

# Industrial Ethernet

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Version 2021



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# Industrial Ethernet – Active components

## Catalogue 9

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<b>B</b>		Unmanaged Switches
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# 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

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# Active components

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### Unmanaged Power over Ethernet

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### Managed Switches

Fast Ethernet, Fast / Gigabit Ethernet, Gigabit Ethernet  
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### Managed Power over Ethernet Switches

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### Managed Switches IEC 61850-3

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# Active components

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# Passive components

## An overview of our portfolio

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## An overview of our portfolio

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# Passive components

## Accessories from a single source

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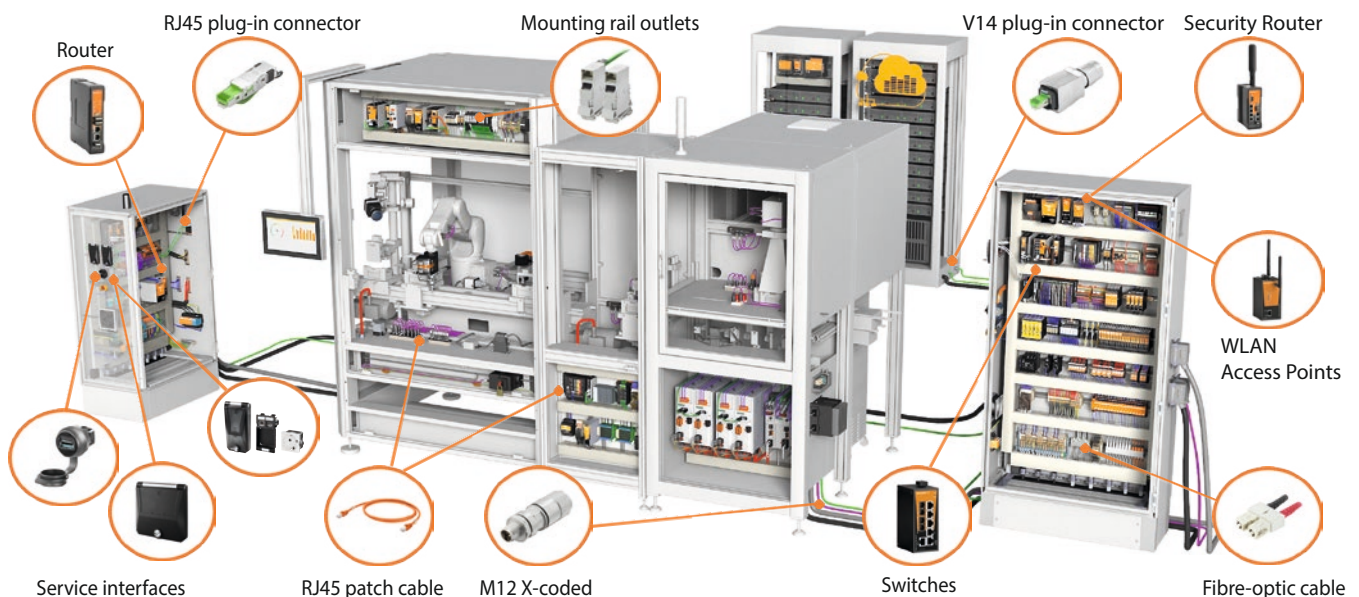


# Intended use for Industrial Ethernet

## 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

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Active components

Introduction - Active components

A.2

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# Transfer data between devices in the network flexibly and reliably

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

A

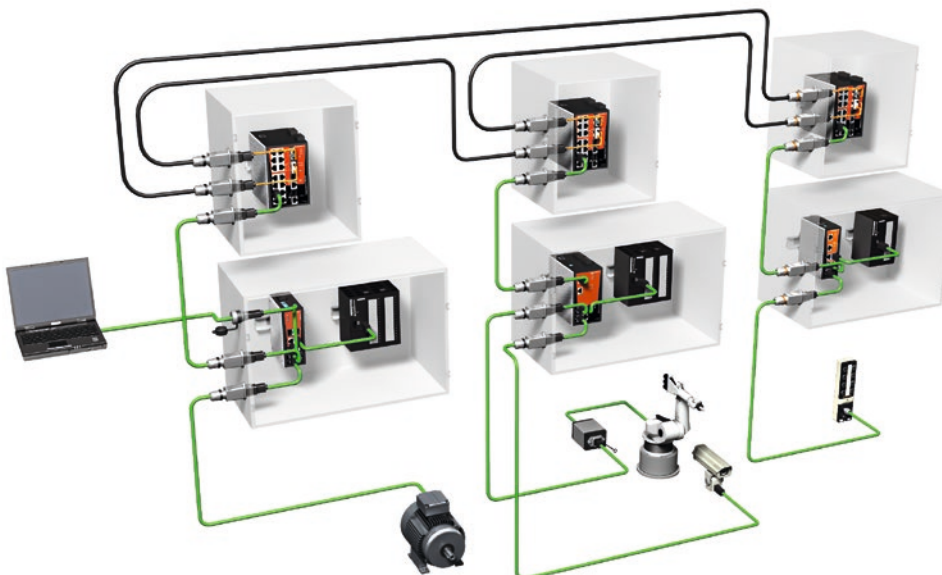
The Industrial Ethernet has proved itself in many areas of automation. With its high performance and flexibility, it opens up a multitude of design options for the network infrastructure. Our Industrial Ethernet components are the perfect connection solution for data communication between Ethernet-capable 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.





# Always the best choice for your requirements

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

A

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

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# The proven standard for active network components

## Unmanaged switches – adaptable and economical

### B

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**

<b>Technology</b>	
Standards	IEEE 802.3 for 10BASE-T IEEE 802.3u for 100BASE-TX and 100BASE-FX IEEE 802.3x for flow control
Processing type	Store and Forward
Flow control	IEEE 802.3x flow control
<b>Switch characteristics</b>	
MAC table size	1K
Packet buffer Size	448 Kbit
<b>Interfaces</b>	
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)
<b>Fibre optic transceiver characteristics</b>	
Transmission rate	100 Mbps
Connector type	SC-Duplex
Transceiver type	Multimode      Singlemode
Fiber cable type	50/125 µm      9/125 µm 62.5/125 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
<b>Power supply</b>	
Connection type	IE-SW-EL05-5TX: 1 removable 4-pin terminal block IE-SW-EL08-8TX: 1 removable 4-pin terminal block IE-SW-EL08-6TX-2SC: 1 removable 3-pin terminal block 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 IE-SW-EL08-8TX: 24 V DC (12 - 48 V), 24 V AC (18 - 36 V), 2 redundant inputs IE-SW-EL08-6TX-2SC: 24 V DC (10 - 30 V DC), 1 single input 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 IE-SW-EL08-8TX: 0.14 A IE-SW-EL08-6TX-2SC: 0.14 A IE-SW-EL08-6TX-2SCS: 0.14 A
Overload current protection	yes
Reverse polarity protection	yes
<b>Physical characteristics</b>	
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) IE-SW-EL08-8TX: 41 x 95 x 90 mm (1.61 x 3.74 x 3.54 in) IE-SW-EL08-6TX-2SC: 41 x 115 x 84 mm (1.61 x 4.52 x 3.31 in) IE-SW-EL08-6TX-2SCS: 41 x 115 x 84 mm (1.61 x 4.52 x 3.31 in)

<b>Physical characteristics</b>	
Weight	IE-SW-EL05-5TX: 205 g IE-SW-EL08-8TX: 334 g IE-SW-EL08-6TX-2SC: 328 g IE-SW-EL08-6TX-2SCS: 328 g
<b>Environmental conditions</b>	
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
<b>EMC conformity and approvals</b>	
EMC	EN 55032, EN 55024, CISPR 32, FCC Part 15 Subpart B Class A IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz bis 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV 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
<b>MTBF</b>	
Time	IE-SW-EL05-5TX: 2,638,236 hrs IE-SW-EL08-8TX: 1,390,019 hrs IE-SW-EL08-6TX-2SC: 595,597 hrs IE-SW-EL08-6TX-2SCS: 609,551 hrs
Database	Telcordia SR332
<b>Guarantee</b>	
Time interval	5 years

<b>Ordering Information</b>		
<b>Version</b>	<b>Model Type</b>	<b>Order No.</b>
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

<b>Accessories</b>		
	<b>Model Type</b>	<b>Order No.</b>
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 IEEE 802.3u for 100BASE-TX and 100BASE-FX 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 IE-SW-EL16-16TX: 8K IE-SW-EL24-24TX: 8K
Packet buffer Size	IE-SW-EL16-14TX-2FESFP: 2.75 Mbit IE-SW-EL16-16TX: 1 Mbit 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 IE-SW-EL16-16TX: 0.27 A 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) IE-SW-EL16-16TX: 74.3 x 153.6 x 107.5 mm (2.93 x 6.05 x 4.2 in) 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 IE-SW-EL16-16TX: 931 g 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 IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz bis 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV 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	IE-SW-EL16-14TX-2FESFP: 719,800 hrs IE-SW-EL16-16TX: 1,160,204 hrs 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 IEEE 802.3u for 100BaseT (X) and 100BaseFX 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	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
<b>Note:</b> 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 IE-SW-BL05-4TX-1SC/1ST/1SCS: 0.1 A at 24 V IE-SW-BL08-8TX: 0.11 A at 24 V IE-SW-BL08-6TX-2SC/2ST/2SCS: 0.15 A at 24 V 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) 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) 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; ATEX Zone 2 Ex nA IIC T4 Gc
EMV	EN 55032/24 / CISPR 32 FCC Part 15B Class A IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV IEC 61000-4-6 CS: 10 V 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 IEEE 802.3u for 100BaseT(X) 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 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) 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, 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 CISPR 32, FCC Part 15B Class A IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV IEC 61000-4-6 CS: 10 V 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 IEEE 802.3u for 100BaseT (X) 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 0.10 A to 24 V DC 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) 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 EN 55032 Class A IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV IEC 61000-4-6 CS: 10 V 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 IEEE 802.3u for 100BASE-TX and 100BASE-FX IEEE 802.3x for flow control 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 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 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 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 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 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 IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz bis 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV 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 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	<b>2682390000</b>
8x RJ45 PoE+ 10/100 Mbit/s	IE-SW-EL08-8PoE	<b>2682380000</b>

Accessories		
	Model Type	Order No.
19" Rack Mounting Kit	RM-KIT	<b>1241440000</b>

**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 IEEE 802.3u for 100BaseT(X) IEEE 802.3x for Flow Control IEEE 802.3af for PoE 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, 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 (with PD consumption)	6.19 A at 12 VDC 5.55 A at 24 VDC 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) 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), 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

Regulatory Approvals	
EMC	EN 55032/24 CISPR 32, FCC Part 15B Class A IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV IEC 61000-4-6 CS: 10 V 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 IEEE 802.3u for 100BASE-TX IEEE 802.3ab for 1000BASE-T IEEE 802.3z for 1000BASE-X 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 IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz bis 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV 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	<b>2682200000</b>

Accessories		
	Model Type	Order No.
19" Rack Mounting Kit	RM-KIT	<b>1241440000</b>

**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 IEEE 802.3u for 100BASE-TX and 100BASE-FX IEEE 802.3ab for 1000BASE-T IEEE 802.3z for 1000BASE-X 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 IE-SW-EL05-4GT-1GESFP: 1K IE-SW-EL08-8GT-MINI: 4K IE-SW-EL08-8GT: 4K IE-SW-EL10-8GT-2GESFP: 4K
Packet buffer Size	IE-SW-EL05-5GT: 1 Mbit IE-SW-EL05-4GT-1GESFP: 1 Mbit IE-SW-EL08-8GT-MINI: 1.5 Mbit IE-SW-EL08-8GT: 1.5 Mbit IE-SW-EL10-8GT-2GESFP: 1.5 Mbit
Jumbo frame support	IE-SW-EL05-5GT: up to 9.72 KB IE-SW-EL05-4GT-1GESFP: up to 10 KB IE-SW-EL08-8GT-MINI: up to 9 KB IE-SW-EL08-8GT: up to 9.2 KB 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 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 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 IE-SW-EL05-4GT-1GESFP: 1 removable 6-pin terminal block IE-SW-EL08-8GT-MINI: 1 removable 4-pin terminal block IE-SW-EL08-8GT: 1 removable 6-pin terminal block 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 IE-SW-EL05-4GT-1GESFP: 0.18 A IE-SW-EL08-8GT-MINI: 0.17 A IE-SW-EL08-8GT: 0.20 A 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) IE-SW-EL05-4GT-1GESFP: 26.1 x 144.3 x 94.9 mm (1.03 x 5.68 x 3.74 in) IE-SW-EL08-8GT-MINI: 41 x 95 x 90 mm (1.61 x 3.74 x 3.54 in) IE-SW-EL08-8GT: 26.1 x 144.3 x 94.9 mm (1.03 x 5.68 x 3.74 in) 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 IE-SW-EL05-4GT-1GESFP: 305 g IE-SW-EL08-8GT-MINI: 330 g IE-SW-EL08-8GT: 335 g 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 IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz bis 1 GHz; 3 V/m IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV 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 IE-SW-EL05-4GT-1GESFP: 1,861,840 hrs IE-SW-EL08-8GT-MINI: 1,742,238 hrs IE-SW-EL08-8GT: 926,332 hrs 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 IEEE 802.3u for 100BaseT (X) and 100BaseFX IEEE 802.3ab for 1000BaseT(X) IEEE 802.3z for 1000BaseX IEEE 802.3x for flow control 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 IE-SW-VL08-Series: 4 Mbit
Jumbo frame support	IE-SW-BL05-4GT-Series: 10 KByte IE-SW-VL08-Series: 9.6 KByte
Interface	
Fibre Ports	100/1000BaseSFP
RJ45 Ports	10/100/1000BaseT(X) auto negotiation speed, Full/Half duplex mode, and auto MDI/MDI-X connection
DIP Switches	Port fault alarm enable/disable Broadcast storm protection enable/disable Jumbo frame support enable/disable IEEE 802.3az energy saving enable/disable 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 IE-SW-VL08-8GT: 0.29 A at 24 V 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-Series: 29 x 135 x 105 mm (1.14 x 5.31 x 4.13 in) 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 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) Wide Temp. Models: -40 to 75 °C (-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; ATEX Zone 2 Ex nA nC IIC T4 Gc

Regulatory Approvals	
EMC	EN 55032/24 CISPR 32, FCC Part 15B Class A IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Power: 4 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV IEC 61000-4-6 CS: 10 V 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-Series: 2,823,446 hrs IE-SW-VL08-Series: 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 IE-SW-VL08T-8GT	-10 to +60 °C -40 to +75 °C	1241270000 1286860000
6 * RJ45 10/100/1000BaseT(X), 2 * Combo Port (10/100/1000 BaseT(X) or 100/1000BaseSFP)	IE-SW-VL08-6GT-2GS IE-SW-VL08T-6GT-2GS	-10 to +60 °C -40 to +75 °C	1241280000 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

## Unmanaged Power over Ethernet Switches Gigabit Ethernet – EcoLine

### 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 IEEE 802.3u for 100BASE-TX and 100BASE-FX IEEE 802.3ab for 1000BASE-T IEEE 802.3z for 1000BASE-X IEEE 802.3x for flow control 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 IE-SW-EL10-8GTPoE-2GESFP: 8K
Packet buffer Size	IE-SW-EL08-8GTPoE: 1.5 Mbit IE-SW-EL10-8GTPoE-2GESFP: 4 Mbit
Jumbo frame support	IE-SW-EL08-8GTPoE: up to 9.72 KB 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 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 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) 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 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 IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz bis 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV 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 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



### Technical data

Technology	
Standards	IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT(X) IEEE 802.3ab for 1000BaseT IEEE 802.3x for Flow Control IEEE 802.3af for PoE IEEE 802.3at for PoE+ 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, Full/Half duplex mode and auto MDI/MDI-X connection
DIP Switches	Broadcast storm protection enable/disable Jumbo Frame support enable/disable IEEE 802.3az energy saving enable/disable 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 5.65 A at 24 VDC 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 protection	Present
PoE	
PoE power budget total	62 W at 12 V DC (12-17 V DC) 120 W at 24 V DC (18-35 V DC) 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) 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 CISPR 32, FCC Part 15B Class A IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV IEC 61000-4-6 CS: 10 V 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

**Power over Ethernet Injector Gigabit Ethernet – EcoLine**

**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 IEEE 802.3u for 100BASE-T(X) IEEE 802.3ab for 1000BASE-T 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 IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz bis 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV 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, 2x RJ45 PoE+ 10/100/1000 Mbit/s	IE-INJ-EL02-2GTPoE	<b>2682440000</b>

Accessories		
	Model Type	Order No.
19" Rack Mounting Kit	RM-KIT	<b>1241440000</b>

# Managed Switches

## Overview

<b>Managed Switches</b>	Introduction - Managed Switches	C.2
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# 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.

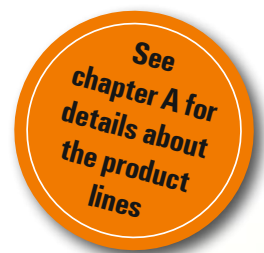
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In the industrial Ethernet infrastructures of today, system availability must be ensured through network redundancy. This prevents machine downtimes and production losses due to connection errors in the highly integrated systems. Weidmüller managed 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



**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



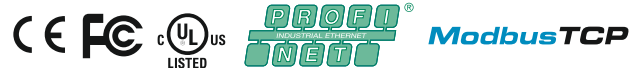
Technical data

Technology	
Standards	IEEE 802.3 for 10BASE-T IEEE 802.3u for 100BASE-TX and 100BASE-FX IEEE 802.3x for flow control IEEE 802.1D for the Spanning Tree protocol (STP) IEEE 802.1w for Rapid Spanning Tree protocol (RSTP) 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 (DoS), 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 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 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-AL05LM-5TX: 1 removable 6-pin terminal block IE-SW-AL06LM-4TX-2SC: 1 removable 7-pin terminal block 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 IE-SW-AL06LM-4TX-2SC: 0.24 A 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) IE-SW-AL06LM-4TX-2SC: 54.2 x 145.4 x 107.1 mm (2.13 x 5.72 x 4.22 in) 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 IE-SW-AL06LM-4TX-2SC: 649 g 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 IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz bis 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV 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 IE-SW-AL06LM-4TX-2SC: 595,597 hrs 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 IEEE 802.3u for 100BASE-TX IEEE 802.3x for flow control IEEE 802.3ad for port trunk with LACP IEEE 802.1D for the Spanning Tree protocol (STP) IEEE 802.1w for Rapid Spanning Tree protocol (RSTP) IEEE 802.1s for Multiple Spanning Tree Protocol (MSTP) IEEE 802.1p for Class of Service IEEE 802.1Q for VLAN Tagging IEEE 802.1X for Authentication 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 IE-SW-AL16M-16TX: 256 per VLAN 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 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 IE-SW-AL16M-16TX: 1 removable 6-pin terminal block 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 IE-SW-AL16M-16TX: 0.6 A 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) IE-SW-AL16M-16TX: 74.3 x 153.6 x 107.5 mm (2.93 x 6.05 x 4.2 in) 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 IE-SW-AL16M-16TX: 1148 g 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 IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz bis 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV 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 IE-SW-AL16M-16TX: 886,987 hrs 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) 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 CISPR 32, FCC Part 15B Class A IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV IEC 61000-4-6 CS: 10 V 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



EtherNet/IP<sup>®</sup> PROFINET<sup>®</sup> ModbusTCP

**Technical data**

<b>Standards</b>			
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			
<b>Protocols</b>			
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			
<b>MIB</b>			
MIB-II ■ Ethernet-like MIB ■ P-BRIDGE MIB ■ Bridge MIB ■ RSTP MIB ■ RMON MIB Group 1, 2, 3, 9 ■ Private MIB			
<b>Flow Control</b>			
IEEE 802.3x flow control ■ back pressure flow control			
<b>Switch Properties</b>			
MAC Table Size	8K		
Packet Buffer Size	1 MBit		
<b>Interface</b>			
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		
<b>Specification optical fiber</b>			
Transceiver Type	100Base FX		
	Multi-Mode	Single-Mode	
Fiber Cable Type	OM1	50/125 µm	G.652
		800 MHz*km	
Typical Distance	4 km	5 km	40 km
Wave-length	Typical (nm)	1300	
	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
<b>Note:</b> 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.			
<b>Power Requirements</b>			
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 IE-SW-VL08M-6TX-2ST/2SC/2SCS: 0.30 A at 24 V 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		
<b>Physical Characteristics</b>			
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 IE-SW-VL08MT-5TX-1SC-2SCS: 890 g		

<b>Physical Characteristics</b>			
Type of mounting	DIN-Rail		
<b>Environmental Limits</b>			
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)		
<b>Regulatory Approvals</b>			
Safety	UL 508, UL 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 CISPR 32, FCC Part 15B Class A IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV IEC 61000-4-6 CS: 10 V IEC 61000-4-8		
Maritime	DNV-GL*		
Shock	IEC 60068-2-27		
Freefall	IEC 60068-2-32		
Vibration	IEC 60068-2-6		
<b>MTBF (mean time between failures)</b>			
Time	1,339,439 hrs / 1,253,072 hrs model IE-SW-VL08MT-5TX-1SC-2SCS		
Database	Telcordia (Bellcore), GB		
<b>Warranty</b>			
Warranty Period	5 years		
<b>Ordering data</b>			
<b>Version</b>	<b>Model Type</b>	<b>Operating Temperature</b>	<b>Order No.</b>
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
<b>Accessories</b>			
	<b>Model Type</b>	<b>Order No.</b>	
External Backup and Restore Module	EBR-Module RS232	1241430000	
19" Rack Mounting Kit	RM-KIT	1241440000	
<b>Note</b>			
* 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 <ul style="list-style-type: none"> <li>• +13 to +30 V for state "1"</li> <li>• -30 to +3 V for state "0"</li> <li>• Max. input current: 8 mA</li> </ul>
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) 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; ATEX Zone 2 Ex nA nC IIC T4 Gc
EMI	FCC Part 15, CISPR (EN55022) class A
EMC	EN61000-4-2 (ESD) level 2; EN61000-4-3 (RS) level 3; EN61000-4-4 (EFT) level 3; EN61000-4-5 (Surge) level 3; EN61000-4-6 (CS) level 3; 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 IEEE 802.3u for 100BASE-TX and 100BASE-FX IEEE 802.3ab for 1000BASE-T IEEE 802.3z for 1000BASE-X IEEE 802.3x for flow control IEEE 802.3ad for port trunk with LACP IEEE 802.1D for the Spanning Tree protocol (STP) IEEE 802.1w for Rapid Spanning Tree protocol (RSTP) IEEE 802.1s for Multiple Spanning Tree Protocol (MSTP) IEEE 802.1p for Class of Service IEEE 802.1Q for VLAN Tagging IEEE 802.1X for Authentication 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 IE-SW-AL10M-8TX-2GC: 1 removable 6-pin terminal block 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 IE-SW-AL10M-8TX-2GC: 0.45 A 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) IE-SW-AL10M-8TX-2GC: 74.3 x 153.6 x 107.5 mm (2.93 x 6.05 x 4.2 in) 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 IE-SW-AL10M-8TX-2GC: 1140 g 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 IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz bis 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV 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 IE-SW-AL10M-8TX-2GC: 366,529 hrs 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
	• +13 to +30 V for state "1"
	• -30 to +3 V for state "0"
	• 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); 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	EN 55032/24 CISPR 32, FCC Part 15B Class A IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV IEC 61000-4-6 CS: 10 V 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. • +13 to +30 V for state "1" • -30 to +3 V for state "0" • 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) 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 EN61000-4-2 (ESD), level 2; EN61000-4-3 (RS), level 3; EN61000-4-4 (EFT), level 2; EN61000-4-5 (Surge), level 3; 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	<b>1241320000</b>
2 * Combo Port (10/100/1000BaseT(X) or 1000BaseSFP)	IE-SW-PL18MT-2GC-16TX	-40 to +75 °C	<b>1286970000</b>
14 * RJ45 10/100BaseT(X),	IE-SW-PL18M-2GC14TX2SCS	0 to +60 °C	<b>1241350000</b>
2 * SC-Singlemode 100BaseFX,	IE-SW-PL18MT-2GC14TX2SCS	-40 to +75 °C	<b>1287010000</b>
2 * Combo Port (10/100/1000BaseT(X) or 1000BaseSFP)			

**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



Technical data

Technology	
Standards	IEEE 802.3 for 10BASE-T IEEE 802.3u for 100BASE-TX and 100BASE-FX IEEE 802.3ab for 1000BASE-T IEEE 802.3z for 1000BASE-X IEEE 802.3x for flow control IEEE 802.3ad for port trunk with LACP IEEE 802.1D for the Spanning Tree protocol (STP) IEEE 802.1w for Rapid Spanning Tree protocol (RSTP) IEEE 802.1s for Multiple Spanning Tree Protocol (MSTP) IEEE 802.1p for Class of Service IEEE 802.1Q for VLAN Tagging IEEE 802.1X for Authentication IEEE 802.1AB for Link Layer Discovery Protocol (LLDP) 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 IE-SW-AL12M-8GT-4GESFP: 0.54 A IE-SW-AL14M-12GT-2GESFP: 0.53 A 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) IE-SW-AL12M-8GT-4GESFP: 54.3 x 145.1 x 108.3 mm (2.13 x 5.71 x 4.26 in) IE-SW-AL14M-12GT-2GESFP: 74.3 x 153.6 x 109.2 mm (2.93 x 6.05 x 4.3 in) 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 IE-SW-AL12M-8GT-4GESFP: 779 g IE-SW-AL14M-12GT-2GESFP: 1039 g 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 IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz bis 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV 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 IE-SW-AL12M-8GT-4GESFP: 551,478 hrs IE-SW-AL14M-12GT-2GESFP: 713,154 hrs 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

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**Technical data**

Technology	
Standards	IEEE 802.3 for 10BASE-T IEEE 802.3u for 100BASE-TX and 100BASE-FX IEEE 802.3ab for 1000BASE-T IEEE 802.3z for 1000BASE-X IEEE 802.3x for flow control IEEE 802.3ad for port trunk with LACP IEEE 802.1D for the Spanning Tree protocol (STP) IEEE 802.1w for Rapid Spanning Tree protocol (RSTP) IEEE 802.1s for Multiple Spanning Tree Protocol (MSTP) IEEE 802.1p for Class of Service IEEE 802.1Q for VLAN Tagging IEEE 802.1X for Authentication IEEE 802.1AB for Link Layer Discovery Protocol (LLDP) 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 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 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 IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz bis 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV 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 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



**Technical data**

Technology	
Standards	IEEE 802.3 for 10BASE-T IEEE 802.3u for 100BASE-TX and 100BASE-FX IEEE 802.3ab for 1000BASE-T IEEE 802.3z for 1000BASE-X IEEE 802.3x for flow control IEEE 802.3ad for port trunk with LACP IEEE 802.1D for the Spanning Tree protocol (STP) IEEE 802.1w for Rapid Spanning Tree protocol (RSTP) IEEE 802.1D-2004 for Rapid Spanning Tree Protocol 2004 (RSTP:2004) IEEE 802.1s for MSTP (Multiple Spanning Tree Protocol) IEEE 802.1p for Class of Service IEEE 802.1Q for VLAN Tagging IEEE 802.1X for Authentication 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 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 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 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 IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Power: 4 kV; Signal: 4 kV IEC 61000-4-5 Surge: Power: 4 kV; Signal: 4 kV 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 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		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

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### Technical data

<b>Technology</b>	
Standards	IEEE 802.3 for 10BASE-T IEEE 802.3u for 100BASE-TX and 100BASE-FX IEEE 802.3ab for 1000BASE-T IEEE 802.3z for 1000BASE-X IEEE 802.3x for flow control IEEE 802.3ad for port trunk with LACP IEEE 802.1D for the Spanning Tree protocol (STP) IEEE 802.1w for Rapid Spanning Tree protocol (RSTP) IEEE 802.1s for Multiple Spanning Tree Protocol (MSTP) IEEE 802.1p for Class of Service IEEE 802.1Q for VLAN Tagging IEEE 802.1X for Authentication IEEE 802.1AB for LLDP (Link Layer Discovery Protocol) IEEE 1588 PTPv2 for time synchronization
Processing type	Store and Forward
Flow control	IEEE 802.3x flow control
<b>Switch characteristics</b>	
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
<b>Management features</b>	
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
<b>Interfaces</b>	
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
<b>Power supply</b>	
Connection type	IE-SW-SL20M-8GT-12GESFP-HV: 2x 3-pin fork/ring lug connection IE-SW-SL20M-8GT-12GESFP-LV: 2 removable 2-pin terminal blocks



<b>Power supply</b>	
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 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
<b>Physical characteristics</b>	
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 IE-SW-SL20M-8GT-12GESFP-LV: 1520 g
<b>Environmental conditions</b>	
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
<b>EMC conformity and approvals</b>	
EMC	EN 55032, EN 55024, CISPR 32, FCC Part 15 Subpart B Class A IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Power: 4 kV; Signal: 4 kV IEC 61000-4-5 Surge: Power: 4 kV; Signal: 4 kV 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
<b>MTBF</b>	
Time	IE-SW-SL20M-8GT-12GESFP-HV: 421,961 hrs IE-SW-SL20M-8GT-12GESFP-LV: 273,551 hrs
Database	Telcordia SR332
<b>Guarantee</b>	
Time interval	5 years

<b>Ordering Information</b>		
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	<b>2778970000</b>
8x RJ45 10/100/1000 Mbit/s, 12x SFP 100/1000 Mbit/s, Low Voltage	IE-SW-SL20M-8GT-12GESFP-LV	<b>2778980000</b>
<b>Accessories</b>		
	Model Type	Order No.
19" Rack Mounting Kit	RM-KIT	<b>1241440000</b>
Configuration backup and restore module	IE-EBR-MODULE-RS232-ALM	<b>2682610000</b>

**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

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**Technical data**

Technology	
Standards	IEEE 802.3 for 10BASE-T IEEE 802.3u for 100BASE-TX and 100BASE-FX IEEE 802.3ab for 1000BASE-T IEEE 802.3z for 1000BASE-X IEEE 802.3x for flow control IEEE 802.3ad for port trunk with LACP IEEE 802.1D for the Spanning Tree protocol (STP) IEEE 802.1w for Rapid Spanning Tree protocol (RSTP) IEEE 802.1s for Multiple Spanning Tree Protocol (MSTP) IEEE 802.1p for Class of Service IEEE 802.1Q for VLAN Tagging IEEE 802.1X for Authentication IEEE 802.1AB for LLDP (Link Layer Discovery Protocol) 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 RJ45 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 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 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 IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Power: 4 kV; Signal: 4 kV IEC 61000-4-5 Surge: Power: 4 kV; Signal: 4 kV 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 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



**Technical data**

Technology	
Standards	IEEE 802.3 for 10BASE-T IEEE 802.3u for 100BASE-TX and 100BASE-FX IEEE 802.3ab for 1000BASE-T IEEE 802.3z for 1000BASE-X IEEE 802.3ae for 10-Gigabit Ethernet IEEE 802.3x for flow control IEEE 802.3ad for port trunk with LACP IEEE 802.1D for the Spanning Tree protocol (STP) IEEE 802.1w for Rapid Spanning Tree protocol (RSTP) IEEE 802.1s for Multiple Spanning Tree Protocol (MSTP) IEEE 802.1p for Class of Service IEEE 802.1Q for VLAN Tagging IEEE 802.1X for Authentication IEEE 802.1AB for LLDP (Link Layer Discovery Protocol) 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) 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

Management features	
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	
Supported media interface modules at slots 1 - 3	IE-SWM-SL08-8GT: 8 x 10/100/1000BASE-T(X) ports IE-SWM-SL08-8GESFP: 8 x 100/1000BaseSFP ports IE-SWM-SL04-4SC: 4 x 100Base-FX ports (SC-duplex, multimode) IE-SWM-SL04-4SCS: 4 x 100Base-FX ports (SC-duplex, singlemode) IE-SWM-SL04-4ST: 4 x 100Base-FX ports (ST-duplex, multimode) IE-SWM-SL04-4STS: 4 x 100Base-FX ports (ST-duplex, singlemode)
<b>Note:</b> 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 IE-SWM-SL02-2GESFP+: 2 x 10GBaseSFP+ slots IE-SWM-SL04-4GESFP+: 4 x 10GBaseSFP+ slots
<b>Note:</b> 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 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 IE-SW-SL28M-LV: 6450 g
Environmental conditions	
Operating temperature	-40 to 85 °C (-40 to 185 °F) -20 to 60 °C (-4 to 140 °F) 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 IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Power: 4 kV; Signal: 4 kV IEC 61000-4-5 Surge: Power: 4 kV; Signal: 4 kV 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 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 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 IE-SWM-SL08-8GT: 8 W 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 IE-SWM-SL04-4SCS: 401,287 hrs IE-SWM-SL04-4ST: 314,863 hrs IE-SWM-SL04-4STS: 401,287 hrs IE-SWM-SL08-8GT: 1,303,990 hrs 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) IE-SWM-SL02-2GESFP+: 7 W (w/o SFP-transceiver) 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) IE-SWM-SL02-2GESFP+: -40 to 60 °C (-40 to 140 °F) 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 IE-SWM-SL02-2GESFP+: 3,814,097 hrs 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

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<b>Industrial Security Router</b>	Introduction - Industrial Security Router	D.2
	Industrial Security Router	D.4

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# 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

**D** 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

Compatible  
with u-link  
Remote Access  
Service



**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

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

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



D

## Industrial Security Router

### 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	
	<ul style="list-style-type: none"> <li>• DHCP server / DHCP relay</li> <li>• DNS relay</li> <li>• NTP-Client/Relay</li> <li>• DynDNS (DHCP client by RFC 2136)</li> </ul>
Firewall	
	<ul style="list-style-type: none"> <li>• IPv4 Stateful inspection Firewall (incoming/outgoing)</li> <li>• NAT-Masquerading, 1:1 NAT, Portforwarding</li> <li>• Layer-2/3-Filter (VLAN ID, VLAN, QoS tag, MAC address, Ether type frame)</li> <li>• "Auto learning" feature to create packet filter rules (analysis of network traffic)</li> <li>• Layer 2/3-based packet prioritization (Ethernet frame, IP header, VLAN tag)</li> </ul>
VPN functionality*	
u-link	OpenVPN-based remote access via Weidmüller u-link cloud
OpenVPN	<ul style="list-style-type: none"> <li>• Configurable as OpenVPN server or client (Layer 2 and Layer 3)</li> <li>• Authentication with X.509 Certificates</li> <li>• Tunnel support via HTTP proxy</li> <li>• Maximum of 10 different client or server configurations</li> <li>• Unlimited number of client connections in server mode</li> </ul>
IPsec	<ul style="list-style-type: none"> <li>• Can be configured as an IPsec server or client</li> <li>• PSK authentication (user ID, password) or X.509 certificates</li> <li>• Hardware-based encryption for faster data throughput</li> <li>• A maximum of 64 simultaneous connections (subnet to subnet or as an IPsec server)</li> <li>• Encryption algorithms DES-56, 3DES-168, AES 128, AES 192, AES-256</li> </ul>

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

Management	
	<ul style="list-style-type: none"> <li>• Configuration via WEB interface (HTTP / HTTPS)</li> <li>• Configuration support through detailed help information (tooltip)</li> <li>• Configurable multi-user access with definable rights mask</li> <li>• Support of SNMP v1/v2/v3, event log / syslog</li> </ul>
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 4G / LTE: B1, B2, B3, B4, B5, B7, B12, B13, B20, B25, B26, B29, B30, B41 3G: B1, B2, B3, B4, B5, B8

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	<ul style="list-style-type: none"> <li>• "Alarm" → Indicates a configurable network status or error (24 V out)</li> <li>• "VPN-active" → Indicates an active VPN connection (24 V out)*</li> </ul>
Digital inputs	<ul style="list-style-type: none"> <li>• „Cut“ → Disconnects physically (link down) the WAN port (24 V)</li> <li>• "VPN-initiate" → Enables a pre-configured VPN connection (24 V)*</li> </ul>
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, (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 6-Port Router: 57 x 163 x 140 mm 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 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

## Industrial Security Router – Fast Ethernet

## 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 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), 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), Authentication via X.509 certificate, Tunnel support via HTTP proxy, Maximum 10 different client or server configurations
Ipssec	Configurable as Ipssec server or client
Interfaces	
RJ45 ports	10/100BASE-T(X), auto negotiation, Full/half-duplex mode, Auto MDI/MDI-X port
Digital inputs	1x galvanically isolated VPN-initiate: establishes a pre-configured VPN connection (24 V in) Cut: physically disconnects (Link Down) the WAN port (24 V in) 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) 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, max. 150 Mbps; upload rate, max. 50 Mbps 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: LTE: B1 (2100), B3 (1800), B7 (2600), B8 (900), B20 (800DD) UMTS/WCDMA: B1 (2100), B8 (900) GSM/GPRS/EDGE: B3 (1800), B8 (900)  IE-SR-4TX-LTE/4G-USEMEA: 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) 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: LTE: +23 dBm +2.7/-2.7 dB (Power Class 3) WCDMA: 24 +/-3 dBm (Power Class 3) GSM900: 33 ± 2 dBm (Power Class 4) GSM1800: 30 ± 2 dBm (Power Class 1)
	IE-SR-4TX-LTE/4G-USEMEA: LTE Band 1, 2, 3, 4, 5, 8, 12, 13, 20, 25, 26: +23 dBm +/- 1 dB LTE Band 7, 30, 41: +22 dBm +/- 1 dB 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 IE-SR-4TX-LTE/4G-EU: 213 g 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
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## 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

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<b>u-link Remote Access Service</b>	Introduction - u-link Remote Access Service	E.2
	u-link Remote Access Service	E.6

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

## Advanced features for convenient remote access management

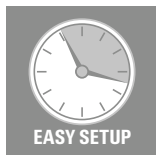
The remote maintenance of machines and systems is often a complex and time-consuming task. On top of that is the demand for a targeted and secure functional connection to the associated IT systems. For many users, these two challenges constitute a major obstacle to the global connection of systems.

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

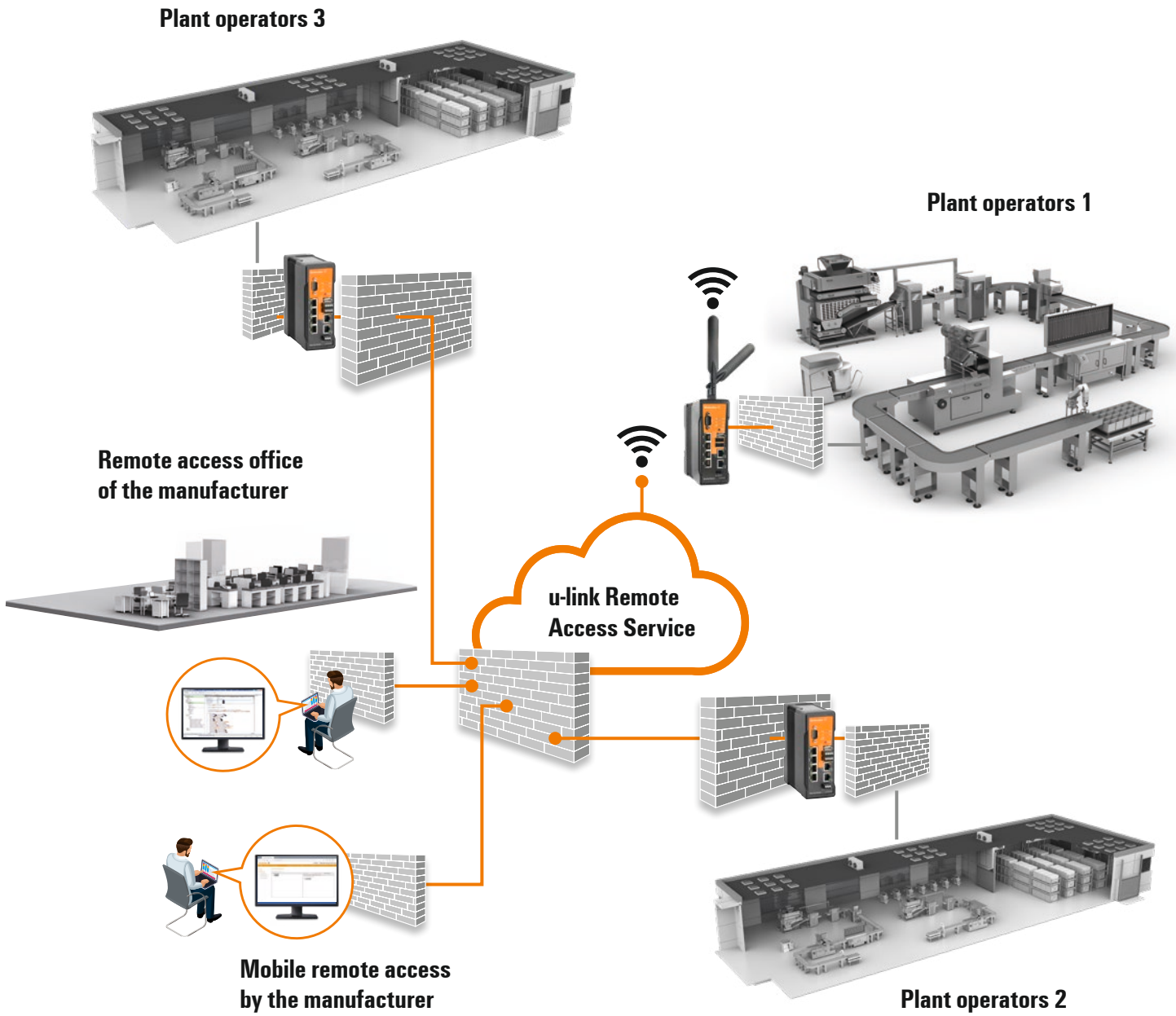
Remote access to machines and systems takes place via a secure VPN connection – worldwide and regardless of location. You have secure access to your systems at all times via the highly available servers.



### 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](https://u-link.weidmueller.com)



# 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.

### E

#### Your security features:



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



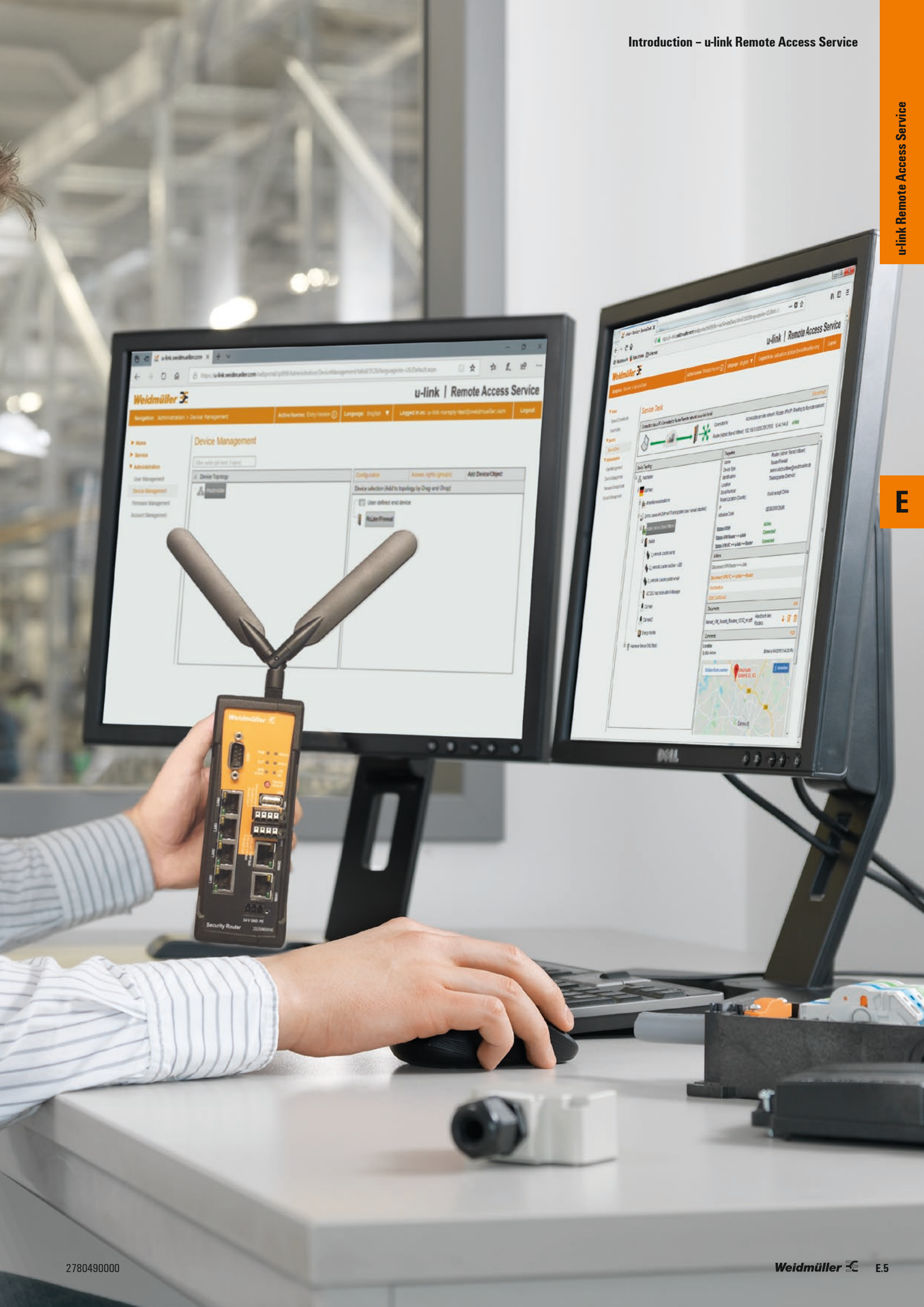
- TLS/SSL encryption
- 2-factor authentication
- Custom password policy



- 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



## u-link Remote Access Service

### 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 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

<b>Media converter and protocol gateways</b>	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.

#### **F**

#### **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

<b>Technology</b>			
Standards	IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT (X) and 100BaseFX		
<b>Interfaces</b>			
Fibre Ports	100BaseFX (SC/ST-duplex connection)		
RJ45 ports	10/100BaseT(X)		
DIP Switches	100BaseFX Full/Half duplex selection, Port fault alarm		
Alarm Contact	One relay output with current carrying capacity of 1 A at 24 V DC		
<b>Specification optical fiber</b>			
Transceiver Type	100Base FX		
	Multi-Mode		Single-Mode
Fiber Cable Type	OM1	50/125 µm	G.652
		800 MHz*km	
Typical Distance	4 km	5 km	40 km
Wave-length	Typical (nm)	1300	
	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)
	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 CISPR 32, FCC Part 15B Class A IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 1 kV; Signal: 1 kV IEC 61000-4-6 CS: 3 V IEC 61000-4-8
Hazardous Location	UL/cUL Class1, Division 2, Groups A, B, C, and D, ATEX Zone 2 Ex nA nC IIC T4 Gc
Maritime	DNV-GL
Freefall	IEC60068-2-32
Shock	IEC60068-2-27
Vibration	IEC60068-2-6
<b>MTBF (mean time between failures)</b>	
Time	401,000 hrs
Database	MIL-HDBK-217F: GB 25 °C
<b>Warranty</b>	
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 IE-CS-2TX-2RS232/485: 2
Serial Standards	RS 232/422/485
Connection	IE-CS-2TX-1RS232/485: DB9 for RS 232, terminal block for RS 422/485 IE-CS-2TX-2RS232/485: DB9 for RS 232/422/485
Serial Line Protection	<ul style="list-style-type: none"> <li>• 15 kV ESD protection for all signals</li> <li>• 1 kV (level 2) surge protection</li> </ul>
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, Rtelnet, DNS, SNMP, HTTP, SMTP, SNTIP, IGMP
Configuration Options	Web Console, Serial Console, Telnet Console, Windows Utility
Windows Real COM Drivers	Windows 95/98/ME/NT/2000, Windows XP/2003/Vista/2008/7/8 x86/x64, 2012 x64
Technical data	
Housing	Metal, IP30 protection
Weight	IE-CS-2TX-1RS232/485: 475 g 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) Wide Temp. Models: -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 IE-CS(T)-2TX-2RS232/485: 0.25 A at 12 V

**Approvals**

EMC	EN 55032/24 CISPR 32, FCC Part 15B Class A IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Power: 4 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV IEC 61000-4-6 CS: 10 V IEC 61000-4-8
Security	UL 508
Hazardous Location	UL/cUL Class 1 Division 2 Groups A, B, C and D ATEX Zone 2 Ex nA nC IIC T3 Gc
Shock	IEC60068-2-27
Freefall	IEC60068-2-32
Vibration	IEC60068-2-6

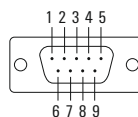
Alert Tools	Built-in buzzer and RTC (real-time clock)
Automatic Reboot Trigger	Built-in WDT (watchdog timer)
MTBF (mean time between failures)	
Time	262,805 hrs
Database	Telcordia (Bellcore), GB

Reliability	
Alert Tools	Built-in buzzer and RTC (real-time clock)
Automatic Reboot Trigger	Built-in WDT (watchdog timer)

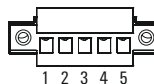
Warranty	
Warranty Period	5 years

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, RS422/485: terminal block)	IE-CS-2TX-1RS232/485	0 to +60 °C	1242080000
2 * RJ45; 2 * serial (RS232/422/485: 2 * SubDB9)	IE-CST-2TX-1RS232/485	-40 to +75 °C	1285830000
	IE-CS-2TX-2RS232/485	0 to +60 °C	1242090000
	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

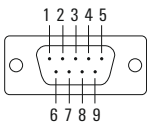
## Serial/Ethernet converter and Modbus TCP/RTU protocol gateway

- 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 IEEE 802.3u for 100BASE-TX																																																		
Processing type	Store and Forward																																																		
Management features																																																			
Device configuration	Webbrowser (HTTP/HTTPS) SSH Upload of a configuration file via web-interface																																																		
Monitoring function	Modbus traffic monitor Syslog Event based warning via E-Mail Event based warning via SNMP trap																																																		
IP-address management	Static DHCP-Client BootP																																																		
Security functions	Enable/disable ports 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 TCP Server mode TCP Client mode UDP Server/Client mode Modbus RTU/ASCII Master to Modbus TCP Slave Gateway 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 k $\Omega$ , 150 k $\Omega$ ) 1x for pull high resistor setting (1 k $\Omega$ , 150 k $\Omega$ ) 1x for termination resistor setting (120 $\Omega$ )																																																		
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)	<table border="1"> <thead> <tr> <th>Pin #</th> <th>RS-232 (DTE Device)</th> <th>RS-422</th> <th>RS-485 (4-wire)</th> <th>RS-485 (2-wire)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>DCD</td> <td>TX-</td> <td>TX-</td> <td>DATA-</td> </tr> <tr> <td>2</td> <td>RXD</td> <td>TX+</td> <td>TX+</td> <td>DATA+</td> </tr> <tr> <td>3</td> <td>TXD</td> <td>RX+</td> <td>RX+</td> <td>-</td> </tr> <tr> <td>4</td> <td>DTR</td> <td>RX-</td> <td>RX-</td> <td>-</td> </tr> <tr> <td>5</td> <td>GND</td> <td>GND</td> <td>GND</td> <td>GND</td> </tr> <tr> <td>6</td> <td>DSR</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>7</td> <td>RTS</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>8</td> <td>CTS</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>9</td> <td>RI</td> <td>-</td> <td>-</td> <td>-</td> </tr> </tbody> </table>	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	-	-	-
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 IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz bis 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV 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	IECS-MBGW-2TX-1COM	<b>2682600000</b>

## Accessories

	Model Type	Order No.
19" Rack Mounting Kit	RM-KIT	<b>1241440000</b>

# IoT-Gateways Overview

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<b>IoT-Gateways</b>	Introduction - IoT-Gateways	G.2
	IoT-Gateways	G.4

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# 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

G

Also  
available in  
IP54

**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.

## IoT-Gateways

### 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

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<b>Industrial WLAN</b>	Introduction - Industrial WLAN	H.2
	Industrial WLAN	H.4

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# 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

H



### 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 IEEE 802.11i for Wireless Security IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT(X) IEEE 802.3ab for 1000BaseT
Spread Spectrum and Modulation (typically)	<ul style="list-style-type: none"> <li>• DSSS with DBPSK, DQPSK, CCK</li> <li>• OFDM with BPSK, QPSK, 16QAM, 64QAM</li> <li>• 802.11b: CCK at 11/5.5 Mbps, DQPSK at 2 Mbps, DBPSK at 1 Mbps</li> <li>• 802.11a/g: 64QAM at 54/48 Mbps, 16QAM at 36/24 Mbps, QPSK at 18/12 Mbps, BPSK at 9/6 Mbps</li> <li>• 802.11n: 64QAM at 300 Mbps to BPSK at 6.5 Mbps</li> </ul>
Operating Channels (central frequency)	US model: 2.412 to 2.462 GHz (11 channels) / 5.180 to 5.240 GHz (4 channels) 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) EU model: 2.412 to 2.472 GHz (13 channels) / 5.180 to 5.240 GHz (4 channels) 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	<ul style="list-style-type: none"> <li>• SSID Broadcast enable/disable</li> <li>• Firewall for MAC/IP/protocol/port-based filtering</li> <li>• 64-bit and 128-bit WEP encryption, WPA/WPA2 personnel and enterprise (IEEE 802.1X/RADIUS, TKIP and AES)</li> </ul>
Transmission Rates	802.11b: 1, 2, 5.5, 11 Mbps 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 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 Type 26±1.5 dBm at 5.5 Mbps, Type 25±1.5 dBm at 11 Mbps 802.11g: Type 23±1.5 dBm at 6 to 24 Mbps, Type 21±1.5 dBm at 36 Mbps Type 19±1.5 dBm at 48 Mbps, Type 18±1.5 dBm at 54 Mbps 802.11n: Type 23±1.5 dBm at MCS0/8 20 MHz, (2.4 GHz) Type 18±1.5 dBm at MCS7/15 20 MHz Type 23±1.5 dBm at MCS0/8 40 MHz Type 17±1.5 dBm at MCS7/15 40 MHz 802.11a: Type 23±1.5 dBm at 6 to 24 Mbps, Type 21±1.5 dBm at 36 Mbps Type 20±1.5 dBm at 48 Mbps, Type 18±1.5 dBm at 54 Mbps 802.11n: Type 23±1.5 dBm at MCS0/8 20 MHz (5 GHz) Type 18±1.5 dBm at MCS7/15 20 MHz Type 23±1.5 dBm at MCS0/8 40 MHz 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:	802.11g:	802.11n:	802.11a:	802.11n:
	• 93 dBm at 1 Mbps, -93 dBm at 2 Mbps	• 88 dBm at 6 Mbps, -86 dBm at 9 Mbps	• 70 dBm at MCS7 20 MHz, -69 dBm at MCS15 20 MHz (2.4 GHz)	• 93 dBm at 5.5 Mbps, -88 dBm at 11 Mbps	• 69 dBm at MCS7 20 MHz, -71 dBm at MCS15 20 MHz (5 GHz)
	• 85 dBm at 12 Mbps, -85 dBm at 18 Mbps	• 85 dBm at 24 Mbps, -82 dBm at 36 Mbps	• 67 dBm at MCS7 40 MHz, -67 dBm at MCS15 40 MHz	• 88 dBm at 12 Mbps, -85 dBm at 18 Mbps	• 63 dBm at MCS7 40 MHz, -68 dBm at MCS15 40 MHz
	• 78 dBm at 48 Mbps, -74 dBm at 54 Mbps	• 81 dBm at 24 Mbps, -78 dBm at 36 Mbps	• 67 dBm at MCS7 40 MHz, -67 dBm at MCS15 40 MHz	• 78 dBm at 48 Mbps, -74 dBm at 54 Mbps	
		• 74 dBm at 48 Mbps, -72 dBm at 54 Mbps			

Protocol Support	
General Protocols	Proxy ARP, DNS, HTTP, HTTPS, IP, ICMP, SNMP, 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) 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)
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 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, TELECOM, FCC ID: SLE-WAPN008, KC
EMC	EN 55032/24 CISPR 32, FCC Part 15B Class B IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV IEC 61000-4-6 CS: 3 V 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 IE-WLT-BL-AP-CL-EU	0 to +60 °C -40 to +75 °C	<b>2536600000</b> <b>2536650000</b>
WLAN Access Point/Client, IEEE 802.11 a/b/g/n, US-Modell	IE-WL-BL-AP-CL-US IE-WLT-BL-AP-CL-US	0 to +60 °C -40 to +75 °C	<b>2536660000</b> <b>2536670000</b>

**Accessories**

	Type	Order No.
External Backup and Restore Module	EBR-Modul RS232	<b>1241430000</b>
19" Rack Mounting Kit	RM-KIT	<b>1241440000</b>

**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 IEEE 802.11i for wireless security IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT(X) IEEE 802.3ab for 1000BaseT IEEE 802.3af for Power-over-Ethernet IEEE 802.1D for Spanning Tree Protocol IEEE 802.1w for Rapid STP IEEE 802.1Q for VLAN
Spreading code process and modulation (typical)	<ul style="list-style-type: none"> <li>• DSSS with DBPSK, DQPSK, CCK</li> <li>• OFDM with BPSK, QPSK, 16QAM, 64QAM</li> <li>• 802.11b: CCK at 11/5.5 Mbps, DQPSK at 2 Mbps, DBPSK at 1 Mbps</li> <li>• 802.11a/g: 64QAM at 54/48 Mbps, 16QAM at 36/24 Mbps, QPSK at 18/12 Mbps, BPSK at 9/6 Mbps</li> <li>• 802.11n: 64QAM at 300 Mbps to BPSK at 6.5 Mbps</li> </ul>
Operating Channels (central frequency)	US model: 2.412 to 2.462 GHz (11 channels) / 5.180 to 5.240 GHz (4 channels) 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) EU model: 2.412 to 2.472 GHz (13 channels) / 5.180 to 5.240 GHz (4 channels) 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	<ul style="list-style-type: none"> <li>• SSID Broadcast enable/disable</li> <li>• Firewall for MAC/IP/protocol/port-based filtering</li> <li>• 64-bit and 128-bit WEP encryption, WPA/WPA2 personal and enterprise (IEEE 802.1X/RADIUS, TKIP and AES)</li> </ul>
Transmission Rates	802.11b: 1, 2, 5.5, 11 Mbps 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 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 Type 26±1.5 dBm at 5.5 Mbps, Type 25±1.5 dBm at 11 Mbps 802.11g: Type 23±1.5 dBm at 6 to 24 Mbps, Type 21±1.5 dBm at 36 Mbps Type 19±1.5 dBm at 48 Mbps, Type 18±1.5 dBm at 54 Mbps 802.11n: Type 23±1.5 dBm at MCS0/8 20 MHz, (2.4 GHz) Type 18±1.5 dBm at MCS7/15 20 MHz Type 23±1.5 dBm at MCS0/8 40 MHz Type 17±1.5 dBm at MCS7/15 40 MHz 802.11a: Type 23±1.5 dBm at 6 to 24 Mbps, Type 21±1.5 dBm at 36 Mbps Type 20±1.5 dBm at 48 Mbps, Type 18±1.5 dBm at 54 Mbps 802.11n: Type 23±1.5 dBm at MCS0/8 20 MHz (5 GHz) Type 18±1.5 dBm at MCS7/15 20 MHz Type 23±1.5 dBm at MCS0/8 40 MHz 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 • 93 dBm at 5.5 Mbps, -88 dBm at 11 Mbps 802.11g: • 88 dBm at 6 Mbps, -86 dBm at 9 Mbps • 85 dBm at 12 Mbps, -85 dBm at 18 Mbps • 85 dBm at 24 Mbps, -82 dBm at 36 Mbps • 78 dBm at 48 Mbps, -74 dBm at 54 Mbps 802.11n: • 70 dBm at MCS7 20 MHz, -69 dBm at MCS15 20 MHz (2.4 GHz) • 67 dBm at MCS7 40 MHz, -67 dBm at MCS15 40 MHz 802.11a: • 90 dBm at 6 Mbps, -88 dBm at 9 Mbps • 88 dBm at 12 Mbps, -85 dBm at 18 Mbps • 81 dBm at 24 Mbps, -78 dBm at 36 Mbps • 74 dBm at 48 Mbps, -72 dBm at 54 Mbps 802.11n: • 69 dBm at MCS7 20 MHz, -71 dBm at MCS15 20 MHz (5 GHz) • 63 dBm at MCS7 40 MHz, -68 dBm at MCS15 40 MHz
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Supported protocols	
General protocols	Proxy ARP, DNS, HTTP, HTTPS, IP, ICMP, SNMP, 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 • +13 to +30 V for the state "1" • +3 to -30 V for the state "0" • 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) Models with extended temperature range: -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 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 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: SLE-WAPN008, KC
EMC	EN 61000-6-2/6-4 CISPR 32, FCC Part 15B Class B IEC 61000-4-2 ESD: Contact: 8 kV; Air: 15 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV IEC 61000-4-6 CS: 3 V/m 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	<b>2536680000</b>
WLAN Access Point/Bridge/Client, IEEE 802.11 a/b/g/n, US-Modell	IE-WLT-VL-AP-BR-CL-EU	-40 to +75 °C	<b>2536690000</b>
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	<b>2536700000</b>
WLAN Access Point/Bridge/Client, IEEE 802.11 a/b/g/n, US-Modell	IE-WLT-VL-AP-BR-CL-US	-40 to +75 °C	<b>2536710000</b>

**Accessories**

	Type	Order No.
External backup and restore module	EBR-Modul RS232	<b>1241430000</b>
19" Rack Mounting Kit	RM-KIT	<b>1241440000</b>



# Active components

## Overview of accessories

<b>Accessories – Active components</b>	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	<b>2682450000</b>
SFP Transceiver, 100 Mbit/s, Singlemode, LC-Duplex, 30 km, -40 °C...85 °C	IE-SFP-1FE-SM-30	<b>2682450000</b>
SFP Transceiver, 100 Mbit/s, Singlemode, LC-Duplex, 60 km, -40 °C...85 °C	IE-SFP-1FE-SM-60	<b>2682470000</b>

**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
Transmission speed	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-TX1550	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 2779110000	IE-SFP-10GE-SM-20 2779120000	IE-SFP-10GE-SM-40 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

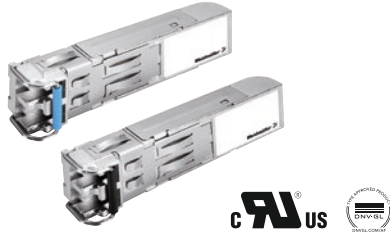
Time interval 3 years

#### 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	<b>2779110000</b>
SFP+ Transceiver, 10 Gbit/s, Singlemode, LC-Duplex, 20 km, -40 °C..85 °C	IE-SFP-10GE-SM-20	<b>2779120000</b>
SFP+ Transceiver, 10 Gbit/s, Singlemode, LC-Duplex, 40 km, -40 °C..85 °C	IE-SFP-10GE-SM-40	<b>2779130000</b>

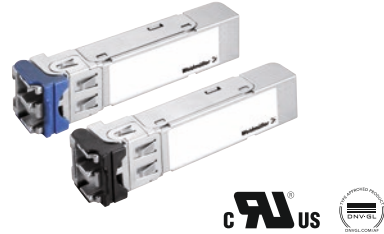
**Gigabit Ethernet SFP-Transceiver**

- 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



**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						
		1000BaseSFP				
		SFP-SX		SFP-LX		SFP-LHX
Transceiver Type		Multi-Mode		Multi-Mode		Single-Mode
Fiber Cable Type		OM1	OM2	OM1	OM2	G.652
Typical Distance		300 m	550 m	1 km	2 km	40 km
Wave-length	Typical (nm)	850				
	TX Range (nm)	830 to 860		1270 to 1355		1280 to 1340
	RX Range (nm)	770 to 860		1260 to 1610		1260 to 1610
Optical Power	TX Range (dBm)	-4 to -9.6		-1 to -9		-3 to -9
	RX Range (dBm)	0 to -18		-1 to -19		-3 to -21
	Link-Budget (dB)	8.5		10		12
Dispersion Penalty (dB)		4.3	3.6	5	5	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) 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-1GLHLC	0 to +60 °C	1241520000
	IE-SFP-1GLHLC-T	-40 to 85 °C	1286730000

**Technical data**

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

**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
	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 CISPR 32, FCC Part 15B Class A IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV IEC 61000-4-6 CS: 10 V IEC 61000-4-8	
Warranty		
Warranty Period	5 years	
Ordering data		
Version	Type	Order No.
External Backup and Restore Module	EBR-MODULE RS232	<b>1241430000</b>

**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) 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) 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 IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV 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 IE-SW-AL08M-8GTPoE IE-SW-AL08M-8GT IE-SW-AL12M-8GT-4GESFP IE-SW-AL14M-12GT-2GESFP IE-SW-AL24M-16GT-8GESFP IE-SW-SL20M-8GT-12GESFP-HV IE-SW-SL20M-8GT-12GESFP-LV IE-SW-SL28M-HV 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	<b>2682610000</b>

## Mounting kits for 19" rack and wall

### Kit for 19" rack-mounting

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



#### Technical data

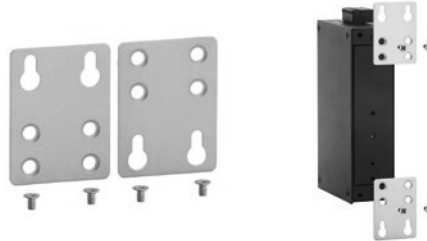
Technical data	
Dimensions (W x H x D)	481 x 177.8 x 202.4 mm

#### 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: IE-SW-BL05

#### Ordering data

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

# Passive components

## Introduction

<b>Introduction – Passive components</b>	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 **STEADYTEC**<sup>®</sup> technology



**STEADYTEC**<sup>®</sup> – this name stands for the future of connection technology in the field of data and signal transmissions. Established market leaders in the industry, **STEADYTEC**<sup>®</sup> 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.





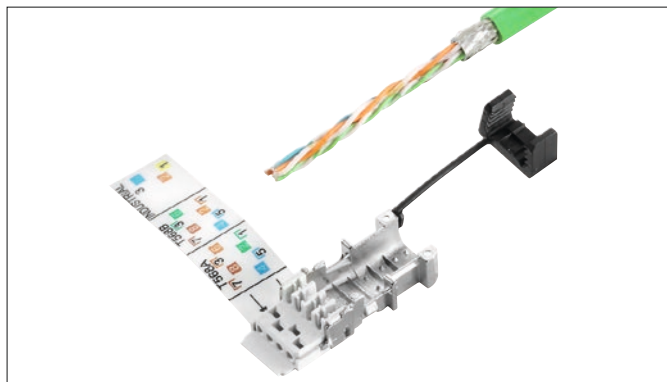
### Tool-free assembly and powerful connections: the RJ45 gigabit connector!

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. Weidmüller's IE product line fulfils the requirements for 10 GBit Ethernet, according to IEEE 802.3an, up to 500 MHz.

#### STEADYTEC®: Systematic benefits

- **Cat. 6A 10 GBit System Class E<sub>A</sub>**
- **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**



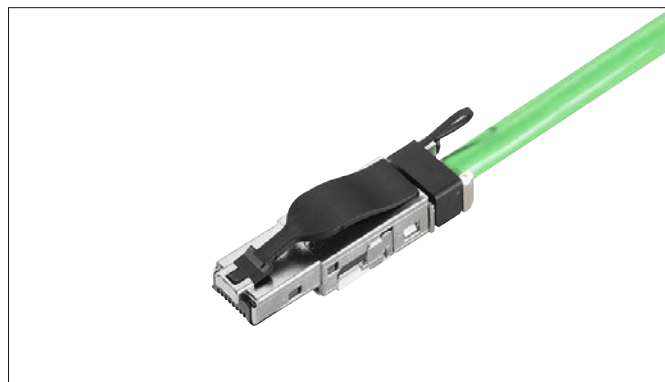
1. Strip sheath cladding and shorten shield to 5 mm



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.

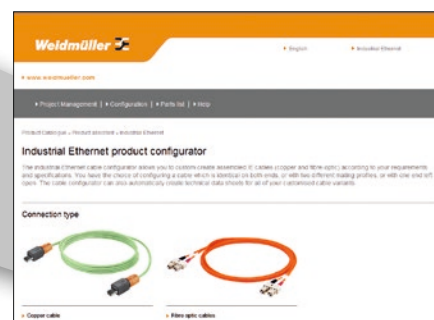


The Industrial Ethernet Configurator can be found in our online catalogue.

Our configurator  
creates connections  
tailor-made.

**Weidmüller**

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
- Variable connection options
- Pre-assembled connection cables
- Star topology most widely in use

- Individual plant-influenced networks
- Robust component characteristics
- On-site, user assembly connections
- Redundant network topologies (ring)

#### Transmission

- Large volume of data
- Mid-level network availability
- Mostly only acyclical transmission
- No real-time characteristics required for standard applications

- Small data packets (measurement values)
- Very high network availability
- Extremely high real-time requirement
- Mostly cyclical transmission

#### Surroundings

- No extreme conditions

- Extreme temperatures
- Dust, dirt, splashing water, oils gases,
- Vibration, electromagnetic fields
- 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.



## 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



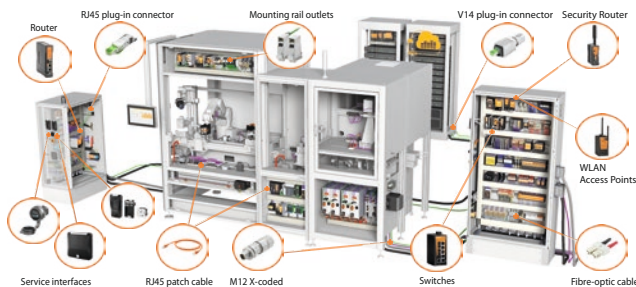
IP67  
plug-in M12 connectors



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 angled 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-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

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-SCRJMM	8946990000
SC-RJ singlemode coupling	IE-TO-SCRJSM	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.



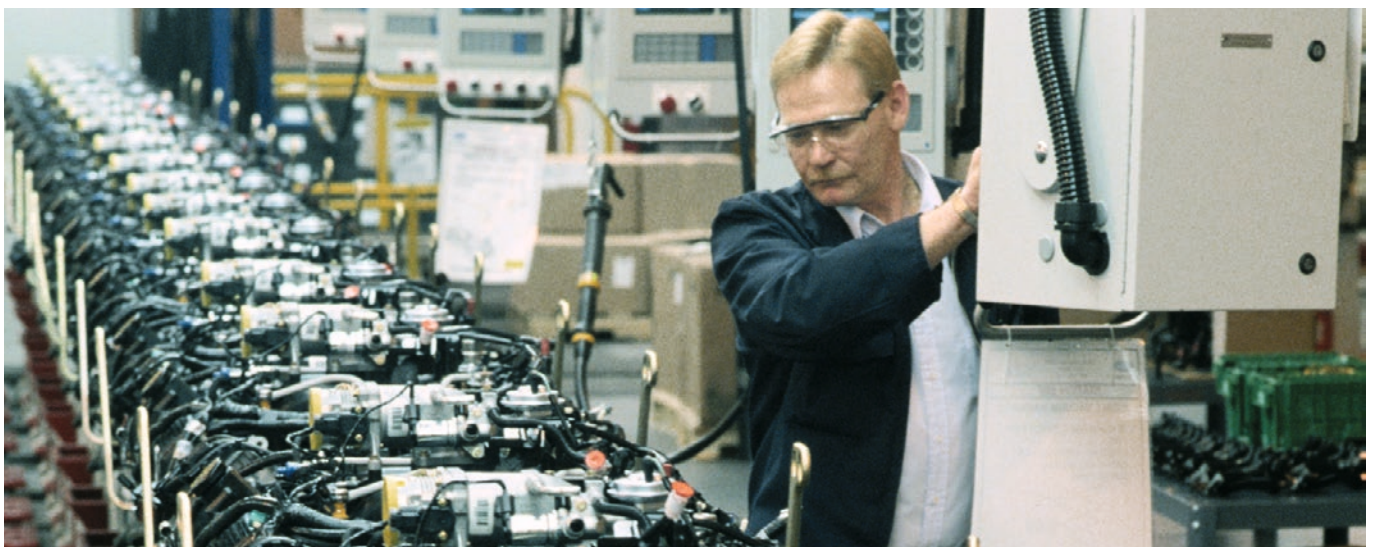
### Profile specific guidelines for the connection components

#### 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



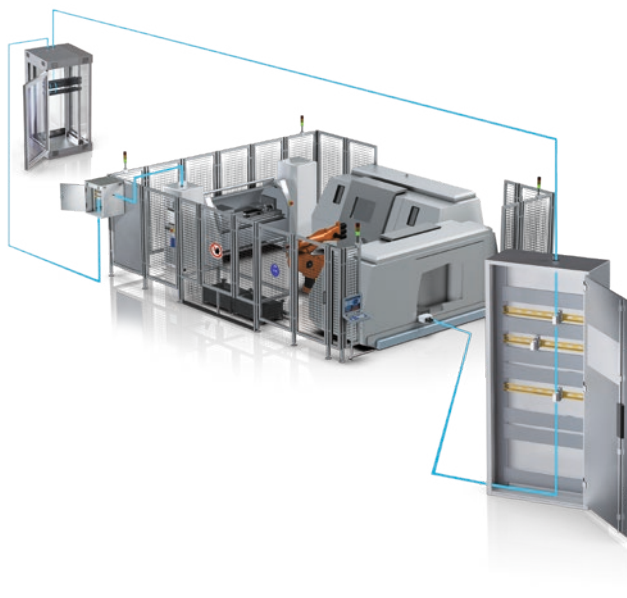
IP67  
plug-in M12 connectors



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-FJA	8946930000
RJ45 Module TIA-B printing	IE-TO-RJ45-FJB	8946940000
SC-RJ POF coupling / multimode	IE-TO-SCRJ-MMM	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-FJA	1018810000
FrontCom® Micro RJ45 module TIA-B printing	IE-FCM-RJ45-FJB	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-FJA	1963480000
Bayonet flange plastic RJ45 coupling	IE-BS-V01P-RJ45-C	1012370000
Bayonet flange metal RJ45 module TIA-A printing	IE-BS-V01P-RJ45-FJA	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

## K

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 Weidmüller 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

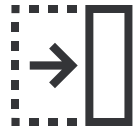


#### Simplicity

#### Future-proof

## Particularly compact

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



## K

Weidmüller 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

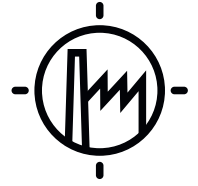
#### Easy IP67-integration

- 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. Weidmüller 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



### K

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

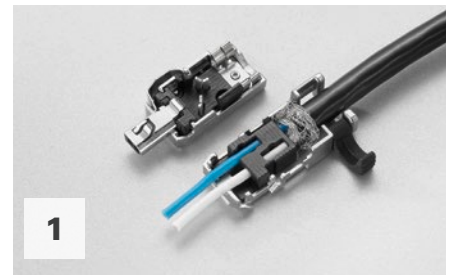
- Industry standard plugs and sockets with metal Snap-in hooks locking
- Known locking and unlocking mechanism as for RJ45 connectors
- High holding force (> 50 N)

#### 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-free 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



### 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.

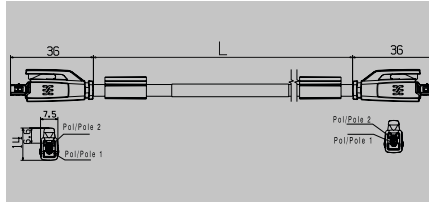


## Assembled cable IP20

## Assembled cable IP20

## Plug - Plug

Socket contact / Socket contact



### Technical data

Product type
Category
Shielding
Ambient temperature (operational)
Rated voltage (DC)
Rated current
PoE / PoE+
Transmission rate
Dielectric strength, contact / contact
Dielectric strength, contact / shield
Characteristic impedance
Capacity at 800 Hz
Coupling attenuation 1 to 600 MHz
Coupling attenuation up to 1000 MHz
Test voltage: wire-wire-shield
Resistance differential
Transmission rate
Version connector left
Version connector right
Number of wires
Colour coding
Complete shielding / Overlap of shielding braid
Insulation
Insulation diameter
Sheath diameter, min. / max.
Cross-section / Strands
Shielding
Material sheath
Colour
Halogen
UV-resistant
Connector standard

#### Note

### Ordering data

	1.0 m
	2.0 m
	3.0 m
	5.0 m

#### Note

### Accessories

#### Note

Patch cable
STP
-40...80 °C
60 V
3.5 A
PoDL acc. to IEEE 802.3bu / cg
10/100 Mbit/s, 1000 Mbit/s, 1000 Mbit/s
1000 V DC
2250 V DC
100 ± 15 Ω at 20 MHz
1.6 nF/km
Type I
1 kV DC, 1 min
2 %
10/100 Mbit/s, 1000 Mbit/s, 1000 Mbit/s
SPE plug (IEC 63171-2) - IP20 socket contact straight
SPE plug (IEC 63171-2) - IP20 socket contact straight
2
white / blue
Shielding braid made from copper wiring / 80 %
PE
1.65 mm
4.9 / 5.3 mm
2*AWG 22 / 7
STP
PVC
black
Yes
Complies with UL 1581 Sec. 1200
IEC 63171-2

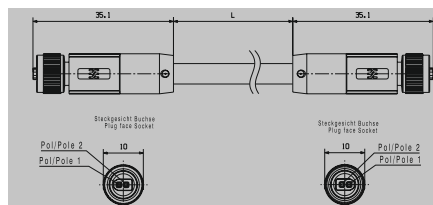
Type	Qty.	Order No.
IE-S1DS2VE0010T01T01-E	1	2725850010
IE-S1DS2VE0020T01T01-E	1	2725850020
IE-S1DS2VE0030T01T01-E	1	2725850030
IE-S1DS2VE0050T01T01-E	1	2725850050

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

Assembled cable  
IP67

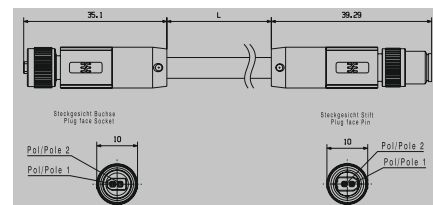
M8 / M8

Socket contact / Socket contact



M8 / M8

Socket contact / Pin contact



Technical data

Product type	Patch cable
Category	STP
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	1 kV DC, 1 min
Test voltage: wire-wire-shield	2 %
Resistance differential	10/100 MBit/s, 1000 MBit/s
Transmission rate	M8 SPE ( IEC63171-5) - IP67 socket contact straight
Version connector left	M8 SPE ( IEC63171-5) - IP67 socket contact straight
Version connector right	M8 SPE ( IEC63171-5) - IP67 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 63171-5
Note	

Ordering data

	2.0 m
Note	

Accessories

Type	Qty.	Order No.
Note		

Product type	Patch cable
Category	STP
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	1 kV DC, 1 min
Test voltage: wire-wire-shield	2 %
Resistance differential	10/100 MBit/s, 1000 MBit/s
Transmission rate	M8 SPE ( IEC63171-5) - IP67 socket contact straight
Version connector left	M8 SPE ( IEC63171-5) - IP67 socket contact straight
Version connector right	M8 SPE ( IEC63171-5) - IP67 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 63171-5
Note	

Type	Qty.	Order No.
IE-S1DS2VE0020TM1TM1-E	1	2726050020
Note		

Type	Qty.	Order No.
Note		

Product type	Patch cable
Category	STP
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	1 kV DC, 1 min
Test voltage: wire-wire-shield	2 %
Resistance differential	10/100 MBit/s, 1000 MBit/s
Transmission rate	M8 SPE ( IEC63171-5) - IP67 socket contact straight
Version connector left	M8 SPE ( IEC63171-5) - IP67 socket 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	

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

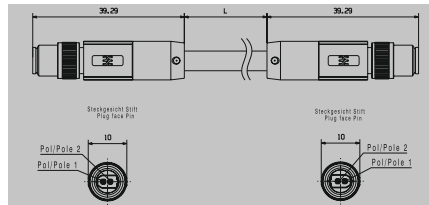
Type	Qty.	Order No.
Note		

## Assembled cable IP67

## Assembled cable IP67

## M8 / M8

Pin contact / Pin contact



### Technical data

Product type
Category
Shielding
Ambient temperature (operational)
Rated voltage (DC)
Rated current
PoE / PoE+
Transmission rate
Dielectric strength, contact / contact
Dielectric strength, contact / shield
Current-carrying capacity
Characteristic impedance
Capacity at 800 Hz
Coupling attenuation 1 to 600 MHz
Coupling attenuation up to 1000 MHz
Test voltage: wire-wire-shield
Resistance differential
Transmission rate
Version connector left
Version connector right
Number of wires
Colour coding
Complete shielding / Overlap of shielding braid
Insulation
Insulation diameter
Sheath diameter, min. / max.
Cross-section / Strands
Shielding
Material sheath
Colour
Halogen
UV-resistant
Connector standard

#### Note

### Ordering data

2.0 m

#### Note

### Accessories

#### Note

#### Patch cable

STP
-40...85 °C
60 V
3.5 A
PoDL acc. to IEEE 802.3bu / cg
10/100 MBit/s, 1000 MBit/s
1000 V DC
2250 V DC
3.5A @ 0°C
100 ± 15 Ω at 20 MHz
1.6 nF/km
Type I
1 kV DC, 1 min
2 %
10/100 MBit/s, 1000 MBit/s
M8 SPE ( IEC63171-5) - IP67 pin contact straight
M8 SPE ( IEC63171-5) - IP67 pin contact straight
2
white / blue
Shielding braid made from copper wiring / 80 %
PE
1.65 mm
4.9 / 5.3 mm
2*AWG 22 / 7
STP
PVC
black
Yes
Complies with UL 1581 Sec. 1200
IEC 63171-5

Type	Qty.	Order No.
IE-S1DS2VE0020TM2TM2-E	1	2726070020

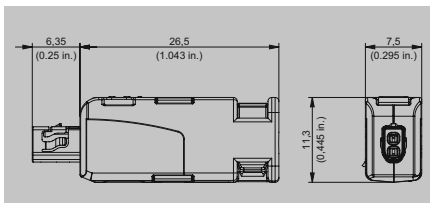
Type	Qty.	Order No.
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**Plug**

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

**Field-terminated plug IP20**

**Socket contact**



**Technical data**

- Category
- Protection degree
- Ambient temperature (operational)
- Plugging cycles
- Housing main material
- Contact material
- Contact surface
- Rated voltage
- Insulation cross-section, min.
- Insulation cross-section, max.
- Insulation strength
- PoE / PoE+
- Dielectric strength, contact / contact
- Dielectric strength, contact / shield
- Connector standard
- UL 94 flammability rating

**Note**

**Ordering data**

Plug	
	field-terminated plug

**Note**

**Accessories**

**Preliminary technical data!**

- IP20
- 40...85 °C
- 750
- zinc diecast nickel-plated
- Bronze tin-plated
- 0.85 mm
- 1.6 mm
- ≥ 500 MΩ
- PoDL acc. to IEEE 802.3bu / cg
- ≥ 1000 V DC
- ≥ 1500 V DC
- IEC 63171-2
- V-0

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

Type	Qty.	Order No.

**Note**

Plug

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

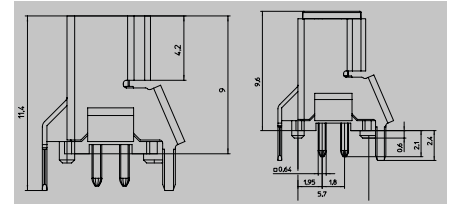
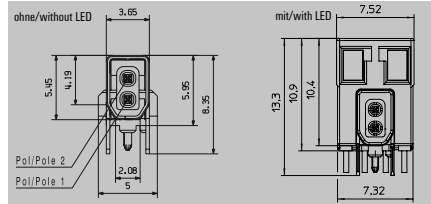
PCB connector, 90°

Pin contact



PCB connector, 180°

Pin contact



Technical data

- Category
- Protection degree
- Ambient temperature (operational)
- Transmission rate
- Type of connection
- Outgoing elbow
- Number of poles
- Mounting onto the PCB
- Plugging cycles
- Contact material
- Contact surface
- Rated voltage
- Insulation strength
- PoE / PoE+
- Dielectric strength, contact / contact
- Dielectric strength, contact / shield
- Connector standard
- UL 94 flammability rating

Note

Preliminary technical data!

- IP20
- 40...85 °C
- 10/100 MBit/s, 1000 MBit/s
- Solder connection, Male contact
- 90°
- 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, ISO/IEC 11801-1
- V-0

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

Ordering data

Plug	
	PCB connector, IP20, pin contact
	PCB connector, IP20, pin contact incl. LEDs

Note

Type	Qty.	Order No.
IE-PCB-SPO-P-90V-THR	100	2726010000
IE-PCB-SPO-P-90V-THR-YG/YG	100	2795120000

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

Accessories

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

Note

Empty housing



Technical data

Category  
 Ambient temperature (operational)  
 Protection degree  
 Housing main material  
 Seal material  
 Configuration  
 Type of mounting  
 Connection thread  
 Connector standard  
 Tightening torque fixing nut

Note

Ordering data

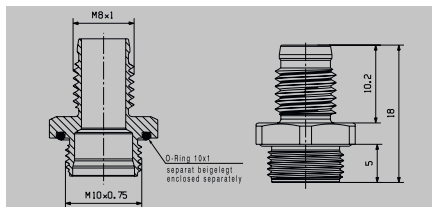
Note

Accessories

Fastening nut

Note

M8 front wall mounting



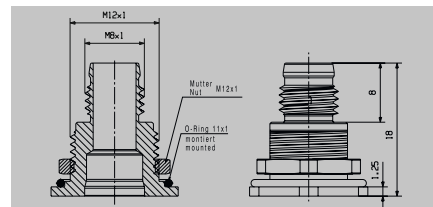
-40...85 °C  
 IP67  
 Brass, nickel-plated  
 FKM  
 Frontpanel mounting  
 Screw mounting  
 M10 x 0.75  
 IEC 61076-2-104  
 2.5 Nm

Type	Qty.	Order No.
IE-BHD-SPE-M8-OT-FP	10	2726020000

Inserts must be ordered separately.

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

M8 rear wall mounting



40...85 °C  
 IP67  
 Brass, nickel-plated  
 FKM  
 Backpanel mounting  
 Screw mounting  
 M10 x 0.75  
 IEC 61076-2-104  
 2.5 Nm

Type	Qty.	Order No.
IE-BHD-SPE-M8-OT-BP	20	2726030000

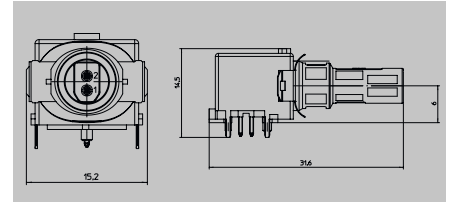
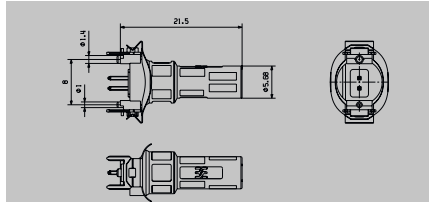
Inserts must be ordered separately.

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

PCB insert

M8 insert 180° pin contacts

M8 insert 90° pin contacts



Technical data

Category	
Ambient temperature (operational)	
Protection degree	
Pollution severity	
Connection thread	
Number of poles	
Type of connection	
Outgoing elbow	
Contact material	
Contact surface	
Contact carrier material	
Operational voltage range	
Insulation strength	
Dielectric strength, contact / contact	
Dielectric strength, contact / shield	
Connector standard	
UL 94 flammability rating	
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	
Note	

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	
Note	

Ordering data

	THR
	SMD
Note	

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

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

Accessories

Type	Qty.	Order No.
Note		

Type	Qty.	Order No.
Note		

Type	Qty.	Order No.
Note		

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

## Overview

<b>IP20 plug-in connectors and mounting rail outlets</b>	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



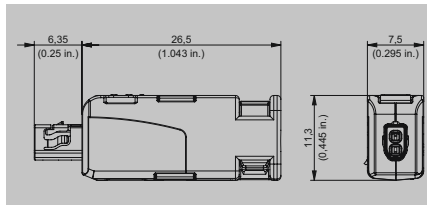
## IP20 plug-in connectors

### 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

Category  
 Protection degree  
 Ambient temperature (operational)  
 Plugging cycles  
 Housing main material  
 Contact material  
 Contact surface  
 Rated voltage  
 Insulation cross-section, min.  
 Insulation cross-section, max.  
 Insulation strength  
 PoE / PoE+  
 Dielectric strength, contact / contact  
 Dielectric strength, contact / shield  
 Connector standard  
 UL 94 flammability rating

#### Note

#### Ordering data

**Plug**  
 field-terminated plug

#### Note

#### Accessories

#### preliminary technical data!

IP20  
 -40...85 °C  
 750  
 zinc diecast nickel-plated  
 Bronze tin-plated  
 0.85 mm  
 1.6 mm  
 ≥ 500 MΩ  
 PoDL acc. to IEEE 802.3bu / cg  
 ≥ 1000 V DC  
 ≥ 1500 V DC  
 IEC 63171-2  
 V-0

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

Type	Qty.	Order No.

#### Note

### Single Pair Ethernet (SPE) plug

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

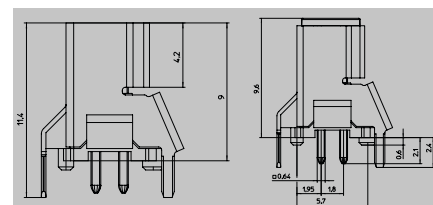
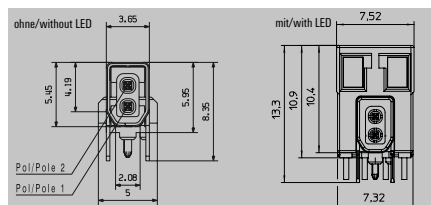
### PCB connector, 90°

Pin contact



### PCB connector, 180°

Pin contact



### Technical data

- Category
- Protection degree
- Ambient temperature (operational)
- Transmission rate
- Type of connection
- Outgoing elbow
- Number of poles
- Mounting onto the PCB
- Plugging cycles
- Contact material
- Contact surface
- Rated voltage
- Insulation strength
- PoE / PoE+
- Dielectric strength, contact / contact
- Dielectric strength, contact / shield
- Connector standard
- UL 94 flammability rating

Note

### Ordering data

Plug	
	PCB connector, IP20, pin contact
	PCB connector, IP20, pin contact incl. LEDs

Note

### Accessories

Type	Qty.	Order No.

Note

### preliminary technical data!

- IP20
- 40...85 °C
- 10/100 MBit/s, 1000 MBit/s
- Solder connection, Male contact
- 90°
- 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, ISO/IEC 11801-1
- V-0

Type	Qty.	Order No.
IE-PCB-SPO-P-90V-THR	100	2726010000
IE-PCB-SPO-P-90V-THR-YG/YG	100	2795120000

Type	Qty.	Order No.

### 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.

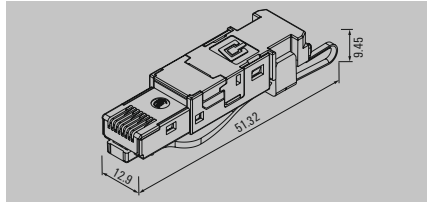
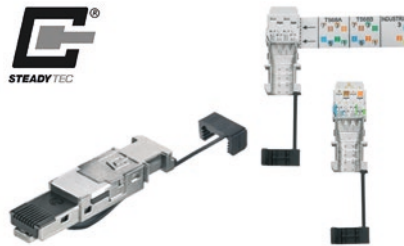


## IP20 plug-in connectors

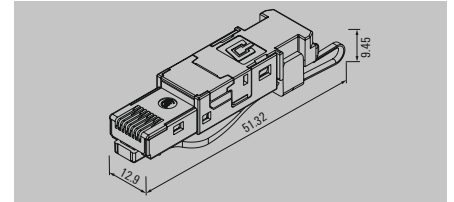
### RJ45 plug, tool free

- Cat. 6<sub>A</sub>(8 wires)/cat. 5 (4 wires) for PROFINET
- Multi-port support
- IP20

### 8-wire



### 4-wire for PROFINET



### Technical data

Category
Protection degree
Housing main material
Connection diameter, flexible, min. / max.
Connection cross-section, flexible, min. / max.
Connection diameter, solid, min. / max.
Connection cross-section, solid, min. / max.
Wire connection cross-section, finely stranded
Insulation diameter, min. / max.
Sheath diameter, min. / max.
Contact surface
Shielding
Plugging cycles
Ambient temperature (operational)
Contact resistance
Insulation strength
Dielectric strength, contact / contact
Dielectric strength, contact / shield
Connector standard
Current-carrying capacity at 50 °C
Speed
PoE / PoE+
Approvals

#### Note

Cat.6 <sub>A</sub> / Class E <sub>A</sub> (ISO/IEC 11801 2010)
IP20
Zinc diecast
0.48 mm / 0.76 mm
AWG 26/7 / AWG 22/7
0.41 mm / 0.64 mm
AWG 24/1 / AWG 22/1
Approval of the cable by Weidmüller necessary
0.85 mm / 1.6 mm
5.5 mm / 8.5 mm
Gold over nickel
360° all-round enclosure
750
-40 °C...70 °C
≤ 20 mΩ
> 500 MΩ
≥ 1000 V DC
≥ 1500 V DC
IEC 60603-7-51
1 A
10 GBit/s
conforming to IEEE 802.3at
CULUS
Approvals available on request

Cat.5 (ISO/IEC 11801)
IP20
Zinc diecast
0.48 mm / 0.76 mm
AWG 26/7 / AWG 22/7
0.41 mm / 0.64 mm
AWG 26/1 / AWG 22/1
Approval of the cable by Weidmüller necessary
0.85 mm / 1.6 mm
5.5 mm / 8.5 mm
Gold over nickel
360° all-round enclosure
750
-40 °C...70 °C
≤ 20 mΩ
> 500 MΩ
≥ 1000 V DC
≥ 1500 V DC
IEC 60603-7-51
1 A
10 GBit/s
conforming to IEEE 802.3at
CULUS

### Ordering data

Plug
with tear-off flags: EIA / TIA T568-A/B / PROFINET
with printing: PROFINET
with printing: EIA / TIA T568-A
with printing: EIA / TIA T568-B

#### Note

Type	Qty.	Order No.
IE-PS-RJ45-FH-BK	10	1963600000
IE-PS-RJ45-FH-BK-A	10	1132040000
IE-PS-RJ45-FH-BK-B	10	1132050000

Type	Qty.	Order No.
IE-PS-RJ45-FH-BK-P	10	1132060000

### Accessories

Strain relief
green
grey
blue
orange
yellow
white

Tools
Optional pressing tool

Type	Qty.	Order No.
IE-CR-IP20-RJ45-FH-GN	10	1963100000
IE-CR-IP20-RJ45-FH-GY	10	1963060000
IE-CR-IP20-RJ45-FH-BU	10	1963080000
IE-CR-IP20-RJ45-FH-OG	10	1963070000
IE-CR-IP20-RJ45-FH-YE	10	1963090000
IE-CR-IP20-RJ45-FH-WH	10	1963050000
PWZ RJ45	1	1118040000

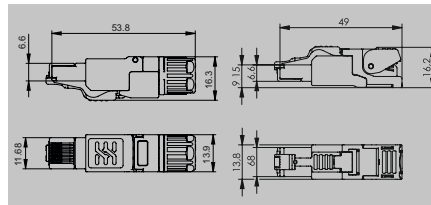
Type	Qty.	Order No.
IE-CR-IP20-RJ45-FH-GN	10	1963100000
IE-CR-IP20-RJ45-FH-GY	10	1963060000
IE-CR-IP20-RJ45-FH-BU	10	1963080000
IE-CR-IP20-RJ45-FH-OG	10	1963070000
IE-CR-IP20-RJ45-FH-YE	10	1963090000
IE-CR-IP20-RJ45-FH-WH	10	1963050000
PWZ RJ45	1	1118040000

#### Note

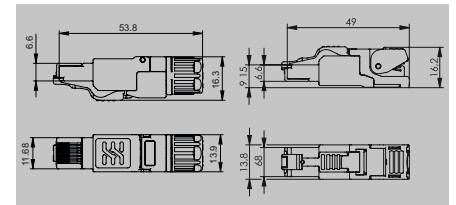
**RJ45 plug, straight, tool free**

- Fieldattachable
- Cat. 6<sub>A</sub> (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  
 Protection degree  
 Housing main material  
 Connection diameter, flexible, min. / max.  
 Connection cross-section, flexible, min. / max.  
 Connection diameter, solid, min. / max.  
 Connection cross-section, solid, min. / max.  
 Connection diameter, very finely stranded, min./max.  
 Connection cross-section, very finely stranded, min./max.

Insulation diameter, min. / max.  
 Sheath diameter, min. / max.  
 Contact surface  
 Shielding  
 Plugging cycles  
 Ambient temperature (operational)  
 Contact resistance  
 Insulation strength  
 Dielectric strength, contact / contact  
 Dielectric strength, contact / shield  
 Connector standard  
 Current-carrying capacity at 50 °C  
 Speed  
 PoE / PoE+  
 Approvals

**Note**

Cat.6<sub>A</sub> / Class E<sub>A</sub> (ISO/IEC 11801 2010)  
 IP20  
 Zinc diecast, nickel-plated  
 0.46 mm / 0.76 mm  
 AWG 27 / AWG 22  
 0.51 mm / 0.64 mm  
 AWG 24 / AWG 22  
 0.61 mm / 0.78 mm / Approval of the cable by Weidmüller necessary  
 AWG 24 / AWG 22 / Approval of the cable by Weidmüller necessary

1.1 mm / 1.6 mm  
 5 mm / 9 mm  
 Gold over nickel  
 360° all-round enclosure  
 750  
 -40 °C...85 °C  
 ≤ 20 mΩ  
 > 500 MΩ  
 ≥ 1000 V DC  
 ≥ 1500 V DC  
 IEC 60603-7-51  
 1 A  
 10 GBit  
 conforming to IEEE 802.3at  
 CULUS; DNVGL

Cat.6<sub>A</sub> / Class E<sub>A</sub> (ISO/IEC 11801 2010)  
 IP20  
 Zinc diecast, nickel-plated  
 0.46 mm / 0.61 mm  
 AWG 27 / AWG 24  
 0.41 mm / 0.51 mm  
 AWG 26 / AWG 24  
 0.51 mm / / Approval of the cable by Weidmüller necessary  
 AWG 26 / / Approval of the cable by Weidmüller necessary

0.85 mm / 1.1 mm  
 5 mm / 9 mm  
 Gold over nickel  
 360° all-round enclosure  
 750  
 -40 °C...85 °C  
 ≤ 20 mΩ  
 > 500 MΩ  
 ≥ 1000 V DC  
 ≥ 1500 V DC  
 IEC 60603-7-51  
 1 A  
 10 GBit  
 conforming to IEEE 802.3at  
 CULUS; DNVGL

**Ordering data**

Plug with latching strain relief	
	with printing: EIA / TIA T568-A
	with printing: EIA / TIA T568-B
Plug with cable gland	
	with printing: EIA / TIA T568-A
	with printing: EIA / TIA T568-B

**Note**

Type	Qty.	Order No.
IE-PS-RJ45-FH-180-A-1.6	1	1992820000
IE-PS-RJ45-FH-180-B-1.6	1	1992830000
IE-PS-RJ45-FH-180-A-1.6-CG	1	2703390000
IE-PS-RJ45-FH-180-B-1.6-CG	1	2703410000

Type	Qty.	Order No.
IE-PS-RJ45-FH-180-A-1.1	1	1992850000
IE-PS-RJ45-FH-180-B-1.1	1	1992860000
IE-PS-RJ45-FH-180-A-1.1-CG	1	2703440000
IE-PS-RJ45-FH-180-B-1.1-CG	1	2703460000

**Accessories**

Substitute wire manager	
TIA-A, insulation diameter 1.1...1.6 mm	
TIA-B, insulation diameter 1.1...1.6 mm	
TIA-A, insulation diameter 0.85...1 mm	
TIA-B, insulation diameter 0.85...1 mm	

**Tools**

Optional pressing tool

Type	Qty.	Order No.
IE-PI-RJ45-FH-A-1.6	30	1992880000
IE-PI-RJ45-FH-B-1.6	30	1992900000
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

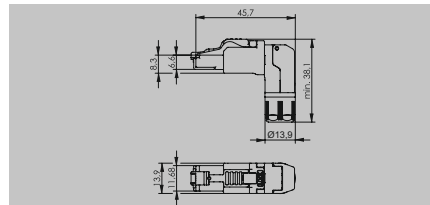
**Note**

## IP20 plug-in connectors

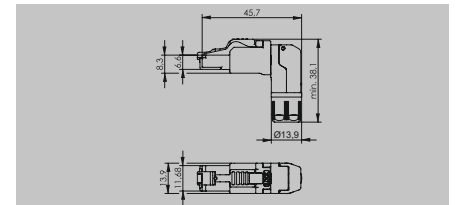
### RJ45 plug, angled, tool free

- Assembled
- Cat. 6<sub>A</sub> (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  
Protection degree  
Housing main material  
Connection diameter, flexible, min. / max.  
Connection cross-section, flexible, min. / max.  
Connection diameter, solid, min. / max.  
Connection cross-section, solid, min. / max.  
Connection diameter, very finely stranded, min./max.

Connection cross-section, very finely stranded, min./max.

Insulation diameter, min. / max.  
Sheath diameter, min. / max.  
Contact surface  
Shielding  
Plugging cycles  
Ambient temperature (operational)  
Contact resistance  
Insulation strength  
Dielectric strength, contact / contact  
Dielectric strength, contact / shield  
Connector standard  
Current-carrying capacity at 50 °C  
Speed  
PoE / PoE+  
Approvals

#### Note

Cat.6<sub>A</sub> / Class E<sub>A</sub> (ISO/IEC 11801 2010)  
IP20  
Zinc diecast, nickel-plated  
0.46 mm / 0.76 mm  
AWG 27 / AWG 22  
0.51 mm / 0.64 mm  
AWG 24 / AWG 22  
0.61 mm / 0.78 mm / Approval of the cable by Weidmüller necessary

AWG 24 / AWG 22 / Approval of the cable by Weidmüller necessary

1.1 mm / 1.6 mm  
5 mm / 9 mm  
Gold over nickel  
360° all-round enclosure  
750  
-40 °C...85 °C  
≤ 20 mΩ  
> 500 MΩ  
≥ 1000 V DC  
≥ 1500 V DC  
IEC 60603-7-51  
1 A  
10 GBit  
conforming to IEEE 802.3at  
CULUS; DNVGL

Cat.6<sub>A</sub> / Class E<sub>A</sub> (ISO/IEC 11801 2010)  
IP20  
Zinc diecast, nickel-plated  
0.46 mm / 0.61 mm  
AWG 27 / AWG 24  
0.41 mm / 0.51 mm  
AWG 26 / AWG 24  
0.51 mm / / Approval of the cable by Weidmüller necessary

AWG 26 / / Approval of the cable by Weidmüller necessary

0.85 mm / 1.1 mm  
5 mm / 9 mm  
Gold over nickel  
360° all-round enclosure  
750  
-40 °C...85 °C  
≤ 20 mΩ  
> 500 MΩ  
≥ 1000 V DC  
≥ 1500 V DC  
IEC 60603-7-51  
1 A  
10 GBit  
conforming to IEEE 802.3at  
CULUS; DNVGL

### Ordering data

**Plug**  
with printing: EIA / TIA T568-A  
with printing: EIA / TIA T568-B

#### Note

Type	Qty.	Order No.
IE-PS-RJ45-FH-90-A-1.6	1	1992870000
IE-PS-RJ45-FH-90-B-1.6	1	1992890000

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**  
TIA-A, insulation diameter 1.1...1.6 mm  
TIA-B, insulation diameter 1.1...1.6 mm  
TIA-A, insulation diameter 0.85...1 mm  
TIA-B, insulation diameter 0.85...1 mm

#### Tools

Optional pressing tool

Type	Qty.	Order No.
IE-PI-RJ45-FH-A-1.6	30	1992880000
IE-PI-RJ45-FH-B-1.6	30	1992900000

Type	Qty.	Order No.
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

Type	Qty.	Order No.
PWZ RJ45	1	1118040000

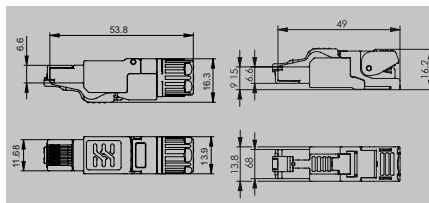
#### Note

### RJ45 plug, straight and angled, tool free

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

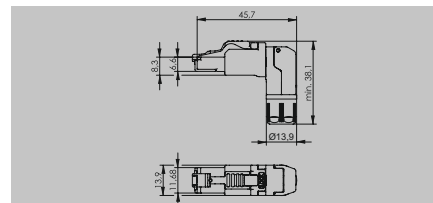
### 4-wire for PROFINET

straight



### 4-wire for PROFINET

angled



#### Technical data

Category  
 Protection degree  
 Housing main material  
 Connection diameter, flexible, min. / max.  
 Connection cross-section, flexible, min. / max.  
 Connection diameter, solid, min. / max.  
 Connection cross-section, solid, min. / max.  
 Connection diameter, very finely stranded, min./max.  
  
 Connection cross-section, very finely stranded, min./max.

Cat.5 (ISO/IEC 11801)  
 IP20  
 Zinc diecast, nickel-plated  
 0.46 mm / 0.76 mm  
 AWG 27 / AWG 22  
 0.51 mm / 0.64 mm  
 AWG 24 / AWG 22  
 0.61 mm / 0.78 mm / Approval of the cable by Weidmüller necessary  
  
 AWG 24 / AWG 22 / Approval of the cable by Weidmüller necessary

Cat.5 (ISO/IEC 11801)  
 IP20  
 Zinc diecast, nickel-plated  
 0.46 mm / 0.76 mm  
 AWG 27 / AWG 22  
 0.51 mm / 0.64 mm  
 AWG 24 / AWG 22  
 0.61 mm / 0.78 mm / Approval of the cable by Weidmüller necessary  
  
 AWG 24 / AWG 22 / Approval of the cable by Weidmüller necessary

Insulation diameter, min. / max.  
 Sheath diameter, min. / max.  
 Contact surface  
 Shielding  
 Plugging cycles  
 Ambient temperature (operational)  
 Contact resistance  
 Insulation strength  
 Dielectric strength, contact / contact  
 Dielectric strength, contact / shield  
 Connector standard  
 Current-carrying capacity at 50 °C  
 Speed  
 PoE / PoE+  
 Approvals

1.1 mm / 1.6 mm  
 5 mm / 9 mm  
 Gold over nickel  
 360° all-round enclosure  
 750  
 -40 °C...85 °C  
 ≤ 20 mΩ  
 > 500 MΩ  
 ≥ 1000 V DC  
 ≥ 1500 V DC  
 IEC 60603-7-51  
 1 A  
 100 Mbit  
 conforming to IEEE 802.3at  
 CULUS; DNVGL

1.1 mm / 1.6 mm  
 5 mm / 9 mm  
 Gold over nickel  
 360° all-round enclosure  
 750  
 -40 °C...85 °C  
 ≤ 20 mΩ  
 > 500 MΩ  
 ≥ 1000 V DC  
 ≥ 1500 V DC  
 IEC 60603-7-51  
 1 A  
 100 Mbit  
 conforming to IEEE 802.3at  
 CULUS; DNVGL

#### Note

#### Ordering data

Plug with latching strain relief	
	with printing: PROFINET
Plug with cable gland	
	with printing: PROFINET
Note	

Type	Qty.	Order No.
IE-PS-RJ45-FH-180-P-1.6	10	1992840000
IE-PS-RJ45-FH-180-P-1.6-CG	1	2703420000
With pre-installed dust cap		

Type	Qty.	Order No.
IE-PS-RJ45-FH-90-P-1.6	10	1518100000
With pre-installed dust cap		

#### Accessories

Substitute wire manager	
	PROFINET, insulation diameter 1.1...1.6 mm
Tools	
	Optional pressing tool

Type	Qty.	Order No.
IE-PI-RJ45-FH-P-1.6	30	1992910000
PWZ RJ45	1	1118040000

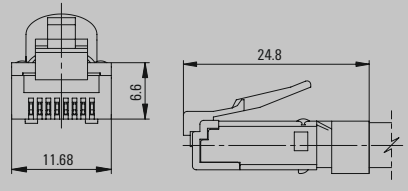
Type	Qty.	Order No.
IE-PI-RJ45-FH-P-1.6	30	1992910000
PWZ RJ45	1	1118040000

#### Note

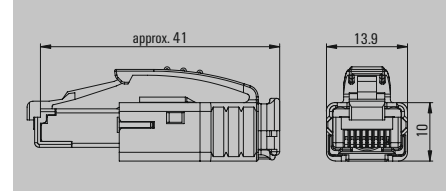
RJ45 crimp plug

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

8-wire, housing 1-part



8-wire, housing 2-part



Technical data

Category	
Protection degree	
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.	
Shielding	
Plugging cycles	
Ambient temperature (operational)	
Connector standard	
Bending protection sleeve material	
Material insulator	
Contact material / Contact surface	
Shielding material	
Cable pull-out force, min.	
Contact resistance	
Insulation strength	
Dielectric strength, contact / contact	
Dielectric strength, contact / shield	
Current-carrying capacity at 50 °C	
PoE / PoE+	
Approvals	
<b>Note</b>	

Cat.6 <sub>n</sub> / Class E <sub>n</sub> (ISO/IEC 11801 2010)	
IP20	
0.46 mm / 0.61 mm	
AWG 27 / AWG 24	
0.36 mm / 0.51 mm	
AWG 27 / AWG 24	
1.05 mm	
5.5 mm / 6.2 mm	
360° all-round enclosure	
750	
-40 °C...70 °C	
IEC 60603-7-51	
PVC, UL 94-V0	
Polycarbonate PC, UL 94 V-0	
Phosphorus bronze / Gold-plated	
0.5 mm brass, 2 µm nickel	
89 N	
≤ 20 mΩ	
500 MΩ	
≤ 1000 V DC	
≤ 1500 V DC	
1 A	
conforming to IEEE 802.3af	
EAC	

Cat.6 <sub>n</sub> / Class E <sub>n</sub> (ISO/IEC 11801 2010)	
IP20	
0.46 mm / 0.61 mm	
AWG 27 / AWG 24	
0.36 mm / 0.51 mm	
AWG 27 / AWG 24	
1.05 mm	
5 mm / 7.3 mm	
360° all-round enclosure	
750	
-40 °C...70 °C	
IEC 60603-7-51	
Polycarbonate PC, UL 94 V-0	
Polycarbonate PC, UL 94 V-0	
Phosphorus bronze / Gold-plated	
0.5 mm brass, 2 µm nickel	
89 N	
≤ 20 mΩ	
500 MΩ	
≤ 1000 V DC	
≤ 1500 V DC	
1 A	
conforming to IEEE 802.3af	
CURUS	

Ordering data

<b>Plug</b>	
	with kink protection; 5.5 - 6.2 mm
	with anti-kink protection; 6.2 - 7.1 mm
	with anti-kink sleeve, black
	without anti-kink sleeve
<b>Note</b>	

Type	Qty.	Order No.
IE-P63	10	8813110000
IE-P70	10	8813120000
IE-P	100	8813100000

Type	Qty.	Order No.
IE-PS-RJ45-TH-BK	10	1963590000
IE-PM-RJ45-TH	100	1963580000

Accessories

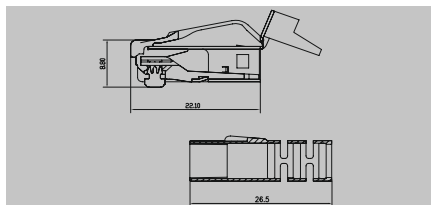
<b>Kink prevention sleeve</b>	
	white
	green
	grey
	yellow
	orange
	black
	blue
<b>Tools</b>	
	Pressing tool
<b>Note</b>	

Type	Qty.	Order No.
TT 8 RS MP 8	1	9202800000

Type	Qty.	Order No.
IE-PH-RJ45-TH-WH	10	1962430000
IE-PH-RJ45-TH-GN	10	1962490000
IE-PH-RJ45-TH-GY	10	1962440000
IE-PH-RJ45-TH-YE	10	1962480000
IE-PH-RJ45-TH-OG	10	1962450000
IE-PH-RJ45-TH-BK	10	1962500000
IE-PH-RJ45-TH-BU	10	1962470000
TT 8 RS MP 8	1	9202800000

RJ45 PROFINET crimp plug

4-wire for PROFINET, 1-part enclosure



Technical data

Category
Protection degree
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.
Shielding
Plugging cycles
Ambient temperature (operational)
Connector standard
Bending protection sleeve material
Material insulator
Contact material / Contact surface
Shielding material
Cable pull-out force, min.
Contact resistance
Insulation strength
Dielectric strength, contact / contact
Dielectric strength, contact / shield
Current-carrying capacity at 50 °C
PoE / PoE+
Approvals

Cat.5 (ISO/IEC 11801)
IP20
0.57 mm / 0.64 mm
AWG 23 / AWG 22
0.57 mm / 0.64 mm
AWG 23 / AWG 22
1.6 mm
/ 7.5 mm
360° all-round enclosure
750
-40 °C...70 °C
IEC 60603-7
Polyamide PA6, UL 94-V0
Copper alloy
≤ 10 mΩ
500 MΩ
1000 V AC
conforming to IEEE 802.3af

**Note**

Ordering data

Plug
<b>Note</b>

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

Accessories

Tools
Pressing tool

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

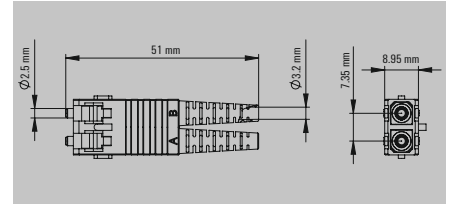
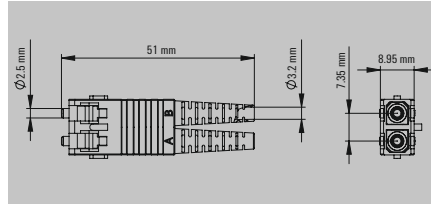
**Note**

FO connector

- IP 20

SCRJ, POF, Crimp

SCRJ, POF, reconnectable



Technical data

Protection degree
Plugging cycles
Ambient temperature (operational)
Connector standard
Individual wire diameter, min. / max.
Crimp barrel material
Pressure spring material
Ferrule material
Dust protection cap material
Bending protection sleeve material
Cable pull-out force, min.
Housing main material
Housing material, insert
Humidity
Approvals

IP20
1000
-20 °C...80 °C
IEC 61754-24
2.1 mm...2.3 mm
Copper, nickel-plated
Stainless steel, rust-proof
Nickel silver
TPE
TPE
100 N
PC UL 94 V0
Zinc diecast, nickel-plated
0...93 % rel. humidity
UL

IP20
1000
-20 °C...80 °C
IEC 61754-24
2.1 mm...2.3 mm
Copper, nickel-plated
Stainless steel, rust-proof
Nickel silver
TPE
TPE
100 N
PC UL 94 V0
Zinc diecast, nickel-plated
0...93 % rel. humidity

Note

Ordering data

	POF
Note	

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

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

Accessories

Tools	
Mounting tool, POF	
Replacement ferrule	
Contact Removal Tool	

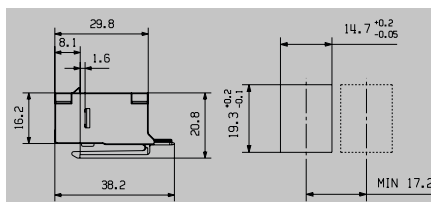
Type	Qty.	Order No.
HTX-IE-POF	1	1208870000
IE-SCRJ1-IP20-POF-100	100	1278420000
REMOVAL TOOL HD	1	1866730000

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

Note

RJ45 keystone

RJ45 Coupling



Technical data

Housing main material
Category
Protection degree
Plugging cycles
PoE / PoE+
Connector standard
Approvals
<b>Note</b>

Zinc diecast
Cat.6 <sub>A</sub> / Class E <sub>A</sub> (ISO/IEC 11801 2010)
IP20
750
conforming to IEEE 802.3at
IEC 60603-7-5
EAC
<b>Note</b>

Ordering data

<b>Note</b>
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Type	Qty.	Order No.
IE-XR-RJ45/RJ45-2	24	<b>8952950000</b>

Accessories

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Type	Qty.	Order No.

<b>Note</b>
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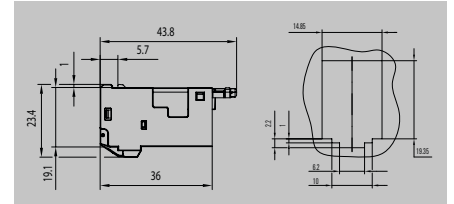
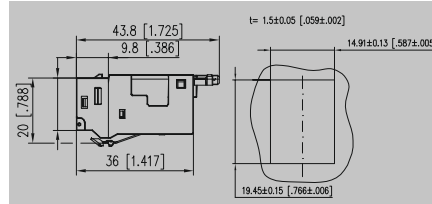
RJ45 keystone

RJ45 module

RJ45 module

Mounting cut-out Rectangular

Mounting cut-out special shape



Technical data

Category	
Wiring	
Protection degree	
Housing main material	
Connection diameter, flexible	
Conductor connection cross-section, flexible (AWG)	
Connection diameter, solid	
Conductor connection cross-section, solid (AWG)	
Insulation cross-section, max.	
Plugging cycles	
Ambient temperature (operational)	
Connector standard	
Contact surface	
Contact resistance	
Insulation strength	
PoE / PoE+	
Dielectric strength, contact / contact	
Dielectric strength, contact / shield	
Approvals	
<b>Note</b>	

Cat.6 <sub>n</sub> / Class E <sub>n</sub> (ISO/IEC 11801 2010)	
TIA-568A, TIA-568B, PROFINET	
IP20	
Zinc diecast	
0.48...0.76 mm	
AWG 26...AWG 22	
0.41...0.64 mm	
AWG 26...AWG 22	
1.8 mm	
750	
-40...70 °C	
IEC 60603-7-51	
Gold over nickel	
≤ 20 mΩ	
500 MΩ	
conforming to IEEE 802.3at	
≥ 1000 V DC	
<b>Note</b>	

Cat.6 <sub>n</sub> / Class E <sub>n</sub> (ISO/IEC 11801 2010)	
TIA-568A, TIA-568B, PROFINET	
IP20	
Zinc diecast	
0.48...0.76 mm	
AWG 26...AWG 22	
0.41...0.64 mm	
AWG 26...AWG 22	
1.8 mm	
750	
-40...70 °C	
IEC 60603-7-51	
Gold over nickel	
≤ 20 mΩ	
500 MΩ	
conforming to IEEE 802.3at	
≥ 1000 V DC	
DNVGL	
<b>Note</b>	

Ordering data

<b>Note</b>	
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Type	Qty.	Order No.
IE-KEY-RJ45/DC-1	1	2782300000

Type	Qty.	Order No.
IE-XRJ45/DC	1	8808330000

Accessories

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Type	Qty.	Order No.

Type	Qty.	Order No.

<b>Note</b>	
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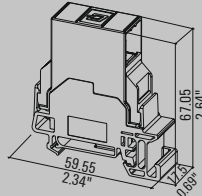
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**Module RJ45**

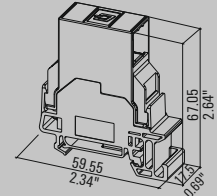
**Outlet direction straight**

- Cat. 6<sub>A</sub>
- IP20
- TS 35

**8-wire**



**4-wire**



**Technical data**

Category
Protection degree
Housing main material
Contact surface
Colour
Type of mounting
Plugging cycles
Configuration
Ambient temperature (operational)
Temperature range, assembly, min. / max.
Connector standard
Connection diameter, flexible, min. / max.
Connection cross-section, flexible, min. / max.
Connection diameter, solid, min. / max.
Connection cross-section, solid, min. / max.
<b>Electrical properties*</b>
PoE / PoE+
Contact resistance
Current-carrying capacity at 50 °C
Dielectric strength, contact / contact
Dielectric strength, contact / shield
Insulation strength
Approvals
<b>Note</b>

Cat.6 <sub>A</sub> / Class E <sub>A</sub> (ISO/IEC 11801 2010)
IP20
PA UL 94 V0
Au ≥ 0.8 µm
Light Grey
TS 35
750
Switchable volt. connection from module/coupling to mounting rail
-40 °C...70 °C
-25 °C...70 °C
IEC 60603-7-51
0.48 mm / 0.76 mm
AWG 26 / AWG 22
0.4 mm / 0.64 mm
AWG 24 / AWG 22
conforming to IEEE 802.3af
≤ 20 mΩ
1 A
≥ 1000 V DC
≥ 1500 V DC
500 MΩ
EAC
Weidmüller connection cat. 7 AWG 27/7 LSZH cable possible

Cat.5 (ISO/IEC 11801)
IP20
PA UL 94 V0
Au ≥ 0.8 µm
Light Grey
TS 35
750
Switchable volt. connection from module/coupling to mounting rail
-40 °C...70 °C
-25 °C...70 °C
IEC 60603-7-51
0.48 mm / 0.76 mm
AWG 26 / AWG 22
0.4 mm / 0.64 mm
AWG 24 / AWG 22
conforming to IEEE 802.3af
≤ 20 mΩ
1 A
≥ 1000 V DC
≥ 1500 V DC
500 MΩ
EAC

**Ordering data**

A-coded
B-coded
PROFINET-coded
<b>Note</b>

Type	Qty.	Order No.
IE-TO-RJ45-FJ-A	10	8946930000
IE-TO-RJ45-FJ-B	10	8946940000

Type	Qty.	Order No.
IE-TO-RJ45-FJ-P	10	8946950000

**Accessories**

<b>Marking tags</b>	MultiCard, white
---------------------	------------------

Type	Qty.	Order No.
ESG 9/11 K MC NE WS	200	1857440000

Type	Qty.	Order No.
ESG 9/11 K MC NE WS	200	1857440000

<b>Note</b>
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<b>Note</b>
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<b>Note</b>
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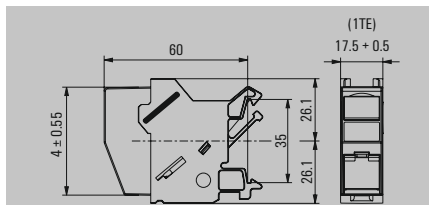


**Module RJ45**

**Outlet direction diagonal**

- Cat. 6
- IP20
- TS 35

**8-wire**



**Technical data**

Category	
Protection degree	
Housing main material	
Contact surface	
Colour	
Type of mounting	
Plugging cycles	
Configuration	
Ambient temperature (operational)	
Temperature range, assembly, min. / max.	
Connector standard	
Connection diameter, flexible, min. / max.	
Connection cross-section, flexible, min. / max.	
Connection diameter, solid, min. / max.	
Connection cross-section, solid, min. / max.	
<b>Electrical properties*</b>	
PoE / PoE+	
Contact resistance	
Current-carrying capacity at 50 °C	
Dielectric strength, contact / contact	
Dielectric strength, contact / shield	
Insulation strength	
Approvals	
<b>Note</b>	

Cat.6 <sub>x</sub> / Class E <sub>x</sub> (ISO/IEC 11801 2010)
IP20
PA 66, UL 94: V-0
Light Grey
TS 35
750
1 TE pitch dimension acc. to DIN 43880. insta-compatible
Installation flange with mounting frame
-25 °C...70 °C
...
IEC 60603-7-5
0.48 mm / 0.64 mm
AWG 26 / AWG 22
0.4 mm / 0.64 mm
AWG 24 / AWG 22
conforming to IEEE 802.3at
≤ 20 mΩ
1 A
≥ 1000 V DC
≥ 1500 V DC
500 MΩ
CULUS; DNVGL

**Ordering data**

	A/B-coded
<b>Note</b>	

Type	Qty.	Order No.
IE-XM-RJ45/IDC	1	8808360000

**Accessories**

<b>Marking tags</b>	Marking tag
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Type	Qty.	Order No.
IE-DM	50	8813500000

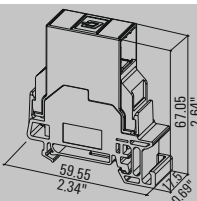
<b>Note</b>	
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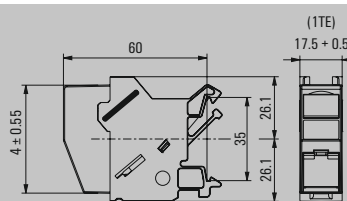
**Coupling RJ45, 8-wire**

- Cat. 6<sub>A</sub>
- IP20
- TS 35

**Outlet direction straight**



**Outlet direction diagonal**



**Technical data**

Category  
 Protection degree  
 Housing main material  
 Contact material / Contact surface  
 Colour  
 Type of mounting  
 Plugging cycles  
 Configuration

Ambient temperature (operational)  
 Temperature range, assembly, min. / max.  
 Humidity  
 Shock resistance acc. to IEC 60512-4  
 Vibration resistance acc. to IEC 60512-4  
 Housing material, insert  
 Connector standard

**Electrical properties\***

PoE / PoE+  
 Contact resistance  
 Current-carrying capacity at 50 °C  
 Dielectric strength, contact / contact  
 Dielectric strength, contact / shield  
 Insulation strength  
 Approvals

**Note**

Cat.6<sub>A</sub> / Class E<sub>A</sub> (ISO/IEC 11801 2010)  
 IP20  
 PA UL 94 V0  
 Spring steel, Ni 1.2 µm / Au ≥ 0.8 µm  
 Light Grey  
 TS 35  
 750  
 Switchable volt. connection from module/coupling to mounting rail

-40 °C...70 °C  
 -25 °C...70 °C  
 0...93 % rel. humidity  
 250 ms<sup>2</sup>  
 50 ms<sup>2</sup> sinusoidal (9...500 Hz)  
 Zinc diecast  
 IEC 60603-7-51

conforming to IEEE 802.3af  
 ≤ 20 mΩ  
 1 A  
 ≥ 1000 V DC  
 ≥ 1500 V DC  
 500 MΩ  
 EAC

Cat.6 (ISO/IEC 11801)  
 IP20  
 PA 66, UL 94: V-0  
 Light Grey  
 TS 35  
 750  
 1 TE pitch dimension acc. to DIN 43880. insta-compatible  
 Installation flange with mounting frame  
 -25 °C...70 °C  
 ...

IEC 60603-7-5

conforming to IEEE 802.3at  
 ≤ 20 mΩ  
 1 A  
 ≥ 1000 V DC  
 ≥ 1500 V DC  
 500 MΩ  
 CULUS; DNVGL

**Ordering data**

**Note**

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

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

**Accessories**

**Marking tags**

MultiCard, white  
 Marking tag

Type	Qty.	Order No.
ESG 9/11 K MC NE WS	200	1857440000

Type	Qty.	Order No.
IE-DM	50	8813500000

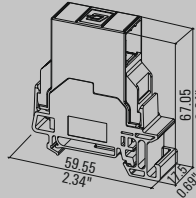
**Note**



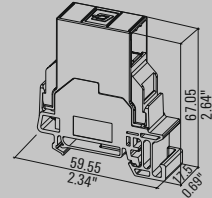
USB connection

- IP20
- TS 35

USB A



USB AB



Technical data

Protection degree
Housing main material
Colour
Type of mounting
Ambient temperature (operational)
Temperature range, assembly, min. / max.
Connector standard
Connection 1 / 2
Approvals
Note

IP20
PA UL 94 V0
Light Grey
TS 35
-40 °C...70 °C
-25 °C...70 °C
IEC 61076-3-107
USB A / USB A
EAC
Note

IP20
PA UL 94 V0
Light Grey
TS 35
-40 °C...70 °C
-25 °C...70 °C
IEC 61076-3-107
USB A / USB B
EAC
Note

Ordering data

USB
Note

Type	Qty.	Order No.
IE-T0-USB	1	8946960000
Note		

Type	Qty.	Order No.
IE-T0-USB-AB	1	1438180000
Note		

Accessories

Marking tags	MultiCard, white
--------------	------------------

Type	Qty.	Order No.
ESG 9/11 K MC NE WS	200	1857440000
Note		

Type	Qty.	Order No.
ESG 9/11 K MC NE WS	200	1857440000
Note		

Note
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Note
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Note
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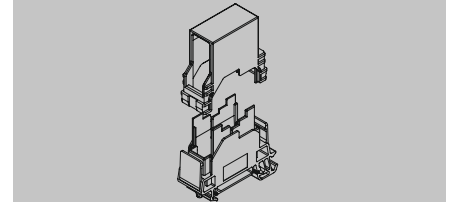
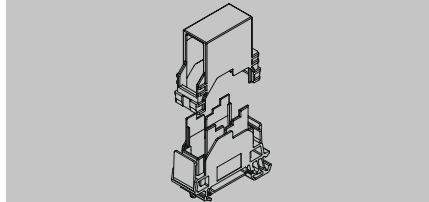
**Coupling fibre-optic**

- IP20
- TS 35

**SC duplex**



**SC-RJ**



**Technical data**

Protection degree  
 Housing main material  
 Colour  
 Type of mounting  
 Plugging cycles  
 Ambient temperature (operational)  
 Temperature range, assembly, min. / max.  
 Connector standard  
 Approvals

IP20  
 PA UL 94 V0  
 Light Grey  
 TS 35  
 1000  
 -40 °C...70 °C  
 -25 °C...70 °C  
 IEC 61754-4  
 UL

IP20  
 PA UL 94 V0  
 Light Grey  
 TS 35  
 1000  
 -40 °C...70 °C  
 -25 °C...70 °C  
 IEC 61754-24  
 UL

**Note**

**Ordering data**

Fibre-optic	
Singlemode	
Multimode/POF	

**Note**

Type	Qty.	Order No.
IE-TO-SCD-SM	1	8946980000
IE-TO-SCD-MM	10	8946970000

Type	Qty.	Order No.
IE-TO-SCRJ-SM	10	8947000000
IE-TO-SCRJ-MM	10	8946990000

**Accessories**

Marking tags	
MultiCard, white	

Type	Qty.	Order No.
ESG 9/11 K MC NE WS	200	1857440000

Type	Qty.	Order No.
ESG 9/11 K MC NE WS	200	1857440000

**Note**

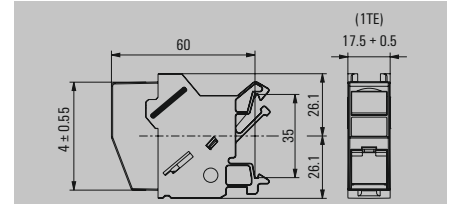
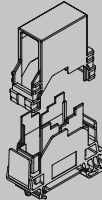
Coupling fibre-optic

- IP20
- TS 35

LC Duplex



ST



Technical data

Protection degree
Housing main material
Colour
Type of mounting
Configuration
Plugging cycles
Ambient temperature (operational)
Temperature range, assembly, min. / max.
Connector standard
Approvals
<b>Note</b>

IP20
PA UL 94 V0
Light Grey
TS 35
1000
-40 °C...70 °C
-25 °C...70 °C
IEC 61754-20
EAC

IP20
PA 66, UL 94: V-0
Light Grey
TS 35
1 TE pitch dimension acc. to DIN 43880. insta-compatible
Installation flange with mounting frame
750
-25 °C...70 °C
...
IEC 61754-2
EAC

Ordering data

Singlemode
Multimode
<b>Note</b>

Type	Qty.	Order No.
IE-T0-LCD-SM	10	8947020000
IE-T0-LCD-MM	10	8947010000

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

Accessories

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

Type	Qty.	Order No.
IE-DM	50	8813500000

Note

Note

Note



**Socket adapter**

- IP 20
- TS 35

**Socket adapter**



**Technical data**

Protection degree  
 Housing main material  
 Ambient temperature (operational)  
 Approvals

IP20  
 Polycarbonate PC, Acrylnitril-Butadien-Styrol (ABS)  
 -25 °C...70 °C

**Note**



**Ordering data**

**Note**

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

**Accessories**

**Inserts, Power**

- Socket AU 15 A
- Socket AU 10 A
- Socket CH
- Socket CN
- Socket GB
- Socket DE
- Socket DE orange
- Socket FR
- Socket FR orange
- Socket IT/EU
- Socket CZ
- Socket IND
- RCBO
- ISR socket

Type	Qty.	Order No.
IE-FCI-PWB-AU	1	1450830000
IE-FCI-PWB-AU-10A	1	1546590000
IE-FCI-PWB-CH	1	1450780000
IE-FCI-PWB-CN	1	1450790000
IE-FCI-PWB-GB	1	1450770000
IE-FCI-PWB-DE	1	1450730000
IE-FCI-PWB-DE-OR	1	1554000000
IE-FCI-PWB-FR	1	1450750000
IE-FCI-PWB-FR-OR	1	2007230000
IE-FCI-PWS-IT	1	1450810000
IE-FCI-PWB-CZ	1	2426700000
IE-FCI-PWB-IND	1	2500710000
IE-FCI-PWB-RCBO	1	1534250000
IE-FCI-PWB-ISR	1	2531060000

**Note**





# FrontCom® IP65 service interfaces

## Overview

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### FrontCom® IP65 service interfaces

FrontCom® Vario IP65 service interface	M.2
FrontCom® Micro IP65 service interface	
RJ45	M.30
USB	M.32

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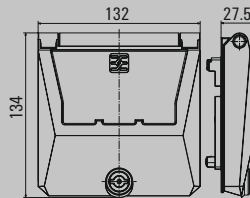
**FrontCom® Vario IP65 service interface**

**FrontCom® Vario**

**Double frame**

- IP65
- Possibility of using single and double insertion plates

**Metal cover**



**Technical data**

Protection degree / Protection class (UL)	
Material cover	
Material frame	
Ambient temperature (operational)	
Approvals	
<b>Note</b>	

IP65, in closed state / Type 12
Zinc diecast, powder-coated
Zinc diecast
-40 °C...70 °C
CSA; CURUS

**Ordering data**

Rotary button operation
Lockable with key
Lockable with electrical cabinet key
Lockable with electrical cabinet key (Daimler lock)
<b>Note</b>

Type	Qty.	Order No.
IE-FC-DFM-KNOB	1	2003170000
IE-FC-DFM-KEY	1	2003180000
IE-FC-DFM-CAB	1	2003190000
IE-FC-DFM-CAB-DB	1	2003150000

**Accessories**

<b>spare key</b>	
<b>Marking tags</b>	
	silver
	light grey
	white
<b>Touch-safe protection</b>	
	Touch-safe protection
<b>Bar (for mounting single insert plates)</b>	
	Partition

Type	Qty.	Order No.
IE-FC-KEY2	1	2066650000
SM 27/18 K MC NE SI	80	1713760000
SM 27/18 K MC NE GR	80	1073340000
SM 27/18 K MC NE WS	80	1707270000
ESG 7/20 SIRIUS MC NE WS	200	1736181044
IE-FC-PWPC	1	1450820000
IE-FC-DF-IPH	1	2003340000

**Note**

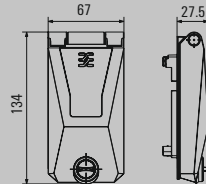
**Note**

FrontCom® Vario

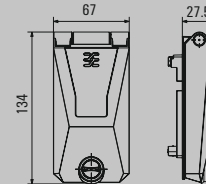
Single frame

- IP65

Metal cover



Plastic cover



Technical data

Protection degree / Protection class (UL)  
 Material cover  
 Material frame  
 Ambient temperature (operational)  
 Approvals

Note

IP65, in closed state / Type 12  
 Zinc diecast, powder-coated  
 Zinc diecast  
 -40 °C...70 °C  
 CSA; CURUS; DNVGL

IP65, in closed state  
 Polycarbonate PC  
 Zinc diecast  
 -40 °C...70 °C  
 DNVGL

Ordering data

Rotary button operation  
 Lockable with key  
 Control cabinet key (double bit)  
 Control cabinet key (Daimler)

Note

Type	Qty.	Order No.
IE-FC-SFM-KNOB	1	1450530000
IE-FC-SFM-KEY2	1	1450540000
IE-FC-SFM-CAB	1	2003160000
IE-FC-SFM-CAB-DB	1	2663200000

Type	Qty.	Order No.
IE-FC-SFP-KNOB	1	1450510000
IE-FC-SFP-KEY2	1	1450520000
IE-FC-SFP-CAB	1	2003140000
IE-FC-SFP-CAB-DB	1	2663190000

Accessories

spare key

Marking tags

silver  
 light grey  
 white

Touch-safe protection

Touch-safe protection

Accessories for mounting cut-out

Punch for hole punching tool  
 Punching tool

Type	Qty.	Order No.
IE-FC-KEY2	1	2066650000
SM 27/18 K MC NE SI	80	1713760000
SM 27/18 K MC NE GR	80	1073340000
SM 27/18 K MC NE WS	80	1707270000
ESG 7/20 SIRIUS MC NE WS	200	1736181044
IE-FC-PWPC	1	1450820000
KOK 52 X 91	1	2008410000
IE-KO-HAT	1	1966810000

Type	Qty.	Order No.
IE-FC-KEY2	1	2066650000
SM 27/18 K MC NE SI	80	1713760000
SM 27/18 K MC NE GR	80	1073340000
SM 27/18 K MC NE WS	80	1707270000
ESG 7/20 SIRIUS MC NE WS	200	1736181044
IE-FC-PWPC	1	1450820000
KOK 52 X 91	1	2008410000
IE-KO-HAT	1	1966810000

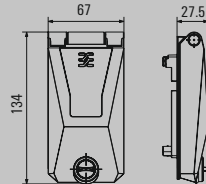
Note

**FrontCom® Vario IP65 service interface**

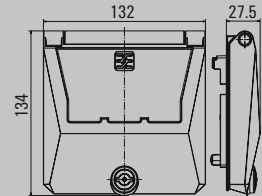
**FrontCom® Vario  
Frame NEMA 4X**

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

**Single frame, metal lid**



**Double frame, metal lid**



**Technical data**

Protection degree / Protection class (UL)
Material cover
Material frame
Ambient temperature (operational)
Approvals
<b>Note</b>

IP65, in closed state / NEMA 4X
Zinc diecast, powder-coated
Zinc diecast, powder-coated
-40 °C...70 °C
CSA; CURUS
<b>Note</b>

IP65, in closed state / NEMA 4X
Zinc diecast, powder-coated
Zinc diecast, powder-coated
-40 °C...70 °C
CSA; CURUS
<b>Note</b>

**Ordering data**

Rotary button operation
<b>Note</b>

Type	Qty.	Order No.
IE-FC-SFM-KNOB-4X	1	2669630000
<b>Note</b>		

Type	Qty.	Order No.
IE-FC-DFM-KNOB-4X	1	2669640000
<b>Note</b>		

**Accessories**

<b>Marking tags</b>
silver
light grey
white
<b>Touch-safe protection</b>
Touch-safe protection
<b>Accessories for mounting cut-out</b>
Punch for hole punching tool
Punching tool
<b>Bar (for mounting single insert plates)</b>
Partition

Type	Qty.	Order No.
SM 27/18 K MC NE SI	80	1713760000
SM 27/18 K MC NE GR	80	1073340000
SM 27/18 K MC NE WS	80	1707270000
ESG 7/20 SIRIUS MC NE WS	200	1736181044
IE-FC-PWPC	1	1450820000
KDK 52 X 91	1	2008410000
IE-KD-HAT	1	1966810000
<b>Note</b>		

Type	Qty.	Order No.
SM 27/18 K MC NE SI	80	1713760000
SM 27/18 K MC NE GR	80	1073340000
SM 27/18 K MC NE WS	80	1707270000
ESG 7/20 SIRIUS MC NE WS	200	1736181044
IE-FC-PWPC	1	1450820000
<b>Note</b>		
IE-FC-DF-IPH	1	2003340000

<b>Note</b>
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<b>Note</b>
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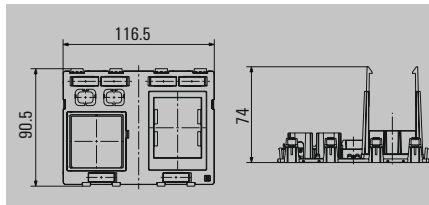
<b>Note</b>
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**FrontCom® Vario**

**Insert plates for double frames**

- IP20

**1 x power, 2 x data, 1 x RCBO**



**Technical data**

Material  
 Insert, data  
 Insert Power large  
 Insert RCBO (2 modular width units)  
 Insert suitable for RCBO according to standard  
 Insert GFCI /2 x Power US pre-assembled  
 Ambient temperature (operational)  
 Approvals

Polycarbonate PC
2
1
1
DIN43880
-40 °C...70 °C
CSA; CURUS

**Note**

**Ordering data**

shielded
unshielded

**Note**

Type	Qty.	Order No.
IE-FC-DSP-PWB/2ST/FILS	1	2067080000
IE-FC-DIP-PWB/2ST/FILS	1	2067070000

**Accessories**

Inserts, Data	
RJ45 coupling	
RJ45 module EIA/TIA T568 B	
RJ45 module PROFINET	
RJ45 module EIA/TIA T568 A	
USB 2.0 A / A	
USB 3.0 A / A	
USB 2.0 A / B	

Type	Qty.	Order No.
IE-BI-RJ45-C	10	1962840000
IE-BI-RJ45-FJ-B	10	1963840000
IE-BI-RJ45-FJ-P	10	1963830000
IE-BI-RJ45-FJ-A	10	1962850000
IE-BI-USB-A	10	1019570000
IE-BI-USB-3.0-A	10	1487920000
IE-BI-USB-AB	10	1131380000

**Marking tags**

ESG 7/20 SIRIUS MC NE WS	200	1736181044
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**Touch-safe protection**

Touch-safe protection

IE-FC-PWPC	1	1450820000
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**Note**

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

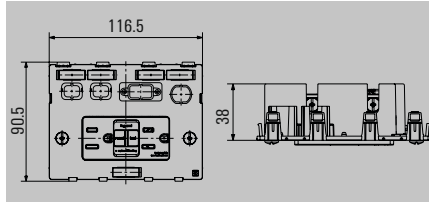
**FrontCom® Vario IP65 service interface**

**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
<b>Technical data GFCI insert</b>	
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 mm <sup>2</sup>
finely stranded with wire-end ferrule	1.5 ... 2.5 mm <sup>2</sup>
Conductor connection cross-section, rigid	1.5 ... 4 mm <sup>2</sup>
<b>Note</b>	

<b>Technical data</b>		
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	
<b>Technical data GFCI insert</b>		
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 mm <sup>2</sup>	
finely stranded with wire-end ferrule	1.5 ... 2.5 mm <sup>2</sup>	
Conductor connection cross-section, rigid	1.5 ... 4 mm <sup>2</sup>	
<b>Note</b>		

**Ordering data**

	shielded
	unshielded
<b>Note</b>	

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

**Accessories**

<b>Inserts, Signal</b>	
	D-Sub, 9-pole, female/female
	D-Sub, 9-pole, female / male
	D-Sub, 9-pole, female / solder connection
	VGA coupling
	HDMI coupling
<b>Fuse inserts</b>	
	3 A
<b>Inserts, Data</b>	
	RJ45 coupling
	RJ45 module EIA/TIA T568 A
	RJ45 module EIA/TIA T568 B
	RJ45 module PROFINET
	USB 2.0 A / A
	USB 3.0 A / A
	USB 2.0 A / B
<b>Marking tags</b>	
<b>Note</b>	

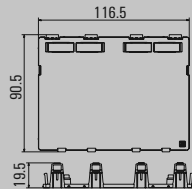
Type	Qty.	Order No.
IE-FCI-D9-FF	1	1450840000
IE-FCI-D9-FM	1	1450850000
IE-FCI-D9-FS	1	1450870000
IE-FCI-HD15-FF	1	1556290000
IE-FCI-HDMI-FF	1	2003390000
<b>Fuse inserts</b>		
IE-FCI-PWCB-3A	1	1543690000
<b>Inserts, Data</b>		
IE-BI-RJ45-C	10	1962840000
IE-BI-RJ45-FJ-A	10	1962850000
IE-BI-RJ45-FJ-B	10	1963840000
IE-BI-RJ45-FJ-P	10	1963830000
IE-BI-USB-A	10	1019570000
IE-BI-USB-3.0-A	10	1487920000
IE-BI-USB-AB	10	1131380000
<b>Marking tags</b>		
ESG 7/20 SIRIUS MC NE WS	200	1736181044
<b>Note</b>		

**FrontCom® Vario**

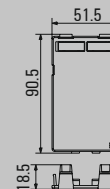
**Insert plates**

- IP20

**blank double plate**



**blank single plate**



**Technical data**

Material
Ambient temperature (operational)
Approvals
<b>Note</b>

Polycarbonate PC
-40 °C...70 °C
CSA; CURUS

Polycarbonate PC
-40 °C...70 °C
CSA; CURUS; DNVGL

**Ordering data**

unshielded
<b>Note</b>

Type	Qty.	Order No.
IE-FC-DIP-BP	1	2004890000

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

**Accessories**

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Type	Qty.	Order No.

Type	Qty.	Order No.

<b>Note</b>
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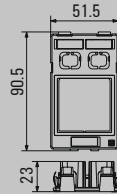
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**FrontCom® Vario**

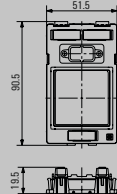
**Insert plates**

- IP20

**1 x power, 2 x data**



**1x Power, 1x Signal**



**Technical data**

Material
Insert, data
Signal insert D-Sub 9-pole / VGA / HDMI
Insert, signal, D-Sub, 25-pole
Insert Power large
Insert Power small
Insert Power US
Ambient temperature (operational)
Approvals
<b>Note</b>

Polycarbonate PC
2
1
-40 °C...70 °C
CSA; CURUS; DNVGL

Polycarbonate PC
1
1
-40 °C...70 °C
CSA; CURUS

**Ordering data**

shielded
unshielded
<b>Note</b>

Type	Qty.	Order No.
IE-FC-SP-PWB/2ST	1	1450550000
IE-FC-IP-PWB/2ST	1	1450630000

Type	Qty.	Order No.
IE-FC-IP-PWB/1D9	1	2003350000

**Accessories**

<b>Inserts, Data</b>
RJ45 coupling
RJ45 module EIA/TIA T568 A
RJ45 module EIA/TIA T568 B
RJ45 module PROFINET
USB 2.0 A / A
USB 3.0 A / A
USB 2.0 A / B
<b>Marking tags</b>
<b>Touch-safe protection</b>
Touch-safe protection
<b>Inserts, Signal</b>
D-Sub, 9-pole, female/female
D-Sub, 9-pole, female / male
D-Sub, 9-pole, female / solder connection
VGA coupling
HDMI coupling

Type	Qty.	Order No.
IE-BI-RJ45-C	10	1962840000
IE-BI-RJ45-FJ-A	10	1962850000
IE-BI-RJ45-FJ-B	10	1963840000
IE-BI-RJ45-FJ-P	10	1963830000
IE-BI-USB-A	10	1019570000
IE-BI-USB-3.0-A	10	1487920000
IE-BI-USB-AB	10	1131380000
ESG 7/20 SIRIUS MC NE WS	200	1736181044
IE-FC-PWPC	1	1450820000

Type	Qty.	Order No.
ESG 7/20 SIRIUS MC NE WS	200	1736181044
IE-FC-PWPC	1	1450820000
IE-FCI-D9-FF	1	1450840000
IE-FCI-D9-FM	1	1450850000
IE-FCI-D9-FS	1	1450870000
IE-FCI-HD15-FF	1	1556290000
IE-FCI-HDMI-FF	1	2003390000

**Note**

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

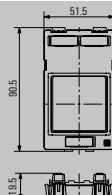
You will find an overview of the power inserts in this chapter under Power inserts-sockets.

FrontCom® Vario

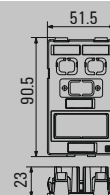
Insert plates

- IP20

1x Power



1x Power, 2x Data, 1x Signal



Technical data

Material
Insert, data
Signal insert D-Sub 9-pole / VGA / HDMI
Insert, signal, D-Sub, 25-pole
Insert Power large
Insert Power small
Insert Power US
Ambient temperature (operational)
Approvals
<b>Note</b>

Polycarbonate PC
2
1
1
-40 °C...70 °C
CSA; CURUS
<b>Note</b>

Polycarbonate PC
2
1
1
-40 °C...70 °C
CSA; CURUS; DNVGL
<b>Note</b>

Ordering data

shielded
unshielded
<b>Note</b>

Type	Qty.	Order No.
IE-FC-IP-PWB	1	2548060000
<b>Note</b>		

Type	Qty.	Order No.
IE-FC-SP-PWS/2ST/1D9	1	1450600000
IE-FC-IP-PWS/2ST/1D9	1	1450690000
<b>Note</b>		

Accessories

Inserts, Data
RJ45 coupling
RJ45 module EIA/TIA T568 A
RJ45 module EIA/TIA T568 B
RJ45 module PROFINET
USB 2.0 A / A
USB 3.0 A / A
USB 2.0 A / B

<b>Marking tags</b>
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<b>Touch-safe protection</b>
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Inserts, Signal
D-Sub, 9-pole, female/female
D-Sub, 9-pole, female / male
D-Sub, 9-pole, female / solder connection
VGA coupling
HDMI coupling

Type	Qty.	Order No.
ESG 7/20 SIRIUS MC NE WS	200	1736181044
IE-FC-PWPC	1	1450820000
<b>Note</b>		

Type	Qty.	Order No.
IE-BI-RJ45-C	10	1962840000
IE-BI-RJ45-FJ-A	10	1962850000
IE-BI-RJ45-FJ-B	10	1963840000
IE-BI-RJ45-FJ-P	10	1963830000
IE-BI-USB-A	10	1019570000
IE-BI-USB-3.0-A	10	1487920000
IE-BI-USB-AB	10	1131380000
<b>Note</b>		
ESG 7/20 SIRIUS MC NE WS	200	1736181044
IE-FC-PWPC	1	1450820000
IE-FCI-D9-FF	1	1450840000
IE-FCI-D9-FM	1	1450850000
IE-FCI-D9-FS	1	1450870000
IE-FCI-HD15-FF	1	1556290000
IE-FCI-HDMI-FF	1	2003390000
<b>Note</b>		

<b>Note</b>
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You will find an overview of the power inserts in this chapter under Power inserts-sockets.
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You will find an overview of the power inserts in this chapter under Power inserts-sockets.
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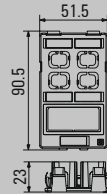
**FrontCom® Vario IP65 service interface**

**FrontCom® Vario**

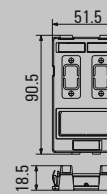
**Insert plates**

- IP20

**1 x power, 4 x data**



**1 x power, 2 x signal**



**Technical data**

Material
Insert, data
Signal insert D-Sub 9-pole / VGA / HDMI
Insert, signal, D-Sub, 25-pole
Insert Power large
Insert Power small
Insert Power US
Ambient temperature (operational)
Approvals
<b>Note</b>

Polycarbonate PC
4
1
-40 °C...70 °C
CSA; CURUS; DNVGL

Polycarbonate PC
2
1
-40 °C...70 °C
CSA; CURUS; DNVGL

**Ordering data**

	shielded
	unshielded
<b>Note</b>	

Type	Qty.	Order No.
IE-FC-SP-PWS/4ST	1	1450570000
IE-FC-IP-PWS/4ST	1	1450640000

Type	Qty.	Order No.
IE-FC-SP-PWS/2D9	1	1450610000
IE-FC-IP-PWS/2D9	1	1450680000

**Accessories**

<b>Inserts, Power</b>	Socket IT/EU
<b>Inserts, Data</b>	RJ45 coupling
	RJ45 module EIA/TIA T568 A
	RJ45 module EIA/TIA T568 B
	RJ45 module PROFINET
	USB 2.0 A / A
	USB 3.0 A / A
	USB 2.0 A / B
<b>Marking tags</b>	
<b>Touch-safe protection</b>	Touch-safe protection
<b>Inserts, Signal</b>	D-Sub, 9-pole, female/female
	D-Sub, 9-pole, female / male
	D-Sub, 9-pole, female / solder connection
	VGA coupling
	HDMI coupling
<b>Note</b>	

Type	Qty.	Order No.
IE-FCI-PWS-IT	1	1450810000
IE-BI-RJ45-C	10	1962840000
IE-BI-RJ45-FJA	10	1962850000
IE-BI-RJ45-FJB	10	1963840000
IE-BI-RJ45-FJP	10	1963830000
IE-BI-USB-A	10	1019570000
IE-BI-USB-3.0-A	10	1487920000
IE-BI-USB-AB	10	1131380000
ESG 7/20 SIRIUS MC NE WS	200	1736181044
IE-FC-PWPC	1	1450820000

Type	Qty.	Order No.
IE-FCI-PWS-IT	1	1450810000
IE-FCI-D9-FF	1	1450840000
IE-FCI-D9-FM	1	1450850000
IE-FCI-D9-FS	1	1450870000
IE-FCI-HD15-FF	1	1556290000
IE-FCI-HDMI-FF	1	2003390000
ESG 7/20 SIRIUS MC NE WS	200	1736181044
IE-FC-PWPC	1	1450820000



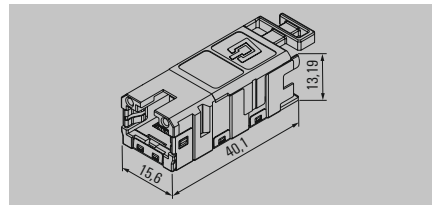


**Data inserts**

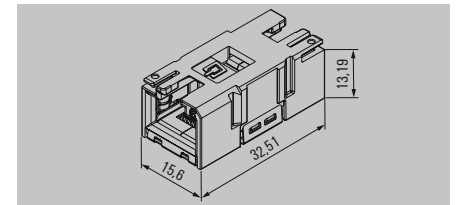
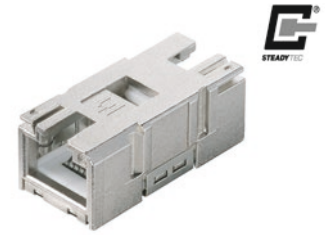
**RJ45**

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

**Module**



**Coupling**



**Technical data**

Protection degree
Plugging cycles
Shielding
Housing main material
Contact surface
Connection cross-section, flexible, min. / max.
Connection cross-section, solid, min. / max.
Insulation diameter, min. / max.
Connector standard
Ambient temperature (operational)
PoE / PoE+
Approvals
<b>Note</b>

IP67 with housing
750
360° all-round enclosure
Zinc diecast
Gold over nickel, Au ≥ 0.8 µm
AWG 26 / AWG 22
AWG 24 / AWG 22
0.85 mm...1.6 mm
IEC 60603-7-51
-40 °C...70 °C
conforming to IEEE 802.3af
CULUS
Connection of WM Cat. 7 AWG 27/7 LSZH possible

IP67 with housing
750
360° all-round enclosure
Zinc diecast
Gold over nickel, Au ≥ 0.8 µm
...
IEC 60603-7-51
-40 °C...70 °C
conforming to IEEE 802.3af
CULUS; DNVGL

**Ordering data**

tool-free	
	TIA-A. Cat. 6A
	TIA-B. Cat. 6A
	PROFINET Cat. 5 Coupling
<b>Note</b>	

Type	Qty.	Order No.
IE-BI-RJ45-FJ-A	10	1962850000
IE-BI-RJ45-FJ-B	10	1963840000
IE-BI-RJ45-FJ-P	10	1963830000

Type	Qty.	Order No.
IE-BI-RJ45-C	10	1962840000

**Accessories**

Tools	
	Optional pressing tool

Type	Qty.	Order No.
PWZ RJ45	1	1118040000

Type	Qty.	Order No.
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**Note**

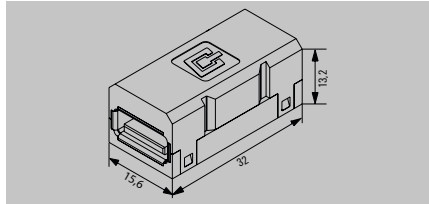
**Note**

**Note**

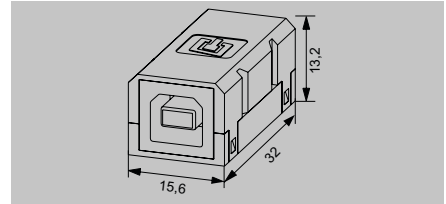
**Data inserts**  
**USB**

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

**Coupling USB A/A**



**Coupling USB A/B**



**Technical data**

Protection degree
Shielding
Ambient temperature (operational)
Connection 1 / 2
Connector standard
Approvals
<b>Note</b>

IP67 with housing
360° all-round enclosure
-40 °C...70 °C
USB A / USB A
IEC 61076-3-107
CULUS; DNVGL
<b>Note</b>

IP67 with housing
360° all-round enclosure
-40 °C...70 °C
USB A / USB B
IEC 61076-3-107
CULUS; DNVGL
<b>Note</b>

**Ordering data**

USB 2.0
USB 3.0
<b>Note</b>

Type	Qty.	Order No.
IE-BI-USB-A	10	1019570000
IE-BI-USB-3.0-A	10	1487920000

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

**Accessories**

USB cable 2.0	
0.5 m	
1.0 m	
1.5 m	
1.8 m	
3.0 m	
USB cable 3.0	
0.5 m	
1.8 m	
3.0 m	
5.0 m	

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

Type	Qty.	Order No.

**Note**

**Note**

**Note**

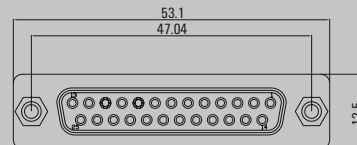
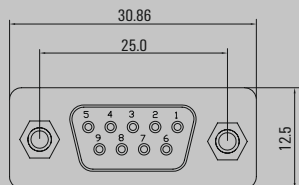
Signal inserts

D-sub

- IP 20

9-pole

25-pole



Technical data

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

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

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

Ordering data

Socket / socket
Socket / plug
Socket / solder connection
<b>Note</b>

Type	Qty.	Order No.
IE-FCI-D9-FF	1	1450840000
IE-FCI-D9-FM	1	1450850000
IE-FCI-D9-FS	1	1450870000

Type	Qty.	Order No.
IE-FCI-D25-FF	1	1450880000
IE-FCI-D25-FM	1	1450890000
IE-FCI-D25-FS	1	1450900000

Accessories

Type	Qty.	Order No.

Type	Qty.	Order No.

Type	Qty.	Order No.

<b>Note</b>
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<b>Note</b>
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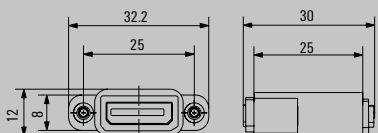
<b>Note</b>
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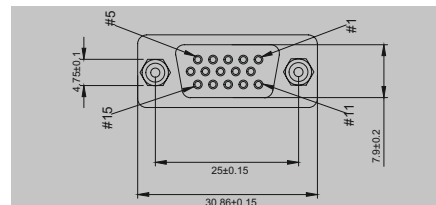
Signal inserts

- IP 20

HDMI



HD15 / VGA



Technical data

Protection degree  
 Housing main material  
 Number of poles  
 Housing surface  
 Contact surface  
 Contact resistance  
 Insulation strength  
 Dielectric strength, contact / contact  
 Ambient temperature (operational)  
 Approvals

IP20  
 PVC casting  
 9  
 Gold-plated  
 -15 °C...50 °C  
 UR

IP20  
 25  
 Gold over nickel  
 1000 MΩ at 500 V DC  
 1000 V<sub>eff</sub> / 1 min  
 -55 °C...105 °C  
 DNVGL; UR

Note

Ordering data

Note

Accessories

Note

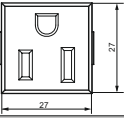
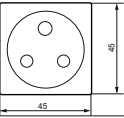
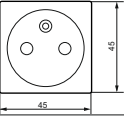
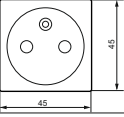
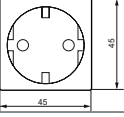
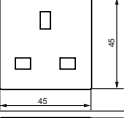
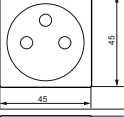
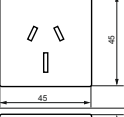
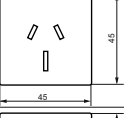
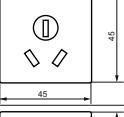
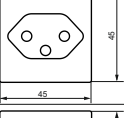
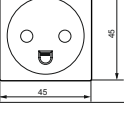
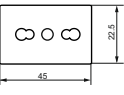
Type	Qty.	Order No.
IE-FCHDMI-FF	1	2003390000

Type	Qty.	Order No.

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

Type	Qty.	Order No.

Type overview: Power inserts/sockets

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



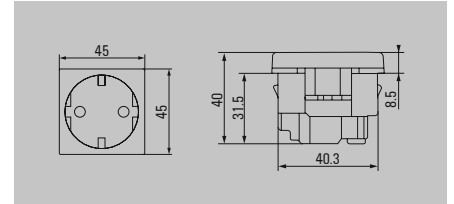
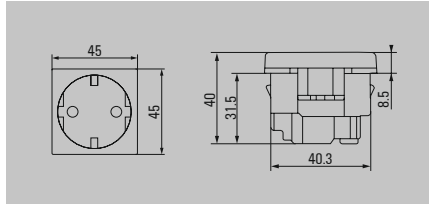
**Power inserts**  
**Power sockets**

- IP 20

**Germany, white**



**Germany, orange**



**Technical data**

Protection degree	IP20
Housing main material	Polycarbonate PC
Type of connection	PUSH IN
Connector face	Type F
Connector standard	
Line connection cross-section	
finely stranded with wire-end ferrule	1.5 ... 1.5 mm <sup>2</sup>
finely stranded without wire-end ferrule	1.5 ... 2.5 mm <sup>2</sup>
finely stranded with wire-end ferrule	1.5 ... 1.5 mm <sup>2</sup>
finely stranded without wire-end ferrule	1.5 ... 2.5 mm <sup>2</sup>
Conductor connection cross-section, rigid	1.5 ... 2.5 mm <sup>2</sup>
Stripping length	10 mm
Rated voltage (AC)	250 V
Rated current	16 A
Ambient temperature (operational)	-5 °C...50 °C
Approvals	DNVGL
<b>Note</b>	

Protection degree	IP20
Housing main material	Polycarbonate PC
Type of connection	PUSH IN
Connector face	Type F
Connector standard	
Line connection cross-section	
finely stranded with wire-end ferrule	1.5 ... 1.5 mm <sup>2</sup>
finely stranded without wire-end ferrule	1.5 ... 2.5 mm <sup>2</sup>
finely stranded with wire-end ferrule	1.5 ... 1.5 mm <sup>2</sup>
finely stranded without wire-end ferrule	1.5 ... 2.5 mm <sup>2</sup>
Conductor connection cross-section, rigid	1.5 ... 2.5 mm <sup>2</sup>
Stripping length	10 mm
Rated voltage (AC)	250 V
Rated current	16 A
Ambient temperature (operational)	-5 °C...50 °C
Approvals	DNVGL
<b>Note</b>	

Protection degree	IP20
Housing main material	Polycarbonate PC
Type of connection	PUSH IN
Connector face	Type F
Connector standard	
Line connection cross-section	
finely stranded with wire-end ferrule	1.5 ... 1.5 mm <sup>2</sup>
finely stranded without wire-end ferrule	1.5 ... 2.5 mm <sup>2</sup>
finely stranded with wire-end ferrule	1.5 ... 1.5 mm <sup>2</sup>
finely stranded without wire-end ferrule	1.5 ... 2.5 mm <sup>2</sup>
Conductor connection cross-section, rigid	1.5 ... 2.5 mm <sup>2</sup>
Stripping length	10 mm
Rated voltage (AC)	250 V
Rated current	16 A
Ambient temperature (operational)	-5 °C...50 °C
Approvals	DNVGL
<b>Note</b>	

**Ordering data**

<b>Note</b>
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Type	Qty.	Order No.
IE-FCH-PWB-DE	1	1450730000

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

**Accessories**

<b>FrontCom</b>	Adapter for mounting rail installation
<b>Flat blade connector, 6.5 mm</b>	straight, 4.8 mm, fully insulated

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

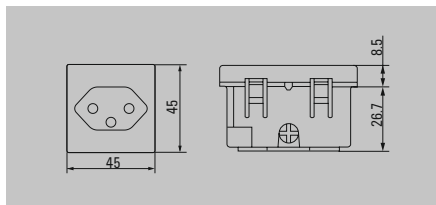
Type	Qty.	Order No.
IE-DINRAIL-AD-PWB	1	2534680000

<b>Note</b>
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<b>Note</b>
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<b>Note</b>
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Switzerland

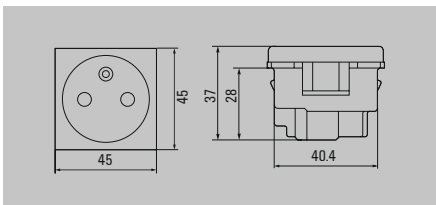


IP20
Polycarbonate PC
PUSH IN
Type J
1.5 ... 1.5 mm <sup>2</sup>
1.5 ... 2.5 mm <sup>2</sup>
1.5 ... 1.5 mm <sup>2</sup>
1.5 ... 2.5 mm <sup>2</sup>
1.5 ... 2.5 mm <sup>2</sup>
10 mm
250 V
10 A
-5 °C...50 °C
DNVGL

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

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

France, white

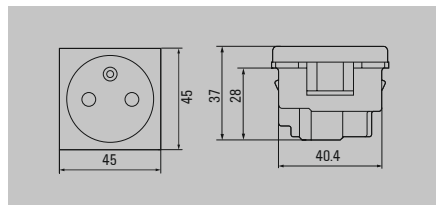


IP20
Polycarbonate PC
PUSH IN
Type E
1.5 ... 1.5 mm <sup>2</sup>
1.5 ... 2.5 mm <sup>2</sup>
1.5 ... 1.5 mm <sup>2</sup>
1.5 ... 2.5 mm <sup>2</sup>
1.5 ... 2.5 mm <sup>2</sup>
10 mm
250 V
16 A
-5 °C...50 °C
DNVGL

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 mm <sup>2</sup>
1.5 ... 2.5 mm <sup>2</sup>
1.5 ... 1.5 mm <sup>2</sup>
1.5 ... 2.5 mm <sup>2</sup>
1.5 ... 2.5 mm <sup>2</sup>
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



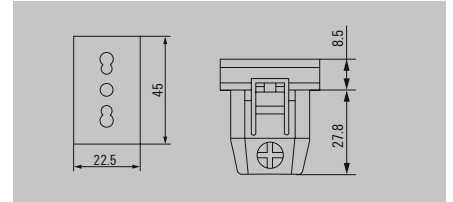
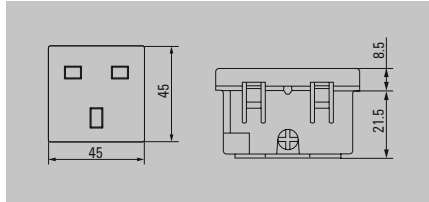
**Power inserts**  
**Power sockets**

- IP 20

**UK**



**Italy / Europe**



**Technical data**

Protection degree  
 Housing main material  
 Type of connection  
 Connector face  
 Connector standard  
 Line connection cross-section  
     finely stranded with wire-end ferrule  
     finely stranded without wire-end ferrule  
     finely stranded with wire-end ferrule  
     finely stranded without wire-end ferrule  
 Conductor connection cross-section, rigid  
 Stripping length  
 Rated voltage (AC)  
 Rated current  
 Ambient temperature (operational)  
 Approvals

IP20  
 Polycarbonate PC  
 Screw connection  
 Type G

1.5 ... 2.5 mm<sup>2</sup>  
 1.5 ... 4 mm<sup>2</sup>  
 1.5 ... 2.5 mm<sup>2</sup>  
 1.5 ... 4 mm<sup>2</sup>  
 1.5 ... 4 mm<sup>2</sup>

9 mm  
 250 V  
 13 A  
 -5 °C...50 °C  
 DNVGL

IP20  
 Polycarbonate PC  
 Screw connection  
 Type L

1.5 ... 2.5 mm<sup>2</sup>  
 1.5 ... 4 mm<sup>2</sup>  
 1.5 ... 2.5 mm<sup>2</sup>  
 1.5 ... 4 mm<sup>2</sup>  
 1.5 ... 4 mm<sup>2</sup>

9 mm  
 250 V  
 16 A  
 -5 °C...50 °C  
 DNVGL

**Note**

**Ordering data**

**Note**

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

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

**Accessories**

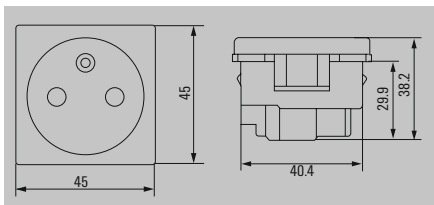
FrontCom	
Adapter for mounting rail installation	
<b>Flat blade connector, 6.5 mm</b>	straight, 4.8 mm, fully insulated

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

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

**Note**

Czech Republic

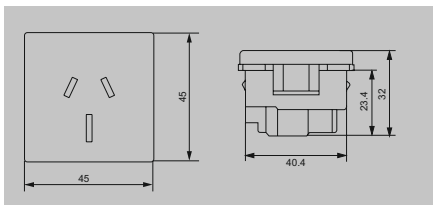


IP20
Polycarbonate PC
PUSH IN
Type E
1.5 ... 1.5 mm <sup>2</sup>
1.5 ... 2.5 mm <sup>2</sup>
1.5 ... 1.5 mm <sup>2</sup>
1.5 ... 2.5 mm <sup>2</sup>
1.5 ... 2.5 mm <sup>2</sup>
12 mm
250 V
16 A
-5 °C...50 °C

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

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

Australia, 15 A

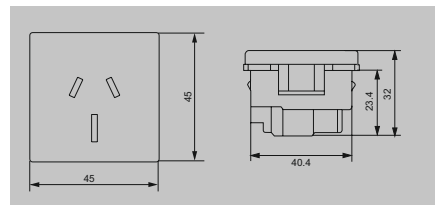


IP20
Polycarbonate PC
Screw connection
Type I
1.5 ... 2.5 mm <sup>2</sup>
1.5 ... 4 mm <sup>2</sup>
1.5 ... 2.5 mm <sup>2</sup>
1.5 ... 4 mm <sup>2</sup>
1.5 ... 4 mm <sup>2</sup>
9 mm
240 V
15 A
-5 °C...50 °C
DNVGL

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 mm <sup>2</sup>
1.5 ... 4 mm <sup>2</sup>
1.5 ... 2.5 mm <sup>2</sup>
1.5 ... 4 mm <sup>2</sup>
1.5 ... 4 mm <sup>2</sup>
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

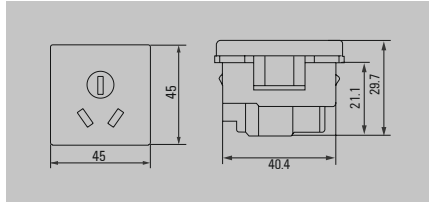


FrontCom® Vario IP65 service interface

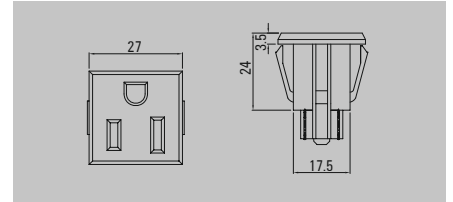
**Power inserts**  
**Power sockets**

- IP 20

**China**



**USA**



**Technical data**

Protection degree	IP20
Housing main material	Polycarbonate PC
Type of connection	Screw connection
Connector face	Type I
Connector standard	
Line connection cross-section	
finely stranded with wire-end ferrule	1.5 ... 2.5 mm <sup>2</sup>
finely stranded without wire-end ferrule	1.5 ... 4 mm <sup>2</sup>
finely stranded with wire-end ferrule	1.5 ... 2.5 mm <sup>2</sup>
finely stranded without wire-end ferrule	1.5 ... 4 mm <sup>2</sup>
Conductor connection cross-section, rigid	1.5 ... 4 mm <sup>2</sup>
Stripping length	9 mm
Rated voltage (AC)	250 V
Rated current	10 A
Ambient temperature (operational)	-5 °C...50 °C
Approvals	DNVGL
<b>Note</b>	

Protection degree	IP20
Housing main material	Polycarbonate PC
Type of connection	Screw connection
Connector face	Type I
Connector standard	
Line connection cross-section	
finely stranded with wire-end ferrule	1.5 ... 2.5 mm <sup>2</sup>
finely stranded without wire-end ferrule	1.5 ... 4 mm <sup>2</sup>
finely stranded with wire-end ferrule	1.5 ... 2.5 mm <sup>2</sup>
finely stranded without wire-end ferrule	1.5 ... 4 mm <sup>2</sup>
Conductor connection cross-section, rigid	1.5 ... 4 mm <sup>2</sup>
Stripping length	9 mm
Rated voltage (AC)	250 V
Rated current	10 A
Ambient temperature (operational)	-5 °C...50 °C
Approvals	DNVGL
<b>Note</b>	

Protection degree	IP20
Housing main material	PA 66
Type of connection	Solder connection, FS 4.8 x 0.8
Connector face	Type B
Connector standard	
Line connection cross-section	
finely stranded with wire-end ferrule	...
finely stranded without wire-end ferrule	...
finely stranded with wire-end ferrule	...
finely stranded without wire-end ferrule	...
Conductor connection cross-section, rigid	...
Stripping length	9 mm
Rated voltage (AC)	125 V
Rated current	15 A
Ambient temperature (operational)	-20 °C...85 °C
Approvals	DNVGL; UR
<b>Note</b>	

**Ordering data**

<b>Type</b>	<b>Qty.</b>	<b>Order No.</b>
IE-FCH-PWB-CN	1	1450790000
<b>Note</b>		

<b>Type</b>	<b>Qty.</b>	<b>Order No.</b>
IE-FCH-PWB-CN	1	1450790000
<b>Note</b>		

<b>Type</b>	<b>Qty.</b>	<b>Order No.</b>
IE-FCH-PWS-US	1	1450800000
For US socket the touch-safe protection is mandatory		
<b>Note</b>		

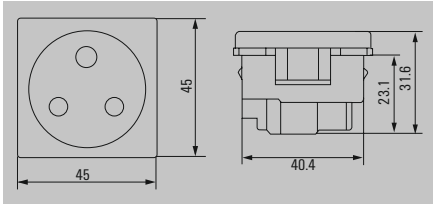
**Accessories**

<b>FrontCom</b>	Adapter for mounting rail installation
<b>Flat blade connector, 6.5 mm</b>	straight, 4.8 mm, fully insulated
<b>Note</b>	

<b>Type</b>	<b>Qty.</b>	<b>Order No.</b>
IE-DINRAIL-AD-PWB	1	2534680000
<b>Note</b>		

<b>Type</b>	<b>Qty.</b>	<b>Order No.</b>
VFSKHV/1,5-2,5/485	100	1491920000
<b>Note</b>		

India, South Africa

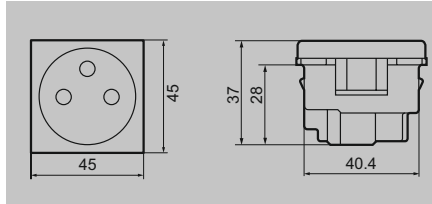


IP20
Polycarbonate PC
Screw connection
Type D
1.5 ... 2.5 mm <sup>2</sup>
...
1.5 ... 2.5 mm <sup>2</sup>
...
1.5 ... 4 mm <sup>2</sup>
9 mm
250 V
13 A
-5 °C...50 °C

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

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

Israel

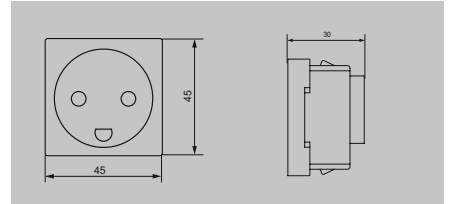


IP20
PP
Screw connection
Type H
1.5 ... 1.5 mm <sup>2</sup>
...
1.5 ... 1.5 mm <sup>2</sup>
...
1.5 ... 2.5 mm <sup>2</sup>
11 mm
250 V
16 A
-5 °C...50 °C

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 mm <sup>2</sup>
1.5 ... 2.5 mm <sup>2</sup>
1.5 ... 1.5 mm <sup>2</sup>
1.5 ... 2.5 mm <sup>2</sup>
1.5 ... 2.5 mm <sup>2</sup>
13 mm
250 V
13 A
-5 °C...40 °C

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

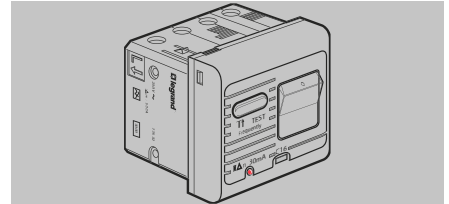
Type	Qty.	Order No.
IE-DINRAIL-AD-PWB	1	2534680000

**Power inserts**

**RCBO**

- IP 20

**RCBO**

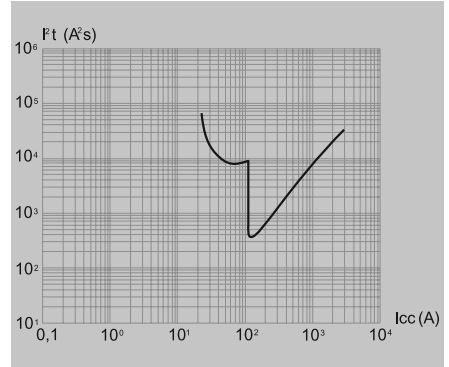


**M**

**Technical data**

Ambient temperature (operational)	-5 °C...40 °C
Operating voltage	230 V AC
Rated current	16 A
I $\Delta$ m	500 A
I $\Delta$ n	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 mm <sup>2</sup>
finely stranded with wire-end ferrule	1.5 ... 2.5 mm <sup>2</sup>
Conductor connection cross-section, rigid	1.5 ... 2.5 mm <sup>2</sup>
<b>Note</b>	

Ambient temperature (operational)	-5 °C...40 °C
Operating voltage	230 V AC
Rated current	16 A
I $\Delta$ m	500 A
I $\Delta$ n	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 mm <sup>2</sup>
finely stranded with wire-end ferrule	1.5 ... 2.5 mm <sup>2</sup>
Conductor connection cross-section, rigid	1.5 ... 2.5 mm <sup>2</sup>
<b>Note</b>	



**Ordering data**

<b>Note</b>
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Type	Qty.	Order No.
IE-FCH-PWB-RCBO	1	1534250000

**Accessories**

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

<b>Note</b>
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<b>Note</b>
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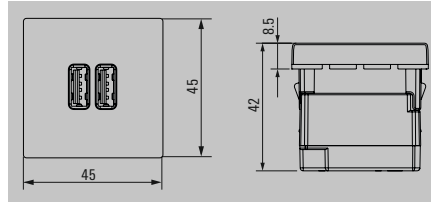
<b>Note</b>
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**Power inserts**

**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 mm <sup>2</sup>
finely stranded with wire-end ferrule	1.5 ... 2.5 mm <sup>2</sup>
Conductor connection cross-section, rigid	1.5 ... 2.5 mm <sup>2</sup>
Stripping length	6 mm
<b>Note</b>	

**Ordering data**

Type	Qty.	Order No.
IE-FCI-PWB-2USB-A-5V	1	2505070000
<b>Note</b>		

**Accessories**

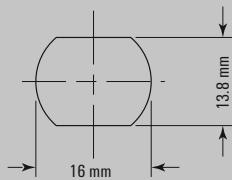
FrontCom	Type	Qty.	Order No.
Adapter for mounting rail installation	IE-DINRAIL-AD-PWB	1	2534680000

**Note**

**3A fuse**

- IP 20

**3A fuse**



**Technical data**

Operating voltage  
Rated current  
Type of connection

32 V DC, 250 V AC  
3 A  
Flat-blade receptacles 6.5 mm

Note

**Ordering data**

Note

Type	Qty.	Order No.
IE-FCH-PWCB-3A	1	1543690000

**Accessories**

Flat blade connector, 6.5 mm

angled  
straight

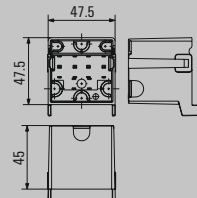
Type	Qty.	Order No.
WFSKHV/1,5-2,5	100	1491970000
VFSKHV/1,5-2,5/638	100	1491940000

Note

**Accessories**

**Touch-safe protection**

**Touch-safe protection**



**Technical data**

Length x width x height	47.5 / 47.5 / 45 mm
Material	PC
<b>Note</b>	

Length x width x height	47.5 / 47.5 / 45 mm
Material	PC
<b>Note</b>	

**Ordering data**

<b>Note</b>
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Type	Qty.	Order No.
IE-FC-PWPC	1	1450820000

**Accessories**

<b>Note</b>
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Type	Qty.	Order No.

<b>Note</b>
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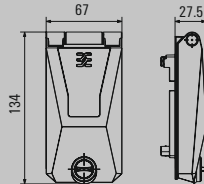
<b>Note</b>
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**Sets**

- shielded

**2x Data 1x Power DE**

Plastic cover



**Technical data**

Frame  
 Insert plate  
 Data inserts  
 Power inserts  
 Rated voltage for socket  
 Rated current for socket  
 Protection degree  
 products included in the set

Plastic cover  
 2x data, 1x power, Shielded  
 USB 2.0 A/A, RJ45 coupling Cat.6<sub>A</sub>  
 Socket DE  
 250 V  
 16 A  
 IP65, in closed state  
 1450510000;1450550000;1450730000;1019570000;1962840000

**Note**

**Ordering data**

shielded  
 unshielded

Type	Qty.	Order No.
IE-FC-SET-SPDED001-KN-P	1	1529580000

**Note**

**Accessories**

Type	Qty.	Order No.
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**Note**

**Sets**

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

**2x Data, 1x Power**



**2x Data, 1x Power**



**Technical data**

Frame
Insert plate
Data inserts
Power inserts
Rated voltage for socket
Rated current for socket
Protection degree
products included in the set
<b>Note</b>

Plastic cover, Lockable with key
2x data, 1x power, Shielded
USB 2.0 A/A, RJ45 coupling Cat.6 <sub>A</sub>
Socket DE
250 V
16 A
IP65, in closed state
1450520000;1450550000;1450730000;1019570000;1962840000;1450820000
<b>Note</b>

Plastic cover, Lockable with key
2x data, 1x power, Unshielded
USB 2.0 A/A, RJ45 coupling Cat.6 <sub>A</sub>
Socket DE
250 V
16 A
IP65, in closed state
1450520000;1450630000;1450730000;1019570000;1962840000;1450820000
<b>Note</b>

**Ordering data**

shielded
unshielded
<b>Note</b>

Type	Qty.	Order No.
IE-FC-SET-SPDEK001-KY-P	1	1989020000
<b>Note</b>		

Type	Qty.	Order No.
IE-FC-SET-IPDEK001-KY-P	1	1543680000
<b>Note</b>		

**Accessories**

Type	Qty.	Order No.
<b>Note</b>		

Type	Qty.	Order No.
<b>Note</b>		

Type	Qty.	Order No.
<b>Note</b>		

<b>Note</b>
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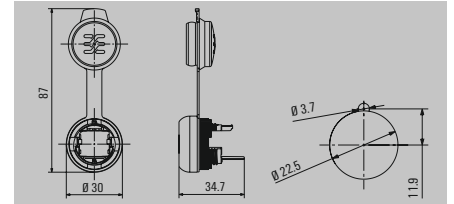
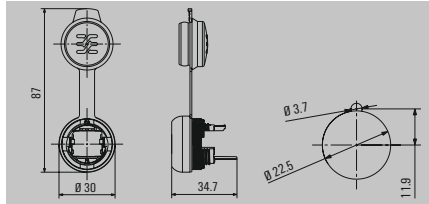
<b>Note</b>
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<b>Note</b>
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**FrontCom® Micro RJ45  
Module**

**8-wire**

**4-wire**



**Technical data**

Category  
Protection degree  
Housing main material  
Contact surface  
Colour  
Shielding  
Type of mounting  
Plugging cycles  
Connector standard  
Connection 1 / 2  
Wall thickness, min. / max.  
Dust protection cap material  
PoE / PoE+  
Ambient temperature (operational)  
Approvals

Cat.6<sub>n</sub> / Class E<sub>n</sub> (ISO/IEC 11801 2010)  
IP65, in closed state  
PA UL 94 V0  
Gold over nickel  
black  
360° shield contact  
Cabinet, Distribution box  
750  
IEC 60603-7-51  
RJ45 / IDC  
1 mm / 3 mm  
EPDM  
conforming to IEEE 802.3af  
-40 °C...70 °C  
CULUS

Cat.5 (ISO/IEC 11801)  
IP65, in closed state  
PA UL 94 V0  
Gold over nickel  
black  
360° shield contact  
Cabinet, Distribution box  
750  
IEC 60603-7-51  
RJ45 / IDC  
1 mm / 3 mm  
EPDM  
conforming to IEEE 802.3af  
-40 °C...70 °C  
CULUS

**Note**

**Note**

**Note**

**Ordering data**

PROFINET module  
TIA-A module  
TIA-B module

Type	Qty.	Order No.
IE-FCM-RJ45-FJ-A	10	1018810000
IE-FCM-RJ45-FJ-B	10	1018820000

Type	Qty.	Order No.
IE-FCM-RJ45-FJ-P	10	1018830000

**Note**

**Accessories**

**Fixing tool**

**Marking tags**

SwitchMark markers white  
MultiCard, white

**Holder**

Type	Qty.	Order No.
IE-FISP-V4	2	9204370000
SM 27/18 MC NE WS	80	1699860000
ESG 9/11 K MC NE WS	200	1857440000
SM-H 27/18 SW	25	1716630000

Type	Qty.	Order No.
IE-FISP-V4	2	9204370000
SM 27/18 MC NE WS	80	1699860000
ESG 9/11 K MC NE WS	200	1857440000
SM-H 27/18 SW	25	1716630000

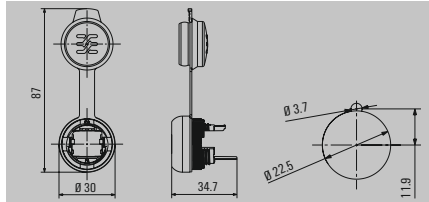
**Note**

**Note**

**Note**

**FrontCom® Micro RJ45  
Coupling**

**8-wire**



**Technical data**

Category  
 Protection degree  
 Housing main material  
 Contact surface  
 Colour  
 Shielding  
 Type of mounting  
 Plugging cycles  
 Connector standard  
 Connection 1 / 2  
 Wall thickness, min. / max.  
 Dust protection cap material  
 PoE / PoE+  
 Ambient temperature (operational)  
 Approvals

Cat.6<sub>n</sub> / Class E<sub>n</sub> (ISO/IEC 11801 2010)  
 IP65, in closed state  
 PA UL 94 V0  
 Gold over nickel  
 black  
 360° shield contact  
 Cabinet, Distribution box  
 750  
 IEC 60603-7-51  
 RJ45 / RJ45  
 1 mm / 3 mm  
 EPDM  
 conforming to IEEE 802.3af  
 -40 °C...70 °C  
 CULUS

**Note**

**Ordering data**

Note Coupling

Type	Qty.	Order No.
IE-FCM-RJ45-C	10	1018790000

**Accessories**

Fixing tool  
 Marking tags SwitchMark markers white  
 Holder

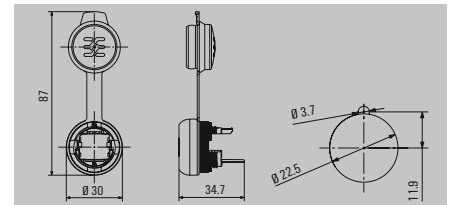
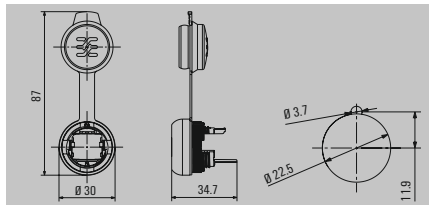
Type	Qty.	Order No.
IE-FISP-V4	2	9204370000
SM 27/18 MC NE WS	80	1699860000
SM-H 27/18 SW	25	1716630000

**Note**

FrontCom® Micro USB

Coupling AA

Coupling AB



Technical data

Ambient temperature (operational)
Protection degree
Housing main material
Colour
Shielding
Type of mounting
Connector standard
Connection 1 / 2
Dust protection cap material
Wall thickness, min. / max.
Approvals
<b>Note</b>

-40 °C...70 °C
IP65, in closed state
PA UL 94 V0
black
360° shield contact
Cabinet, Distribution box
IEC 61076-3-107
USB A / USB A
EPDM
1 mm / 3 mm
CULUS; EAC
Approvals available on request

-40 °C...70 °C
IP65, in closed state
PA UL 94 V0
black
360° shield contact
Cabinet, Distribution box
IEC 61076-3-107
USB A / USB B
EPDM
1 mm / 3 mm
CULUS; EAC

Ordering data

USB 2.0
USB 3.0
<b>Note</b>

Type	Qty.	Order No.
IE-FCM-USB-A	10	1018840000
IE-FCM-USB-3.0-A	10	1427960000

Type	Qty.	Order No.
IE-FCM-USB-AB	10	1222550000

Accessories

<b>Fixing tool</b>
<b>Marking tags</b>
SwitchMark markers white
MultiCard, white
<b>Holder</b>
<b>USB cable 2.0</b>
0.5 m
1.0 m
1.5 m
1.8 m
3.0 m
<b>USB cable 3.0</b>
0.5 m
1.8 m
3.0 m
5.0 m

Type	Qty.	Order No.
IE-FISP-V4	2	9204370000
SM 27/18 MC NE WS	80	1699860000
ESG 9/11 K MC NE WS	200	1857440000
SM-H 27/18 SW	25	1716630000
IE-USB-A-A-0.5M	1	1993550005
IE-USB-A-A-1.0M	1	1993550010
IE-USB-A-A-1.5M	1	1993550015
IE-USB-A-A-1.8M	1	1993550018
IE-USB-A-A-3.0M	1	1993550030
IE-USB-3.0-A-A-0.5M	1	2581730005
IE-USB-3.0-A-A-1.8M	1	2581730018
IE-USB-3.0-A-A-3M	1	2581730030
IE-USB-3.0-A-A-5M	1	2581730050

Type	Qty.	Order No.
IE-FISP-V4	2	9204370000
SM 27/18 MC NE WS	80	1699860000
ESG 9/11 K MC NE WS	200	1857440000
SM-H 27/18 SW	25	1716630000

<b>Note</b>
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<b>Note</b>
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<b>Note</b>
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# IP67 plug-in connectors

## Overview

<b>IP67 plug-in connectors</b>	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

## PushPull V14 - RJ45

### Plug PushPull V14 - RJ45 PROFINET

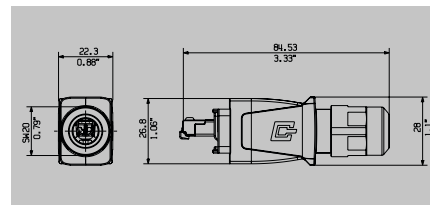
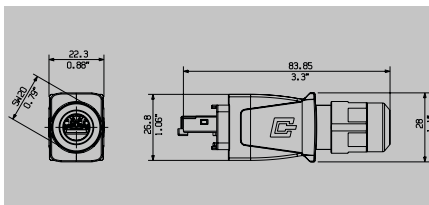
- 4-wire, RJ45 plug field attachable with colour coding on the plug

### 4-wire, field-attachable

PROFINET printing



### 4-wire, crimp



### Technical data

Category
Protection degree
Housing main material
Contact surface
Sheath diameter, min. / max.
Plugging cycles
Ambient temperature (operational)
Connector standard
Connection diameter, flexible, min. / max.
Connection cross-section, flexible, min. / max.
Connection diameter, solid, min. / max.
Connection cross-section, solid, min. / max.
Approvals

Cat.5 (ISO/IEC 11801)
IP67
Zinc diecast
Gold over nickel
5 mm / 10 mm
750
-40 °C...70 °C
IEC 61076-3-117 Var. 14, IEC 60603-7-51
0.48 mm / 0.76 mm
AWG 26 / AWG 22
0.4 mm / 0.64 mm
AWG 24 / AWG 22
CULUS

Cat.5 (ISO/IEC 11801)
IP67
Zinc diecast
Gold over nickel
5 mm / 10 mm
750
-40 °C...70 °C
IEC 60603-7, IEC 61076-3-117 Var. 14
0.57 mm / 0.64 mm
AWG 23 / AWG 22
0.57 mm / 0.64 mm
AWG 23 / AWG 22

Other approvals for individual parts of the set available

### Ordering data - Sets

RJ45 tool-free
Note

Type	Qty.	Order No.
IE-PS-V14M-RJ45-FHP	10	1012170000

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

### Ordering data - Empty housings

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

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

### Accessories

Dust protection cap	Protective cap
Marking tags	MultiCard, white
Plug insert for V14 PROFINET crimp	Replacement crimp inserts
Tools	Pressing tool

Type	Qty.	Order No.
IE-PP-V14P	10	1058280000
ESG 9/11 K MC NE WS	200	1857440000

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

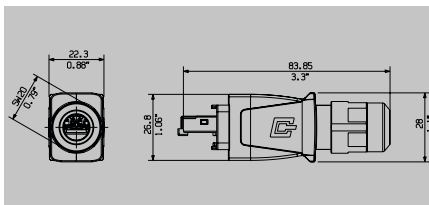
Note

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

**Plug PushPull V14 - RJ45**

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

**8-wire, crimp**



**Technical data**

Category	Cat.6 <sub>x</sub> / Class E <sub>x</sub> (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

Category	Cat.6 <sub>x</sub> / Class E <sub>x</sub> (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**

	RJ45 tool-free
<b>Note</b>	

Type	Qty.	Order No.
IE-PS-V14M-RJ45-TH	10	1012160000

**Ordering data - Empty housings**

<b>Note</b>	
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Type	Qty.	Order No.
IE-PH-V14M-RJ	10	1011560000

**Accessories**

<b>Dust protection cap</b>	Protective cap
<b>Marking tags</b>	MultiCard, white
<b>Tools</b>	Pressing tool

Type	Qty.	Order No.
IE-PP-V14P	10	1058280000
ESG 9/11 K MC NE WS	200	1857440000
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**

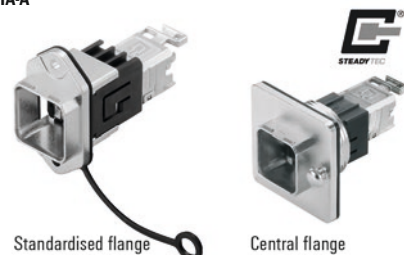
PROFINET printing



Standardised flange

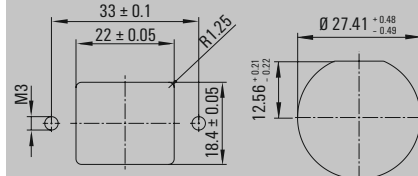
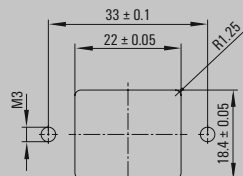
**8-wire**

TIA-A



Standardised flange

Central flange



**Technical data**

Category	
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.	0.48 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
Approvals	CULUS
<b>Note</b>	Other approvals for individual parts of the set available

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	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.	0.48 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
Approvals	CULUS
<b>Note</b>	Other approvals for individual parts of the set available

Category	Cat.6 <sub>A</sub> / Class E <sub>A</sub> (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.	0.48 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
Approvals	CULUS
<b>Note</b>	Other approvals for individual parts of the set available

**Ordering data - Sets**

	Standardised flange
	Central flange
<b>Note</b>	

Type	Qty.	Order No.
IE-BSS-V14M-RJ45-FJ-P	10	1085260000

Type	Qty.	Order No.
IE-BSS-V14M-RJ45-FJ-A	10	1012320000
IE-BSC-V14M-RJ45-FJ-A	10	1058270000

**Ordering data - Empty housings**

	Standardised flange
	Central flange
	Device flange
<b>Note</b>	

Type	Qty.	Order No.
IE-BHS-V14M-RJA	10	1011540000
IE-BHC-V14M-RJA	10	1047950000
IE-BHD-V14M	10	1047940000

Type	Qty.	Order No.
IE-BHS-V14M-RJA	10	1011540000
IE-BHC-V14M-RJA	10	1047950000
IE-BHD-V14M	10	1047940000

**Accessories**

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

Type	Qty.	Order No.
IE-BP-V14P	10	1058310000

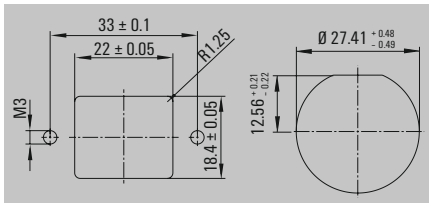
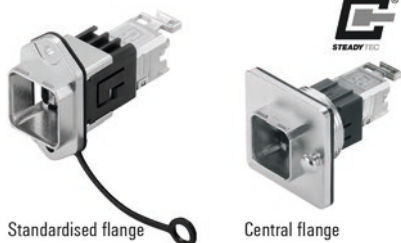
**Note**

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	
Protection degree	
Housing main material	
Contact surface	
Sheath diameter, min. / max.	
Plugging cycles	
Ambient temperature (operational)	
Connector standard	
Connection diameter, flexible, min. / max.	
Connection cross-section, flexible, min. / max.	
Connection diameter, solid, min. / max.	
Connection cross-section, solid, min. / max.	
Approvals	
<b>Note</b>	

Cat.6 <sub>x</sub> / Class E <sub>x</sub> (ISO/IEC 11801 2010)
IP67
Zinc diecast
Gold over nickel
5 mm / 10 mm
750
-40 °C...70 °C
IEC 61076-3-117 Var. 14, IEC 60603-7-51
CULUS
Other approvals for individual parts of the set available

**Ordering data - Sets**

Standardised flange
Central flange
<b>Note</b>

Type	Qty.	Order No.
IE-BSS-V14M-RJ45-C	10	1012310000
IE-BSC-V14M-RJ45-C	10	1058250000

**Ordering data - Empty housings**

Standardised flange
Central flange
Device flange
<b>Note</b>

Type	Qty.	Order No.
IE-BHS-V14M-RJA	10	1011540000
IE-BHC-V14M-RJA	10	1047950000
IE-BHD-V14M	10	1047940000

**Accessories**

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

**Note**

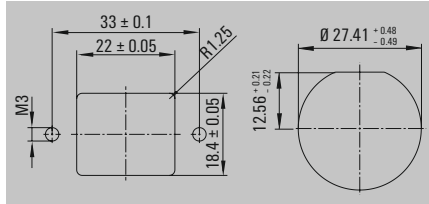
Plug inserts can also be ordered separately. Refer to Inserts.

**PushPull V14 - RJ45**

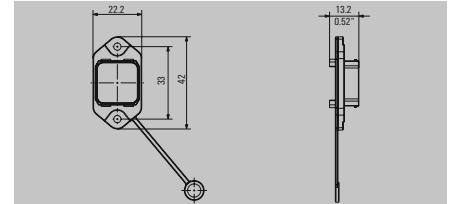
**Flange-mounted empty housing /  
PushPull device flange  
V14**

- IP 67

**Empty housing**



**Device flange**



**Technical data**

- Category
- Protection degree
- Housing main material
- Contact surface
- Sheath diameter, min. / max.
- Plugging cycles
- Ambient temperature (operational)
- Connector standard
- Connection diameter, flexible, min. / max.
- Connection cross-section, flexible, min. / max.
- Connection diameter, solid, min. / max.
- Connection cross-section, solid, min. / max.
- Approvals

IP67  
Zinc diecast  
  
750  
-40 °C...70 °C  
IEC 61076-3-117 Var. 14

IP67  
Zinc diecast  
  
750  
-40 °C...70 °C  
IEC 61076-3-117 Var. 14

CULUS

CULUS

**Note**

**Ordering data**

- Standardised flange
- Central flange
- Device flange

Type	Qty.	Order No.
IE-BHS-V14M-RJA	10	1011540000
IE-BHC-V14M-RJA	10	1047950000

Type	Qty.	Order No.
IE-BHD-V14M	10	1047940000

**Note**

**Accessories**

Dust protection cap	
Protective cap	

Type	Qty.	Order No.
IE-BP-V14P	10	1058310000

Type	Qty.	Order No.
IE-BP-V14P	10	1058310000

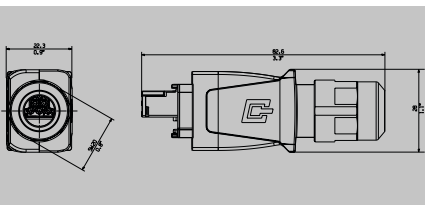
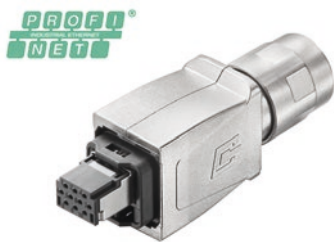
**Note**

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

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

Plug PushPull V14 - Hybrid

Hybrid



Technical data

Category
Protection degree
Housing main material
Contact surface
Sheath diameter, min. / max.
Plugging cycles
Ambient temperature (operational)
Connection 1 / 2
Connector standard
Connection cross-section, flexible, min. / max.
Connection diameter, flexible, min. / max.
Rated current (hybrid connector)
Volume resistance
Approvals
<b>Note</b>

Cat.5 (ISO/IEC 11801)
IP67
Zinc diecast
Gold over nickel
5 mm / 10 mm
500
-40 °C...70 °C
Hybrid (Q10) / Crimp
IEC 61076-3-119 CDV, IEC 61076-3-117 Var. 14
AWG 27 / AWG 20
0.08 mm <sup>2</sup> / 0.75 mm <sup>2</sup>
3 A per contact
<10 mΩ
CULUS
Other approvals for individual parts of the set available

Ordering data - Sets

<b>Note</b>
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Type	Qty.	Order No.
IE-PS-V14M-HYB-10P	10	1072910000
Order contacts separately		

Ordering data - Empty housings

<b>Note</b>
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Type	Qty.	Order No.
IE-PH-V14M-RJ	10	1011560000

Accessories

<b>Crimping contact</b>	0.08...0.2 mm <sup>2</sup>
	0.2...0.5 mm <sup>2</sup>
	0.75 mm <sup>2</sup>
<b>Tools</b>	Pressing tool
<b>Cable</b>	Hybrid cable, 100 m
	Hybrid cable, 500 m
<b>Dust protection cap</b>	Protective cap
<b>Marking tags</b>	MultiCard, white

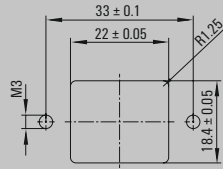
Type	Qty.	Order No.
IE-PIC-HYB-S-0,2-300	300	1135150000
IE-PIC-HYB-S-0,5-300	300	1096180000
IE-PIC-HYB-S-0,75-300	300	1068950000
HTF HYB	1	1119580000
IE-C5DHAG-100	1	2763660000
IE-C5DHAG-500	1	2763460000
IE-PP-V14P	10	1058280000
ESG 9/11 K MC NEWS	200	1857440000

<b>Note</b>
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Plug inserts can also be ordered separately. Refer to Inserts.
--

Flange PushPull V14 - Hybrid

Standardised flange



Technical data

Category
Protection degree
Housing main material
Seal material
Contact surface
Sheath diameter, min. / max.
Plugging cycles
Ambient temperature (operational)
Connection 1 / 2
Connector standard
Connection cross-section, flexible, min. / max.
Connection diameter, flexible, min. / max.
Rated current (hybrid connector)
Volume resistance
Approvals

Cat.5 (ISO/IEC 11801)
IP67
Zinc diecast
EPDM
Gold over nickel
5 mm / 10 mm
500
-40 °C...70 °C
Hybrid (Q10) / Crimp
IEC 61076-3-119 CDV, IEC 61076-3-117 Var. 14
AWG 27 / AWG 20
0.08 mm <sup>2</sup> / 0.75 mm <sup>2</sup>
3 A per contact
<10 mΩ
CULUS

**Note** Other approvals for individual parts of the set available

Ordering data - Sets

**Note**

Type	Qty.	Order No.
IE-BSS-V14M-HYB-10P-FJ	10	1072900000

Order contacts separately

Ordering data - Empty housings

**Note**

Standardised flange

Type	Qty.	Order No.
IE-BHS-V14M-RJA	10	1011540000

Accessories

Crimping contact	
	0.08...0.2 mm <sup>2</sup>
	0.2...0.5 mm <sup>2</sup>
	0.75 mm <sup>2</sup>
Tools	Pressing tool
Cable	Hybrid cable
Dust protection cap	Protective cap

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-C5DHAG-MW	110 M	1172250000
IE-BP-V14P	10	1058310000

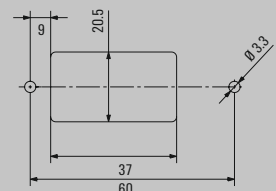
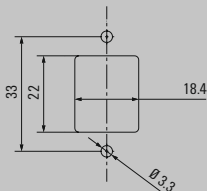
**Note**

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

V14 flange adapter

Straight

Angled



Technical data

Protection degree
Housing main material
Seal material
Type of mounting
Ambient temperature (operational)
Note

IP67
Zinc diecast
EPDM
2 screws, M3 (not included)
-40...70 °C

IP67
Zinc diecast
EPDM
2 screws, M3 (not included)
-40...70 °C

Ordering data

Note
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Type	Qty.	Order No.
IE-AD-BHS-V14M-RJA	1	1302000000
Flange and plug inserts must be ordered separately, see Inserts/Flanges		

Type	Qty.	Order No.
IE-BHS-V14M-RJA-45	10	1296710000
Flange inserts must be ordered separately, see Inserts		

Accessories

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Type	Qty.	Order No.

Type	Qty.	Order No.

Note
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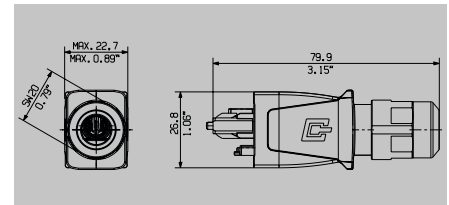
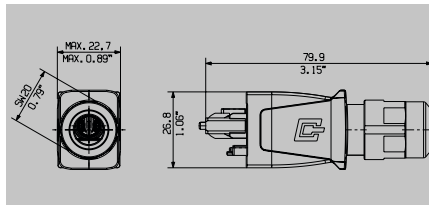
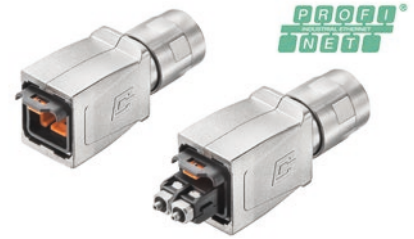
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PushPull V14 plug - fibre-optic

Without kink prevention, crimp

Without kink prevention, reconnectable



Technical data

Protection degree	
Housing main material	
Sheath diameter, min. / max.	
Plugging cycles	
Ambient temperature (operational)	
Connector standard	
Approvals	
<b>Note</b>	

IP67	
Zinc diecast	
5 mm / 10 mm	
750	
-40...70 °C	
IEC 61076-3-117 Var. 14, IEC 61754-24	
CULUS	

IP67	
Zinc diecast	
5 mm / 10 mm	
750	
-40...70 °C	
IEC 61076-3-117 Var. 14, IEC 61754-24	

Ordering data - Sets

	POF
<b>Note</b>	

Type	Qty.	Order No.
IE-PS-V14M-2SC-POF	10	1191550000

Type	Qty.	Order No.
IE-PS-V14M-2SC-POF-QA	10	2568260000

Ordering data - Empty housings

<b>Note</b>	
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Type	Qty.	Order No.
IE-PH-V14M-FO	10	1058100000

Type	Qty.	Order No.
IE-PH-V14M-FO	10	1058100000

Accessories

<b>Inserts</b>	POF
<b>Dust protection cap</b>	Protective cap
<b>Tools</b>	Tool set POF, crimp Mounting tool, POF MULTI-STRIPAX IE-POF Cevlar scissors
<b>Replacement ferrule</b>	
<b>Marking tags</b>	MultiCard, white

Type	Qty.	Order No.
IE-PI-SCRJ-POF	10	1067410000
IE-PP-V14P	10	1058280000
TOOL SET IE-POF	1	1208930000
HTX-IE-POF	1	1208870000
MULTI-STRIPAX IE-POF	1	1208880000
SCISSORS KEVLAR	1	1208910000
IE-SCRJ-IP67-POF-100	100	1278430000
ESG 9/11 K MC NE WS	200	1857440000

Type	Qty.	Order No.
IE-PI-SCRJ-POF-QA	10	2564960000
IE-PP-V14P	10	1058280000
HTX-IE-POF-QA	1	2602860000
MULTI-STRIPAX IE-POF	1	1208880000
SCISSORS KEVLAR	1	1208910000
ESG 9/11 K MC NE WS	200	1857440000

<b>Note</b>	
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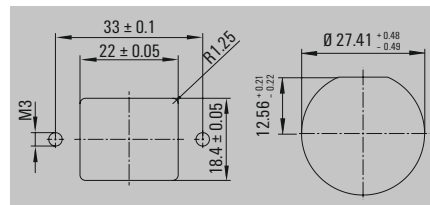
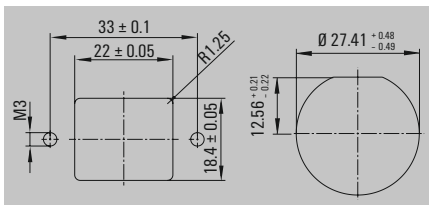
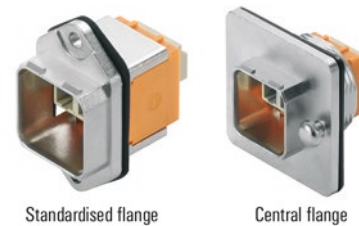
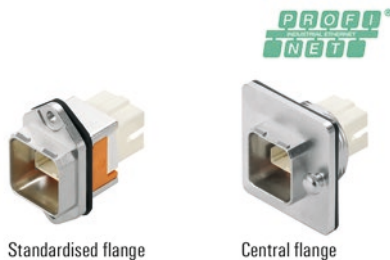
Plug inserts can also be ordered separately, see Inserts
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Flange PushPull V14 - fibre-optic

SCRJ

LC Duplex coupling



Technical data

Protection degree	IP67
Housing main material	Zinc diecast
Plugging cycles	500
Ambient temperature (operational)	-40 °C...70 °C
Insertion loss	≤ 0.5 dB
Connector standard	IEC 61076-3-117 Var. 14, IEC 61754-24
Approvals	CULUS
<b>Note</b>	

Protection degree	IP67
Housing main material	Zinc diecast
Plugging cycles	500
Ambient temperature (operational)	-40 °C...70 °C
Insertion loss	≤ 0.4 dB
Connector standard	IEC 61076-3-117 Var. 14, IEC 61754-20
<b>Note</b>	

Ordering data - Sets

Central flange Singlemode	
Standardised flange Singlemode	
Central flange Multimode/POF	
Standardised flange Multimode/POF	
<b>Note</b>	

Type	Qty.	Order No.
IE-BSC-V14M-SCRJ-SM-C	10	1062600000
IE-BSS-V14M-SCRJ-SM-C	10	1058140000
IE-BSC-V14M-SCRJ-MM-C	10	1062590000
IE-BSS-V14M-SCRJ-MM-C	10	1058120000

Type	Qty.	Order No.
IE-BSC-V14M-LCD-SM-C	10	1062620000
IE-BSS-V14M-LCD-SM-C	10	1058150000
IE-BSC-V14M-LCD-MM-C	10	1062610000
IE-BSS-V14M-LCD-MM-C	10	1058130000

Ordering data - Empty housings

Device flange	
<b>Note</b>	

Type	Qty.	Order No.
IE-BHD-V14M	10	1047940000

Type	Qty.	Order No.
IE-BHD-V14M	10	1047940000

Accessories

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

Type	Qty.	Order No.
IE-BP-V14P	10	1058310000

**Note**

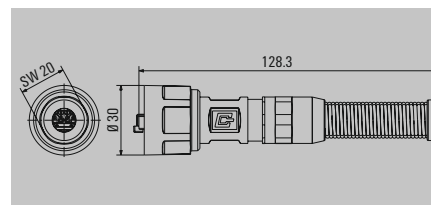
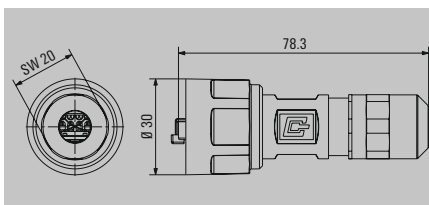
Plug inserts can also be ordered separately. Refer to Inserts.

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

Plug bayonet V1 Metal - RJ45

Without kink prevention

With kink prevention



Technical data

Category
Protection degree
Housing main material
Contact surface
Sheath diameter, min. / max.
Plugging cycles
Ambient temperature (operational)
Connection cross-section, flexible, min. / max.
Connection diameter, flexible, min. / max.
Connection cross-section, solid, min. / max.
Connection diameter, solid, min. / max.
Connector standard
Approvals
Note

Cat.6 <sub>n</sub> / Class E <sub>n</sub> (ISO/IEC 11801 2010)
IP67
Zinc diecast
Gold over nickel
5 mm / 10 mm
750
-40 °C...70 °C
AWG 26 / AWG 22
0.48 mm / 0.76 mm
AWG 24 / AWG 22
0.4 mm / 0.64 mm
IEC 61076-3-106 Var. 1, IEC 60603-7-51
CULUS

Cat.6 <sub>n</sub> / Class E <sub>n</sub> (ISO/IEC 11801 2010)
IP67
Zinc diecast
Gold over nickel
5 mm / 10 mm
750
-40 °C...70 °C
AWG 26 / AWG 22
0.48 mm / 0.76 mm
AWG 24 / AWG 22
0.4 mm / 0.64 mm
IEC 61076-3-106 Var. 1, IEC 60603-7-51
CULUS

Ordering data - Sets

RJ45 without tools. AWG 26-22. TIA-A/B-PROFINET
RJ45 Crimp. AWG 27-24
Note

Type	Qty.	Order No.
IE-PS-V01M-RJ45-FH	10	1963120000
IE-PS-V01M-RJ45-TH	10	1963140000

Type	Qty.	Order No.
IE-PS-V01M-RJ45-FH-BP	10	1963130000
IE-PS-V01M-RJ45-TH-BP	10	1963150000

Ordering data - Empty housings

Note
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Type	Qty.	Order No.
IE-PH-V01M	10	1962550000

Type	Qty.	Order No.
IE-PH-V01M-BP	10	1962560000

Accessories

Dust protection cap	Plug housing protective cap
Marking tags	MultiCard, white

Type	Qty.	Order No.
IE-PP-V01P	10	1965690000
ESG 9/11 K MC NE WS	200	1857440000

Type	Qty.	Order No.
IE-PP-V01P	10	1965690000
ESG 9/11 K MC NE WS	200	1857440000

Note

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

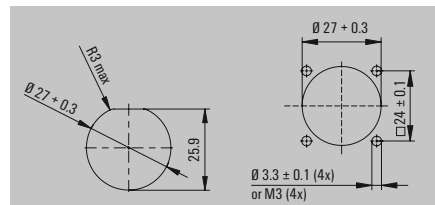
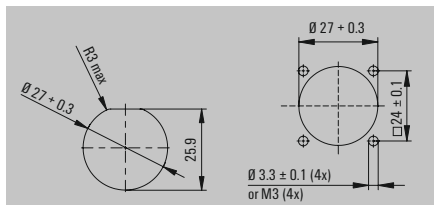
Plug inserts can also be ordered separately. Refer to Inserts.

Flange bayonet V1 Metal - RJ45

Module

Coupling

TIA-A



Technical data

Category
Protection degree
Housing main material
Contact surface
Plugging cycles
Ambient temperature (operational)
Connector standard
Connection cross-section, flexible, min. / max.
Connection diameter, flexible, min. / max.
Connection cross-section, solid, min. / max.
Connection diameter, solid, min. / max.
Approvals
<b>Note</b>

Cat.6 <sub>n</sub> / Class E <sub>n</sub> (ISO/IEC 11801 2010)
IP67
Zinc diecast
Gold over nickel
750
-40 °C...70 °C
IEC 61076-3-106 Var. 1, IEC 60603-7-51
AWG 26 / AWG 22
0.48 mm / 0.76 mm
AWG 24 / AWG 22
0.4 mm / 0.64 mm
CULUS
<b>Note</b>

Cat.6 <sub>n</sub> / Class E <sub>n</sub> (ISO/IEC 11801 2010)
IP67
Zinc diecast
Gold over nickel
750
-40 °C...70 °C
IEC 61076-3-106 Var. 1, IEC 60603-7-51
CULUS
<b>Note</b>

Ordering data - Sets

<b>Note</b>
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Type	Qty.	Order No.
IE-BS-V01M-RJ45-FJ-A	10	1963480000

Type	Qty.	Order No.
IE-BS-V01M-RJ45-C	10	1963470000

Ordering data - Empty housings

<b>Note</b>
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Type	Qty.	Order No.
IE-BH-V01M	10	1963540000

Type	Qty.	Order No.
IE-BH-V01M	10	1963540000

Accessories

Dust protection cap	Flange-mounted housing protective cap
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Type	Qty.	Order No.
IE-BP-V01P	10	1965700000

Type	Qty.	Order No.
IE-BP-V01P	10	1965700000

<b>Note</b>
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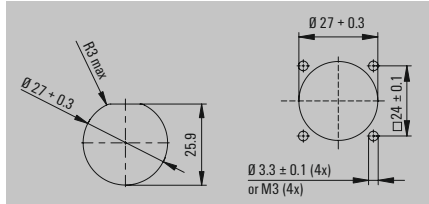
Plug inserts can also be ordered separately. Refer to Inserts.
--

Plug inserts can also be ordered separately. Refer to Inserts.
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**Bayonet V1 Metal-FO**

**Flange bayonet V1 metal - fibre-optic-SC**

**Standardised flange**



**Technical data**

Protection degree
Housing main material
Plugging cycles
Ambient temperature (operational)
Connector standard
Approvals

IP67
Zinc diecast
500
-40 °C...70 °C
IEC 61076-3-106 Var. 1, IEC 61754-24

**Note**

**Ordering data - Sets**

Singlemode
Multimode/POF
<b>Note</b>

Type	Qty.	Order No.
IE-BS-V01M-SCRJ-SM	10	1221020000
IE-BS-V01M-SCRJ-MM	10	1221010000

**Ordering data - Empty housings**

<b>Note</b>
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Type	Qty.	Order No.
IE-BHD-V01M-SCA	10	1221030000

**Accessories**

<b>Dust protection cap</b>
Flange-mounted housing protective cap

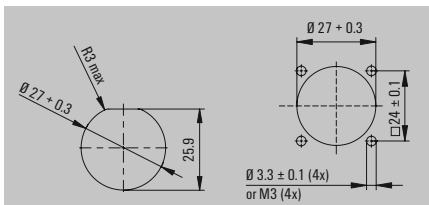
Type	Qty.	Order No.
IE-BP-V01P	10	1965700000

**Note**

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

Flange bayonet V1 metal - fibre-optic-LC

Standardised flange



Technical data

Protection degree
Housing main material
Plugging cycles
Ambient temperature (operational)
Connector standard
Approvals
<b>Note</b>

IP67
Zinc diecast
500
-40 °C...70 °C
IEC 61076-3-106 Var. 1, IEC 61754-20
<b>Note</b>

Ordering data - Sets

Singlemode
Multimode
<b>Note</b>

Type	Qty.	Order No.
IE-BS-V01M-LCD-SM-C	10	1963430000
IE-BS-V01M-LCD-MM-C	10	1964440000
<b>Note</b>		

Ordering data - Empty housings

<b>Note</b>
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Type	Qty.	Order No.
IE-BH-V01M	10	1963540000
<b>Note</b>		

Accessories

<b>Dust protection cap</b>
Flange-mounted housing protective cap

Type	Qty.	Order No.
IE-BP-V01P	10	1965700000
<b>Note</b>		

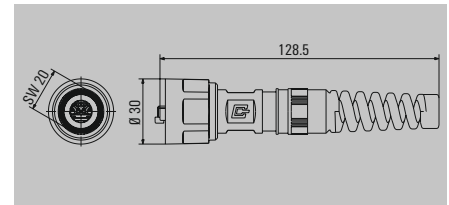
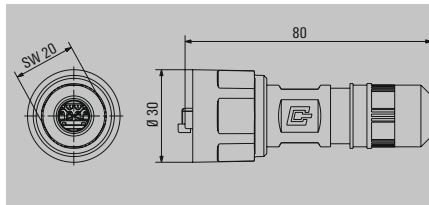
<b>Note</b>
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Plug inserts can also be ordered separately. Refer to Inserts.
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Plug bayonet V1 Plastic - RJ45

Without kink prevention

With kink prevention



Technical data

Category	
Protection degree	IP67
Housing main material	PA UL 94 V0
Contact surface	Gold over nickel
Sheath diameter, min. / max.	5 mm / 10 mm
Plugging cycles	750
Ambient temperature (operational)	-40 °C...70 °C
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
Connector standard	IEC 61076-3-106 Var. 1, IEC 60603-7-51
Approvals	CULUS
Note	

Cat.6 <sub>n</sub> / Class E <sub>n</sub> (ISO/IEC 11801 2010)	
IP67	
PA UL 94 V0	
Gold over nickel	
5 mm / 10 mm	
750	
-40 °C...70 °C	
AWG 26 / AWG 22	
0.48 mm / 0.76 mm	
AWG 24 / AWG 22	
0.4 mm / 0.64 mm	
IEC 61076-3-106 Var. 1, IEC 60603-7-51	
CULUS	

Cat.6 <sub>n</sub> / Class E <sub>n</sub> (ISO/IEC 11801 2010)	
IP67	
PA UL 94 V0	
Gold over nickel	
5 mm / 10 mm	
750	
-40 °C...70 °C	
AWG 26 / AWG 22	
0.48 mm / 0.76 mm	
AWG 24 / AWG 22	
0.4 mm / 0.64 mm	
IEC 61076-3-106 Var. 1, IEC 60603-7-51	
CULUS	

Ordering data - Sets

RJ45 without tools. AWG 26-22. TIA-A/B-PROFINET	
RJ45 Crimp. AWG 27-24	
Note	

Type	Qty.	Order No.
IE-PS-V01P-RJ45-FH	10	1012490000
IE-PS-V01P-RJ45-TH	10	1012470000

Type	Qty.	Order No.
IE-PS-V01P-RJ45-FH-BP	10	1012570000
IE-PS-V01P-RJ45-TH-BP	10	1012560000

Ordering data - Empty housings

Note	
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Type	Qty.	Order No.
IE-PH-V01P	10	1012440000

Type	Qty.	Order No.
IE-PH-V01P-BP	10	1012460000

Accessories

Dust protection cap	Plug housing protective cap
Marking tags	MultiCard, white

Type	Qty.	Order No.
IE-PP-V01P	10	1965690000
ESG 9/11 K MC NE WS	200	1857440000

Type	Qty.	Order No.
IE-PP-V01P	10	1965690000
ESG 9/11 K MC NE WS	200	1857440000

Note

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

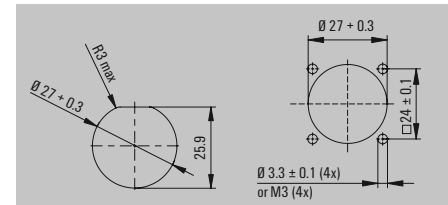
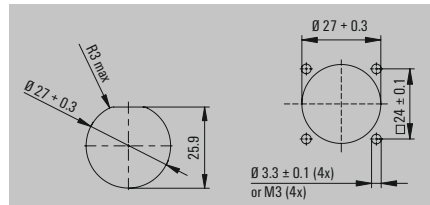
Plug inserts can also be ordered separately. Refer to Inserts.

Flange bayonet V1 Plastic - RJ45

Module

Coupling

TIA-A



Technical data

Category
Protection degree
Housing main material
Contact surface
Plugging cycles
Ambient temperature (operational)
Connector standard
Connection cross-section, flexible, min. / max.
Connection diameter, flexible, min. / max.
Connection cross-section, solid, min. / max.
Connection diameter, solid, min. / max.
Approvals
<b>Note</b>

Cat.6 <sub>n</sub> / Class E <sub>n</sub> (ISO/IEC 11801 2010)
IP67
PA UL 94 V0
Gold over nickel
750
-40 °C...70 °C
IEC 61076-3-106 Var. 1, IEC 60603-7-51
AWG 26 / AWG 22
0.48 mm / 0.76 mm
AWG 24 / AWG 22
0.4 mm / 0.64 mm
CULUS
<b>Note</b>

Cat.6 <sub>n</sub> / Class E <sub>n</sub> (ISO/IEC 11801 2010)
IP67
PA UL 94 V0
Gold over nickel
750
-40 °C...70 °C
IEC 61076-3-106 Var. 1, IEC 60603-7-51
CULUS
<b>Note</b>

Ordering data - Sets

<b>Note</b>
-------------

Type	Qty.	Order No.
IE-BS-V01P-RJ45-FJ-A	10	1012380000

Type	Qty.	Order No.
IE-BS-V01P-RJ45-C	10	1012370000

Ordering data - Empty housings

<b>Note</b>
-------------

Type	Qty.	Order No.
IE-BH-V01P	10	1016960000

Type	Qty.	Order No.
IE-BH-V01P	10	1016960000

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

<b>Note</b>
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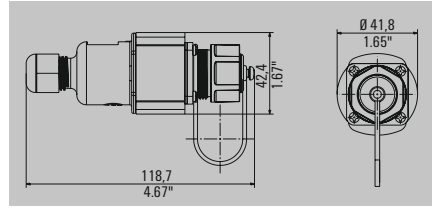
Plug inserts can also be ordered separately. Refer to Inserts.
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Plug inserts can also be ordered separately. Refer to Inserts.
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**Bayonet V1 Plastic - RJ45**

**Cable coupling bayonet V1  
Plastic - RJ45**

**Cable coupling**



**Technical data**

Protection degree
Housing main material
Plugging cycles
Ambient temperature (operational)
Connector standard
Sheath diameter, min. / max.
Approvals
<b>Note</b>

IP67
PA UL 94 V0
750
-40 °C...70 °C
IEC 61076-3-106 Var. 1
6 mm / 9.5 mm
<b>Note</b>

**Ordering data**

<b>Variant 1</b>	Cable coupling
<b>Note</b>	

Type	Qty.	Order No.
IE-CC-V01P	10	<b>1061820000</b>
RJ45 modules can be ordered separately		

**Accessories**

Inserts, Data
RJ45 module EIA/TIA T568 B
RJ45 module PROFINET
RJ45 module EIA/TIA T568 A

Type	Qty.	Order No.
IE-BI-RJ45-FJ-B	10	<b>1963840000</b>
IE-BI-RJ45-FJ-P	10	<b>1963830000</b>
IE-BI-RJ45-FJ-A	10	<b>1962850000</b>

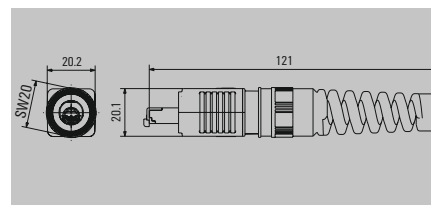
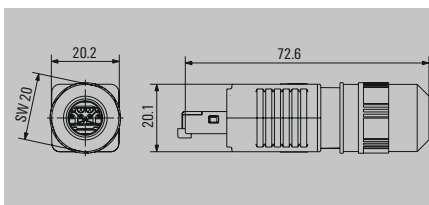
<b>Note</b>
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<b>Note</b>
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Plug PushPull V4 - RJ45

Without kink prevention

With kink prevention



Technical data

Category
Protection degree
Housing main material
Contact surface
Sheath diameter, min. / max.
Plugging cycles
Ambient temperature (operational)
Connection cross-section, flexible, min. / max.
Connection diameter, flexible, min. / max.
Connection cross-section, solid, min. / max.
Connection diameter, solid, min. / max.
Connector standard
Approvals
Note

Cat.6 <sub>n</sub> / Class E <sub>x</sub> (ISO/IEC 11801 2010)
IP67
PA UL 94 V0
Gold over nickel
5 mm / 10 mm
750
-40 °C...70 °C
AWG 27/7 / AWG 24/7
0.46 mm / 0.61 mm
AWG 26/1 / AWG 24/1
0.36 mm / 0.51 mm
IEC 61076-3-106 Var. 4, IEC 60603-7-51
CULUS

Cat.6 <sub>n</sub> / Class E <sub>x</sub> (ISO/IEC 11801 2010)
IP67
PA UL 94 V0
Gold over nickel
5 mm / 10 mm
750
-40 °C...70 °C
AWG 27/7 / AWG 24/7
0.46 mm / 0.61 mm
AWG 26/1 / AWG 24/1
0.36 mm / 0.51 mm
IEC 61076-3-106 Var. 4, IEC 60603-7-51
CULUS

Ordering data - Sets

RJ45 without tools. AWG 26-22. TIA-A/B-PROFINET
RJ45 without tools. AWG 26-22. TIA-B
RJ45 Crimp. AWG 27-24
Note

Type	Qty.	Order No.
IE-PS-V04P-RJ45-FH	10	1963160000
IE-PS-V04P-RJ45-FH-B	10	1271240000
IE-PS-V04P-RJ45-TH	10	1963180000

Type	Qty.	Order No.
IE-PS-V04P-RJ45-FH-BP	10	1963170000
IE-PS-V04P-RJ45-TH-BP	10	1963190000

Ordering data - Empty housings

Note
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Type	Qty.	Order No.
IE-PH-V04P	10	1962520000

Type	Qty.	Order No.
IE-PH-V04P-BP	10	1962530000

Accessories

Dust protection cap	Plug housing protective cap
Marking tags	MultiCard, white

Type	Qty.	Order No.
IE-PP-V04P	10	1963890000
ESG 9/11 K MC NE WS	200	1857440000

Type	Qty.	Order No.
IE-PP-V04P	10	1963890000
ESG 9/11 K MC NE WS	200	1857440000

Note

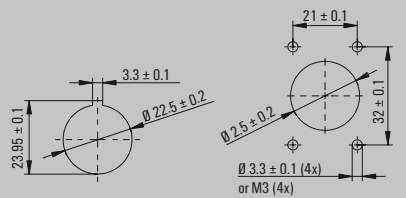
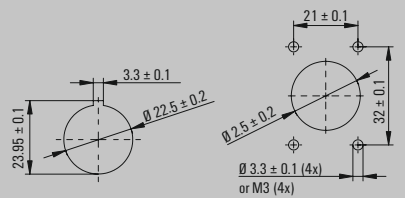
Plug inserts can also be ordered separately. Refer to Inserts.

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

Flange PushPull V4 - RJ45

Module

Coupling



Technical data

Category
Protection degree
Housing main material
Contact surface
Plugging cycles
Ambient temperature (operational)
Connector standard
Connection cross-section, flexible, min. / max.
Connection diameter, flexible, min. / max.
Connection cross-section, solid, min. / max.
Connection diameter, solid, min. / max.
Approvals
<b>Note</b>

Cat.6 <sub>n</sub> / Class E <sub>n</sub> (ISO/IEC 11801 2010)
IP67
PA UL 94 V0
Gold over nickel
750
-40 °C...70 °C
IEC 61076-3-106 Var. 4, IEC 60603-7-51
AWG 26 / AWG 22
0.48 mm
AWG 24 / AWG 22
0.4 mm / 0.64 mm
CULUS
Other approvals for individual parts of the set available

Cat.6 <sub>n</sub> / Class E <sub>n</sub> (ISO/IEC 11801 2010)
IP67
PA UL 94 V0
Gold over nickel
750
-40 °C...70 °C
IEC 61076-3-106 Var. 4, IEC 60603-7-51
CULUS

Ordering data - Sets

RJ45 module TIA-A
RJ45 module TIA-B
Coupling
<b>Note</b>

Type	Qty.	Order No.
IE-BS-V04P-RJ45-FJ-A	10	1963500000
IE-BS-V04P-RJ45-FJ-B	10	1963730000

Type	Qty.	Order No.
IE-BS-V04P-RJ45-C	10	1963490000

Ordering data - Empty housings

Empty enclosure
Device flange
<b>Note</b>

Type	Qty.	Order No.
IE-BH-V04P	10	1963520000
IE-BHD-V04P	200	2027660000

Type	Qty.	Order No.
IE-BH-V04P	10	1963520000
IE-BHD-V04P	200	2027660000

Accessories

Dust protection cap
Flange-mounted housing protective cap
Marking tags
MultiCard, white
Fixing tool
<b>Note</b>

Type	Qty.	Order No.
IE-BP-V04P	10	1963900000
ESG 9/11 K MC NE WS	200	1857440000
IE-FISP-V4	2	9204370000

Type	Qty.	Order No.
IE-BP-V04P	10	1963900000
ESG 9/11 K MC NE WS	200	1857440000
IE-FISP-V4	2	9204370000

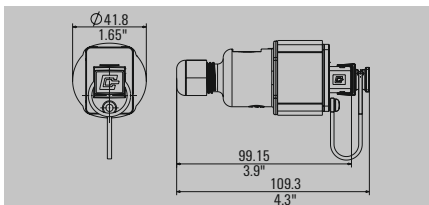
**Note**

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
Housing main material
Plugging cycles
Ambient temperature (operational)
Connector standard
Sheath diameter, min. / max.
Approvals
<b>Note</b>

IP67
PA UL 94 V0
750
-40 °C...70 °C
IEC 61076-3-106 Var. 4
6 mm / 9.5 mm

Ordering data

Cable coupling
<b>Note</b>

Type	Qty.	Order No.
IE-CC-V04P	10	1045960000
RJ45 modules can be ordered separately		

Accessories

Inserts, Data	
RJ45 module EIA/TIA T568 B	
RJ45 module PROFINET	
RJ45 module EIA/TIA T568 A	
Marking tags	MultiCard, white

Type	Qty.	Order No.
IE-BI-RJ45-FJ-B	10	1963840000
IE-BI-RJ45-FJ-P	10	1963830000
IE-BI-RJ45-FJ-A	10	1962850000
ESG 9/11 K MC NE WS	200	1857440000

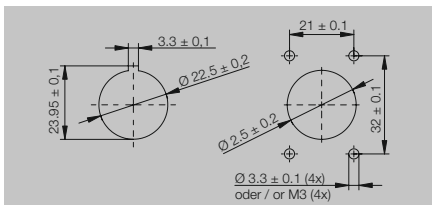
**Note**

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

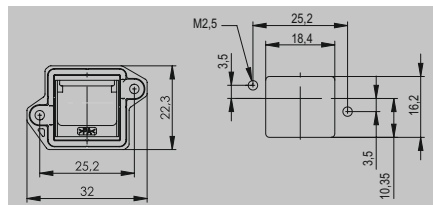
**Flange-mounted empty housing / PushPull V4 device flange**

- IP 67

**Empty housing**



**Device flange**



**Technical data**

Protection degree  
Housing main material  
Plugging cycles  
Ambient temperature (operational)  
Connector standard  
Sheath diameter, min. / max.  
Approvals

**Note**

IP67  
PA UL 94 V0  
750  
-40 °C...70 °C  
IEC 61076-3-106 Var. 4  
5 mm / 10 mm  
CULUS

IP67  
PA UL 94 V0  
-40 °C...70 °C  
IEC 61076-3-106 Var. 4  
CULUS

**Ordering data**

Empty enclosure  
Device flange

**Note**

Type	Qty.	Order No.
IE-BH-V04P	10	1963520000

Type	Qty.	Order No.
IE-BHD-V04P	200	2027660000

**Accessories**

**Dust protection cap**  
Flange-mounted housing protective cap

**Marking tags**  
MultiCard, white

**Fixing tool**

Type	Qty.	Order No.
IE-BP-V04P	10	1963900000

ESG 9/11 K MC NE WS	200	1857440000
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IE-FISP-V4	2	9204370000
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Type	Qty.	Order No.
IE-BP-V04P	10	1963900000

ESG 9/11 K MC NE WS	200	1857440000
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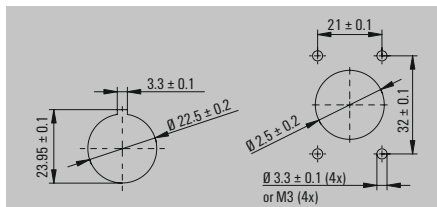
IE-FISP-V4	2	9204370000
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**Note**

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

Flange PushPull V4 - fibre-optic-SC

Standardised flange



Technical data

Protection degree
Housing main material
Plugging cycles
Ambient temperature (operational)
Connector standard
Approvals
<b>Note</b>

IP67
PA UL 94 V0
500
-40 °C...70 °C
IEC 61076-3-106 Var. 4, IEC 61754-4, IEC 61754-24
<b>Note</b>

Ordering data - Sets

Singlemode
Multimode
<b>Note</b>

Type	Qty.	Order No.
IE-BS-V04P-SCRJ2SC-SM-C	10	1963420000
IE-BS-V04P-SCRJ2SC-MM-C	10	1964470000
<b>Note</b>		

Ordering data - Empty housings

Empty enclosure
<b>Note</b>

Type	Qty.	Order No.
IE-BH-V04P	10	1963520000
<b>Note</b>		

Accessories

Dust protection cap	Flange-mounted housing protective cap
Marking tags	MultiCard, white
Fixing tool	

Type	Qty.	Order No.
IE-BP-V04P	10	1963900000
ESG 9/11 K MC NE WS	200	1857440000
IE-FISP-V4	2	9204370000
<b>Note</b>		

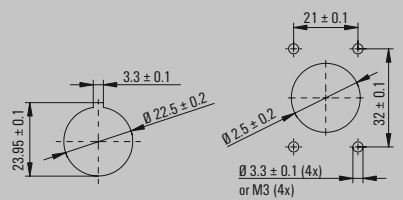
**Note**

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



Flange PushPull V4 - fibre-optic-LC

Standardised flange



Technical data

Protection degree
Housing main material
Plugging cycles
Ambient temperature (operational)
Connector standard
Approvals
<b>Note</b>

IP67
PA UL 94 V0
500
-40 °C...70 °C
IEC 61076-3-106 Var. 4, IEC 61754-20
<b>Note</b>

Ordering data - Sets

	Singlemode
	Multimode
<b>Note</b>	

Type	Qty.	Order No.
IE-BS-V04P-LCD-SM-C	10	1963450000
IE-BS-V04P-LCD-MM-C	10	1964460000
<b>Note</b>		

Ordering data - Empty housings

	Empty enclosure
<b>Note</b>	

Type	Qty.	Order No.
IE-BH-V04P	10	1963520000
<b>Note</b>		

Accessories

<b>Dust protection cap</b>	Flange-mounted housing protective cap
<b>Marking tags</b>	MultiCard, white
<b>Fixing tool</b>	

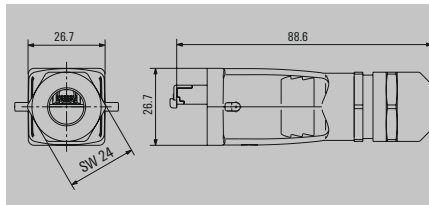
Type	Qty.	Order No.
IE-BP-V04P	10	1963900000
ESG 9/11 K MC NE WS	200	1857440000
IE-FISP-V4	2	9204370000

<b>Note</b>
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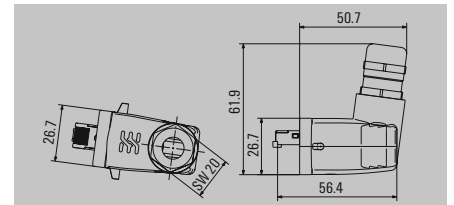
Plug inserts can also be ordered separately. Refer to Inserts.
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RockStar® heavy-duty connector plug  
V5 - RJ45

Straight V5 - RJ45 plug



V5-RJ45 plug, angled



Technical data

Category
Protection degree
Housing main material
Contact surface
Sheath diameter, min. / max.
Plugging cycles
Ambient temperature (operational)
Connector standard
Approvals
<b>Note</b>

Cat.6 <sub>A</sub> / Class E <sub>A</sub> (ISO/IEC 11801 2010)
IP67
diecast aluminium
Gold over nickel
5 mm / 12 mm
750
-40 °C...70 °C
IEC 61076-3-106 Var. 5, IEC 60603-7-51
CULUS

Cat.6 <sub>A</sub> / Class E <sub>A</sub> (ISO/IEC 11801 2010)
IP67
diecast aluminium
Gold over nickel
5 mm / 10 mm
750
-40 °C...70 °C
IEC 61076-3-106 Var. 5, IEC 60603-7-51
EAC
Other approvals for individual parts of the set available

Ordering data - Sets

RJ45 without tools. AWG 26-22. TIA-A/B-PROFINET
RJ45 without tools. AWG 26-22 . TIA-B
RJ45 Crimp. AWG 27-24
<b>Note</b>

Type	Qty.	Order No.
IE-PS-V05M-RJ45-FH	10	1963200000
IE-PS-V05M-RJ45-FH-B	10	1271250000
IE-PS-V05M-RJ45-TH	10	1963110000

Type	Qty.	Order No.
IE-PS-V05M-A-RJ45-FH	10	1077300000

Ordering data - Empty housings

<b>Note</b>
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Type	Qty.	Order No.
IE-PH-V05M	10	1962540000

Type	Qty.	Order No.
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Accessories

Dust protection cap	Plug housing protective cap
	Spare insert holder

Type	Qty.	Order No.
IE-PP-V05M	1	1968920000
IE-PH-AD-V05M-RJ45	1	1993540000

Type	Qty.	Order No.
IE-PP-V05M	1	1968920000

**Note**

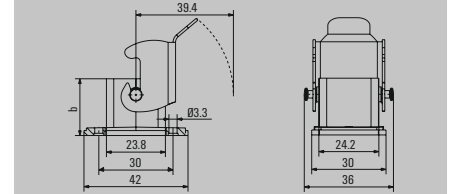
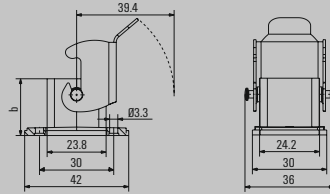
Plug inserts can also be ordered separately. Refer to Inserts.

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

RockStar® heavy-duty connector flange  
V5 - RJ45

Module

Coupling



Technical data

Protection degree  
Housing main material  
Contact surface  
Plugging cycles  
Ambient temperature (operational)  
Connector standard  
Connection cross-section, flexible, min. / max.  
Connection diameter, flexible, min. / max.  
Connection cross-section, solid, min. / max.  
Connection diameter, solid, min. / max.  
Approvals

IP67  
diecast aluminium  
Gold over nickel  
750  
-40 °C...70 °C  
IEC 61076-3-106 Var. 5, IEC 60603-7-51  
AWG 26 / AWG 22  
0.48 mm / 0.76 mm  
AWG 24 / AWG 22  
0.4 mm / 0.64 mm  
CULUS

IP67  
diecast aluminium  
Gold over nickel  
750  
-40 °C...70 °C  
IEC 61076-3-106 Var. 5, IEC 60603-7-51

Note

CULUS

Ordering data - Sets

TIA-A Cat. 6<sub>A</sub>  
PROFINET Cat. 5  
Coupling

Type	Qty.	Order No.
IE-BS-V05M-RJ45-FJ-A	10	1963460000
IE-BS-V05M-RJ45-FJ-P	10	1963700000

Type	Qty.	Order No.
IE-BS-V05M-RJ45-C	10	1963510000

Note

Ordering data - Empty housings

Type	Qty.	Order No.
IE-BH-V05M	10	1963530000

Type	Qty.	Order No.
IE-BH-V05M	10	1963530000

Note

Accessories

Dust protection cap  
Flange-mounted housing protective cap

Type	Qty.	Order No.
IE-BP-V05M	10	1968930000

Type	Qty.	Order No.
IE-BP-V05M	10	1968930000

Note

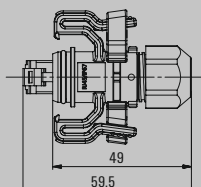
Plug inserts can also be ordered separately. Refer to Inserts.

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 <sub>n</sub> / Class E <sub>n</sub> (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

Category	Cat.6 <sub>n</sub> / Class E <sub>n</sub> (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**

**Note**

**Accessories**

Plug-in connector

Type	Qty.	Order No.
IE-P-IP67	1	8808380000

Type	Qty.	Order No.
IE-PM-RJ45-TH	100	1963580000

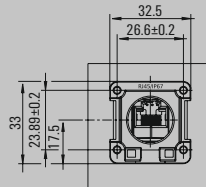
**Note**

See also the "Accessories" chapter.

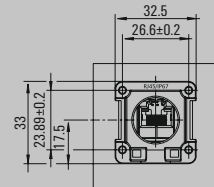
Flange SnapIn V6 - RJ45

- Cat. 6
- IP 67

Module



Coupling



Technical data

Category
Protection degree
Shielding
Housing main material
Contact surface
Colour
Plugging cycles
Type of mounting
Wiring
Ambient temperature (operational)
Connector standard
Approvals

Cat.6 (ISO/IEC 11801)
IP67
360° shield contact
PA 66, UL 94: V-0
Gold over nickel
Light Grey
750
Cabinet, Distribution box
Colour-coded pin assignment according to EIA/TIA T568 A., EIA/TIA T568 B
-40 °C...70 °C
IEC 61076-3-106 Var. 6, IEC 60603-7-5
DNVGL

Cat.6 (ISO/IEC 11801)
IP67
360° shield contact
PA 66, UL 94: V-0
Gold over nickel
Light Grey
750
Cabinet, Distribution box
-40 °C...70 °C
IEC 61076-3-106 Var. 6, IEC 60603-7-5
DNVGL

Note

Ordering data

straight
angled, upwards
angled, downwards
Note

Type	Qty.	Order No.
IE-XM-RJ45/IDC-IP67	1	8808440000

Type	Qty.	Order No.
IE-XM-RJ45/RJ45-IP67	1	8808450000
IE-XM-6U-RJ45/RJ45-IP67	1	8829440000
IE-XM-6D-RJ45/RJ45-IP67	1	8829450000

Accessories

Flange insert	RJ45 module A, straight
	RJ45 coupling, straight

Type	Qty.	Order No.
IE-XR-RJ45/IDC	1	8808330000

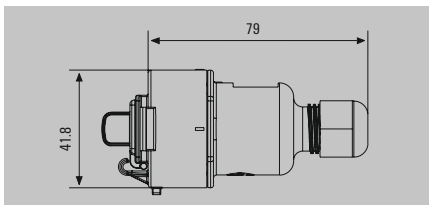
Type	Qty.	Order No.
IE-XR-RJ45/RJ45-2	24	8952950000

Note

**Cable coupling SnapIn V6 - RJ45**

- Cat. 6
- IP 67

**Cable coupling**



**Technical data**

Category  
 Protection degree  
 Shielding  
 Housing main material  
 Contact surface  
 Colour  
 Plugging cycles  
 Type of mounting  
 Wiring  
  
 Ambient temperature (operational)  
 Connector standard  
 Sheath diameter, min. / max.  
 Approvals

Cat.6<sub>n</sub> / Class E<sub>n</sub> (ISO/IEC 11801 2010)  
 IP67  
 360° shield contact  
 PA 66, UL 94: V-0  
 Gold over nickel  
 Light Grey  
 750  
 Floor-mounted, for exposed connections, Wall mounting  
 Colour-coded pin assignment according to  
 EIA/TIA T568 A., EIA/TIA T568 B  
 -40 °C...70 °C  
 IEC 61076-3-106 Var. 6, IEC 60603-7-5  
 6 mm / 9.5 mm  
 DNVGL

**Note**

**Ordering data**

Cable coupling

**Note**

Type	Qty.	Order No.
IE-C-IP67	1	8813090000

**Accessories**

Type	Qty.	Order No.

**Note**

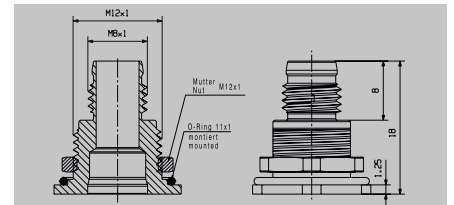
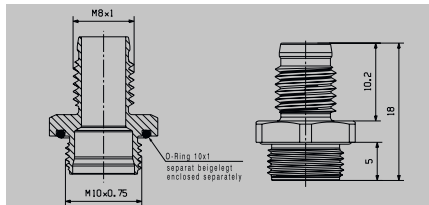
See also the "Accessories" chapter.

## M8 Single Pair Ethernet

### Single Pair Ethernet, M8 empty housing

### M8 front wall mounting

### M8 rear wall mounting



#### Technical data

Category  
Ambient temperature (operational)  
Protection degree  
Housing main material  
Seal material  
Configuration  
Type of mounting  
Connection thread  
Connector standard  
Tightening torque fixing nut

-40...85 °C  
IP67  
Brass, nickel-plated  
FKM  
Frontpanel mounting  
Screw mounting  
M10 x 0.75  
IEC 61076-2-104  
2.5 Nm

40...85 °C  
IP67  
Brass, nickel-plated  
FKM  
Backpanel mounting  
Screw mounting  
M10 x 0.75  
IEC 61076-2-104  
2.5 Nm

**Note**

#### Ordering data

**Note**

#### Accessories

Fastening nut

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.

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

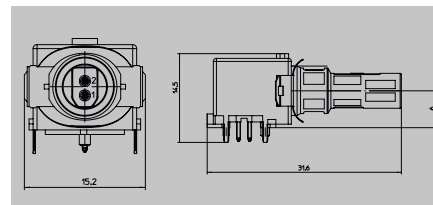
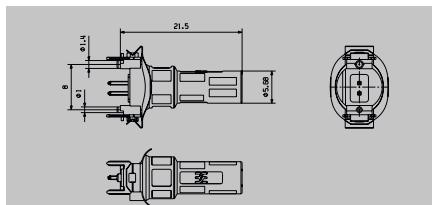
Type	Qty.	Order No.
IE-BHD-SPE-FP-CN-M10X0.75	10	2739640000

**Note**

PCB insert

M8 insert 180° pin contacts

M8 insert 90° pin contacts



Technical data

Category
Ambient temperature (operational)
Protection degree
Pollution severity
Connection thread
Number of poles
Type of connection
Outgoing elbow
Contact material
Contact surface
Contact carrier material
Operational voltage range
Insulation strength
Dielectric strength, contact / contact
Dielectric strength, contact / shield
Connector standard
UL 94 flammability rating

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

THR
SMD

Note

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

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

Accessories

Type	Qty.	Order No.

Type	Qty.	Order No.

Note

**M12 D-coded**

**M12 plug,  
Tension-clamp connection,  
D-coded**



**SAISM / SAIBM**

Straight



**SAISW / SAIBW**

angled



**Ordering data**

<b>Male</b>	4-pole, PG 9
<b>Female</b>	4-pole, PG 9
<b>Note</b>	

Type	Qty.	Order No.
SAISM-4/8S-M12 4P D-ZF	1	<b>1892120001</b>
SAIBM-4/8S-M12 4P D-ZF	1	<b>1892130001</b>

Type	Qty.	Order No.
SAISW-4/8S-M12 4P D-ZF	1	<b>1803930001</b>
SAIBW-4/8S-M12 4P D-ZF	1	<b>1139330000</b>

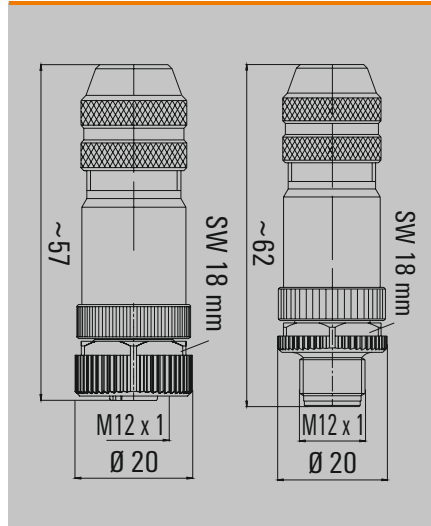
**Technical data**

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 mm <sup>2</sup> / 0.5 mm <sup>2</sup>
Rated current	4
Rated voltage	250
Temperature range of housing	-40 ... +85 °C
Protection degree	IP67
Contact surface	Gold-plated
<b>Note</b>	

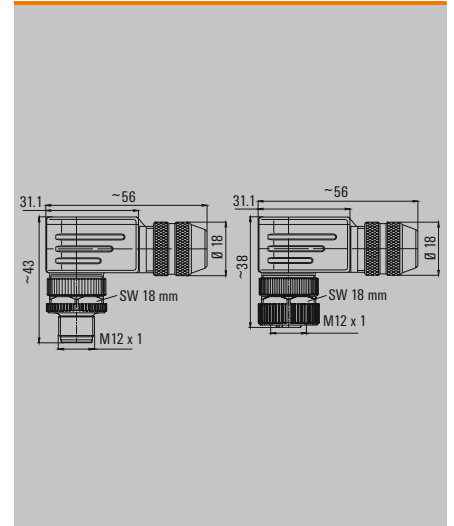
Type of connection	Tension-clamp connection
Housing main material	CuZn
Ambient temperature (operational)	-40 °C...
Connector standard	IEC 61076-2-101
Connection thread	M12
Cable diameter	6...8 mm (PG9)
Conductor cross-section min. / max.	0.25 mm <sup>2</sup> / 0.5 mm <sup>2</sup>
Rated current	4
Rated voltage	250
Temperature range of housing	-40 ... +85 °C
Protection degree	IP67
Contact surface	Gold-plated
<b>Note</b>	

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 mm <sup>2</sup> / 0.5 mm <sup>2</sup>
Rated current	4
Rated voltage	250
Temperature range of housing	-40 ... +85 °C
Protection degree	IP67
Contact surface	Gold-plated
<b>Note</b>	

**Dimensioned drawing**



**Dimensioned drawing**



**M12 plug,  
Screw connection,  
D-coded**



**SAISM / SAIBM**

Straight



**Ordering data**

<b>Male</b>	4-pole, PG 9
<b>Female</b>	4-pole, PG 9
<b>Note</b>	

Type	Qty.	Order No.
SAISM-4/8S-M12-4P D-COD	1	1892120000
SAIBM-4/8S-M12-4P D-COD	1	1892130000

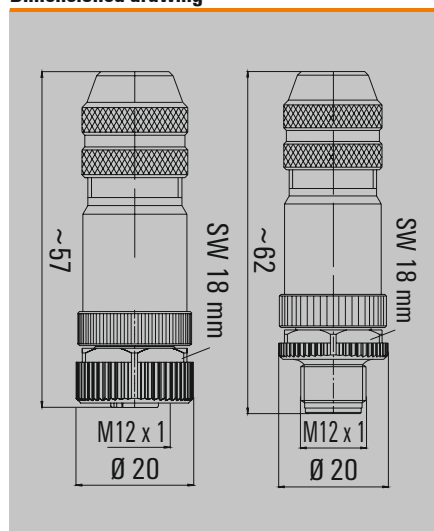
**Technical data**

Type of connection  
Housing main material  
Ambient temperature (operational)  
Connector standard  
Connection thread  
Cable diameter  
Conductor cross-section min. / max.  
Rated current  
Rated voltage  
Temperature range of housing  
Protection degree  
Contact surface

Screw connection  
CuZn  
-40 °C...85 °C  
IEC 61076-2-101  
M12  
6...8 mm (PG9)  
0.25 mm<sup>2</sup> / 0.75 mm<sup>2</sup>  
4  
250  
-40 ... +85 °C  
IP67  
Gold-plated

**Note**

**Dimensioned drawing**



**M12 D-coded**

**PUSH IN M12  
with shield connection  
D coded**



**SAISP / SAIBP**

Straight



**SAISWP / SAIBWP**

Angled



**Ordering data**

<b>Male</b>	D-coded, 4-pole
<b>Female</b>	D-coded, 4-pole
<b>Note</b>	

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		

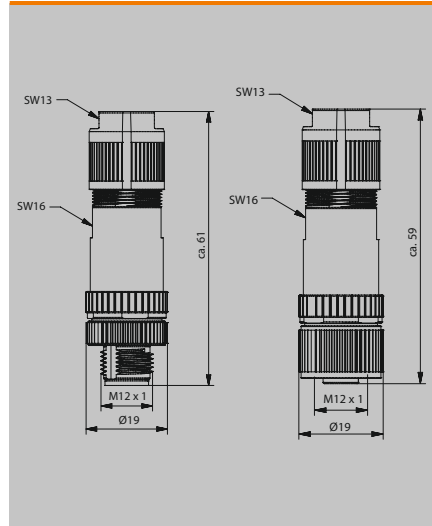
**Technical data**

Type of connection	PUSH IN
Housing main material	PA 66
Connection thread	M12
Cable diameter	4..8 mm
Conductor cross-section min. / max.	0.14...0.75 mm <sup>2</sup>
Rated current	4 A
Rated voltage	250 V
Temperature range of housing	-40 ... +85 °C
Protection degree	IP67
Contact surface	Ni/Au
<b>Note</b>	

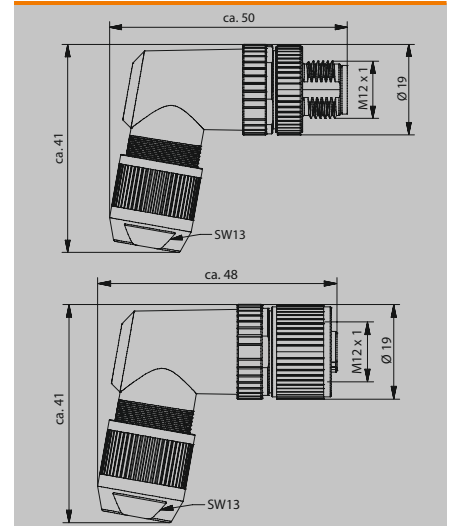
Type of connection	PUSH IN
Housing main material	PA 66
Connection thread	M12
Cable diameter	4..8 mm
Conductor cross-section min. / max.	0.14...0.75 mm <sup>2</sup>
Rated current	4 A
Rated voltage	250 V
Temperature range of housing	-40 ... +85 °C
Protection degree	IP67
Contact surface	Ni/Au
<b>Note</b>	

Type of connection	PUSH IN
Housing main material	PA 66
Connection thread	M12
Cable diameter	4..8 mm
Conductor cross-section min. / max.	0.14...0.75 mm <sup>2</sup>
Rated current	4 A
Rated voltage	250 V
Temperature range of housing	-40 ... +85 °C
Protection degree	IP67
Contact surface	Ni/Au
<b>Note</b>	

**Dimensioned drawing**



**Dimensioned drawing**



**Crimp connection M12  
with shield connection  
D-coded**



**SAISC / SAIBC**

straight



**SAISC / SAIBC**

Panel feed-through



**Ordering data**

<b>Male</b>	4-pole
<b>Female</b>	4-pole
<b>Note</b>	

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

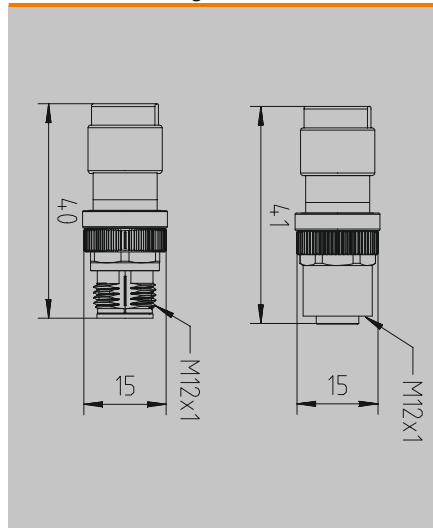
**Technical data**

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 mm <sup>2</sup>
Rated current	4 A
Rated voltage	50 V
Temperature range of housing	-40 ... +85 °C
Protection degree	IP67
Contact surface	Gold-plated
<b>Note</b>	

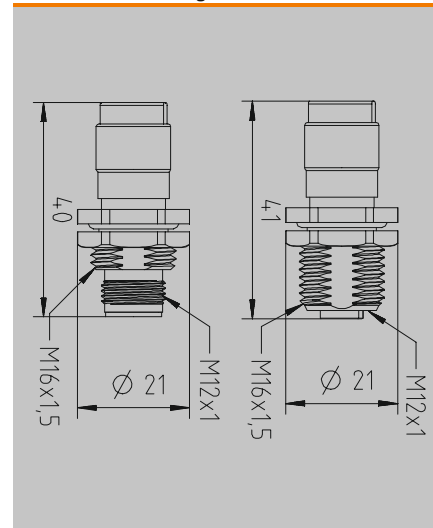
Type of connection	Crimp connection
Housing main material	CuZn
Connection thread	M12
Cable diameter	4...9 mm
Conductor cross-section min. / max.	0.08...0.75 mm <sup>2</sup>
Rated current	4 A
Rated voltage	50 V
Temperature range of housing	-40 ... +85 °C
Protection degree	IP67
Contact surface	Gold-plated
<b>Note</b>	

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 mm <sup>2</sup>
Rated current	4 A
Rated voltage	50 V
Temperature range of housing	-40 ... +85 °C
Protection degree	IP67
Contact surface	Gold-plated
<b>Note</b>	

**Dimensioned drawing**



**Dimensioned drawing**



**M12 D-coded**

**Crimp connection M12 with shield connection D-coded**



**SAISC / SAIBC**

angled



**Ordering data**

<b>Male</b>	4-pole
<b>Female</b>	4-pole
<b>Note</b>	

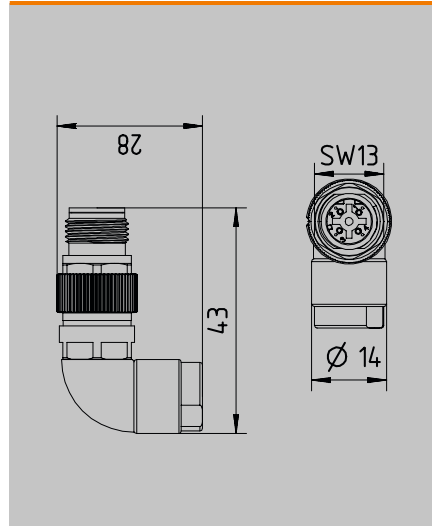
Type	Qty.	Order No.
SAISWC-D-18/28-4/9CG	1	2702690000
SAIBWC-D-18/28-4/9CG	1	2702700000

**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 mm <sup>2</sup>
Rated current	4 A
Rated voltage	50 V
Temperature range of housing	-40 ... +85 °C
Protection degree	IP67
Contact surface	Gold-plated
<b>Note</b>	

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 mm <sup>2</sup>
Rated current	4 A
Rated voltage	50 V
Temperature range of housing	-40 ... +85 °C
Protection degree	IP67
Contact surface	Gold-plated
<b>Note</b>	

**Dimensioned drawing**





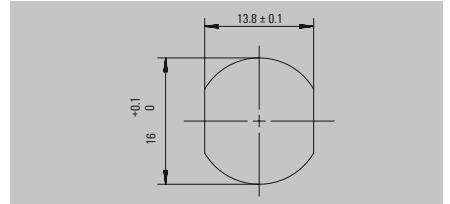
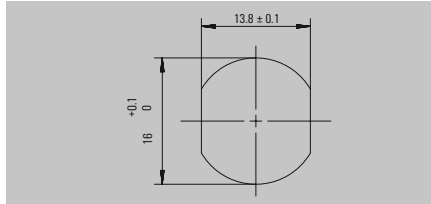
**M12 D-coded**

**Adapter / coupling M12**

- Cat. 5
  - IP67
  - D-coding

**Adapter M12-RJ45, female**

**Adapter M12-RJ45, male**



**Technical data**

Category	
Protection degree	
Housing main material	
Shielding	
Ambient temperature (operational)	
Connector standard	
Approvals	
<b>Note</b>	

Cat.5 (ISO/IEC 11801)
IP67
PA 66
Yes
-25 °C...80 °C
IEC 60603-7-5, IEC 61076-2-101
CULUS

Cat.5 (ISO/IEC 11801)
IP67
PA 66
Yes
-25 °C...80 °C
IEC 60603-7-5, IEC 61076-2-101
CULUS

**Ordering data**

<b>Adaptor</b>	
	straight
	angled
<b>Coupling</b>	
<b>Note</b>	

Type	Qty.	Order No.
IE-M12-ADAP S	1	8901620000
IE-M12-ADAP A	1	8901630000

Type	Qty.	Order No.
IE-AD-M12DRJ45-MF-180	1	1514970000
IE-AD-M12DRJ45-MF-90	1	1514940000

**Accessories**

Type	Qty.	Order No.

Type	Qty.	Order No.

Type	Qty.	Order No.

<b>Note</b>
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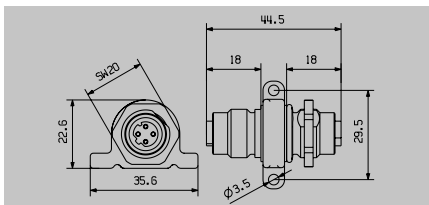
<b>Note</b>
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<b>Note</b>
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**Adapter / coupling M12**

- Cat. 5
  - IP67
  - D-coding

**Coupling M12-M12**



**Technical data**

Category
Protection degree
Housing main material
Shielding
Ambient temperature (operational)
Connector standard
Approvals
<b>Note</b>

Cat.5 (ISO/IEC 11801)
IP67
Polyamide, Brass, nickel-plated
360° shield contact
-5 °C...60 °C
IEC 61076-2-101
EAC
<b>Note</b>

**Ordering data**

<b>Adaptor</b>	straight
	angled
<b>Coupling</b>	
<b>Note</b>	

Type	Qty.	Order No.
IE-M12-COUP	1	8901640000
<b>Note</b>		

**Accessories**

<b>Type</b>
<b>Qty.</b>
<b>Order No.</b>

<b>Type</b>
<b>Qty.</b>
<b>Order No.</b>

<b>Note</b>
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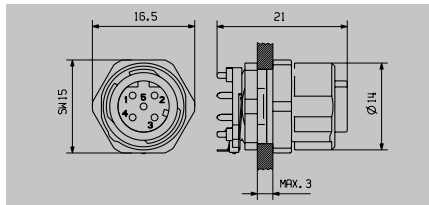
<b>Note</b>
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**M12 D-coded**

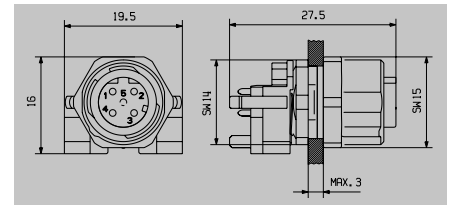
**M12 PCB connection element**

- Cat. 5
- For installation into the end device
- D-coded

**Standard assembly**



**Additional fastening mechanism**



**Technical data**

Category
Protection degree
Configuration
Housing main material
Shielding
Ambient temperature (operational)
Connector standard
Approvals

Cat.5 (ISO/IEC 11801)
IP65 in acc. with DIN EN 60529
Reflow compatible
CuZn, Polyamide, nickel-plated
360° shield contact
-25...85 °C
IEC 61076-2-101
EAC

Cat.5 (ISO/IEC 11801)
IP65 in acc. with DIN EN 60529
Reflow compatible
CuZn, Polyamide, nickel-plated
360° shield contact
-25...85 °C
IEC 61076-2-101
EAC

**Note**

**Ordering data**

Connection element
straight
angled

Type	Qty.	Order No.
IE-M12-PCBCE	60	8902810000

Type	Qty.	Order No.
IE-M12-PCBCE-PANEL	10	8902820000
IE-M12-PCBCE-PANEL-A	10	1393470000

**Note**

**Accessories**

Type	Qty.	Order No.

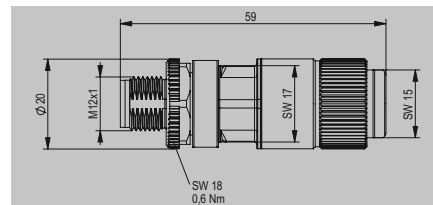
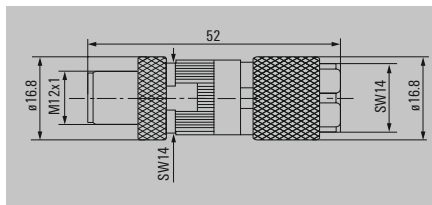
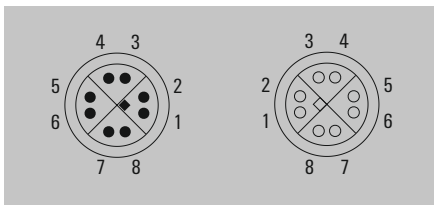
Type	Qty.	Order No.

**Note**

**M12 plug**  
M12 X-type Cat. 6<sub>A</sub>

**Plug, AWG 26-22**

**Plug, AWG 27-22**



**Technical data**

Category	Cat.6 <sub>A</sub> / Class E <sub>A</sub> (ISO/IEC 11801 2010)
Protection degree	IP67
Connection 1 / 2	M12 / Insulation displacement technology
Housing main material	Zinc diecast
Connection thread	M12
Contact material / Contact surface	Brass / Gold-plated
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	
Wall thickness, min. / max.	
Shielding	360° all-round enclosure
Connection diameter, flexible, min. / max.	0.48 mm / 0.76 mm
Connection cross-section, flexible, min. / max.	AWG 26/7 / AWG 22/7
Connection diameter, solid, min. / max.	0.41 mm / 0.64 mm
Connection cross-section, solid, min. / max.	AWG 26/1 / AWG 22/1
Insulation cross-section, max.	1.6 mm
Sheath diameter min. / max.	5 mm / 9.7 mm
Approvals	CULUS
<b>Note</b>	

Category	Cat.6 <sub>A</sub> / Class E <sub>A</sub> (ISO/IEC 11801 2010)
Protection degree	IP67
Connection 1 / 2	M12 / Insulation displacement technology
Housing main material	Zinc diecast
Connection thread	M12
Contact material / Contact surface	Brass, tinned / Gold-plated
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	50 V
Insulation strength	100 MΩ
Plugging cycles	≥ 100
Configuration	
Wall thickness, min. / max.	
Shielding	360° all-round enclosure
Connection diameter, flexible, min. / max.	0.46 mm / 0.76 mm
Connection cross-section, flexible, min. / max.	AWG 27/7 / AWG 22/7
Connection diameter, solid, min. / max.	0.51 mm / 0.64 mm
Connection cross-section, solid, min. / max.	AWG 24/1 / AWG 22/1
Insulation cross-section, max.	1.6 mm
Sheath diameter min. / max.	5.5 mm / 9 mm
Approvals	CULUS
<b>Note</b>	

Category	Cat.6 <sub>A</sub> / Class E <sub>A</sub> (ISO/IEC 11801 2010)
Protection degree	IP67
Connection 1 / 2	M12 / Insulation displacement technology
Housing main material	Zinc diecast
Connection thread	M12
Contact material / Contact surface	Brass, tinned / Gold-plated
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	50 V
Insulation strength	100 MΩ
Plugging cycles	≥ 100
Configuration	
Wall thickness, min. / max.	
Shielding	360° all-round enclosure
Connection diameter, flexible, min. / max.	0.46 mm / 0.76 mm
Connection cross-section, flexible, min. / max.	AWG 27/7 / AWG 22/7
Connection diameter, solid, min. / max.	0.51 mm / 0.64 mm
Connection cross-section, solid, min. / max.	AWG 24/1 / AWG 22/1
Insulation cross-section, max.	1.6 mm
Sheath diameter min. / max.	5.5 mm / 9 mm
Approvals	CULUS
<b>Note</b>	

**Ordering data**

	Plugs
<b>Note</b>	

Type	Qty.	Order No.
IE-PS-M12X-P-FH	10	1324020000

Type	Qty.	Order No.
IE-PS-M12X-P-AWG22/27FH	1	2007500000

**Accessories**

Type	Qty.	Order No.

Type	Qty.	Order No.

Type	Qty.	Order No.

<b>Note</b>
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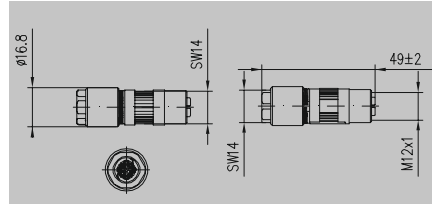
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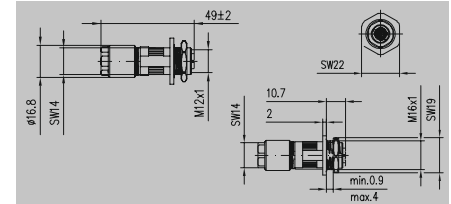
## M12 X-Type

### M12 plug / flange M12 X-type Cat. 6<sub>A</sub>

#### Plug, female



#### Flange



#### Technical data

Category	Cat.6 <sub>A</sub> / Class E <sub>A</sub> (ISO/IEC 11801 2010)
Protection degree	IP67
Connection 1 / 2	M12 / Insulation displacement technology
Housing main material	Zinc diecast
Connection thread	M12
Contact material / Contact surface	Brass / Gold-plated
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	
Wall thickness, min. / max.	
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	CULUS
Note	

Category	Cat.6 <sub>A</sub> / Class E <sub>A</sub> (ISO/IEC 11801 2010)
Protection degree	IP67
Connection 1 / 2	M12 / Insulation displacement technology
Housing main material	Zinc diecast
Connection thread	M12
Contact material / Contact surface	Brass / Gold-plated
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	
Wall thickness, min. / max.	
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	CULUS
Note	

Category	Cat.6 <sub>A</sub> / Class E <sub>A</sub> (ISO/IEC 11801 2010)
Protection degree	IP67
Connection 1 / 2	M12 / Insulation displacement technology
Housing main material	Zinc diecast
Connection thread	M12
Contact material / Contact surface	CuZn / Gold-plated
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	
Wall thickness, min. / max.	0.9 mm / 4 mm
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	CULUS
Note	

#### Ordering data

Type	Plugs
Type	IE-PS-M12X-S-FH
Qty.	1
Order No.	1516330000
Note	

Type	Plugs
Type	IE-PS-M12X-S-FH
Qty.	1
Order No.	1516330000
Note	

Type	Flange
Type	IE-BS-M12X-S-FH
Qty.	1
Order No.	1516340000
Note	

#### Accessories

Tools	
Tool set	
Tool set with torque function	
Cable gland tool, M 12	
Cable gland tool with torque function, M 12	

Type	Qty.	Order No.
SCREWTY SET	1	1910000000
SCREWTY SET-DM	1	1920000000
SCREWTY-M12 F	1	1900020000
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	
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Note	
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Note	
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**Crimp connection M12 with shield connection X-Type**



**SAISC / SAIBC**

angled



**SAISC / SAIBC**

straight



**Ordering data**

<b>Male</b>	8-pole
<b>Female</b>	8-pole
<b>Note</b>	

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

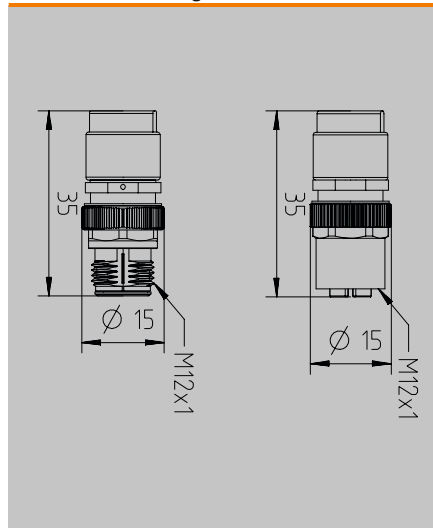
**Technical data**

Type of connection	Crimp connection
Housing main material	CuZn
Connection thread	M12
Cable diameter	4...9 mm
Conductor cross-section min. / max.	0.14...0.34 mm <sup>2</sup>
Rated current	4 A
Rated voltage	50 V
Temperature range of housing	-40 ... +85 °C
Protection degree	IP67
Contact surface	Gold-plated
<b>Note</b>	

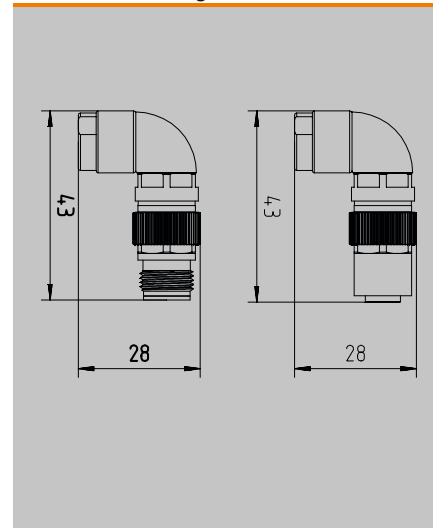
Type of connection	Crimp connection
Housing main material	Cu alloy Ni plated
Connection thread	M12
Cable diameter	4...9 mm
Conductor cross-section min. / max.	0.14...0.34 mm <sup>2</sup>
Rated current	2 A
Rated voltage	30 V
Temperature range of housing	-40 ... +85 °C
Protection degree	IP67
Contact surface	Gold-plated
<b>Note</b>	

Type of connection	Crimp connection
Housing main material	Cu alloy Ni plated
Connection thread	M12
Cable diameter	4...9 mm
Conductor cross-section min. / max.	0.14...0.34 mm <sup>2</sup>
Rated current	2 A
Rated voltage	30 V
Temperature range of housing	-40 ... +85 °C
Protection degree	IP67
Contact surface	Gold-plated
<b>Note</b>	

**Dimensioned drawing**



**Dimensioned drawing**



## M12 X-Type

### Crimp connection M12 with shield connection X-Type

#### SAISC / SAIBC

Panel feed-through, straight



#### SAISC / SAIBC

Panel feed-through, angled



#### Ordering data

<b>Male</b>	8-pole, Back panel mounting
<b>Female</b>	8-pole, Back panel mounting
<b>Note</b>	

Type	Qty.	Order No.
IE-BS-M12X-180-P-TH	1	2747880000
IE-BS-M12X-180-S-TH		2747900000

Type	Qty.	Order No.
IE-BS-M12X-90-P-TH	1	2747910000
IE-BS-M12X-90-S-TH		2747920000

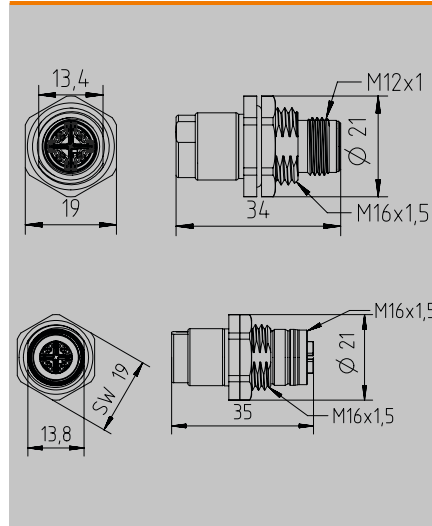
#### Technical data

Type of connection	Crimp connection
Housing main material	CuZn
Connection thread	M12
Cable diameter	4...9 mm
Conductor cross-section min. / max.	0.14...0.34 mm <sup>2</sup>
Rated current	4 A
Rated voltage	50 V
Temperature range of housing	-40 ... +85 °C
Protection degree	IP67
Contact surface	Gold-plated
<b>Note</b>	

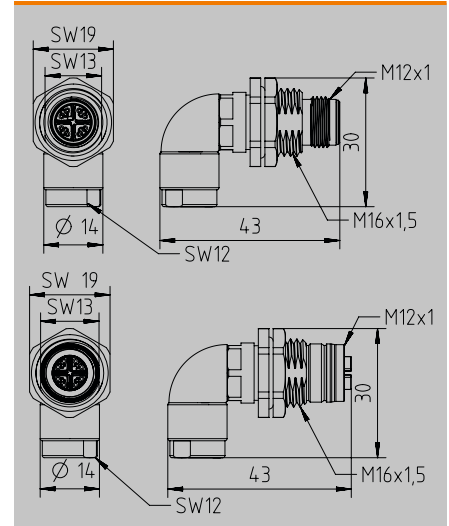
Type of connection	Crimp connection
Housing main material	CuZn
Connection thread	M12
Cable diameter	4...9 mm
Conductor cross-section min. / max.	0.14...0.34 mm <sup>2</sup>
Rated current	4 A
Rated voltage	50 V
Temperature range of housing	-40 ... +85 °C
Protection degree	IP67
Contact surface	Gold-plated
<b>Note</b>	

Type of connection	Crimp connection
Housing main material	CuZn
Connection thread	M12
Cable diameter	4...9 mm
Conductor cross-section min. / max.	0.14...0.34 mm <sup>2</sup>
Rated current	4 A
Rated voltage	50 V
Temperature range of housing	-40 ... +85 °C
Protection degree	IP67
Contact surface	Gold-plated
<b>Note</b>	

#### Dimensioned drawing



#### Dimensioned drawing



## Crimp contact M12 X-Type



## SAI - KSC / KBC



### Ordering data

<b>Male</b>	AWG 22-26
<b>Female</b>	AWG 22-26
<b>Note</b>	

Type	Qty.	Order No.
IE-PIC-M12X-P-22/26	100	<b>2664880000</b>
IE-PIC-M12X-S-22/26	100	<b>2673440000</b>
<b>Note</b>		

### Technical data

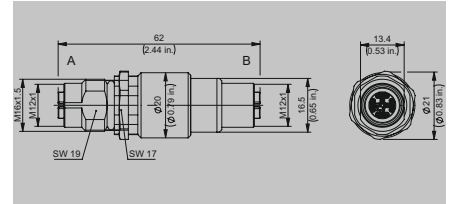
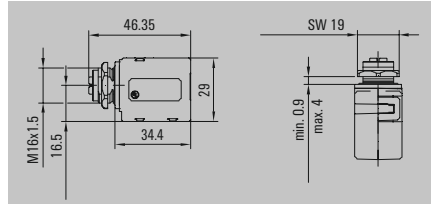
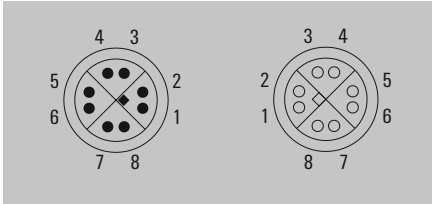
Type of connection	
Housing main material	
Connection thread	
Cable diameter	
Conductor cross-section min. / max.	0.34...0.14 mm <sup>2</sup>
Rated current	1 A
Rated voltage	
Temperature range of housing	
Protection degree	
Contact material	Copper alloy, Gold-plated
<b>Note</b>	

## M12 X-Type

### Adapter / Coupling M12 M12 X-type Cat. 6<sub>A</sub>

### Adapter M12 X-Type-RJ45

### Coupling M12 X-Type



#### Technical data

Category  
Protection degree  
Connection 1 / 2  
Housing main material  
Connection thread  
Contact material / Contact surface  
Ambient temperature (operational)  
Connector standard  
Current-carrying capacity at 50 °C  
Rated voltage  
Insulation strength  
Plugging cycles  
Configuration  
Wall thickness, min. / max.  
Shielding  
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

#### Note

Cat.6<sub>A</sub> / Class E<sub>A</sub> (ISO/IEC 11801 2010)  
IP67  
RJ45 / M12  
Zinc diecast  
M12  
Copper alloy / Gold-plated  
-25 °C...85 °C  
IEC 61076-2-109, IEC 60603-7-51

50 V  
100 MΩ  
≥ 100 (M12), 750 (RJ45)  
M12 socket to RJ45 socket  
0.9 mm / 3 mm  
360° shield contact

#### CULUS

Cat.6<sub>A</sub> / Class E<sub>A</sub> (ISO/IEC 11801 2010)  
IP67 plugged  
M12 / M12  
Brass, Copper-tin-zinc alloy  
M12 / M12  
CuSn / Au (Gold), ≥ 100 MΩ  
-40 °C...85 °C  
IEC 61076-2-109  
0.5 A @ 40 °C

≥ 100  
M12 socket to M12 socket  
/ 4.5 mm  
360° shield contact

#### Ordering data

Adapter 90°  
Adapter 180°  
Coupling

#### Note

Type	Qty.	Order No.
IE-AD-M12XRJ45-90	10	1400610000
IE-AD-M12XRJ45-180	1	1400620000

Type	Qty.	Order No.
IE-BS-M12X-S-C	1	2731010000

#### Accessories

Type	Qty.	Order No.
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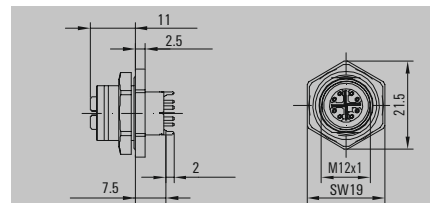
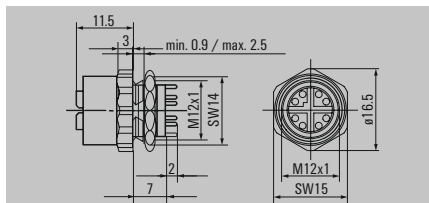
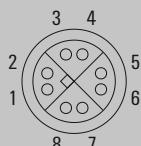
Type	Qty.	Order No.
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#### Note

PCB socket  
M12 X-type Cat. 6<sub>A</sub>

PCB socket

PCB socket, back panel mounting



Technical data

Category	Cat.6 <sub>A</sub> / Class E <sub>A</sub> (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.	0.9 mm / 2.5 mm
Shielding	360° all-round enclosure
Approvals	CULUS
Note	

Category	Cat.6 <sub>A</sub> / Class E <sub>A</sub> (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, Back panel mounting
Wall thickness, min. / max.	0.9 mm / 2.5 mm
Shielding	360° all-round enclosure
Approvals	CULUS
Note	

Category	Cat.6 <sub>A</sub> / Class E <sub>A</sub> (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, Back panel mounting
Wall thickness, min. / max.	0.9 mm / 2.5 mm
Shielding	360° all-round enclosure
Approvals	CULUS
Note	

Ordering data

	pre-assembled
	2-part version
Note	

Type	Qty.	Order No.
IE-PCB-M12X-S-180	10	1324010000
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

Accessories

Type	Qty.	Order No.

Type	Qty.	Order No.

Type	Qty.	Order No.

Note	
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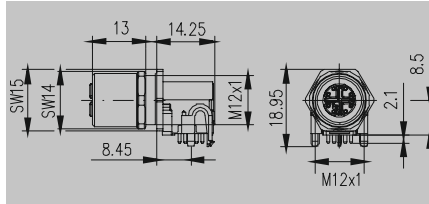
Note	
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Note	
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**M12 X-Type**

**PCB socket  
M12 X-type Cat. 6<sub>A</sub>**

**PCB socket, angled**



**Technical data**

Category
Protection degree
Connection 1 / 2
Housing main material
Connection thread
Contact material / Contact surface
Ambient temperature (operational)
Connector standard
Current-carrying capacity at 50 °C
Rated voltage
Insulation strength
Plugging cycles
Configuration
Wall thickness, min. / max.
Shielding
Approvals

Cat.6 <sub>A</sub> / Class E <sub>A</sub> (ISO/IEC 11801 2010)
IP67, when screwed in
M12 / Solder connection
CuZn
M12
CuZn / Gold over nickel
-40 °C...85 °C
IEC 61076-2-109
0.5 A @ 40 °C
48 V
100 MΩ
≥ 100
Reflow compatible
1 mm / 2.5 mm
360° all-round enclosure
CULUS

**Note**

**Ordering data**

pre-assembled  
2-part version

Type	Qty.	Order No.
IE-PCB-M12X-S-90	10	2168220000

**Note**

**Accessories**

Type	Qty.	Order No.
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**Note**

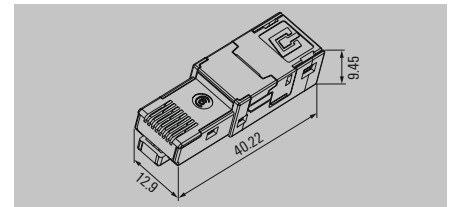
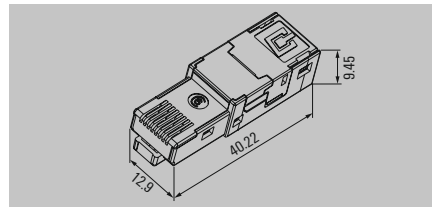
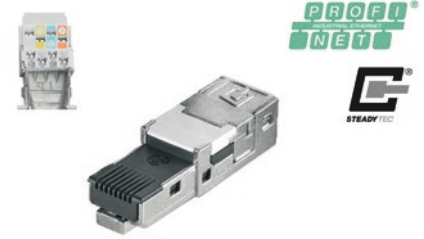
**RJ45 plug inserts, tool free**

- Cat. 6<sub>A</sub>
- IP 20
- For housing variants 1, 4, 5 and 14

**8-wire**



**4-wire**



**Technical data**

Category	
Protection degree	
Plugging cycles	
Shielding	
Housing main material	
Contact material	
Contact surface	
Connection cross-section, flexible, min. / max.	
Connection diameter, flexible, min. / max.	
Connection cross-section, solid, min. / max.	
Connection diameter, solid, min. / max.	
Wire connection cross-section, finely stranded	
Insulation diameter, min. / max.	
Humidity	
Ambient temperature (operational)	
Insulation strength	
Contact resistance	
Dielectric strength, contact / contact	
Dielectric strength, contact / shield	
Current-carrying capacity at 50 °C	
PoE / PoE+	
Speed	
Connector standard	
Approvals	
<b>Note</b>	

Cat.6 <sub>A</sub> / Class E <sub>A</sub> (ISO/IEC 11801 2010)
IP67 with housing
750
360° all-round enclosure
Zinc diecast
Gold over nickel, Au ≥ 0.8 µm
AWG 26 / AWG 22
0.48 mm / 0.76 mm
AWG 24 / AWG 22
0.4 mm / 0.64 mm
Approval of the cable by Weidmüller necessary
0.85 mm...1.6 mm
-40 °C...70 °C
500 MΩ
≤ 20 mΩ
≥ 1000 V DC
≥ 1500 V DC
1 A
conforming to IEEE 802.3at
10 GBit/s
IEC 60603-7-51
CULUS; CURUS
Approvals available on request

Cat.5 (ISO/IEC 11801)
IP67 with housing
750
360° all-round enclosure
Zinc diecast
Gold over nickel, Au ≥ 0.8 µm
AWG 26 / AWG 22
0.48 mm / 0.76 mm
AWG 24 / AWG 22
0.4 mm / 0.64 mm
Approval of the cable by Weidmüller necessary
0.85 mm...1.6 mm
-40 °C...70 °C
500 MΩ
≤ 20 mΩ
≥ 1000 V DC
≥ 1500 V DC
1 A
conforming to IEEE 802.3at
100 MBit/s
IEC 60603-7-51
CULUS; CURUS

**Ordering data**

<b>tool-free</b>	
	TIA-A/B/PROFINET
	TIA-A
	TIA-B
	PROFINET
<b>Note</b>	

Type	Qty.	Order No.
IE-PI-RJ45-FH	10	1962730000
IE-PI-RJ45-FH-A	10	1132010000
IE-PI-RJ45-FH-B	10	1132020000

Type	Qty.	Order No.
IE-PI-RJ45-FH-P	10	1132030000

**Accessories**

<b>Tools</b>	
	Optional pressing tool

Type	Qty.	Order No.
PWZ RJ45	1	1118040000

Type	Qty.	Order No.
PWZ RJ45	1	1118040000

<b>Note</b>	
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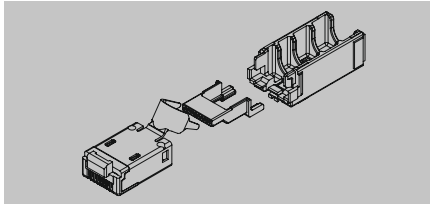
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**Inserts**

**RJ45 plug inserts, crimp**

- Cat. 6<sub>A</sub>
- IP 20
- For housing variants 1, 4, 5 and 14

**8-wire**



**Technical data**

Category
Protection degree
Plugging cycles
Shielding
Housing main material
Contact material
Contact surface
Connection cross-section, flexible, min. / max.
Connection diameter, flexible, min. / max.
Connection cross-section, solid, min. / max.
Connection diameter, solid, min. / max.
Insulation diameter, min. / max.
Humidity
Ambient temperature (operational)
Insulation strength
Contact resistance
Dielectric strength, contact / contact
Dielectric strength, contact / shield
Current-carrying capacity at 50 °C
PoE / PoE+
Speed
Connector standard
Approvals

Cat.6 <sub>A</sub> / Class E <sub>A</sub> (ISO/IEC 11801 2010)
IP67 with housing
750
360° all-round enclosure
Brass, PC UL 94 V0
Phosphorus bronze
Gold over nickel, Au ≥ 0.8 µm, Ni 2.54 µm
AWG 27/7 / AWG 24/7
0.46 mm / 0.61 mm
AWG 26/1 / AWG 24/1
0.4 mm / 0.51 mm
0.85 mm...1.05 mm
0...93 % rel. humidity
-40 °C...70 °C
500 MΩ
≤ 20 mΩ
≥ 1000 V DC
≥ 1500 V DC
1 A
conforming to IEEE 802.3af
IEC 60603-7-51
CURUS

**Note**

**Ordering data**

<b>Crimp</b>
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Type	Qty.	Order No.
IE-PI-RJ45-TH	10	1962720000

**Note**

**Accessories**

<b>Tools</b>	Pressing tool
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Type	Qty.	Order No.
TT 8 RS MP 8	1	9202800000

**Note**

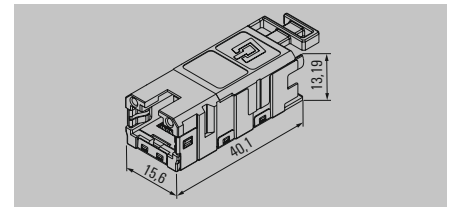
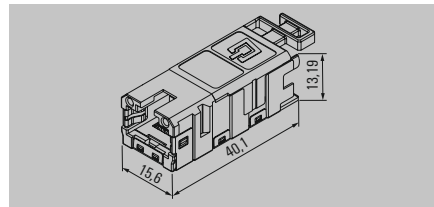
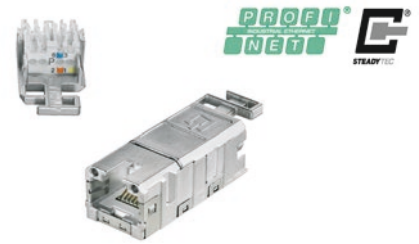
**RJ45 flange inserts, module**

- Completely in Cat. 6<sub>A</sub>
- IP20
- For housing variants 1, 4, 5, 14 and for FrontCom®

**8-wire**



**4-wire**



**Technical data**

Category	Cat.6 <sub>A</sub> / Class E <sub>A</sub> (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.	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
Ambient temperature (operational)	-40 °C...70 °C
PoE / PoE+	conforming to IEEE 802.3af
Approvals	CULUS
<b>Note</b>	Connection of WM Cat. 7 AWG 27/7 LSZH possible

Category	Cat.5 (ISO/IEC 11801)
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.	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
Ambient temperature (operational)	-40 °C...70 °C
PoE / PoE+	conforming to IEEE 802.3af
Approvals	CULUS; DNVGL

Category	Cat.5 (ISO/IEC 11801)
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.	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
Ambient temperature (operational)	-40 °C...70 °C
PoE / PoE+	conforming to IEEE 802.3af
Approvals	CULUS; DNVGL

**Ordering data**

<b>tool-free</b>	
	TIA-A. Cat. 6 <sub>A</sub>
	TIA-B. Cat. 6 <sub>A</sub>
	PROFINET Cat. 5
<b>Note</b>	

Type	Qty.	Order No.
IE-BI-RJ45-FJ-A	10	1962850000
IE-BI-RJ45-FJ-B	10	1963840000

Type	Qty.	Order No.
IE-BI-RJ45-FJ-P	10	1963830000

**Accessories**

<b>Tools</b>	
	Optional pressing tool

Type	Qty.	Order No.
PWZ RJ45	1	1118040000

Type	Qty.	Order No.
PWZ RJ45	1	1118040000

<b>Note</b>	
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<b>Note</b>	
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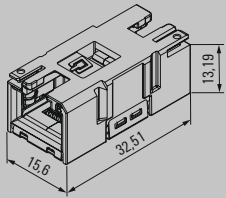
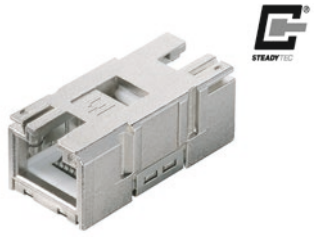
<b>Note</b>	
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**Inserts**

**RJ45 flange inserts, coupling**

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

**8-wire**



**Technical data**

Category  
 Protection degree  
 Plugging cycles  
 Shielding  
 Housing main material  
 Contact surface  
 Connection cross-section, flexible, min. / max.  
 Connection cross-section, solid, min. / max.  
 Insulation diameter, min. / max.  
 Connector standard  
 Ambient temperature (operational)  
 PoE / PoE+  
 Approvals

Cat.6<sub>A</sub> / Class E<sub>A</sub> (ISO/IEC 11801 2010)  
 IP67 with housing  
 750  
 360° all-round enclosure  
 Zinc diecast  
 Gold over nickel, Au ≥ 0.8 μm

**Note**

**Ordering data**

tool-free  
 Coupling

**Note**

Type	Qty.	Order No.
IE-BI-RJ45-C	10	1962840000

**Accessories**

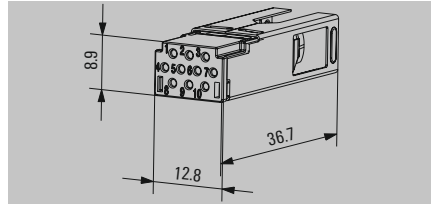
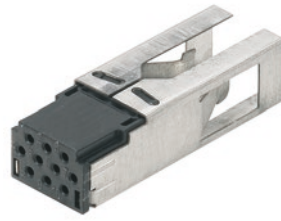
Type	Qty.	Order No.

**Note**

**Plug inserts Hybrid**

- Cat. 5
- IP 20
- For housing variants 1 (metal) and 14

**Crimp**



**Technical data**

Category
Protection degree
Plugging cycles
Shielding
Housing main material
Contact surface
Number of poles
Connection cross-section, flexible, min. / max.
Connection diameter, flexible, min. / max.
Insulation diameter, min. / max.
Ambient temperature (operational)
Volume resistance
Rated current
Rated voltage
Contact resistance
Approvals

Cat.5 (ISO/IEC 11801)
IP67 with housing
500
360° all-round enclosure
Nickel silver, PA 66
Gold over nickel
10
AWG 27 / AWG 20
0.08 mm <sup>2</sup> / 0.75 mm <sup>2</sup>
1 mm...2.2 mm
-40 °C...70 °C
<10 mΩ
3 A per contact
24 V
≤ 5 mΩ
CULUS

**Note**

**Ordering data**

**Note**

**Accessories**

<b>Crimping contact</b>
0.08...0.2 mm <sup>2</sup>
0.2...0.5 mm <sup>2</sup>
0.75 mm <sup>2</sup>
<b>Tools</b>
Pressing tool

Type	Qty.	Order No.
IE-PI-HYB-10P	10	1068990000
Contacts should be ordered separately		

Type	Qty.	Order No.
IE-PIC-HYB-S-0,2-300	300	1135150000
IE-PIC-HYB-S-0,5-300	300	1096180000
IE-PIC-HYB-S-0,75-300	300	1068950000
<b>HTF HYB</b>	1	1119580000

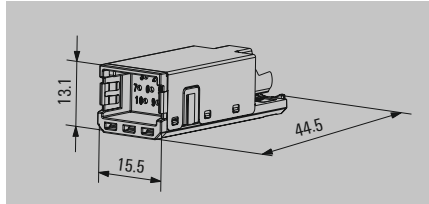
**Note**

**Inserts**

**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 mm <sup>2</sup> / 0.75 mm <sup>2</sup>
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

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 mm <sup>2</sup> / 0.75 mm <sup>2</sup>
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**

**Note**

Type	Qty.	Order No.
IE-BI-HYB-10P	10	1069010000
Contacts should be ordered separately		

**Accessories**

Crimping contact	
	0.08...0.2 mm <sup>2</sup>
	0.2...0.5 mm <sup>2</sup>
	0.75 mm <sup>2</sup>
Tools	
	Pressing tool

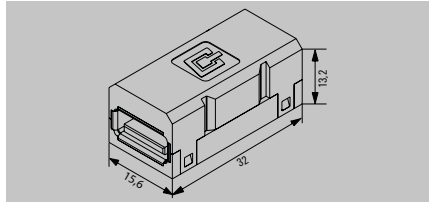
Type	Qty.	Order No.
IE-BIC-HYB-P-0,2-300	300	1135160000
IE-BIC-HYB-P-0,5-300	300	1096150000
IE-BIC-HYB-P-0,75-300	300	1068970000
HTF HYB	1	1119580000

**Note**

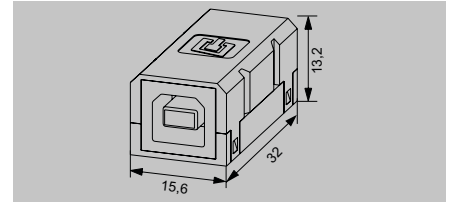
**Flange inserts USB**

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

**Coupling USB A/A**



**Coupling USB A/B**



**Technical data**

Protection degree  
Shielding  
Ambient temperature (operational)  
Connection 1 / 2  
Connector standard  
Approvals

**Note**

IP67 with housing  
360° all-round enclosure  
-40 °C...70 °C  
USB A / USB A  
IEC 61076-3-107  
CULUS; DNVGL

IP67 with housing  
360° all-round enclosure  
-40 °C...70 °C  
USB A / USB B  
IEC 61076-3-107  
CULUS; DNVGL

**Ordering data**

	USB 2.0
	USB 3.0

**Note**

Type	Qty.	Order No.
IE-BI-USB-A	10	1019570000
IE-BI-USB-3.0-A	10	1487920000

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

**Accessories**

USB cable 2.0	
	0.5 m
	1.0 m
	1.5 m
	1.8 m
	3.0 m
USB cable 3.0	
	0.5 m
	1.8 m
	3.0 m
	5.0 m

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

Type	Qty.	Order No.

**Note**

**Inserts**

**Plug inserts SC**

- IP 20
- For variant 1, 4 and 14 housings

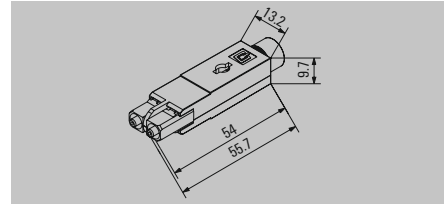
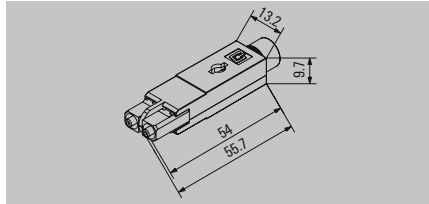
**Plug insert SC, POF**

only for V14



**Connector insert SC, POF, reconnectable**

only for V14



**Technical data**

Protection degree  
Housing main material  
Plugging cycles  
Ambient temperature (operational)  
Connector standard  
Approvals

**Note**

IP67 with housing  
Zinc diecast, PA  
1000  
-40 °C...70 °C  
IEC 61754-24  
UL

IP67 with housing  
PA 66  
≥ 500  
-40 °C...70 °C  
IEC 61754-24

**Ordering data**

POF

**Note**

Type	Qty.	Order No.
IE-PI-SCRJ-POF	10	1067410000

Type	Qty.	Order No.
IE-PI-SCRJ-POF-QA	10	2564960000

**Accessories**

**Tools**

Tool set POF, crimp  
Mounting tool, POF  
MULTI-STRIPAX IE-POF  
Cevlar scissors

**Replacement ferrule**

Type	Qty.	Order No.
TOOL SET IE-POF	1	1208930000
HTX-IE-POF	1	1208870000
MULTI-STRIPAX IE-POF	1	1208880000
SCISSORS KEVLAR	1	1208910000
IE-SCRJ-IP67-POF-100	100	1278430000

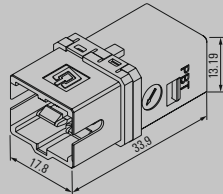
Type	Qty.	Order No.
HTX-IE-POF-QA	1	2602860000
MULTI-STRIPAX IE-POF	1	1208880000
SCISSORS KEVLAR	1	1208910000

**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  
 Housing main material  
 Plugging cycles  
 Ambient temperature (operational)  
 Approvals

IP67 with housing  
 PA  
 1000  
 -40 °C...70 °C

**Note**

**Ordering data**

Flange insert
Singlemode
Multimode/POF

Type	Qty.	Order No.
IE-BI-SCRJ2SC-SM-C	10	1962870000
IE-BI-SCRJ2SC-MM-C	1	1964430000

**Note**

**Accessories**

Type	Qty.	Order No.
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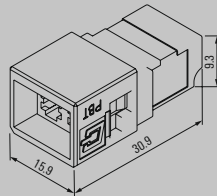
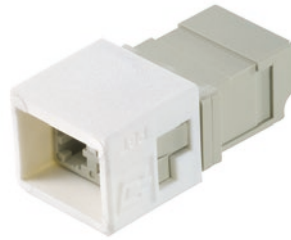
**Note**

**Inserts**

**Flange inserts LC**

- IP 20
- For variant 1, 4 and 14 housings

**Flange inserts LC**



**Technical data**

Protection degree  
 Housing main material  
 Plugging cycles  
 Ambient temperature (operational)  
 Connector standard  
 Approvals

IP67 with housing  
 PBT diecast zinc  
 1000  
 -40 °C...70 °C  
 IEC 61754-20

**Note**

**Ordering data**

Flange insert	
	Singlemode
	Multimode

Type	Qty.	Order No.
IE-BH-LCD-SM-C	10	1962880000
IE-BH-LCD-MM-C	10	1964420000

**Note**

**Accessories**

Tools	
	Crimping pliers GOF LC

Type	Qty.	Order No.
IE-CT-LC-GOF	1	9205330000

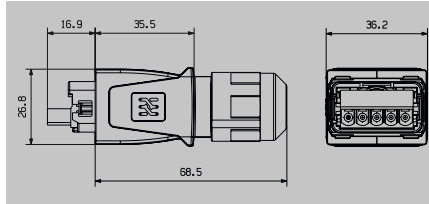
**Note**



**PushPull Power**

**Plug PushPull Power**

**Plug Power 24 V**



**Technical data**

**General data**

Protection degree  
 Connector standard  
 Ambient temperature (operational)  
 Number of poles  
 Wire connection cross-section, flexible, min./max.  
 Sheath diameter, min. / max.  
 Connection  
 Approvals

IP65, IP67  
 in accordance with PROFINET specification  
 -40 °C...70 °C  
 5  
 0.75 mm<sup>2</sup> / 2.5 mm<sup>2</sup>  
 6 mm / 13 mm  
 Tension clamp  
 UR

**Material properties**

Housing base material  
 Sealing material  
 Cable sealing material  
 Contact material / Contact surface  
 UL 94 flammability rating  
 Pollution severity level  
 Plugging cycles

Zinc diecast, nickel-plated  
 NBR  
 EPDM  
 Copper alloy / Gold over nickel  
 V-2  
 2  
 ≥ 100

**Electrical properties\***

Current-carrying capacity at 50 °C  
 Rated voltage

16 A  
 24 V

**Note**

**Ordering data - Sets**

**Note**

Type	Qty.	Order No.
IE-PS-VAPM-5P-2.5	1	2465440000

We recommend using 10-mm-long wire-end ferrules

**Ordering data - Empty housings**

**Note**

Type	Qty.	Order No.

**Accessories**

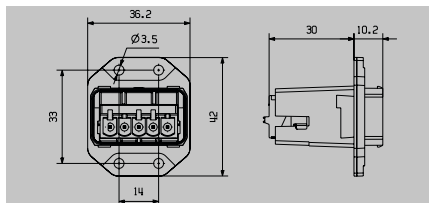
Sealing insert 6-8 mm

Type	Qty.	Order No.
IE-REDU-6-8-PS-VAPM	10	2531330000

**Note**

Flanges PushPull Power

Flange Power 24 V



Technical data

General data

Protection degree  
 Connector standard  
 Ambient temperature (operational)  
 Number of poles  
 Connection diameter, flexible, min. / max.  
 Connection 1  
 Approvals  
 Installation

IP67  
 in accordance with PROFINET specification  
 -40 °C...70 °C  
 5  
 0.75 mm<sup>2</sup> / 2.5 mm<sup>2</sup>  
 Tension clamp  
 UR  
 4 screws

Material properties

Housing base material  
 Sealing material  
 Cable sealing material  
 Contact carrier material  
 Contact material / Contact surface  
 UL 94 flammability rating  
 Pollution severity level  
 Plugging cycles

Zinc diecast, nickel-plated  
 NBR  
 EPDM  
 PA  
 Copper alloy / Gold over nickel  
 V-2  
 2  
 ≥ 100

Electrical properties\*

Current-carrying capacity at 50 °C  
 Rated voltage

16 A  
 24 V

Note

Ordering data - Sets

Type	Qty.	Order No.
IE-BSS-VAPM-24V	1	2493480000

Type	Qty.	Order No.
IE-BSS-VAPM-24V	1	2493480000

Note

We recommend using 10-mm-long wire-end ferrules

Ordering data - Empty housings

Type	Qty.	Order No.
IE-BHD-VAPM	1	2493490000

Type	Qty.	Order No.
IE-BHD-VAPM	1	2493490000

Note

Accessories

Dust protection cap

IP54 protective cap  
 Dust cap

Type Qty. Order No.

IE-BP-VAPP	10	1068930000
IE-BP-VAPP-DC	10	2494060000

Note



# IP65 connection components / FreeCon connecting components

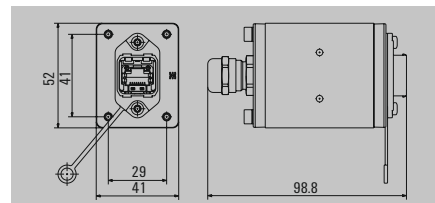
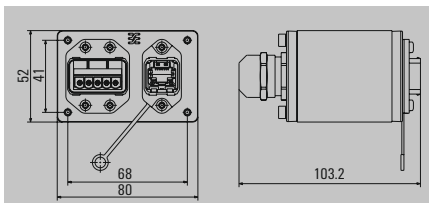
## Overview

<b>IP65 connection components / FreeCon connecting components</b>	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
Protection degree	IP65
Ambient temperature (operational)	-40 °C...70 °C
Connector standard	IEC 61076-3-117 Var. 14, IEC 60603-7-5
Approvals	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 mm <sup>2</sup> / 2.5 mm <sup>2</sup>
Connection	Tension clamp
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
Plugging cycles (RJ45 module)	750
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	

General data		
Housing main material	Aluminium profile, Cover: die-cast zinc, nickel plated	
Protection degree	IP65	
Ambient temperature (operational)	-40 °C...70 °C	
Connector standard	IEC 61076-3-117 Var. 14, IEC 60603-7-5	
Approvals	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 mm <sup>2</sup> / 2.5 mm <sup>2</sup>	
Connection	Tension clamp	
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	
Plugging cycles (RJ45 module)	750	
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		

General data		
Housing main material	Aluminium profile, Cover: die-cast zinc, nickel plated	
Protection degree	IP65	
Ambient temperature (operational)	-40 °C...70 °C	
Connector standard	IEC 61076-3-117 Var. 14, IEC 60603-7-5	
Approvals	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 mm <sup>2</sup> / 2.5 mm <sup>2</sup>	
Connection	Tension clamp	
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	
Plugging cycles (RJ45 module)	750	
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		

Ordering data

Type	Qty.	Order No.
IE-CD-V14MRJ/VAPM24V-FJ	1	1068830000

Type	Qty.	Order No.
IE-CD-V14MRJ/VAPM24V-FJ	1	1068830000

Type	Qty.	Order No.
IE-CD-V14MRJ-FJ	1	1068880000

Accessories

Mounting foot	
IE-CD-MA	10 1099580000
IE-BP-V14P	10 1058310000
IE-BP-VAPP	10 1068930000

Mounting foot	
IE-CD-MA	10 1099580000
IE-BP-V14P	10 1058310000
IE-BP-VAPP	10 1068930000

Mounting foot	
IE-CD-MA	10 1099580000
IE-BP-V14P	10 1058310000

Note

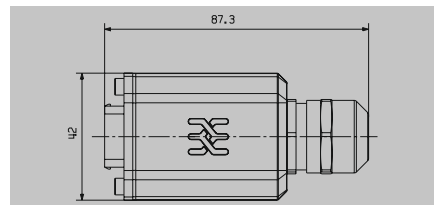
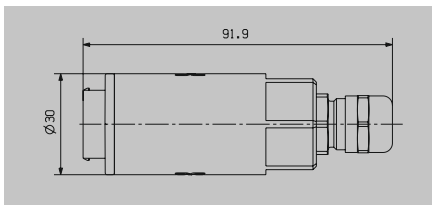
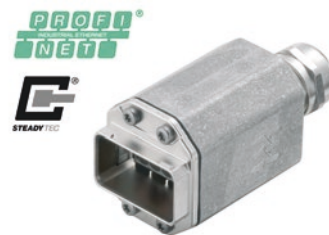
Note

Note

FreeCon V14 - single junction box

RJ45 cable coupling

PushPull Power cable coupling



Technical data

General data	
Housing main material	diecast aluminium
Protection degree	IP65
Ambient temperature (operational)	-40 °C...70 °C
Connector standard	IEC 61076-3-117 Var. 14, IEC 60603-7-5
Approvals	CULUS
Technical specifications power connector	
Housing base material	
Sealing material	
Contact material	
Contact carrier material	
Contact surface	
Plugging cycles	
Number of poles	
Sheath diameter, min. / max.	
Wire connection cross section, stranded, min. / max.	
Connection	
Electrical properties power connector	
Current-carrying capacity at 50 °C	
Rated voltage	
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	

General data	
Housing main material	diecast aluminium
Protection degree	IP65
Ambient temperature (operational)	-40 °C...70 °C
Connector standard	in accordance with PROFINET specification
Approvals	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 mm <sup>2</sup> / 2.5 mm <sup>2</sup>
Connection	Tension clamp
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	

General data	
Housing main material	diecast aluminium
Protection degree	IP65
Ambient temperature (operational)	-40 °C...70 °C
Connector standard	in accordance with PROFINET specification
Approvals	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 mm <sup>2</sup> / 2.5 mm <sup>2</sup>
Connection	Tension clamp
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-V14M-RJ45-FJ-P	1	1990600000

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		

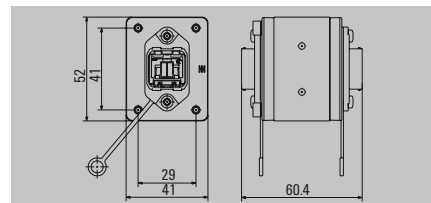
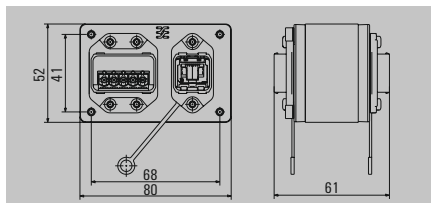
Type	Qty.	Order No.
IE-CC-V14M-EH	1	2583100000

Type	Qty.	Order No.

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
Protection degree	IP65
Ambient temperature (operational)	-40 °C...70 °C
Connector standard	IEC 61076-3-117 Var. 14, IEC 60603-7-5
Approvals	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
Electrical properties RJ45 coupling	
Category	Cat.6 <sub>A</sub> / Class E <sub>A</sub> (ISO/IEC 11801 2010)
Contact resistance	≤ 20 mΩ
Contact surface	Gold over nickel
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
Note	

General data		
Housing main material	Aluminium profile, Cover: die-cast zinc, nickel plated	
Protection degree	IP65	
Ambient temperature (operational)	-40 °C...70 °C	
Connector standard	IEC 61076-3-117 Var. 14, IEC 60603-7-5	
Approvals	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	
Electrical properties RJ45 coupling		
Category	Cat.6 <sub>A</sub> / Class E <sub>A</sub> (ISO/IEC 11801 2010)	
Contact resistance	≤ 20 mΩ	
Contact surface	Gold over nickel	
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	
Note		

General data		
Housing main material	Aluminium profile, Cover: die-cast zinc, nickel plated	
Protection degree	IP65	
Ambient temperature (operational)	-40 °C...70 °C	
Connector standard	IEC 61076-3-117 Var. 14, IEC 60603-7-5	
Approvals	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	
Electrical properties RJ45 coupling		
Category	Cat.6 <sub>A</sub> / Class E <sub>A</sub> (ISO/IEC 11801 2010)	
Contact resistance	≤ 20 mΩ	
Contact surface	Gold over nickel	
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	
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/VAPM24V-C-MA	1	1068820000
Note		
Including mounting foot		

Type	Qty.	Order No.
IE-CD-V14MRJ-C-MA	1	1068870000
Note		
Including mounting foot		

Accessories

Dust protection cap	
IE-BP-V14P	Protective cap
IE-BP-VAPP	IP54 protective cap

Type	Qty.	Order No.
IE-BP-V14P	10	1058310000
IE-BP-VAPP	10	1068930000

Type	Qty.	Order No.
IE-BP-V14P	10	1058310000

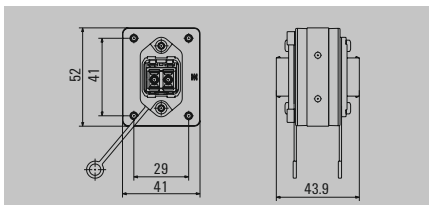
Note	
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Note		
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Note		
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FreeCon V14 single coupling

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	

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

Note	

Type	Qty.	Order No.
IE-CD-V14MSCRJ-MM-C-MA	1	1318150000

Accessories

Dust protection cap	
Protective cap	

Type	Qty.	Order No.
IE-BP-V14P	10	1058310000

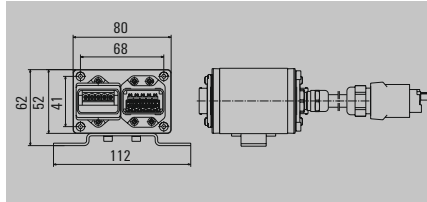
Note	

Note		

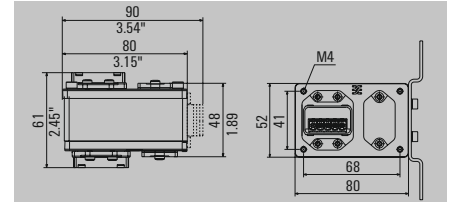
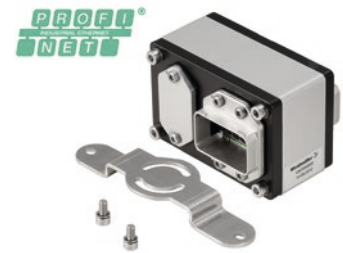
## FreeCon Passive V14

### FreeCon V14 - Power

#### Y-distributor, Power



#### Single coupling, Power



#### Technical data

##### General data

Housing main material  
Protection degree  
Ambient temperature (operational)  
Connector standard  
Approvals

##### Technical specifications power connector

Housing base material  
Sealing material  
Cable sealing material  
Contact material  
Contact carrier material  
Contact surface  
UL 94 flammability rating  
Plugging cycles  
Pollution severity level

##### Electrical properties power connector

Current-carrying capacity at 50 °C  
Rated voltage  
Number of poles

##### Note

Aluminium profile, Cover: die-cast zinc, nickel plated  
IP65  
-40...70 °C  
in accordance with PROFINET specification  
CULUS

Zinc diecast, nickel-plated  
NBR  
TPE  
Copper alloy  
PA  
Gold over nickel

V-0  
≥ 100  
2

16 A @ 20 °C  
24 V  
5

Aluminium profile, Cover: die-cast zinc, nickel plated  
IP65, If thread-locking fluid is used  
-40...70 °C  
in accordance with PROFINET specification  
CULUS

Zinc diecast, nickel-plated  
NBR  
TPE  
Copper alloy  
PA  
Gold over nickel

V-0  
≥ 100  
2

16 A @ 20 °C  
24 V  
5

#### Ordering data

##### Note

Type	Qty.	Order No.
IE-CD-VAPM24V-Y-MA	1	1297010000

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

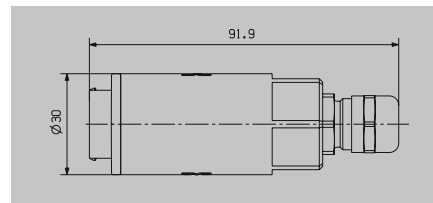
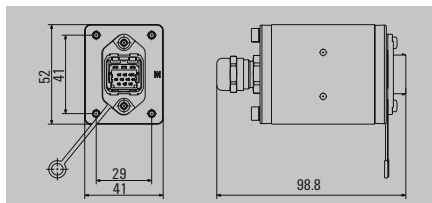
Type	Qty.	Order No.
IE-BP-VAPP	10	1068930000

##### 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
Protection degree	IP65
Ambient temperature (operational)	-40 °C...70 °C
Approvals	CULUS
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
Pole count	10
Connection cross-section, flexible, min. / max.	AWG 27 / AWG 20
Connection cross-section, flexible, min. / max.	0.08 mm <sup>2</sup> / 0.75 mm <sup>2</sup>
Electrical properties hybrid connector	
Rated current (hybrid connector)	3 A per contact
Rated voltage (DIN EN 61984)	24 V
Contact resistance	≤ 10 mΩ
Note	

General data		
Housing main material	diecast aluminium	
Protection degree	IP65	
Ambient temperature (operational)	-40 °C...70 °C	
Approvals	CULUS	
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	
Pole count	10	
Connection cross-section, flexible, min. / max.	AWG 27 / AWG 20	
Connection cross-section, flexible, min. / max.	0.08 mm <sup>2</sup> / 0.75 mm <sup>2</sup>	
Electrical properties hybrid connector		
Rated current (hybrid connector)	3 A per contact	
Rated voltage (DIN EN 61984)	24 V	
Contact resistance	≤ 10 mΩ	
Note		

General data		
Housing main material	diecast aluminium	
Protection degree	IP65	
Ambient temperature (operational)	-40 °C...70 °C	
Approvals	CULUS	
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	
Pole count	10	
Connection cross-section, flexible, min. / max.	AWG 27 / AWG 20	
Connection cross-section, flexible, min. / max.	0.08 mm <sup>2</sup> / 0.75 mm <sup>2</sup>	
Electrical properties hybrid connector		
Rated current (hybrid connector)	3 A per contact	
Rated voltage (DIN EN 61984)	24 V	
Contact resistance	≤ 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-CD-V14MHYB-10P-FJ	1	1068850000
Note		
Contacts should be ordered separately		

Type	Qty.	Order No.
IE-CC-V14M-HYB-10P-FJ	1	1990610000
Note		
Contacts should be ordered separately		

Accessories

Mounting foot	
Crimping contact	
	0.08...0.2 mm <sup>2</sup>
	0.2...0.5 mm <sup>2</sup>
	0.75 mm <sup>2</sup>
Tools	
	Pressing tool
Dust protection cap	
	Protective cap
Mounting frame	

Type	Qty.	Order No.
IE-CD-MA	10	1099580000
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

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

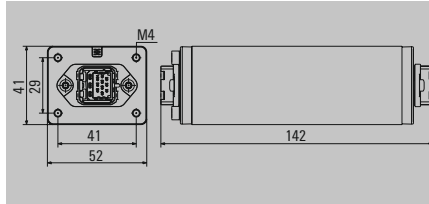
Note	
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Note		
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Note		
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FreeCon V14 single coupling

Single coupling, hybrid



Technical data

General data

Housing main material  
Protection degree  
Ambient temperature (operational)

Technical specifications hybrid connector

Housing base material  
Sealing material  
Contact material  
Contact surface  
Plugging cycles

Electrical properties hybrid connector

Rated current (hybrid connector)  
Rated voltage (DIN EN 61984)  
Contact resistance  
Pole count  
Approvals

Note

Aluminium profile, Cover: die-cast zinc, nickel plated  
IP65  
-40...70 °C

Zinc diecast (flange), PA 66  
NBR  
Copper alloy  
Gold over nickel  
500

3 A per contact  
24  
≤ 10 mΩ  
10  
CULUS

Ordering data

Note

Type	Qty.	Order No.
IE-CD-V14MHYB-10P-C-MA	1	1068840000

Accessories

Dust protection cap

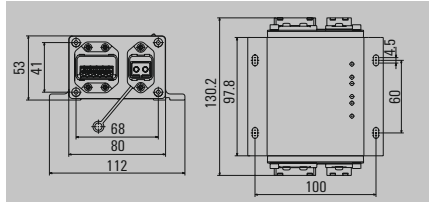
Protective cap

Type	Qty.	Order No.
IE-BP-V14P	10	1058310000

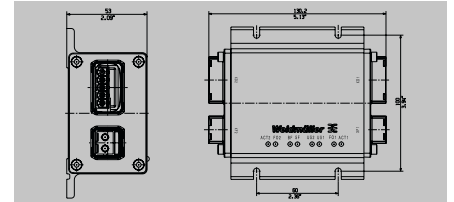
Note

**FreeCon Active PROFINET**  
with diagnostics functionality

**POF repeater**



**POF repeater II**



**Technical data**

**General data**

Housing main material  
Weight  
Data interface  
Power interface  
Protection degree  
Ambient temperature (operational)  
Network standard  
Connector standard

**Electrical data**

Operating voltage  
Operational voltage range  
Current consumption  
Baud rate  
Protocol  
LED indicator

Approvals

**Note**

Aluminium profile, Cover: die-cast zinc, nickel plated

PROFINET PushPull SCRJ POF (V14)  
PROFINET PushPull Power  
IP65  
-20 °C...55 °C  
IEC 61158, IEC 61784  
IEC 61076-3-117 Var. 14, IEC 61754-24

24 V DC  
18...30 V DC  
200 mA typical  
100 MB  
PROFINET IRT  
F01: port active, F02: port active, SF: general error, BF: bus error, US1: voltage 1 (electronics), US2: voltage 2

CE; CULUS

Aluminium profile, Zinc die cast, electroplated lid

PROFINET PushPull SCRJ POF (V14)  
PROFINET PushPull Power  
IP65  
-20 °C...55 °C  
IEC 61158, IEC 61784  
IEC 61076-3-117 Var. 14, IEC 61754-24

24 V DC  
18...30 V DC  
200 mA typical  
100 MB  
PROFINET IRT  
F01: port active, F02: port active, SF: general error, BF: bus error, US1: voltage 1 (electronics), US2: voltage 2, ACT1: activity Port1, ACT2: activity Port2

CE; CULUS

**Ordering data**

**Note**

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.
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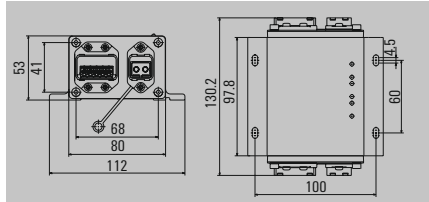
Type	Qty.	Order No.
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**Note**

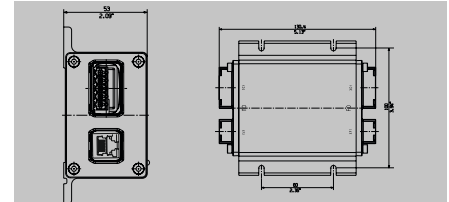
**FreeCon Active PROFINET**

**FreeCon Active PROFINET with diagnostics functionality**

**POF media converter**



**POF media converter II**



**Technical data**

**General data**

Housing main material  
Weight  
Data interface  
Power interface  
Protection degree  
Ambient temperature (operational)  
Network standard  
Connector standard

**Electrical data**

Operating voltage  
Operational voltage range  
Current consumption  
Baud rate  
Protocol  
LED indicator

Approvals

**Note**

**Ordering data**

**Note**

**Accessories**

**Note**

Aluminium profile, Cover: die-cast zinc, nickel plated

PROFINET PushPull SCRJ POF (V14), PROFINET PushPull RJ45 (V14)  
PROFINET PushPull Power  
IP65  
-20 °C...55 °C  
IEC 61158, IEC 61784  
IEC 61076-3-117 Var. 14, IEC 61754-24, IEC 60603-7-51

24 V DC  
18...30 V DC  
200 mA typical  
100 MB  
PROFINET IRT  
P1: port active, P2: port active, SF: general error, BF: bus error, US1: voltage 1 (electronics), US2: voltage 2

CE, CULUS

Type	Qty.	Order No.
IE-CDM-V14MRJSCP/VAPM-C	1	1324440000

Delivery incl. protective caps

Type	Qty.	Order No.

Aluminium profile, Zinc die cast, electroplated lid

PROFINET PushPull SCRJ POF (V14), PROFINET PushPull RJ45 (V14)  
PROFINET PushPull Power  
IP65  
-20 °C...55 °C  
IEC 61158, IEC 61784  
IEC 61076-3-117 Var. 14, IEC 61754-24, IEC 60603-7-51

24 V DC  
18...30 V DC  
200 mA typical  
100 MB  
PROFINET IRT  
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

CULUS

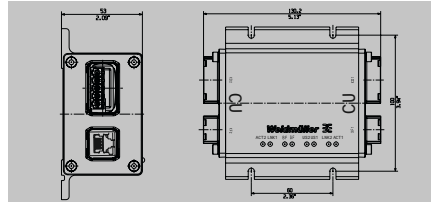
Further development of 1324440000, IE-CDM-V14MRJSCP/VAPM-C. For commissioning, the new GSDML file (see Downloads) must be installed.

Type	Qty.	Order No.
IE-CDM-V14MRJSCP/VAPM-C II	1	2588270000

Type	Qty.	Order No.

## FreeCon Active PROFINET with diagnostics functionality

### Copper repeater



### Technical data

#### General data

Housing main material
Weight
Data interface
Power interface
Protection degree
Ambient temperature (operational)
Network standard
Connector standard

Aluminium profile, Zinc die cast, electroplated lid

PROFINET PushPull RJ45 (V14)

PROFINET PushPull Power

IP65

-20 °C...55 °C

IEC 61158, IEC 61784

IEC 61076-3-117 Var. 14

#### Electrical data

Operating voltage
Operational voltage range
Current consumption
Baud rate
Protocol
LED indicator

24 V DC

18...30 V DC

100 mA

100 MBit/s

PROFINET IRT

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

CULUS

Approvals

#### Note

### Ordering data

#### Note

Type	Qty.	Order No.
IE-CDR-V14MRJ/VAPM-C	1	2581810000

Delivery incl. protective caps

### Accessories

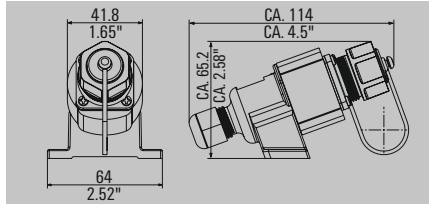
Type	Qty.	Order No.
------	------	-----------

#### Note

## V1 junction boxes

### V1 junction boxes - plastic

### Single junction box



#### Technical data

Protection degree
Housing main material
Plugging cycles
Ambient temperature (operational)
Connector standard
Sheath diameter min. / max.
Approvals
<b>Note</b>

IP67
PA UL 94 V0
750
-40 °C...70 °C
IEC 61076-3-106 Var. 1
6 mm / 9.5 mm
<b>Note</b>

#### Ordering data

<b>Variant 1</b>	Pre-assembled cable
<b>Note</b>	

Type	Qty.	Order No.
IE-OP-V01P-1S	10	<b>1061830000</b>
Order RJ45 modules separately		

#### Accessories

Inserts, Data
RJ45 module EIA/TIA T568 B
RJ45 module PROFINET
RJ45 module EIA/TIA T568 A

Type	Qty.	Order No.
IE-BI-RJ45-FJ-B	10	<b>1963840000</b>
IE-BI-RJ45-FJ-P	10	<b>1963830000</b>
IE-BI-RJ45-FJ-A	10	<b>1962850000</b>

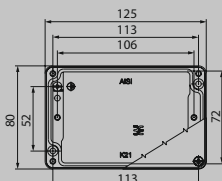
<b>Note</b>
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<b>Note</b>
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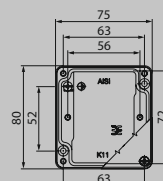
V1 junction boxes - metal

- IP 67
- For wall or floor mounting

Double junction box



Single junction box



Technical data

Protection degree	IP67
Housing main material	AL-Si 12
Colour	grey
Type of mounting	Floor-mounted, Wall mounting
Ambient temperature (operational)	-40 °C...70 °C
Plugging cycles	750
Connector standard	IEC 61076-3-106 Var. 1
Sheath diameter min. / max.	5 mm / 10 mm
Approvals	GOSTME25
Note	

Protection degree	IP67
Housing main material	AL-Si 12
Colour	grey
Type of mounting	Floor-mounted, Wall mounting
Ambient temperature (operational)	-40 °C...70 °C
Plugging cycles	750
Connector standard	IEC 61076-3-106 Var. 1
Sheath diameter min. / max.	5 mm / 10 mm
Approvals	GOSTME25
Note	

Protection degree	IP67
Housing main material	AL-Si 12
Colour	grey
Type of mounting	Floor-mounted, Wall mounting
Ambient temperature (operational)	-40 °C...70 °C
Plugging cycles	750
Connector standard	IEC 61076-3-106 Var. 1
Sheath diameter min. / max.	5 mm / 10 mm
Approvals	
Note	

Ordering data

Variant 1	
	2 ports. straight
	1 port. straight
Note	

Type	Qty.	Order No.
IE-OM-V01M-K21-2S	1	1966330000
RJ45 modules can be ordered separately		

Type	Qty.	Order No.
IE-OM-V01M-K11-1S	1	1966300000
RJ45 modules can be ordered separately		

Accessories

Inserts, Data	
	RJ45 module EIA/TIA T568 B
	RJ45 module PROFINET
	RJ45 module EIA/TIA T568 A

Type	Qty.	Order No.
IE-BI-RJ45-FJ-B	10	1963840000
IE-BI-RJ45-FJ-P	10	1963830000
IE-BI-RJ45-FJ-A	10	1962850000

Type	Qty.	Order No.
IE-BI-RJ45-FJ-B	10	1963840000
IE-BI-RJ45-FJ-P	10	1963830000
IE-BI-RJ45-FJ-A	10	1962850000

Note

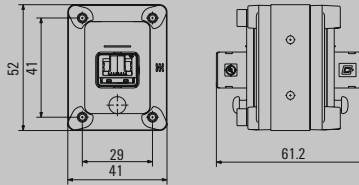
Note

Note

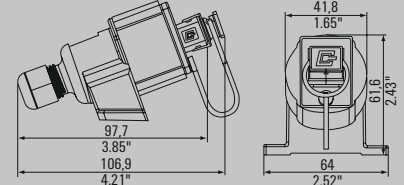
## V4 junction boxes

### FreeCon V4 junction boxes

### Single coupling, RJ45



### Single junction box



#### Technical data

##### General data

Plugging cycles  
 Housing main material  
 Contact surface  
 UL 94 flammability rating  
 Connector standard  
 Protection degree  
 Ambient temperature (operational)  
 Sheath diameter min. / max.  
 Approvals

##### Electrical properties for RJ45 module

Category  
 Contact resistance  
 Insulation resistance  
 Dielectric strength, contact - contact, min.  
 Dielectric strength, contact - shielding, max.  
 Current carrying capacity

##### Material properties RJ45 coupling

Housing base material

##### Note

750  
 Aluminium profile, Cover: die-cast zinc, nickel plated  
 Gold over nickel  
 IEC 61076-3-106 Var. 4, IEC 60603-7-5  
 IP65  
 -40 °C...70 °C

##### CULUS

Cat.6<sub>n</sub> / Class E<sub>x</sub> (ISO/IEC 11801 2010)  
 ≤ 20 mΩ  
 > 500 MΩ  
 ≥ 1000 V DC  
 ≥ 1500 V DC  
 1 A

Zinc diecast, PA 66

750  
 PA  
 Gold over nickel  
 V-0  
 IEC 61076-3-106 Var. 4  
 IP67  
 -40 °C...70 °C  
 6 mm / 9.5 mm

#### Ordering data

Pre-assembled cable  
 Coupling

##### Note

Type	Qty.	Order No.
IE-CD-V04PRJ-C-MA	1	1122710000

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

##### Dust protection cap

Flange-mounted housing protective cap

##### 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

Type	Qty.	Order No.
IE-BP-V04P	10	1963900000

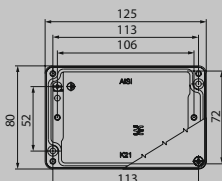
IE-BI-RJ45-FJ-P	10	1963830000
IE-BI-RJ45-FJ-A	10	1962850000
IE-BI-RJ45-FJ-B	10	1963840000

##### Note

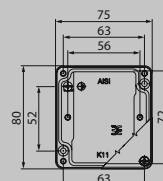
V4 junction boxes

- IP 67
- For wall or floor mounting

Double junction box



Single junction box



Technical data

Protection degree	IP67
Housing main material	AL-Si 12
Colour	grey
Type of mounting	Floor-mounted, Wall mounting
Ambient temperature (operational)	-40 °C...70 °C
Plugging cycles	750
Connector standard	IEC 61076-3-106 Var. 4
Sheath diameter min. / max.	5 mm / 10 mm
Approvals	GOSTME25
Note	

Protection degree	IP67
Housing main material	AL-Si 12
Colour	grey
Type of mounting	Floor-mounted, Wall mounting
Ambient temperature (operational)	-40 °C...70 °C
Plugging cycles	750
Connector standard	IEC 61076-3-106 Var. 4
Sheath diameter min. / max.	5 mm / 10 mm
Approvals	GOSTME25
Note	

Protection degree	IP67
Housing main material	AL-Si 12
Colour	grey
Type of mounting	Floor-mounted, Wall mounting
Ambient temperature (operational)	-40 °C...70 °C
Plugging cycles	750
Connector standard	IEC 61076-3-106 Var. 4
Sheath diameter min. / max.	5 mm / 10 mm
Approvals	
Note	

Ordering data

Variant 4	
	2 ports. straight
	1 port. straight
Note	

Type	Qty.	Order No.
IE-OM-V04P-K21-2S	1	1966250000
RJ45 modules can be ordered separately		

Type	Qty.	Order No.
IE-OM-V04P-K11-1S	1	1966220000
RJ45 modules can be ordered separately		

Accessories

Inserts, Data	
	RJ45 module EIA/TIA T568 B
	RJ45 module PROFINET
	RJ45 module EIA/TIA T568 A

Type	Qty.	Order No.
IE-BI-RJ45-FJ-B	10	1963840000
IE-BI-RJ45-FJ-P	10	1963830000
IE-BI-RJ45-FJ-A	10	1962850000

Type	Qty.	Order No.
IE-BI-RJ45-FJ-B	10	1963840000
IE-BI-RJ45-FJ-P	10	1963830000
IE-BI-RJ45-FJ-A	10	1962850000

Note

Note

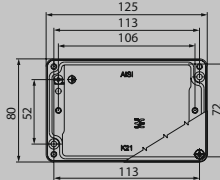
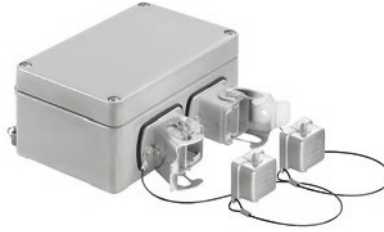
Note

## V5 junction boxes

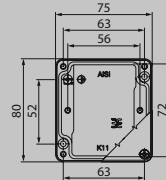
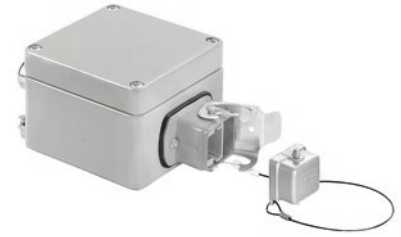
### V5 junction boxes

- IP 67
- For wall or floor mounting

### Double junction box



### Single junction box



### Technical data

Protection degree  
Housing main material  
Colour  
Type of mounting  
Ambient temperature (operational)  
Plugging cycles  
Connector standard  
Sheath diameter min. / max.  
Approvals

IP67  
AL-Si 12  
grey  
Floor-mounted, Wall mounting  
-40 °C...70 °C  
750  
IEC 61076-3-106 Var. 5  
5 mm / 10 mm  
GOSTME25

IP67  
AL-Si 12  
grey  
Floor-mounted, Wall mounting  
-40 °C...70 °C  
750  
IEC 61076-3-106 Var. 5  
5 mm / 10 mm

**Note**

### Ordering data

Variant 5	
	2 ports. straight
	1 port. straight

**Note**

Type	Qty.	Order No.
IE-OM-V05M-K21-2S	1	1966290000

RJ45 modules can be ordered separately

Type	Qty.	Order No.
IE-OM-V05M-K11-1S	1	1966260000

RJ45 modules can be ordered separately

### Accessories

Inserts, Data	
	RJ45 module EIA/TIA T568 B
	RJ45 module PROFINET
	RJ45 module EIA/TIA T568 A

Type	Qty.	Order No.
IE-BI-RJ45-FJ-B	10	1963840000
IE-BI-RJ45-FJ-P	10	1963830000
IE-BI-RJ45-FJ-A	10	1962850000

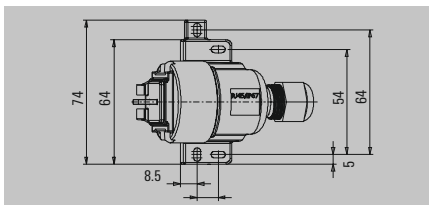
Type	Qty.	Order No.
IE-BI-RJ45-FJ-B	10	1963840000
IE-BI-RJ45-FJ-P	10	1963830000
IE-BI-RJ45-FJ-A	10	1962850000

**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
<b>Note</b>	

Ordering data

Type	Qty.	Order No.
IE-S-IP67	1	8808370000
<b>Note</b>		

Accessories

Type	Qty.	Order No.
TT 8 RS MP 8	1	9202800000

Tools Pressing tool

**Note**

**Note**



# Contactless Transmission Overview

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<b>Contactless Transmission</b>	Overview	P.2
	FreeCon Contactless Power	P.5

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# 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.

P



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.

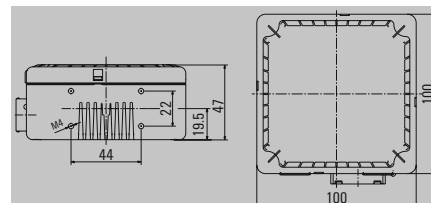
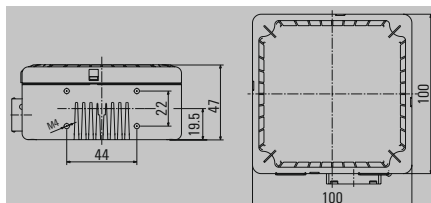
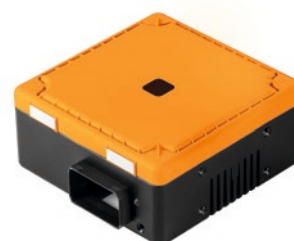
FreeCon Contactless

- Contactless power transmission via air gap

Primary side (base)

Secondary side (remote)

24 V / 10 A



Technical data

General data	
Housing main material	
Technologie, version	
Loads	
Turn-on time	
Coupling time	
Air gap	
Centre offset	
Power interface	
Protection degree	
Ambient temperature (operational)	
Weight	
Electrical data	
Primary voltage	
Secondary voltage	
Secondary current max.	
Degree of efficiency	
LED indicator	
Approvals	
Note	

Diecast zinc, painted, Cover PBT
Inductive resonance coupling
Inductive and resistive loads
1 s
0...5 mm
max. 5mm
PROFINET PushPull Power
IP65
-20...45 °C Consider derating
1020 g
24 V DC (21.6...26.4 V DC)
max. 91 %
Status indication via multi-coloured LED
CE

Diecast zinc, painted, Cover PBT
Inductive resonance coupling
Inductive and resistive loads
< 500 ms
0...5 mm
max. 5mm
PROFINET PushPull Power
IP65
-20...45 °C Consider derating
1020 g
24 V DC (19.2...28.8 V DC)
10 A
max. 91 %
Status indication via multi-coloured LED
CE

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	Qty.	Order No.
IE-PS-VAPM-5P-2.5	1	2465440000

Marking tags

Type	Qty.	Order No.
ESG 6/17 K MC NE WS	200	1880120000

Type	Qty.	Order No.
ESG 6/17 K MC NE WS	200	1880120000

Note

Note

Note

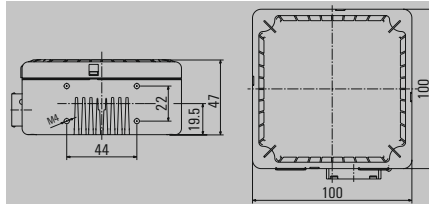
**FreeCon Contactless Power**

**FreeCon Contactless**

- Contactless power transmission via air gap

**Secondary side (remote)**

27 V / 5 A



**Technical data**

**General data**

Housing main material  
 Technologie, version  
 Loads  
 Turn-on time  
 Coupling time  
 Air gap  
 Centre offset  
 Power interface  
 Protection degree  
 Ambient temperature (operational)  
 Weight

Diecast zinc, painted, Cover PBT  
 Inductive resonance coupling  
 Inductive and resistive loads  
 < 500 ms  
 0...5 mm  
 max. 5mm  
 PROFINET PushPull Power  
 IP65  
 -20...45 °C Consider derating  
 1020 g

**Electrical data**

Primary voltage  
 Secondary voltage  
 Secondary current max.  
 Degree of efficiency  
 LED indicator  
 Approvals

26,5 V DC (+/- 5%) (necessary voltage for secondary voltage must be ensured)  
 27 V DC (±7 %)  
 5 A  
 max. 91 %  
 Status indication via multi-coloured LED

**Note**

**Ordering data**

**Note**

Type	Qty.	Order No.
IE-CL27V5A-PP-S	1	2623940000

**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

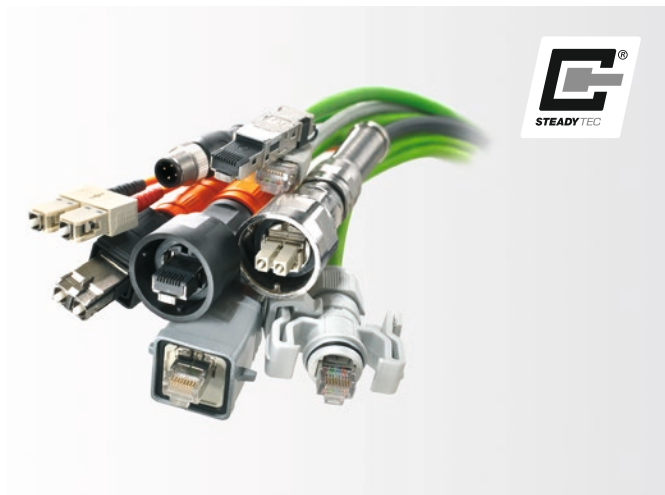
## Overview

<b>Copper cabling solutions</b>	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.20
	Assembled cables – PROFINET cable PushPull Power	Q.24
	Assembled cables – PROFINET cable M12	Q.26
	Assembled cables – EtherNet/IP	Q.34
	Assembled cables – PROFINET cable M8	Q.36
	Assembled cables – PROFINET cable M8, D-coded	Q.40
	Assembled cables – Railway cable M12	Q.45
	Assembled cables – Railway cable RJ45	Q.50
	Assembled cables – USB cable	Q.51
	Assembled cables – Single Pair Ethernet cable	Q.53

# 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<sub>A</sub>. 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

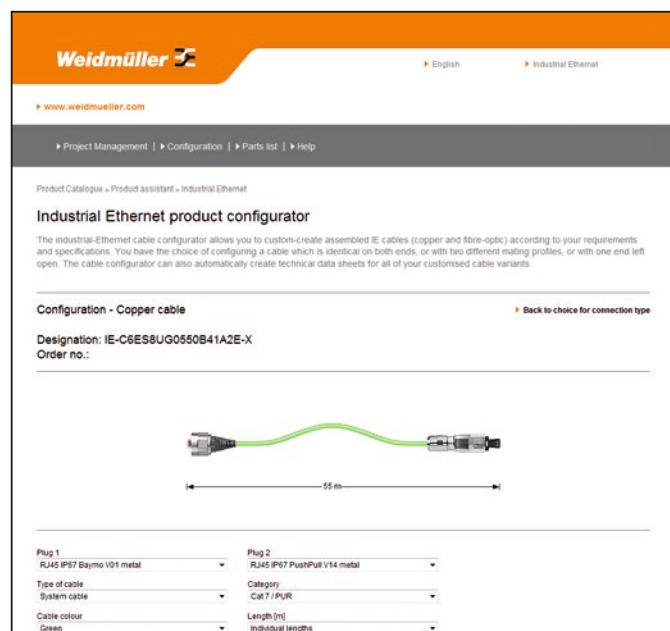
## Tailor-made connections

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	100 m	500 m	305 m				
<b>Industrial installation cables</b>											
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					
<b>Industrial connecting cables</b>											
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		
<b>Industrial trailing cables</b>											
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					

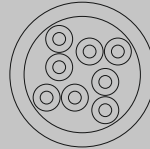
## Raw cables – Installation cable

## Raw cables

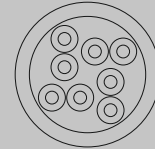
## Installation cable Cat. 5

- In lengths from 100 or 500 metres

## PUR



## PVC



## Technical data

Product type
Category
Shielding
Cross-section
Sheath diameter, max.
Material sheath
Sheathing colour
Insulation diameter
Min. bending radius, repetitive
Min. bending radius, once only
Ambient temperature (operational)
Installation temperature
Storage temperature
Abrasion resistance
Halogen
Resistance to spread of flame
Resistance to oils
Approvals

## Note

Installation cable
Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
SF/UTP
4*2*AWG 24/1 - 4*2*0.205 mm <sup>2</sup>
6.7 mm
PUR
green (RAL 6018)
1 mm
10 x cable diameter
5 x cable diameter
-40 °C...80 °C
-15 °C...60 °C
-40 °C...80 °C
very good
halogen-free, according to IEC 60754-2
in acc. with IEC 60332-1
in acc. with IEC 60811-2-1

Installation cable
Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
SF/UTP
4*2*AWG 24/1 - 4*2*0.205 mm <sup>2</sup>
6.3 mm
PVC
green (RAL 6018)
1 mm
10 x cable diameter
5 x cable diameter
-40 °C...80 °C
-15 °C...60 °C
-40 °C...80 °C
good
in acc. with IEC 60332-1

## Ordering data

100.0 m
500.0 m

## Note

Type	Qty.	Order No.
IE-C5CS8UG-100	1	8813160000
IE-C5CS8UG-500	1	2762870000

Type	Qty.	Order No.
IE-C5CS8VG-100	1	8813150000
IE-C5CS8VG-500	1	2763440000

## Accessories

Tools
Sheathing strippers, For UTP and STP data cables
Sheathing strippers, For coaxial and round data cables

## Marking tags

Wire and cable markers. ø 4.7 - 7.4 mm
Wire and cable markers. ø 5.8 - 7.8 mm
Insertion label, yellow, 12 mm
Insertion label, yellow, 18 mm
Transparent sleeves, 12-mm length
Transparent sleeves, 18-mm length

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000

VT SF 5/21 MC NE WS VO	160	1689470001
VT SF 6/21 MC NE WS VO	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

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000

VT SF 5/21 MC NE WS VO	160	1689470001
VT SF 6/21 MC NE WS VO	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

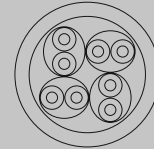
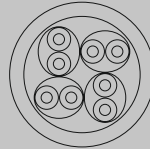
**Raw cables**

**Installation cable Cat. 7**

- In lengths from 100 or 500 metres

**PUR**

**PVC**



**Technical data**

Product type	Installation cable
Category	Cat.7 (ISO/IEC 11801)
Shielding	S/FTP
Cross-section	4*2*AWG 23/1 - 4*2*0.255 mm <sup>2</sup>
Sheath diameter, max.	8.4 mm
Material sheath	PUR
Sheathing colour	green (RAL 6018)
Insulation diameter	1.4 mm
Min. bending radius, repetitive	10 x cable diameter
Min. bending radius, once only	5 x cable diameter
Ambient temperature (operational)	-40 °C...80 °C
Installation temperature	-15 °C...60 °C
Storage temperature	-40 °C...80 °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	
<b>Note</b>	

Product type	Installation cable
Category	Cat.7 (ISO/IEC 11801)
Shielding	S/FTP
Cross-section	4*2*AWG 23/1 - 4*2*0.255 mm <sup>2</sup>
Sheath diameter, max.	8.4 mm
Material sheath	PVC
Sheathing colour	green (RAL 6018)
Insulation diameter	1.4 mm
Min. bending radius, repetitive	10 x cable diameter
Min. bending radius, once only	5 x cable diameter
Ambient temperature (operational)	-40 °C...80 °C
Installation temperature	-15 °C...60 °C
Storage temperature	-40 °C...80 °C
Abrasion resistance	good
Halogen	
Resistance to spread of flame	in acc. with IEC 60332-1
Resistance to oils	
Approvals	
<b>Note</b>	

Product type	Installation cable
Category	Cat.7 (ISO/IEC 11801)
Shielding	S/FTP
Cross-section	4*2*AWG 23/1 - 4*2*0.255 mm <sup>2</sup>
Sheath diameter, max.	8.4 mm
Material sheath	PVC
Sheathing colour	green (RAL 6018)
Insulation diameter	1.4 mm
Min. bending radius, repetitive	10 x cable diameter
Min. bending radius, once only	5 x cable diameter
Ambient temperature (operational)	-40 °C...80 °C
Installation temperature	-15 °C...60 °C
Storage temperature	-40 °C...80 °C
Abrasion resistance	good
Halogen	
Resistance to spread of flame	in acc. with IEC 60332-1
Resistance to oils	
Approvals	
<b>Note</b>	

**Ordering data**

	100.0 m
	500.0 m
<b>Note</b>	

Type	Qty.	Order No.
IE-C7BS8UG-100	1	8813140000
IE-C7BS8UG-500	1	2763530000

Type	Qty.	Order No.
IE-C7BS8VG-100	1	8813130000
IE-C7BS8VG-500	1	2763540000

**Accessories**

<b>Tools</b>	
Sheathing strippers, For UTP and STP data cables	
Sheathing strippers, For coaxial and round data cables	
<b>Marking tags</b>	
Wire and cable markers. ø 4.7 - 7.4 mm	
Wire and cable markers. ø 5.8 - 7.8 mm	
Insertion label, yellow, 12 mm	
Insertion label, yellow, 18 mm	
Transparent sleeves, 12-mm length	
Transparent sleeves, 18-mm length	

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
VT SF 5/21 MC NE WS VO	160	1689470001
VT SF 6/21 MC NE WS VO	160	1730560001
TM-H 12 MC NE GE	320	1718411687
TM-H 18 MC NE GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
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 VO	160	1689470001
VT SF 6/21 MC NE WS VO	160	1730560001
TM-H 12 MC NE GE	320	1718411687
TM-H 18 MC NE GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000

<b>Note</b>	
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<b>Note</b>	
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<b>Note</b>	
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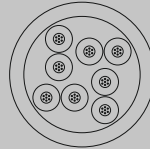
## Raw cables – Connection cable

## Raw cables

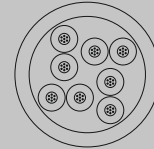
## Connecting cable Cat. 5

- In lengths from 100 or 500 metres

## PUR



## PVC



## Technical data

Product type
Category
Shielding
Cross-section
Sheath diameter, max.
Material sheath
Sheathing colour
Insulation diameter
Min. bending radius, repetitive
Min. bending radius, once only
Ambient temperature (operational)
Installation temperature
Storage temperature
Abrasion resistance
Halogen
Resistance to spread of flame
Resistance to oils
Standard, assembly
Approvals

## Note

System cable
Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
SF/UTP
4*2*AWG 26/7 - 4*2*0.128 mm <sup>2</sup>
6.1 mm
PUR
green (RAL 6018)
1 mm
10 x cable diameter
5 x cable diameter
-40 °C...80 °C
-10 °C...60 °C
-40 °C...80 °C
very good
halogen-free, according to IEC 60754-2
in acc. with IEC 60332-1
in acc. with IEC 60811-2-1
UL-Style 20963 (80°C/30V)

System cable
Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
SF/UTP
4*2*AWG 26/7 - 4*2*0.128 mm <sup>2</sup>
5.8 mm
PVC
green (RAL 6018)
1 mm
10 x cable diameter
5 x cable diameter
-40 °C...80 °C
-15 °C...60 °C
-40 °C...80 °C
good

in acc. with IEC 60332-1

## Ordering data

100.0 m
500.0 m

## Note

Type	Qty.	Order No.
IE-C5ES8UG-100	1	8813200000
IE-C5ES8UG-500	1	2763500000

Type	Qty.	Order No.
IE-C5ES8VG-100	1	8813190000
IE-C5ES8VG-500	1	2763510000

## Accessories

Tools
Sheathing strippers, For UTP and STP data cables
Sheathing strippers, For coaxial and round data cables

## Marking tags

Wire and cable markers. ø 4.7 - 7.4 mm
Wire and cable markers. ø 5.8 - 7.8 mm
Insertion label, yellow, 12 mm
Insertion label, yellow, 18 mm
Transparent sleeves, 12-mm length
Transparent sleeves, 18-mm length

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
VT SF 5/21 MC NE WS VO	160	1689470001
VT SF 6/21 MC NE WS VO	160	1730560001
TM-H 12 MC NE GE	320	1718411687
TM-H 18 MC NE GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
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 VO	160	1689470001
VT SF 6/21 MC NE WS VO	160	1730560001
TM-H 12 MC NE GE	320	1718411687
TM-H 18 MC NE GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000

## Note

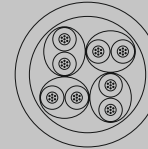
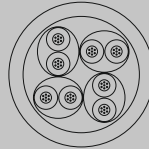
**Raw cables**

**Connecting cable Cat. 7**

- In lengths from 100 or 500 metres

**PUR**

**PVC**



**Technical data**

Product type	System cable
Category	Cat.7 (ISO/IEC 11801)
Shielding	S/FTP
Cross-section	4*2*AWG 26/7 - 4*2*0.128 mm <sup>2</sup>
Sheath diameter, max.	6.6 mm
Material sheath	PUR
Sheathing colour	green (RAL 6018)
Insulation diameter	1.03 mm
Min. bending radius, repetitive	10 x cable diameter
Min. bending radius, once only	5 x cable diameter
Ambient temperature (operational)	-40 °C...80 °C
Installation temperature	-15 °C...60 °C
Storage temperature	-40 °C...80 °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
Standard, assembly	UL-Style 20963 (80°C/30V)
Approvals	

Product type	System cable
Category	Cat.7 (ISO/IEC 11801)
Shielding	S/FTP
Cross-section	4*2*AWG 26/7 - 4*2*0.128 mm <sup>2</sup>
Sheath diameter, max.	6.7 mm
Material sheath	PVC
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
Ambient temperature (operational)	-40 °C...80 °C
Installation temperature	-15 °C...60 °C
Storage temperature	-40 °C...80 °C
Abrasion resistance	good
Halogen	
Resistance to spread of flame	in acc. with IEC 60332-1
Resistance to oils	
Standard, assembly	UL-Style 2879 (80°C/30V)
Approvals	

Product type	System cable
Category	Cat.7 (ISO/IEC 11801)
Shielding	S/FTP
Cross-section	4*2*AWG 26/7 - 4*2*0.128 mm <sup>2</sup>
Sheath diameter, max.	6.7 mm
Material sheath	PVC
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
Ambient temperature (operational)	-40 °C...80 °C
Installation temperature	-15 °C...60 °C
Storage temperature	-40 °C...80 °C
Abrasion resistance	good
Halogen	
Resistance to spread of flame	in acc. with IEC 60332-1
Resistance to oils	
Standard, assembly	UL-Style 2879 (80°C/30V)
Approvals	

**Note**

**Ordering data**

	100.0 m
	500.0 m

Type	Qty.	Order No.
IE-C7ES8UG-100	1	8813180000
IE-C7ES8UG-500	1	2763550000

Type	Qty.	Order No.
IE-C7ES8VG-100	1	8813170000
IE-C7ES8VG-500	1	2763560000

**Note**

**Accessories**

Tools
Sheathing strippers, For UTP and STP data cables
Sheathing strippers, For coaxial and round data cables
Marking tags
Wire and cable markers. ø 4.7 - 7.4 mm
Wire and cable markers. ø 5.8 - 7.8 mm
Insertion label, yellow. 12 mm
Insertion label, yellow. 18 mm
Transparent sleeves. 12-mm length
Transparent sleeves. 18-mm length

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
VT SF 5/21 MC NE WS VO	160	1689470001
VT SF 6/21 MC NE WS VO	160	1730560001
TM-H 12 MC NE GE	320	1718411687
TM-H 18 MC NE GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
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 VO	160	1689470001
VT SF 6/21 MC NE WS VO	160	1730560001
TM-H 12 MC NE GE	320	1718411687
TM-H 18 MC NE GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000

**Note**

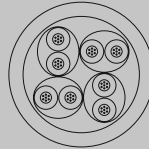
## Raw cables – Connection cable

## Raw cables

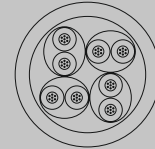
## Connecting cable Cat. 7

- 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 mm <sup>2</sup>	4*2*AWG 27/7 - 4*2*0.1 mm <sup>2</sup>
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
<b>Note</b>		

## Ordering data

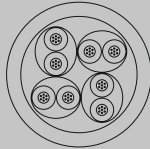
	Type	Qty.	Order No.
	IE-C7FS8LD-305M	1	1273090000
<b>Note</b>			

## 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		Type	Qty.	Order No.
	Wire and cable markers. ø 4.7 - 7.4 mm	VT SF 5/21 MC NE WS VO	160	1689470001
	Wire and cable markers. ø 5.8 - 7.8 mm	VT SF 6/21 MC NE WS VO	160	1730560001
	Insertion label, yellow, 12 mm	TM-H 12 MC NE GE	320	1718411687
	Insertion label, yellow, 18 mm	TM-H 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

<b>Note</b>		

LSZH black

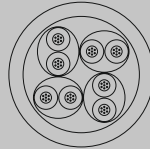


System cable
Cat.7 (ISO/IEC 11801)
S/FTP
4*2*AWG 27/7 - 4*2*0.1 mm <sup>2</sup>
5.9 mm
LSZH
black
1.04 mm
50 mm
25 mm
-20 °C...60 °C
0 °C...50 °C
No
in acc. with IEC 60332-1
CULUS

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 VO	160	1689470001
VT SF 6/21 MC NE WS VO	160	1730560001
TMH 12 MC NE GE	320	1718411687
TMH 18 MC NE GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000

LSZH green

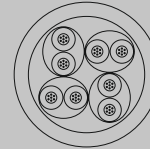


System cable
Cat.7 (ISO/IEC 11801)
S/FTP
4*2*AWG 27/7 - 4*2*0.1 mm <sup>2</sup>
5.9 mm
LSZH
green
1.04 mm
50 mm
25 mm
-20 °C...60 °C
0 °C...50 °C
No
in acc. with IEC 60332-1
CULUS

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 VO	160	1689470001
VT SF 6/21 MC NE WS VO	160	1730560001
TMH 12 MC NE GE	320	1718411687
TMH 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 mm <sup>2</sup>
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 VO	160	1689470001
VT SF 6/21 MC NE WS VO	160	1730560001
TMH 12 MC NE GE	320	1718411687
TMH 18 MC NE GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000

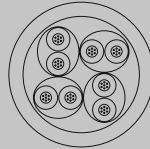
## Raw cables – Connection cable

## Raw cables

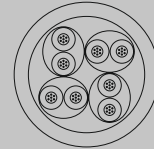
## Connecting cable Cat. 7

- 305 m / 1,000 ft

## LSZH magenta



## LSZH violet



## Technical data

Product type
Category
Shielding
Cross-section
Sheath diameter, max.
Material sheath
Sheathing colour
Insulation diameter
Min. bending radius, repetitive
Min. bending radius, once only
Ambient temperature (operational)
Installation temperature
Halogen
Resistance to spread of flame
Resistance to oils
Approvals

## Note

System cable
Cat.7 (ISO/IEC 11801)
S/FTP
4*2*AWG 27/7 - 4*2*0.1 mm <sup>2</sup>
5.9 mm
LSZH
Magenta
1.04 mm
50 mm
25 mm
-20 °C...60 °C
0 °C...50 °C
No
in acc. with IEC 60332-1

## CULUS

System cable
Cat.7 (ISO/IEC 11801)
S/FTP
4*2*AWG 27/7 - 4*2*0.1 mm <sup>2</sup>
5.9 mm
LSZH
violet
1.04 mm
50 mm
25 mm
-20 °C...60 °C
0 °C...50 °C
No
in acc. with IEC 60332-1

## CULUS

## Ordering data

305 m / 1000 ft

## Note

Type	Qty.	Order No.
IE-C7FS8LM-305M	1	1333160000

Type	Qty.	Order No.
IE-C7FS8LV-305M	1	2779910000

## Accessories

Tools
Sheathing strippers, For UTP and STP data cables
Sheathing strippers, For coaxial and round data cables

## Marking tags

Insertion label, yellow, 12 mm
Insertion label, yellow, 18 mm
Transparent sleeves, 12-mm length
Transparent sleeves, 18-mm length
Wire and cable markers, ø 4.7 - 7.4 mm
Wire and cable markers, ø 5.8 - 7.8 mm

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 VO	160	1689470001
VT SF 6/21 MC NE WS VO	160	1730560001

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000

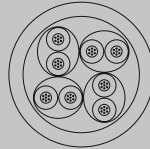
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000
VT SF 5/21 MC NE WS VO	160	1689470001
VT SF 6/21 MC NE WS VO	160	1730560001

## Note

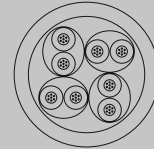
**Raw cables**  
**Connecting cable Cat. 7**

- 305 m / 1,000 ft

**LSZH yellow**



**LZSH orange**



**Technical data**

Product type	System cable
Category	Cat.7 (ISO/IEC 11801)
Shielding	S/FTP
Cross-section	4*2*AWG 27/7 - 4*2*0.1 mm <sup>2</sup>
Sheath diameter, max.	5.9 mm
Material sheath	LSZH
Sheathing colour	yellow
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
Halogen	No
Resistance to spread of flame	in acc. with IEC 60332-1
Resistance to oils	
Approvals	CULUS

Product type	System cable
Category	Cat.7 (ISO/IEC 11801)
Shielding	S/FTP
Cross-section	4*2*AWG 27/7 - 4*2*0.1 mm <sup>2</sup>
Sheath diameter, max.	5.9 mm
Material sheath	LSZH
Sheathing colour	orange
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
Halogen	No
Resistance to spread of flame	in acc. with IEC 60332-1
Resistance to oils	
Approvals	

Product type	System cable
Category	Cat.7 (ISO/IEC 11801)
Shielding	S/FTP
Cross-section	4*2*AWG 27/7 - 4*2*0.1 mm <sup>2</sup>
Sheath diameter, max.	5.9 mm
Material sheath	LSZH
Sheathing colour	orange
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
Halogen	No
Resistance to spread of flame	in acc. with IEC 60332-1
Resistance to oils	
Approvals	

**Note**

**Ordering data**

305 m / 1000 ft

**Note**

Type	Qty.	Order No.
IE-C7FS8LY-305M	1	1344670000

Type	Qty.	Order No.
IE-C7FS8LO-305M	1	2661080000

**Accessories**

Tools	
Sheathing strippers, For UTP and STP data cables	
Sheathing strippers, For coaxial and round data cables	
Marking tags	
Insertion label, yellow, 12 mm	
Insertion label, yellow, 18 mm	
Transparent sleeves, 12-mm length	
Transparent sleeves, 18-mm length	
Wire and cable markers, ø 4.7 - 7.4 mm	
Wire and cable markers, ø 5.8 - 7.8 mm	

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 VO	160	1689470001
VT SF 6/21 MC NE WS VO	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 VO	160	1689470001
VT SF 6/21 MC NE WS VO	160	1730560001

**Note**

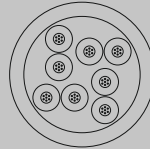
## Raw cables – Dragline cable

## Raw cables

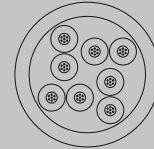
## Dragline cable Cat. 5

- In lengths from 100, 500 or 1000 metres

## PUR green



## PUR blue



## Technical data

Product type
Category
Shielding
Cross-section
Sheath diameter, max.
Material sheath
Sheathing colour
Insulation diameter
Min. bending radius, repetitive
Min. bending radius, once only
Bending cycles
Ambient temperature (operational)
Installation temperature
Storage temperature
Abrasion resistance
Halogen
Resistance to spread of flame
Resistance to oils
Standard, assembly
Approvals

## Note

Dragline cable
Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
SF/UTP
4*2*AWG 26/7 - 4*2*0.128 mm <sup>2</sup>
6.8 mm
PUR
green (RAL 6018)
0.95 mm
7.5 x cable diameter
4 x cable diameter
5 Mio
-40 °C...80 °C
-20 °C...60 °C
-40 °C...80 °C
very good
halogen-free, according to IEC 60754-2
in acc. with IEC 60332-1
in acc. with IEC 60811-2-1
UL-Style 20963 (80°C/30V)

Dragline cable
Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
SF/UTP
4*2*AWG 26/7 - 4*2*0.128 mm <sup>2</sup>
6.8 mm
PUR
blue (RAL 5015)
0.95 mm
7.5 x cable diameter
4 x cable diameter
5 Mio
-40 °C...80 °C
-20 °C...60 °C
-40 °C...80 °C
very good
halogen-free, according to IEC 60754-2
in acc. with IEC 60332-1
in acc. with IEC 60811-2-1
UL-Style 20963 (80°C/30V)

## Ordering data

100.0 m
500.0 m
1000.0 m

## Note

Type	Qty.	Order No.
IE-C5ED8UG-100	1	8813210000
IE-C5ED8UG-500	1	2763490000
IE-C5ED8UG-1000	1	2781890000

Type	Qty.	Order No.
IE-C5ED8UB-100	1	8960670000
IE-C5ED8UB-500	1	2763480000
IE-C5ED8UB-1000	1	2781880000

## Accessories

Tools
Sheathing strippers, For UTP and STP data cables
Sheathing strippers, For coaxial and round data cables
Marking tags
Wire and cable markers. ø 4.7 - 7.4 mm
Wire and cable markers. ø 5.8 - 7.8 mm
Insertion label, yellow, 12 mm
Insertion label, yellow, 18 mm
Transparent sleeves, 12-mm length
Transparent sleeves, 18-mm length

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
VT SF 5/21 MC NE WS VO	160	1689470001
VT SF 6/21 MC NE WS VO	160	1730560001
TM-H 12 MC NE GE	320	1718411687
TM-H 18 MC NE GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000

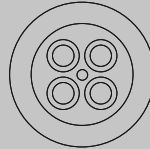
Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
VT SF 5/21 MC NE WS VO	160	1689470001
VT SF 6/21 MC NE WS VO	160	1730560001
TM-H 12 MC NE GE	320	1718411687
TM-H 18 MC NE GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000

## Note

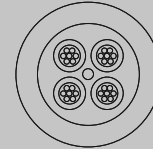
**Raw cables**  
**PROFINET cable**

- In lengths from 100 or 500 metres

**Installation cable type A, PVC**



**Connection cable type B, PVC**



**Technical data**

Product type	Installation cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
Shielding	SF/UTP
Cross-section	4*AWG 22/1 - 0.33 mm <sup>2</sup>
Sheath diameter, max.	6.7 mm
Material sheath	PVC
Sheathing colour	green (RAL 6018)
Insulation diameter	1.5 mm
Min. bending radius, repetitive	7.5 x cable diameter
Min. bending radius, once only	3.5 *diameter
Ambient temperature (operational)	-40 °C...75 °C
Installation temperature	-20 °C...60 °C
Storage temperature	-40 °C...75 °C
Abrasion resistance	good
Resistance to spread of flame	in acc. with IEC 60332-1 / UL 1685
Standard, assembly	UL-Style 21694
Approvals	
Note	

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 mm <sup>2</sup>
Sheath diameter, max.	6.7 mm
Material sheath	PVC
Sheathing colour	green (RAL 6018)
Insulation diameter	1.5 mm
Min. bending radius, repetitive	7.5 x cable diameter
Min. bending radius, once only	3.5 *diameter
Ambient temperature (operational)	-40 °C...70 °C
Installation temperature	-20 °C...60 °C
Storage temperature	-40 °C...70 °C
Abrasion resistance	good
Resistance to spread of flame	in acc. with IEC 60332-1 / UL 1685
Standard, assembly	UL-Style 21694
Approvals	
Note	

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 mm <sup>2</sup>
Sheath diameter, max.	6.7 mm
Material sheath	PVC
Sheathing colour	green (RAL 6018)
Insulation diameter	1.5 mm
Min. bending radius, repetitive	7.5 x cable diameter
Min. bending radius, once only	3.5 *diameter
Ambient temperature (operational)	-40 °C...70 °C
Installation temperature	-20 °C...60 °C
Storage temperature	-40 °C...70 °C
Abrasion resistance	good
Resistance to spread of flame	in acc. with IEC 60332-1 / UL 1685
Standard, assembly	UL-Style 21694
Approvals	
Note	

**Ordering data**

Type	Qty.	Order No.
IE-C5AS4VG-100	1	8899000000
IE-C5AS4VG-500	1	2763430000
Note		

Type	Qty.	Order No.
IE-C5AS4VG-100	1	8899000000
IE-C5AS4VG-500	1	2763430000
Note		

Type	Qty.	Order No.
IE-C5DS4VG-100	1	8898990000
IE-C5DS4VG-500	1	2763470000
Note		

**Accessories**

Tools
Sheathing strippers, For UTP and STP data cables
Sheathing strippers, For coaxial and round data cables
Marking tags
Wire and cable markers. ø 4.7 - 7.4 mm
Wire and cable markers. ø 5.8 - 7.8 mm
Insertion label, yellow. 12 mm
Insertion label, yellow. 18 mm
Transparent sleeves. 12-mm length
Transparent sleeves. 18-mm length
Note

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
VT SF 5/21 MC NE WS VO	160	1689470001
VT SF 6/21 MC NE WS VO	160	1730560001
TM-H 12 MC NE GE	320	1718411687
TM-H 18 MC NE GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000
Note		

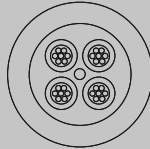
Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
VT SF 5/21 MC NE WS VO	160	1689470001
VT SF 6/21 MC NE WS VO	160	1730560001
TM-H 12 MC NE GE	320	1718411687
TM-H 18 MC NE GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000
Note		

Raw cables – PROFINET cable

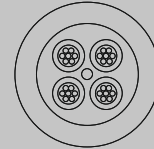
Raw cables  
PROFINET cable

- In lengths from 100 or 500 metres

Dragline cable type C, PUR



Torsion cable type C, PUR



Technical data

Product type
Category
Shielding
Cross-section
Sheath diameter, max.
Material sheath
Sheathing colour
Insulation diameter
Min. bending radius, repetitive
Min. bending radius, once only
Bending cycles
Torsion cycles
Torsion resistance
Ambient temperature (operational)
Installation temperature
Storage temperature
Abrasion resistance
Halogen
Resistance to spread of flame
Resistance to oils
Standard, assembly
Approvals
<b>Note</b>

Dragline cable
Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
SF/UTP
4*AWG 22/7 - 0.36 mm <sup>2</sup>
6.7 mm
PUR
green (RAL 6018)
1.5 mm
7.5 x cable diameter
5 x cable diameter
3 Mio
-40 °C...70 °C
-20 °C...60 °C
-50 °C...70 °C
very good
halogen-free, according to IEC 60754-2
in acc. with IEC 60332-1
in acc. with IEC 60811-2-1

Torsion cable
Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
S/UTP
4*AWG 22/19 - 0.38 mm <sup>2</sup>
6.7 mm
PUR
green (RAL 6018)
1.5 mm
10 x cable diameter
5 x cable diameter
1 mill.
180 °/m
-40 °C...80 °C
-40 °C...80 °C
-40 °C...80 °C
very good
halogen-free, according to IEC 60754-2
in acc. with IEC 60332-1
in acc. with IEC 60811-2-1
UL Style 21161

Ordering data

Cat. 5 PROFINET. PUR	
	100.0 m
	500.0 m

Note

Type	Qty.	Order No.
IE-C5DD4UG-100	1	8899010000
IE-C5DD4UG-500	1	2763450000

Type	Qty.	Order No.
IE-C5IT4UG-100	1	2764770000
IE-C5IT4UG-500	1	2763520000

Accessories

Tools	
Sheathing strippers, For UTP and STP data cables	
Sheathing strippers, For coaxial and round data cables	

Marking tags	
Wire and cable markers. ø 4.7 - 7.4 mm	
Wire and cable markers. ø 5.8 - 7.8 mm	
Insertion label, yellow, 12 mm	
Insertion label, yellow, 18 mm	
Transparent sleeves, 12-mm length	
Transparent sleeves, 18-mm length	

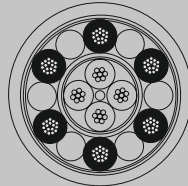
Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
VT SF 5/21 MC NE WS VO	160	1689470001
VT SF 6/21 MC NE WS VO	160	1730560001
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
VT SF 5/21 MC NE WS VO	160	1689470001
VT SF 6/21 MC NE WS VO	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****Hybrid cable**

- In lengths from 100 or 500 metres

**PVC****Technical data**

Product type
Category
Shielding
Cross-section
Sheath diameter, max.
Material sheath
Sheathing colour
Insulation diameter
Min. bending radius, repetitive
Min. bending radius, once only
Ambient temperature (operational)
Installation temperature
Storage temperature
Abrasion resistance
Halogen
Resistance to spread of flame
Resistance to oils
Standard, assembly
Approvals

System cable
Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
SF/UTP
4*AWG 22/7 - 0.36 mm <sup>2</sup> , 6*0.5 mm <sup>2</sup>
9.5 mm
PVC
green (RAL 6018)
1.5 mm / 1.75 mm
7.5 x cable diameter
3.5 *diameter
-30 °C...75 °C
0 °C...50 °C
-40 °C...70 °C
good
Yes
in acc. with IEC 60332-1 / UL 1685
limited

**Note****Ordering data**

100.0 m
500.0 m

**Note**

Type	Qty.	Order No.
IE-C5DHAG-100	1	2763660000
IE-C5DHAG-500	1	2763460000

**Accessories**

Tools
Sheathing strippers, For UTP and STP data cables
Sheathing strippers, For coaxial and round data cables
Marking tags
Wire and cable markers. ø 4.7 - 7.4 mm
Wire and cable markers. ø 5.8 - 7.8 mm
Insertion label. yellow. 12 mm
Insertion label. yellow. 18 mm
Transparent sleeves. 12-mm length
Transparent sleeves. 18-mm length

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
VT SF 5/21 MC NE WS VO	160	1689470001
VT SF 6/21 MC NE WS VO	160	1730560001
TM-H 12 MC NE GE	320	1718411687
TM-H 18 MC NE GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000

**Note**

## Assembled cables - Patch cable

## Assembled cables

## Patch cable CabinetLine Cat. 5 straight

## PVC green



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		

## PUR green



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
Category	Cat.5 (ISO/IEC 11801)
Shielding	SF/UTP
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 26/7 - 4*2*0.128 mm <sup>2</sup>
Sheath diameter, max.	5.8 mm
Material sheath	PVC
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
Ambient temperature (operational)	-40 °C...75 °C
Abrasion resistance	good
Halogen	
Resistance to spread of flame	in acc. with IEC 60332-1
Resistance to oils	
Approvals	EAC

## Note

## Ordering data

	0.5 m
	1.0 m
	1.5 m
	2.0 m
	3.0 m
	5.0 m
	10.0 m
	15.0 m
	20.0 m

## Note

## Accessories

<b>Tools</b>	
	Sheathing strippers, For UTP and STP data cables
	Sheathing strippers, For coaxial and round data cables
<b>Marking tags</b>	
	Insertion label, yellow, 12 mm
	Insertion label, yellow, 18 mm
<b>Dust protection cap</b>	Protective cap
<b>Cable routing</b>	90° outlet angle

## Note

Type	Qty.	Order No.
IE-C5ES8VG0005M40M40-G	1	1166020005
IE-C5ES8VG0010M40M40-G	1	1166020010
IE-C5ES8VG0015M40M40-G	1	1166020015
IE-C5ES8VG0020M40M40-G	1	1166020020
IE-C5ES8VG0030M40M40-G	1	1166020030
IE-C5ES8VG0050M40M40-G	1	1166020050
IE-C5ES8VG0100M40M40-G	1	1166020100
IE-C5ES8VG0150M40M40-G	1	1166020150
IE-C5ES8VG0200M40M40-G	1	1166020200

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
IE-PP-RJ45	10	2552580000
IE-CABLE-BENDER-90	50	2704480000

Type	Qty.	Order No.
IE-C5ES8UG0005M40M40-G	1	1166000005
IE-C5ES8UG0010M40M40-G	1	1166000010
IE-C5ES8UG0015M40M40-G	1	1166000015
IE-C5ES8UG0020M40M40-G	1	1166000020
IE-C5ES8UG0030M40M40-G	1	1166000030
IE-C5ES8UG0050M40M40-G	1	1166000050
IE-C5ES8UG0100M40M40-G	1	1166000100
IE-C5ES8UG0150M40M40-G	1	1166000150
IE-C5ES8UG0200M40M40-G	1	1166000200

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
IE-PP-RJ45	10	2552580000
IE-CABLE-BENDER-90	50	2704480000

## Assembled cables

## Patch cable CabinetLine Cat. 6 straight

## PUR green



RJ45			RJ45
1	white (orange)	1	RJ45
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
Category	Cat.6 <sub>A</sub> / Class E <sub>A</sub> (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 mm <sup>2</sup>
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

	0.3 m
	0.5 m
	1.0 m
	1.5 m
	2.0 m
	3.0 m
	5.0 m
	10.0 m
	15.0 m
	20.0 m

## Note

Type	Qty.	Order No.
IE-C6FS8UG0003A40A40-G	1	8941350003
IE-C6FS8UG0005A40A40-G	1	8941350005
IE-C6FS8UG0010A40A40-G	1	8941350010
IE-C6FS8UG0015A40A40-G	1	8941350015
IE-C6FS8UG0020A40A40-G	1	8941350020
IE-C6FS8UG0030A40A40-G	1	8941350030
IE-C6FS8UG0050A40A40-G	1	8941350050
IE-C6FS8UG0100A40A40-G	1	8941350100
IE-C6FS8UG0150A40A40-G	1	8941350150
IE-C6FS8UG0200A40A40-G	1	8941350200

Other lengths available on request

## Accessories

<b>Tools</b>	
	Sheathing strippers, For UTP and STP data cables
	Sheathing strippers, For coaxial and round data cables
<b>Marking tags</b>	
	Wire and cable markers. ø 4.7 - 7.4 mm
	Wire and cable markers. ø 5.8 - 7.8 mm
	Insertion label, yellow, 12 mm
	Insertion label, yellow, 18 mm
	Transparent sleeves, 12-mm length
	Transparent sleeves, 18-mm length
<b>Dust protection cap</b>	Protective cap
<b>Cable routing</b>	90° outlet angle
<b>Note</b>	

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
TMH 12 MC NE GE	320	1718411687
TMH 18 MC NE GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000
IE-PP-RJ45	10	2552580000
IE-CABLE-BENDER-90	50	2704480000

Assembled cables - PROFINET cable

Assembled cables

Patch cable PROFINET dragline cable (type C)

Cat. 5

IP 20

RJ45 IP20



RJ45 IP20 incl. protective cap




RJ45		RJ45
1	yellow	1
2	orange	2
3	white	3
6	blue	6

RJ45		RJ45
1	yellow	1
2	orange	2
3	white	3
6	blue	6

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	RJ45 IP 20 / RJ45 IP 20
Cross-section	4*AWG 22/7 - 0.36 mm <sup>2</sup>
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/s <sup>2</sup>
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	CULUS
Note	

Product type	Dragline cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
Shielding	SF/UTP
Version connector left / Version connector right	RJ45 IP 20 with protective cap / RJ45 IP 20 with protective cap
Cross-section	4*AWG 22/7 - 0.36 mm <sup>2</sup>
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/s <sup>2</sup>
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	

Product type	Dragline cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
Shielding	SF/UTP
Version connector left / Version connector right	RJ45 IP 20 with protective cap / RJ45 IP 20 with protective cap
Cross-section	4*AWG 22/7 - 0.36 mm <sup>2</sup>
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/s <sup>2</sup>
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

	0.5 m
	1.0 m
	2.0 m
	3.0 m
	5.0 m
	10.0 m
	15.0 m
	20.0 m
Note	

Type	Qty.	Order No.
IE-C5DD4UG0005A20A20-E	1	1173030005
IE-C5DD4UG0010A20A20-E	1	1173030010
IE-C5DD4UG0020A20A20-E	1	1173030020
IE-C5DD4UG0030A20A20-E	1	1173030030
IE-C5DD4UG0050A20A20-E	1	1173030050
IE-C5DD4UG0100A20A20-E	1	1173030100
IE-C5DD4UG0150A20A20-E	1	1173030150
IE-C5DD4UG0200A20A20-E	1	1173030200
Note		

Type	Qty.	Order No.
IE-C5DD4UG0005A2DA2D-E	1	1376510005
IE-C5DD4UG0010A2DA2D-E	1	1376510010
IE-C5DD4UG0020A2DA2D-E	1	1376510020
IE-C5DD4UG0030A2DA2D-E	1	1376510030
IE-C5DD4UG0050A2DA2D-E	1	1376510050
IE-C5DD4UG0100A2DA2D-E	1	1376510100
IE-C5DD4UG0150A2DA2D-E	1	1376510150
IE-C5DD4UG0200A2DA2D-E	1	1376510200
Note		

Accessories

<b>Tools</b>	
	Sheathing strippers, For UTP and STP data cables
	Sheathing strippers, For coaxial and round data cables
<b>Marking tags</b>	
	Insertion label, yellow, 12 mm
	Insertion label, yellow, 18 mm
<b>Dust protection cap</b>	Protective cap
Note	

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
IE-PP-RJ45	10	2552580000
Note		

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
Note		



## Assembled cables - PROFINET cable

## Assembled cables

## Patch cable PROFINET dragline cable (type C)

Cat. 5

IP 67

## V14 RJ45 IP67



RJ45		RJ45
1	yellow	1
2	orange	2
3	white	3
6	blue	6

## 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 mm <sup>2</sup>
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/s <sup>2</sup>
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		TMH 12 MC NE GE	320	1718411687
Insertion label, yellow, 18 mm		TMH 18 MC NE GE	320	1718431687

## Note



**Assembled cables**  
**Patch cable PushPull Power**

**Power IP67, PVC**



**Power IP67, PUR**



**Technical data**

Connector standard
Version connector left / Version connector right
Ambient temperature (operational)
Cross-section
Wire connection cross section AWG, max.
Sheath diameter, max.
Material sheath
Sheathing colour
Insulation
Number of wires
Min. bending radius, once only
Rated voltage
Current-carrying capacity at 50 °C
Approvals
<b>Note</b>

in acc. with PROFINET specification
PushPull Power / PushPull Power
-40 °C...70 °C
5*1.5 mm <sup>2</sup>
AWG 16
8.1 mm
PVC
grey (similar to RAL 7001)
PVC
5
4 x cable diameter
24 V
16 A
EAC
<b>Note</b>

in acc. with PROFINET specification
PushPull Power / PushPull Power
-40 °C...80 °C
5*1.5 mm <sup>2</sup>
AWG 16
9 mm
PUR
grey (similar to RAL 7001)
TPE
5
5 x cable diameter
24 V
16 A
EAC
<b>Note</b>

**Ordering data**

	1.0 m
	3.0 m
	5.0 m
	10.0 m
	15.0 m
	20.0 m
<b>Note</b>	

Type	Qty.	Order No.
IE-CSPS5VS0010VAPVAP-X	1	1350120010
IE-CSPS5VS0030VAPVAP-X	1	1350120030
IE-CSPS5VS0050VAPVAP-X	1	1350120050
IE-CSPS5VS0100VAPVAP-X	1	1350120100
IE-CSPS5VS0150VAPVAP-X	1	1350120150
IE-CSPS5VS0200VAPVAP-X	1	1350120200
Other lengths available on request		
<b>Note</b>		

Type	Qty.	Order No.
IE-CSPD5US0050VAPVAP-X	1	1403680050
IE-CSPD5US0100VAPVAP-X	1	1403680100
IE-CSPD5US0150VAPVAP-X	1	1403680150
<b>Note</b>		

**Accessories**

<b>Tools</b>
Sheathing strippers, For UTP and STP data cables
Sheathing strippers, For coaxial and round data cables
<b>Marking tags</b>
Insertion label, yellow, 12 mm
Insertion label, yellow, 18 mm
<b>Note</b>

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
<b>Note</b>		

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
<b>Note</b>		

**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 mm <sup>2</sup>
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**

	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	TMH 12 MC NE GE	320	1718411687
Insertion label, yellow, 18 mm	TMH 18 MC NE GE	320	1718431687

**Note**













**Assembled cables****System cable M12 flange**

- Cat. 5
- PUR
- D-coded
- PROFINET type B

**M12 flange - open**

Socket / -



EtherCAT



	M12
yellow	1
white	2
orange	3
blue	4

**Technical data**

Product type
Category
Shielding
Version connector left / Version connector right
Cross-section
Sheath diameter, max.
Material sheath
Sheathing colour
Insulation diameter
Min. bending radius, repetitive
Min. bending radius, once only
Ambient temperature (operational)
Installation temperature
Storage temperature
Approvals

System cable
Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
360° shield contact
M12 D-code - flange / Open
4*AWG 22/7 - 0.36 mm <sup>2</sup>
6.7 mm
PUR
green (RAL 6018)
1.5 mm
15 x cable diameter
5 x cable diameter
-40 °C...70 °C
-20 °C...60 °C
-50 °C...70 °C

**Note****Ordering data**

0.5 m
1.0 m
1.5 m
2.0 m
5.0 m

Type	Qty.	Order No.
IE-C5DS4UG0005MBSXXX-E	1	1234770005
IE-C5DS4UG0010MBSXXX-E	1	1234770010
IE-C5DS4UG0015MBSXXX-E	1	1234770015
IE-C5DS4UG0020MBSXXX-E	1	1234770020
IE-C5DS4UG0050MBSXXX-E	1	1234770050

**Note****Accessories**

<b>Marking tags</b>	Insertion label, yellow, 12 mm
	Insertion label, yellow, 18 mm

<b>Tools</b>	Tool set
	Tool set with torque function
	Mounting tool
	Screwty-M12

<b>Dust protection cap</b>	Protective cap
----------------------------	----------------

Type	Qty.	Order No.
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687
SCREWTY SET	1	1910000000
SCREWTY SET-DM	1	1920000000
SCREWTY-M12-DM	1	1900001000
SCREWTY-M12	1	1900000000

**Note****Note**

## Assembled cables – PROFINET cable M12

## Assembled cable

## Connecting cable M12

- Cat. 6
- PVC
- X-type
- PROFINET type B

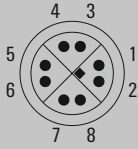
## M12 - M12

Plug / plug



## M12 - open

Plug / -



M12			M12
1	white, orange		1
2	orange		2
3	white, green		3
4	green		4
5	white, brown		5
6	brown		6
7	white, blue		7
8	blue		8

		M12
White, Orange		1
Orange		2
White, Green		3
Green		4
White, Brown		5
Brown		6
White, Blue		7
Blue		8

## Technical data

Product type
Category
Shielding
Version connector left / Version connector right
Cross-section
Sheath diameter, max.
Material sheath
Sheathing colour
Insulation diameter
Min. bending radius, repetitive
Min. bending radius, once only
Pulling force
Ambient temperature (operational)
Installation temperature
Storage temperature
Halogen
Resistance to spread of flame
Standard, assembly
Approvals

Connecting line
Cat.6 <sub>A</sub> / Class E <sub>A</sub> (ISO/IEC 11801 2010)
S/FTP
M12 X-type IP 67 straight male / M12 X-type IP 67 straight male
4*2*AWG 23/7
8.8 mm
PVC
green (RAL 6018)
1.58 mm
8 x cable diameter
4 x cable diameter
≤ 150 N
-40 °C...80 °C
-40 °C...80 °C
-40 °C...80 °C
in acc. with IEC 60332-1-2
UL-Style 2461

Connecting line
Cat.6 <sub>A</sub> / Class E <sub>A</sub> (ISO/IEC 11801 2010)
S/FTP
M12 X-type IP 67 straight male / Open
4*2*AWG 23/7
8.8 mm
PVC
green (RAL 6018)
1.58 mm
8 x cable diameter
4 x cable diameter
≤ 150 N
-40 °C...80 °C
-40 °C...80 °C
-40 °C...80 °C
in acc. with IEC 60332-1-2
UL-Style 2461

## Note

## Ordering data

0.5 m
1.5 m
3.0 m
5.0 m
10.0 m

## Note

Type	Qty.	Order No.
IE-C6KS8VG0005XCSXCS-E	1	1398070005
IE-C6KS8VG0015XCSXCS-E	1	1398070015
IE-C6KS8VG0030XCSXCS-E	1	1398070030
IE-C6KS8VG0050XCSXCS-E	1	1398070050
IE-C6KS8VG0100XCSXCS-E	1	1398070100

Type	Qty.	Order No.
IE-C6KS8VG0005XCSXXX-E	1	1449470005
IE-C6KS8VG0015XCSXXX-E	1	1449470015
IE-C6KS8VG0030XCSXXX-E	1	1449470030
IE-C6KS8VG0050XCSXXX-E	1	1449470050
IE-C6KS8VG0100XCSXXX-E	1	1449470100

## Accessories

Marking tags	
Insertion label, yellow, 12 mm	
Insertion label, yellow, 18 mm	

Type	Qty.	Order No.
TM-I 12 MC NE GE	320	1718411687
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**  
**Dragline cable M12**

- Cat. 6
- PUR
- X-type
- PROFINET type C

**M12 - M12**



**M12 - RJ45**

Plug / plug



M12			M12
1	white, orange		1
2	orange		2
3	white, green		3
4	green		4
5	white, brown		5
6	brown		6
7	white, blue		7
8	blue		8

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	Dragline cable
Category	Cat.6 <sub>A</sub> / Class E <sub>A</sub> (ISO/IEC 11801 2010)
Shielding	S/FTP
Version connector left / Version connector right	M12 X-type IP 67 straight male / M12 X-type IP 67 straight male
Cross-section	4*2*AWG 26/19 - 4*2*0.128 mm <sup>2</sup>
Sheath diameter, max.	7.8 mm
Material sheath	PUR
Sheathing colour	green (RAL 6018)
Insulation diameter	0.98 mm
Min. bending radius, repetitive	7.5 x cable diameter
Min. bending radius, once only	4 x cable diameter
Pulling force	≤ 100 N
Ambient temperature (operational)	-40 °C...80 °C
Installation temperature	-30 °C...70 °C
Storage temperature	...
Halogen	halogen-free
Resistance to spread of flame	in acc. with IEC 60332-1-2, in acc. with UL 1581 VW-1 and CSA FT1
Standard, assembly	
Approvals	

**Note**

**Ordering data**

	1.0 m
	3.0 m
	5.0 m
	7.5 m
	10.0 m
	15.0 m

**Note**

**Accessories**

Marking tags	
	Insertion label, yellow, 12 mm
	Insertion label, yellow, 18 mm

**Note**

Type	Qty.	Order No.
IE-C6HD8UG0010XCSXCS-E	1	2723040010
IE-C6HD8UG0030XCSXCS-E	1	2723040030
IE-C6HD8UG0050XCSXCS-E	1	2723040050
IE-C6HD8UG0075XCSXCS-E	1	2723040075
IE-C6HD8UG0100XCSXCS-E	1	2723040100
IE-C6HD8UG0150XCSXCS-E	1	2723040150

Type	Qty.	Order No.
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687

Type	Qty.	Order No.
IE-C6HD8UG0010E40XCS-E	1	2723030010
IE-C6HD8UG0030E40XCS-E	1	2723030030
IE-C6HD8UG0050E40XCS-E	1	2723030050
IE-C6HD8UG0075E40XCS-E	1	2723030075
IE-C6HD8UG0100E40XCS-E	1	2723030100
IE-C6HD8UG0150E40XCS-E	1	2723030150

Type	Qty.	Order No.
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687

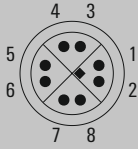
## Assembled cables

## 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
Category
Shielding
Version connector left / Version connector right
Cross-section
Sheath diameter, max.
Material sheath
Sheathing colour
Insulation diameter
Min. bending radius, repetitive
Min. bending radius, once only
Pulling force
Ambient temperature (operational)
Installation temperature
Storage temperature
Halogen
Resistance to spread of flame
Standard, assembly
Approvals

System cable
Cat.6 <sub>A</sub> / Class E <sub>A</sub> (ISO/IEC 11801 2010)
S/FTP
RJ45 IP 20 / M12 X-type IP 67 straight male
4*2*AWG 26/7 - 4*2*0.128 mm <sup>2</sup>
6.7 mm
PUR
green (RAL 6018)
0.98 mm
10 x cable diameter
5 x cable diameter
-40 °C...80 °C
-20 °C...60 °C
-40 °C...80 °C
halogen-free, according to IEC 60754-1
in acc. with IEC 60332-1-2
UL Style 20963

## Note

## Ordering data

1.0 m
2.0 m
3.0 m
5.0 m
10.0 m
12.0 m

Type	Qty.	Order No.
IE-C6EL8UG0010U40XCS-E	1	1457580010
IE-C6EL8UG0020U40XCS-E	1	1457580020
IE-C6EL8UG0030U40XCS-E	1	1457580030
IE-C6EL8UG0050U40XCS-E	1	1457580050
IE-C6EL8UG0100U40XCS-E	1	1457580100
IE-C6EL8UG0120U40XCS-E	1	1457580120

## Note

## Accessories

Marking tags	Insertion label, yellow, 12 mm
	Insertion label, yellow, 18 mm
Dust protection cap	Protective cap

Type	Qty.	Order No.
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687
IE-PP-RJ45	10	2552580000

## Note

**Assembled cables**  
**EtherNet/IP patch cable**

- in PUR

**V1 RJ45 IP 67 - metal**



**V1 RJ45 IP 67 - plastic**



RJ45			RJ45
1	white (orange)	1	RJ45
2	orange	2	
3	white (green)	3	
4	blue	4	
5	white (blue)	5	
6	green	6	
7	white (brown)	7	
8	brown	8	

RJ45			RJ45
1	white (orange)	1	RJ45
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
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
Shielding	SF/UTP
Version connector left / Version connector right	RJ45 IP 67 Baymo V01 metal / RJ45 IP 67 Baymo V01 metal
Cross-section	4*2*AWG 26/7 - 4*2*0.128 mm <sup>2</sup>
Sheath diameter, max.	6.1 mm
Material sheath	PUR
Sheathing colour	green (RAL 6018)
Insulation diameter	1 mm
Min. bending radius, repetitive	10 x cable diameter
Min. bending radius, once only	5 x cable diameter
Ambient temperature (operational)	-40 °C...80 °C
Installation temperature	-10 °C...60 °C
Storage temperature	-40 °C...80 °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	CULUS
<b>Note</b>	

Product type	System cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
Shielding	SF/UTP
Version connector left / Version connector right	RJ45 IP 67 Baymo V01 plastic / RJ45 IP 67 Baymo V01 plastic
Cross-section	4*2*AWG 26/7 - 4*2*0.128 mm <sup>2</sup>
Sheath diameter, max.	6.1 mm
Material sheath	PUR
Sheathing colour	green (RAL 6018)
Insulation diameter	1 mm
Min. bending radius, repetitive	10 x cable diameter
Min. bending radius, once only	5 x cable diameter
Ambient temperature (operational)	-40 °C...80 °C
Installation temperature	-10 °C...60 °C
Storage temperature	-40 °C...80 °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	CULUS
<b>Note</b>	

Product type	System cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
Shielding	SF/UTP
Version connector left / Version connector right	RJ45 IP 67 Baymo V01 plastic / RJ45 IP 67 Baymo V01 plastic
Cross-section	4*2*AWG 26/7 - 4*2*0.128 mm <sup>2</sup>
Sheath diameter, max.	6.1 mm
Material sheath	PUR
Sheathing colour	green (RAL 6018)
Insulation diameter	1 mm
Min. bending radius, repetitive	10 x cable diameter
Min. bending radius, once only	5 x cable diameter
Ambient temperature (operational)	-40 °C...80 °C
Installation temperature	-10 °C...60 °C
Storage temperature	-40 °C...80 °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	CULUS
<b>Note</b>	

**Ordering data**

	1.0 m
	2.0 m
	5.0 m
	10.0 m
<b>Note</b>	

Type	Qty.	Order No.
IE-C5ES8UG0010B41B41-E	1	1066850000
IE-C5ES8UG0020B41B41-E	1	1066860000
IE-C5ES8UG0050B41B41-E	1	1066870000
IE-C5ES8UG0100B41B41-E	1	1066880000

Type	Qty.	Order No.
IE-C5ES8UG0010P41P41-E	1	1106010000
IE-C5ES8UG0020P41P41-E	1	1106020000
IE-C5ES8UG0050P41P41-E	1	1106030000
IE-C5ES8UG0100P41P41-E	1	1106040000

**Accessories**

Marking tags	
	Insertion label, yellow, 12 mm
	Insertion label, yellow, 18 mm

Type	Qty.	Order No.
TM-I 12 MC NE GE	320	1718411687
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

<b>Note</b>	
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<b>Note</b>	
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<b>Note</b>	
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**Assembled cable**  
**Dragline cable M8**

- Cat. 5
- PUR
- P-coded

**M8 - open**

Plug / -



**M8 - open**

Plug / -



M8	yellow
1	white
2	blue
3	orange
4	

M8	yellow
1	white
2	blue
3	orange
4	

**Technical data**

Product type	Dragline cable
Category	Cat. 5e
Shielding	SF/UTP
Version connector left / Version connector right	M8 P-code - IP67 straight socket / Open
Cross-section	2*2*AWG 22/7 - 2*2*0.36 mm <sup>2</sup>
Sheath diameter, max.	6.7 mm
Material sheath	PUR
Sheathing colour	black
Insulation diameter	1.6 mm
Min. bending radius, repetitive	8 x cable diameter
Min. bending radius, once only	5 x cable diameter
Ambient temperature (operational)	-40 °C...80 °C
Installation temperature	...
Storage temperature	...
Approvals	...
<b>Note</b>	

Product type	Dragline cable
Category	Cat. 5e
Shielding	SF/UTP
Version connector left / Version connector right	M8 D-code - IP67 straight pin / Open
Cross-section	2*2*AWG 22/7 - 2*2*0.36 mm <sup>2</sup>
Sheath diameter, max.	6.7 mm
Material sheath	PUR
Sheathing colour	black
Insulation diameter	1.6 mm
Min. bending radius, repetitive	8 x cable diameter
Min. bending radius, once only	5 x cable diameter
Ambient temperature (operational)	-40 °C...80 °C
Installation temperature	...
Storage temperature	...
Approvals	...
<b>Note</b>	

Product type	Dragline cable
Category	Cat. 5e
Shielding	SF/UTP
Version connector left / Version connector right	M8 D-code - IP67 straight pin / Open
Cross-section	2*2*AWG 22/7 - 2*2*0.36 mm <sup>2</sup>
Sheath diameter, max.	6.7 mm
Material sheath	PUR
Sheathing colour	black
Insulation diameter	1.6 mm
Min. bending radius, repetitive	8 x cable diameter
Min. bending radius, once only	5 x cable diameter
Ambient temperature (operational)	-40 °C...80 °C
Installation temperature	...
Storage temperature	...
Approvals	...
<b>Note</b>	

**Ordering data**

	1.5 m
	3.0 m
	5.0 m
	7.5 m
	10.0 m
	20.0 m
	30.0 m
<b>Note</b>	

Type	Qty.	Order No.
IE-C5DE4UP0015PSSXXX-E	1	2717740015
IE-C5DE4UP0030PSSXXX-E	1	2717740030
IE-C5DE4UP0050PSSXXX-E	1	2717740050
IE-C5DE4UP0075PSSXXX-E	1	2717740075
IE-C5DE4UP0100PSSXXX-E	1	2717740100
IE-C5DE4UP0200PSSXXX-E	1	2717740200
IE-C5DE4UP0300PSSXXX-E	1	2717740300

Type	Qty.	Order No.
IE-C5DE4UP0015PCSXXX-E	1	2717750015
IE-C5DE4UP0030PCSXXX-E	1	2717750030
IE-C5DE4UP0050PCSXXX-E	1	2717750050
IE-C5DE4UP0075PCSXXX-E	1	2717750075
IE-C5DE4UP0100PCSXXX-E	1	2717750100
IE-C5DE4UP0200PCSXXX-E	1	2717750200
IE-C5DE4UP0300PCSXXX-E	1	2717750300

**Accessories**

<b>Marking tags</b>	Insertion label, yellow, 12 mm
	Insertion label, yellow, 18 mm
<b>Tools</b>	Tool set
	Tool set with torque function
	Mounting tool
	Screwty-M12

Type	Qty.	Order No.
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687
SCREWTY SET	1	1910000000
SCREWTY SET-DM	1	1920000000
SCREWTY-M12-DM	1	1900001000
SCREWTY-M12	1	1900000000

Type	Qty.	Order No.
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687
SCREWTY SET	1	1910000000
SCREWTY SET-DM	1	1920000000
SCREWTY-M12-DM	1	1900001000
SCREWTY-M12	1	1900000000

**Note**

**Note**

**Note**

**Assembled cable**  
**Dragline cable M8**

- Cat. 5
- PUR
- P-coded

**M8 - open**

Plug angled / -



**M8 - open**

Socket angled / -



M8	yellow
1	white
2	blue
3	orange
4	

M8	yellow
1	white
2	blue
3	orange
4	

**Technical data**

Product type	Dragline cable
Category	Cat. 5e
Shielding	SF/UTP
Version connector left / Version connector right	M8 P-code - IP67 angeled socket / Open
Cross-section	2*2*AWG 22/7 - 2*2*0.36 mm <sup>2</sup>
Sheath diameter, max.	6.7 mm
Material sheath	PUR
Sheathing colour	black
Insulation diameter	1.6 mm
Min. bending radius, repetitive	8 x cable diameter
Min. bending radius, once only	5 x cable diameter
Ambient temperature (operational)	-40 °C...80 °C
Installation temperature	...
Storage temperature	...
Approvals	...

Product type	Dragline cable
Category	Cat. 5e
Shielding	SF/UTP
Version connector left / Version connector right	M8 P-code - IP67 angeled pin / Open
Cross-section	2*2*AWG 22/7 - 2*2*0.36 mm <sup>2</sup>
Sheath diameter, max.	6.7 mm
Material sheath	PUR
Sheathing colour	black
Insulation diameter	1.6 mm
Min. bending radius, repetitive	8 x cable diameter
Min. bending radius, once only	5 x cable diameter
Ambient temperature (operational)	-40 °C...80 °C
Installation temperature	...
Storage temperature	...
Approvals	...

Product type	Dragline cable
Category	Cat. 5e
Shielding	SF/UTP
Version connector left / Version connector right	M8 P-code - IP67 angeled pin / Open
Cross-section	2*2*AWG 22/7 - 2*2*0.36 mm <sup>2</sup>
Sheath diameter, max.	6.7 mm
Material sheath	PUR
Sheathing colour	black
Insulation diameter	1.6 mm
Min. bending radius, repetitive	8 x cable diameter
Min. bending radius, once only	5 x cable diameter
Ambient temperature (operational)	-40 °C...80 °C
Installation temperature	...
Storage temperature	...
Approvals	...

**Note**

**Ordering data**

	1.5 m
	3.0 m
	5.0 m
	7.5 m
	10.0 m
	20.0 m
	30.0 m

Type	Qty.	Order No.
IE-C5DE4UP0015PSAXXX-E	1	2717760015
IE-C5DE4UP0030PSAXXX-E	1	2717760030
IE-C5DE4UP0050PSAXXX-E	1	2717760050
IE-C5DE4UP0075PSAXXX-E	1	2717760075
IE-C5DE4UP0100PSAXXX-E	1	2717760100
IE-C5DE4UP0200PSAXXX-E	1	2717760200
IE-C5DE4UP0300PSAXXX-E	1	2717760300

Type	Qty.	Order No.
IE-C5DE4UP0015PCAXXX-E	1	2717770015
IE-C5DE4UP0030PCAXXX-E	1	2717770030
IE-C5DE4UP0050PCAXXX-E	1	2717770050
IE-C5DE4UP0075PCAXXX-E	1	2717770075
IE-C5DE4UP0100PCAXXX-E	1	2717770100

**Note**

**Accessories**

<b>Marking tags</b>	
	Insertion label, yellow, 12 mm
	Insertion label, yellow, 18 mm

Type	Qty.	Order No.
TM-I 12 MC NE GE	320	1718411687
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

<b>Tools</b>	
	Tool set
	Tool set with torque function
	Mounting tool
	Screwty-M12

Type	Qty.	Order No.
SCREWTY SET	1	1910000000
SCREWTY SET-DM	1	1920000000
SCREWTY-M12-DM	1	1900001000
SCREWTY-M12	1	1900000000

Type	Qty.	Order No.
SCREWTY SET	1	1910000000
SCREWTY SET-DM	1	1920000000
SCREWTY-M12-DM	1	1900001000
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



M8		M8
1	yellow	1
2	white	2
3	blue	3
4	orange	4

M8		M8
1	yellow	1
2	white	2
3	blue	3
4	orange	4

**Technical data**

Product type  
Category  
Shielding  
Version connector left / Version connector right

Cross-section  
Sheath diameter, max.  
Material sheath  
Sheathing colour  
Insulation diameter  
Min. bending radius, repetitive  
Min. bending radius, once only  
Ambient temperature (operational)  
Installation temperature  
Storage temperature  
Approvals

**Note**

Dragline cable  
Cat. 5e  
SF/UTP  
M8 P-code - IP67 angled pin / M8 P-code - IP67 angled pin

2\*2\*AWG 22/7 - 2\*2\*0.36 mm<sup>2</sup>  
6.7 mm  
PUR  
black  
1.6 mm  
8 x cable diameter  
5 x cable diameter  
-40 °C...80 °C  
...  
...

Dragline cable  
Cat. 5e  
SF/UTP  
M8 P-code - IP67 angled pin / M8 P-code - IP67 angled socket

2\*2\*AWG 22/7 - 2\*2\*0.36 mm<sup>2</sup>  
6.7 mm  
PUR  
black  
1.6 mm  
8 x cable diameter  
5 x cable diameter  
-40 °C...80 °C  
...  
...

**Ordering data**

1.5 m
3.0 m
5.0 m
7.5 m
10.0 m

**Note**

Type	Qty.	Order No.
IE-C5DE4UP0015PCAPCA-E	1	2717800015
IE-C5DE4UP0030PCAPCA-E	1	2717800030
IE-C5DE4UP0050PCAPCA-E	1	2717800050
IE-C5DE4UP0075PCAPCA-E	1	2717800075
IE-C5DE4UP0100PCAPCA-E	1	2717800100

Type	Qty.	Order No.
IE-C5DE4UP0015PCAPSA-E	1	2717810015
IE-C5DE4UP0030PCAPSA-E	1	2717810030
IE-C5DE4UP0050PCAPSA-E	1	2717810050
IE-C5DE4UP0075PCAPSA-E	1	2717810075
IE-C5DE4UP0100PCAPSA-E	1	2717810100

**Accessories**

Marking tags	
	Insertion label, yellow, 12 mm
	Insertion label, yellow, 18 mm

Tools	
	Tool set
	Tool set with torque function
	Mounting tool
	Screwty-M12

Type	Qty.	Order No.
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687
SCREWTY SET	1	1910000000
SCREWTY SET-DM	1	1920000000
SCREWTY-M12-DM	1	1900001000
SCREWTY- M12	1	1900000000

Type	Qty.	Order No.
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687
SCREWTY SET	1	1910000000
SCREWTY SET-DM	1	1920000000
SCREWTY-M12-DM	1	1900001000
SCREWTY- M12	1	1900000000

**Note**

## Assembled cables – PROFINET cable M8, D-coded

### Assembled cable

#### Dragline cable M8

- Cat. 5
- PUR
- D-coded

### M8 - open

Plug / -



### M8 - open

Socket / -



M8	yellow
1	white
2	orange
3	blue
4	

M8	yellow
1	white
2	orange
3	blue
4	

### 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 / Open
Cross-section	4*AWG 22/7 - 0.36 mm <sup>2</sup>
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	

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 socket / Open
Cross-section	4*AWG 22/7 - 0.36 mm <sup>2</sup>
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	

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 socket / Open
Cross-section	4*AWG 22/7 - 0.36 mm <sup>2</sup>
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

	1.5 m
	3.0 m
	5.0 m
	7.5 m
	10.0 m
	20.0 m
	30.0 m

Type	Qty.	Order No.
IE-C5DD4UG0015DCSXXX-E	1	2706150015
IE-C5DD4UG0030DCSXXX-E	1	2706150030
IE-C5DD4UG0050DCSXXX-E	1	2706150050
IE-C5DD4UG0075DCSXXX-E	1	2706150075
IE-C5DD4UG0100DCSXXX-E	1	2706150100
IE-C5DD4UG0200DCSXXX-E	1	2706150200
IE-C5DD4UG0300DCSXXX-E	1	2706150300

Type	Qty.	Order No.
IE-C5DD4UG0015DSSXXX-E	1	2706260015
IE-C5DD4UG0030DSSXXX-E	1	2706260030
IE-C5DD4UG0050DSSXXX-E	1	2706260050
IE-C5DD4UG0075DSSXXX-E	1	2706260075
IE-C5DD4UG0100DSSXXX-E	1	2706260100
IE-C5DD4UG0200DSSXXX-E	1	2706260200
IE-C5DD4UG0300DSSXXX-E	1	2706260300

### Note

### Accessories

Marking tags	Insertion label, yellow, 12 mm
	Insertion label, yellow, 18 mm

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

Type	Qty.	Order No.
TM-I 12 MC NE GE	320	1718411687
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**  
**Dragline cable M8**

- Cat. 5
- PUR
- D-coded

**M8 - open**

Plug angled / -



**M8 - open**

Socket angled / -



M8	yellow
1	white
2	orange
3	blue
4	

M8	yellow
1	white
2	orange
3	blue
4	

**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 angeled pin / Open
Cross-section	4*AWG 22/7 - 0.36 mm <sup>2</sup>
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	

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 angeled pin / Open
Cross-section	4*AWG 22/7 - 0.36 mm <sup>2</sup>
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	

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 angeled socket / Open
Cross-section	4*AWG 22/7 - 0.36 mm <sup>2</sup>
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**

	1.5 m
	3.0 m
	5.0 m
	7.5 m
	10.0 m
	20.0 m
	30.0 m

Type	Qty.	Order No.
IE-C5DD4UG0015DCAXXX-E	1	2706190015
IE-C5DD4UG0030DCAXXX-E	1	2706190030
IE-C5DD4UG0050DCAXXX-E	1	2706190050
IE-C5DD4UG0075DCAXXX-E	1	2706190075
IE-C5DD4UG0100DCAXXX-E	1	2706190100

Type	Qty.	Order No.
IE-C5DD4UG0015DSAXXX-E	1	2706160015
IE-C5DD4UG0030DSAXXX-E	1	2706160030
IE-C5DD4UG0050DSAXXX-E	1	2706160050
IE-C5DD4UG0075DSAXXX-E	1	2706160075
IE-C5DD4UG0100DSAXXX-E	1	2706160100
IE-C5DD4UG0200DSAXXX-E	1	2706160200
IE-C5DD4UG0300DSAXXX-E	1	2706160300

**Note**

**Accessories**

<b>Marking tags</b>	Insertion label, yellow, 12 mm
	Insertion label, yellow, 18 mm

Type	Qty.	Order No.
TM-I 12 MC NE GE	320	1718411687
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

<b>Tools</b>	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

Type	Qty.	Order No.
SCREWTY SET	1	1910000000
SCREWTY SET-DM	1	1920000000
SCREWTY-M12-DM	1	1900001000
SCREWTY-M12	1	1900000000

Type	Qty.	Order No.
SCREWTY SET	1	1910000000
SCREWTY SET-DM	1	1920000000
SCREWTY-M12-DM	1	1900001000
SCREWTY-M12	1	1900000000

**Note**

## Assembled cables – PROFINET cable M8, D-coded

### Assembled cable

#### Dragline cable M8

- Cat. 5
- PUR
- D-coded

### M8 - M8

Plug straight / Plug straight



### M8 - M8

Plug straight / Socket straight



M8	yellow
1	white
2	orange
3	blue
4	

M8	yellow
1	white
2	orange
3	blue
4	

### 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 / M8 D-code - IP67 straight pin
Cross-section	4*AWG 22/7 - 0.36 mm <sup>2</sup>
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	

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 / M8 D-code - IP67 straight socket
Cross-section	4*AWG 22/7 - 0.36 mm <sup>2</sup>
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	

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 / M8 D-code - IP67 straight socket
Cross-section	4*AWG 22/7 - 0.36 mm <sup>2</sup>
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

	1.5 m
	3.0 m
	5.0 m
	7.5 m
	10.0 m
	20.0 m
	30.0 m

Type	Qty.	Order No.
IE-C5DD4UG0015DCSDCS-E	1	2706200015
IE-C5DD4UG0030DCSDCS-E	1	2706200030
IE-C5DD4UG0050DCSDCS-E	1	2706200050
IE-C5DD4UG0075DCSDCS-E	1	2706200075
IE-C5DD4UG0100DCSDCS-E	1	2706200100
IE-C5DD4UG0200DCSDCS-E	1	2706200200
IE-C5DD4UG0300DCSDCS-E	1	2706200300

Type	Qty.	Order No.
IE-C5DD4UG0015DCSDSS-E	1	2706210015
IE-C5DD4UG0030DCSDSS-E	1	2706210030
IE-C5DD4UG0050DCSDSS-E	1	2706210050
IE-C5DD4UG0075DCSDSS-E	1	2706210075
IE-C5DD4UG0100DCSDSS-E	1	2706210100
IE-C5DD4UG0200DCSDSS-E	1	2706210200
IE-C5DD4UG0300DCSDSS-E	1	2706210300

#### Note

### Accessories

<b>Marking tags</b>	
	Insertion label, yellow, 12 mm
	Insertion label, yellow, 18 mm

<b>Tools</b>	
	Tool set
	Tool set with torque function
	Mounting tool
	Screwty-M12

Type	Qty.	Order No.
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687
SCREWTY SET	1	1910000000
SCREWTY SET-DM	1	1920000000
SCREWTY-M12-DM	1	1900001000
SCREWTY-M12	1	1900000000

Type	Qty.	Order No.
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687
SCREWTY SET	1	1910000000
SCREWTY SET-DM	1	1920000000
SCREWTY-M12-DM	1	1900001000
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	yellow
1	white
2	orange
3	blue
4	

M8	yellow
1	white
2	orange
3	blue
4	

**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 angled pin / M8 D-code - IP67 angled pin
Cross-section	4*AWG 22/7 - 0.36 mm <sup>2</sup>
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	
<b>Note</b>	

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 angled pin / M8 D-code - IP67 angled socket
Cross-section	4*AWG 22/7 - 0.36 mm <sup>2</sup>
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	
<b>Note</b>	

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 angled pin / M8 D-code - IP67 angled socket
Cross-section	4*AWG 22/7 - 0.36 mm <sup>2</sup>
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	
<b>Note</b>	

**Ordering data**

	1.5 m
	3.0 m
	5.0 m
	7.5 m
	10.0 m
<b>Note</b>	

Type	Qty.	Order No.
IE-C5DD4UG0015DCADCA-E	1	2706220015
IE-C5DD4UG0030DCADCA-E	1	2706220030
IE-C5DD4UG0050DCADCA-E	1	2706220050
IE-C5DD4UG0075DCADCA-E	1	2706220075
IE-C5DD4UG0100DCADCA-E	1	2706220100

Type	Qty.	Order No.
IE-C5DD4UG0015DCADSA-E	1	2706230015
IE-C5DD4UG0030DCADSA-E	1	2706230030
IE-C5DD4UG0050DCADSA-E	1	2706230050
IE-C5DD4UG0075DCADSA-E	1	2706230075
IE-C5DD4UG0100DCADSA-E	1	2706230100

**Accessories**

<b>Marking tags</b>	Insertion label, yellow, 12 mm
	Insertion label, yellow, 18 mm
<b>Tools</b>	Tool set
	Tool set with torque function
	Mounting tool
	Screwty-M12

Type	Qty.	Order No.
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687
SCREWTY SET	1	1910000000
SCREWTY SET-DM	1	1920000000
SCREWTY-M12-DM	1	1900001000
SCREWTY- M12	1	1900000000

Type	Qty.	Order No.
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687
SCREWTY SET	1	1910000000
SCREWTY SET-DM	1	1920000000
SCREWTY-M12-DM	1	1900001000
SCREWTY- M12	1	1900000000

<b>Note</b>	
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<b>Note</b>	
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<b>Note</b>	
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## Assembled cables – PROFINET cable M8, D-coded

### Assembled cable

#### Dragline cable M8

- Cat. 5
- PUR
- D-coded

### M8 - RJ45

Plug straight / Plug straight



RJ45		M8
1	yellow	1
3	white	2
2	orange	3
6	blue	4

### Technical data

Product type
Category
Shielding
Version connector left / Version connector right
Cross-section
Sheath diameter, max.
Material sheath
Sheathing colour
Insulation diameter
Min. bending radius, repetitive
Min. bending radius, once only
Ambient temperature (operational)
Installation temperature
Storage temperature
Approvals

Dragline cable
Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
SF/UTP
M8 D-code - IP67 straight pin / RJ45 IP 20
4*AWG 22/7 - 0.36 mm <sup>2</sup>
6.7 mm
PUR
green (RAL 6018)
1.5 mm
7.5 x cable diameter
5 x cable diameter
-40 °C...70 °C
-20 °C...60 °C
-50 °C...70 °C

#### Note

### Ordering data

1.5 m
3.0 m
5.0 m
7.5 m
10.0 m
20.0 m
30.0 m

Type	Qty.	Order No.
IE-C5DD4UG0015DCSE40-E	1	2706250015
IE-C5DD4UG0030DCSE40-E	1	2706250030
IE-C5DD4UG0050DCSE40-E	1	2706250050
IE-C5DD4UG0075DCSE40-E	1	2706250075
IE-C5DD4UG0100DCSE40-E	1	2706250100
IE-C5DD4UG0200DCSE40-E	1	2706250200
IE-C5DD4UG0300DCSE40-E	1	2706250300

#### Note

### Accessories

#### Marking tags

Insertion label, yellow, 12 mm
Insertion label, yellow, 18 mm

#### Tools

Tool set
Tool set with torque function
Mounting tool
Screwty-M12

Type	Qty.	Order No.
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687
SCREWTY SET	1	1910000000
SCREWTY SET-DM	1	1920000000
SCREWTY-M12-DM	1	1900001000
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
Category
Shielding
Version connector left / Version connector right
Cross-section
Sheath diameter, max.
Material sheath
Sheathing colour
Insulation diameter
Min. bending radius, repetitive
Ambient temperature (operational)
Installation temperature
Storage temperature
Abrasion resistance
Halogen
Resistance to oils
Fire safety for railway vehicles

System cable
Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
SF/UTP
M12 D-code - IP 67 straight pin / M12 D-code - IP 67 straight pin
2*2*AWG 22/7 - 2*2*0.36 mm <sup>2</sup>
7.55 mm
Radox GKW S
black
1.95 mm
6 *diameter
-40 °C...90 °C
-25 °C...90 °C
-40 °C...90 °C
very good
halogen-free, according to IEC 60754-2
in acc. with EN 50306-3
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
CULUS

System cable
Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
SF/UTP
M12 D-code - IP 67 straight pin / M12 D-code - IP 67 straight socket
2*2*AWG 22/7 - 2*2*0.36 mm <sup>2</sup>
7.55 mm
Radox GKW S
black
1.95 mm
6 *diameter
-40 °C...90 °C
-25 °C...90 °C
-40 °C...90 °C
very good
halogen-free, according to IEC 60754-2
in acc. with EN 50306-3
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
CULUS

Approvals

**Note**

## Ordering data

1.5 m
3.0 m
5.0 m
10.0 m

**Note**

Type	Qty.	Order No.
IE-C5DB4RE0015MCSMCS-E	1	1010850015
IE-C5DB4RE0030MCSMCS-E	1	1010850030
IE-C5DB4RE0050MCSMCS-E	1	1010850050
IE-C5DB4RE0100MCSMCS-E	1	1010850100

Type	Qty.	Order No.
IE-C5DB4RE0015MSSMCS-E	1	1059340015
IE-C5DB4RE0030MSSMCS-E	1	1059340030
IE-C5DB4RE0050MSSMCS-E	1	1059340050
IE-C5DB4RE0100MSSMCS-E	1	1059340100

## Accessories

Marking tags	
	Insertion label, yellow, 12 mm
	Insertion label, yellow, 18 mm

Type	Qty.	Order No.
TM-I 12 MC NE GE	320	1718411687
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 cables - Railway cable M12

Assembled cable  
Railway cable M12

- Cat. 5
- Radox
- D-coded

## M12 - open

Plug / -



	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	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 mm <sup>2</sup>
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

Note

## Ordering data

	1.5 m
	3.0 m
	5.0 m
	10.0 m

Note

## Accessories

<b>Tools</b>	
	Sheathing strippers, For UTP and STP data cables
	Sheathing strippers, For coaxial and round data cables

## Marking tags

	Insertion label, yellow, 12 mm
	Insertion label, yellow, 18 mm

Note

Type	Qty.	Order No.
IE-C5DB4RE0015MCSXXX-X	1	1010840015
IE-C5DB4RE0030MCSXXX-X	1	1010840030
IE-C5DB4RE0050MCSXXX-X	1	1010840050
IE-C5DB4RE0100MCSXXX-X	1	1010840100

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
TMH 12 MC NE GE	320	1718411687
TMH 18 MC NE GE	320	1718431687

## 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

Plug / plug



M12		M12
1	yellow	1
2	white	2
3	orange	3
4	blue	4

## Technical data

Product type  
Category  
Shielding  
Version connector left / Version connector right

Cross-section  
Sheath diameter, max.  
Material sheath  
Sheathing colour  
Insulation diameter, min. / max.  
Min. bending radius, repetitive  
Ambient temperature (operational)  
Installation temperature  
Storage temperature  
Abrasion resistance  
Halogen  
Resistance to oils  
Fire safety for railway vehicles

### Note

## Ordering data

1.5 m
3.0 m
5.0 m
10.0 m

### Note

## Accessories

Marking tags	
Insertion label, yellow, 12 mm	
Insertion label, yellow, 18 mm	
Transparent sleeves, 12-mm length	
Transparent sleeves, 18-mm length	

### Note

System cable  
Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)  
SF/UTP  
M12 D-code - IP 67 straight pin / M12 D-code - IP 67 angled pin

2\*2\*AWG 22/7 - 2\*2\*0.36 mm<sup>2</sup>  
7.55 mm  
Radox GKW S  
black  
1.95 mm  
6 \*diameter  
-40 °C...90 °C  
-25 °C...90 °C  
-40 °C...90 °C  
very good  
halogen-free, according to IEC 60754-2  
in acc. with EN 50306-3  
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

Type	Qty.	Order No.
IE-C5DB4RE0015MCSMCA-E	1	1059940015
IE-C5DB4RE0030MCSMCA-E	1	1059940030
IE-C5DB4RE0050MCSMCA-E	1	1059940050
IE-C5DB4RE0100MCSMCA-E	1	1059940100

Type	Qty.	Order No.
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

System cable  
Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)  
SF/UTP  
M12 D-code - IP 67 angled pin / M12 D-code - IP 67 angled pin

2\*2\*AWG 22/7 - 2\*2\*0.36 mm<sup>2</sup>  
7.55 mm  
Radox GKW S  
black  
1.95 mm  
6 \*diameter  
-40 °C...90 °C  
-25 °C...90 °C  
-40 °C...90 °C  
very good  
halogen-free, according to IEC 60754-2  
in acc. with EN 50306-3  
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

Type	Qty.	Order No.
IE-C5DB4RE0015MCAMCA-E	1	1059970015
IE-C5DB4RE0030MCAMCA-E	1	1059970030
IE-C5DB4RE0050MCAMCA-E	1	1059970050
IE-C5DB4RE0100MCAMCA-E	1	1059970100

Type	Qty.	Order No.
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

## Assembled cables - Railway cable M12

## Assembled cables

## Railway cable M12

- Cat. 5
- Radox
- D-coded

## M12 - open

Plug / -



	M12
yellow	1
white	2
orange	3
blue	4

## Technical data

Product type  
 Category  
 Shielding  
 Version connector left / Version connector right

Cross-section  
 Sheath diameter, max.  
 Material sheath  
 Sheathing colour  
 Insulation diameter, min. / max.  
 Min. bending radius, repetitive  
 Ambient temperature (operational)  
 Installation temperature  
 Storage temperature  
 Abrasion resistance  
 Halogen  
 Resistance to oils  
 Fire safety for railway vehicles

System cable  
 Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)  
 SF/UTP  
 M12 D-code - IP 67 angled pin / Open  
 2\*2\*AWG 22/7 - 2\*2\*0.36 mm<sup>2</sup>  
 7.55 mm  
 Radox GKW S  
 black  
 1.95 mm  
 6 \*diameter  
 -40 °C...90 °C  
 -25 °C...90 °C  
 -40 °C...90 °C  
 very good  
 halogen-free, according to IEC 60754-2  
 in acc. with EN 50306-3  
 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

1.5 m  
 3.0 m  
 5.0 m  
 10.0 m

Type	Qty.	Order No.
IE-C5DB4RE0015MCAXXX-X	1	1059900015
IE-C5DB4RE0030MCAXXX-X	1	1059900030
IE-C5DB4RE0050MCAXXX-X	1	1059900050
IE-C5DB4RE0100MCAXXX-X	1	1059900100

## Note

## Accessories

Marking tags  
 Insertion label, yellow, 12 mm  
 Insertion label, yellow, 18 mm  
 Transparent sleeves, 12-mm length  
 Transparent sleeves, 18-mm length

Type	Qty.	Order No.
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

**Assembled cables**

**Railway cable RW M12**

- Cat. 5
- Radox
- D-coded
- RW (reduced wire): suitable for RJ45 connectors

**M12 - open**

Plug / -



**M12 - RJ45**

Plug / plug



--	--

	M12
yellow	1
white	2
orange	3
blue	4

RJ45		M12
1	yellow	1
3	white	2
2	orange	3
6	blue	4

**Technical data**

Product type	System cable
Category	Cat.5 (ISO/IEC 11801)
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 mm <sup>2</sup>
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	
<b>Note</b>	

Product type	System cable
Category	Cat.5 (ISO/IEC 11801)
Shielding	SF/UTP
Version connector left / Version connector right	M12 D-code - IP 67 straight pin / RJ45 IP 20 no tools needed
Cross-section	2*2*AWG 22/7 - 2*2*0.36 mm <sup>2</sup>
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	
<b>Note</b>	

Product type	System cable
Category	Cat.5 (ISO/IEC 11801)
Shielding	SF/UTP
Version connector left / Version connector right	M12 D-code - IP 67 straight pin / RJ45 IP 20 no tools needed
Cross-section	2*2*AWG 22/7 - 2*2*0.36 mm <sup>2</sup>
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	
<b>Note</b>	

**Ordering data**

	4.0 m
	5.0 m
	10.0 m
<b>Note</b>	

Type	Qty.	Order No.
IE-C5DB4WE0050MCSXXX-E	1	1269740050
IE-C5DB4WE0100MCSXXX-E	1	1269740100

Type	Qty.	Order No.
IE-C5DB4WE0040MCSA20-E	1	1220310040

**Accessories**

<b>Tools</b>	Sheathing strippers, For UTP and STP data cables
	Sheathing strippers, For coaxial and round data cables
<b>Marking tags</b>	Transparent sleeves. 12-mm length
	Transparent sleeves. 18-mm length
<b>Dust protection cap</b>	Protective cap

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000

Type	Qty.	Order No.
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000
IE-PP-RJ45	10	2552580000

<b>Note</b>	
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<b>Note</b>	
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<b>Note</b>	
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Assembled cables – Railway cable RJ45

Assembled cables

Railway cable RJ45 - RJ45

- Cat. 5
- Radox
- RW (reduced wire)

RJ45 - RJ45

Plug / plug



RJ45		RJ45
1	yellow	1
2	orange	2
3	white	3
6	blue	6

Technical data

Product type  
 Category  
 Shielding  
 Version connector left / Version connector right  
 Cross-section  
 Sheath diameter, max.  
 Material sheath  
 Sheathing colour  
 Insulation diameter  
 Min. bending radius, repetitive  
 Ambient temperature (operational)  
 Storage temperature  
 Abrasion resistance  
 Halogen  
 Resistance to oils  
 Fire safety for railway vehicles

System cable  
 Cat.5 (ISO/IEC 11801)  
 SF/UTP  
 RJ45 IP 20 no tools needed / RJ45 IP 20 no tools needed  
 2\*2\*AWG 22/7 - 2\*2\*0.36 mm<sup>2</sup>  
 7 mm  
 Radox GKW S  
 black  
 1.58 mm  
 6 \*diameter  
 -40 °C...90 °C  
 -40 °C...90 °C  
 very good  
 halogen-free, according to IEC 60754-2  
 in acc. with EN 50306-3  
 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

	1.0 m
	2.0 m
	3.0 m
	4.0 m
	5.0 m
	10.0 m
	20.0 m

Note

Type	Qty.	Order No.
IE-C5DB4WE0010A20A20-E	1	1421710010
IE-C5DB4WE0020A20A20-E	1	1421710020
IE-C5DB4WE0030A20A20-E	1	1421710030
IE-C5DB4WE0040A20A20-E	1	1421710040
IE-C5DB4WE0050A20A20-E	1	1421710050
IE-C5DB4WE0100A20A20-E	1	1421710100
IE-C5DB4WE0200A20A20-E	1	1421710200

Accessories

Marking tags	
	Transparent sleeves. 12-mm length
	Transparent sleeves. 18-mm length
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**  
USB cable

**USB A - USB A**



**USB A - USB Micro**



**Technical data**

Sheathing colour
Material sheath
Version connector left
Version connector right
Ambient temperature (operational)
<b>Note</b>

black
PVC
USB A
USB A
-15 °C...80 °C
<b>Note</b>

black
PVC
USB A
USB Micro
-15 °C...80 °C
<b>Note</b>

**Ordering data**

0.3 m	
0.5 m	
1.0 m	
1.5 m	
1.8 m	
3.0 m	
<b>Note</b>	

Type	Qty.	Order No.
IE-USB-A-A-0.3M	1	1993550003
IE-USB-A-A-0.5M	1	1993550005
IE-USB-A-A-1.0M	1	1993550010
IE-USB-A-A-1.5M	1	1993550015
IE-USB-A-A-1.8M	1	1993550018
IE-USB-A-A-3.0M	1	1993550030
<b>Note</b>		

Type	Qty.	Order No.
IE-USB-A-MICRO-1.8M	1	1487980000
<b>Note</b>		

**Accessories**

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Type	Qty.	Order No.

Type	Qty.	Order No.

<b>Note</b>
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## Assembled cables - USB cable

Assembled cables  
USB cable

## USB A 3.0 - USB A 3.0



## Technical data

Sheathing colour  
Material sheath  
Version connector left  
Version connector right  
Ambient temperature (operational)

## Note

blue  
PVC  
USB A 3.0  
USB A 3.0  
-15 °C...80 °C

## Ordering data

0.5 m  
1.8 m  
3.0 m  
5.0 m

## Note

Type	Qty.	Order No.
IE-USB-3.0-A-A-0.5M	1	2581730005
IE-USB-3.0-A-A-1.8M	1	2581730018
IE-USB-3.0-A-A-3M	1	2581730030
IE-USB-3.0-A-A-5M	1	2581730050

## Accessories

Type	Qty.	Order No.

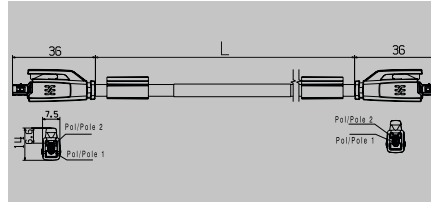
## Note

## Assembled cable

### Single Pair Ethernet IP20

## Plug - Plug

Socket contact / Socket contact



## Technical data

Product type
Category
Shielding
Ambient temperature (operational)
Rated voltage (DC)
Rated current
PoE / PoE+
Transmission rate
Dielectric strength, contact / contact
Dielectric strength, contact / shield
Characteristic impedance
Capacity at 800 Hz
Coupling attenuation 1 to 600 MHz
Coupling attenuation up to 1000 MHz
Test voltage: wire-wire-shield
Resistance differential
Transmission rate
Version connector left
Version connector right
Number of wires
Colour coding
Complete shielding / Overlap of shielding braid
Insulation
Insulation diameter
Sheath diameter, min. / max.
Cross-section / Strands
Shielding
Material sheath
Colour
Halogen
UV-resistant
Connector standard

### Note

## Ordering data

1.0 m
2.0 m
3.0 m
5.0 m

### Note

## Accessories

### Note

Patch cable
STP
-40...80 °C
60 V
3.5 A
PoDL acc. to IEEE 802.3bu / cg
10/100 Mbit/s, 1000 Mbit/s, 1000 Mbit/s
1000 V DC
2250 V DC
100 ± 15 Ω at 20 MHz
1.6 nF/km
Type I
1 kV DC, 1 min
2 %
10/100 Mbit/s, 1000 Mbit/s, 1000 Mbit/s
SPE plug (IEC 63171-2) - IP20 socket contact straight
SPE plug (IEC 63171-2) - IP20 socket contact straight
2
white / blue
Shielding braid made from copper wiring / 80 %
PE
1.65 mm
4.9 / 5.3 mm
2*AWG 22 / 7
STP
PVC
black
Yes
Complies with UL 1581 Sec. 1200
IEC 63171-2

Type	Qty.	Order No.
IE-S1DS2VE0010T01T01-E	1	2725850010
IE-S1DS2VE0020T01T01-E	1	2725850020
IE-S1DS2VE0030T01T01-E	1	2725850030
IE-S1DS2VE0050T01T01-E	1	2725850050

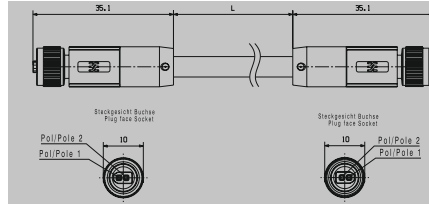
Type	Qty.	Order No.
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Assembled cables – Single Pair Ethernet cable

Assembled cable  
Single Pair Ethernet IP67

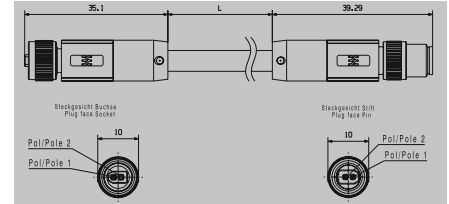
M8 / M8

Socket contact / Socket contact



M8 / M8

Socket contact / Pin contact



Technical data

Product type	Patch cable
Category	STP
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	1 kV DC, 1 min
Test voltage: wire-wire-shield	2 %
Resistance differential	10/100 MBit/s, 1000 MBit/s
Transmission rate	M8 SPE ( IEC63171-5) - IP67 socket contact straight
Version connector left	M8 SPE ( IEC63171-5) - IP67 socket contact straight
Version connector right	2
Number of wires	white / blue
Colour coding	Shielding braid made from copper wiring / 80 %
Complete shielding / Overlap of shielding braid	PE
Insulation	1.65 mm
Insulation diameter	4.9 / 5.3 mm
Sheath diameter, min. / max.	2*AWG 22 / 7
Cross-section / Strands	STP
Shielding	PVC
Material sheath	black
Colour	Yes
Halogen	Complies with UL 1581 Sec. 1200
UV-resistant	IEC 63171-5
Connector standard	
Note	

Ordering data

	2.0 m
Note	

Accessories

Type	Qty.	Order No.
Note		

Product type	Patch cable
Category	STP
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	1 kV DC, 1 min
Test voltage: wire-wire-shield	2 %
Resistance differential	10/100 MBit/s, 1000 MBit/s
Transmission rate	M8 SPE ( IEC63171-5) - IP67 socket contact straight
Version connector left	M8 SPE ( IEC63171-5) - IP67 socket contact straight
Version connector right	2
Number of wires	white / blue
Colour coding	Shielding braid made from copper wiring / 80 %
Complete shielding / Overlap of shielding braid	PE
Insulation	1.65 mm
Insulation diameter	4.9 / 5.3 mm
Sheath diameter, min. / max.	2*AWG 22 / 7
Cross-section / Strands	STP
Shielding	PVC
Material sheath	black
Colour	Yes
Halogen	Complies with UL 1581 Sec. 1200
UV-resistant	IEC 63171-5
Connector standard	
Note	

Type	Qty.	Order No.
IE-S1DS2VE0020TM1TM1-E	1	2726050020
Note		

Type	Qty.	Order No.
Note		

Product type	Patch cable
Category	STP
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	1 kV DC, 1 min
Test voltage: wire-wire-shield	2 %
Resistance differential	10/100 MBit/s, 1000 MBit/s
Transmission rate	M8 SPE ( IEC63171-5) - IP67 socket contact straight
Version connector left	M8 SPE ( IEC63171-5) - IP67 pin contact straight
Version connector right	2
Number of wires	white / blue
Colour coding	Shielding braid made from copper wiring / 80 %
Complete shielding / Overlap of shielding braid	PE
Insulation	1.65 mm
Insulation diameter	4.9 / 5.3 mm
Sheath diameter, min. / max.	2*AWG 22 / 7
Cross-section / Strands	STP
Shielding	PVC
Material sheath	black
Colour	Yes
Halogen	Complies with UL 1581 Sec. 1200
UV-resistant	IEC 63171-5
Connector standard	
Note	

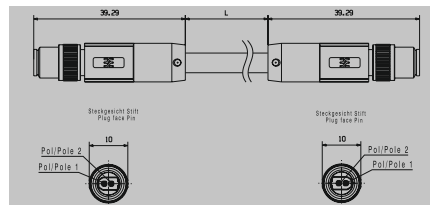
Type	Qty.	Order No.
IE-S1DS2VE0020TM1TM2-E	1	2726060020
Note		

Type	Qty.	Order No.
Note		

**Assembled cable**  
**Single Pair Ethernet IP67**

**M8 / M8**

Pin contact / Pin contact



**Technical data**

Product type
Category
Shielding
Ambient temperature (operational)
Rated voltage (DC)
Rated current
PoE / PoE+
Transmission rate
Dielectric strength, contact / contact
Dielectric strength, contact / shield
Current-carrying capacity
Characteristic impedance
Capacity at 800 Hz
Coupling attenuation 1 to 600 MHz
Coupling attenuation up to 1000 MHz
Test voltage: wire-wire-shield
Resistance differential
Transmission rate
Version connector left
Version connector right
Number of wires
Colour coding
Complete shielding / Overlap of shielding braid
Insulation
Insulation diameter
Sheath diameter, min. / max.
Cross-section / Strands
Shielding
Material sheath
Colour
Halogen
UV-resistant
Connector standard
<b>Note</b>

Patch cable
STP
-40...85 °C
60 V
3.5 A
PoDL acc. to IEEE 802.3bu / cg
10/100 MBit/s, 1000 MBit/s
1000 V DC
2250 V DC
3.5A @ 0°C
100 ± 15 Ω at 20 MHz
1.6 nF/km
Type I
1 kV DC, 1 min
2 %
10/100 MBit/s, 1000 MBit/s
M8 SPE ( IEC63171-5) - IP67 pin contact straight
M8 SPE ( IEC63171-5) - IP67 pin contact straight
2
white / blue
Shielding braid made from copper wiring / 80 %
PE
1.65 mm
4.9 / 5.3 mm
2*AWG 22 / 7
STP
PVC
black
Yes
Complies with UL 1581 Sec. 1200
IEC 63171-5
<b>Note</b>

**Ordering data**

2.0 m
<b>Note</b>

Type	Qty.	Order No.
IE-S1DS2VE0020TM2TM2-E	1	<b>2726070020</b>
<b>Note</b>		

**Accessories**

<b>Note</b>
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Type	Qty.	Order No.
<b>Note</b>		





# Fibre-optic cabling solutions

## Overview

<b>Fibre-optic cabling solutions</b>	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:

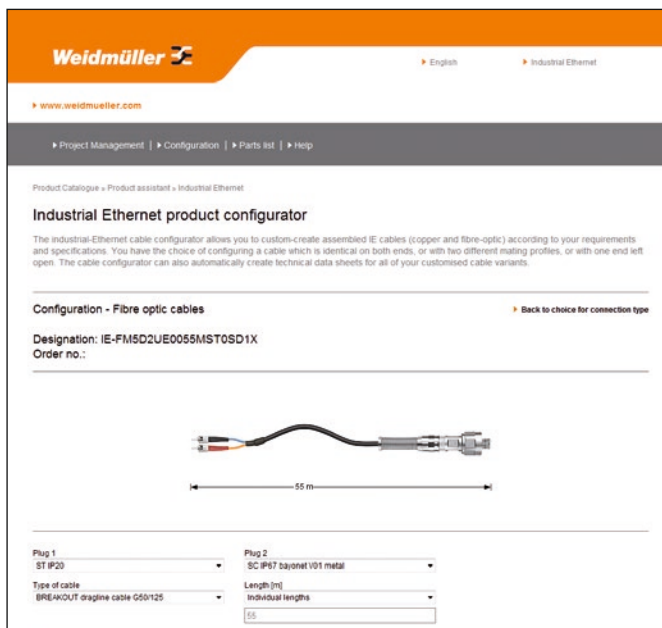
### IP20

- 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 – FO connection cable / dragline cable**

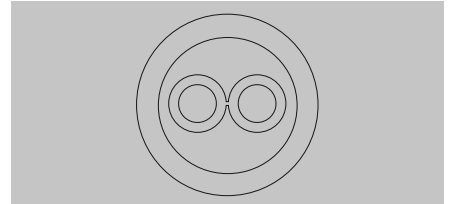
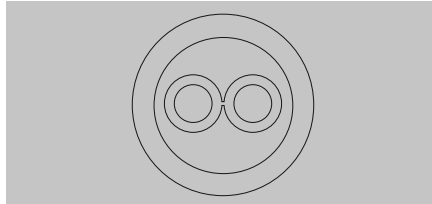
**Raw cables**

- Polymer optical fibre
- Customisable

**Mini-Breakout (Typ B)**



**Breakout (Typ C)**



**Technical data**

Product type
Cable layout
Sheath diameter
Material sheath
Sheathing colour
Insulation
Min. bending radius, repetitive
Min. bending radius, once only
Bending cycles
Ambient temperature (operational)
Fibre type
Bandwidth
Attenuation
Core diameter
Installation temperature
Storage temperature
Halogen
Approvals
<b>Note</b>

System cable
Mini-Breakout
7,5 mm
Polyethylene
green
10.000
-30 °C...70 °C
POF
> 35 MHz*100 m at 650 nm
≤ 160 dB/km at 650 nm
980 µm
...
-30 °C...70 °C
No

Dragline cable
Break-out dragline
7,5 mm
PUR
green
60 mm
25 mm
6 Mio
-40 °C...85 °C
POF
> 35 MHz*100 m at 650 nm
≤ 160 dB/km at 650 nm
980 µm
...
-40 °C...85 °C
No

**Ordering data**

<b>POF 980/1000 µm</b>	500.0 m
<b>Note</b>	

Type	Qty.	Order No.
IE-FPOB2EG-500	1	2781950000

Type	Qty.	Order No.
IE-FPOD2UG-500	1	2763640000

**Accessories**

<b>Marking tags</b>	Insertion label, yellow, 12 mm
	Insertion label, yellow, 18 mm
	Transparent sleeves, 12-mm length
	Transparent sleeves, 18-mm length
	Wire and cable markers, ø 4.7 - 7.4 mm
	Wire and cable markers, ø 5.8 - 7.8 mm
<b>Tools</b>	Crimping tool POF
	POF tool set

Type	Qty.	Order No.
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 VO	160	1689470001
VT SF 6/21 MC NE WS VO	160	1730560001
HTX-IE-POF	1	1208870000
TOOL SET IE-POF	1	1208930000

Type	Qty.	Order No.
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 VO	160	1689470001
VT SF 6/21 MC NE WS VO	160	1730560001
HTX-IE-POF	1	1208870000
TOOL SET IE-POF	1	1208930000

<b>Note</b>
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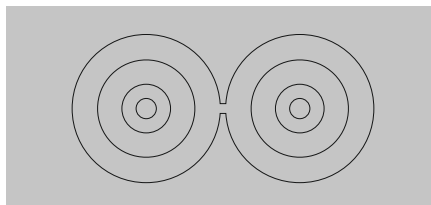
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**Assembled cables**

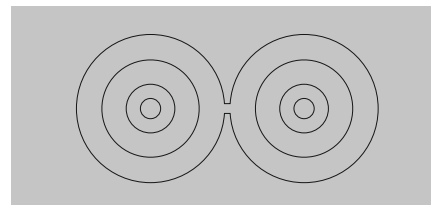
**CabinetLine FO patch cable**

- Multi-mode glass fibre optics
- LSZH Casing

**SC-Duplex / SC-Duplex**



**ST / ST**



**Technical data**

Product type
Cable layout
Sheath diameter
Material sheath
Sheathing colour
Ambient temperature (operational)
Installation temperature
Storage temperature
Approvals
Note

Patch cable, duplex clip included
ZIPCORD
2.8 * 5.7 mm
LSZH
orange
-20 °C...70 °C
...
...
Note

Patch cable
ZIPCORD
2.8 * 5.7 mm
LSZH
orange
-20 °C...70 °C
...
...
Note

**Ordering data**

Core 62.5 µm, OM1	
0.5 m	
1.0 m	
2.0 m	
3.0 m	
5.0 m	
10.0 m	
Core 50 µm, OM2	
0.5 m	
1.0 m	
2.0 m	
3.0 m	
5.0 m	
10.0 m	
Note	

Type	Qty.	Order No.
IE-FM6Z2L00005DSD0SD0-X	1	1433960005
IE-FM6Z2L00001MSD0SD0-X	1	1433960010
IE-FM6Z2L00002MSD0SD0-X	1	1433960020
IE-FM6Z2L00003MSD0SD0-X	1	1433960030
IE-FM6Z2L00005MSD0SD0-X	1	1433960050
IE-FM6Z2L00010MSD0SD0-X	1	1433960100
Type	Qty.	Order No.
IE-FM5Z2L00005DSD0SD0-X	1	1433970005
IE-FM5Z2L00001MSD0SD0-X	1	1433970010
IE-FM5Z2L00002MSD0SD0-X	1	1433970020
IE-FM5Z2L00003MSD0SD0-X	1	1433970030
IE-FM5Z2L00005MSD0SD0-X	1	1433970050
IE-FM5Z2L00010MSD0SD0-X	1	1433970100
Note		

Type	Qty.	Order No.
IE-FM6Z2L00005DST0ST0-X	1	1433980005
IE-FM6Z2L00001MST0ST0-X	1	1433980010
IE-FM6Z2L00002MST0ST0-X	1	1433980020
IE-FM6Z2L00003MST0ST0-X	1	1433980030
IE-FM6Z2L00005MST0ST0-X	1	1433980050
IE-FM6Z2L00010MST0ST0-X	1	1433980100
Type	Qty.	Order No.
IE-FM5Z2L00005DST0ST0-X	1	1433990005
IE-FM5Z2L00001MST0ST0-X	1	1433990010
IE-FM5Z2L00002MST0ST0-X	1	1433990020
IE-FM5Z2L00003MST0ST0-X	1	1433990030
IE-FM5Z2L00005MST0ST0-X	1	1433990050
IE-FM5Z2L00010MST0ST0-X	1	1433990100
Note		

**Accessories**

Marking tags	Wire and cable markers. ø 4.7 - 7.4 mm Wire and cable markers. ø 5.8 - 7.8 mm
Note	

Type	Qty.	Order No.
VT SF 5/21 MC NE WS V0	160	1689470001
VT SF 6/21 MC NE WS V0	160	1730560001
Note		

Type	Qty.	Order No.
VT SF 5/21 MC NE WS V0	160	1689470001
VT SF 6/21 MC NE WS V0	160	1730560001
Note		

Note
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Note
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Note
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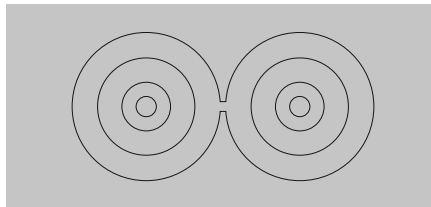
**Assembled cables - FO patch cable**

**Assembled cables**

**CabinetLine FO patch cable**

- Multi-mode glass fibre optics
- LSZH Casing

**LC-Duplex / LC-Duplex**



**Technical data**

Product type
Cable layout
Sheath diameter
Material sheath
Sheathing colour
Ambient temperature (operational)
Installation temperature
Storage temperature
Approvals
<b>Note</b>

Patch cable, duplex clip included
ZIPCORD
2.0 * 4.1 mm
LSZH
orange
-20 °C...70 °C
...
...
<b>Note</b>

**Ordering data**

<b>Core 62.5 µm, OM1</b>	
0.5 m	
1.0 m	
2.0 m	
3.0 m	
5.0 m	
10.0 m	
<b>Core 50 µm, OM2</b>	
0.5 m	
1.0 m	
2.0 m	
3.0 m	
5.0 m	
10.0 m	
<b>Note</b>	

Type	Qty.	Order No.
IE-FM6Z2L00005DLDO-X	1	1433930005
IE-FM6Z2L00001MLDO-X	1	1433930010
IE-FM6Z2L00002MLDO-X	1	1433930020
IE-FM6Z2L00003MLDO-X	1	1433930030
IE-FM6Z2L00005MLDO-X	1	1433930050
IE-FM6Z2L00010MLDO-X	1	1433930100
<hr/>		
IE-FM5Z2L00005DLDO-X	1	1433940005
IE-FM5Z2L00001MLDO-X	1	1433940010
IE-FM5Z2L00002MLDO-X	1	1433940020
IE-FM5Z2L00003MLDO-X	1	1433940030
IE-FM5Z2L00005MLDO-X	1	1433940050
IE-FM5Z2L00010MLDO-X	1	1433940100
<b>Note</b>		

**Accessories**

<b>Marking tags</b>
Wire and cable markers. ø 4.7 - 7.4 mm
Wire and cable markers. ø 5.8 - 7.8 mm
<b>Note</b>

Type	Qty.	Order No.
VT SF 5/21 MC NE WS V0	160	1689470001
VT SF 6/21 MC NE WS V0	160	1730560001
<b>Note</b>		

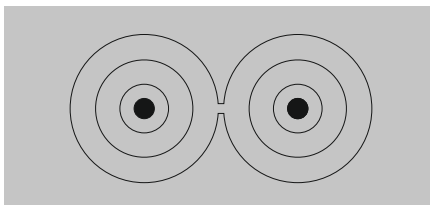
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**Assembled cables**

**CabinetLine FO patch cable**

- Single-mode glass fibre optics
- LSZH Casing

**LC-Duplex / LC-Duplex**



**Technical data**

Product type
Cable layout
Sheath diameter
Material sheath
Sheathing colour
Ambient temperature (operational)
Installation temperature
Storage temperature
Approvals
<b>Note</b>

Patch cable, duplex clip included
ZIPCORD
2.0 * 4.1 mm
LSZH
yellow
-20 °C...70 °C
...
...
<b>Note</b>

**Ordering data**

<b>Core 9 µm. OS2</b>
0.5 m
1.0 m
2.0 m
3.0 m
5.0 m
10.0 m
<b>Note</b>

Type	Qty.	Order No.
IE-FSMZ2LY0005DLDO-X	1	1433950005
IE-FSMZ2LY0001MLDO-X	1	1433950010
IE-FSMZ2LY0002MLDO-X	1	1433950020
IE-FSMZ2LY0003MLDO-X	1	1433950030
IE-FSMZ2LY0005MLDO-X	1	1433950050
IE-FSMZ2LY0010MLDO-X	1	1433950100
<b>Note</b>		

**Accessories**

<b>Marking tags</b>
Wire and cable markers. ø 4.7 - 7.4 mm
Wire and cable markers. ø 5.8 - 7.8 mm

Type	Qty.	Order No.
VT SF 5/21 MC NE WS V0	160	1689470001
VT SF 6/21 MC NE WS V0	160	1730560001
<b>Note</b>		

**Note**

**Note**



**Assembled cables - FO patch cable**

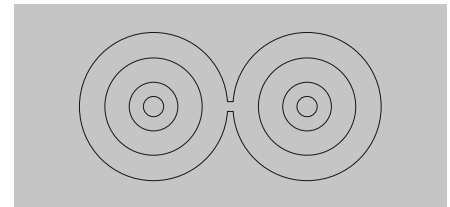
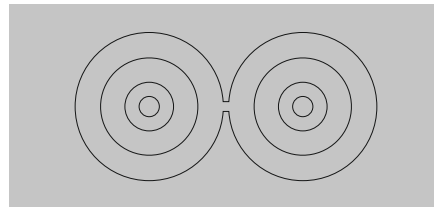
**Assembled cable**

**FO patch cable**

- Multimode glass optical fibre
- PVC outer cladding

**SC-Duplex / SC-Duplex**

**ST / ST**



**Technical data**

Product type
Cable layout
Sheath diameter
Material sheath
Sheathing colour
Ambient temperature (operational)
Installation temperature
Storage temperature
Approvals
Note

Pre-assembled patch cable, crossover
ZIPCORD
3*6 mm
PVC
orange
-5 °C...75 °C
-5 °C...50 °C
-25 °C...75 °C
Note

Patch cable
ZIPCORD
3*6 mm
PVC
orange
-5 °C...75 °C
-5 °C...50 °C
-25 °C...75 °C
Note

**Ordering data**

Core 50 µm, OM2	
1.0 m	
2.0 m	
3.0 m	
5.0 m	
10.0 m	
Core 62.5 µm, OM1	
1.0 m	
2.0 m	
3.0 m	
5.0 m	
10.0 m	
Note	

Type	Qty.	Order No.
IE-FM5Z2V00001MSDOSDOX	1	8813300000
IE-FM5Z2V00002MSDOSDOX	1	8813310000
IE-FM5Z2V00003MSDOSDOX	1	8813320000
IE-FM5Z2V00005MSDOSDOX	1	8876350050
IE-FM5Z2V00010MSDOSDOX	1	8876350100
IE-FM6Z2V00001MSDOSDOX	1	8813330000
IE-FM6Z2V00002MSDOSDOX	1	8813340000
IE-FM6Z2V00003MSDOSDOX	1	8813350000
IE-FM6Z2V00005MSDOSDOX	1	8876360050
IE-FM6Z2V00010MSDOSDOX	1	8876360100
Note		

Type	Qty.	Order No.
IE-FM5Z2V00001MSTOSTOX	1	8876370010
IE-FM5Z2V00002MSTOSTOX	1	8876370020
IE-FM5Z2V00003MSTOSTOX	1	8876370030
IE-FM5Z2V00005MSTOSTOX	1	8876370050
IE-FM5Z2V00010MSTOSTOX	1	8876370100
IE-FM6Z2V00001MSTOSTOX	1	8813270000
IE-FM6Z2V00002MSTOSTOX	1	8813280000
IE-FM6Z2V00003MSTOSTOX	1	8813290000
IE-FM6Z2V00005MSTOSTOX	1	8876380050
IE-FM6Z2V00010MSTOSTOX	1	8876380100
Note		

**Accessories**

Marking tags	
Wire and cable markers. ø 4.7 - 7.4 mm	
Wire and cable markers. ø 5.8 - 7.8 mm	
Note	

Type	Qty.	Order No.
VT SF 5/21 MC NE WS VO	160	1689470001
VT SF 6/21 MC NE WS VO	160	1730560001
Note		

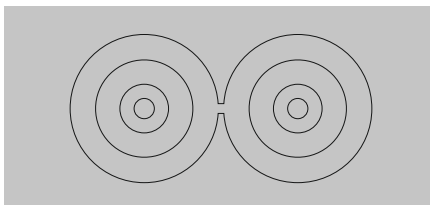
Type	Qty.	Order No.
VT SF 5/21 MC NE WS VO	160	1689470001
VT SF 6/21 MC NE WS VO	160	1730560001
Note		

R

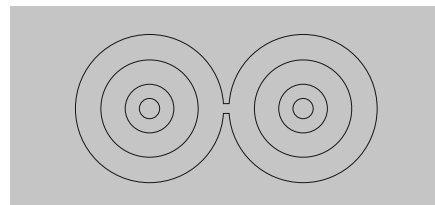
**Assembled cable**  
**FO patch cable**

- Multimode glass optical fibre
- PVC outer cladding

**ST / SC-Duplex**



**LC-Duplex / LC-Duplex**



**Technical data**

Product type
Cable layout
Sheath diameter
Material sheath
Sheathing colour
Ambient temperature (operational)
Installation temperature
Storage temperature
Approvals
Note

Pre-assembled patch cable, crossover
ZIPCORD
3*6 mm
PVC
orange
-5 °C...75 °C
-5 °C...50 °C
-25 °C...75 °C
Note

Pre-assembled patch cable, crossover
ZIPCORD
3*6 mm
PVC
orange
-5 °C...75 °C
-5 °C...50 °C
-25 °C...75 °C
Note

**Ordering data**

<b>Core 62.5 µm, OM1</b>	1.0 m
	2.0 m
<b>Core 50 µm, OM2</b>	1.0 m
	2.0 m
	5.0 m
	10.0 m
Note	

Type	Qty.	Order No.
IE-FM6Z2V00002MSTOSDOX	1	8813400000
IE-FM5Z2V00002MSTOSDOX	1	8813390000
Note		

Type	Qty.	Order No.
IE-FM6Z2V00001MLDOLD0X	1	1296450000
IE-FM5Z2V00001MLDOLD0X	1	1276880000
IE-FM5Z2V00002MLDOLD0X	1	1062570000
IE-FM5Z2V00005MLDOLD0X	1	1062550000
IE-FM5Z2V00010MLDOLD0X	1	1062580000
Note		

**Accessories**

<b>Marking tags</b>
Wire and cable markers. ø 4.7 - 7.4 mm
Wire and cable markers. ø 5.8 - 7.8 mm

Type	Qty.	Order No.
VT SF 5/21 MC NE WS VO	160	1689470001
VT SF 6/21 MC NE WS VO	160	1730560001

Type	Qty.	Order No.
VT SF 5/21 MC NE WS VO	160	1689470001
VT SF 6/21 MC NE WS VO	160	1730560001

Note
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Note
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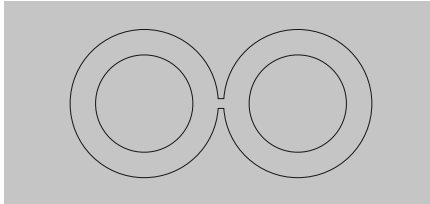
Note
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**Assembled cables - FO PROFINET cable**

**Assembled cable  
FO patch cable PROFINET**

- Polymer optical fibre

**SC-RJ / SC-RJ**



**Technical data**

Product type
Version connector left / Version connector right
Cable layout
Sheath diameter
Insulation
Sheathing colour
Fibre type
Core diameter
Ambient temperature (operational)
Attenuation
Insertion loss
Bandwidth
Halogen
Approvals

Connecting line
SCRJ IP 20 / SCRJ IP 20
ZIPCORD
2.2*4.5 mm
PE
black
POF
980 µm
-20 °C...80 °C
≤ 160 dB/km at 650 nm
≤ 1.0 dB
≥ 100 MHz*km at 650 nm
No

**Note**

**Note**

**Ordering data**

POF 980/1000 µm	
1.0 m	
3.0 m	
5.0 m	
10.0 m	
20.0 m	

Type	Qty.	Order No.
IE-FPOZ2EE0001MSJOSJO-X	1	1273430010
IE-FPOZ2EE0003MSJOSJO-X	1	1273430030
IE-FPOZ2EE0005MSJOSJO-X	1	1273430050
IE-FPOZ2EE0010MSJOSJO-X	1	1273430100
IE-FPOZ2EE0020MSJOSJO-X	1	1273430200

**Note**

**Accessories**

Marking tags	
Wire and cable markers. ø 4.7 - 7.4 mm	
Wire and cable markers. ø 5.8 - 7.8 mm	

Type	Qty.	Order No.
VT SF 5/21 MC NE WS V0	160	1689470001
VT SF 6/21 MC NE WS V0	160	1730560001

**Note**

**Note**

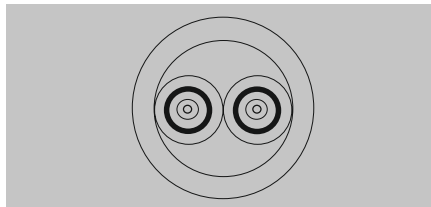
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**Assembled cables**

**FO dragline cable**

- Multimode glass optical fibre

**LC-Duplex / LC-Duplex**



**Technical data**

Product type
Version connector left / Version connector right
Cable layout
Sheath diameter
Material sheath
Sheathing colour
Ambient temperature (operational)
Installation temperature
Storage temperature
Approvals

Dragline cable
LC-Duplex IP 20 / LC-Duplex IP 20
Break-out dragline
6 mm
PUR
black
-40 °C...80 °C
-20 °C...60 °C
-40 °C...80 °C

**Note**



**Ordering data**

<b>Core 62.5 µm, OM1</b>
5.0 m
20.0 m
50.0 m
<b>Core 50 µm, OM2</b>
10.0 m
50.0 m
100.0 m

Type	Qty.	Order No.
IE-FM6D2UE0005MLDOLD0X	1	1220930000
IE-FM6D2UE0020MLDOLD0X	1	1174830000
IE-FM6D2UE0050MLDOLD0X	1	8993220000
IE-FM5D2UE0010MLDOLD0X	1	8979020000
IE-FM5D2UE0050MLDOLD0X	1	8979040000
IE-FM5D2UE0100MLDOLD0X	1	8979030000

**Note**

**Accessories**

<b>Marking tags</b>
Wire and cable markers. ø 4.7 - 7.4 mm
Wire and cable markers. ø 5.8 - 7.8 mm

Type	Qty.	Order No.
VT SF 5/21 MC NE WS V0	160	1689470001
VT SF 6/21 MC NE WS V0	160	1730560001

**Note**

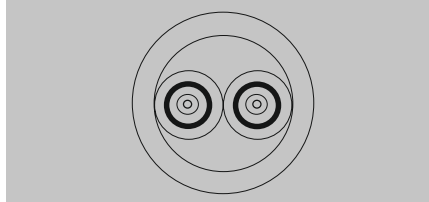


**Assembled cables - FO dragline cable**

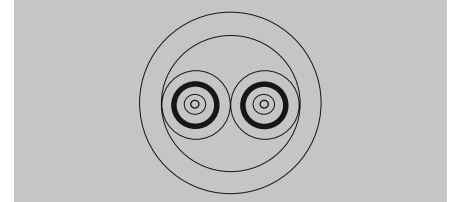
**Assembled cable  
FO dragline cable**

- Multimode glass optical fibre

**SC-Duplex / SC-Duplex**



**ST / ST**



**Technical data**

Product type  
Cable layout  
Sheath diameter  
Material sheath  
Sheathing colour  
Ambient temperature (operational)  
Installation temperature  
Storage temperature  
Approvals

Dragline cable  
Break-out dragline  
6 mm  
PUR  
black  
-40 °C...80 °C  
-20 °C...60 °C  
-40 °C...80 °C

Dragline cable  
Break-out dragline  
6 mm  
PUR  
black  
-40 °C...80 °C  
-20 °C...60 °C  
-40 °C...80 °C

**Note**

**Ordering data**

Core 62.5 µm, OM1	
1.0 m	
3.0 m	
5.0 m	
10.0 m	
50.0 m	
100.0 m	

Core 50 µm, OM2	
1.0 m	
3.0 m	
5.0 m	
10.0 m	
50.0 m	
100.0 m	

**Note**

Type	Qty.	Order No.
IE-FM6D2UE0001MSDOSD0X	1	8876440010
IE-FM6D2UE0003MSDOSD0X	1	8876440030
IE-FM6D2UE0005MSDOSD0X	1	8876440050
IE-FM6D2UE0010MSDOSD0X	1	8876440100
IE-FM6D2UE0050MSDOSD0X	1	8876440500
IE-FM6D2UE0100MSDOSD0X	1	8876441000

IE-FM5D2UE0001MSDOSD0X	1	8876430010
IE-FM5D2UE0003MSDOSD0X	1	8876430030
IE-FM5D2UE0005MSDOSD0X	1	8876430050
IE-FM5D2UE0010MSDOSD0X	1	8876430100
IE-FM5D2UE0050MSDOSD0X	1	8876430500
IE-FM5D2UE0100MSDOSD0X	1	8876431000

Type	Qty.	Order No.
IE-FM6D2UE0001MSTOST0X	1	8876460010
IE-FM6D2UE0003MSTOST0X	1	8876460030
IE-FM6D2UE0005MSTOST0X	1	8876460050
IE-FM6D2UE0010MSTOST0X	1	8876460100
IE-FM6D2UE0100MSTOST0X	1	8876461000

IE-FM5D2UE0001MSTOST0X	1	8876450010
IE-FM5D2UE0003MSTOST0X	1	8876450030
IE-FM5D2UE0005MSTOST0X	1	8876450050
IE-FM5D2UE0010MSTOST0X	1	8876450100
IE-FM5D2UE0050MSTOST0X	1	8876450500
IE-FM5D2UE0100MSTOST0X	1	8876451000

**Accessories**

Marking tags
Wire and cable markers. ø 4.7 - 7.4 mm
Wire and cable markers. ø 5.8 - 7.8 mm

Type	Qty.	Order No.
VT SF 5/21 MC NE WS V0	160	1689470001
VT SF 6/21 MC NE WS V0	160	1730560001

Type	Qty.	Order No.
VT SF 5/21 MC NE WS V0	160	1689470001
VT SF 6/21 MC NE WS V0	160	1730560001

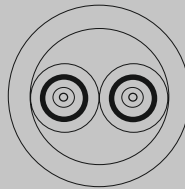
**Note**

## Assembled cables

### FO dragline cable with extended temperature range

- Multimode glass optical fibre

## SC-Duplex IP67



### Technical data

Product type
Cable layout
Version connector left / Version connector right
Sheath diameter
Material sheath
Sheathing colour
Fibre type
Bandwidth
Attenuation
Ambient temperature (operational)
Installation temperature
Storage temperature
Approvals

Dragline cable
Break-out dragline
SC IP 67 bayonet V01 metal / SC IP 67 bayonet V01 metal
7.5-8 mm
PUR
black
GOF, Multimode, OM1
200 MHz*km at 850 nm, 500 MHz*km at 1300 nm
2.7 dB/km at 850 nm, ≤ 0.5 dB/km at 1300 nm
-40 °C...85 °C
-55 °C...60 °C
-55 °C...85 °C

### Note

### Ordering data

Core 62.5 µm. OM1	
100.0 m	
180.0 m	
200.0 m	
250.0 m	
300.0 m	
350.0 m	
500.0 m	

### Note

Type	Qty.	Order No.
IE-FM6C2UE0100MSD1SD1X	1	1318011000
IE-FM6C2UE0180MSD1SD1X	1	1318011800
IE-FM6C2UE0200MSD1SD1X	1	1318012000
IE-FM6C2UE0250MSD1SD1X	1	1318012500
IE-FM6C2UE0300MSD1SD1X	1	1318013000
IE-FM6C2UE0350MSD1SD1X	1	1318013500
IE-FM6C2UE0500MSD1SD1X	1	1318015000

### Accessories

Marking tags	
Wire and cable markers. ø 4.7 - 7.4 mm	
Wire and cable markers. ø 5.8 - 7.8 mm	

Type	Qty.	Order No.
VT SF 5/21 MC NE WS V0	160	1689470001
VT SF 6/21 MC NE WS V0	160	1730560001

### Note

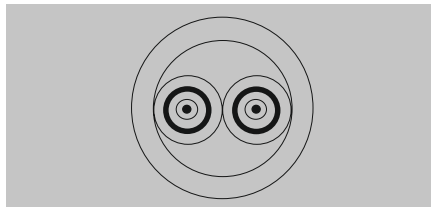
**Assembled cables - FO dragline cable**

**Assembled cables**

**FO dragline cable**

- Singlemode glass optical fibre

**SC-Duplex IP67**



**Technical data**

Product type
Cable layout
Version connector left / Version connector right
Sheath diameter
Material sheath
Sheathing colour
Fibre type
Bandwidth
Insertion loss
Attenuation
Ambient temperature (operational)
Installation temperature
Storage temperature
Approvals

Dragline cable
Break-out dragline
SC IP 67 PushPull V14 metal / SC IP 67 PushPull V14 metal
6 mm
PUR
black
Singlemode, OS 2
≤ 0.5 dB
≤0.4 dB/km at 1310 nm
-40 °C...80 °C
-20 °C...60 °C
-40 °C...80 °C

**Note**

**Note**

**Ordering data**

<b>Core 9 µm. OS2</b>
5.0 m
20.0 m
25.0 m
40.0 m

Type	Qty.	Order No.
IE-FSMD2UE0005MSDESDEX	1	1449420050
IE-FSMD2UE0020MSDESDEX	1	1449420200
IE-FSMD2UE0025MSDESDEX	1	1449420250
IE-FSMD2UE0040MSDESDEX	1	1449420400

**Note**

**Accessories**

<b>Marking tags</b>
Wire and cable markers. ø 4.7 - 7.4 mm
Wire and cable markers. ø 5.8 - 7.8 mm

Type	Qty.	Order No.
VT SF 5/21 MC NE WS V0	160	1689470001
VT SF 6/21 MC NE WS V0	160	1730560001

**Note**

**Note**

R

# Passive components

## Overview of accessories

<b>Accessories – Passive components</b>	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 <b>STEADYTEC</b> <sup>®</sup>	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<sub>A</sub>

- fieldattachable with IDC connection technology
- Specified for class F<sub>A</sub>
- IP67

### Cable guiding



Cable bender to guide patch cables safely and without cable breakage or data loss by 90° angles

### Copper cabling tools

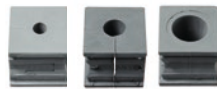


For assembling

- RJ45 crimp
- Hybrid insert

for stripping to test the wiring

### Cabletie



System-based cable entry

- Cable entry strips
- Cable grommets

S

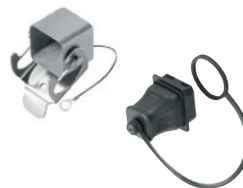
### Fibre-optic cabling tools



For assembling

- SCRJ-POF
- SC-GOF
- ST-GOF

### Protective caps



to protect all IE-LINE connectors with **STEADYTEC**® 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

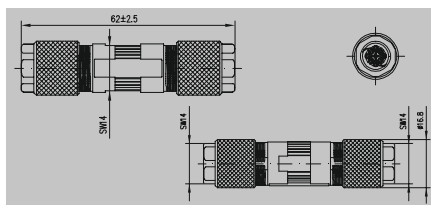
### Surge protection for data interfaces



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	
Protection degree	
Connection 1 / 2	
Housing main material	
Ambient temperature (operational)	
Current-carrying capacity at 50 °C	
Rated voltage	
Insulation strength	
Shielding	
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	
<b>Note</b>	

Class F <sub>A</sub> (ISO/IEC11801 2011) with cat. 7 <sub>A</sub> Cable	
IP67	
Insulation displacement technology / Insulation displacement technology	
Zinc diecast	
-40 °C...85 °C	
0.5 A @ 40 °C	
63 V	
100 MΩ	
360° all-round enclosure	
0.48 mm / 0.76 mm	
AWG 26 / AWG 22	
0.4 mm / 0.64 mm	
AWG 24 / AWG 22	
1.6 mm	
5 mm / 9.7 mm	
EAC	

Ordering data

<b>Note</b>
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Type	Qty.	Order No.
IE-CC-8W-FA-IP67	1	1499940000

Accessories

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Type	Qty.	Order No.

<b>Note</b>
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**Copper cabling tools**

**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<sup>2</sup> (~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	
Cable model	
Conductor cross-section	AWG
Conductor diameter	mm
Adjustable depth of cut	mm
Cutting performance	
Non-shielded & shielded data cables	mm
Flexible copper cable	mm <sup>2</sup>
Tool data	
Length	mm
Weight	g
<b>Note</b>	

**Ordering data**

Type	Qty.	Order No.
IE-CST	1	9204350000
<b>Note</b>		

**Accessories**

Type	Qty.	Order No.
Spare cutter cassette	1	9032020000
<b>Note</b>		

IE-CST	
coaxial & round data cables	
Conductor diameter	2.5 ... 8
Length	100
Weight	85
<b>Note</b>	

Type	Qty.	Order No.
IE-CST	1	9204350000
<b>Note</b>		

Type	Qty.	Order No.
Spare cutter cassette	1	9032020000
<b>Note</b>		

AM 12	
UTP and STP data cables	
Conductor diameter	0.5...12.5
Adjustable depth of cut	adjustable
Length	8
Weight	4
Length gauge	97
Weight	36
<b>Note</b>	

Type	Qty.	Order No.
AM 12	1	9030060000
<b>Note</b>		

Type	Qty.	Order No.
AM 12	1	9030060000
<b>Note</b>		

**Pressing tools**

- Press (punch-down) tool for Ethernet connectors
- Ratchet for precise crimping
- Release option in the event of incorrect operation

**TT 8 RS MP 8**

For 8-pole shielded RJ45 plug

- AWG 27...24

**Technical data**

<b>Description of contact</b>	
No. of poles	
<b>Tool data</b>	
Length	mm
Weight	g
<b>Note</b>	

<b>TT 8 RS MP 8</b>	
No. of poles	8
Length	255
Weight	1251
<b>Note</b>	

**Ordering data**

<b>Version</b>	
<b>Note</b>	

Type	Qty.	Order No.
TT 8 RS MP 8	1	9202800000
<b>Note</b>		

**Copper cabling tools**

**Pressing tools**

- Press (punch-down) tool for Ethernet connectors
- Ratchet for precise crimping
- Release option in the event of incorrect operation

**IE-CWZ-RJ45-TH-P**



For 4-pole shielded RJ45 plug

- AWG 23...22



**S**

**Technical data**

<b>Description of contact</b>	
No. of poles	
<b>Tool data</b>	
Length	mm
Weight	g
<b>Note</b>	

<b>IE-CWZ-RJ45-TH-P</b>	
No. of poles	4
Length	250
Weight	570
<b>Note</b>	

**Ordering data**

<b>Version</b>	
<b>Note</b>	

Type	Qty.	Order No.
IE-CWZ-RJ45-TH-P	1	2614210000
<b>Note</b>		





**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



## Fibre-optic cabling tools

### 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 mm<sup>2</sup>

## S

### Technical data

Length / Width / Height	mm	241 / 338 / 79
Weight	g	1,800
<b>Note</b>		

Length / Width / Height	mm	241 / 338 / 79
Weight	g	1,800
<b>Note</b>		

Length / Width / Height	mm	250 / 85 / 40
Weight	g	250
<b>Note</b>		

### Ordering data

<b>Version</b>	
<b>Note</b>	

Type	Qty.	Order No.
TOOL SET IE-POF	1	1208930000
<b>Note</b>		

Type	Qty.	Order No.
MULTI-STRIPAX IE-POF	1	1208800000
<b>Note</b>		

### Accessories

<b>Note</b>		
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Type	Qty.	Order No.
HTX-IE-POF	1	1208870000
MULTI-STRIPAX IE-POF	1	1208800000
KEVLAR SCISSORS	1	1208910000
<b>Note</b>		

Type	Qty.	Order No.
Replacement cutting blade	1	9203100000
Replacement stop set	1	9203070000
AIE MULTI-STRIPAX POF	1	1212770000
<b>Note</b>		

**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 (reconnectable) 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

**Technical data**

Material data
Length
Weight
Note

HTX-IE-POF
220
450
Note

HTX-HTX-IE-POF-QA
220
450
Note

**Ordering data**

Version
Note

Type	Qty.	Order No.
HTX-IE-POF	1	1208870000
Note		

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



**Fibre-optic cabling tools**

**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

**S**

**Technical data**

<b>Material data</b>
Length
Weight
<b>Note</b>

<b>SCISSORS KEVLAR</b>
147
100

**Ordering data**

<b>Version</b>
<b>Note</b>

Type	Qty.	Order No.
SCISSORS KEVLAR	1	1208910000

**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 mm<sup>2</sup>



For Weidmüller hybrid sockets and pins

- ~AWG 28...AWG 17



**Technical data**

Description of contact	
Type of contact	
Crimping range	mm <sup>2</sup>
Crimping range 1 (with multiple crimping positions)	mm <sup>2</sup>
Crimping range 2 (with multiple crimping positions)	mm <sup>2</sup>
Crimping range 3 (with multiple crimping positions)	mm <sup>2</sup>
Tool data	
Length	mm
Weight	g
Note	

HTF HYB		
Hybrid sockets / plugs		
		0.08...1
		0.08...0.2
		0.2...0.5
		0.75...1

**Ordering data**

Version	
Note	

Type	Qty.	Order No.
HTF HYB	1	1119580000
Note		

## Fibre-optic cabling tools

### 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

## S

### Technical data

Max. stripping performance	
Cable type	-
Conductor diameter, min. / max.	-
Stripping length, max.	-
Tool data	
Width	mm
Height	mm
Weight	g
Note	

M-D-STRIPAX LWL	
POF conductor with an inner conductor of 1 mm Ø	
Stripping length, max.	7.5
Width	82
Height	135
Weight	110
Note	
POF: polymer optical fibre	

### Ordering data

Version
Note

Type	Qty.	Order No.
M-D-STRIPAX LWL	1	9003750000
Note		

### Accessories

Note

Type	Qty.	Order No.
Spare stripping blades	1	9003760000
Note		

### Incision tool for twisted-pair cable

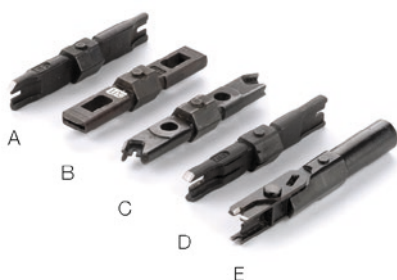
For connecting twisted-pair cable to terminal rails with IDC contacts e.g. in main and floor distributors, and in modular wall junction boxes for structured building cabling.

### 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)

### Technical data

Length / Width / Height	mm
Weight	g
<b>Note</b>	

### Ordering data

<b>Version</b>
<b>Note</b>

### Accessories

<b>Note</b>
-------------

<b>PUNCH DOWN TOOL PDT</b>		
160 / 37 / 29		
142		

Type	Qty.	Order No.
PUNCH DOWN TOOL PDT	1	9013970000
(without blade)		

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

### IE-FISP-V4



Fastening tool for the hexagon cap nut from **STEADYTEC**® V4 flange and FrontCom® Micro.

**General tools**

**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**

<b>Maximum steel-sheet punching performance</b>
Round holes from 1 to Ø 85 mm
Round holes from 2 to Ø 64 mm
Square holes up to
Rectangular holes up to
<b>Maximum stainless steel sheet punching performance</b>
Round holes from 3 to Ø 64 mm
<b>Tool data</b>
Depth / Width / Height
Weight
Punching force
Max. operating pressure
<b>Note</b>

<b>IE-KO-HAT</b>
2,0 mm F = 370 N/mm <sup>2</sup>
3,0 mm F = 370 N/mm <sup>2</sup>
68 x 68 mm; 2,0 mm F = 370 N/mm <sup>2</sup>
36 x 112 mm; 2,0 mm F = 370 N/mm <sup>2</sup>
2,5 mm F = 600 N/mm <sup>2</sup>
70 / 290 / 120 mm
1.9 kg
75 kN
650 bar

**Ordering data**

<b>Version</b>
<b>Note</b>

Type	Qty.	Order No.
IE-KO-HAT	1	1966810000

**Accessories**

Tension bolt
Tension bolts
Pre-drill
<b>Note</b>

Type	Qty.	Order No.
KOHS 19	1	9205010000
KOHS 9.5+19	1	9205000000
KOPD 10.0	1	9205020000

Splitting stamp on the next page

**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



Tension bolt KOHS 19



Tension bolts KOHS 9.5+19



Pre-drill KOPD 10.0



## Cabtite cable entry system

### 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.

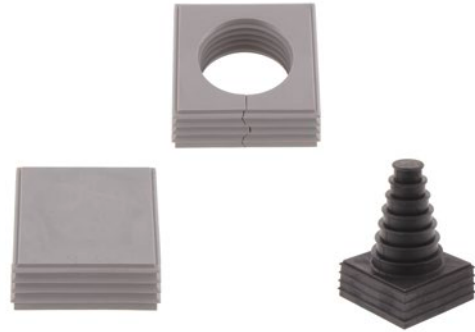
#### Technical data

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
<b>Note</b>	

#### Ordering data

Type	Clamping range	Qty.	Deep black Order No.	Light Grey Order No.
<b>Individual sealing elements</b>				
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
<b>Special geometry ASI</b>				
CABTITE SE 1/ASI SML		10	2583530000	2584810000
CABTITE SE 2/ASI SML		10	2583520000	2584800000
<b>Multiple sealing element</b>				
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
<b>Cone sealing element</b>				
CABTITE CSE 2-11 SML	2...11 mm	10	2583510000	
<b>Blind plugs</b>				
CABTITE BSE SML		10	2584790000	2583350000
<b>Note</b>				

### 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.

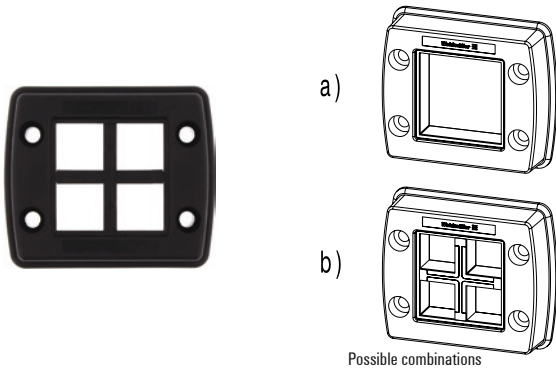
#### Technical data

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
<b>Note</b>	

#### Ordering data

Type	Clamping range	Qty.	Deep black Order No.	Light Grey Order No.
<b>Individual sealing elements</b>				
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
<b>Cone sealing element</b>				
CABTITE CSE 7-24 LRG	7...24 mm	10	2583500000	
<b>Blind plugs</b>				
CABTITE BSE LRG		10	2583900000	2584520000
<b>Note</b>				

**Cabtite FR - CABTITE FR 4-1 BK SET**



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
<b>Note</b>	

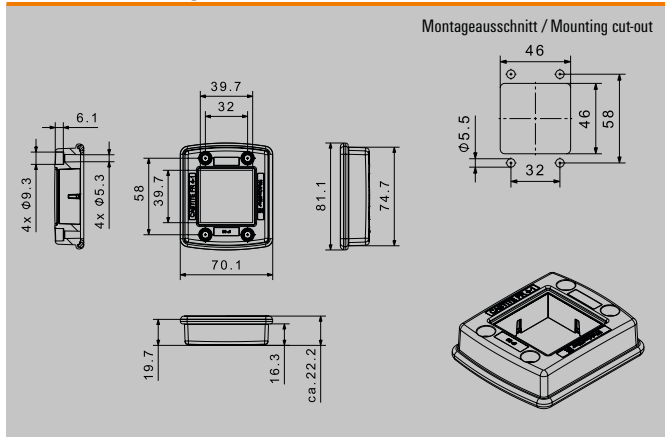
**Ordering data**

Type	Qty.	Order No.
<b>Set</b>		
CABTITE FR 4-1 BK SET	1	2583780000
<b>Single frame (without snap-in inlay)</b>		
CABTITE FR 4-1 BK	1	2583490000
<b>Note</b>	The individual frames do not contain any Rastinlays or sealing elements.	

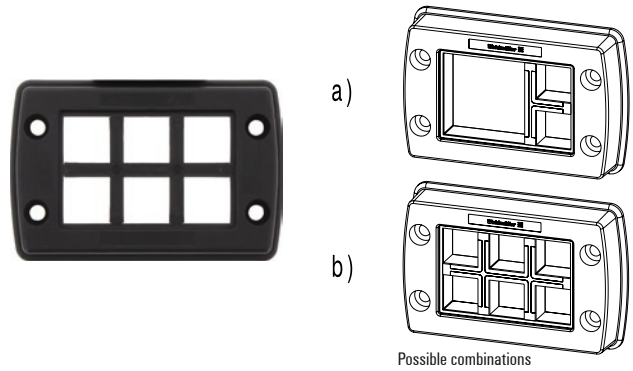
**Accessories**

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
<b>Note</b>			

**Dimensioned drawing**



**Cabtite FR - CABTITE FR 10/6 BK SET**



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
<b>Note</b>	

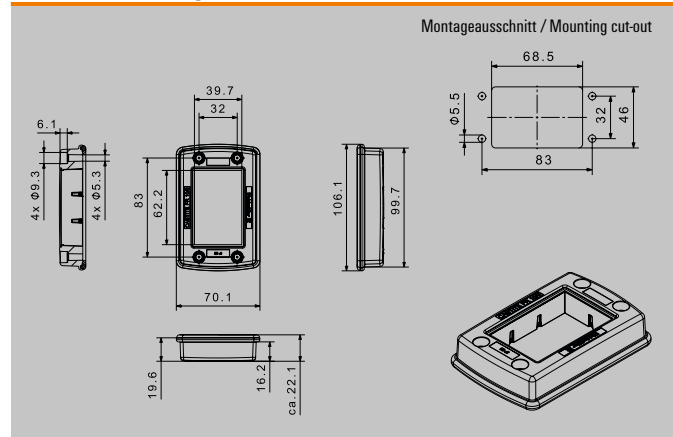
**Ordering data**

Type	Qty.	Order No.
<b>Set</b>		
CABTITE FR 10/6 BK SET	1	2583760000
<b>Single frame (without snap-in inlay)</b>		
CABTITE FR 10/6 BK	1	2583480000
<b>Note</b>	The individual frames do not contain any Rastinlays or sealing elements.	

**Accessories**

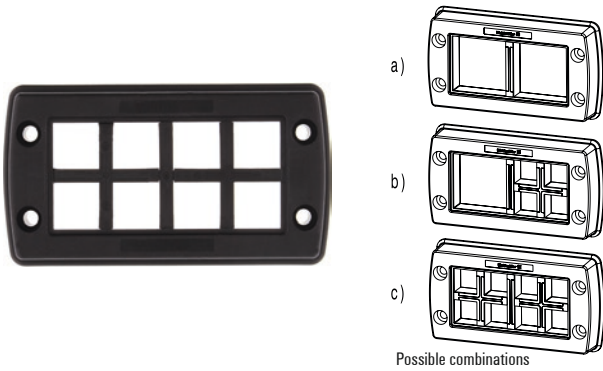
Product type	Type	Qty.	Order No.
Locking frame (inside)	CABTITE FRL 10/6 BK	10	2584240000
Operating tool	CABTITE TOOL ATSE PA	1	2637360000
Mounting screw set	CABTITE SC M5X25 SET	1	2635120000
<b>Note</b>			

**Dimensioned drawing**



## Cabtite cable entry system

### Cabtite FR - CABTITE FR 16/8 BK SET



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
<b>Note</b>	

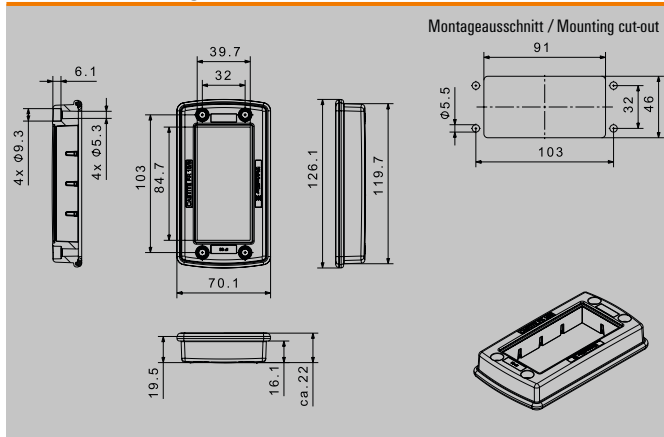
#### Ordering data

Type	Qty.	Order No.
<b>Set</b>		
CABTITE FR 16/8 BK SET	1	2583740000
<b>Single frame (without snap-in inlay)</b>		
CABTITE FR 16/8 BK	1	2583470000
<b>Note</b>	The individual frames do not contain any Rastinlays or sealing elements.	

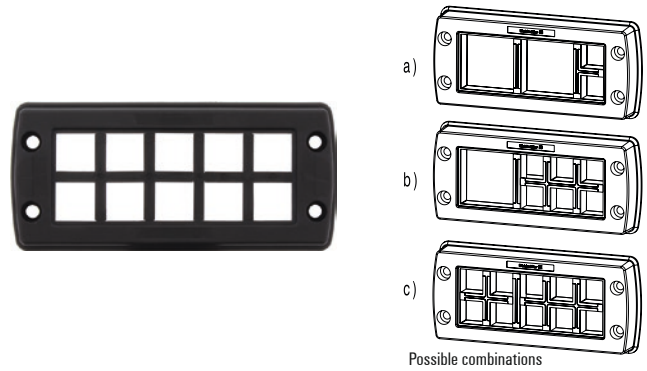
#### Accessories

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
<b>Note</b>			

#### Dimensioned drawing



### Cabtite FR - CABTITE FR 24/10 BK SET



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
<b>Note</b>	

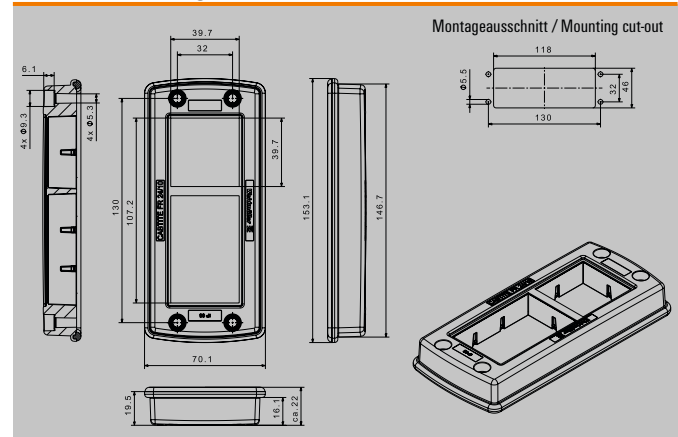
#### Ordering data

Type	Qty.	Order No.
<b>Set</b>		
CABTITE FR 24/10 BK SET	1	2583720000
<b>Single frame (without snap-in inlay)</b>		
CABTITE FR 24/10 BK	1	2583800000
<b>Note</b>	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
<b>Note</b>			

#### 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**

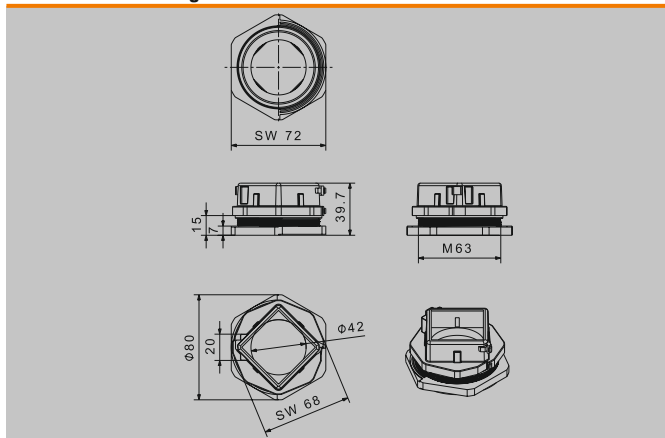
Material	Polyamide, glass fibre-reinforced
Colour	Deep black
Operating temperature	-40...120 °C
Protection class / Protection class (UL)	IP54, IP65, IP66 /
UL 94 flammability rating	V-0
<b>Note</b>	

**Ordering data**

Type	Qty.	Order No.
<b>Divisible cable gland*</b>		
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
<b>Articulated locknut</b>		
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
<b>Rastinly for M40-M63**</b>		
CABTITE GI X BK	5	2584290000
<b>Note</b>		

\*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**

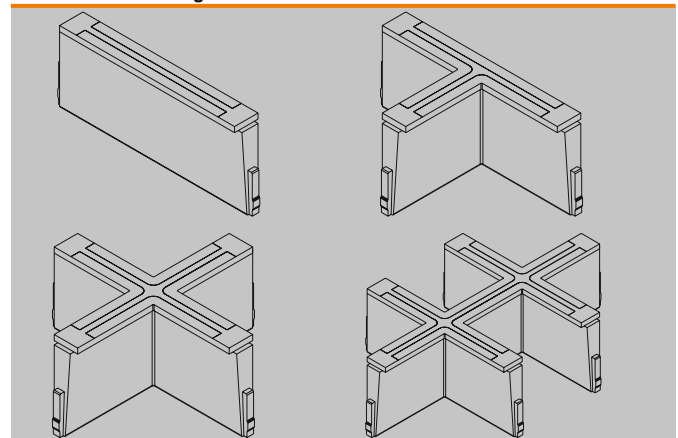
Material	Polyamide, glass fibre-reinforced
Colour	Deep black
Operating temperature	-40...120 °C
Protection class / Protection class (UL)	IP54, IP65, IP66 /
UL 94 flammability rating	V-0
<b>Note</b>	

**Ordering data**

Type	Qty.	Order No.
CABTITE GI I BK	5	2584320000
CABTITE GI T BK	5	2584300000
CABTITE GI H BK	5	2584270000
<b>Rastinly for M40-M63**</b>		
CABTITE GI X BK	5	2584290000
<b>Note</b>		

\*\*The locking inlay is required to install 4 small sealing elements in the cable gland.

**Dimensioned drawing**



## Cabtite cable entry system

### 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

### 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

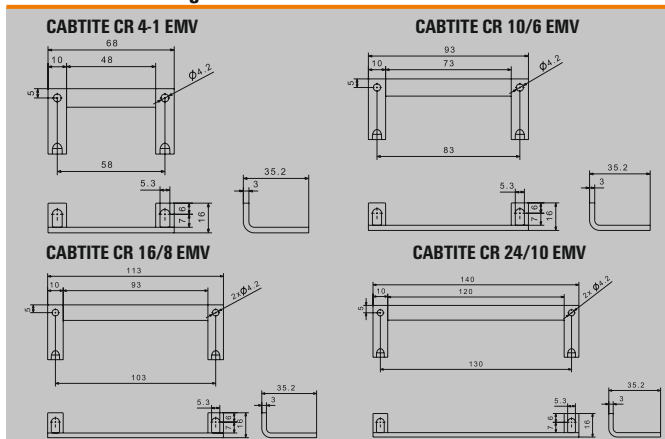
#### Note

#### 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

### Dimensioned drawing



### 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
<b>Hinweis</b>	

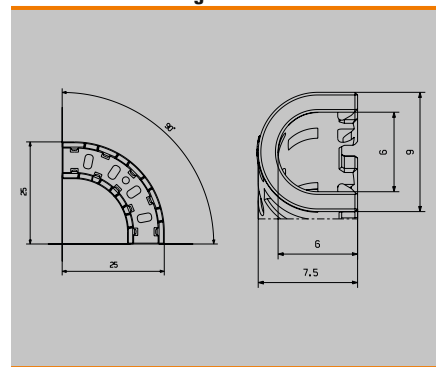
Cable bending radius	90 °
Colour	black
Temperature range	-25 °C...85 °C
Sheath diameter, min.	5.5 mm
Sheath diameter, max	6.5 mm
<b>Hinweis</b>	

#### Ordering data

<b>Note</b>		

Type	Qty.	Order No.
IE-CABLE-BENDER-90	50	2704480000

#### Dimensioned drawings



**Protective caps**

**Dust-protection plugs for protecting empty ports**

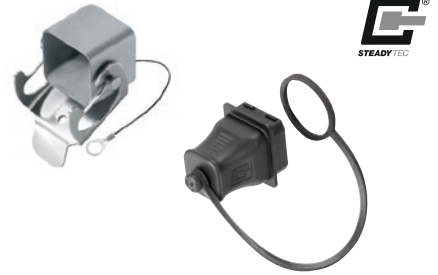
- RJ45
- **STEADYTEC**® variants
- M12

**Dust Cap RJ45**



- Dust Cap RJ45 with finger grip

**Protective caps IP67**



- Protective caps for all **STEADYTEC**® variants and for M12 plug-in connectors

**Ordering data**

Type	Qty.	Order No.
IE-DPC	100	8813490000
<b>Note</b>		

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



# 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.

### 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



The new 7" touch colour display with a multitude of new functions ensures optimal operation.



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 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 0 °F – 95 °F
Dimensions	Length including output rail: approx. 1.133 mm (44,60") Length not including output rail: approx. 930 mm (36,60") Width: 590 mm (23,20") Height: 454 mm (17,90")
Weight	63 kg with packaging 38 kg without packaging
Ink system	Colour system – black, cyan, magenta, yellow
Included in delivery	<ul style="list-style-type: none"> <li>• PrintJet CONNECT</li> <li>• Mains cable</li> <li>• LAN cable</li> <li>• USB cable</li> <li>• WIFI stick</li> <li>• one MultiCard DEK 5/5</li> <li>• DVD with M-Print® PRO software</li> <li>• Quick start guide</li> <li>• Operating manual</li> <li>• Ink set PJ CON INK SET</li> <li>• 2 PrintJet cleaner cloths</li> </ul>
The ink cartridges are not installed in the printer.	

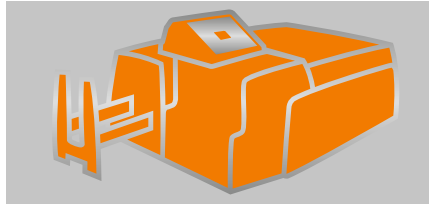


High magazine capacity for loading and dispensing of up to 50 MultiCards.

**Inkjet printer**

**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
<b>Note</b>	

**Ordering data**

Type	Qty.	Order No.
PRINTJET CONNECT	1	2715590000
<b>Note</b>		

**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
<b>Note</b>				



**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

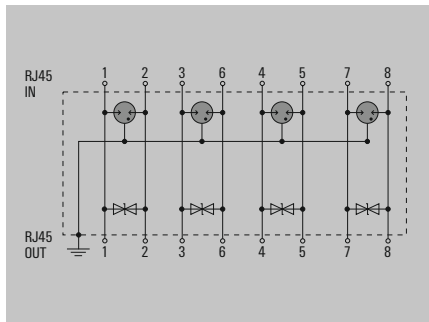
**Note:** Can be printed with PrintJet PRO.

**Surge protection for data interfaces**

**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  
 Surge current-carrying capacity C2  
 Surge current-carrying capacity D1  
 Discharge current  $I_n$  (8/20  $\mu$ s) wire-wire/wire-PE/GND-PE  
 Discharge  $I_{max}$  (8/20  $\mu$ s) wire-wire/wire-PE/GND-PE  
 Lightning test  $I_{imp}$  (10/350  $\mu$ s) wire-wire/wire-PE/GND-PE  
 Type of connection  
 Storage temperature  
 Ambient temperature (operational)  
 Protection degree  
 Rated voltage (AC)  
 Rated current  
 Insertion loss at 250 MHz  
 Protection level  $U_p$  typical

**Approvals**

Standards

**Dimensions of complete module (arrester + base element)**

Height x width x depth

**Note**

C2, D1  
 10 kA  
 1 kA 10/350  $\mu$ s  
 150 A / 1,25 kA  
 10 kA / 5 kA  
 1 kA / 1 kA  
 RJ45-Port  
 -40 ... +85 °C  
 -40 ... +80 °C  
 IP20  
 48 V  
 1 A  
 $\leq$  1 dB at 250 MHz  
 $\leq$  550 V

According to IEC61643-21

75 / 19 / 46 mm

Can also be used for Cat.5 applications

**Ordering data**

**Note**

Type	Qty.	Order No.
VDATA CAT6	1 ST	1348590000

# Service and support

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<b>Service and support</b>	Our expertise for your requirements	V.2
	Engineering support and customised assembly	V.3
	Personal support	V.4

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## Our expertise for your requirements

### Service connects – worldwide



Automation technology functions are becoming more complex in a globally-oriented world facing ambitious targets in terms of energy efficiency and smart production. We are your equal partners for the best connections in Industrial Connectivity.

Our personal support can answer any questions reliably and expertly. Our online services are available 365 day a year around the clock to provide answers to your questions on our products – from user documentation through software to planning tools.

In short: Weidmüller's global service combines our expertise with your requirements.

V



**Your way to our service**  
[www.weidmueller.com/service](http://www.weidmueller.com/service)

## Engineering support and customised assembly

Automation engineering and connectivity consulting belongs to our services as well as assembly of engineered products. We also support the process from the idea to the product with our Weidmüller Configurator and the Configure-to-Order process.



### Consulting and engineering

The challenge for you is reducing costs and increasing efficiency. This requires intelligent, individual solutions. Whether it is modified products, pre-fitted mounting rails or complete small cabinets – our application centres provide a highly qualified custom-made engineering and production service.



### Connectivity Consulting

Alongside our product offering, we support you with our range of services through all the phases of machine construction. The result of this collaboration is a reduction of up to 30% in cycle times, up to 20% more space in the control cabinet and significant fault reduction. Our experienced Connectivity Consulting team delivers a practical impetus rather than just abstract theories.



### Fitted mounting rails

Your processes in panel building have to be fast, flexible and productive. This is the only way you can cut your costs and increase efficiency. Depending on the application in question, you will have different requirements with respect to the engineering service, delivery speed and flexibility to be provided.



### Processed and assembled enclosures

To compete internationally, your plants need to satisfy high standards of safety, quality and performance. The smart combination of consultation, application expertise and industry know-how is our key to finding a custom-fit solution for your application. Reduce costs and increase efficiency.

## Personal support

Exactly the right help and information on our solutions and products



If our products are used in your automation technology applications, you need the best possible individual support, from planning through installation to operation. For every stage of your application, we can offer the right tools and information for our products and solutions. Up-to-date, uncomplicated, comprehensive and around the clock via our service portal at [www.weidmueller.com/support](http://www.weidmueller.com/support).

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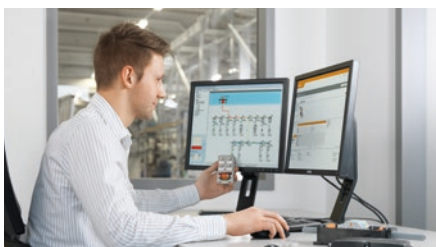


**Your way to your local personal support**  
[www.weidmueller.com/support](http://www.weidmueller.com/support)



### Technical downloads

All information, such as technical data, manuals, certificates and much more for the appropriate use of our products and solutions in your application.



### Engineering data

For the quick integration of our products into your design, there are a lot of digital product data for engineering systems like EPLAN, Zuken E3.series, WSCAD and many others available for download.



### Product software

Our software makes using and configuration of our products easier for you when it comes to operation, configuration and monitoring.



### Approvals, certificates & declaration of conformity

We supply product- or company-related approvals and certificates for your documentation.



### Security advisory board

Our Product Security Incident Response Team (PSIRT) continuously informs you about possible security-related vulnerabilities of our products.



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IE-BP-WAPP-DC	2494060000	N.61	IE-C5DB4WE0020A20A20E	1421710020	0.50	IE-C5D04UG0075DCSDCS-E	2706200075	0.42	IE-C5DHAG-100	2763660000	0.5
IE-BS-M12X-180P-TH	2747880000	N.44	IE-C5DB4WE0030A20A20E	1421710030	0.50	IE-C5D04UG0075DCSDSE	2706210075	0.42	IE-C5DHAG-100	2763660000	0.17
IE-BS-M12X-180S-TH	2747900000	N.44	IE-C5DB4WE0040A20A20E	1421710040	0.50	IE-C5D04UG0075DCSE40E	2706250075	0.44	IE-C5DHAG-500	2763660000	J.11
IE-BS-M12X-90P-TH	2747910000	N.44	IE-C5DB4WE0040MCA20E	1220310040	0.49	IE-C5D04UG0075DCSXXX-E	2706150075	0.40	IE-C5DHAG-500	2763660000	N.7
IE-BS-M12X-90S-TH	2747920000	N.44	IE-C5DB4WE0050A20A20E	1421710050	0.50	IE-C5D04UG0075DSAXXXE	2706160075	0.41	IE-C5DHAG-500	2763660000	0.5
IE-BS-M12X-S-FH	2731010000	N.46	IE-C5DB4WE0050MCSXXX-E	1269740050	0.49	IE-C5D04UG0075DSXXX-E	2706260075	0.40	IE-C5DHAG-500	2763660000	0.17
IE-BS-M12X-S-FH	1516340000	N.42	IE-C5DB4WE0100A20A20E	1421710100	0.50	IE-C5D04UG0100A20A20E	1173030100	0.20	IE-C5DHAG-MW	1172250000	N.8
IE-BS-V01M-LCD-MMC	1964440000	N.15	IE-C5DB4WE0100MCSXXX-E	1269740100	0.49	IE-C5D04UG0100A2EA2E-X	1376510100	0.20	IE-C5D04UG0005MBSA20E	1234750005	0.30
IE-BS-V01M-LCD-SMC	1963430000	N.15	IE-C5D04UG-100	1421710200	0.50	IE-C5D04UG0100A2EA2E-X	1119730100	J.11	IE-C5D04UG0005MBSMCS-E	1244130005	0.30
IE-BS-V01M-RJ45-C	1963470000	N.14	IE-C5D04UG-100	8899010000	J.11	IE-C5D04UG0100A2EA2E-X	1119730100	0.22	IE-C5D04UG0005MBSXXXE	1234770005	0.31
IE-BS-V01M-RJ45-C	1963470000	J.13	IE-C5D04UG-100	8899010000	0.5	IE-C5D04UG0100A60A60E	2047310100	0.21	IE-C5D04UG0010MBSA20E	1234750010	0.30
IE-BS-V01M-RJ45-FJA	1963480000	N.14	IE-C5D04UG-500	8899010000	0.16	IE-C5D04UG0100B2EB2E-X	1307610100	0.23	IE-C5D04UG0010MBSMCS-E	1244130010	0.30
IE-BS-V01M-RJ45-FJA	1963480000	J.13	IE-C5D04UG-500	2763450000	J.11	IE-C5D04UG0100DCADCAE	2706220100	0.43	IE-C5D04UG0010MBSXXXE	1234770010	0.31
IE-BS-V01M-SCRJ-MM	1221010000	N.14	IE-C5D04UG-500	2763450000	0.16	IE-C5D04UG0100DCADSAE	2706230100	0.43	IE-C5D04UG0015MBSA20E	1234750015	0.30
IE-BS-V01M-SCRJ-MM	1221010000	J.14	IE-C5D04UG-500	2763450000	0.15	IE-C5D04UG0100DCAXXXE	2706190100	0.41	IE-C5D04UG0015MBSMCS-E	1244130015	0.30
IE-BS-V01M-SCRJ-SM	1221020000	J.14	IE-C5D04UG0050A20A20E	1173030005	0.20	IE-C5D04UG0100DCSDCS-E	2706200100	0.42	IE-C5D04UG0015MBSXXXE	1234770015	0.31
IE-BS-V01M-SCRJ-SM	1221020000	N.14	IE-C5D04UG0050A2DA2DE	1376510005	0.20	IE-C5D04UG0100DCSDSE	2706210100	0.42	IE-C5D04UG0020MBSA20E	1234750020	0.30
IE-BS-V01P-RJ45-C	1012370000	J.14	IE-C5D04UG0050A60A60E	2047310005	0.21	IE-C5D04UG0100DCSE40E	2706250100	0.44	IE-C5D04UG0020MBSMCS-E	1244130020	0.30
IE-BS-V01P-RJ45-C	1012370000	N.17	IE-C5D04UG0050MCSMCS-E	1025950005	0.26	IE-C5D04UG0100DSAXXXE	2706150100	0.40	IE-C5D04UG0020MBSXXXE	1234770020	0.31
IE-BS-V01P-RJ45-FJA	1012380000	J.14	IE-C5D04UG0010A20A20E	1173030010	0.20	IE-C5D04UG0100DSAXXXE	2706160100	0.41	IE-C5D04UG0050MBSA20E	1234750050	0.30
IE-BS-V01P-RJ45-FJA	1012380000	N.14	IE-C5D04UG0010A20A20E	1376510010	0.20	IE-C5D04UG0100DSXXX-E	2706260100	0.40	IE-C5D04UG0050MBSMCS-E	1244130050	0.30
IE-BS-V01P-RJ45-MMC	1964460000	N.17	IE-C5D04UG0010A2EA2E-X	1119730010	J.11	IE-C5D04UG0100MCAECAE	1059890010	0.28	IE-C5D04UG0050MBSXXXE	1234770050	0.31
IE-BS-V04P-LCD-SMC	1963450000	N.24	IE-C5D04UG0010A2EA2E-X	1119730010	0.22	IE-C5D04UG0100MCAXXX-X	1059750010	0.29	IE-C5D5AVG-100	8898990000	J.11
IE-BS-V04P-RJ45-C	1963490000	N.20	IE-C5D04UG0010A60A60E	2047310010	0.21	IE-C5D04UG0100MCA20E	1044470100	0.27	IE-C5D5AVG-100	8898990000	0.5
IE-BS-V04P-RJ45-FJA	1963500000	N.14	IE-C5D04UG0010B2EB2E-X	1307610010	0.23	IE-C5D04UG0100MCSMCAE	1059770100	0.28	IE-C5D5AVG-100	8898990000	0.15
IE-BS-V04P-RJ45-FJA	1963730000	N.17	IE-C5D04UG0010MCA20E	1044470010	0.27	IE-C5D04UG0100MCSMCS-E	1025950100	0.26	IE-C5D5AVG-500	2763470000	J.11
IE-BS-V04P-RJ45-FJA	1964470000	N.23	IE-C5D04UG0010MCSXXX-E	1025940010	0.27	IE-C5D04UG0100MCSXXX-E	1025940100	0.27	IE-C5D5AVG-500	2763470000	0.5
IE-BS-V04P-SCRJ2SC-MMC	1963420000	N.23	IE-C5D04UG0015A60A60E	2047310015	0.21	IE-C5D04UG0100MSSMCS-E	1059330100	0.26	IE-C5D5AVG-500	2763470000	0.15
IE-BS-V05M-RJ45-C	1963510000	N.26	IE-C5D04UG0015DCADCAE	2706220015	0.43	IE-C5D04UG0150A20A20E	1173030150	0.20	IE-C5D5AVG0005A60A60E	1522100005	0.21
IE-BS-V05M-RJ45-FJA	1963460000	N.26	IE-C5D04UG0015DCADSAE	2706230015	0.43	IE-C5D04UG0150A20A20E	1376510150	0.20	IE-C5D5AVG0010A60A60E	1522100010	J.10
IE-BS-V05M-RJ45-FJP	1963700000	N.26	IE-C5D04UG0015DCAXXXE	2706190015	0.41	IE-C5D04UG0150A2EA2E-X	1119730150	0.22	IE-C5D5AVG0010A60A60E	1522100010	0.21
IE-BSC-V14M-LCD-MMC	1062610000	N.11	IE-C5D04UG0015DCSDCS-E	2706200015	0.42	IE-C5D04UG0150A60A60E	2047310150	0.21	IE-C5D5AVG0015A60A60E	1522100015	0.21
IE-BSC-V14M-LCD-SMC	1062620000	N.11	IE-C5D04UG0015DCSDSE	2706210015	0.42	IE-C5D04UG0200A20A20E	1173030200	0.20	IE-C5D5AVG0020A60A60E	1522100020	0.21
IE-BSC-V14M-RJ45-C	1058250000	J.10	IE-C5D04UG0015DCSE40E	2706250015	0.44	IE-C5D04UG0200A2DA2DE	1376510200	0.20	IE-C5D5AVG0025A60A60E	1522100025	0.21
IE-BSC-V14M-RJ45-C	1058250000	N.5	IE-C5D04UG0015DCSXXX-E	2706150015	0.40	IE-C5D04UG0200A2EA2E-X	1119730200	0.22	IE-C5D5AVG0030A60A60E	1522100030	J.10
IE-BSC-V14M-RJ45-FJA	1058270000	N.4	IE-C5D04UG0015DSAXXXE	2706160015	0.41	IE-C5D04UG0200A60A60E	2047310200	0.21	IE-C5D5AVG0030A60A60E	1522100030	0.21
IE-BSC-V14M-SCRJ-MM-C	1062590000	J.10	IE-C5D04UG0015DSXXX-E	2706260015	0.40	IE-C5D04UG0200DCSDCS-E	2706200200	0.42	IE-C5D5AVG0040A60A60E	1522100040	0.21
IE-BSC-V14M-SCRJ-MM-C	1062590000	N.11	IE-C5D04UG0015MCAECAE	1059890015	0.28	IE-C5D04UG0200DCSDSE	2706210200	0.42	IE-C5D5AVG0050A60A60E	1522100050	J.10
IE-BSC-V14M-SCRJ-SM-C	1062600000	J.10	IE-C5D04UG0015MCAXXX-X	1059750015	0.29	IE-C5D04UG0200DCSE40E	2706250200	0.44	IE-C5D5AVG0050A60A60E	1522100050	0.21
IE-BSC-V14M-SCRJ-SM-C	1062600000	N.11	IE-C5D04UG0015MCSA20E	1044470015	0.27	IE-C5D04UG0200DCSXXX-E	2706150200	0.40	IE-C5D5AVG0075A60A60E	1522100075	0.21
IE-BSS-V14M-HYB-10P-FJ	1072900000	N.10	IE-C5D04UG0015MCSMCAE	1059770015	0.28	IE-C5D04UG0200DSAXXXE	2706160200	0.41	IE-C5D5AVG0100A60A60E	1522100100	J.10
IE-BSS-V14M-HYB-10P-FJ	1072900000	J.8	IE-C5D04UG0015MCSMCS-E	1025950015	0.26	IE-C5D04UG0200DSXXX-E	2706260200	0.40	IE-C5D5AVG0100A60A60E	1522100100	0.21
IE-BSS-V14M-LCD-MMC	1058130000	N.11	IE-C5D04UG0015MCSXXX-E	1025940015	0.27	IE-C5D04UG0300DCSDCS-E	2706200300	0.42	IE-C5D5AVG0150A60A60E	1522100150	0.21



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IE-FM5D2UE0050MLDOLDX	897940000	R.11	IE-FP022EE0003MSJOSJ0-X	1273430030	J.10	IE-PH-RJ45-FH-B-1.6	1992900000	L.5	IE-PS-V05M-RJ45-FH	1963200000	N.25
IE-FM5D2UE0050MSDSDDX	8876430500	R.12	IE-FP022EE0003MSJOSJ0-X	1273430030	J.14	IE-PH-RJ45-FH-B-1.6	1992900000	L.6	IE-PS-V05M-RJ45-FH-B	1271250000	N.25
IE-FM5D2UE0050MSTOSTOX	8876450500	R.12	IE-FP022EE0003MSJOSJ0-X	1273430030	J.10	IE-PH-RJ45-FH-P	1123030000	N.49	IE-PS-V05M-RJ45-TH	1963110000	N.25
IE-FM5D2UE0100MLDOLDX	897930000	R.11	IE-FP022EE0005MSJOSJ0-X	1273430050	R.10	IE-PH-RJ45-FH-P-1.6	1992910000	L.7	IE-PS-V14M-25C-PDF	1191550000	J.11
IE-FM5D2UE0100MSDSDDX	8876431000	R.12	IE-FP022EE0005MSJOSJ0-X	1273430050	J.14	IE-PH-RJ45-TH	1962720000	N.50	IE-PS-V14M-25C-PDF	1191550000	N.10
IE-FM5D2UE0100MSTOSTOX	8876451000	R.12	IE-FP022EE0005MSJOSJ0-X	1273430050	R.10	IE-PH-RJ45-TH-P	2768720000	N.2	IE-PS-V14M-25C-PDF-0A	2568260000	N.10
IE-FM5Z2L0001MLDOLDX	1433940010	R.6	IE-FP022EE0010MSJOSJ0-X	1273430100	J.10	IE-PI-SCRJ-PDF	1067410000	N.10	IE-PS-V14M-HYB-10P	1072910000	J.11
IE-FM5Z2L0001MSDSDDX	1433970010	R.5	IE-FP022EE0010MSJOSJ0-X	1273430100	J.14	IE-PI-SCRJ-PDF	1067410000	N.56	IE-PS-V14M-HYB-10P	1072910000	N.7
IE-FM5Z2L0001MSTOSTOX	1433990010	R.5	IE-FP022EE0010MSJOSJ0-X	1273430100	R.10	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-FH-P	1012170000	J.11
IE-FM5Z2L0002MLDOLDX	1433940020	R.6	IE-FP022EE0020MSJOSJ0-X	1273430200	R.10	IE-PI-SCRJ-PDF-0A	2564960000	N.56	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM5Z2L0002MSDSDDX	1433970020	R.5	IE-FSMD2UE0005MSDESDEX	1449420050	R.14	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-TH	1012160000	N.3
IE-FM5Z2L0002MSTOSTOX	1433990020	R.5	IE-FSMD2UE0020MSDESDEX	1449420200	R.14	IE-PI-SCRJ-PDF-0A	2564960000	N.56	IE-PS-V14M-RJ45-TH-P	2768740000	J.11
IE-FM5Z2L0003MLDOLDX	1433940030	R.6	IE-FSMD2UE0025MSDESDEX	1449420250	R.14	IE-PI-SCRJ-PDF-0A	2564960000	N.56	IE-PS-V14M-RJ45-TH-P	2768740000	N.2
IE-FM5Z2L0003MSDSDDX	1433970030	R.5	IE-FSMD2UE0040MSDESDEX	1449420400	R.14	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-FH-P	1012170000	J.11
IE-FM5Z2L0003MSTOSTOX	1433990030	R.5	IE-FSMZ2LY0001MLDOLDX	1433950010	R.7	IE-PI-SCRJ-PDF-0A	2564960000	N.56	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM5Z2L0005MLDOLDX	1433940005	R.6	IE-FSMZ2LY0002MLDOLDX	1433950020	R.7	IE-PI-SCRJ-PDF-0A	2564960000	N.56	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM5Z2L0005MSDSDDX	1433970005	R.5	IE-FSMZ2LY0003MLDOLDX	1433950030	R.7	IE-PI-SCRJ-PDF-0A	2564960000	N.56	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM5Z2L0005MSTOSTOX	1433990005	R.5	IE-FSMZ2LY0005MLDOLDX	1433950005	R.7	IE-PI-SCRJ-PDF-0A	2564960000	N.56	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM5Z2L0005MLDOLDX	1433940050	R.6	IE-FSMZ2LY0005MSDSDDX	1433950005	R.7	IE-PI-SCRJ-PDF-0A	2564960000	N.56	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM5Z2L0005MSDSDDX	1433970050	R.5	IE-FSMZ2LY0010MLDOLDX	1433950100	R.7	IE-PI-SCRJ-PDF-0A	2564960000	N.56	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM5Z2L0005MSTOSTOX	1433990050	R.5	IE-INJ-EL02-2GTPDE	2682440000	B.16	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM5Z2L0010MLDOLDX	1433940100	R.6	IE-KEY-RJ45/JDC-1	2782300000	L.12	IE-PI-SCRJ-PDF-0A	2564960000	N.56	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM5Z2L0010MSDSDDX	1433970100	R.5	IE-KO-HAT	1966810000	M.3	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM5Z2L0010MSTOSTOX	1433990100	R.5	IE-KO-HAT	1966810000	M.4	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM5Z2V0001MLDOLDX	1276880000	R.9	IE-KO-HAT	1966810000	S.16	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM5Z2V0001MSDSDDX	8813300000	R.8	IE-KO-KV1	1966780000	S.16	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM5Z2V0001MSTOSTOX	8876370010	R.8	IE-KO-KV4	1966790000	S.16	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM5Z2V0002MLDOLDX	1062570000	R.9	IE-KO-KV5	9204790000	S.16	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM5Z2V0002MSDSDDX	8813310000	R.8	IE-M12-ADAP	8901630000	N.38	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM5Z2V0002MSTOSTOX	8876370020	R.8	IE-M12-ADAP S	8901630000	N.38	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM5Z2V0003MSDSDDX	8813320000	R.8	IE-M12-COUP	8901640000	N.39	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM5Z2V0003MSTOSTOX	8876370030	R.8	IE-M12-PCBCE	8902810000	N.40	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM5Z2V0005MLDOLDX	1062550000	R.9	IE-M12-PCBCE-PANEL	8902820000	N.40	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM5Z2V0005MSDSDDX	8876350050	R.8	IE-M12-PCBCE-PANEL A	1393470000	N.40	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM5Z2V0005MSTOSTOX	8876370050	R.8	IE-MC-VL1-TX-1S	1241400000	F.4	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM5Z2V0010MLDOLDX	1062580000	R.9	IE-MC-VL1-TX-1S	1241410000	F.4	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM5Z2V0010MSDSDDX	8876351000	R.8	IE-MC-VL1-TX-1S	1268880000	F.4	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM5Z2V0010MSTOSTOX	8876370100	R.8	IE-MC-VL1-TX-1S	1268900000	F.4	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM6C2UE0100MSDSDX	1318011000	R.13	IE-MC-VL1-TX-1S	1268900000	F.4	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM6C2UE0180MSDSDX	1318011800	R.13	IE-OM-V01M-K11-1S	1966300000	0.13	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM6C2UE0100MSDSDX	1318012000	R.13	IE-OM-V01M-K21-2S	1966330000	0.13	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM6C2UE0250MSDSDX	1318012500	R.13	IE-OM-V04P-K11-1S	1966220000	0.15	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM6C2UE0300MSDSDX	1318013000	R.13	IE-OM-V04P-K21-2S	1966250000	0.15	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM6C2UE0350MSDSDX	1318013500	R.13	IE-OM-V05M-K11-1S	1966260000	0.16	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM6C2UE0500MSDSDX	1318015000	R.13	IE-OM-V05M-K21-2S	1966290000	0.16	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM6D2UE0001MSDSDX	8876440010	R.12	IE-OP-V01P-1S	1061830000	J.15	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM6D2UE0001MSTOSTOX	8876460010	R.12	IE-OP-V01P-1S	1061830000	0.12	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM6D2UE0003MSDSDX	8876440030	R.12	IE-OP-V04P-1S	1045780000	0.14	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM6D2UE0003MSTOSTOX	8876460030	R.12	IE-P	8813100000	L.8	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM6D2UE0005MLDOLDX	1220930000	R.11	IE-P-IP67	8808380000	N.27	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM6D2UE0005MSDSDDX	8876440050	R.12	IE-P63	8813110000	L.8	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM6D2UE0005MSTOSTOX	8876460050	R.12	IE-P70	8813120000	N.48	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM6D2UE0010MSDSDDX	8876440100	R.12	IE-PCB-M12X-S-180	1324010000	L.7	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM6D2UE0010MSTOSTOX	8876460100	R.12	IE-PCB-M12X-S-90	2168220000	N.48	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM6D2UE0020MLDOLDX	1174830000	R.11	IE-PCB-SPD-P-180V-THR	2795170000	K.12	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM6D2UE0020MSDSDDX	8876440020	R.12	IE-PCB-SPD-P-180V-THR	2795170000	L.3	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM6D2UE0020MSTOSTOX	8876460020	R.12	IE-PCB-SPD-P-90V-THR	2726010000	K.12	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM6D2UE0100MSDSDDX	8876441000	R.12	IE-PCB-SPD-P-90V-THR	2726010000	L.3	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM6D2UE0100MSTOSTOX	8876461000	R.12	IE-PCB-SPD-P-90V-THR-YG	2795120000	K.12	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM6Z2L0001MLDOLDX	1433930010	R.6	IE-PCB-SPD-P-90V-THR-YG	2795120000	L.3	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM6Z2L0001MSDSDDX	1433960010	R.5	IE-PCB-SPM-P-180-SMD	2795110000	K.14	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM6Z2L0001MSTOSTOX	1433980010	R.5	IE-PCB-SPM-P-180-SMD	2795110000	N.31	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM6Z2L0002MLDOLDX	1433930020	R.6	IE-PCB-SPM-P-180-THR	2735920000	K.14	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM6Z2L0002MSDSDDX	1433960020	R.5	IE-PCB-SPM-P-180-THR	2735920000	N.31	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM6Z2L0002MSTOSTOX	1433980020	R.5	IE-PCB-SPM-P-90-THR	2795100000	K.14	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM6Z2L0003MLDOLDX	1433930030	R.6	IE-PCB-SPM-P-90-THR	2795100000	N.31	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM6Z2L0003MSDSDDX	1433960030	R.5	IE-PCB2-M12X-S-180	1393080000	N.47	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM6Z2L0003MSTOSTOX	1433980030	R.5	IE-PCBRM-M12X-S-180	1424670000	N.47	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM6Z2L0005MLDOLDX	1433930005	R.6	IE-PCBRM-M12X-S-180	1444650000	N.47	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM6Z2L0005MSDSDDX	1433960005	R.5	IE-PH-AD-V05M-RJ45	1993540000	N.25	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM6Z2L0005MSTOSTOX	1433980005	R.5	IE-PH-RJ45-TH-BK	1962500000	L.8	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM6Z2L0005MLDOLDX	1433930050	R.6	IE-PH-RJ45-TH-BU	1962470000	L.8	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM6Z2L0005MSDSDDX	1433960050	R.5	IE-PH-RJ45-TH-GN	1962490000	L.8	IE-PI-SCRJ-PDF-0A	2564960000	N.10	IE-PS-V14M-RJ45-FH-P	1012170000	N.2
IE-FM6											

Type	Order No.	Page	Type	Order No.	Page	Type	Order No.	Page	Type	Order No.	Page
IE-SW-BL06T-2TX-4POE	128692000	B.10	IE-USB-3.0-A-A-3M	2581730030	N.55	PWZ RJ45	1118040000	L.5	SCREWTY SET-DM	1920000000	Q.42
IE-SW-BL08-6TX-2SC	1240910000	B.6	IE-USB-3.0-A-A-3M	2581730030	Q.52	PWZ RJ45	1118040000	L.6	SCREWTY SET-DM	1920000000	Q.43
IE-SW-BL08-6TX-2SCS	1412110000	B.6	IE-USB-3.0-A-A-5M	2581730050	M.14	PWZ RJ45	1118040000	L.7	SCREWTY SET-DM	1920000000	Q.44
IE-SW-BL08-6TX-2ST	1240930000	B.6	IE-USB-3.0-A-A-5M	2581730050	M.32	PWZ RJ45	1118040000	M.13	SCREWTY-M12	1900000000	Q.26
IE-SW-BL08-7TX-1SC	1412070000	B.6	IE-USB-3.0-A-A-5M	2581730050	N.55	PWZ RJ45	1118040000	N.49	SCREWTY-M12	1900000000	Q.27
IE-SW-BL08-8TX	1240900000	B.6	IE-USB-3.0-A-A-5M	2581730050	Q.52	PWZ RJ45	1118040000	N.51	SCREWTY-M12	1900000000	Q.30
IE-SW-BL08T-6TX-2SC	1240920000	B.6	IE-USB-A-A-0.3M	1993550003	Q.51				SCREWTY-M12	1900000000	Q.31
IE-SW-BL08T-6TX-2SCS	1412120000	B.6	IE-USB-A-A-0.5M	1993550005	M.14				SCREWTY-M12	1900000000	Q.36
IE-SW-BL08T-6TX-2ST	1286570000	B.6	IE-USB-A-A-0.5M	1993550005	M.32				SCREWTY-M12	1900000000	Q.37
IE-SW-BL08T-7TX-1SC	1412080000	B.6	IE-USB-A-A-0.5M	1993550005	N.55	REMOVAL TOOL HD	1866730000	L.10	SCREWTY-M12	1900000000	Q.38
IE-SW-BL08T-8TX	1286560000	B.6	IE-USB-A-A-0.5M	1993550005	Q.51	RM-KIT	1241440000	B.4	SCREWTY-M12	1900000000	Q.39
IE-SW-EL05-4GT-1GESFP	2682220000	B.12	IE-USB-A-A-1.0M	1993550010	M.14	RM-KIT	1241440000	B.5	SCREWTY-M12	1900000000	Q.40
IE-SW-EL05-5GT	2682210000	B.12	IE-USB-A-A-1.0M	1993550010	M.32	RM-KIT	1241440000	B.6	SCREWTY-M12	1900000000	Q.41
IE-SW-EL05-5TX	2682130000	B.4	IE-USB-A-A-1.0M	1993550010	N.55	RM-KIT	1241440000	B.7	SCREWTY-M12	1900000000	Q.42
IE-SW-EL06-4POE-2SC	2682390000	B.9	IE-USB-A-A-1.0M	1993550010	Q.51	RM-KIT	1241440000	B.9	SCREWTY-M12	1900000000	Q.43
IE-SW-EL08-6TX-2SC	2682170000	B.4	IE-USB-A-A-1.5M	1993550015	M.14	RM-KIT	1241440000	B.10	SCREWTY-M12	1900000000	Q.44
IE-SW-EL08-6TX-2SCS	2682180000	B.4	IE-USB-A-A-1.5M	1993550015	M.32	RM-KIT	1241440000	B.11	SCREWTY-M12 F	1900200000	N.42
IE-SW-EL08-6GT	2682230000	B.12	IE-USB-A-A-1.5M	1993550015	N.55	RM-KIT	1241440000	B.12	SCREWTYM12 F-DM	1900201000	N.42
IE-SW-EL08-8GT-MINI	2705000000	B.12	IE-USB-A-A-1.5M	1993550015	Q.51	RM-KIT	1241440000	B.13	SCREWTYM12-DM	1900001000	Q.26
IE-SW-EL08-8GT-POE	2682400000	B.14	IE-USB-A-A-1.8M	1993550018	M.14	RM-KIT	1241440000	B.14	SCREWTYM12-DM	1900001000	Q.27
IE-SW-EL08-8POE	2682380000	B.9	IE-USB-A-A-1.8M	1993550018	M.32	RM-KIT	1241440000	B.15	SCREWTYM12-DM	1900001000	Q.30
IE-SW-EL08-8TX	2682140000	B.4	IE-USB-A-A-1.8M	1993550018	N.55	RM-KIT	1241440000	B.16	SCREWTYM12-DM	1900001000	Q.31
IE-SW-EL10-8GT-2GESFP	2682240000	B.12	IE-USB-A-A-1.8M	1993550018	Q.51	RM-KIT	1241440000	C.4	SCREWTYM12-DM	1900001000	Q.36
IE-SW-EL10-8GT-POE-2GESFP	2682410000	B.14	IE-USB-A-A-3.0M	1993550030	M.14	RM-KIT	1241440000	C.5	SCREWTYM12-DM	1900001000	Q.37
IE-SW-EL16-14TX-2FESFP	2682160000	B.5	IE-USB-A-A-3.0M	1993550030	M.32	RM-KIT	1241440000	C.6	SCREWTYM12-DM	1900001000	Q.38
IE-SW-EL16-16TX	2682150000	B.5	IE-USB-A-A-3.0M	1993550030	N.55	RM-KIT	1241440000	C.7	SCREWTYM12-DM	1900001000	Q.39
IE-SW-EL18-16TX-2GC	2682200000	B.11	IE-USB-A-A-3.0M	1993550030	Q.51	RM-KIT	1241440000	C.9	SCREWTYM12-DM	1900001000	Q.40
IE-SW-EL24-24TX	2682190000	B.5	IE-USB-A-MICRO-1.8M	1487980000	Q.51	RM-KIT	1241440000	C.10	SCREWTYM12-DM	1900001000	Q.41
IE-SW-IP67-5M12	1504410000	B.8	IE-WALLMOUNT-KIT-30MM	1504450000	B.6	RM-KIT	1241440000	C.12	SCREWTYM12-DM	1900001000	Q.42
IE-SW-IP67-7M12	1504420000	B.8	IE-WALLMOUNT-KIT-30MM	1504450000	B.13	RM-KIT	1241440000	C.13	SCREWTYM12-DM	1900001000	Q.43
IE-SW-PL10M-3GT-7TX	1241290000	C.10	IE-WALLMOUNT-KIT-30MM	1504450000	B.15	RM-KIT	1241440000	C.14	SCREWTYM12-DM	1900001000	Q.44
IE-SW-PL10MT-3GT-7TX	1286930000	C.10	IE-WALLMOUNT-KIT-30MM	1504450000	L.10	RM-KIT	1241440000	C.15	SEE ESD 120	9205130000	S.9
IE-SW-PL16M-16TX	1241100000	C.8	IE-WALLMOUNT-KIT-46MM	1504440000	F.4	RM-KIT	1241440000	D.5	SEE ESD 125	9204750000	S.9
IE-SW-PL16MT-16TX	1286820000	C.8	IE-WL-BL-AP-CL-US	2536600000	H.5	RM-KIT	1241440000	D.6	SM 27/18 MC NE GR	1073340000	M.2
IE-SW-PL18M-26C-16TX	1241320000	C.11	IE-WL-BL-AP-CL-US	2536600000	H.5	RM-KIT	1241440000	F.4	SM 27/18 MC NE GR	1073340000	M.3
IE-SW-PL18M-26C14TX2SCS	1241350000	C.11	IE-WL-VL-AP-BR-CL-US	2536680000	H.7	RM-KIT	1241440000	F.5	SM 27/18 MC NE GR	1073340000	M.4
IE-SW-PL18MT-26C-16TX	1286970000	C.11	IE-WL-VL-AP-BR-CL-US	2536700000	H.7	RM-KIT	1241440000	F.6	SM 27/18 K MC NE SI	1713760000	M.2
IE-SW-PL18MT-26C14TX2SCS	1287010000	C.11	IE-WLT-BL-AP-CL-US	2536650000	H.5	RM-KIT	1241440000	G.4	SM 27/18 K MC NE SI	1713760000	M.3
IE-SW-SL10M-7TX-3GC-HV	2778950000	C.14	IE-WLT-BL-AP-CL-US	2536670000	H.5	RM-KIT	1241440000	H.5	SM 27/18 K MC NE SI	1713760000	M.4
IE-SW-SL10M-7TX-3GC-LV	2778960000	C.14	IE-WLT-VL-AP-BR-CL-US	2536690000	H.7	RM-KIT	1241440000	H.7	SM 27/18 K MC NE WS	1707270000	M.2
IE-SW-SL20M-8GT-12GESFP-HV	2778970000	C.15	IE-WLT-VL-AP-BR-CL-US	2536710000	H.7	RM-KIT	1241440000	L.10	SM 27/18 K MC NE WS	1707270000	M.3
IE-SW-SL20M-8GT-12GESFP-LV	2778980000	C.15	IE-XM-6U-RJ45/RJ45-IP67	8929450000	N.28				SM 27/18 MC NE WS	1707270000	M.4
IE-SW-SL26M-24TX-2GC-HV	2778990000	C.16	IE-XM-6U-RJ45/RJ45-IP67	8929440000	N.28				SM 27/18 MC NE WS	1699860000	M.30
IE-SW-SL26M-24TX-2GC-LV	2779000000	C.16	IE-XM-RJ45/IDC	8808360000	L.14				SM 27/18 MC NE WS	1699860000	M.31
IE-SW-SL28M-HV	2779010000	C.19	IE-XM-RJ45/IDC-IP67	8808440000	N.28	SAH-M12-KBC-18/20	2664860000	N.37	SM 27/18 MC NE WS	1699860000	M.32
IE-SW-SL28M-LV	2779020000	C.19	IE-XM-RJ45/RJ45	8879050000	L.15	SAH-M12-KBC-20/22	2664870000	N.37	SMH 27/18 SW	1716630000	M.30
IE-SW-VL05M-5TX	1504280000	C.6	IE-XM-RJ45/RJ45-IP67	8808450000	N.28	SAH-M12-KSC-22/24	2673730000	N.37	SMH 27/18 SW	1716630000	M.31
IE-SW-VL05MT-5TX	1504310000	C.6	IE-XM-ST/ST	8808340000	L.18	SAH-M12-KBC-26/28	2673740000	N.37	SMH 27/18 SW	1716630000	M.32
IE-SW-VL08-6GT-2GS	1241280000	B.13	IE-XR-RJ45/RJ45-2	8952950000	L.11	SAHM12-KSC-18/20	2664840000	N.37	SUPER CUT	9205150000	S.9
IE-SW-VL08-8GT	1241270000	B.13	IE-XR-RJ45/RJ45-2	8952950000	N.28	SAHM12-KSC-20/22	2664850000	N.37	SVSE ESD 130	9205140000	S.9
IE-SW-VL08MT-6TX-1SC-2SCS	1345240000	C.7	IE-XR-RJ45/IDC	8808330000	L.12	SAH-M12-KSC-22/24	2673710000	N.37	SZE ESD 130	9204770000	S.9
IE-SW-VL08MT-6TX-2SC	1344770000	C.7	IE-XR-RJ45/IDC	8808330000	N.28	SAH-M12-KSC-26/28	2673720000	N.37			
IE-SW-VL08MT-6TX-2SCS	1241020000	C.7	IOT-GW30	2682260000	G.4	SAI-SK-M12 BU	8425960000	S.24			
IE-SW-VL08MT-6TX-2ST	1240990000	C.7				SAI-SK-M12-UNI 2029	2330260000	S.24			
IE-SW-VL08MT-8TX	1240940000	C.7				SAIBC-D-18/28-4/9CG	2672420000	N.35			
IE-SW-VL08T-6GT-2GS	1286870000	B.13				SAIBC-WDF-D-18/28-4/9CG	2664780000	N.35	TM 4/12 HF/HB	1719840000	Q.6
IE-SW-VL08T-8GT	1286860000	B.13				SAIBM-4/8S-M12 4P D-ZF	1892130001	N.32	TM 4/12 HF/HB	1719840000	Q.7
IE-SW-VL16-16TX	1241000000	B.7				SAIBM-4/8S-M12 4P D-CDD	1892130000	N.33	TM 4/12 HF/HB	1719840000	Q.8
IE-SW-VL16T-16TX	1286590000	B.7				SAIBM-4D-4/8-M12	2681700000	N.34	TM 4/12 HF/HB	1719840000	Q.9
IE-SW-SL02-2GESFP+	2779210000	C.21				SAIBW-4/8S-M12 4P D-ZF	1139330000	N.32	TM 4/12 HF/HB	1719840000	Q.10
IE-SW-SL04-4GESFP	2779200000	C.21				SAIBWC-D-18/28-4/9CG	2702700000	N.36	TM 4/12 HF/HB	1719840000	Q.11
IE-SW-SL04-4GESFP+	2779220000	C.21				SAIBWP-M4D-4/8-M12	2681710000	N.34	TM 4/12 HF/HB	1719840000	Q.12
IE-SW-SL04-4SC	2779170000	C.20				SAISC-D-18/28-4/9CG	2664810000	N.35	TM 4/12 HF/HB	1719840000	Q.13
IE-SW-SL04-4SCS	2779160000	C.20				SAISC-WDF-D-18/28-4/9CG	2664790000	N.35	TM 4/12 HF/HB	1719840000	Q.14
IE-SW-SL04-4ST	2779190000	C.20				SAISM-4/8S-M12 4P D-ZF	1892120001	N.32	TM 4/12 HF/HB	1719840000	Q.15
IE-SW-SL04-4STS	2779180000	C.20				SAISM-4/8S-M12 4P D-CDD	1892120000	N.33	TM 4/12 HF/HB	1719840000	Q.16
IE-SW-SL08-8GESFP	2779150000	C.20				SAISP-M4D-4/8-M12	2681680000	N.34	TM 4/12 HF/HB	1719840000	Q.17
IE-SW-SL08-8GT	2779140000	C.20				SAISW-4/8S-M12 4P D-ZF	1803930001	N.32	TM 4/12 HF/HB	1719840000	Q.18
IE-TO-LCD-MM	8947010000	L.18				SAISWC-D-18/28-4/9CG	2702690000	N.36	TM 4/12 HF/HB	1719840000	Q.19
IE-TO-LCD-SM	8947020000	L.18				SAISWP-M4D-4/8-M12	2681690000	N.34	TM 4/12 HF/HB	1719840000	Q.20
IE-TO-RJ45-C	8946920000	J.10				SCISSORS KEVLAR	1208910000	N.10	TM 4/12 HF/HB	1719840000	Q.47
IE-TO-RJ45-C	8946920000	J.14				SCISSORS KEVLAR	1208910000	N.56	TM 4/12 HF/HB	1719840000	Q.48
IE-TO-RJ45-C	8946920000	L.15				SCISSORS KEVLAR	1208910000	S.10	TM 4/12 HF/HB	1719840000	Q.49
IE-TO-RJ45-FJA	8946930000	J.14				SCISSORS KEVLAR	1208910000	S.12	TM 4/12 HF/HB	1719840000	Q.50
IE-TO-RJ45-FJA	8946930000	L.13				SCREWTY SET	1910000000	N.42	TM 4/12 HF/HB	1719840000	Q.51
IE-TO-RJ45-FJ-B	8946940000	J.14				SCREWTY SET	1910000000	Q.26	TM 4/12 HF/HB	1719840000	Q.52
IE-TO-RJ45-FJ-B	8946940000	L.13				SCREWTY SET	1910000000	Q.27	TM 4/18 HF/HB	1719850000	Q.7
IE-TO-RJ45-FJ-P	8946950000	J.10				SCREWTY SET	1910000000	Q.30	TM 4/18 HF/HB	1719850000	Q.8
IE-TO-RJ45-FJ-P	8946950000	L.13				SCREWTY SET	1910000000	Q.31	TM 4/18 HF/HB	1719850000	Q.9
IE-TO-SCD-MM	8946970000	L.17				SCREWTY SET	1910000000	Q.36	TM 4/18 HF/HB	1719850000	Q.10
IE-TO-SCD-SM	8946980000	L.17				SCREWTY SET	1910000000	Q.37	TM 4/18 HF/HB	1719850000	Q.11
IE-TO-SCRJ-MM	8946990000	J.10				SCREWTY SET	1910000000	Q.38	TM 4/18 HF/HB	1719850000	Q.12
IE-TO-SCRJ-MM	8946990000	J.14				SCREWTY SET	1910000000	Q.39	TM 4/18 HF/HB	1719850000	Q.13
IE-TO-SCRJ-MM	8946990000	L.17				SCREWTY SET	1910000000	Q.40	TM 4/18 HF/HB	1719850000	Q.14
IE-TO-SCRJ-SM	8947000000	J.10				SCREWTY SET	1910000000	Q.41	TM 4/18 HF/HB	1719850000	Q.15
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1068970000	IE-BIC-HYB-P-0.75-300	0.8
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1068980000	IE-CD-V14MRJ-FJ	0.2
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1068970000	IE-BIC-HYB-P-0.75-300	0.8
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1286720000	IE-SFP-1GLHXL-T	L.7
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1689470001	VT SF 5/21 MC NE WS VO	R.11
1689470001	VT SF 5/21 MC NE WS VO	R.12
1689470001	VT SF 5/21 MC NE WS VO	R.13
1689470001	VT SF 5/21 MC NE WS VO	R.14
1689470001	VT SF 5/21 MC NE WS VO	S.27

## 1690000000

1699860000	SM 27/18 MC NE WS	M.30
1699860000	SM 27/18 MC NE WS	M.31
1699860000	SM 27/18 MC NE WS	M.32

## 1700000000

1707270000	SM 27/18 K MC NE WS	M.2
1707270000	SM 27/18 K MC NE WS	M.3
1707270000	SM 27/18 K MC NE WS	M.4

## 1710000000

1713760000	SM 27/18 K MC NE SI	M.2
1713760000	SM 27/18 K MC NE SI	M.3
1713760000	SM 27/18 K MC NE SI	M.4
1716630000	SM-H 27/18 SW	M.30
1716630000	SM-H 27/18 SW	M.31
1716630000	SM-H 27/18 SW	M.32
1718411687	TM-H 12 MC NE GE	Q.6
1718411687	TM-H 12 MC NE GE	Q.7
1718411687	TM-H 12 MC NE GE	Q.8
1718411687	TM-H 12 MC NE GE	Q.9
1718411687	TM-H 12 MC NE GE	Q.10
1718411687	TM-H 12 MC NE GE	Q.11
1718411687	TM-H 12 MC NE GE	Q.12
1718411687	TM-H 12 MC NE GE	Q.13
1718411687	TM-H 12 MC NE GE	Q.14
1718411687	TM-H 12 MC NE GE	Q.15
1718411687	TM-H 12 MC NE GE	Q.16
1718411687	TM-H 12 MC NE GE	Q.17
1718411687	TM-H 12 MC NE GE	Q.18
1718411687	TM-H 12 MC NE GE	Q.19
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1718411687	TM-H 12 MC NE GE	Q.21
1718411687	TM-H 12 MC NE GE	Q.22
1718411687	TM-H 12 MC NE GE	Q.23
1718411687	TM-H 12 MC NE GE	Q.24
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1718411687	TM-H 12 MC NE GE	Q.26
1718411687	TM-H 12 MC NE GE	Q.27
1718411687	TM-H 12 MC NE GE	Q.28
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1718411687	TM-H 12 MC NE GE	Q.57
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1993550018	IE-USB-A-A-1.8M	N.55
1993550018	IE-USB-A-A-1.8M	Q.51
1993550030	IE-USB-A-A-3.0M	M.14
1993550030	IE-USB-A-A-3.0M	M.32
1993550030	IE-USB-A-A-3.0M	N.55
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2581730018	IE-USB-3.0-A-A-1.8M	M.32
2581730018	IE-USB-3.0-A-A-1.8M	N.55
2581730018	IE-USB-3.0-A-A-1.8M	M.52
2581730030	IE-USB-3.0-A-A-3M	M.14
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2581730050	IE-USB-3.0-A-A-5M	M.14
2581730050	IE-USB-3.0-A-A-5M	M.32
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2583360000	CABTITE SE 1/5.3 SML GY	S.18
2583380000	CABTITE SE 2/3 SML GY	S.18
2583400000	CABTITE SE 3/4 SML GY	S.18
2583440000	CABTITE SE 4/5 SML GY	S.18
2583450000	CABTITE SE 5/6 SML GY	S.18
2583460000	CABTITE SE 6/7 SML GY	S.18
2583470000	CABTITE FR 16/8 BK	S.20
2583480000	CABTITE FR 10/6 BK	S.19
2583490000	CABTITE FR 4-1 BK	S.19
2583500000	CABTITE CSE 7/24 LRG BK	S.18
2583510000	CABTITE CSE 2-11 SML BK	S.18
2583520000	CABTITE SE 2/AS1 SML BK	S.18
2583530000	CABTITE SE 1/AS1 SML BK	S.18
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2583550000	CABTITE SE 2/7 SML BK	S.18
2583560000	CABTITE SE 4/4.5 SML BK	S.18
2583580000	CABTITE SE 4/3.4 SML BK	S.18
2583590000	CABTITE SE 4/2.3 SML BK	S.18
2583610000	CABTITE SE 2/5.6 SML BK	S.18
2583620000	CABTITE SE 2/4.5 SML BK	S.18
2583630000	CABTITE SE 32-33 LRG BK	S.18
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2583690000	CABTITE SE 26-27 LRG BK	S.18
2583700000	CABTITE SE 25-26 LRG BK	S.18
2583710000	CABTITE SE 24-25 LRG BK	S.18
2583720000	CABTITE FR 24/10 BK SET	S.20
2583730000	CABTITE SE 23-24 LRG BK	S.18
2583740000	CABTITE FR 16/8 BK SET	S.20
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2583780000	CABTITE FR 4-1 BK SET	S.19
2583790000	CABTITE SE 20-21 LRG BK	S.18
2583800000	CABTITE FR 24/10 BK	S.20
2583810000	CABTITE SE 19-20 LRG BK	S.18
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2583900000	CABTITE BSE LRG BK	S.18
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2583930000	CABTITE CR 10/6 EMV	S.22
2583950000	CABTITE CR 4/1 EMV	S.22
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2584610000	CABTITE SE 10-11 SML GY	S.18
2584630000	CABTITE SE 9-10 SML GY	S.18
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2584730000	CABTITE SE 3-4 SML BK	S.18
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2584780000	CABTITE SE 1-2 SML BK	S.18
2584790000	CABTITE BSE SML BK	S.18
2584800000	CABTITE SE 2/AS1 SML GY	S.18
2584810000	CABTITE SE 1/AS1 SML GY	S.18
2584820000	CABTITE SE 2/8 SML GY	S.18
2584830000	CABTITE SE 2/7 SML GY	S.18
2584840000	CABTITE SE 4/4.5 SML GY	S.18
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2652350000	CABTITE BP 7MM PA	S.22
2652360000	CABTITE BP 8MM PA	S.22
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2682200000	IE-SW-EL18-16TX-2GC	B.11
2682210000	IE-SW-EL05-5GT	B.12
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2682330000	IE-SW-AL18M-16TX-2GC	C.12
2682340000	IE-SW-AL12M-8GT-4GESFP	C.12
2682350000	IE-SW-AL08M-8GT	C.12
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2682380000	IE-SW-EL08-8POE	B.9
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2682410000	IE-SW-EL10-8GTPOE-2GESFP	B.14
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2723040030	IE-C6H8D8U60030XCSCX-E	0.33
2723040050	IE-C6H8D8U60050XCSCX-E	0.33
2723040075	IE-C6H8D8U60075XCSCX-E	0.33
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2723040150	IE-C6H8D8U60150XCSCX-E	0.33
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2725850020	IE-S1DS2VE0020T01T01-E	0.53
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2726060020	IE-S1DS2VE0020T01M2E	K.9
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2726070020	IE-S1DS2VE0020T02M2E	K.10
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2732640030	IE-CSPD5U00030LSSVAP-X	0.25
2732640050	IE-CSPD5U00050LSSVAP-X	0.25
2732640100	IE-CSPD5U00100LSSVAP-X	0.25
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2763440000	IE-C5C88UG-500	J.15
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2763440000	IE-C5C88UG-500	0.6
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2763460000	IE-C5DHAG-500	J.11
2763460000	IE-C5DHAG-500	N.7
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2778990000	IE-SW-SL26M-24TX-2GC-HV	C.16
2779000000	IE-SW-SL26M-24TX-2GC-LV	C.16
2779010000	IE-SW-SL28M-HV	C.19
2779020000	IE-SW-SL28M-LV	C.19
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2779120000	IE-SFP-10GE-SM-20	I.6
2779130000	IE-SFP-10GE-SM-40	I.6
2779140000	IE-SWM-SL08-8GT	C.20
2779150000	IE-SWM-SL08-8GESFP	C.20
2779160000	IE-SWM-SL04-4SCS	C.20
2779170000	IE-SWM-SL04-4SCS	C.20
2779180000	IE-SWM-SL04-4ST	C.20
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2779200000	IE-SWM-SL04-4GESFP	C.21
2779210000	IE-SWM-SL02-2GESFP+	C.21
2779220000	IE-SWM-SL04-4GESFP+	C.21
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2795120000	IE-PCB-SPO-P-90V-THR-YG/YG	K.12
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8808360000	IE-XM-RJ45/10C	L.14
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8808450000	IE-XM-RJ45/RJ45-IP67	N.28

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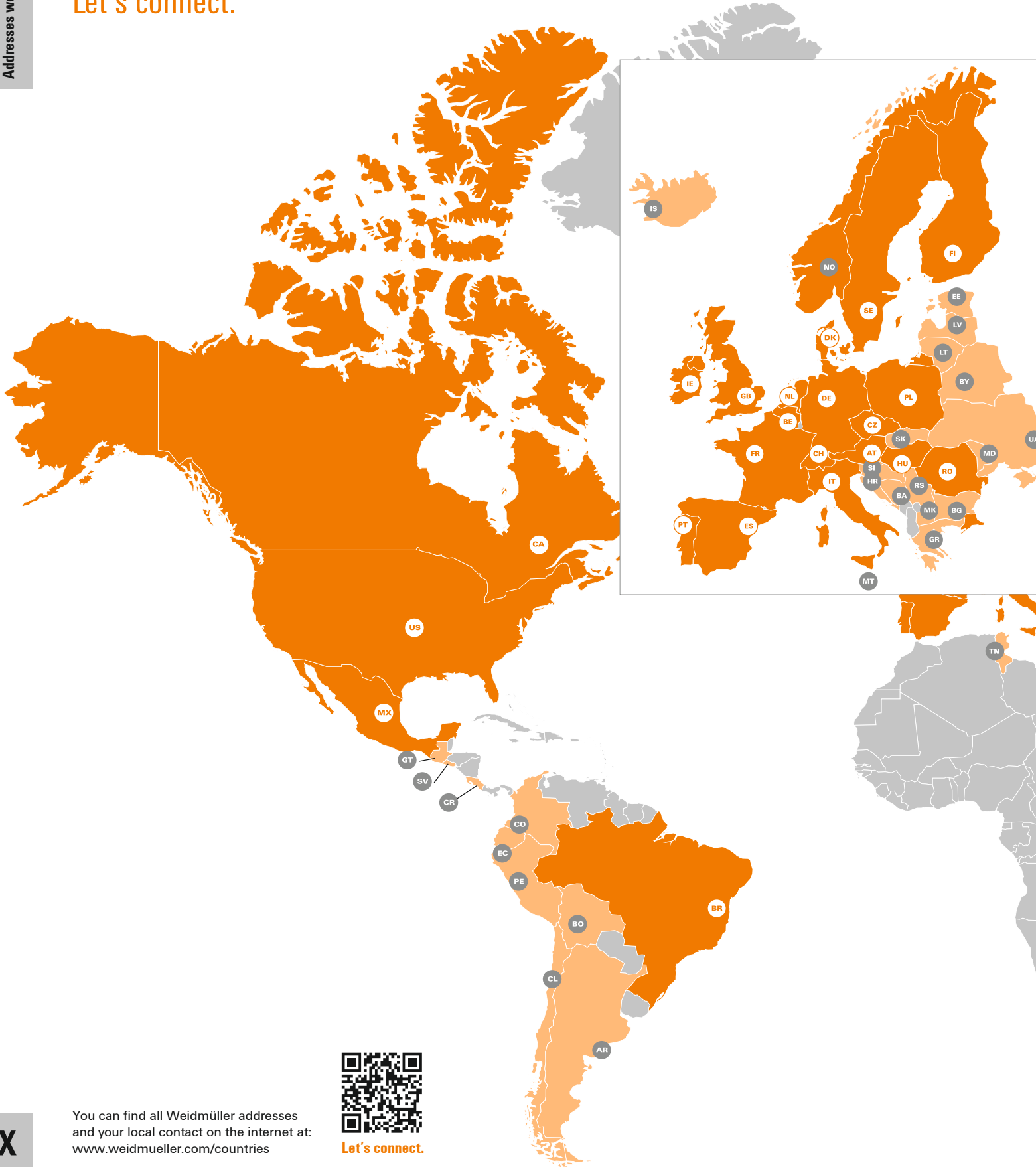
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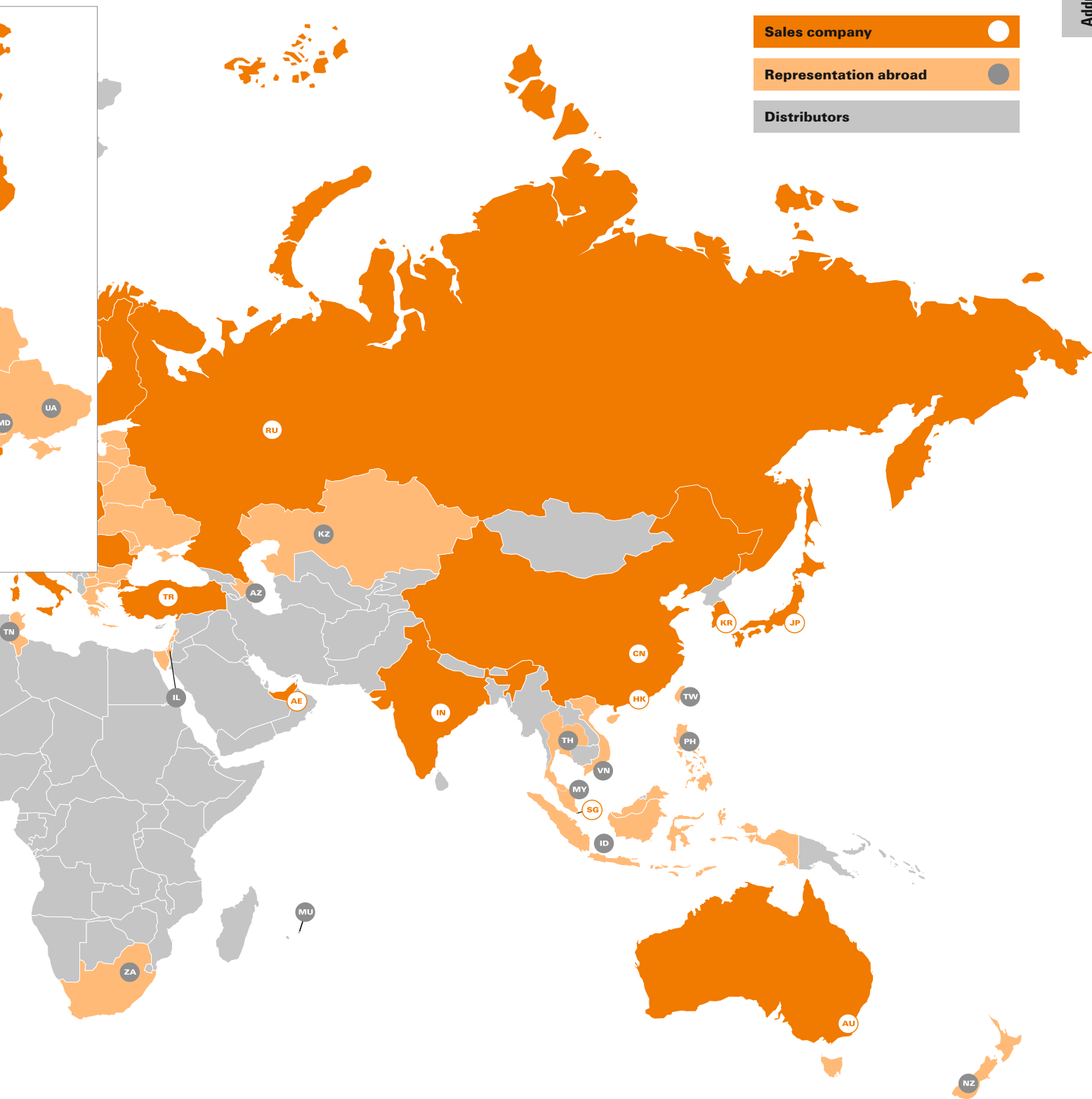
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