |
| RJ45 ports | 10/100/1000BASE-T(X), auto negotiation, Full-/half-duplex mode, Auto MDI/MDI-X port | |
| Fibre optic ports | 100BASE-FX (SC/ST-Duplex connector) or 100/1000BaseSFP-slot | |
| **Fibre optic transceiver characteristics** | | |
| Transmission rate | 100 Mbps | |
| Connector type | SC-Duplex or ST-Duplex | |
| Transceiver type | Multimode | Singlemode |
| Fiber cable type | 50/125 µm<br>62.5/125 µm | 9/125 µm |
| Transmission distance, typical | 2 km | 30 km |
| Wavelength, typical | 1310 nm | |
| Optical power RX range | -32to -8 dBm | -34 to 0 dBm |
| Optical power TX range | -23.5 to -14 dBm | -15 to -8 dBm |
| Link-budget | 8.5 dB | 19 dB |
| **Power supply** | | |
| Voltage supply | via Ethernet switch | |
| Power consumption | IE-SWM-SL04-4SC/4SCS/4ST/4STS: 5.5 W<br>IE-SWM-SL08-8GT: 8 W<br>IE-SWM-SL08-8GESFP: 0.5 W (w/o SFP-transceiver) | |
| **Physical characteristics** | | |
| Housing main material | Metal | |
| Type of mounting | Insert in module slot 1, 2 or 3 of IE-SW-SL28M series | |
| Dimensions (W x H x D) | 99 x 40.7 x 107 mm (3.9 x 1.6 x 4.2 in) | |
| Weight | 326 g | |
| **Environmental conditions** | | |
| Operating temperature | -40 to 85 °C (-40 to 185 °F) | |
| Storage temperature | -40 to 85 °C (-40 to 185 °F) | |
| Humidity | 5 to 95 % (non-condensing) | |
| Operating altitude | ≤ 2000 m | |
| **MTBF** | | |
| Time | IE-SWM-SL04-4SC: 315,658 hrs<br>IE-SWM-SL04-4SCS: 401,287 hrs<br>IE-SWM-SL04-4ST: 314,863 hrs<br>IE-SWM-SL04-4STS: 401,287 hrs<br>IE-SWM-SL08-8GT: 1,303,990 hrs<br>IE-SWM-SL08-8GESFP: 3,712,062 hrs | |
| Database | Telcordia SR332 | |
| **Guarantee** | | |
| Time interval | 5 years | |

**Ordering Information**

| Version | Model Type | Order No. |
|---|---|---|
| Media interface module, 4x SC Multimode 100Mbit/s | IE-SWM-SL04-4SC | **2779170000** |
| Media interface module, 4x SC Singlemode 100Mbit/s | IE-SWM-SL04-4SCS | **2779160000** |
| Media interface module, 4x ST Multimode 100Mbit/s | IE-SWM-SL04-4ST | **2779190000** |
| Media interface module, 4x ST Singlemode 100Mbit/s | IE-SWM-SL04-4STS | **2779180000** |
| Media interface module, 8x RJ45 10/100/1000 Mbit/s | IE-SWM-SL08-8GT | **2779140000** |
| Media interface module, 8x SFP 100/1000 Mbit/s | IE-SWM-SL08-8GESFP | **2779150000** |

**Note**

Corresponding SFP modules for SubstationLine switches, see page I.4 – I.5.

## Media interface modules for modular switch - Gigabit/10-Gigabit Ethernet

available Q3 2021

### Technical data

| | |
|---|---|
| **Interfaces** | |
| Fibre optic ports | 1000BaseSFP-Slot or 10GBaseSFP+ slot |
| **Power supply** | |
| Voltage supply | via Ethernet switch |
| Power consumption | IE-SWM-SL04-4GESFP: 0.5 W (w/o SFP-transceiver)<br>IE-SWM-SL02-2GESFP+: 7 W (w/o SFP-transceiver)<br>IE-SWM-SL04-4GESFP+: 14 W (w/o SFP-transceiver) |
| **Physical characteristics** | |
| Housing main material | Metal |
| Type of mounting | Insert in module slot 4 of IE-SW-SL28M series |
| Dimensions (W x H x D) | 99 x 40.7 x 136 mm (3.9 x 1.6 x 5.35 in) |
| Weight | 314 g |
| **Environmental conditions** | |
| Operating temperature | IE-SWM-SL04-4GESFP: -40 to 85 °C (-40 to 185 °F)<br>IE-SWM-SL02-2GESFP+: -40 to 60 °C (-40 to 140 °F)<br>IE-SWM-SL04-4GESFP+: -40 to 60 °C (-40 to 140 °F) |
| Storage temperature | -40 to 85 °C (-40 to 185 °F) |
| Humidity | 5 to 95 % (non-condensing) |
| Operating altitude | ≤ 2000 m |
| **MTBF** | |
| Time | IE-SWM-SL04-4GESFP: 4,419,625 hrs<br>IE-SWM-SL02-2GESFP+: 3,814,097 hrs<br>IE-SWM-SL04-4GESFP+: 1,871,812 hrs |
| Database | Telcordia SR332 |
| **Guarantee** | |
| Time interval | 5 years |

**Ordering Information**

| Version | Model Type | Order No. |
|---|---|---|
| Media interface module, 4x SFP 1000 Mbit/s | IE-SWM-SL04-4GESFP | **2779200000** |
| Media interface module, 2x SFP+ 10 Gbit/s | IE-SWM-SL02-2GESFP+ | **2779210000** |
| Media interface module, 4x SFP+ 10 Gbit/s | IE-SWM-SL04-4GESFP+ | **2779220000** |

**Note**

Corresponding SFP modules for SubstationLine switches, see page I.5 – I.6.

# Industrial Security Router
## Overview


| | | |
|---|---|---|
| **Industrial Security Router** | Introduction – Industrial Security Router | D.2 |
| | Industrial Security Router | D.4 |

# Secure data communication with integrated VPN technology

## Industrial security routers – versatile, reliable and flexible

As data and information networking continues to increase, Ethernet communication seeing more and more use in industrial automation technology. This is a trend that has not only changed the individual requirements of many customers, but has also had an impact on the devices used. These must now support a flexible system structure, allow networking with each other and, in addition to the targeted integration of all relevant network participants, also guarantee maximum data security

In order to provide optimal support for meeting the many different requirements, we offer different versions of industrial security routers. These routers enable secure, reliable and location-independent communication between machines and systems, as well as reliable user authentication to protect the network.

Our routers with integrated VPN technology are ideally suited for secure remote access to components and systems in remote networks. They are available with either wired or mobile Internet connectivity and support the u-link Remote Access Service. This allows remote access systems to be set up quickly and easily, with no special IT knowledge required.

**Your special advantage:**

- Easy integration of subnets with identical IP address ranges through 1:1 NAT
- Secure and easy remote maintenance via Weidmüller u-link Remote Access Service
- Future-proof network connection with static and dynamic routing
- Increased network security thanks to stateful inspection firewall, IP/port forwarding and network segmentation
- Full flexibility thanks to Fast Ethernet and Gigabit Ethernet interfaces with 2 to a maximum of 6 ports

**Reliable Internet connection**
Reliable Internet connection thanks to integrated 4G/LTE mobile modem

**Monitoring**
Client monitoring of network participants

**Remote Access Service**
Secure remote access with VPN

**Internet communication**
Secure Internet communication thanks to IPsec and OpenVPN

**Configuration**
Extensive configuration options for IP address mapping

## Gigabit Industrial Security Router

- 2 or 6 Gigabit ports (LAN/WAN)
- NAT masquerading, 1:1 network mapping and port forwarding
- VPN function via u-link Remote Access Service, OpenVPN and IPsec
- Key switch function for disabling/enabling of a WAN/VPN connection
- Variations with 6 routed Ethernet sub networks and individual firewall rules
- Variations with integrated 4G/LTE modem for fast, Internet-based radio communication access
- Variation without VPN functionality for NAT and security applications (1489940000, IE-SR-2GT-LAN-FN)

## Technical data

| | |
|---|---|
| **Operation modes** | |
| Extended IP router | Each interface (LAN, WAN, optional mobile radio) can be configured as a separate IP network |
| IP router | IP routing (IPv4, Layer 3) with SPI firewall (Stateful Packet Inspection) |
| Transparent bridge | 2/6-port switch with additional Layer 2 filter |
| **Network Services** | |
| | • DHCP server / DHCP relay<br>• DNS relay<br>• NTP-Client/Relay<br>• DynDNS (DHCP client by RFC 2136) |
| **Firewall** | |
| | • IPv4 Stateful inspection Firewall (incoming/outgoing)<br>• NAT-Masquerading, 1:1 NAT, Portforwarding<br>• Layer-2/3-Filter (VLAN ID, VLAN, QoS tag, MAC address, Ethertype frame)<br>• "Auto learning" feature to create packet filter rules (analysis of network traffic)<br>• Layer 2/3-based packet prioritization (Ethernet frame, IP header, VLAN tag) |
| **VPN functionality*** | |
| u-link | OpenVPN-based remote access via Weidmüller u-link cloud |
| OpenVPN | • Configurable as OpenVPN server or client (Layer 2 and Layer 3)<br>• Authentication with X.509 Certificates<br>• Tunnel support via HTTP proxy<br>• Maximum of 10 different client or server configurations<br>• Unlimited number of client connections in server mode |
| IPsec | • Can be configured as an IPsec server or client<br>• PSK authentication (user ID, password) or X.509 certificates<br>• Hardware-based encryption for faster data throughput<br>• A maximum of 64 simultaneous connections (subnet to subnet or as an IPsec server)<br>• Encryption algorithms DES-56, 3DES-168, AES 128, AES 192, AES-256 |

| | |
|---|---|
| **Management** | |
| | • Configuration via WEB interface (HTTP / HTTPS)<br>• Configuration support through detailed help information (tooltip)<br>• Configurable multi-user access with definable rights mask<br>• Support of SNMP v1/v2/v3, event log / syslog |
| **Miscellaneous** | |
| Modbus/TCP | Integrated Modbus TCP Server for status queries, and software-based activation / de-activation of VPN connections |
| Diagnosis | Remote Capture" feature for network diagnostics via a connected PC (Wireshark) |
| Monitoring | Client Monitoring (via ICMP) with alarm function in case of error |
| **Mobile radio interface (mobile radio variants only)** | |
| Mode of operation | Permanent connection, Manual connection control via web interface, Fallback connection with active ICMP monitoring |
| Wireless module | multi-band modem (4G/3G) |
| Transmission rate mobile radio | LTE Category: CAT 6; download rate, max. 300 Mbps; upload rate, max. 50 Mbps |
| Frequency band | Region: EMEA + Americas<br>4G / LTE: B1, B2, B3, B4, B5, B7, B12, B13, B20, B25, B26, B29, B30, B41<br>3G: B1, B2, B3, B4, B5, B8 |

* is not supported by the model IE-SR-2GT-LAN-FN

| Interfaces | |
|---|---|
| RJ45 ports | 10/100/1000BaseT (X), auto negotiation, full/half duplex mode |
| USB port | USB 2.0 interface for firmware update or restoration of the device configuration via USB flash drive |
| Digital outputs | • "Alarm" –> Indicates a configurable network status or error (24 V out)<br>• "VPN-active" –> Indicates an active VPN connection (24 V out)* |
| Digital inputs | • „"Cut"" –> Disconnects physically (link down) the WAN port (24 V)<br>• "VPN-initiate" –> Enables a pre-configured VPN connection (24 V)* |
| Reset button | Restoring the factory default |
| Connection for external antennas | SMA (socket) |
| **Power Requirements** | |
| Input Voltage | 1x 24 V DC (7 to 36 V DC), NEC class 2,<br>(for use in compliance with UL specifications: 7 - 30 V DC) |
| Current consumption | max. 0.8 A at 24 V |
| **Technical data (housing)** | |
| Housing | Diecast aluminium, IP20 protection |
| Dimensions (W x H x D) | 2-Port Router: 35 x 163 x 140 mm<br>6-Port Router: 57 x 163 x 140 mm<br>2-Port DNV-GL Router: 57 x 163 x 140 mm |
| Installation | DIN-Rail, VESA 75 |
| **Environmental Limits** | |
| Operating temperature | –20 °C to +70 °C |
| Storage Temperature | –20 °C to +85 °C |
| Relative ambient air humidity | 5 to 95% (non-condensing) |
| **Approvals** | |
| Security | EN60950-1 |
| Radio | EN 301 489-1/17, EN 301 893, EN 302 291-2 |
| EMC | EN 61000-6-2/6-4<br>FCC Part 15B Class A |
| Ship use | DNV-GL (only for 2535980000, 2535970000) |
| Shock | DIN EN 60068-2-27 |
| Vibration | DIN EN 60068-2-6 |
| **Warranty** | |
| Warranty Period | 3 years |

## Ordering data

| Version | Type | Order No. |
|---|---|---|
| Security/NAT/VPN/u-link Router, 2 * RJ45 10/100/1000BaseT(X) | IE-SR-2GT-LAN | **1345270000** |
| Security/NAT Router, 2 * RJ45 10/100/1000BaseT(X) | IE-SR-2GT-LAN-FN | **1489940000** |
| Security/NAT/VPN/u-link Router, with integrated multi-band modem (4G/3G), 2 * RJ45 10/100/1000BaseT(X) | IE-SR-2GT-LTE/4G-US | **2535780000** |
| Security/NAT/VPN/u-link Router, with integrated multi-band modem (4G/3G), 2 * RJ45 10/100/1000BaseT(X) | IE-SR-2GT-LTE/4G-EU | **2535930000** |
| Security/NAT/VPN/u-link Router, 6 * RJ45 10/100/1000BaseT(X) | IE-SR-6GT-LAN | **2535940000** |
| Security/NAT/VPN/u-link Router, with integrated multi-band modem (4G/3G), 6 * RJ45 10/100/1000BaseT(X) | IE-SR-6GT-LTE/4G-US | **2535950000** |
| Security/NAT/VPN/u-link Router, with integrated multi-band modem (4G/3G), 6 * RJ45 10/100/1000BaseT(X) | IE-SR-6GT-LTE/4G-EU | **2535960000** |
| Security/NAT/VPN/u-link Router, 2 * RJ45 10/100/1000BaseT(X), DNV-GL approval | IE-SR-2GT-LAN-M | **2535980000** |
| Security/NAT/VPN/u-link Router, with integrated multi-band modem (4G/3G), 2 * RJ45 10/100/1000BaseT(X), DNV-GL approval | IE-SR-2GT-LTE/4G-EU-M | **2535970000** |

**Accessories**

| | Model Type | Order No. |
|---|---|---|
| 19" Rack Mounting Kit | RM-KIT | **1241440000** |

**4-Port Fast Ethernet Industrial Security Routers**

- Easy integration of subnets with identical IP address ranges through 1: 1 NAT
- Secure and easy remote maintenance with Weidmüller u-link remote access service
- Future-proof network connection with static and dynamic routing
- Increased network security through stateful inspection firewall, IP/Port- forwarding and network segmentation
- Reliable internet connection, even without on-site internet access, thanks to integrated 4G/LTE cellular modem

## Technical data

| | |
|---|---|
| **Management features** | |
| Operating modes | IP router: IP routing (IPv4, Layer-3) with SPI firewall (Stateful Packet Inspection), Static or dynamic routing, Supports RIPv2 / OSPF<br>Transparent bridge: 4-port switch with additional Layer-2 filter |
| Device configuration | Webbrowser (HTTP/HTTPS), SNMP v1/v2c/v3, Windows tool |
| Monitoring function | SNMP v1/v2c/v3, Syslog |
| IP-address management | Static, DHCP-Client, DHCP-Server (pool-based), DHCP-Relay |
| Security functions | IPv4 Stateful Packet Inspection Firewall (incoming/outgoing),<br>NAT masquerading, 1:1 NAT, IP forwarding, Port forwarding |
| Time synchronization management | NTP client |
| Industrial protocol support | Modbus/TCP slave |
| **VPN functionality** | |
| u-link | OpenVPN-based remote access service via the Weidmüller u-link cloud |
| OpenVPN | Configurable as OpenVPN server or client (Layer 2 and Layer 3),<br>Authentication via X.509 certificate, Tunnel support via HTTP proxy,<br>Maximum 10 different client or server configurations |
| Ipsec | Configurable as IPsec server or client |
| **Interfaces** | |
| RJ45 ports | 10/100BASE-T(X), auto negotiation, Full-/half-duplex mode,<br>Auto MDI/MDI-X port |
| Digital inputs | 1x galvanically isolated<br>VPN-initiate: establishes a pre-configured VPN connection (24 V in)<br>Cut: physically disconnects (Link Down) the WAN port (24 V in)<br>Trigger pre-configured packet filter rules (24 V in) |
| Serial port | 1x RS-485, 2-wire, galvanically isolated, 1 removable 3-pole terminal block |
| Reset button | Reset to factory default settings |
| SCM-card slot | 1x Smart Card (ID-000 format), save and restore the configuration using smart card (memory chip) |
| SIM-card slot (mobile radio variants only) | 1x Mini-SIM (ID-000 format) |
| Connector for external antennas (mobile radio variants only) | 1x SMA female |
| **Mobile radio interface** (mobile radio variants only) | |
| Mode of operation | Permanent connection, Manual connection control via web interface |
| Wireless module | IE-SR-4TX-LTE/4G-EU: multi-band modem (4G/3G/2G)<br>IE-SR-4TX-LTE/4G-USEMEA: multi-band modem (4G/3G) |
| Transmission rate mobile radio | IE-SR-4TX-LTE/4G-EU: LTE Category: CAT 4 download rate,<br>max. 150 Mbps; upload rate, max. 50 Mbps<br>IE-SR-4TX-LTE/4G-USEMEA: LTE Category: CAT 6; download rate, max. 300 Mbps; upload rate, max. 50 Mbps |
| Frequency band | IE-SR-4TX-LTE/4G-EU:<br>LTE: B1 (2100), B3 (1800), B7 (2600), B8 (900), B20 (800DD)<br>UMTS/WCDMA: B1 (2100), B8 (900)<br>GSM/GPRS/EDGE: B3 (1800), B8 (900)<br><br>IE-SR-4TX-LTE/4G-USEMEA:<br>LTE: B1 (2100), B2 (1900), B3 (1800), B4 (AWS), B5 (850), B7 (2600), B12 (700ac), B13 (700c), B20 (800DD), B25 (1900), B26 (US 850 Ext), B29 (US 700de Lower), B30 (2300 WCS), B41 (TDD 2500)<br>UMTS: B1 (2100), B2 (1900), B3 (1800), B4 (AWS), B5 (850), B8 (900) |

| | |
|---|---|
| **Mobile radio interface** (mobile radio variants only) | |
| Transmit power | IE-SR-4TX-LTE/4G-EU:<br>LTE: +23 dBm +2.7/-2.7 dB (Power Class 3)<br>WCDMA : 24 +1/-3 dBm (Power Class 3)<br>GSM900: 33 ± 2 dBm (Power Class 4)<br>GSM1800: 30 ± 2 dBm (Power Class 1)<br><br>IE-SR-4TX-LTE/4G-USEMEA:<br>LTE Band 1, 2, 3, 4, 5, 8, 12, 13, 20, 25, 26: +23 dBm +/- 1 dB<br>LTE Band 7, 30, 41: +22 dBm +/- 1 dB<br>UMTS: +23 dBm +/- 1 dB |
| **Power supply** | |
| Connection type | 1 removable 4-pin terminal block |
| Input voltage | 24 V DC (19.2 - 28.8 V), 1 single input |
| Current consumption at 24 V | 0.8 A |
| Reverse polarity protection | yes |
| **Physical characteristics** | |
| Housing main material | Plastic |
| Protection degree | IP30 |
| Type of mounting | DIN rail |
| Dimensions (W x H x D) | 29.9 x 134.5 x 94.8 mm (1.17 x 5.29 x 3.73 in) |
| Weight | IE-SR-4TX: 175 g<br>IE-SR-4TX-LTE/4G-EU: 213 g<br>IE-SR-4TX-LTE/4G-USEMEA: 213 g |
| **Environmental conditions** | |
| Operating temperature | -30 to 75 °C (-22 to 167 °F) |
| Storage temperature | -40 to 85 °C (-40 to 185 °F) |
| Humidity | 5 to 90 % (non-condensing) |
| Operating altitude | ≤ 2000 m |
| **EMC conformity and approvals** | |
| EMC | EN 55032, EN 55024, EN 61000-6-2, EN 61000-6-4 |
| Safety | SELV according to EN 62368-1, EN 62311 |
| Shock | IEC 60068-2-27 |
| Vibration | IEC 60068-2-6 |
| Wireless | EN 301 489-1, EN 301 489-52, EN 301 511, EN 301 908-1, EN 301 908-2 |
| **Guarantee** | |
| Time interval | 3 years |

**Ordering Information**

| Version | Model Type | Order No. |
|---|---|---|
| Security/NAT/VPN/U-link Router, 4x RJ45 10/100 Mbit/s | IE-SR-4TX | **2751270000** |
| Security/NAT/VPN/U-link Router with integrated multi-band modem (4G/3G/2G), EU-model, 4x RJ45 10/100 Mbit/s | IE-SR-4TX-LTE/4G-EU | **2751280000** |
| Security/NAT/VPN/U-link Router with integrated multi-band modem (4G/3G), US/EMEA-model, 4x RJ45 10/100 Mbit/s | IE-SR-4TX-LTE/4G-USEMEA | **2739630000** |

**Accessories**

| | Model Type | Order No. |
|---|---|---|
| 19" Rack Mounting Kit | RM-KIT | **1241440000** |

# u-link Remote Access Service
## Overview


| | | |
|---|---|---|
| **u-link Remote Access Service** | Introduction – u-link Remote Access Service | E.2 |
| | u-link Remote Access Service | E.6 |

# u-link Remote Access Service – A tool for all purposes

## Advanced features for convenient remote access management



The remote maintenance of machines and systems is often a complex and time-consuming task. On top of that is the demand for a targeted and secure functional connection to the associated IT systems. For many users, these two challenges constitute a major obstacle to the global connection of systems.

u-link guarantees a quick and secure access to machines and plants and, at the same time, allows the efficient management of production plants, user clients, access rights and firmware versions. The intuitive u-link web portal are quick and easy to configure without expert knowledge and can be adapted to specific processes. Secure servers in Europe provide an online platform that ensures conformity between different IT systems when carrying out remote maintenance.

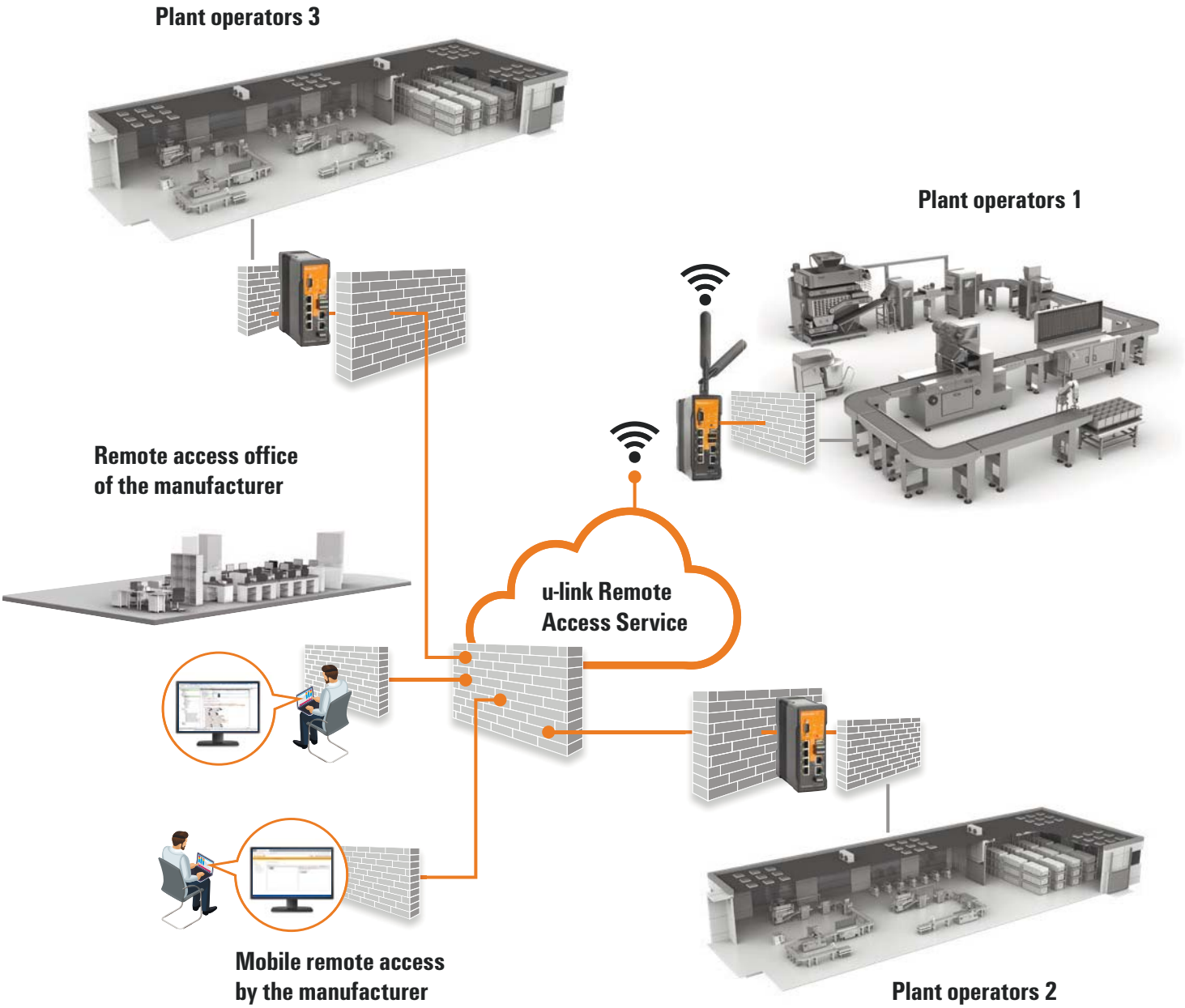
**Individual system management**
u-link can manage users and groups as well as their access rights according to individual specifications. This includes group assignments and access rights to production systems.

**Little configuration effort**
Thanks to the intuitive user interface, the devices and clients can be connected easily and without detailed IT knowledge. Thus u-link allows you to quickly network multiple systems.

**Secure remote access and remote diagnostics**
Remote access to machines and systems takes place via a secure VPN connection – worldwide and regardless of location. You have secure access to your systems at all times via the highly available servers.

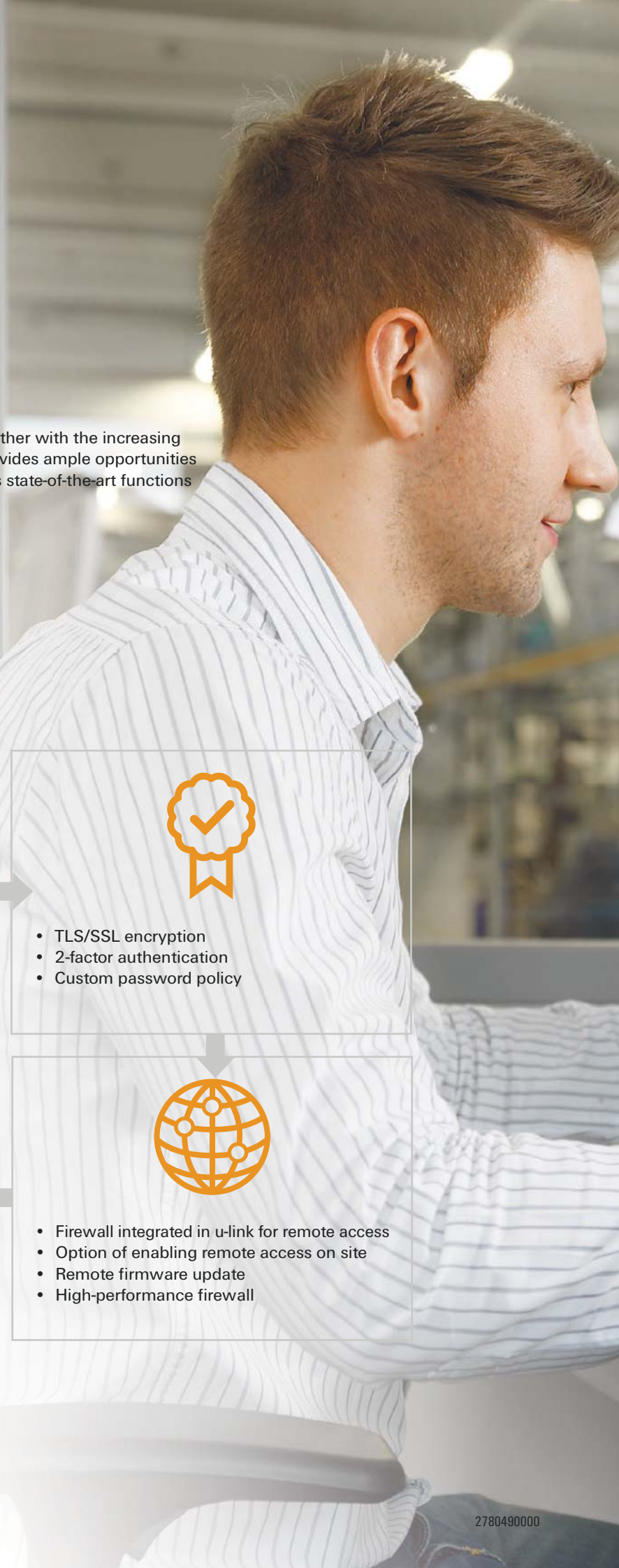
**Condition monitoring and status reporting**
Weidmüller Heartbeat can be used to report the availability of a router to u-link. This makes condition monitoring easier and enables status messages of the installed router.

**u-link.weidmueller.com**


Plant operators 3
Plant operators 1
Remote access office
of the manufacturer
u-link Remote
Access Service
Mobile remote access
by the manufacturer
Plant operators 2

# Simple – secure – u-link

## The integrated security concept for your networks



The growing number of network-capable devices together with the increasing networking of manufacturing through the Internet provides ample opportunities for cyber attacks. To protect your systems, u-link offers state-of-the-art functions without increasing complexity.

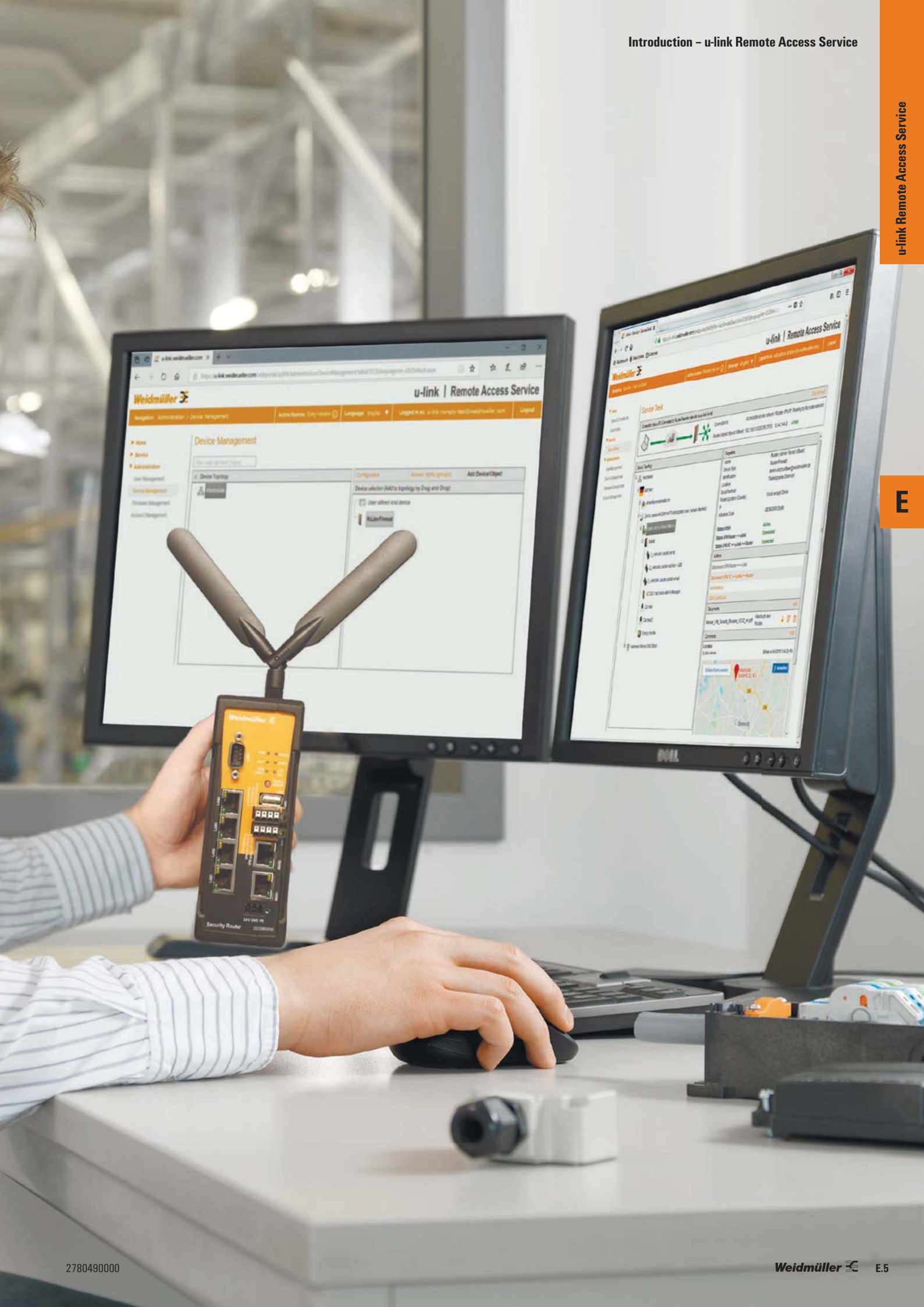
**Your security features:**

- X.509 certificates for authentication
- 2048 bit key length

- TLS/SSL encryption
- 2-factor authentication
- Custom password policy

- Outgoing connections only
- Port 443 exclusively used for remote access
- User and rights management

- Firewall integrated in u-link for remote access
- Option of enabling remote access on site
- Remote firmware update
- High-performance firewall


Weidmüller
u-link | Remote Access Service
Device Management
u-link | Remote Access Service
Security Router
DELL

## u-link licences

Weidmüller offers the following usage variations and additional options for the u-link Remote Access Service:

**Standard version 50/150/300/500**

- Licence-dependent configuration from 50 up to 500 router objects (further license models on request)

**Extensive functional and performance features as compared with the entry version, such as**

- 3 simultaneous VPN through-connections per customer account (can be extended)
- China-VPN: reliable VPN connection to and from China
- Firmware management: Display of firmware status of all routers and the option of a time-controlled, automated firmware update
- Individual access rights: granular configuration of access rights to devices in the target network
- Extensive event log: Presentation of all activities in the u-link portal with extensive filter and export functions
- Password policy: Increased security through configurable specification of minimum requirements for password quality and validity period

**Extension for additional VPN connections**

- Licence code can be used for all Standard versions
- Additional data volumes with guaranteed bandwidth

## Technical data

| Functions and performance characteristics / Standard licence | |
|---|---|
| Number of configurable user objects (service PC) | Unrestricted |
| Number of configurable router objects (access points remote network) | depends on licence (50, 150, 300, 500,...)* |
| User organisation | Organisation of service users in groups, assignment of selective access rights to device topology, group-dependent assignment of rights re. device configuration and user administration |
| Device management | Illustration of the device infrastructure (remote access objects) in a clearly defined tree structure via location, group and device objects |
| Firmware management | Display of the firmware version of all routers and the possibility of timed, automated firmware updates |
| China-VPN | Reliable VPN connection to and from China |
| Password guideline | Increased security through configurable specification of minimum requirements for the password quality and validity period |
| Simultaneously usable pass-through VPN connections | 3 (can be extended by adding on other pass-through VPN connections) |
| Period | 1 year from activation of the licence key. When extending a "Standard 50/150/300/500" version, the validity period is extended by 1 year from the expiry date of the current period, but not less than 1 year<br>Note: When the validity period has expired, automatic reduction of the bandwidth to the values of the free-of-charge entry version (<= 1 GB with max. 500 kBit/sec, > 1 GB with max. 64 kBit/sec) |
| Monthly data volume and bandwidth | <= 5 GB with max. 1 Mbit/s, > 5 GB with max. 500 Kbit/s. Increase by 1 GB/month with 1 Mbit/s per added-on pass-through VPN connection, for data volume > 12 GB/month max. 500 Kbit/s |
| Usage information | Extended reporting and statistical information (itemised statement, usage duration, data volume) |
| System availability | ≥ 99.6% |
| **Functions and performance characteristics / VPN licence** | |
| Number of additional VPN connections (per licence code) | 1 (pass-through VPN connection for service PC <-> u-link <-> router/ target network) |
| VPN channel bandwidth | 1 Mbit/s |
| Extension of data volume | Data volume of the u-link client account increased by 1 GB/month with a bandwidth of 1 Mbit/s |
| Period | 1 year from activation of the licence key. When extending a VPN licence that has already been activated, the validity period is extended by 1 year from the expiry date of the current period, but not less than 1 year. |
| Usage | Use as additional VPN channel or to extend the period of a VPN channel. Can be used within the scope of all standard versions (not for entry version). |

| System requirements | |
|---|---|
| Hardware (service PC) | PC with Windows 7, 8 or 10 operating system |
| Hardware, remote target network | Weidmüller router (except IE-SR-2GT-LAN-FN; 1489940000) |
| Portal administration (user/device configuration) | Standard browser (IE, Edge, Chrome, Firefox) via an HTTPS connection (SSL), login via username and password |
| VPN software (service PC) | u-link VPN Client (installation on PC) |
| **Miscellaneous** | |
| Activation | Account administrator enters the licence key in the u-link portal (functions immediately available) |
| Included in delivery | Letter with licence key |

## Ordering data

| Version | Type | Order No. |
|---|---|---|
| „Standard 50" version software licence for u-link Remote Access Service. Can be used to upgrade an entry version or to extend period of a "Standard 50" version" | U-LINK-LIC-STD-50-1Y | **2665050000** |
| "Standard 150" version software licence for u-link Remote Access Service. Can be used to upgrade an entry version or „Standard 50" version or to extend the period of a "Standard 150" version | U-LINK-LIC-STD-150-1Y | **2447050000** |
| "Standard 300" version software licence for u-link Remote Access Service. Can be used to upgrade an entry version or „Standard 50/150" version or to extend the period of a "Standard 300" version | U-LINK-LIC-STD-300-1Y | **2457840000** |
| "Standard 500" version software licence for u-link Remote Access Service. Can be used to upgrade an entry version or „Standard 50/150/300" versions or to extend the period of a "Standard 500" version | U-LINK-LIC-STD-500-1Y | **2457850000** |
| "VPN connection" licence code for u-link Remote Access Service. Can be used as an additional VPN connection or to extend the period of a VPN connection that has already been activated | U-LINK-LIC-VPN-1Y | **2447060000** |

**Note:** * Licence models with more than 500 configurable router objects are available upon request.

# Media converter and protocol gateways
## Overview


| | | |
|---|---|---|
| **Media converter and protocol gateways** | Introduction – Media converter and protocol gateways | F.2 |
| | Ethernet media converter (copper/fiber optic) | F.4 |
| | Serial/Ethernet converter | F.5 |
| | Serial/Ethernet converter and Modbus TCP/RTU gateway | F.6 |

# Transmit data without interference

## Media converters and protocol gateways – convenient and economical

A goal of industrial automation is to achieve the continuous networking of all system components. This also requires the interconnection of devices and network segments that use different transmission technologies or are very far away from each other. Our media converters and protocol gateways ensure smooth communication between all network participants and are also especially convenient and economical.

**Serial/Ethernet converters for integrating existing devices**
In many systems, serial devices with RS232, RS422 or RS485 interfaces are still widely used. These may include control systems, sensors, measuring instruments, motors, drives, barcode readers and operating displays. Our serial/Ethernet converters allow you to integrate such serial components quickly and easily into your existing Ethernet network structure. For this purpose, the converters support a variety of operating modes, such as TCP server, TCP client, UDP, Real COM, RFC2217, reverse Telnet, pair connection and Ethernet modem.



**Media converters for easy and economical glass fibre utilisation**
In case of high requirements on interference immunity or long transmission distances, optical fibres are an expedient solution – in the process industry, for example. With fibre optics, transmission distances ranging between 5 km (multi-mode fibres) and 40 km (single-mode fibres) can be achieved without the use of intermediate generators. Our media converters convert Ethernet signals on an RJ45 port to fibre optic signals for SC or ST cables. In the process, the collision domain of both participants is retained so as to ensure the greatest possible port transparency.

**Seamless integration of Ethernet and serial Modbus devices**
Modbus is one of the most popular automation protocols in the world and supports traditional RS-232/422/485 devices and Ethernet devices. However, the Ethernet-based Modbus protocol is different from the original serial-based protocols. In order to integrate Modbus networks, the Modbus TCP/RTU Gateway includes two Ethernet interfaces and one serial interface that supports RS-232, RS-422 and RS-485 communication. It automatically and intelligently translates between Modbus TCP (Ethernet) and Modbus ASCII/RTU (serial) protocols.

**Simple warning system**
Warning in case of power failure and port errors

**Surge protection**
Improved surge protection for serial ports, LAN and power supply connections

**Power supply**
Redundant power supply inputs

**Extensive approvals**
Developed and approved for EX areas (Class 1 Div. 2/ Atex Zone 2)

# Ethernet media converter (copper/fiber optic)

## Industrial Media Converter (10/100BaseT (X) to 100BaseFX)

- 10/100BaseT(X) auto-negotiation and auto-MDI/MDI-X
- Link Fault Pass-Through (LFP)
- Power failure, port break alarm by relay output
- Redundant power inputs
- Designed for hazardous locations (Zone 2)

## Technical data

| | | | | |
|---|---|---|---|---|
| **Technology** | | | | |
| Standards | | IEEE 802.3 for 10BaseT<br>IEEE 802.3u for 100BaseT (X) and 100BaseFX | | |
| **Interfaces** | | | | |
| Fibre Ports | | 100BaseFX (SC/ST-duplex connection) | | |
| RJ45 ports | | 10/100BaseT(X) | | |
| DIP Switches | | 100BaseFX Full/Half duplex selection,<br>Port fault alarm | | |
| Alarm Contact | | One relay output with current carrying capacity of 1 A at 24 V DC | | |
| **Specification optical fiber** | | | | |
| Transceiver Type | | 100Base FX | | |
| | | Multi-Mode | | Single-Mode |
| Fiber Cable Type | | OM1 | 50/125 µm<br>800 MHz*km | G.652 |
| Typical Distance | | 4 km | 5 km | 40 km |
| Wave-length | Typical (nm) | 1300 | | 1310 |
| | TX Range (nm) | 1260 to 1360 | | 1280 to 1340 |
| | RX Range (nm) | 1100 to 1600 | | 1100 to 1600 |
| Optical Power | TX Range (dBm) | -10 to -20 | | 0 to -5 |
| | RX Range (dBm) | -3 to -32 | | -3 to -34 |
| | Link-Budget (dB) | 12 | | 29 |
| | Dispersion Penalty (dB) | 3 | | 1 |

**Note:** When connecting a single-mode fiber transceiver over a short distance, we recommend using an attenuator to prevent the transceiver from being damaged by excessive optical power.

| | |
|---|---|
| **Power Requirements** | |
| Input Voltage | 24 V DC (12 to 48 V DC), two redundant inputs |
| Current consumption | 0.16 A at 24 V |
| Connection | 1 removable 6-pole terminal block |
| Overload Current Protection | 1.1 A |
| Reverse Polarity Protection | Present |
| **Technical data** | |
| Housing | Metal, IP30 protection |
| Dimensions (W x H x D) | 53.6 x 135 x 105 mm (2.11 x 5.31 x 4.13 in) |
| Weight | 630 g |
| Installation | DIN-Rail |
| **Environmental Limits** | |
| Operating temperature | Standard Models: 0 to 60 °C (32 to 140 °F)<br>Wide Temp. Models: -40 to 75 °C (-40 to 167 °F) |
| Operating Humidity | 5 to 95 % (non-condensing) |
| Storage Temperature | -40 to 85 °C (-40 to 185 °F) |

| | |
|---|---|
| **Approvals** | |
| Security | UL 508 |
| EMC | EN 55032/24<br>CISPR 32, FCC Part 15B Class A<br>IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV<br>IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m<br>IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV<br>IEC 61000-4-5 Surge: Power: 1 kV; Signal: 1 kV<br>IEC 61000-4-6 CS: 3 V<br>IEC 61000-4-8 |
| Hazardous Location | UL/cUL Class1, Division 2, Groups A, B, C, and D,<br>ATEX Zone 2 Ex nA nC IIC T4 Gc |
| Maritime | DNV-GL |
| Freefall | IEC60068-2-32 |
| Shock | IEC60068-2-27 |
| Vibration | IEC60068-2-6 |
| **MTBF (mean time between failures)** | |
| Time | 401,000 hrs |
| Database | MIL-HDBK-217F: GB 25 °C |
| **Warranty** | |
| Warranty Period | 5 years |

**Ordering data**

| Version | Type | Operating Temperature | Order No. |
|---|---|---|---|
| 1 * RJ45, 1 * SC-Multimode | IE-MC-VL-1TX-1SC | 0 to +60 °C | **1241400000** |
| | IE-MC-VLT-1TX-1SC | -40 to +75 °C | **1286880000** |
| 1 * RJ45, 1 * ST-Multimode | IE-MC-VL-1TX-1ST | 0 to +60 °C | **1241410000** |
| | IE-MC-VLT-1TX-1ST | -40 to +75 °C | **1286890000** |
| 1 * RJ45, 1 * SC-Singlemode | IE-MC-VL-1TX-1SCS | 0 to +60 °C | **1241420000** |
| | IE-MC-VLT-1TX-1SCS | -40 to +75 °C | **1286900000** |

**Accessories**

| | Type | Order No. |
|---|---|---|
| 19" Rack Mounting Kit | RM-KIT | **1241440000** |

## 1 and 2- port Serial/Ethernet Converter for industrial automation

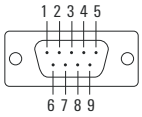
- High surge protection for the serial ports, LAN ports and power supply connection
- Rugged screw-type terminal blocks for power and serial connectors
- Cascading Ethernet ports for easy wiring
- Redundant DC power inputs
- Warning by relay output and email
- Low power consumption

### Technical data

| | |
|---|---|
| **Ethernet Interface** | |
| Number of Ports | 2 |
| Speed | 10/100 MBit/s, auto MDI/MDIX |
| Connection | 8-pin RJ45 |
| Magnetic Isolation Protection | 1.5 KV built-in |
| Ethernet Line Protection | 1 KV (level 2) surge protection |
| **Serial Interface** | |
| Number of ports that can be used simultaneously | IE-CS-2TX-1RS232/485: 1<br>IE-CS-2TX-2RS232/485: 2 |
| Serial Standards | RS 232/422/485 |
| Connection | IE-CS-2TX-1RS232/485: DB9 for RS 232,<br>terminal block for RS 422/485<br>IE-CS-2TX-2RS232/485: DB9<br>for RS 232/422/485 |
| Serial Line Protection | • 15 KV ESD protection for all signals<br>• 1 KV (level 2) surge protection |
| RS 485 Data Direction Control | ADDC® (automatic data direction control) |
| **Serial Communication Parameters** | |
| Data Bits | 5, 6, 7, 8 |
| Stop Bits | 1, 1.5, 2 |
| Parity | None, Even, Odd, Space, Mark |
| Flow Control | RTS/CTS and DTR/DSR (RS 232 only), XON/XOFF |
| Baud rate | 50 bit/s to 921.6 kbit/s |
| **Serial Signals** | |
| RS 232 | TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND |
| RS 422 | Tx+, Tx-, Rx+, Rx-, GND |
| RS 485 4w | Tx+, Tx-, Rx+, Rx-, GND |
| RS 485 2w | Data+, Data-, GND |
| **Software** | |
| Network Protocols | ICMP, IP, TCP, UDP, DHCP, BOOTP, Telnet,<br>Rtelnet, DNS, SNMP, HTTP, SMTP, SNTP, IGMP |
| Configuration Options | Web Console, Serial Console, Telnet Console,<br>Windows Utility |
| Windows Real COM Drivers | Windows 95/98/ME/NT/2000, Windows<br>XP/2003/Vista/2008/7/8 x86/x64, 2012 x64 |
| **Technical data** | |
| Housing | Metal, IP30 protection |
| Weight | IE-CS-2TX-1RS232/485: 475 g<br>IE-CS-2TX-2RS232/485: 485 g |
| Dimensions (W x H x D) | 36 x 105 x 140 mm (1.42 x 4.13 x 5.51 in) |
| **Environmental Limits** | |
| Operating temperature | Standard Models: 0 to 60 °C (32 to 140 °F)<br>Wide Temp. Models:<br>-40 to 75 °C (-40 to 167 °F) |
| Ambient Relative Humidity | 5 to 95 % RH |
| Storage Temperature | -40 to 85 °C (-40 to 185 °F) |
| **Power Requirements** | |
| Input Voltage | 12 to 48 V DC |
| Current consumption | IE-CS(T)-2TX-1RS232/485: 0.22 A at 12 V<br>IE-CS(T)-2TX-2RS232/485: 0.25 A at 12 V |

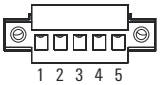
| | |
|---|---|
| **Approvals** | |
| EMC | EN 55032/24<br>CISPR 32, FCC Part 15B Class A<br>IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV<br>IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m<br>IEC 61000-4-4 EFT: Power: 4 kV; Signal: 2 kV<br>IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV<br>IEC 61000-4-6 CS: 10 V<br>IEC 61000-4-8 |
| Security | UL 508 |
| Hazardous Location | UL/cUL Class 1 Division 2 Groups A, B, C and D<br>ATEX Zone 2 Ex nA nC IIC T3 Gc |
| Shock | IEC60068-2-27 |
| Freefall | IEC60068-2-32 |
| Vibration | IEC60068-2-6 |
| **Reliability** | |
| Alert Tools | Built-in buzzer and RTC (real-time clock) |
| Automatic Reboot Trigger | Built-in WDT (watchdog timer) |
| **MTBF (mean time between failures)** | |
| Time | 262,805 hrs |
| Database | Telcordia (Bellcore), GB |
| **Warranty** | |
| Warranty Period | 5 years |

**Pin assignment**

| RS 232/422/485 (Male DB9) | PIN | RS 232 | RS 422/RS 485-4w | RS 485-2W |
|---|---|---|---|---|
|  | 1 | DCD | TxD-(A) | - |
| | 2 | RXD | TxD+(B) | - |
| | 3 | TXD | RxD+(B) | Data+(B) |
| | 4 | DTR | RxD-(A) | Data-(A) |
| | 5 | GND | GND | GND |
| | 6 | DSR | - | - |
| | 7 | RTS | - | - |
| | 8 | CTS | - | - |



**Pin Assignment**

| RS 422/485 Terminal block | PIN | RS 422/RS 485-4w | RS 485-2w |
|---|---|---|---|
|  | 1 | TxD+(B) | - |
| | 2 | TxD-(A) | - |
| | 3 | RxD+(B) | Data+(B) |
| | 4 | RxD-(A) | Data-(A) |
| | 5 | GND | GND |



**Ordering data**

| Version | Type | Operating Temperature | Order No. |
|---|---|---|---|
| 2 * RJ45; 1 * serial (RS232: Sub-DB9, | IE-CS-2TX-1RS232/485 | 0 to +60 °C | **1242080000** |
| RS422/485: terminal block) | IE-CST-2TX-1RS232/485 | -40 to +75 °C | **1285830000** |
| 2 * RJ45; 2 * serial (RS232/422/485: | IE-CS-2TX-2RS232/485 | 0 to +60 °C | **1242090000** |
| 2 * SubDB9) | IE-CST-2TX-2RS232/485 | -40 to +75 °C | **1285840000** |

**Accessories**

| | Type | Order No. |
|---|---|---|
| 19" Rack Mounting Kit | RM-KIT | **1241440000** |

## Serial/Ethernet converter and Modbus TCP/RTU gateway

### Serial/Ethernet converter and Modbus TCP/RTU protocol gateway

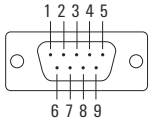
- Integrated 2-port switch for line topology without need for additional switch
- Device server and modbus protocol gateway in one device
- Suitable for use in harsh industrial environment thanks to rugged design and wide operating temperature range of -40°C up to 70°C

### Technical data

| | |
|---|---|
| **Technology** | |
| Standards | IEEE 802.3 for 10BASE-T<br>IEEE 802.3u for 100BASE-TX |
| Processing type | Store and Forward |
| **Management features** | |
| Device configuration | Webbrowser (HTTP/HTTPS)<br>SSH<br>Upload of a configuration file via web-interface |
| Monitoring function | Modbus traffic monitor<br>Syslog<br>Event based warning via E-Mail<br>Event based warning via SNMP trap |
| IP-address management | Static<br>DHCP-Client<br>BootP |
| Security functions | Enable/disable ports<br>Management access security via secure IP-list and configuration of allowed access methods (web-interface, SSH) |
| Time synchronization management | SNTP client |
| Operating modes | Virtual COM mode<br>TCP Server mode<br>TCP Client mode<br>UDP Server/Client mode<br>Modbus RTU/ASCII Master to Modbus TCP Slave Gateway<br>Modbus TCP Master to Modbus RTU/ASCII Slave Gateway |
| **Interfaces** | |
| RJ45 ports | 2x 10/100BASE-T(X), auto negotiation, Full-/half-duplex mode, Auto MDI/MDI-X port |
| DB9 | 1x DB9 male for RS-232/422/485 |
| DIP switches | 1x for pull low resistor setting (1 kΩ, 150 kΩ)<br>1x for pull high resistor setting (1 kΩ, 150 kΩ)<br>1x for termination resistor setting (120 Ω) |
| Reset button | < 5 sec: System reboot ; > 5 sec: Factory default |
| **Serial interface characteristics** | |
| Standard | RS-232/422/485 |
| Baud rate | 50 bit/s to 460.8 kbit/s |
| Data Bits | 7, 8 |
| Stop Bits | 1, 2 |
| Parity | odd, even, none, mark, space |
| Flow Control | XON/XOFF, RTS/CTS, DTR/DSR |

**Pin assignment**

RS 232/422/485
(Male DB9)




| Pin # | RS-232 (DTE Device) | RS-422 | RS-485 (4-wire) | RS-485 (2-wire) |
|---|---|---|---|---|
| 1 | DCD | TX- | TX- | DATA- |
| 2 | RXD | TX+ | TX+ | DATA+ |
| 3 | TXD | RX+ | RX+ | – |
| 4 | DTR | RX- | RX- | – |
| 5 | GND | GND | GND | GND |
| 6 | DSR | – | – | – |
| 7 | RTS | – | – | – |
| 8 | CTS | – | – | – |
| 9 | RI | – | – | – |

| | |
|---|---|
| **Power supply** | |
| Connection type | 1 removable 4-pin terminal block |
| Input voltage | 24 V DC (12 - 48 V), 2 redundant inputs |
| Current consumption at 24 V | 0.20 A |
| Overload current protection | yes |
| Reverse polarity protection | yes |
| **Physical characteristics** | |
| Housing main material | Metal |
| Protection degree | IP30 |
| Type of mounting | DIN rail |
| Dimensions (W x H x D) | 26.1 x 110 x 75.2 mm (1.02 x 4.33 x 2.95 in) |
| Weight | 200 g |
| **Environmental conditions** | |
| Operating temperature | -40 to 70°C (-40 to 158°F) |
| Storage temperature | -40 to 85 °C (-40 to 185 °F) |
| Humidity | 5 to 95 % (non-condensing) |
| Operating altitude | ≤ 2000 m |
| **EMC conformity and approvals** | |
| EMC | EN 55032, EN 55024, CISPR 32, FCC Part 15 Subpart B Class A<br>IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV<br>IEC 61000-4-3 RS: 80 MHz bis 1 Ghz: 3 V/m<br>IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV<br>IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV<br>IEC 61000-4-6 CS: 3 Vrms |
| Safety | UL 61010-1, UL 61010-2-201 |
| Shock | IEC 60068-2-27 |
| Vibration | IEC 60068-2-6 |
| Free fall | IEC 60068-2-31 |
| **MTBF** | |
| Time | 1,479,078 hrs |
| Database | Telcordia SR332 |
| **Guarantee** | |
| Time interval | 5 years |

**Ordering Information**

| Version | Model Type | Order No. |
|---|---|---|
| 2x RJ45 10/100 Mbit/s, 1x DB9 for RS-232/422/485 | IE-CS-MBGW-2TX-1COM | 2682600000 |

**Accessories**

| | Model Type | Order No. |
|---|---|---|
| 19" Rack Mounting Kit | RM-KIT | 1241440000 |

# IoT-Gateways
## Overview


| | | |
|---|---|---|
| **IoT-Gateways** | Introduction – IoT-Gateways | G.2 |
| | IoT-Gateways | G.4 |

# Integration of existing components into IoT networks
## Complete application representation for the IoT gateway

The intelligent networking of machines and devices in the IoT opens up many possibilities and offers opportunities for new business models. IoT gateways enable the exchange of data between field devices and servers or cloud applications. The transmitted data can be used to deepen process knowledge, carry out optimisations or offer new services.

With the help of our IoT gateway, you can collect machine data and gain access to your field devices and controls. Various protocols and interfaces are available for this purpose. Data pre-processing is carried out using the open IoT standard Node-RED, whose large community has a wide range of solutions in store. You can set up interfaces to your own IT systems as well as to cloud solutions like Azure, AWS or IBM. For location-independent remote system maintenance, you can also integrate the gateway into the u-link Remote Access Service.

**Your special advantage:**
- Full flexibility for your application thanks to various interfaces and protocols as well as the open application tool Node-RED
- Easy handling thanks to pre-defined nodes and open programming using your own nodes
- Secure and cost-optimised use of cloud systems through pre-processing and storage

**Flexible IoT integration**
Process data can be collected via various interfaces, such as Ethernet, CAN, RS485 or RS232. In addition, many protocols for coupling with PLC systems are supported – e.g. Siemens, Rockwell, Schneider or the industry standard OPC-UA.

**Integrated remote access**
The simple and secure remote access solution u-link Remote Access Service enables a quick response to changes in situations on site – and that worldwide.

**Versatile IT integration**
Whether via company network or mobile radio: The open IoT standard Node-RED allows data to be pre-processed and transmitted to other systems, such as servers, SCADA systems or cloud platforms, via various transmission media and protocols.

## Industrial IoT-Gateways

- Enables machine data acquisition and provides access to field devices and PLC's via various protocols and interfaces
- Interfaces to your own IT systems as well as to common cloud systems
- Data traffic reduction through preprocessing on edge via the open IoT standard Node-RED
- Secure and easy remote maintenance with Weidmüller u-link Remote Access Service
- Integration of most common communication interfaces in small design
- Open programming platform Node-RED with strong community support

## Technical data

| | |
|---|---|
| **System data** | |
| Memory (Flash) | 4 GB |
| Memory (RAM) | 1 GB (DDR3) |
| Processor | Dual Core ARM Cortex A9, 600 MHz |
| Real-time clock | Capacity buffered (max. 5 days) |
| **VPN functionality** | |
| u-link | OpenVPN-based remote access service via the Weidmüller u-link cloud |
| **Interfaces** | |
| RJ45 ports | 2x 10/100BASE-T(X), auto negotiation, Full-/half-duplex mode, Auto MDI/MDI-X port |
| Digital inputs | 2x (>10 V high , <3.6 V low; max. 30 V DC) |
| Digital outputs | 1x (19.2 - 28 V high; max. 1 A) |
| Serial port | 1x RS-232/485 |
| USB port | 1x USB 2.0 (Type A; max. 500 mA) |
| **Power supply** | |
| Connection type | 1 removable 6-pin terminal block |
| Input voltage | 24 V DC (19.2 - 28.8 V), 1 single input |
| Current consumption at 24 V | 0.24 A |
| Reverse polarity protection | yes |
| **Physical characteristics** | |
| Housing main material | Metal |
| Protection degree | IP30 |
| Type of mounting | DIN rail |
| Dimensions (W x H x D) | 35 x 125 x 105 mm (1.37 x 4.92 x 4.13 in) |
| Weight | 412 g |
| **Environmental conditions** | |
| Operating temperature | -20 to 60 °C (-4 to 140 °F) |
| Storage temperature | -40 to 85 °C (-40 to 185 °F) |
| Humidity | 5 to 95 % (non-condensing) |
| **EMC conformity and approvals** | |
| EMC | EN 61000-6-3, EN 61000-6-2 |
| Shock | IEC 60068-2-27 |
| Vibration | IEC 60068-2-6 |
| **Guarantee** | |
| Time interval | 2 years |

**Ordering Information**

| Version | Model Type | Order No. |
|---|---|---|
| IoT Gateway, 2x RJ45 10/100 Mbit/s, 1x RS232/485, 2x DI, 1x DO | IOT-GW30 | **2682620000** |

**Accessories**

| | Model Type | Order No. |
|---|---|---|
| 19" Rack Mounting Kit | RM-KIT | **1241440000** |

# Industrial WLAN
## Overview


| | | |
|---|---|---|
| **Industrial WLAN** | Introduction – Industrial WLAN | H.2 |
| | Industrial WLAN | H.4 |

# Industrial WLAN
## Wireless communication solutions

In many mobile applications and industrial environments that are difficult to access, cabling does not usually make sense. Instead, WLAN-based wireless communication solutions are employed. In logistics, for example, WLAN is used to connect AGVs (Automatic Guided Vehicles). Roaming between several radio cells is important in this case in order to enable individually configurable radio coverage.

Our WLAN module can be used flexibly as an access point (AP), bridge or client. The alternative Power over Ethernet supply makes integration into an existing infrastructure especially easy. Maximum data integrity is guaranteed through integration into a RADIUS service and secure encryption with WPA2 in the radio field. Several radio fields can be flexibly spread out. Within these fields, the clients can move between the radio cells thanks to fast roaming. Several areas can be assigned for each radio cell (Multi-SSID) and allocated to different VLANs. This way, the wired infrastructure is continued 1:1 in the radio range.

**Your special advantage:**
- Compliant access point / client according to IEEE 802.11a/b/g/n
- MIMO technology for data rates up to 300 Mbit/s
- Fast roaming for interruption-free connection changes between access points
- DFS support in 5 Ghz band
- Power supply with PoE according to IEEE 802.3af possible
- Integrated DIs/DOs for monitoring and alarms

**Turbo roaming for interruption-free connections**
Roaming technology ensures a seamless wireless connection and allows you to switch quickly between different wireless access points without the risk of discontinued data communication.

**Various wireless modes of operation**
The most important modes of operation for wireless networks are AP Client mode and Bridge mode. AP mode can be used to create a new WLAN or to connect an existing WLAN to a wired network. Bridge mode allows two Ethernet devices to be connected wirelessly using a point-to-point connection.

**Integrated digital inputs/outputs**
Weidmüller WLAN access points have integrated digital inputs/outputs that can be used to send alarm notifications in real time via the network to the responsible maintenance personnel.

## BasicLine WLAN Access Point/Client

- IEEE 802.11a/b/g/n conform access point/client
- MIMO technology for data rates up to 300Mbit/s
- Fast roaming for interruption-free connection change between access points
- DFS support in 5GHz bandwidth

## Technical data

| WLAN Interface | |
|---|---|
| Standards | IEEE 802.11a/b/g/n for Wireless LAN<br>IEEE 802.11i for Wireless Security<br>IEEE 802.3 for 10BaseT<br>IEEE 802.3u for 100BaseT(X)<br>IEEE 802.3ab for 1000BaseT |
| Spread Spectrum and Modulation (typically) | • DSSS with DBPSK, DQPSK, CCK<br>• OFDM with BPSK, QPSK, 16QAM, 64QAM<br>• 802.11b: CCK at 11/5.5 Mbps, DQPSK at 2 Mbps, DBPSK at 1 Mbps<br>• 802.11a/g: 64QAM at 54/48 Mbps, 16QAM at 36/24 Mbps, QPSK at 18/12 Mbps, BPSK at 9/6 Mbps<br>• 802.11n: 64QAM at 300 Mbps to BPSK at 6.5 Mbps |
| Operating Channels (central frequency) | US model:<br>2.412 to 2.462 GHz (11 channels) / 5.180 to 5.240 GHz (4 channels)<br>5.260 to 5.320 GHz (4 channels)* /5.500 to 5.700 GHz (8 channels, excluding 5.600 to 5.640 GHz)* / 5.745 to 5.825 GHz (5 channels)<br>EU model:<br>2.412 to 2.472 GHz (13 channels) /5.180 to 5.240 GHz (4 channels)<br>5.260 to 5.320 GHz (4 channels)* /5.500 to 5.700 GHz (11 channels)* |
| *DFS (Dynamic Frequency Selection): If the device is operated in access point mode on these channels, the device automatically switches to another channel once a radar signal is detected. After switching to another channel, a 60-second availability check is carried out in accordance with the specification, before communication can take place on the channel. | |
| Security | • SSID Broadcast enable/disable<br>• Firewall for MAC/IP/protocol/port-based filtering<br>• 64-bit and 128-bit WEP encryption, WPA/WPA2 personnel and enterprise (IEEE 802.1X/RADIUS, TKIP and AES) |
| Transmission Rates | 802.11b: 1, 2, 5.5, 11 Mbps<br>802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps<br>802.11n: 6.5 to 300 Mbps |
| Transmit Power | 802.11b: Type 26±1.5 dBm at 1 Mbps, Type 26±1.5 dBm at 2 Mbps<br>Type 26±1.5 dBm at 5.5 Mbps, Type 25±1.5 dBm at 11 Mbps<br>802.11g: Type 23±1.5 dBm at 6 to 24 Mbps, Type 21±1.5 dBm at 36 Mbps<br>Type 19±1.5 dBm at 48 Mbps, Type 18±1.5 dBm at 54 Mbps<br>802.11n: Type 23±1.5 dBm at MCS0/8 20 MHz,<br>(2.4 GHz) Type 18±1.5 dBm at MCS7/15 20 MHz<br>Type 23±1.5 dBm at MCS0/8 40 MHz<br>Type 17±1.5 dBm at MCS7/15 40 MHz<br>802.11a: Type 23±1.5 dBm at 6 to 24 Mbps, Type 21±1.5 dBm at 36 Mbps<br>Type 20±1.5 dBm at 48 Mbps, Type 18±1.5 dBm at 54 Mbps<br>802.11n: Type 23±1.5 dBm at MCS0/8 20 MHz<br>(5 GHz) Type 18±1.5 dBm at MCS7/15 20 MHz<br>Type 23±1.5 dBm at MCS0/8 40 MHz<br>Type 17±1.5 dBm at MCS7/15 40 MHz |

**Note:** In accordance with regional regulations, the maximum permissible transmit power is limited on the UNII bandwidths via the device firmware. The corresponding values are contained in the following tables:

| | US model | EU model |
|---|---|---|
| 2.4 GHz | 26 dBm | 18 dBm |
| 5 GHz (UNII-1) | 23 dBm | 21 dBm |
| 5 GHz (UNII-2) | 23 dBm | 21 dBm |
| 5 GHz (UNII-2e) | 23 dBm | 23 dBm |
| 5 GHz (UNII-3) | 23 dBm | - |

| | |
|---|---|
| Receive Sensitivity | 802.11b: • 93 dBm at 1 Mbps, -93 dBm at 2 Mbps<br>• 93 dBm at 5.5 Mbps, -88 dBm at 11 Mbps<br>802.11g: • 88 dBm at 6 Mbps, -86 dBm at 9 Mbps<br>• 85 dBm at 12 Mbps, -85 dBm at 18 Mbps<br>• 85 dBm at 24 Mbps, -82 dBm at 36 Mbps<br>• 78 dBm at 48 Mbps, -74 dBm at 54 Mbps<br>802.11n: • 70 dBm at MCS7 20 MHz, -69 dBm at MCS15 20 MHz<br>(2.4 GHz) • 67 dBm at MCS7 40 MHz, -67 dBm at MCS15 40 MHz<br>802.11a: • 90 dBm at 6 Mbps, -88 dBm at 9 Mbps<br>• 88 dBm at 12 Mbps, -85 dBm at 18 Mbps<br>• 81 dBm at 24 Mbps, -78 dBm at 36 Mbps<br>• 74 dBm at 48 Mbps, -72 dBm at 54 Mbps<br>802.11n: • 69 dBm at MCS7 20 MHz, -71 dBm at MCS15 20 MHz<br>(5 GHz) • 63 dBm at MCS7 40 MHz, -68 dBm at MCS15 40 MHz |
| **Protocol Support** | |
| General Protocols | Proxy ARP, DNS, HTTP, HTTPS, IP, ICMP, SNTP, TCP, UDP, RADIUS, SNMP, DHCP, LLDP |
| **Interfaces** | |
| Supplied antenna | 2x omni-directional dual-band antenna, 2 dBi, RP-SMA (male) |
| Connector for External Antennas | RP-SMA (female), 500 V insulation |
| RJ45 port | 1x 10/100/1000BaseT (X) auto negotiation, full/half duplex mode and auto MDI/MDI-X connection |
| Console Port | RS 232 (RJ45-type) |

## Technical data

| Technical data | |
|---|---|
| Housing | Metal, IP30 protection |
| Weight | 307 g |
| Dimensions (W x H x D) | 58 x 115 x 70 mm (2.29 x 4.53 x 2.76 in) |
| Installation | DIN-Rail |
| **Environmental Limits** | |
| Operating temperature | Standard Models: 0 to 60 °C (32 to 140 °F)<br>Wide Temp. Models: -40 to 75 °C<br>(-40 to 167 °F) |
| Storage Temperature | -40 to 85 °C (-40 to 185 °F) |
| Ambient Relative Humidity | 5 % to 95 % (non-condensing) |
| **Power Requirements** | |
| Input Voltage | 24 V DC (12 to 48 V DC), two redundant inputs |
| Connection | 1 removable 4-pin terminal block, 500 V insulation |
| Power Consumption | 0.56 A at 12 VDC<br>0.14 A at 48 VDC |
| Power consumption | 6.96 W |
| Reverse Polarity Protection | Present |
| **Approvals** | |
| Safety | EN62368-1, UL 60950-1 |
| Radio | EN 301 489-1/17, EN 300 328, EN 301 893, TELEC, FCC ID: SLE-WAPN008, KC |
| EMC | EN 55032/24<br>CISPR 32, FCC Part 15B Class B<br>IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV<br>IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m<br>IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV<br>IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV<br>IEC 61000-4-6 CS: 3 V<br>IEC 61000-4-8 |
| **MTBF (mean time between failures)** | |
| Time | 749,476 hrs |
| Database | Telcordia (Bellcore), GB |
| **Warranty** | |
| Warranty Period | 5 years |

## Ordering data

| Version | Type | Operating Temperature | Order No. |
|---|---|---|---|
| WLAN Access Point/Client, IEEE 802.11 a/b/g/n, EU-Modell | IE-WL-BL-AP-CL-EU | 0 to +60 °C | **2536600000** |
| | IE-WLT-BL-AP-CL-EU | -40 to +75 °C | **2536650000** |
| WLAN Access Point/Client, IEEE 802.11 a/b/g/n, US-Modell | IE-WL-BL-AP-CL-US | 0 to +60 °C | **2536660000** |
| | IE-WLT-BL-AP-CL-US | -40 to +75 °C | **2536670000** |

**Accessories**

| | Type | Order No. |
|---|---|---|
| External Backup and Restore Module | EBR-Modul RS232 | **1241430000** |
| 19" Rack Mounting Kit | RM-KIT | **1241440000** |

## ValueLine WLAN Access Point/Bridge/Client

- IEEE 802.11a/b/g/n conform Access Point/Client/Bridge
- MIMO technology for data rates up to 300Mbit/s
- Fast roaming for interruption-free connection change between access points
- DFS support in 5GHz bandwidth
- Power can be supplied via PoE in accordance with IEEE 802.3af
- Integrated DI/DOs for monitoring and alarms

## Technical data

| WLAN-Interface | |
|---|---|
| Standards | IEEE 802.11a/b/g/n for wireless LAN<br>IEEE 802.11i for wireless security<br>IEEE 802.3 for 10BaseT<br>IEEE 802.3u for 100BaseT(X)<br>IEEE 802.3ab for 1000BaseT<br>IEEE 802.3af for Power-over-Ethernet<br>IEEE 802.1D for Spanning Tree Protocol<br>IEEE 802.1w for Rapid STP<br>IEEE 802.1Q for VLAN |
| Spreading code process and modulation (typical) | • DSSS with DBPSK, DQPSK, CCK<br>• OFDM with BPSK, QPSK, 16QAM, 64QAM<br>• 802.11b: CCK at 11/5.5 Mbps, DQPSK at 2 Mbps, DBPSK at 1 Mbps<br>• 802.11a/g: 64QAM at 54/48 Mbps, 16QAM at 36/24 Mbps, QPSK at 18/12 Mbps, BPSK at 9/6 Mbps<br>• 802.11n: 64QAM at 300 Mbps to BPSK at 6.5 Mbps |
| Operating Channels (central frequency) | US model:<br>2.412 to 2.462 GHz (11 channels) / 5.180 to 5.240 GHz (4 channels)<br>5.260 to 5.320 GHz (4 channels)* / 5.500 to 5.700 GHz (8 channels, excluding 5.600 to 5.640 GHz)* / 5.745 to 5.825 GHz (5 channels)<br>EU model:<br>2.412 to 2.472 GHz (13 channels) / 5.180 to 5.240 GHz (4 channels)<br>5.260 to 5.320 GHz (4 channels)* / 5.500 to 5.700 GHz (11 channels)* |
| *DFS (Dynamic Frequency Selection): If the device is operated in access point mode on these channels, the device automatically switches to another channel once a radar signal is detected. After switching to another channel, a 60-second availability check is first carried out in accordance with the specification, before communication can take place on the channel. | |
| Security | • SSID Broadcast enable/disable<br>• Firewall for MAC/IP/protocol/port-based filtering<br>• 64-bit and 128-bit WEP encryption, WPA/WPA2 personnel and enterprise (IEEE 802.1X/RADIUS, TKIP and AES) |
| Transmission Rates | 802.11b: 1, 2, 5.5, 11 Mbps<br>802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps<br>802.11n: 6.5 to 300 Mbps |
| Transmit power | 802.11b: Type 26±1.5 dBm at 1 Mbps, Type 26±1.5 dBm at 2 Mbps<br>Type 26±1.5 dBm at 5.5 Mbps, Type 25±1.5 dBm at 11 Mbps<br>802.11g: Type 23±1.5 dBm at 6 to 24 Mbps, Type 21±1.5 dBm at 36 Mbps<br>Type 19±1.5 dBm at 48 Mbps, Type 18±1.5 dBm at 54 Mbps<br>802.11n: Type 23±1.5 dBm at MCS0/8 20 MHz,<br>(2.4 GHz) Type 18±1.5 dBm at MCS7/15 20 MHz<br>Type 23±1.5 dBm at MCS0/8 40 MHz<br>Type 17±1.5 dBm at MCS7/15 40 MHz<br>802.11a: Type 23±1.5 dBm at 6 to 24 Mbps, Type 21±1.5 dBm at 36 Mbps<br>Type 20±1.5 dBm at 48 Mbps, Type 18±1.5 dBm at 54 Mbps<br>802.11n: Type 23±1.5 dBm at MCS0/8 20 MHz<br>(5 GHz) Type 18±1.5 dBm at MCS7/15 20 MHz<br>Type 23±1.5 dBm at MCS0/8 40 MHz<br>Type 17±1.5 dBm at MCS7/15 40 MHz |

**Note:** In accordance with regional regulations, the maximum permissible transmit power is limited on the UNII bandwidths via the device firmware. The corresponding values are contained in the following tables:

| | US model | EU model |
|---|---|---|
| 2.4 GHz | 26 dBm | 18 dBm |
| 5 GHz (UNII-1) | 23 dBm | 21 dBm |
| 5 GHz (UNII-2) | 23 dBm | 21 dBm |
| 5 GHz (UNII-2e) | 23 dBm | 23 dBm |
| 5 GHz (UNII-3) | 23 dBm | - |

| | |
|---|---|
| Receive sensitivity | 802.11b: • 93 dBm at 1 Mbps, -93 dBm at 2 Mbps<br>• 93 dBm at 5.5 Mbps, -88 dBm at 11 Mbp<br>802.11g: • 88 dBm at 6 Mbps, -86 dBm at 9 Mbps<br>• 85 dBm at 12 Mbps, -85 dBm at 18 Mbps<br>• 85 dBm at 24 Mbps, -82 dBm at 36 Mbps<br>• 78 dBm at 48 Mbps, -74 dBm at 54 Mbps<br>802.11n: • 70 dBm at MCS7 20 MHz, -69 dBm at MCS15 20 MHz<br>(2.4 GHz) • 67 dBm at MCS7 40 MHz, -67 dBm at MCS15 40 MHz<br>802.11a: • 90 dBm at 6 Mbps, -88 dBm at 9 Mbps<br>• 88 dBm at 12 Mbps, -85 dBm at 18 Mbps<br>• 81 dBm at 24 Mbps, -78 dBm at 36 Mbps<br>• 74 dBm at 48 Mbps, -72 dBm at 54 Mbps<br>802.11n: • 69 dBm at MCS7 20 MHz, -71 dBm at MCS15 20 MHz<br>(5 GHz) • 63 dBm at MCS7 40 MHz, -68 dBm at MCS15 40 MHz |
| **Supported protocols** | |
| General protocols | Proxy ARP, DNS, HTTP, HTTPS, IP, ICMP, SNTP, TCP, UDP, RADIUS, SNMP, DHCP, LLDP, VLAN, STP/RSTP |
| **Interfaces** | |
| Supplied antenna | 2x omni-directional dual-band antenna, 2 dBi, RP-SMA (male) |
| Connection for external antennas | RP-SMA (female), 500 V insulation |
| RJ45 port | 1x 10/100/1000BaseT (X) auto negotiation, full/half duplex mode and auto MDI/MDI-X connection |
| Console port | RS 232 (RJ45 connection) |
| Alarm contact | 1 relay output with a current capacity of 1 A at 24 V DC |
| Digital inputs | 2 galvanically separated inputs<br>• +13 to +30 V for the state "1"<br>• +3 to -30 V for the state "0"<br>• max. Current consumption: 8 mA |

## Technical data

| Technical data | |
|---|---|
| Housing | Metal, IP30 protection class |
| Weight | 860 g |
| Dimensions (W x H x D) | 52.7 x 135 x 105 mm (2.08 x 5.32 x 4.13 in) |
| Installation | DIN-Rail |
| **Environmental conditions** | |
| Operating temperature | Standard models: -25 to 60°C (-13 to 140°F)<br>Models with extended temperature range:<br>-40 to 75 °C (-40 to 167 °F) |
| Storage temperature | -40 to 85 °C (-40 to 185 °F) |
| Relative ambient air humidity | 5% to 95% (non-condensing) |
| **Power supply** | |
| Input voltage | 24 V DC (12 to 48 V DC), two redundant inputs<br>or 48 V DC PoE (IEEE802.3af) |
| Connection | 1 removable 10-pin terminal block, 500 V insulation |
| Current consumption | 0.6 A at 12 VDC<br>0.15 A at 48 VDC |
| Power consumption | 7.2 W |
| Reverse polarity protection | Present |
| **Approvals** | |
| Safety | EN62368-1, UL 60950-1 |
| Wireless | EN 301 489-1/17, EN 300 328, EN 301 893, TELEC, FCC ID:<br>SLE-WAPN008, KC |
| EMC | EN 61000-6-2/6-4<br>CISPR 32, FCC Part 15B Class B<br>IEC 61000-4-2 ESD: Contact: 8 kV; Air: 15 kV<br>IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m<br>IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV<br>IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV<br>IEC 61000-4-6 CS: 3 V/m<br>IEC 61000-4-8 PFMF: 1 A/m |
| Explosive risk zones | UL / cUL Class I, Division 2; ATEX Zone 2 Ex nA IIC T4 Gc |
| **MTBF (mean time between failures)** | |
| Time | 570,854 hrs |
| Database | Telcordia (Bellcore), GB |
| **Warranty** | |
| Period | 5 Years |

## Ordering data

| Version | Type | Operating Temperature | Order No. |
|---|---|---|---|
| WLAN Access Point/Bridge/Client, IEEE 802.11 a/b/g/n, EU-Modell | IE-WL-VL-AP-BR-CL-EU | -25 to +60 °C | **2536680000** |
| | IE-WLT-VL-AP-BR-CL-EU | -40 to +75 °C | **2536690000** |
| WLAN Access Point/Bridge/Client, IEEE 802.11 a/b/g/n, US-Modell | IE-WL-VL-AP-BR-CL-US | -25 to +60 °C | **2536700000** |
| | IE-WLT-VL-AP-BR-CL-US | -40 to +75 °C | **2536710000** |

**Accessories**

| | Type | Order No. |
|---|---|---|
| External backup and restore module | EBR-Modul RS232 | **1241430000** |
| 19" Rack Mounting Kit | RM-KIT | **1241440000** |

# Active components
## Overview of accessories


| | | |
|---|---|---|
| **Accessories – Active components** | Introduction – Accessories – Active components | I.2 |
| | SFP transceiver (for use with switches of Eco- Advanced- and SubstationLine) | I.4 |
| | SFP transceiver (for use with switches of Basic- Value- and PremiumLine) | I.7 |
| | Configuration backup and restore module (for use with switches of Value- and PremiumLine such as Basic- and ValueLine WLAN devices) | I.8 |
| | Configuration backup and restore module (for use with switches of Advanced- and SubstationLine) | I.9 |
| | Mounting kits for 19" rack and wall | I.10 |

# Easy assembly, configuration and operation
## Our accessories for active Industrial Ethernet solutions

Industrial Ethernet connection solutions from Weidmüller are versatile and can be precisely matched to the infrastructure of your machine, system or factory. In order to guarantee optimum functionality, we provide you with all the connection technology from a single source. We also offer a wide range of accessories for your active Industrial Ethernet components.

**Configuration module**
To quickly back up, restore and load configurations, we recommend our configuration module. It supports you in performing reconfigurations for replacement devices, thereby minimising your downtimes.

**SFP transceivers**
Our SFP transceivers give you more flexibility in your choice of transmission media. We offer you a broad selection – for transmission speeds up to 10 Gbit/s and distances up to 60 km. The modules support digital diagnostic monitoring (DDM) for the easy monitoring of the transceiver status.

**19“ mounting kit**
For our Industrial Ethernet components, we also offer a mounting kit as an alternative for the installation of DIN rail-based components in 19“ racks.

**Individual solutions**
In addition to our line of accessories, we provide you with a wide range of products and services for custom connection solutions. This also includes our assembly service, which supports you in mastering even the most complex cabling tasks.

Customer-
specific cable
configuration

# Fast Ethernet SFP transceiver (for use with switches of Eco- Advanced- and SubstationLine)

**Fast Ethernet SFP transceiver**

- IEEE 802.3u compliant
- Class 1 laser product; EN 60825-1 compliant
- Pluggable during operation (hot pluggable)
- Supports DDM (Digital Diagnostic Monitoring)

## Technical data

| Fibre optic transceiver characteristics | | | |
|---|---|---|---|
| | IE-SFP-1FE-MM-2 | IE-SFP-1FE-SM-30 | IE-SFP-1FE-SM-60 |
| | 2682450000 | 2682460000 | 2682470000 |
| Transmission speed | 100 Mbit/s | 100 Mbit/s | 100 Mbit/s |
| Digital Diagnostic Monitor function (DDM) | Supported | Supported | Supported |
| Transceiver Type | Multimode | Singlemode | Singlemode |
| Connector type | LC-Duplex | LC-Duplex | LC-Duplex |
| Fiber Cable Type | OM1, OM2 | G.652 | G.652 |
| Typical Distance | 2 km, 4 km | 30 km | 60 km |
| Wavelength typ (nm) | 1310 | 1310 | 1310 |
| Wavelength (TX) range (nm) | 1270 to 1380 | 1280 to 1340 | 1280 to 1340 |
| Wavelength (RX) range (nm) | 1260 to 1620 | 1260 to 1620 | 1260 to 1620 |
| Optical Power (TX) range (dBm) | -14 to -20 | -8 to -15 | 0 to -5 |
| Optical Power (RX) range (dBm) | -3 to -32 | -3 to -34 | -3 to -34 |
| Link-Budget (dB) | 12 | 19 | 29 |

**Note:** When connecting a single-mode fiber transceiver over a short distance, we recommend using an attenuator to prevent the transceiver from being damaged by excessive optical power.

| | |
|---|---|
| **Power supply** | |
| Voltage supply | 3.3 V (via Ethernet switch) |
| **Physical characteristics** | |
| Type of mounting | Insert in SFP slot |
| Weight | 46 g |
| **Environmental conditions** | |
| Operating temperature | -40 to 85 °C (-40 to 185 °F) |
| Storage temperature | -40 to 85 °C (-40 to 185 °F) |
| Humidity | 5 to 95 % (non-condensing) |
| **EMC conformity and approvals** | |
| EMC | EN 55032, EN 55024 |
| **Guarantee** | |
| Time interval | 3 years |

**Ordering Information**

| Version | Model Type | Order No. |
|---|---|---|
| SFP Transceiver, 100 Mbit/s, Multimode, LC-Duplex, 2 km, -40 °C...85 °C | IE-SFP-1FE-MM-2 | **2682450000** |
| SFP Transceiver, 100 Mbit/s, Singlemode, LC-Duplex, 30 km, -40 °C...85 °C | IE-SFP-1FE-SM-30 | **2682450000** |
| SFP Transceiver, 100 Mbit/s, Singlemode, LC-Duplex, 60 km, -40 °C...85 °C | IE-SFP-1FE-SM-60 | **2682470000** |

**Gigabit Ethernet SFP transceiver**

- IEEE 802.3z compliant
- Class 1 laser product; EN 60825-1 compliant
- Pluggable during operation (hot pluggable)
- Supports DDM (Digital Diagnostic Monitoring)

## Technical data

| Fibre optic transceiver characteristics | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | IE-SFP-1GE-MM-05 | IE-SFP-1GE-MM-2 | IE-SFP-1GE-SM-10 | IE-SFP-1GE-SM-40 | IE-SFP-1GE-SM-10-BiDi-TX1310 | IE-SFP-1GE-SM-10-BiDi-TX1550 | IE-SFP-1GE-SM-20-BiDi-TX1310 | IE-SFP-1GE-SM-20-BiDi-TX1550 |
| | 2682480000 | 2682490000 | 2682500000 | 2682510000 | 2682520000 | 2682530000 | 2682540000 | 2682550000 |
| Transmission speed | 1000 Mbit/s | 1000 Mbit/s | 1000 Mbit/s | 1000 Mbit/s | 1000 Mbit/s | 1000 Mbit/s | 1000 Mbit/s | 1000 Mbit/s |
| Digital Diagnostic Monitor function (DDM) | Supported | Supported | Supported | Supported | Supported | Supported | Supported | Supported |
| Transceiver Type | Multimode | Multimode | Singlemode | Singlemode | Singlemode BiDi | Singlemode BiDi | Singlemode BiDi | Singlemode BiDi |
| Connector type | LC-Duplex | LC-Duplex | LC-Duplex | LC-Duplex | LC-Simplex | LC-Simplex | LC-Simplex | LC-Simplex |
| Fiber Cable Type | OM1, OM2 | OM1, OM2 | G.652 | G.652 | G.652 | G.652 | G.652 | G.652 |
| Typical Distance | 275 m, 550 m | 2 km | 10 km | 40 km | 10 km | 10 km | 20 km | 20 km |
| Wavelength typ (nm) | 850 | 1310 | 1310 | 1310 | RX 1550 / TX 1310 | RX 1310 / TX 1550 | RX 1550 / TX 1310 | RX 1310 / TX 1550 |
| Wavelength (TX) range (nm) | 830 to 870 | 1270 to 1355 | 1280 to 1365 | 1280 to 1350 | 1270 to 1355 | 1510 to 1570 | 1270 to 1355 | 1510 to 1570 |
| Wavelength (RX) range (nm) | 770 to 870 | 1260 to 1620 | 1260 to 1620 | 1260 to 1610 | 1470 to 1600 | 1250 to 1380 | 1470 to 1600 | 1250 to 1380 |
| Optical Power (TX) range (dBm) | -3 to -9 | -1 to -9 | -3 to -9 | +3 to -3 | -3 to -9 | -3 to -9 | -2 to -8 | -2 to -8 |
| Optical Power (RX) range (dBm) | -3 to -18 | -1 to -19 | -3 to -20 | -3 to -24 | -3 to -20 | -3 to -20 | -3 to -23 | -3 to -23 |
| Link-Budget (dB) | 9 | 10 | 11 | 21 | 11 | 11 | 15 | 15 |

**Note:** When connecting a single-mode fiber transceiver over a short distance, we recommend using an attenuator to prevent the transceiver from being damaged by excessive optical power.

| | |
|---|---|
| **Power supply** | |
| Voltage supply | 3.3 V (via Ethernet switch) |
| **Physical characteristics** | |
| Type of mounting | Insert in SFP slot |
| Weight | 46 g |
| **Environmental condition** | |
| Operating temperature | -40 to 85 °C (-40 to 185 °F) |
| Storage temperature | -40 to 85 °C (-40 to 185 °F) |
| Humidity | 5 to 95 % (non-condensing) |
| **EMC conformity and approvals** | |
| EMC | EN 55032, EN 55024 |
| **Guarantee** | |
| Time interval | 3 years |

**Ordering Information**

| Version | Model Type | Order No. |
|---|---|---|
| SFP Transceiver, 1000 Mbit/s, Multimode, LC-Duplex, 0.5 km, -40 °C...85 °C | IE-SFP-1GE-MM-05 | **2682480000** |
| SFP Transceiver, 1000 MBit/s, Multimode, LC-Duplex, 2 km, -40 °C...85 °C | IE-SFP-1GE-MM-2 | **2682490000** |
| SFP Transceiver, 1000 Mbit/s, Singlemode, LC-Duplex, 10 km, -40 °C...85 °C | IE-SFP-1GE-SM-10 | **2682500000** |
| SFP Transceiver, 1000 MBit/s, Singlemode, LC-Duplex, 40 km, -40 °C...85 °C | IE-SFP-1GE-SM-40 | **2682510000** |
| SFP Transceiver, 1000 MBit/s, Singlemode BiDi, LC-Simplex, 10 km, -40 °C...85 °C | IE-SFP-1GE-SM-10-BiDi-TX1310 | **2682520000** |
| SFP Transceiver, 1000 MBit/s, Singlemode BiDi, LC-Simplex, 10 km, -40 °C...85 °C | IE-SFP-1GE-SM-10-BiDi-TX1550 | **2682530000** |
| SFP Transceiver, 1000 MBit/s, Singlemode BiDi, LC-Simplex, 20 km, -40 °C...85 °C | IE-SFP-1GE-SM-20-BiDi-TX1310 | **2682540000** |
| SFP Transceiver, 1000 MBit/s, Singlemode BiDi, LC-Simplex, 20 km, -40 °C...85 °C | IE-SFP-1GE-SM-20-BiDi-TX1310 | **2682550000** |

# 10 Gigabit Ethernet SFP+ transceiver (for use with switches of SubstationLine)

**10 Gigabit Ethernet SFP+ transceiver**

- IEEE 802.3ae compliant
- Class 1 laser product; EN 60825-1 compliant
- Pluggable during operation (hot pluggable)
- Supports DDM (Digital Diagnostic Monitoring)

## Technical data

| Fibre optic transceiver characteristics | | | |
|---|---|---|---|
| | IE-SFP-10GE-MM-03 | IE-SFP-10GE-SM-20 | IE-SFP-10GE-SM-40 |
| | 2779110000 | 2779120000 | 2779130000 |
| Transmission speed | 10 Gbit/s | 10 Gbit/s | 10 Gbit/s |
| Digital Diagnostic Monitor function (DDM) | Supported | Supported | Supported |
| Transceiver Type | Multimode | Singlemode | Singlemode |
| Connector type | LC-Duplex | LC-Duplex | LC-Duplex |
| Fiber Cable Type | OM1, OM2, OM3 | G.652 | G.652 |
| Typical Distance | 33 m, 82 m, 300 m | 20 km | 40 km |
| Wavelength typ (nm) | 850 | 1310 | 1550 |
| Wavelength (TX) range (nm) | 840 to 860 | 1260 to 1355 | 1530 to 1565 |
| Wavelength (RX) range (nm) | 840 to 860 | 1260 to 1600 | 1250 to 1600 |
| Optical Power (TX) range (dBm) | -1 to -6.5 | 0.5 to -4 | 4 to -4.7 |
| Optical Power (RX) range (dBm) | -1 to -9.9 | 0.5 to -15 | -1 to -15.8 |
| Link-Budget (dB) | 3.4 | 11 | 11.1 |

**Note:** When connecting a single-mode fiber transceiver over a short distance, we recommend using an attenuator to prevent the transceiver from being damaged by excessive optical power.

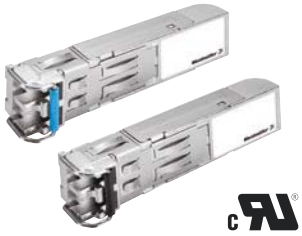
| | |
|---|---|
| **Power supply** | |
| Voltage supply | 3.3 V (via Ethernet switch) |
| **Physical characteristics** | |
| Type of mounting | Insert in SFP slot |
| Weight | 46 g |
| **Environmental conditions** | |
| Operating temperature | -40 to 85 °C (-40 to 185 °F) |
| Storage temperature | -40 to 85 °C (-40 to 185 °F) |
| Humidity | 5 to 95 % (non-condensing) |
| **EMC conformity and approvals** | |
| EMC | EN 55032, EN 55024 |
| **Guarantee** | |
| Time interval | 3 years |

**Ordering Information**

| Version | Model Type | Order No. |
|---|---|---|
| SFP+ Transceiver, 10 Gbit/s, Multimode, LC-Duplex, 0.3 km, -40 °C...85 °C | IE-SFP-10GE-MM-03 | **2779110000** |
| SFP+ Transceiver, 10 Gbit/s, Singlemode, LC-Duplex, 20 km, -40 °C...85 °C | IE-SFP-10GE-SM-20 | **2779120000** |
| SFP+ Transceiver, 10 Gbit/s, Singlemode, LC-Duplex, 40 km, -40 °C...85 °C | IE-SFP-10GE-SM-40 | **2779130000** |

## Gigabit Ethernet SFP-Transceiver

- Supports DDM (Digital Diagnostic Monitoring)
- IEEE 802.3z-conform
- Symmetric LVPECL inputs and outputs
- TTL signal detection indicator
- Pluggable during operation (hot pluggable)
- Class 1 laser product; EN 60825-1-conform



### Technical data

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Interfaces** | | | | | | | |
| Fibre-optic ports | | 100BaseSFP (LC-duplex connection) | | | | | |
| **Specification optical fiber** | | | | | | | |
| | | 1000BaseSFP | | | | | |
| | | SFP-SX | | SFP-LSX | | SFP-LX | SFP-LHX |
| Transceiver Type | | Multi-Mode | | Multi-Mode | | Single-Mode | Single-Mode |
| Fiber Cable Type | | OM1 | OM2 | OM1 | OM2 | G.652 | G.652 |
| Typical Distance | | 300 m | 550 m | 1 km | 2 km | 10 km | 40 km |
| Wave-length | Typical (nm) | 850 | | 1310 | | 1310 | 1310 |
| | TX Range (nm) | 830 to 860 | | 1270 to 1355 | | 1280 to 1355 | 1280 to 1340 |
| | RX Range (nm) | 770 to 860 | | 1260 to 1610 | | 1260 to 1610 | 1260 to 1610 |
| Optical Power | TX Range (dBm) | -4 to -9.6 | | -1 to -9 | | -3 to -9 | +3 to -4 |
| | RX Range (dBm) | 0 to -18 | | -1 to -19 | | -3 to -21 | -1 to -24 |
| | Link-Budget (dB) | 8.5 | | 10 | | 12 | 20 |
| | Dispersion Penalty (dB) | 4.3 | 3.6 | 5 | 5 | 1 | 1 |

**Note:** When connecting a single-mode fiber transceiver over a short distance, we recommend using an attenuator to prevent the transceiver from being damaged by excessive optical power.

| | |
|---|---|
| Power consumption | max. 1 Watt |
| **Environmental Limits** | |
| Operating temperature | Standard Models: 0 to 60 °C (32 to 140 °F)<br>Wide Temp. Models: -40 to 75 °C (-40 to 167 °F) |
| Storage Temperature | -40 to 85 °C (-40 to 185 °F) |
| Ambient Relative Humidity | 5 to 95 % (non-condensing) |
| **Approvals** | |
| Security | CE, FCC, TÜV (EN 60825), UL 60950-1 |
| Maritime | DNV-GL |
| **Warranty** | |
| Warranty Period | 5 years |

**Ordering data**

| SFP Variants | Type | Operating Temperature | Order No. |
|---|---|---|---|
| Gigabit-Ethernet, Multimode, LC-duplex connection, 500 m | IE-SFP-1GSXLC | 0 to +60 °C | **1241490000** |
| | IE-SFP-1GSXLC-T | -40 to 85 °C | **1286700000** |
| Gigabit-Ethernet, Multimode, LC-duplex connection, 2 km | IE-SFP-1GLSXLC | 0 to +60 °C | **1241500000** |
| | IE-SFP-1GLSXLC-T | -40 to 85 °C | **1286710000** |
| Gigabit-Ethernet, Singlemode, LC-duplex connection,10 km | IE-SFP-1GLXLC | 0 to +60 °C | **1241510000** |
| | IE-SFP-1GLXLC-T | -40 to 85 °C | **1286720000** |
| Gigabit-Ethernet, Singlemode, LC-duplex connection, 40 km | IE-SFP-1GLHXLC | 0 to +60 °C | **1241520000** |
| | IE-SFP-1GLHXLC-T | -40 to 85 °C | **1286730000** |

## Fast Ethernet SFP-Transceiver

- Supports DDM (Digital Diagnostic Monitoring)
- IEEE 802.3u-conform
- Symmetric PECL inputs and outputs
- TTL signal detection indicator
- Pluggable during operation (hot pluggable)
- Class 1 laser product; EN 60825-1-conform

### Technical data

| | | | | |
|---|---|---|---|---|
| **Interfaces** | | | | |
| Fibre-optic ports | | 100BaseSFP (LC-duplex connection) | | |
| **Specification optical fiber** | | | | |
| | | 100BaseSFP | | |
| | | SFP-M | | SFP-S |
| Transceiver Type | | Multi-Mode | | Single-Mode |
| Fiber Cable Type | | OM1/OM2 | 50/125 µm<br>62/125 µm<br>800 MHz*km | G.652 |
| Typical Distance | | 2 km | 4 km | 40 km |
| Wave-length | Typical (nm) | 1300 | | 1310 |
| | TX Range (nm) | 1280 to 1340 | | 1280 to 1340 |
| | RX Range (nm) | 1100 to 1600 | | 1100 to 1600 |
| Optical Power | TX Range (dBm) | -8 to -18 | | 0 to -5 |
| | RX Range (dBm) | -3 to -32 | | -3 to -34 |
| | Link-Budget (dB) | 14 | | 29 |
| | Dispersion Penalty (dB) | 2 | 3 | 1 |

**Note:** When connecting a single-mode fiber transceiver over a short distance, we recommend using an attenuator to prevent the transceiver from being damaged by excessive optical power.

| | |
|---|---|
| Power consumption | max. 1 Watt |
| **Environmental Limits** | |
| Operating temperature | -40 to 85 °C (-40 to 185 °F) |
| Storage Temperature | -40 to 85 °C (-40 to 185 °F) |
| Ambient Relative Humidity | 5 to 95 % (non-condensing) |
| **Approvals** | |
| Security | CE, FCC, TÜV (EN 60825), UL 60950-1 |
| Maritime | DNV-GL |
| **Warranty** | |
| Warranty Period | 5 years |

**Ordering data**

| Port Variants | Type | Operating Temperature | Order No. |
|---|---|---|---|
| Fast Ethernet, Multimode, LC-duplex connection, 4 km | IE-SFP-1FEMLC-T | -40 to +85 °C | **1241450000** |
| Fast Ethernet, Singlemode, LC-duplex connection, 40 km | IE-SFP-1FESLC-T | -40 to +85 °C | **1241470000** |

# Configuration backup and restore module (for use with switches of Value- and PremiumLine such as Basic- and ValueLine WLAN devices)

## Module for saving and loading a device configuration

- Reduce system downtime by simple reconfiguration in case of replacing devices
- Automatic loading of the saved configuration possible after device restart
- Compact, rugged, reliable design
- For use with switches of Value- and PremiumLine such as Basic- and ValueLine WLAN devices

## Technical data

| | |
|---|---|
| **Basic Operation** | |
| Connection | RS 232 (RJ45 connection), is plugged into the corresponding console port on the managed switch or WLAN Access Point. |
| Configuration | Saving and loading of the corresponding device configuration via web interface of the managed switch or the WLAN Access Point |
| **Power Requirements** | |
| Input Voltage | 3 to 5 V DC (through the RS 232 port's RTS signal) |
| **Technical data** | |
| Housing | PVC molding, IP40 protection |
| Dimensions (W x H x D) | 32.5 x 97 x 12 mm (8.07 x 3.82 x 0.47 in) |
| Weight | 50 g |
| Mounting possibility | M4 screw (< 4 mm) |
| Cable Length | 35 cm (including connector) |
| **Environmental Limits** | |
| Operating temperature | 0 to 60 °C (32 to 140 °F) |
| Storage Temperature | -20 to 70 °C (-4 to 158 °F) |
| Ambient Relative Humidity | 5 to 95 % (non-condensing) |
| **Approvals** | |
| EMC | EN 55032 Class A<br>CISPR 32, FCC Part 15B Class A<br>IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV<br>IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m<br>IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV<br>IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV<br>IEC 61000-4-6 CS: 10 V<br>IEC 61000-4-8 |
| **Warranty** | |
| Warranty Period | 5 years |

**Ordering data**

| Version | Type | Order No. |
|---|---|---|
| External Backup and Restore Module | EBR-MODULE RS232 | **1241430000** |

## Module for saving and loading a device configuration

- Reduce system downtime by simple reconfiguration in case of replacing devices
- 2 storage spaces selectable via DIP switch
- Compact, rugged, reliable design
- For use with switches of Advanced- and SubstationLine

## Technical data

| | |
|---|---|
| **Interfaces** | |
| Connector | RJ45 connector (plugged into device´s console port) |
| DIP switches | 1x for selection of the configuration storage space (A or B)<br>1x for selection between upload or download of a configuration |
| Start button | Starts the upload or download of a configuration |
| LED indicators | Power, data transmitting, transmission status |
| **Power supply** | |
| Connection type | RJ45 connector |
| Input voltage | 5 V DC (via RS-232 RTS signal of serial console port) |
| Current consumption at 5 V | 0.14 A |
| **Physical characteristics** | |
| Housing main material | PC molding |
| Protection degree | IP40 |
| Dimensions (W x H x D) | Module: 32 x 14.5 x 90.25 mm (1.25 x 0.57 x 3.5 in)<br>Cable length: 210 mm (8.27 in) including RJ45 connector |
| Weight | 33 g |
| **Environmental conditions** | |
| Operating temperature | -10 to 60°C (14 to 140°F) |
| Storage temperature | -40 to 85 °C (-40 to 185 °F) |
| Humidity | 5 to 95 % (non-condensing) |
| Operating altitude | ≤ 2000 m |
| **EMC conformity and approvals** | |
| EMC | EN 55032, EN 55024, CISPR 32, FCC Part 15 Subpart B Class A<br>IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV<br>IEC 61000-4-3 RS: 80 MHz bis 1 Ghz: 3 V/m |
| Safety | UL 61010-1, UL 61010-2-201 |
| Shock | IEC 60068-2-27 |
| Vibration | IEC 60068-2-6 |
| Free fall | IEC 60068-2-31 |
| **MTBF** | |
| Time | 6.645.051 hrs |
| Database | Telcordia SR332 |
| **Supported switch models** | |
| The EBR-Module can be used with the listed switches of Advanced- and SubstationLine only. | IE-SW-AL06M-4GTPoE-2GESFP<br>IE-SW-AL08M-8GTPoE<br>IE-SW-AL08M-8GT<br>IE-SW-AL12M-8GT-4GESFP<br>IE-SW-AL14M-12GT-2GESFP<br>IE-SW-AL24M-16GT-8GESFP<br>IE-SW-SL20M-8GT-12GESFP-HV<br>IE-SW-SL20M-8GT-12GESFP-LV<br>IE-SW-SL28M-HV<br>IE-SW-SL28M-LV |
| **Guarantee** | |
| Time interval | 3 years |

**Ordering Information**

| Version | Model Type | Order No. |
|---|---|---|
| External Backup and Restore Module | IE-EBR-MODULE-RS232-ALM | **2682610000** |

# Mounting kits for 19“ rack and wall

## Kit for 19" rack-mounting

- For mounting DIN-rail based devices in 19" racks

### Technical data

| Technical data | |
|---|---|
| Dimensions (W x H x D) | 481 x 177.8 x 202.4 mm |

**Ordering data**

| Version | Type | Order No. |
|---|---|---|
| 19" Rack Mounting Kit | RM-KIT | 1241440000 |

## Wall mounting kit

- Mounting kit for alternative wall-mounting of DIN rail-based Industrial Ethernet components.

### Technical data

| Usage | |
|---|---|
| Industrial Ethernet Switches | Product lines:<br>IE-SW-BL05 |

**Ordering data**

| Version | Type | Order No. |
|---|---|---|
| Wall mounting kit | IE-WALLMOUNT-KIT-30MM | 1504450000 |

# Passive components
## Introduction


| | | |
|---|---|---|
| **Introduction – Passive components** | IE-line connectors | J.2 |
| | Cable configurator | J.4 |
| | Differences between industrial and office Ethernet | J.6 |
| | PROFINET and SERCOS III cabling solutions | J.8 |
| | EtherNet/IP cabling solutions | J.12 |

# IE-LINE plug-in connectors
## Clever and flexible with ***STEADY**TEC*® technology

***STEADY**TEC*® – this name stands for the future of connection technology in the field of data and signal transmissions. Established market leaders in the industry, ***STEADY**TEC*® forms the foundation for reliable, application-orientated, standards-compliant solutions - for offices through to areas with harsh industrial conditions.

**The objective:** The development of reliable plug-in connector technologies for industrial applications. Technologies that satisfy the highest customer demands and hence enable new, specialised and dependable solutions.

**The result:** An extremely reliable, extraordinarily practical, flexible and especially efficient plug-in connector system for office and industrial applications. And using products whose characteristics accurately reflect the values originally laid out:

- **fast**
- **reliable**
- **solution-based**
- **simple**

**The Ethernet connector system: clever – flexible**

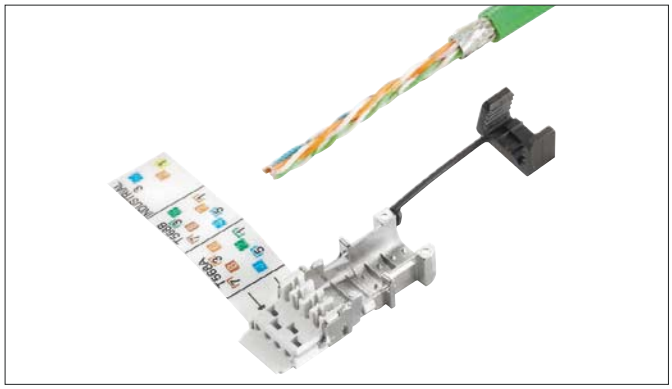
Connectors for modern industrial applications need to be designed in such a way that they simplify processes and cope with faster data transmission. Weidmüller's Ethernet connectors keep you a step ahead. These products are not only ready for 10 gigabit, they are also standardised for IEC 61076-3-106 and IEC 61076-3-117. In addition, the connector variants 4 (Ethernet TCP/IP), variants 5 and 1 (Ethernet IP) and variant 14 (PROFINET/AIDA) which are named in these standards are all specified as mandatory in the standards covering generic cabling systems for industrial premises: ISO/IEC 24702, IEC 61918 (Automation Island), as well as for Fieldbus installations IEC 61784-5. What's more, you have a unique choice of versions made of plastic or metal as well as inserts for copper and fibre-optic cabling.
All of the connectors are designed for ease of use and for quick on-site assembly. They are also modular and can be tailored to suit your application.

**Tool-free assembly and powerful connections: the RJ45 gigabit connector!**

You can now securely plug the connector you need directly into your machinery with very little effort – and without a single tool! The 10-gigabit connector, with IDC-connection, was developed to provide quick, simple, secure and, most importantly, tool-free wiring.
In addition, zinc die-casting makes the connector more robust and therefore suitable for industrial applications and as it is fitted with a protected locking clip means it is suitable for meeting the requirements of harsh industrial environments.
Weidmüllers IE product line fulfils the requirements for 10 GBit Ethernet, according to IEEE 802.3an, up to 500 MHz.

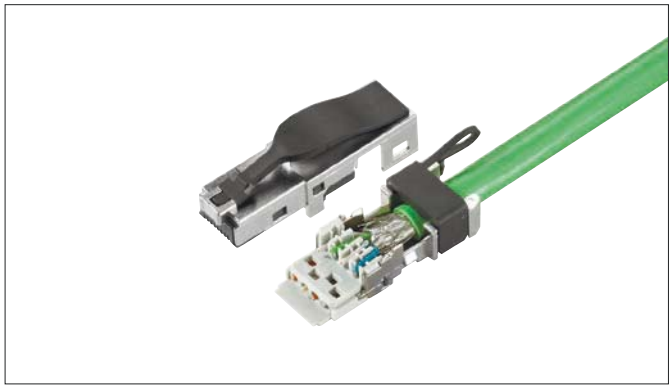
***STEADY**TEC*®: Systematic benefits**

- **Cat. $6_A$ 10 GBit System Class $E_A$**
- **Assembly without tools in the field**
- **Countless variations thanks to highly diverse combinations of inserts**
- **Unrestricted compatibility because standardised to IEC 61076-3-106**
- **Reliable and long-lasting thanks to use of diecast zinc**
- **Suitable for industry thanks to IP67 class of protection**
- **Simple ordering procedure and low storage costs thanks to Weidmüller's modular system**

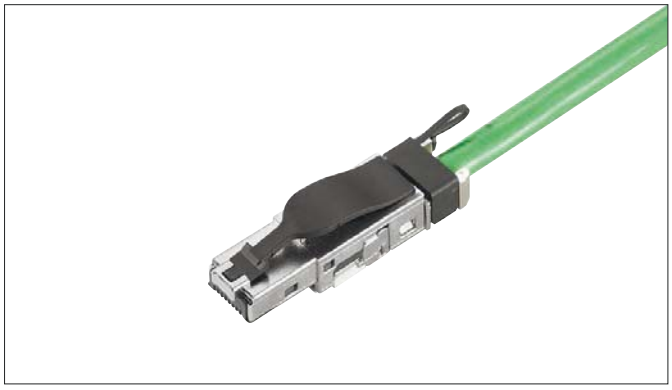


**1. Strip sheath cladding and shorten shield to 5 mm**

**2. Prepare wires and shorten**



**3. Snap together the two pluggable elements**



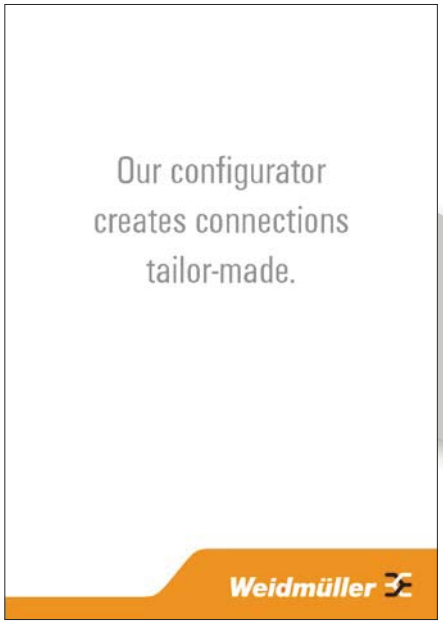
**4. Finished**

# Cable configurator
## Tailor-made connections

The cable configurator allows you to configure your specific cable with comfort, speed and simplicity. Just select, request order – and you are finished!

Make your selection from the list of available cables (material for cable sheathing, category, colour, ...). Next, choose the connector for both the right and left cable ends and then choose the cable length. Configurations which are not possible are marked in red, so that it is not possible to create an unsupported or wrong configuration.

The Industrial Ethernet Configurator can be found in our online catalogue.




You will be forwarded directly and will be able to configure a fibre-optic or copper cable.

After you have made your selection, there are several available options:

- Locate and display the data sheet for the assembled cable
- Export the information in Excel or CSV format
- Save the configuration
- Create additional cables or load previous cables
- Place the assembled cable in the shopping cart to obtain a quote or to order

Practically all types of connectors and cables can be combined to your requirements!

# From office communication to Industrial Ethernet

## An overview of the differences

| | Office Ethernet | Industrial Ethernet |
|---|---|---|
| | | |
| **Cabling** | • Fixed building installation<br>• Variable connection options<br>• Pre-assembled connection cables<br>• Star topology most widely in use | • Individual plant-influenced networks<br>• Robust component characteristics<br>• On-site, user assembly connections<br>• Redundant network topologies (ring) |
| **Transmission** | • Large volume of data<br>• Mid-level network availability<br>• Mostly only acyclical transmission<br>• No real-time characteristics required for standard applications | • Small data packets (measurement values)<br>• Very high network availability<br>• Extremely high real-time requirement<br>• Mostly cyclical transmission |
| **Surroundings** | • No extreme conditions | • Extreme temperatures<br>• Dust, dirt, splashing water, oils gases,<br>• Vibration, electromagnetic fields<br>• Risks of danger and damage from mechanical or chemical influences |

# Passive components
## Introduction


| | | |
|---|---|---|
| **Introduction – Passive components** | IE-line connectors | J.2 |
| | Cable configurator | J.4 |
| | Differences between industrial and office Ethernet | J.6 |
| | PROFINET and SERCOS III cabling solutions | J.8 |
| | EtherNet/IP cabling solutions | J.12 |

# IE-LINE plug-in connectors
## Clever and flexible with ***STEADY**TEC*® technology

***STEADY**TEC*® – this name stands for the future of connection technology in the field of data and signal transmissions. Established market leaders in the industry, ***STEADY**TEC*® forms the foundation for reliable, application-orientated, standards-compliant solutions - for offices through to areas with harsh industrial conditions.

**The objective:** The development of reliable plug-in connector technologies for industrial applications. Technologies that satisfy the highest customer demands and hence enable new, specialised and dependable solutions.

**The result:** An extremely reliable, extraordinarily practical, flexible and especially efficient plug-in connector system for office and industrial applications. And using products whose characteristics accurately reflect the values originally laid out:

- **fast**
- **reliable**
- **solution-based**
- **simple**

**The Ethernet connector system: clever – flexible**

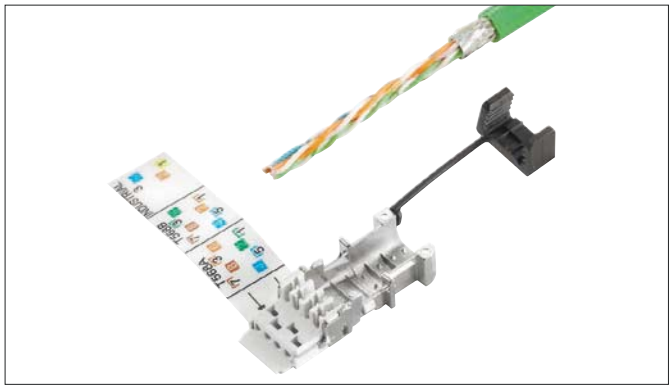
Connectors for modern industrial applications need to be designed in such a way that they simplify processes and cope with faster data transmission. Weidmüller's Ethernet connectors keep you a step ahead. These products are not only ready for 10 gigabit, they are also standardised for IEC 61076-3-106 and IEC 61076-3-117. In addition, the connector variants 4 (Ethernet TCP/IP), variants 5 and 1 (Ethernet IP) and variant 14 (PROFINET/AIDA) which are named in these standards are all specified as mandatory in the standards covering generic cabling systems for industrial premises: ISO/IEC 24702, IEC 61918 (Automation Island), as well as for Fieldbus installations IEC 61784-5. What's more, you have a unique choice of versions made of plastic or metal as well as inserts for copper and fibre-optic cabling.
All of the connectors are designed for ease of use and for quick on-site assembly. They are also modular and can be tailored to suit your application.

**Tool-free assembly and powerful connections: the RJ45 gigabit connector!**

You can now securely plug the connector you need directly into your machinery with very little effort – and without a single tool! The 10-gigabit connector, with IDC-connection, was developed to provide quick, simple, secure and, most importantly, tool-free wiring.
In addition, zinc die-casting makes the connector more robust and therefore suitable for industrial applications and as it is fitted with a protected locking clip means it is suitable for meeting the requirements of harsh industrial environments.
Weidmüllers IE product line fulfils the requirements for 10 GBit Ethernet, according to IEEE 802.3an, up to 500 MHz.

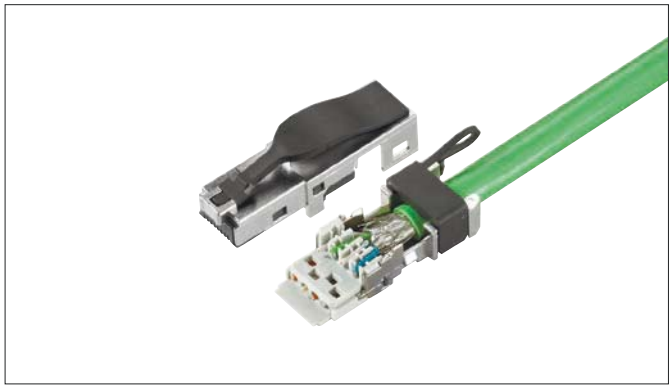
***STEADY**TEC*®: Systematic benefits**

- **Cat. $6_A$ 10 GBit System Class $E_A$**
- **Assembly without tools in the field**
- **Countless variations thanks to highly diverse combinations of inserts**
- **Unrestricted compatibility because standardised to IEC 61076-3-106**
- **Reliable and long-lasting thanks to use of diecast zinc**
- **Suitable for industry thanks to IP67 class of protection**
- **Simple ordering procedure and low storage costs thanks to Weidmüller's modular system**

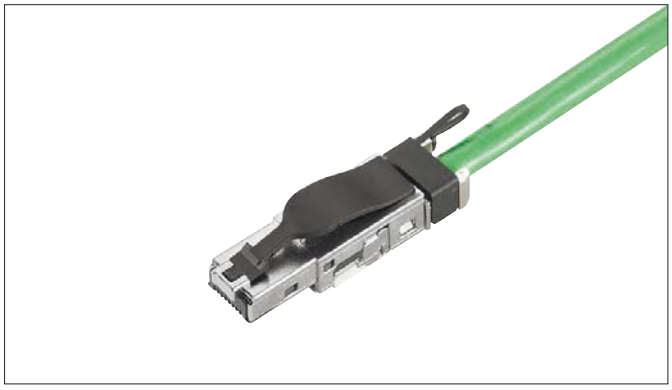


**1. Strip sheath cladding and shorten shield to 5 mm**

**2. Prepare wires and shorten**



**3. Snap together the two pluggable elements**



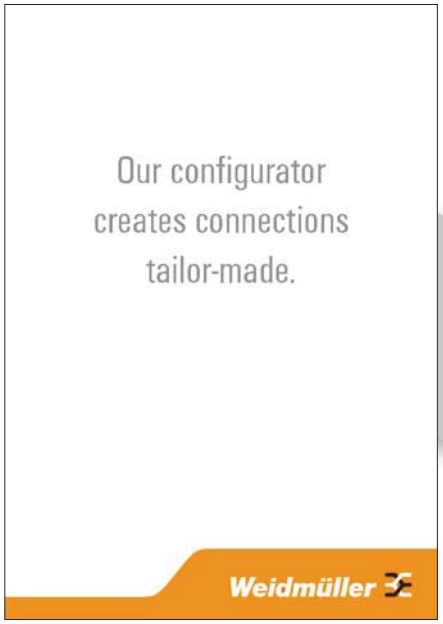
**4. Finished**

# Cable configurator
## Tailor-made connections

The cable configurator allows you to configure your specific cable with comfort, speed and simplicity. Just select, request order – and you are finished!

Make your selection from the list of available cables (material for cable sheathing, category, colour, ...). Next, choose the connector for both the right and left cable ends and then choose the cable length. Configurations which are not possible are marked in red, so that it is not possible to create an unsupported or wrong configuration.

The Industrial Ethernet Configurator can be found in our online catalogue.




You will be forwarded directly and will be able to configure a fibre-optic or copper cable.

After you have made your selection, there are several available options:

- Locate and display the data sheet for the assembled cable
- Export the information in Excel or CSV format
- Save the configuration
- Create additional cables or load previous cables
- Place the assembled cable in the shopping cart to obtain a quote or to order

Practically all types of connectors and cables can be combined to your requirements!

# From office communication to Industrial Ethernet

## An overview of the differences

| | Office Ethernet | Industrial Ethernet |
|---|---|---|
| | | |
| **Cabling** | • Fixed building installation<br>• Variable connection options<br>• Pre-assembled connection cables<br>• Star topology most widely in use | • Individual plant-influenced networks<br>• Robust component characteristics<br>• On-site, user assembly connections<br>• Redundant network topologies (ring) |
| **Transmission** | • Large volume of data<br>• Mid-level network availability<br>• Mostly only acyclical transmission<br>• No real-time characteristics required for standard applications | • Small data packets (measurement values)<br>• Very high network availability<br>• Extremely high real-time requirement<br>• Mostly cyclical transmission |
| **Surroundings** | • No extreme conditions | • Extreme temperatures<br>• Dust, dirt, splashing water, oils gases,<br>• Vibration, electromagnetic fields<br>• Risks of danger and damage from mechanical or chemical influences |

# Customised cabling solutions
## for PROFINET and SERCOS III

Weidmüller's cabling products enable you to create a specific infrastructure that meets all the requirements of PROFINET and SERCOS III.

The cabling components for copper and fibre-optic cables are designed and tested for use in harsh industrial conditions. Interoperability in the system is assured by the PROFINET and SERCOS cabling guidelines that specifically prescribe the interfaces to be used. For PROFINET this is guaranteed through the manufacturer's declaration.

Comprehensive protection against disturbance by electromagnetic fields is achieved through the use of high quality shielding of the cables and the related connection components. Significant system reserves are offered through the star quad design of the cables and their wire cross-section of AWG 22. Stable real-time transmission is guaranteed, for applications such as PROFINET IRT or SERCOS III typical hardware synchronisation, by the low signal transmission time differences resulting from the cable construction. At the same time the cables offer high crush resistance for reliable installation in industrial applications.

The cabling components are also remarkably easy to handle when out in the field. The plug-in connectors for copper and fibre-optic can all be assembled on-site. This reduces installation time, reduces errors and simplifies maintenance.

PROFINET INDUSTRIAL ETHERNET

sercos the automation bus

**Profile specific guidelines for the connection components**

**Cable:**

- Quad-star design of AWG 22

**Connector:**

- IP20 RJ45
- IP20 SC-RJ
- IP67 PushPull RJ45
- IP67 PushPull Power
- IP67 PushPull SC-RJ
- IP67 M12 D-coding

Weidmüller offers you a wide range of cabling solutions for PROFINET and SERCOS III applications. IP20 plug-in connectors for copper and fibre-optic cables are also included as well as IP67 plug-in connectors and junction boxes for the toughest requirements. The components are designed to be used together from the floor distributors down to the machines.

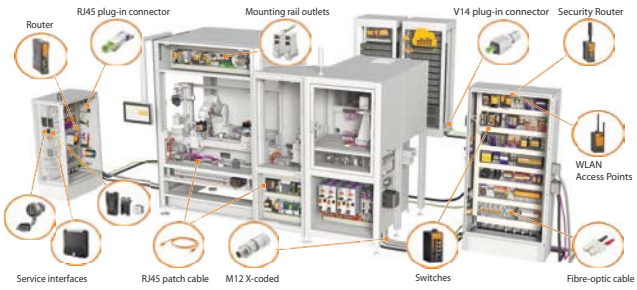
IP67
assembled RJ45 cables

IP67
assembled M12 cables

IP67
plug-in M12 connectors

IP67
connection components

Raw cable
copper and fibre-optic




IP67
plug-in connectors data / power

IP67
flanges data / power

IP20
plug-in connector

IP20
assembled cables

IP20
mounting rail outlets

IP65
service interfaces

# Selection table
## Ideal combinations

### IP20 plug-in connector

| Description | Type | Order No. |
|---|---|---|
| RJ45 tool-free PROFINET printing | IE-PS-RJ45-FH-BK-P | 1132060000 |
| RJ45 tool-free angeld Profinet printing | IE-PS-RJ45-FH-90-P-1.6 | 1518100000 |
| SC-RJ for POF fibres 1 mm | IE-PS-SCRJ1-POF | 1206720000 |

### IP20 assembled data cables

| Description | Type | Order No. |
|---|---|---|
| RJ45 patch cable PVC type B - 1 m | IE-C5DS4VG0010A60A60-E | 1522100010 |
| RJ45 patch cable PVC type B - 3 m | IE-C5DS4VG0030A60A60-E | 1522100030 |
| RJ45 patch cable PVC type B - 5 m | IE-C5DS4VG0050A60A60-E | 1522100050 |
| RJ45 patch cable PVC type B - 10 m | IE-C5DS4VG0100A60A60-E | 1522100100 |
| SC-RJ zipcord patch cable - POF - 1 m | IE-FPOZ2EE0001MSJOSJ0-X | 1273430010 |
| SC-RJ zipcord patch cable - POF - 3 m | IE-FPOZ2EE0003MSJOSJ0-X | 1273430030 |
| SC-RJ zipcord patch cable - POF - 5 m | IE-FPOZ2EE0005MSJOSJ0-X | 1273430050 |
| SC-RJ zipcord patch cable - POF - 10 m | IE-FPOZ2EE0010MSJOSJ0-X | 1273430100 |
| Further PROFINET cables - SERCOS III cables can be found in Chapter L | | |

### IP20 mounting rail outlets

| Description | Type | Order No. |
|---|---|---|
| RJ45 coupling | IE-TO-RJ45-C | 8946920000 |
| RJ45 module PROFINET printing | IE-TO-RJ45-FJ-P | 8946950000 |
| SC-RJ POF coupling / multimode | IE-TO-SCRJ-MM | 8946990000 |
| SC-RJ singlemode coupling | IE-TO-SCRJ-SM | 8947000000 |

### IP65 service interface

| Beschreibung | Type | Order No. |
|---|---|---|
| FrontCom® Micro RJ45 coupling | IE-FCM-RJ45-C | 1018790000 |
| FrontCom® Micro RJ45 module PROFINET printing | IE-FCM-RJ45-FJ-P | 1018830000 |

### IP67 flange data

| Description | Type | Order No. |
|---|---|---|
| PushPull standard flange RJ45 coupling | IE-BSS-V14M-RJ45-C | 1012310000 |
| PushPull central cable gland RJ45 coupling | IE-BSC-V14M-RJ45-C | 1058250000 |
| PushPull standardised flange RJ45 module PROFINET printing | IE-BSS-V14M-RJ45-FJ-P | 1085260000 |
| PushPull standardised flange hybrid (Q10) 10-pole module without contacts | IE-BSS-V14M-HYB-10P-FJ | 1072900000 |
| Contacts for Hybrid (Q10) module 0.5 mm² - 0.75 mm² VPE 300 | IE-BIC-HYB-P-0,75-300 | 1068970000 |
| Contacts for Hybrid (Q10) module 0.2 mm² - 0.5 mm² VPE 300 | IE-BIC-HYB-P-0,5-300 | 1096150000 |
| PushPull standardised flange SC-RJ coupling POF / multimode | IE-BSS-V14M-SCRJ-MM-C | 1058120000 |
| PushPull standardised flange SC-RJ coupling singlemode | IE-BSS-V14M-SCRJ-SM-C | 1058140000 |
| PushPull central cable gland SC-RJ coupling POF / multimode | IE-BSC-V14M-SCRJ-MM-C | 1062590000 |
| PushPull central cable gland SC-RJ coupling singlemode | IE-BSC-V14M-SCRJ-SM-C | 1062600000 |
| PushPull device flange | IE-BHD-V14M | 1047940000 |
| other inserts can be found in Chapter J | | |

### IP67 Power connectors

| Description | Type | Order No. |
|---|---|---|
| PushPull Power with 24 V / 16 A use | IE-PS-VAPM-5P-2.5 | 2465440000 |

### IP67 flange power

| Description | Type | Order No. |
|---|---|---|
| PushPull Power standardised flange with 24 V / 16 A use | IE-BSS-VAPM-24V | 2493480000 |
| PushPull Power device flange | IE-BHD-VAPM | 2493490000 |

## IP67 data connectors

| Description | Type | Order No. |
|---|---|---|
| PushPull RJ45 tool-free module PROFINET printing | IE-PS-V14M-RJ45-FH-P | 1012170000 |
| PushPull RJ45 Crimp PROFINET | | 2768740000 |
| PushPull Hybrid (Q10) use, 10-pole module without contacts | IE-PS-V14M-HYB-10P | 1072910000 |
| PushPull SC-RJ use POF 1 mm | IE-PS-V14M-2SC-POF | 1191550000 |

## IP67 assembled data cables

| Description | Type | Order No. |
|---|---|---|
| PushPull RJ45 patch cable PUR - Type C - 1 m | IE-C5DD4UG0010A2EA2E-X | 1119730010 |
| PushPull RJ45 patch cable PUR - Type C - 3 m | IE-C5DD4UG0030A2EA2E-X | 1119730030 |
| PushPull RJ45 patch cable PUR - Type C - 5 m | IE-C5DD4UG0050A2EA2E-X | 1119730050 |
| PushPull RJ45 patch cable PUR - Type C - 10 m | IE-C5DD4UG0100A2EA2E-X | 1119730100 |
| Further PROFINET cables - SERCOS III cables can be found in Chapter L | | |

## IP67 plug connector M12 D-coded and X-Type

M 12 components can be found in Chapter J

## IP65 connection components

| Description | Type | Order No. |
|---|---|---|
| FreeCon passive double junction box RJ45/Power | IE-CD-V14MRJ/VAPM24V-FJ | 1068830000 |
| FreeCon passive single junction box RJ45 | IE-CD-V14MRJ-FJ | 1068880000 |
| FreeCon passive single junction box Hybrid (Q10) without contacts | IE-CD-V14MHYB-10P-FJ | 1068850000 |
| FreeCon passive double coupling RJ45/Power | IE-CD-V14MRJ/VAPM24V-C-MA | 1068820000 |
| FreeCon passive single coupling RJ45 | IE-CD-V14MRJ-C-MA | 1068870000 |
| FreeCon passive single coupling hybrid (Q10) | IE-CD-V14MHYB-10P-C-MA | 1068840000 |
| FreeCon PushPull Power Y-distributor | IE-CD-VAPM24V-Y-MA | 1297010000 |
| FreeCon PushPull Power single coupling | IE-CD-VAPM24V-C-MA | 1397690000 |
| FreeCon passive single coupling SCRJ | IE-CD-V14MSCRJ-MM-C-MA | 1318150000 |
| FreeCon active FO PROFINET repeater | IE-CDR-V14MSCPOF/VAPM-C | 1253240000 |
| FreeCon active PROFINET media converter | IE-CDM-V14MRJSCP/VAPM-C | 1324440000 |
| FreeCon active FO PROFINET repeater II | IE-CDR-V14MSCPOF/VAPM-C II | 2455360000 |
| FreeCon active FO PROFINET media converter II | IE-CDM-V14MRJSCP/VAPM-C II | 2588270000 |
| FreeCon active PROFINET copper repeater | IE-CDR-V14MRJ/VAPM-C | 2581810000 |
| FreeCon passive cable coupling RJ45 | IE-CC-V14M-RJ45-FJ-P | 1990600000 |
| FreeCon passive cable coupling hybrid | IE-CC-V14M-HYB-10P-FJ | 1990610000 |
| FreeCon passive cable coupling power | IE-CC-VAPM-24V | 1990630000 |

## Raw cable copper cable

| Description | Type | Order No. |
|---|---|---|
| 100 m ring installation cable PVC type A | IE-C5AS4VG-100 | 8899000000 |
| 500 m ring installation cable PVC type A | IE-C5AS4VG-500 | 2763430000 |
| 100 m ring connection cable PVC type B | IE-C5DS4VG-100 | 8898990000 |
| 500 m ring connection cable PVC type B | IE-C5DS4VG-500 | 2763470000 |
| 100 m ring dragline cable PUR type C | IE-C5DD4UG-100 | 8899010000 |
| 500 m ring dragline cable PUR type C | IE-C5DD4UG-500 | 2763450000 |
| 500 m ring Torsion cable PUR type C | IE-C5IT4UG-500 | 2763520000 |
| 500 m ring hybrid cable PVC | IE-C5DHAG-500 | 2763460000 |

## Raw cable fibre-optic cable

| Description | Type | Order No. |
|---|---|---|
| 500 m ring POF breakout cable 2X980/1000 µm TPE | IE-FPOD2UG-500 | 2763640000 |
| 500 m ring POF mini breakout cable 2X980/1000 µm PE | IE-FPOB2EG-500 | 2781950000 |

# Customised cabling solutions
## for Ethernet/IP

The wiring guidelines for EtherNet/IP clearly define the interfaces to be used to ensure interoperability in EtherNet/IP systems.

Weidmüller offers all the cabling products needed to build a requirement specific infrastructure which is tailored to the needs of EtherNet/IP.

The wiring components for copper and fibre-optic cables are designed and tested for use in harsh industrial environments. The user is provided with clear guidelines about the requirements of the components for use in industrial environments with the introduction of the MICE classification (EtherNet/IP Media Planning and Installation Manual).

The high-quality shielding of the cables and connection components offers comprehensive protection against electromagnetic interference.

The cables are 8-wire twisted-pair cables for RJ45 or star quad for use in M12.

The cabling components are also easy to handle in the field. The plug-in connectors for copper and fibre optic cables can all be assembled on-site. This reduces installation time, reduces errors and simplifies maintenance.

The connectors wire/pin assignment is either according to TIA568-A or TIA568-B as required. The connectors and modules are marked accordingly, making them easier to connect.

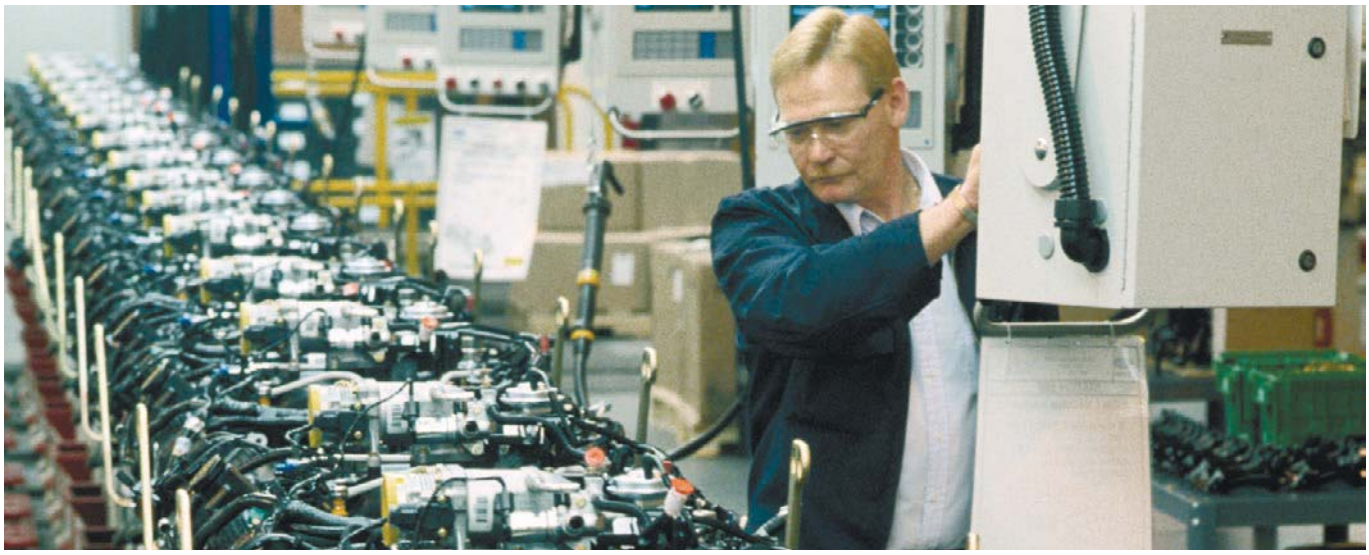
**Profile specific guidelines for the connection components**

**Cable:**

- 8-wire twisted-pair shielded cables

**Connector:**

- IP20 RJ45
- IP20 SC-RJ
- IP67 bayonet RJ45
- IP67 M12 D-coding



Weidmüller offers you a wide range of cabling solutions for EtherNet/IP applications. IP20 plug-in connectors for copper and fibre-optic cables are available, as well as IP67 connectors and junction boxes for the most exacting requirements. The components are designed to be used together from the floor distributors down to the machines.

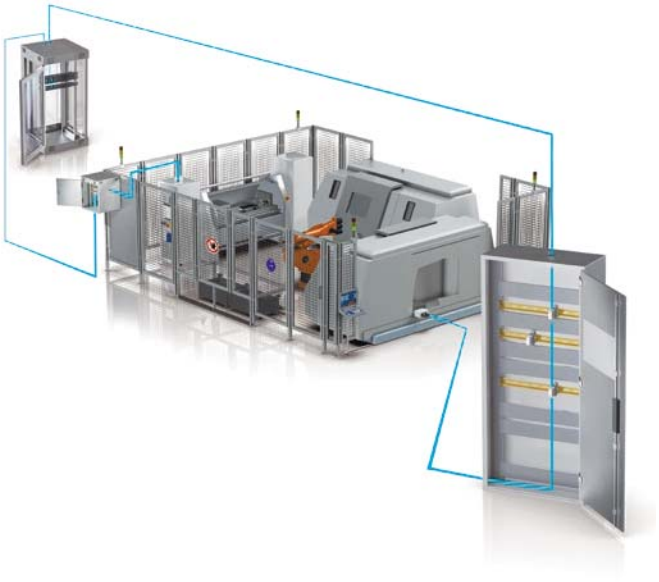
IP67
assembled RJ45 cables

IP67
assembled M12 cables

IP67
plug-in M12 connectors

IP67
connection components

Raw cable
copper and fibre-optic



IP67
plug-in connectors data

IP67
flanges data / power

IP20
plug-in connector

IP20
assembled cables

IP20
mounting rail outlets

IP65
service interfaces

# Selection table

## Ideal combinations for a perfect fit

### IP20 plug-in connector

| Description | Type | Order No. |
|---|---|---|
| RJ45 crimp | IE-PS-RJ45-TH-BK | 1963590000 |
| RJ45 tool-free TIA-A printing | IE-PS-RJ45-FH-BK-A | 1132040000 |
| RJ45 tool-free TIA-B printing | IE-PS-RJ45-FH-BK-B | 1132050000 |
| SC-RJ for 1 mm POF fibres | IE-PS-SCRJ1-POF | 1206720000 |

### IP20 assembled data cables

| Description | Type | Order No. |
|---|---|---|
| RJ45 patch cables - see CabinetLine | | |
| SC-RJ zipcord patch cable - POF - 1 m | IE-FPOZ2EE0001MSJOSJO-X | 1273430010 |
| SC-RJ zipcord patch cable - POF - 3 m | IE-FPOZ2EE0003MSJOSJO-X | 1273430030 |
| SC-RJ zipcord patch cable - POF - 5 m | IE-FPOZ2EE0005MSJOSJO-X | 1273430050 |
| SC-RJ zipcord patch cable - POF - 10 m | IE-FPOZ2EE0010MSJOSJO-X | 1273430100 |
| Other EtherNet/IP cables available on request | | |

### IP20 mounting rail outlets

| Description | Type | Order No. |
|---|---|---|
| RJ45 coupling | IE-TO-RJ45-C | 8946920000 |
| RJ45 Module TIA-A printing | IE-TO-RJ45-FJ-A | 8946930000 |
| RJ45 Module TIA-B printing | IE-TO-RJ45-FJ-B | 8946940000 |
| SC-RJ POF coupling / multimode | IE-TO-SCRJ-MM | 8946990000 |
| SC-RJ singlemode coupling | IE-TO-SCRJ-SM | 8947000000 |

### IP65 service interface

| Description | Type | Order No. |
|---|---|---|
| FrontCom® Micro RJ45 coupling | IE-FCM-RJ45-C | 1018790000 |
| FrontCom® Micro RJ45 module TIA-A printing | IE-FCM-RJ45-FJ-A | 1018810000 |
| FrontCom® Micro RJ45 module TIA-B printing | IE-FCM-RJ45-FJ-B | 1018820000 |

### IP67 flange data

| Description | Type | Order No. |
|---|---|---|
| Bayonet flange metal RJ45 coupling | IE-BS-V01M-RJ45-C | 1963470000 |
| Bayonet flange metal RJ45 module TIA-A printing | IE-BS-V01M-RJ45-FJ-A | 1963480000 |
| Bayonet flange plastic RJ45 coupling | IE-BS-V01P-RJ45-C | 1012370000 |
| Bayonet flange metal RJ45 module TIA-A printing | IE-BS-V01P-RJ45-FJ-A | 1012380000 |
| Bayonet flange metal SC-RJ POF / multimode | IE-BS-V01M-SCRJ-MM | 1221010000 |
| Bayonet flange metal SC-RJ singlemode | IE-BS-V01M-SCRJ-SM | 1221020000 |
| Other inserts can be found in Chapter J | | |

### IP67 data connectors

| Description | Type | Order No. |
|---|---|---|
| Bayonet plug metal RJ45 crimped | IE-PS-V01M-RJ45-TH | 1963140000 |
| Bayonet plug metal RJ45 tool-free | IE-PS-V01M-RJ45-FH | 1963120000 |
| Bayonet plug plastic RJ45 crimped | IE-PS-V01P-RJ45-TH | 1012470000 |
| Bayonet plug plastic RJ45 tool-free | IE-PS-V01P-RJ45-FH | 1012490000 |
| Bayonet plug metal SC-RJ use POF | IE-PS-V01M-2SC-POF | 1963280000 |

## IP67 assembled data cables

| Description | Type | Order No. |
|---|---|---|
| Bayonet metal RJ45 patch cable PUR 1 m | IE-C5ES8UG0010B41B41-E | 1066850000 |
| Bayonet metal RJ45 patch cable PUR 2 m | IE-C5ES8UG0020B41B41-E | 1066860000 |
| Bayonet metal RJ45 patch cable PUR 5 m | IE-C5ES8UG0050B41B41-E | 1066870000 |
| Bayonet metal RJ45 patch cable PUR 10 m | IE-C5ES8UG0100B41B41-E | 1066880000 |
| Bayonet plastic RJ45 patch cable PUR 1 m | IE-C5ES8UG0010P41P41-E | 1106010000 |
| Bayonet plastic RJ45 patch cable PUR 2 m | IE-C5ES8UG0020P41P41-E | 1106020000 |
| Bayonet plastic RJ45 patch cable PUR 5 m | IE-C5ES8UG0050P41P41-E | 1106030000 |
| Bayonet plastic RJ45 patch cable PUR 10 m | IE-C5ES8UG0100P41P41-E | 1106040000 |
| Other EtherNet/IP cables available on request | | |

## IP67 plug-in M12 connectors

M 12 components can be found in Chapter J

## IP65 connection components

| Description | Type | Order No. |
|---|---|---|
| Single junction box, plastic | IE-OP-V01P-1S | 1061830000 |
| Plastic cable coupling | IE-CC-V01P | 1061820000 |
| RJ45 module TIA-A printing | IE-BI-RJ45-FJ-A | 1962850000 |
| RJ45 module TIA-B printing | IE-BI-RJ45-FJ-B | 1963840000 |

## Raw cable copper cable

| Description | Type | Order No. |
|---|---|---|
| 100 m ring installation cable PVC Cat. 5 SF/UTP | IE-C5CS8VG-100 | 8813150000 |
| 500 m ring installation cable PVC Cat. 5 SF/UTP | IE-C5CS8VG-500 | 2763440000 |
| 100 m ring installation cable PUR Cat. 5 SF/UTP | IE-C5CS8UG-100 | 8813160000 |
| 500 m ring installation cable PUR Cat. 5 SF/UTP | IE-C5CS8UG-500 | 2762870000 |
| 100 m ring connection cable PVC Cat. 5 SF/UTP | IE-C5ES8VG-100 | 8813190000 |
| 500 m ring connection cable PVC Cat. 5 SF/UTP | IE-C5ES8VG-500 | 2763510000 |
| 100 m ring connection cable PUR Cat. 5 SF/UTP | IE-C5ES8UG-100 | 8813200000 |
| 500 m ring connection cable PUR Cat. 5 SF/UTP | IE-C5ES8UG-500 | 2763500000 |
| Other EtherNet/IP cables available on request | | |

## Raw cable fibre-optic cable

| Description | Type | Order No. |
|---|---|---|
| 500 m ring POF breakout cable 2X980/1000 µm TPE | IE-FPOD2UG-500 | 2763640000 |
| 500 m ring POF mini breakout cable 2X980/1000 µm PE | IE-FPOB2EG-500 | 2781950000 |

# Single Pair Ethernet


| | | |
|---|---|---|
| **Single Pair Ethernet** | Overview | K.2 |
| | Assembled cables IP20 | K.8 |
| | Assembled cables IP67 | K.9 |
| | PCB components & field attachable components | K.11 |

# Single Pair Ethernet

## The network infrastructure for Industrial IIoT

In the factory of the future, machines and systems will be connected to each other consistently via a data infrastructure. These cyber-physical systems can act independently in the Industrial Internet of Things (IIoT), communicate in real time, and control production processes. In order to enable this, a continuous network with high-performance data connections from the sensor to the cloud is required. This pushes conventional Ethernet systems to their limits.

Single Pair Ethernet (SPE) facilitates the extension of the Ethernet to the sensor. It is compact, flexible, and enables high ranges. This means that data connections are achievable in situations where conventional Ethernet systems have reached their limits. SPE provides for the extension of existing installations and supports consistent communication based on the Ethernet protocol. Indeed, SPE is considered by Weidmuller as the missing component needed to close the current gap in the supply of standard Ethernet at field level.

SPE runs at the same transmission speeds as conventional Ethernet but with simplified 2-wire cabling technology and data lines up to 1,000 m in length. Together with other new technologies such as TSN, OPC-UA, or 5G, SPE enables both continuous IP communication between the server and the cloud, as well as supplying up to 60 Watts of power in complex IIoT solutions through PoDL (Power over Data Line).

# The new standard for high demands
## SPE connectors for the industry

SPE connections can transfer data and power using only one twin wire. This enables both end-to-end IP communication between server and cloud, as well as power supply in complex IIoT solutions. SPE connectors therefore are particularly efficient and future-oriented.

**The market requirements for data connectors in the field level are:**
- Smallest, most compact design possible for implementing IIoT devices
- High robustness for use in industrial environments
- Easy to connect for safe, fast installation
- Future-proof design through international standards

**Advantages of SPE connectors at a glance:**

**Miniaturisation**

**Industrial suitability**

**Simplicity**

**Future-proof**

# Particularly compact

## Miniaturisation of SPE connectors according to IEC 63171-2

Weidmuller has been developing user-friendly connectors for industrial use, according to IEC63171-2. With a pitch of 7.62mm the compact connector system saves up to 50% space in comparison to RJ45 interfaces. The vertical arrangement of the two contacts allows a very high packing density. This enables device manufacturers to save valuable space on the PCB and to build smaller devices. This reduces port costs in device construction and effectively saves space in the control cabinet.

**Small mating face**
- Currently the smallest mating face according to IEC 63171 on the market

**High packing density**
- Double the packing density compared to RJ45 connectors
- Doubling of the interfaces with the same housing contour
- Only 20% of the volume of an RJ45 jack
- Minimum space requirement in the device

**Easy IP67-integration**
- Can be integrated into standard M8 housings and connectors as with I/O-Link or PROFINET
- M8 connectors with male and female contacts available
- Front and rear panel mounting with male and female contacts supported
- Simple integration in M8 sensors
- Inverse M8 system possible

# Made for highest demands

## The industrial suitability of SPE connectors

Originally developed for automotive applications, the aim of single pair ethernet technology was to realise the most efficient infrastructure capable of delivering high performance with as little cabling as possible. There are similar expectations within industry applications and building automation where the number of intelligent end devices in the plant is increasing but the amount of available space is not. Weidmuller SPE connector solutions deliver long cable lengths, a compact design that is simple, robust and vibration-proof, as well as being insensitive to electromagnetic influences.

**Mechanical robustness**

- Robust metal housing with metal snap-in hooks
- Safe industrial double contacting compared to single-sided contacting RJ45
- Shock resistant and vibration resistant according to IEC 60068
- Stable latching with lateral forces

**EMC Compatibility**

- Coupling attenuation at 600 MHz according to IEEE 802.3
- Additional burst test according to IEC 61000-6-2
- Optimum shield connection on the PCB due to four symmetrical legs

**Industrial suitability**

- PCB connectors for environments up to pollution degree 2
- Impulse voltage strength of 2.25 kV according to IEEE 802.3
- Optimum contact distance for 100 Ohm systems

# Easy to use
## The simplicity of SPE connectors

Ethernet technology is too complex for many industrial applications. SPE components are clearly superior due to their simplicity. Compared to four-pair Ethernet, installation is less difficult and allows a significant reduction in space and weight. SPE connectors also enable robust cabling in a short time. At the same time, they offer extended cable lengths in an extremely compact design.

**Proven locking mechanism**
- Industry standard plugs and sockets with metal Snap-in hooks locking
- Known locking and unlocking mechanism as for RJ45 connectors
- High holding force (> 50 N)

**Tool-free installation**
- Well proven IDC connection technology
- Simple assembly due to a two-part connector
- Clear colour coding to prevent miswiring
- Suitable for all commercially available SPE cables

**Easy integration**
- Trouble-fee integration into M8 housings and connectors
- Compatibility of IP20 and IP67 variants
- Optional use of the IP20 connector as service connector for devices with M8IP67 interfaces

# Ready for the challenges of tomorrow
## Future-proof SPE connectors

SPE is the next milestone in network technology, as it enables continuous intelligent networking across all levels. SPE is scalable, deterministic, and fully compatible, allowing all components to communicate with each other. As a comprehensive key technology for applications in the field of Industry 4.0 and IIoT, it will form the core of a wide range of industrial applications in the future.

**Extensive support**
The SPE product family is already supported by several well-known connector manufacturers, which have joined together to form the Single Pair Ethernet System Alliance. This collaboration, with leading technology companies from a wide range of markets and application areas, means that the level of combined technological competence will result in unprecedented and lasting benefits for all users.

Single Pair Ethernet System Alliance

IEEE

IEC

**Suitable for low to high transmission rates**
With SPE components, only a compact IEC standard interface is required to connect a sensor to the cloud via the data centre. The interface is suitable for various Ethernet applications with transfer rates from 10 Mbit/s to 1 Gbit/s. Simulations confirm a bandwidth of up to 2.5 GHz – this corresponds to the new Ethernet transmission standard IEEE 802.3ch. which is currently under development for up to 10 Gbit/s.

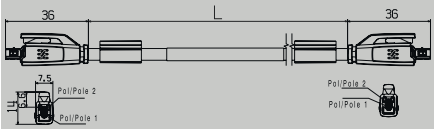
**Increase of the port density**
In the near future, a new and innovative four-chamber system will be available that will enable the port density for IP20 and IP67 systems to be quadrupled. This means that SPE technology can also be used in standard M12 connectors.
It will also allow extremely compact IIoT devices with 32 ports to be implemented, and can be integrated into existing housing structures.

## Assembled cable
## IP20

## Assembled cable
## IP20

### Plug - Plug

**Socket contact / Socket contact**




### Technical data

| | |
|---|---|
| Product type | Patch cable |
| Category | |
| Shielding | STP |
| Ambient temperature (operational) | -40...80 °C |
| Rated voltage (DC) | 60 V |
| Rated current | 3.5 A |
| PoE / PoE+ | PoDL acc. to IEEE 802.3bu / cg |
| Transmission rate | 10/100 MBit/s, 1000 Mbit/s, 1000 MBit/s |
| Dielectric strength, contact / contact | 1000 V DC |
| Dielectric strength, contact / shield | 2250 V DC |
| Characteristic impedance | 100 ± 15 Ω at 20 MHz |
| Capacity at 800 Hz | 1.6 nF/km |
| Coupling attenuation 1 to 600 MHz | Type I |
| Coupling attenuation up to 1000 MHz | |
| Test voltage: wire-wire-shield | 1 kV DC, 1 min |
| Resistance differential | 2 % |
| Transmission rate | 10/100 MBit/s, 1000 Mbit/s, 1000 MBit/s |
| Version connector left | SPE plug (IEC 63171-2) - IP20 socket contact straight |
| Version connector right | SPE plug (IEC 63171-2) - IP20 socket contact straight |
| Number of wires | 2 |
| Colour coding | white / blue |
| Complete shielding / Overlap of shielding braid | Shielding braid made from copper wiring / 80 % |
| Insulation | PE |
| Insulation diameter | 1.65 mm |
| Sheath diameter, min. / max. | 4.9 / 5.3 mm |
| Cross-section / Strands | 2*AWG 22 / 7 |
| Shielding | STP |
| Material sheath | PVC |
| Colour | black |
| Halogen | Yes |
| UV-resistant | Complies with UL 1581 Sec. 1200 |
| Connector standard | IEC 63171-2 |
| **Note** | |

### Ordering data

| | Type | Qty. | Order No. |
|---|---|---|---|
| 1.0 m | IE-S1DS2VE0010T01T01-E | 1 | **2725850010** |
| 2.0 m | IE-S1DS2VE0020T01T01-E | 1 | **2725850020** |
| 3.0 m | IE-S1DS2VE0030T01T01-E | 1 | **2725850030** |
| 5.0 m | IE-S1DS2VE0050T01T01-E | 1 | **2725850050** |
| **Note** | | | |

### Accessories

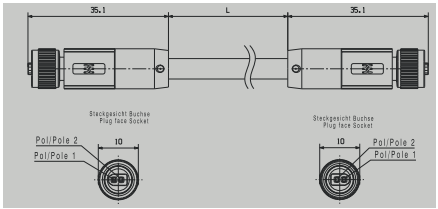
| Type | Qty. | Order No. |
|---|---|---|
| | | |

| **Note** |
|---|

## Assembled cable
## IP67

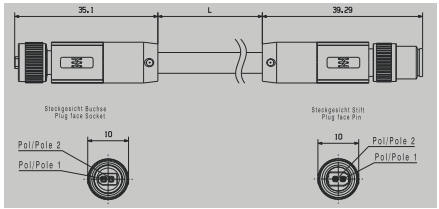
### M8 / M8

**Socket contact / Socket contact**




### M8 / M8

**Socket contact / Pin contact**




## Technical data

| | | |
|---|---|---|
| Product type | Patch cable | Patch cable |
| Category | | |
| Shielding | STP | STP |
| Ambient temperature (operational) | -40...85 °C | -40...85 °C |
| Rated voltage (DC) | 60 V | 60 V |
| Rated current | 3.5 A | 3.5 A |
| PoE / PoE+ | PoDL acc. to IEEE 802.3bu / cg | PoDL acc. to IEEE 802.3bu / cg |
| Transmission rate | 10/100 MBit/s, 1000 MBit/s | 10/100 MBit/s, 1000 MBit/s |
| Dielectric strength, contact / contact | 1000 V DC | 1000 V DC |
| Dielectric strength, contact / shield | 2250 V DC | 2250 V DC |
| Current-carrying capacity | 3.5A @ 0°C | 3.5A @ 0°C |
| Characteristic impedance | 100 ± 15 Ω at 20 MHz | 100 ± 15 Ω at 20 MHz |
| Capacity at 800 Hz | 1.6 nF/km | 1.6 nF/km |
| Coupling attenuation 1 to 600 MHz | Type I | Type I |
| Coupling attenuation up to 1000 MHz | | |
| Test voltage: wire-wire-shield | 1 kV DC, 1 min | 1 kV DC, 1 min |
| Resistance differential | 2 % | 2 % |
| Transmission rate | 10/100 MBit/s, 1000 MBit/s | 10/100 MBit/s, 1000 MBit/s |
| Version connector left | M8 SPE ( IEC63171-5) - IP67 socket contact straight | M8 SPE ( IEC63171-5) - IP67 socket contact straight |
| Version connector right | M8 SPE ( IEC63171-5) - IP67 socket contact straight | M8 SPE ( IEC63171-5) - IP67 pin contact straight |
| Number of wires | 2 | 2 |
| Colour coding | white / blue | white / blue |
| Complete shielding / Overlap of shielding braid | Shielding braid made from copper wiring / 80 % | Shielding braid made from copper wiring / 80 % |
| Insulation | PE | PE |
| Insulation diameter | 1.65 mm | 1.65 mm |
| Sheath diameter, min. / max. | 4.9 / 5.3 mm | 4.9 / 5.3 mm |
| Cross-section / Strands | 2*AWG 22 / 7 | 2*AWG 22 / 7 |
| Shielding | STP | STP |
| Material sheath | PVC | PVC |
| Colour | black | black |
| Halogen | Yes | Yes |
| UV-resistant | Complies with UL 1581 Sec. 1200 | Complies with UL 1581 Sec. 1200 |
| Connector standard | IEC 63171-5 | IEC 63171-5 |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. |
|---|---|---|---|
| 2.0 m | IE-S1DS2VE0020TM1TM1-E | 1 | 2726050020 |
| **Note** | | | |

| Type | Qty. | Order No. |
|---|---|---|
| IE-S1DS2VE0020TM1TM2-E | 1 | 2726060020 |

## Accessories

| Type | Qty. | Order No. |
|---|---|---|
| | | |

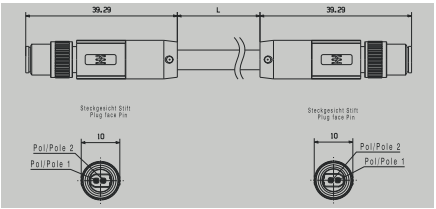
| Type | Qty. | Order No. |
|---|---|---|
| | | |

**Note**

## Assembled cable
## IP67

### M8 / M8

**Pin contact / Pin contact**




## Technical data

| | |
|---|---|
| Product type | Patch cable |
| Category | |
| Shielding | STP |
| Ambient temperature (operational) | -40...85 °C |
| Rated voltage (DC) | 60 V |
| Rated current | 3.5 A |
| PoE / PoE+ | PoDL acc. to IEEE 802.3bu / cg |
| Transmission rate | 10/100 MBit/s, 1000 MBit/s |
| Dielectric strength, contact / contact | 1000 V DC |
| Dielectric strength, contact / shield | 2250 V DC |
| Current-carrying capacity | 3.5A @ 0°C |
| Characteristic impedance | 100 ± 15 Ω at 20 MHz |
| Capacity at 800 Hz | 1.6 nF/km |
| Coupling attenuation 1 to 600 MHz | Type I |
| Coupling attenuation up to 1000 MHz | |
| Test voltage: wire-wire-shield | 1 kV DC, 1 min |
| Resistance differential | 2 % |
| Transmission rate | 10/100 MBit/s, 1000 MBit/s |
| Version connector left | M8 SPE ( IEC63171-5) - IP67 pin contact straight |
| Version connector right | M8 SPE ( IEC63171-5) - IP67 pin contact straight |
| Number of wires | 2 |
| Colour coding | white / blue |
| Complete shielding / Overlap of shielding braid | Shielding braid made from copper wiring / 80 % |
| Insulation | PE |
| Insulation diameter | 1.65 mm |
| Sheath diameter, min. / max. | 4.9 / 5.3 mm |
| Cross-section / Strands | 2*AWG 22 / 7 |
| Shielding | STP |
| Material sheath | PVC |
| Colour | black |
| Halogen | Yes |
| UV-resistant | Complies with UL 1581 Sec. 1200 |
| Connector standard | IEC 63171-5 |

**Note**

## Ordering data

| | Type | Qty. | Order No. |
|---|---|---|---|
| 2.0 m | IE-S1DS2VE0020TM2TM2-E | 1 | 2726070020 |

**Note**

## Accessories

| Type | Qty. | Order No. |
|---|---|---|
| | | |

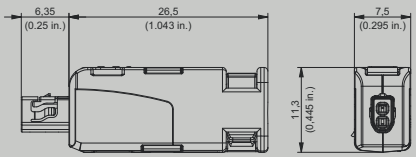
**Note**

## Plug

- Only one pair of cables for data and power
- Multi-port support
- IP20

## Field-terminated plug IP20

**Socket contact**




## Technical data

| | |
|---|---|
| Category | |
| Protection degree | IP20 |
| Ambient temperature (operational) | -40...85 °C |
| Plugging cycles | 750 |
| Housing main material | zinc diecast nickel-plated |
| Contact material | Bronze tin-plated |
| Contact surface | |
| Rated voltage | |
| Insulation cross-section, min. | 0.85 mm |
| Insulation cross-section, max. | 1.6 mm |
| Insulation strength | ≥ 500 MΩ |
| PoE / PoE+ | PoDL acc. to IEEE 802.3bu / cg |
| Dielectric strength, contact / contact | ≥ 1000 V DC |
| Dielectric strength, contact / shield | ≥ 1500 V DC |
| Connector standard | IEC 63171-2 |
| UL 94 flammability rating | V-0 |

**Note**

## Preliminary technical data!

## Ordering data

| Plug | | |
|---|---|---|
| field-terminated plug | | |

| Type | Qty. | Order No. |
|---|---|---|
| IE-PS-SP0-S-FH-180 | 1 | 2726040000 |

**Note**

## Accessories

| Type | Qty. | Order No. |
|---|---|---|
| | | |

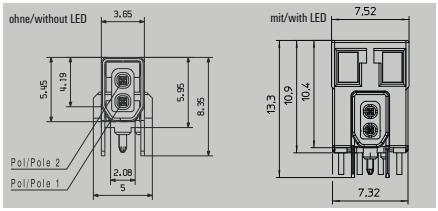
**Note**

## Plug

- Only one pair of cables for data and power
- Multi-port support
- IP20

## PCB connector, 90°

**Pin contact**




### Technical data

| | |
|---|---|
| Category | |
| Protection degree | IP20 |
| Ambient temperature (operational) | -40...85 °C |
| Transmission rate | 10/100 MBit/s, 1000 MBit/s |
| Type of connection | Solder connection, Male contact |
| Outgoing elbow | 90° |
| Number of poles | 2 |
| Mounting onto the PCB | THT/THR solder connection |
| Plugging cycles | 750 |
| Contact material | Cu |
| Contact surface | Ni/Au |
| Rated voltage | 72 V |
| Insulation strength | ≥ 500 MΩ |
| PoE / PoE+ | PoDL acc. to IEEE 802.3bu / cg |
| Dielectric strength, contact / contact | 1000 V DC |
| Dielectric strength, contact / shield | 2250 V DC |
| Connector standard | IEC 63171-2, ISO/IEC 11801-1 |
| UL 94 flammability rating | V-0 |
| **Note** | |

### Ordering data

| Plug | Qty. | Order No. |
|---|---|---|
| PCB connector, IP20, pin contact | 100 | **2726010000** |
| PCB connector, IP20, pin contact incl. LEDs | 100 | **2795120000** |

**Note**

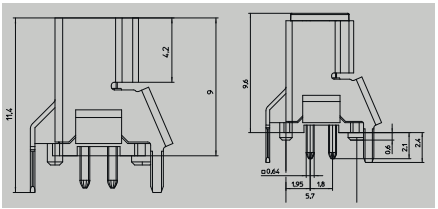
### Accessories

| Type | Qty. | Order No. |
|---|---|---|

**Note**

## PCB connector, 180°

**Pin contact**




### Preliminary technical data!

| | |
|---|---|
| Category | |
| Protection degree | IP20 |
| Ambient temperature (operational) | -40...85 °C |
| Transmission rate | 10/100 MBit/s, 1000 MBit/s |
| Type of connection | Solder connection, Male contact |
| Outgoing elbow | 180° |
| Number of poles | 2 |
| Mounting onto the PCB | THT/THR solder connection |
| Plugging cycles | 750 |
| Contact material | Cu |
| Contact surface | Ni/Au |
| Rated voltage | 72 V |
| Insulation strength | ≥ 500 MΩ |
| PoE / PoE+ | PoDL acc. to IEEE 802.3bu / cg |
| Dielectric strength, contact / contact | 1000 V DC |
| Dielectric strength, contact / shield | 2250 V DC |
| Connector standard | IEC 63171-2 |
| UL 94 flammability rating | V-0 |
| **Note** | |

### Ordering data

| Type | Qty. | Order No. |
|---|---|---|
| IE-PCB-SP0-P-180V-THR | 100 | **2795170000** |

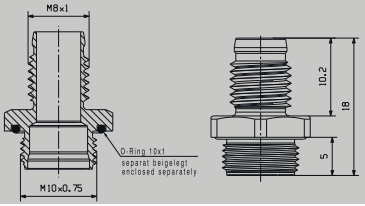
### Accessories

| Type | Qty. | Order No. |
|---|---|---|

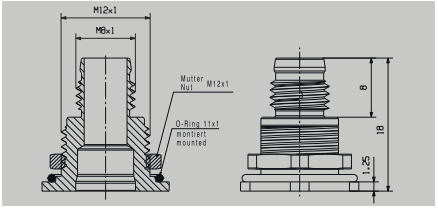
**Note**

## Empty housing

## M8 front wall mounting




## M8 rear wall mounting




## Technical data

| | | |
|---|---|---|
| Category | | |
| Ambient temperature (operational) | -40...85 °C | 40...85 °C |
| Protection degree | IP67 | IP67 |
| Housing main material | Brass, nickel-plated | Brass, nickel-plated |
| Seal material | FKM | FKM |
| Configuration | Frontpanel mounting | Backpanel mounting |
| Type of mounting | Screw mounting | Screw mounting |
| Connection thread | M10 x 0.75 | M10 x 0.75 |
| Connector standard | IEC 61076-2-104 | IEC 61076-2-104 |
| Tightening torque fixing nut | 2.5 Nm | 2.5 Nm |
| **Note** | | |

## Ordering data

| Type | Qty. | Order No. |
|---|---|---|
| IE-BHD-SPE-M8-OT-FP | 10 | **2726020000** |
| Inserts must be ordered separately. | | |

| Type | Qty. | Order No. |
|---|---|---|
| IE-BHD-SPE-M8-OT-BP | 20 | **2726030000** |
| Inserts must be ordered separately. | | |

## Accessories

| Type | Qty. | Order No. |
|---|---|---|
| Fastening nut | | |
| IE-BHD-SPE-FP-CN-M10X0.75 | 10 | **2739640000** |

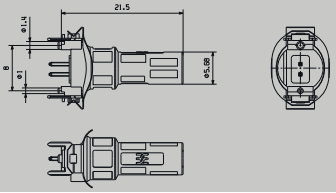
| Type | Qty. | Order No. |
|---|---|---|
| IE-BHD-SPE-FP-CN-M10X0.75 | 10 | **2739640000** |

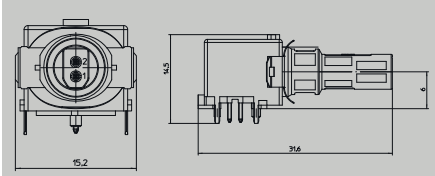
**Note**

## PCB insert

## M8 insert 180° pin contacts

## M8 insert 90° pin contacts




## Technical data

| | |
|---|---|
| Category | T1-B |
| Ambient temperature (operational) | -40...85 °C |
| Protection degree | |
| Pollution severity | 2 |
| Connection thread | M8 |
| Number of poles | 2 |
| Type of connection | Solder connection, Male contact |
| Outgoing elbow | 180° |
| Contact material | Copper alloy |
| Contact surface | Ni/Au |
| Contact carrier material | LCP |
| Operational voltage range | ≤ 50 V AC, ≤ 60 V DC |
| Insulation strength | ≥ 500 MΩ |
| Dielectric strength, contact / contact | 1000 V DC |
| Dielectric strength, contact / shield | 2250 V DC |
| Connector standard | IEC 63171-5 |
| UL 94 flammability rating | V-0 |

**Note**

## Preliminary technical data!

| | |
|---|---|
| | T1-B |
| | -40...85 °C |
| | |
| | 2 |
| | M8 |
| | 2 |
| | Solder connection, Male contact |
| | 180° |
| | Copper alloy |
| | Ni/Au |
| | LCP |
| | ≤ 50 V AC, ≤ 60 V DC |
| | ≥ 500 MΩ |
| | 1000 V DC |
| | 2250 V DC |
| | IEC 63171-5 |
| | V-0 |

## Preliminary technical data!

| | |
|---|---|
| | T1-B |
| | -40...85 °C |
| | |
| | 2 |
| | M8 |
| | 2 |
| | Solder connection, Male contact |
| | 90° |
| | Copper alloy |
| | Ni/Au |
| | LCP |
| | ≤ 50 V AC, ≤ 60 V DC |
| | ≥ 500 MΩ |
| | 1000 V DC |
| | 2250 V DC |
| | IEC 63171-5 |
| | V-0 |

## Ordering data

| | Type | Qty. | Order No. |
|---|---|---|---|
| THR | IE-PCB-SPM-P-180-THR | 100 | **2735920000** |
| SMD | IE-PCB-SPM-P-180-SMD | 100 | **2795110000** |

**Note**

| Type | Qty. | Order No. |
|---|---|---|
| IE-PCB-SPM-P-90-THR | 100 | **2795100000** |
| | | |

## Accessories

| Type | Qty. | Order No. |
|---|---|---|
| | | |

| Type | Qty. | Order No. |
|---|---|---|
| | | |

**Note**

# IP20 plug-in connectors and mounting rail outlets
## Overview



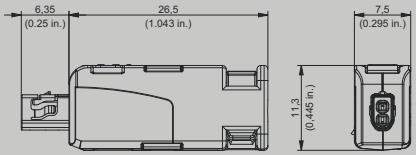

| | | | |
|---|---|---|---|
| **IP20 plug-in connectors and mounting rail outlets** | IP20 plug-in connectors | | |
| | | Single Pair Ethernet (SPE) plug | L.2 |
| | | RJ45 plug | L.4 |
| | | FO Connector | L.10 |
| | | RJ45 keystone | L.11 |
| | IP20 mounting rail outlets | | |
| | | RJ45 | L.13 |
| | | USB | L.16 |
| | | FO | L.17 |
| | | Socket adapter | L.19 |

## Single Pair Ethernet (SPE) plug

- Only one pair of cables for data and power
- Multi-port support
- IP20

## Field-terminated plug IP20

**Socket contact**




## Technical data

## preliminary technical data!

| | |
|---|---|
| Category | |
| Protection degree | IP20 |
| Ambient temperature (operational) | -40...85 °C |
| Plugging cycles | 750 |
| Housing main material | zinc diecast nickel-plated |
| Contact material | Bronze tin-plated |
| Contact surface | |
| Rated voltage | |
| Insulation cross-section, min. | 0.85 mm |
| Insulation cross-section, max. | 1.6 mm |
| Insulation strength | ≥ 500 MΩ |
| PoE / PoE+ | PoDL acc. to IEEE 802.3bu / cg |
| Dielectric strength, contact / contact | ≥ 1000 V DC |
| Dielectric strength, contact / shield | ≥ 1500 V DC |
| Connector standard | IEC 63171-2 |
| UL 94 flammability rating | V-0 |

**Note**

## Ordering data

| Plug | Type | Qty. | Order No. |
|---|---|---|---|
| field-terminated plug | IE-PS-SP0-S-FH-180 | 1 | **2726040000** |

**Note**

## Accessories

| Type | Qty. | Order No. |
|---|---|---|
| | | |

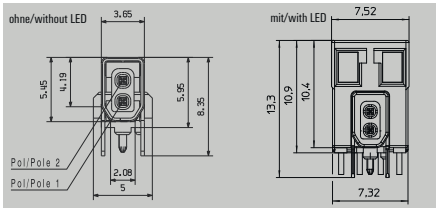
**Note**

## Single Pair Ethernet (SPE) plug

- Only one pair of cables for data and power
- Multi-port support
- IP20

## PCB connector, 90°

**Pin contact**




### Technical data

| | |
|---|---|
| Category | |
| Protection degree | IP20 |
| Ambient temperature (operational) | -40...85 °C |
| Transmission rate | 10/100 MBit/s, 1000 MBit/s |
| Type of connection | Solder connection, Male contact |
| Outgoing elbow | 90° |
| Number of poles | 2 |
| Mounting onto the PCB | THT/THR solder connection |
| Plugging cycles | 750 |
| Contact material | Cu |
| Contact surface | Ni/Au |
| Rated voltage | 72 V |
| Insulation strength | ≥ 500 MΩ |
| PoE / PoE+ | PoDL acc. to IEEE 802.3bu / cg |
| Dielectric strength, contact / contact | 1000 V DC |
| Dielectric strength, contact / shield | 2250 V DC |
| Connector standard | IEC 63171-2, ISO/IEC 11801-1 |
| UL 94 flammability rating | V-0 |

**Note**

### preliminary technical data!

### Ordering data

| Plug | Type | Qty. | Order No. |
|---|---|---|---|
| PCB connector, IP20, pin contact | IE-PCB-SPO-P-90V-THR | 100 | **2726010000** |
| PCB connector, IP20, pin contact incl. LEDs | IE-PCB-SPO-P-90V-THR-YG/YG | 100 | **2795120000** |

**Note**

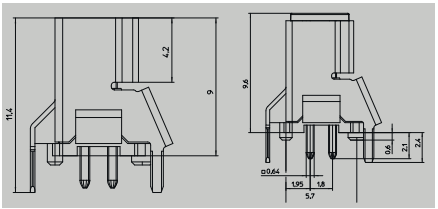
### Accessories

| Type | Qty. | Order No. |
|---|---|---|
| | | |

**Note**

## PCB connector, 180°

**Pin contact**




### preliminary technical data!

| | |
|---|---|
| IP20 | |
| -40...85 °C | |
| 10/100 MBit/s, 1000 MBit/s | |
| Solder connection, Male contact | |
| 180° | |
| 2 | |
| THT/THR solder connection | |
| 750 | |
| Cu | |
| Ni/Au | |
| 72 V | |
| ≥ 500 MΩ | |
| PoDL acc. to IEEE 802.3bu / cg | |
| 1000 V DC | |
| 2250 V DC | |
| IEC 63171-2 | |
| V-0 | |

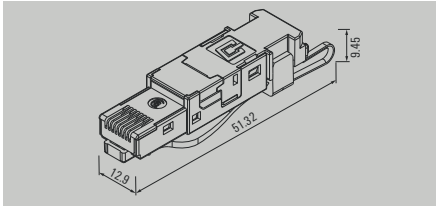
| Type | Qty. | Order No. |
|---|---|---|
| IE-PCB-SPO-P-180V-THR | 100 | **2795170000** |

| Type | Qty. | Order No. |
|---|---|---|
| | | |

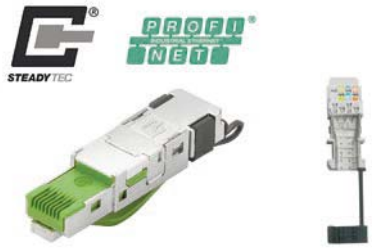
## RJ45 plug, tool free

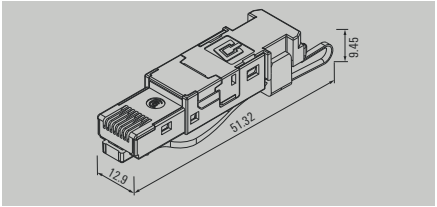
- Cat. $6_A$(8 wires)/cat. 5 (4 wires) for PROFINET
- Multi-port support
- IP20

### 8-wire




### 4-wire for PROFINET






## Technical data

| | | |
|---|---|---|
| Category | Cat.$6_A$ / Class $E_A$ (ISO/IEC 11801 2010) | Cat.5 (ISO/IEC 11801) |
| Protection degree | IP20 | IP20 |
| Housing main material | Zinc diecast | Zinc diecast |
| Connection diameter, flexible, min. / max. | 0.48 mm / 0.76 mm | 0.48 mm / 0.76 mm |
| Connection cross-section, flexible, min. / max. | AWG 26/7 / AWG 22/7 | AWG 26/7 / AWG 22/7 |
| Connection diameter, solid, min. / max. | 0.41 mm / 0.64 mm | 0.41 mm / 0.64 mm |
| Connection cross-section, solid, min. / max. | AWG 24/1 / AWG 22/1 | AWG 26/1 / AWG 22/1 |
| Wire connection cross-section, finely stranded | Approval of the cable by Weidmüller necessary | Approval of the cable by Weidmüller necessary |
| Insulation diameter, min. / max. | 0.85 mm / 1.6 mm | 0.85 mm / 1.6 mm |
| Sheath diameter, min. / max. | 5.5 mm / 8.5 mm | 5.5 mm / 8.5 mm |
| Contact surface | Gold over nickel | Gold over nickel |
| Shielding | 360° all-round enclosure | 360° all-round enclosure |
| Plugging cycles | 750 | 750 |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...70 °C |
| Contact resistance | ≤ 20 mΩ | ≤ 20 mΩ |
| Insulation strength | > 500 MΩ | > 500 MΩ |
| Dielectric strength, contact / contact | ≥ 1000 V DC | ≥ 1000 V DC |
| Dielectric strength, contact / shield | ≥ 1500 V DC | ≥ 1500 V DC |
| Connector standard | IEC 60603-7-51 | IEC 60603-7-51 |
| Current-carrying capacity at 50 °C | 1 A | 1 A |
| Speed | 10 GBit/s | 10 GBit/s |
| PoE / PoE+ | conforming to IEEE 802.3at | conforming to IEEE 802.3at |
| Approvals | CULUS | CULUS |
| **Note** | Approvals available on request | |

## Ordering data

| Plug | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| with tear-off flags: EIA / TIA T568-A/B / PROFINET | IE-PS-RJ45-FH-BK | 10 | 1963600000 | | | |
| with printing: PROFINET | | | | IE-PS-RJ45-FH-BK-P | 10 | 1132060000 |
| with printing: EIA / TIA T568-A | IE-PS-RJ45-FH-BK-A | 10 | 1132040000 | | | |
| with printing: EIA / TIA T568-B | IE-PS-RJ45-FH-BK-B | 10 | 1132050000 | | | |
| **Note** | | | | | | |

## Accessories

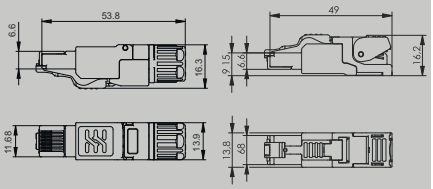
| Strain relief | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| green | IE-CR-IP20-RJ45-FH-GN | 10 | 1963100000 | IE-CR-IP20-RJ45-FH-GN | 10 | 1963100000 |
| grey | IE-CR-IP20-RJ45-FH-GY | 10 | 1963060000 | IE-CR-IP20-RJ45-FH-GY | 10 | 1963060000 |
| blue | IE-CR-IP20-RJ45-FH-BU | 10 | 1963080000 | IE-CR-IP20-RJ45-FH-BU | 10 | 1963080000 |
| orange | IE-CR-IP20-RJ45-FH-OG | 10 | 1963070000 | IE-CR-IP20-RJ45-FH-OG | 10 | 1963070000 |
| yellow | IE-CR-IP20-RJ45-FH-YE | 10 | 1963090000 | IE-CR-IP20-RJ45-FH-YE | 10 | 1963090000 |
| white | IE-CR-IP20-RJ45-FH-WH | 10 | 1963050000 | IE-CR-IP20-RJ45-FH-WH | 10 | 1963050000 |
| **Tools** | | | | | | |
| Optional pressing tool | PWZ RJ45 | 1 | 1118040000 | PWZ RJ45 | 1 | 1118040000 |

**Note**

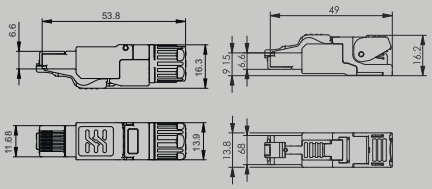
## RJ45 plug, straight, tool free

- Fieldattachable
- Cat. $6_A$ (8-wire)
- Multi-port-compatible
- IP 20

### 8-wire, insulation diameter 1.1 - 1.6 mm




### 8-wire, insulation diameter 0.85 - 1.1 mm




## Technical data

| | | |
|---|---|---|
| Category | Cat.$6_A$ / Class $E_A$ (ISO/IEC 11801 2010) | Cat.$6_A$ / Class $E_A$ (ISO/IEC 11801 2010) |
| Protection degree | IP20 | IP20 |
| Housing main material | Zinc diecast, nickel-plated | Zinc diecast, nickel-plated |
| Connection diameter, flexible, min. / max. | 0.46 mm / 0.76 mm | 0.46 mm / 0.61 mm |
| Connection cross-section, flexible, min. / max. | AWG 27 / AWG 22 | AWG 27 / AWG 24 |
| Connection diameter, solid, min. / max. | 0.51 mm / 0.64 mm | 0.41 mm / 0.51 mm |
| Connection cross-section, solid, min. / max. | AWG 24 / AWG 22 | AWG 26 / AWG 24 |
| Connection diameter, very finely stranded, min./max. | 0.61 mm / 0.78 mm / Approval of the cable by Weidmüller necessary | 0.51 mm / / Approval of the cable by Weidmüller necessary |
| Connection cross-section, very finely stranded, min./max. | AWG 24 / AWG 22 / Approval of the cable by Weidmüller necessary | AWG 26 / / Approval of the cable by Weidmüller necessary |
| Insulation diameter, min. / max. | 1.1 mm / 1.6 mm | 0.85 mm / 1.1 mm |
| Sheath diameter, min. / max. | 5 mm / 9 mm | 5 mm / 9 mm |
| Contact surface | Gold over nickel | Gold over nickel |
| Shielding | 360° all-round enclosure | 360° all-round enclosure |
| Plugging cycles | 750 | 750 |
| Ambient temperature (operational) | -40 °C...85 °C | -40 °C...85 °C |
| Contact resistance | ≤ 20 mΩ | ≤ 20 mΩ |
| Insulation strength | > 500 MΩ | > 500 MΩ |
| Dielectric strength, contact / contact | ≥ 1000 V DC | ≥ 1000 V DC |
| Dielectric strength, contact / shield | ≥ 1500 V DC | ≥ 1500 V DC |
| Connector standard | IEC 60603-7-51 | IEC 60603-7-51 |
| Current-carrying capacity at 50 °C | 1 A | 1 A |
| Speed | 10 GBit | 10 GBit |
| PoE / PoE+ | conforming to IEEE 802.3at | conforming to IEEE 802.3at |
| Approvals | CULUS; DNVGL | CULUS; DNVGL |
| **Note** | | |

## Ordering data

| **Plug with latching strain relief** | **Type** | **Qty.** | **Order No.** | **Type** | **Qty.** | **Order No.** |
|---|---|---|---|---|---|---|
| with printing: EIA / TIA T568-A | IE-PS-RJ45-FH-180-A-1.6 | 1 | **1992820000** | IE-PS-RJ45-FH-180-A-1.1 | 1 | **1992850000** |
| with printing: EIA / TIA T568-B | IE-PS-RJ45-FH-180-B-1.6 | 1 | **1992830000** | IE-PS-RJ45-FH-180-B-1.1 | 1 | **1992860000** |
| **Plug with cable gland** | | | | | | |
| with printing: EIA / TIA T568-A | IE-PS-RJ45-FH-180-A-1.6-CG | 1 | **2703390000** | IE-PS-RJ45-FH-180-A-1.1-CG | 1 | **2703440000** |
| with printing: EIA / TIA T568-B | IE-PS-RJ45-FH-180-B-1.6-CG | 1 | **2703410000** | IE-PS-RJ45-FH-180-B-1.1-CG | 1 | **2703460000** |
| **Note** | | | | | | |

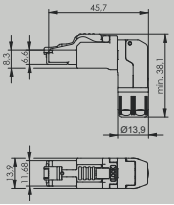
## Accessories

| **Substitute wire manager** | **Type** | **Qty.** | **Order No.** | **Type** | **Qty.** | **Order No.** |
|---|---|---|---|---|---|---|
| TIA-A, insulation diameter 1.1...1.6 mm | IE-PI-RJ45-FH-A-1.6 | 30 | **1992880000** | | | |
| TIA-B, insulation diameter 1.1...1.6 mm | IE-PI-RJ45-FH-B-1.6 | 30 | **1992900000** | | | |
| TIA-A, insulation diameter 0.85...1 mm | | | | IE-PI-RJ45-FH-A-1.1 | 30 | **1992920000** |
| TIA-B, insulation diameter 0.85...1 mm | | | | IE-PI-RJ45-FH-B-1.1 | 30 | **1992930000** |
| **Tools** | | | | | | |
| Optional pressing tool | PWZ RJ45 | 1 | **1118040000** | PWZ RJ45 | 1 | **1118040000** |
| **Note** | | | | | | |

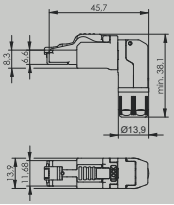
## RJ45 plug, angled, tool free

- Assembled
- Cat. $6_A$ (8-wire)
- Compatible with multiple ports
- IP20

### 8-wire, insulation diameter 1.1 - 1.6 mm




### 8-wire, insulation diameter 0.85 - 1.1 mm




## Technical data

| | | |
|---|---|---|
| Category | Cat.$6_A$ / Class $E_A$ (ISO/IEC 11801 2010) | Cat.$6_A$ / Class $E_A$ (ISO/IEC 11801 2010) |
| Protection degree | IP20 | IP20 |
| Housing main material | Zinc diecast, nickel-plated | Zinc diecast, nickel-plated |
| Connection diameter, flexible, min. / max. | 0.46 mm / 0.76 mm | 0.46 mm / 0.61 mm |
| Connection cross-section, flexible, min. / max. | AWG 27 / AWG 22 | AWG 27 / AWG 24 |
| Connection diameter, solid, min. / max. | 0.51 mm / 0.64 mm | 0.41 mm / 0.51 mm |
| Connection cross-section, solid, min. / max. | AWG 24 / AWG 22 | AWG 26 / AWG 24 |
| Connection diameter, very finely stranded, min./max. | 0.61 mm / 0.78 mm / Approval of the cable by Weidmüller necessary | 0.51 mm / / Approval of the cable by Weidmüller necessary |
| Connection cross-section, very finely stranded, min./max. | AWG 24 / AWG 22 / Approval of the cable by Weidmüller necessary | AWG 26 / / Approval of the cable by Weidmüller necessary |
| Insulation diameter, min. / max. | 1.1 mm / 1.6 mm | 0.85 mm / 1.1 mm |
| Sheath diameter, min. / max. | 5 mm / 9 mm | 5 mm / 9 mm |
| Contact surface | Gold over nickel | Gold over nickel |
| Shielding | 360° all-round enclosure | 360° all-round enclosure |
| Plugging cycles | 750 | 750 |
| Ambient temperature (operational) | -40 °C...85 °C | -40 °C...85 °C |
| Contact resistance | ≤ 20 mΩ | ≤ 20 mΩ |
| Insulation strength | > 500 MΩ | > 500 MΩ |
| Dielectric strength, contact / contact | ≥ 1000 V DC | ≥ 1000 V DC |
| Dielectric strength, contact / shield | ≥ 1500 V DC | ≥ 1500 V DC |
| Connector standard | IEC 60603-7-51 | IEC 60603-7-51 |
| Current-carrying capacity at 50 °C | 1 A | 1 A |
| Speed | 10 GBit | 10 GBit |
| PoE / PoE+ | conforming to IEEE 802.3at | conforming to IEEE 802.3at |
| Approvals | CULUS; DNVGL | CULUS; DNVGL |
| **Note** | | |

## Ordering data

| **Plug** | **Type** | **Qty.** | **Order No.** |
|---|---|---|---|
| with printing: EIA / TIA T568-A | IE-PS-RJ45-FH-90-A-1.6 | 1 | **1992870000** |
| with printing: EIA / TIA T568-B | IE-PS-RJ45-FH-90-B-1.6 | 1 | **1992890000** |
| **Note** | With pre-installed dust cap | | |

| **Type** | **Qty.** | **Order No.** |
|---|---|---|
| IE-PS-RJ45-FH-90-A-1.1 | 10 | **1518080000** |
| IE-PS-RJ45-FH-90-B-1.1 | 1 | **1518090000** |
| With pre-installed dust cap | | |

## Accessories

| **Substitute wire manager** | **Type** | **Qty.** | **Order No.** |
|---|---|---|---|
| TIA-A, insulation diameter 1.1...1.6 mm | IE-PI-RJ45-FH-A-1.6 | 30 | **1992880000** |
| TIA-B, insulation diameter 1.1...1.6 mm | IE-PI-RJ45-FH-B-1.6 | 30 | **1992900000** |
| TIA-A, insulation diameter 0.85...1 mm | | | |
| TIA-B, insulation diameter 0.85...1 mm | | | |
| **Tools** | | | |
| Optional pressing tool | PWZ RJ45 | 1 | **1118040000** |

| **Type** | **Qty.** | **Order No.** |
|---|---|---|
| | | |
| | | |
| IE-PI-RJ45-FH-A-1.1 | 30 | **1992920000** |
| IE-PI-RJ45-FH-B-1.1 | 30 | **1992930000** |
| | | |
| PWZ RJ45 | 1 | **1118040000** |

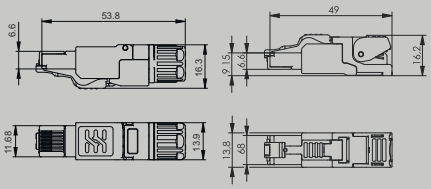
**Note**

## RJ45 plug, straight and angled, tool free

- Fieldattachable
- Cat. 5 (4-wire) for PROFINET
- Multi-port-compatible
- IP20

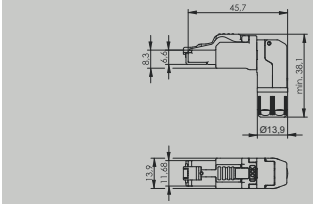
### 4-wire for PROFINET

**straight**




### 4-wire for PROFINET

**angled**




## Technical data

| | | |
|---|---|---|
| Category | Cat.5 (ISO/IEC 11801) | Cat.5 (ISO/IEC 11801) |
| Protection degree | IP20 | IP20 |
| Housing main material | Zinc diecast, nickel-plated | Zinc diecast, nickel-plated |
| Connection diameter, flexible, min. / max. | 0.46 mm / 0.76 mm | 0.46 mm / 0.76 mm |
| Connection cross-section, flexible, min. / max. | AWG 27 / AWG 22 | AWG 27 / AWG 22 |
| Connection diameter, solid, min. / max. | 0.51 mm / 0.64 mm | 0.51 mm / 0.64 mm |
| Connection cross-section, solid, min. / max. | AWG 24 / AWG 22 | AWG 24 / AWG 22 |
| Connection diameter, very finely stranded, min./max. | 0.61 mm / 0.78 mm / Approval of the cable by Weidmüller necessary | 0.61 mm / 0.78 mm / Approval of the cable by Weidmüller necessary |
| Connection cross-section, very finely stranded, min./max. | AWG 24 / AWG 22 / Approval of the cable by Weidmüller necessary | AWG 24 / AWG 22 / Approval of the cable by Weidmüller necessary |
| Insulation diameter, min. / max. | 1.1 mm / 1.6 mm | 1.1 mm / 1.6 mm |
| Sheath diameter, min. / max. | 5 mm / 9 mm | 5 mm / 9 mm |
| Contact surface | Gold over nickel | Gold over nickel |
| Shielding | 360° all-round enclosure | 360° all-round enclosure |
| Plugging cycles | 750 | 750 |
| Ambient temperature (operational) | -40 °C...85 °C | -40 °C...85 °C |
| Contact resistance | ≤ 20 mΩ | ≤ 20 mΩ |
| Insulation strength | > 500 MΩ | > 500 MΩ |
| Dielectric strength, contact / contact | ≥ 1000 V DC | ≥ 1000 V DC |
| Dielectric strength, contact / shield | ≥ 1500 V DC | ≥ 1500 V DC |
| Connector standard | IEC 60603-7-51 | IEC 60603-7-51 |
| Current-carrying capacity at 50 °C | 1 A | 1 A |
| Speed | 100 MBit | 100 MBit |
| PoE / PoE+ | conforming to IEEE 802.3at | conforming to IEEE 802.3at |
| Approvals | CULUS; DNVGL | CULUS; DNVGL |
| **Note** | | |

## Ordering data

| **Plug with latching strain relief** | **Type** | **Qty.** | **Order No.** | **Type** | **Qty.** | **Order No.** |
|---|---|---|---|---|---|---|
| with printing: PROFINET | IE-PS-RJ45-FH-180-P-1.6 | 10 | **1992840000** | | | |
| **Plug with cable gland** | | | | | | |
| with printing: PROFINET | IE-PS-RJ45-FH-180-P-1.6-CG | 1 | **2703420000** | IE-PS-RJ45-FH-90-P-1.6 | 10 | **1518100000** |
| **Note** | With pre-installed dust cap | | | With pre-installed dust cap | | |

## Accessories

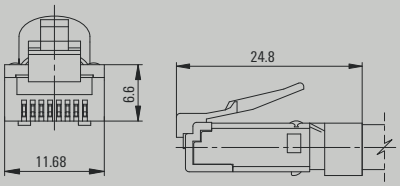
| **Substitute wire manager** | **Type** | **Qty.** | **Order No.** | **Type** | **Qty.** | **Order No.** |
|---|---|---|---|---|---|---|
| PROFINET, insulation diameter 1.1...1.6 mm | IE-PI-RJ45-FH-P-1.6 | 30 | **1992910000** | IE-PI-RJ45-FH-P-1.6 | 30 | **1992910000** |
| **Tools** | | | | | | |
| Optional pressing tool | PWZ RJ45 | 1 | **1118040000** | PWZ RJ45 | 1 | **1118040000** |

**Note**

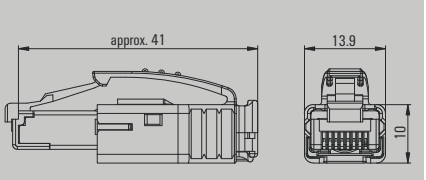
## RJ45 crimp plug

- Cat. 6
- With anti-folding protection
- With anti-crash lever protection

## 8-wire, housing 1-part




## 8-wire, housing 2-part




## Technical data

| | | |
|---|---|---|
| Category | Cat.$6_A$ / Class $E_A$ (ISO/IEC 11801 2010) | Cat.$6_A$ / Class $E_A$ (ISO/IEC 11801 2010) |
| Protection degree | IP20 | IP20 |
| Connection diameter, flexible, min. / max. | 0.46 mm / 0.61 mm | 0.46 mm / 0.61 mm |
| Connection cross-section, flexible, min. / max. | AWG 27 / AWG 24 | AWG 27 / AWG 24 |
| Connection diameter, solid, min. / max. | 0.36 mm / 0.51 mm | 0.36 mm / 0.51 mm |
| Connection cross-section, solid, min. / max. | AWG 27 / AWG 24 | AWG 27 / AWG 24 |
| Insulation cross-section, max. | 1.05 mm | 1.05 mm |
| Sheath diameter, min. / max. | 5.5 mm / 6.2 mm | 5 mm / 7.3 mm |
| Shielding | 360° all-round enclosure | 360° all-round enclosure |
| Plugging cycles | 750 | 750 |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...70 °C |
| Connector standard | IEC 60603-7-51 | IEC 60603-7-51 |
| Bending protection sleeve material | PVC, UL 94-V0 | Polycarbonate PC, UL 94 V-0 |
| Material insulator | Polycarbonate PC, UL 94 V-0 | Polycarbonate PC, UL 94 V-0 |
| Contact material / Contact surface | Phosphorus bronze / Gold-plated | Phosphorus bronze / Gold-plated |
| Shielding material | 0.5 mm brass, 2 µm nickel | 0.5 mm brass, 2 µm nickel |
| Cable pull-out force, min. | 89 N | 89 N |
| Contact resistance | ≤ 20 mΩ | ≤ 20 mΩ |
| Insulation strength | 500 MΩ | 500 MΩ |
| Dielectric strength, contact / contact | ≤ 1000 V DC | ≤ 1000 V DC |
| Dielectric strength, contact / shield | ≤ 1500 V DC | ≤ 1500 V DC |
| Current-carrying capacity at 50 °C | 1 A | 1 A |
| PoE / PoE+ | conforming to IEEE 802.3af | conforming to IEEE 802.3af |
| Approvals | EAC | CURUS |
| **Note** | | |

## Ordering data

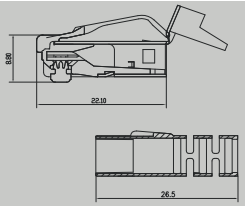
| Plug | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| with kink protection; 5.5 - 6.2 mm | IE-P63 | 10 | **8813110000** | | | |
| with anti-kink protection; 6.2 - 7.1 mm | IE-P70 | 10 | **8813120000** | | | |
| with anti-kink sleeve. black | | | | IE-PS-RJ45-TH-BK | 10 | **1963590000** |
| without anti-kink sleeve | IE-P | 100 | **8813100000** | IE-PM-RJ45-TH | 100 | **1963580000** |
| **Note** | | | | | | |

## Accessories

| Kink prevention sleeve | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| white | | | | IE-PH-RJ45-TH-WH | 10 | **1962430000** |
| green | | | | IE-PH-RJ45-TH-GN | 10 | **1962490000** |
| grey | | | | IE-PH-RJ45-TH-GY | 10 | **1962440000** |
| yellow | | | | IE-PH-RJ45-TH-YE | 10 | **1962480000** |
| orange | | | | IE-PH-RJ45-TH-OG | 10 | **1962450000** |
| black | | | | IE-PH-RJ45-TH-BK | 10 | **1962500000** |
| blue | | | | IE-PH-RJ45-TH-BU | 10 | **1962470000** |
| **Tools** | | | | | | |
| Pressing tool | TT 8 RS MP 8 | 1 | **9202800000** | TT 8 RS MP 8 | 1 | **9202800000** |
| **Note** | | | | | | |

## RJ45 PROFINET crimp plug

## 4-wire for PROFINET, 1-part enclosure




## Technical data

| | |
|---|---|
| Category | Cat.5 (ISO/IEC 11801) |
| Protection degree | IP20 |
| Connection diameter, flexible, min. / max. | 0.57 mm / 0.64 mm |
| Connection cross-section, flexible, min. / max. | AWG 23 / AWG 22 |
| Connection diameter, solid, min. / max. | 0.57 mm / 0.64 mm |
| Connection cross-section, solid, min. / max. | AWG 23 / AWG 22 |
| Insulation cross-section, max. | 1.6 mm |
| Sheath diameter, min. / max. | / 7.5 mm |
| Shielding | 360° all-round enclosure |
| Plugging cycles | 750 |
| Ambient temperature (operational) | -40 °C...70 °C |
| Connector standard | IEC 60603-7 |
| Bending protection sleeve material | Polyamide PA6, UL 94-V0 |
| Material insulator | |
| Contact material / Contact surface | Copper alloy |
| Shielding material | |
| Cable pull-out force, min. | |
| Contact resistance | ≤ 10 mΩ |
| Insulation strength | 500 MΩ |
| Dielectric strength, contact / contact | 1000 V AC |
| Dielectric strength, contact / shield | |
| Current-carrying capacity at 50 °C | |
| PoE / PoE+ | conforming to IEEE 802.3af |
| Approvals | |

**Note**

## Ordering data

**Plug**

| Type | Qty. | Order No. |
|---|---|---|
| IE-PS-RJ45-TH-BK-P | 10 | **2584980000** |

**Note**

## Accessories

**Tools**

Pressing tool

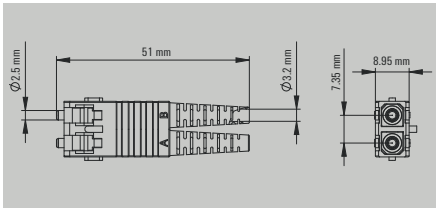
| Type | Qty. | Order No. |
|---|---|---|
| IE-CWZ-RJ45-TH-P | 1 | **2614210000** |

**Note**

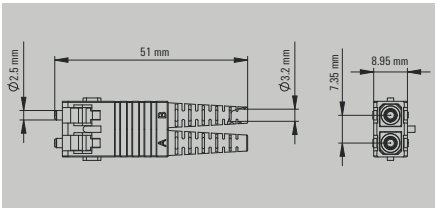
## FO connector

- IP 20

## SCRJ, POF, Crimp




## SCRJ, POF, reconnectable




## Technical data

| | | |
|---|---|---|
| Protection degree | IP20 | IP20 |
| Plugging cycles | 1000 | 1000 |
| Ambient temperature (operational) | -20 °C...80 °C | -20 °C...80 °C |
| Connector standard | IEC 61754-24 | IEC 61754-24 |
| Individual wire diameter, min. / max. | 2.1 mm...2.3 mm | 2.1 mm...2.3 mm |
| Crimp barrel material | Copper, nickel-plated | Copper, nickel-plated |
| Pressure spring material | Stainless steel, rust-proof | Stainless steel, rust-proof |
| Ferrule material | Nickel silver | Nickel silver |
| Dust protection cap material | TPE | TPE |
| Bending protection sleeve material | TPE | TPE |
| Cable pull-out force, min. | 100 N | 100 N |
| Housing main material | PC UL 94 V0 | PC UL 94 V0 |
| Housing material, insert | Zinc diecast, nickel-plated | Zinc diecast, nickel-plated |
| Humidity | 0...93 % rel. humidity | 0...93 % rel. humidity |
| Approvals | UL | |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. |
|---|---|---|---|
| POF | IE-PS-SCRJ1-POF | 10 | **1206720000** |
| **Note** | | | |

| Type | Qty. | Order No. |
|---|---|---|
| IE-PS-SCRJ1-POF-QA | 10 | **2564950000** |

## Accessories

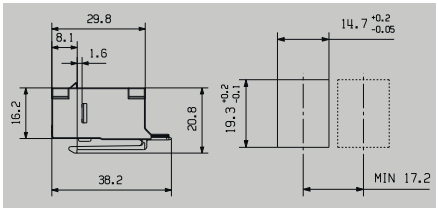
| Tools | Type | Qty. | Order No. |
|---|---|---|---|
| Mounting tool, POF | HTX-IE-POF | 1 | **1208870000** |
| Replacement ferrule | IE-SCRJ1-IP20-POF-100 | 100 | **1278420000** |
| Contact Removal Tool | REMOVAL TOOL HD | 1 | **1866730000** |

| Type | Qty. | Order No. |
|---|---|---|
| HTX-IE-POF-QA | 1 | **2602860000** |
| | | |
| | | |

**Note**

## RJ45 keystone

## RJ45 Coupling




## Technical data

| | |
|---|---|
| Housing main material | Zinc diecast |
| Category | Cat.$6_A$ / Class $E_A$ (ISO/IEC 11801 2010) |
| Protection degree | IP20 |
| Plugging cycles | 750 |
| PoE / PoE+ | conforming to IEEE 802.3at |
| Connector standard | IEC 60603-7-5 |
| Approvals | EAC |

**Note**

## Ordering data

| Type | Qty. | Order No. |
|---|---|---|
| IE-XR-RJ45/RJ45-2 | 24 | **8952950000** |

**Note**

## Accessories

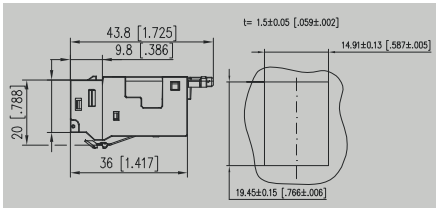
| Type | Qty. | Order No. |
|---|---|---|
| | | |

**Note**

## RJ45 keystone

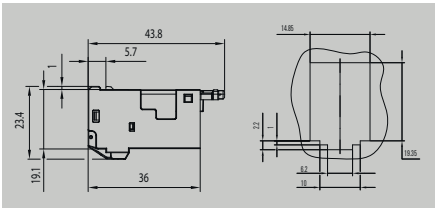
## RJ45 module

**Mounting cut-out Rectangular**




## RJ45 module

**Mounting cut-out special shape**




## Technical data

| | | |
|---|---|---|
| Category | Cat.$6_A$ / Class $E_A$ (ISO/IEC 11801 2010) | Cat.$6_A$ / Class $E_A$ (ISO/IEC 11801 2010) |
| Wiring | TIA-568A, TIA-568B, PROFINET | TIA-568A, TIA-568B, PROFINET |
| Protection degree | IP20 | IP20 |
| Housing main material | Zinc diecast | Zinc diecast |
| Connection diameter, flexible | 0.48...0.76 mm | 0.48...0.76 mm |
| Conductor connection cross-section, flexible (AWG) | AWG 26...AWG 22 | AWG 26...AWG 22 |
| Connection diameter, solid | 0.41...0.64 mm | 0.41...0.64 mm |
| Conductor connection cross-section, solid (AWG) | AWG 26...AWG 22 | AWG 26...AWG 22 |
| Insulation cross-section, max. | 1.8 mm | 1.8 mm |
| Plugging cycles | 750 | 750 |
| Ambient temperature (operational) | -40...70 °C | -40...70 °C |
| Connector standard | IEC 60603-7-51 | IEC 60603-7-51 |
| Contact surface | Gold over nickel | Gold over nickel |
| Contact resistance | ≤ 20 mΩ | ≤ 20 mΩ |
| Insulation strength | 500 MΩ | 500 MΩ |
| PoE / PoE+ | conforming to IEEE 802.3at | conforming to IEEE 802.3at |
| Dielectric strength, contact / contact | ≥ 1000 V DC | ≥ 1000 V DC |
| Dielectric strength, contact / shield | | |
| Approvals | | DNVGL |
| **Note** | | |

## Ordering data

| Type | Qty. | Order No. |
|---|---|---|
| IE-KEY-RJ45/IDC-1 | 1 | **2782300000** |

**Note**

| Type | Qty. | Order No. |
|---|---|---|
| IE-XRJ45/IDC | 1 | **8808330000** |

**Note**

## Accessories

| Type | Qty. | Order No. |
|---|---|---|

| Type | Qty. | Order No. |
|---|---|---|

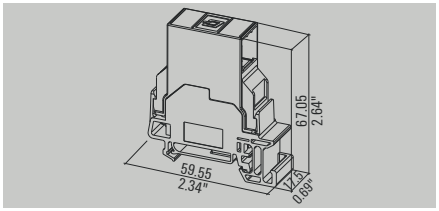
**Note**

## Module RJ45

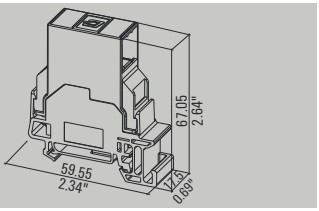
### Outlet direction straight

- Cat. $6_A$
- IP20
- TS 35

### 8-wire




### 4-wire




## Technical data

| | 8-wire | 4-wire |
|---|---|---|
| Category | Cat.$6_A$ / Class $E_A$ (ISO/IEC 11801 2010) | Cat.5 (ISO/IEC 11801) |
| Protection degree | IP20 | IP20 |
| Housing main material | PA UL 94 V0 | PA UL 94 V0 |
| Contact surface | Au ≥ 0.8 µm | Au ≥ 0.8 µm |
| Colour | Light Grey | Light Grey |
| Type of mounting | TS 35 | TS 35 |
| Plugging cycles | 750 | 750 |
| Configuration | Switchable volt. connection from module/coupling to mounting rail | Switchable volt. connection from module/coupling to mounting rail |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...70 °C |
| Temperature range, assembly, min. / max. | -25 °C...70 °C | -25 °C...70 °C |
| Connector standard | IEC 60603-7-51 | IEC 60603-7-51 |
| Connection diameter, flexible, min. / max. | 0.48 mm / 0.76 mm | 0.48 mm / 0.76 mm |
| Connection cross-section, flexible, min. / max. | AWG 26 / AWG 22 | AWG 26 / AWG 22 |
| Connection diameter, solid, min. / max. | 0.4 mm / 0.64 mm | 0.4 mm / 0.64 mm |
| Connection cross-section, solid, min. / max. | AWG 24 / AWG 22 | AWG 24 / AWG 22 |
| **Electrical properties*** | | |
| PoE / PoE+ | conforming to IEEE 802.3af | conforming to IEEE 802.3af |
| Contact resistance | ≤ 20 mΩ | ≤ 20 mΩ |
| Current-carrying capacity at 50 °C | 1 A | 1 A |
| Dielectric strength, contact / contact | ≥ 1000 V DC | ≥ 1000 V DC |
| Dielectric strength, contact / shield | ≥ 1500 V DC | ≥ 1500 V DC |
| Insulation strength | 500 MΩ | 500 MΩ |
| Approvals | EAC | EAC |
| **Note** | Weidmüller connection cat. 7 AWG 27/7 LSZH cable possible | |

## Ordering data

| | 8-wire Type | Qty. | Order No. | 4-wire Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| A-coded | IE-TO-RJ45-FJ-A | 10 | **8946930000** | | | |
| B-coded | IE-TO-RJ45-FJ-B | 10 | **8946940000** | | | |
| PROFINET-coded | | | | IE-TO-RJ45-FJ-P | 10 | **8946950000** |
| **Note** | | | | | | |

## Accessories

| **Marking tags** | 8-wire Type | Qty. | Order No. | 4-wire Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| MultiCard, white | ESG 9/11 K MC NE WS | 200 | **1857440000** | ESG 9/11 K MC NE WS | 200 | **1857440000** |

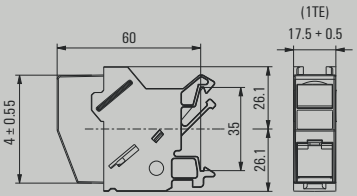
**Note**

## Module RJ45

### Outlet direction diagonal

- Cat. 6
- IP20
- TS 35

### 8-wire




## Technical data

| | |
|---|---|
| Category | Cat.6$_A$ / Class E$_A$ (ISO/IEC 11801 2010) |
| Protection degree | IP20 |
| Housing main material | PA 66, UL 94: V-0 |
| Contact surface | |
| Colour | Light Grey |
| Type of mounting | TS 35 |
| Plugging cycles | 750 |
| Configuration | 1 TE pitch dimension acc. to DIN 43880. insta-compatible<br>Installation flange with mounting frame |
| Ambient temperature (operational) | -25 °C...70 °C |
| Temperature range, assembly, min. / max. | ... |
| Connector standard | IEC 60603-7-5 |
| Connection diameter, flexible, min. / max. | 0.48 mm / 0.64 mm |
| Connection cross-section, flexible, min. / max. | AWG 26 / AWG 22 |
| Connection diameter, solid, min. / max. | 0.4 mm / 0.64 mm |
| Connection cross-section, solid, min. / max. | AWG 24 / AWG 22 |
| **Electrical properties*** | |
| PoE / PoE+ | conforming to IEEE 802.3at |
| Contact resistance | ≤ 20 mΩ |
| Current-carrying capacity at 50 °C | 1 A |
| Dielectric strength, contact / contact | ≥ 1000 V DC |
| Dielectric strength, contact / shield | ≥ 1500 V DC |
| Insulation strength | 500 MΩ |
| Approvals | CULUS; DNVGL |
| **Note** | |

## Ordering data

| | Type | Qty. | Order No. |
|---|---|---|---|
| A/B-coded | IE-XM-RJ45/IDC | 1 | 8808360000 |

**Note**

## Accessories

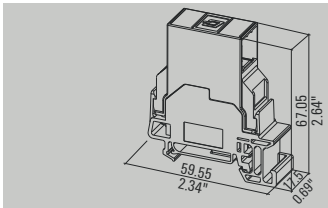
| Marking tags | Type | Qty. | Order No. |
|---|---|---|---|
| Marking tag | IE-DM | 50 | 8813500000 |

**Note**

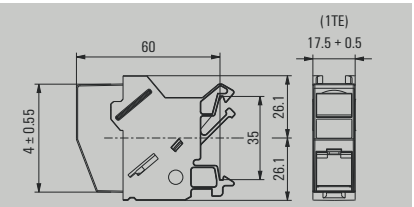
## Coupling RJ45, 8-wire

- Cat. $6_A$
- IP20
- TS 35

## Outlet direction straight




## Outlet direction diagonal




## Technical data

| | | |
|---|---|---|
| Category | Cat.$6_A$ / Class $E_A$ (ISO/IEC 11801 2010) | Cat.6 (ISO/IEC 11801) |
| Protection degree | IP20 | IP20 |
| Housing main material | PA UL 94 V0 | PA 66, UL 94: V-0 |
| Contact material / Contact surface | Spring steel, Ni 1.2 µm / Au ≥ 0.8 µm | |
| Colour | Light Grey | Light Grey |
| Type of mounting | TS 35 | TS 35 |
| Plugging cycles | 750 | 750 |
| Configuration | Switchable volt. connection from module/coupling to mounting rail | 1 TE pitch dimension acc. to DIN 43880. insta-compatible Installation flange with mounting frame |
| Ambient temperature (operational) | -40 °C...70 °C | -25 °C...70 °C |
| Temperature range, assembly, min. / max. | -25 °C...70 °C | ... |
| Humidity | 0...93 % rel. humidity | |
| Shock resistance acc. to IEC 60512-4 | 250 $ms^{-2}$ | |
| Vibration resistance acc. to IEC 60512-4 | 50 $ms^{-2}$ sinusoidal (9...500 Hz) | |
| Housing material, insert | Zinc diecast | |
| Connector standard | IEC 60603-7-51 | IEC 60603-7-5 |
| **Electrical properties*** | | |
| PoE / PoE+ | conforming to IEEE 802.3af | conforming to IEEE 802.3at |
| Contact resistance | ≤ 20 mΩ | ≤ 20 mΩ |
| Current-carrying capacity at 50 °C | 1 A | 1 A |
| Dielectric strength, contact / contact | ≥ 1000 V DC | ≥ 1000 V DC |
| Dielectric strength, contact / shield | ≥ 1500 V DC | ≥ 1500 V DC |
| Insulation strength | 500 MΩ | 500 MΩ |
| Approvals | EAC | CULUS; DNVGL |
| **Note** | | |

## Ordering data

| Type | Qty. | Order No. |
|---|---|---|
| IE-TO-RJ45-C | 10 | 8946920000 |

| Type | Qty. | Order No. |
|---|---|---|
| IE-XM-RJ45/RJ45 | 1 | 8879050000 |

**Note**

## Accessories

**Marking tags**

| Type | Qty. | Order No. |
|---|---|---|
| MultiCard, white | | |
| ESG 9/11 K MC NE WS | 200 | 1857440000 |
| Marking tag | | |

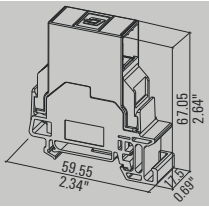
| Type | Qty. | Order No. |
|---|---|---|
| | | |
| IE-DM | 50 | 8813500000 |

**Note**

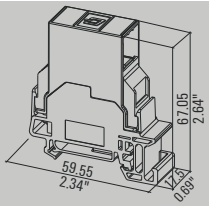
## USB connection

- IP20
- TS 35

## USB A




## USB AB




## Technical data

| | | |
|---|---|---|
| Protection degree | IP20 | IP20 |
| Housing main material | PA UL 94 V0 | PA UL 94 V0 |
| Colour | Light Grey | Light Grey |
| Type of mounting | TS 35 | TS 35 |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...70 °C |
| Temperature range, assembly, min. / max. | -25 °C...70 °C | -25 °C...70 °C |
| Connector standard | IEC 61076-3-107 | IEC 61076-3-107 |
| Connection 1 / 2 | USB A / USB A | USB A / USB B |
| Approvals | EAC | EAC |
| **Note** | | |

## Ordering data

| USB | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| | IE-TO-USB | 1 | **8946960000** | IE-TO-USB-AB | 1 | **1438180000** |
| **Note** | | | | | | |

## Accessories

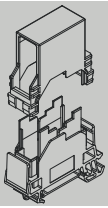
| Marking tags | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| MultiCard, white | ESG 9/11 K MC NE WS | 200 | **1857440000** | ESG 9/11 K MC NE WS | 200 | **1857440000** |

| Note | | |
|---|---|---|

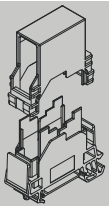
## Coupling fibre-optic

- IP20
- TS 35

## SC duplex



## SC-RJ



## Technical data

| | | |
|---|---|---|
| Protection degree | IP20 | IP20 |
| Housing main material | PA UL 94 V0 | PA UL 94 V0 |
| Colour | Light Grey | Light Grey |
| Type of mounting | TS 35 | TS 35 |
| Plugging cycles | 1000 | 1000 |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...70 °C |
| Temperature range, assembly, min. / max. | -25 °C...70 °C | -25 °C...70 °C |
| Connector standard | IEC 61754-4 | IEC 61754-24 |
| Approvals | UL | UL |
| **Note** | | |

## Ordering data

| **Fibre-optic** | **Type** | **Qty.** | **Order No.** | **Type** | **Qty.** | **Order No.** |
|---|---|---|---|---|---|---|
| Singlemode | IE-TO-SCD-SM | 1 | **8946980000** | IE-TO-SCRJ-SM | 10 | **8947000000** |
| Multimode/POF | IE-TO-SCD-MM | 10 | **8946970000** | IE-TO-SCRJ-MM | 10 | **8946990000** |
| **Note** | | | | | | |

## Accessories

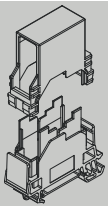
| **Marking tags** | **Type** | **Qty.** | **Order No.** | **Type** | **Qty.** | **Order No.** |
|---|---|---|---|---|---|---|
| MultiCard, white | ESG 9/11 K MC NE WS | 200 | **1857440000** | ESG 9/11 K MC NE WS | 200 | **1857440000** |

| **Note** | | |
|---|---|---|

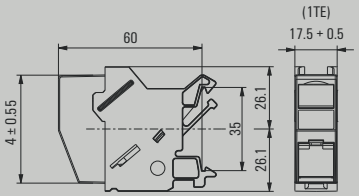
## Coupling fibre-optic

- IP20
- TS 35

## LC Duplex



## ST




## Technical data

| | | |
|---|---|---|
| Protection degree | IP20 | IP20 |
| Housing main material | PA UL 94 V0 | PA 66, UL 94: V-0 |
| Colour | Light Grey | Light Grey |
| Type of mounting | TS 35 | TS 35 |
| Configuration | | 1 TE pitch dimension acc. to DIN 43880. insta-compatible Installation flange with mounting frame |
| Plugging cycles | 1000 | 750 |
| Ambient temperature (operational) | -40 °C...70 °C | -25 °C...70 °C |
| Temperature range, assembly, min. / max. | -25 °C...70 °C | ... |
| Connector standard | IEC 61754-20 | IEC 61754-2 |
| Approvals | EAC | EAC |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. |
|---|---|---|---|
| Singlemode | IE-TO-LCD-SM | 10 | **8947020000** |
| Multimode | IE-TO-LCD-MM | 10 | **8947010000** |
| **Note** | | | |

| Type | Qty. | Order No. |
|---|---|---|
| | | |
| IE-XM-ST/ST | 1 | **8808340000** |

## Accessories

| Marking tags | Type | Qty. | Order No. |
|---|---|---|---|
| MultiCard, white | ESG 9/11 K MC NE WS | 200 | **1857440000** |
| Marking tag | | | |

| Type | Qty. | Order No. |
|---|---|---|
| | | |
| IE-DM | 50 | **8813500000** |

**Note**

## Socket adapter

- IP 20
- TS 35

## Socket adapter

## Technical data

| | |
|---|---|
| Protection degree | IP20 |
| Housing main material | Polycarbonate PC, Acrylnitril-Butadien-Styrol (ABS) |
| Ambient temperature (operational) | -25 °C...70 °C |
| Approvals | |

**Note**

## Ordering data

| Type | Qty. | Order No. |
|---|---|---|
| IE-DINRAIL-AD-PWB | 1 | **2534680000** |

**Note**

## Accessories

| Inserts, Power | Type | Qty. | Order No. |
|---|---|---|---|
| Socket AU 15 A | IE-FCI-PWB-AU | 1 | **1450830000** |
| Socket AU 10 A | IE-FCI-PWB-AU-10A | 1 | **1546590000** |
| Socket CH | IE-FCI-PWB-CH | 1 | **1450780000** |
| Socket CN | IE-FCI-PWB-CN | 1 | **1450790000** |
| Socket GB | IE-FCI-PWB-GB | 1 | **1450770000** |
| Socket DE | IE-FCI-PWB-DE | 1 | **1450730000** |
| Socket DE orange | IE-FCI-PWB-DE-OR | 1 | **1554000000** |
| Socket FR | IE-FCI-PWB-FR | 1 | **1450750000** |
| Socket FR orange | IE-FCI-PWB-FR-OR | 1 | **2007230000** |
| Socket IT/EU | IE-FCI-PWS-IT | 1 | **1450810000** |
| Socket CZ | IE-FCI-PWB-CZ | 1 | **2426700000** |
| Socket IND | IE-FCI-PWB-IND | 1 | **2500710000** |
| RCBO | IE-FCI-PWB-RCBO | 1 | **1534250000** |
| ISR socket | IE-FCI-PWB-ISR | 1 | **2531060000** |

**Note**

# FrontCom® IP65 service interfaces
## Overview

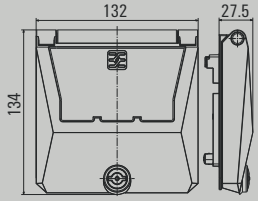

| | | |
|---|---|---|
| **FrontCom® IP65 service interfaces** | FrontCom® Vario IP65 service interface | M.2 |
| | FrontCom® Micro IP65 service interface | |
| | RJ45 | M.30 |
| | USB | M.32 |

# FrontCom® Vario IP65 service interface

## FrontCom® Vario
## Double frame

- IP65
- Possibility of using single and double insertion plates

## Metal cover




## Technical data

| | |
|---|---|
| Protection degree / Protection class (UL) | IP65, in closed state / Type 12 |
| Material cover | Zinc diecast, powder-coated |
| Material frame | Zinc diecast |
| Ambient temperature (operational) | -40 °C...70 °C |
| Approvals | CSA; CURUS |
| **Note** | |

## Ordering data

| | Type | Qty. | Order No. |
|---|---|---|---|
| Rotary button operation | IE-FC-DFM-KNOB | 1 | **2003170000** |
| Lockable with key | IE-FC-DFM-KEY | 1 | **2003180000** |
| Lockable with electrical cabinet key | IE-FC-DFM-CAB | 1 | **2003190000** |
| Lockable with electrical cabinet key (Daimler lock) | IE-FC-DFM-CAB-DB | 1 | **2003150000** |
| **Note** | | | |

## Accessories

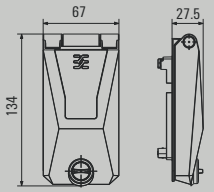
| | Type | Qty. | Order No. |
|---|---|---|---|
| **spare key** | | | |
| | IE-FC-KEY2 | 1 | **2066650000** |
| **Marking tags** | | | |
| silver | SM 27/18 K MC NE SI | 80 | **1713760000** |
| light grey | SM 27/18 K MC NE GR | 80 | **1073340000** |
| white | SM 27/18 K MC NE WS | 80 | **1707270000** |
| | ESG 7/20 SIRIUS MC NE WS | 200 | **1736181044** |
| **Touch-safe protection** | | | |
| Touch-safe protection | IE-FC-PWPC | 1 | **1450820000** |
| **Bar (for mounting single insert plates)** | | | |
| Partition | IE-FC-DF-IPH | 1 | **2003340000** |

**Note**

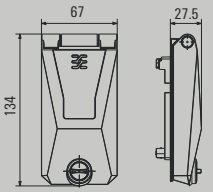
## FrontCom® Vario
## Single frame

- IP65

### Metal cover




### Plastic cover




## Technical data

| | | |
|---|---|---|
| Protection degree / Protection class (UL) | IP65, in closed state / Type 12 | IP65, in closed state |
| Material cover | Zinc diecast, powder-coated | Polycarbonate PC |
| Material frame | Zinc diecast | Zinc diecast |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...70 °C |
| Approvals | CSA; CURUS; DNVGL | DNVGL |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| Rotary button operation | IE-FC-SFM-KNOB | 1 | **1450530000** | IE-FC-SFP-KNOB | 1 | **1450510000** |
| Lockable with key | IE-FC-SFM-KEY2 | 1 | **1450540000** | IE-FC-SFP-KEY2 | 1 | **1450520000** |
| Control cabinet key (double bit) | IE-FC-SFM-CAB | 1 | **2003160000** | IE-FC-SFP-CAB | 1 | **2003140000** |
| Control cabinet key (Daimler) | IE-FC-SFM-CAB-DB | 1 | **2663200000** | IE-FC-SFP-CAB-DB | 1 | **2663190000** |
| **Note** | | | | | | |

## Accessories

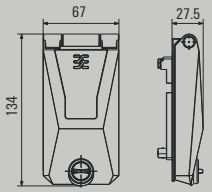
| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| **spare key** | | | | | | |
| | IE-FC-KEY2 | 1 | **2066650000** | IE-FC-KEY2 | 1 | **2066650000** |
| **Marking tags** | | | | | | |
| silver | SM 27/18 K MC NE SI | 80 | **1713760000** | SM 27/18 K MC NE SI | 80 | **1713760000** |
| light grey | SM 27/18 K MC NE GR | 80 | **1073340000** | SM 27/18 K MC NE GR | 80 | **1073340000** |
| white | SM 27/18 K MC NE WS | 80 | **1707270000** | SM 27/18 K MC NE WS | 80 | **1707270000** |
| | ESG 7/20 SIRIUS MC NE WS | 200 | **1736181044** | ESG 7/20 SIRIUS MC NE WS | 200 | **1736181044** |
| **Touch-safe protection** | | | | | | |
| Touch-safe protection | IE-FC-PWPC | 1 | **1450820000** | IE-FC-PWPC | 1 | **1450820000** |
| **Accessories for mounting cut-out** | | | | | | |
| Punch for hole punching tool | KOK 52 X 91 | 1 | **2008410000** | KOK 52 X 91 | 1 | **2008410000** |
| Punching tool | IE-KO-HAT | 1 | **1966810000** | IE-KO-HAT | 1 | **1966810000** |

**Note**

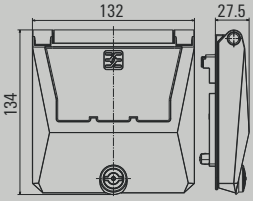
## FrontCom® Vario Frame NEMA 4X

- For particularly harsh environmental conditions (outdoor) with NEMA 4X approval

### Single frame, metal lid




### Double frame, metal lid




## Technical data

| | Single frame, metal lid | Double frame, metal lid |
|---|---|---|
| Protection degree / Protection class (UL) | IP65, in closed state / NEMA 4X | IP65, in closed state / NEMA 4X |
| Material cover | Zinc diecast, powder-coated | Zinc diecast, powder-coated |
| Material frame | Zinc diecast, powder-coated | Zinc diecast, powder-coated |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...70 °C |
| Approvals | CSA; CURUS | CSA; CURUS |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| Rotary button operation | IE-FC-SFM-KNOB-4X | 1 | **2669630000** | IE-FC-DFM-KNOB-4X | 1 | **2669640000** |
| **Note** | | | | | | |

## Accessories

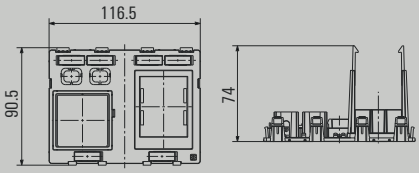
| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| **Marking tags** | | | | | | |
| silver | SM 27/18 K MC NE SI | 80 | **1713760000** | SM 27/18 K MC NE SI | 80 | **1713760000** |
| light grey | SM 27/18 K MC NE GR | 80 | **1073340000** | SM 27/18 K MC NE GR | 80 | **1073340000** |
| white | SM 27/18 K MC NE WS | 80 | **1707270000** | SM 27/18 K MC NE WS | 80 | **1707270000** |
| | ESG 7/20 SIRIUS MC NE WS | 200 | **1736181044** | ESG 7/20 SIRIUS MC NE WS | 200 | **1736181044** |
| **Touch-safe protection** | | | | | | |
| Touch-safe protection | IE-FC-PWPC | 1 | **1450820000** | IE-FC-PWPC | 1 | **1450820000** |
| **Accessories for mounting cut-out** | | | | | | |
| Punch for hole punching tool | KOK 52 X 91 | 1 | **2008410000** | | | |
| Punching tool | IE-KO-HAT | 1 | **1966810000** | | | |
| **Bar (for mounting single insert plates)** | | | | | | |
| Partition | | | | IE-FC-DF-IPH | 1 | **2003340000** |

| Note | | |
|---|---|---|

## FrontCom® Vario
## Insert plates for double frames

- IP20

## 1 x power, 2 x data, 1 x RCBO




## Technical data

| | |
|---|---|
| Material | Polycarbonate PC |
| Insert, data | 2 |
| Insert Power large | 1 |
| Insert RCBO (2 modular width units) | 1 |
| Insert suitable for RCBO according to standard | DIN43880 |
| Insert GFCI /2 x Power US pre-assembled | |
| Ambient temperature (operational) | -40 °C...70 °C |
| Approvals | CSA; CURUS |
| **Note** | |

## Ordering data

| | Type | Qty. | Order No. |
|---|---|---|---|
| shielded | IE-FC-DSP-PWB/2ST/FILS | 1 | 2067080000 |
| unshielded | IE-FC-DIP-PWB/2ST/FILS | 1 | 2067070000 |
| **Note** | | | |

## Accessories

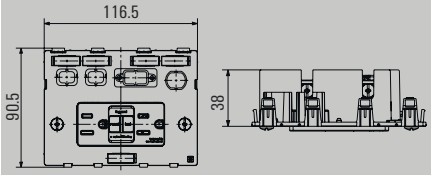
| **Inserts, Data** | **Type** | **Qty.** | **Order No.** |
|---|---|---|---|
| RJ45 coupling | IE-BI-RJ45-C | 10 | 1962840000 |
| RJ45 module EIA/TIA T568 B | IE-BI-RJ45-FJ-B | 10 | 1963840000 |
| RJ45 module PROFINET | IE-BI-RJ45-FJ-P | 10 | 1963830000 |
| RJ45 module EIA/TIA T568 A | IE-BI-RJ45-FJ-A | 10 | 1962850000 |
| USB 2.0 A / A | IE-BI-USB-A | 10 | 1019570000 |
| USB 3.0 A / A | IE-BI-USB-3.0-A | 10 | 1487920000 |
| USB 2.0 A / B | IE-BI-USB-AB | 10 | 1131380000 |
| **Marking tags** | | | |
| | ESG 7/20 SIRIUS MC NE WS | 200 | 1736181044 |
| **Touch-safe protection** | | | |
| Touch-safe protection | IE-FC-PWPC | 1 | 1450820000 |

| **Note** | An overview of the power inserts can be found in this chapter under power insert sockets. |
|---|---|

## FrontCom® Vario
## Insert plates for double frames

- IP20

## 1x GFCI, 2x data, 1x signal, 1x fuse




## Technical data

| | |
|---|---|
| Material | Polycarbonate PC |
| Insert, data | 2 |
| Insert Power large | |
| Insert fuse | 1 |
| Signal insert D-Sub 9-pole / VGA / HDMI | 1 |
| Insert RCBO (2 modular width units) | |
| Insert GFCI /2 x Power US pre-assembled | 1 |
| Ambient temperature (operational) | -35 °C...66 °C |
| Approvals | CSA; CURUS |
| **Technical data GFCI insert** | |
| Operating voltage / Rated current | 125 V AC / 20 A |
| GFCI protected US outlet | 2 pieces |
| Self-test | automatically every 3 seconds |
| Status indication | red LED |
| Type of connection | Screw connection |
| Line connection cross-section | |
| finely stranded with wire-end ferrule | 1.5 ... 2.5 mm² |
| finely stranded with wire-end ferrule | 1.5 ... 2.5 mm² |
| Conductor connection cross-section, rigid | 1.5 ... 4 mm² |
| **Note** | |

## Ordering data

| | Type | Qty. | Order No. |
|---|---|---|---|
| shielded | IE-FC-DSP-CI/3A/2ST/1D9 | 1 | **2004810000** |
| unshielded | IE-FC-DIP-CI/3A/2ST/1D9 | 1 | **2003370000** |
| **Note** | incl. pre-mounted GFCI | | |

## Accessories

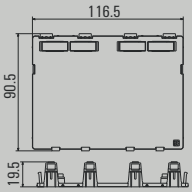
| | Type | Qty. | Order No. |
|---|---|---|---|
| **Inserts, Signal** | | | |
| D-Sub, 9-pole, female/female | IE-FCI-D9-FF | 1 | **1450840000** |
| D-Sub, 9-pole, female / male | IE-FCI-D9-FM | 1 | **1450850000** |
| D-Sub, 9-pole, female / solder connection | IE-FCI-D9-FS | 1 | **1450870000** |
| VGA coupling | IE-FCI-HD15-FF | 1 | **1556290000** |
| HDMI coupling | IE-FCI-HDMI-FF | 1 | **2003390000** |
| **Fuse inserts** | | | |
| 3 A | IE-FCI-PWCB-3A | 1 | **1543690000** |
| **Inserts, Data** | | | |
| RJ45 coupling | IE-BI-RJ45-C | 10 | **1962840000** |
| RJ45 module EIA/TIA T568 A | IE-BI-RJ45-FJ-A | 10 | **1962850000** |
| RJ45 module EIA/TIA T568 B | IE-BI-RJ45-FJ-B | 10 | **1963840000** |
| RJ45 module PROFINET | IE-BI-RJ45-FJ-P | 10 | **1963830000** |
| USB 2.0 A / A | IE-BI-USB-A | 10 | **1019570000** |
| USB 3.0 A / A | IE-BI-USB-3.0-A | 10 | **1487920000** |
| USB 2.0 A / B | IE-BI-USB-AB | 10 | **1131380000** |
| **Marking tags** | | | |
| | ESG 7/20 SIRIUS MC NE WS | 200 | **1736181044** |

**Note**

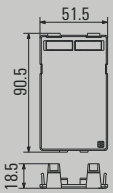
## FrontCom® Vario
## Insert plates

- IP20

### blank double plate




### blank single plate




### Technical data

| | | |
|---|---|---|
| Material | Polycarbonate PC | Polycarbonate PC |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...70 °C |
| Approvals | CSA; CURUS | CSA; CURUS; DNVGL |
| **Note** | | |

### Ordering data

| | Type | Qty. | Order No. |
|---|---|---|---|
| unshielded | IE-FC-DIP-BP | 1 | 2004890000 |
| **Note** | | | |

| | Type | Qty. | Order No. |
|---|---|---|---|
| | IE-FC-IP-BP | 1 | 1450710000 |
| | | | |

### Accessories

| Type | Qty. | Order No. |
|---|---|---|
| | | |

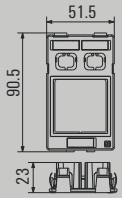
| Type | Qty. | Order No. |
|---|---|---|
| | | |

| **Note** | | |
|---|---|---|
| | | |

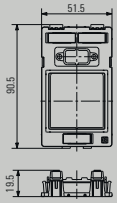
## FrontCom® Vario Insert plates

- IP20

### 1 x power, 2 x data




### 1x Power, 1x Signal




## Technical data

| | | |
|---|---|---|
| Material | Polycarbonate PC | Polycarbonate PC |
| Insert, data | 2 | |
| Signal insert D-Sub 9-pole / VGA / HDMI | | 1 |
| Insert, signal, D-Sub, 25-pole | | |
| Insert Power large | 1 | 1 |
| Insert Power small | | |
| Insert Power US | | |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...70 °C |
| Approvals | CSA; CURUS; DNVGL | CSA; CURUS |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| shielded | IE-FC-SP-PWB/2ST | 1 | **1450550000** | | | |
| unshielded | IE-FC-IP-PWB/2ST | 1 | **1450630000** | IE-FC-IP-PWB/1D9 | 1 | **2003350000** |
| **Note** | | | | | | |

## Accessories

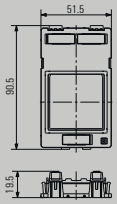
| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| **Inserts, Data** | | | | | | |
| RJ45 coupling | IE-BI-RJ45-C | 10 | **1962840000** | | | |
| RJ45 module EIA/TIA T568 A | IE-BI-RJ45-FJ-A | 10 | **1962850000** | | | |
| RJ45 module EIA/TIA T568 B | IE-BI-RJ45-FJ-B | 10 | **1963840000** | | | |
| RJ45 module PROFINET | IE-BI-RJ45-FJ-P | 10 | **1963830000** | | | |
| USB 2.0 A / A | IE-BI-USB-A | 10 | **1019570000** | | | |
| USB 3.0 A / A | IE-BI-USB-3.0-A | 10 | **1487920000** | | | |
| USB 2.0 A / B | IE-BI-USB-AB | 10 | **1131380000** | | | |
| **Marking tags** | | | | | | |
| | ESG 7/20 SIRIUS MC NE WS | 200 | **1736181044** | ESG 7/20 SIRIUS MC NE WS | 200 | **1736181044** |
| **Touch-safe protection** | | | | | | |
| Touch-safe protection | IE-FC-PWPC | 1 | **1450820000** | IE-FC-PWPC | 1 | **1450820000** |
| **Inserts, Signal** | | | | | | |
| D-Sub, 9-pole, female/female | | | | IE-FCI-D9-FF | 1 | **1450840000** |
| D-Sub, 9-pole, female / male | | | | IE-FCI-D9-FM | 1 | **1450850000** |
| D-Sub, 9-pole, female / solder connection | | | | IE-FCI-D9-FS | 1 | **1450870000** |
| VGA coupling | | | | IE-FCI-HD15-FF | 1 | **1556290000** |
| HDMI coupling | | | | IE-FCI-HDMI-FF | 1 | **2003390000** |

| | | |
|---|---|---|
| **Note** | You will find an overview of the power inserts in this chapter under Power inserts-sockets. | You will find an overview of the power inserts in this chapter under Power inserts-sockets. |

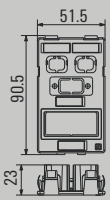
## FrontCom® Vario
## Insert plates

- IP20

### 1x Power




### 1x Power, 2x Data, 1x Signal




## Technical data

| | | |
|---|---|---|
| Material | Polycarbonate PC | Polycarbonate PC |
| Insert, data | | 2 |
| Signal insert D-Sub 9-pole / VGA / HDMI | | 1 |
| Insert, signal, D-Sub, 25-pole | | |
| Insert Power large | 1 | |
| Insert Power small | | 1 |
| Insert Power US | | |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...70 °C |
| Approvals | CSA; CURUS | CSA; CURUS; DNVGL |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| shielded | | | | IE-FC-SP-PWS/2ST/1D9 | 1 | **1450600000** |
| unshielded | IE-FC-IP-PWB | 1 | **2548060000** | IE-FC-IP-PWS/2ST/1D9 | 1 | **1450690000** |
| **Note** | | | | | | |

## Accessories

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| **Inserts, Data** | | | | | | |
| RJ45 coupling | | | | IE-BI-RJ45-C | 10 | **1962840000** |
| RJ45 module EIA/TIA T568 A | | | | IE-BI-RJ45-FJ-A | 10 | **1962850000** |
| RJ45 module EIA/TIA T568 B | | | | IE-BI-RJ45-FJ-B | 10 | **1963840000** |
| RJ45 module PROFINET | | | | IE-BI-RJ45-FJ-P | 10 | **1963830000** |
| USB 2.0 A / A | | | | IE-BI-USB-A | 10 | **1019570000** |
| USB 3.0 A / A | | | | IE-BI-USB-3.0-A | 10 | **1487920000** |
| USB 2.0 A / B | | | | IE-BI-USB-AB | 10 | **1131380000** |
| **Marking tags** | | | | | | |
| | ESG 7/20 SIRIUS MC NE WS | 200 | **1736181044** | ESG 7/20 SIRIUS MC NE WS | 200 | **1736181044** |
| **Touch-safe protection** | | | | | | |
| Touch-safe protection | IE-FC-PWPC | 1 | **1450820000** | IE-FC-PWPC | 1 | **1450820000** |
| **Inserts, Signal** | | | | | | |
| D-Sub, 9-pole, female/female | | | | IE-FCI-D9-FF | 1 | **1450840000** |
| D-Sub, 9-pole, female / male | | | | IE-FCI-D9-FM | 1 | **1450850000** |
| D-Sub, 9-pole, female / solder connection | | | | IE-FCI-D9-FS | 1 | **1450870000** |
| VGA coupling | | | | IE-FCI-HD15-FF | 1 | **1556290000** |
| HDMI coupling | | | | IE-FCI-HDMI-FF | 1 | **2003390000** |

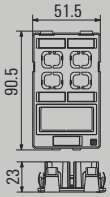
| Note | | |
|---|---|---|
| | You will find an overview of the power inserts in this chapter under Power inserts-sockets. | You will find an overview of the power inserts in this chapter under Power inserts-sockets. |

# FrontCom® Vario IP65 service interface

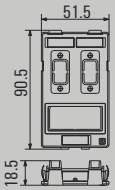
## FrontCom® Vario Insert plates

- IP20

### 1 x power, 4 x data




### 1 x power, 2 x signal




## Technical data

| | | |
|---|---|---|
| Material | Polycarbonate PC | Polycarbonate PC |
| Insert, data | 4 | |
| Signal insert D-Sub 9-pole / VGA / HDMI | | 2 |
| Insert, signal, D-Sub, 25-pole | | |
| Insert Power large | | |
| Insert Power small | 1 | 1 |
| Insert Power US | | |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...70 °C |
| Approvals | CSA; CURUS; DNVGL | CSA; CURUS; DNVGL |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| shielded | IE-FC-SP-PWS/4ST | 1 | **1450570000** | IE-FC-SP-PWS/2D9 | 1 | **1450610000** |
| unshielded | IE-FC-IP-PWS/4ST | 1 | **1450640000** | IE-FC-IP-PWS/2D9 | 1 | **1450680000** |
| **Note** | | | | | | |

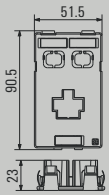
## Accessories

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| **Inserts, Power** | | | | | | |
| Socket IT/EU | IE-FCI-PWS-IT | 1 | **1450810000** | IE-FCI-PWS-IT | 1 | **1450810000** |
| **Inserts, Data** | | | | | | |
| RJ45 coupling | IE-BI-RJ45-C | 10 | **1962840000** | | | |
| RJ45 module EIA/TIA T568 A | IE-BI-RJ45-FJ-A | 10 | **1962850000** | | | |
| RJ45 module EIA/TIA T568 B | IE-BI-RJ45-FJ-B | 10 | **1963840000** | | | |
| RJ45 module PROFINET | IE-BI-RJ45-FJ-P | 10 | **1963830000** | | | |
| USB 2.0 A / A | IE-BI-USB-A | 10 | **1019570000** | | | |
| USB 3.0 A / A | IE-BI-USB-3.0-A | 10 | **1487920000** | | | |
| USB 2.0 A / B | IE-BI-USB-AB | 10 | **1131380000** | | | |
| **Marking tags** | | | | | | |
| | ESG 7/20 SIRIUS MC NE WS | 200 | **1736181044** | ESG 7/20 SIRIUS MC NE WS | 200 | **1736181044** |
| **Touch-safe protection** | | | | | | |
| Touch-safe protection | IE-FC-PWPC | 1 | **1450820000** | IE-FC-PWPC | 1 | **1450820000** |
| **Inserts, Signal** | | | | | | |
| D-Sub, 9-pole, female/female | | | | IE-FCI-D9-FF | 1 | **1450840000** |
| D-Sub, 9-pole, female / male | | | | IE-FCI-D9-FM | 1 | **1450850000** |
| D-Sub, 9-pole, female / solder connection | | | | IE-FCI-D9-FS | 1 | **1450870000** |
| VGA coupling | | | | IE-FCI-HD15-FF | 1 | **1556290000** |
| HDMI coupling | | | | IE-FCI-HDMI-FF | 1 | **2003390000** |
| **Note** | | | | | | |

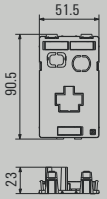
## FrontCom® Vario
## Insert plates

- IP20

### 1 x power, 2 x data




### 1 x power, 1 x 3A fuse, 1 x data




## Technical data

| | | |
|---|---|---|
| Material | Polycarbonate PC | Polycarbonate PC |
| Insert, data | 2 | 1 |
| Signal insert D-Sub 9-pole / VGA / HDMI | | |
| Insert, signal, D-Sub, 25-pole | | |
| Insert Power large | | |
| Insert Power small | | |
| Insert Power US | 1 | 1 |
| Insert fuse | | 1 |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...70 °C |
| Approvals | CSA; CURUS; DNVGL | CSA; CURUS |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| shielded | IE-FC-SP-PWU/2ST | 1 | **1450620000** | | | |
| unshielded | IE-FC-IP-PWU/2ST | 1 | **1450700000** | IE-FC-IP-PWU/1ST/CB | 1 | **1543710000** |
| **Note** | For US socket the touch-safe protection is mandatory | | | For US socket the touch-safe protection is mandatory | | |

## Accessories

| **Inserts, Signal** | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| D-Sub, 9-pole, female/female | | | | | | |
| D-Sub, 9-pole, female / male | | | | | | |
| D-Sub, 9-pole, female / solder connection | | | | | | |
| D-Sub, 25-pole, female/female | | | | | | |
| D-Sub, 25-pole, female/male | | | | | | |
| D-Sub, 25-pole, female / solder connection | | | | | | |
| HDMI coupling | | | | | | |
| VGA coupling | | | | | | |
| **Inserts, Data** | | | | | | |
| RJ45 coupling | IE-BI-RJ45-C | 10 | **1962840000** | IE-BI-RJ45-C | 10 | **1962840000** |
| RJ45 module EIA/TIA T568 A | IE-BI-RJ45-FJ-A | 10 | **1962850000** | IE-BI-RJ45-FJ-A | 10 | **1962850000** |
| RJ45 module EIA/TIA T568 B | IE-BI-RJ45-FJ-B | 10 | **1963840000** | IE-BI-RJ45-FJ-B | 10 | **1963840000** |
| RJ45 module PROFINET | IE-BI-RJ45-FJ-P | 10 | **1963830000** | IE-BI-RJ45-FJ-P | 10 | **1963830000** |
| USB 2.0 A / A | IE-BI-USB-A | 10 | **1019570000** | IE-BI-USB-A | 10 | **1019570000** |
| USB 3.0 A / A | IE-BI-USB-3.0-A | 10 | **1487920000** | IE-BI-USB-3.0-A | 10 | **1487920000** |
| USB 2.0 A / B | IE-BI-USB-AB | 10 | **1131380000** | IE-BI-USB-AB | 10 | **1131380000** |
| **Marking tags** | | | | | | |
| | ESG 7/20 SIRIUS MC NE WS | 200 | **1736181044** | ESG 7/20 SIRIUS MC NE WS | 200 | **1736181044** |
| **Touch-safe protection** | | | | | | |
| Touch-safe protection | IE-FC-PWPC | 1 | **1450820000** | IE-FC-PWPC | 1 | **1450820000** |
| **Inserts, Power** | | | | | | |
| US socket | IE-FCI-PWS-US | 1 | **1450800000** | IE-FCI-PWS-US | 1 | **1450800000** |
| **Fuse inserts** | | | | | | |
| 3 A | | | | IE-FCI-PWCB-3A | 1 | **1543690000** |

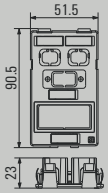
| **Note** | | | |
|---|---|---|---|

# FrontCom® Vario IP65 service interface

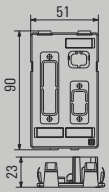
## FrontCom® Vario Insert plates

- IP20

### 2 x data, 2 x signal




### 1 x data, 2 x signal




## Technical data

| | 2 x data, 2 x signal | 1 x data, 2 x signal |
|---|---|---|
| Material | Polycarbonate PC | Polycarbonate PC |
| Insert, data | 2 | 1 |
| Signal insert D-Sub 9-pole / VGA / HDMI | 2 | 1 |
| Insert, signal, D-Sub, 25-pole | | 1 |
| Insert Power large | | |
| Insert Power small | | |
| Insert Power US | | |
| Insert fuse | | |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...70 °C |
| Approvals | CSA; CURUS; DNVGL | CSA; CURUS; DNVGL |
| **Note** | | |

## Ordering data

| | 2 x data, 2 x signal | | | 1 x data, 2 x signal | | |
|---|---|---|---|---|---|---|
| | **Type** | **Qty.** | **Order No.** | **Type** | **Qty.** | **Order No.** |
| shielded | IE-FC-SP-2ST/2D9 | 1 | **1450590000** | IE-FC-SP-1ST/1D9/1D25 | 1 | **1450580000** |
| unshielded | IE-FC-IP-2ST/2D9 | 1 | **1450670000** | IE-FC-IP-1ST/1D9/1D25 | 1 | **1450650000** |
| **Note** | | | | | | |

## Accessories

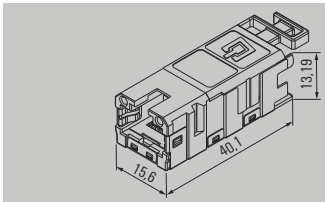
| | 2 x data, 2 x signal | | | 1 x data, 2 x signal | | |
|---|---|---|---|---|---|---|
| **Inserts, Signal** | **Type** | **Qty.** | **Order No.** | **Type** | **Qty.** | **Order No.** |
| D-Sub, 9-pole, female/female | IE-FCI-D9-FF | 1 | **1450840000** | IE-FCI-D9-FF | 1 | **1450840000** |
| D-Sub, 9-pole, female / male | IE-FCI-D9-FM | 1 | **1450850000** | IE-FCI-D9-FM | 1 | **1450850000** |
| D-Sub, 9-pole, female / solder connection | IE-FCI-D9-FS | 1 | **1450870000** | IE-FCI-D9-FS | 1 | **1450870000** |
| D-Sub, 25-pole, female/female | | | | IE-FCI-D25-FM | 1 | **1450890000** |
| D-Sub, 25-pole, female/male | | | | IE-FCI-D25-FS | 1 | **1450900000** |
| D-Sub, 25-pole, female / solder connection | | | | IE-FCI-D25-FF | 1 | **1450880000** |
| HDMI coupling | IE-FCI-HDMI-FF | 1 | **2003390000** | IE-FCI-HDMI-FF | 1 | **2003390000** |
| VGA coupling | IE-FCI-HD15-FF | 1 | **1556290000** | IE-FCI-HD15-FF | 1 | **1556290000** |
| **Inserts, Data** | | | | | | |
| RJ45 coupling | IE-BI-RJ45-C | 10 | **1962840000** | IE-BI-RJ45-C | 10 | **1962840000** |
| RJ45 module EIA/TIA T568 A | IE-BI-RJ45-FJ-A | 10 | **1962850000** | IE-BI-RJ45-FJ-A | 10 | **1962850000** |
| RJ45 module EIA/TIA T568 B | IE-BI-RJ45-FJ-B | 10 | **1963840000** | IE-BI-RJ45-FJ-B | 10 | **1963840000** |
| RJ45 module PROFINET | IE-BI-RJ45-FJ-P | 10 | **1963830000** | IE-BI-RJ45-FJ-P | 10 | **1963830000** |
| USB 2.0 A / A | IE-BI-USB-A | 10 | **1019570000** | IE-BI-USB-A | 10 | **1019570000** |
| USB 3.0 A / A | IE-BI-USB-3.0-A | 10 | **1487920000** | IE-BI-USB-3.0-A | 10 | **1487920000** |
| USB 2.0 A / B | IE-BI-USB-AB | 10 | **1131380000** | IE-BI-USB-AB | 10 | **1131380000** |
| **Marking tags** | | | | | | |
| | ESG 7/20 SIRIUS MC NE WS | 200 | **1736181044** | ESG 7/20 SIRIUS MC NE WS | 200 | **1736181044** |
| **Touch-safe protection** | | | | | | |
| Touch-safe protection | IE-FC-PWPC | 1 | **1450820000** | IE-FC-PWPC | 1 | **1450820000** |
| **Inserts, Power** | | | | | | |
| US socket | | | | | | |
| **Fuse inserts** | | | | | | |
| 3 A | | | | | | |
| **Note** | | | | | | |

## Data inserts

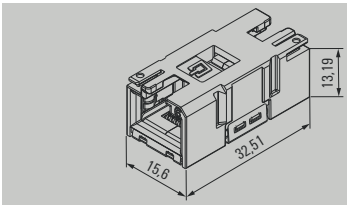
### RJ45

- Completely in Cat. $6_A$
- IP20
- For housing variants 1, 4, 5, 14 and for FrontCom®

## Module




## Coupling




## Technical data

| | | |
|---|---|---|
| Protection degree | IP67 with housing | IP67 with housing |
| Plugging cycles | 750 | 750 |
| Shielding | 360° all-round enclosure | 360° all-round enclosure |
| Housing main material | Zinc diecast | Zinc diecast |
| Contact surface | Gold over nickel, Au ≥ 0.8 µm | Gold over nickel, Au ≥ 0.8 µm |
| Connection cross-section, flexible, min. / max. | AWG 26 / AWG 22 | |
| Connection cross-section, solid, min. / max. | AWG 24 / AWG 22 | |
| Insulation diameter, min. / max. | 0.85 mm...1.6 mm | ... |
| Connector standard | IEC 60603-7-51 | IEC 60603-7-51 |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...70 °C |
| PoE / PoE+ | conforming to IEEE 802.3af | conforming to IEEE 802.3af |
| Approvals | CULUS | CULUS; DNVGL |
| **Note** | Connection of WM Cat. 7 AWG 27/7 LSZH possible | |

## Ordering data

| tool-free | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| TIA-A. Cat. $6_A$ | IE-BI-RJ45-FJ-A | 10 | **1962850000** | | | |
| TIA-B. Cat. $6_A$ | IE-BI-RJ45-FJ-B | 10 | **1963840000** | | | |
| PROFINET Cat. 5 | IE-BI-RJ45-FJ-P | 10 | **1963830000** | | | |
| Coupling | | | | IE-BI-RJ45-C | 10 | **1962840000** |
| **Note** | | | | | | |

## Accessories

| Tools | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| Optional pressing tool | PWZ RJ45 | 1 | **1118040000** | | | |

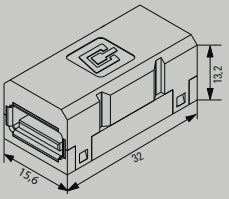
**Note**

## Data inserts

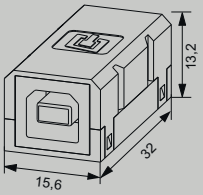
### USB

- IP20
- For housing variants 1, 4, 5, 14 and for FrontCom®

### Coupling USB A/A




### Coupling USB A/B




## Technical data

| | | |
|---|---|---|
| Protection degree | IP67 with housing | IP67 with housing |
| Shielding | 360° all-round enclosure | 360° all-round enclosure |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...70 °C |
| Connection 1 / 2 | USB A / USB A | USB A / USB B |
| Connector standard | IEC 61076-3-107 | IEC 61076-3-107 |
| Approvals | CULUS; DNVGL | CULUS; DNVGL |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. |
|---|---|---|---|
| USB 2.0 | IE-BI-USB-A | 10 | **1019570000** |
| USB 3.0 | IE-BI-USB-3.0-A | 10 | **1487920000** |
| **Note** | | | |

| Type | Qty. | Order No. |
|---|---|---|
| IE-BI-USB-AB | 10 | **1131380000** |
| | | |

## Accessories

| | Type | Qty. | Order No. |
|---|---|---|---|
| **USB cable 2.0** | | | |
| 0.5 m | IE-USB-A-A-0.5M | 1 | **1993550005** |
| 1.0 m | IE-USB-A-A-1.0M | 1 | **1993550010** |
| 1.5 m | IE-USB-A-A-1.5M | 1 | **1993550015** |
| 1.8 m | IE-USB-A-A-1.8M | 1 | **1993550018** |
| 3.0 m | IE-USB-A-A-3.0M | 1 | **1993550030** |
| **USB cable 3.0** | | | |
| 0.5 m | IE-USB-3.0-A-A-0.5M | 1 | **2581730005** |
| 1.8 m | IE-USB-3.0-A-A-1.8M | 1 | **2581730018** |
| 3.0 m | IE-USB-3.0-A-A-3M | 1 | **2581730030** |
| 5.0 m | IE-USB-3.0-A-A-5M | 1 | **2581730050** |

| Type | Qty. | Order No. |
|---|---|---|
| | | |

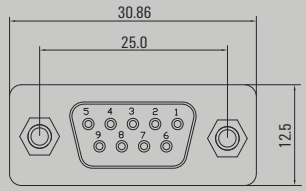
**Note**

## Signal inserts

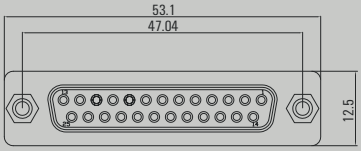
### D-sub

- IP 20

### 9-pole




### 25-pole




## Technical data

| | | |
|---|---|---|
| Protection degree | IP20 | IP20 |
| Housing main material | SPCC | SPCC |
| Number of poles | 9 | 25 |
| Housing surface | tin-plated | tin-plated |
| Material insulator | PBT glass fibre reinforced UL 94 V-0 | PBT glass fibre reinforced UL 94 V-0 |
| Contact surface | Gold-plated | Gold-plated |
| Contact resistance | ≤ 20 mΩ | ≤ 20 mΩ |
| Insulation strength | 1000 MΩ at 500 V DC | 1000 MΩ at 500 V DC |
| Dielectric strength, contact / contact | 1 kV $_{eff}$ /1 min. | 1 kV $_{eff}$ /1 min. |
| Ambient temperature (operational) | -55 °C...105 °C | -55 °C...105 °C |
| Approvals | DNVGL; UR | DNVGL; UR |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. |
|---|---|---|---|
| Socket / socket | IE-FCI-D9-FF | 1 | **1450840000** |
| Socket / plug | IE-FCI-D9-FM | 1 | **1450850000** |
| Socket / solder connection | IE-FCI-D9-FS | 1 | **1450870000** |

| | Type | Qty. | Order No. |
|---|---|---|---|
| Socket / socket | IE-FCI-D25-FF | 1 | **1450880000** |
| Socket / plug | IE-FCI-D25-FM | 1 | **1450890000** |
| Socket / solder connection | IE-FCI-D25-FS | 1 | **1450900000** |

**Note**

## Accessories

| Type | Qty. | Order No. |
|---|---|---|

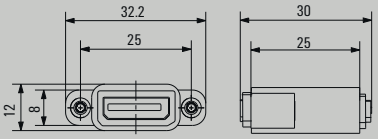
| Type | Qty. | Order No. |
|---|---|---|

**Note**

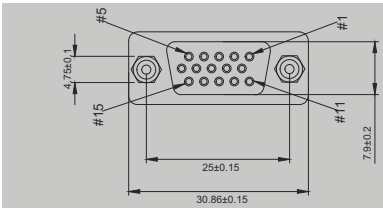
## Signal inserts

- IP 20

## HDMI




## HD15 / VGA




## Technical data

| | HDMI | HD15 / VGA |
|---|---|---|
| Protection degree | IP20 | IP20 |
| Housing main material | PVC casting | |
| Number of poles | 9 | 25 |
| Housing surface | | |
| Contact surface | Gold-plated | Gold over nickel |
| Contact resistance | | |
| Insulation strength | | 1000 MΩ at 500 V DC |
| Dielectric strength, contact / contact | | 1000 $V_{eff}$ / 1 min |
| Ambient temperature (operational) | -15 °C...50 °C | -55 °C...105 °C |
| Approvals | UR | DNVGL; UR |
| **Note** | | |

## Ordering data

| Type | Qty. | Order No. |
|---|---|---|
| IE-FCI-HDMI-FF | 1 | 2003390000 |

**Note**

| Type | Qty. | Order No. |
|---|---|---|
| IE-FCI-HD15-FF | 1 | 1556290000 |

**Note**

## Accessories

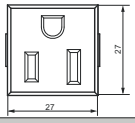
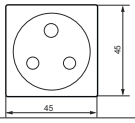
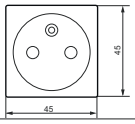
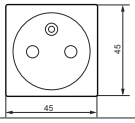
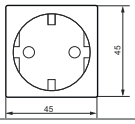
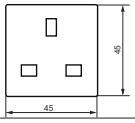
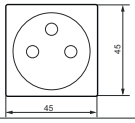
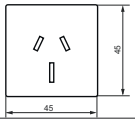
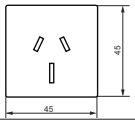
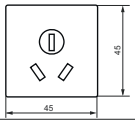
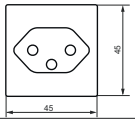
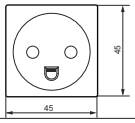
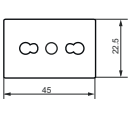
| Type | Qty. | Order No. |
|---|---|---|

**Note**

| Type | Qty. | Order No. |
|---|---|---|

**Note**

## Type overview: Power inserts/sockets

| Type | Region | Plug-Type | | Qty. | Order No. |
|---|---|---|---|---|---|
| IE-FCI-PWS-US | USA | Type B |  Power socket type B isn't compatible with mounting rail adaptor, but it's applicable with following insert plates: 1450620000, 1450700000, 1543710000. | 1 | **1450800000** |
| IE-FCI-PWB-IND | India, South Africa | Type D |  | 1 | **2500710000** |
| IE-FCI-PWB-CZ | Czechia | Type E |  The difference to IE-FCI-PWB-FR is the printing on the back side. Connector face is the same. | 1 | **2426700000** |
| IE-FCI-PWB-FR | France | Type E |  The difference IE-FCI-PWB-CZ is the printing on the back side. Connector face is the same. | 1 | **1450750000** |
| IE-FCI-PWB-DE | Germany | Type F |  | 1 | **1450730000** |
| IE-FCI-PWB-GB | Great Britain | Type G |  | 1 | **1450770000** |
| IE-FCI-PWS-ISR | Israel | Tpy H |  | 1 | **2531060000** |
| IE-FCI-PWB-AU-15A | Australia | Type I |  The difference to IE-FCI-PWB-AU-10A and IE-FCI-PWB-CN is rated current: 15A 240V and the protective contact is higher and wider. Furthermore the difference to IE-FCI-PWB-CN is the connection on the backside. | 1 | **1450830000** |
| IE-FCI-PWB-AU-10A | Australia | Type I |  The difference to IE-FCI-PWB-CN is the connection on the backside. Connector face is the same. The difference to IE-FCI-PWB-AU is rated current: 10A 240V and the protective contact is smaller and thinner. | 1 | **1546590000** |
| IE-FCI-PWB-CN | China | Type I |  The difference to IE-FCI-PWB-AU is rated current: 10A 240V and the protective contact is smaller and thinner.<br>Furthermore the difference to IE-FCI-PWB-AU-10A and IE-FCI-PWB-AU is the connection on the backside. | 1 | **1450790000** |
| IE-FCI-PWB-CH | Schwitzerland | Type J |  | 1 | **1450780000** |
| IE-FCI-PWB-DK | Denmark | Type K |  | 1 | **2661340000** |
| IE-FCI-PWS-IT | Italy, Europe | Type L |  | 1 | **1450810000** |

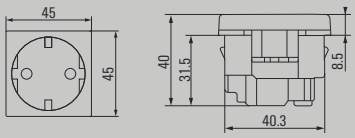
# FrontCom® Vario IP65 service interface

## Power inserts

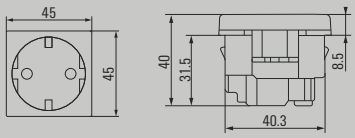
## Power sockets

- IP 20

### Germany, white




### Germany, orange




## Technical data

| | | |
|---|---|---|
| Protection degree | IP20 | IP20 |
| Housing main material | Polycarbonate PC | Polycarbonate PC |
| Type of connection | PUSH IN | PUSH IN |
| Connector face | Type F | Type F |
| Connector standard | | |
| Line connection cross-section | | |
| finely stranded with wire-end ferrule | 1.5 ... 1.5 mm² | 1.5 ... 1.5 mm² |
| finely stranded without wire-end ferrule | 1.5 ... 2.5 mm² | 1.5 ... 2.5 mm² |
| finely stranded with wire-end ferrule | 1.5 ... 1.5 mm² | 1.5 ... 1.5 mm² |
| finely stranded without wire-end ferrule | 1.5 ... 2.5 mm² | 1.5 ... 2.5 mm² |
| Conductor connection cross-section, rigid | 1.5 ... 2.5 mm² | 1.5 ... 2.5 mm² |
| Stripping length | 10 mm | 10 mm |
| Rated voltage (AC) | 250 V | 250 V |
| Rated current | 16 A | 16 A |
| Ambient temperature (operational) | -5 °C...50 °C | -5 °C...50 °C |
| Approvals | DNVGL | DNVGL |
| **Note** | | |

## Ordering data

| Type | Qty. | Order No. |
|---|---|---|
| IE-FCI-PWB-DE | 1 | 1450730000 |

**Note**

| Type | Qty. | Order No. |
|---|---|---|
| IE-FCI-PWB-DE-OR | 1 | 1554000000 |

## Accessories

**FrontCom**

Adapter for mounting rail installation

| Type | Qty. | Order No. |
|---|---|---|
| IE-DINRAIL-AD-PWB | 1 | 2534680000 |

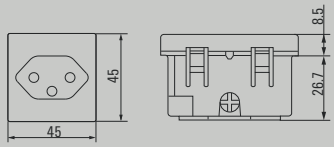
**Flat blade connector, 6.5 mm**

straight, 4.8 mm, fully insulated

| Type | Qty. | Order No. |
|---|---|---|
| IE-DINRAIL-AD-PWB | 1 | 2534680000 |

**Note**

## Switzerland

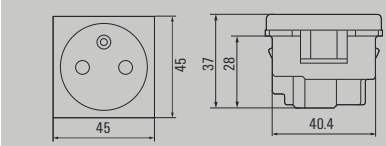



| |
|---|
| IP20 |
| Polycarbonate PC |
| PUSH IN |
| Type J |
| |
| 1.5 ... 1.5 mm² |
| 1.5 ... 2.5 mm² |
| 1.5 ... 1.5 mm² |
| 1.5 ... 2.5 mm² |
| 1.5 ... 2.5 mm² |
| 10 mm |
| 250 V |
| 10 A |
| -5 °C...50 °C |
| DNVGL |

| Type | Qty. | Order No. |
|---|---|---|
| IE-FCI-PWB-CH | 1 | 1450780000 |

| Type | Qty. | Order No. |
|---|---|---|
| IE-DINRAIL-AD-PWB | 1 | 2534680000 |

## France, white

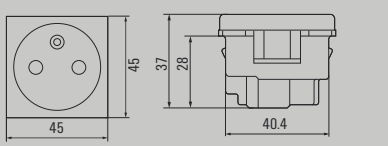



| |
|---|
| IP20 |
| Polycarbonate PC |
| PUSH IN |
| Type E |
| |
| 1.5 ... 1.5 mm² |
| 1.5 ... 2.5 mm² |
| 1.5 ... 1.5 mm² |
| 1.5 ... 2.5 mm² |
| 1.5 ... 2.5 mm² |
| 10 mm |
| 250 V |
| 16 A |
| -5 °C...50 °C |
| DNVGL |

| Type | Qty. | Order No. |
|---|---|---|
| IE-FCI-PWB-FR | 1 | 1450750000 |

| Type | Qty. | Order No. |
|---|---|---|
| IE-DINRAIL-AD-PWB | 1 | 2534680000 |

## France, orange




| |
|---|
| IP20 |
| Polycarbonate PC |
| PUSH IN |
| Type E |
| |
| 1.5 ... 1.5 mm² |
| 1.5 ... 2.5 mm² |
| 1.5 ... 1.5 mm² |
| 1.5 ... 2.5 mm² |
| 1.5 ... 2.5 mm² |
| 10 mm |
| 250 V |
| 16 A |
| -5 °C...50 °C |

| Type | Qty. | Order No. |
|---|---|---|
| IE-FCI-PWB-FR-OR | 1 | 2007230000 |

| Type | Qty. | Order No. |
|---|---|---|
| IE-DINRAIL-AD-PWB | 1 | 2534680000 |

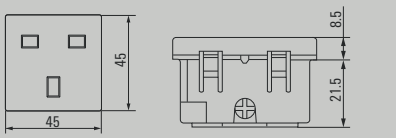
# FrontCom® Vario IP65 service interface

## Power inserts

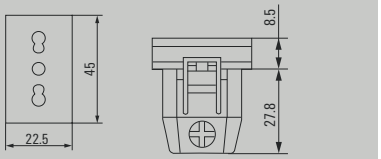
## Power sockets

- IP 20

### UK




### Italy / Europe




## Technical data

| | UK | Italy / Europe |
|---|---|---|
| Protection degree | IP20 | IP20 |
| Housing main material | Polycarbonate PC | Polycarbonate PC |
| Type of connection | Screw connection | Screw connection |
| Connector face | Type G | Type L |
| Connector standard | | |
| Line connection cross-section | | |
| finely stranded with wire-end ferrule | 1.5 ... 2.5 mm² | 1.5 ... 2.5 mm² |
| finely stranded without wire-end ferrule | 1.5 ... 4 mm² | 1.5 ... 4 mm² |
| finely stranded with wire-end ferrule | 1.5 ... 2.5 mm² | 1.5 ... 2.5 mm² |
| finely stranded without wire-end ferrule | 1.5 ... 4 mm² | 1.5 ... 4 mm² |
| Conductor connection cross-section, rigid | 1.5 ... 4 mm² | 1.5 ... 4 mm² |
| Stripping length | 9 mm | 9 mm |
| Rated voltage (AC) | 250 V | 250 V |
| Rated current | 13 A | 16 A |
| Ambient temperature (operational) | -5 °C...50 °C | -5 °C...50 °C |
| Approvals | DNVGL | DNVGL |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. |
|---|---|---|---|
| | IE-FCI-PWB-GB | 1 | 1450770000 |
| **Note** | | | |

| | Type | Qty. | Order No. |
|---|---|---|---|
| | IE-FCI-PWS-IT | 1 | 1450810000 |
| | | | |

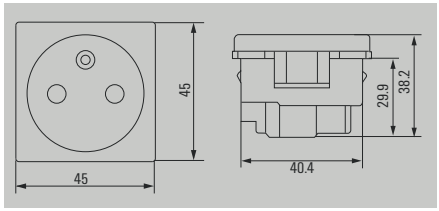
## Accessories

| FrontCom | Type | Qty. | Order No. |
|---|---|---|---|
| Adapter for mounting rail installation | IE-DINRAIL-AD-PWB | 1 | 2534680000 |
| **Flat blade connector, 6.5 mm** | | | |
| straight, 4.8 mm, fully insulated | | | |

| | Type | Qty. | Order No. |
|---|---|---|---|
| | IE-DINRAIL-AD-PWB | 1 | 2534680000 |
| | | | |

**Note**

## Czech Republic

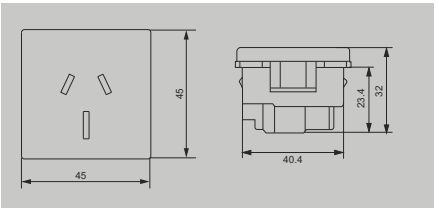



| |
|---|
| IP20 |
| Polycarbonate PC |
| PUSH IN |
| Type E |
| |
| 1.5 … 1.5 mm² |
| 1.5 … 2.5 mm² |
| 1.5 … 1.5 mm² |
| 1.5 … 2.5 mm² |
| 1.5 … 2.5 mm² |
| 12 mm |
| 250 V |
| 16 A |
| -5 °C...50 °C |

| Type | Qty. | Order No. |
|---|---|---|
| IE-FCI-PWB-CZ | 1 | **2426700000** |

| Type | Qty. | Order No. |
|---|---|---|
| IE-DINRAIL-AD-PWB | 1 | **2534680000** |

## Australia, 15 A

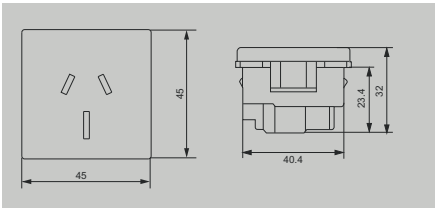



| |
|---|
| IP20 |
| Polycarbonate PC |
| Screw connection |
| Type I |
| |
| 1.5 … 2.5 mm² |
| 1.5 … 4 mm² |
| 1.5 … 2.5 mm² |
| 1.5 … 4 mm² |
| 1.5 … 4 mm² |
| 9 mm |
| 240 V |
| 15 A |
| -5 °C...50 °C |
| DNVGL |

| Type | Qty. | Order No. |
|---|---|---|
| IE-FCI-PWB-AU | 1 | **1450830000** |

| Type | Qty. | Order No. |
|---|---|---|
| IE-DINRAIL-AD-PWB | 1 | **2534680000** |

## Australia, 10 A




| |
|---|
| IP20 |
| Polycarbonate PC |
| Screw connection |
| Type I |
| |
| 1.5 … 2.5 mm² |
| 1.5 … 4 mm² |
| 1.5 … 2.5 mm² |
| 1.5 … 4 mm² |
| 1.5 … 4 mm² |
| 9 mm |
| 240 V |
| 10 A |
| -5 °C...50 °C |
| DNVGL |

| Type | Qty. | Order No. |
|---|---|---|
| IE-FCI-PWB-AU-10A | 1 | **1546590000** |

| Type | Qty. | Order No. |
|---|---|---|
| IE-DINRAIL-AD-PWB | 1 | **2534680000** |

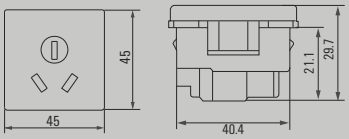
# FrontCom® Vario IP65 service interface

## Power inserts

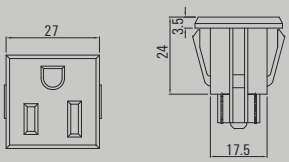
## Power sockets

- IP 20

### China




### USA




## Technical data

| | | |
|---|---|---|
| Protection degree | IP20 | IP20 |
| Housing main material | Polycarbonate PC | PA 66 |
| Type of connection | Screw connection | Solder connection, FS 4.8 x 0.8 |
| Connector face | Type I | Type B |
| Connector standard | | |
| Line connection cross-section | | |
| finely stranded with wire-end ferrule | 1.5 ... 2.5 mm² | ... |
| finely stranded without wire-end ferrule | 1.5 ... 4 mm² | ... |
| finely stranded with wire-end ferrule | 1.5 ... 2.5 mm² | ... |
| finely stranded without wire-end ferrule | 1.5 ... 4 mm² | ... |
| Conductor connection cross-section, rigid | 1.5 ... 4 mm² | ... |
| Stripping length | 9 mm | |
| Rated voltage (AC) | 250 V | 125 V |
| Rated current | 10 A | 15 A |
| Ambient temperature (operational) | -5 °C...50 °C | -20 °C...85 °C |
| Approvals | DNVGL | DNVGL; UR |
| **Note** | | |

## Ordering data

| Type | Qty. | Order No. |
|---|---|---|
| IE-FCI-PWB-CN | 1 | **1450790000** |

**Note**

| Type | Qty. | Order No. |
|---|---|---|
| IE-FCI-PWS-US | 1 | **1450800000** |

For US socket the touch-safe protection is mandatory

## Accessories

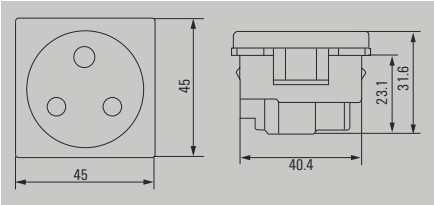
| FrontCom | | |
|---|---|---|
| Adapter for mounting rail installation | | |
| **Flat blade connector, 6.5 mm** | | |
| straight, 4.8 mm, fully insulated | | |

| Type | Qty. | Order No. |
|---|---|---|
| IE-DINRAIL-AD-PWB | 1 | **2534680000** |
| | | |

| Type | Qty. | Order No. |
|---|---|---|
| | | |
| | | |
| VFSKHV/1,5-2,5/485 | 100 | **1491920000** |

**Note**

## India, South Africa

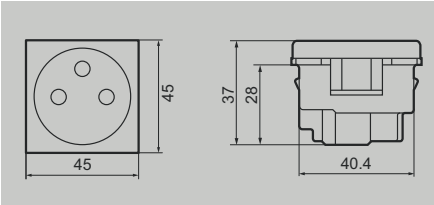



| |
|---|
| IP20 |
| Polycarbonate PC |
| Screw connection |
| Type D |
| |
| 1.5 ... 2.5 mm² |
| ... |
| 1.5 ... 2.5 mm² |
| ... |
| 1.5 ... 4 mm² |
| 9 mm |
| 250 V |
| 13 A |
| -5 °C...50 °C |

| Type | Qty. | Order No. |
|---|---|---|
| IE-FCI-PWB-IND | 1 | **2500710000** |

| Type | Qty. | Order No. |
|---|---|---|
| IE-DINRAIL-AD-PWB | 1 | **2534680000** |

## Israel

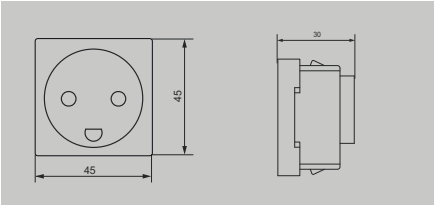



| |
|---|
| IP20 |
| PP |
| Screw connection |
| Type H |
| |
| 1.5 ... 1.5 mm² |
| ... |
| 1.5 ... 1.5 mm² |
| ... |
| 1.5 ... 2.5 mm² |
| 11 mm |
| 250 V |
| 16 A |
| -5 °C...50 °C |

| Type | Qty. | Order No. |
|---|---|---|
| IE-FCI-PWB-ISR | 1 | **2531060000** |

| Type | Qty. | Order No. |
|---|---|---|
| IE-DINRAIL-AD-PWB | 1 | **2534680000** |

## Denmark




| |
|---|
| IP20 |
| Polycarbonate PC |
| PUSH IN |
| Type K |
| |
| 1.5 ... 1.5 mm² |
| 1.5 ... 2.5 mm² |
| 1.5 ... 1.5 mm² |
| 1.5 ... 2.5 mm² |
| 1.5 ... 2.5 mm² |
| 13 mm |
| 250 V |
| 13 A |
| -5 °C...40 °C |

| Type | Qty. | Order No. |
|---|---|---|
| IE-FCI-PWB-DK | 1 | **2661340000** |

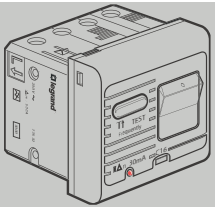
| Type | Qty. | Order No. |
|---|---|---|
| IE-DINRAIL-AD-PWB | 1 | **2534680000** |

## Power inserts

### RCBO

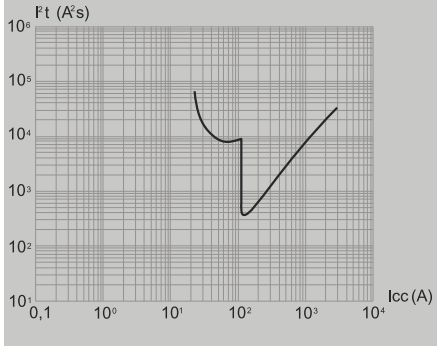
- IP 20

### RCBO



## Technical data

| | |
|---|---|
| Ambient temperature (operational) | -5 °C...40 °C |
| Operating voltage | 230 V AC |
| Rated current | 16 A |
| IΔm | 500 A |
| IΔn | 30 mA |
| Triggering characteristic | Typ C |
| Type of connection | Screw connection |
| Line connection cross-section | |
| finely stranded with wire-end ferrule | 1.5 ... 2.5 mm² |
| finely stranded with wire-end ferrule | 1.5 ... 2.5 mm² |
| Conductor connection cross-section, rigid | 1.5 ... 2.5 mm² |
| **Note** | |




## Ordering data

| Type | Qty. | Order No. |
|---|---|---|
| IE-FCI-PWB-RCBO | 1 | 1534250000 |

**Note**

## Accessories

| FrontCom | Type | Qty. | Order No. |
|---|---|---|---|
| Adapter for mounting rail installation | IE-DINRAIL-AD-PWB | 1 | 2534680000 |

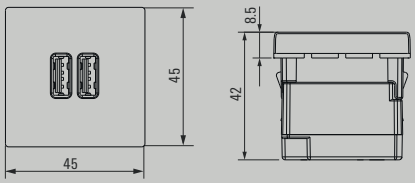
**Note**

## Power inserts

## USB charge insert

- IP 20

## USB-Charger 5 V / 2.4 A




## Technical data

| | |
|---|---|
| Ambient temperature (operational) | 0 °C...45 °C |
| Input voltage | 220...240 V AC |
| Frequency range | 50...60 Hz |
| Input current | ≤ 300 mA |
| Output voltage | 5 V DC |
| Output current | 2.4 A |
| Degree of efficiency | 81 % |
| Power consumption in standby mode | max. 0.1 W |
| Standards | EN 60950-1, EN 62684, EN 50558 |
| Protection class | II |
| Housing main material | Polycarbonate PC |
| Type of connection | Screw connection |
| Line connection cross-section | |
| finely stranded with wire-end ferrule | 1.5 ... 2.5 mm² |
| finely stranded with wire-end ferrule | 1.5 ... 2.5 mm² |
| Conductor connection cross-section, rigid | 1.5 ... 2.5 mm² |
| Stripping length | 6 mm |

**Note**

## Ordering data

| Type | Qty. | Order No. |
|---|---|---|
| IE-FCI-PWB-2USB-A-5V | 1 | **2505070000** |

**Note**

## Accessories

| FrontCom | Type | Qty. | Order No. |
|---|---|---|---|
| Adapter for mounting rail installation | IE-DINRAIL-AD-PWB | 1 | **2534680000** |

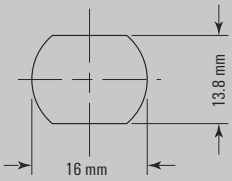
**Note**

# FrontCom® Vario IP65 service interface

## 3A fuse

- IP 20

## 3A fuse




## Technical data

| | |
|---|---|
| Operating voltage | 32 V DC, 250 V AC |
| Rated current | 3 A |
| Type of connection | Flat-blade receptacles 6.5 mm |

**Note**

## Ordering data

| Type | Qty. | Order No. |
|---|---|---|
| IE-FCI-PWCB-3A | 1 | **1543690000** |

**Note**

## Accessories

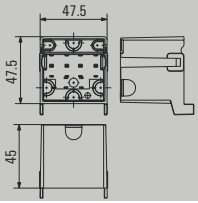
| Flat blade connector, 6.5 mm | Type | Qty. | Order No. |
|---|---|---|---|
| angled | WFSKHV/1,5-2,5 | 100 | **1491970000** |
| straight | VFSKHV/1,5-2,5/638 | 100 | **1491940000** |

**Note**

## Accessories

### Touch-safe protection

### Touch-safe protection




## Technical data

| | |
|---|---|
| Length x width x height | 47.5 / 47.5 / 45 mm |
| Material | PC |
| **Note** | |

## Ordering data

| Type | Qty. | Order No. |
|---|---|---|
| IE-FC-PWPC | 1 | 1450820000 |

**Note**

## Accessories

| Type | Qty. | Order No. |
|---|---|---|
| | | |

**Note**

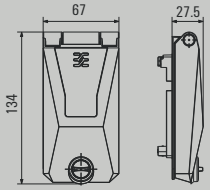
# FrontCom® Vario IP65 service interface

## Sets

- shielded

## 2x Data 1x Power DE

**Plastic cover**




## Technical data

| | |
|---|---|
| Frame | Plastic cover |
| Insert plate | 2x data, 1x power, Shielded |
| Data inserts | USB 2.0 A/A, RJ45 coupling Cat.$6_A$ |
| Power inserts | Socket DE |
| Rated voltage for socket | 250 V |
| Rated current for socket | 16 A |
| Protection degree | IP65, in closed state |
| products included in the set | 1450510000;1450550000;1450730000;1019570000;196284 0000 |

**Note**

## Ordering data

| | Type | Qty. | Order No. |
|---|---|---|---|
| shielded | IE-FC-SET-SPDED001-KN-P | 1 | **1529580000** |
| unshielded | | | |

**Note**

## Accessories

| Type | Qty. | Order No. |
|---|---|---|
| | | |

**Note**

## Sets

Incl. fixed label: "Service only!", "USB", "Ethernet", "230 V AC"

## 2x Data, 1x Power

## 2x Data, 1x Power

## Technical data

| | 2x Data, 1x Power | 2x Data, 1x Power |
|---|---|---|
| Frame | Plastic cover, Lockable with key | Plastic cover, Lockable with key |
| Insert plate | 2x data, 1x power, Shielded | 2x data, 1x power, Unshielded |
| Data inserts | USB 2.0 A/A, RJ45 coupling Cat.$6_A$ | USB 2.0 A/A, RJ45 coupling Cat.$6_A$ |
| Power inserts | Socket DE | Socket DE |
| Rated voltage for socket | 250 V | 250 V |
| Rated current for socket | 16 A | 16 A |
| Protection degree | IP65, in closed state | IP65, in closed state |
| products included in the set | 1450520000;1450550000;1450730000;1019570000;1962840000;1450820000 | 1450520000;1450630000;1450730000;1019570000;1962840000;1450820000 |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. |
|---|---|---|---|
| shielded | IE-FC-SET-SPDEK001-KY-P | 1 | **1989020000** |
| unshielded | | | |
| **Note** | | | |

| Type | Qty. | Order No. |
|---|---|---|
| | | |
| IE-FC-SET-IPDEK001-KY-P | 1 | **1543680000** |

## Accessories

| Type | Qty. | Order No. |
|---|---|---|
| | | |

| Type | Qty. | Order No. |
|---|---|---|
| | | |

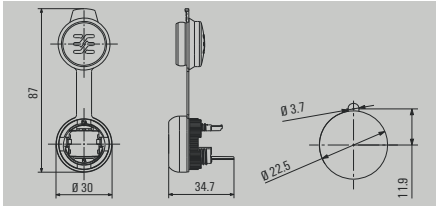
**Note**

# FrontCom® Micro IP65 service interface

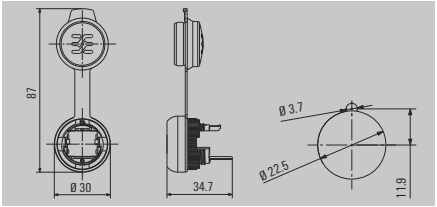
## FrontCom® Micro RJ45

### Module

### 8-wire




### 4-wire




## Technical data

| | 8-wire | 4-wire |
|---|---|---|
| Category | Cat.6$_A$ / Class E$_A$ (ISO/IEC 11801 2010) | Cat.5 (ISO/IEC 11801) |
| Protection degree | IP65, in closed state | IP65, in closed state |
| Housing main material | PA UL 94 V0 | PA UL 94 V0 |
| Contact surface | Gold over nickel | Gold over nickel |
| Colour | black | black |
| Shielding | 360° shield contact | 360° shield contact |
| Type of mounting | Cabinet, Distribution box | Cabinet, Distribution box |
| Plugging cycles | 750 | 750 |
| Connector standard | IEC 60603-7-51 | IEC 60603-7-51 |
| Connection 1 / 2 | RJ45 / IDC | RJ45 / IDC |
| Wall thickness, min. / max. | 1 mm / 3 mm | 1 mm / 3 mm |
| Dust protection cap material | EPDM | EPDM |
| PoE / PoE+ | conforming to IEEE 802.3af | conforming to IEEE 802.3af |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...70 °C |
| Approvals | CULUS | CULUS |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| PROFINET module | | | | IE-FCM-RJ45-FJ-P | 10 | **1018830000** |
| TIA-A module | IE-FCM-RJ45-FJ-A | 10 | **1018810000** | | | |
| TIA-B module | IE-FCM-RJ45-FJ-B | 10 | **1018820000** | | | |
| **Note** | | | | | | |

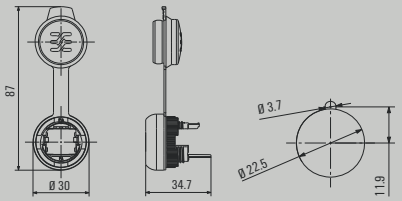
## Accessories

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| **Fixing tool** | IE-FISP-V4 | 2 | **9204370000** | IE-FISP-V4 | 2 | **9204370000** |
| **Marking tags** | | | | | | |
| SwitchMark markers white | SM 27/18 MC NE WS | 80 | **1699860000** | SM 27/18 MC NE WS | 80 | **1699860000** |
| MultiCard, white | ESG 9/11 K MC NE WS | 200 | **1857440000** | ESG 9/11 K MC NE WS | 200 | **1857440000** |
| **Holder** | | | | | | |
| | SM-H 27/18 SW | 25 | **1716630000** | SM-H 27/18 SW | 25 | **1716630000** |

| | | |
|---|---|---|
| **Note** | | |

## FrontCom® Micro RJ45
## Coupling

### 8-wire




### Technical data

| | |
|---|---|
| Category | Cat.6$_A$ / Class E$_A$ (ISO/IEC 11801 2010) |
| Protection degree | IP65, in closed state |
| Housing main material | PA UL 94 V0 |
| Contact surface | Gold over nickel |
| Colour | black |
| Shielding | 360° shield contact |
| Type of mounting | Cabinet, Distribution box |
| Plugging cycles | 750 |
| Connector standard | IEC 60603-7-51 |
| Connection 1 / 2 | RJ45 / RJ45 |
| Wall thickness, min. / max. | 1 mm / 3 mm |
| Dust protection cap material | EPDM |
| PoE / PoE+ | conforming to IEEE 802.3af |
| Ambient temperature (operational) | -40 °C...70 °C |
| Approvals | CULUS |
| **Note** | |

### Ordering data

| | Type | Qty. | Order No. |
|---|---|---|---|
| Coupling | IE-FCM-RJ45-C | 10 | **1018790000** |
| **Note** | | | |

### Accessories

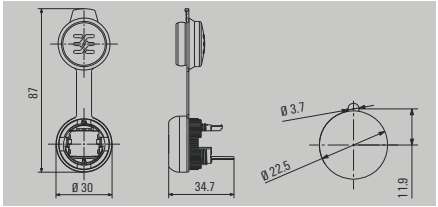
| | Type | Qty. | Order No. |
|---|---|---|---|
| **Fixing tool** | | | |
| | IE-FISP-V4 | 2 | **9204370000** |
| **Marking tags** | | | |
| SwitchMark markers white | SM 27/18 MC NE WS | 80 | **1699860000** |
| **Holder** | | | |
| | SM-H 27/18 SW | 25 | **1716630000** |

**Note**

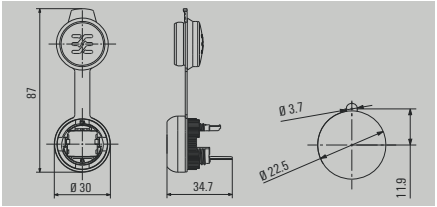
# FrontCom® Micro IP65 service interface

## FrontCom® Micro USB

### Coupling AA




### Coupling AB




## Technical data

| | | |
|---|---|---|
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...70 °C |
| Protection degree | IP65, in closed state | IP65, in closed state |
| Housing main material | PA UL 94 V0 | PA UL 94 V0 |
| Colour | black | black |
| Shielding | 360° shield contact | 360° shield contact |
| Type of mounting | Cabinet, Distribution box | Cabinet, Distribution box |
| Connector standard | IEC 61076-3-107 | IEC 61076-3-107 |
| Connection 1 / 2 | USB A / USB A | USB A / USB B |
| Dust protection cap material | EPDM | EPDM |
| Wall thickness, min. / max. | 1 mm / 3 mm | 1 mm / 3 mm |
| Approvals | CULUS; EAC | CULUS; EAC |
| **Note** | Approvals available on request | |

## Ordering data

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| USB 2.0 | IE-FCM-USB-A | 10 | **1018840000** | IE-FCM-USB-AB | 10 | **1222550000** |
| USB 3.0 | IE-FCM-USB-3.0-A | 10 | **1427960000** | | | |
| **Note** | | | | | | |

## Accessories

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| **Fixing tool** | | | | | | |
| | IE-FISP-V4 | 2 | **9204370000** | IE-FISP-V4 | 2 | **9204370000** |
| **Marking tags** | | | | | | |
| SwitchMark markers white | SM 27/18 MC NE WS | 80 | **1699860000** | SM 27/18 MC NE WS | 80 | **1699860000** |
| MultiCard, white | ESG 9/11 K MC NE WS | 200 | **1857440000** | ESG 9/11 K MC NE WS | 200 | **1857440000** |
| **Holder** | | | | | | |
| | SM-H 27/18 SW | 25 | **1716630000** | SM-H 27/18 SW | 25 | **1716630000** |
| **USB cable 2.0** | | | | | | |
| 0.5 m | IE-USB-A-A-0.5M | 1 | **1993550005** | | | |
| 1.0 m | IE-USB-A-A-1.0M | 1 | **1993550010** | | | |
| 1.5 m | IE-USB-A-A-1.5M | 1 | **1993550015** | | | |
| 1.8 m | IE-USB-A-A-1.8M | 1 | **1993550018** | | | |
| 3.0 m | IE-USB-A-A-3.0M | 1 | **1993550030** | | | |
| **USB cable 3.0** | | | | | | |
| 0.5 m | IE-USB-3.0-A-A-0.5M | 1 | **2581730005** | | | |
| 1.8 m | IE-USB-3.0-A-A-1.8M | 1 | **2581730018** | | | |
| 3.0 m | IE-USB-3.0-A-A-3M | 1 | **2581730030** | | | |
| 5.0 m | IE-USB-3.0-A-A-5M | 1 | **2581730050** | | | |
| **Note** | | | | | | |

# IP67 plug-in connectors
## Overview

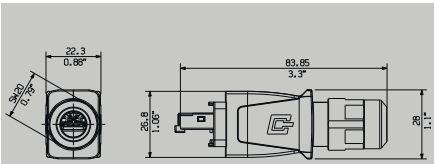

| | | |
|---|---|---|
| **IP67 plug-in connectors** | PushPull V14 - RJ45 | N.2 |
| | PushPull V14 - Hybrid | N.7 |
| | PushPull V14 - FO | N.10 |
| | Bayonet V1 Metal-RJ45 | N.12 |
| | Bayonet V1 Metal-FO | N.14 |
| | Bayonet V1 Plastic-RJ45 | N.16 |
| | PushPull V4 – RJ45 | N.19 |
| | PushPull V4 – FO | N.23 |
| | RockStar® V5 – RJ45 | N.25 |
| | SnapIn V6 – RJ45 | N.27 |
| | M8 Single Pair Ethernet | N.30 |
| | M12 D-coded | N.32 |
| | M12 X-Type | N.41 |
| | Inserts | N.49 |
| | PushPull Power | N.60 |

## Plug PushPull V14 - RJ45 PROFINET

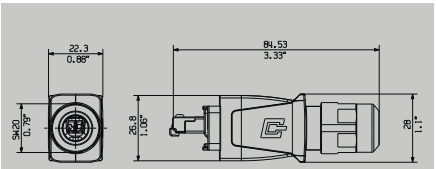
- 4-wire, RJ45 plug field attachable with colour coding on the plug

### 4-wire, field-attachable

**PROFINET printing**




### 4-wire, crimp




## Technical data

| | 4-wire, field-attachable | 4-wire, crimp |
|---|---|---|
| Category | Cat.5 (ISO/IEC 11801) | Cat.5 (ISO/IEC 11801) |
| Protection degree | IP67 | IP67 |
| Housing main material | Zinc diecast | Zinc diecast |
| Contact surface | Gold over nickel | Gold over nickel |
| Sheath diameter, min. / max. | 5 mm / 10 mm | 5 mm / 10 mm |
| Plugging cycles | 750 | 750 |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...70 °C |
| Connector standard | IEC 61076-3-117 Var. 14, IEC 60603-7-51 | IEC 60603-7, IEC 61076-3-117 Var. 14 |
| Connection diameter, flexible, min. / max. | 0.48 mm / 0.76 mm | 0.57 mm / 0.64 mm |
| Connection cross-section, flexible, min. / max. | AWG 26 / AWG 22 | AWG 23 / AWG 22 |
| Connection diameter, solid, min. / max. | 0.4 mm / 0.64 mm | 0.57 mm / 0.64 mm |
| Connection cross-section, solid, min. / max. | AWG 24 / AWG 22 | AWG 23 / AWG 22 |
| Approvals | CULUS | |
| **Note** | Other approvals for individual parts of the set available | |

## Ordering data - Sets

| | Type | Qty. | Order No. |
|---|---|---|---|
| RJ45 tool-free | IE-PS-V14M-RJ45-FH-P | 10 | 1012170000 |
| **Note** | | | |

| | Type | Qty. | Order No. |
|---|---|---|---|
| | IE-PS-V14M-RJ45-TH-P | 10 | 2768740000 |

## Ordering data - Empty housings

| | Type | Qty. | Order No. |
|---|---|---|---|
| | IE-PH-V14M-RJ | 10 | 1011560000 |
| **Note** | | | |

| | Type | Qty. | Order No. |
|---|---|---|---|
| | IE-PH-V14M-RJ | 10 | 1011560000 |

## Accessories

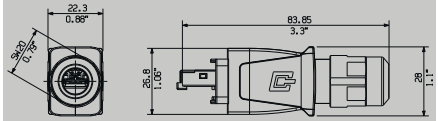
| | Type | Qty. | Order No. |
|---|---|---|---|
| **Dust protection cap** | | | |
| Protective cap | IE-PP-V14P | 10 | 1058280000 |
| **Marking tags** | | | |
| MultiCard, white | ESG 9/11 K MC NE WS | 200 | 1857440000 |
| **Plug insert for V14 PROFINET crimp** | | | |
| Replacement crimp inserts | | | |
| **Tools** | | | |
| Pressing tool | | | |
| **Note** | Plug inserts can also be ordered separately. Refer to Inserts. | | |

| | Type | Qty. | Order No. |
|---|---|---|---|
| | IE-PP-V14P | 10 | 1058280000 |
| | ESG 9/11 K MC NE WS | 200 | 1857440000 |
| | IE-PI-RJ45-TH-P | 10 | 2768720000 |
| | IE-CWZ-RJ45-TH-P | 1 | 2614210000 |

## Plug PushPull V14 - RJ45

- 8-wire, RJ45 plug field attachable with colour coding on the plug

## 8-wire, crimp




## Technical data

| | |
|---|---|
| Category | Cat.6$_A$ / Class E$_A$ (ISO/IEC 11801 2010) |
| Protection degree | IP67 |
| Housing main material | zinc diecast |
| Contact surface | Gold over nickel |
| Sheath diameter, min. / max. | 5 mm / 10 mm |
| Plugging cycles | 750 |
| Ambient temperature (operational) | -40 °C...70 °C |
| Connector standard | IEC 61076-3-117 Var. 14, IEC 60603-7-51 |
| Connection diameter, flexible, min. / max. | 0.46 mm / 0.61 mm |
| Connection cross-section, flexible, min. / max. | AWG 27/7 / AWG 24/7 |
| Connection diameter, solid, min. / max. | 0.36 mm / 0.51 mm |
| Connection cross-section, solid, min. / max. | AWG 26/1 / AWG 24/1 |
| Approvals | EAC |
| **Note** | |

## Ordering data - Sets

| | Type | Qty. | Order No. |
|---|---|---|---|
| RJ45 tool-free | IE-PS-V14M-RJ45-TH | 10 | **1012160000** |

**Note**

## Ordering data - Empty housings

| | Type | Qty. | Order No. |
|---|---|---|---|
| | IE-PH-V14M-RJ | 10 | **1011560000** |

**Note**

## Accessories

| | Type | Qty. | Order No. |
|---|---|---|---|
| **Dust protection cap** | | | |
| Protective cap | IE-PP-V14P | 10 | **1058280000** |
| **Marking tags** | | | |
| MultiCard, white | ESG 9/11 K MC NE WS | 200 | **1857440000** |
| **Tools** | | | |
| Pressing tool | TT 8 RS MP 8 | 1 | **9202800000** |

**Note**

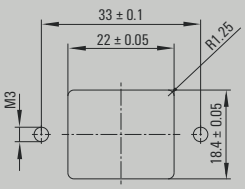
Plug inserts can also be ordered separately. Refer to Inserts.

## PushPull V14 - RJ45 flange

### Module

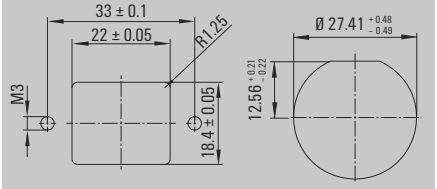
### 4-wire

**PROFINET printing**




### 8-wire

**TIA-A**




## Technical data

| | | |
|---|---|---|
| Category | Cat.5 (ISO/IEC 11801) | Cat.$6_A$ / Class $E_A$ (ISO/IEC 11801 2010) |
| Protection degree | IP67 | IP67 |
| Housing main material | Zinc diecast | Zinc diecast |
| Contact surface | Gold over nickel | Gold over nickel |
| Sheath diameter, min. / max. | 5 mm / 10 mm | 5 mm / 10 mm |
| Plugging cycles | 750 | 750 |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...70 °C |
| Connector standard | IEC 61076-3-117 Var. 14, IEC 60603-7-51 | IEC 61076-3-117 Var. 14, IEC 60603-7-51 |
| Connection diameter, flexible, min. / max. | 0.48 mm / 0.76 mm | 0.48 mm |
| Connection cross-section, flexible, min. / max. | AWG 26 / AWG 22 | AWG 26 / AWG 22 |
| Connection diameter, solid, min. / max. | 0.4 mm / 0.64 mm | 0.4 mm / 0.64 mm |
| Connection cross-section, solid, min. / max. | AWG 24 / AWG 22 | AWG 24 / AWG 22 |
| Approvals | CULUS | CULUS |
| **Note** | Other approvals for individual parts of the set available | Other approvals for individual parts of the set available |

## Ordering data - Sets

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| Standardised flange | IE-BSS-V14M-RJ45-FJ-P | 10 | **1085260000** | IE-BSS-V14M-RJ45-FJ-A | 10 | **1012320000** |
| Central flange | | | | IE-BSC-V14M-RJ45-FJ-A | 10 | **1058270000** |
| **Note** | | | | | | |

## Ordering data - Empty housings

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| Standardised flange | IE-BHS-V14M-RJA | 10 | **1011540000** | IE-BHS-V14M-RJA | 10 | **1011540000** |
| Central flange | IE-BHC-V14M-RJA | 10 | **1047950000** | IE-BHC-V14M-RJA | 10 | **1047950000** |
| Device flange | IE-BHD-V14M | 10 | **1047940000** | IE-BHD-V14M | 10 | **1047940000** |
| **Note** | | | | | | |

## Accessories

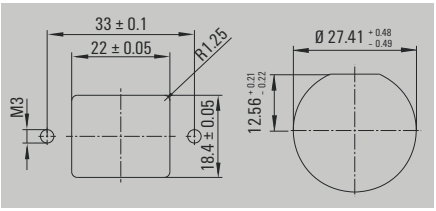
| **Dust protection cap** | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| Protective cap | IE-BP-V14P | 10 | **1058310000** | IE-BP-V14P | 10 | **1058310000** |

| | | |
|---|---|---|
| **Note** | Plug inserts can also be ordered separately. Refer to Inserts. | Plug inserts can also be ordered separately, see Inserts |

## PushPull V14 - RJ45 flange

## Coupling

### 8-wire




## Technical data

| | |
|---|---|
| Category | Cat.6$_A$ / Class E$_A$ (ISO/IEC 11801 2010) |
| Protection degree | IP67 |
| Housing main material | Zinc diecast |
| Contact surface | Gold over nickel |
| Sheath diameter, min. / max. | 5 mm / 10 mm |
| Plugging cycles | 750 |
| Ambient temperature (operational) | -40 °C...70 °C |
| Connector standard | IEC 61076-3-117 Var. 14, IEC 60603-7-51 |
| Connection diameter, flexible, min. / max. | |
| Connection cross-section, flexible, min. / max. | |
| Connection diameter, solid, min. / max. | |
| Connection cross-section, solid, min. / max. | |
| Approvals | CULUS |
| **Note** | Other approvals for individual parts of the set available |

## Ordering data - Sets

| | Type | Qty. | Order No. |
|---|---|---|---|
| Standardised flange | IE-BSS-V14M-RJ45-C | 10 | **1012310000** |
| Central flange | IE-BSC-V14M-RJ45-C | 10 | **1058250000** |

**Note**

## Ordering data - Empty housings

| | Type | Qty. | Order No. |
|---|---|---|---|
| Standardised flange | IE-BHS-V14M-RJA | 10 | **1011540000** |
| Central flange | IE-BHC-V14M-RJA | 10 | **1047950000** |
| Device flange | IE-BHD-V14M | 10 | **1047940000** |

**Note**

## Accessories

| **Dust protection cap** | Type | Qty. | Order No. |
|---|---|---|---|
| Protective cap | IE-BP-V14P | 10 | **1058310000** |

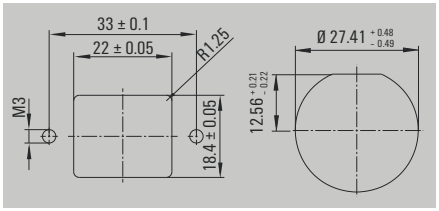
**Note**

Plug inserts can also be ordered separately. Refer to Inserts.

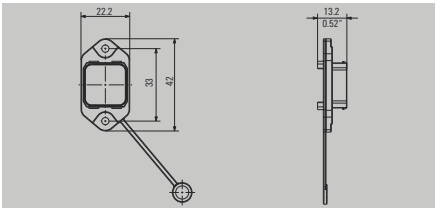
## Flange-mounted empty housing / PushPull device flange V14

- IP 67

### Empty housing




### Device flange




## Technical data

| | Empty housing | Device flange |
|---|---|---|
| Category | | |
| Protection degree | IP67 | IP67 |
| Housing main material | Zinc diecast | Zinc diecast |
| Contact surface | | |
| Sheath diameter, min. / max. | | |
| Plugging cycles | 750 | 750 |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...70 °C |
| Connector standard | IEC 61076-3-117 Var. 14 | IEC 61076-3-117 Var. 14 |
| Connection diameter, flexible, min. / max. | | |
| Connection cross-section, flexible, min. / max. | | |
| Connection diameter, solid, min. / max. | | |
| Connection cross-section, solid, min. / max. | | |
| Approvals | CULUS | CULUS |
| **Note** | | |

## Ordering data

| | Empty housing | | | Device flange | | |
|---|---|---|---|---|---|---|
| | **Type** | **Qty.** | **Order No.** | **Type** | **Qty.** | **Order No.** |
| Standardised flange | IE-BHS-V14M-RJA | 10 | **1011540000** | | | |
| Central flange | IE-BHC-V14M-RJA | 10 | **1047950000** | | | |
| Device flange | | | | IE-BHD-V14M | 10 | **1047940000** |
| **Note** | | | | | | |

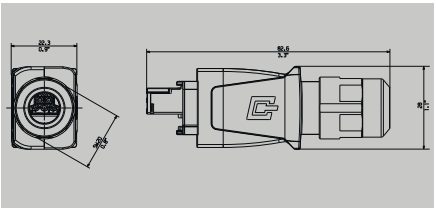
## Accessories

| **Dust protection cap** | Empty housing | | | Device flange | | |
|---|---|---|---|---|---|---|
| | **Type** | **Qty.** | **Order No.** | **Type** | **Qty.** | **Order No.** |
| Protective cap | IE-BP-V14P | 10 | **1058310000** | IE-BP-V14P | 10 | **1058310000** |

| **Note** | Empty housing | Device flange |
|---|---|---|
| | Plug inserts can also be ordered separately. Refer to Inserts. | Plug inserts can also be ordered separately. Refer to Inserts. |

## Plug PushPull V14 - Hybrid

### Hybrid



### Technical data

| | |
|---|---|
| Category | Cat.5 (ISO/IEC 11801) |
| Protection degree | IP67 |
| Housing main material | Zinc diecast |
| Contact surface | Gold over nickel |
| Sheath diameter, min. / max. | 5 mm / 10 mm |
| Plugging cycles | 500 |
| Ambient temperature (operational) | -40 °C...70 °C |
| Connection 1 / 2 | Hybrid (Q10) / Crimp |
| Connector standard | IEC 61076-3-119 CDV, IEC 61076-3-117 Var. 14 |
| Connection cross-section, flexible, min. / max. | AWG 27 / AWG 20 |
| Connection diameter, flexible, min. / max. | 0.08 mm² / 0.75 mm² |
| Rated current (hybrid connector) | 3 A per contact |
| Volume resistance | <10 mΩ |
| Approvals | CULUS |
| **Note** | Other approvals for individual parts of the set available |

### Ordering data - Sets

| Type | Qty. | Order No. |
|---|---|---|
| IE-PS-V14M-HYB-10P | 10 | **1072910000** |
| **Note** | Order contacts separately | |

### Ordering data - Empty housings

| Type | Qty. | Order No. |
|---|---|---|
| IE-PH-V14M-RJ | 10 | **1011560000** |
| **Note** | | |

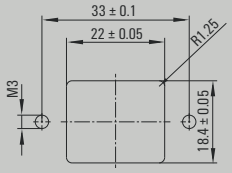
### Accessories

| | Type | Qty. | Order No. |
|---|---|---|---|
| **Crimping contact** | | | |
| 0.08...0.2 mm² | IE-PIC-HYB-S-0,2-300 | 300 | **1135150000** |
| 0.2...0.5 mm² | IE-PIC-HYB-S-0,5-300 | 300 | **1096180000** |
| 0.75 mm² | IE-PIC-HYB-S-0,75-300 | 300 | **1068950000** |
| **Tools** | | | |
| Pressing tool | HTF HYB | 1 | **1119580000** |
| **Cable** | | | |
| Hybrid cable, 100 m | IE-C5DHAG-100 | 1 | **2763660000** |
| Hybrid cable, 500 m | IE-C5DHAG-500 | 1 | **2763460000** |
| **Dust protection cap** | | | |
| Protective cap | IE-PP-V14P | 10 | **1058280000** |
| **Marking tags** | | | |
| MultiCard, white | ESG 9/11 K MC NE WS | 200 | **1857440000** |

| | |
|---|---|
| **Note** | Plug inserts can also be ordered separately. Refer to Inserts. |

## Flange PushPull V14 - Hybrid

### Standardised flange




## Technical data

| | |
|---|---|
| Category | Cat.5 (ISO/IEC 11801) |
| Protection degree | IP67 |
| Housing main material | Zinc diecast |
| Seal material | EPDM |
| Contact surface | Gold over nickel |
| Sheath diameter, min. / max. | 5 mm / 10 mm |
| Plugging cycles | 500 |
| Ambient temperature (operational) | -40 °C...70 °C |
| Connection 1 / 2 | Hybrid (Q10) / Crimp |
| Connector standard | IEC 61076-3-119 CDV, IEC 61076-3-117 Var. 14 |
| Connection cross-section, flexible, min. / max. | AWG 27 / AWG 20 |
| Connection diameter, flexible, min. / max. | 0.08 mm² / 0.75 mm² |
| Rated current (hybrid connector) | 3 A per contact |
| Volume resistance | <10 mΩ |
| Approvals | CULUS |
| **Note** | Other approvals for individual parts of the set available |

## Ordering data - Sets

| Type | Qty. | Order No. |
|---|---|---|
| IE-BSS-V14M-HYB-10P-FJ | 10 | **1072900000** |
| **Note** | Order contacts separately | |

## Ordering data - Empty housings

| | Type | Qty. | Order No. |
|---|---|---|---|
| Standardised flange | IE-BHS-V14M-RJA | 10 | **1011540000** |
| **Note** | | | |

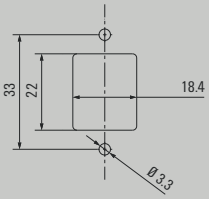
## Accessories

| | Type | Qty. | Order No. |
|---|---|---|---|
| **Crimping contact** | | | |
| 0.08...0.2 mm² | IE-BIC-HYB-P-0,2-300 | 300 | **1135160000** |
| 0.2...0.5 mm² | IE-BIC-HYB-P-0,5-300 | 300 | **1096150000** |
| 0.75 mm² | IE-BIC-HYB-P-0,75-300 | 300 | **1068970000** |
| **Tools** | | | |
| Pressing tool | HTF HYB | 1 | **1119580000** |
| **Cable** | | | |
| Hybrid cable | IE-C5DHAG-MW | 110 M | **1172250000** |
| **Dust protection cap** | | | |
| Protective cap | IE-BP-V14P | 10 | **1058310000** |

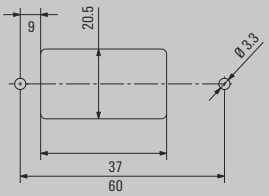
| | |
|---|---|
| **Note** | Plug inserts can also be ordered separately. Refer to Inserts. |

## V14 flange adapter

### Straight




### Angled




## Technical data

| | Straight | Angled |
|---|---|---|
| Protection degree | IP67 | IP67 |
| Housing main material | Zinc diecast | Zinc diecast |
| Seal material | EPDM | EPDM |
| Type of mounting | 2 screws, M3 (not included) | 2 screws, M3 (not included) |
| Ambient temperature (operational) | -40...70 °C | -40...70 °C |
| **Note** | | |

## Ordering data

| Type | Qty. | Order No. |
|---|---|---|
| IE-AD-BHS-V14M-RJA | 1 | **1302000000** |

**Note**: Flange and plug inserts must be ordered separately, see Inserts/Flanges

| Type | Qty. | Order No. |
|---|---|---|
| IE-BHS-V14M-RJA-45 | 10 | **1296710000** |

**Note**: Flange inserts must be ordered separately, see Inserts

## Accessories

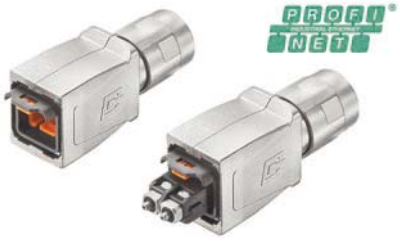
| Type | Qty. | Order No. |
|---|---|---|

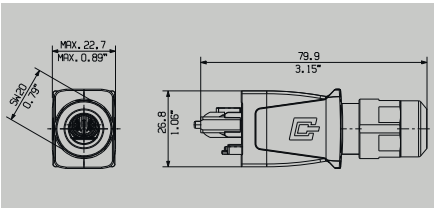
| Type | Qty. | Order No. |
|---|---|---|

**Note**

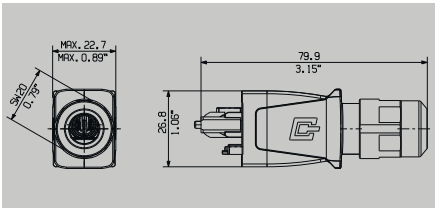
## PushPull V14 plug - fibre-optic

### Without kink prevention, crimp






### Without kink prevention, reconnectable




## Technical data

| | Without kink prevention, crimp | Without kink prevention, reconnectable |
|---|---|---|
| Protection degree | IP67 | IP67 |
| Housing main material | Zinc diecast | Zinc diecast |
| Sheath diameter, min. / max. | 5 mm / 10 mm | 5 mm / 10 mm |
| Plugging cycles | 750 | 750 |
| Ambient temperature (operational) | -40...70 °C | -40...70 °C |
| Connector standard | IEC 61076-3-117 Var. 14, IEC 61754-24 | IEC 61076-3-117 Var. 14, IEC 61754-24 |
| Approvals | CULUS | |
| **Note** | | |

## Ordering data - Sets

| | Without kink prevention, crimp | | | Without kink prevention, reconnectable | | |
|---|---|---|---|---|---|---|
| | **Type** | **Qty.** | **Order No.** | **Type** | **Qty.** | **Order No.** |
| POF | IE-PS-V14M-2SC-POF | 10 | **1191550000** | IE-PS-V14M-2SC-POF-QA | 10 | **2568260000** |
| **Note** | | | | | | |

## Ordering data - Empty housings

| | Without kink prevention, crimp | | | Without kink prevention, reconnectable | | |
|---|---|---|---|---|---|---|
| | **Type** | **Qty.** | **Order No.** | **Type** | **Qty.** | **Order No.** |
| | IE-PH-V14M-FO | 10 | **1058100000** | IE-PH-V14M-FO | 10 | **1058100000** |
| **Note** | | | | | | |

## Accessories

| | Without kink prevention, crimp | | | Without kink prevention, reconnectable | | |
|---|---|---|---|---|---|---|
| **Inserts** | **Type** | **Qty.** | **Order No.** | **Type** | **Qty.** | **Order No.** |
| POF | IE-PI-SCRJ-POF | 10 | **1067410000** | IE-PI-SCRJ-POF-QA | 10 | **2564960000** |
| **Dust protection cap** | | | | | | |
| Protective cap | IE-PP-V14P | 10 | **1058280000** | IE-PP-V14P | 10 | **1058280000** |
| **Tools** | | | | | | |
| Tool set POF, crimp | TOOL SET IE-POF | 1 | **1208930000** | | | |
| Mounting tool, POF | HTX-IE-POF | 1 | **1208870000** | HTX-IE-POF-QA | 1 | **2602860000** |
| MULTI-STRIPAX IE-POF | MULTI-STRIPAX IE-POF | 1 | **1208880000** | MULTI-STRIPAX IE-POF | 1 | **1208880000** |
| Cevlar scissors | SCISSORS KEVLAR | 1 | **1208910000** | SCISSORS KEVLAR | 1 | **1208910000** |
| **Replacement ferrule** | | | | | | |
| | IE-SCRJ-IP67-POF-100 | 100 | **1278430000** | | | |
| **Marking tags** | | | | | | |
| MultiCard, white | ESG 9/11 K MC NE WS | 200 | **1857440000** | ESG 9/11 K MC NE WS | 200 | **1857440000** |

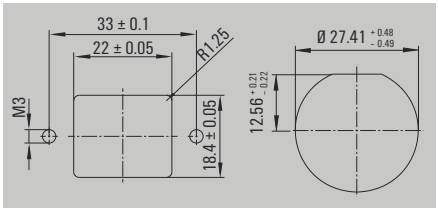
| | |
|---|---|
| **Note** | Plug inserts can also be ordered separately, see Inserts |

## Flange PushPull V14 - fibre-optic

### SC-RJ

Standardised flange

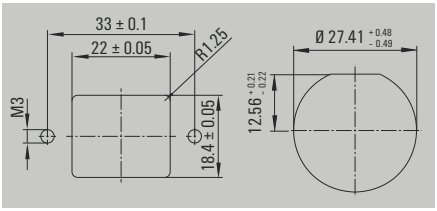
Central flange




### LC Duplex coupling

Standardised flange

Central flange




## Technical data

| | | |
|---|---|---|
| Protection degree | IP67 | IP67 |
| Housing main material | Zinc diecast | Zinc diecast |
| Plugging cycles | 500 | 500 |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...70 °C |
| Insertion loss | ≤ 0.5 dB | ≤ 0.4 dB |
| Connector standard | IEC 61076-3-117 Var. 14, IEC 61754-24 | IEC 61076-3-117 Var. 14, IEC 61754-20 |
| Approvals | CULUS | |
| **Note** | | |

## Ordering data - Sets

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| Central flange Singlemode | IE-BSC-V14M-SCRJ-SM-C | 10 | **1062600000** | IE-BSC-V14M-LCD-SM-C | 10 | **1062620000** |
| Standardised flange Singlemode | IE-BSS-V14M-SCRJ-SM-C | 10 | **1058140000** | IE-BSS-V14M-LCD-SM-C | 10 | **1058150000** |
| Central flange Multimode/POF | IE-BSC-V14M-SCRJ-MM-C | 10 | **1062590000** | IE-BSC-V14M-LCD-MM-C | 10 | **1062610000** |
| Standardised flange Multimode/POF | IE-BSS-V14M-SCRJ-MM-C | 10 | **1058120000** | IE-BSS-V14M-LCD-MM-C | 10 | **1058130000** |
| **Note** | | | | | | |

## Ordering data - Empty housings

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| Device flange | IE-BHD-V14M | 10 | **1047940000** | IE-BHD-V14M | 10 | **1047940000** |
| **Note** | | | | | | |

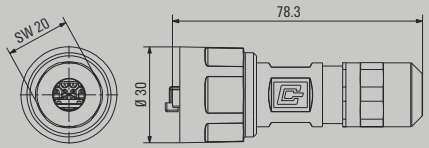
## Accessories

| **Dust protection cap** | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| Protective cap | IE-BP-V14P | 10 | **1058310000** | IE-BP-V14P | 10 | **1058310000** |

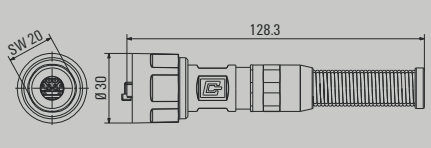
| | | |
|---|---|---|
| **Note** | Plug inserts can also be ordered separately. Refer to Inserts. | Plug inserts can also be ordered separately. Refer to Inserts. |

## Plug bayonet V1 Metal - RJ45

### Without kink prevention




### With kink prevention




## Technical data

| | Without kink prevention | With kink prevention |
|---|---|---|
| Category | Cat.6$_A$ / Class E$_A$ (ISO/IEC 11801 2010) | Cat.6$_A$ / Class E$_A$ (ISO/IEC 11801 2010) |
| Protection degree | IP67 | IP67 |
| Housing main material | Zinc diecast | Zinc diecast |
| Contact surface | Gold over nickel | Gold over nickel |
| Sheath diameter, min. / max. | 5 mm / 10 mm | 5 mm / 10 mm |
| Plugging cycles | 750 | 750 |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...70 °C |
| Connection cross-section, flexible, min. / max. | AWG 26 / AWG 22 | AWG 26 / AWG 22 |
| Connection diameter, flexible, min. / max. | 0.48 mm / 0.76 mm | 0.48 mm / 0.76 mm |
| Connection cross-section, solid, min. / max. | AWG 24 / AWG 22 | AWG 24 / AWG 22 |
| Connection diameter, solid, min. / max. | 0.4 mm / 0.64 mm | 0.4 mm / 0.64 mm |
| Connector standard | IEC 61076-3-106 Var. 1, IEC 60603-7-51 | IEC 61076-3-106 Var. 1, IEC 60603-7-51 |
| Approvals | CULUS | CULUS |
| **Note** | | |

## Ordering data - Sets

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| RJ45 without tools. AWG 26-22. TIA-A/-B/-PROFINET<br>RJ45 Crimp. AWG 27-24 | IE-PS-V01M-RJ45-FH<br>IE-PS-V01M-RJ45-TH | 10<br>10 | **1963120000**<br>**1963140000** | IE-PS-V01M-RJ45-FH-BP<br>IE-PS-V01M-RJ45-TH-BP | 10<br>10 | **1963130000**<br>**1963150000** |
| **Note** | | | | | | |

## Ordering data - Empty housings

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| | IE-PH-V01M | 10 | **1962550000** | IE-PH-V01M-BP | 10 | **1962560000** |
| **Note** | | | | | | |

## Accessories

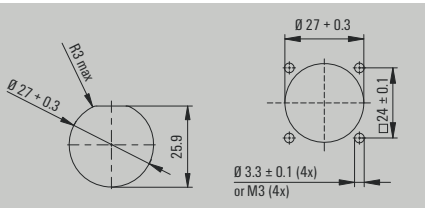
| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| **Dust protection cap** | | | | | | |
| Plug housing protective cap | IE-PP-V01P | 10 | **1965690000** | IE-PP-V01P | 10 | **1965690000** |
| **Marking tags** | | | | | | |
| MultiCard, white | ESG 9/11 K MC NE WS | 200 | **1857440000** | ESG 9/11 K MC NE WS | 200 | **1857440000** |

| | | |
|---|---|---|
| **Note** | Plug inserts can also be ordered separately. Refer to Inserts. | Plug inserts can also be ordered separately. Refer to Inserts. |

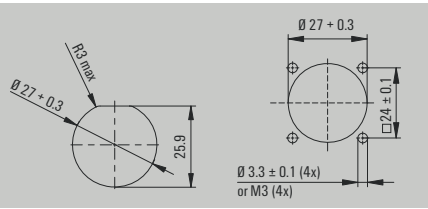
## Flange bayonet V1 Metal - RJ45

### Module

TIA-A




### Coupling




## Technical data

| | | |
|---|---|---|
| Category | Cat.6$_A$ / Class E$_A$ (ISO/IEC 11801 2010) | Cat.6$_A$ / Class E$_A$ (ISO/IEC 11801 2010) |
| Protection degree | IP67 | IP67 |
| Housing main material | Zinc diecast | Zinc diecast |
| Contact surface | Gold over nickel | Gold over nickel |
| Plugging cycles | 750 | 750 |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...70 °C |
| Connector standard | IEC 61076-3-106 Var. 1, IEC 60603-7-51 | IEC 61076-3-106 Var. 1, IEC 60603-7-51 |
| Connection cross-section, flexible, min. / max. | AWG 26 / AWG 22 | |
| Connection diameter, flexible, min. / max. | 0.48 mm / 0.76 mm | |
| Connection cross-section, solid, min. / max. | AWG 24 / AWG 22 | |
| Connection diameter, solid, min. / max. | 0.4 mm / 0.64 mm | |
| Approvals | CULUS | CULUS |
| **Note** | | |

## Ordering data - Sets

| Type | Qty. | Order No. |
|---|---|---|
| IE-BS-V01M-RJ45-FJ-A | 10 | **1963480000** |

| Type | Qty. | Order No. |
|---|---|---|
| IE-BS-V01M-RJ45-C | 10 | **1963470000** |

**Note**

## Ordering data - Empty housings

| Type | Qty. | Order No. |
|---|---|---|
| IE-BH-V01M | 10 | **1963540000** |

| Type | Qty. | Order No. |
|---|---|---|
| IE-BH-V01M | 10 | **1963540000** |

**Note**

## Accessories

**Dust protection cap**

Flange-mounted housing protective cap

| Type | Qty. | Order No. |
|---|---|---|
| IE-BP-V01P | 10 | **1965700000** |

| Type | Qty. | Order No. |
|---|---|---|
| IE-BP-V01P | 10 | **1965700000** |

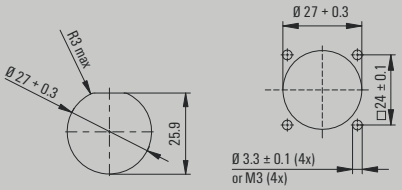
**Note**

Plug inserts can also be ordered separately. Refer to Inserts.

Plug inserts can also be ordered separately. Refer to Inserts.

## Flange bayonet V1 metal - fibre-optic-SC

## Standardised flange




## Technical data

| | |
|---|---|
| Protection degree | IP67 |
| Housing main material | Zinc diecast |
| Plugging cycles | 500 |
| Ambient temperature (operational) | -40 °C...70 °C |
| Connector standard | IEC 61076-3-106 Var. 1, IEC 61754-24 |
| Approvals | |

**Note**

## Ordering data - Sets

| | Type | Qty. | Order No. |
|---|---|---|---|
| Singlemode | IE-BS-V01M-SCRJ-SM | 10 | **1221020000** |
| Multimode/POF | IE-BS-V01M-SCRJ-MM | 10 | **1221010000** |

**Note**

## Ordering data - Empty housings

| Type | Qty. | Order No. |
|---|---|---|
| IE-BHD-V01M-SCA | 10 | **1221030000** |

**Note**

## Accessories

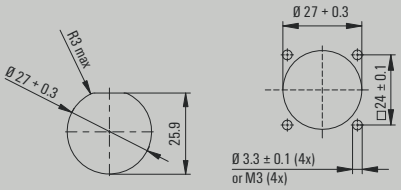
| Dust protection cap | Type | Qty. | Order No. |
|---|---|---|---|
| Flange-mounted housing protective cap | IE-BP-V01P | 10 | **1965700000** |

**Note**

Plug inserts can also be ordered separately. Refer to Inserts.

## Flange bayonet V1 metal - fibre-optic-LC

### Standardised flange




### Technical data

| | |
|---|---|
| Protection degree | IP67 |
| Housing main material | Zinc diecast |
| Plugging cycles | 500 |
| Ambient temperature (operational) | -40 °C...70 °C |
| Connector standard | IEC 61076-3-106 Var. 1, IEC 61754-20 |
| Approvals | |

**Note**

### Ordering data - Sets

| | Type | Qty. | Order No. |
|---|---|---|---|
| Singlemode | IE-BS-V01M-LCD-SM-C | 10 | 1963430000 |
| Multimode | IE-BS-V01M-LCD-MM-C | 10 | 1964440000 |

**Note**

### Ordering data - Empty housings

| Type | Qty. | Order No. |
|---|---|---|
| IE-BH-V01M | 10 | 1963540000 |

**Note**

### Accessories

**Dust protection cap**

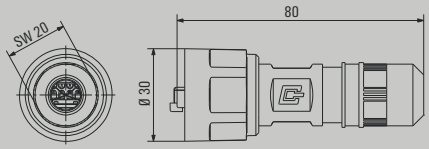
| | Type | Qty. | Order No. |
|---|---|---|---|
| Flange-mounted housing protective cap | IE-BP-V01P | 10 | 1965700000 |

**Note**

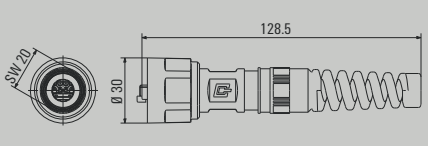
Plug inserts can also be ordered separately. Refer to Inserts.

## Plug bayonet V1 Plastic - RJ45

### Without kink prevention




### With kink prevention




## Technical data

| | Without kink prevention | With kink prevention |
|---|---|---|
| Category | Cat.6$_A$ / Class E$_A$ (ISO/IEC 11801 2010) | Cat.6$_A$ / Class E$_A$ (ISO/IEC 11801 2010) |
| Protection degree | IP67 | IP67 |
| Housing main material | PA UL 94 V0 | PA UL 94 V0 |
| Contact surface | Gold over nickel | Gold over nickel |
| Sheath diameter, min. / max. | 5 mm / 10 mm | 5 mm / 10 mm |
| Plugging cycles | 750 | 750 |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...70 °C |
| Connection cross-section, flexible, min. / max. | AWG 26 / AWG 22 | AWG 26 / AWG 22 |
| Connection diameter, flexible, min. / max. | 0.48 mm / 0.76 mm | 0.48 mm / 0.76 mm |
| Connection cross-section, solid, min. / max. | AWG 24 / AWG 22 | AWG 24 / AWG 22 |
| Connection diameter, solid, min. / max. | 0.4 mm / 0.64 mm | 0.4 mm / 0.64 mm |
| Connector standard | IEC 61076-3-106 Var. 1, IEC 60603-7-51 | IEC 61076-3-106 Var. 1, IEC 60603-7-51 |
| Approvals | CULUS | CULUS |
| **Note** | | |

## Ordering data - Sets

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| RJ45 without tools. AWG 26-22. TIA-A/-B/-PROFINET | IE-PS-V01P-RJ45-FH | 10 | **1012490000** | IE-PS-V01P-RJ45-FH-BP | 10 | **1012570000** |
| RJ45 Crimp. AWG 27-24 | IE-PS-V01P-RJ45-TH | 10 | **1012470000** | IE-PS-V01P-RJ45-TH-BP | 10 | **1012560000** |
| **Note** | | | | | | |

## Ordering data - Empty housings

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| | IE-PH-V01P | 10 | **1012440000** | IE-PH-V01P-BP | 10 | **1012460000** |
| **Note** | | | | | | |

## Accessories

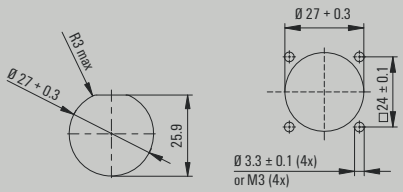
| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| **Dust protection cap** | | | | | | |
| Plug housing protective cap | IE-PP-V01P | 10 | **1965690000** | IE-PP-V01P | 10 | **1965690000** |
| **Marking tags** | | | | | | |
| MultiCard, white | ESG 9/11 K MC NE WS | 200 | **1857440000** | ESG 9/11 K MC NE WS | 200 | **1857440000** |

| | | |
|---|---|---|
| **Note** | Plug inserts can also be ordered separately. Refer to Inserts. | Plug inserts can also be ordered separately. Refer to Inserts. |

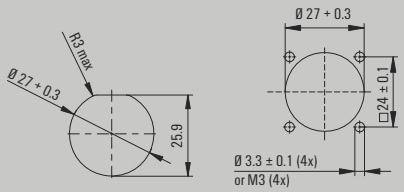
## Flange bayonet V1 Plastic - RJ45

### Module

TIA-A




### Coupling




## Technical data

| | | |
|---|---|---|
| Category | Cat.6$_A$ / Class E$_A$ (ISO/IEC 11801 2010) | Cat.6$_A$ / Class E$_A$ (ISO/IEC 11801 2010) |
| Protection degree | IP67 | IP67 |
| Housing main material | PA UL 94 V0 | PA UL 94 V0 |
| Contact surface | Gold over nickel | Gold over nickel |
| Plugging cycles | 750 | 750 |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...70 °C |
| Connector standard | IEC 61076-3-106 Var. 1, IEC 60603-7-51 | IEC 61076-3-106 Var. 1, IEC 60603-7-51 |
| Connection cross-section, flexible, min. / max. | AWG 26 / AWG 22 | |
| Connection diameter, flexible, min. / max. | 0.48 mm / 0.76 mm | |
| Connection cross-section, solid, min. / max. | AWG 24 / AWG 22 | |
| Connection diameter, solid, min. / max. | 0.4 mm / 0.64 mm | |
| Approvals | CULUS | CULUS |
| **Note** | | |

## Ordering data - Sets

| Type | Qty. | Order No. |
|---|---|---|
| IE-BS-V01P-RJ45-FJ-A | 10 | **1012380000** |

| Type | Qty. | Order No. |
|---|---|---|
| IE-BS-V01P-RJ45-C | 10 | **1012370000** |

**Note**

## Ordering data - Empty housings

| Type | Qty. | Order No. |
|---|---|---|
| IE-BH-V01P | 10 | **1016960000** |

| Type | Qty. | Order No. |
|---|---|---|
| IE-BH-V01P | 10 | **1016960000** |

**Note**

## Accessories

**Dust protection cap**

Flange-mounted housing protective cap

| Type | Qty. | Order No. |
|---|---|---|
| IE-BP-V01P | 10 | **1965700000** |

| Type | Qty. | Order No. |
|---|---|---|
| IE-BP-V01P | 10 | **1965700000** |

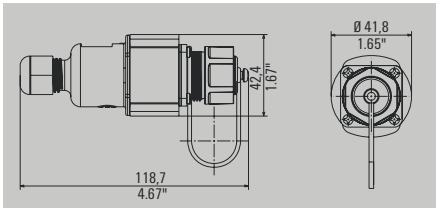
**Note**

Plug inserts can also be ordered separately. Refer to Inserts.

Plug inserts can also be ordered separately. Refer to Inserts.

## Cable coupling bayonet V1 Plastic - RJ45

### Cable coupling




### Technical data

| | |
|---|---|
| Protection degree | IP67 |
| Housing main material | PA UL 94 V0 |
| Plugging cycles | 750 |
| Ambient temperature (operational) | -40 °C...70 °C |
| Connector standard | IEC 61076-3-106 Var. 1 |
| Sheath diameter, min. / max. | 6 mm / 9.5 mm |
| Approvals | |

**Note**

### Ordering data

**Variant 1**

Cable coupling

| Type | Qty. | Order No. |
|---|---|---|
| IE-CC-V01P | 10 | **1061820000** |

**Note**

RJ45 modules can be ordered separately

### Accessories

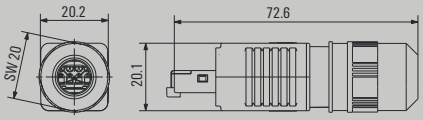
**Inserts, Data**

| Type | Qty. | Order No. |
|---|---|---|
| RJ45 module EIA/TIA T568 B | 10 | **1963840000** |
| RJ45 module PROFINET | 10 | **1963830000** |
| RJ45 module EIA/TIA T568 A | 10 | **1962850000** |

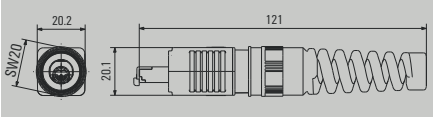
**Note**

## Plug PushPull V4 - RJ45

### Without kink prevention




### With kink prevention




## Technical data

| | Without kink prevention | With kink prevention |
|---|---|---|
| Category | Cat.6$_A$ / Class E$_A$ (ISO/IEC 11801 2010) | Cat.6$_A$ / Class E$_A$ (ISO/IEC 11801 2010) |
| Protection degree | IP67 | IP67 |
| Housing main material | PA UL 94 V0 | PA UL 94 V0 |
| Contact surface | Gold over nickel | Gold over nickel |
| Sheath diameter, min. / max. | 5 mm / 10 mm | 5 mm / 10 mm |
| Plugging cycles | 750 | 750 |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...70 °C |
| Connection cross-section, flexible, min. / max. | AWG 27/7 / AWG 24/7 | AWG 27/7 / AWG 24/7 |
| Connection diameter, flexible, min. / max. | 0.46 mm / 0.61 mm | 0.46 mm / 0.61 mm |
| Connection cross-section, solid, min. / max. | AWG 26/1 / AWG 24/1 | AWG 26/1 / AWG 24/1 |
| Connection diameter, solid, min. / max. | 0.36 mm / 0.51 mm | 0.36 mm / 0.51 mm |
| Connector standard | IEC 61076-3-106 Var. 4, IEC 60603-7-51 | IEC 61076-3-106 Var. 4, IEC 60603-7-51 |
| Approvals | CULUS | CULUS |
| **Note** | | |

## Ordering data - Sets

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| RJ45 without tools. AWG 26-22. TIA-A/-B/-PROFINET | IE-PS-V04P-RJ45-FH | 10 | **1963160000** | IE-PS-V04P-RJ45-FH-BP | 10 | **1963170000** |
| RJ45 without tools. AWG 26-22 . TIA-B | IE-PS-V04P-RJ45-FH-B | 10 | **1271240000** | | | |
| RJ45 Crimp. AWG 27-24 | IE-PS-V04P-RJ45-TH | 10 | **1963180000** | IE-PS-V04P-RJ45-TH-BP | 10 | **1963190000** |
| **Note** | | | | | | |

## Ordering data - Empty housings

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| | IE-PH-V04P | 10 | **1962520000** | IE-PH-V04P-BP | 10 | **1962530000** |
| **Note** | | | | | | |

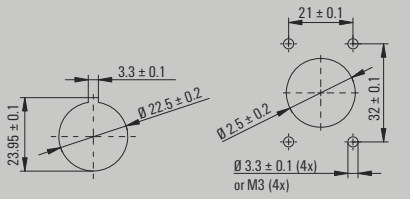
## Accessories

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| **Dust protection cap** | | | | | | |
| Plug housing protective cap | IE-PP-V04P | 10 | **1963890000** | IE-PP-V04P | 10 | **1963890000** |
| **Marking tags** | | | | | | |
| MultiCard, white | ESG 9/11 K MC NE WS | 200 | **1857440000** | ESG 9/11 K MC NE WS | 200 | **1857440000** |

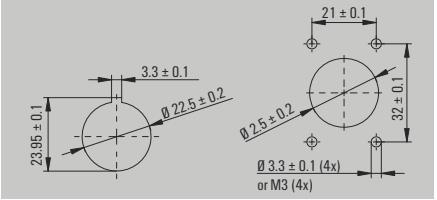
| Note | | |
|---|---|---|
| | Plug inserts can also be ordered separately. Refer to Inserts. | Plug inserts can also be ordered separately. Refer to Inserts. |

## Flange PushPull V4 - RJ45

## Module




## Coupling




## Technical data

| | | |
|---|---|---|
| Category | Cat.6$_A$ / Class E$_A$ (ISO/IEC 11801 2010) | Cat.6$_A$ / Class E$_A$ (ISO/IEC 11801 2010) |
| Protection degree | IP67 | IP67 |
| Housing main material | PA UL 94 V0 | PA UL 94 V0 |
| Contact surface | Gold over nickel | Gold over nickel |
| Plugging cycles | 750 | 750 |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...70 °C |
| Connector standard | IEC 61076-3-106 Var. 4, IEC 60603-7-51 | IEC 61076-3-106 Var. 4, IEC 60603-7-51 |
| Connection cross-section, flexible, min. / max. | AWG 26 / AWG 22 | |
| Connection diameter, flexible, min. / max. | 0.48 mm | |
| Connection cross-section, solid, min. / max. | AWG 24 / AWG 22 | |
| Connection diameter, solid, min. / max. | 0.4 mm / 0.64 mm | |
| Approvals | CULUS | CULUS |
| **Note** | Other approvals for individual parts of the set available | |

## Ordering data - Sets

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| RJ45 module TIA-A | IE-BS-V04P-RJ45-FJ-A | 10 | **1963500000** | | | |
| RJ45 module TIA-B | IE-BS-V04P-RJ45-FJ-B | 10 | **1963730000** | | | |
| Coupling | | | | IE-BS-V04P-RJ45-C | 10 | **1963490000** |
| **Note** | | | | | | |

## Ordering data - Empty housings

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| Empty enclosure | IE-BH-V04P | 10 | **1963520000** | IE-BH-V04P | 10 | **1963520000** |
| Device flange | IE-BHD-V04P | 200 | **2027660000** | IE-BHD-V04P | 200 | **2027660000** |
| **Note** | | | | | | |

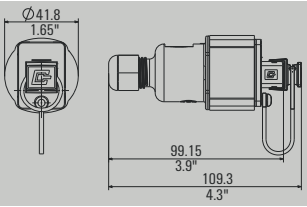
## Accessories

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| **Dust protection cap** | | | | | | |
| Flange-mounted housing protective cap | IE-BP-V04P | 10 | **1963900000** | IE-BP-V04P | 10 | **1963900000** |
| **Marking tags** | | | | | | |
| MultiCard, white | ESG 9/11 K MC NE WS | 200 | **1857440000** | ESG 9/11 K MC NE WS | 200 | **1857440000** |
| **Fixing tool** | | | | | | |
| | IE-FISP-V4 | 2 | **9204370000** | IE-FISP-V4 | 2 | **9204370000** |

| | | |
|---|---|---|
| **Note** | Plug inserts can also be ordered separately. Refer to Inserts. | Plug inserts can also be ordered separately. Refer to Inserts. |

## Cable coupling PushPull V4 - RJ45

### Cable coupling




### Technical data

| | |
|---|---|
| Protection degree | IP67 |
| Housing main material | PA UL 94 V0 |
| Plugging cycles | 750 |
| Ambient temperature (operational) | -40 °C...70 °C |
| Connector standard | IEC 61076-3-106 Var. 4 |
| Sheath diameter, min. / max. | 6 mm / 9.5 mm |
| Approvals | |
| **Note** | |

### Ordering data

| | Type | Qty. | Order No. |
|---|---|---|---|
| Cable coupling | IE-CC-V04P | 10 | **1045960000** |
| **Note** | RJ45 modules can be ordered separately | | |

### Accessories

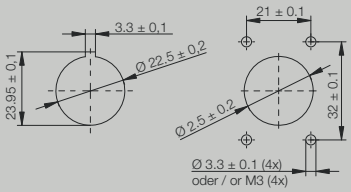
| **Inserts, Data** | Type | Qty. | Order No. |
|---|---|---|---|
| RJ45 module EIA/TIA T568 B | IE-BI-RJ45-FJ-B | 10 | **1963840000** |
| RJ45 module PROFINET | IE-BI-RJ45-FJ-P | 10 | **1963830000** |
| RJ45 module EIA/TIA T568 A | IE-BI-RJ45-FJ-A | 10 | **1962850000** |
| **Marking tags** | | | |
| MultiCard, white | ESG 9/11 K MC NE WS | 200 | **1857440000** |

| **Note** | Plug inserts can also be ordered separately. Refer to Inserts. |
|---|---|

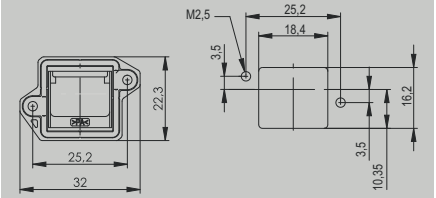
## Flange-mounted empty housing / PushPull V4 device flange

- IP 67

### Empty housing




### Device flange




### Technical data

| | Empty housing | Device flange |
|---|---|---|
| Protection degree | IP67 | IP67 |
| Housing main material | PA UL 94 V0 | PA UL 94 V0 |
| Plugging cycles | 750 | |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...70 °C |
| Connector standard | IEC 61076-3-106 Var. 4 | IEC 61076-3-106 Var. 4 |
| Sheath diameter, min. / max. | 5 mm / 10 mm | |
| Approvals | CULUS | CULUS |
| **Note** | | |

### Ordering data

| | Empty housing Type | Qty. | Order No. | Device flange Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| Empty enclosure | IE-BH-V04P | 10 | 1963520000 | | | |
| Device flange | | | | IE-BHD-V04P | 200 | 2027660000 |
| **Note** | | | | | | |

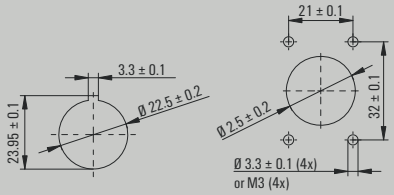
### Accessories

| | Empty housing Type | Qty. | Order No. | Device flange Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| **Dust protection cap** | | | | | | |
| Flange-mounted housing protective cap | IE-BP-V04P | 10 | 1963900000 | IE-BP-V04P | 10 | 1963900000 |
| **Marking tags** | | | | | | |
| MultiCard, white | ESG 9/11 K MC NE WS | 200 | 1857440000 | ESG 9/11 K MC NE WS | 200 | 1857440000 |
| **Fixing tool** | | | | | | |
| | IE-FISP-V4 | 2 | 9204370000 | IE-FISP-V4 | 2 | 9204370000 |

| Note | | |
|---|---|---|
| | Plug inserts can also be ordered separately. Refer to Inserts. | |

## Flange PushPull V4 - fibre-optic-SC

### Standardised flange




## Technical data

| | |
|---|---|
| Protection degree | IP67 |
| Housing main material | PA UL 94 V0 |
| Plugging cycles | 500 |
| Ambient temperature (operational) | -40 °C...70 °C |
| Connector standard | IEC 61076-3-106 Var. 4, IEC 61754-4, IEC 61754-24 |
| Approvals | |
| **Note** | |

## Ordering data - Sets

| | Type | Qty. | Order No. |
|---|---|---|---|
| Singlemode | IE-BS-V04P-SCRJ2SC-SM-C | 10 | **1963420000** |
| Multimode | IE-BS-V04P-SCRJ2SC-MM-C | 10 | **1964470000** |

**Note**

## Ordering data - Empty housings

| | Type | Qty. | Order No. |
|---|---|---|---|
| Empty enclosure | IE-BH-V04P | 10 | **1963520000** |

**Note**

## Accessories

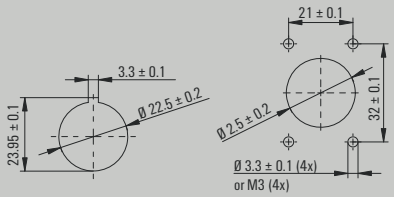
| | Type | Qty. | Order No. |
|---|---|---|---|
| **Dust protection cap** | | | |
| Flange-mounted housing protective cap | IE-BP-V04P | 10 | **1963900000** |
| **Marking tags** | | | |
| MultiCard, white | ESG 9/11 K MC NE WS | 200 | **1857440000** |
| **Fixing tool** | | | |
| | IE-FISP-V4 | 2 | **9204370000** |

**Note**

Plug inserts can also be ordered separately. Refer to Inserts.

## Flange PushPull V4 - fibre-optic-LC

## Standardised flange




## Technical data

| | |
|---|---|
| Protection degree | IP67 |
| Housing main material | PA UL 94 V0 |
| Plugging cycles | 500 |
| Ambient temperature (operational) | -40 °C...70 °C |
| Connector standard | IEC 61076-3-106 Var. 4, IEC 61754-20 |
| Approvals | |

**Note**

## Ordering data - Sets

| | Type | Qty. | Order No. |
|---|---|---|---|
| Singlemode | IE-BS-V04P-LCD-SM-C | 10 | **1963450000** |
| Multimode | IE-BS-V04P-LCD-MM-C | 10 | **1964460000** |

**Note**

## Ordering data - Empty housings

| | Type | Qty. | Order No. |
|---|---|---|---|
| Empty enclosure | IE-BH-V04P | 10 | **1963520000** |

**Note**

## Accessories

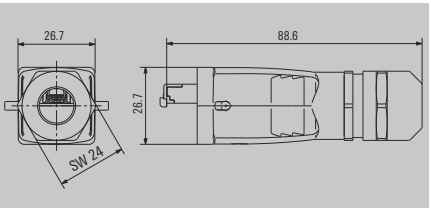
| | Type | Qty. | Order No. |
|---|---|---|---|
| **Dust protection cap** | | | |
| Flange-mounted housing protective cap | IE-BP-V04P | 10 | **1963900000** |
| **Marking tags** | | | |
| MultiCard, white | ESG 9/11 K MC NE WS | 200 | **1857440000** |
| **Fixing tool** | | | |
| | IE-FISP-V4 | 2 | **9204370000** |

**Note**

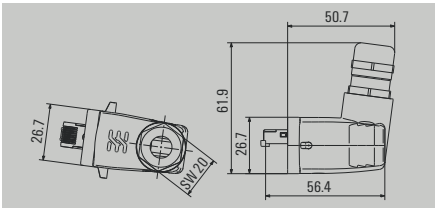
Plug inserts can also be ordered separately. Refer to Inserts.

## RockStar® heavy-duty connector plug V5 - RJ45

### Straight V5 - RJ45 plug




### V5-RJ45 plug, angled




## Technical data

| | Straight V5 - RJ45 plug | V5-RJ45 plug, angled |
|---|---|---|
| Category | Cat.6$_A$ / Class E$_A$ (ISO/IEC 11801 2010) | Cat.6$_A$ / Class E$_A$ (ISO/IEC 11801 2010) |
| Protection degree | IP67 | IP67 |
| Housing main material | diecast aluminium | diecast aluminium |
| Contact surface | Gold over nickel | Gold over nickel |
| Sheath diameter, min. / max. | 5 mm / 12 mm | 5 mm / 10 mm |
| Plugging cycles | 750 | 750 |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...70 °C |
| Connector standard | IEC 61076-3-106 Var. 5, IEC 60603-7-51 | IEC 61076-3-106 Var. 5, IEC 60603-7-51 |
| Approvals | CULUS | EAC |
| **Note** | | Other approvals for individual parts of the set available |

## Ordering data - Sets

| | Straight V5 - RJ45 plug | | | V5-RJ45 plug, angled | | |
|---|---|---|---|---|---|---|
| | **Type** | **Qty.** | **Order No.** | **Type** | **Qty.** | **Order No.** |
| RJ45 without tools. AWG 26-22. TIA-A/-B/-PROFINET | IE-PS-V05M-RJ45-FH | 10 | **1963200000** | IE-PS-V05M-A-RJ45-FH | 10 | **1077300000** |
| RJ45 without tools. AWG 26-22 . TIA-B | IE-PS-V05M-RJ45-FH-B | 10 | **1271250000** | | | |
| RJ45 Crimp. AWG 27-24 | IE-PS-V05M-RJ45-TH | 10 | **1963110000** | | | |
| **Note** | | | | | | |

## Ordering data - Empty housings

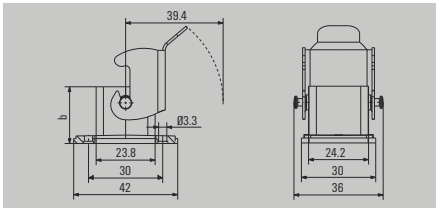
| | Straight V5 - RJ45 plug | | | V5-RJ45 plug, angled | | |
|---|---|---|---|---|---|---|
| | **Type** | **Qty.** | **Order No.** | **Type** | **Qty.** | **Order No.** |
| | IE-PH-V05M | 10 | **1962540000** | | | |
| **Note** | | | | | | |

## Accessories

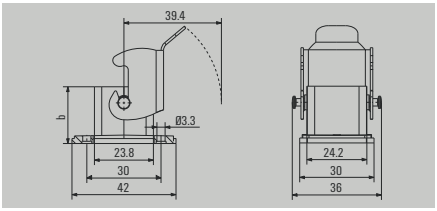
| | Straight V5 - RJ45 plug | | | V5-RJ45 plug, angled | | |
|---|---|---|---|---|---|---|
| **Dust protection cap** | **Type** | **Qty.** | **Order No.** | **Type** | **Qty.** | **Order No.** |
| Plug housing protective cap | IE-PP-V05M | 1 | **1968920000** | IE-PP-V05M | 1 | **1968920000** |
| Spare insert holder | IE-PH-AD-V05M-RJ45 | 1 | **1993540000** | | | |
| **Note** | Plug inserts can also be ordered separately. Refer to Inserts. | | | Plug inserts can also be ordered separately. Refer to Inserts. | | |

## RockStar® heavy-duty connector flange V5 - RJ45

### Module




### Coupling




### Technical data

| | Module | Coupling |
|---|---|---|
| Protection degree | IP67 | IP67 |
| Housing main material | diecast aluminium | diecast aluminium |
| Contact surface | Gold over nickel | Gold over nickel |
| Plugging cycles | 750 | 750 |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...70 °C |
| Connector standard | IEC 61076-3-106 Var. 5, IEC 60603-7-51 | IEC 61076-3-106 Var. 5, IEC 60603-7-51 |
| Connection cross-section, flexible, min. / max. | AWG 26 / AWG 22 | |
| Connection diameter, flexible, min. / max. | 0.48 mm / 0.76 mm | |
| Connection cross-section, solid, min. / max. | AWG 24 / AWG 22 | |
| Connection diameter, solid, min. / max. | 0.4 mm / 0.64 mm | |
| Approvals | CULUS | CULUS |
| **Note** | | |

### Ordering data - Sets

| | Type | Qty. | Order No. |
|---|---|---|---|
| TIA-A Cat. $6_A$ | IE-BS-V05M-RJ45-FJ-A | 10 | **1963460000** |
| PROFINET Cat. 5 | IE-BS-V05M-RJ45-FJ-P | 10 | **1963700000** |
| Coupling | | | |
| **Note** | | | |

| | Type | Qty. | Order No. |
|---|---|---|---|
| | | | |
| | | | |
| | IE-BS-V05M-RJ45-C | 10 | **1963510000** |
| | | | |

### Ordering data - Empty housings

| | Type | Qty. | Order No. |
|---|---|---|---|
| | IE-BH-V05M | 10 | **1963530000** |
| **Note** | | | |

| | Type | Qty. | Order No. |
|---|---|---|---|
| | IE-BH-V05M | 10 | **1963530000** |
| | | | |

### Accessories

| Dust protection cap | Type | Qty. | Order No. |
|---|---|---|---|
| Flange-mounted housing protective cap | IE-BP-V05M | 10 | **1968930000** |

| | Type | Qty. | Order No. |
|---|---|---|---|
| | IE-BP-V05M | 10 | **1968930000** |

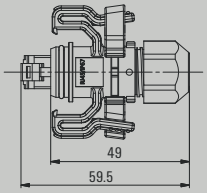
| | |
|---|---|
| **Note** | Plug inserts can also be ordered separately. Refer to Inserts. |

| |
|---|
| Plug inserts can also be ordered separately. Refer to Inserts. |

## Plug SnapIn V6 - RJ45

- Cat. 6
- IP 67

## Without kink prevention




## Technical data

| | |
|---|---|
| Category | Cat.$6_A$ / Class $E_A$ (ISO/IEC 11801 2010) |
| Protection degree | IP67 |
| Shielding | 360° shield contact |
| Housing main material | PA 66, UL 94: V-0 |
| Contact surface | Gold over nickel |
| Colour | Light Grey |
| Plugging cycles | 750 |
| Wiring | EIA/TIA T568 A |
| Type of mounting | Floor-mounted, for exposed connections, Wall mounting |
| Ambient temperature (operational) | -40 °C...70 °C |
| Connector standard | IEC 61076-3-106 Var. 6, IEC 60603-7-5 |
| Approvals | DNVGL |
| **Note** | |

## Ordering data

| Type | Qty. | Order No. |
|---|---|---|
| IE-P-IP67 | 1 | **8808380000** |

**Note**

## Accessories

Plug-in connector

| Type | Qty. | Order No. |
|---|---|---|
| IE-PM-RJ45-TH | 100 | **1963580000** |

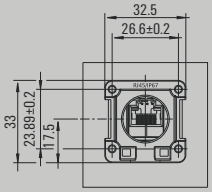
**Note**

See also the "Accessories" chapter.

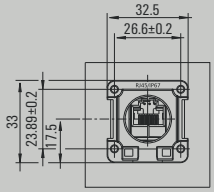
## Flange SnapIn V6 - RJ45

- Cat. 6
- IP 67

## Module




## Coupling




## Technical data

| | Module | Coupling |
|---|---|---|
| Category | Cat.6 (ISO/IEC 11801) | Cat.6 (ISO/IEC 11801) |
| Protection degree | IP67 | IP67 |
| Shielding | 360° shield contact | 360° shield contact |
| Housing main material | PA 66, UL 94: V-0 | PA 66, UL 94: V-0 |
| Contact surface | Gold over nickel | Gold over nickel |
| Colour | Light Grey | Light Grey |
| Plugging cycles | 750 | 750 |
| Type of mounting | Cabinet, Distribution box | Cabinet, Distribution box |
| Wiring | Colour-coded pin assignment according to EIA/TIA T568 A ., EIA/TIA T568 B | |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...70 °C |
| Connector standard | IEC 61076-3-106 Var. 6, IEC 60603-7-5 | IEC 61076-3-106 Var. 6, IEC 60603-7-5 |
| Approvals | DNVGL | DNVGL |
| **Note** | | |

## Ordering data

| | Module Type | Qty. | Order No. | Coupling Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| straight | IE-XM-RJ45/IDC-IP67 | 1 | **8808440000** | IE-XM-RJ45/RJ45-IP67 | 1 | **8808450000** |
| angled. upwards | | | | IE-XM-6U-RJ45/RJ45-IP67 | 1 | **8829440000** |
| angled. downwards | | | | IE-XM-6D-RJ45/RJ45-IP67 | 1 | **8829450000** |
| **Note** | | | | | | |

## Accessories

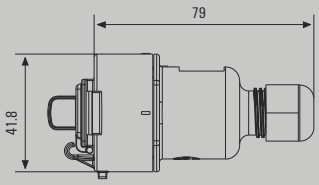
| Flange insert | Module Type | Qty. | Order No. | Coupling Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| RJ45 module A. straight | IE-XRJ45/IDC | 1 | **8808330000** | | | |
| RJ45 coupling. straight | | | | IE-XR-RJ45/RJ45-2 | 24 | **8952950000** |

**Note**

## Cable coupling SnapIn V6 - RJ45

- Cat. 6
- IP 67

## Cable coupling




## Technical data

| | |
|---|---|
| Category | Cat.$6_A$ / Class $E_A$ (ISO/IEC 11801 2010) |
| Protection degree | IP67 |
| Shielding | 360° shield contact |
| Housing main material | PA 66, UL 94: V-0 |
| Contact surface | Gold over nickel |
| Colour | Light Grey |
| Plugging cycles | 750 |
| Type of mounting | Floor-mounted, for exposed connections, Wall mounting |
| Wiring | Colour-coded pin assignment according to EIA/TIA T568 A ., EIA/TIA T568 B |
| Ambient temperature (operational) | -40 °C...70 °C |
| Connector standard | IEC 61076-3-106 Var. 6, IEC 60603-7-5 |
| Sheath diameter, min. / max. | 6 mm / 9.5 mm |
| Approvals | DNVGL |
| **Note** | |

## Ordering data

| | Type | Qty. | Order No. |
|---|---|---|---|
| Cable coupling | IE-C-IP67 | 1 | **8813090000** |

**Note**

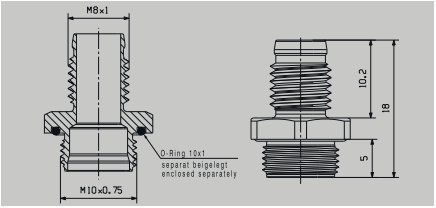
## Accessories

| Type | Qty. | Order No. |
|---|---|---|
| | | |

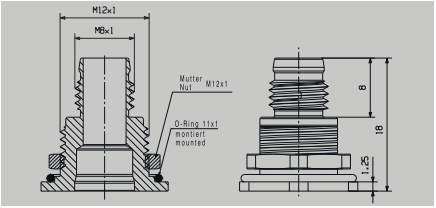
| | |
|---|---|
| **Note** | See also the "Accessories" chapter. |

## Single Pair Ethernet, M8 empty housing

## M8 front wall mounting




## M8 rear wall mounting




## Technical data

| | | |
|---|---|---|
| Category | | |
| Ambient temperature (operational) | -40...85 °C | 40...85 °C |
| Protection degree | IP67 | IP67 |
| Housing main material | Brass, nickel-plated | Brass, nickel-plated |
| Seal material | FKM | FKM |
| Configuration | Frontpanel mounting | Backpanel mounting |
| Type of mounting | Screw mounting | Screw mounting |
| Connection thread | M10 x 0.75 | M10 x 0.75 |
| Connector standard | IEC 61076-2-104 | IEC 61076-2-104 |
| Tightening torque fixing nut | 2.5 Nm | 2.5 Nm |
| **Note** | | |

## Ordering data

| Type | Qty. | Order No. |
|---|---|---|
| IE-BHD-SPE-M8-OT-FP | 10 | **2726020000** |
| Inserts must be ordered separately. | | |

| Type | Qty. | Order No. |
|---|---|---|
| IE-BHD-SPE-M8-OT-BP | 20 | **2726030000** |
| Inserts must be ordered separately. | | |

**Note**

## Accessories

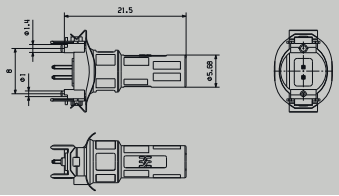
| Type | Qty. | Order No. |
|---|---|---|
| Fastening nut | | |
| IE-BHD-SPE-FP-CN-M10X0.75 | 10 | **2739640000** |

| Type | Qty. | Order No. |
|---|---|---|
| IE-BHD-SPE-FP-CN-M10X0.75 | 10 | **2739640000** |

**Note**

## PCB insert

## M8 insert 180° pin contacts




### Technical data

| | |
|---|---|
| Category | T1-B |
| Ambient temperature (operational) | -40...85 °C |
| Protection degree | |
| Pollution severity | 2 |
| Connection thread | M8 |
| Number of poles | 2 |
| Type of connection | Solder connection, Male contact |
| Outgoing elbow | 180° |
| Contact material | Copper alloy |
| Contact surface | Ni/Au |
| Contact carrier material | LCP |
| Operational voltage range | ≤ 50 V AC, ≤ 60 V DC |
| Insulation strength | ≥ 500 MΩ |
| Dielectric strength, contact / contact | 1000 V DC |
| Dielectric strength, contact / shield | 2250 V DC |
| Connector standard | IEC 63171-5 |
| UL 94 flammability rating | V-0 |
| **Note** | |

### Ordering data

| | Type | Qty. | Order No. |
|---|---|---|---|
| THR | IE-PCB-SPM-P-180-THR | 100 | **2735920000** |
| SMD | IE-PCB-SPM-P-180-SMD | 100 | **2795110000** |

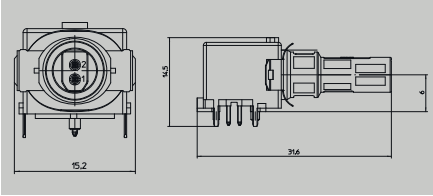
**Note**

### Accessories

| Type | Qty. | Order No. |
|---|---|---|
| | | |

**Note**

## M8 insert 90° pin contacts




### Preliminary technical data!

| | |
|---|---|
| T1-B | |
| -40...85 °C | |
| | |
| 2 | |
| M8 | |
| 2 | |
| Solder connection, Male contact | |
| 90° | |
| Copper alloy | |
| Ni/Au | |
| LCP | |
| ≤ 50 V AC, ≤ 60 V DC | |
| ≥ 500 MΩ | |
| 1000 V DC | |
| 2250 V DC | |
| IEC 63171-5 | |
| V-0 | |

### Ordering data

| Type | Qty. | Order No. |
|---|---|---|
| IE-PCB-SPM-P-90-THR | 100 | **2795100000** |
| | | |

### Accessories

| Type | Qty. | Order No. |
|---|---|---|
| | | |

## M12 plug, Tension-clamp connection, D-coded

## SAISM / SAIBM

**Straight**

## SAISW / SAIBW

**angled**

## Ordering data

| Male | | | | |
|---|---|---|---|---|
| | 4-pole. PG 9 | | | |
| **Female** | | | | |
| | 4-pole. PG 9 | | | |
| **Note** | | | | |

| Type | Qty. | Order No. |
|---|---|---|
| SAISM-4/8S-M12 4P D-ZF | 1 | **1892120001** |
| | | |
| SAIBM-4/8S-M12 4P D-ZF | 1 | **1892130001** |

| Type | Qty. | Order No. |
|---|---|---|
| SAISW-4/8S-M12 4P D-ZF | 1 | **1803930001** |
| | | |
| SAIBW-4/8S-M12 4P D-ZF | 1 | **1139330000** |

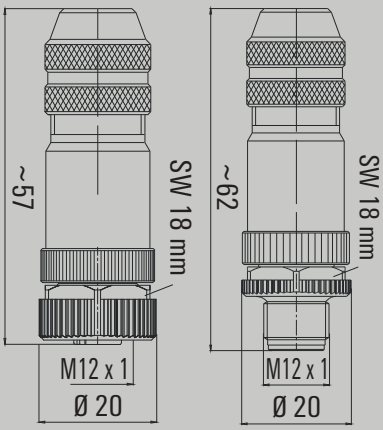
## Technical data

| | |
|---|---|
| Type of connection | Tension-clamp connection |
| Housing main material | CuZn |
| Ambient temperature (operational) | -40 °C... |
| Connector standard | IEC 61076-2-101 |
| Connection thread | M12 |
| Cable diameter | 6...8 mm (PG9) |
| Conductor cross-section min. / max. | 0.25 mm² / 0.5 mm² |
| Rated current | 4 |
| Rated voltage | 250 |
| Temperature range of housing | -40 ... +85 ° C |
| Protection degree | IP67 |
| Contact surface | Gold-plated |
| **Note** | |

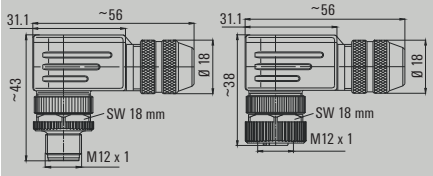
| | |
|---|---|
| Tension-clamp connection | |
| CuZn | |
| -40 °C... | |
| IEC 61076-2-101 | |
| M12 | |
| 6...8 mm (PG9) | |
| 0.25 mm² / 0.5 mm² | |
| 4 | |
| 250 | |
| -40 ... +85 ° C | |
| IP67 | |
| Gold-plated | |

| | |
|---|---|
| Tension-clamp connection | |
| CuZn | |
| -40 °C... | |
| IEC 61076-2-101 | |
| M12 | |
| 6...8 mm (PG9) | |
| 0.25 mm² / 0.5 mm² | |
| 4 | |
| 250 | |
| -40 ... +85 ° C | |
| IP67 | |
| Gold-plated | |

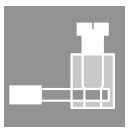
## Dimensioned drawing




## Dimensioned drawing



## M12 plug, Screw connection, D-coded



## SAISM / SAIBM

**Straight**

### Ordering data

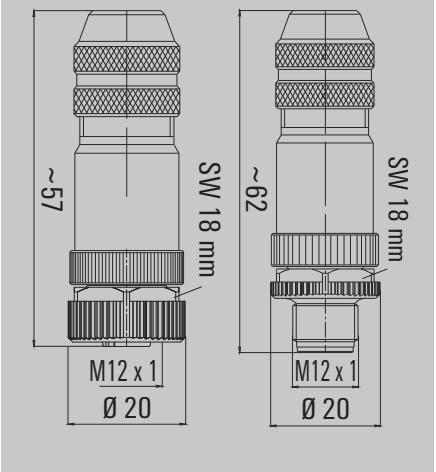
| Male | | | |
|---|---|---|---|
| | 4-pole. PG 9 | | |
| **Female** | | | |
| | 4-pole. PG 9 | | |
| **Note** | | | |

| Type | Qty. | Order No. |
|---|---|---|
| SAISM-4/8S-M12-4P D-COD | 1 | **1892120000** |
| | | |
| SAIBM-4/8S-M12-4P D-COD | 1 | **1892130000** |

### Technical data

| | |
|---|---|
| Type of connection | Screw connection |
| Housing main material | CuZn |
| Ambient temperature (operational) | -40 °C...85 °C |
| Connector standard | IEC 61076-2-101 |
| Connection thread | M12 |
| Cable diameter | 6...8 mm (PG9) |
| Conductor cross-section min. / max. | 0.25 mm² / 0.75 mm² |
| Rated current | 4 |
| Rated voltage | 250 |
| Temperature range of housing | -40 ... +85 ° C |
| Protection degree | IP67 |
| Contact surface | Gold-plated |
| **Note** | |

### Dimensioned drawing



## PUSH IN M12
## with shield connection
## D coded

### SAISP / SAIBP

**Straight**

### SAISWP / SAIBWP

**Angled**

### Ordering data

| Male | | | |
|---|---|---|---|
| | D-coded, 4-pole | | |
| **Female** | | | |
| | D-coded, 4-pole | | |
| **Note** | | | |

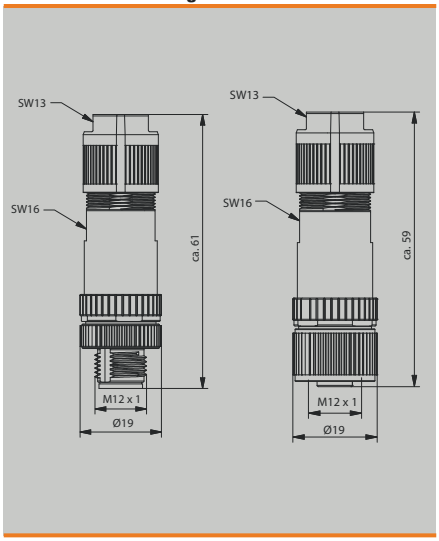
| Type | Qty. | Order No. |
|---|---|---|
| SAISP-M-4D-4/8-M12 | 1 | **2681680000** |
| | | |
| SAIBP-M-4D-4/8-M12 | 1 | **2681700000** |
| Other versions on request | | |

| Type | Qty. | Order No. |
|---|---|---|
| SAISWP-M-4D-4/8-M12 | 1 | **2681690000** |
| | | |
| SAIBWP-M-4D-4/8-M12 | 1 | **2681710000** |
| Other versions on request | | |

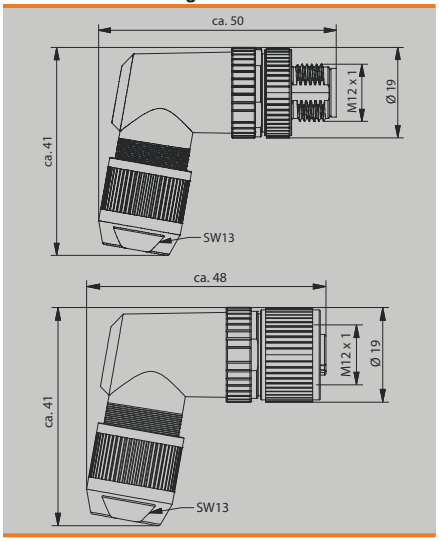
### Technical data

| | | |
|---|---|---|
| Type of connection | PUSH IN | PUSH IN |
| Housing main material | PA 66 | PA 66 |
| Connection thread | M12 | M12 |
| Cable diameter | 4...8 mm | 4...8 mm |
| Conductor cross-section min. / max. | 0.14...0.75 mm² | 0.14...0.75 mm² |
| Rated current | 4 A | 4 A |
| Rated voltage | 250 V | 250 V |
| Temperature range of housing | -40 ... +85 ° C | -40 ... +85 ° C |
| Protection degree | IP67 | IP67 |
| Contact surface | Ni/Au | Ni/Au |
| **Note** | | |

### Dimensioned drawing




### Dimensioned drawing



## Crimp connection M12 with shield connection D-coded

### SAISC / SAIBC

**straight**

### SAISC / SAIBC

**Panel feed-through**

## Ordering data

| Male | | | |
|---|---|---|---|
| | 4-pole | | |
| **Female** | | | |
| | 4-pole | | |
| **Note** | | | |

| Type | Qty. | Order No. |
|---|---|---|
| SAISC-D-18/28-4/9CG | 1 | **2664810000** |
| | | |
| SAIBC-D-18/28-4/9CG | 1 | **2672420000** |

| Type | Qty. | Order No. |
|---|---|---|
| SAISC-WDF-D-18/28-4/9CG | 1 | **2664790000** |
| | | |
| SAIBC-WDF-D-18/28-4/9CG | 1 | **2664780000** |

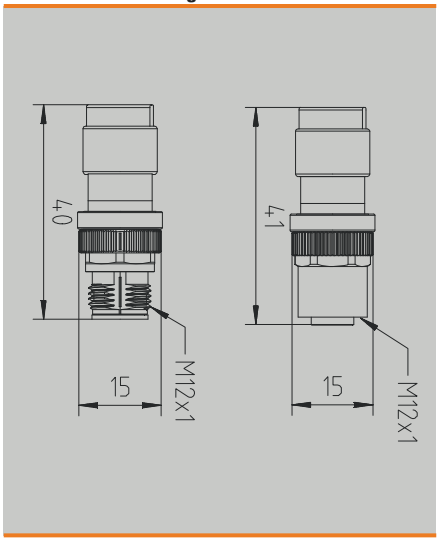
## Technical data

| | |
|---|---|
| Type of connection | Crimp connection |
| Housing main material | CuZn |
| Connection thread | M12 |
| Cable diameter | 4...9 mm |
| Conductor cross-section min. / max. | 0.08...0.75 mm² |
| Rated current | 4 A |
| Rated voltage | 50 V |
| Temperature range of housing | -40 ... +85 ° C |
| Protection degree | IP67 |
| Contact surface | Gold-plated |
| **Note** | |

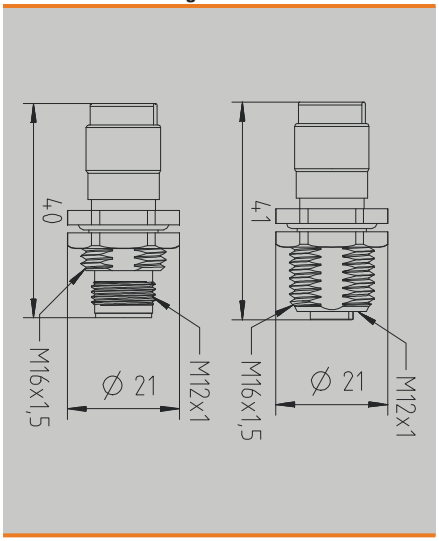
| |
|---|
| Crimp connection |
| CuZn |
| M12 |
| 4...9 mm |
| 0.08...0.75 mm² |
| 4 A |
| 50 V |
| -40 ... +85 ° C |
| IP67 |
| Gold-plated |
| |

| |
|---|
| Crimp connection |
| CuZn |
| M12 |
| 4...9 mm |
| 0.08...0.75 mm² |
| 4 A |
| 50 V |
| -40 ... +85 ° C |
| IP67 |
| Gold-plated |
| |

### Dimensioned drawing




### Dimensioned drawing



## Crimp connection M12 with shield connection D-coded

## SAISC / SAIBC

**angled**

## Ordering data

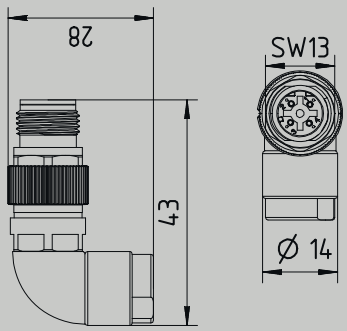
| Male | |
|---|---|
| | 4-pole |
| **Female** | |
| | 4-pole |
| **Note** | |

| Type | Qty. | Order No. |
|---|---|---|
| SAISWC-D-18/28-4/9CG | 1 | **2702690000** |
| | | |
| SAIBWC-D-18/28-4/9CG | 1 | **2702700000** |

## Technical data

| | |
|---|---|
| Type of connection | Crimp connection |
| Housing main material | CuZn |
| Connection thread | M12 |
| Cable diameter | 4...9 mm |
| Conductor cross-section min. / max. | 0.08...0.75 mm² |
| Rated current | 4 A |
| Rated voltage | 50 V |
| Temperature range of housing | -40 ... +85 ° C |
| Protection degree | IP67 |
| Contact surface | Gold-plated |
| **Note** | |

## Dimensioned drawing



## Crimp contact M12

## SAI - KSC / KBC

**straight**

## Ordering data

| Male | | Type | Qty. | Order No. |
|---|---|---|---|---|
| | AWG 18-20 | SAI-M12-KSC-18/20 | 100 | **2664840000** |
| | AWG 20-22 | SAI-M12-KSC-20/22 | 100 | **2664850000** |
| | AWG 22-24 | SAI-M12-KSC-22/24 | 100 | **2673710000** |
| | AWG 26-28 | SAI-M12-KSC-26/28 | 100 | **2673720000** |
| **Female** | | | | |
| | AWG 18-20 | SAI-M12-KBC-18/20 | 100 | **2664860000** |
| | AWG 20-22 | SAI-M12-KBC-20/22 | 100 | **2664870000** |
| | AWG 22-24 | SAI-M12-KBC-22/24 | 100 | **2673730000** |
| | AWG 26-28 | SAI-M12-KBC-26/28 | 100 | **2673740000** |
| **Note** | | | | |

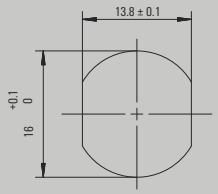
## Technical data

| | |
|---|---|
| Type of connection | |
| Housing main material | |
| Connection thread | |
| Cable diameter | |
| Conductor cross-section min. / max. | |
| Rated current | 7 A |
| Rated voltage | |
| Temperature range of housing | |
| Protection degree | |
| Contact surface | Gold-plated |
| **Note** | |

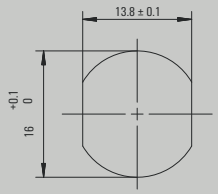
## Adapter / coupling M12

- Cat. 5
  - IP67
  - D-coding

## Adapter M12-RJ45, female




## Adapter M12-RJ45, male




## Technical data

| | Adapter M12-RJ45, female | Adapter M12-RJ45, male |
|---|---|---|
| Category | Cat.5 (ISO/IEC 11801) | Cat.5 (ISO/IEC 11801) |
| Protection degree | IP67 | IP67 |
| Housing main material | PA 66 | PA 66 |
| Shielding | Yes | Yes |
| Ambient temperature (operational) | -25 °C...80 °C | -25 °C...80 °C |
| Connector standard | IEC 60603-7-5, IEC 61076-2-101 | IEC 60603-7-5, IEC 61076-2-101 |
| Approvals | CULUS | CULUS |
| **Note** | | |

## Ordering data

| Adaptor | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| straight | IE-M12-ADAP S | 1 | **8901620000** | IE-AD-M12DRJ45-MF-180 | 1 | **1514970000** |
| angled | IE-M12-ADAP A | 1 | **8901630000** | IE-AD-M12DRJ45-MF-90 | 1 | **1514940000** |
| **Coupling** | | | | | | |
| | | | | | | |
| **Note** | | | | | | |

## Accessories

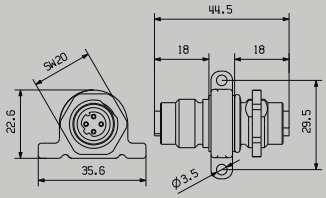
| Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|
| | | | | | |

| Note | | |
|---|---|---|

## Adapter / coupling M12

- Cat. 5
  - IP67
  - D-coding

## Coupling M12-M12




## Technical data

| | |
|---|---|
| Category | Cat.5 (ISO/IEC 11801) |
| Protection degree | IP67 |
| Housing main material | Polyamide, Brass, nickel-plated |
| Shielding | 360° shield contact |
| Ambient temperature (operational) | -5 °C...60 °C |
| Connector standard | IEC 61076-2-101 |
| Approvals | EAC |
| **Note** | |

## Ordering data

| **Adaptor** | **Type** | **Qty.** | **Order No.** |
|---|---|---|---|
| straight | | | |
| angled | | | |
| **Coupling** | | | |
| | IE-M12-COUP | 1 | **8901640000** |
| **Note** | | | |

## Accessories

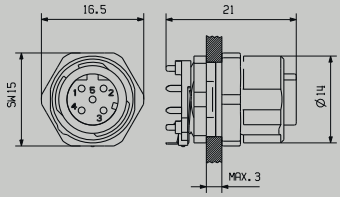
| **Type** | **Qty.** | **Order No.** |
|---|---|---|
| | | |

| **Note** | |
|---|---|

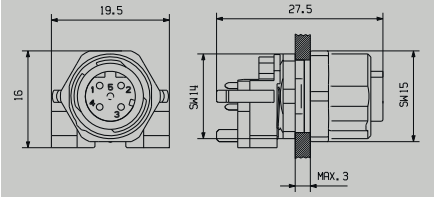
## M12 PCB connection element

- Cat. 5
- For installation into the end device
- D-coded

## Standard assembly




## Additional fastening mechanism




## Technical data

| | | |
|---|---|---|
| Category | Cat.5 (ISO/IEC 11801) | Cat.5 (ISO/IEC 11801) |
| Protection degree | IP65 in acc. with DIN EN 60529 | IP65 in acc. with DIN EN 60529 |
| Configuration | Reflow compatible | Reflow compatible |
| Housing main material | CuZn, Polyamide, nickel-plated | CuZn, Polyamide, nickel-plated |
| Shielding | 360° shield contact | 360° shield contact |
| Ambient temperature (operational) | -25...85 °C | -25...85 °C |
| Connector standard | IEC 61076-2-101 | IEC 61076-2-101 |
| Approvals | EAC | EAC |
| **Note** | | |

## Ordering data

| Connection element | | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|---|
| | straight | IE-M12-PCBCE | 60 | **8902810000** | IE-M12-PCBCE-PANEL | 10 | **8902820000** |
| | angled | | | | IE-M12-PCBCE-PANEL-A | 10 | **1393470000** |
| **Note** | | | | | | | |

## Accessories

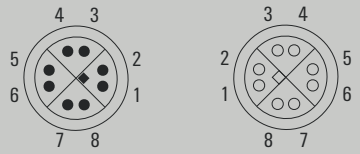
| Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|
| | | | | | |

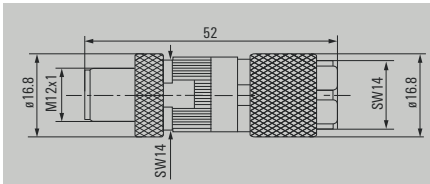
**Note**

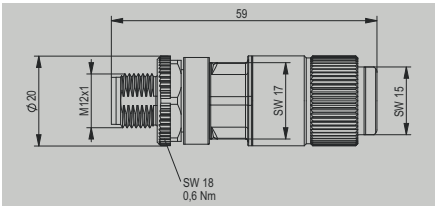
## M12 plug
## M12 X-type Cat. $6_A$

### Plug, AWG 26-22

### Plug, AWG 27-22




## Technical data

| | | |
|---|---|---|
| Category | Cat.$6_A$ / Class $E_A$ (ISO/IEC 11801 2010) | Cat.$6_A$ / Class $E_A$ (ISO/IEC 11801 2010) |
| Protection degree | IP67 | IP67 |
| Connection 1 / 2 | M12 / Insulation displacement technology | M12 / Insulation displacement technology |
| Housing main material | Zinc diecast | Zinc diecast |
| Connection thread | M12 | M12 |
| Contact material / Contact surface | Brass / Gold-plated | Brass, tinned / Gold-plated |
| Ambient temperature (operational) | -40 °C...85 °C | -40 °C...85 °C |
| Connector standard | IEC 61076-2-109 | IEC 61076-2-109 |
| Current-carrying capacity at 50 °C | 0.5 A @ 40 °C | 0.5 A @ 40 °C |
| Rated voltage | 48 V | 50 V |
| Insulation strength | 100 MΩ | 100 MΩ |
| Plugging cycles | ≥ 100 | ≥ 100 |
| Configuration | | |
| Wall thickness, min. / max. | | |
| Shielding | 360° all-round enclosure | 360° all-round enclosure |
| Connection diameter, flexible, min. / max. | 0.48 mm / 0.76 mm | 0.46 mm / 0.76 mm |
| Connection cross-section, flexible, min. / max. | AWG 26/7 / AWG 22/7 | AWG 27/7 / AWG 22/7 |
| Connection diameter, solid, min. / max. | 0.41 mm / 0.64 mm | 0.51 mm / 0.64 mm |
| Connection cross-section, solid, min. / max. | AWG 26/1 / AWG 22/1 | AWG 24/1 / AWG 22/1 |
| Insulation cross-section, max. | 1.6 mm | 1.6 mm |
| Sheath diameter min. / max. | 5 mm / 9.7 mm | 5.5 mm / 9 mm |
| Approvals | CULUS | CULUS |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. |
|---|---|---|---|
| Plugs | IE-PS-M12X-P-FH | 10 | **1324020000** |
| **Note** | | | |

| | Type | Qty. | Order No. |
|---|---|---|---|
| | IE-PS-M12X-P-AWG22/27FH | 1 | **2007500000** |

## Accessories

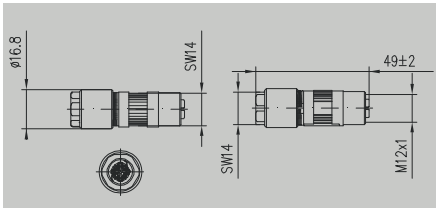
| Type | Qty. | Order No. |
|---|---|---|
| | | |

| Type | Qty. | Order No. |
|---|---|---|
| | | |

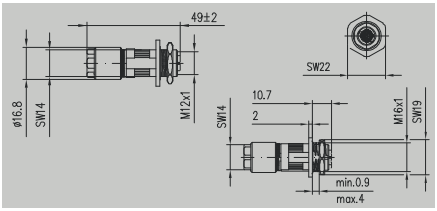
**Note**

## M12 plug / flange
## M12 X-type Cat. $6_A$

### Plug, female




### Flange




## Technical data

| | Plug, female | Flange |
|---|---|---|
| Category | Cat.$6_A$ / Class $E_A$ (ISO/IEC 11801 2010) | Cat.$6_A$ / Class $E_A$ (ISO/IEC 11801 2010) |
| Protection degree | IP67 | IP67 |
| Connection 1 / 2 | M12 / Insulation displacement technology | M12 / Insulation displacement technology |
| Housing main material | Zinc diecast | Zinc diecast |
| Connection thread | M12 | M12 |
| Contact material / Contact surface | Brass / Gold-plated | CuZn / Gold-plated |
| Ambient temperature (operational) | -40 °C...85 °C | -40 °C...85 °C |
| Connector standard | IEC 61076-2-109 | IEC 61076-2-109 |
| Current-carrying capacity at 50 °C | 0.5 A @ 40 °C | 0.5 A @ 40 °C |
| Rated voltage | 48 V | 48 V |
| Insulation strength | 100 MΩ | 100 MΩ |
| Plugging cycles | ≥ 100 | ≥ 100 |
| Configuration | | |
| Wall thickness, min. / max. | | 0.9 mm / 4 mm |
| Shielding | 360° all-round enclosure | 360° all-round enclosure |
| Connection diameter, flexible, min. / max. | 0.48 mm / 0.76 mm | 0.48 mm / 0.76 mm |
| Connection cross-section, flexible, min. / max. | AWG 26 / AWG 22 | AWG 26 / AWG 22 |
| Connection diameter, solid, min. / max. | 0.4 mm / 0.64 mm | 0.4 mm / 0.64 mm |
| Connection cross-section, solid, min. / max. | AWG 24 / AWG 22 | AWG 24 / AWG 22 |
| Insulation cross-section, max. | 1.6 mm | 1.6 mm |
| Sheath diameter min. / max. | 5 mm / 9.7 mm | 5 mm / 9.7 mm |
| Approvals | CULUS | CULUS |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. |
|---|---|---|---|
| Plugs | IE-PS-M12X-S-FH | 1 | **1516330000** |
| **Note** | | | |

| Type | Qty. | Order No. |
|---|---|---|
| IE-BS-M12X-S-FH | 1 | **1516340000** |

## Accessories

| Tools | Type | Qty. | Order No. |
|---|---|---|---|
| Tool set | SCREWTY SET | 1 | **1910000000** |
| Tool set with torque function | SCREWTY SET -DM | 1 | **1920000000** |
| Cable gland tool, M 12 | SCREWTY- M12 F | 1 | **1900020000** |
| Cable gland tool with torque function, M 12 | SCREWTY-M12 F-DM | 1 | **1900021000** |

| Type | Qty. | Order No. |
|---|---|---|
| SCREWTY SET | 1 | **1910000000** |
| SCREWTY SET -DM | 1 | **1920000000** |
| SCREWTY- M12 F | 1 | **1900020000** |
| SCREWTY-M12 F-DM | 1 | **1900021000** |

**Note**

## Crimp connection M12 with shield connection X-Type

### SAISC / SAIBC

**angled**

### SAISC / SAIBC

**straight**

## Ordering data

| Male | | | |
|---|---|---|---|
| | 8-pole | | |
| **Female** | | | |
| | 8-pole | | |
| **Note** | | | |

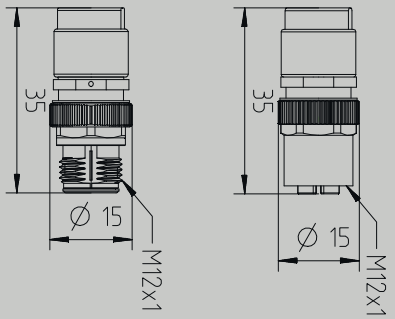
| Type | Qty. | Order No. |
|---|---|---|
| IE-PS-M12X-180-P-TH | 1 | **2664820000** |
| | | |
| IE-PS-M12X-180-S-TH | 1 | **2672440000** |

| Type | Qty. | Order No. |
|---|---|---|
| IE-PS-M12X-90-P-TH | 1 | **2702710000** |
| | | |
| IE-PS-M12X-90-S-TH | 1 | **2702720000** |

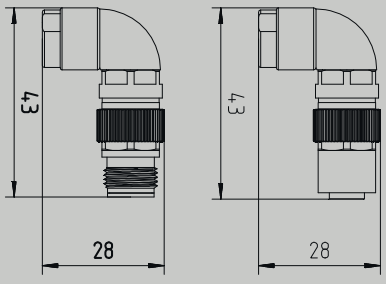
## Technical data

| | | |
|---|---|---|
| Type of connection | Crimp connection | Crimp connection |
| Housing main material | CuZn | Cu alloy Ni plated |
| Connection thread | M12 | M12 |
| Cable diameter | 4...9 mm | 4...9 mm |
| Conductor cross-section min. / max. | 0.14...0.34 mm² | 0.14...0.34 mm² |
| Rated current | 4 A | 2 A |
| Rated voltage | 50 V | 30 V |
| Temperature range of housing | -40 ... +85 ° C | -40 ... +85 ° C |
| Protection degree | IP67 | IP67 |
| Contact surface | Gold-plated | Gold-plated |
| **Note** | | |

### Dimensioned drawing




### Dimensioned drawing



## Crimp connection M12 with shield connection X-Type

### SAISC / SAIBC

**Panel feed-through, straight**

### SAISC / SAIBC

**Panel feed-through, angled**

## Ordering data

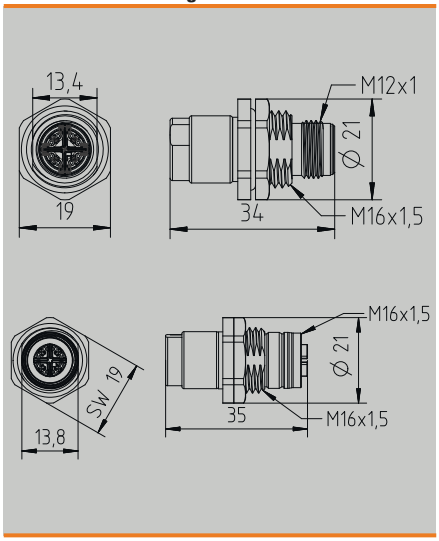
| Male | | | |
|---|---|---|---|
| | 8-pole, Back panel mounting | IE-BS-M12X-180-P-TH | 1 | 2747880000 |
| **Female** | | | | |
| | 8-pole, Back panel mounting | IE-BS-M12X-180-S-TH | | 2747900000 |
| **Note** | | | | |

| Type | Qty. | Order No. |
|---|---|---|
| IE-BS-M12X-90-P-TH | 1 | 2747910000 |
| IE-BS-M12X-90-S-TH | | 2747920000 |

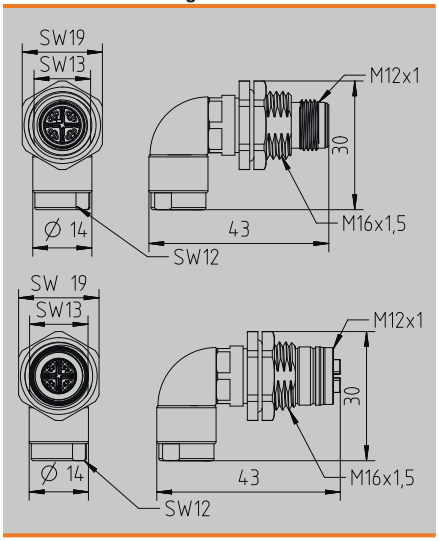
## Technical data

| | | |
|---|---|---|
| Type of connection | Crimp connection | Crimp connection |
| Housing main material | CuZn | CuZn |
| Connection thread | M12 | M12 |
| Cable diameter | 4...9 mm | 4...9 mm |
| Conductor cross-section min. / max. | 0.14...0.34 mm² | 0.14...0.34 mm² |
| Rated current | 4 A | 4 A |
| Rated voltage | 50 V | 50 V |
| Temperature range of housing | -40 ... +85 ° C | -40 ... +85 ° C |
| Protection degree | IP67 | IP67 |
| Contact surface | Gold-plated | Gold-plated |
| **Note** | | |

## Dimensioned drawing




## Dimensioned drawing



## Crimp contact M12
## X-Type

## SAI - KSC / KBC

## Ordering data

| Male | |
|---|---|
| | AWG 22-26 |
| **Female** | |
| | AWG 22-26 |
| **Note** | |

| Type | Qty. | Order No. |
|---|---|---|
| IE-PIC-M12X-P-22/26 | 100 | **2664880000** |
| | | |
| IE-PIC-M12X-S-22/26 | 100 | **2673440000** |
| | | |

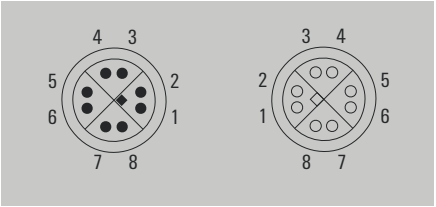
## Technical data

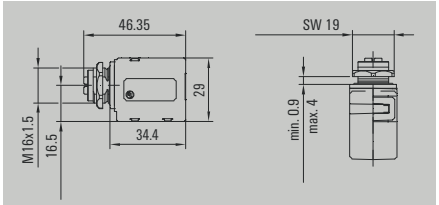
| | |
|---|---|
| Type of connection | |
| Housing main material | |
| Connection thread | |
| Cable diameter | |
| Conductor cross-section min. / max. | 0.34...0.14 mm² |
| Rated current | 1 A |
| Rated voltage | |
| Temperature range of housing | |
| Protection degree | |
| Contact material | Copper alloy, Gold-plated |
| **Note** | |

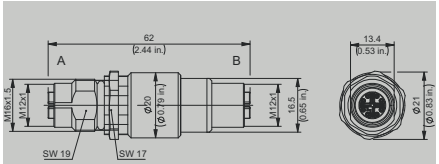
## Adapter / Coupling M12
## M12 X-type Cat. $6_A$

### Adapter M12 X-Type-RJ45

### Coupling M12 X-Type




## Technical data

| | Adapter M12 X-Type-RJ45 | Coupling M12 X-Type |
|---|---|---|
| Category | Cat.$6_A$ / Class $E_A$ (ISO/IEC 11801 2010) | Cat.$6_A$ / Class $E_A$ (ISO/IEC 11801 2010) |
| Protection degree | IP67 | IP67 plugged |
| Connection 1 / 2 | RJ45 / M12 | M12 / M12 |
| Housing main material | Zinc diecast | Brass, Copper-tin-zinc alloy |
| Connection thread | M12 | M12 / M12 |
| Contact material / Contact surface | Copper alloy / Gold-plated | CuSn / Au (Gold), ≥ 100 MΩ |
| Ambient temperature (operational) | -25 °C...85 °C | -40 °C...85 °C |
| Connector standard | IEC 61076-2-109, IEC 60603-7-51 | IEC 61076-2-109 |
| Current-carrying capacity at 50 °C | | 0.5 A @ 40 °C |
| Rated voltage | 50 V | |
| Insulation strength | 100 MΩ | |
| Plugging cycles | ≥ 100 (M12), 750 (RJ45) | ≥ 100 |
| Configuration | M12 socket to RJ45 socket | M12 socket to M12 socket |
| Wall thickness, min. / max. | 0.9 mm / 3 mm | / 4.5 mm |
| Shielding | 360° shield contact | 360° shield contact |
| Connection diameter, flexible, min. / max. | | |
| Connection cross-section, flexible, min. / max. | | |
| Connection diameter, solid, min. / max. | | |
| Connection cross-section, solid, min. / max. | | |
| Insulation cross-section, max. | | |
| Sheath diameter min. / max. | | |
| Approvals | CULUS | |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. |
|---|---|---|---|
| Adapter 90° | IE-AD-M12XRJ45-90 | 10 | **1400610000** |
| Adapter 180° | IE-AD-M12XRJ45-180 | 1 | **1400620000** |
| Coupling | | | |
| **Note** | | | |

| Type | Qty. | Order No. |
|---|---|---|
| | | |
| | | |
| IE-BS-M12X-S-C | 1 | **2731010000** |

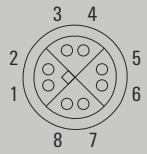
## Accessories

| Type | Qty. | Order No. |
|---|---|---|
| | | |

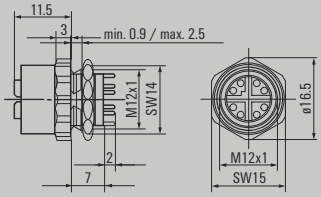
| Type | Qty. | Order No. |
|---|---|---|
| | | |

| Note | | |
|---|---|---|

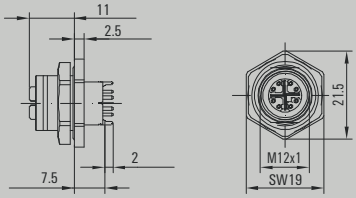
## PCB socket
## M12 X-type Cat. $6_A$




## PCB socket




## PCB socket, back panel mounting




## Technical data

| | | |
|---|---|---|
| Category | Cat.$6_A$ / Class $E_A$ (ISO/IEC 11801 2010) | Cat.$6_A$ / Class $E_A$ (ISO/IEC 11801 2010) |
| Protection degree | IP67, when screwed in | IP67, when screwed in |
| Connection 1 / 2 | M12 / Solder connection | M12 / Solder connection |
| Housing main material | CuZn | CuZn |
| Connection thread | M12 | M12 |
| Contact material / Contact surface | CuZn / Gold over nickel | CuZn / Gold over nickel |
| Ambient temperature (operational) | -40 °C...85 °C | -40 °C...85 °C |
| Connector standard | IEC 61076-2-109 | IEC 61076-2-109 |
| Current-carrying capacity at 50 °C | 0.5 A @ 40 °C | 0.5 A @ 40 °C |
| Rated voltage | 48 V | 48 V |
| Insulation strength | 100 MΩ | 100 MΩ |
| Plugging cycles | ≥ 100 | ≥ 100 |
| Configuration | Reflow compatible | Reflow compatible, Back panel mounting |
| Wall thickness, min. / max. | 0.9 mm / 2.5 mm | 0.9 mm / 2.5 mm |
| Shielding | 360° all-round enclosure | 360° all-round enclosure |
| Approvals | CULUS | CULUS |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. |
|---|---|---|---|
| pre-assembled | IE-PCB-M12X-S-180 | 10 | **1324010000** |
| 2-part version | IE-PCB2-M12X-S-180 | 10 | **1393080000** |

| Type | Qty. | Order No. |
|---|---|---|
| IE-PCBR-M12X-S-180 | 10 | **1427670000** |
| IE-PCBR2-M12X-S-180 | 10 | **1444650000** |

**Note**

## Accessories

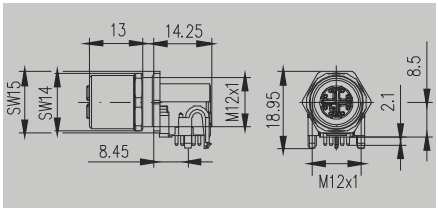
| Type | Qty. | Order No. |
|---|---|---|

| Type | Qty. | Order No. |
|---|---|---|

**Note**

## PCB socket
## M12 X-type Cat. $6_A$

## PCB socket, angled




## Technical data

| | |
|---|---|
| Category | Cat.$6_A$ / Class $E_A$ (ISO/IEC 11801 2010) |
| Protection degree | IP67, when screwed in |
| Connection 1 / 2 | M12 / Solder connection |
| Housing main material | CuZn |
| Connection thread | M12 |
| Contact material / Contact surface | CuZn / Gold over nickel |
| Ambient temperature (operational) | -40 °C...85 °C |
| Connector standard | IEC 61076-2-109 |
| Current-carrying capacity at 50 °C | 0.5 A @ 40 °C |
| Rated voltage | 48 V |
| Insulation strength | 100 MΩ |
| Plugging cycles | ≥ 100 |
| Configuration | Reflow compatible |
| Wall thickness, min. / max. | 1 mm / 2.5 mm |
| Shielding | 360° all-round enclosure |
| Approvals | CULUS |

**Note**

## Ordering data

| Type | Qty. | Order No. |
|---|---|---|
| IE-PCB-M12X-S-90 | 10 | **2168220000** |
| pre-assembled<br>2-part version | | |

**Note**

## Accessories

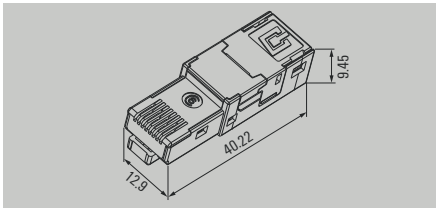
| Type | Qty. | Order No. |
|---|---|---|
| | | |

**Note**

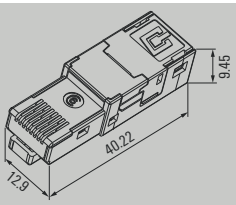
## RJ45 plug inserts, tool free

- Cat. $6_A$
- IP 20
- For housing variants 1, 4, 5 and 14

### 8-wire




### 4-wire




## Technical data

| | 8-wire | 4-wire |
|---|---|---|
| Category | Cat.$6_A$ / Class $E_A$ (ISO/IEC 11801 2010) | Cat.5 (ISO/IEC 11801) |
| Protection degree | IP67 with housing | IP67 with housing |
| Plugging cycles | 750 | 750 |
| Shielding | 360° all-round enclosure | 360° all-round enclosure |
| Housing main material | Zinc diecast | Zinc diecast |
| Contact material | | |
| Contact surface | Gold over nickel, Au ≥ 0.8 µm | Gold over nickel, Au ≥ 0.8 µm |
| Connection cross-section, flexible, min. / max. | AWG 26 / AWG 22 | AWG 26 / AWG 22 |
| Connection diameter, flexible, min. / max. | 0.48 mm / 0.76 mm | 0.48 mm / 0.76 mm |
| Connection cross-section, solid, min. / max. | AWG 24 / AWG 22 | AWG 24 / AWG 22 |
| Connection diameter, solid, min. / max. | 0.4 mm / 0.64 mm | 0.4 mm / 0.64 mm |
| Wire connection cross-section, finely stranded | Approval of the cable by Weidmüller necessary | Approval of the cable by Weidmüller necessary |
| Insulation diameter, min. / max. | 0.85 mm...1.6 mm | 0.85 mm...1.6 mm |
| Humidity | | |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...70 °C |
| Insulation strength | 500 MΩ | 500 MΩ |
| Contact resistance | ≤ 20 mΩ | ≤ 20 mΩ |
| Dielectric strength, contact / contact | ≥ 1000 V DC | ≥ 1000 V DC |
| Dielectric strength, contact / shield | ≥ 1500 V DC | ≥ 1500 V DC |
| Current-carrying capacity at 50 °C | 1 A | 1 A |
| PoE / PoE+ | conforming to IEEE 802.3at | conforming to IEEE 802.3at |
| Speed | 10 GBit/s | 100 MBit/s |
| Connector standard | IEC 60603-7-51 | IEC 60603-7-51 |
| Approvals | CULUS; CURUS | CULUS; CURUS |
| **Note** | Approvals available on request | |

## Ordering data

| tool-free | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| TIA-A/B/PROFINET | IE-PI-RJ45-FH | 10 | **1962730000** | | | |
| TIA-A | IE-PI-RJ45-FH-A | 10 | **1132010000** | | | |
| TIA-B | IE-PI-RJ45-FH-B | 10 | **1132020000** | | | |
| PROFINET | | | | IE-PI-RJ45-FH-P | 10 | **1132030000** |
| **Note** | | | | | | |

## Accessories

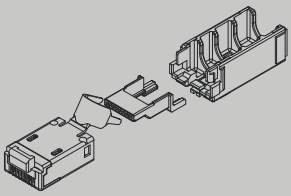
| Tools | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| Optional pressing tool | PWZ RJ45 | 1 | **1118040000** | PWZ RJ45 | 1 | **1118040000** |

**Note**

## RJ45 plug inserts, crimp

- Cat. $6_A$
- IP 20
- For housing variants 1, 4, 5 and 14

## 8-wire



## Technical data

| | |
|---|---|
| Category | Cat.$6_A$ / Class $E_A$ (ISO/IEC 11801 2010) |
| Protection degree | IP67 with housing |
| Plugging cycles | 750 |
| Shielding | 360° all-round enclosure |
| Housing main material | Brass, PC UL 94 V0 |
| Contact material | Phosphorus bronze |
| Contact surface | Gold over nickel, Au ≥ 0.8 µm, Ni 2.54 µm |
| Connection cross-section, flexible, min. / max. | AWG 27/7 / AWG 24/7 |
| Connection diameter, flexible, min. / max. | 0.46 mm / 0.61 mm |
| Connection cross-section, solid, min. / max. | AWG 26/1 / AWG 24/1 |
| Connection diameter, solid, min. / max. | 0.4 mm / 0.51 mm |
| Insulation diameter, min. / max. | 0.85 mm...1.05 mm |
| Humidity | 0...93 % rel. humidity |
| Ambient temperature (operational) | -40 °C...70 °C |
| Insulation strength | 500 MΩ |
| Contact resistance | ≤ 20 mΩ |
| Dielectric strength, contact / contact | ≥ 1000 V DC |
| Dielectric strength, contact / shield | ≥ 1500 V DC |
| Current-carrying capacity at 50 °C | 1 A |
| PoE / PoE+ | conforming to IEEE 802.3af |
| Speed | |
| Connector standard | IEC 60603-7-51 |
| Approvals | CURUS |

**Note**

## Ordering data

**Crimp**

| Type | Qty. | Order No. |
|---|---|---|
| IE-PI-RJ45-TH | 10 | **1962720000** |

**Note**

## Accessories

**Tools**

Pressing tool

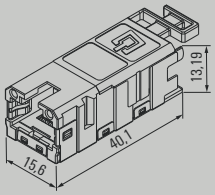
| Type | Qty. | Order No. |
|---|---|---|
| TT 8 RS MP 8 | 1 | **9202800000** |

**Note**

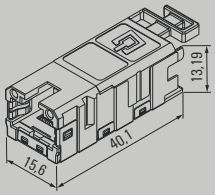
## RJ45 flange inserts, module

- Completely in Cat. $6_A$
- IP20
- For housing variants 1, 4, 5, 14 and for FrontCom®

### 8-wire




### 4-wire




## Technical data

| | 8-wire | 4-wire |
|---|---|---|
| Category | Cat.$6_A$ / Class $E_A$ (ISO/IEC 11801 2010) | Cat.5 (ISO/IEC 11801) |
| Protection degree | IP67 with housing | IP67 with housing |
| Plugging cycles | 750 | 750 |
| Shielding | 360° all-round enclosure | 360° all-round enclosure |
| Housing main material | Zinc diecast | Zinc diecast |
| Contact surface | Gold over nickel, Au ≥ 0.8 µm | Gold over nickel, Au ≥ 0.8 µm |
| Connection cross-section, flexible, min. / max. | AWG 26 / AWG 22 | AWG 26 / AWG 22 |
| Connection cross-section, solid, min. / max. | AWG 24 / AWG 22 | AWG 24 / AWG 22 |
| Insulation diameter, min. / max. | 0.85 mm...1.6 mm | 0.85 mm...1.6 mm |
| Connector standard | IEC 60603-7-51 | IEC 60603-7-51 |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...70 °C |
| PoE / PoE+ | conforming to IEEE 802.3af | conforming to IEEE 802.3af |
| Approvals | CULUS | CULUS; DNVGL |
| **Note** | Connection of WM Cat. 7 AWG 27/7 LSZH possible | |

## Ordering data

**tool-free**

| | Type | Qty. | Order No. |
|---|---|---|---|
| TIA-A. Cat. $6_A$ | IE-BI-RJ45-FJ-A | 10 | **1962850000** |
| TIA-B. Cat. $6_A$ | IE-BI-RJ45-FJ-B | 10 | **1963840000** |
| PROFINET Cat. 5 | | | |

| Type | Qty. | Order No. |
|---|---|---|
| | | |
| | | |
| IE-BI-RJ45-FJ-P | 10 | **1963830000** |

**Note**

## Accessories

**Tools**

| | Type | Qty. | Order No. |
|---|---|---|---|
| Optional pressing tool | PWZ RJ45 | 1 | **1118040000** |

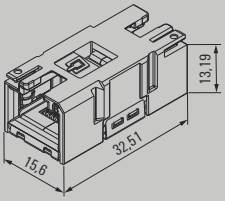
| Type | Qty. | Order No. |
|---|---|---|
| PWZ RJ45 | 1 | **1118040000** |

**Note**

## RJ45 flange inserts, coupling

- Completely in Cat. $6_A$
- IP20
- For housing variants 1, 4, 5, 14 and for FrontCom®

## 8-wire




## Technical data

| | |
|---|---|
| Category | Cat.$6_A$ / Class $E_A$ (ISO/IEC 11801 2010) |
| Protection degree | IP67 with housing |
| Plugging cycles | 750 |
| Shielding | 360° all-round enclosure |
| Housing main material | Zinc diecast |
| Contact surface | Gold over nickel, Au ≥ 0.8 µm |
| Connection cross-section, flexible, min. / max. | |
| Connection cross-section, solid, min. / max. | |
| Insulation diameter, min. / max. | ... |
| Connector standard | IEC 60603-7-51 |
| Ambient temperature (operational) | -40 °C...70 °C |
| PoE / PoE+ | conforming to IEEE 802.3af |
| Approvals | CULUS; DNVGL |
| **Note** | |

## Ordering data

| tool-free | Type | Qty. | Order No. |
|---|---|---|---|
| Coupling | IE-BI-RJ45-C | 10 | **1962840000** |
| **Note** | | | |

## Accessories

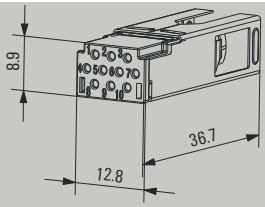
| Type | Qty. | Order No. |
|---|---|---|
| | | |

**Note**

## Plug inserts Hybrid

- Cat. 5
- IP 20
- For housing variants 1 (metal) and 14

## Crimp




## Technical data

| | |
|---|---|
| Category | Cat.5 (ISO/IEC 11801) |
| Protection degree | IP67 with housing |
| Plugging cycles | 500 |
| Shielding | 360° all-round enclosure |
| Housing main material | Nickel silver, PA 66 |
| Contact surface | Gold over nickel |
| Number of poles | 10 |
| Connection cross-section, flexible, min. / max. | AWG 27 / AWG 20 |
| Connection diameter, flexible, min. / max. | 0.08 mm² / 0.75 mm² |
| Insulation diameter, min. / max. | 1 mm...2.2 mm |
| Ambient temperature (operational) | -40 °C...70 °C |
| Volume resistance | <10 mΩ |
| Rated current | 3 A per contact |
| Rated voltage | 24 V |
| Contact resistance | ≤ 5 mΩ |
| Approvals | CULUS |
| **Note** | |

## Ordering data

| Type | Qty. | Order No. |
|---|---|---|
| IE-PI-HYB-10P | 10 | **1068990000** |
| Contacts should be ordered separately | | |

**Note**

## Accessories

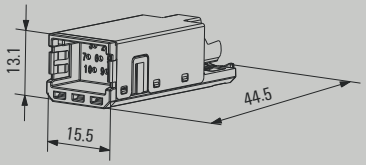
| Crimping contact | Type | Qty. | Order No. |
|---|---|---|---|
| 0.08...0.2 mm² | IE-PIC-HYB-S-0,2-300 | 300 | **1135150000** |
| 0.2...0.5 mm² | IE-PIC-HYB-S-0,5-300 | 300 | **1096180000** |
| 0.75 mm² | IE-PIC-HYB-S-0,75-300 | 300 | **1068950000** |
| **Tools** | | | |
| Pressing tool | HTF HYB | 1 | **1119580000** |

**Note**

## Flange inserts Hybrid

- Cat. 5
- IP 20
- For housing variants 1 (metal) and 14

## Module




## Technical data

| | |
|---|---|
| Category | Cat.5 (ISO/IEC 11801) |
| Protection degree | IP67 with housing |
| Plugging cycles | 500 |
| Shielding | 360° all-round enclosure |
| Housing main material | Zinc diecast, Nickel silver, PA 66 |
| Contact surface | Gold over nickel |
| Number of poles | 10 |
| Connection cross-section, flexible, min. / max. | AWG 27 / AWG 20 |
| Connection diameter, flexible, min. / max. | 0.08 mm² / 0.75 mm² |
| Insulation diameter, min. / max. | 1 mm...2.2 mm |
| Rated current | 3 A per contact |
| Rated voltage | 24 V |
| Contact resistance | ≤ 10 mΩ |
| Volume resistance | <10 mΩ |
| Ambient temperature (operational) | -40 °C...70 °C |
| Approvals | CULUS |
| **Note** | |

## Ordering data

| Type | Qty. | Order No. |
|---|---|---|
| IE-BI-HYB-10P | 10 | **1069010000** |
| Contacts should be ordered separately | | |

**Note**

## Accessories

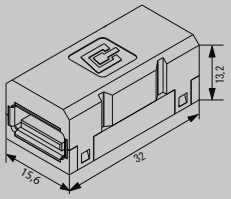
| Crimping contact | Type | Qty. | Order No. |
|---|---|---|---|
| 0.08...0.2 mm² | IE-BIC-HYB-P-0,2-300 | 300 | **1135160000** |
| 0.2...0.5 mm² | IE-BIC-HYB-P-0,5-300 | 300 | **1096150000** |
| 0.75 mm² | IE-BIC-HYB-P-0,75-300 | 300 | **1068970000** |
| **Tools** | | | |
| Pressing tool | HTF HYB | 1 | **1119580000** |

**Note**

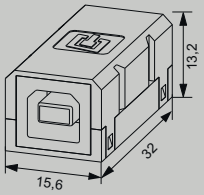
## Flange inserts USB

- IP20
- For housing variants 1, 4, 5, 14 and for FrontCom®

## Coupling USB A/A




## Coupling USB A/B




## Technical data

| | Coupling USB A/A | Coupling USB A/B |
|---|---|---|
| Protection degree | IP67 with housing | IP67 with housing |
| Shielding | 360° all-round enclosure | 360° all-round enclosure |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...70 °C |
| Connection 1 / 2 | USB A / USB A | USB A / USB B |
| Connector standard | IEC 61076-3-107 | IEC 61076-3-107 |
| Approvals | CULUS; DNVGL | CULUS; DNVGL |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. |
|---|---|---|---|
| USB 2.0 | IE-BI-USB-A | 10 | **1019570000** |
| USB 3.0 | IE-BI-USB-3.0-A | 10 | **1487920000** |
| **Note** | | | |

| Type | Qty. | Order No. |
|---|---|---|
| IE-BI-USB-AB | 10 | **1131380000** |
| | | |

## Accessories

| **USB cable 2.0** | Type | Qty. | Order No. |
|---|---|---|---|
| 0.5 m | IE-USB-A-A-0.5M | 1 | **1993550005** |
| 1.0 m | IE-USB-A-A-1.0M | 1 | **1993550010** |
| 1.5 m | IE-USB-A-A-1.5M | 1 | **1993550015** |
| 1.8 m | IE-USB-A-A-1.8M | 1 | **1993550018** |
| 3.0 m | IE-USB-A-A-3.0M | 1 | **1993550030** |
| **USB cable 3.0** | | | |
| 0.5 m | IE-USB-3.0-A-A-0.5M | 1 | **2581730005** |
| 1.8 m | IE-USB-3.0-A-A-1.8M | 1 | **2581730018** |
| 3.0 m | IE-USB-3.0-A-A-3M | 1 | **2581730030** |
| 5.0 m | IE-USB-3.0-A-A-5M | 1 | **2581730050** |

| Type | Qty. | Order No. |
|---|---|---|
| | | |

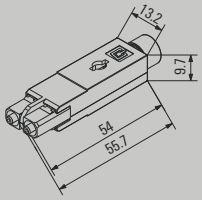
**Note**

## Plug inserts SC

- IP 20
- For variant 1, 4 and 14 housings

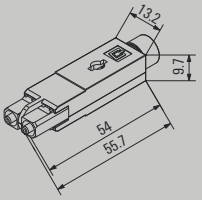
## Plug insert SC, POF

**only for V14**




## Connector insert SC, POF, reconnectable

**only for V14**




## Technical data

| | | |
|---|---|---|
| Protection degree | IP67 with housing | IP67 with housing |
| Housing main material | Zinc diecast, PA | PA 66 |
| Plugging cycles | 1000 | ≥ 500 |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...70 °C |
| Connector standard | IEC 61754-24 | IEC 61754-24 |
| Approvals | UL | |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. |
|---|---|---|---|
| POF | IE-PI-SCRJ-POF | 10 | **1067410000** |
| **Note** | | | |

| Type | Qty. | Order No. |
|---|---|---|
| IE-PI-SCRJ-POF-QA | 10 | **2564960000** |

## Accessories

| **Tools** | Type | Qty. | Order No. |
|---|---|---|---|
| Tool set POF, crimp | TOOL SET IE-POF | 1 | **1208930000** |
| Mounting tool, POF | HTX-IE-POF | 1 | **1208870000** |
| MULTI-STRIPAX IE-POF | MULTI-STRIPAX IE-POF | 1 | **1208880000** |
| Cevlar scissors | SCISSORS KEVLAR | 1 | **1208910000** |
| **Replacement ferrule** | | | |
| | IE-SCRJ-IP67-POF-100 | 100 | **1278430000** |

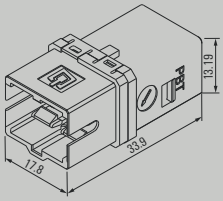
| Type | Qty. | Order No. |
|---|---|---|
| | | |
| HTX-IE-POF-QA | 1 | **2602860000** |
| MULTI-STRIPAX IE-POF | 1 | **1208880000** |
| SCISSORS KEVLAR | 1 | **1208910000** |
| | | |

**Note**

## Flange inserts SC

- IP 20
- SC-RJ on 2 SC
- For variant 1, 4 and 14 housings

## Flange inserts SC




## Technical data

| | |
|---|---|
| Protection degree | IP67 with housing |
| Housing main material | PA |
| Plugging cycles | 1000 |
| Ambient temperature (operational) | -40 °C...70 °C |
| Approvals | |

**Note**

## Ordering data

| Flange insert | Type | Qty. | Order No. |
|---|---|---|---|
| Singlemode | IE-BI-SCRJ2SC-SM-C | 10 | **1962870000** |
| Multimode/POF | IE-BI-SCRJ2SC-MM-C | 1 | **1964430000** |

**Note**

## Accessories

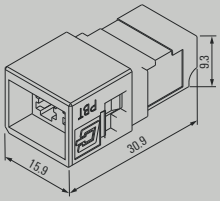
| Type | Qty. | Order No. |
|---|---|---|
| | | |

**Note**

## Flange inserts LC

- IP 20
- For variant 1, 4 and 14 housings

## Flange inserts LC




## Technical data

| | |
|---|---|
| Protection degree | IP67 with housing |
| Housing main material | PBT diecast zinc |
| Plugging cycles | 1000 |
| Ambient temperature (operational) | -40 °C...70 °C |
| Connector standard | IEC 61754-20 |
| Approvals | |

**Note**

## Ordering data

| Flange insert | Type | Qty. | Order No. |
|---|---|---|---|
| Singlemode | IE-BI-LCD-SM-C | 10 | **1962880000** |
| Multimode | IE-BI-LCD-MM-C | 10 | **1964420000** |

**Note**

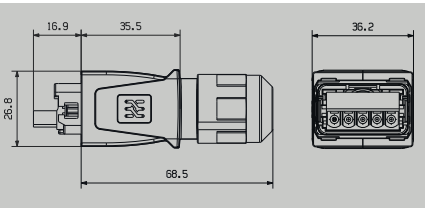
## Accessories

| Tools | Type | Qty. | Order No. |
|---|---|---|---|
| Crimping pliers GOF LC | IE-CT-LC-GOF | 1 | **9205330000** |

**Note**

## Plug PushPull Power

## Plug Power 24 V




## Technical data

| General data | |
|---|---|
| Protection degree | IP65, IP67 |
| Connector standard | in accordance with PROFINET specification |
| Ambient temperature (operational) | -40 °C...70 °C |
| Number of poles | 5 |
| Wire connection cross-section, flexible, min./max. | 0.75 mm² / 2.5 mm² |
| Sheath diameter, min. / max. | 6 mm / 13 mm |
| Connection | Tension clamp |
| Approvals | UR |
| **Material properties** | |
| Housing base material | Zinc diecast, nickel-plated |
| Sealing material | NBR |
| Cable sealing material | EPDM |
| Contact material / Contact surface | Copper alloy / Gold over nickel |
| UL 94 flammability rating | V-2 |
| Pollution severity level | 2 |
| Plugging cycles | ≥ 100 |
| **Electrical properties*** | |
| Current-carrying capacity at 50 °C | 16 A |
| Rated voltage | 24 V |

**Note**

## Ordering data - Sets

| Type | Qty. | Order No. |
|---|---|---|
| IE-PS-VAPM-5P-2.5 | 1 | **2465440000** |

**Note**

We recommend using 10-mm-long wire-end ferrules

## Ordering data - Empty housings

| Type | Qty. | Order No. |
|---|---|---|

**Note**

## Accessories

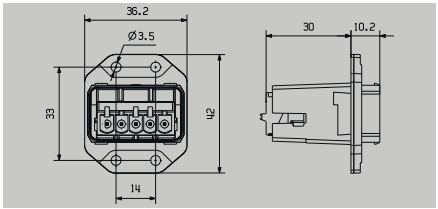
| Type | Qty. | Order No. |
|---|---|---|
| IE-REDU-6-8-PS-VAPM | 10 | **2531330000** |

Sealing insert 6–8 mm

**Note**

## Flanges PushPull Power

## Flange Power 24 V




## Technical data

| General data | |
|---|---|
| Protection degree | IP67 |
| Connector standard | in accordance with PROFINET specification |
| Ambient temperature (operational) | -40 °C...70 °C |
| Number of poles | 5 |
| Connection diameter, flexible, min. / max. | 0.75 mm² / 2.5 mm² |
| Connection 1 | Tension clamp |
| Approvals | UR |
| Installation | 4 screws |
| **Material properties** | |
| Housing base material | Zinc diecast, nickel-plated |
| Sealing material | NBR |
| Cable sealing material | EPDM |
| Contact carrier material | PA |
| Contact material / Contact surface | Copper alloy / Gold over nickel |
| UL 94 flammability rating | V-2 |
| Pollution severity level | 2 |
| Plugging cycles | ≥ 100 |
| **Electrical properties*** | |
| Current-carrying capacity at 50 °C | 16 A |
| Rated voltage | 24 V |
| **Note** | |

## Ordering data - Sets

| Type | Qty. | Order No. |
|---|---|---|
| IE-BSS-VAPM-24V | 1 | 2493480000 |
| We recommend using 10-mm-long wire-end ferrules | | |

**Note**

## Ordering data - Empty housings

| Type | Qty. | Order No. |
|---|---|---|
| IE-BHD-VAPM | 1 | 2493490000 |

Device flange

**Note**

## Accessories

| Type | Qty. | Order No. |
|---|---|---|
| IE-BP-VAPP | 10 | 1068930000 |
| IE-BP-VAPP-DC | 10 | 2494060000 |

**Dust protection cap**

IP54 protective cap

Dust cap

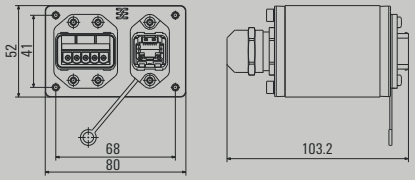
**Note**

# IP65 connection components / FreeCon connecting components
## Overview

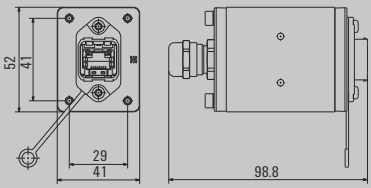

| | | |
|---|---|---|
| **IP65 connection components / FreeCon connecting components** | FreeCon Passive V14 | 0.2 |
| | FreeCon Active PROFINET | 0.9 |
| | V1 junction boxes | 0.12 |
| | V4 junction boxes | 0.14 |
| | V5 junction boxes | 0.16 |
| | V6 junction boxes | 0.17 |

## FreeCon V14 - junction box

### Double junction box, Power / RJ45




### Single junction box, RJ45




## Technical data

| General data | | |
|---|---|---|
| Housing main material | Aluminium profile, Cover: die-cast zinc, nickel plated | Aluminium profile, Cover: die-cast zinc, nickel plated |
| Protection degree | IP65 | IP65 |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...70 °C |
| Connector standard | IEC 61076-3-117 Var. 14, IEC 60603-7-5 | IEC 61076-3-117 Var. 14, IEC 60603-7-5 |
| Approvals | CULUS | CULUS |
| **Technical specifications power connector** | | |
| Housing base material | Zinc diecast, nickel-plated | |
| Sealing material | NBR | |
| Contact material | Copper alloy | |
| Contact carrier material | PA | |
| Contact surface | Gold over nickel | |
| Plugging cycles | ≤ 100 | |
| Number of poles | 5 | |
| Sheath diameter, min. / max. | 6 mm / 12 mm | |
| Wire connection cross section, stranded, min. / max. | 0.75 mm² / 2.5 mm² | |
| Connection | Tension clamp | |
| **Electrical properties power connector** | | |
| Current-carrying capacity at 50 °C | 16 A | |
| Rated voltage | 24 V | |
| **Technical specifications for RJ45 module** | | |
| Housing base material | Zinc diecast, nickel-plated | Zinc diecast, nickel-plated |
| Contact surface | Gold over nickel | Gold over nickel |
| Connection cross-section, flexible, min. / max. | AWG 26 / AWG 22 | AWG 26 / AWG 22 |
| Plugging cycles (RJ45 module) | 750 | 750 |
| Connection 1 | IDC | IDC |
| Sheath diameter, min./max. | 5 mm / 10 mm | 5 mm / 10 mm |
| **Electrical properties for RJ45 module** | | |
| Category | Cat.5 (ISO/IEC 11801) | Cat.5 (ISO/IEC 11801) |
| Contact resistance | ≤ 20 mΩ | ≤ 20 mΩ |
| Insulation resistance | > 500 MΩ | > 500 MΩ |
| Dielectric strength, contact – contact, max. | ≤ 1000 V DC | ≤ 1000 V DC |
| Dielectric strength, contact – contact, min. | ≤ 1500 V DC | ≤ 1500 V DC |
| Current carrying capacity | 1 A | 1 A |
| **Note** | | |

## Ordering data

| Type | Qty. | Order No. |
|---|---|---|
| IE-CD-V14MRJ/VAPM24V-FJ | 1 | **1068830000** |

**Note**

| Type | Qty. | Order No. |
|---|---|---|
| IE-CD-V14MRJ-FJ | 1 | **1068880000** |

## Accessories

**Mounting foot**

| Type | Qty. | Order No. |
|---|---|---|
| IE-CD-MA | 10 | **1099580000** |

**Dust protection cap**

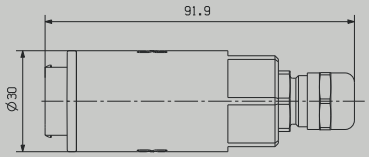
| | Type | Qty. | Order No. |
|---|---|---|---|
| Protective cap | IE-BP-V14P | 10 | **1058310000** |
| IP54 protective cap | IE-BP-VAPP | 10 | **1068930000** |

| Type | Qty. | Order No. |
|---|---|---|
| IE-CD-MA | 10 | **1099580000** |
| IE-BP-V14P | 10 | **1058310000** |

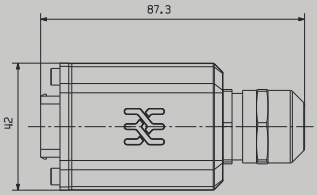
**Note**

## FreeCon V14 - single junction box

## RJ45 cable coupling




## PushPull Power cable coupling




## Technical data

| | | |
|---|---|---|
| **General data** | | |
| Housing main material | diecast aluminium | diecast aluminium |
| Protection degree | IP65 | IP65 |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...70 °C |
| Connector standard | IEC 61076-3-117 Var. 14, IEC 60603-7-5 | in accordance with PROFINET specification |
| Approvals | CULUS | CULUS |
| **Technical specifications power connector** | | |
| Housing base material | | Zinc diecast, nickel-plated |
| Sealing material | | NBR |
| Contact material | | Copper alloy |
| Contact carrier material | | PA |
| Contact surface | | Gold over nickel |
| Plugging cycles | | ≤ 100 |
| Number of poles | | 5 |
| Sheath diameter, min. / max. | | 6 mm / 12 mm |
| Wire connection cross section, stranded, min. / max. | | 0.75 mm² / 2.5 mm² |
| Connection | | Tension clamp |
| **Electrical properties power connector** | | |
| Current-carrying capacity at 50 °C | | 16 A |
| Rated voltage | | 24 V |
| **Technical specifications for RJ45 module** | | |
| Housing base material | Zinc diecast, nickel-plated | |
| Contact surface | Gold over nickel | |
| Connection cross-section, flexible, min. / max. | AWG 26 / AWG 22 | |
| Connection 1 | IDC | |
| Sheath diameter, min./max. | 5 mm / 10 mm | |
| **Electrical properties for RJ45 module** | | |
| Category | Cat.5 (ISO/IEC 11801) | |
| Contact resistance | ≤ 20 mΩ | |
| Insulation resistance | > 500 MΩ | |
| Dielectric strength, contact – contact, max. | ≤ 1000 V DC | |
| Dielectric strength, contact – contact, min. | ≤ 1500 V DC | |
| Current carrying capacity | 1 A | |
| **Note** | | We recommend using 10-mm-long wire-end ferrules |

## Ordering data - Sets

| Type | Qty. | Order No. |
|---|---|---|
| IE-CC-V14M-RJ45-FJ-P | 1 | 1990600000 |

**Note**

| Type | Qty. | Order No. |
|---|---|---|
| IE-CC-VAPM-24V | 1 | 1990630000 |

## Ordering data - Empty housings

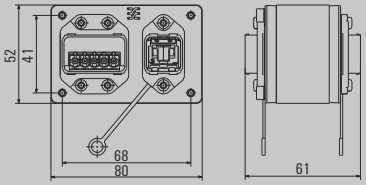
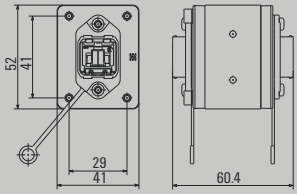
| Type | Qty. | Order No. |
|---|---|---|
| IE-CC-V14M-EH | 1 | 2583100000 |

**Note**

| Type | Qty. | Order No. |
|---|---|---|
| | | |

# FreeCon Passive V14

## FreeCon V14 - coupling

| | Double coupling, Power / RJ45 | Single coupling, RJ45 |
|---|---|---|
| | | |
| |  |  |

## Technical data

| | | |
|---|---|---|
| **General data** | | |
| Housing main material | Aluminium profile, Cover: die-cast zinc, nickel plated | Aluminium profile, Cover: die-cast zinc, nickel plated |
| Protection degree | IP65 | IP65 |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...70 °C |
| Connector standard | IEC 61076-3-117 Var. 14, IEC 60603-7-5 | IEC 61076-3-117 Var. 14, IEC 60603-7-5 |
| Approvals | CULUS | CULUS |
| **Technical specifications power connector** | | |
| Housing base material | Zinc diecast, nickel-plated | |
| Sealing material | NBR | |
| Contact material | Copper alloy | |
| Contact carrier material | PA | |
| Contact surface | Gold over nickel | |
| Plugging cycles | ≥ 100 | |
| Number of poles | 5 | |
| **Electrical properties power connector** | | |
| Current-carrying capacity at 50 °C | 16 A | |
| Rated voltage | 24 V | |
| **Technical data for RJ45 coupling** | | |
| Housing base material | Zinc diecast, PA 66 | Zinc diecast, PA 66 |
| **Electrical properties RJ45 coupling** | | |
| Category | Cat.$6_A$ / Class $E_A$ (ISO/IEC 11801 2010) | Cat.$6_A$ / Class $E_A$ (ISO/IEC 11801 2010) |
| Contact resistance | ≤ 20 mΩ | ≤ 20 mΩ |
| Contact surface | Gold over nickel | Gold over nickel |
| Insulation resistance | > 500 MΩ | > 500 MΩ |
| Dielectric strength, contact – contact, min. | ≥ 1000 V DC | ≥ 1000 V DC |
| Dielectric strength, contact – shielding, max. | ≥ 1500 V DC | ≥ 1500 V DC |
| Current carrying capacity | 1 A | 1 A |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. |
|---|---|---|---|
| | IE-CD-V14MRJ/VAPM24V-C-MA | 1 | 1068820000 |
| **Note** | Including mounting foot | | |

| Type | Qty. | Order No. |
|---|---|---|
| IE-CD-V14MRJ-C-MA | 1 | 1068870000 |
| Including mounting foot | | |

## Accessories

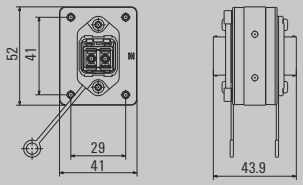
| Dust protection cap | Type | Qty. | Order No. |
|---|---|---|---|
| Protective cap | IE-BP-V14P | 10 | 1058310000 |
| IP54 protective cap | IE-BP-VAPP | 10 | 1068930000 |

| Type | Qty. | Order No. |
|---|---|---|
| IE-BP-V14P | 10 | 1058310000 |
| | | |

**Note**

## FreeCon V14 single coupling

## Single coupling, SCRJ




## Technical data

| General data | |
|---|---|
| Housing main material | Aluminium profile, Cover: die-cast zinc, nickel plated |
| Protection degree | IP65 |
| Ambient temperature (operational) | -40...70 °C |
| Connector standard | IEC 61076-3-117 Var. 14, IEC 61754-24 |
| Approvals | CULUS |
| **Technical specifications - fibre-optic coupler** | |
| Housing base material (fibre-optic coupling) | PA |
| Plugging cycles (fibre-optic coupling) | ≥ 500 |
| Seal material (fibre-optic coupling) | NBR |
| Connection 1 / 2 | SCRJ / SCRJ |
| Insertion attenuation (fibre-optic coupling) | < 0.2 dB |
| Fibre type | Multimode, POF |

**Note**

## Ordering data

| Type | Qty. | Order No. |
|---|---|---|
| IE-CD-V14MSCRJ-MM-C-MA | 1 | 1318150000 |

**Note**

## Accessories

**Dust protection cap**

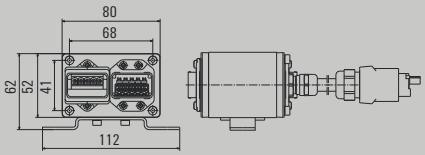
Protective cap

| Type | Qty. | Order No. |
|---|---|---|
| IE-BP-V14P | 10 | 1058310000 |

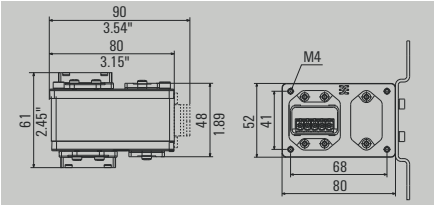
**Note**

## FreeCon V14 - Power

### Y-distributor, Power




### Single coupling, Power




## Technical data

| General data | | |
|---|---|---|
| Housing main material | Aluminium profile, Cover: die-cast zinc, nickel plated | Aluminium profile, Cover: die-cast zinc, nickel plated |
| Protection degree | IP65 | IP65, If thread-locking fluid is used |
| Ambient temperature (operational) | -40...70 °C | -40...70 °C |
| Connector standard | in accordance with PROFINET specification | in accordance with PROFINET specification |
| Approvals | CULUS | CULUS |
| **Technical specifications power connector** | | |
| Housing base material | Zinc diecast, nickel-plated | Zinc diecast, nickel-plated |
| Sealing material | NBR | NBR |
| Cable sealing material | TPE | TPE |
| Contact material | Copper alloy | Copper alloy |
| Contact carrier material | PA | PA |
| Contact surface | Gold over nickel | Gold over nickel |
| UL 94 flammability rating | V-0 | V-0 |
| Plugging cycles | ≥ 100 | ≥ 100 |
| Pollution severity level | 2 | 2 |
| **Electrical properties power connector** | | |
| Current-carrying capacity at 50 °C | 16 A @ 20 °C | 16 A @ 20 °C |
| Rated voltage | 24 V | 24 V |
| Number of poles | 5 | 5 |
| **Note** | | |

## Ordering data

| Type | Qty. | Order No. |
|---|---|---|
| IE-CD-VAPM24V-Y-MA | 1 | 1297010000 |

**Note**

| Type | Qty. | Order No. |
|---|---|---|
| IE-CD-VAPM24V-C-MA | 1 | 1397690000 |

## Accessories

**Dust protection cap**

IP54 protective cap

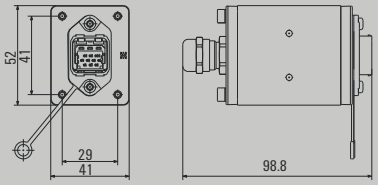
| Type | Qty. | Order No. |
|---|---|---|
| IE-BP-VAPP | 10 | 1068930000 |

| Type | Qty. | Order No. |
|---|---|---|
| IE-BP-VAPP | 10 | 1068930000 |

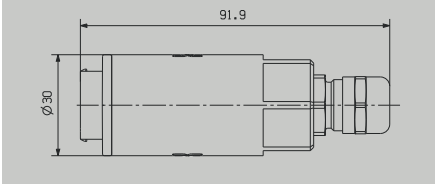
**Note**

## FreeCon V14 - junction box

## Single junction box, Hybrid




## Hybrid cable coupling




## Technical data

| | | |
|---|---|---|
| **General data** | | |
| Housing main material | Aluminium profile, Cover: die-cast zinc, nickel plated | diecast aluminium |
| Protection degree | IP65 | IP65 |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...70 °C |
| Approvals | CULUS | CULUS |
| **Technical specifications hybrid connector** | | |
| Housing base material | Zinc diecast (flange), PA 66 | Zinc diecast (flange), PA 66 |
| Sealing material | NBR | NBR |
| Contact material | Copper alloy | Copper alloy |
| Contact surface | Gold over nickel | Gold over nickel |
| Plugging cycles | 500 | 500 |
| Pole count | 10 | 10 |
| Connection cross-section, flexible, min. / max. | AWG 27 / AWG 20 | AWG 27 / AWG 20 |
| Connection cross-section, flexible, min. / max. | 0.08 mm² / 0.75 mm² | 0.08 mm² / 0.75 mm² |
| **Electrical properties hybrid connector** | | |
| Rated current (hybrid connector) | 3 A per contact | 3 A per contact |
| Rated voltage (DIN EN 61984) | 24 V | 24 V |
| Contact resistance | ≤ 10 mΩ | ≤ 10 mΩ |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. |
|---|---|---|---|
| | IE-CD-V14MHYB-10P-FJ | 1 | 1068850000 |
| **Note** | Contacts should be ordered separately | | |

| Type | Qty. | Order No. |
|---|---|---|
| IE-CC-V14M-HYB-10P-FJ | 1 | 1990610000 |
| Contacts should be ordered separately | | |

## Accessories

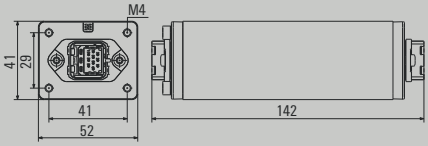
| | Type | Qty. | Order No. |
|---|---|---|---|
| **Mounting foot** | | | |
| | IE-CD-MA | 10 | 1099580000 |
| **Crimping contact** | | | |
| 0.08...0.2 mm² | IE-BIC-HYB-P-0,2-300 | 300 | 1135160000 |
| 0.2...0.5 mm² | IE-BIC-HYB-P-0,5-300 | 300 | 1096150000 |
| 0.75 mm² | IE-BIC-HYB-P-0,75-300 | 300 | 1068970000 |
| **Tools** | | | |
| Pressing tool | HTF HYB | 1 | 1119580000 |
| **Dust protection cap** | | | |
| Protective cap | IE-BP-V14P | 10 | 1058310000 |
| **Mounting frame** | | | |
| | | | |

| Type | Qty. | Order No. |
|---|---|---|
| | | |
| IE-BIC-HYB-P-0,2-300 | 300 | 1135160000 |
| IE-BIC-HYB-P-0,5-300 | 300 | 1096150000 |
| IE-BIC-HYB-P-0,75-300 | 300 | 1068970000 |
| HTF HYB | 1 | 1119580000 |
| IE-BP-V14P | 10 | 1058310000 |
| IE-CC-V14M-MF | 1 | 1990620000 |

**Note**

## FreeCon V14 single coupling

### Single coupling, hybrid




## Technical data

| General data | |
|---|---|
| Housing main material | Aluminium profile, Cover: die-cast zinc, nickel plated |
| Protection degree | IP65 |
| Ambient temperature (operational) | -40...70 °C |
| **Technical specifications hybrid connector** | |
| Housing base material | Zinc diecast (flange), PA 66 |
| Sealing material | NBR |
| Contact material | Copper alloy |
| Contact surface | Gold over nickel |
| Plugging cycles | 500 |
| **Electrical properties hybrid connector** | |
| Rated current (hybrid connector) | 3 A per contact |
| Rated voltage (DIN EN 61984) | 24 |
| Contact resistance | ≤ 10 mΩ |
| Pole count | 10 |
| Approvals | CULUS |

**Note**

## Ordering data

| Type | Qty. | Order No. |
|---|---|---|
| IE-CD-V14MHYB-10P-C-MA | 1 | 1068840000 |

**Note**

## Accessories

**Dust protection cap**

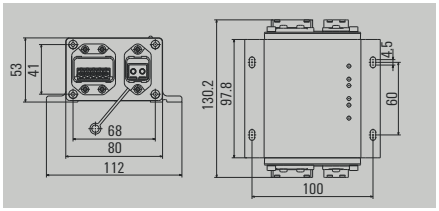
Protective cap

| Type | Qty. | Order No. |
|---|---|---|
| IE-BP-V14P | 10 | 1058310000 |

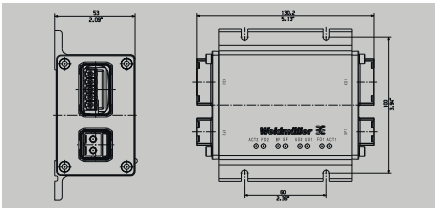
**Note**

## FreeCon Active PROFINET with diagnostics functionality

### POF repeater




### POF repeater II



## Technical data

| General data | | |
|---|---|---|
| Housing main material | Aluminium profile, Cover: die-cast zinc, nickel plated | Aluminium profile, Zinc die cast, electroplated lid |
| Weight | | |
| Data interface | PROFINET PushPull SCRJ POF (V14) | PROFINET PushPull SCRJ POF (V14) |
| Power interface | PROFINET PushPull Power | PROFINET PushPull Power |
| Protection degree | IP65 | IP65 |
| Ambient temperature (operational) | -20 °C...55 °C | -20 °C...55 °C |
| Network standard | IEC 61158, IEC 61784 | IEC 61158, IEC 61784 |
| Connector standard | IEC 61076-3-117 Var. 14, IEC 61754-24 | IEC 61076-3-117 Var. 14, IEC 61754-24 |
| **Electrical data** | | |
| Operating voltage | 24 V DC | 24 V DC |
| Operational voltage range | 18...30 V DC | 18...30 V DC |
| Current consumption | 200 mA typical | 200 mA typical |
| Baud rate | 100 MB | 100 MB |
| Protocol | PROFINET IRT | PROFINET IRT |
| LED indicator | FO1: port active, FO2: port active, SF: general error, BF: bus error, US1: voltage 1 (electronics), US2: voltage 2 | FO1: port active, FO2: port active, SF: general error, BF: bus error, US1: voltage 1 (electronics), US2: voltage 2, ACT1: activity Port1, ACT2: activity Port2 |
| Approvals | CE; CULUS | CE; CULUS |
| **Note** | | |

## Ordering data

| Type | Qty. | Order No. |
|---|---|---|
| IE-CDR-V14MSCPOF/VAPM-C | 1 | 1253240000 |
| Delivery incl. protective caps | | |

| Type | Qty. | Order No. |
|---|---|---|
| IE-CDR-V14MSCPOF/VAPM-C II | 1 | 2455360000 |
| Further development of 1253240000, IE-CDR-V14MSCPOF/VAPM-C. For commissioning, the new GSDML file (see Downloads) must be installed. | | |

## Accessories

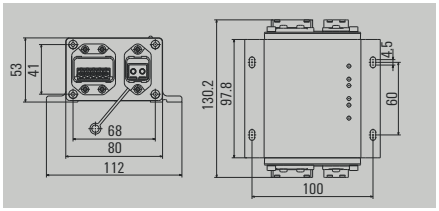
| Type | Qty. | Order No. |
|---|---|---|
| | | |

| Type | Qty. | Order No. |
|---|---|---|
| | | |

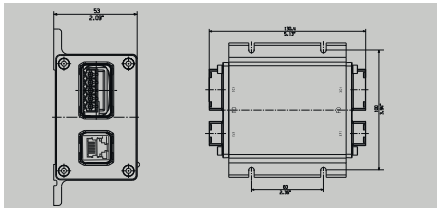
**Note**

## FreeCon Active PROFINET with diagnostics functionality

### POF media converter




### POF media converter II



## Technical data

| General data | | |
|---|---|---|
| Housing main material | Aluminium profile, Cover: die-cast zinc, nickel plated | Aluminium profile, Zinc die cast, electroplated lid |
| Weight | | |
| Data interface | PROFINET PushPull SCRJ POF (V14), PROFINET PushPull RJ45 (V14) | PROFINET PushPull SCRJ POF (V14), PROFINET PushPull RJ45 (V14) |
| Power interface | PROFINET PushPull Power | PROFINET PushPull Power |
| Protection degree | IP65 | IP65 |
| Ambient temperature (operational) | -20 °C...55 °C | -20 °C...55 °C |
| Network standard | IEC 61158, IEC 61784 | IEC 61158, IEC 61784 |
| Connector standard | IEC 61076-3-117 Var. 14, IEC 61754-24, IEC 60603-7-51 | IEC 61076-3-117 Var. 14, IEC 61754-24, IEC 60603-7-51 |
| **Electrical data** | | |
| Operating voltage | 24 V DC | 24 V DC |
| Operational voltage range | 18...30 V DC | 18...30 V DC |
| Current consumption | 200 mA typical | 200 mA typical |
| Baud rate | 100 MB | 100 MB |
| Protocol | PROFINET IRT | PROFINET IRT |
| LED indicator | P1: port active, P2: port active, SF: general error, BF: bus error, US1: voltage 1 (electronics), US2: voltage 2 | P1: port active, P2: port active, SF: general error, BF: bus error, US1: voltage 1 (electronics), US2: voltage 2, ACT1: activity Port1, ACT2: activity Port2 |
| Approvals | CE; CULUS | CULUS |
| **Note** | | Further development of 1324440000, IE-CDM-V14MRJSCP/VAPM-C. For commissioning, the new GSDML file (see Downloads) must be installed. |

## Ordering data

| Type | Qty. | Order No. |
|---|---|---|
| IE-CDM-V14MRJSCP/VAPM-C | 1 | **1324440000** |
| Delivery incl. protective caps | | |

| Type | Qty. | Order No. |
|---|---|---|
| IE-CDM-V14MRJSCP/VAPM-C II | 1 | **2588270000** |

## Accessories

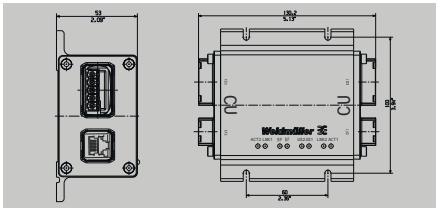
| Type | Qty. | Order No. |
|---|---|---|

| Type | Qty. | Order No. |
|---|---|---|

**Note**

## FreeCon Active PROFINET with diagnostics functionality

### Copper repeater



## Technical data

| General data | |
|---|---|
| Housing main material | Aluminium profile, Zinc die cast, electroplated lid |
| Weight | |
| Data interface | PROFINET PushPull RJ45 (V14) |
| Power interface | PROFINET PushPull Power |
| Protection degree | IP65 |
| Ambient temperature (operational) | -20 °C...55 °C |
| Network standard | IEC 61158, IEC 61784 |
| Connector standard | IEC 61076-3-117 Var. 14 |
| **Electrical data** | |
| Operating voltage | 24 V DC |
| Operational voltage range | 18...30 V DC |
| Current consumption | 100 mA |
| Baud rate | 100 MBit/s |
| Protocol | PROFINET IRT |
| LED indicator | ACT1: activity Port1, ACT2: activity Port2, SF: general error, BF: bus error, US1: voltage 1 (electronics), US2: voltage 2, LNK1: port active, LNK2: port active |
| Approvals | CULUS |
| **Note** | |

## Ordering data

| Type | Qty. | Order No. |
|---|---|---|
| IE-CDR-V14MRJ/VAPM-C | 1 | 2581810000 |
| Delivery incl. protective caps | | |

**Note**

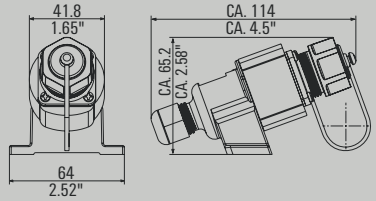
## Accessories

| Type | Qty. | Order No. |
|---|---|---|
| | | |

**Note**

## V1 junction boxes - plastic

### Single junction box




### Technical data

| | |
|---|---|
| Protection degree | IP67 |
| Housing main material | PA UL 94 V0 |
| Plugging cycles | 750 |
| Ambient temperature (operational) | -40 °C...70 °C |
| Connector standard | IEC 61076-3-106 Var. 1 |
| Sheath diameter min. / max. | 6 mm / 9.5 mm |
| Approvals | |
| **Note** | |

### Ordering data

| Variant 1 | Type | Qty. | Order No. |
|---|---|---|---|
| Pre-assembled cable | IE-OP-V01P-1S | 10 | **1061830000** |
| **Note** | Order RJ45 modules separately | | |

### Accessories

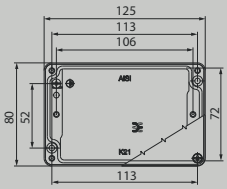
| Inserts, Data | Type | Qty. | Order No. |
|---|---|---|---|
| RJ45 module EIA/TIA T568 B | IE-BI-RJ45-FJ-B | 10 | **1963840000** |
| RJ45 module PROFINET | IE-BI-RJ45-FJ-P | 10 | **1963830000** |
| RJ45 module EIA/TIA T568 A | IE-BI-RJ45-FJ-A | 10 | **1962850000** |

**Note**

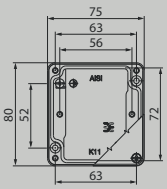
## V1 junction boxes - metal

- IP 67
- For wall or floor mounting

### Double junction box




### Single junction box




### Technical data

| | | |
|---|---|---|
| Protection degree | IP67 | IP67 |
| Housing main material | AL-Si 12 | AL-Si 12 |
| Colour | grey | grey |
| Type of mounting | Floor-mounted, Wall mounting | Floor-mounted, Wall mounting |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...70 °C |
| Plugging cycles | 750 | 750 |
| Connector standard | IEC 61076-3-106 Var. 1 | IEC 61076-3-106 Var. 1 |
| Sheath diameter min. / max. | 5 mm / 10 mm | 5 mm / 10 mm |
| Approvals | GOSTME25 | |
| **Note** | | |

### Ordering data

| Variant 1 | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| 2 ports. straight | IE-OM-V01M-K21-2S | 1 | **1966330000** | | | |
| 1 port. straight | | | | IE-OM-V01M-K11-1S | 1 | **1966300000** |
| **Note** | RJ45 modules can be ordered separately | | | RJ45 modules can be ordered separately | | |

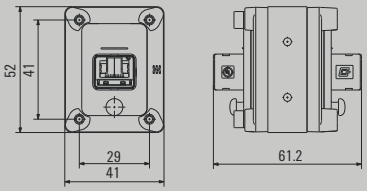
### Accessories

| Inserts, Data | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| RJ45 module EIA/TIA T568 B | IE-BI-RJ45-FJ-B | 10 | **1963840000** | IE-BI-RJ45-FJ-B | 10 | **1963840000** |
| RJ45 module PROFINET | IE-BI-RJ45-FJ-P | 10 | **1963830000** | IE-BI-RJ45-FJ-P | 10 | **1963830000** |
| RJ45 module EIA/TIA T568 A | IE-BI-RJ45-FJ-A | 10 | **1962850000** | IE-BI-RJ45-FJ-A | 10 | **1962850000** |

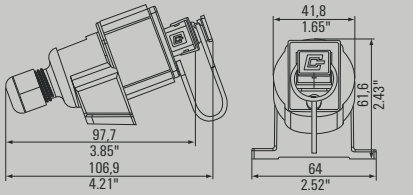
**Note**

## FreeCon V4 junction boxes

## Single coupling, RJ45




## Single junction box




## Technical data

| General data | | |
|---|---|---|
| Plugging cycles | 750 | 750 |
| Housing main material | Aluminium profile, Cover: die-cast zinc, nickel plated | PA |
| Contact surface | Gold over nickel | Gold over nickel |
| UL 94 flammability rating | | V-0 |
| Connector standard | IEC 61076-3-106 Var. 4, IEC 60603-7-5 | IEC 61076-3-106 Var. 4 |
| Protection degree | IP65 | IP67 |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...70 °C |
| Sheath diameter min. / max. | | 6 mm / 9.5 mm |
| Approvals | CULUS | |
| **Electrical properties for RJ45 module** | | |
| Category | Cat.$6_A$ / Class $E_A$ (ISO/IEC 11801 2010) | |
| Contact resistance | ≤ 20 mΩ | |
| Insulation resistance | > 500 MΩ | |
| Dielectric strength, contact – contact, min. | ≥ 1000 V DC | |
| Dielectric strength, contact – shielding, max. | ≥ 1500 V DC | |
| Current carrying capacity | 1 A | |
| **Material properties RJ45 coupling** | | |
| Housing base material | Zinc diecast, PA 66 | |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. |
|---|---|---|---|
| Pre-assembled cable | | | |
| Coupling | IE-CD-V04PRJ-C-MA | 1 | 1122710000 |
| **Note** | Including mounting foot | | |

| Type | Qty. | Order No. |
|---|---|---|
| IE-OP-V04P-1S | 10 | 1045780000 |
| Order RJ45 modules separately, IP 67 protective cap included in delivery | | |

## Accessories

| | Type | Qty. | Order No. |
|---|---|---|---|
| **Dust protection cap** | | | |
| Flange-mounted housing protective cap | IE-BP-V04P | 10 | 1963900000 |
| **Inserts, Data** | | | |
| RJ45 module PROFINET | | | |
| RJ45 module EIA/TIA T568 A | | | |
| RJ45 module EIA/TIA T568 B | | | |

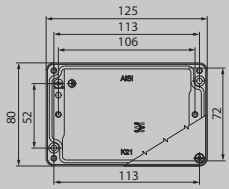
| Type | Qty. | Order No. |
|---|---|---|
| IE-BP-V04P | 10 | 1963900000 |
| IE-BI-RJ45-FJ-P | 10 | 1963830000 |
| IE-BI-RJ45-FJ-A | 10 | 1962850000 |
| IE-BI-RJ45-FJ-B | 10 | 1963840000 |

**Note**

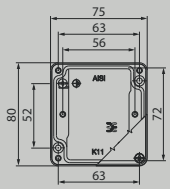
## V4 junction boxes

- IP 67
- For wall or floor mounting

## Double junction box




## Single junction box




## Technical data

| | | |
|---|---|---|
| Protection degree | IP67 | IP67 |
| Housing main material | AL-Si 12 | AL-Si 12 |
| Colour | grey | grey |
| Type of mounting | Floor-mounted, Wall mounting | Floor-mounted, Wall mounting |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...70 °C |
| Plugging cycles | 750 | 750 |
| Connector standard | IEC 61076-3-106 Var. 4 | IEC 61076-3-106 Var. 4 |
| Sheath diameter min. / max. | 5 mm / 10 mm | 5 mm / 10 mm |
| Approvals | GOSTME25 | |
| **Note** | | |

## Ordering data

| Variant 4 | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| 2 ports. straight | IE-OM-V04P-K21-2S | 1 | **1966250000** | | | |
| 1 port. straight | | | | IE-OM-V04P-K11-1S | 1 | **1966220000** |
| **Note** | RJ45 modules can be ordered separately | | | RJ45 modules can be ordered separately | | |

## Accessories

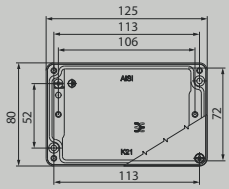
| Inserts, Data | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| RJ45 module EIA/TIA T568 B | IE-BI-RJ45-FJ-B | 10 | **1963840000** | IE-BI-RJ45-FJ-B | 10 | **1963840000** |
| RJ45 module PROFINET | IE-BI-RJ45-FJ-P | 10 | **1963830000** | IE-BI-RJ45-FJ-P | 10 | **1963830000** |
| RJ45 module EIA/TIA T568 A | IE-BI-RJ45-FJ-A | 10 | **1962850000** | IE-BI-RJ45-FJ-A | 10 | **1962850000** |

**Note**

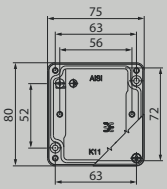
## V5 junction boxes

- IP 67
- For wall or floor mounting

## Double junction box




## Single junction box




## Technical data

| | Double junction box | Single junction box |
|---|---|---|
| Protection degree | IP67 | IP67 |
| Housing main material | AL-Si 12 | AL-Si 12 |
| Colour | grey | grey |
| Type of mounting | Floor-mounted, Wall mounting | Floor-mounted, Wall mounting |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...70 °C |
| Plugging cycles | 750 | 750 |
| Connector standard | IEC 61076-3-106 Var. 5 | IEC 61076-3-106 Var. 5 |
| Sheath diameter min. / max. | 5 mm / 10 mm | 5 mm / 10 mm |
| Approvals | GOSTME25 | |
| **Note** | | |

## Ordering data

| Variant 5 | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| 2 ports. straight | IE-OM-V05M-K21-2S | 1 | **1966290000** | | | |
| 1 port. straight | | | | IE-OM-V05M-K11-1S | 1 | **1966260000** |
| **Note** | RJ45 modules can be ordered separately | | | RJ45 modules can be ordered separately | | |

## Accessories

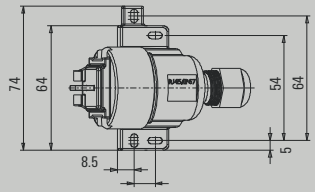
| Inserts, Data | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| RJ45 module EIA/TIA T568 B | IE-BI-RJ45-FJ-B | 10 | **1963840000** | IE-BI-RJ45-FJ-B | 10 | **1963840000** |
| RJ45 module PROFINET | IE-BI-RJ45-FJ-P | 10 | **1963830000** | IE-BI-RJ45-FJ-P | 10 | **1963830000** |
| RJ45 module EIA/TIA T568 A | IE-BI-RJ45-FJ-A | 10 | **1962850000** | IE-BI-RJ45-FJ-A | 10 | **1962850000** |

**Note**

## V6 junction boxes

- Cat. 6
- IP 67

## Single junction box, RJ45




## Technical data

| | |
|---|---|
| Protection degree | IP67 |
| Housing main material | PA 66, UL 94: V-0 |
| Colour | Light Grey |
| Type of mounting | Floor-mounted, for exposed connections, Wall mounting |
| Configuration | Screw-on junction box including RJ45 module with IDC connection |
| Wiring | EIA/TIA T568 A, EIA/TIA T568 B |
| Ambient temperature (operational) | -40 °C...70 °C |
| Plugging cycles | 750 |
| Connector standard | IEC 61076-3-106 Var. 6 |
| Sheath diameter min. / max. | 6 mm / 9.5 mm |
| Approvals | DNVGL |
| **Note** | |

## Ordering data

| Type | Qty. | Order No. |
|---|---|---|
| IE-S-IP67 | 1 | **8808370000** |

**Note**

## Accessories

| Tools | Type | Qty. | Order No. |
|---|---|---|---|
| Pressing tool | TT 8 RS MP 8 | 1 | **9202800000** |

**Note**

# Contactless Transmission
## Overview


| | | |
|---|---|---|
| **Contactless Transmission** | Overview | P.2 |
| | FreeCon Contactless Power | P.5 |

# Contactless power transmission – maintenance-free and up to 240 W

## High power density and maximum efficiency with small dimensions

Burnt, bent or dirty contacts are often the cause of timeconsuming and costly production failures. This is all the more true of applications requiring frequent plugging cycles. To name but one example, these include industrial robots performing frequent tool changes. Here, the level of wear is especially high. FreeCon Contactless allows power to be transmitted via an air gap by means of an inductive resonance coupling – it's a solution that's completely wear-free and especially efficient. Double the power density and a far higher degree of efficiency is achieved compared with comparable solutions that are available on the market.

Thanks to FreeCon Contactless, you can avoid contactrelated failures and cut your maintenance costs considerably. It even opens up completely new areas of application, since for the first time ever an automated process can be used to establish a connection which previously would have to be plugged manually. The process of charging driverless transport systems, for instance, can be automated. Highmaintenance slip ring transmitters can be replaced too, since FreeCon Contactless securely transmits power even in the case of rotational movements.



**Wear-free electrical connection that can be switched as part of a controlled process**

FreeCon Contactless enables reliable and contactless transmission of up to 240 W of power with compact dimensions and maximum efficiency. The transmission can even be controlled via PLC. It is therefore possible to switch 10 A directly via the PLC without the need for an additional contactor.

**Flexible mounting options**
Fastening can optionally take place on three different sides by means of direct mounting on the relevant machine component, or by using a mounting bracket or a groove profile. This allows for maximum flexibility during installation.

**High flexibility thanks to unlimited approach options**
The secondary side can be approached by the primary side from any direction. The connection is established as soon as both modules are positioned opposite one another. The connection remains stable even in the event of rotational movements.

**Complete protection against humidity and dirt**
Unlike conventional plug-in connections, which only provide IP 20 protection when unplugged and are therefore unprotected, FreeCon Contactless offers IP 65 – permanently. So, with FreeCon Contactless, contacting problems caused by dirt are a thing of the past.

**High power density with maximum efficiency**
For the first time ever, 240 W of power can be transmitted contactlessly via two especially small modules. Extremely low transmission losses translate into an efficiency level of up to 93 %

**Fast commissioning with PROFINET PushPull Power connection**
Our proven standard plug-in connector for 24 V DC applications enables fast installation and ensures that the modules are provided with a secure and reliable supply.

# Drive automation forwards – the intelligent way

## FreeCon Contactless makes your applications more efficient on many levels

FreeCon Contactless was developed in close collaboration with leading German car manufacturers. The system is suitable for an extremely wide range of sectors, such as machine construction, robotics, materials handling and even renewable energy. It can be retrofitted with ease and is thus an appealing solution for existing plants, too. With this multitude of advantages, it helps to increase the level of automation and optimises the production process. And best of all, FreeCon Contactless does more than simply help to avoid contact-related failures and cut maintenance costs. Completely new designs and areas of application are possible with a view to optimising production processes.

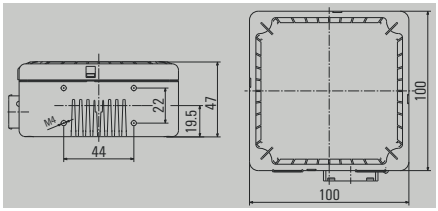
The automotive industry makes use of applications that require frequent plugging cycles, such as industrial robots performing tool changes. They work with a variety of tools, which they independently change for different tasks – such as gripping or welding. The high level of wear that occurs on the mechanical plug-in connections can be avoided entirely with FreeCon Contactless. This saves both time and money in terms of contact maintenance and replacement, in addition to minimising machine failures caused by maintenance work or defects.

Automatic transport systems, which are a common feature of many warehouses and production halls nowadays, complete all work without mechanical support. A member of staff only has to be present to make the plug-in connection, which is required for charging the battery. FreeCon Contactless makes even this manual work step superfluous. The driverless transport systems move to the charging station independently just before the battery goes flat, at the end of the working day, or at shutdown periods. The result is effective time and cost savings, which means your investment pays for itself in no time at all.

## FreeCon Contactless

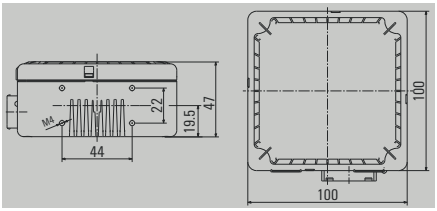
- Contactless power transmission via air gap

## Primary side (base)




## Secondary side (remote)

**24 V / 10 A**




## Technical data

| General data | | |
|---|---|---|
| Housing main material | Diecast zinc, painted, Cover PBT | Diecast zinc, painted, Cover PBT |
| Technologie, version | Inductive resonance coupling | Inductive resonance coupling |
| Loads | Inductive and resistive loads | Inductive and resistive loads |
| Turn-on time | 1 s | |
| Coupling time | | < 500 ms |
| Air gap | 0...5 mm | 0...5 mm |
| Centre offset | max. 5mm | max. 5mm |
| Power interface | PROFINET PushPull Power | PROFINET PushPull Power |
| Protection degree | IP65 | IP65 |
| Ambient temperature (operational) | -20...45 °C Consider derating | -20...45 °C Consider derating |
| Weight | 1020 g | 1020 g |
| **Electrical data** | | |
| Primary voltage | 24 V DC (21.6...26.4 V DC) | |
| Secondary voltage | | 24 V DC (19.2...28.8 V DC) |
| Secondary current max. | | 10 A |
| Degree of efficiency | max. 91 % | max. 91 % |
| LED indicator | Status indication via multi-coloured LED | Status indication via multi-coloured LED |
| Approvals | CE | CE |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. |
|---|---|---|---|
| | IE-CL240W-PP-BASE | 1 | **1547440000** |
| **Note** | | | |

| Type | Qty. | Order No. |
|---|---|---|
| IE-CL240W-PP-REMOTE | 1 | **1547450000** |

## Accessories

| **Plug** | Type | Qty. | Order No. |
|---|---|---|---|
| PushPull Power | IE-PS-VAPM-5P-2.5 | 1 | **2465440000** |
| **Marking tags** | | | |
| | ESG 6/17 K MC NE WS | 200 | **1880120000** |

| Type | Qty. | Order No. |
|---|---|---|
| IE-PS-VAPM-5P-2.5 | 1 | **2465440000** |
| ESG 6/17 K MC NE WS | 200 | **1880120000** |

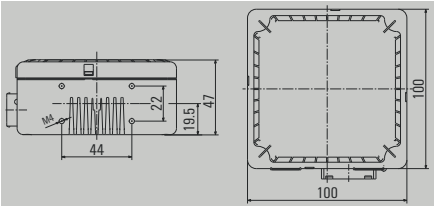
| **Note** | | |
|---|---|---|

## FreeCon Contactless

- Contactless power transmission via air gap

## Secondary side (remote)

**27 V / 5 A**




## Technical data

| General data | |
|---|---|
| Housing main material | Diecast zinc, painted, Cover PBT |
| Technologie, version | Inductive resonance coupling |
| Loads | Inductive and resistive loads |
| Turn-on time | |
| Coupling time | < 500 ms |
| Air gap | 0...5 mm |
| Centre offset | max. 5mm |
| Power interface | PROFINET PushPull Power |
| Protection degree | IP65 |
| Ambient temperature (operational) | -20...45 °C Consider derating |
| Weight | 1020 g |
| **Electrical data** | |
| Primary voltage | 26,5 V DC (+/- 5%) (necessary voltage for secondary voltage must be ensured) |
| Secondary voltage | 27 V DC (±7 %) |
| Secondary current max. | 5 A |
| Degree of efficiency | max. 91 % |
| LED indicator | Status indication via multi-coloured LED |
| Approvals | |

**Note**

## Ordering data

| Type | Qty. | Order No. |
|---|---|---|
| IE-CL27V5A-PP-S | 1 | **2623940000** |

**Note**

## Accessories

| Plug | | |
|---|---|---|
| PushPull Power | | |
| **Marking tags** | | |
| **Type** | **Qty.** | **Order No.** |
| IE-PS-VAPM-5P-2.5 | 1 | **2465440000** |
| ESG 6/17 K MC NE WS | 200 | **1880120000** |

**Note**

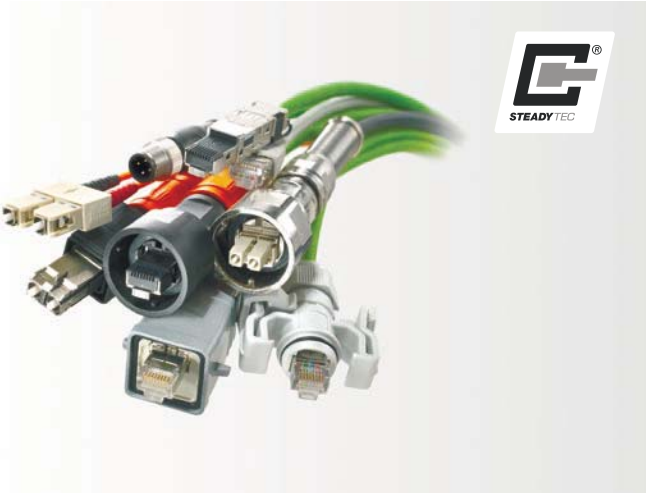
# Copper cabling solutions
## Overview


| | | |
|---|---|---|
| **Copper cabling solutions** | Introduction AdvancedLine and CabinetLine | Q.2 |
| | Product configurator – Copper cables | Q.3 |
| | Overview – Copper cables | Q.4 |
| | Raw cables – Installation cable | Q.6 |
| | Raw cables – Connection cable | Q.8 |
| | Raw cables – Dragline cable | Q.14 |
| | Raw cables – PROFINET cable | Q.15 |
| | Raw cables – Hybrid cable | Q.17 |
| | Assembled cables – Patch cable | Q.18 |
| | Assembled cables – PROFINET cable | Q.28 |
| | Assembled cables – PROFINET cable PushPull Power | Q.32 |
| | Assembled cables – PROFINET cable M12 | Q.34 |
| | Assembled cables – EtherNet/IP | Q.42 |
| | Assembled cables – PROFINET cable M8 | Q.44 |
| | Assembled cables – PROFINET cable M8, D-coded | Q.48 |
| | Assembled cables – Railway cable M12 | Q.53 |
| | Assembled cables – Railway cable RJ45 | Q.58 |
| | Assembled cables – USB cable | Q.59 |
| | Assembled cables – Single Pair Ethernet cable | Q.61 |

# The ideal solution, whatever your needs

## Our AdvancedLine and CabinetLine product ranges

### AdvancedLine




The AdvancedLine from Weidmüller offers all combinations of cables that are possible with the extensive range of plug connections.

This means flexibility and robustness through the high quality of the used components. The range comprises standard cables and customer-specific versions. Standard cables can be found in the catalogue; customer-specific versions can be freely configured online using the “Galaxy” configuration software. All AdvancedLine cables are particularly suitable for industrial use.

- High-quality cables with very good technical characteristics
- Suitable for demanding IP20 to IP67 applications
- Suitable for temperatures from -40 to +70 °C
- High-quality shielding

### CabinetLine

The new CabinetLine range of patch cables from Weidmüller is available in a variety of colours for visually differentiating between various networks.

Additional benefits:
All CabinetLine cables are fitted with Weidmüller TM marking sleeves for clearly labelling cables and ports. CabinetLine is available in many different colours in combination with LSZH sheathing material and transmission power Cat. $6_A$.
CabinetLine is also available in the colour green and Cat. 5 with PUR or PVC sheathing material. All variants are fitted with protected clips which facilitate, e.g., pulling through a cable duct.

- For applications in switching cabinets and simple environmental conditions
- Suitable for temperatures from –20 to +60 °C
- Simple shielding

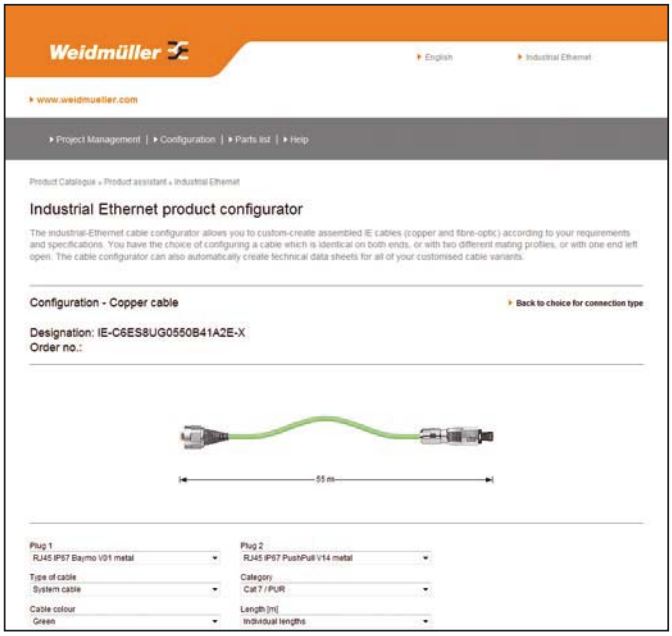
# Configurators for copper cables
## Tailor-made connections

The cable configurator in Weidmüller's online catalogue makes it possible for you to create fully-assembled cables customised specifically to your requirements and specifications.

An RJ45 plug with IP20 protection is available. The following variants are also available with IP67 protection:

- Variant 1, metal and plastic
- Variant 4, plastic
- Variant 5, metal
- Variant 14, metal
- M12 connector, straight and angled

You have the choice of configuring a cable which is identical on both ends, or with two different mating profiles, or with one end left open.




When selecting the cable, the following types are available:

- 8-wire system cable, AWG 26/7 in Cat. 5 or Cat. 7, with PVC or PUR sheath
- 8-wire dragline cable, AWG 26/7 in Cat. 5, PUR sheath
- 4-wire PROFINET dragline cable in Cat. 5, PUR sheath
- 4-wire PROFINET system cables in Cat. 5, PVC sheathing
- 4-wire railway cable in Cat. 5, Radox sheathing

The cable length can also be customised:

- From 0.3 m to 9.9 m, in 0.1 m steps
- From 10 m to 100 m, in 1 m steps

The cable configurator can automatically create technical data sheets for all of your customised cable variants.

All of your cable selections can be sent to Weidmüller using the "request list". You will then quickly receive a price proposal for the cables from your local Weidmüller representative.

# Overview of copper cables
## Solutions for every environment

Copper cables should be your first choice for applications in offices and harsh industrial environments.

**Advantages:**
- Available in many different variations and lengths
- Robust
- Easy to assemble
- RJ45 connections are the most popular

### Raw cables

#### Industrial installation cables, horizontal cables

...for stationary, permanent installation in cable ducts and cable trays

- Cat. 5 or Cat. 7
- Available for PROFINET as well
- With PUR or PVC sheathing

#### Industrial connecting cables

...for flexible installation in machines and plants in industrial applications and difficult environments

- Cat. 5 or Cat. 7
- Available for PROFINET as well
- With PUR or PVC sheathing

#### Industrial trailing cables

...for applications subjected to constant movement

- Cat. 5
- Available for PROFINET as well
- With PUR sheathing

### Assembled cables

#### Industrial patch cables / CabinetLine

...not only for office applications, but also in switching cabinets for industrial applications

- Cat. 6
- With LSZH sheathing – low smoke and zero halogens
- In straight and crossover versions

#### Industrial system cables

...pre-assembled cables for flexible installation in machines and plants in industrial applications and difficult environments

- Cat. 5 or Cat. 6
- With PUR sheathing

#### Industrial trailing cables

...pre-assembled cable for constant motion, e.g., with draglines

- Cat. 5
- Available for PROFINET as well
- With PUR sheathing

#### System cable for railway applications

...pre-assembled cable for flexible wiring on railway vehicles for both interior and exterior installations.

- In Cat. 5
- Also for PROFINET
- With Radox sheath

#### Single Pair Ethernet cables

IP20 and IP67 Patch Cables for compact Ethernet transmission with only one wire pair.

- according to IEC 63171-2 / -5
- very robust and space-saving

## Ordering data for copper cables, raw cable

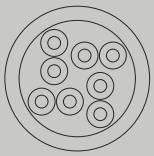
| Type | Cat./Class | Colour | Plug-in connector | | Length | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | left | right | | | | | | |
| **Industrial installation cables** | | | | | 100 m | 500 m | 305 m | | | |
| IE-C5CS8UG-xxx | Cat. 5 | green | - | - | **8813160000** | **2762870000** | | | | |
| IE-C5CS8VG-xxx | Cat. 5 | green | - | - | **8813150000** | **2763440000** | | | | |
| IE-C7BS8UG-xxx | Cat. 7 | green | - | - | **8813140000** | **2763530000** | | | | |
| IE-C7BS8VG-xxx | Cat. 7 | green | - | - | **8813130000** | **2763540000** | | | | |
| IE-C5AS4V-xxx | Cat. 5 PROFINET | green | - | - | **8899000000** | **2763430000** | | | | |
| **Industrial connecting cables** | | | | | | | | | | |
| IE-C5ES8UG-xxx | Cat. 5 | green | - | - | **8813200000** | **2763500000** | | | | |
| IE-C5ES8VG-xxx | Cat. 5 | green | - | - | **8813190000** | **2763510000** | | | | |
| IE-C7ES8UG-xxx | Cat. 7 | green | - | - | **8813180000** | **2763550000** | | | | |
| IE-C7ES8VG-xxx | Cat. 7 | green | - | - | **8813170000** | **2763490000** | | | | |
| IE-C5DS4V-xxx | Cat. 5 PROFINET | green | - | - | **8898990000** | **2763470000** | | | | |
| IE-C5DHAG-xxx | Cat. 5 PROFINET | green | - | - | **2763660000** | **2763460000** | | | | |
| IE-C7FS8LD-305M | Cat. 7 | grey | - | - | | | **1273090000** | | | |
| IE-C7FS8LB-305M | Cat. 7 | blue | - | - | | | **1326540000** | | | |
| IE-C7FS8LE-305M | Cat. 7 | black | - | - | | | **1344690000** | | | |
| IE-C7FS8LG-305M | Cat. 7 | green | - | - | | | **1344680000** | | | |
| IE-C7FS8LR-305M | Cat. 7 | red | - | - | | | **1287910000** | | | |
| IE-C7FS8LV-305M | Cat. 7 | violet | | | | | **2779910000** | | | |
| IE-C7FS8LM-305M | Cat. 7 | magenta | - | - | | | **1333160000** | | | |
| IE-C7FS8LO-305M | Cat. 7 | orange | | | | | **2661080000** | | | |
| IE-C7FS8LY-305M | Cat. 7 | yellow | - | - | | | **1344670000** | | | |
| **Industrial trailing cables** | | | | | | | | | | |
| IE-C5ED8UG-xxx | Cat. 5 | green | - | - | **8813210000** | **2763490000** | | | | |
| IE-C5ED8UB-xxx | Cat. 5 | blue | - | - | **8960670000** | **2763480000** | | | | |
| IE-C5DD4UG-xxx | Cat. 5 PROFINET | green | - | - | **8899010000** | **2763450000** | | | | |
| IE-C5IT4UG-xxx | Cat. 5 PROFINET | green | - | - | **2764770000** | **2763520000** | | | | |

## Raw cables

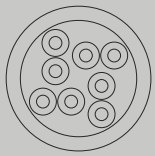
## Installation cable Cat. 5

- In lengths from 100 or 500 metres

### PUR



### PVC



## Technical data

| | PUR | PVC |
|---|---|---|
| Product type | Installation cable | Installation cable |
| Category | Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B) | Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B) |
| Shielding | SF/UTP | SF/UTP |
| Cross-section | 4*2*AWG 24/1 - 4*2*0.205 mm² | 4*2*AWG 24/1 - 4*2*0.205 mm² |
| Sheath diameter, max. | 6.7 mm | 6.3 mm |
| Material sheath | PUR | PVC |
| Sheathing colour | green (RAL 6018) | green (RAL 6018) |
| Insulation diameter | 1 mm | 1 mm |
| Min. bending radius, repetitive | 10 x cable diameter | 10 x cable diameter |
| Min. bending radius, once only | 5 x cable diameter | 5 x cable diameter |
| Ambient temperature (operational) | -40 °C...80 °C | -40 °C...80 °C |
| Installation temperature | -15 °C...60 °C | -15 °C...60 °C |
| Storage temperature | -40 °C...80 °C | -40 °C...80 °C |
| Abrasion resistance | very good | good |
| Halogen | halogen-free, according to IEC 60754-2 | |
| Resistance to spread of flame | in acc. with IEC 60332-1 | in acc. with IEC 60332-1 |
| Resistance to oils | in acc. with IEC 60811-2-1 | |
| Approvals | | |
| **Note** | | |

## Ordering data

| | PUR | | | PVC | | |
|---|---|---|---|---|---|---|
| | **Type** | **Qty.** | **Order No.** | **Type** | **Qty.** | **Order No.** |
| 100.0 m | IE-C5CS8UG-100 | 1 | **8813160000** | IE-C5CS8VG-100 | 1 | **8813150000** |
| 500.0 m | IE-C5CS8UG-500 | 1 | **2762870000** | IE-C5CS8VG-500 | 1 | **2763440000** |
| **Note** | | | | | | |

## Accessories

| | PUR | | | PVC | | |
|---|---|---|---|---|---|---|
| **Tools** | **Type** | **Qty.** | **Order No.** | **Type** | **Qty.** | **Order No.** |
| Sheathing strippers, For UTP and STP data cables | AM 12 | 1 | **9030060000** | AM 12 | 1 | **9030060000** |
| Sheathing strippers, For coaxial and round data cables | IE-CST | 1 | **9204350000** | IE-CST | 1 | **9204350000** |
| **Marking tags** | | | | | | |
| Wire and cable markers. ø 4.7 - 7.4 mm | VT SF 5/21 MC NE WS V0 | 160 | **1689470001** | VT SF 5/21 MC NE WS V0 | 160 | **1689470001** |
| Wire and cable markers. ø 5.8 - 7.8 mm | VT SF 6/21 MC NE WS V0 | 160 | **1730560001** | VT SF 6/21 MC NE WS V0 | 160 | **1730560001** |
| Insertion label. yellow. 12 mm | TM-I 12 MC NE GE | 320 | **1718411687** | TM-I 12 MC NE GE | 320 | **1718411687** |
| Insertion label. yellow. 18 mm | TM-I 18 MC NE GE | 320 | **1718431687** | TM-I 18 MC NE GE | 320 | **1718431687** |
| Transparent sleeves. 12-mm length | TM 4/12 HF/HB | 500 | **1719840000** | TM 4/12 HF/HB | 500 | **1719840000** |
| Transparent sleeves. 18-mm length | TM 4/18 HF/HB | 500 | **1719850000** | TM 4/18 HF/HB | 500 | **1719850000** |

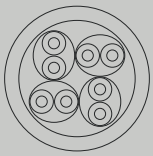
**Note**

## Raw cables

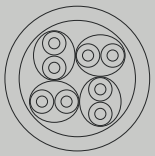
### Installation cable Cat. 7

- In lengths from 100 or 500 metres

### PUR



### PVC



## Technical data

| | PUR | PVC |
|---|---|---|
| Product type | Installation cable | Installation cable |
| Category | Cat.7 (ISO/IEC 11801) | Cat.7 (ISO/IEC 11801) |
| Shielding | S/FTP | S/FTP |
| Cross-section | 4*2*AWG 23/1 - 4*2*0.255 mm² | 4*2*AWG 23/1 - 4*2*0.255 mm² |
| Sheath diameter, max. | 8.4 mm | 8.4 mm |
| Material sheath | PUR | PVC |
| Sheathing colour | green (RAL 6018) | green (RAL 6018) |
| Insulation diameter | 1.4 mm | 1.4 mm |
| Min. bending radius, repetitive | 10 x cable diameter | 10 x cable diameter |
| Min. bending radius, once only | 5 x cable diameter | 5 x cable diameter |
| Ambient temperature (operational) | -40 °C...80 °C | -40 °C...80 °C |
| Installation temperature | -15 °C...60 °C | -15 °C...60 °C |
| Storage temperature | -40 °C...80 °C | -40 °C...80 °C |
| Abrasion resistance | very good | good |
| Halogen | halogen-free, according to IEC 60754-2 | |
| Resistance to spread of flame | in acc. with IEC 60332-1 | in acc. with IEC 60332-1 |
| Resistance to oils | in acc. with IEC 60811-2-1 | |
| Approvals | | |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| 100.0 m | IE-C7BS8UG-100 | 1 | **8813140000** | IE-C7BS8VG-100 | 1 | **8813130000** |
| 500.0 m | IE-C7BS8UG-500 | 1 | **2763530000** | IE-C7BS8VG-500 | 1 | **2763540000** |
| **Note** | | | | | | |

## Accessories

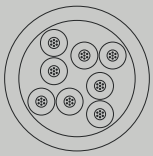
| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| **Tools** | | | | | | |
| Sheathing strippers, For UTP and STP data cables | AM 12 | 1 | **9030060000** | AM 12 | 1 | **9030060000** |
| Sheathing strippers, For coaxial and round data cables | IE-CST | 1 | **9204350000** | IE-CST | 1 | **9204350000** |
| **Marking tags** | | | | | | |
| Wire and cable markers. ø 4.7 - 7.4 mm | VT SF 5/21 MC NE WS V0 | 160 | **1689470001** | VT SF 5/21 MC NE WS V0 | 160 | **1689470001** |
| Wire and cable markers. ø 5.8 - 7.8 mm | VT SF 6/21 MC NE WS V0 | 160 | **1730560001** | VT SF 6/21 MC NE WS V0 | 160 | **1730560001** |
| Insertion label. yellow. 12 mm | TM-I 12 MC NE GE | 320 | **1718411687** | TM-I 12 MC NE GE | 320 | **1718411687** |
| Insertion label. yellow. 18 mm | TM-I 18 MC NE GE | 320 | **1718431687** | TM-I 18 MC NE GE | 320 | **1718431687** |
| Transparent sleeves. 12-mm length | TM 4/12 HF/HB | 500 | **1719840000** | TM 4/12 HF/HB | 500 | **1719840000** |
| Transparent sleeves. 18-mm length | TM 4/18 HF/HB | 500 | **1719850000** | TM 4/18 HF/HB | 500 | **1719850000** |

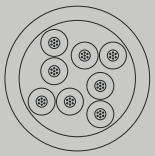
**Note**

## Raw cables

### Connecting cable Cat. 5

- In lengths from 100 or 500 metres





## Technical data

| | PUR | PVC |
|---|---|---|
| Product type | System cable | System cable |
| Category | Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B) | Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B) |
| Shielding | SF/UTP | SF/UTP |
| Cross-section | 4*2*AWG 26/7 - 4*2*0.128 mm² | 4*2*AWG 26/7 - 4*2*0.128 mm² |
| Sheath diameter, max. | 6.1 mm | 5.8 mm |
| Material sheath | PUR | PVC |
| Sheathing colour | green (RAL 6018) | green (RAL 6018) |
| Insulation diameter | 1 mm | 1 mm |
| Min. bending radius, repetitive | 10 x cable diameter | 10 x cable diameter |
| Min. bending radius, once only | 5 x cable diameter | 5 x cable diameter |
| Ambient temperature (operational) | -40 °C...80 °C | -40 °C...80 °C |
| Installation temperature | -10 °C...60 °C | -15 °C...60 °C |
| Storage temperature | -40 °C...80 °C | -40 °C...80 °C |
| Abrasion resistance | very good | good |
| Halogen | halogen-free, according to IEC 60754-2 | |
| Resistance to spread of flame | in acc. with IEC 60332-1 | in acc. with IEC 60332-1 |
| Resistance to oils | in acc. with IEC 60811-2-1 | |
| Standard, assembly | UL-Style 20963 (80°C/30V) | |
| Approvals | | |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. |
|---|---|---|---|
| 100.0 m | IE-C5ES8UG-100 | 1 | **8813200000** |
| 500.0 m | IE-C5ES8UG-500 | 1 | **2763500000** |
| **Note** | | | |

| | Type | Qty. | Order No. |
|---|---|---|---|
| | IE-C5ES8VG-100 | 1 | **8813190000** |
| | IE-C5ES8VG-500 | 1 | **2763510000** |
| | | | |

## Accessories

| **Tools** | Type | Qty. | Order No. |
|---|---|---|---|
| Sheathing strippers, For UTP and STP data cables | AM 12 | 1 | **9030060000** |
| Sheathing strippers, For coaxial and round data cables | IE-CST | 1 | **9204350000** |
| **Marking tags** | | | |
| Wire and cable markers. ø 4.7 - 7.4 mm | VT SF 5/21 MC NE WS V0 | 160 | **1689470001** |
| Wire and cable markers. ø 5.8 - 7.8 mm | VT SF 6/21 MC NE WS V0 | 160 | **1730560001** |
| Insertion label. yellow. 12 mm | TM-I 12 MC NE GE | 320 | **1718411687** |
| Insertion label. yellow. 18 mm | TM-I 18 MC NE GE | 320 | **1718431687** |
| Transparent sleeves. 12-mm length | TM 4/12 HF/HB | 500 | **1719840000** |
| Transparent sleeves. 18-mm length | TM 4/18 HF/HB | 500 | **1719850000** |

| Type | Qty. | Order No. |
|---|---|---|
| AM 12 | 1 | **9030060000** |
| IE-CST | 1 | **9204350000** |
| | | |
| VT SF 5/21 MC NE WS V0 | 160 | **1689470001** |
| VT SF 6/21 MC NE WS V0 | 160 | **1730560001** |
| TM-I 12 MC NE GE | 320 | **1718411687** |
| TM-I 18 MC NE GE | 320 | **1718431687** |
| TM 4/12 HF/HB | 500 | **1719840000** |
| TM 4/18 HF/HB | 500 | **1719850000** |

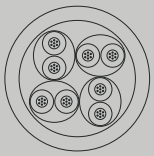
**Note**

## Raw cables

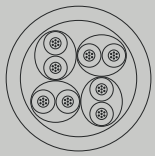
### Connecting cable Cat. 7

- In lengths from 100 or 500 metres

### PUR



### PVC



## Technical data

| | PUR | PVC |
|---|---|---|
| Product type | System cable | System cable |
| Category | Cat.7 (ISO/IEC 11801) | Cat.7 (ISO/IEC 11801) |
| Shielding | S/FTP | S/FTP |
| Cross-section | 4*2*AWG 26/7 - 4*2*0.128 mm² | 4*2*AWG 26/7 - 4*2*0.128 mm² |
| Sheath diameter, max. | 6.6 mm | 6.7 mm |
| Material sheath | PUR | PVC |
| Sheathing colour | green (RAL 6018) | green (RAL 6018) |
| Insulation diameter | 1.03 mm | 0.98 mm |
| Min. bending radius, repetitive | 10 x cable diameter | 10 x cable diameter |
| Min. bending radius, once only | 5 x cable diameter | 5 x cable diameter |
| Ambient temperature (operational) | -40 °C...80 °C | -40 °C...80 °C |
| Installation temperature | -15 °C...60 °C | -15 °C...60 °C |
| Storage temperature | -40 °C...80 °C | -40 °C...80 °C |
| Abrasion resistance | very good | good |
| Halogen | halogen-free, according to IEC 60754-2 | |
| Resistance to spread of flame | in acc. with IEC 60332-1 | in acc. with IEC 60332-1 |
| Resistance to oils | in acc. with IEC 60811-2-1 | |
| Standard, assembly | UL-Style 20963 (80°C/30V) | UL-Style 2879 (80°C/30V) |
| Approvals | | |
| **Note** | | |

## Ordering data

| | PUR | | | PVC | | |
|---|---|---|---|---|---|---|
| | **Type** | **Qty.** | **Order No.** | **Type** | **Qty.** | **Order No.** |
| 100.0 m | IE-C7ES8UG-100 | 1 | **8813180000** | IE-C7ES8VG-100 | 1 | **8813170000** |
| 500.0 m | IE-C7ES8UG-500 | 1 | **2763550000** | IE-C7ES8VG-500 | 1 | **2763560000** |
| **Note** | | | | | | |

## Accessories

| | PUR | | | PVC | | |
|---|---|---|---|---|---|---|
| **Tools** | **Type** | **Qty.** | **Order No.** | **Type** | **Qty.** | **Order No.** |
| Sheathing strippers, For UTP and STP data cables | AM 12 | 1 | **9030060000** | AM 12 | 1 | **9030060000** |
| Sheathing strippers, For coaxial and round data cables | IE-CST | 1 | **9204350000** | IE-CST | 1 | **9204350000** |
| **Marking tags** | | | | | | |
| Wire and cable markers. ø 4.7 - 7.4 mm | VT SF 5/21 MC NE WS V0 | 160 | **1689470001** | VT SF 5/21 MC NE WS V0 | 160 | **1689470001** |
| Wire and cable markers. ø 5.8 - 7.8 mm | VT SF 6/21 MC NE WS V0 | 160 | **1730560001** | VT SF 6/21 MC NE WS V0 | 160 | **1730560001** |
| Insertion label. yellow. 12 mm | TM-I 12 MC NE GE | 320 | **1718411687** | TM-I 12 MC NE GE | 320 | **1718411687** |
| Insertion label. yellow. 18 mm | TM-I 18 MC NE GE | 320 | **1718431687** | TM-I 18 MC NE GE | 320 | **1718431687** |
| Transparent sleeves. 12-mm length | TM 4/12 HF/HB | 500 | **1719840000** | TM 4/12 HF/HB | 500 | **1719840000** |
| Transparent sleeves. 18-mm length | TM 4/18 HF/HB | 500 | **1719850000** | TM 4/18 HF/HB | 500 | **1719850000** |

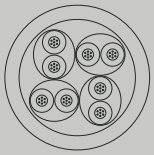
**Note**

## Raw cables

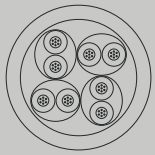
### Connecting cable Cat. 7

- 305 m / 1,000 ft

### LSZH grey



### LSZH blue



## Technical data

| | LSZH grey | LSZH blue |
|---|---|---|
| Product type | System cable | System cable |
| Category | Cat.7 (ISO/IEC 11801) | Cat.7 (ISO/IEC 11801) |
| Shielding | S/FTP | S/FTP |
| Cross-section | 4*2*AWG 27/7 - 4*2*0.1 mm² | 4*2*AWG 27/7 - 4*2*0.1 mm² |
| Sheath diameter, max. | 5.9 mm | 5.9 mm |
| Material sheath | LSZH | LSZH |
| Sheathing colour | light grey (RAL 7035) | blue (RAL 5015) |
| Insulation diameter | 1.04 mm | 1.04 mm |
| Min. bending radius, repetitive | 50 mm | 50 mm |
| Min. bending radius, once only | 25 mm | 25 mm |
| Ambient temperature (operational) | -20 °C...60 °C | -20 °C...60 °C |
| Installation temperature | 0 °C...50 °C | 0 °C...50 °C |
| Halogen | No | No |
| Resistance to spread of flame | in acc. with IEC 60332-1 | in acc. with IEC 60332-1 |
| Resistance to oils | | |
| Approvals | CULUS | CULUS |
| **Note** | | |

## Ordering data

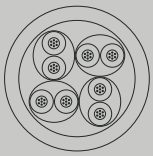
| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| 305 m / 1000 ft | IE-C7FS8LD-305M | 1 | **1273090000** | IE-C7FS8LB-305M | 1 | **1326540000** |
| **Note** | | | | | | |

## Accessories

| **Tools** | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| Sheathing strippers, For UTP and STP data cables | AM 12 | 1 | **9030060000** | AM 12 | 1 | **9030060000** |
| Sheathing strippers, For coaxial and round data cables | IE-CST | 1 | **9204350000** | IE-CST | 1 | **9204350000** |
| **Marking tags** | | | | | | |
| Wire and cable markers. ø 4.7 - 7.4 mm | VT SF 5/21 MC NE WS V0 | 160 | **1689470001** | VT SF 5/21 MC NE WS V0 | 160 | **1689470001** |
| Wire and cable markers. ø 5.8 - 7.8 mm | VT SF 6/21 MC NE WS V0 | 160 | **1730560001** | VT SF 6/21 MC NE WS V0 | 160 | **1730560001** |
| Insertion label. yellow. 12 mm | TM-I 12 MC NE GE | 320 | **1718411687** | TM-I 12 MC NE GE | 320 | **1718411687** |
| Insertion label. yellow. 18 mm | TM-I 18 MC NE GE | 320 | **1718431687** | TM-I 18 MC NE GE | 320 | **1718431687** |
| Transparent sleeves. 12-mm length | TM 4/12 HF/HB | 500 | **1719840000** | TM 4/12 HF/HB | 500 | **1719840000** |
| Transparent sleeves. 18-mm length | TM 4/18 HF/HB | 500 | **1719850000** | TM 4/18 HF/HB | 500 | **1719850000** |

**Note**

## LSZH black

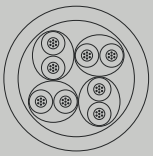


| |
|---|
| System cable |
| Cat.7 (ISO/IEC 11801) |
| S/FTP |
| 4*2*AWG 27/7 - 4*2*0.1 mm² |
| 5.9 mm |
| LSZH |
| black |
| 1.04 mm |
| 50 mm |
| 25 mm |
| -20 °C...60 °C |
| 0 °C...50 °C |
| No |
| in acc. with IEC 60332-1 |
| |
| CULUS |

| Type | Qty. | Order No. |
|---|---|---|
| IE-C7FS8LE-305M | 1 | **1344690000** |

| Type | Qty. | Order No. |
|---|---|---|
| AM 12 | 1 | **9030060000** |
| IE-CST | 1 | **9204350000** |
| | | |
| VT SF 5/21 MC NE WS V0 | 160 | **1689470001** |
| VT SF 6/21 MC NE WS V0 | 160 | **1730560001** |
| TM-I 12 MC NE GE | 320 | **1718411687** |
| TM-I 18 MC NE GE | 320 | **1718431687** |
| TM 4/12 HF/HB | 500 | **1719840000** |
| TM 4/18 HF/HB | 500 | **1719850000** |

## LSZH green

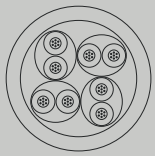


| |
|---|
| System cable |
| Cat.7 (ISO/IEC 11801) |
| S/FTP |
| 4*2*AWG 27/7 - 4*2*0.1 mm² |
| 5.9 mm |
| LSZH |
| green |
| 1.04 mm |
| 50 mm |
| 25 mm |
| -20 °C...60 °C |
| 0 °C...50 °C |
| No |
| in acc. with IEC 60332-1 |
| |
| CULUS |

| Type | Qty. | Order No. |
|---|---|---|
| IE-C7FS8LG-305M | 1 | **1344680000** |

| Type | Qty. | Order No. |
|---|---|---|
| AM 12 | 1 | **9030060000** |
| IE-CST | 1 | **9204350000** |
| | | |
| VT SF 5/21 MC NE WS V0 | 160 | **1689470001** |
| VT SF 6/21 MC NE WS V0 | 160 | **1730560001** |
| TM-I 12 MC NE GE | 320 | **1718411687** |
| TM-I 18 MC NE GE | 320 | **1718431687** |
| TM 4/12 HF/HB | 500 | **1719840000** |
| TM 4/18 HF/HB | 500 | **1719850000** |

## LSZH red



| |
|---|
| System cable |
| Cat.7 (ISO/IEC 11801) |
| S/FTP |
| 4*2*AWG 27/7 - 4*2*0.1 mm² |
| 5.9 mm |
| LSZH |
| red |
| 1.04 mm |
| 50 mm |
| 25 mm |
| -20 °C...60 °C |
| 0 °C...50 °C |
| No |
| in acc. with IEC 60332-1 |
| |
| CULUS |

| Type | Qty. | Order No. |
|---|---|---|
| IE-C7FS8LR-305M | 1 | **1287910000** |

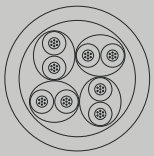
| Type | Qty. | Order No. |
|---|---|---|
| AM 12 | 1 | **9030060000** |
| IE-CST | 1 | **9204350000** |
| | | |
| VT SF 5/21 MC NE WS V0 | 160 | **1689470001** |
| VT SF 6/21 MC NE WS V0 | 160 | **1730560001** |
| TM-I 12 MC NE GE | 320 | **1718411687** |
| TM-I 18 MC NE GE | 320 | **1718431687** |
| TM 4/12 HF/HB | 500 | **1719840000** |
| TM 4/18 HF/HB | 500 | **1719850000** |

## Raw cables

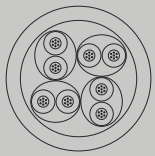
### Connecting cable Cat. 7

- 305 m / 1,000 ft

### LSZH magenta



### LSZH violet



## Technical data

| | LSZH magenta | LSZH violet |
|---|---|---|
| Product type | System cable | System cable |
| Category | Cat.7 (ISO/IEC 11801) | Cat.7 (ISO/IEC 11801) |
| Shielding | S/FTP | S/FTP |
| Cross-section | 4*2*AWG 27/7 - 4*2*0.1 mm² | 4*2*AWG 27/7 - 4*2*0.1 mm² |
| Sheath diameter, max. | 5.9 mm | 5.9 mm |
| Material sheath | LSZH | LSZH |
| Sheathing colour | Magenta | violet |
| Insulation diameter | 1.04 mm | 1.04 mm |
| Min. bending radius, repetitive | 50 mm | 50 mm |
| Min. bending radius, once only | 25 mm | 25 mm |
| Ambient temperature (operational) | -20 °C...60 °C | -20 °C...60 °C |
| Installation temperature | 0 °C...50 °C | 0 °C...50 °C |
| Halogen | No | No |
| Resistance to spread of flame | in acc. with IEC 60332-1 | in acc. with IEC 60332-1 |
| Resistance to oils | | |
| Approvals | CULUS | CULUS |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| 305 m / 1000 ft | IE-C7FS8LM-305M | 1 | **1333160000** | IE-C7FS8LV-305M | 1 | **2779910000** |
| **Note** | | | | | | |

## Accessories

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| **Tools** | | | | | | |
| Sheathing strippers, For UTP and STP data cables | AM 12 | 1 | **9030060000** | AM 12 | 1 | **9030060000** |
| Sheathing strippers, For coaxial and round data cables | IE-CST | 1 | **9204350000** | IE-CST | 1 | **9204350000** |
| **Marking tags** | | | | | | |
| Insertion label. yellow. 12 mm | TM-I 12 MC NE GE | 320 | **1718411687** | TM-I 12 MC NE GE | 320 | **1718411687** |
| Insertion label. yellow. 18 mm | TM-I 18 MC NE GE | 320 | **1718431687** | TM-I 18 MC NE GE | 320 | **1718431687** |
| Transparent sleeves. 12-mm length | TM 4/12 HF/HB | 500 | **1719840000** | TM 4/12 HF/HB | 500 | **1719840000** |
| Transparent sleeves. 18-mm length | TM 4/18 HF/HB | 500 | **1719850000** | TM 4/18 HF/HB | 500 | **1719850000** |
| Wire and cable markers. ø 4.7 - 7.4 mm | VT SF 5/21 MC NE WS V0 | 160 | **1689470001** | VT SF 5/21 MC NE WS V0 | 160 | **1689470001** |
| Wire and cable markers. ø 5.8 - 7.8 mm | VT SF 6/21 MC NE WS V0 | 160 | **1730560001** | VT SF 6/21 MC NE WS V0 | 160 | **1730560001** |

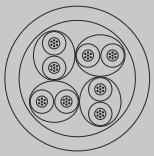
| Note | | |
|---|---|---|

## Raw cables

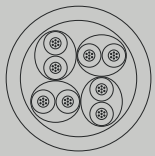
### Connecting cable Cat. 7

- 305 m / 1,000 ft

### LSZH yellow



### LZSH orange



## Technical data

| | | |
|---|---|---|
| Product type | System cable | System cable |
| Category | Cat.7 (ISO/IEC 11801) | Cat.7 (ISO/IEC 11801) |
| Shielding | S/FTP | S/FTP |
| Cross-section | 4*2*AWG 27/7 - 4*2*0.1 mm² | 4*2*AWG 27/7 - 4*2*0.1 mm² |
| Sheath diameter, max. | 5.9 mm | 5.9 mm |
| Material sheath | LSZH | LSZH |
| Sheathing colour | yellow | orange |
| Insulation diameter | 1.04 mm | 1.04 mm |
| Min. bending radius, repetitive | 50 mm | 50 mm |
| Min. bending radius, once only | 25 mm | 25 mm |
| Ambient temperature (operational) | -20 °C...60 °C | -20 °C...60 °C |
| Installation temperature | 0 °C...50 °C | 0 °C...50 °C |
| Halogen | No | No |
| Resistance to spread of flame | in acc. with IEC 60332-1 | in acc. with IEC 60332-1 |
| Resistance to oils | | |
| Approvals | CULUS | |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. |
|---|---|---|---|
| 305 m / 1000 ft | IE-C7FS8LY-305M | 1 | **1344670000** |
| **Note** | | | |

| Type | Qty. | Order No. |
|---|---|---|
| IE-C7FS8LO-305M | 1 | **2661080000** |

## Accessories

| Tools | Type | Qty. | Order No. |
|---|---|---|---|
| Sheathing strippers, For UTP and STP data cables | AM 12 | 1 | **9030060000** |
| Sheathing strippers, For coaxial and round data cables | IE-CST | 1 | **9204350000** |
| **Marking tags** | | | |
| Insertion label. yellow. 12 mm | TM-I 12 MC NE GE | 320 | **1718411687** |
| Insertion label. yellow. 18 mm | TM-I 18 MC NE GE | 320 | **1718431687** |
| Transparent sleeves. 12-mm length | TM 4/12 HF/HB | 500 | **1719840000** |
| Transparent sleeves. 18-mm length | TM 4/18 HF/HB | 500 | **1719850000** |
| Wire and cable markers. ø 4.7 - 7.4 mm | VT SF 5/21 MC NE WS V0 | 160 | **1689470001** |
| Wire and cable markers. ø 5.8 - 7.8 mm | VT SF 6/21 MC NE WS V0 | 160 | **1730560001** |

| Type | Qty. | Order No. |
|---|---|---|
| AM 12 | 1 | **9030060000** |
| IE-CST | 1 | **9204350000** |
| TM-I 12 MC NE GE | 320 | **1718411687** |
| TM-I 18 MC NE GE | 320 | **1718431687** |
| TM 4/12 HF/HB | 500 | **1719840000** |
| TM 4/18 HF/HB | 500 | **1719850000** |
| VT SF 5/21 MC NE WS V0 | 160 | **1689470001** |
| VT SF 6/21 MC NE WS V0 | 160 | **1730560001** |

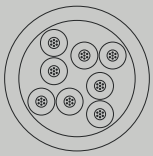
**Note**

## Raw cables

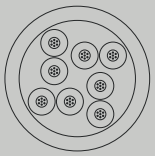
### Dragline cable Cat. 5

- In lengths from 100, 500 or 1000 metres

### PUR green



### PUR blue



## Technical data

| | PUR green | PUR blue |
|---|---|---|
| Product type | Dragline cable | Dragline cable |
| Category | Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B) | Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B) |
| Shielding | SF/UTP | SF/UTP |
| Cross-section | 4*2*AWG 26/7 - 4*2*0.128 mm² | 4*2*AWG 26/7 - 4*2*0.128 mm² |
| Sheath diameter, max. | 6.8 mm | 6.8 mm |
| Material sheath | PUR | PUR |
| Sheathing colour | green (RAL 6018) | blue (RAL 5015) |
| Insulation diameter | 0.95 mm | 0.95 mm |
| Min. bending radius, repetitive | 7.5 x cable diameter | 7.5 x cable diameter |
| Min. bending radius, once only | 4 x cable diameter | 4 x cable diameter |
| Bending cycles | 5 Mio | 5 Mio |
| Ambient temperature (operational) | -40 °C...80 °C | -40 °C...80 °C |
| Installation temperature | -20 °C...60 °C | -20 °C...60 °C |
| Storage temperature | -40 °C...80 °C | -40 °C...80 °C |
| Abrasion resistance | very good | very good |
| Halogen | halogen-free, according to IEC 60754-2 | halogen-free, according to IEC 60754-2 |
| Resistance to spread of flame | in acc. with IEC 60332-1 | in acc. with IEC 60332-1 |
| Resistance to oils | in acc. with IEC 60811-2-1 | in acc. with IEC 60811-2-1 |
| Standard, assembly | UL-Style 20963 (80°C/30V) | UL-Style 20963 (80°C/30V) |
| Approvals | | |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| 100.0 m | IE-C5ED8UG-100 | 1 | **8813210000** | IE-C5ED8UB-100 | 1 | **8960670000** |
| 500.0 m | IE-C5ED8UG-500 | 1 | **2763490000** | IE-C5ED8UB-500 | 1 | **2763480000** |
| 1000.0 m | IE-C5ED8UG-1000 | 1 | **2781890000** | IE-C5ED8UB-1000 | 1 | **2781880000** |
| **Note** | | | | | | |

## Accessories

| **Tools** | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| Sheathing strippers, For UTP and STP data cables | AM 12 | 1 | **9030060000** | AM 12 | 1 | **9030060000** |
| Sheathing strippers, For coaxial and round data cables | IE-CST | 1 | **9204350000** | IE-CST | 1 | **9204350000** |
| **Marking tags** | | | | | | |
| Wire and cable markers. ø 4.7 - 7.4 mm | VT SF 5/21 MC NE WS V0 | 160 | **1689470001** | VT SF 5/21 MC NE WS V0 | 160 | **1689470001** |
| Wire and cable markers. ø 5.8 - 7.8 mm | VT SF 6/21 MC NE WS V0 | 160 | **1730560001** | VT SF 6/21 MC NE WS V0 | 160 | **1730560001** |
| Insertion label. yellow. 12 mm | TM-I 12 MC NE GE | 320 | **1718411687** | TM-I 12 MC NE GE | 320 | **1718411687** |
| Insertion label. yellow. 18 mm | TM-I 18 MC NE GE | 320 | **1718431687** | TM-I 18 MC NE GE | 320 | **1718431687** |
| Transparent sleeves. 12-mm length | TM 4/12 HF/HB | 500 | **1719840000** | TM 4/12 HF/HB | 500 | **1719840000** |
| Transparent sleeves. 18-mm length | TM 4/18 HF/HB | 500 | **1719850000** | TM 4/18 HF/HB | 500 | **1719850000** |

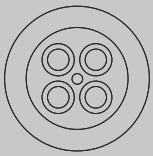
**Note**

## Raw cables

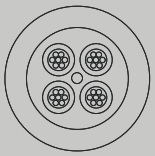
## PROFINET cable

- In lengths from 100 or 500 metres

### Installation cable type A, PVC



### Connection cable type B, PVC



### Technical data

| | | |
|---|---|---|
| Product type | Installation cable | System cable |
| Category | Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B) | Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B) |
| Shielding | SF/UTP | SF/UTP |
| Cross-section | 4*AWG 22/1 - 0.33 mm² | 4*AWG 22/7 - 0.36 mm² |
| Sheath diameter, max. | 6.7 mm | 6.7 mm |
| Material sheath | PVC | PVC |
| Sheathing colour | green (RAL 6018) | green (RAL 6018) |
| Insulation diameter | 1.5 mm | 1.5 mm |
| Min. bending radius, repetitive | 7.5 x cable diameter | 7.5 x cable diameter |
| Min. bending radius, once only | 3.5 *diameter | 3.5 *diameter |
| Ambient temperature (operational) | -40 °C...75 °C | -40 °C...70 °C |
| Installation temperature | -20 °C...60 °C | -20 °C...60 °C |
| Storage temperature | -40 °C...75 °C | -40 °C...70 °C |
| Abrasion resistance | good | good |
| Resistance to spread of flame | in acc. with IEC 60332-1 / UL 1685 | in acc. with IEC 60332-1 / UL 1685 |
| Standard, assembly | UL-Style 21694 | UL-Style 21694 |
| Approvals | | |
| **Note** | | |

### Ordering data

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| 100.0 m | IE-C5AS4VG-100 | 1 | **8899000000** | IE-C5DS4VG-100 | 1 | **8898990000** |
| 500.0 m | IE-C5AS4VG-500 | 1 | **2763430000** | IE-C5DS4VG-500 | 1 | **2763470000** |
| **Note** | | | | | | |

### Accessories

| **Tools** | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| Sheathing strippers, For UTP and STP data cables | AM 12 | 1 | **9030060000** | AM 12 | 1 | **9030060000** |
| Sheathing strippers, For coaxial and round data cables | IE-CST | 1 | **9204350000** | IE-CST | 1 | **9204350000** |
| **Marking tags** | | | | | | |
| Wire and cable markers. ø 4.7 - 7.4 mm | VT SF 5/21 MC NE WS V0 | 160 | **1689470001** | VT SF 5/21 MC NE WS V0 | 160 | **1689470001** |
| Wire and cable markers. ø 5.8 - 7.8 mm | VT SF 6/21 MC NE WS V0 | 160 | **1730560001** | VT SF 6/21 MC NE WS V0 | 160 | **1730560001** |
| Insertion label. yellow. 12 mm | TM-I 12 MC NE GE | 320 | **1718411687** | TM-I 12 MC NE GE | 320 | **1718411687** |
| Insertion label. yellow. 18 mm | TM-I 18 MC NE GE | 320 | **1718431687** | TM-I 18 MC NE GE | 320 | **1718431687** |
| Transparent sleeves. 12-mm length | TM 4/12 HF/HB | 500 | **1719840000** | TM 4/12 HF/HB | 500 | **1719840000** |
| Transparent sleeves. 18-mm length | TM 4/18 HF/HB | 500 | **1719850000** | TM 4/18 HF/HB | 500 | **1719850000** |

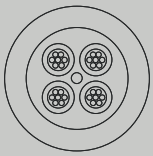
**Note**

## Raw cables

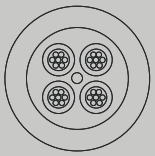
## PROFINET cable

- In lengths from 100 or 500 metres

### Dragline cable type C, PUR



### Torsion cable type C, PUR



## Technical data

| | | |
|---|---|---|
| Product type | Dragline cable | Torsion cable |
| Category | Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B) | Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B) |
| Shielding | SF/UTP | S/UTP |
| Cross-section | 4*AWG 22/7 - 0.36 mm² | 4*AWG 22/19 - 0.38 mm² |
| Sheath diameter, max. | 6.7 mm | 6.7 mm |
| Material sheath | PUR | PUR |
| Sheathing colour | green (RAL 6018) | green (RAL 6018) |
| Insulation diameter | 1.5 mm | 1.5 mm |
| Min. bending radius, repetitive | 7.5 x cable diameter | 10 x cable diameter |
| Min. bending radius, once only | 5 x cable diameter | 5 x cable diameter |
| Bending cycles | 3 Mio | |
| Torsion cycles | | 1 mill. |
| Torsion resistance | | 180 °/m |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...80 °C |
| Installation temperature | -20 °C...60 °C | -40 °C...80 °C |
| Storage temperature | -50 °C...70 °C | -40 °C...80 °C |
| Abrasion resistance | very good | very good |
| Halogen | halogen-free, according to IEC 60754-2 | halogen-free, according to IEC 60754-2 |
| Resistance to spread of flame | in acc. with IEC 60332-1 | in acc. with IEC 60332-1 |
| Resistance to oils | in acc. with IEC 60811-2-1 | in acc. with IEC 60811-2-1 |
| Standard, assembly | | UL Style 21161 |
| Approvals | | |
| **Note** | | |

## Ordering data

| Cat. 5 PROFINET. PUR | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| 100.0 m | IE-C5DD4UG-100 | 1 | **8899010000** | IE-C5IT4UG-100 | 1 | **2764770000** |
| 500.0 m | IE-C5DD4UG-500 | 1 | **2763450000** | IE-C5IT4UG-500 | 1 | **2763520000** |
| **Note** | | | | | | |

## Accessories

| Tools | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| Sheathing strippers, For UTP and STP data cables | AM 12 | 1 | **9030060000** | AM 12 | 1 | **9030060000** |
| Sheathing strippers, For coaxial and round data cables | IE-CST | 1 | **9204350000** | IE-CST | 1 | **9204350000** |
| **Marking tags** | | | | | | |
| Wire and cable markers. ø 4.7 - 7.4 mm | VT SF 5/21 MC NE WS V0 | 160 | **1689470001** | VT SF 5/21 MC NE WS V0 | 160 | **1689470001** |
| Wire and cable markers. ø 5.8 - 7.8 mm | VT SF 6/21 MC NE WS V0 | 160 | **1730560001** | VT SF 6/21 MC NE WS V0 | 160 | **1730560001** |
| Insertion label. yellow. 12 mm | TM-I 12 MC NE GE | 320 | **1718411687** | TM-I 12 MC NE GE | 320 | **1718411687** |
| Insertion label. yellow. 18 mm | TM-I 18 MC NE GE | 320 | **1718431687** | TM-I 18 MC NE GE | 320 | **1718431687** |
| Transparent sleeves. 12-mm length | TM 4/12 HF/HB | 500 | **1719840000** | TM 4/12 HF/HB | 500 | **1719840000** |
| Transparent sleeves. 18-mm length | TM 4/18 HF/HB | 500 | **1719850000** | TM 4/18 HF/HB | 500 | **1719850000** |

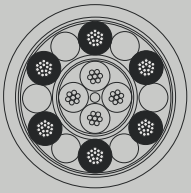
**Note**

## Raw cables

## Hybrid cable

- In lengths from 100 or 500 metres

## PVC



## Technical data

| | |
|---|---|
| Product type | System cable |
| Category | Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B) |
| Shielding | SF/UTP |
| Cross-section | 4*AWG 22/7 - 0.36 mm², 6*0.5 mm² |
| Sheath diameter, max. | 9.5 mm |
| Material sheath | PVC |
| Sheathing colour | green (RAL 6018) |
| Insulation diameter | 1.5 mm / 1.75 mm |
| Min. bending radius, repetitive | 7.5 x cable diameter |
| Min. bending radius, once only | 3.5 *diameter |
| Ambient temperature (operational) | -30 °C...75 °C |
| Installation temperature | 0 °C...50 °C |
| Storage temperature | -40 °C...70 °C |
| Abrasion resistance | good |
| Halogen | Yes |
| Resistance to spread of flame | in acc. with IEC 60332-1 / UL 1685 |
| Resistance to oils | limited |
| Standard, assembly | |
| Approvals | |
| **Note** | |

## Ordering data

| | Type | Qty. | Order No. |
|---|---|---|---|
| 100.0 m | IE-C5DHAG-100 | 1 | **2763660000** |
| 500.0 m | IE-C5DHAG-500 | 1 | **2763460000** |

**Note**

## Accessories

| **Tools** | Type | Qty. | Order No. |
|---|---|---|---|
| Sheathing strippers, For UTP and STP data cables | AM 12 | 1 | **9030060000** |
| Sheathing strippers, For coaxial and round data cables | IE-CST | 1 | **9204350000** |
| **Marking tags** | | | |
| Wire and cable markers. ø 4.7 - 7.4 mm | VT SF 5/21 MC NE WS V0 | 160 | **1689470001** |
| Wire and cable markers. ø 5.8 - 7.8 mm | VT SF 6/21 MC NE WS V0 | 160 | **1730560001** |
| Insertion label. yellow. 12 mm | TM-I 12 MC NE GE | 320 | **1718411687** |
| Insertion label. yellow. 18 mm | TM-I 18 MC NE GE | 320 | **1718431687** |
| Transparent sleeves. 12-mm length | TM 4/12 HF/HB | 500 | **1719840000** |
| Transparent sleeves. 18-mm length | TM 4/18 HF/HB | 500 | **1719850000** |

**Note**

## Assembled cables

## Patch cable CabinetLine Cat. 6 straight

### LSZH grey

### Technical data

| | |
|---|---|
| Product type | Patch cable |
| Category | Cat.$6_A$ / Class $E_A$ (ISO/IEC 11801 2010) |
| Shielding | S/FTP |
| Version connector left / Version connector right | RJ45 IP 20 / RJ45 IP 20 |
| Connector standard | IEC 60603-7-51 |
| PoE / PoE+ | conforming to IEEE 802.3at |
| Cross-section | 4*2*AWG 27/7 - 4*2*0.1 mm² |
| Sheath diameter, max. | 5.9 mm |
| Material sheath | LSZH |
| Colour | grey |
| Insulation diameter | 1.04 mm |
| Min. bending radius, repetitive / Min. bending radius, once only | 50 mm / 25 mm |
| Ambient temperature (operational) | -20 °C...60 °C |
| Installation temperature | 0 °C...50 °C |
| Storage temperature | -20 °C...60 °C |
| Halogen | halogen-free, according to IEC 60754-2 |
| Resistance to spread of flame | in acc. with IEC 60332-2-2, in acc. with IEC 60332-1-2, in acc. with IEC 60332-3-24, in acc. with UL 2556 (FT1) |
| Approvals | CULUS |
| **Note** | |

### Ordering data

| | Type | Qty. | Order No. |
|---|---|---|---|
| 0.2 m | IE-C6FP8LD0002M40M40-D | 1 | **1165940002** |
| 0.5 m | IE-C6FP8LD0005M40M40-D | 1 | **1165940005** |
| 1.0 m | IE-C6FP8LD0010M40M40-D | 1 | **1165940010** |
| 1.5 m | IE-C6FP8LD0015M40M40-D | 1 | **1165940015** |
| 2.0 m | IE-C6FP8LD0020M40M40-D | 1 | **1165940020** |
| 3.0 m | IE-C6FP8LD0030M40M40-D | 1 | **1165940030** |
| 5.0 m | IE-C6FP8LD0050M40M40-D | 1 | **1165940050** |
| 7.5 m | IE-C6FP8LD0075M40M40-D | 1 | **1165940075** |
| 10.0 m | IE-C6FP8LD0100M40M40-D | 1 | **1165940100** |
| 15.0 m | IE-C6FP8LD0150M40M40-D | 1 | **1165940150** |
| 20.0 m | IE-C6FP8LD0200M40M40-D | 1 | **1165940200** |
| 25.0 m | IE-C6FP8LD0250M40M40-D | 1 | **1165940250** |
| **Note** | Other lengths available on request | | |

### Accessories

| **Tools** | **Type** | **Qty.** | **Order No.** |
|---|---|---|---|
| Sheathing strippers, For UTP and STP data cables | AM 12 | 1 | **9030060000** |
| Sheathing strippers, For coaxial and round data cables | IE-CST | 1 | **9204350000** |
| **Marking tags** | | | |
| Insertion label. yellow. 12 mm | TM-I 12 MC NE GE | 320 | **1718411687** |
| Insertion label. yellow. 18 mm | TM-I 18 MC NE GE | 320 | **1718431687** |
| **Dust protection cap** | | | |
| Protective cap | IE-PP-RJ45 | 10 | **2552580000** |
| **Cable routing** | | | |
| 90° outlet angle | IE-CABLE-BENDER-90 | 50 | **2704480000** |
| **Note** | | | |

## Assembled cables

## Patch cable CabinetLine Cat. 6 straight

### LSZH blue

### LSZH black

## Technical data

| | | |
|---|---|---|
| Product type | Patch cable | Patch cable |
| Category | Cat.$6_A$ / Class $E_A$ (ISO/IEC 11801 2010) | Cat.$6_A$ / Class $E_A$ (ISO/IEC 11801 2010) |
| Shielding | S/FTP | S/FTP |
| Version connector left / Version connector right | RJ45 IP 20 / RJ45 IP 20 | RJ45 IP 20 / RJ45 IP 20 |
| Connector standard | IEC 60603-7-51 | IEC 60603-7-51 |
| PoE / PoE+ | conforming to IEEE 802.3at | conforming to IEEE 802.3at |
| Cross-section | 4*2*AWG 27/7 - 4*2*0.1 mm² | 4*2*AWG 27/7 - 4*2*0.1 mm² |
| Sheath diameter, max. | 5.9 mm | 5.9 mm |
| Material sheath | LSZH | LSZH |
| Colour | blue | black |
| Insulation diameter | 1.04 mm | 1.04 mm |
| Min. bending radius, repetitive | 50 mm | 50 mm |
| Min. bending radius, once only | 25 mm | 25 mm |
| Ambient temperature (operational) | -20 °C...60 °C | -20 °C...60 °C |
| Installation temperature | 0 °C...50 °C | 0 °C...50 °C |
| Storage temperature | -20 °C...60 °C | -20 °C...60 °C |
| Halogen | halogen-free, according to IEC 60754-2 | halogen-free, according to IEC 60754-2 |
| Resistance to spread of flame | in acc. with IEC 60332-2-2, in acc. with IEC 60332-1-2, in acc. with IEC 60332-3-24, in acc. with UL 2556 (FT1) | in acc. with IEC 60332-2-2, in acc. with IEC 60332-1-2, in acc. with IEC 60332-3-24, in acc. with UL 2556 (FT1) |
| Approvals | CULUS | CULUS |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| 0.2 m | IE-C6FP8LB0002M40M40-B | 1 | **1165900002** | IE-C6FP8LE0002M40M40-E | 1 | **1251610002** |
| 0.5 m | IE-C6FP8LB0005M40M40-B | 1 | **1165900005** | IE-C6FP8LE0005M40M40-E | 1 | **1251610005** |
| 1.0 m | IE-C6FP8LB0010M40M40-B | 1 | **1165900010** | IE-C6FP8LE0010M40M40-E | 1 | **1251610010** |
| 1.5 m | IE-C6FP8LB0015M40M40-B | 1 | **1165900015** | IE-C6FP8LE0015M40M40-E | 1 | **1251610015** |
| 2.0 m | IE-C6FP8LB0020M40M40-B | 1 | **1165900020** | IE-C6FP8LE0020M40M40-E | 1 | **1251610020** |
| 3.0 m | IE-C6FP8LB0030M40M40-B | 1 | **1165900030** | IE-C6FP8LE0030M40M40-E | 1 | **1251610030** |
| 5.0 m | IE-C6FP8LB0050M40M40-B | 1 | **1165900050** | IE-C6FP8LE0050M40M40-E | 1 | **1251610050** |
| 10.0 m | IE-C6FP8LB0100M40M40-B | 1 | **1165900100** | IE-C6FP8LE0100M40M40-E | 1 | **1251610100** |
| 15.0 m | IE-C6FP8LB0150M40M40-B | 1 | **1165900150** | IE-C6FP8LE0150M40M40-E | 1 | **1251610150** |
| 20.0 m | IE-C6FP8LB0200M40M40-B | 1 | **1165900200** | IE-C6FP8LE0200M40M40-E | 1 | **1251610200** |
| 25.0 m | IE-C6FP8LB0250M40M40-B | 1 | **1165900250** | IE-C6FP8LE0250M40M40-E | 1 | **1251610250** |
| **Note** | | | | | | |

## Accessories

| **Tools** | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| Sheathing strippers, For UTP and STP data cables | AM 12 | 1 | **9030060000** | AM 12 | 1 | **9030060000** |
| Sheathing strippers, For coaxial and round data cables | IE-CST | 1 | **9204350000** | IE-CST | 1 | **9204350000** |
| **Marking tags** | | | | | | |
| Insertion label. yellow. 12 mm | TM-I 12 MC NE GE | 320 | **1718411687** | TM-I 12 MC NE GE | 320 | **1718411687** |
| Insertion label. yellow. 18 mm | TM-I 18 MC NE GE | 320 | **1718431687** | TM-I 18 MC NE GE | 320 | **1718431687** |
| **Dust protection cap** | | | | | | |
| Protective cap | IE-PP-RJ45 | 10 | **2552580000** | IE-PP-RJ45 | 10 | **2552580000** |
| **Cable routing** | | | | | | |
| 90° outlet angle | IE-CABLE-BENDER-90 | 50 | **2704480000** | IE-CABLE-BENDER-90 | 50 | **2704480000** |
| **Note** | | | | | | |

## Assembled cables

## Patch cable CabinetLine Cat. 6 straight

### LSZH green

### LSZH red

## Technical data

| | | |
|---|---|---|
| Product type | Patch cable | Patch cable |
| Category | Cat.$6_A$ / Class $E_A$ (ISO/IEC 11801 2010) | Cat.$6_A$ / Class $E_A$ (ISO/IEC 11801 2010) |
| Shielding | S/FTP | S/FTP |
| Version connector left / Version connector right | RJ45 IP 20 / RJ45 IP 20 | RJ45 IP 20 / RJ45 IP 20 |
| Connector standard | IEC 60603-7-51 | IEC 60603-7-51 |
| PoE / PoE+ | conforming to IEEE 802.3at | conforming to IEEE 802.3at |
| Cross-section | 4*2*AWG 27/7 - 4*2*0.1 mm² | 4*2*AWG 27/7 - 4*2*0.1 mm² |
| Sheath diameter, max. | 5.9 mm | 5.9 mm |
| Material sheath | LSZH | LSZH |
| Colour | green | red |
| Insulation diameter | 1.04 mm | 1.04 mm |
| Min. bending radius, repetitive | 50 mm | 50 mm |
| Min. bending radius, once only | 25 mm | 25 mm |
| Ambient temperature (operational) | -20 °C...60 °C | -20 °C...60 °C |
| Installation temperature | 0 °C...50 °C | 0 °C...50 °C |
| Storage temperature | -20 °C...60 °C | -20 °C...60 °C |
| Halogen | halogen-free, according to IEC 60754-2 | halogen-free, according to IEC 60754-2 |
| Resistance to spread of flame | in acc. with IEC 60332-2-2, in acc. with IEC 60332-1-2, in acc. with IEC 60332-3-24, in acc. with UL 2556 (FT1) | in acc. with IEC 60332-2-2, in acc. with IEC 60332-1-2, in acc. with IEC 60332-3-24, in acc. with UL 2556 (FT1) |
| Approvals | CULUS | CULUS |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| 0.2 m | IE-C6FP8LG0002M40M40-G | 1 | **1251590002** | IE-C6FP8LR0002M40M40-R | 1 | **1166030002** |
| 0.5 m | IE-C6FP8LG0005M40M40-G | 1 | **1251590005** | IE-C6FP8LR0005M40M40-R | 1 | **1166030005** |
| 1.0 m | IE-C6FP8LG0010M40M40-G | 1 | **1251590010** | IE-C6FP8LR0010M40M40-R | 1 | **1166030010** |
| 1.5 m | IE-C6FP8LG0015M40M40-G | 1 | **1251590015** | IE-C6FP8LR0015M40M40-R | 1 | **1166030015** |
| 2.0 m | IE-C6FP8LG0020M40M40-G | 1 | **1251590020** | IE-C6FP8LR0020M40M40-R | 1 | **1166030020** |
| 3.0 m | IE-C6FP8LG0030M40M40-G | 1 | **1251590030** | IE-C6FP8LR0030M40M40-R | 1 | **1166030030** |
| 5.0 m | IE-C6FP8LG0050M40M40-G | 1 | **1251590050** | IE-C6FP8LR0050M40M40-R | 1 | **1166030050** |
| 10.0 m | IE-C6FP8LG0100M40M40-G | 1 | **1251590100** | IE-C6FP8LR0100M40M40-R | 1 | **1166030100** |
| 15.0 m | IE-C6FP8LG0150M40M40-G | 1 | **1251590150** | IE-C6FP8LR0150M40M40-R | 1 | **1166030150** |
| 20.0 m | IE-C6FP8LG0200M40M40-G | 1 | **1251590200** | IE-C6FP8LR0200M40M40-R | 1 | **1166030200** |
| 25.0 m | IE-C6FP8LG0250M40M40-G | 1 | **1251590250** | IE-C6FP8LR0250M40M40-R | 1 | **1166030250** |
| **Note** | | | | | | |

## Accessories

| **Tools** | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| Sheathing strippers, For UTP and STP data cables | AM 12 | 1 | **9030060000** | AM 12 | 1 | **9030060000** |
| Sheathing strippers, For coaxial and round data cables | IE-CST | 1 | **9204350000** | IE-CST | 1 | **9204350000** |
| **Marking tags** | | | | | | |
| Insertion label. yellow. 12 mm | TM-I 12 MC NE GE | 320 | **1718411687** | TM-I 12 MC NE GE | 320 | **1718411687** |
| Insertion label. yellow. 18 mm | TM-I 18 MC NE GE | 320 | **1718431687** | TM-I 18 MC NE GE | 320 | **1718431687** |
| **Dust protection cap** | | | | | | |
| Protective cap | IE-PP-RJ45 | 10 | **2552580000** | IE-PP-RJ45 | 10 | **2552580000** |
| **Cable routing** | | | | | | |
| 90° outlet angle | IE-CABLE-BENDER-90 | 50 | **2704480000** | IE-CABLE-BENDER-90 | 50 | **2704480000** |
| **Note** | | | | | | |

## Assembled cables

## Patch cable CabinetLine Cat. 6 straight

### LSZH magenta

### LSZH violet

## Technical data

| | | |
|---|---|---|
| Product type | Patch cable | Patch cable |
| Category | Cat.$6_A$ / Class $E_A$ (ISO/IEC 11801 2010) | Cat.$6_A$ / Class $E_A$ (ISO/IEC 11801 2010) |
| Shielding | S/FTP | S/FTP |
| Version connector left / Version connector right | RJ45 IP 20 / RJ45 IP 20 | RJ45 IP 20 / RJ45 IP 20 |
| Connector standard | IEC 60603-7-51 | IEC 60603-7-51 |
| PoE / PoE+ | conforming to IEEE 802.3at | conforming to IEEE 802.3at |
| Cross-section | 4*2*AWG 27/7 - 4*2*0.1 mm² | 4*2*AWG 27/7 - 4*2*0.1 mm² |
| Sheath diameter, max. | 5.9 mm | 5.9 mm |
| Material sheath | LSZH | LSZH |
| Colour | Magenta | violet |
| Insulation diameter | 1.04 mm | 1.04 mm |
| Min. bending radius, repetitive | 50 mm | 50 mm |
| Min. bending radius, once only | 25 mm | 25 mm |
| Ambient temperature (operational) | -20 °C...60 °C | -20 °C...60 °C |
| Installation temperature | 0 °C...50 °C | 0 °C...50 °C |
| Storage temperature | -20 °C...60 °C | -20 °C...60 °C |
| Halogen | halogen-free, according to IEC 60754-2 | halogen-free, according to IEC 60754-2 |
| Resistance to spread of flame | in acc. with IEC 60332-2-2, in acc. with IEC 60332-1-2, in acc. with IEC 60332-3-24, in acc. with UL 2556 (FT1) | in acc. with IEC 60332-2-2, in acc. with IEC 60332-1-2, in acc. with IEC 60332-3-24, in acc. with UL 2556 (FT1) |
| Approvals | CULUS | CULUS |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| 0.2 m | IE-C6FP8LM0002M40M40-M | 1 | **1201270002** | IE-C6FP8LV0002M40M40-V | 1 | **2701550002** |
| 0.5 m | IE-C6FP8LM0005M40M40-M | 1 | **1201270005** | IE-C6FP8LV0005M40M40-V | 1 | **2701550005** |
| 1.0 m | IE-C6FP8LM0010M40M40-M | 1 | **1201270010** | IE-C6FP8LV0010M40M40-V | 1 | **2701550010** |
| 1.5 m | IE-C6FP8LM0015M40M40-M | 1 | **1201270015** | IE-C6FP8LV0015M40M40-V | 1 | **2701550015** |
| 2.0 m | IE-C6FP8LM0020M40M40-M | 1 | **1201270020** | IE-C6FP8LV0020M40M40-V | 1 | **2701550020** |
| 3.0 m | IE-C6FP8LM0030M40M40-M | 1 | **1201270030** | IE-C6FP8LV0030M40M40-V | 1 | **2701550030** |
| 5.0 m | IE-C6FP8LM0050M40M40-M | 1 | **1201270050** | IE-C6FP8LV0050M40M40-V | 1 | **2701550050** |
| 10.0 m | IE-C6FP8LM0100M40M40-M | 1 | **1201270100** | IE-C6FP8LV0100M40M40-V | 1 | **2701550100** |
| 15.0 m | IE-C6FP8LM0150M40M40-M | 1 | **1201270150** | IE-C6FP8LV0150M40M40-V | 1 | **2701550150** |
| 20.0 m | IE-C6FP8LM0200M40M40-M | 1 | **1201270200** | IE-C6FP8LV0200M40M40-V | 1 | **2701550200** |
| 25.0 m | | | | | | |
| **Note** | | | | | | |

## Accessories

| **Tools** | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| Sheathing strippers, For UTP and STP data cables | AM 12 | 1 | **9030060000** | AM 12 | 1 | **9030060000** |
| Sheathing strippers, For coaxial and round data cables | IE-CST | 1 | **9204350000** | IE-CST | 1 | **9204350000** |
| **Marking tags** | | | | | | |
| Insertion label. yellow. 12 mm | TM-I 12 MC NE GE | 320 | **1718411687** | TM-I 12 MC NE GE | 320 | **1718411687** |
| Insertion label. yellow. 18 mm | TM-I 18 MC NE GE | 320 | **1718431687** | TM-I 18 MC NE GE | 320 | **1718431687** |
| **Dust protection cap** | | | | | | |
| Protective cap | IE-PP-RJ45 | 10 | **2552580000** | IE-PP-RJ45 | 10 | **2552580000** |
| **Cable routing** | | | | | | |
| 90° outlet angle | IE-CABLE-BENDER-90 | 50 | **2704480000** | IE-CABLE-BENDER-90 | 50 | **2704480000** |
| **Note** | | | | | | |

## Assembled cables

## Patch cable CabinetLine Cat. 6 straight

### LSZH yellow

### LSZH orange

## Technical data

| | | |
|---|---|---|
| Product type | Patch cable | Patch cable |
| Category | Cat.$6_A$ / Class $E_A$ (ISO/IEC 11801 2010) | Cat.$6_A$ / Class $E_A$ (ISO/IEC 11801 2010) |
| Shielding | S/FTP | S/FTP |
| Version connector left / Version connector right | RJ45 IP 20 / RJ45 IP 20 | RJ45 IP 20 / RJ45 IP 20 |
| Connector standard | IEC 60603-7-51 | IEC 60603-7-51 |
| PoE / PoE+ | conforming to IEEE 802.3at | conforming to IEEE 802.3at |
| Cross-section | 4*2*AWG 27/7 - 4*2*0.1 mm² | 4*2*AWG 27/7 - 4*2*0.1 mm² |
| Sheath diameter, max. | 5.9 mm | 5.9 mm |
| Material sheath | LSZH | LSZH |
| Colour | yellow | orange |
| Insulation diameter | 1.04 mm | 1.04 mm |
| Min. bending radius, repetitive | 50 mm | 50 mm |
| Min. bending radius, once only | 25 mm | 25 mm |
| Ambient temperature (operational) | -20 °C...60 °C | -20 °C...60 °C |
| Installation temperature | 0 °C...50 °C | 0 °C...50 °C |
| Storage temperature | -20 °C...60 °C | -20 °C...60 °C |
| Halogen | halogen-free, according to IEC 60754-2 | halogen-free, according to IEC 60754-2 |
| Resistance to spread of flame | in acc. with IEC 60332-2-2, in acc. with IEC 60332-1-2, in acc. with IEC 60332-3-24, in acc. with UL 2556 (FT1) | in acc. with IEC 60332-2-2, in acc. with IEC 60332-1-2, in acc. with IEC 60332-3-24, in acc. with UL 2556 (FT1) |
| Approvals | CULUS | |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| 0.2 m | IE-C6FP8LY0002M40M40-Y | 1 | **1251580002** | IE-C6FP8L00002M40M40-0 | 1 | **2563810002** |
| 0.5 m | IE-C6FP8LY0005M40M40-Y | 1 | **1251580005** | IE-C6FP8L00005M40M40-0 | 1 | **2563810005** |
| 1.0 m | IE-C6FP8LY0010M40M40-Y | 1 | **1251580010** | IE-C6FP8L00010M40M40-0 | 1 | **2563810010** |
| 1.5 m | IE-C6FP8LY0015M40M40-Y | 1 | **1251580015** | IE-C6FP8L00015M40M40-0 | 1 | **2563810015** |
| 2.0 m | IE-C6FP8LY0020M40M40-Y | 1 | **1251580020** | IE-C6FP8L00020M40M40-0 | 1 | **2563810020** |
| 3.0 m | IE-C6FP8LY0030M40M40-Y | 1 | **1251580030** | IE-C6FP8L00030M40M40-0 | 1 | **2563810030** |
| 5.0 m | IE-C6FP8LY0050M40M40-Y | 1 | **1251580050** | IE-C6FP8L00050M40M40-0 | 1 | **2563810050** |
| 10.0 m | IE-C6FP8LY0100M40M40-Y | 1 | **1251580100** | IE-C6FP8L00100M40M40-0 | 1 | **2563810100** |
| 15.0 m | IE-C6FP8LY0150M40M40-Y | 1 | **1251580150** | IE-C6FP8L00150M40M40-0 | 1 | **2563810150** |
| 20.0 m | IE-C6FP8LY0200M40M40-Y | 1 | **1251580200** | IE-C6FP8L00200M40M40-0 | 1 | **2563810200** |
| 25.0 m | IE-C6FP8LY0250M40M40-Y | 1 | **1251580250** | IE-C6FP8L00250M40M40-0 | 1 | **2563810250** |
| **Note** | | | | | | |

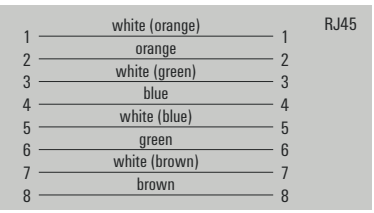
## Accessories

| **Tools** | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| Sheathing strippers, For UTP and STP data cables | AM 12 | 1 | **9030060000** | AM 12 | 1 | **9030060000** |
| Sheathing strippers, For coaxial and round data cables | IE-CST | 1 | **9204350000** | IE-CST | 1 | **9204350000** |
| **Marking tags** | | | | | | |
| Insertion label. yellow. 12 mm | TM-I 12 MC NE GE | 320 | **1718411687** | TM-I 12 MC NE GE | 320 | **1718411687** |
| Insertion label. yellow. 18 mm | TM-I 18 MC NE GE | 320 | **1718431687** | TM-I 18 MC NE GE | 320 | **1718431687** |
| **Dust protection cap** | | | | | | |
| Protective cap | IE-PP-RJ45 | 10 | **2552580000** | IE-PP-RJ45 | 10 | **2552580000** |
| **Cable routing** | | | | | | |
| 90° outlet angle | IE-CABLE-BENDER-90 | 50 | **2704480000** | IE-CABLE-BENDER-90 | 50 | **2704480000** |
| **Note** | | | | | | |

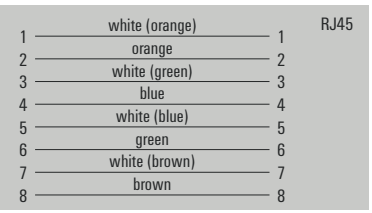
## Assembled cables

## Patch cable CabinetLine Cat. 6 angled

### LSZH grey 270°




### LSZH grey 90°




## Technical data

| | | |
|---|---|---|
| Product type | Patch cable | Patch cable |
| Category | Cat.$6_A$ / Class $E_A$ (ISO/IEC 11801 2010) | Cat.$6_A$ / Class $E_A$ (ISO/IEC 11801 2010) |
| Shielding | S/FTP | S/FTP |
| Version connector left / Version connector right | RJ45 IP 20, Angled 270° / RJ45 IP 20 | RJ45 IP 20, Angled 90° / RJ45 IP 20 |
| Connector standard | IEC 60603-7-51 | IEC 60603-7-51 |
| PoE / PoE+ | conforming to IEEE 802.3at | conforming to IEEE 802.3at |
| Cross-section | 4*2*AWG 27/7 - 4*2*0.1 mm² | 4*2*AWG 27/7 - 4*2*0.1 mm² |
| Sheath diameter, max. | 5.9 mm | 5.9 mm |
| Material sheath | LSZH | LSZH |
| Colour | grey | grey |
| Insulation diameter | 1.04 mm | 1.04 mm |
| Min. bending radius, repetitive | 50 mm | 50 mm |
| Min. bending radius, once only | 25 mm | 25 mm |
| Ambient temperature (operational) | -20 °C...60 °C | -20 °C...60 °C |
| Installation temperature | 0 °C...50 °C | 0 °C...50 °C |
| Storage temperature | -20 °C...60 °C | -20 °C...60 °C |
| Halogen | halogen-free, according to IEC 60754-2 | halogen-free, according to IEC 60754-2 |
| Resistance to spread of flame | in acc. with IEC 60332-2-2, in acc. with IEC 60332-1-2, in acc. with IEC 60332-3-24, in acc. with UL 2556 (FT1) | in acc. with IEC 60332-2-2, in acc. with IEC 60332-1-2, in acc. with IEC 60332-3-24, in acc. with UL 2556 (FT1) |
| Approvals | CULUS | CULUS |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| 0.5 m | IE-C6FP8LD0005M40W40-D | 1 | **1233160005** | IE-C6FP8LD0005M40V40-D | 1 | **1248280005** |
| 1.0 m | IE-C6FP8LD0010M40W40-D | 1 | **1233160010** | IE-C6FP8LD0010M40V40-D | 1 | **1248280010** |
| 1.2 m | IE-C6FP8LD0012M40W40-D | 1 | **1233160012** | IE-C6FP8LD0012M40V40-D | 1 | **1248280012** |
| 1.5 m | IE-C6FP8LD0015M40W40-D | 1 | **1233160015** | IE-C6FP8LD0015M40V40-D | 1 | **1248280015** |
| 2.0 m | IE-C6FP8LD0020M40W40-D | 1 | **1233160020** | IE-C6FP8LD0020M40V40-D | 1 | **1248280020** |
| 3.0 m | IE-C6FP8LD0030M40W40-D | 1 | **1233160030** | IE-C6FP8LD0030M40V40-D | 1 | **1248280030** |
| 5.0 m | IE-C6FP8LD0050M40W40-D | 1 | **1233160050** | IE-C6FP8LD0050M40V40-D | 1 | **1248280050** |
| 10.0 m | IE-C6FP8LD0100M40W40-D | 1 | **1233160100** | IE-C6FP8LD0100M40V40-D | 1 | **1248280100** |
| **Note** | | | | | | |

## Accessories

| **Tools** | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| Sheathing strippers, For UTP and STP data cables | AM 12 | 1 | **9030060000** | AM 12 | 1 | **9030060000** |
| Sheathing strippers, For coaxial and round data cables | IE-CST | 1 | **9204350000** | IE-CST | 1 | **9204350000** |
| **Marking tags** | | | | | | |
| Insertion label. yellow. 12 mm | TM-I 12 MC NE GE | 320 | **1718411687** | TM-I 12 MC NE GE | 320 | **1718411687** |
| Insertion label. yellow. 18 mm | TM-I 18 MC NE GE | 320 | **1718431687** | TM-I 18 MC NE GE | 320 | **1718431687** |
| **Dust protection cap** | | | | | | |
| Protective cap | IE-PP-RJ45 | 10 | **2552580000** | IE-PP-RJ45 | 10 | **2552580000** |

**Note**

## Assembled cables

## Patch cable CabinetLine Cat. 6 angled

### LSZH 90° left

### LSZH 90° right

## Technical data

| | | |
|---|---|---|
| Product type | Patch cable | Patch cable |
| Category | Cat.$6_A$ / Class $E_A$ (ISO/IEC 11801 2010) | Cat.$6_A$ / Class $E_A$ (ISO/IEC 11801 2010) |
| Shielding | S/FTP | S/FTP |
| Version connector left / Version connector right | RJ45 IP 20 / RJ45 IP 20, Angled 90° left | RJ45 IP 20 / RJ45 IP 20, Angled 90° right |
| Connector standard | IEC 60603-7-51 | IEC 60603-7-51 |
| PoE / PoE+ | conforming to IEEE 802.3at | conforming to IEEE 802.3at |
| Cross-section | 4*2*AWG 27/7 - 4*2*0.1 mm² | 4*2*AWG 27/7 - 4*2*0.1 mm² |
| Sheath diameter, max. | 5.9 mm | 5.9 mm |
| Material sheath | LSZH | LSZH |
| Colour | grey | grey |
| Insulation diameter | 1.04 mm | 1.04 mm |
| Min. bending radius, repetitive | 50 mm | 50 mm |
| Min. bending radius, once only | 25 mm | 25 mm |
| Ambient temperature (operational) | -20 °C...60 °C | -20 °C...60 °C |
| Installation temperature | 0 °C...50 °C | 0 °C...50 °C |
| Storage temperature | -20 °C...60 °C | -20 °C...60 °C |
| Halogen | halogen-free, according to IEC 60754-2 | halogen-free, according to IEC 60754-2 |
| Resistance to spread of flame | in acc. with IEC 60332-2-2, in acc. with IEC 60332-1-2, in acc. with IEC 60332-3-24, in acc. with UL 2556 (FT1) | in acc. with IEC 60332-2-2, in acc. with IEC 60332-1-2, in acc. with IEC 60332-3-24, in acc. with UL 2556 (FT1) |
| Approvals | CULUS | CULUS |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| 0.5 m | IE-C6FP8LD0005M40L40-D | 1 | **2703320005** | IE-C6FP8LD0005M40R40-D | 1 | **2703330005** |
| 1.0 m | IE-C6FP8LD0010M40L40-D | 1 | **2703320010** | IE-C6FP8LD0010M40R40-D | 1 | **2703330010** |
| 1.2 m | IE-C6FP8LD0012M40L40-D | 1 | **2703320012** | IE-C6FP8LD0012M40R40-D | 1 | **2703330012** |
| 1.5 m | IE-C6FP8LD0015M40L40-D | 1 | **2703320015** | IE-C6FP8LD0015M40R40-D | 1 | **2703330015** |
| 2.0 m | IE-C6FP8LD0020M40L40-D | 1 | **2703320020** | IE-C6FP8LD0020M40R40-D | 1 | **2703330020** |
| 3.0 m | IE-C6FP8LD0030M40L40-D | 1 | **2703320030** | IE-C6FP8LD0030M40R40-D | 1 | **2703330030** |
| 5.0 m | IE-C6FP8LD0050M40L40-D | 1 | **2703320050** | IE-C6FP8LD0050M40R40-D | 1 | **2703330050** |
| 10.0 m | IE-C6FP8LD0100M40L40-D | 1 | **2703320100** | IE-C6FP8LD0100M40R40-D | 1 | **2703330100** |
| **Note** | | | | | | |

## Accessories

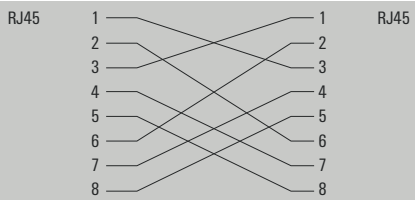
| **Tools** | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| Sheathing strippers, For UTP and STP data cables | AM 12 | 1 | **9030060000** | AM 12 | 1 | **9030060000** |
| Sheathing strippers, For coaxial and round data cables | IE-CST | 1 | **9204350000** | IE-CST | 1 | **9204350000** |
| **Marking tags** | | | | | | |
| Insertion label. yellow. 12 mm | TM-I 12 MC NE GE | 320 | **1718411687** | TM-I 12 MC NE GE | 320 | **1718411687** |
| Insertion label. yellow. 18 mm | TM-I 18 MC NE GE | 320 | **1718431687** | TM-I 18 MC NE GE | 320 | **1718431687** |
| **Dust protection cap** | | | | | | |
| Protective cap | IE-PP-RJ45 | 10 | **2552580000** | IE-PP-RJ45 | 10 | **2552580000** |

**Note**

## Assembled cables

## Patch cable CabinetLine Cat. 6 crossover

### LSZH grey




### Technical data

| | |
|---|---|
| Product type | Patch cable, crossover |
| Category | Cat.$6_A$ / Class $E_A$ (ISO/IEC 11801 2010) |
| Shielding | S/FTP |
| Version connector left / Version connector right | RJ45 IP 20 / RJ45 IP 20 |
| Connector standard | IEC 60603-7-51 |
| PoE / PoE+ | conforming to IEEE 802.3at |
| Cross-section | 4*2*AWG 27/7 - 4*2*0.1 mm² |
| Sheath diameter, max. | 5.9 mm |
| Material sheath | LSZH |
| Colour | grey |
| Insulation diameter | 1.04 mm |
| Min. bending radius, repetitive | 50 mm |
| Min. bending radius, once only | 25 mm |
| Ambient temperature (operational) | -20 °C...60 °C |
| Installation temperature | 0 °C...50 °C |
| Storage temperature | -20 °C...60 °C |
| Halogen | halogen-free, according to IEC 60754-2 |
| Resistance to spread of flame | in acc. with IEC 60332-2-2, in acc. with IEC 60332-1-2, in acc. with IEC 60332-3-24, in acc. with UL 2556 (FT1) |
| Approvals | CULUS |

**Note**

### Ordering data

| | Type | Qty. | Order No. |
|---|---|---|---|
| 0.3 m | IE-C6FP8LD0003X40X40-Y | 1 | **1312160003** |
| 0.4 m | IE-C6FP8LD0004X40X40-Y | 1 | **1312160004** |
| 0.5 m | IE-C6FP8LD0005X40X40-Y | 1 | **1312160005** |
| 1.0 m | IE-C6FP8LD0010X40X40-Y | 1 | **1312160010** |
| 2.0 m | IE-C6FP8LD0020X40X40-Y | 1 | **1312160020** |
| 3.0 m | IE-C6FP8LD0030X40X40-Y | 1 | **1312160030** |
| 5.0 m | IE-C6FP8LD0050X40X40-Y | 1 | **1312160050** |
| 10.0 m | IE-C6FP8LD0100X40X40-Y | 1 | **1312160100** |
| 15.0 m | IE-C6FP8LD0150X40X40-Y | 1 | **1312160150** |
| 20.0 m | IE-C6FP8LD0200X40X40-Y | 1 | **1312160200** |

**Note**

### Accessories

| **Tools** | Type | Qty. | Order No. |
|---|---|---|---|
| Sheathing strippers, For UTP and STP data cables | AM 12 | 1 | **9030060000** |
| Sheathing strippers, For coaxial and round data cables | IE-CST | 1 | **9204350000** |
| **Marking tags** | | | |
| Insertion label. yellow. 12 mm | TM-I 12 MC NE GE | 320 | **1718411687** |
| Insertion label. yellow. 18 mm | TM-I 18 MC NE GE | 320 | **1718431687** |
| **Dust protection cap** | | | |
| Protective cap | IE-PP-RJ45 | 10 | **2552580000** |
| **Cable routing** | | | |
| 90° outlet angle | IE-CABLE-BENDER-90 | 50 | **2704480000** |

**Note**

## Assembled cables

## Patch cable CabinetLine Cat. 5 straight

### PVC green

### PUR green

## Technical data

| | | |
|---|---|---|
| Product type | System cable | System cable |
| Category | Cat.5 (ISO/IEC 11801) | Cat.5 (ISO/IEC 11801) |
| Shielding | SF/UTP | SF/UTP |
| Version connector left / Version connector right | RJ45 IP 20 / RJ45 IP 20 | RJ45 IP 20 / RJ45 IP 20 |
| Connector standard | IEC 60603-7-51 | IEC 60603-7-51 |
| PoE / PoE+ | conforming to IEEE 802.3at | conforming to IEEE 802.3at |
| Cross-section | 4*2*AWG 26/7 - 4*2*0.128 mm² | 4*2*AWG 26/7 - 4*2*0.128 mm² |
| Sheath diameter, max. | 5.8 mm | 6 mm |
| Material sheath | PVC | PUR |
| Sheathing colour | green (RAL 6018) | green (RAL 6018) |
| Insulation diameter | 0.98 mm | 0.98 mm |
| Min. bending radius, repetitive | 10 x cable diameter | 10 x cable diameter |
| Min. bending radius, once only | 5 x cable diameter | 5 x cable diameter |
| Ambient temperature (operational) | -40 °C...75 °C | -40 °C...85 °C |
| Abrasion resistance | good | very good |
| Halogen | | halogen-free, according to IEC 60754-2 |
| Resistance to spread of flame | in acc. with IEC 60332-1 | in acc. with IEC 60332-1 |
| Resistance to oils | | EN 50305 |
| Approvals | EAC | |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| 0.5 m | IE-C5ES8VG0005M40M40-G | 1 | **1166020005** | IE-C5ES8UG0005M40M40-G | 1 | **1166000005** |
| 1.0 m | IE-C5ES8VG0010M40M40-G | 1 | **1166020010** | IE-C5ES8UG0010M40M40-G | 1 | **1166000010** |
| 1.5 m | IE-C5ES8VG0015M40M40-G | 1 | **1166020015** | IE-C5ES8UG0015M40M40-G | 1 | **1166000015** |
| 2.0 m | IE-C5ES8VG0020M40M40-G | 1 | **1166020020** | IE-C5ES8UG0020M40M40-G | 1 | **1166000020** |
| 3.0 m | IE-C5ES8VG0030M40M40-G | 1 | **1166020030** | IE-C5ES8UG0030M40M40-G | 1 | **1166000030** |
| 5.0 m | IE-C5ES8VG0050M40M40-G | 1 | **1166020050** | IE-C5ES8UG0050M40M40-G | 1 | **1166000050** |
| 10.0 m | IE-C5ES8VG0100M40M40-G | 1 | **1166020100** | IE-C5ES8UG0100M40M40-G | 1 | **1166000100** |
| 15.0 m | IE-C5ES8VG0150M40M40-G | 1 | **1166020150** | IE-C5ES8UG0150M40M40-G | 1 | **1166000150** |
| 20.0 m | IE-C5ES8VG0200M40M40-G | 1 | **1166020200** | IE-C5ES8UG0200M40M40-G | 1 | **1166000200** |
| **Note** | | | | | | |

## Accessories

| **Tools** | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| Sheathing strippers, For UTP and STP data cables | AM 12 | 1 | **9030060000** | AM 12 | 1 | **9030060000** |
| Sheathing strippers, For coaxial and round data cables | IE-CST | 1 | **9204350000** | IE-CST | 1 | **9204350000** |
| **Marking tags** | | | | | | |
| Insertion label. yellow. 12 mm | TM-I 12 MC NE GE | 320 | **1718411687** | TM-I 12 MC NE GE | 320 | **1718411687** |
| Insertion label. yellow. 18 mm | TM-I 18 MC NE GE | 320 | **1718431687** | TM-I 18 MC NE GE | 320 | **1718431687** |
| **Dust protection cap** | | | | | | |
| Protective cap | IE-PP-RJ45 | 10 | **2552580000** | IE-PP-RJ45 | 10 | **2552580000** |
| **Cable routing** | | | | | | |
| 90° outlet angle | IE-CABLE-BENDER-90 | 50 | **2704480000** | IE-CABLE-BENDER-90 | 50 | **2704480000** |

**Note**

## Assembled cables

## Patch cable CabinetLine Cat. 6 straight

### PUR green

### Technical data

| | |
|---|---|
| Product type | System cable |
| Category | Cat.$6_A$ / Class $E_A$ (ISO/IEC 11801 2010) |
| Shielding | S/FTP |
| Version connector left / Version connector right | RJ45 IP 20 / RJ45 IP 20 |
| Connector standard | IEC 60603-7-51 |
| PoE / PoE+ | conforming to IEEE 802.3at |
| Cross-section | 4*2*AWG 27/7 - 4*2*0.1 mm² |
| Sheath diameter, max. | 6.4 mm |
| Material sheath / Sheathing colour | PUR / green (RAL 6018) |
| Insulation diameter | 1.02 mm |
| Min. bending radius, repetitive / Min. bending radius, once only | 10 x cable diameter / 5 x cable diameter |
| Ambient temperature (operational) | -40 °C...85 °C |
| Abrasion resistance | very good |
| Halogen | halogen-free, according to IEC 60754-2 |
| Resistance to spread of flame | in acc. with IEC 60332-1 / UL 1581 FT2 |
| Resistance to oils | in acc. with IEC 60811-2-1 |
| Approvals | |
| **Note** | |

### Ordering data

| | Type | Qty. | Order No. |
|---|---|---|---|
| 0.3 m | IE-C6FS8UG0003A40A40-G | 1 | **8941350003** |
| 0.5 m | IE-C6FS8UG0005A40A40-G | 1 | **8941350005** |
| 1.0 m | IE-C6FS8UG0010A40A40-G | 1 | **8941350010** |
| 1.5 m | IE-C6FS8UG0015A40A40-G | 1 | **8941350015** |
| 2.0 m | IE-C6FS8UG0020A40A40-G | 1 | **8941350020** |
| 3.0 m | IE-C6FS8UG0030A40A40-G | 1 | **8941350030** |
| 5.0 m | IE-C6FS8UG0050A40A40-G | 1 | **8941350050** |
| 10.0 m | IE-C6FS8UG0100A40A40-G | 1 | **8941350100** |
| 15.0 m | IE-C6FS8UG0150A40A40-G | 1 | **8941350150** |
| 20.0 m | IE-C6FS8UG0200A40A40-G | 1 | **8941350200** |
| **Note** | Other lengths available on request | | |

### Accessories

| | Type | Qty. | Order No. |
|---|---|---|---|
| **Tools** | | | |
| Sheathing strippers, For UTP and STP data cables | AM 12 | 1 | **9030060000** |
| Sheathing strippers, For coaxial and round data cables | IE-CST | 1 | **9204350000** |
| **Marking tags** | | | |
| Wire and cable markers. ø 4.7 - 7.4 mm | VT SF 5/21 MC NE WS V0 | 160 | **1689470001** |
| Wire and cable markers. ø 5.8 - 7.8 mm | VT SF 6/21 MC NE WS V0 | 160 | **1730560001** |
| Insertion label. yellow. 12 mm | TM-I 12 MC NE GE | 320 | **1718411687** |
| Insertion label. yellow. 18 mm | TM-I 18 MC NE GE | 320 | **1718431687** |
| Transparent sleeves. 12-mm length | TM 4/12 HF/HB | 500 | **1719840000** |
| Transparent sleeves. 18-mm length | TM 4/18 HF/HB | 500 | **1719850000** |
| **Dust protection cap** | | | |
| Protective cap | IE-PP-RJ45 | 10 | **2552580000** |
| **Cable routing** | | | |
| 90° outlet angle | IE-CABLE-BENDER-90 | 50 | **2704480000** |
| **Note** | | | |

## Assembled cables
## Patch cable PROFINET dragline cable (type C)
## Cat. 5
## IP 20

### RJ45 IP20

| RJ45 | | RJ45 |
|---|---|---|
| 1 | yellow | 1 |
| 2 | orange | 2 |
| 3 | white | 3 |
| 6 | blue | 6 |

### RJ45 IP20 incl. protective cap

| RJ45 | | RJ45 |
|---|---|---|
| 1 | yellow | 1 |
| 2 | orange | 2 |
| 3 | white | 3 |
| 6 | blue | 6 |

## Technical data

| | | |
|---|---|---|
| Product type | Dragline cable | Dragline cable |
| Category | Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B) | Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B) |
| Shielding | SF/UTP | SF/UTP |
| Version connector left / Version connector right | RJ45 IP 20 / RJ45 IP 20 | RJ45 IP 20 with protective cap / RJ45 IP 20 with protective cap |
| Cross-section | 4*AWG 22/7 - 0.36 mm² | 4*AWG 22/7 - 0.36 mm² |
| Sheath diameter, max. | 6.7 mm | 6.7 mm |
| Material sheath | PUR | PUR |
| Insulation diameter | 1.5 mm | 1.5 mm |
| Min. bending radius, repetitive / Min. bending radius, once only | 7.5 x cable diameter / 5 x cable diameter | 7.5 x cable diameter / 5 x cable diameter |
| Bending cycles | 3 Mio | 3 Mio |
| Speed | 180 m/min | 180 m/min |
| Acceleration | 4 m/s² | 4 m/s² |
| Pulling force | ≤ 150 N | ≤ 150 N |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...70 °C |
| Installation temperature | -20 °C...60 °C | -20 °C...60 °C |
| Storage temperature | -50 °C...70 °C | -50 °C...70 °C |
| Abrasion resistance | very good | very good |
| Halogen | halogen-free, according to IEC 60754-2 | halogen-free, according to IEC 60754-2 |
| Resistance to spread of flame | in acc. with IEC 60332-1 | in acc. with IEC 60332-1 |
| Resistance to oils | in acc. with IEC 60811-2-1 | in acc. with IEC 60811-2-1 |
| Approvals | CULUS | |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| 0.5 m | IE-C5DD4UG0005A20A20-E | 1 | **1173030005** | IE-C5DD4UG0005A2DA2D-E | 1 | **1376510005** |
| 1.0 m | IE-C5DD4UG0010A20A20-E | 1 | **1173030010** | IE-C5DD4UG0010A2DA2D-E | 1 | **1376510010** |
| 2.0 m | IE-C5DD4UG0020A20A20-E | 1 | **1173030020** | IE-C5DD4UG0020A2DA2D-E | 1 | **1376510020** |
| 3.0 m | IE-C5DD4UG0030A20A20-E | 1 | **1173030030** | IE-C5DD4UG0030A2DA2D-E | 1 | **1376510030** |
| 5.0 m | IE-C5DD4UG0050A20A20-E | 1 | **1173030050** | IE-C5DD4UG0050A2DA2D-E | 1 | **1376510050** |
| 10.0 m | IE-C5DD4UG0100A20A20-E | 1 | **1173030100** | IE-C5DD4UG0100A2DA2D-E | 1 | **1376510100** |
| 15.0 m | IE-C5DD4UG0150A20A20-E | 1 | **1173030150** | IE-C5DD4UG0150A2DA2D-E | 1 | **1376510150** |
| 20.0 m | IE-C5DD4UG0200A20A20-E | 1 | **1173030200** | IE-C5DD4UG0200A2DA2D-E | 1 | **1376510200** |
| **Note** | | | | | | |

## Accessories

| **Tools** | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| Sheathing strippers, For UTP and STP data cables | AM 12 | 1 | **9030060000** | AM 12 | 1 | **9030060000** |
| Sheathing strippers, For coaxial and round data cables | IE-CST | 1 | **9204350000** | IE-CST | 1 | **9204350000** |
| **Marking tags** | | | | | | |
| Insertion label. yellow. 12 mm | TM-I 12 MC NE GE | 320 | **1718411687** | TM-I 12 MC NE GE | 320 | **1718411687** |
| Insertion label. yellow. 18 mm | TM-I 18 MC NE GE | 320 | **1718431687** | TM-I 18 MC NE GE | 320 | **1718431687** |
| **Dust protection cap** | | | | | | |
| Protective cap | IE-PP-RJ45 | 10 | **2552580000** | | | |

**Note**

## Assembled cables
## Patch cable PROFINET RJ45 crimp
## Cat.5
## IP20

### Connecting cable (Type B), PVC

### Dragline cable (Type C), PUR

## Technical data

| | | |
|---|---|---|
| Product type | System cable | Dragline cable |
| Category | Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B) | Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B) |
| Shielding | SF/UTP | SF/UTP |
| Version connector left / Version connector right | RJ45 IP 20 / RJ45 IP 20 | RJ45 IP 20 / RJ45 IP 20 |
| Cross-section | 4*AWG 22/7 - 0.36 mm² | 4*AWG 22/7 - 0.36 mm² |
| Sheath diameter, max. | 6.7 mm | 6.7 mm |
| Material sheath | PVC | PUR |
| Insulation diameter | 1.5 mm | 1.5 mm |
| Min. bending radius, repetitive / Min. bending radius, once only | 7.5 x cable diameter / 3.5 *diameter | 7.5 x cable diameter / 5 x cable diameter |
| Bending cycles | | 3 Mio |
| Speed | | 180 m/min |
| Acceleration | | 4 m/s² |
| Pulling force | | ≤ 150 N |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...70 °C |
| Installation temperature | -20 °C...60 °C | -20 °C...60 °C |
| Storage temperature | -40 °C...70 °C | -50 °C...70 °C |
| Abrasion resistance | good | very good |
| Halogen | | halogen-free, according to IEC 60754-2 |
| Resistance to spread of flame | in acc. with IEC 60332-1 / UL 1685 | in acc. with IEC 60332-1 |
| Resistance to oils | | in acc. with IEC 60811-2-1 |
| Approvals | | |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| 0.5 m | IE-C5DS4VG0005A60A60-E | 1 | **1522100005** | IE-C5DD4UG0005A60A60-E | 1 | **2047310005** |
| 1.0 m | IE-C5DS4VG0010A60A60-E | 1 | **1522100010** | IE-C5DD4UG0010A60A60-E | 1 | **2047310010** |
| 1.5 m | IE-C5DS4VG0015A60A60-E | 1 | **1522100015** | IE-C5DD4UG0015A60A60-E | 1 | **2047310015** |
| 2.0 m | IE-C5DS4VG0020A60A60-E | 1 | **1522100020** | IE-C5DD4UG0020A60A60-E | 1 | **2047310020** |
| 2.5 m | IE-C5DS4VG0025A60A60-E | 1 | **1522100025** | IE-C5DD4UG0025A60A60-E | 1 | **2047310025** |
| 3.0 m | IE-C5DS4VG0030A60A60-E | 1 | **1522100030** | IE-C5DD4UG0030A60A60-E | 1 | **2047310030** |
| 4.0 m | IE-C5DS4VG0040A60A60-E | 1 | **1522100040** | IE-C5DD4UG0040A60A60-E | 1 | **2047310040** |
| 5.0 m | IE-C5DS4VG0050A60A60-E | 1 | **1522100050** | IE-C5DD4UG0050A60A60-E | 1 | **2047310050** |
| 7.5 m | IE-C5DS4VG0075A60A60-E | 1 | **1522100075** | IE-C5DD4UG0075A60A60-E | 1 | **2047310075** |
| 10.0 m | IE-C5DS4VG0100A60A60-E | 1 | **1522100100** | IE-C5DD4UG0100A60A60-E | 1 | **2047310100** |
| 15.0 m | IE-C5DS4VG0150A60A60-E | 1 | **1522100150** | IE-C5DD4UG0150A60A60-E | 1 | **2047310150** |
| 20.0 m | IE-C5DS4VG0200A60A60-E | 1 | **1522100200** | IE-C5DD4UG0200A60A60-E | 1 | **2047310200** |
| **Note** | Other lengths available on request | | | | | |

## Accessories

| **Dust protection cap** | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| Protective cap | IE-PP-RJ45 | 10 | **2552580000** | IE-PP-RJ45 | 10 | **2552580000** |

**Note**

## Assembled cables
## Patch cable PROFINET dragline cable (type C)
## Cat. 5
## IP 67

### V14 RJ45 IP67

### Technical data

| | |
|---|---|
| Product type | Dragline cable |
| Category | Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B) |
| Connector standard | IEC 61076-3-117 Var. 14, IEC 60603-7-51 |
| Shielding | SF/UTP |
| Version connector left / Version connector right | RJ45 IP 67 PushPull V14 metal / RJ45 IP 67 PushPull V14 metal |
| Cross-section | 4*AWG 22/7 - 0.36 mm² |
| Sheath diameter, max. | 6.7 mm |
| Material sheath | PUR |
| Insulation diameter | 1.5 mm |
| Min. bending radius, repetitive / Min. bending radius, once only | 7.5 x cable diameter / 5 x cable diameter |
| Bending cycles | 3 Mio |
| Speed | 180 m/min |
| Acceleration | 4 m/s² |
| Pulling force | ≤ 150 N |
| Ambient temperature (operational) | -40 °C...70 °C |
| Installation temperature | -20 °C...60 °C |
| Storage temperature | -50 °C...70 °C |
| Abrasion resistance | very good |
| Halogen | halogen-free, according to IEC 60754-2 |
| Resistance to spread of flame | in acc. with IEC 60332-1 |
| Resistance to oils | in acc. with IEC 60811-2-1 |
| Approvals | |

**Note**

### Ordering data

| | Type | Qty. | Order No. |
|---|---|---|---|
| 1.0 m | IE-C5DD4UG0010A2EA2E-X | 1 | **1119730010** |
| 2.0 m | IE-C5DD4UG0020A2EA2E-X | 1 | **1119730020** |
| 3.0 m | IE-C5DD4UG0030A2EA2E-X | 1 | **1119730030** |
| 5.0 m | IE-C5DD4UG0050A2EA2E-X | 1 | **1119730050** |
| 10.0 m | IE-C5DD4UG0100A2EA2E-X | 1 | **1119730100** |
| 15.0 m | IE-C5DD4UG0150A2EA2E-X | 1 | **1119730150** |
| 20.0 m | IE-C5DD4UG0200A2EA2E-X | 1 | **1119730200** |

**Note**

### Accessories

| **Tools** | Type | Qty. | Order No. |
|---|---|---|---|
| Sheathing strippers, For UTP and STP data cables | AM 12 | 1 | **9030060000** |
| Sheathing strippers, For coaxial and round data cables | IE-CST | 1 | **9204350000** |
| **Marking tags** | | | |
| Insertion label. yellow. 12 mm | TM-I 12 MC NE GE | 320 | **1718411687** |
| Insertion label. yellow. 18 mm | TM-I 18 MC NE GE | 320 | **1718431687** |

**Note**

## Assembled cables

**Patch cable PROFINET (Type C) Cat. 5, over-moulded**

**IP 67**

### V14 RJ45 IP67

**Dragline cable**

### V14 RJ45 IP67

**Torsion cable**

## Technical data

| | | |
|---|---|---|
| Product type | Dragline cable | Torsion cable |
| Category | Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B) | Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B) |
| Connector standard | IEC 61076-3-117 Var. 14 | IEC 61076-3-117 Var. 14 |
| Shielding | SF/UTP | S/UTP |
| Version connector left / Version connector right | RJ45 IP 67 PushPull moulded V14 metal / RJ45 IP 67 PushPull moulded V14 metal | RJ45 IP 67 PushPull moulded V14 metal / RJ45 IP 67 PushPull moulded V14 metal |
| Cross-section | 4*AWG 22/7 - 0.36 mm² | 4*AWG 22/19 - 0.38 mm² |
| Sheath diameter, max. | 6.7 mm | 6.7 mm |
| Material sheath | PUR | PUR |
| Insulation diameter | 1.5 mm | 1.5 mm |
| Min. bending radius, repetitive / Min. bending radius, once only | 7.5 x cable diameter / 5 x cable diameter | 10 x cable diameter / 5 x cable diameter |
| Bending cycles / Pulling force | 3 Mio / ≤ 150 N | |
| Torsion cycles / Torsion resistance | | 1 mill. / 180 °/m |
| Speed / Acceleration | 180 m/min / 4 m/s² | |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...80 °C |
| Installation temperature | -20 °C...60 °C | -40 °C...80 °C |
| Storage temperature | -50 °C...70 °C | -40 °C...80 °C |
| Abrasion resistance | very good | very good |
| Halogen | halogen-free, according to IEC 60754-2 | halogen-free, according to IEC 60754-2 |
| Resistance to spread of flame | in acc. with IEC 60332-1 | in acc. with IEC 60332-1 |
| Resistance to oils | in acc. with IEC 60811-2-1 | in acc. with IEC 60811-2-1 |
| Approvals | | |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| 1.0 m | IE-C5DD4UG0010B2EB2E-X | 1 | **1307610010** | IE-C5IT4UG0010B2EB2E-X | 1 | **1312690010** |
| 2.0 m | IE-C5DD4UG0020B2EB2E-X | 1 | **1307610020** | IE-C5IT4UG0020B2EB2E-X | 1 | **1312690020** |
| 3.0 m | IE-C5DD4UG0030B2EB2E-X | 1 | **1307610030** | IE-C5IT4UG0030B2EB2E-X | 1 | **1312690030** |
| 5.0 m | IE-C5DD4UG0050B2EB2E-X | 1 | **1307610050** | IE-C5IT4UG0050B2EB2E-X | 1 | **1312690050** |
| 10.0 m | IE-C5DD4UG0100B2EB2E-X | 1 | **1307610100** | IE-C5IT4UG0100B2EB2E-X | 1 | **1312690100** |
| **Note** | | | | | | |

## Accessories

| **Tools** | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| Sheathing strippers, For UTP and STP data cables | AM 12 | 1 | **9030060000** | AM 12 | 1 | **9030060000** |
| Sheathing strippers, For coaxial and round data cables | IE-CST | 1 | **9204350000** | IE-CST | 1 | **9204350000** |
| **Marking tags** | | | | | | |
| Insertion label. yellow. 12 mm | TM-I 12 MC NE GE | 320 | **1718411687** | TM-I 12 MC NE GE | 320 | **1718411687** |
| Insertion label. yellow. 18 mm | TM-I 18 MC NE GE | 320 | **1718431687** | TM-I 18 MC NE GE | 320 | **1718431687** |

**Note**

## Assembled cables

## Patch cable PushPull Power

### Power IP67, PVC

### Power IP67, PUR

### Technical data

| | Power IP67, PVC | Power IP67, PUR |
|---|---|---|
| Connector standard | in acc. with PROFINET specification | in acc. with PROFINET specification |
| Version connector left / Version connector right | PushPull Power / PushPull Power | PushPull Power / PushPull Power |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...80 °C |
| Cross-section | 5*1.5 mm² | 5*1.5 mm² |
| Wire connection cross section AWG, max. | AWG 16 | AWG 16 |
| Sheath diameter, max. | 8.1 mm | 9 mm |
| Material sheath | PVC | PUR |
| Sheathing colour | grey (similar to RAL 7001) | grey (similar to RAL 7001) |
| Insulation | PVC | TPE |
| Number of wires | 5 | 5 |
| Min. bending radius, once only | 4 x cable diameter | 5 x cable diameter |
| Rated voltage | 24 V | 24 V |
| Current-carrying capacity at 50 °C | 16 A | 16 A |
| Approvals | EAC | EAC |
| **Note** | | |

### Ordering data

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| 1.0 m | IE-CSPS5VS0010VAPVAP-X | 1 | **1350120010** | | | |
| 3.0 m | IE-CSPS5VS0030VAPVAP-X | 1 | **1350120030** | | | |
| 5.0 m | IE-CSPS5VS0050VAPVAP-X | 1 | **1350120050** | IE-CSPD5US0050VAPVAP-X | 1 | **1403680050** |
| 10.0 m | IE-CSPS5VS0100VAPVAP-X | 1 | **1350120100** | IE-CSPD5US0100VAPVAP-X | 1 | **1403680100** |
| 15.0 m | IE-CSPS5VS0150VAPVAP-X | 1 | **1350120150** | IE-CSPD5US0150VAPVAP-X | 1 | **1403680150** |
| 20.0 m | IE-CSPS5VS0200VAPVAP-X | 1 | **1350120200** | | | |
| **Note** | Other lengths available on request | | | | | |

### Accessories

| **Tools** | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| Sheathing strippers, For UTP and STP data cables | AM 12 | 1 | **9030060000** | AM 12 | 1 | **9030060000** |
| Sheathing strippers, For coaxial and round data cables | IE-CST | 1 | **9204350000** | IE-CST | 1 | **9204350000** |
| **Marking tags** | | | | | | |
| Insertion label. yellow. 12 mm | TM-I 12 MC NE GE | 320 | **1718411687** | TM-I 12 MC NE GE | 320 | **1718411687** |
| Insertion label. yellow. 18 mm | TM-I 18 MC NE GE | 320 | **1718431687** | TM-I 18 MC NE GE | 320 | **1718431687** |

**Note**

## Assembled cables
## Patch cable PushPull Power
## M12 L-coded

### Power IP67, PUR

### Technical data

| | |
|---|---|
| Connector standard | in acc. with PROFINET specification, IEC 61076-2-111 |
| Version connector left / Version connector right | M12 L-code – IP 67 straight socket / PushPull Power |
| Ambient temperature (operational) | -25 °C...70 °C |
| Cross-section | 5*1.5 mm² |
| Wire connection cross section AWG, max. | |
| Sheath diameter, max. | 8.2 mm |
| Material sheath | PUR |
| Sheathing colour | Silver grey |
| Insulation | PP |
| Number of wires | 5 |
| Min. bending radius, once only | 4 x cable diameter |
| Min. bending radius, repetitive | 7.5 x cable diameter |
| Rated voltage | 24 V |
| Rated current | 16 A |
| Approvals | |

**Note**

### Ordering data

| | Type | Qty. | Order No. |
|---|---|---|---|
| 1.5 m | IE-CSPD5UD0015LSSVAP-X | 1 | **2732640015** |
| 3.0 m | IE-CSPD5UD0030LSSVAP-X | 1 | **2732640030** |
| 5.0 m | IE-CSPD5UD0050LSSVAP-X | 1 | **2732640050** |
| 10.0 m | IE-CSPD5UD0100LSSVAP-X | 1 | **2732640100** |

**Note**

### Accessories

| **Tools** | **Type** | **Qty.** | **Order No.** |
|---|---|---|---|
| Sheathing strippers, For UTP and STP data cables | AM 12 | 1 | **9030060000** |
| Sheathing strippers, For coaxial and round data cables | IE-CST | 1 | **9204350000** |
| **Marking tags** | | | |
| Insertion label. yellow. 12 mm | TM-I 12 MC NE GE | 320 | **1718411687** |
| Insertion label. yellow. 18 mm | TM-I 18 MC NE GE | 320 | **1718431687** |

**Note**

## Assembled cable

## Dragline cable M12

- Cat. 5
- PUR
- D-coded
- PROFINET type C

### M12 - M12

**Plug / plug**

| M12 | | M12 |
|---|---|---|
| 1 | yellow | 1 |
| 2 | white | 2 |
| 3 | orange | 3 |
| 4 | blue | 4 |

### M12 - M12

**Plug / socket**

| M12 | | M12 |
|---|---|---|
| 1 | yellow | 1 |
| 2 | white | 2 |
| 3 | orange | 3 |
| 4 | blue | 4 |

## Technical data

| | | |
|---|---|---|
| Product type | Dragline cable | Dragline cable |
| Category | Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B) | Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B) |
| Shielding | SF/UTP | SF/UTP |
| Version connector left / Version connector right | M12 D-code – IP 67 straight pin / M12 D-code – IP 67 straight pin | M12 D-code – IP 67 straight pin / M12 D-code – IP 67 straight socket |
| Cross-section | 4*AWG 22/7 - 0.36 mm² | 4*AWG 22/7 - 0.36 mm² |
| Sheath diameter, max. | 6.7 mm | 6.7 mm |
| Material sheath | PUR | PUR |
| Sheathing colour | green (RAL 6018) | green (RAL 6018) |
| Insulation diameter | 1.5 mm | 1.5 mm |
| Min. bending radius, repetitive | 7.5 x cable diameter | 7.5 x cable diameter |
| Min. bending radius, once only | 5 x cable diameter | 5 x cable diameter |
| Bending cycles | 3 Mio | 3 Mio |
| Speed | 180 m/min | 180 m/min |
| Acceleration | 4 m/s² | 4 m/s² |
| Pulling force | ≤ 150 N | ≤ 150 N |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...70 °C |
| Installation temperature | -20 °C...60 °C | -20 °C...60 °C |
| Storage temperature | -50 °C...70 °C | -50 °C...70 °C |
| Abrasion resistance | very good | very good |
| Halogen | halogen-free, according to IEC 60754-2 | halogen-free, according to IEC 60754-2 |
| Resistance to spread of flame | in acc. with IEC 60332-1 | in acc. with IEC 60332-1 |
| Resistance to oils | in acc. with IEC 60811-2-1 | in acc. with IEC 60811-2-1 |
| Approvals | CULUS | CULUS |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| 0.5 m | IE-C5DD4UG0005MCSMCS-E | 1 | **1025950005** | | | |
| 1.5 m | IE-C5DD4UG0015MCSMCS-E | 1 | **1025950015** | IE-C5DD4UG0015MSSMCS-E | 1 | **1059330015** |
| 3.0 m | IE-C5DD4UG0030MCSMCS-E | 1 | **1025950030** | IE-C5DD4UG0030MSSMCS-E | 1 | **1059330030** |
| 5.0 m | IE-C5DD4UG0050MCSMCS-E | 1 | **1025950050** | IE-C5DD4UG0050MSSMCS-E | 1 | **1059330050** |
| 10.0 m | IE-C5DD4UG0100MCSMCS-E | 1 | **1025950100** | IE-C5DD4UG0100MSSMCS-E | 1 | **1059330100** |
| **Note** | | | | | | |

## Accessories

| **Marking tags** | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| Insertion label. yellow. 12 mm | TM-I 12 MC NE GE | 320 | **1718411687** | TM-I 12 MC NE GE | 320 | **1718411687** |
| Insertion label. yellow. 18 mm | TM-I 18 MC NE GE | 320 | **1718431687** | TM-I 18 MC NE GE | 320 | **1718431687** |
| **Tools** | | | | | | |
| Tool set | SCREWTY SET | 1 | **1910000000** | SCREWTY SET | 1 | **1910000000** |
| Tool set with torque function | SCREWTY SET -DM | 1 | **1920000000** | SCREWTY SET -DM | 1 | **1920000000** |
| Mounting tool | SCREWTY-M12-DM | 1 | **1900001000** | SCREWTY-M12-DM | 1 | **1900001000** |
| Screwty-M12 | SCREWTY- M12 | 1 | **1900000000** | SCREWTY- M12 | 1 | **1900000000** |

**Note**

## Assembled cable

## Dragline cable M12

- Cat. 5
- PUR
- D-coded
- PROFINET type C

### M12 - open

| | M12 |
|---|---|
| yellow | 1 |
| white | 2 |
| orange | 3 |
| blue | 4 |

### M12 - RJ45

**Plug / plug**

| RJ45 | | M12 |
|---|---|---|
| 1 | yellow | 1 |
| 3 | white | 2 |
| 2 | orange | 3 |
| 6 | blue | 4 |

## Technical data

| | | |
|---|---|---|
| Product type | Dragline cable | Dragline cable |
| Category | Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B) | Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B) |
| Shielding | SF/UTP | SF/UTP |
| Version connector left / Version connector right | M12 D-code – IP 67 straight pin / Open | M12 D-code – IP 67 straight pin / RJ45 IP 20 |
| Cross-section | 4*AWG 22/7 - 0.36 mm² | 4*AWG 22/7 - 0.36 mm² |
| Sheath diameter, max. | 6.7 mm | 6.7 mm |
| Material sheath | PUR | PUR |
| Sheathing colour | green (RAL 6018) | green (RAL 6018) |
| Insulation diameter | 1.5 mm | 1.5 mm |
| Min. bending radius, repetitive | 7.5 x cable diameter | 7.5 x cable diameter |
| Min. bending radius, once only | 5 x cable diameter | 5 x cable diameter |
| Bending cycles | 3 Mio | 3 Mio |
| Speed | 180 m/min | 180 m/min |
| Acceleration | 4 m/s² | 4 m/s² |
| Pulling force | ≤ 150 N | ≤ 150 N |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...70 °C |
| Installation temperature | -20 °C...60 °C | -20 °C...60 °C |
| Storage temperature | -50 °C...70 °C | -50 °C...70 °C |
| Abrasion resistance | very good | very good |
| Halogen | halogen-free, according to IEC 60754-2 | halogen-free, according to IEC 60754-2 |
| Resistance to spread of flame | in acc. with IEC 60332-1 | in acc. with IEC 60332-1 |
| Resistance to oils | in acc. with IEC 60811-2-1 | in acc. with IEC 60811-2-1 |
| Approvals | | CULUS |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| 1.0 m | IE-C5DD4UG0010MCSXXX-X | 1 | **1025940010** | IE-C5DD4UG0010MCSA20-E | 1 | **1044470010** |
| 1.5 m | IE-C5DD4UG0015MCSXXX-X | 1 | **1025940015** | IE-C5DD4UG0015MCSA20-E | 1 | **1044470015** |
| 3.0 m | IE-C5DD4UG0030MCSXXX-X | 1 | **1025940030** | IE-C5DD4UG0030MCSA20-E | 1 | **1044470030** |
| 5.0 m | IE-C5DD4UG0050MCSXXX-X | 1 | **1025940050** | IE-C5DD4UG0050MCSA20-E | 1 | **1044470050** |
| 10.0 m | IE-C5DD4UG0100MCSXXX-X | 1 | **1025940100** | IE-C5DD4UG0100MCSA20-E | 1 | **1044470100** |
| **Note** | | | | | | |

## Accessories

| **Tools** | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| Sheathing strippers, For UTP and STP data cables | AM 12 | 1 | **9030060000** | | | |
| Sheathing strippers, For coaxial and round data cables | IE-CST | 1 | **9204350000** | | | |
| Tool set | SCREWTY SET | 1 | **1910000000** | SCREWTY SET | 1 | **1910000000** |
| Tool set with torque function | SCREWTY SET -DM | 1 | **1920000000** | SCREWTY SET -DM | 1 | **1920000000** |
| Mounting tool | SCREWTY-M12-DM | 1 | **1900001000** | SCREWTY-M12-DM | 1 | **1900001000** |
| Screwty-M12 | SCREWTY- M12 | 1 | **1900000000** | SCREWTY- M12 | 1 | **1900000000** |
| **Marking tags** | | | | | | |
| Insertion label. yellow. 12 mm | TM-I 12 MC NE GE | 320 | **1718411687** | TM-I 12 MC NE GE | 320 | **1718411687** |
| Insertion label. yellow. 18 mm | TM-I 18 MC NE GE | 320 | **1718431687** | TM-I 18 MC NE GE | 320 | **1718431687** |
| **Dust protection cap** | | | | | | |
| Protective cap | | | | IE-PP-RJ45 | 10 | **2552580000** |
| **Note** | | | | | | |

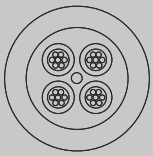
## Assembled cables

### M12 dragline cable, angled

- Cat. 5
- PUR
- D-coded
- PROFINET type C

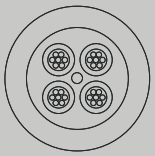
### M12 - M12

**Plug / plug**



### M12 - M12

**Plug / plug**



## Technical data

| | | |
|---|---|---|
| Product type | Dragline cable | Dragline cable |
| Category | Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B) | Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B) |
| Shielding | SF/UTP | SF/UTP |
| Version connector left / Version connector right | M12 D-code – IP 67 straight pin / M12 D-code – IP 67 straight pin | M12 D-code – IP 67 angled pin / M12 D-code – IP 67 angled pin |
| Cross-section | 4*AWG 22/7 - 0.36 mm² | 4*AWG 22/7 - 0.36 mm² |
| Sheath diameter, max. | 6.7 mm | 6.7 mm |
| Material sheath | PUR | PUR |
| Sheathing colour | green (RAL 6018) | green (RAL 6018) |
| Insulation diameter, min. / max. | 1.5 mm | 1.5 mm |
| Min. bending radius, repetitive | 7.5 x cable diameter | 7.5 x cable diameter |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...70 °C |
| Installation temperature | -20 °C...60 °C | -20 °C...60 °C |
| Storage temperature | -50 °C...70 °C | -50 °C...70 °C |
| Abrasion resistance | very good | very good |
| Halogen | halogen-free, according to IEC 60754-2 | halogen-free, according to IEC 60754-2 |
| Resistance to oils | in acc. with IEC 60811-2-1 | in acc. with IEC 60811-2-1 |
| Fire safety for railway vehicles | | |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| **Cat. 5 PROFINET. PUR. M12 straight-M12 angled** | | | | | | |
| 1.5 m | IE-C5DD4UG0015MCSMCA-E | 1 | **1059770015** | | | |
| 3.0 m | IE-C5DD4UG0030MCSMCA-E | 1 | **1059770030** | | | |
| 5.0 m | IE-C5DD4UG0050MCSMCA-E | 1 | **1059770050** | | | |
| 10.0 m | IE-C5DD4UG0100MCSMCA-E | 1 | **1059770100** | | | |
| **Cat. 5 PROFINET. PUR. M12 angled-M12 angled** | | | | | | |
| 1.5 m | | | | IE-C5DD4UG0015MCAMCA-E | 1 | **1059890015** |
| 3.0 m | | | | IE-C5DD4UG0030MCAMCA-E | 1 | **1059890030** |
| 5.0 m | | | | IE-C5DD4UG0050MCAMCA-E | 1 | **1059890050** |
| 10.0 m | | | | IE-C5DD4UG0100MCAMCA-E | 1 | **1059890100** |
| **Cat. 5. PUR. M12 angled-open** | | | | | | |
| 1.5 m | | | | | | |
| 3.0 m | | | | | | |
| 5.0 m | | | | | | |
| 10.0 m | | | | | | |
| **Note** | | | | | | |

## Accessories

| **Marking tags** | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| Insertion label. yellow. 12 mm | TM-I 12 MC NE GE | 320 | **1718411687** | TM-I 12 MC NE GE | 320 | **1718411687** |
| Insertion label. yellow. 18 mm | TM-I 18 MC NE GE | 320 | **1718431687** | TM-I 18 MC NE GE | 320 | **1718431687** |
| Transparent sleeves. 12-mm length | TM 4/12 HF/HB | 500 | **1719840000** | TM 4/12 HF/HB | 500 | **1719840000** |
| Transparent sleeves. 18-mm length | TM 4/18 HF/HB | 500 | **1719850000** | TM 4/18 HF/HB | 500 | **1719850000** |

**Note**

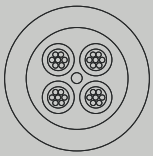
## Assembled cables

## M12 dragline cable, angled

- Cat. 5
- PUR
- D-coded
- PROFINET type C

### M12 - open

**Plug / -**



## Technical data

| | |
|---|---|
| Product type | Dragline cable |
| Category | Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B) |
| Shielding | SF/UTP |
| Version connector left / Version connector right | M12 D-code – IP 67 angled pin / Open |
| Cross-section | 4*AWG 22/7 - 0.36 mm² |
| Sheath diameter, max. | 6.7 mm |
| Material sheath | PUR |
| Sheathing colour | green (RAL 6018) |
| Insulation diameter, min. / max. | 1.5 mm |
| Min. bending radius, repetitive | 7.5 x cable diameter |
| Ambient temperature (operational) | -40 °C...70 °C |
| Installation temperature | -20 °C...60 °C |
| Storage temperature | -50 °C...70 °C |
| Abrasion resistance | very good |
| Halogen | halogen-free, according to IEC 60754-2 |
| Resistance to oils | in acc. with IEC 60811-2-1 |
| Fire safety for railway vehicles | |
| **Note** | |

## Ordering data

| Cat. 5 PROFINET. PUR. M12 straight-M12 angled | Type | Qty. | Order No. |
|---|---|---|---|
| 1.5 m | | | |
| 3.0 m | | | |
| 5.0 m | | | |
| 10.0 m | | | |
| **Cat. 5 PROFINET. PUR. M12 angled-M12 angled** | | | |
| 1.5 m | | | |
| 3.0 m | | | |
| 5.0 m | | | |
| 10.0 m | | | |
| **Cat. 5. PUR. M12 angled-open** | | | |
| 1.5 m | IE-C5DD4UG0015MCAXXX-X | 1 | **1059750015** |
| 3.0 m | IE-C5DD4UG0030MCAXXX-X | 1 | **1059750030** |
| 5.0 m | IE-C5DD4UG0050MCAXXX-X | 1 | **1059750050** |
| 10.0 m | IE-C5DD4UG0100MCAXXX-X | 1 | **1059750100** |
| **Note** | | | |

## Accessories

| Marking tags | Type | Qty. | Order No. |
|---|---|---|---|
| Insertion label. yellow. 12 mm | TM-I 12 MC NE GE | 320 | **1718411687** |
| Insertion label. yellow. 18 mm | TM-I 18 MC NE GE | 320 | **1718431687** |
| Transparent sleeves. 12-mm length | TM 4/12 HF/HB | 500 | **1719840000** |
| Transparent sleeves. 18-mm length | TM 4/18 HF/HB | 500 | **1719850000** |

**Note**

## Assembled cables

### System cable M12 flange

- Cat. 5
- PUR
- D-coded
- PROFINET type B

| | M12 flange - M12 male | M12 flange - RJ45 |
|---|---|---|
| | Plug / socket | Plug / socket |

**M12 flange - M12 male**

**M12 flange - RJ45**

| M12 | | M12 |
|---|---|---|
| 1 | yellow | 1 |
| 2 | white | 2 |
| 3 | orange | 3 |
| 4 | blue | 4 |

| M12 | | M12 |
|---|---|---|
| 1 | yellow | 1 |
| 2 | white | 2 |
| 3 | orange | 3 |
| 4 | blue | 4 |

## Technical data

| | M12 flange - M12 male | M12 flange - RJ45 |
|---|---|---|
| Product type | System cable | System cable |
| Category | Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B) | Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B) |
| Shielding | 360° shield contact | 360° shield contact |
| Version connector left / Version connector right | M12 D-code – flange / M12 D-code – pin straight | M12 D-code – flange / RJ45 IP 20 |
| Cross-section | 4*AWG 22/7 - 0.36 mm² | 4*AWG 22/7 - 0.36 mm² |
| Sheath diameter, max. | 6.7 mm | 6.7 mm |
| Material sheath | PUR | PUR |
| Sheathing colour | green (RAL 6018) | green (RAL 6018) |
| Insulation diameter | 1.5 mm | 1.5 mm |
| Min. bending radius, repetitive | 15 x cable diameter | 15 x cable diameter |
| Min. bending radius, once only | 5 x cable diameter | 5 x cable diameter |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...70 °C |
| Installation temperature | -20 °C...60 °C | -20 °C...60 °C |
| Storage temperature | -50 °C...70 °C | -50 °C...70 °C |
| Approvals | | |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| 0.5 m | IE-C5DS4UG0005MBSMCS-E | 1 | **1244130005** | IE-C5DS4UG0005MBSA20-E | 1 | **1234750005** |
| 1.0 m | IE-C5DS4UG0010MBSMCS-E | 1 | **1244130010** | IE-C5DS4UG0010MBSA20-E | 1 | **1234750010** |
| 1.5 m | IE-C5DS4UG0015MBSMCS-E | 1 | **1244130015** | IE-C5DS4UG0015MBSA20-E | 1 | **1234750015** |
| 2.0 m | IE-C5DS4UG0020MBSMCS-E | 1 | **1244130020** | IE-C5DS4UG0020MBSA20-E | 1 | **1234750020** |
| 5.0 m | IE-C5DS4UG0050MBSMCS-E | 1 | **1244130050** | IE-C5DS4UG0050MBSA20-E | 1 | **1234750050** |
| **Note** | | | | | | |

## Accessories

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| **Marking tags** | | | | | | |
| Insertion label. yellow. 12 mm | TM-I 12 MC NE GE | 320 | **1718411687** | TM-I 12 MC NE GE | 320 | **1718411687** |
| Insertion label. yellow. 18 mm | TM-I 18 MC NE GE | 320 | **1718431687** | TM-I 18 MC NE GE | 320 | **1718431687** |
| **Tools** | | | | | | |
| Tool set | SCREWTY SET | 1 | **1910000000** | SCREWTY SET | 1 | **1910000000** |
| Tool set with torque function | SCREWTY SET -DM | 1 | **1920000000** | SCREWTY SET -DM | 1 | **1920000000** |
| Mounting tool | SCREWTY-M12-DM | 1 | **1900001000** | SCREWTY-M12-DM | 1 | **1900001000** |
| Screwty-M12 | SCREWTY- M12 | 1 | **1900000000** | SCREWTY- M12 | 1 | **1900000000** |
| **Dust protection cap** | | | | | | |
| Protective cap | | | | IE-PP-RJ45 | 10 | **2552580000** |

| **Note** | | |
|---|---|---|

## Assembled cables

## System cable M12 flange

- Cat. 5
- PUR
- D-coded
- PROFINET type B

### M12 flange - open

**Socket / -**

| | M12 |
|---|---|
| yellow | 1 |
| white | 2 |
| orange | 3 |
| blue | 4 |

## Technical data

| | |
|---|---|
| Product type | System cable |
| Category | Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B) |
| Shielding | 360° shield contact |
| Version connector left / Version connector right | M12 D-code – flange / Open |
| Cross-section | 4*AWG 22/7 - 0.36 mm² |
| Sheath diameter, max. | 6.7 mm |
| Material sheath | PUR |
| Sheathing colour | green (RAL 6018) |
| Insulation diameter | 1.5 mm |
| Min. bending radius, repetitive | 15 x cable diameter |
| Min. bending radius, once only | 5 x cable diameter |
| Ambient temperature (operational) | -40 °C...70 °C |
| Installation temperature | -20 °C...60 °C |
| Storage temperature | -50 °C...70 °C |
| Approvals | |

**Note**

## Ordering data

| | Type | Qty. | Order No. |
|---|---|---|---|
| 0.5 m | IE-C5DS4UG0005MBSXXX-E | 1 | 1234770005 |
| 1.0 m | IE-C5DS4UG0010MBSXXX-E | 1 | 1234770010 |
| 1.5 m | IE-C5DS4UG0015MBSXXX-E | 1 | 1234770015 |
| 2.0 m | IE-C5DS4UG0020MBSXXX-E | 1 | 1234770020 |
| 5.0 m | IE-C5DS4UG0050MBSXXX-E | 1 | 1234770050 |

**Note**

## Accessories

| | Type | Qty. | Order No. |
|---|---|---|---|
| **Marking tags** | | | |
| Insertion label. yellow. 12 mm | TM-I 12 MC NE GE | 320 | 1718411687 |
| Insertion label. yellow. 18 mm | TM-I 18 MC NE GE | 320 | 1718431687 |
| **Tools** | | | |
| Tool set | SCREWTY SET | 1 | 1910000000 |
| Tool set with torque function | SCREWTY SET -DM | 1 | 1920000000 |
| Mounting tool | SCREWTY-M12-DM | 1 | 1900001000 |
| Screwty-M12 | SCREWTY- M12 | 1 | 1900000000 |
| **Dust protection cap** | | | |
| Protective cap | | | |

**Note**

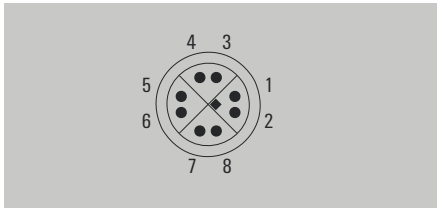
## Assembled cable

## Connecting cable M12

- Cat. 6
- PVC
- X-type
- PROFINET type B

### M12 - M12

**Plug / plug**



### M12 - open

**Plug / -**

## Technical data

| | | |
|---|---|---|
| Product type | Connecting line | Connecting line |
| Category | Cat.$6_A$ / Class $E_A$ (ISO/IEC 11801 2010) | Cat.$6_A$ / Class $E_A$ (ISO/IEC 11801 2010) |
| Shielding | S/FTP | S/FTP |
| Version connector left / Version connector right | M12 X-type IP 67 straight male / M12 X-type IP 67 straight male | M12 X-type IP 67 straight male / Open |
| Cross-section | 4*2*AWG 23/7 | 4*2*AWG 23/7 |
| Sheath diameter, max. | 8.8 mm | 8.8 mm |
| Material sheath | PVC | PVC |
| Sheathing colour | green (RAL 6018) | green (RAL 6018) |
| Insulation diameter | 1.58 mm | 1.58 mm |
| Min. bending radius, repetitive | 8 x cable diameter | 8 x cable diameter |
| Min. bending radius, once only | 4 x cable diameter | 4 x cable diameter |
| Pulling force | ≤ 150 N | ≤ 150 N |
| Ambient temperature (operational) | -40 °C...80 °C | -40 °C...80 °C |
| Installation temperature | -40 °C...80 °C | -40 °C...80 °C |
| Storage temperature | -40 °C...80 °C | -40 °C...80 °C |
| Halogen | | |
| Resistance to spread of flame | in acc. with IEC 60332-1-2 | in acc. with IEC 60332-1-2 |
| Standard, assembly | UL-Style 2461 | UL-Style 2461 |
| Approvals | | |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| 0.5 m | IE-C6KS8VG0005XCSXCS-E | 1 | **1398070005** | IE-C6KS8VG0005XCSXXX-E | 1 | **1449470005** |
| 1.5 m | IE-C6KS8VG0015XCSXCS-E | 1 | **1398070015** | IE-C6KS8VG0015XCSXXX-E | 1 | **1449470015** |
| 3.0 m | IE-C6KS8VG0030XCSXCS-E | 1 | **1398070030** | IE-C6KS8VG0030XCSXXX-E | 1 | **1449470030** |
| 5.0 m | IE-C6KS8VG0050XCSXCS-E | 1 | **1398070050** | IE-C6KS8VG0050XCSXXX-E | 1 | **1449470050** |
| 10.0 m | IE-C6KS8VG0100XCSXCS-E | 1 | **1398070100** | IE-C6KS8VG0100XCSXXX-E | 1 | **1449470100** |
| **Note** | | | | | | |

## Accessories

| **Marking tags** | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| Insertion label. yellow. 12 mm | TM-I 12 MC NE GE | 320 | **1718411687** | TM-I 12 MC NE GE | 320 | **1718411687** |
| Insertion label. yellow. 18 mm | TM-I 18 MC NE GE | 320 | **1718431687** | TM-I 18 MC NE GE | 320 | **1718431687** |

**Note**

## Assembled cable

### Dragline cable M12

- Cat. 6
- PUR
- X-type
- PROFINET type C

### M12 - M12

**Plug / plug**

### M12 - RJ45

**Plug / plug**

## Technical data

| | | |
|---|---|---|
| Product type | Dragline cable | Dragline cable |
| Category | Cat.$6_A$ / Class $E_A$ (ISO/IEC 11801 2010) | Cat.$6_A$ / Class $E_A$ (ISO/IEC 11801 2010) |
| Shielding | S/FTP | S/FTP |
| Version connector left / Version connector right | M12 X-type IP 67 straight male / M12 X-type IP 67 straight male | M12 X-type IP 67 straight male / RJ45 IP 20 |
| Cross-section | 4*2*AWG 26/19 - 4*2*0.128 mm² | 4*2*AWG 26/19 - 4*2*0.128 mm² |
| Sheath diameter, max. | 7.8 mm | 7.8 mm |
| Material sheath | PUR | PUR |
| Sheathing colour | green (RAL 6018) | green (RAL 6018) |
| Insulation diameter | 0.98 mm | 0.98 mm |
| Min. bending radius, repetitive | 7.5 x cable diameter | 7.5 x cable diameter |
| Min. bending radius, once only | 4 x cable diameter | 4 x cable diameter |
| Pulling force | ≤ 100 N | ≤ 100 N |
| Ambient temperature (operational) | -40 °C...80 °C | -40 °C...80 °C |
| Installation temperature | -30 °C...70 °C | -30 °C...70 °C |
| Storage temperature | ... | ... |
| Halogen | halogen-free | halogen-free |
| Resistance to spread of flame | in acc. with IEC 60332-1-2, in acc. with UL 1581 VW-1 and CSA FT1 | in acc. with IEC 60332-1-2, in acc. with UL 1581 VW-1 and CSA FT1 |
| Standard, assembly | | |
| Approvals | | |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| 1.0 m | IE-C6HD8UG0010XCSXCS-E | 1 | **2723040010** | IE-C6HD8UG0010E40XCS-E | 1 | **2723030010** |
| 3.0 m | IE-C6HD8UG0030XCSXCS-E | 1 | **2723040030** | IE-C6HD8UG0030E40XCS-E | 1 | **2723030030** |
| 5.0 m | IE-C6HD8UG0050XCSXCS-E | 1 | **2723040050** | IE-C6HD8UG0050E40XCS-E | 1 | **2723030050** |
| 7.5 m | IE-C6HD8UG0075XCSXCS-E | 1 | **2723040075** | IE-C6HD8UG0075E40XCS-E | 1 | **2723030075** |
| 10.0 m | IE-C6HD8UG0100XCSXCS-E | 1 | **2723040100** | IE-C6HD8UG0100E40XCS-E | 1 | **2723030100** |
| 15.0 m | IE-C6HD8UG0150XCSXCS-E | 1 | **2723040150** | IE-C6HD8UG0150E40XCS-E | 1 | **2723030150** |
| **Note** | | | | | | |

## Accessories

| **Marking tags** | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| Insertion label. yellow. 12 mm | TM-I 12 MC NE GE | 320 | **1718411687** | TM-I 12 MC NE GE | 320 | **1718411687** |
| Insertion label. yellow. 18 mm | TM-I 18 MC NE GE | 320 | **1718431687** | TM-I 18 MC NE GE | 320 | **1718431687** |

**Note**

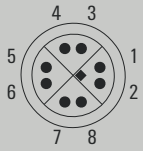
## Assembled cables

## M12 connecting cables

- Cat. 6
- PUR
- X-type

## M12 - RJ45

**Plug / plug**




| RJ45 | | M12 |
|---|---|---|
| 1 | White, Orange | 1 |
| 2 | Orange | 2 |
| 3 | White, Green | 3 |
| 4 | Blue | 8 |
| 5 | White, Blue | 7 |
| 6 | Green | 4 |
| 7 | White, Brown | 5 |
| 8 | Brown | 6 |

## Technical data

| | |
|---|---|
| Product type | System cable |
| Category | Cat.$6_A$ / Class $E_A$ (ISO/IEC 11801 2010) |
| Shielding | S/FTP |
| Version connector left / Version connector right | RJ45 IP 20 / M12 X-type IP 67 straight male |
| Cross-section | 4*2*AWG 26/7 - 4*2*0.128 mm² |
| Sheath diameter, max. | 6.7 mm |
| Material sheath | PUR |
| Sheathing colour | green (RAL 6018) |
| Insulation diameter | 0.98 mm |
| Min. bending radius, repetitive | 10 x cable diameter |
| Min. bending radius, once only | 5 x cable diameter |
| Pulling force | |
| Ambient temperature (operational) | -40 °C...80 °C |
| Installation temperature | -20 °C...60 °C |
| Storage temperature | -40 °C...80 °C |
| Halogen | halogen-free, according to IEC 60754-1 |
| Resistance to spread of flame | in acc. with IEC 60332-1-2 |
| Standard, assembly | UL Style 20963 |
| Approvals | |
| **Note** | |

## Ordering data

| | Type | Qty. | Order No. |
|---|---|---|---|
| 1.0 m | IE-C6EL8UG0010U40XCS-E | 1 | **1457580010** |
| 2.0 m | IE-C6EL8UG0020U40XCS-E | 1 | **1457580020** |
| 3.0 m | IE-C6EL8UG0030U40XCS-E | 1 | **1457580030** |
| 5.0 m | IE-C6EL8UG0050U40XCS-E | 1 | **1457580050** |
| 10.0 m | IE-C6EL8UG0100U40XCS-E | 1 | **1457580100** |
| 12.0 m | IE-C6EL8UG0120U40XCS-E | 1 | **1457580120** |
| **Note** | | | |

## Accessories

| **Marking tags** | Type | Qty. | Order No. |
|---|---|---|---|
| Insertion label. yellow. 12 mm | TM-I 12 MC NE GE | 320 | **1718411687** |
| Insertion label. yellow. 18 mm | TM-I 18 MC NE GE | 320 | **1718431687** |
| **Dust protection cap** | | | |
| Protective cap | IE-PP-RJ45 | 10 | **2552580000** |

**Note**

## Assembled cables

### EtherNet/IP patch cable

- in PUR

### V1 RJ45 IP 67 - metal

| RJ45 | | RJ45 |
|---|---|---|
| 1 | white (orange) | 1 |
| 2 | orange | 2 |
| 3 | white (green) | 3 |
| 4 | blue | 4 |
| 5 | white (blue) | 5 |
| 6 | green | 6 |
| 7 | white (brown) | 7 |
| 8 | brown | 8 |

### V1 RJ45 IP 67 - plastic

| RJ45 | | RJ45 |
|---|---|---|
| 1 | white (orange) | 1 |
| 2 | orange | 2 |
| 3 | white (green) | 3 |
| 4 | blue | 4 |
| 5 | white (blue) | 5 |
| 6 | green | 6 |
| 7 | white (brown) | 7 |
| 8 | brown | 8 |

## Technical data

| | | |
|---|---|---|
| Product type | System cable | System cable |
| Category | Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B) | Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B) |
| Shielding | SF/UTP | SF/UTP |
| Version connector left / Version connector right | RJ45 IP 67 Baymo V01 metal / RJ45 IP 67 Baymo V01 metal | RJ45 IP 67 Baymo V01 plastic / RJ45 IP 67 Baymo V01 plastic |
| Cross-section | 4*2*AWG 26/7 - 4*2*0.128 mm² | 4*2*AWG 26/7 - 4*2*0.128 mm² |
| Sheath diameter, max. | 6.1 mm | 6.1 mm |
| Material sheath | PUR | PUR |
| Sheathing colour | green (RAL 6018) | green (RAL 6018) |
| Insulation diameter | 1 mm | 1 mm |
| Min. bending radius, repetitive | 10 x cable diameter | 10 x cable diameter |
| Min. bending radius, once only | 5 x cable diameter | 5 x cable diameter |
| Ambient temperature (operational) | -40 °C...80 °C | -40 °C...80 °C |
| Installation temperature | -10 °C...60 °C | -10 °C...60 °C |
| Storage temperature | -40 °C...80 °C | -40 °C...80 °C |
| Abrasion resistance | very good | very good |
| Halogen | halogen-free, according to IEC 60754-2 | halogen-free, according to IEC 60754-2 |
| Resistance to spread of flame | in acc. with IEC 60332-1 | in acc. with IEC 60332-1 |
| Resistance to oils | in acc. with IEC 60811-2-1 | in acc. with IEC 60811-2-1 |
| Approvals | CULUS | CULUS |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| 1.0 m | IE-C5ES8UG0010B41B41-E | 1 | **1066850000** | IE-C5ES8UG0010P41P41-E | 1 | **1106010000** |
| 2.0 m | IE-C5ES8UG0020B41B41-E | 1 | **1066860000** | IE-C5ES8UG0020P41P41-E | 1 | **1106020000** |
| 5.0 m | IE-C5ES8UG0050B41B41-E | 1 | **1066870000** | IE-C5ES8UG0050P41P41-E | 1 | **1106030000** |
| 10.0 m | IE-C5ES8UG0100B41B41-E | 1 | **1066880000** | IE-C5ES8UG0100P41P41-E | 1 | **1106040000** |
| **Note** | | | | | | |

## Accessories

| **Marking tags** | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| Insertion label. yellow. 12 mm | TM-I 12 MC NE GE | 320 | **1718411687** | TM-I 12 MC NE GE | 320 | **1718411687** |
| Insertion label. yellow. 18 mm | TM-I 18 MC NE GE | 320 | **1718431687** | TM-I 18 MC NE GE | 320 | **1718431687** |

**Note**

## Assembled cable

## Dragline cable M8

- Cat. 5
- PUR
- P-coded

### M8 - open

**Plug / -**

M8

| | |
|---|---|
| 1 | yellow |
| 2 | white |
| 3 | blue |
| 4 | orange |

### M8 - open

**Plug / -**

M8

| | |
|---|---|
| 1 | yellow |
| 2 | white |
| 3 | blue |
| 4 | orange |

## Technical data

| | | |
|---|---|---|
| Product type | Dragline cable | Dragline cable |
| Category | Cat. 5e | Cat. 5e |
| Shielding | SF/UTP | SF/UTP |
| Version connector left / Version connector right | M8 P-code - IP67 straight socket / Open | M8 D-code - IP67 straight pin / Open |
| Cross-section | 2*2*AWG 22/7 - 2*2*0.36 mm² | 2*2*AWG 22/7 - 2*2*0.36 mm² |
| Sheath diameter, max. | 6.7 mm | 6.7 mm |
| Material sheath | PUR | PUR |
| Sheathing colour | black | black |
| Insulation diameter | 1.6 mm | 1.6 mm |
| Min. bending radius, repetitive | 8 x cable diameter | 8 x cable diameter |
| Min. bending radius, once only | 5 x cable diameter | 5 x cable diameter |
| Ambient temperature (operational) | -40 °C...80 °C | -40 °C...80 °C |
| Installation temperature | ... | ... |
| Storage temperature | ... | ... |
| Approvals | | |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| 1.5 m | IE-C5DE4UP0015PSSXXX-E | 1 | **2717740015** | IE-C5DE4UP0015PCSXXX-E | 1 | **2717750015** |
| 3.0 m | IE-C5DE4UP0030PSSXXX-E | 1 | **2717740030** | IE-C5DE4UP0030PCSXXX-E | 1 | **2717750030** |
| 5.0 m | IE-C5DE4UP0050PSSXXX-E | 1 | **2717740050** | IE-C5DE4UP0050PCSXXX-E | 1 | **2717750050** |
| 7.5 m | IE-C5DE4UP0075PSSXXX-E | 1 | **2717740075** | IE-C5DE4UP0075PCSXXX-E | 1 | **2717750075** |
| 10.0 m | IE-C5DE4UP0100PSSXXX-E | 1 | **2717740100** | IE-C5DE4UP0100PCSXXX-E | 1 | **2717750100** |
| 20.0 m | IE-C5DE4UP0200PSSXXX-E | 1 | **2717740200** | IE-C5DE4UP0200PCSXXX-E | 1 | **2717750200** |
| 30.0 m | IE-C5DE4UP0300PSSXXX-E | 1 | **2717740300** | IE-C5DE4UP0300PCSXXX-E | 1 | **2717750300** |
| **Note** | | | | | | |

## Accessories

| **Marking tags** | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| Insertion label. yellow. 12 mm | TM-I 12 MC NE GE | 320 | **1718411687** | TM-I 12 MC NE GE | 320 | **1718411687** |
| Insertion label. yellow. 18 mm | TM-I 18 MC NE GE | 320 | **1718431687** | TM-I 18 MC NE GE | 320 | **1718431687** |
| **Tools** | | | | | | |
| Tool set | SCREWTY SET | 1 | **1910000000** | SCREWTY SET | 1 | **1910000000** |
| Tool set with torque function | SCREWTY SET -DM | 1 | **1920000000** | SCREWTY SET -DM | 1 | **1920000000** |
| Mounting tool | SCREWTY-M12-DM | 1 | **1900001000** | SCREWTY-M12-DM | 1 | **1900001000** |
| Screwty-M12 | SCREWTY- M12 | 1 | **1900000000** | SCREWTY- M12 | 1 | **1900000000** |

**Note**

## Assembled cable

## Dragline cable M8

- Cat. 5
- PUR
- P-coded

### M8 - open

**Plug angled / -**

| M8 | |
|---|---|
| 1 | yellow |
| 2 | white |
| 3 | blue |
| 4 | orange |

### M8 - open

**Socket angled / -**

| M8 | |
|---|---|
| 1 | yellow |
| 2 | white |
| 3 | blue |
| 4 | orange |

## Technical data

| | | |
|---|---|---|
| Product type | Dragline cable | Dragline cable |
| Category | Cat. 5e | Cat. 5e |
| Shielding | SF/UTP | SF/UTP |
| Version connector left / Version connector right | M8 P-code - IP67 angeled socket / Open | M8 P-code - IP67 angeled pin / Open |
| Cross-section | 2*2*AWG 22/7 - 2*2*0.36 mm² | 2*2*AWG 22/7 - 2*2*0.36 mm² |
| Sheath diameter, max. | 6.7 mm | 6.7 mm |
| Material sheath | PUR | PUR |
| Sheathing colour | black | black |
| Insulation diameter | 1.6 mm | 1.6 mm |
| Min. bending radius, repetitive | 8 x cable diameter | 8 x cable diameter |
| Min. bending radius, once only | 5 x cable diameter | 5 x cable diameter |
| Ambient temperature (operational) | -40 °C...80 °C | -40 °C...80 °C |
| Installation temperature | ... | ... |
| Storage temperature | ... | ... |
| Approvals | | |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| 1.5 m | IE-C5DE4UP0015PSAXXX-E | 1 | **2717760015** | IE-C5DE4UP0015PCAXXX-E | 1 | **2717770015** |
| 3.0 m | IE-C5DE4UP0030PSAXXX-E | 1 | **2717760030** | IE-C5DE4UP0030PCAXXX-E | 1 | **2717770030** |
| 5.0 m | IE-C5DE4UP0050PSAXXX-E | 1 | **2717760050** | IE-C5DE4UP0050PCAXXX-E | 1 | **2717770050** |
| 7.5 m | IE-C5DE4UP0075PSAXXX-E | 1 | **2717760075** | IE-C5DE4UP0075PCAXXX-E | 1 | **2717770075** |
| 10.0 m | IE-C5DE4UP0100PSAXXX-E | 1 | **2717760100** | IE-C5DE4UP0100PCAXXX-E | 1 | **2717770100** |
| 20.0 m | IE-C5DE4UP0200PSAXXX-E | 1 | **2717760200** | | | |
| 30.0 m | IE-C5DE4UP0300PSAXXX-E | 1 | **2717760300** | | | |
| **Note** | | | | | | |

## Accessories

| **Marking tags** | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| Insertion label. yellow. 12 mm | TM-I 12 MC NE GE | 320 | **1718411687** | TM-I 12 MC NE GE | 320 | **1718411687** |
| Insertion label. yellow. 18 mm | TM-I 18 MC NE GE | 320 | **1718431687** | TM-I 18 MC NE GE | 320 | **1718431687** |
| **Tools** | | | | | | |
| Tool set | SCREWTY SET | 1 | **1910000000** | SCREWTY SET | 1 | **1910000000** |
| Tool set with torque function | SCREWTY SET -DM | 1 | **1920000000** | SCREWTY SET -DM | 1 | **1920000000** |
| Mounting tool | SCREWTY-M12-DM | 1 | **1900001000** | SCREWTY-M12-DM | 1 | **1900001000** |
| Screwty-M12 | SCREWTY- M12 | 1 | **1900000000** | SCREWTY- M12 | 1 | **1900000000** |

**Note**

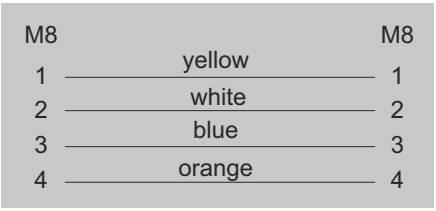
## Assembled cable

## Dragline cable M8

- Cat. 5
- PUR
- P-coded

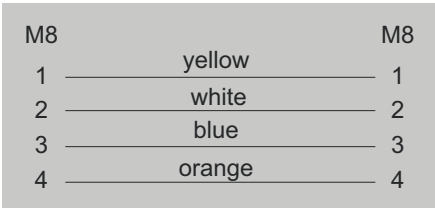
### M8 - M8

**Plug straight / Plug straight**




### M8 - M8

**Plug straight / Socket straight**




## Technical data

| | | |
|---|---|---|
| Product type | Dragline cable | Dragline cable |
| Category | Cat. 5e | Cat. 5e |
| Shielding | SF/UTP | SF/UTP |
| Version connector left / Version connector right | M8 P-code - IP67 straight pin / M8 P-code - IP67 straight pin | M8 P-code - IP67 straight pin / M8 P-code - IP67 straight socket |
| Cross-section | 2*2*AWG 22/7 - 2*2*0.36 mm² | 2*2*AWG 22/7 - 2*2*0.36 mm² |
| Sheath diameter, max. | 6.7 mm | 6.7 mm |
| Material sheath | PUR | PUR |
| Sheathing colour | black | black |
| Insulation diameter | 1.6 mm | 1.6 mm |
| Min. bending radius, repetitive | 8 x cable diameter | 8 x cable diameter |
| Min. bending radius, once only | 5 x cable diameter | 5 x cable diameter |
| Ambient temperature (operational) | -40 °C...80 °C | -40 °C...80 °C |
| Installation temperature | ... | ... |
| Storage temperature | ... | ... |
| Approvals | | |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| 1.5 m | IE-C5DE4UP0015PCSPCS-E | 1 | **2717780015** | IE-C5DE4UP0015PCSPSS-E | 1 | **2717790015** |
| 3.0 m | IE-C5DE4UP0030PCSPCS-E | 1 | **2717780030** | IE-C5DE4UP0030PCSPSS-E | 1 | **2717790030** |
| 5.0 m | IE-C5DE4UP0050PCSPCS-E | 1 | **2717780050** | IE-C5DE4UP0050PCSPSS-E | 1 | **2717790050** |
| 7.5 m | IE-C5DE4UP0075PCSPCS-E | 1 | **2717780075** | IE-C5DE4UP0075PCSPSS-E | 1 | **2717790075** |
| 10.0 m | IE-C5DE4UP0100PCSPCS-E | 1 | **2717780100** | IE-C5DE4UP0100PCSPSS-E | 1 | **2717790100** |
| 20.0 m | IE-C5DE4UP0200PCSPCS-E | 1 | **2717780200** | IE-C5DE4UP0200PCSPSS-E | 1 | **2717790200** |
| 30.0 m | IE-C5DE4UP0300PCSPCS-E | 1 | **2717780300** | IE-C5DE4UP0300PCSPSS-E | 1 | **2717790300** |
| **Note** | | | | | | |

## Accessories

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| **Marking tags** | | | | | | |
| Insertion label. yellow. 12 mm | TM-I 12 MC NE GE | 320 | **1718411687** | TM-I 12 MC NE GE | 320 | **1718411687** |
| Insertion label. yellow. 18 mm | TM-I 18 MC NE GE | 320 | **1718431687** | TM-I 18 MC NE GE | 320 | **1718431687** |
| **Tools** | | | | | | |
| Tool set | SCREWTY SET | 1 | **1910000000** | SCREWTY SET | 1 | **1910000000** |
| Tool set with torque function | SCREWTY SET -DM | 1 | **1920000000** | SCREWTY SET -DM | 1 | **1920000000** |
| Mounting tool | SCREWTY-M12-DM | 1 | **1900001000** | SCREWTY-M12-DM | 1 | **1900001000** |
| Screwty-M12 | SCREWTY- M12 | 1 | **1900000000** | SCREWTY- M12 | 1 | **1900000000** |

**Note**

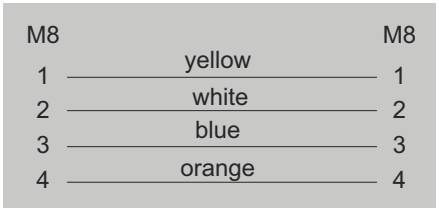
## Assembled cable

## Dragline cable M8

- Cat. 5
- PUR
- P-coded

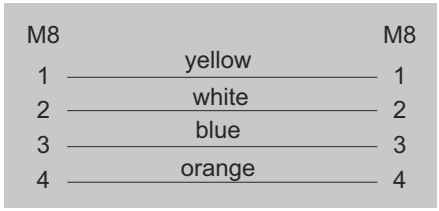
### M8 - M8

**Plug angled / Plug angled**




### M8 - M8

**Plug angled / socket angled**




## Technical data

| | | |
|---|---|---|
| Product type | Dragline cable | Dragline cable |
| Category | Cat. 5e | Cat. 5e |
| Shielding | SF/UTP | SF/UTP |
| Version connector left / Version connector right | M8 P-code - IP67 angeled pin / M8 P-code - IP67 angeled pin | M8 P-code - IP67 angeled pin / M8 P-code - IP67 angeled socket |
| Cross-section | 2*2*AWG 22/7 - 2*2*0.36 mm² | 2*2*AWG 22/7 - 2*2*0.36 mm² |
| Sheath diameter, max. | 6.7 mm | 6.7 mm |
| Material sheath | PUR | PUR |
| Sheathing colour | black | black |
| Insulation diameter | 1.6 mm | 1.6 mm |
| Min. bending radius, repetitive | 8 x cable diameter | 8 x cable diameter |
| Min. bending radius, once only | 5 x cable diameter | 5 x cable diameter |
| Ambient temperature (operational) | -40 °C...80 °C | -40 °C...80 °C |
| Installation temperature | ... | ... |
| Storage temperature | ... | ... |
| Approvals | | |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| 1.5 m | IE-C5DE4UP0015PCAPCA-E | 1 | **2717800015** | IE-C5DE4UP0015PCAPSA-E | 1 | **2717810015** |
| 3.0 m | IE-C5DE4UP0030PCAPCA-E | 1 | **2717800030** | IE-C5DE4UP0030PCAPSA-E | 1 | **2717810030** |
| 5.0 m | IE-C5DE4UP0050PCAPCA-E | 1 | **2717800050** | IE-C5DE4UP0050PCAPSA-E | 1 | **2717810050** |
| 7.5 m | IE-C5DE4UP0075PCAPCA-E | 1 | **2717800075** | IE-C5DE4UP0075PCAPSA-E | 1 | **2717810075** |
| 10.0 m | IE-C5DE4UP0100PCAPCA-E | 1 | **2717800100** | IE-C5DE4UP0100PCAPSA-E | 1 | **2717810100** |
| **Note** | | | | | | |

## Accessories

| **Marking tags** | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| Insertion label. yellow. 12 mm | TM-I 12 MC NE GE | 320 | **1718411687** | TM-I 12 MC NE GE | 320 | **1718411687** |
| Insertion label. yellow. 18 mm | TM-I 18 MC NE GE | 320 | **1718431687** | TM-I 18 MC NE GE | 320 | **1718431687** |
| **Tools** | | | | | | |
| Tool set | SCREWTY SET | 1 | **1910000000** | SCREWTY SET | 1 | **1910000000** |
| Tool set with torque function | SCREWTY SET -DM | 1 | **1920000000** | SCREWTY SET -DM | 1 | **1920000000** |
| Mounting tool | SCREWTY-M12-DM | 1 | **1900001000** | SCREWTY-M12-DM | 1 | **1900001000** |
| Screwty-M12 | SCREWTY- M12 | 1 | **1900000000** | SCREWTY- M12 | 1 | **1900000000** |

**Note**

## Assembled cable

## Dragline cable M8

- Cat. 5
- PUR
- D-coded

### M8 - open

**Plug / -**

### M8 - open

**Socket / -**

| | M8 | |
|---|---|---|
| 1 | | yellow |
| 2 | | white |
| 3 | | orange |
| 4 | | blue |

| | M8 | |
|---|---|---|
| 1 | | yellow |
| 2 | | white |
| 3 | | orange |
| 4 | | blue |

## Technical data

| | | |
|---|---|---|
| Product type | Dragline cable | Dragline cable |
| Category | Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B) | Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B) |
| Shielding | SF/UTP | SF/UTP |
| Version connector left / Version connector right | M8 D-code - IP67 straight pin / Open | M8 D-code - IP67 straight socket / Open |
| Cross-section | 4*AWG 22/7 - 0.36 mm² | 4*AWG 22/7 - 0.36 mm² |
| Sheath diameter, max. | 6.7 mm | 6.7 mm |
| Material sheath | PUR | PUR |
| Sheathing colour | green (RAL 6018) | green (RAL 6018) |
| Insulation diameter | 1.5 mm | 1.5 mm |
| Min. bending radius, repetitive | 7.5 x cable diameter | 7.5 x cable diameter |
| Min. bending radius, once only | 5 x cable diameter | 5 x cable diameter |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...70 °C |
| Installation temperature | -20 °C...60 °C | -20 °C...60 °C |
| Storage temperature | -50 °C...70 °C | -50 °C...70 °C |
| Approvals | | |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| 1.5 m | IE-C5DD4UG0015DCSXXX-E | 1 | **2706150015** | IE-C5DD4UG0015DSSXXX-E | 1 | **2706260015** |
| 3.0 m | IE-C5DD4UG0030DCSXXX-E | 1 | **2706150030** | IE-C5DD4UG0030DSSXXX-E | 1 | **2706260030** |
| 5.0 m | IE-C5DD4UG0050DCSXXX-E | 1 | **2706150050** | IE-C5DD4UG0050DSSXXX-E | 1 | **2706260050** |
| 7.5 m | IE-C5DD4UG0075DCSXXX-E | 1 | **2706150075** | IE-C5DD4UG0075DSSXXX-E | 1 | **2706260075** |
| 10.0 m | IE-C5DD4UG0100DCSXXX-E | 1 | **2706150100** | IE-C5DD4UG0100DSSXXX-E | 1 | **2706260100** |
| 20.0 m | IE-C5DD4UG0200DCSXXX-E | 1 | **2706150200** | IE-C5DD4UG0200DSSXXX-E | 1 | **2706260200** |
| 30.0 m | IE-C5DD4UG0300DCSXXX-E | 1 | **2706150300** | IE-C5DD4UG0300DSSXXX-E | 1 | **2706260300** |
| **Note** | | | | | | |

## Accessories

| **Marking tags** | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| Insertion label. yellow. 12 mm | TM-I 12 MC NE GE | 320 | **1718411687** | TM-I 12 MC NE GE | 320 | **1718411687** |
| Insertion label. yellow. 18 mm | TM-I 18 MC NE GE | 320 | **1718431687** | TM-I 18 MC NE GE | 320 | **1718431687** |
| **Tools** | | | | | | |
| Tool set | SCREWTY SET | 1 | **1910000000** | SCREWTY SET | 1 | **1910000000** |
| Tool set with torque function | SCREWTY SET -DM | 1 | **1920000000** | SCREWTY SET -DM | 1 | **1920000000** |
| Mounting tool | SCREWTY-M12-DM | 1 | **1900001000** | SCREWTY-M12-DM | 1 | **1900001000** |
| Screwty-M12 | SCREWTY- M12 | 1 | **1900000000** | SCREWTY- M12 | 1 | **1900000000** |

**Note**

## Assembled cable

## Dragline cable M8

- Cat. 5
- PUR
- D-coded

### M8 - open

**Plug angled / -**

### M8 - open

**Socket angled / -**

| M8 | |
|---|---|
| 1 | yellow |
| 2 | white |
| 3 | orange |
| 4 | blue |

| M8 | |
|---|---|
| 1 | yellow |
| 2 | white |
| 3 | orange |
| 4 | blue |

## Technical data

| | | |
|---|---|---|
| Product type | Dragline cable | Dragline cable |
| Category | Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B) | Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B) |
| Shielding | SF/UTP | SF/UTP |
| Version connector left / Version connector right | M8 D-code - IP67 angeled pin / Open | M8 D-code - IP67 angeled socket / Open |
| Cross-section | 4*AWG 22/7 - 0.36 mm² | 4*AWG 22/7 - 0.36 mm² |
| Sheath diameter, max. | 6.7 mm | 6.7 mm |
| Material sheath | PUR | PUR |
| Sheathing colour | green (RAL 6018) | green (RAL 6018) |
| Insulation diameter | 1.5 mm | 1.5 mm |
| Min. bending radius, repetitive | 7.5 x cable diameter | 7.5 x cable diameter |
| Min. bending radius, once only | 5 x cable diameter | 5 x cable diameter |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...70 °C |
| Installation temperature | -20 °C...60 °C | -20 °C...60 °C |
| Storage temperature | -50 °C...70 °C | -50 °C...70 °C |
| Approvals | | |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| 1.5 m | IE-C5DD4UG0015DCAXXX-E | 1 | **2706190015** | IE-C5DD4UG0015DSAXXX-E | 1 | **2706160015** |
| 3.0 m | IE-C5DD4UG0030DCAXXX-E | 1 | **2706190030** | IE-C5DD4UG0030DSAXXX-E | 1 | **2706160030** |
| 5.0 m | IE-C5DD4UG0050DCAXXX-E | 1 | **2706190050** | IE-C5DD4UG0050DSAXXX-E | 1 | **2706160050** |
| 7.5 m | IE-C5DD4UG0075DCAXXX-E | 1 | **2706190075** | IE-C5DD4UG0075DSAXXX-E | 1 | **2706160075** |
| 10.0 m | IE-C5DD4UG0100DCAXXX-E | 1 | **2706190100** | IE-C5DD4UG0100DSAXXX-E | 1 | **2706160100** |
| 20.0 m | | | | IE-C5DD4UG0200DSAXXX-E | 1 | **2706160200** |
| 30.0 m | | | | IE-C5DD4UG0300DSAXXX-E | 1 | **2706160300** |
| **Note** | | | | | | |

## Accessories

| **Marking tags** | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| Insertion label. yellow. 12 mm | TM-I 12 MC NE GE | 320 | **1718411687** | TM-I 12 MC NE GE | 320 | **1718411687** |
| Insertion label. yellow. 18 mm | TM-I 18 MC NE GE | 320 | **1718431687** | TM-I 18 MC NE GE | 320 | **1718431687** |
| **Tools** | | | | | | |
| Tool set | SCREWTY SET | 1 | **1910000000** | SCREWTY SET | 1 | **1910000000** |
| Tool set with torque function | SCREWTY SET -DM | 1 | **1920000000** | SCREWTY SET -DM | 1 | **1920000000** |
| Mounting tool | SCREWTY-M12-DM | 1 | **1900001000** | SCREWTY-M12-DM | 1 | **1900001000** |
| Screwty-M12 | SCREWTY- M12 | 1 | **1900000000** | SCREWTY- M12 | 1 | **1900000000** |

**Note**

## Assembled cable

## Dragline cable M8

- Cat. 5
- PUR
- D-coded

### M8 - M8

**Plug straight / Plug straight**

M8

| | |
|---|---|
| 1 | yellow |
| 2 | white |
| 3 | orange |
| 4 | blue |

### M8 - M8

**Plug straight / Socket straight**

M8

| | |
|---|---|
| 1 | yellow |
| 2 | white |
| 3 | orange |
| 4 | blue |

## Technical data

| | | |
|---|---|---|
| Product type | Dragline cable | Dragline cable |
| Category | Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B) | Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B) |
| Shielding | SF/UTP | SF/UTP |
| Version connector left / Version connector right | M8 D-code - IP67 straight pin / M8 D-code - IP67 straight pin | M8 D-code - IP67 straight pin / M8 D-code - IP67 straight socket |
| Cross-section | 4*AWG 22/7 - 0.36 mm² | 4*AWG 22/7 - 0.36 mm² |
| Sheath diameter, max. | 6.7 mm | 6.7 mm |
| Material sheath | PUR | PUR |
| Sheathing colour | green (RAL 6018) | green (RAL 6018) |
| Insulation diameter | 1.5 mm | 1.5 mm |
| Min. bending radius, repetitive | 7.5 x cable diameter | 7.5 x cable diameter |
| Min. bending radius, once only | 5 x cable diameter | 5 x cable diameter |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...70 °C |
| Installation temperature | -20 °C...60 °C | -20 °C...60 °C |
| Storage temperature | -50 °C...70 °C | -50 °C...70 °C |
| Approvals | | |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| 1.5 m | IE-C5DD4UG0015DCSDCS-E | 1 | **2706200015** | IE-C5DD4UG0015DCSDSS-E | 1 | **2706210015** |
| 3.0 m | IE-C5DD4UG0030DCSDCS-E | 1 | **2706200030** | IE-C5DD4UG0030DCSDSS-E | 1 | **2706210030** |
| 5.0 m | IE-C5DD4UG0050DCSDCS-E | 1 | **2706200050** | IE-C5DD4UG0050DCSDSS-E | 1 | **2706210050** |
| 7.5 m | IE-C5DD4UG0075DCSDCS-E | 1 | **2706200075** | IE-C5DD4UG0075DCSDSS-E | 1 | **2706210075** |
| 10.0 m | IE-C5DD4UG0100DCSDCS-E | 1 | **2706200100** | IE-C5DD4UG0100DCSDSS-E | 1 | **2706210100** |
| 20.0 m | IE-C5DD4UG0200DCSDCS-E | 1 | **2706200200** | IE-C5DD4UG0200DCSDSS-E | 1 | **2706210200** |
| 30.0 m | IE-C5DD4UG0300DCSDCS-E | 1 | **2706200300** | IE-C5DD4UG0300DCSDSS-E | 1 | **2706210300** |
| **Note** | | | | | | |

## Accessories

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| **Marking tags** | | | | | | |
| Insertion label. yellow. 12 mm | TM-I 12 MC NE GE | 320 | **1718411687** | TM-I 12 MC NE GE | 320 | **1718411687** |
| Insertion label. yellow. 18 mm | TM-I 18 MC NE GE | 320 | **1718431687** | TM-I 18 MC NE GE | 320 | **1718431687** |
| **Tools** | | | | | | |
| Tool set | SCREWTY SET | 1 | **1910000000** | SCREWTY SET | 1 | **1910000000** |
| Tool set with torque function | SCREWTY SET -DM | 1 | **1920000000** | SCREWTY SET -DM | 1 | **1920000000** |
| Mounting tool | SCREWTY-M12-DM | 1 | **1900001000** | SCREWTY-M12-DM | 1 | **1900001000** |
| Screwty-M12 | SCREWTY- M12 | 1 | **1900000000** | SCREWTY- M12 | 1 | **1900000000** |

**Note**

## Assembled cable

## Dragline cable M8

- Cat. 5
- PUR
- D-coded

### M8 - M8

**Plug angled / Plug angled**

### M8 - M8

**Plug angled / socket angled**

| | M8 | |
|---|---|---|
| 1 | | yellow |
| 2 | | white |
| 3 | | orange |
| 4 | | blue |

| | M8 | |
|---|---|---|
| 1 | | yellow |
| 2 | | white |
| 3 | | orange |
| 4 | | blue |

## Technical data

| | | |
|---|---|---|
| Product type | Dragline cable | Dragline cable |
| Category | Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B) | Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B) |
| Shielding | SF/UTP | SF/UTP |
| Version connector left / Version connector right | M8 D-code - IP67 angeled pin / M8 D-code - IP67 angeled pin | M8 D-code - IP67 angeled pin / M8 D-code - IP67 angeled socket |
| Cross-section | 4*AWG 22/7 - 0.36 mm² | 4*AWG 22/7 - 0.36 mm² |
| Sheath diameter, max. | 6.7 mm | 6.7 mm |
| Material sheath | PUR | PUR |
| Sheathing colour | green (RAL 6018) | green (RAL 6018) |
| Insulation diameter | 1.5 mm | 1.5 mm |
| Min. bending radius, repetitive | 7.5 x cable diameter | 7.5 x cable diameter |
| Min. bending radius, once only | 5 x cable diameter | 5 x cable diameter |
| Ambient temperature (operational) | -40 °C...70 °C | -40 °C...70 °C |
| Installation temperature | -20 °C...60 °C | -20 °C...60 °C |
| Storage temperature | -50 °C...70 °C | -50 °C...70 °C |
| Approvals | | |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| 1.5 m | IE-C5DD4UG0015DCADCA-E | 1 | **2706220015** | IE-C5DD4UG0015DCADSA-E | 1 | **2706230015** |
| 3.0 m | IE-C5DD4UG0030DCADCA-E | 1 | **2706220030** | IE-C5DD4UG0030DCADSA-E | 1 | **2706230030** |
| 5.0 m | IE-C5DD4UG0050DCADCA-E | 1 | **2706220050** | IE-C5DD4UG0050DCADSA-E | 1 | **2706230050** |
| 7.5 m | IE-C5DD4UG0075DCADCA-E | 1 | **2706220075** | IE-C5DD4UG0075DCADSA-E | 1 | **2706230075** |
| 10.0 m | IE-C5DD4UG0100DCADCA-E | 1 | **2706220100** | IE-C5DD4UG0100DCADSA-E | 1 | **2706230100** |
| **Note** | | | | | | |

## Accessories

| **Marking tags** | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| Insertion label. yellow. 12 mm | TM-I 12 MC NE GE | 320 | **1718411687** | TM-I 12 MC NE GE | 320 | **1718411687** |
| Insertion label. yellow. 18 mm | TM-I 18 MC NE GE | 320 | **1718431687** | TM-I 18 MC NE GE | 320 | **1718431687** |
| **Tools** | | | | | | |
| Tool set | SCREWTY SET | 1 | **1910000000** | SCREWTY SET | 1 | **1910000000** |
| Tool set with torque function | SCREWTY SET -DM | 1 | **1920000000** | SCREWTY SET -DM | 1 | **1920000000** |
| Mounting tool | SCREWTY-M12-DM | 1 | **1900001000** | SCREWTY-M12-DM | 1 | **1900001000** |
| Screwty-M12 | SCREWTY- M12 | 1 | **1900000000** | SCREWTY- M12 | 1 | **1900000000** |

**Note**

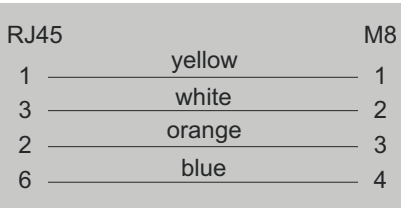
## Assembled cable

## Dragline cable M8

- Cat. 5
- PUR
- D-coded

### M8 - RJ45

**Plug straight / Plug straight**




## Technical data

| | |
|---|---|
| Product type | Dragline cable |
| Category | Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B) |
| Shielding | SF/UTP |
| Version connector left / Version connector right | M8 D-code - IP67 straight pin / RJ45 IP 20 |
| Cross-section | 4*AWG 22/7 - 0.36 mm² |
| Sheath diameter, max. | 6.7 mm |
| Material sheath | PUR |
| Sheathing colour | green (RAL 6018) |
| Insulation diameter | 1.5 mm |
| Min. bending radius, repetitive | 7.5 x cable diameter |
| Min. bending radius, once only | 5 x cable diameter |
| Ambient temperature (operational) | -40 °C...70 °C |
| Installation temperature | -20 °C...60 °C |
| Storage temperature | -50 °C...70 °C |
| Approvals | |

**Note**

## Ordering data

| | Type | Qty. | Order No. |
|---|---|---|---|
| 1.5 m | IE-C5DD4UG0015DCSE40-E | 1 | **2706250015** |
| 3.0 m | IE-C5DD4UG0030DCSE40-E | 1 | **2706250030** |
| 5.0 m | IE-C5DD4UG0050DCSE40-E | 1 | **2706250050** |
| 7.5 m | IE-C5DD4UG0075DCSE40-E | 1 | **2706250075** |
| 10.0 m | IE-C5DD4UG0100DCSE40-E | 1 | **2706250100** |
| 20.0 m | IE-C5DD4UG0200DCSE40-E | 1 | **2706250200** |
| 30.0 m | IE-C5DD4UG0300DCSE40-E | 1 | **2706250300** |

**Note**

## Accessories

| Marking tags | Type | Qty. | Order No. |
|---|---|---|---|
| Insertion label. yellow. 12 mm | TM-I 12 MC NE GE | 320 | **1718411687** |
| Insertion label. yellow. 18 mm | TM-I 18 MC NE GE | 320 | **1718431687** |
| **Tools** | | | |
| Tool set | SCREWTY SET | 1 | **1910000000** |
| Tool set with torque function | SCREWTY SET -DM | 1 | **1920000000** |
| Mounting tool | SCREWTY-M12-DM | 1 | **1900001000** |
| Screwty-M12 | SCREWTY- M12 | 1 | **1900000000** |

**Note**

## Assembled cable

## Railway cable M12

- Cat. 5
- Radox
- D-coded

### M12 - M12

**Plug / plug**

| M12 | | M12 |
|---|---|---|
| 1 | yellow | 1 |
| 2 | white | 2 |
| 3 | orange | 3 |
| 4 | blue | 4 |

### M12 - M12

**Plug / socket**

| M12 | | M12 |
|---|---|---|
| 1 | yellow | 1 |
| 2 | white | 2 |
| 3 | orange | 3 |
| 4 | blue | 4 |

## Technical data

| | | |
|---|---|---|
| Product type | System cable | System cable |
| Category | Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B) | Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B) |
| Shielding | SF/UTP | SF/UTP |
| Version connector left / Version connector right | M12 D-code – IP 67 straight pin / M12 D-code – IP 67 straight pin | M12 D-code – IP 67 straight pin / M12 D-code – IP 67 straight socket |
| Cross-section | 2*2*AWG 22/7 - 2*2*0.36 mm² | 2*2*AWG 22/7 - 2*2*0.36 mm² |
| Sheath diameter, max. | 7.55 mm | 7.55 mm |
| Material sheath | Radox GKW S | Radox GKW S |
| Sheathing colour | black | black |
| Insulation diameter | 1.95 mm | 1.95 mm |
| Min. bending radius, repetitive | 6 *diameter | 6 *diameter |
| Ambient temperature (operational) | -40 °C...90 °C | -40 °C...90 °C |
| Installation temperature | -25 °C...90 °C | -25 °C...90 °C |
| Storage temperature | -40 °C...90 °C | -40 °C...90 °C |
| Abrasion resistance | very good | very good |
| Halogen | halogen-free, according to IEC 60754-2 | halogen-free, according to IEC 60754-2 |
| Resistance to oils | in acc. with EN 50306-3 | in acc. with EN 50306-3 |
| Fire safety for railway vehicles | According to DIN 5510-2 fire safety levels 1,2,3,4, According to BS 6853, According to EN50288-2-2, According to EN 45545, HL1 - HL3 | According to DIN 5510-2 fire safety levels 1,2,3,4, According to BS 6853, According to EN50288-2-2, According to EN 45545, HL1 - HL3 |
| Approvals | CULUS | CULUS |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. |
|---|---|---|---|
| 1.5 m | IE-C5DB4RE0015MCSMCS-E | 1 | **1010850015** |
| 3.0 m | IE-C5DB4RE0030MCSMCS-E | 1 | **1010850030** |
| 5.0 m | IE-C5DB4RE0050MCSMCS-E | 1 | **1010850050** |
| 10.0 m | IE-C5DB4RE0100MCSMCS-E | 1 | **1010850100** |

| | Type | Qty. | Order No. |
|---|---|---|---|
| 1.5 m | IE-C5DB4RE0015MSSMCS-E | 1 | **1059340015** |
| 3.0 m | IE-C5DB4RE0030MSSMCS-E | 1 | **1059340030** |
| 5.0 m | IE-C5DB4RE0050MSSMCS-E | 1 | **1059340050** |
| 10.0 m | IE-C5DB4RE0100MSSMCS-E | 1 | **1059340100** |

**Note**

## Accessories

| Marking tags | Type | Qty. | Order No. |
|---|---|---|---|
| Insertion label. yellow. 12 mm | TM-I 12 MC NE GE | 320 | **1718411687** |
| Insertion label. yellow. 18 mm | TM-I 18 MC NE GE | 320 | **1718431687** |

| Type | Qty. | Order No. |
|---|---|---|
| TM-I 12 MC NE GE | 320 | **1718411687** |
| TM-I 18 MC NE GE | 320 | **1718431687** |

**Note**

## Assembled cable

## Railway cable M12

- Cat. 5
- Radox
- D-coded

### M12 - open

**Plug / -**

## Technical data

| | |
|---|---|
| Product type | System cable |
| Category | Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B) |
| Shielding | SF/UTP |
| Version connector left / Version connector right | M12 D-code – IP 67 straight pin / Open |
| Cross-section | 2*2*AWG 22/7 - 2*2*0.36 mm² |
| Sheath diameter, max. | 7.55 mm |
| Material sheath | Radox GKW S |
| Sheathing colour | black |
| Insulation diameter | 1.95 mm |
| Min. bending radius, repetitive | 6 *diameter |
| Ambient temperature (operational) | -40 °C...90 °C |
| Installation temperature | -25 °C...90 °C |
| Storage temperature | -40 °C...90 °C |
| Abrasion resistance | very good |
| Halogen | halogen-free, according to IEC 60754-2 |
| Resistance to oils | in acc. with EN 50306-3 |
| Fire safety for railway vehicles | According to DIN 5510-2 fire safety levels 1,2,3,4, According to BS 6853, According to EN50288-2-2, According to EN 45545, HL1 - HL3 |
| Approvals | CULUS |

**Note**

## Ordering data

| | Type | Qty. | Order No. |
|---|---|---|---|
| 1.5 m | IE-C5DB4RE0015MCSXXX-X | 1 | **1010840015** |
| 3.0 m | IE-C5DB4RE0030MCSXXX-X | 1 | **1010840030** |
| 5.0 m | IE-C5DB4RE0050MCSXXX-X | 1 | **1010840050** |
| 10.0 m | IE-C5DB4RE0100MCSXXX-X | 1 | **1010840100** |

**Note**

## Accessories

| Tools | Type | Qty. | Order No. |
|---|---|---|---|
| Sheathing strippers, For UTP and STP data cables | AM 12 | 1 | **9030060000** |
| Sheathing strippers, For coaxial and round data cables | IE-CST | 1 | **9204350000** |
| **Marking tags** | | | |
| Insertion label. yellow. 12 mm | TM-I 12 MC NE GE | 320 | **1718411687** |
| Insertion label. yellow. 18 mm | TM-I 18 MC NE GE | 320 | **1718431687** |

**Note**

## Assembled cables

## Railway cable M12

- Cat. 5
- Radox
- D-coded

### M12 - M12

**Plug / plug**

| M12 | | M12 |
|---|---|---|
| 1 | yellow | 1 |
| 2 | white | 2 |
| 3 | orange | 3 |
| 4 | blue | 4 |

| M12 | | M12 |
|---|---|---|
| 1 | yellow | 1 |
| 2 | white | 2 |
| 3 | orange | 3 |
| 4 | blue | 4 |

## Technical data

| | | |
|---|---|---|
| Product type | System cable | System cable |
| Category | Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B) | Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B) |
| Shielding | SF/UTP | SF/UTP |
| Version connector left / Version connector right | M12 D-code – IP 67 straight pin / M12 D-code – IP 67 angled pin | M12 D-code – IP 67 angled pin / M12 D-code – IP 67 angled pin |
| Cross-section | 2*2*AWG 22/7 - 2*2*0.36 mm² | 2*2*AWG 22/7 - 2*2*0.36 mm² |
| Sheath diameter, max. | 7.55 mm | 7.55 mm |
| Material sheath | Radox GKW S | Radox GKW S |
| Sheathing colour | black | black |
| Insulation diameter, min. / max. | 1.95 mm | 1.95 mm |
| Min. bending radius, repetitive | 6 *diameter | 6 *diameter |
| Ambient temperature (operational) | -40 °C...90 °C | -40 °C...90 °C |
| Installation temperature | -25 °C...90 °C | -25 °C...90 °C |
| Storage temperature | -40 °C...90 °C | -40 °C...90 °C |
| Abrasion resistance | very good | very good |
| Halogen | halogen-free, according to IEC 60754-2 | halogen-free, according to IEC 60754-2 |
| Resistance to oils | in acc. with EN 50306-3 | in acc. with EN 50306-3 |
| Fire safety for railway vehicles | According to DIN 5510-2 fire safety levels 1,2,3,4, According to BS 6853, According to EN50288-2-2, According to EN 45545, HL1 - HL3 | According to DIN 5510-2 fire safety levels 1,2,3,4, According to BS 6853, According to EN50288-2-2, According to EN 45545, HL1 - HL3 |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. |
|---|---|---|---|
| 1.5 m | IE-C5DB4RE0015MCSMCA-E | 1 | **1059940015** |
| 3.0 m | IE-C5DB4RE0030MCSMCA-E | 1 | **1059940030** |
| 5.0 m | IE-C5DB4RE0050MCSMCA-E | 1 | **1059940050** |
| 10.0 m | IE-C5DB4RE0100MCSMCA-E | 1 | **1059940100** |
| **Note** | | | |

| | Type | Qty. | Order No. |
|---|---|---|---|
| 1.5 m | IE-C5DB4RE0015MCAMCA-E | 1 | **1059970015** |
| 3.0 m | IE-C5DB4RE0030MCAMCA-E | 1 | **1059970030** |
| 5.0 m | IE-C5DB4RE0050MCAMCA-E | 1 | **1059970050** |
| 10.0 m | IE-C5DB4RE0100MCAMCA-E | 1 | **1059970100** |
| **Note** | | | |

## Accessories

| **Marking tags** | Type | Qty. | Order No. |
|---|---|---|---|
| Insertion label. yellow. 12 mm | TM-I 12 MC NE GE | 320 | **1718411687** |
| Insertion label. yellow. 18 mm | TM-I 18 MC NE GE | 320 | **1718431687** |
| Transparent sleeves. 12-mm length | TM 4/12 HF/HB | 500 | **1719840000** |
| Transparent sleeves. 18-mm length | TM 4/18 HF/HB | 500 | **1719850000** |

| **Marking tags** | Type | Qty. | Order No. |
|---|---|---|---|
| Insertion label. yellow. 12 mm | TM-I 12 MC NE GE | 320 | **1718411687** |
| Insertion label. yellow. 18 mm | TM-I 18 MC NE GE | 320 | **1718431687** |
| Transparent sleeves. 12-mm length | TM 4/12 HF/HB | 500 | **1719840000** |
| Transparent sleeves. 18-mm length | TM 4/18 HF/HB | 500 | **1719850000** |

**Note**

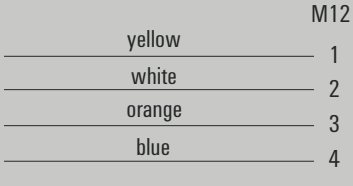
## Assembled cables

## Railway cable M12

- Cat. 5
- Radox
- D-coded

### M12 – open

**Plug / -**




## Technical data

| | |
|---|---|
| Product type | System cable |
| Category | Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B) |
| Shielding | SF/UTP |
| Version connector left / Version connector right | M12 D-code – IP 67 angled pin / Open |
| Cross-section | 2*2*AWG 22/7 - 2*2*0.36 mm² |
| Sheath diameter, max. | 7.55 mm |
| Material sheath | Radox GKW S |
| Sheathing colour | black |
| Insulation diameter, min. / max. | 1.95 mm |
| Min. bending radius, repetitive | 6 *diameter |
| Ambient temperature (operational) | -40 °C...90 °C |
| Installation temperature | -25 °C...90 °C |
| Storage temperature | -40 °C...90 °C |
| Abrasion resistance | very good |
| Halogen | halogen-free, according to IEC 60754-2 |
| Resistance to oils | in acc. with EN 50306-3 |
| Fire safety for railway vehicles | According to DIN 5510-2 fire safety levels 1,2,3,4, According to BS 6853, According to EN50288-2-2, According to EN 45545, HL1 - HL3 |

**Note**

## Ordering data

| | Type | Qty. | Order No. |
|---|---|---|---|
| 1.5 m | IE-C5DB4RE0015MCAXXX-X | 1 | **1059900015** |
| 3.0 m | IE-C5DB4RE0030MCAXXX-X | 1 | **1059900030** |
| 5.0 m | IE-C5DB4RE0050MCAXXX-X | 1 | **1059900050** |
| 10.0 m | IE-C5DB4RE0100MCAXXX-X | 1 | **1059900100** |

**Note**

## Accessories

| Marking tags | Type | Qty. | Order No. |
|---|---|---|---|
| Insertion label. yellow. 12 mm | TM-I 12 MC NE GE | 320 | **1718411687** |
| Insertion label. yellow. 18 mm | TM-I 18 MC NE GE | 320 | **1718431687** |
| Transparent sleeves. 12-mm length | TM 4/12 HF/HB | 500 | **1719840000** |
| Transparent sleeves. 18-mm length | TM 4/18 HF/HB | 500 | **1719850000** |

**Note**

## Assembled cables

## Railway cable RW M12

- Cat. 5
- Radox
- D-coded
- RW (reduced wire): suitable for RJ45 connectors

### M12 – open

**Plug / -**

| | M12 |
|---|---|
| yellow | 1 |
| white | 2 |
| orange | 3 |
| blue | 4 |

### M12 - RJ45

**Plug / plug**

| RJ45 | | M12 |
|---|---|---|
| 1 | yellow | 1 |
| 3 | white | 2 |
| 2 | orange | 3 |
| 6 | blue | 4 |

## Technical data

| | | |
|---|---|---|
| Product type | System cable | System cable |
| Category | Cat.5 (ISO/IEC 11801) | Cat.5 (ISO/IEC 11801) |
| Shielding | SF/UTP | SF/UTP |
| Version connector left / Version connector right | M12 D-code – IP 67 straight pin / Open | M12 D-code – IP 67 straight pin / RJ45 IP 20 no tools needed |
| Cross-section | 2*2*AWG 22/7 - 2*2*0.36 mm² | 2*2*AWG 22/7 - 2*2*0.36 mm² |
| Sheath diameter, max. | 7 mm | 7 mm |
| Material sheath | Radox GKW S | Radox GKW S |
| Sheathing colour | black | black |
| Insulation diameter | 1.58 mm | 1.58 mm |
| Min. bending radius, repetitive | 6 *diameter | 6 *diameter |
| Ambient temperature (operational) | -40 °C...90 °C | -40 °C...90 °C |
| Storage temperature | -40 °C...90 °C | -40 °C...90 °C |
| Abrasion resistance | very good | very good |
| Halogen | halogen-free, according to IEC 60754-2 | halogen-free, according to IEC 60754-2 |
| Resistance to oils | in acc. with EN 50306-3 | in acc. with EN 50306-3 |
| Fire safety for railway vehicles | According to DIN 5510-2 fire safety levels 1,2,3,4, According to BS 6853, According to EN50288-2-2, According to EN 45545, HL1 - HL3 | According to DIN 5510-2 fire safety levels 1,2,3,4, According to BS 6853, According to EN50288-2-2, According to EN 45545, HL1 - HL3 |
| Approvals | | |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. |
|---|---|---|---|
| 4.0 m | | | |
| 5.0 m | IE-C5DB4WE0050MCSXXX-E | 1 | **1269740050** |
| 10.0 m | IE-C5DB4WE0100MCSXXX-E | 1 | **1269740100** |
| **Note** | | | |

| Type | Qty. | Order No. |
|---|---|---|
| IE-C5DB4WE0040MCSA20-E | 1 | **1220310040** |
| | | |
| | | |

## Accessories

| **Tools** | Type | Qty. | Order No. |
|---|---|---|---|
| Sheathing strippers, For UTP and STP data cables | AM 12 | 1 | **9030060000** |
| Sheathing strippers, For coaxial and round data cables | IE-CST | 1 | **9204350000** |
| **Marking tags** | | | |
| Transparent sleeves. 12-mm length | TM 4/12 HF/HB | 500 | **1719840000** |
| Transparent sleeves. 18-mm length | TM 4/18 HF/HB | 500 | **1719850000** |
| **Dust protection cap** | | | |
| Protective cap | | | |

| Type | Qty. | Order No. |
|---|---|---|
| | | |
| | | |
| | | |
| TM 4/12 HF/HB | 500 | **1719840000** |
| TM 4/18 HF/HB | 500 | **1719850000** |
| | | |
| IE-PP-RJ45 | 10 | **2552580000** |

**Note**

## Assembled cables

## Railway cable RJ45 - RJ45

- Cat. 5
- Radox
- RW (reduced wire)

### RJ45 - RJ45

**Plug / plug**

## Technical data

| | |
|---|---|
| Product type | System cable |
| Category | Cat.5 (ISO/IEC 11801) |
| Shielding | SF/UTP |
| Version connector left / Version connector right | RJ45 IP 20 no tools needed / RJ45 IP 20 no tools needed |
| Cross-section | 2*2*AWG 22/7 - 2*2*0.36 mm² |
| Sheath diameter, max. | 7 mm |
| Material sheath | Radox GKW S |
| Sheathing colour | black |
| Insulation diameter | 1.58 mm |
| Min. bending radius, repetitive | 6 *diameter |
| Ambient temperature (operational) | -40 °C...90 °C |
| Storage temperature | -40 °C...90 °C |
| Abrasion resistance | very good |
| Halogen | halogen-free, according to IEC 60754-2 |
| Resistance to oils | in acc. with EN 50306-3 |
| Fire safety for railway vehicles | According to DIN 5510-2 fire safety levels 1,2,3,4, According to BS 6853, According to EN50288-2-2, According to EN 45545, HL1 - HL3 |
| Approvals | |

**Note**

## Ordering data

| | Type | Qty. | Order No. |
|---|---|---|---|
| 1.0 m | IE-C5DB4WE0010A20A20-E | 1 | **1421710010** |
| 2.0 m | IE-C5DB4WE0020A20A20-E | 1 | **1421710020** |
| 3.0 m | IE-C5DB4WE0030A20A20-E | 1 | **1421710030** |
| 4.0 m | IE-C5DB4WE0040A20A20-E | 1 | **1421710040** |
| 5.0 m | IE-C5DB4WE0050A20A20-E | 1 | **1421710050** |
| 10.0 m | IE-C5DB4WE0100A20A20-E | 1 | **1421710100** |
| 20.0 m | IE-C5DB4WE0200A20A20-E | 1 | **1421710200** |

**Note**

## Accessories

| **Marking tags** | Type | Qty. | Order No. |
|---|---|---|---|
| Transparent sleeves. 12-mm length | TM 4/12 HF/HB | 500 | **1719840000** |
| Transparent sleeves. 18-mm length | TM 4/18 HF/HB | 500 | **1719850000** |
| **Dust protection cap** | | | |
| Protective cap | IE-PP-RJ45 | 10 | **2552580000** |

**Note**

## Assembled cables
## USB cable

### USB A - USB A

### USB A - USB Micro

### Technical data

| | USB A - USB A | USB A - USB Micro |
|---|---|---|
| Sheathing colour | black | black |
| Material sheath | PVC | PVC |
| Version connector left | USB A | USB A |
| Version connector right | USB A | USB Micro |
| Ambient temperature (operational) | -15 °C...80 °C | -15 °C...80 °C |
| **Note** | | |

### Ordering data

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| 0.3 m | IE-USB-A-A-0.3M | 1 | **1993550003** | | | |
| 0.5 m | IE-USB-A-A-0.5M | 1 | **1993550005** | | | |
| 1.0 m | IE-USB-A-A-1.0M | 1 | **1993550010** | | | |
| 1.5 m | IE-USB-A-A-1.5M | 1 | **1993550015** | | | |
| 1.8 m | IE-USB-A-A-1.8M | 1 | **1993550018** | IE-USB-A-MICRO-1.8M | 1 | **1487980000** |
| 3.0 m | IE-USB-A-A-3.0M | 1 | **1993550030** | | | |
| **Note** | | | | | | |

### Accessories

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| | | | | | | |

| Note | | |
|---|---|---|

## Assembled cables
## USB cable

## USB A 3.0 - USB A 3.0

### Technical data

| | |
|---|---|
| Sheathing colour | blue |
| Material sheath | PVC |
| Version connector left | USB A 3.0 |
| Version connector right | USB A 3.0 |
| Ambient temperature (operational) | -15 °C...80 °C |

**Note**

### Ordering data

| | Type | Qty. | Order No. |
|---|---|---|---|
| 0.5 m | IE-USB-3.0-A-A-0.5M | 1 | **2581730005** |
| 1.8 m | IE-USB-3.0-A-A-1.8M | 1 | **2581730018** |
| 3.0 m | IE-USB-3.0-A-A-3M | 1 | **2581730030** |
| 5.0 m | IE-USB-3.0-A-A-5M | 1 | **2581730050** |

**Note**

### Accessories

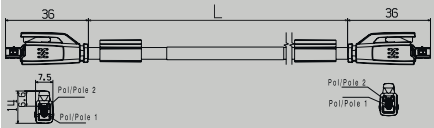
| Type | Qty. | Order No. |
|---|---|---|
| | | |

**Note**

## Assembled cable
## Single Pair Ethernet IP20

### Plug - Plug

**Socket contact / Socket contact**




### Technical data

| | |
|---|---|
| Product type | Patch cable |
| Category | |
| Shielding | STP |
| Ambient temperature (operational) | -40...80 °C |
| Rated voltage (DC) | 60 V |
| Rated current | 3.5 A |
| PoE / PoE+ | PoDL acc. to IEEE 802.3bu / cg |
| Transmission rate | 10/100 MBit/s, 1000 Mbit/s, 1000 MBit/s |
| Dielectric strength, contact / contact | 1000 V DC |
| Dielectric strength, contact / shield | 2250 V DC |
| Characteristic impedance | 100 ± 15 Ω at 20 MHz |
| Capacity at 800 Hz | 1.6 nF/km |
| Coupling attenuation 1 to 600 MHz | Type I |
| Coupling attenuation up to 1000 MHz | |
| Test voltage: wire-wire-shield | 1 kV DC, 1 min |
| Resistance differential | 2 % |
| Transmission rate | 10/100 MBit/s, 1000 Mbit/s, 1000 MBit/s |
| Version connector left | SPE plug (IEC 63171-2) - IP20 socket contact straight |
| Version connector right | SPE plug (IEC 63171-2) - IP20 socket contact straight |
| Number of wires | 2 |
| Colour coding | white / blue |
| Complete shielding / Overlap of shielding braid | Shielding braid made from copper wiring / 80 % |
| Insulation | PE |
| Insulation diameter | 1.65 mm |
| Sheath diameter, min. / max. | 4.9 / 5.3 mm |
| Cross-section / Strands | 2*AWG 22 / 7 |
| Shielding | STP |
| Material sheath | PVC |
| Colour | black |
| Halogen | Yes |
| UV-resistant | Complies with UL 1581 Sec. 1200 |
| Connector standard | IEC 63171-2 |
| **Note** | |

### Ordering data

| | Type | Qty. | Order No. |
|---|---|---|---|
| 1.0 m | IE-S1DS2VE0010T01T01-E | 1 | **2725850010** |
| 2.0 m | IE-S1DS2VE0020T01T01-E | 1 | **2725850020** |
| 3.0 m | IE-S1DS2VE0030T01T01-E | 1 | **2725850030** |
| 5.0 m | IE-S1DS2VE0050T01T01-E | 1 | **2725850050** |
| **Note** | | | |

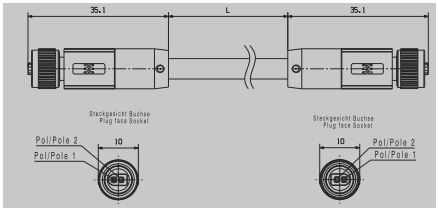
### Accessories

| Type | Qty. | Order No. |
|---|---|---|
| | | |

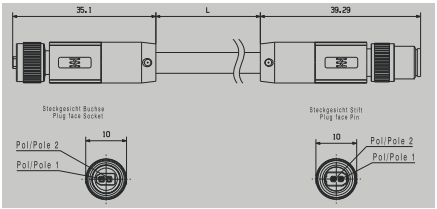
**Note**

## Assembled cable
## Single Pair Ethernet IP67

### M8 / M8
**Socket contact / Socket contact**




### M8 / M8
**Socket contact / Pin contact**




## Technical data

| | | |
|---|---|---|
| Product type | Patch cable | Patch cable |
| Category | | |
| Shielding | STP | STP |
| Ambient temperature (operational) | -40...85 °C | -40...85 °C |
| Rated voltage (DC) | 60 V | 60 V |
| Rated current | 3.5 A | 3.5 A |
| PoE / PoE+ | PoDL acc. to IEEE 802.3bu / cg | PoDL acc. to IEEE 802.3bu / cg |
| Transmission rate | 10/100 MBit/s, 1000 MBit/s | 10/100 MBit/s, 1000 MBit/s |
| Dielectric strength, contact / contact | 1000 V DC | 1000 V DC |
| Dielectric strength, contact / shield | 2250 V DC | 2250 V DC |
| Current-carrying capacity | 3.5A @ 0°C | 3.5A @ 0°C |
| Characteristic impedance | 100 ± 15 Ω at 20 MHz | 100 ± 15 Ω at 20 MHz |
| Capacity at 800 Hz | 1.6 nF/km | 1.6 nF/km |
| Coupling attenuation 1 to 600 MHz | Type I | Type I |
| Coupling attenuation up to 1000 MHz | | |
| Test voltage: wire-wire-shield | 1 kV DC, 1 min | 1 kV DC, 1 min |
| Resistance differential | 2 % | 2 % |
| Transmission rate | 10/100 MBit/s, 1000 MBit/s | 10/100 MBit/s, 1000 MBit/s |
| Version connector left | M8 SPE ( IEC63171-5) - IP67 socket contact straight | M8 SPE ( IEC63171-5) - IP67 socket contact straight |
| Version connector right | M8 SPE ( IEC63171-5) - IP67 socket contact straight | M8 SPE ( IEC63171-5) - IP67 pin contact straight |
| Number of wires | 2 | 2 |
| Colour coding | white / blue | white / blue |
| Complete shielding / Overlap of shielding braid | Shielding braid made from copper wiring / 80 % | Shielding braid made from copper wiring / 80 % |
| Insulation | PE | PE |
| Insulation diameter | 1.65 mm | 1.65 mm |
| Sheath diameter, min. / max. | 4.9 / 5.3 mm | 4.9 / 5.3 mm |
| Cross-section / Strands | 2*AWG 22 / 7 | 2*AWG 22 / 7 |
| Shielding | STP | STP |
| Material sheath | PVC | PVC |
| Colour | black | black |
| Halogen | Yes | Yes |
| UV-resistant | Complies with UL 1581 Sec. 1200 | Complies with UL 1581 Sec. 1200 |
| Connector standard | IEC 63171-5 | IEC 63171-5 |
| **Note** | | |

## Ordering data

| | Type | Qty. | Order No. |
|---|---|---|---|
| 2.0 m | IE-S1DS2VE0020TM1TM1-E | 1 | 2726050020 |
| **Note** | | | |

| Type | Qty. | Order No. |
|---|---|---|
| IE-S1DS2VE0020TM1TM2-E | 1 | 2726060020 |

## Accessories

| Type | Qty. | Order No. |
|---|---|---|
| | | |

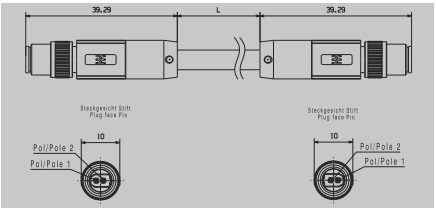
| Type | Qty. | Order No. |
|---|---|---|
| | | |

**Note**

## Assembled cable
## Single Pair Ethernet IP67

### M8 / M8

**Pin contact / Pin contact**




## Technical data

| | |
|---|---|
| Product type | Patch cable |
| Category | |
| Shielding | STP |
| Ambient temperature (operational) | -40...85 °C |
| Rated voltage (DC) | 60 V |
| Rated current | 3.5 A |
| PoE / PoE+ | PoDL acc. to IEEE 802.3bu / cg |
| Transmission rate | 10/100 MBit/s, 1000 MBit/s |
| Dielectric strength, contact / contact | 1000 V DC |
| Dielectric strength, contact / shield | 2250 V DC |
| Current-carrying capacity | 3.5A @ 0°C |
| Characteristic impedance | 100 ± 15 Ω at 20 MHz |
| Capacity at 800 Hz | 1.6 nF/km |
| Coupling attenuation 1 to 600 MHz | Type I |
| Coupling attenuation up to 1000 MHz | |
| Test voltage: wire-wire-shield | 1 kV DC, 1 min |
| Resistance differential | 2 % |
| Transmission rate | 10/100 MBit/s, 1000 MBit/s |
| Version connector left | M8 SPE ( IEC63171-5) - IP67 pin contact straight |
| Version connector right | M8 SPE ( IEC63171-5) - IP67 pin contact straight |
| Number of wires | 2 |
| Colour coding | white / blue |
| Complete shielding / Overlap of shielding braid | Shielding braid made from copper wiring / 80 % |
| Insulation | PE |
| Insulation diameter | 1.65 mm |
| Sheath diameter, min. / max. | 4.9 / 5.3 mm |
| Cross-section / Strands | 2*AWG 22 / 7 |
| Shielding | STP |
| Material sheath | PVC |
| Colour | black |
| Halogen | Yes |
| UV-resistant | Complies with UL 1581 Sec. 1200 |
| Connector standard | IEC 63171-5 |

**Note**

## Ordering data

| | Type | Qty. | Order No. |
|---|---|---|---|
| 2.0 m | IE-S1DS2VE0020TM2TM2-E | 1 | 2726070020 |

**Note**

## Accessories

| Type | Qty. | Order No. |
|---|---|---|
| | | |

**Note**

# Fibre-optic cabling solutions
## Overview


| | | |
|---|---|---|
| **Fibre-optic cabling solutions** | Overview – Fibre-optic cables | R.2 |
| | Product configurator – Fibre-optic cables | R.3 |
| | Raw cable – FO connection cable / dragline cable | R.4 |
| | Assembled cables – FO patch cable | R.5 |
| | Assembled cables – FO PROFINET cable | R.10 |
| | Assembled cables – FO dragline cable | R.11 |

# Overview – Fibre-optic cables
## First choice for industry

Fibre-optic cables are the best option for working in harsh industrial environments, especially if you:

- Need long transmission paths (up to 120 km!)
- Need to take account of EMC issues
- Must ensure electrical isolation in the case of potential differences

### Raw cables

#### Industrial fibre-optic dragline cable

For flexible installations in and around machinery and plants – for harsh, industrial surroundings, dragline cable compatible

- Polymer optic fibre (POF)
- Breakout cable
- Raw cable for assembling your own connecting cables

### Assembled cables

#### Industrial FO patch cables

...for use in industrial switching cabinets or junction boxes

- Multimode glass fibre
- Zipcord cable

#### Industrial FO adapter cables

...for linking ST and SC connections

- Multimode glass fibre
- Zipcord cable

#### Industrial fibre-optic dragline cable

...for flexible installations in and around machinery and plants – for harsh, industrial surroundings, dragline cable compatible

- Multimode fibre-optic
- Breakout cable
- Pre-assembled cable

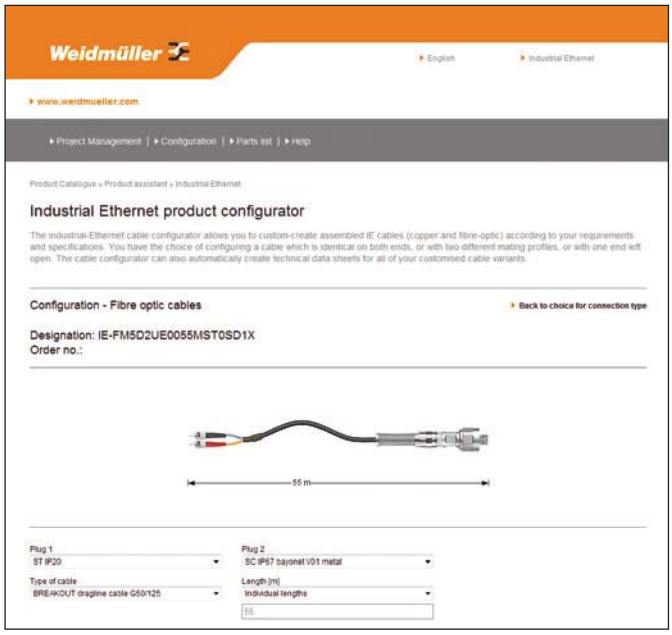
# Configurators for fibre-optic cables
## Tailor-made connections

The cable configurator in Weidmüller's online catalogue makes it possible for you to create a fully-assembled cable adapted to your requirements and specifications.

A variety of plug types in the following protective classes are available:

**IP20**
- SCRJ
- ST
- LC Duplex
- SC duplex

**IP67**
- Variant 1, metal with SC- or LC-Duplex plugs
- Variant 4, plastic with SC- or LC-Duplex plugs
- Additional housing variants to follow shortly.
- Variant 14, metal with SC or LC Duplex plugs




You then have the choice of configuring a cable which is identical on both ends, or with two different mating profiles, or with one end left open.

When selecting the cable, the following types are available:

- Zipcord, inner conductor G50 µm/125 µm and G62.5 µm/125 µm with PVC sheath
- Breakout, interior wire G50 µm/125 µm and G62.5 µm/125 µm with PVC sheath
- Breakout dragline cable, inner conductor G50 µm/125 µm and G62.5 µm/125 µm with PUR sheath.
- Zipcord inner conductor POF 980/1000 µm with PE sheathing

The cable length can also be customised:

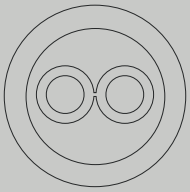
- From 0.3 m to 9.9 m, in 0.1 m steps
- From 10 m to 9999 m, in 1 m steps

The cable configurator can also automatically create technical data sheets for all of your customised cable variants.
All of your customised cable selections can be sent to Weidmüller using the "request list". You will then quickly receive a price proposal for the cables from your local Weidmüller representative.

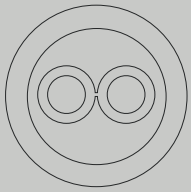
## Raw cables

- Polymer optical fibre
- Customisable

## Mini-Breakout (Typ B)



## Breakout (Typ C)



## Technical data

| | | |
|---|---|---|
| Product type | System cable | Dragline cable |
| Cable layout | Mini-Breakout | Break-out dragline |
| Sheath diameter | 7,5 mm | 7,5 mm |
| Material sheath | Polyethylene | PUR |
| Sheathing colour | green | green |
| Insulation | | |
| Min. bending radius, repetitive | | 60 mm |
| Min. bending radius, once only | | 25 mm |
| Bending cycles | 10.000 | 6 Mio |
| Ambient temperature (operational) | -30 °C...70 °C | -40 °C...85 °C |
| Fibre type | POF | POF |
| Bandwidth | > 35 MHz*100 m at 650 nm | > 35 MHz*100 m at 650 nm |
| Attenuation | ≤ 160 dB/km at 650 nm | ≤ 160 dB/km at 650 nm |
| Core diameter | 980 µm | 980 µm |
| Installation temperature | ... | ... |
| Storage temperature | -30 °C...70 °C | -40 °C...85 °C |
| Halogen | No | No |
| Approvals | | |
| **Note** | | |

## Ordering data

| **POF 980/1000 µm** | **Type** | **Qty.** | **Order No.** | **Type** | **Qty.** | **Order No.** |
|---|---|---|---|---|---|---|
| 500.0 m | IE-FPOB2EG-500 | 1 | **2781950000** | IE-FPOD2UG-500 | 1 | **2763640000** |
| **Note** | | | | | | |

## Accessories

| **Marking tags** | **Type** | **Qty.** | **Order No.** | **Type** | **Qty.** | **Order No.** |
|---|---|---|---|---|---|---|
| Insertion label. yellow. 12 mm | TM-I 12 MC NE GE | 320 | **1718411687** | TM-I 12 MC NE GE | 320 | **1718411687** |
| Insertion label. yellow. 18 mm | TM-I 18 MC NE GE | 320 | **1718431687** | TM-I 18 MC NE GE | 320 | **1718431687** |
| Transparent sleeves. 12-mm length | TM 4/12 HF/HB | 500 | **1719840000** | TM 4/12 HF/HB | 500 | **1719840000** |
| Transparent sleeves. 18-mm length | TM 4/18 HF/HB | 500 | **1719850000** | TM 4/18 HF/HB | 500 | **1719850000** |
| Wire and cable markers. ø 4.7 - 7.4 mm | VT SF 5/21 MC NE WS V0 | 160 | **1689470001** | VT SF 5/21 MC NE WS V0 | 160 | **1689470001** |
| Wire and cable markers. ø 5.8 - 7.8 mm | VT SF 6/21 MC NE WS V0 | 160 | **1730560001** | VT SF 6/21 MC NE WS V0 | 160 | **1730560001** |
| **Tools** | | | | | | |
| Crimping tool POF | HTX-IE-POF | 1 | **1208870000** | HTX-IE-POF | 1 | **1208870000** |
| POF tool set | TOOL SET IE-POF | 1 | **1208930000** | TOOL SET IE-POF | 1 | **1208930000** |

**Note**

## Assembled cables

## CabinetLine FO patch cable

- Multi-mode glass fibre optics
- LSZH Casing

### SC-Duplex / SC-Duplex

### ST / ST

## Technical data

| | SC-Duplex / SC-Duplex | ST / ST |
|---|---|---|
| Product type | Patch cable, duplex clip included | Patch cable |
| Cable layout | ZIPCORD | ZIPCORD |
| Sheath diameter | 2.8 * 5.7 mm | 2.8 * 5.7 mm |
| Material sheath | LSZH | LSZH |
| Sheathing colour | orange | orange |
| Ambient temperature (operational) | -20 °C...70 °C | -20 °C...70 °C |
| Installation temperature | ... | ... |
| Storage temperature | ... | ... |
| Approvals | | |
| **Note** | | |

## Ordering data

| **Core 62.5 µm. OM1** | SC-Duplex / SC-Duplex | | | ST / ST | | |
|---|---|---|---|---|---|---|
| | **Type** | **Qty.** | **Order No.** | **Type** | **Qty.** | **Order No.** |
| 0.5 m | IE-FM6Z2L00005DSD0SD0-X | 1 | **1433960005** | IE-FM6Z2L00005DST0ST0-X | 1 | **1433980005** |
| 1.0 m | IE-FM6Z2L00001MSD0SD0-X | 1 | **1433960010** | IE-FM6Z2L00001MST0ST0-X | 1 | **1433980010** |
| 2.0 m | IE-FM6Z2L00002MSD0SD0-X | 1 | **1433960020** | IE-FM6Z2L00002MST0ST0-X | 1 | **1433980020** |
| 3.0 m | IE-FM6Z2L00003MSD0SD0-X | 1 | **1433960030** | IE-FM6Z2L00003MST0ST0-X | 1 | **1433980030** |
| 5.0 m | IE-FM6Z2L00005MSD0SD0-X | 1 | **1433960050** | IE-FM6Z2L00005MST0ST0-X | 1 | **1433980050** |
| 10.0 m | IE-FM6Z2L00010MSD0SD0-X | 1 | **1433960100** | IE-FM6Z2L00010MST0ST0-X | 1 | **1433980100** |
| **Core 50 µm, OM2** | | | | | | |
| 0.5 m | IE-FM5Z2L00005DSD0SD0-X | 1 | **1433970005** | IE-FM5Z2L00005DST0ST0-X | 1 | **1433990005** |
| 1.0 m | IE-FM5Z2L00001MSD0SD0-X | 1 | **1433970010** | IE-FM5Z2L00001MST0ST0-X | 1 | **1433990010** |
| 2.0 m | IE-FM5Z2L00002MSD0SD0-X | 1 | **1433970020** | IE-FM5Z2L00002MST0ST0-X | 1 | **1433990020** |
| 3.0 m | IE-FM5Z2L00003MSD0SD0-X | 1 | **1433970030** | IE-FM5Z2L00003MST0ST0-X | 1 | **1433990030** |
| 5.0 m | IE-FM5Z2L00005MSD0SD0-X | 1 | **1433970050** | IE-FM5Z2L00005MST0ST0-X | 1 | **1433990050** |
| 10.0 m | IE-FM5Z2L00010MSD0SD0-X | 1 | **1433970100** | IE-FM5Z2L00010MST0ST0-X | 1 | **1433990100** |
| **Note** | | | | | | |

## Accessories

| **Marking tags** | SC-Duplex / SC-Duplex | | | ST / ST | | |
|---|---|---|---|---|---|---|
| | **Type** | **Qty.** | **Order No.** | **Type** | **Qty.** | **Order No.** |
| Wire and cable markers. ø 4.7 - 7.4 mm | VT SF 5/21 MC NE WS V0 | 160 | **1689470001** | VT SF 5/21 MC NE WS V0 | 160 | **1689470001** |
| Wire and cable markers. ø 5.8 - 7.8 mm | VT SF 6/21 MC NE WS V0 | 160 | **1730560001** | VT SF 6/21 MC NE WS V0 | 160 | **1730560001** |

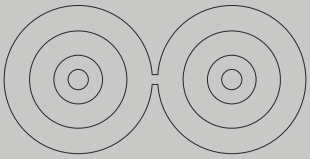
**Note**

## Assembled cables

## CabinetLine FO patch cable

- Multi-mode glass fibre optics
- LSZH Casing

### LC-Duplex / LC-Duplex



## Technical data

| | |
|---|---|
| Product type | Patch cable, duplex clip included |
| Cable layout | ZIPCORD |
| Sheath diameter | 2.0 * 4.1 mm |
| Material sheath | LSZH |
| Sheathing colour | orange |
| Ambient temperature (operational) | -20 °C...70 °C |
| Installation temperature | ... |
| Storage temperature | ... |
| Approvals | |

**Note**

## Ordering data

| Core 62.5 µm, OM1 | Type | Qty. | Order No. |
|---|---|---|---|
| 0.5 m | IE-FM6Z2L00005DLD0LD0-X | 1 | **1433930005** |
| 1.0 m | IE-FM6Z2L00001MLD0LD0-X | 1 | **1433930010** |
| 2.0 m | IE-FM6Z2L00002MLD0LD0-X | 1 | **1433930020** |
| 3.0 m | IE-FM6Z2L00003MLD0LD0-X | 1 | **1433930030** |
| 5.0 m | IE-FM6Z2L00005MLD0LD0-X | 1 | **1433930050** |
| 10.0 m | IE-FM6Z2L00010MLD0LD0-X | 1 | **1433930100** |
| **Core 50 µm, OM2** | | | |
| 0.5 m | IE-FM5Z2L00005DLD0LD0-X | 1 | **1433940005** |
| 1.0 m | IE-FM5Z2L00001MLD0LD0-X | 1 | **1433940010** |
| 2.0 m | IE-FM5Z2L00002MLD0LD0-X | 1 | **1433940020** |
| 3.0 m | IE-FM5Z2L00003MLD0LD0-X | 1 | **1433940030** |
| 5.0 m | IE-FM5Z2L00005MLD0LD0-X | 1 | **1433940050** |
| 10.0 m | IE-FM5Z2L00010MLD0LD0-X | 1 | **1433940100** |

**Note**

## Accessories

| Marking tags | Type | Qty. | Order No. |
|---|---|---|---|
| Wire and cable markers. ø 4.7 - 7.4 mm | VT SF 5/21 MC NE WS V0 | 160 | **1689470001** |
| Wire and cable markers. ø 5.8 - 7.8 mm | VT SF 6/21 MC NE WS V0 | 160 | **1730560001** |

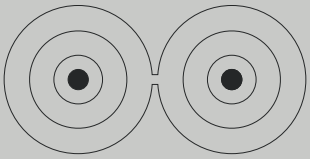
**Note**

## Assembled cables

## CabinetLine FO patch cable

- Single-mode glass fibre optics
- LSZH Casing

### LC-Duplex / LC-Duplex



## Technical data

| | |
|---|---|
| Product type | Patch cable, duplex clip included |
| Cable layout | ZIPCORD |
| Sheath diameter | 2.0 * 4.1 mm |
| Material sheath | LSZH |
| Sheathing colour | yellow |
| Ambient temperature (operational) | -20 °C...70 °C |
| Installation temperature | ... |
| Storage temperature | ... |
| Approvals | |

**Note**

## Ordering data

| Core 9 µm. OS2 | Type | Qty. | Order No. |
|---|---|---|---|
| 0.5 m | IE-FSMZ2LY0005DLD0LD0-X | 1 | **1433950005** |
| 1.0 m | IE-FSMZ2LY0001MLD0LD0-X | 1 | **1433950010** |
| 2.0 m | IE-FSMZ2LY0002MLD0LD0-X | 1 | **1433950020** |
| 3.0 m | IE-FSMZ2LY0003MLD0LD0-X | 1 | **1433950030** |
| 5.0 m | IE-FSMZ2LY0005MLD0LD0-X | 1 | **1433950050** |
| 10.0 m | IE-FSMZ2LY0010MLD0LD0-X | 1 | **1433950100** |

**Note**

## Accessories

| Marking tags | Type | Qty. | Order No. |
|---|---|---|---|
| Wire and cable markers. ø 4.7 - 7.4 mm | VT SF 5/21 MC NE WS V0 | 160 | **1689470001** |
| Wire and cable markers. ø 5.8 - 7.8 mm | VT SF 6/21 MC NE WS V0 | 160 | **1730560001** |

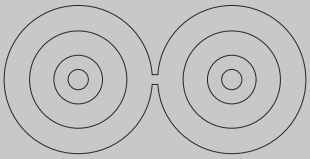
**Note**

## Assembled cable

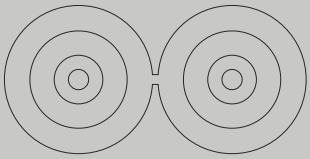
## FO patch cable

- Multimode glass optical fibre
- PVC outer cladding

### SC-Duplex / SC-Duplex



### ST / ST



## Technical data

| | | |
|---|---|---|
| Product type | Pre-assembled patch cable, crossover | Patch cable |
| Cable layout | ZIPCORD | ZIPCORD |
| Sheath diameter | 3*6 mm | 3*6 mm |
| Material sheath | PVC | PVC |
| Sheathing colour | orange | orange |
| Ambient temperature (operational) | -5 °C...75 °C | -5 °C...75 °C |
| Installation temperature | -5 °C...50 °C | -5 °C...50 °C |
| Storage temperature | -25 °C...75 °C | -25 °C...75 °C |
| Approvals | | |
| **Note** | | |

## Ordering data

| **Core 50 µm, OM2** | **Type** | **Qty.** | **Order No.** | **Type** | **Qty.** | **Order No.** |
|---|---|---|---|---|---|---|
| 1.0 m | IE-FM5Z2V00001MSD0SD0X | 1 | **8813300000** | IE-FM5Z2V00001MST0ST0X | 1 | **8876370010** |
| 2.0 m | IE-FM5Z2V00002MSD0SD0X | 1 | **8813310000** | IE-FM5Z2V00002MST0ST0X | 1 | **8876370020** |
| 3.0 m | IE-FM5Z2V00003MSD0SD0X | 1 | **8813320000** | IE-FM5Z2V00003MST0ST0X | 1 | **8876370030** |
| 5.0 m | IE-FM5Z2V00005MSD0SD0X | 1 | **8876350050** | IE-FM5Z2V00005MST0ST0X | 1 | **8876370050** |
| 10.0 m | IE-FM5Z2V00010MSD0SD0X | 1 | **8876350100** | IE-FM5Z2V00010MST0ST0X | 1 | **8876370100** |
| **Core 62.5 µm. OM1** | | | | | | |
| 1.0 m | IE-FM6Z2V00001MSD0SD0X | 1 | **8813330000** | IE-FM6Z2V00001MST0ST0X | 1 | **8813270000** |
| 2.0 m | IE-FM6Z2V00002MSD0SD0X | 1 | **8813340000** | IE-FM6Z2V00002MST0ST0X | 1 | **8813280000** |
| 3.0 m | IE-FM6Z2V00003MSD0SD0X | 1 | **8813350000** | IE-FM6Z2V00003MST0ST0X | 1 | **8813290000** |
| 5.0 m | IE-FM6Z2V00005MSD0SD0X | 1 | **8876360050** | IE-FM6Z2V00005MST0ST0X | 1 | **8876380050** |
| 10.0 m | IE-FM6Z2V00010MSD0SD0X | 1 | **8876360100** | IE-FM6Z2V00010MST0ST0X | 1 | **8876380100** |
| **Note** | | | | | | |

## Accessories

| **Marking tags** | **Type** | **Qty.** | **Order No.** | **Type** | **Qty.** | **Order No.** |
|---|---|---|---|---|---|---|
| Wire and cable markers. ø 4.7 - 7.4 mm | VT SF 5/21 MC NE WS V0 | 160 | **1689470001** | VT SF 5/21 MC NE WS V0 | 160 | **1689470001** |
| Wire and cable markers. ø 5.8 - 7.8 mm | VT SF 6/21 MC NE WS V0 | 160 | **1730560001** | VT SF 6/21 MC NE WS V0 | 160 | **1730560001** |

**Note**

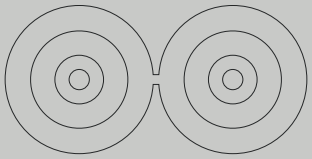
## Assembled cable

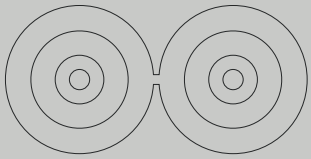
## FO patch cable

- Multimode glass optical fibre
- PVC outer cladding

### ST / SC-Duplex

### LC-Duplex / LC-Duplex





## Technical data

| | | |
|---|---|---|
| Product type | Pre-assembled patch cable, crossover | Pre-assembled patch cable, crossover |
| Cable layout | ZIPCORD | ZIPCORD |
| Sheath diameter | 3*6 mm | 3*6 mm |
| Material sheath | PVC | PVC |
| Sheathing colour | orange | orange |
| Ambient temperature (operational) | -5 °C...75 °C | -5 °C...75 °C |
| Installation temperature | -5 °C...50 °C | -5 °C...50 °C |
| Storage temperature | -25 °C...75 °C | -25 °C...75 °C |
| Approvals | | |
| **Note** | | |

## Ordering data

| Core 62.5 µm, OM1 | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| 1.0 m | | | | IE-FM6Z2V00001MLD0LD0X | 1 | **1296450000** |
| 2.0 m | IE-FM6Z2V00002MST0SD0X | 1 | **8813400000** | | | |
| **Core 50 µm, OM2** | | | | | | |
| 1.0 m | | | | IE-FM5Z2V00001MLD0LD0X | 1 | **1276880000** |
| 2.0 m | IE-FM5Z2V00002MST0SD0X | 1 | **8813390000** | IE-FM5Z2V00002MLD0LD0X | 1 | **1062570000** |
| 5.0 m | | | | IE-FM5Z2V00005MLD0LD0X | 1 | **1062550000** |
| 10.0 m | | | | IE-FM5Z2V00010MLD0LD0X | 1 | **1062580000** |
| **Note** | | | | | | |

## Accessories

| Marking tags | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| Wire and cable markers. ø 4.7 - 7.4 mm | VT SF 5/21 MC NE WS V0 | 160 | **1689470001** | VT SF 5/21 MC NE WS V0 | 160 | **1689470001** |
| Wire and cable markers. ø 5.8 - 7.8 mm | VT SF 6/21 MC NE WS V0 | 160 | **1730560001** | VT SF 6/21 MC NE WS V0 | 160 | **1730560001** |

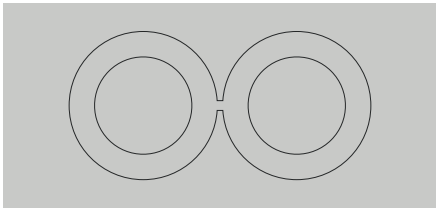
**Note**

## Assembled cable

## FO patch cable PROFINET

- Polymer optical fibre

## SC-RJ / SC-RJ



## Technical data

| | |
|---|---|
| Product type | Connecting line |
| Version connector left / Version connector right | SCRJ IP 20 / SCRJ IP 20 |
| Cable layout | ZIPCORD |
| Sheath diameter | 2.2*4.5 mm |
| Insulation | PE |
| Sheathing colour | black |
| Fibre type | POF |
| Core diameter | 980 µm |
| Ambient temperature (operational) | -20 °C...80 °C |
| Attenuation | ≤ 160 dB/km at 650 nm |
| Insertion loss | ≤ 1.0 dB |
| Bandwidth | ≥ 100 MHz*km at 650 nm |
| Halogen | No |
| Approvals | |
| **Note** | |

## Ordering data

| POF 980/1000 µm | Type | Qty. | Order No. |
|---|---|---|---|
| 1.0 m | IE-FPOZ2EE0001MSJ0SJ0-X | 1 | **1273430010** |
| 3.0 m | IE-FPOZ2EE0003MSJ0SJ0-X | 1 | **1273430030** |
| 5.0 m | IE-FPOZ2EE0005MSJ0SJ0-X | 1 | **1273430050** |
| 10.0 m | IE-FPOZ2EE0010MSJ0SJ0-X | 1 | **1273430100** |
| 20.0 m | IE-FPOZ2EE0020MSJ0SJ0-X | 1 | **1273430200** |

**Note**

## Accessories

| Marking tags | Type | Qty. | Order No. |
|---|---|---|---|
| Wire and cable markers. ø 4.7 - 7.4 mm | VT SF 5/21 MC NE WS V0 | 160 | **1689470001** |
| Wire and cable markers. ø 5.8 - 7.8 mm | VT SF 6/21 MC NE WS V0 | 160 | **1730560001** |

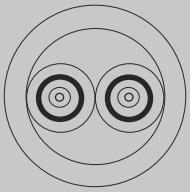
**Note**

## Assembled cables

## FO dragline cable

- Multimode glass optical fibre

### LC-Duplex / LC-Duplex



### Technical data

| | |
|---|---|
| Product type | Dragline cable |
| Version connector left / Version connector right | LC-Duplex IP 20 / LC-Duplex IP 20 |
| Cable layout | Break-out dragline |
| Sheath diameter | 6 mm |
| Material sheath | PUR |
| Sheathing colour | black |
| Ambient temperature (operational) | -40 °C...80 °C |
| Installation temperature | -20 °C...60 °C |
| Storage temperature | -40 °C...80 °C |
| Approvals | |
| **Note** | |

### Ordering data

| **Core 62.5 µm. OM1** | **Type** | **Qty.** | **Order No.** |
|---|---|---|---|
| 5.0 m | IE-FM6D2UE0005MLD0LD0X | 1 | **1220930000** |
| 20.0 m | IE-FM6D2UE0020MLD0LD0X | 1 | **1174830000** |
| 50.0 m | IE-FM6D2UE0050MLD0LD0X | 1 | **8993220000** |
| **Core 50 µm, OM2** | | | |
| 10.0 m | IE-FM5D2UE0010MLD0LD0X | 1 | **8979020000** |
| 50.0 m | IE-FM5D2UE0050MLD0LD0X | 1 | **8979040000** |
| 100.0 m | IE-FM5D2UE0100MLD0LD0X | 1 | **8979030000** |
| **Note** | | | |

### Accessories

| **Marking tags** | **Type** | **Qty.** | **Order No.** |
|---|---|---|---|
| Wire and cable markers. ø 4.7 - 7.4 mm | VT SF 5/21 MC NE WS V0 | 160 | **1689470001** |
| Wire and cable markers. ø 5.8 - 7.8 mm | VT SF 6/21 MC NE WS V0 | 160 | **1730560001** |

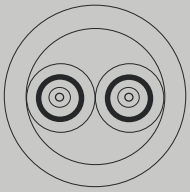
**Note**

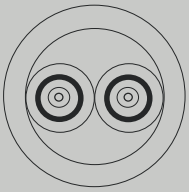
## Assembled cable
## FO dragline cable

- Multimode glass optical fibre

### SC-Duplex / SC-Duplex

### ST / ST





## Technical data

| | SC-Duplex / SC-Duplex | ST / ST |
|---|---|---|
| Product type | Dragline cable | Dragline cable |
| Cable layout | Break-out dragline | Break-out dragline |
| Sheath diameter | 6 mm | 6 mm |
| Material sheath | PUR | PUR |
| Sheathing colour | black | black |
| Ambient temperature (operational) | -40 °C...80 °C | -40 °C...80 °C |
| Installation temperature | -20 °C...60 °C | -20 °C...60 °C |
| Storage temperature | -40 °C...80 °C | -40 °C...80 °C |
| Approvals | | |
| **Note** | | |

## Ordering data

| Core 62.5 µm, OM1 | | SC-Duplex / SC-Duplex | | | ST / ST | | |
|---|---|---|---|---|---|---|---|
| | | Type | Qty. | Order No. | Type | Qty. | Order No. |
| | 1.0 m | IE-FM6D2UE0001MSD0SD0X | 1 | **8876440010** | IE-FM6D2UE0001MST0ST0X | 1 | **8876460010** |
| | 3.0 m | IE-FM6D2UE0003MSD0SD0X | 1 | **8876440030** | IE-FM6D2UE0003MST0ST0X | 1 | **8876460030** |
| | 5.0 m | IE-FM6D2UE0005MSD0SD0X | 1 | **8876440050** | IE-FM6D2UE0005MST0ST0X | 1 | **8876460050** |
| | 10.0 m | IE-FM6D2UE0010MSD0SD0X | 1 | **8876440100** | IE-FM6D2UE0010MST0ST0X | 1 | **8876460100** |
| | 50.0 m | IE-FM6D2UE0050MSD0SD0X | 1 | **8876440500** | | | |
| | 100.0 m | IE-FM6D2UE0100MSD0SD0X | 1 | **8876441000** | IE-FM6D2UE0100MST0ST0X | 1 | **8876461000** |
| **Core 50 µm, OM2** | | | | | | | |
| | 1.0 m | IE-FM5D2UE0001MSD0SD0X | 1 | **8876430010** | IE-FM5D2UE0001MST0ST0X | 1 | **8876450010** |
| | 3.0 m | IE-FM5D2UE0003MSD0SD0X | 1 | **8876430030** | IE-FM5D2UE0003MST0ST0X | 1 | **8876450030** |
| | 5.0 m | IE-FM5D2UE0005MSD0SD0X | 1 | **8876430050** | IE-FM5D2UE0005MST0ST0X | 1 | **8876450050** |
| | 10.0 m | IE-FM5D2UE0010MSD0SD0X | 1 | **8876430100** | IE-FM5D2UE0010MST0ST0X | 1 | **8876450100** |
| | 50.0 m | IE-FM5D2UE0050MSD0SD0X | 1 | **8876430500** | IE-FM5D2UE0050MST0ST0X | 1 | **8876450500** |
| | 100.0 m | IE-FM5D2UE0100MSD0SD0X | 1 | **8876431000** | IE-FM5D2UE0100MST0ST0X | 1 | **8876451000** |
| **Note** | | | | | | | |

## Accessories

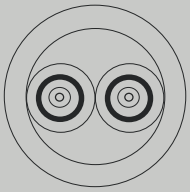
| Marking tags | | SC-Duplex / SC-Duplex | | | ST / ST | | |
|---|---|---|---|---|---|---|---|
| | | Type | Qty. | Order No. | Type | Qty. | Order No. |
| | Wire and cable markers. ø 4.7 - 7.4 mm | VT SF 5/21 MC NE WS V0 | 160 | **1689470001** | VT SF 5/21 MC NE WS V0 | 160 | **1689470001** |
| | Wire and cable markers. ø 5.8 - 7.8 mm | VT SF 6/21 MC NE WS V0 | 160 | **1730560001** | VT SF 6/21 MC NE WS V0 | 160 | **1730560001** |

**Note**

## Assembled cables
## FO dragline cable with extended temperature range

- Multimode glass optical fibre

### SC-Duplex IP67



### Technical data

| | |
|---|---|
| Product type | Dragline cable |
| Cable layout | Break-out dragline |
| Version connector left / Version connector right | SC IP 67 bayonet V01 metal / SC IP 67 bayonet V01 metal |
| Sheath diameter | 7.5–8 mm |
| Material sheath | PUR |
| Sheathing colour | black |
| Fibre type | GOF, Multimode, OM1 |
| Bandwidth | 200 MHz*km at 850 nm, 500 MHz*km at 1300 nm |
| Attenuation | 2.7 dB/km at 850 nm, ≤ 0.5 dB/km at 1300 nm |
| Ambient temperature (operational) | -40 °C...85 °C |
| Installation temperature | -55 °C...60 °C |
| Storage temperature | -55 °C...85 °C |
| Approvals | |

**Note**

### Ordering data

| Core 62.5 µm. OM1 | Type | Qty. | Order No. |
|---|---|---|---|
| 100.0 m | IE-FM6C2UE0100MSD1SD1X | 1 | **1318011000** |
| 180.0 m | IE-FM6C2UE0180MSD1SD1X | 1 | **1318011800** |
| 200.0 m | IE-FM6C2UE0200MSD1SD1X | 1 | **1318012000** |
| 250.0 m | IE-FM6C2UE0250MSD1SD1X | 1 | **1318012500** |
| 300.0 m | IE-FM6C2UE0300MSD1SD1X | 1 | **1318013000** |
| 350.0 m | IE-FM6C2UE0350MSD1SD1X | 1 | **1318013500** |
| 500.0 m | IE-FM6C2UE0500MSD1SD1X | 1 | **1318015000** |

**Note**

### Accessories

| Marking tags | Type | Qty. | Order No. |
|---|---|---|---|
| Wire and cable markers. ø 4.7 - 7.4 mm | VT SF 5/21 MC NE WS V0 | 160 | **1689470001** |
| Wire and cable markers. ø 5.8 - 7.8 mm | VT SF 6/21 MC NE WS V0 | 160 | **1730560001** |

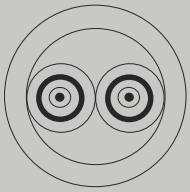
**Note**

## Assembled cables

## FO dragline cable

- Singlemode glass optical fibre

## SC-Duplex IP67



## Technical data

| | |
|---|---|
| Product type | Dragline cable |
| Cable layout | Break-out dragline |
| Version connector left / Version connector right | SC IP 67 PushPull V14 metal / SC IP 67 PushPull V14 metal |
| Sheath diameter | 6 mm |
| Material sheath | PUR |
| Sheathing colour | black |
| Fibre type | Singlemode, OS 2 |
| Bandwidth | |
| Insertion loss | ≤ 0.5 dB |
| Attenuation | ≤0.4 dB/km at 1310 nm |
| Ambient temperature (operational) | -40 °C...80 °C |
| Installation temperature | -20 °C...60 °C |
| Storage temperature | -40 °C...80 °C |
| Approvals | |

**Note**

## Ordering data

| Core 9 µm. OS2 | Type | Qty. | Order No. |
|---|---|---|---|
| 5.0 m | IE-FSMD2UE0005MSDESDEX | 1 | 1449420050 |
| 20.0 m | IE-FSMD2UE0020MSDESDEX | 1 | 1449420200 |
| 25.0 m | IE-FSMD2UE0025MSDESDEX | 1 | 1449420250 |
| 40.0 m | IE-FSMD2UE0040MSDESDEX | 1 | 1449420400 |

**Note**

## Accessories

| Marking tags | Type | Qty. | Order No. |
|---|---|---|---|
| Wire and cable markers. ø 4.7 - 7.4 mm | VT SF 5/21 MC NE WS V0 | 160 | 1689470001 |
| Wire and cable markers. ø 5.8 - 7.8 mm | VT SF 6/21 MC NE WS V0 | 160 | 1730560001 |

**Note**

# Passive components
## Overview of accessories


| | | |
|---|---|---|
| **Accessories – Passive components** | Introduction | S.2 |
| | Connection system | S.3 |
| | Copper cabling tools | S.4 |
| | Fibre-optic cabling tools | S.10 |
| | General tools | S.15 |
| | Cabtite cable entry system | S.18 |
| | Cable guiding | S.23 |
| | Protective caps | S.24 |
| | Inkjet printer | S.25 |
| | Markers for cables and ***STEADY**TEC*® | S.27 |
| | Surge protection for data interfaces | S.28 |

# Overview of accessories
## Everything from a single source

### Cable connector

Connection, repair or extension of Industrial Ethernet cables to Cat.$7_A$

- fieldattachable with IDC connection technology
- Specified for class $F_A$
- IP67

### Cable guiding

Cable bender to guide patch cables safely and without cable breakage or data loss by 90° angles

### Copper cabling tools

For assembling
- RJ45 crimp
- Hybrid insert

for stripping
to test the wiring

### Cabtite

System-based cable entry

- Cable entry strips
- Cable grommets

### Fibre-optic cabling tools

For assembling

- SCRJ-POF
- SC-GOF
- ST-GOF

### Protective caps

to protect all IE-LINE connectors with ***STEADY****TEC*® technology

### General tools

For pressing conductors into IDC terminals and pressing RJ45 contacts

- Indentation tool
- Pressing tool

### Marker

For identifying conductors, plugs and devices

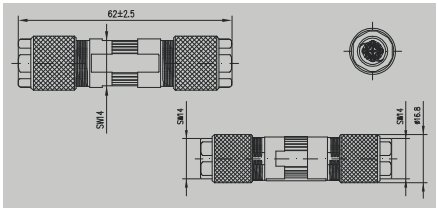
- Line markers
- Housing and plug marker

### Surge protection for data interfaces

For the protection of Cat. 5 and Cat. 6 data lines - also in PoE and PoE + applications

## Cable connector class 7

## Cable connector




## Technical data

| | |
|---|---|
| Category | Class $F_A$(ISO/IEC11801 2011) with cat. $7_A$ Cable |
| Protection degree | IP67 |
| Connection 1 / 2 | Insulation displacement technology / Insulation displacement technology |
| Housing main material | Zinc diecast |
| Ambient temperature (operational) | -40 °C...85 °C |
| Current-carrying capacity at 50 °C | 0.5 A @ 40 °C |
| Rated voltage | 63 V |
| Insulation strength | 100 MΩ |
| Shielding | 360° all-round enclosure |
| Connection diameter, flexible, min. / max. | 0.48 mm / 0.76 mm |
| Connection cross-section, flexible, min. / max. | AWG 26 / AWG 22 |
| Connection diameter, solid, min. / max. | 0.4 mm / 0.64 mm |
| Connection cross-section, solid, min. / max. | AWG 24 / AWG 22 |
| Insulation cross-section, max. | 1.6 mm |
| Sheath diameter min. / max. | 5 mm / 9.7 mm |
| Approvals | EAC |

**Note**

## Ordering data

| Type | Qty. | Order No. |
|---|---|---|
| IE-CC-8W-FA-IP67 | 1 | 1499940000 |

**Note**

## Accessories

| Type | Qty. | Order No. |
|---|---|---|

**Note**

## Stripping tools

### IE-CST

**1- and 2- step stripping in one operation**

Stripping tool for round (shielded) data cables of Ø 2.5...8 mm

- Specially designed for Ethernet cables
- Strips sheathing and cuts shield in one operation
- Blue blade cartridge included in delivery

### AM 12

**For UTP and STP data cables**

- Cutting of UTP and STP data cables and other flexible copper cables with a diameter of up to 4 $mm^2$ (~AWG11)
- Stripping of the outer insulations of UTP and STP data cables and other round cables with Ø 0.5 ... 12.5 mm
- No damage to the shielding or conductor due to adjustable stripping blade
- Length gauge for repeated stripping lengths

S

## Technical data

| Max. cutting performance copper cable | | IE-CST | AM 12 |
|---|---|---|---|
| Cable model | | coaxial & round data cables | UTP and STP data cables |
| Conductor cross-section | AWG | | |
| Conductor diameter | mm | 2.5 ... 8 | 0.5...12.5 |
| Adjustable depth of cut | mm | | adjustable |
| **Cutting performance** | | | |
| Non-shielded & shielded data cables | mm | | 8 |
| Flexible copper cable | $mm^2$ | | 4 |
| **Tool data** | | | |
| Length | mm | 100 | 97 |
| Weight | g | 85 | 36 |
| | | | |
| **Note** | | | |

## Ordering data

| | Type | Qty. | Order No. |
|---|---|---|---|
| IE-CST | IE-CST | 1 | 9204350000 |
| AM 12 | AM 12 | 1 | 9030060000 |

**Note**

## Accessories

| | Type | Qty. | Order No. |
|---|---|---|---|
| Spare cutter cassette | Spare cutter cassette | 1 | 9032020000 |

**Note**

## Pressing tools

- Press (punch-down) tool for Ethernet connectors
- Ratchet for precise crimping
- Release option in the event of incorrect operationg

## TT 8 RS MP 8

For 8-pole shielded RJ45 plug

- AWG 27...24

STEADY TEC

## Technical data

| Description of contact | | TT 8 RS MP 8 |
|---|---|---|
| No. of poles | | 8 |
| **Tool data** | | |
| Length | mm | 255 |
| Weight | g | 1251 |
| **Note** | | |

## Ordering data

| Version | Type | Qty. | Order No. |
|---|---|---|---|
| | TT 8 RS MP 8 | 1 | 9202800000 |
| **Note** | | | |

## Pressing tools

- Press (punch-down) tool for Ethernet connectors
- Ratchet for precise crimping
- Release option in the event of incorrect operationg

### IE-CWZ-RJ45-TH-P

For 4-pole shielded RJ45 plug

- AWG 23...22

## Technical data

| Description of contact | IE-CWZ-RJ45-TH-P |
|---|---|
| No. of poles | 4 |
| **Tool data** | |
| Length mm | 250 |
| Weight g | 570 |
| **Note** | |

## Ordering data

| Version | Type | Qty. | Order No. |
|---|---|---|---|
| | IE-CWZ-RJ45-TH-P | 1 | **2614210000** |
| **Note** | | | |

## Cable Tester

Test devices for testing Ethernet cables, including remote box

### LAN USB TESTER

- Indication of connection errors:
  Connection error
  Interrupt
  Short-circuit
  Permutation
- Network cable tester for LAN and USB connections

### IE-CT

- Indication of connection errors:
  Connection error
  Interrupt
  Short-circuit
  Permutation
  Wire mix-up (split pair)
  External voltage
- External voltage resistance: 80 V AC / DC

## Technical data

| | | | |
|---|---|---|---|
| Display | | LED | 7-segment display |
| Supply | | 9 V battery | 9 V battery |
| Type of connection | | RJ45, USB A, USB B | RJ45 |
| Remote box dimensions | | 65 x 28 x 27 mm | 30 x 68 x 23 mm |
| Remote box weight | | 30 g | 31 g |
| Length / Width / Height | mm | 135 / 65 / 27 | 140 / 70 / 36 |
| Weight | | 174 g | 185 g |
| **Note** | | | |

## Ordering data

| Version | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| | LAN USB TESTER | 1 | **9205400000** | IE-CT | 1 | **8808420000** |
| **Note** | Battery, accessories and bag included in delivery. | | | Battery, accessories and bag included in delivery.<br>Spare IE-CT: 1506880000 | | |

## Cutting tools

- The cutting blade design for different cable sizes increases the quality of the cuts for smaller cross-sections
- Not suitable for steel wires, steel-armoured cables, aluminium alloys and hard-drawn copper conductors!
- Cutting without deformation of the conductor
- Do not cut live conductors
- Individually tested protective insulation, 1000V, VDE and GS tested in accordance with EN/IEC 60900
- Optimised handle ergonomics
- Minimal hand force required

### KT 8

### KT 12

max. 8 mm
max. 16 mm²
max. 16 mm²
max. 16 mm²

max. 12 mm
max. 16 mm²
max. 25 mm²
max. 35 mm²

## Technical data

| Max. cutting performance, copper cable | KT8 | KT12 |
|---|---|---|
| Copper cable - solid, max. | 16 mm² / 6 AWG | 16 mm² / 6 AWG |
| Copper cable - stranded, max. | 16 mm² / 6 AWG | 25 mm² / 3 AWG |
| Copper cable - flexible, max. | 16 mm² / 6 AWG | 35 mm² / 2 AWG |
| Copper cable, max. diameter | 8 mm | 12 mm |
| **Max. cutting performance, aluminium cable** | | |
| Stranded aluminium cable, max (mm²) | 16 mm² / 6 AWG | 25 mm² / 6 AWG |
| Stranded aluminium cable, max. diameter | 8 mm | 8 mm |
| Single-core aluminium cable, max.(mm²) | 16 mm² | 25 mm² |
| **Data / telephone / control cable** | | |
| Data / telephone / control cable, max. Ø | 8 mm | 12 mm |
| **Tool data** | | |
| Depth / Width / Height | 30 / 185 / 65.5 mm | 30 / 225 / 63.5 mm |
| Weight | 180 g | 300 g |
| **Note** | Tool closed | Tool closed |

## Ordering data

| Version | Type | Qty. | Order No. |
|---|---|---|---|
| | KT 8 | 1 | 9002650000 |
| **Note** | | | |

| Type | Qty. | Order No. |
|---|---|---|
| KT 12 | 1 | 9002660000 |

## SEE ESD 120

**Electronic ESD diagonal-cutting pliers with pointed head**

- Hard wire (spring wire or steel nails): 0.2 mm/AWG 32
- Semi-hard wire (iron or nails): 1.0 mm/AWG 18
- Soft wire (copper or aluminium): 1.5 mm/AWG 15

### Ordering data

| Type | Qty. | Order No. |
|---|---|---|
| SEE ESD 120 | 1 | 9205130000 |

### Technical data

| | |
|---|---|
| Weight | 90 g |

## SEE ESD 125

**Electronic ESD diagonal-cutting pliers with oval head**

- Semi-hard wire (iron or nails): 0.3 mm/AWG 29
- Soft wire (copper or aluminium): 1.5 mm/AWG 15

### Ordering data

| Type | Qty. | Order No. |
|---|---|---|
| SEE ESD 125 | 1 | 9204750000 |

### Technical data

| | |
|---|---|
| Weight | 90 g |

## FZE ESD 130

**Electronic ESD flat-nosed pliers**

### Ordering data

| Type | Qty. | Order No. |
|---|---|---|
| FZE ESD 130 | 1 | 9204760000 |

### Technical data

| | |
|---|---|
| Weight | 90 g |

## SZE ESD 130

**Electronic ESD Snipe-nosed pliers**

### Ordering data

| Type | Qty. | Order No. |
|---|---|---|
| SZE ESD 130 | 1 | 9204770000 |

### Technical data

| | |
|---|---|
| Weight | 90 g |

## SVSE ESD 130

**Electronic ESD angle-cutting pliers**

- Hard wire (spring wire or steel nails): 0.6 mm/AWG 22
- Semi-hard wire (iron or nails): 1.0 mm/AWG 18
- Soft wire (copper or aluminium): 1.2 mm/AWG 16

### Ordering data

| Type | Qty. | Order No. |
|---|---|---|
| SVSE ESD 130 | 1 | 9205140000 |

### Technical data

| | |
|---|---|
| Weight | 90 g |

## SUPER CUT

**Electronic diagonal-cutting pliers**

- Soft wire (copper or aluminium): 1.2 mm/AWG 16

### Ordering data

| Type | Qty. | Order No. |
|---|---|---|
| SUPER CUT | 1 | 9205150000 |

### Technical data

| | |
|---|---|
| Weight | 78 g |

## KOF SET ESD

**Electronic ESD case set**

Contents:
- Diagonal-cutting pliers
- Snipe-nosed pliers
- Flat-nose pliers
- Angle-cutting pliers

### Ordering data

| Type | Qty. | Order No. |
|---|---|---|
| KOF SET ESD | 1 | 9205210000 |

### Technical data

| | |
|---|---|
| Weight | 547 g |

## Crimping tools

Cutting, stripping and crimping tools
for processing POF fibres in compliance with
IEC 60793-2 A4A fibres (1000 µm/980 µm POF)

- Multifunction tool for POF fibres
- Processing the duplex POF fibres
- Stripping tool for processing POF fibres and cables
- The new set of blades for POF cables makes stripping the outer covering and the POF fibres simple
- Cable shears specially designed for aramid fibres
- Only for cutting aramid fibres (strain relief in fibre-optic cables)

## Tool-Set IE-POF

**Contents:**

- Assortment case PSC 80
- Kevlar scissors for aramid fibres
- Multifunction tool HTX-IE-POF
- Stripping tool multi-stripax® IE-POF

## multi-stripax® POF

- Excellent stripping quality for industrial applications
- Specially shaped blades enable stripping of special types of insulation and conductor configurations
- Stripping length with end stop, adjustable from 2.3...30 mm
- Very versatile thanks to interchangeable stripping units
- Stripping results reproduced accurately over and over again
- No damage to the conductor
- A long-lasting, reliable tool thanks to its sturdy design
- Integrated cutting function up to 6 mm²

S

## Technical data

| | | | |
|---|---|---|---|
| Length / Width / Height | mm | 241 / 338 / 79 | 250 / 85 / 40 |
| Weight | g | 1,800 | 250 |
| **Note** | | | |

## Ordering data

| Version | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| | TOOL SET IE-POF | 1 | **1208930000** | MULTI-STRIPAX IE-POF | 1 | **1208880000** |
| **Note** | | | | | | |

## Accessories

| | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| | HTX-IE-POF | 1 | **1208870000** | Replacement cutting blade | 1 | **9203100000** |
| | MULTI-STRIPAX IE-POF | 1 | **1208880000** | Replacement stop set | 1 | **9203070000** |
| | KEVLAR SCISSORS | 1 | **1208910000** | AIE MULTI-STRIPAX POF | 1 | **1212770000** |
| **Note** | | | | | | |

## Mounting tools

- Release option in the event of incorrect operation
- With end stop for exact positioning of the contacts

### HTX-IE-POF

- Only one tool needed for all SC-RJ plug processing steps
- For processing 1 mm thick polymer optical fibres, especially for the PROFINET and EtherNet/IP-SC-RJ connectors
- For stripping Duplex polymer optical fibres
- The plug is crimped and the polymer optical fibres are separated, all in a single step
- Cut surfaces do not need to be polished after cutting
- Locator for precise positioning of the SC-RJ plugs
- Ergonomic handles
- High repeat accuracy
- Ratchet for precise crimping

Three steps to produce IP67 connectors:
1) Strip the Duplex polymer optical fibres
2) Crimp and separate
3) Crimp the strain relief

### HTX-HTX-IE-POF-QA

- Only one tool needed for all SC-RJ QA (reconnactable) plug processing steps
- For processing 1 mm thick polymer optical fibres, especially for the PROFINET and EtherNet/IP-SC-RJ connectors
- For stripping Duplex polymer optical fibres
- Cut surfaces do not need to be polished after cutting
- Locator for precise positioning of the SC-RJ plugs
- Ergonomic handles
- High repeat accuracy

Three steps to produce IP67 connectors:
1) Strip the Duplex polymer optical fibres
2) Tighten strain relief
3) Insert and Cutting

S

## Technical data

| Material data | HTX-IE-POF | HTX-HTX-IE-POF-QA |
|---|---|---|
| Length | 220 | 220 |
| Weight | 450 | 450 |
| **Note** | | |

## Ordering data

| Version | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| | HTX-IE-POF | 1 | 1208870000 | HTX-HTX-IE-POF-QA | 1 | 2602860000 |
| **Note** | | | | | | |

## Kevlar Scissor

- Cable shears specially designed for aramid fibres

### SCISSOR Kevlar

- Only for cutting aramid fibres (strain relief in fibre-optic cables)
- Do not use for other materials
- Special blade geometry
- Blades ground
- With teeth on the cutting edge
- Riveted joint
- Hand-friendly, impact-resistant plastic handles



## Technical data

| Material data | SCISSORS KEVLAR |
|---|---|
| Length | 147 |
| Weight | 100 |
| **Note** | |

## Ordering data

| Version | Type | Qty. | Order No. |
|---|---|---|---|
| | SCISSORS KEVLAR | 1 | 1208910000 |
| **Note** | | | |

## Crimping tool for other contacts

- Ratchet for precise crimping
- Release option in the event of incorrect operation
- With end stop for exact positioning of the contacts
- Contact and insulation are crimped in one step

## HTF HYB

**0.08...1.0 mm²**

For Weidmüller hybrid sockets and pins

- ~AWG 28...AWG 17

## Technical data

| Description of contact | | HTF HYB |
|---|---|---|
| Type of contact | | Hybrid sockets / plugs |
| Crimping range | mm² | 0.08...1 |
| Crimping range 1 (with multiple crimping positions) | mm² | 0.08....0.2 |
| Crimping range 2 (with multiple crimping positions) | mm² | 0.2...0.5 |
| Crimping range 3 (with multiple crimping positions) | mm² | 0.75...1 |
| **Tool data** | | |
| Length | mm | 200 |
| Weight | g | 438 |
| **Note** | | |

## Ordering data

| Version | Type | Qty. | Order No. |
|---|---|---|---|
| | HTF HYB | 1 | 1119580000 |
| **Note** | | | |

## Special stripping tools

- Quick and accurate stripping
- No need to adjust cutting depth
- No damage to inner conductors

## LWL-stripax®

Stripping and cutting tool for plastic fibre-optic cables with 1-mm diameter inner conductor

- Stripping length adjustable via end stop
- Automatic opening of the clamping jaws after stripping



## Technical data

| Max. stripping performance | | M-D-STRIPAX LWL |
|---|---|---|
| Cable type | | POF conductor with an inner conductor of 1 mm Ø |
| Conductor diameter, min. / max. | – | |
| Stripping length, max. | – | 7.5 |
| **Tool data** | | |
| Width | mm | 82 |
| Height | mm | 135 |
| Weight | g | 110 |
| **Note** | | POF: polymer optical fibre |

## Ordering data

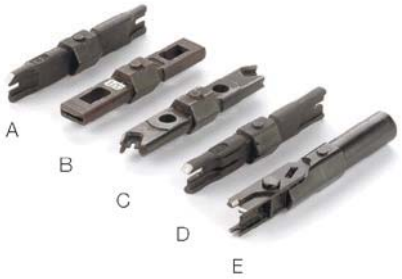
| Version | Type | Qty. | Order No. |
|---|---|---|---|
| | M-D-STRIPAX LWL | 1 | 9003750000 |
| **Note** | | | |

## Accessories

| | Type | Qty. | Order No. |
|---|---|---|---|
| | Spare stripping blades | 1 | 9003760000 |
| **Note** | | | |

## Incision tool for twisted-pair cable

For connecting twisted-pair cable to terminal rails with IDC contacts e.g. in main and floor distributors, and in modular wall junction boxes for structured building cabling.




## PDT

The punch-down tool has the following features:

- Mechanics made from metal components
- Adjustable pressing force for conductor sizes AWG 20 to AWG 28
- Different blades for connector blocks of type 110 from AT&T, type 66, type LSA Plus from Krone (Standard and scissors cutting function) as well as for telephone outlets 630A6
- Incision blades with 2 functions: incision or incision with cutting off of remaining conductor
- Storage compartment for one blade

A = PD blade 110
B = PD blade 66
C = PD blade 630
D = PD blade Krone LSA (standard)
E = PD blade Krone LSA (scissor)

## IE-FISP-V4

Fastening tool for the hexagon cap nut from ***STEADY**TEC*® V4 flange and FrontCom® Micro.

## Technical data

| | | PUNCH DOWN TOOL PDT | Fixing tool |
|---|---|---|---|
| Length / Width / Height | mm | 160 / 37 / 29 | 115 / 28 / 28 |
| Weight | g | 142 | 21 |
| **Note** | | | |

## Ordering data

| Version | Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|---|
| | PUNCH DOWN TOOL PDT | 1 | **9013970000** | IE-FISP-V4 | 2 | **9204370000** |
| **Note** | (without blade) | | | | | |

## Accessories

| Type | Qty. | Order No. | Type | Qty. | Order No. |
|---|---|---|---|---|---|
| PD blade Krone LSA Plus (scissor) | 1 | **9014050000** | | | |
| PD blade 110 | 1 | **9013960000** | | | |
| PD blade 630 | 1 | **9013990000** | | | |
| PD blade 66 | 1 | **9013980000** | | | |
| PD blade Krone LSA Plus (standard) | 1 | **9014000000** | | | |
| **Note** | | | | | |

## Hydraulic sheet holes

Incl. accessories:
- 1 HSS pre-drill Ø 10 mm
- 1 tension bolt Ø 19 mm
- 1 tension bolt Ø 19 x 9.5 mm
- 1 spacer nut set (3-part)
- 1 bridge

## IE-KO-HAT

- Pressure relief valve protects against overloading
- Cylinder head angled at 90°
- Angled head can be rotated through 360°
- Ergonomic handle springs back automatically
- The waste piece no longer becomes jammed thanks to 3-fold splitter
- Hydraulic punch made of high-strength aluminium (approx. 40% weight saving)
- Service life greatly reduced when stainless steel sheets are used

### Technical data

| | IE-KO-HAT |
|---|---|
| **Maximum steel-sheet punching performance** | |
| Round holes from 1 to Ø 85 mm | 2,0 mm F = 370 N/mm² |
| Round holes from 2 to Ø 64 mm | 3,0 mm F = 370 N/mm² |
| Square holes up to | 68 x 68 mm; 2.0 mm F = 370 N/mm² |
| Rectangular holes up to | 36 x 112 mm; 2,0 mm F = 370 N/mm² |
| **Maximum stainless steel sheet punching performance** | |
| Round holes from 3 to Ø 64 mm | 2.5 mm F = 600 N/mm² |
| **Tool data** | |
| Depth / Width / Height | 70 / 290 / 120 mm |
| Weight | 1.9 kg |
| Punching force | 75 kN |
| Max. operating pressure | 650 bar |
| **Note** | |

### Ordering data

| Version | Type | Qty. | Order No. |
|---|---|---|---|
| | IE-KO-HAT | 1 | 1966810000 |
| **Note** | | | |

### Accessories

| | Type | Qty. | Order No. |
|---|---|---|---|
| Tension bolt | KOHS 19 | 1 | 9205010000 |
| Tension bolts | KOHS 9.5+19 | 1 | 9205000000 |
| Pre-drill | KOPD 10.0 | 1 | 9205020000 |
| **Note** | Splitting stamp on the next page | | |

**Tension bolt KOHS 19**

**Tension bolts KOHS 9.5+19**

**Pre-drill KOPD 10.0**

### Custom stamp for Industrial Ethernet connections

| Type | Description | Dimensions | Qty. | Order No. |
|---|---|---|---|---|
| IE-KOK-V1 | Custom shape for Bajonet 01 metal | Diameter 27 mm x 1 side 25.9 mm | 1 | 1966780000 |
| IE-KOK-V4 | Custom shape for Push Pull V04 plastic | Diameter 23.2 mm x 2 sides 20.2 mm | 1 | 1966790000 |
| IE-KOK-V5 | Custom shape for RockStar® V05 metal | 22.0 x 22.0 mm | 1 | 9204790000 |

## Cabtite SE - Sealing element small

Cable grommets for ASI cables

The Cabtite SE sealing elements are used in the Cabtite FR frame or in the separable cable gland Cabtite CGS. The conical design allows easy installation, reliably seals gaps and provides strain relief in accordance with DIN EN 62444. For installation, the sealing elements are pressed from the inside to the outside into the snap-in inlays previously fitted in the frame or, in the case of the Cabtite CGS divisible cable gland, are placed between the cable gland half-shells. Various sealing elements with different cable diameters and geometries are available.

### Technical data

| | |
|---|---|
| Material | TPE |
| Halogen / Silicone | No / No |
| Operating temperature, min. | Light Grey: -40 °C; Deep black: -40 °C |
| Operating temperature, max. | Light Grey: 90 °C; Deep black: 120 °C |
| UL 94 flammability rating | Light Grey: V-0; Deep black: HB |
| **Note** | |

### Ordering data

| Type | Clamping range | Qty. | Deep black | Light Grey |
|---|---|---|---|---|
| | | | Order No. | Order No. |
| **Individual sealing elements** | | | | |
| CABTITE SE 1.5-2 SML | 1.5...2 mm | 10 | **2584780000** | **2583360000** |
| CABTITE SE 2-3 SML | 2...3 mm | 10 | **2584760000** | **2583380000** |
| CABTITE SE 3-4 SML | 3...4 mm | 10 | **2584730000** | **2583400000** |
| CABTITE SE 4-5 SML | 4...5 mm | 10 | **2584680000** | **2583440000** |
| CABTITE SE 5-6 SML | 5...6 mm | 10 | **2584710000** | **2583450000** |
| CABTITE SE 6-7 SML | 6...7 mm | 10 | **2584690000** | **2583460000** |
| CABTITE SE 7-8 SML | 7...8 mm | 10 | **2584670000** | **2584660000** |
| CABTITE SE 8-9 SML | 8...9 mm | 10 | **2584330000** | **2584650000** |
| CABTITE SE 9-10 SML | 9...10 mm | 10 | **2584080000** | **2584630000** |
| CABTITE SE 10-11 SML | 10...11 mm | 10 | **2584060000** | **2584610000** |
| CABTITE SE 11-12 SML | 11...12 mm | 10 | **2584040000** | **2584600000** |
| CABTITE SE 12-13 SML | 12...13 mm | 10 | **2584020000** | **2584590000** |
| CABTITE SE 13-14 SML | 13...14 mm | 10 | **2584000000** | **2584570000** |
| CABTITE SE 14-15 SML | 14...15 mm | 10 | **2583980000** | **2584560000** |
| CABTITE SE 15-16 SML | 15...16 mm | 10 | **2583960000** | **2584550000** |
| **Special geometry ASI** | | | | |
| CABTITE SE 1/ASI SML | | 10 | **2583530000** | **2584810000** |
| CABTITE SE 2/ASI SML | | 10 | **2583520000** | **2584800000** |
| **Multiple sealing element** | | | | |
| CABTITE SE 2/4-5 SML | 4...5 mm | 10 | **2583620000** | **2584900000** |
| CABTITE SE 2/5-6 SML | 5...6 mm | 10 | **2583610000** | **2584890000** |
| CABTITE SE 2/7 SML | 7...8 mm | 10 | **2583550000** | **2584830000** |
| CABTITE SE 2/8 SML | 8...9 mm | 10 | **2583540000** | **2584820000** |
| CABTITE SE 3/5-6 SML | 5...6 mm | 10 | **2652280000** | **2652290000** |
| CABTITE SE 4/2-3 SML | 2...3 mm | 10 | **2583590000** | **2584870000** |
| CABTITE SE 4/3-4 SML | 3...4 mm | 10 | **2583580000** | **2584860000** |
| CABTITE SE 4/4-5 SML | 4...5 mm | 10 | **2583560000** | **2584840000** |
| **Cone sealing element** | | | | |
| CABTITE CSE 2-11 SML | 2...11 mm | 10 | **2583510000** | |
| **Blind plugs** | | | | |
| CABTITE BSE SML | | 10 | **2584790000** | **2583350000** |
| **Note** | | | | |

## Cabtite SE - sealing elements large

Blanking plugs

Cone sealing element

The Cabtite SE sealing elements in large design are identical in construction to those in small design.However, they can accommodate cables with a larger outer diameter.

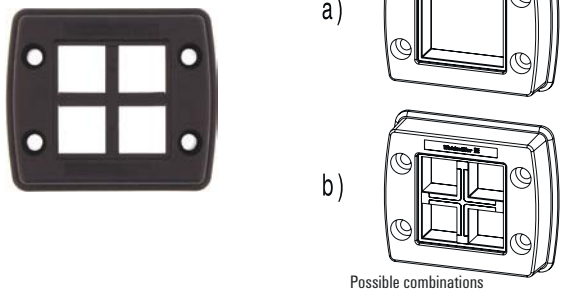
### Technical data

| | |
|---|---|
| Material | TPE |
| Halogen / Silicone | No / No |
| Operating temperature, min. | Deep black: -40 °C; Light Grey: -40 °C |
| Operating temperature, max. | Deep black: 120 °C; Light Grey: 90 °C |
| UL 94 flammability rating | Deep black: HB; Light Grey: V-0 |
| **Note** | |

### Ordering data

| Type | Clamping range | Qty. | Deep black | Light Grey |
|---|---|---|---|---|
| | | | Order No. | Order No. |
| **Individual sealing elements** | | | | |
| CABTITE SE 14-15 LRG | 14...15 mm | 10 | **2583880000** | **2584510000** |
| CABTITE SE 15-16 LRG | 15...16 mm | 10 | **2583860000** | **2584500000** |
| CABTITE SE 16-17 LRG | 16...17 mm | 10 | **2583850000** | **2584490000** |
| CABTITE SE 17-18 LRG | 17...18 mm | 10 | **2583840000** | **2584480000** |
| CABTITE SE 18-19 LRG | 18...19 mm | 10 | **2583830000** | **2584470000** |
| CABTITE SE 19-20 LRG | 19...20 mm | 10 | **2583810000** | **2584460000** |
| CABTITE SE 20-21 LRG | 20...21 mm | 10 | **2583790000** | **2584450000** |
| CABTITE SE 21-22 LRG | 21...22 mm | 10 | **2583770000** | **2584440000** |
| CABTITE SE 22-23 LRG | 22...23 mm | 10 | **2583750000** | **2584430000** |
| CABTITE SE 23-24 LRG | 23...24 mm | 10 | **2583730000** | **2584420000** |
| CABTITE SE 24-25 LRG | 24...25 mm | 10 | **2583710000** | **2584410000** |
| CABTITE SE 25-26 LRG | 25...26 mm | 10 | **2583700000** | **2584400000** |
| CABTITE SE 26-27 LRG | 26...27 mm | 10 | **2583690000** | **2584390000** |
| CABTITE SE 27-28 LRG | 27...28 mm | 10 | **2583680000** | **2584370000** |
| CABTITE SE 28-29 LRG | 28...29 mm | 10 | **2583670000** | **2584350000** |
| CABTITE SE 29-30 LRG | 29...30 mm | 10 | **2583660000** | **2584380000** |
| CABTITE SE 30-31 LRG | 30...31 mm | 10 | **2583650000** | **2584360000** |
| CABTITE SE 31-32 LRG | 31...32 mm | 10 | **2583640000** | **2584340000** |
| CABTITE SE 32-33 LRG | 32...33 mm | 10 | **2583630000** | **2584920000** |
| CABTITE SE 33-34 LRG | 33...34 mm | 10 | **2595510000** | **2584910000** |
| CABTITE SE 34-35 LRG | 34...35 mm | 10 | **2595520000** | **2595530000** |
| **Cone sealing element** | | | | |
| CABTITE CSE 7-24 LRG | 7...24 mm | 10 | **2583500000** | |
| **Blind plugs** | | | | |
| CABTITE BSE LRG | | 10 | **2583900000** | **2584520000** |
| **Note** | | | | |

## Cabtite FR - CABTITE FR 4-1 BK SET




Possible combinations

The one-piece frame, consisting of a dimensionally stable, fibreglass-reinforced plastic, is quick and easy to assemble and available in four different sizes. The foamed, captive seal guarantees a high degree of impermeability to IP66, even with painted or rough surfaces. The frame sets contain the appropriate Rastinlays to realize the individual configuration (see above a or b) of small and large sealing elements. The sealing elements are not included in the frame set and must be selected to match the cable diameter.

### Technical data

| | |
|---|---|
| Material | Polyamide, glass fibre-reinforced |
| Colour | Deep black |
| Operating temperature | -40...120 °C |
| Protection class / Protection class (UL) | IP54, IP65, IP66 / Type 12, Type 4x |
| UL 94 flammability rating | V-0 |
| **Note** | |

### Ordering data

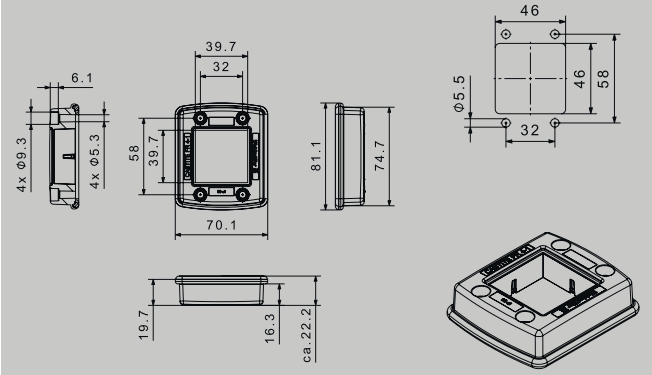
| Type | Qty. | Order No. |
|---|---|---|
| **Set** | | |
| CABTITE FR 4-1 BK SET | 1 | **2583780000** |
| **Single frame (without snap-in inlay)** | | |
| CABTITE FR 4-1 BK | 1 | **2583490000** |
| **Note** The individual frames do not contain any Rastinlays or sealing elements. | | |

### Accessories

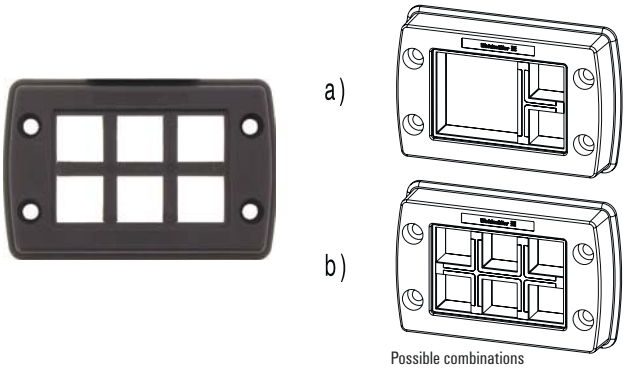
| Product type | Type | Qty. | Order No. |
|---|---|---|---|
| Locking frame (inside) | CABTITE FRL 4-1 BK | 10 | **2584260000** |
| Operating tool | CABTITE TOOL ATSE PA | 1 | **2637360000** |
| Mounting screw set | CABTITE SC M5X25 SET | 1 | **2635120000** |
| **Note** | | | |

### Dimensioned drawing

Montageausschnitt / Mounting cut-out




## Cabtite FR - CABTITE FR 10/6 BK SET




Possible combinations

The one-piece frame, consisting of a dimensionally stable, fibreglass-reinforced plastic, is quick and easy to assemble and available in four different sizes. The foamed, captive seal guarantees a high degree of impermeability to IP66, even with painted or rough surfaces. The frame sets contain the appropriate Rastinlays to realize the individual configuration (see above a or b) of small and large sealing elements. The sealing elements are not included in the frame set and must be selected to match the cable diameter.

### Technical data

| | |
|---|---|
| Material | Polyamide, glass fibre-reinforced |
| Colour | Deep black |
| Operating temperature | -40...120 °C |
| Protection class / Protection class (UL) | IP54, IP65, IP66 / Type 12, Type 4x |
| UL 94 flammability rating | V-0 |
| **Note** | |

### Ordering data

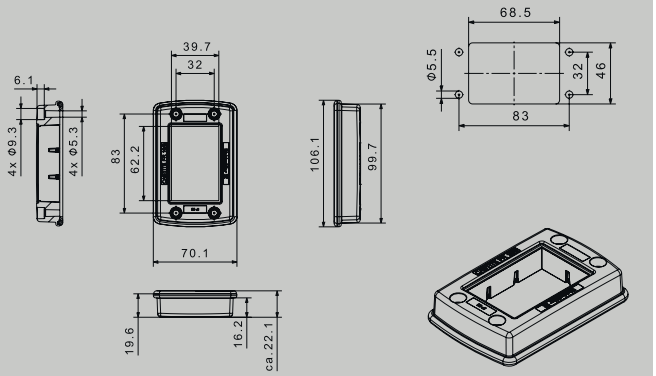
| Type | Qty. | Order No. |
|---|---|---|
| **Set** | | |
| CABTITE FR 10/6 BK SET | 1 | **2583760000** |
| **Single frame (without snap-in inlay)** | | |
| CABTITE FR 10/6 BK | 1 | **2583480000** |
| **Note** The individual frames do not contain any Rastinlays or sealing elements. | | |

### Accessories

| Product type | Type | Qty. | Order No. |
|---|---|---|---|
| Locking frame (inside) | CABTITE FRL 10/6 BK | 10 | **2584240000** |
| Operating tool | CABTITE TOOL ATSE PA | 1 | **2637360000** |
| Mounting screw set | CABTITE SC M5X25 SET | 1 | **2635120000** |
| **Note** | | | |

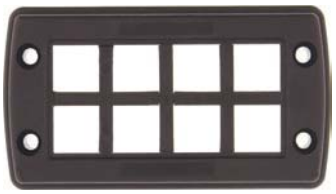
### Dimensioned drawing

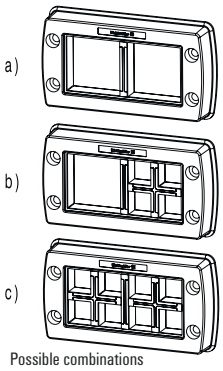
Montageausschnitt / Mounting cut-out




S

## Cabtite FR - CABTITE FR 16/8 BK SET






Possible combinations

The one-piece frame, consisting of a dimensionally stable, fibreglass-reinforced plastic, is quick and easy to assemble and available in four different sizes. The foamed, captive seal guarantees a high degree of impermeability to IP66, even with painted or rough surfaces. The frame sets contain the appropriate Rastinlays to realize the individual configuration (see above a, b or c) of small and large sealing elements. The sealing elements are not included in the frame set and must be selected to match the cable diameters.

### Technical data

| | |
|---|---|
| Material | Polyamide, glass fibre-reinforced |
| Colour | Deep black |
| Operating temperature | -40...120 °C |
| Protection class / Protection class (UL) | IP54, IP65, IP66 / Type 12, Type 4x |
| UL 94 flammability rating | V-0 |
| **Note** | |

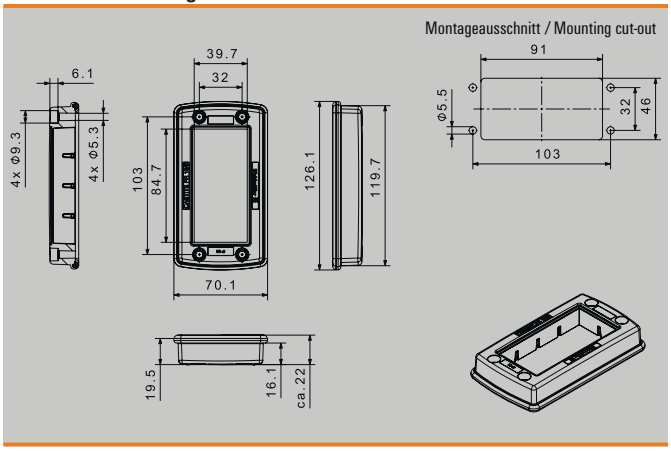
### Ordering data

| Type | Qty. | Order No. |
|---|---|---|
| **Set** | | |
| CABTITE FR 16/8 BK SET | 1 | **2583740000** |
| **Single frame (without snap-in inlay)** | | |
| CABTITE FR 16/8 BK | 1 | **2583470000** |
| **Note** The individual frames do not contain any Rastinlays or sealing elements. | | |

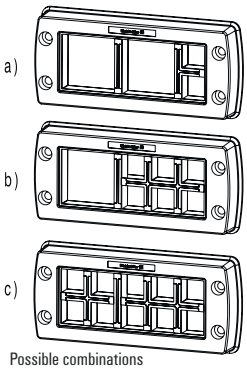
### Accessories

| Product type | Type | Qty. | Order No. |
|---|---|---|---|
| Locking frame (inside) | CABTITE FRL 16/8 BK | 10 | **2584220000** |
| Operating tool | CABTITE TOOL ATSE PA | 1 | **2637360000** |
| Mounting screw set | CABTITE SC M5X25 SET | 1 | **2635120000** |
| **Note** | | | |

### Dimensioned drawing




## Cabtite FR - CABTITE FR 24/10 BK SET




Possible combinations

The one-piece frame, consisting of a dimensionally stable, fibreglass-reinforced plastic, is quick and easy to assemble and available in four different sizes. The foamed, captive seal guarantees a high degree of impermeability to IP66, even with painted or rough surfaces. The frame sets contain the appropriate Rastinlays to realize the individual configuration (see above a, b or c) of small and large sealing elements. The sealing elements are not included in the frame set and must be selected to match the cable diameters.

### Technical data

| | |
|---|---|
| Material | Polyamide, glass fibre-reinforced |
| Colour | Deep black |
| Operating temperature | -40...120 °C |
| Protection class / Protection class (UL) | IP54, IP65, IP66 / Type 12, Type 4x |
| UL 94 flammability rating | V-0 |
| **Note** | |

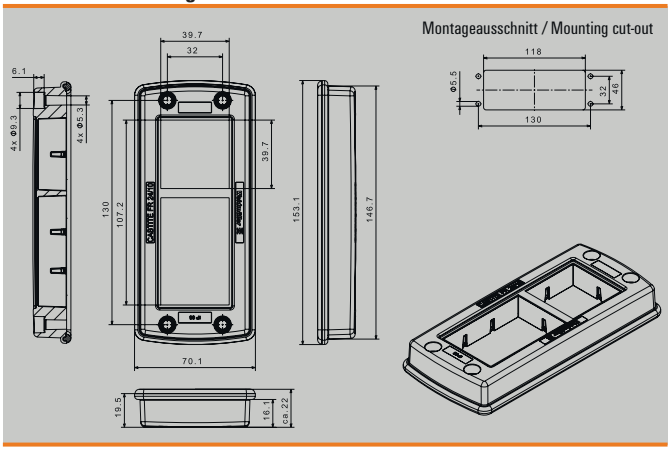
### Ordering data

| Type | Qty. | Order No. |
|---|---|---|
| **Set** | | |
| CABTITE FR 24/10 BK SET | 1 | **2583720000** |
| **Single frame (without snap-in inlay)** | | |
| CABTITE FR 24/10 BK | 1 | **2583800000** |
| **Note** The individual frames do not contain any Rastinlays or sealing elements. | | |

### Accessories

| Product type | Type | Qty. | Order No. |
|---|---|---|---|
| Locking frame (inside) | CABTITE FRL 24/10 BK | 10 | **2584210000** |
| Operating tool | CABTITE TOOL ATSE PA | 1 | **2637360000** |
| Mounting screw set | CABTITE SC M5X25 SET | 1 | **2635120000** |
| **Note** | | | |

### Dimensioned drawing



## Cabtite CGD - separable cable gland

Spare counter nut

For metric through holes from M20 to M63, the Cabtite cable entry system offers separable cable glands for cables with and without plugs. In case of maintenance or changes in the system, pre-assembled cables with diameters from 2 to 35 mm can be quickly and safely inserted into switch cabinets or housings. After inserting the sealing elements (Cabtite SE), the two halves of the cable gland are simply snapped together. A likewise separable lock nut on the inside of the cabinet ensures a secure and firm hold.

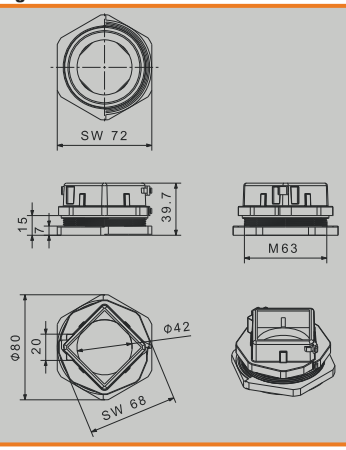
### Technical data

| | |
|---|---|
| Material | Polyamide, glass fibre-reinforced |
| Colour | Deep black |
| Operating temperature | -40...120 °C |
| Protection class / Protection class (UL) | IP54, IP65, IP66 / |
| UL 94 flammability rating | V-0 |
| **Note** | |

### Ordering data

| Type | Qty. | Order No. |
|---|---|---|
| **Divisible cable gland*** | | |
| CABTITE CGS M20 BK | 10 | **2584200000** |
| CABTITE CGS M25 BK | 10 | **2584180000** |
| CABTITE CGS M32 BK | 10 | **2584160000** |
| CABTITE CGS M40 BK | 5 | **2584150000** |
| CABTITE CGS M50 BK | 5 | **2584130000** |
| CABTITE CGS M63 BK | 5 | **2584120000** |
| **Articulated locknut** | | |
| CABTITE LNS M20 BK | 10 | **2584110000** |
| CABTITE LNS M25 BK | 10 | **2584090000** |
| CABTITE LNS M32 BK | 10 | **2584070000** |
| CABTITE LNS M40 BK | 5 | **2584050000** |
| CABTITE LNS M50 BK | 5 | **2584030000** |
| CABTITE LNS M63 BK | 5 | **2584010000** |
| **Rastinly for M40-M63**** | | |
| CABTITE GI X BK | 5 | **2584290000** |
| **Note** | *The cable glands are supplied with a locknut. **The snap-in insert is required to install 4 small sealing elements in the cable gland. | |

### Dimensioned drawing




## Cabtite GI - Rastinlay

The insertable snap-in inlay allows the frame openings/cable glands to be configured as required for the small or large sealing elements used. Thus the Cabtite cable entry system can be variably configured for different requirements (cables, lines, hoses, pneumatic and hydraulic lines).

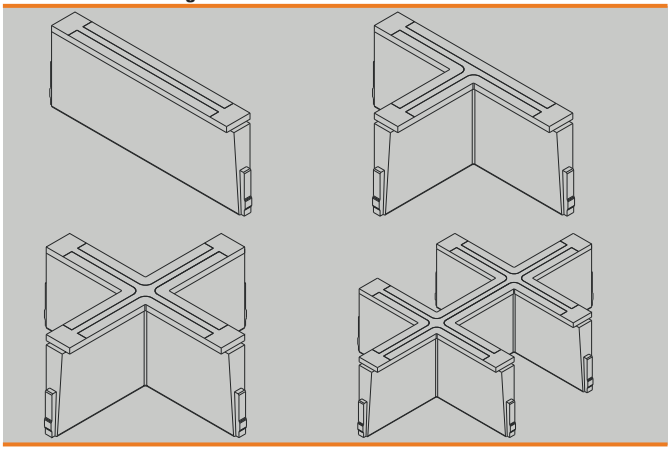
### Technical data

| | |
|---|---|
| Material | Polyamide, glass fibre-reinforced |
| Colour | Deep black |
| Operating temperature | -40...120 °C |
| Protection class / Protection class (UL) | IP54, IP65, IP66 / |
| UL 94 flammability rating | V-0 |
| **Note** | |

### Ordering data

| Type | Qty. | Order No. |
|---|---|---|
| CABTITE GI I BK | 5 | **2584320000** |
| CABTITE GI T BK | 5 | **2584300000** |
| CABTITE GI H BK | 5 | **2584270000** |
| **Rastinly for M40-M63**** | | |
| CABTITE GI X BK | 5 | **2584290000** |
| **Note** | **The locking inlay is required to install 4 small sealing elements in the cable gland. | |

### Dimensioned drawing



S

## Cabtite CR - Cable support strips (EMC)

In combination with a large number of different shield connection clamps (KLBÜ), the shield connection rails enable practical, uncomplicated and fast shielding of cables.

### Technical data

| | |
|---|---|
| Material | Steel, galvanized |
| Colour | silver |

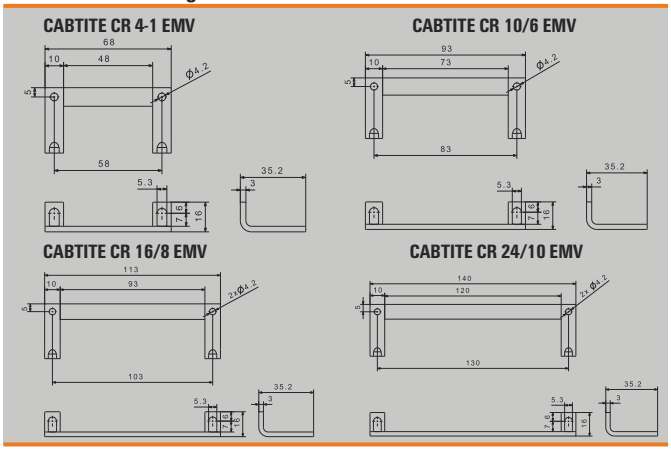
**Note**

### Ordering data

| Type | Qty. | Order No. |
|---|---|---|
| CABTITE CR 4-1 EMV | 10 | 2583950000 |
| CABTITE CR 10/6 EMV | 10 | 2583930000 |
| CABTITE CR 16/8 EMV | 10 | 2583910000 |
| CABTITE CR 24/10 EMV | 10 | 2583890000 |

**Note**

### Dimensioned drawing




## Cabtite BP - Blanking plug

The blind plugs are used for the safe closing of unneeded cable passages in the sealing elements.

### Technical data

| | |
|---|---|
| Material | Polyamide |
| Colour | red |
| Operating temperature | -60...100 °C |

**Note**

### Ordering data

| Type | Qty. | Order No. |
|---|---|---|
| CABTITE BP 2MM PA | 50 | 2652300000 |
| CABTITE BP 3MM PA | 50 | 2652310000 |
| CABTITE BP 4MM PA | 50 | 2652320000 |
| CABTITE BP 5MM PA | 50 | 2652330000 |
| CABTITE BP 6MM PA | 50 | 2652340000 |
| CABTITE BP 7MM PA | 50 | 2652350000 |
| CABTITE BP 8MM PA | 50 | 2652360000 |
| CABTITE BP 9MM PA | 50 | 2652370000 |
| CABTITE BP 10MM PA | 50 | 2652380000 |
| CABTITE BP 12MM PA | 50 | 2652400000 |
| CABTITE BP 13MM PA | 50 | 2652410000 |
| CABTITE BP 14MM PA | 50 | 2652420000 |
| CABTITE BP 17MM PA | 50 | 2652430000 |
| CABTITE BP 20MM PA | 50 | 2652440000 |
| CABTITE BP 21MM PA | 50 | 2652450000 |
| CABTITE BP 25MM PA | 50 | 2652460000 |
| CABTITE BP 28MM PA | 50 | 2652470000 |
| CABTITE BP 35MM PA | 50 | 2652480000 |

**Note**

## Cable Bender

Cable bender to guide patch cables safely and without cable breakage or data loss by 90° angles

### Cable bender

### Technical data

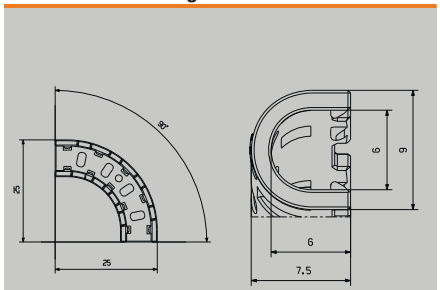
| | |
|---|---|
| Cable bending radius | 90 ° |
| Colour | black |
| Temperature range | -25 °C....85 °C |
| Sheath diameter, min. | 5.5 mm |
| Sheath diameter, max | 6.5 mm |
| **Hinweis** | |

### Ordering data

| Type | Qty. | Order No. |
|---|---|---|
| IE-CABLE-BENDER-90 | 50 | **2704480000** |

**Note**

### Dimensioned drawings




S

## Protective caps

### Dust-protection plugs for protecting empty ports

- RJ45
- ***STEADY****TEC*® variants
- M12

### Dust Cap RJ45

- Dust Cap RJ45 with finger grip

### Protective caps IP67

- Protective caps for all ***STEADY****TEC*® variants and for M12 plug-in connectors

### Ordering data

| Type | Qty. | Order No. |
|---|---|---|
| IE-DPC | 100 | **8813490000** |

| Type | Qty. | Order No. |
|---|---|---|
| V1 Bayonet plug | 10 | **1965690000** |
| V1 Bayonet flange | 10 | **1965700000** |
| V4 PushPull plug | 10 | **1963890000** |
| V4 PushPull flange | 10 | **1963900000** |
| V5 HDC plug | 10 | **1968920000** |
| V5 HDC flange | 10 | **1968930000** |
| V14 PushPull plug | 10 | **1058280000** |
| V14 PushPull flange | 10 | **1058310000** |
| PushPull Power flange | 10 | **1068930000** |
| M12 plug | 1 | **2330260000** |
| M12 flange | 1 | **8425960000** |

**Note**

# PrintJet CONNECT

## The networked high-performance printer for efficient and high-quality markings

**Your direct connection to the optimal marking process**

The PrintJet CONNECT is the consistent further development of our tried-and-tested PrintJet series. Focusing on the modern needs of industry and panel building, it combines maximum process and cost efficiency with intelligent networking and complete data consistency. For example, you can use existing data directly in the marking process – for working more efficiently and with a minimal error rate. The PrintJet CONNECT is part of the Weidmüller marking system consisting of software, markers and printers. It has an extremely durable industrial print head and has been specially optimised for fast working speed and high throughput.

The new 7" touch colour display with a multitude of new functions ensures optimal operation.

**Your advantages at a glance:**

- Perfect printing results every time
- Fast handling of large volumes
- High level of automation thanks to magazine capacity of 50 MultiCards
- Durable and robust markers thanks to thermal fixing
- User-friendly operation thanks to intuitive touch display
- Flexible connection possibilities
- Simple function monitoring on the device

Whether LAN, WLAN or USB: the PrintJet CONNECT offers a wide connectivity spectrum.

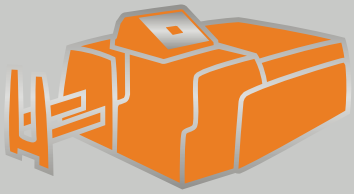
**Technical data**

| | Description | |
|---|---|---|
| Intended use | Printing Weidmüller MultiCards and MetalliCards | |
| Technology | Inkjet procedure with integrated thermal fixing unit | |
| Feed | Automatic magazine for max. 30 MultiCards<br>Individual feed for MetalliCards and MultiCards | |
| Removal | Automatic dispenser magazine for up to 50 MultiCards | |
| Fuses | 10 ATH 240/120 V | |
| Application site | Office conditions | |
| Ambient temperature | 10 °C – 35 °C<br>0 °F – 95 °F | |
| Dimensions | Length including output rail:<br>Length not including output rail:<br>Width:<br>Height: | approx. 1.133 mm (44,60")<br>approx. 930 mm (36,60")<br>590 mm (23,20")<br>454 mm (17,90") |
| Weight | 63 kg with packaging<br>38 kg without packaging | |
| Ink system | Colour system – black, cyan, magenta, yellow | |
| Included in delivery | • PrintJet CONNECT<br>• Mains cable<br>• LAN cable<br>• USB cable<br>• WIFI stick | • one MultiCard DEK 5/5<br>• DVD with M-Print® PRO software<br>• Quick start guide<br>• Operating manual<br>• Ink set PJ CON INK SET<br>• 2 PrintJet cleaner cloths |
| | The ink cartridges are not installed in the printer. | |

High magazine capacity for loading and dispensing of up to 50 MultiCards.

## Ink-jet printer

## PrintJet CONNECT



## Technical data

| | |
|---|---|
| EAN | 4064675016922 |
| Depth | 930 mm |
| Width | 590 mm |
| Height | 454 mm |
| Net weight | 38 kg |
| Printing method | Ink jet technology |
| Printer driver / Operating system | Windows 7, Windows 8, Windows 8.1, Windows 10 |
| Printing speed | Depends on printing quality |
| Print quality | 300 dpi, 600 dpi, 1200 dpi |
| Marker type | MultiCard, MetalliCard |
| Interface | USB, LAN, Wi-Fi |
| Fueling system | Ink cartridge, CMYK |
| Voltage supply | 230 V AC / 16 A, 115 V AC / 20 A |
| Software | M-Print® PRO |
| **Note** | |

## Ordering data

| Type | Qty. | Order No. |
|---|---|---|
| PRINTJET CONNECT | 1 | **2715590000** |

**Note**

## Accessories

| PrintJet CONNECT | Type | Qty. | Order No. |
|---|---|---|---|
| Software | M-PRINT PRO | 1 | **1905490000** |
| Ink set | PJ CON INK SET | 1 | **2715600000** |
| Cyan ink | PJ CON INK C | 1 | **2715610000** |
| Magenta ink | PJ CON INK M | 1 | **2715620000** |
| Yellow ink | PJ CON INK Y | 1 | **2715630000** |
| Black ink | PJ CON INK K | 1 | **2715640000** |
| Fluid set | PJ CON FLUID SET | 1 | **2715650000** |
| Ink collecting tray | PJ CON WASTE PAD | 1 | **2715660000** |
| Textile cover | PJ CON TEXTILE COVER | 1 | **2715670000** |
| WiFi Stick | PJ CON WIFI STICK | 1 | **2715680000** |
| **PrintJet ADVANCED** | | | |
| Ink collecting tray | PJ ADV TNAW | 1 | **1338710000** |
| Cyan ink | PJ ADV TNTK INK C | 1 | **1338680000** |
| Magenta ink | PJ ADV TNTK INK M | 1 | **1338670000** |
| Yellow ink | PJ ADV TNTK INK Y | 1 | **1338650000** |
| Black ink | PJ ADV TNTK INK K | 1 | **1338690000** |
| Ink set | PJ ADV TNTK INK SET | 1 | **1338720000** |

**Note**

## Markers for cables and wires

SlimFix V0 for cables and wires

- Ø 4.7 to 6.8 mm SF5/21
- Ø 5.8 to 8.5 mm SF6/21

### Ordering data

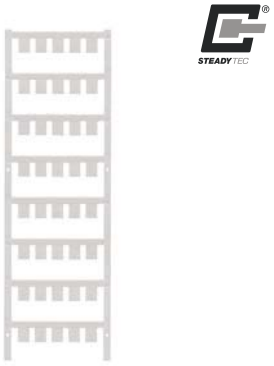
| Type | Qty. | Order No. |
|---|---|---|
| VT SF 5/21 NE WS V0 | 160 | **1689470001** |
| VT SF 6/21 NE WS V0 | 160 | **1730560001** |

**Note:** Can be printed with PrintJet PRO.

### Accessories

| Type | Qty. | Order No. |
|---|---|---|

## Markers for IE-Line STEADYTEC®



MultiCard ESG 9/11 K for IE-Line STEADYTEC®

- 9 x 11 mm
- White

### Ordering data

| Type | Qty. | Order No. |
|---|---|---|
| ESG 9/11 K MC NE WS | 200 | **1857440000** |

**Note:** Can be printed with PrintJet PRO.

### Accessories

| Type | Qty. | Order No. |
|---|---|---|

## TM-I for pre-assembled M12 cables

MultiCard markers for labelling transparent M12 TM-I sleeves

- Tag length: 18 mm
- Tag width: 4 mm

### Ordering data

| Type | Qty. | Order No. |
|---|---|---|
| TM-I 18 MC NE WS | 320 | **1718431044** |
| TM-I 18 MC NE GE | 320 | **1718431687** |

### Accessories

| Type | | Qty. | Order No. |
|---|---|---|---|
| TM 4/12 HF/HB | Length 12 mm | 500 | **1719840000** |
| TM 4/18 HF/HB | Length 18 mm | 500 | **1719850000** |

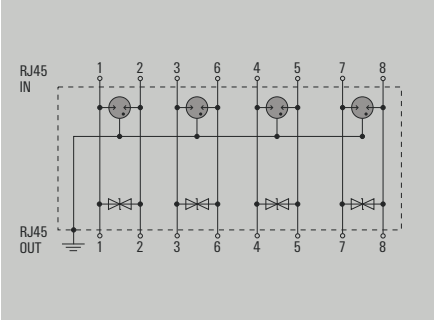
**Note:** Can be printed with PrintJet PRO.

S

## V DATA Cat. 6 - surge protection for 8 wires with RJ45 socket

- RJ45 connection
- All 4 lines are protected
- Robust and compact metal housing
- Suitable for Cat. 5 (to 100 MHz) and Cat. 6 to 250 MHz (class E)
- Suitable for PoE (IEEE 802.3af) and PoE + (IEEE 802.3at)

## V DATA CAT6






## Technical data

| | |
|---|---|
| Requirements category acc. to IEC 61643-21 | C2, D1 |
| Surge current-carrying capacity C2 | 10 kA |
| Surge current-carrying capacity D1 | 1 kA 10/350 µs |
| Discharge current $I_n$ (8/20 µs) wire-wire/wire-PE/GND-PE | 150 A / 1,25 kA |
| Discharge $I_{max}$ (8/20 µs) wire-wire/wire-PE/GND-PE | 10 kA / 5 kA |
| Lightning test $I_{imp}$ (10/350 µs) wire-wire/wire-PE/GND-PE | 1 kA / 1 kA |
| Type of connection | RJ45-Port |
| Storage temperature | -40 ... +85 °C |
| Ambient temperature (operational) | -40 ... +80 °C |
| Protection degree | IP20 |
| Rated voltage (AC) | 48 V |
| Rated current | 1 A |
| Insertion loss at 250 MHz | ≤ 1 dB at 250 MHz |
| Protection level $U_P$ typical | ≤ 550 V |
| **Approvals** | |
| Standards | According to IEC61643-21 |
| **Dimensions of complete module (arrester + base element)** | |
| Height x width x depth | 75 / 19 / 46 mm |
| **Note** | Can also be used for Cat.5 applications |

## Ordering data

| | | | |
|---|---|---|---|
| **Type** | **Qty.** | **Order No.** |
| VDATA CAT6 | 1 ST | **1348590000** |
| **Note** | | |