CATALOGUE 9

2011|2012

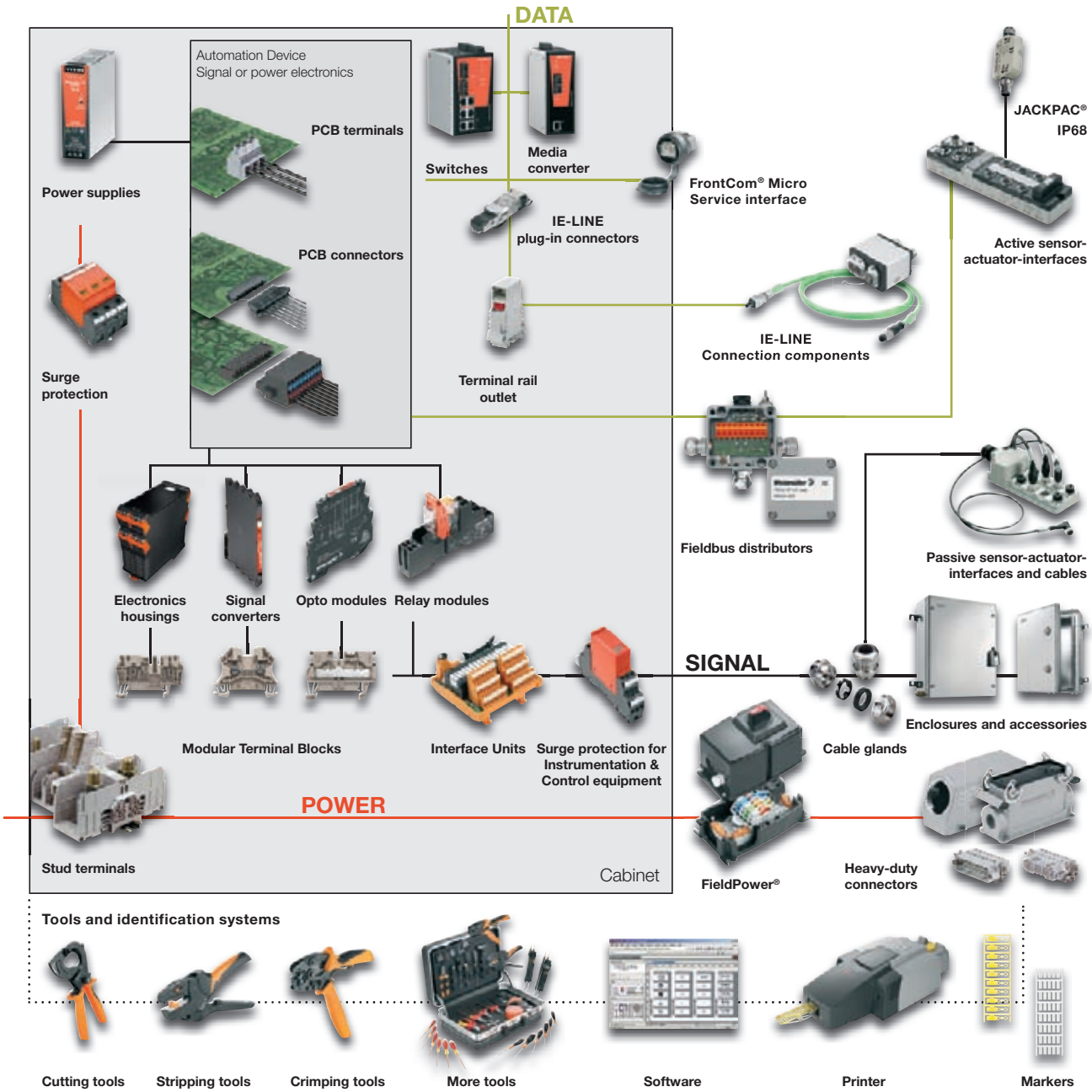
Industrial Ethernet

Catalogue

Weidmüller

Product Portfolio

Weidmüller is a leading international provider of solutions for electrical connectivity, transmission and conditioning of power, signal and data in industrial environments. The company with headquarters in Detmold/Germany develops, produces and sells products in the field of electrical connectivity and electronics all over the world.
www.power-signal-data.com



All the catalogues at a glance

		Order No.
Catalog 1	Modular Terminal Blocks	**5661400000**
Catalog 2	PCB Terminals, PCB Connectors and Housings for Electronics	**1250030000**
Catalog 3	RockStar® – Heavy Duty Connectors	**5664240000**
Catalog 4.1	Electronics – Analogue Signal Conditioning	**1203510000**
Catalog 4.2	Electronics – Relays and Optos	**1282330000**
Catalog 4.3	Electronics – Power Supplies	**1282390000**
Catalog 4.4	Electronics – Surge protection	**1271290000**

		Order No.
Catalog 4.5	Electronics – Interface units and PLC solutions	**1252080000**
Catalog 5	Enclosures and Cable Glands	**1274520000**
Catalog 6	Tools	**1161520000**
Catalog 7	Identification systems	**1125590000**
Catalog 8	Sensor Actuator Interface	**1235620000**
Catalog 9	Industrial Ethernet	**1274570000**
Product information	FieldPower® – decentralised power distribution	**1229860000**

CATALOGUE 9

Industrial Ethernet

Industrial Ethernet

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Industrial Ethernet

Introduction

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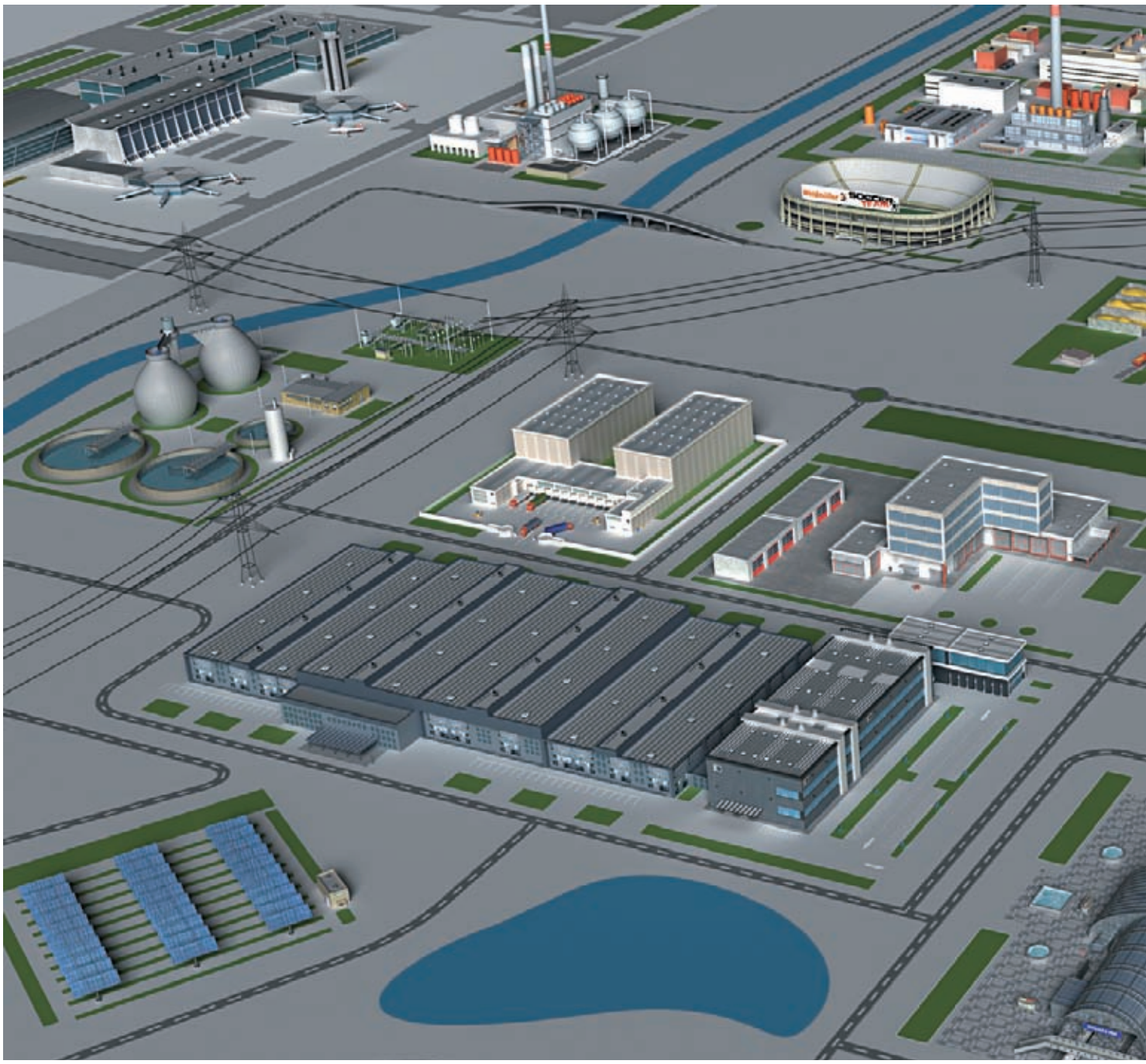
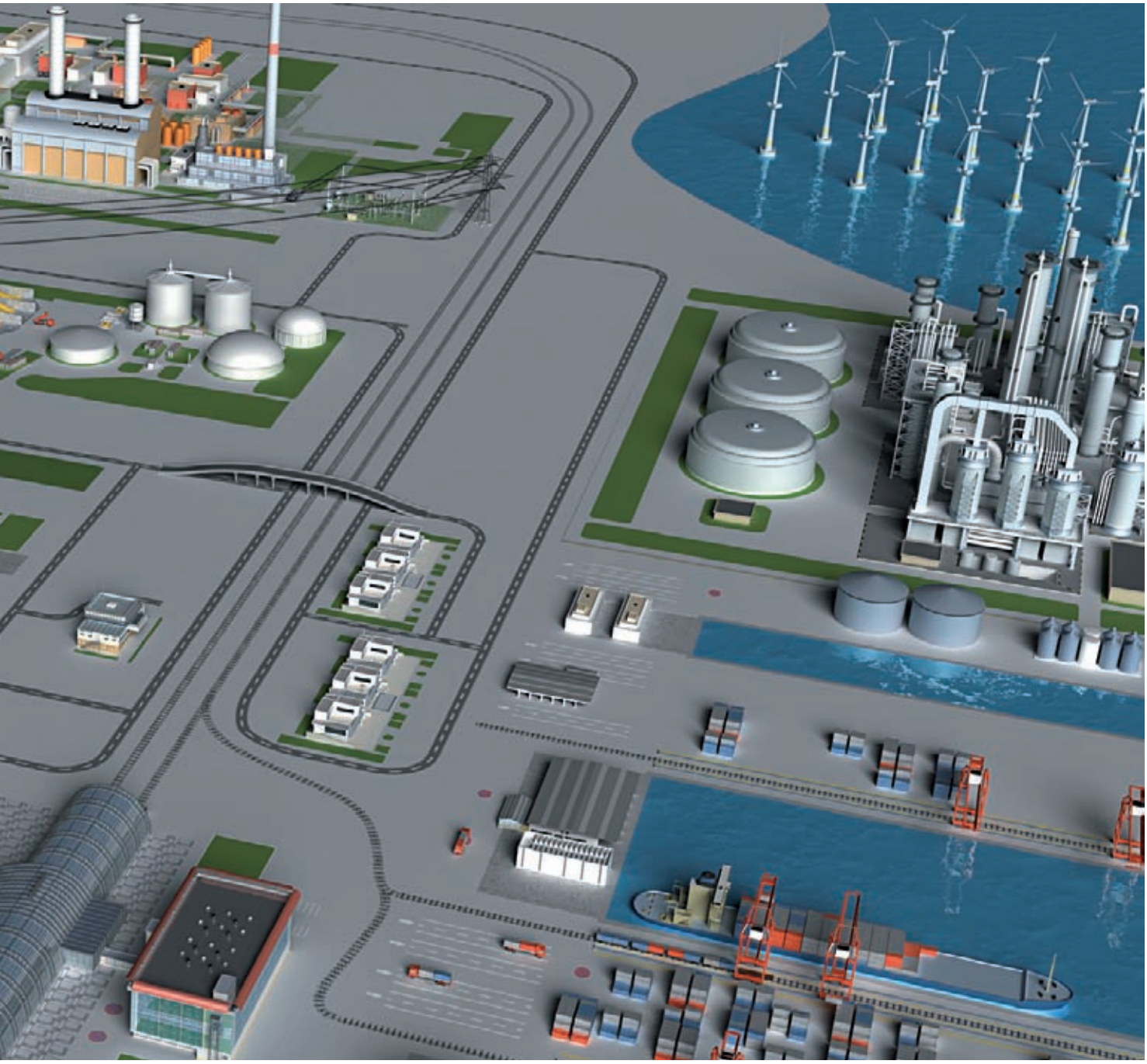
Intended for use in Industrial Ethernet



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; automotive, general machine construction, process industry, transportation as well in the energy branch. The requirements of the different branches differ in terms of the protocols, environmental conditions, certifications and standardisations. As well as being a leading provider of industrial connection and network products, Weidmüller covers these differing requirements with a comprehensive and high-quality product range of active and passive components for Ethernet communications.



The basic requirements of most of these branches are high reliability, availability and safeguarding against failure. These are met by extremely high MTBF times of the active network components. Maximum reliability and simple operation is ensured through Weidmüller's high-quality ***STEADY****TEC*® connector system.

Together Weidmüller's network components create a complete communications infrastructure for industrial applications in machine construction, process and plant engineering and energy.

Automotive

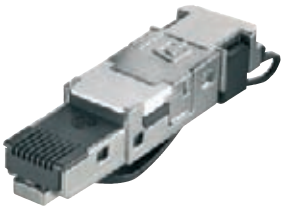
Car manufacturers in AIDA (the German car manufacturers' automation initiative) are the driver behind the use of Industrial Ethernet in the manufacturing sector, as they clearly prefer the use of PROFINET for communication between machines and equipment parts. To make the most savings in modern communications structures, Industrial Ethernet in the automotive industry is homogeneous from the corporate management level down to the field level.

New production plants in North American car production are also being exclusively automated using Industrial Ethernet. Here the Real-Time Ethernet protocol Ethernet/IP is used. This, in the same way as PROFINET and other protocols, means there are different requirements for the connector systems used and the active network devices.

Extremely harsh environmental conditions – such as may be found where industrial robotics are used, for example – place high requirements on the components used. Cabling needs to be torsion resistant and there are increased EMC demands placed on plug-in connectors and active devices. For these application fields, Weidmüller offers a complete product range consisting of copper and fibre-optic connectors and passive hand-tools that are specifically designed for the requirements of cabling robotic systems.

The use of active devices with powerful redundancy mechanisms is needed to prevent network failures. Weidmüller's managed switches meet these requirements with their particularly fast recovery time of under 20 ms when an error occurs.

General machine construction



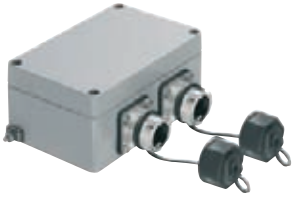
Important parts of communications in machinery and device construction are networking machine segments and device parts and connecting them to the higher-level office network. Many serial devices are connected to the Ethernet infrastructure to protect investments and because of the various different communication protocols in use. Weidmüller offers active components for this which convert the protocols. By simply integrating devices with serial interfaces, you get protection for your investments in existing automation components.

The volume of data in networks is steadily rising with the applications used, for example with camera-based quality control. Weidmüller easily meets these increased demands with its product range of high-performance Gigabit switches and plug-in connectors capable of 10 Gigabit transfer.

The extensive plug-in connector range also meets the higher demands in terms of EMC as well as shock, vibration and temperature resistance and facilitates easy on-site assembly.

Dragline cable compatible connection cables from Weidmüller are used on moving parts of complex machines. Hard to reach areas can be covered using the wireless modules that are available.

Process



Weidmüller's network components for the process industry allow their use in explosion hazard areas with their certification - Class 1 Div. 2 and ATEX. The active components have high fault-tolerance and ensure high system availability with redundancy mechanisms like trunking and ring-redundancy as well as RSTP.

Long distances can be bridged using fibre-optic media in large process plants. There are requirements placed on the protection categories of the individual components as these are found in the field. The harsh environments in process plants are characterised by high temperature variations, vibrations, rain, dust as well as electromagnetic influences. Weidmüller's active and passive Ethernet components withstand these influences.

It is particularly important to make sure the communication between various parts of the plant is secure and structured in security relevant processing areas. Weidmüller's Ethernet switches support network management and security functions like IGMP Snooping, IEEE 802.1X, QoS and VLAN.

With this the devices form a secure and efficient bridge to the office communication and from there to the higher IT systems.

Active components

Active components

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Active components

Ethernet technology is an established standard in office communication and has existed for many years. Without it, effective communications between the different participants like PCs, printers, data servers etc. would no longer be possible.

In recent years this technology has been expanded under the term Industrial Ethernet and implemented in automation systems. The common goal of both manufacturer and user is to make networking automation system components easier and more effective. To make process data and diagnostic functions device-independent when exchanged between network participants, all equipment in a plant should be linked with just one bus technology.

Industrial applications, however, differ significantly from office applications. There are normally much higher demands placed on the communication devices in the industrial setting. These include, as examples:

- Installation conditions
- Environmental conditions
- Protocols
- Approvals

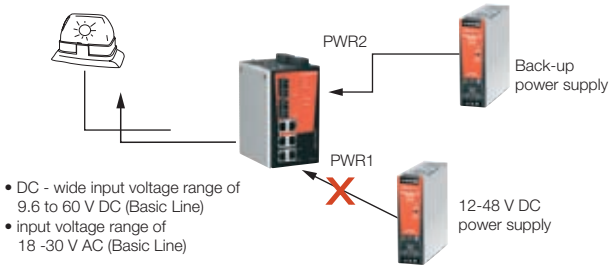
Weidmüller's Industrial Ethernet components meet all of these requirements as they have the properties listed below:

- Reliable (redundant) power supply for uninterrupted network operation
- Resistance to extreme temperatures
- Immune to electromagnetically caused malfunctions
- Insensitive to vibration, shock and corrosive environments
- Conformity with various certification standards
- Longevity

These rugged devices can therefore be used world-wide in different industries and applications.

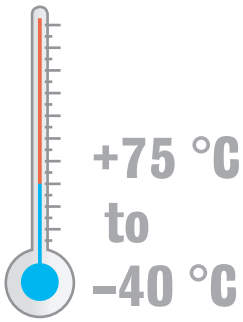
Stable and versatile power supply inputs for industrial applications

The redundant voltage inputs provide reliable functionality of the whole system. If a power supply fails, the redundant power source takes over the energy supply. All of Weidmüller's Industrial Ethernet components have a wide input voltage range of at least 12 to 48 V DC (Basic Line switches 9.6 to 60 V DC). They can also work with large fluctuations in voltage. As examples, with a rated 48 V DC input, a fluctuation of +20 % is acceptable and in one of 12 V DC a voltage drop of up to 20 % present no problems for the attached devices.



Suitable for use in extreme temperature environments

Industrial environments often present extreme temperature conditions. This means that devices are needed which can operate under extreme temperature fluctuations flawlessly. Therefore all Industrial Ethernet components undergo a burn-in test over several hours to ensure they function properly at the guaranteed temperature ranges (e.g. -40 °C to +75 °C).



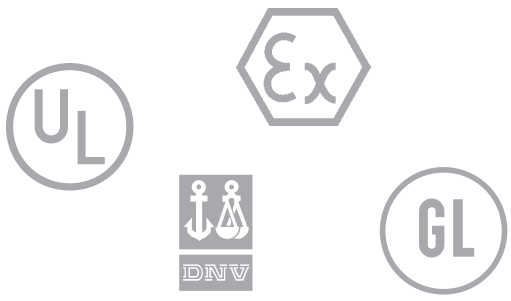
Outstanding immunity to electromagnetic interference

The sturdy design of Weidmüller's Industrial Ethernet components also includes excellent electromagnetic compatibility and fully complies with the requirements of the EN50121-4, DNV and IEC 61000 standards.

Certified to industry standards

Extensive certifications confirm the reliability of Weidmüller's Industrial Ethernet components

- UL508 and UL60950-1
- Class I, Division2 / ATEX Zone 2 for safe use in explosive hazard areas
- DNV/GL approval for use in maritime settings



Durability and reliability

- Many of the Weidmüller Ethernet components have relay outputs. These can be used for alarm signal notification (e.g. power failures or port problems). This means that in emergencies it is possible to react quickly to any failures.
- Weidmüller's unmanaged switches are protected from receiving too many broadcast packets. The switches discard broadcast or multicast packets if they exceed a threshold level in a given time. They then receive further broadcast and multicast packets after a given time has past, until the threshold level is reached again.
- All Weidmüller active Industrial Ethernet components are designed for a long in-service life, this can be seen from the high MTBF value. Weidmüller also guarantees its Industrial Ethernet components for a period of five years.

Active components

Basic Line

Weidmüller's Basic Line series consists of unmanaged Plug & Play switches in a rugged IP30 rated aluminium housing. The devices are available with Fast Ethernet and Gigabit Ethernet and provide an economical solution for Industrial Ethernet ports networks. One model is equipped with Fast Ethernet and Power-over-Ethernet ports. All devices have been developed for applications in harsh industrial environments and have international approvals such as CE, cULus, Class I Div. 2 / Atex and DNV / GL and are thus international applicable for different applications.

- Plug & Play switches in a rugged aluminium housing (IP30)
- Compact design
- Cost efficient entry-level switches
- Fast Ethernet variants with 5 and 8 Ports
- Versions with copper or fibre-optic interface (multimode and single-mode)
- 5 port Full-Gigabit Plug & Play Switch
- Power-over-Ethernet switch with 6 Fast Ethernet ports, thereof 4 PoE+ ports
- Approvals: cULus, Class I Div. 2 / Atex, DNV / GL

Value Line

Weidmüller's Value Line series consists of unmanaged and managed switches in a high quality IP30 rated metal housing. The devices are available with Fast Ethernet and Gigabit Ethernet ports. Managed switches of the Value Line support a variety of useful management functions, such as fast ring redundancy, VLAN, QoS, RMON, bandwidth management, port mirroring and warning by email message or relay. The ring redundancy can be set up easily using the web-based management interface, or with the DIP switches located on the top panel of the switches.

- Unmanaged Plug & Play switches in a high quality metal housing (IP30)
- Price-sensitive mid-range class
- Managed switches for entry into configurable network infrastructure
- Unmanaged 8 port Full-Gigabit switches
- Approvals: cULus, Class I Div. 2 / Atex, DNV / GL

Premium Line

Weidmüller's Premium Line series completes the switch range for the high-end sector and is particularly suitable for complex network solutions with high traffic levels. The devices are available in different versions - number of ports, transmission rate (Fast and Gigabit Ethernet) and the type of connection (copper and fibre-optic).
With their advanced ring redundancy technology (recovery time ≤ 20 ms), these devices increase the reliability and availability of your industrial network. The optional to use SFP transceivers offer a high degree of flexibility and the Gigabit variants allows the use in networks with high traffic loads also.

- Managed Fast Ethernet variants in a high quality metal housing (IP30)
- Managed Power-over-Ethernet switch with 6 Fast Ethernet ports, thereof 4 PoE+ ports
- Variants with 10 or 18 ports and Gigabit uplink ports
- Full-Gigabit switch with 9 ports
- Supports all standard protocols in TCP/IP-based industrial networks (e.g. Ethernet/IP, Modbus/TCP)
- Built-in redundancy mechanisms (recovery time ≤ 20 ms) for increased reliability in network ring structures
- Approvals: cULus, Class I Div. 2 / Atex, DNV / GL

Switches – quick-finder

Order No.	Type	Ports total	2	5		6	8				
		Ports copper	1	5	4	6	8	5	6	6	7
		Ports fibre	1		1			3	2	3	1
		Ports SFP									
Industrial Ethernet Switches											
1240840000	IE-SW-BL05-5TX			●							
1240850000	IE-SW-BL05T-5TX			●							
1240870000	IE-SW-BL05-4TX-1SCS				●						
1240880000	IE-SW-BL05-4TX-1ST				●						
1240890000	IE-SW-BL05-4TX-1SC				●						
1240900000	IE-SW-BL08-8TX						●				
1240910000	IE-SW-BL08-6TX-2SC								●		
1240920000	IE-SW-BL08T-6TX-2SC								●		
1240930000	IE-SW-BL08-6TX-2ST								●		
1240950000	IE-SW-BL08-7TX-1SCS										●
1241250000	IE-SW-BL05-5GT		5 GE								
1240980000	IE-SW-VL09T-6TX-3SC									●	
1241000000	IE-SW-VL16-16TX										
1241030000	IE-SW-VL16-14TX-2SC										
1241050000	IE-SW-VL16-14TX-2ST										
1240940000	IE-SW-VL08MT-8TX						●				
1240970000	IE-SW-VL08MT-5TX-3SC							●			
1240990000	IE-SW-VL08MT-6TX-2ST								●		
1241020000	IE-SW-VL08MT-6TX-2SCS								●		
1241270000	IE-SW-VL08-8GT						8 GE				
1241280000	IE-SW-VL08-6GT-2GS								6 GE 2 GEC		
1241040000	IE-SW-PL08M-8TX						●				
1241070000	IE-SW-PL08M-6TX-2SC								●		
1241080000	IE-SW-PL08M-6TX-2ST								●		
1241090000	IE-SW-PL08M-6TX-2SCS								●		
1241100000	IE-SW-PL16M-16TX										
1241120000	IE-SW-PL16M-14TX-2SC										
1241130000	IE-SW-PL16M-14TX-2ST										
1241290000	IE-SW-PL10M-3GT-7TX										
1241300000	IE-SW-PL10M-1GT-2GS-7TX										
1241320000	IE-SW-PL18M-2GC-16TX										
1241330000	IE-SW-PL18M-2GC-14TX2SC										
1241340000	IE-SW-PL18M-2GC14TX2ST										
1241350000	IE-SW-PL18M-2GC14TX2SCS										
1241370000	IE-SW-PL09M-5GC-4GT										
Power over Ethernet Switches											
1241380000	IE-SW-BL06-2TX-4PoE					4 PoE+					
1241390000	IE-SW-PL06M-2TX-4PoE					4 PoE+					

FE = Fast Ethernet
GE = Gigabit Ethernet
GEC = Gigabit Ethernet Combo Ports
PoE+ = Power over Ethernet+

9	10		16		18		Unmanaged	Managed	Temperature	Further characteristics	Page
4	10	8	16	14	16	14					
		2		2		2					
5					2	2					
							●		-10 … +60 °C		B.9
							●		-40 … +75 °C		B.9
							●		-10 … +60 °C	singlemode	B.9
							●		-10 … +60 °C		B.9
							●		-10 … +60 °C		B.9
							●		-10 … +60 °C		B.9
							●		-10 … +60 °C		B.9
							●		-40 … +75 °C		B.9
							●		-10 … +60 °C		B.9
							●		-10 … +60 °C	singlemode	B.9
							●		0 … +60 °C		B.11
							●		-40 … +75 °C		B.10
			●				●		0 … +60 °C		B.10
				●			●		0 … +60 °C		B.10
				●			●		0 … +60 °C		B.10
								●	-40 … +75 °C		B.17
								●	-40 … +75 °C		B.17
								●	-40 … +75 °C		B.17
								●	-40 … +75 °C	singlemode	B.17
							●		0 … +60 °C		B.11
							●		0 … +60 °C		B.11
								●	0 … +60 °C		B.18
								●	0 … +60 °C		B.18
								●	0 … +60 °C		B.18
								●	0 … +60 °C	singlemode	B.18
			●					●	0 … +60 °C		B.18
				●				●	0 … +60 °C		B.18
				●				●	0 … +60 °C		B.18
	3 GE 7 FE							●	0 … +60 °C		B.19
		1 GE 2 GEC 7 FE						●	0 … +60 °C		B.19
					2 GEC 16 FE			●	0 … +60 °C		B.20
						2 GEC 16 FE		●	0 … +60 °C		B.20
						2 GEC 16 FE		●	0 … +60 °C		B.20
						2 GEC 16 FE		●	0 … +60 °C	singlemode	B.20
5 GEC 4 GE								●	0 … +60 °C		B.21
							●		0 … +60 °C	PoE+	B.23
								●	0 … +60 °C	PoE+	B.24

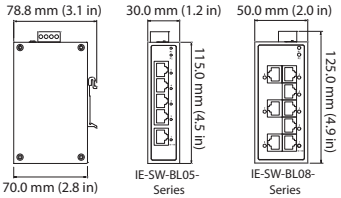
Unmanaged Switches

Switches are the basic coupling elements in Ethernet networks. They connect the Ethernet participants together. In an Ethernet network the communication basically originates from the participants. The switches connect the participants together and enable the communication. Unmanaged switches are the simplest active network component. They do not need to be configured and are therefore very flexible. They use the basic standard protocols like auto-negotiation, auto-crossing, and flow-control and can automatically adjust to the different transmission speeds or connector wiring.

Unmanaged switches are protocol transparent. Each port on the switch creates an individual collision domain. The use of twisted-pair cabling with an RJ45 interface or fibre-optic cable based on the IEEE 802.3 specification interfaces are supported by all Weidmüller switches.

Unmanaged Fast Ethernet Switches

- 10/100BaseT(X) (RJ45 connector), 100BaseFX (multi/singlemode, SC or ST connector)
- Redundant dual 12/24/48 V DC, 18 to 30 V AC power inputs
- IP30 aluminum housing
- Rugged hardware design well suited for hazardous locations (Class I Div. 2 /ATEX) and maritime environments (DNV/GL)
- -40 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	1 K
Packet Buffer Size	512 Kbit
Interface	
Fiber Ports	100BaseFX ports (SC/ST connector, multimode, singlemode)
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
LED Indicators	Power, 10/100M (TP port), 100M (fiber port)
Optical Fiber	

	100BaseFX	
	multimode	singlemode
Wavelength	1300 nm	1310 nm
Max. TX	-10 dBm	0 dBm
Min. TX	-20 dBm	-5 dBm
RX Sensitivity	-32 dBm	-34 dBm
Link Budget	12 dB	29 dB
Typical Distance	5 km (50/125 µm multimode cable) 4 km (62,5/125 µm multimode cable)	40 km (9/125 µm singlemode cable)
Saturation	-6 dBm	-3 dBm

Power Requirements	
Input Voltage	12/24/48 V DC (9.6 to 60 V DC), 18 to 30 V AC (47 to 63 Hz), redundant dual inputs
Input Current	IE SW BL05 5TX: 0.1 A @ 24 V IE SW BL05 SC/ST/SCS: 0.11 A @ 24 V IE SW BL08 8TX: 0.13 A @ 24 V IE SW BL08 2SC/2ST: 0.22 A @ 24 V IE SW BL08 SCS: 0.17 A @ 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	IIE-SW-BL05-Series: 30 x 115 x 70 mm (1.18 x 4.52 x 2.76 in) IE-SW-BL08-Series: 50 x 115 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
Installation	DIN-Rail mounting
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)

Environmental Limits	
Ambient Relative Humidity	5 to 95 % (non-condensing)
Regulatory Approvals	
Safety	UL508
Hazardous Location	UL/cUL Class I, Division 2, Groups A, B, C and D; ATEX Zone 2, Ex nC IIC
EMI	FCC Part 15, CISPR (EN55022) class A
EMS	EN61000-4-2 (ESD), level 3; 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; EN61000-4-11
Maritime	DNV, GL (IE-SW-BL05-4TX-1SCS/SC/ST: pending)
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Vibration	IEC 60068-2-6
MTBF (meantime between failures)	
Time	425,000 hrs
Database	Telcordia (Bellcore), GB
Warranty	
Warranty Period	5 years

Ordering Information

Port Variants	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 [1)]	-10 to +60 °C	**1240890000**
4 * RJ45, 1 * ST-Multimode	IE-SW-BL05-4TX-1ST [1)]	-10 to +60 °C	**1240880000**
4 * RJ45, 1 * SC-Singlemode	IE-SW-BL05-4TX-1SCS [1)]	-10 to +60 °C	**1240870000**
8 * RJ45	IE-SW-BL08-8TX [1)]	-10 to +60 °C	**1240900000**
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 [1)]	-10 to +60 °C	**1240930000**
7 * RJ45, 1 * SC-Singlemode	IE-SW-BL08-7TX-1SCS [1)]	-10 to +60 °C	**1240950000**

[1)] Model with extended operating temperature -40 to +75 °C on request

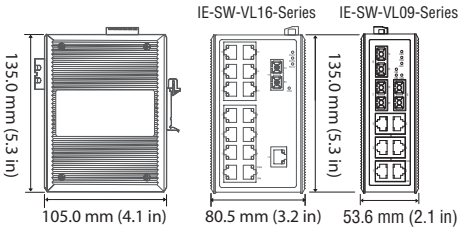
Accessories

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

Unmanaged Switches Fast Ethernet – Value Line

Unmanaged Fast Ethernet Switches

- Redundant dual 24 V DC power inputs
- Relay output warning for power failure and port break alarm
- Broadcast storm protection
- Transparent transmission of VLAN tagged packets
- -40 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	1 K (IE-SW-VL09...Series), 4 K (IE-SW-VL16...Series)
Packet Buffer Size	512 Kbit (IE-SW-VL09...Series), 1.5 Mbit (IE-SW-VL16...Series)
Interface	
Fiber Ports	100BaseFX ports (SC/ST connector)
RJ45 Ports	10/100BaseT(X) auto negotiation speed, Full/Half duplex mode, and auto MDI/MDI-X connection
DIP Switches	Port break alarm mask
LED Indicators	PWR1, PWR2, FAULT, 10/100M (TP port), 100M (fiber port)
Alarm Contact	1 relay output with current carrying capacity of 1 A @ 24 V DC
Optical Fiber	
	100BaseFX
	multimode
Wavelength	1300 nm
Max. TX	-10 dBm
Min. TX	-20 dBm
RX Sensitivity	-32 dBm
Link Budget	12 dB
Typical Distance	5 km (50/125 µm multimode cable) 4 km (62,5/125 µm multimode cable)
Saturation	-6 dBm
Power Requirements	
Input Voltage	IE-SW-VL09...16-Ports: 24 V DC (12 to 45 V DC), redundant dual inputs
Input Current	IE-SW-VL09T-6TX-3SC: 0.31 A @ 24 V IE-SW-VL16-16TX: 0.27 A @ 24 V IE-SW-VL16 SC/ST: 0.44 A @ 24 V
Power Requirements	
Overload Current Protection	IE-SW-VL09/16...Series: 1.6 A
Connection	1 removable 6-pin terminal blocks
Reverse Polarity Protection	Present
Physical Characteristics	
Housing	Metal, IP30 protection
Dimensions	IE-SW-VL09...Series: 53.6 x 135 x 105 mm (2.11 x 5.31 x 4.13 in) IE-SW-VL16...Series: 80.5 x 135 x 105 mm (3.16 x 5.31 x 4.13 in)
Weight	IE-SW-VL09: 630 g IE-SW-VL16: 1140g

Physical Characteristics	
Installation	DIN-Rail mounting
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	IE-SW-VL09...Series: UL508, UL60950-1, CSA C22.2 No. 60950-1, EN60950-1 IE-SW-VL16...Series: UL508, UL60950-1, EN60950-1
Hazardous Location	UL/cUL Class I, Division 2, Groups A, B, C and D; ATEX Zone 2, Ex nC IIC
EMI	FCC Part 15, CISPR (EN55022) class A
EMS	EN61000-4-2 (ESD), level 3; EN61000-4-3 (RS), level 3; EN61000-4-4 (EFT), level 3; EN61000-4-5 (Surge), level 3; EN61000-4-6 (CS), level 3;
Maritime	DNV, GL
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Vibration	IEC 60068-2-6
MTBF (meantime between failures)	
Time	IE-SW-VL09...Series: 396,000 hrs IE-SW-VL16...Series: 257,000 hrs
Database	MIL-HDBK-217F, GB 25 °C
Warranty	
Warranty Period	5 years

Ordering Information

Port Variants	Model Type	Operating Temperature	Order No.
16 * RJ45	IE-SW-VL16-16TX [1]	0 to 60 °C	**1241000000**
6 * RJ45, 3 * SC-Multimode	IE-SW-VL09T-6TX-3SC	-40 to +75 °C	**1240980000**
14 * RJ45, 2 * SC-Multimode	IE-SW-VL16-14TX-2SC [1]	0 to 60 °C	**1241030000**
14 * RJ45, 2 * ST-Multimode	IE-SW-VL16-14TX-2ST [1]	0 to 60 °C	**1241050000**

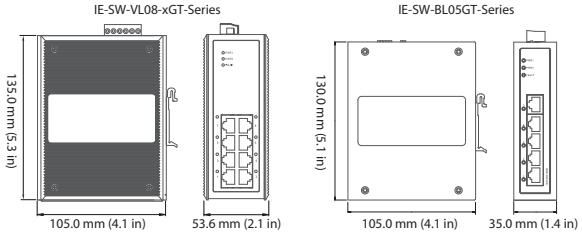
[1] Model with extended operating temperature -40 to +75 °C on request

Accessories

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

Unmanaged Gigabit Ethernet Switches

- Fibre-optic options for extending distance and electrical noise immunity
- 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 (up to 9.6 KB)



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
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	1088 Kbit (IE-SW-BL05-5GT), 1408 Kbit (IE-SW-VL08-xGT)
Interface	
Fiber Ports	100/1000BaseSFP slot (IE-SW-VL08-6GT-2GS)
RJ45 Ports	10/100/1000BaseT(X) auto negotiation speed, Full/Half duplex mode, and auto MDI/MDI-X connection
DIP Switches	One for port break alarm, one for Enable/ Disable broadcast storm protection
LED Indicators	PWR1, PWR2, FAULT, 10/100/1000M
Alarm Contact	1 relay output with current carrying capacity of 1 A @ 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-BL05-5GT: 0.20 A @ 24 V IE-SW-VL08-8GT: 0.32 A @ 24 V IE-SW-VL08-6GT-2GS: 0.34 A @ 24 V
Connection	1 removable 6-contact terminal block
Reverse Polarity Protection	Present
Physical Characteristics	
Housing	Metal, IP30 protection
Dimensions	IE-SW-BL05-5GT: 35 x 130 x 105 mm (1.37 x 5.12 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-BL05-5GT: 290 g IE-SW-VL08-xGT: 630 g
Installation	DIN-Rail mounting
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) (on request)
Storage Temperature	-40 to 85 °C (-40 to 185 °F)
Ambient Relative Humidity	5 to 95 % (non-condensing)
Regulatory Approvals	
Safety	UL508
Hazardous Location	UL/cUL Class I, Division 2, Groups A, B, C, and D; ATEX Zone 2, Ex nC IIC
EMI	FCC Part 15, CISPR (EN55022) class A

Regulatory Approvals	
EMS	EN61000-4-2 (ESD), level 3; EN61000-4-3 (RS), level 3; EN61000-4-4 (EFT), level 3; EN61000-4-5 (Surge), level 3; EN61000-4-6 (CS), level 3
Maritime	DNV, GL
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Vibration	IEC 60068-2-6
MTBF (meantime between failures)	
Time	325,000 hrs (IE-SW-VL08-xGT series)
Database	Telcordia (Bellcore), GB (IE-SW-VL08-xGT series)
Warranty	
Warranty Period	5 years

Ordering Information

Port Variants	Model Type	Operating Temperature	Order No.
5 * RJ45 10/100/1000BaseT(X)	IE-SW-BL05-5GT	0 to 60 °C	**1241250000**
8 * RJ45 10/100/1000BaseT(X)	IE-SW-VL08-8GT	0 to 60 °C	**1241270000**
6 * RJ45 10/100/1000BaseT(X), 2 Combo Ports (10/100/1000 BaseT(X) or 100/1000BaseSFP)	IE-SW-VL08-6GT-2GS	0 to 60 °C	**1241280000**
Models with extended operating temperature -40 to +75 °C on request			

Accessories

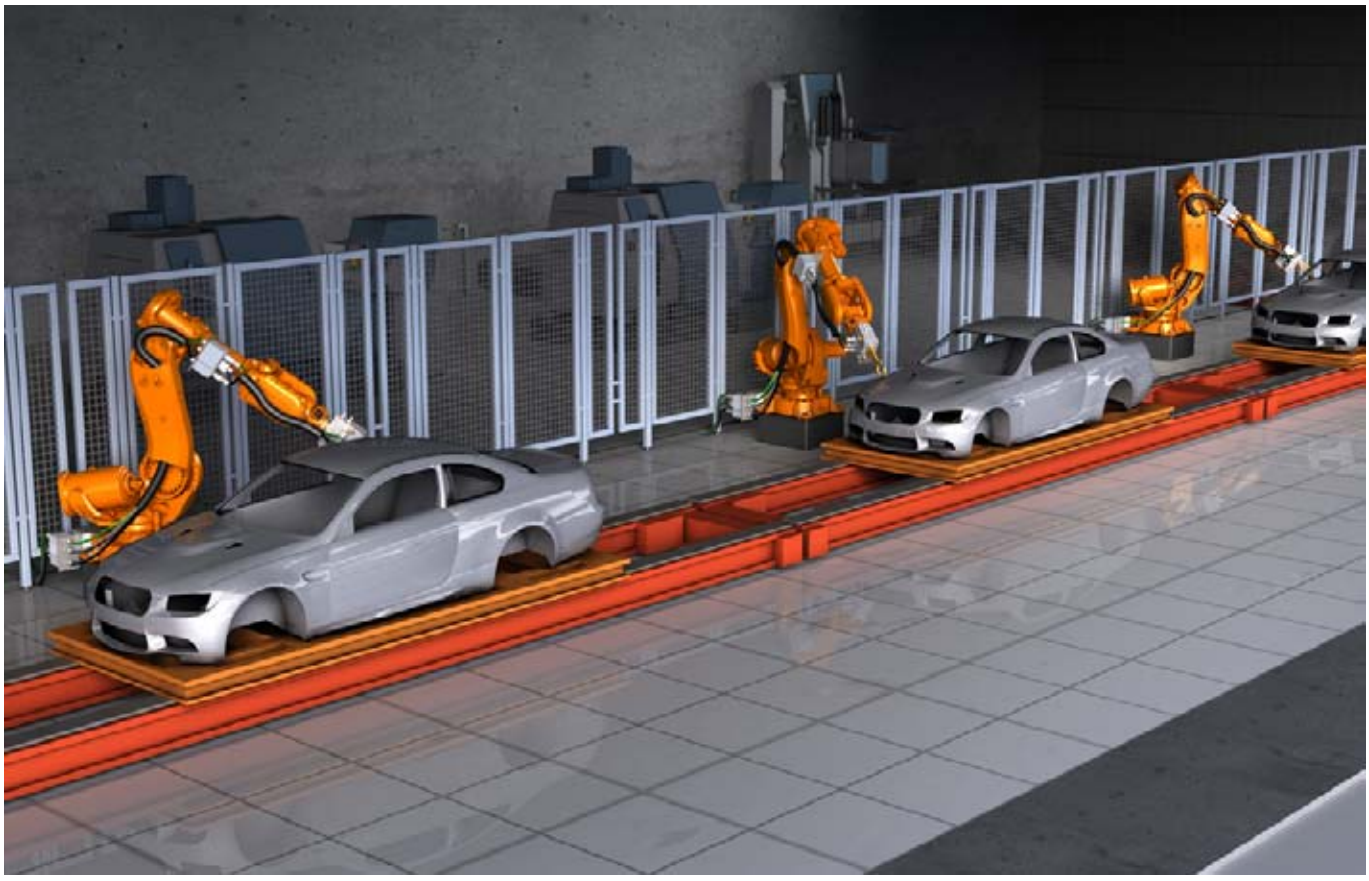
	Model Type	Order No.
19'' Rack Mounting Kit	RM-KIT	**1241440000**

Managed Switches

Managed switches offer extensive control mechanisms for data distribution and bandwidth management to coordinate and cope with the different requirements of communication participants in an industrial network. Configuration is either web-based using a simple and intuitive user interface, or using convenient management software in large networks with multiple switches, this could be Weidmüller's Net-Manager software for example.

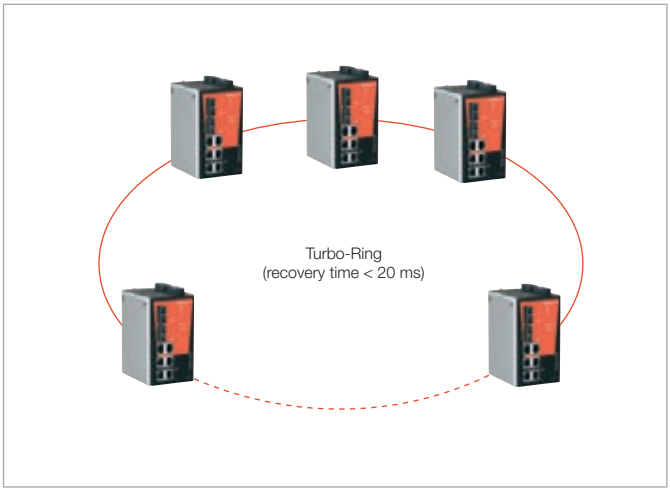
Powerful and reliable network redundancy

It is particularly important to have network redundancy to ensure system availability in today's industrial Ethernet infrastructures. This is because in a highly integrated system a connection error can lead to machine stoppage and thus to production losses. To minimise such risks in a managed Ethernet network Weidmüller has integrated high-performance redundancy mechanisms into its managed switches, this is in addition to the RSTP/STP standard and port-trunking.



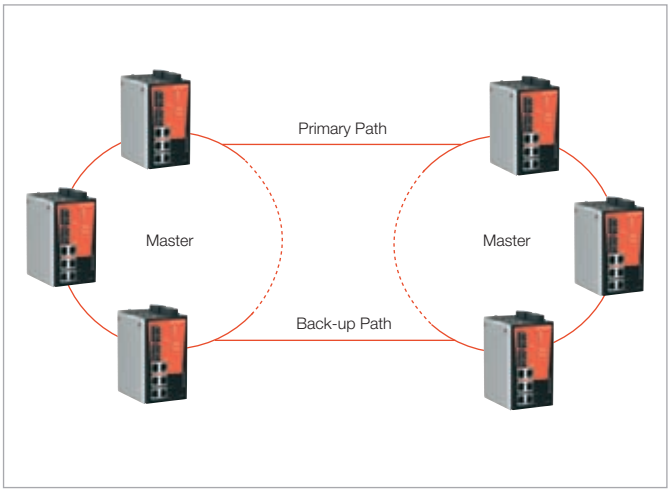
Ring redundancy

The Turbo-Ring technology integrated into Weidmüller's switches allows you to restore a network connection in case of failure in under 20 ms, and this with up to 250 switches in a ring. Turbo-Ring offers thee different topology options (Ring-Coupling, Dual-Ring and Dual-Homing) for different application requirements to ensure the maximum possible availability of industrial network applications.



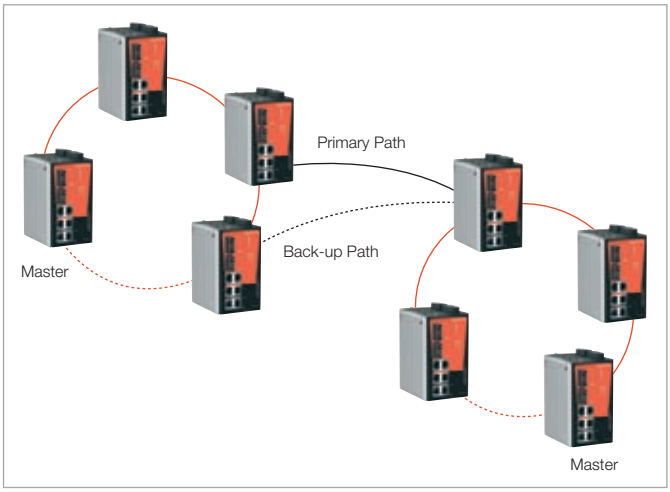
Ring-Coupling

In some applications it is not sensible to have all equipment and devices in a single large redundant ring networked together as some of the devices may be located in remote parts of the plant. For such structures Ring-Coupling is ideal. It connects devices in multiple, smaller rings that are connected redundantly and directly with one another.



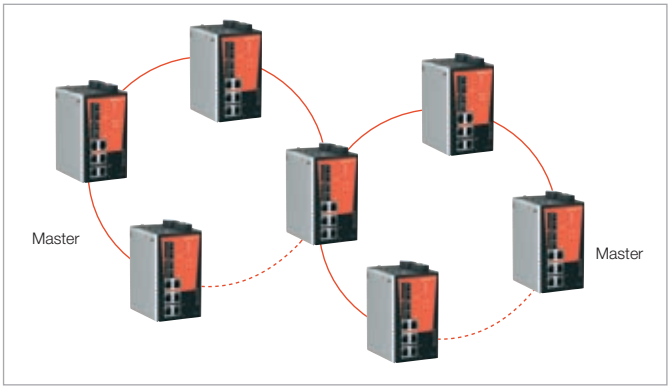
Dual-Homing

Two separate rings are connected through one managed switch via two independent connection points. The back-up connection is activated if the primary connection fails.



Dual-Ring

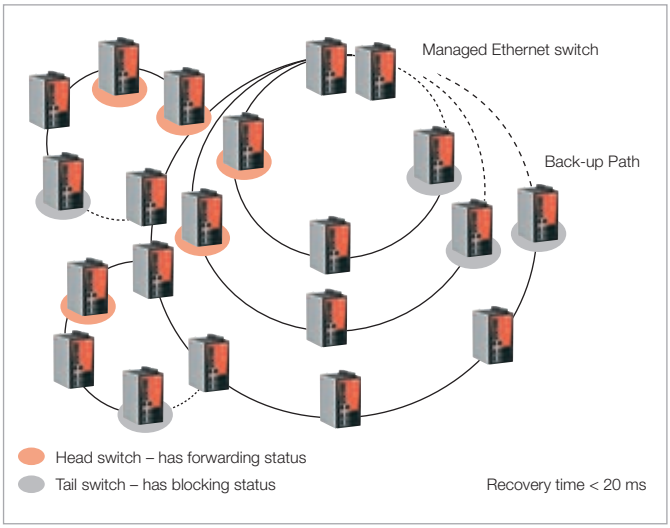
In Dual-Ring two neighbouring rings are connected with one another using one switch without the need for additional ports or cabling. This configuration reduces the total number of ports and saves cabling costs as an additional primary and back-up line is not needed.



Turbo-Chain

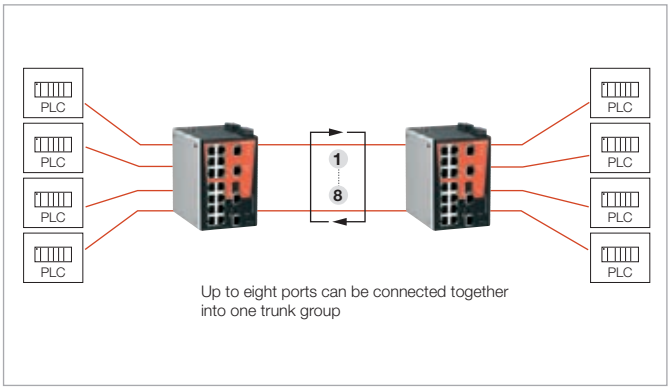
Turbo-Chain offers the possibility of creating multiple redundant networks without the limitations of the ring technology. Turbo-Chain can be simply configured by defining two end-points in a segment. This means you can connect or extend existing redundant networks. When compared with traditional ring coupling or a network re-design, Turbo-Chain is more flexible as well as being more cost efficient and it has significant savings potential when compared to the effort for network restructuring and re-cabling. It also supports the Turbo-Chain standard IEEE 802.1w / D RSTP and STP protocols.

- Flexible network topology
- Unlimited and simple network expansion
- Quick troubleshooting (recovery time < 20 ms)
- Cost-effective configurations



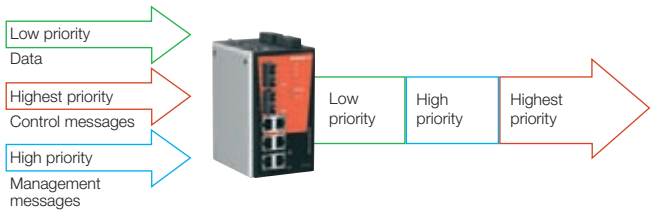
Port trunking for flexible connections

IEEE 802.3ad (LACP, Link Aggregation Control Protocol) permits flexible network connections and a redundant path for critical applications. It provides the possibility to give the user a link with higher bandwidth over the PremiumLine managed switches by combining more ports into a trunk group.



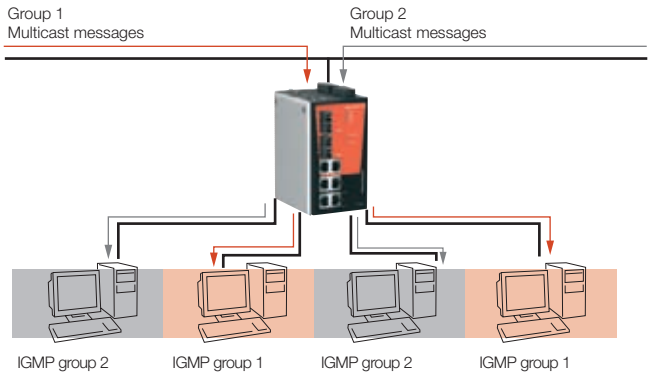
QoS supports real-time capability

Quality of Service (QoS) offers the possibility of prioritising data traffic in a network and ensures that important data are consistently and predictably available. Weidmüller managed switches can deal with IEEE 802.1p/1Q layer 2 CoS tags and also layer 3 TOS information. The QoS functionality of Weidmüller's managed switches improves network performance and ensures that time-critical applications are given priority communications.



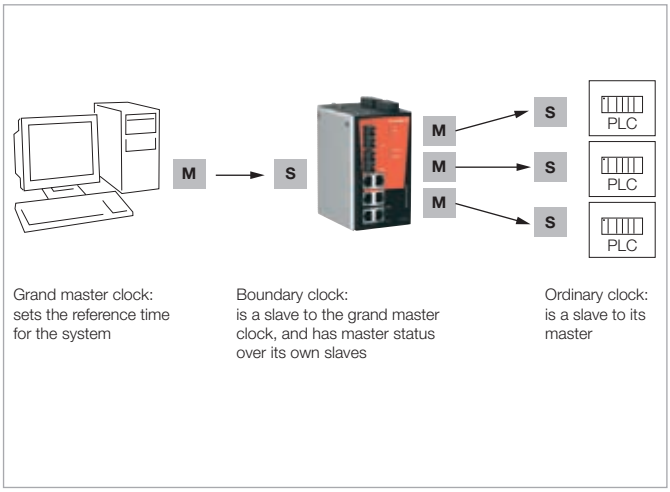
IGMP snooping and GMRP for filtering multicast data traffic

Weidmüller managed switches support GMRP (Generic Multicast Registration Protocol) and IGMP snooping. These protocols limit multicast data traffic so that it is only forwarded to the devices that actually require it. This reduces unnecessary network data traffic.



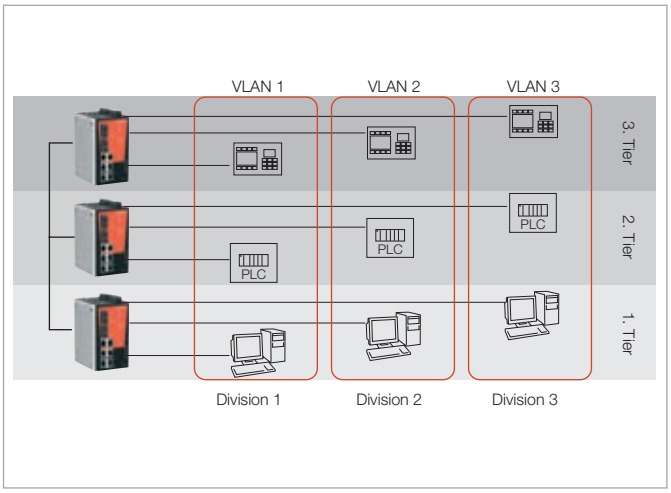
IEEE 1588 PTP - improves time synchronisation of automation devices

IEEE 1588 PTP, also known as Precision Time Protocol (PTP), was developed to synchronise real-time clocks which are located at specific nodes of a distributed system. Weidmüller manage switches with IEEE 1588 PTP are particularly suited for motion control applications where distributed clocks must be synchronised with high levels of accuracy.



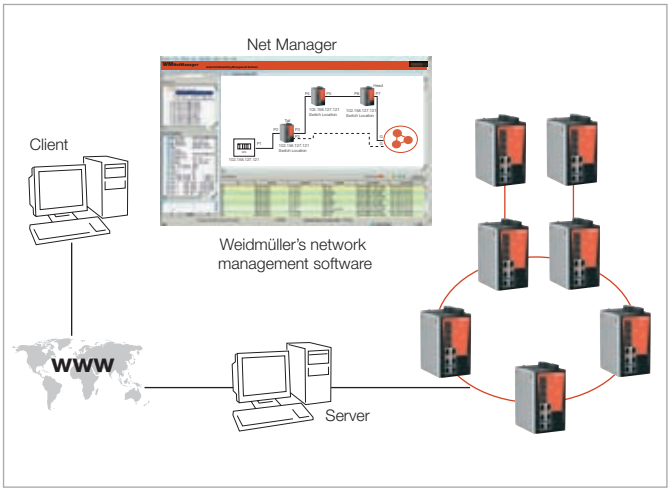
VLAN – simplifies network planning

VLAN stands for virtual LAN. It is a network structure with all the characteristics of a normal LAN, but not geographically constrained. A network can be divided into different sections using the VLAN function. It is possible, for example, to group servers or workstations together based on their function. Data will only then be sent to Ethernet devices of a specific VLAN group. The possibility to isolate VLANs completely from one another serves to increase the security of data transfer and offers additional protection from unauthorised access or unauthorised data traffic.



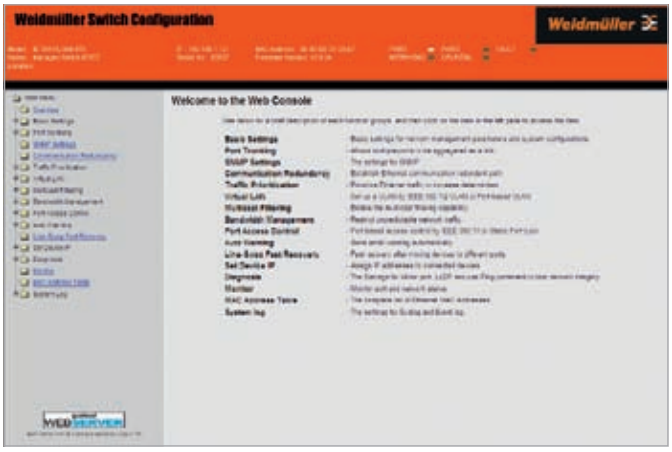
Automatic topology detection using LLDP

The Link Layer Discovery Protocol (LLDP - IEEE 802.1AB) is a data link layer protocol which publishes information about a device containing its IP address, description and functional information to its neighbouring devices over the network. All of Weidmüller's managed switches fully support LLDP. Using Weidmüller'µms Net-Manager network management software LLDP capable devices are detected and managed. The information is used by the system to automatically generate accurate network topologies and to provide information about the connected devices.



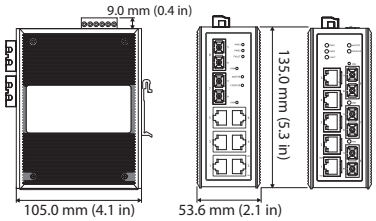
Simple browser based configuration

Weidmüller's managed switches can be easily configured using a web browser, telnet console or the Weidmüller switch configuration utility. Further switch configurations can be saved or the firmware updated using this user-friendly tool.



Managed Entry-level Ethernet Switches

- Turbo Ring and Turbo Chain with fast recovery time (under 20 ms)
- QoS, port-based VLAN, SNMPv1/v2c/v3, RMON supported
- Automatic warning by exception through e-mail, relay output
- User-friendly web-based configuration and management
- External Backup and Restoring Module for easy system reconfiguration (optional accessory)



Technical data

Technology	
Standards	IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT(X) and 100BaseFX IEEE 802.3x for Flow Control IEEE 802.1D 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, IPv6
MIB	MIB-II, Ethernet-Like MIB, P-BRIDGE MIB, Bridge MIB, RSTP MIB, RMON MIB Group 1, 2, 3, 9
Flow Control	IEEE 802.3x flow control, back pressure flow control
Switch Properties	
MAC Table Size	8 K
Packet Buffer Size	1 Mbit
Interface	
Fiber Ports	100BaseFX ports (SC/ST connector)
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
LED Indicators	PWR1, PWR2, FAULT, MSTR/HEAD, CPLR/TAIL, 10/100M
Alarm Contact	1 relay output with current carrying capacity of 1 A @ 24 V DC

Optical Fiber		
	100BaseFX	
	multimode	singlemode
Wavelength	1300 nm	1310 nm
Max. TX	-10 dBm	0 dBm
Min. TX	-20 dBm	-5 dBm
RX Sensitivity	-32 dBm	-34 dBm
Link Budget	12 dB	29 dB
Typical Distance	5 km [a]	40 km [c]
	4 km [b]	
Saturation	-6 dBm	-3 dBm

[a] 50/125 µm, 800 MHz*km fiber optic cable
[b] 62.5/125 µm, 500 MHz*km fiber optic cable
[c] 9/125 µm singlemode fiber optic cable

Power Requirements	
Input Voltage	24 V DC (12 to 45 V DC), redundant dual inputs
Input Current	IE-SW-VL08M-8TX: 0.26 A @ 24 V IE-SW-VL08M-6TX-2ST/SC: 0.35 A @ 24 V IE-SW-VL08M-5TX-3SC: 0.32 A @ 24 V
Power Requirements	
Overload Current Protection	Present
Connection	1 removable 6-contact terminal block
Reverse Polarity Protection	Present
Physical Characteristics	
Housing	Metal, IP30 protection
Dimensions	53.6 x 135 x 105 mm (2.11 x 5.31 x 4.13 in)
Weight	IE-SW-VL08M-...8TX/6TX-2SC/6TX-2ST: 650 g IE-SW-VL08M-5TX-3SC: 890 g
Installation	DIN-Rail mounting
Environmental Limits	
Operating Temperature	-40 to 75 °C (-40 to 167 °F)
Storage Temperature	-40 to 85 °C (-40 to 185 °F)
Ambient Relative Humidity	5 to 95 % (non-condensing)
Regulatory Approvals	
Safety	UL508, UL60950-1, CSA C22.2 No. 60950-1, EN60950-1
Hazardous Location	UL/cUL Class I, Division 2, Groups A, B, C, and D (IE-SW-VL08M-5TX-3SC Pending); ATEX Zone 2, Ex nC IIC (IE-SW-VL08M-5TX-3SC Pending)
EMI	FCC Part 15, CISPR (EN55022) class A
EMS	EN61000-4-2 (ESD), level 3; 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 (meantime between failures)	
Time	IE-SW-VL08M-...Series: 363,000 hrs
Database	Telcordia (Bellcore), GB
Warranty	
Warranty Period	5 years

Ordering Information

Port Variants	Model Type	Operating Temperature	Order No.
8 * RJ45	IE-SW-VL08MT-8TX	-40 to +75 °C	**1240940000**
5 * RJ45, 3 * SC-Multimode	IE-SW-VL08MT-5TX-3SC	-40 to +75 °C	**1240970000**
6 * RJ45, 2 * ST-Multimode	IE-SW-VL08MT-6TX-2ST	-40 to +75 °C	**1240990000**
6 * RJ45, 2 * SC-Singlemode	IE-SW-VL08MT-6TX-2SCS	-40 to +75 °C	**1241020000**

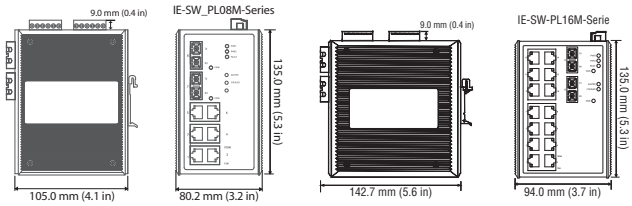
Accessories

	Model Type	Order No.
External Backup and Restore Module	EBR-Module RS232	**1241430000**
Networkmanagement Software	IE-NM-WMNETMANAGER	**1242120000**
19'' Rack Mounting Kit	RM-KIT	**1241440000**

Managed Switches Fast Ethernet – Premium Line

Managed Fast Ethernet Switches

- Plug-n-play Turbo Ring and Turbo Chain (recovery time < 20 ms), RSTP/STP (IEEE 802.1w/D) for Ethernet redundancy
- IEEE 1588 PTP, Modbus/TCP, LLDP, SNMP Inform, QoS, IGMP snooping, VLAN, IEEE 802.1X, HTTPS, SNMPv3, and SSH supported
- EBR-Module (External Backup and Restore Module) for system configuration backup (optional accessory)



Technical data

Technology	
Standards	IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT(X) and 100BaseFX IEEE 802.3x for Flow Control IEEE 802.1D 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, 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
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 (IE-SW-PL08M) 2 Mbit (IE-SW-PL16M)
Interface	
Fiber Ports	100BaseFX ports (SC/ST connector)
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
LED Indicators	PWR1, PWR2, FAULT, MSTR/HEAD, CPLR/TAIL, 10/100M
Alarm Contact	2 relay outputs with current carrying capacity of 1 A @ 24 V DC
Digital Inputs	2 inputs with the same ground, electrically isolated • +13 to +30 V for state “1” • -30 to +3 V for state “0” • Max. input current: 8 mA

Optical Fiber	100BaseFX	
	multimode	singlemode
Wavelength	1300 nm	1310 nm
Max. TX	-10 dBm	0 dBm
Min. TX	-20 dBm	-5 dBm
RX Sensitivity	-32 dBm	-34 dBm
Link Budget	12 dB	29 dB
Typical Distance	5 km (50/125 µm multimode cable) 4 km (62,5/125 µm multimode cable)	40 km (9/125 µm singlemode cable)
Saturation	-6 dBm	-3 dBm

Power Requirements	
Input Voltage	24 V DC (12 to 45 V DC), redundant dual inputs
Input Current	IE-SW-PL08M-8TX: 0.26 A @ 24 V IE-SW-PL08M-6TX-2SC/ST/2SCS: 0.36 A @ 24 V IE-SW-PL16M-16TX: 0.41 A @ 24 V IE-SW-PL16M-14TX-2SC/ST: 0.51 A @ 24 V
Overload Current Protection	Present
Connection	2 removable 6-contact terminal blocks
Reverse Polarity Protection	Present
Physical Characteristics	
Housing	Metal, IP30 protection
Dimensions	IE-SW-PL08M: 80.2 x 135 x 105 mm (3.16 x 5.31 x 4.13 in) IE-SW-PL16M: 94 x 135 x 142.7 mm (3.7 x 5.31 x 5.62 in)
Weight	IE-SW-PL08M: 1040 g IE-SW-PL16M: 1586 g
Installation	DIN-Rail mounting
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) (on request)
Storage Temperature	-40 to 85 °C (-40 to 185 °F)
Ambient Relative Humidity	5 to 95 % (non-condensing)
Regulatory Approvals	
Safety	UL508, UL60950-1, 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 nC IIC
EMI	FCC Part 15, CISPR (EN55022) class A
EMS	EN61000-4-2 (ESD): IE-SW-PL08M...Series: level 3 IE-SW-PL16M...Series: 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
Maritime	DNV, GL
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Vibration	IEC 60068-2-6
MTBF (meantime between failures)	
Time	IE-SW-PL08M...Series: 339,000 hrs IE-SW-PL16M...Series: 247,000 hrs
Database	Telcordia (Bellcore), GB
Warranty	
Warranty Period	5 years

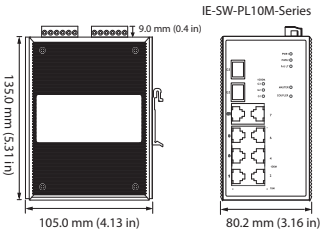
Ordering Information

Port Variants	Model Type	Operating Temperature	Order No.
8 * RJ45	IE-SW-PL08M-8TX	0 to 60 °C	**1241040000**
6 * RJ45, 2 * SC-Multimode	IE-SW-PL08M-6TX-2SC	0 to 60 °C	**1241070000**
6 * RJ45, 2 * ST-Multimode	IE-SW-PL08M-6TX-2ST	0 to 60 °C	**1241080000**
6 * RJ45, 2 * SC-Singlemode	IE-SW-PL08M-6TX-2SCS	0 to 60 °C	**1241090000**
16 * RJ45	IE-SW-PL16M-16TX	0 to 60 °C	**1241100000**
14 * RJ45, 2 * SC-Multimode	IE-SW-PL16M-14TX-2SC	0 to 60 °C	**1241120000**
14 * RJ45, 2 * ST-Multimode	IE-SW-PL16M-14TX-2ST	0 to 60 °C	**1241130000**

Note: Models with extended operating temperature -40 to +75 °C on request

Managed Gigabit Ethernet Switches

- 2 Gigabit Ethernet ports for redundant ring and 1 Gigabit Ethernet port for uplink solution
- Turbo Ring, Turbo Chain, and RSTP/STP for network redundancy
- EEE 1588 PTP, Modbus/TCP, LLDP, SNMP Inform, QoS, IGMP snooping, VLAN, IEEE 802.1X, HTTPS, SNMPv3, and SSH supported
- EBR-Module - External Backup and Restoring Module for easy system reconfiguration (optional accessory)



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 802.1D 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 ▪ 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	
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	
Fiber Ports	1000BaseSFP slot
RJ45 Ports	10/100BaseT(X) or 10/100/1000BaseT(X) auto negotiation speed
Console Port	RS-232 (RJ45 connector)
DIP Switches	Turbo Ring, Master, Coupler, Reserve
LED Indicators	PWR1, PWR2, FAULT, 10/100M (TP port), 1000M (Gigabit port), MSTR/HEAD, CPLR/TAIL
Alarm Contact	2 relay outputs with current carrying capacity of 1 A @ 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	IE-SW-PL10M-3GT-7TX: 0.65 A @ 24 V IE-SW-PL10M-1GT-2GS-7TX: 0.44 A @ 24 V
Overload Current Protection	Present
Connection	2 removable 6-contact terminal blocks
Reverse Polarity Protection	Present

Physical Characteristics	
Housing	Metal, IP30 protection
Dimensions	80.2 x 135 x 105 mm (3.16 x 5.31 x 4.13 in)
Weight	1170 g
Installation	DIN-Rail mounting
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) on request
Storage Temperature	-40 to 85 °C (-40 to 185 °F)
Ambient Relative Humidity	5 to 95 % (non-condensing)
Regulatory Approvals	
Safety	UL508, UL60950-1, 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 nC IIC
EMI	FCC Part 15, CISPR (EN55022) class A
EMS	EN61000-4-2 (ESD), level 3; 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 (meantime between failures)	
Time	204,000 hrs
Database	MIL-HDBK-217J, GB 25 °C
Warranty	
Warranty Period	5 years

Ordering Information

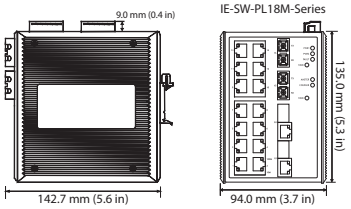
Port Variants	Model Type	Operating Temperature	Order No.
3 * RJ45 10/100/1000BaseT(X), 7 * RJ45 10/100BaseT(X)	IE-SW-PL10M-3GT-7TX	0 to 60 °C	**1241290000**
1 * RJ45 10/100/1000BaseT(X), 2 * Slots 1000BaseSFP, 7 * RJ45 10/100BaseT(X)	IE-SW-PL10M-1GT-2GS-7TX	0 to 60 °C	**1241300000**
Note: Models with extended operating temperature -40 to +75 °C on request			

Accessories

	Model Type	Order No.
External Backup and Restore Module	EBR-Module RS232	**1241430000**
Networkmanagement Software	IE-NM-WMNETMANAGER	**1242120000**
19'' Rack Mounting Kit	RM-KIT	**1241440000**

Managed Gigabit Ethernet Switches

- 2 Gigabit Ethernet ports plus 16 Fast Ethernet ports for copper and fibre
- Turbo Ring, Turbo Chain, and RSTP/STP for network redundancy
- EEE 1588 PTP, Modbus/TCP, LLDP, SNMP Inform, QoS, IGMP snooping, VLAN, IEEE 802.1X, HTTPS, SNMPv3, and SSH supported
- EBR-Module - External Backup and Restoring Module for easy system reconfiguration (optional accessory)



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 802.1D 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 ▪ 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	
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	
Fiber Ports	100BaseFX (SC/ST connector) and 1000BaseSFP slot
RJ45 Ports	10/100BaseT(X) or 10/100/1000BaseT(X) auto negotiation speed
Console Port	RS-232 (RJ45 connector)
LED Indicators	PWR1, PWR2, FAULT, 10/100M (TP port), 100M (fiber port), MSTR/HEAD, CPLR/TAIL
Alarm Contact	2 relay outputs with current carrying capacity of 1 A @ 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

Optical Fiber		
	100BaseFX	
	multimode	singlemode
Wavelength	1300 nm	1310 nm
Max. TX	-10 dBm	0 dBm
Min. TX	-20 dBm	-5 dBm
RX Sensitivity	-32 dBm	-34 dBm
Link Budget	12 dB	29 dB
Typical Distance	5 km (50/125 µm multimode cable) 4 km (62,5/125 µm multimode cable)	40 km (9/125 µm singlemode cable)
Saturation	-6 dBm	-3 dBm

Power Requirements	
Input Voltage	24 V DC (12 to 45 V DC), redundant dual inputs
Input Current	IE-SW-PL18M-2GC-16TX: 0.51 A @ 24 V IE-SW-PL18M-SC/ST/SCS: 0.61 A @ 24 V
Overload Current Protection	Present
Connection	2 removable 6-contact terminal blocks
Reverse Polarity Protection	Present
Physical Characteristics	
Housing	Metal, IP30 protection
Dimensions	94 x 135 x 142.7 mm (3.7 x 5.31 x 5.62 in)
Weight	1630 g
Installation	DIN-Rail mounting
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) on request
Storage Temperature	-40 to 85 °C (-40 to 185 °F)
Ambient Relative Humidity	5 to 95 % (non-condensing)
Regulatory Approvals	
Safety	UL508, UL60950-1, 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 nC IIC
EMI	FCC Part 15, CISPR (EN55022) class A
EMS	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 (meantime between failures)	
Time	240,000 hrs
Database	Telcordia (Bellcore), GB
Warranty	
Warranty Period	5 years

Ordering Information

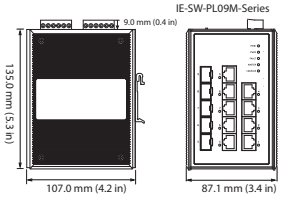
Port Variants	Model Type	Operating Temperature	Order No.
16 * RJ45 10/100BaseT(X), 2 * Combo Ports[1]	IE-SW-PL18M-2GC-16TX	0 to +60 °C	**1241320000**
14 * RJ45 10/100BaseT(X), 2 * SC-Multimode 100FX, 2 * Combo Ports[1]	IE-SW-PL18M-2GC14TX2SC	0 to +60 °C	**1241330000**
14 * RJ45 10/100BaseT(X), 2 * ST-Multimode 100FX, 2 * Combo Ports[1]	IE-SW-PL18M-2GC14TX2ST	0 to +60 °C	**1241340000**
14 * RJ45 10/100BaseT(X), 2 * SC-Singlemode 100FX, 2 * Combo Ports[1]	IE-SW-PL18M-2GC14TX2SCS	0 to +60 °C	**1241350000**

Models with extended operating temperature -40 to +75 °C on request

[1] (10/100/1000BaseT(X) or 100/1000BaseSFP)

Managed Full Gigabit Ethernet Switch

- 4 10/100/1000BaseT(X) ports plus 5 combo (10/100/1000BaseT(X) or 100/1000BaseSFP slot) Gigabit ports
- Turbo Ring, Turbo Chain, and RSTP/STP for network redundancy
- IEEE 1588 PTP, Modbus/TCP, LLDP, SNMP Inform, QoS, IGMP snooping, VLAN, IEEE 802.1X, HTTPS, SNMPv3, and SSH supported
- EBR-Module - External Backup and Restoring Module for easy system reconfiguration (optional accessory)



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 802.1D 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, DHCP Option 66/67/82, BootP, TFTP, SNTP, SMTP, RARP, RMON, HTTP, HTTPS, Telnet, SSH, Syslog, Modbus/TCP, SNMP Inform, 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	
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	ID 1 to 4094
IGMP Groups	256
MAC Table Size	8 K
Packet Buffer Size	1 Mbit
Interface	
Fiber Ports	100/1000Base SFP slot
RJ45 Ports	10/100/1000BaseT(X) auto negotiation speed
Console Port	RS-232 (RJ45 connector)
DIP Switches	Turbo Ring, Master, Coupler, Reserve
LED Indicators	PWR1, PWR2, FAULT, 10/100/1000M, MSTR/HEAD, CPLR/TAIL
Alarm Contact	2 relay outputs with current carrying capacity of 1 A @ 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	12/24/48 V DC, redundant dual inputs
Input Current	0.81 A @ 24 V
Overload Current Protection	Present
Connection	2 removable 6-contact terminal blocks
Reverse Polarity Protection	Present
Physical Characteristics	
Housing	Metal, IP30 protection
Dimensions	87.1 × 135 × 107 mm (3.43 × 5.31 × 4.21 in)

Physical Characteristics	
Weight	1510 g
Installation	DIN-Rail mounting
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) for T models on request
Storage Temperature	-40 to 85 °C (-40 to 185 °F)
Ambient Relative Humidity	5 to 95 % (non-condensing)
Regulatory Approvals	
Safety	UL508, EN60950-1
Hazardous Location	UL/cUL Class I, Division 2, Groups A, B, C, and D (Pending); ATEX Zone 2, Ex nC IIC (Pending)
EMI	FCC Part 15, CISPR (EN55022) class A
EMS	EN61000-4-2 (ESD), level 3; 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
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Vibration	IEC 60068-2-6
MTBF (meantime between failures)	
Time	330,000 hrs
Database	Telcordia (Bellcore), GB
Warranty	
Warranty Period	5 years

Ordering Information

Port Variants	Model Type	Operating Temperature	Order No.
4 * RJ45 10/100/1000BaseT(X), 5 * Combo Ports 10/100/1000BaseT(X) or 100/1000BaseSFP	IE-SW-PL09M-5GC-4GT	0 to 60 °C	**1241370000**
Model with extended operating temperature -40 to +75 °C on request			

Accessories

	Model Type	Order No.
External Backup and Restore Module	EBR-Module RS232	**1241430000**
Networkmanagement Software	IE-NM-WMNETMANAGER	**1242120000**
19'' Rack Mounting Kit	RM-KIT	**1241440000**

PoE Switches

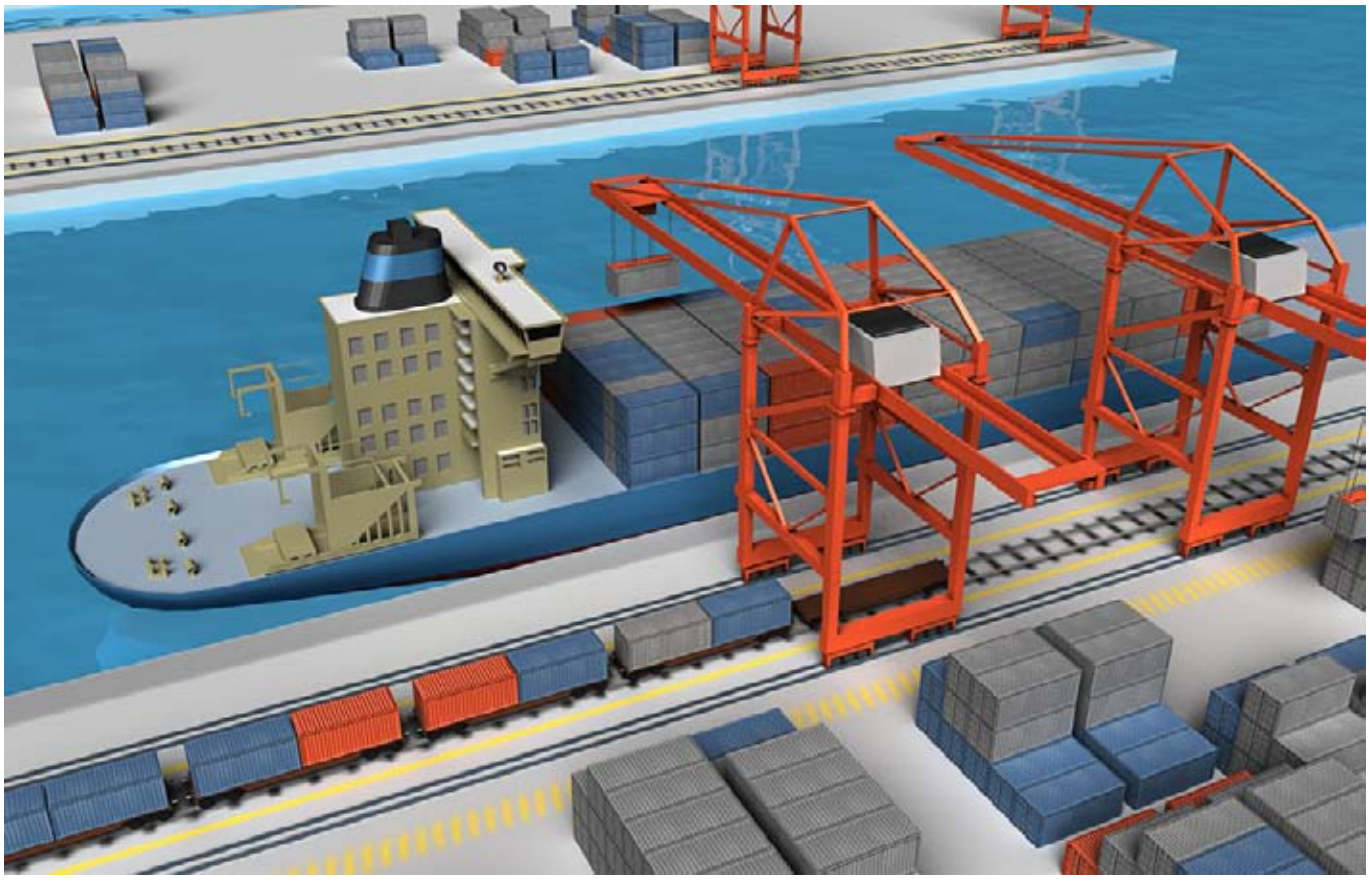
Power over Ethernet (PoE) describes a process where power can be supplied to a network compatible device over the 8-wire Ethernet cable. In a narrower sense PoE today means the IEEE 802.3af (DTE Power over MDI) standard which was adopted in June 2003 in its final form.

The main advantage of Power over Ethernet is that you do not require a separate power supply cable and so can install Ethernet devices in hard to reach places or in areas where there is not sufficient room for many cables. This means that you can save some significant installation costs, and that you can also integrate the power supply into a central uninterruptible power supply (UPS) to improve the reliability of the connected devices.

PoE is used by network devices that need small amounts of power. It is typically used for IP telephones, network cameras, operating panel or wireless communications devices like WLAN access points.

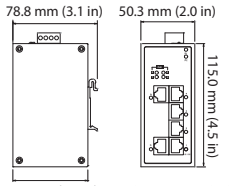
Weidmüller PoE switches support the IEE 802.3at standard (also known as PoE+) and can therefore supply end devices with up to 30 W per PoE port.

Weidmüller PoE switches also offer further advantages by the simple power supply. They do not require an additional 48 V supply in addition to the standard 24 V supply.



6-port IEEE 802.3af/at PoE+ unmanaged Ethernet Switch

- 4 IEEE 802.3af/at compliant PoE and Ethernet combo ports
- Up to 30 watts per PoE port
- 24/48 V DC wide range redundant power inputs
- Intelligent power consumption detection and classification
- Redundant dual V DC power inputs
- Broadcast Storm Protection



IE-SW-BL-4PoE-Series

Technical data

Technology	
Standards	IEEE 802.3at for Power-over-Ethernet 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
Interface	
RJ45 Ports	10/100BaseT(X) auto negotiation speed, Full/Half duplex mode and auto MDI/MDI-X connection
LED Indicators	PWR1, PWR2, 10/100M, PoE
Power Requirements	
Input Voltage	24/48 V DC
Input Current	Max 7.5 A @ 24 V DC (supports up to 4 ports at 30 watts per PoE port)
Overload Current Protection	Present
Connection	1 removable 4-contact terminal block
Reverse Polarity Protection	Present
Physical Characteristics	
Housing	Metal, IP30 protection
Dimensions	50 × 115 × 70 mm (1.96 x 4.52 x 2.76 in)
Weight	375 g
Installation	DIN-Rail mounting, wall mounting (with optional 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) on request
Storage Temperature	-40 to 85 °C (-40 to 185 °F)
Ambient Relative Humidity	5 to 95 % (non-condensing)
Regulatory Approvals	
Safety	UL508 (Pending)
EMI	FCC Part 15, CISPR (EN55022) class A
EMS	EN61000-4-2 (ESD), level 3; EN61000-4-3 (RS), level 3; EN61000-4-4 (EFT), level 4; EN61000-4-5 (Surge), level 4; EN61000-4-6 (CS), level 3; EN61000-4-8
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Vibration	IEC 60068-2-6
Warranty	
Warranty Period	5 years

Ordering Information

Port Variants	Model Type	Operating Temperature	Order No.
2 * RJ45 10/100 BaseT(X), 4 * RJ45 10/100 BaseT(X) PoE+	IE-SW-BL06-2TX-4POE	0 to 60 °C	**1241380000**

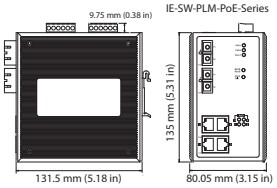
Note 1: Model with extended operating temperature -40 to +75 °C on request
Note 2: Models with Fiber optic ports on request

Accessories

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

6 Port IEEE 802.3af/at PoE + Managed Ethernet Switch

- 4 IEEE 802.3af/at compliant PoE and Ethernet combo ports
- Up to 30 watts per PoE port
- 24/48 V DC wide range redundant power inputs
- Advanced PoE management functions, including PD failure check and PoE scheduling



Technical data

Technology	
Standards	IEEE 802.3at/af for Power-over-Ethernet IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT(X) and 100BaseFX IEEE 802.3x for Flow Control IEEE 802.1D 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, DHCP Option 66/67/82, BootP, TFTP, SNTP, SMTP, RARP, RMON, HTTP, HTTPS, Telnet, SSH, Syslog, Modbus/TCP, SNMP Inform, 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	
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) 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
LED Indicators	PWR1, PWR2, FAULT, 10/100M, MSTR/HEAD, CPLR/TAIL, PoE
Alarm Contact	2 relay outputs with current carrying capacity of 1 A @ 24 V DC
Digital Inputs	2 inputs with the same ground, electrically isolated • +13 to +30 V for state “1” • -30 to +3 V for state “0” • Max. input current: 8 mA
Power Requirements	
Input Voltage	24/48 V DC
Input Current	Max. 7.8 A @ 24 V DC (supports up to 4 ports at 30 watts per PoE port)
Overload Current Protection	Present
Connection	2 removable 6-contact terminal blocks
Reverse Polarity Protection	Present
Physical Characteristics	
Housing	Metal, IP30 protection
Dimensions	80 x 135 x 131.5 mm (3.15 x 5.31 x 5.18 in)

Physical Characteristics	
Weight	1270 g
Installation	DIN-Rail mounting
Environmental Limits	
Operating Temperature	Standard Models: 0 to 60 °C (32 to 140 °F) Wide Operating 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	UL508 (Pending)
EMI	FCC Part 15, CISPR (EN55022) class A
EMS	EN61000-4-2 (ESD), level 3; 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
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Vibration	IEC 60068-2-6
Warranty	
Warranty Period	5 years

Ordering Information

Port Variants	Model Type	Operating Temperature	Order No.
2 * RJ45 10/100 BaseT(X), 4 * RJ45 10/100 BaseT(X) PoE+	IE-SW-PL06M-2TX-4PoE	0 to 60 °C	**1241390000**

Note 1: Model with extended operating temperature -40 to +75 °C on request
Note 2: Models with Fiber optic ports on request

Accessories

	Model Type	Order No.
External Backup and Restore Module	EBR-Module RS232	**1241430000**
Networkmanagement Software	IE-NM-WMNETMANAGER	**1242120000**
19'' Rack Mounting Kit	RM-KIT	**1241440000**

Media converter

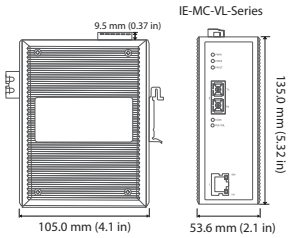
If high interference immunity is needed or long transmission distances are involved, then fibre-optic cables are advisable. Another advantage of using fibre-optic cabling is the insensitivity to lightning or voltage surges. They are also not absorbed. The use of fibre-optic based systems is already established in the process industry, plant engineering, energy distribution and the wind energy branches.

One simple and inexpensive solution if offered by the media converter. This connects the Ethernet via an RJ45 port to an optical fibre-optic cable port with SC or ST glass fibre connections. This retains the collision domain between the two Ethernet participants and means that there is status transparency exchanged between the two Ethernet interfaces and the port status.

Multimode glass fibres allow distances of up to 5,000 m to be bridged without intermediate repeaters. Singlemode fibres can be used over distances of up to 40 km.

Industrial Fast Ethernet Media Converter

- 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 (Class 1 Div. 2/Zone 2)



Technical data

Technology	
Standards	IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT(X) and 100BaseFX
Interface	
Fiber Ports	100BaseFX (SC/ST connectors)
RJ45 Ports	10/100BaseT(X)
DIP Switches	100BaseFX Full/Half duplex selection, port break alarm mask
LED Indicators	PWR1, PWR2, FAULT, 10/100M (TP port), 100M (Fiber port), FDX/COL (Fiber port)
Alarm Contact	One relay output with current carrying capacity of 1 A @ 24 V DC

Optical Fiber

	100BaseFX	
	multimode	singlemode
Wavelength	1300 nm	1310 nm
Max. TX	-10 dBm	0 dBm
Min. TX	-20 dBm	-5 dBm
RX Sensitivity	-32 dBm	-34 dBm
Link Budget	12 dB	29 dB
Typical Distance	5 km [a] 4 km [b]	40 km [c]
Saturation	-6 dBm	-3 dBm

[a] 50/125 µm, 800 MHz*km fiber optic cable
[b] 62.5/125 µm, 500 MHz*km fiber optic cable
[c] 9/125 µm, 3.5 PS/(nm*km) fiber optic cable

Power Requirements	
Input Voltage	24 V DC (12 to 48 V DC), redundant inputs
Input Current	0.16 A (@ 24 V)
Connection	Removable terminal block
Overload Current Protection	1.1 A
Reverse Polarity Protection	Present
Physical Characteristics	
Housing	Metal, IP30 protection
Dimensions	53.6 x 135 x 105 mm (2.11 x 5.31 x 4.13 in)
Weight	630 g
Installation	DIN-Rail mounting, wall mounting (with optional kit)
Environmental Limits	
Operating Temperature	Standard Models: 0 to 60 °C (32 to 140 °F) Wide Temp. Models: -40 to 75 °C on request (-40 to 167 °F)
Operating Humidity	5 to 95 % RH
Storage Temperature	-40 to 85 °C (-40 to 185 °F)

Regulatory Approvals	
Safety	UL508, UL60950-1, CSA C22.2 No. 60950-1, EN60950-1
EMI	FCC Part 15, CISPR (EN55022) class A
EMS	EN61000-4-2 (ESD), level 3 EN61000-4-3 (RS), level 3 EN61000-4-4 (EFT), level 3 EN61000-4-5 (Surge), level 2 EN61000-4-6 (CS), level 3 EN61000-4-8 EN61000-4-11
Hazardous Location	UL/cUL Class1, Division 2, Groups A, B, C, and D, ATEX Class1, Zone 2, Ex nC IIC
Freefall	IEC60068-2-32
Shock	IEC60068-2-27
Vibration	IEC60068-2-6
Maritime	DNV, GL
MTBF	401,000 hrs; Database: MIL-HDBK-217F: GB 25 °C
Warranty	
Warranty Period	5 years

Ordering Information

Port Variants	Model Type	Operating Temperature	Order No.
1 * RJ45, 1 * SC-Multimode	IE-MC-VL-1TX-1SC	0 to +60 °C	**1241400000**
1 * RJ45, 1 * ST-Multimode	IE-MC-VL-1TX-1ST	0 to +60 °C	**1241410000**
1 * RJ45, 1 * SC-Singlemode	IE-MC-VL-1TX-1SCS	0 to +60 °C	**1241420000**

Note: Models with extended operating temperature -40 to +75 °C on request

Accessories

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

Serial / Ethernet converter

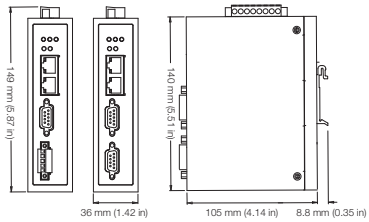
Serial interfaces such as RS 232, RS 422 or RS 485 are widespread today in automation systems. To integrate these devices into modern Industrial Ethernets, Serial / Ethernet converters are used which offer investment protection for existing automation components. These devices include control systems, sensors, meters, drives, bar code readers and operator displays.

Weidmüller's Serial / Ethernet converters connect these devices simply and easily to existing Ethernet network structures. The configuration of the serial port and Ethernet port parameters is done using an internet browser. On the Ethernet side, these devices support several operating modes: including TCP server, TCP client, UDP, Real COM, RFC 2217, Reverse Telnet, Pair Connection and Ethernet modem. These modes ensure compatibility for the network software.

There are two Ethernet ports on the device which can be used as Ethernet switch ports. This helps to reduce your cabling costs since you no longer need to connect each device with a separate Ethernet switch.

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

- Enhanced surge protection for serial, LAN, and power
- 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

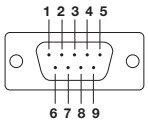


Technical data

Ethernet Interface	
Number of Ports	2
Speed	10/100 Mbps, auto MDI/MDIX
Connector	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	IE-CS-2TX-1RS232/485: 1 IE-CS-2TX-2RS232/485: 2
Serial Standards	RS-232/422/485
Connector	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	• 15 KV ESD protection for all signals • 1 KV (level 2) surge protection
RS-485 Data Direction Control	ADDC® (automatic data direction control)
Serial Communication Parameters	
Data Bits	5, 6, 7, 8
Stop Bits	1, 1.5, 2
Parity	None, Even, Odd, Space, Mark
Flow Control	RTS/CTS and DTR/DSR (RS-232 only), XON/XOFF
Baud rate	50 to 921.6 Kbps
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, SNTP, 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 x86/x64
Fixed TTY Drivers	SCO Unix, SCO OpenServer, UnixWare 7, UnixWare 2.1, SVR 4.2, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x, HP-UX 11i
Linux Real TTY Drivers	Linux kernel 2.4.x, 2.6.x
Physical Characteristics	
Housing	Metal, IP30 protection
Weight	IE-CS-2TX-1RS232/485: 475 g IE-CS-2TX-2RS232/485: 485 g
Dimensions	36 x 105 x 140 mm (1.42 x 4.13 x 5.51 in)
Environmental Limits	
Operating Temperature	0 to 60 °C (32 to 140 °F)
Operating Humidity	5 to 95% RH
Storage Temperature	-40 to 85 °C (-40 to 185 °F)
Power Requirements	
Input Voltage	12 to 48 V DC
Power Consumption	IE-CS-2TX-1RS232/485: 12 to 48 V DC; 220 mA @ 12 V DC, 110 mA @ 24 V DC IE-CS-2TX-2RS232/485: 12 to 48 V DC; 250 mA @ 12 V DC, 125 mA @ 24 V DC

Regulatory Approvals	
EMC	CE (EN55022 Class A, EN55024), FCC Part 15 Subpart B Class A
Safety	UL508 (Pending)
Hazardous Location	UL/cUL Class 1 Division 2 Groups A, B, C and D (Pending)
ATEX	Class I, Zone 2 (Pending)
EMS	EN61000-4-2 (ESD), Level 3 EN61000-4-3 (RS), Level 3 EN61000-4-4 (EFT), Level 4 EN61000-4-5 (Surge), Level 3 EN61000-4-6 (CS), Level 3 EN61000-4-8 EN61000-4-11
Shock	IEC60068-2-27
Freefall	IEC60068-2-32
Vibration	IEC60068-2-6
Reliability	
Alert Tools	Built-in buzzer and RTC (real-time clock)
Automatic Reboot Trigger	Built-in WDT (watchdog timer)
Warranty	
Warranty Period	5 years
Pin Assignment	

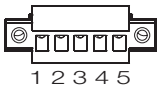
RS-232/422/485 DB9 male port



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 Wiring



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 Information

Models	Model Type	Operating Temperature	Order No.
2x RJ45; 1x RS-232; 1x RS-422/485	IE-CS-2TX-1RS232/485	0 to +60 °C	**1242080000**
2x RJ45; 2x RS-232/422/485	IE-CS-2TX-2RS232/485	0 to +60 °C	**1242090000**

Accessories

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

Industrial wireless

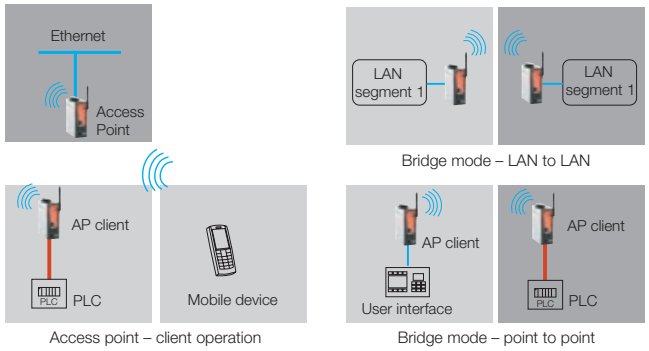
Wireless communications are preferred when working with moveable applications or difficult-to-reach areas. Currently, wireless LAN can be used for industrial manufacturing plants or facilities; it is ideal for use anywhere where traditional cabling is not suitable or where a mobile network connection is required. For example in logistics AGB (automatic guide vehicles) are connected over WLAN. Here it is important that roaming between different radio cells is possible, thereby creating an individually configurable radio coverage.

Weidmüller's versatile WLAN module can be used as an access point, bridge or client. It is quite simple to integrate into existing infrastructures because it has an alternative Power over Ethernet supply (using the data cable for the power supply).

Support for RADIUS services and WPA2 secure encryption guarantees that your data is fully protected. Multiple wireless zones can be set up so that clients can move with versatility by quickly roaming between the different radio/wireless cells. Multiple zones can be specified (multiple SSIDs) and different VLANs can be assigned for each wireless cell. This allows you to implement a one-to-one forwarding of the cable-based infrastructure to the wireless zone.

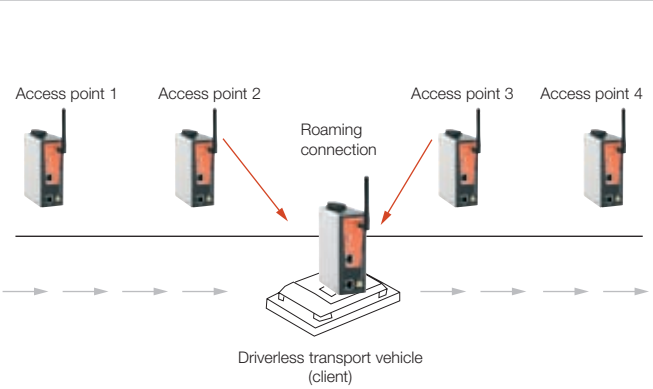
Wireless operating modes

The most common operating mode for wireless networks are AP client mode (Access Point) and bridge mode. A WLAN access point is needed and set up to create a Basic Service Set (BSS) for a wireless connection in AP client mode. The AP can be used to create a wireless LAN, or to connect an existing WLAN with a wired network. Bridge mode offers a simple way to connect two Ethernet devices over a point-to-point connection wirelessly with one another.



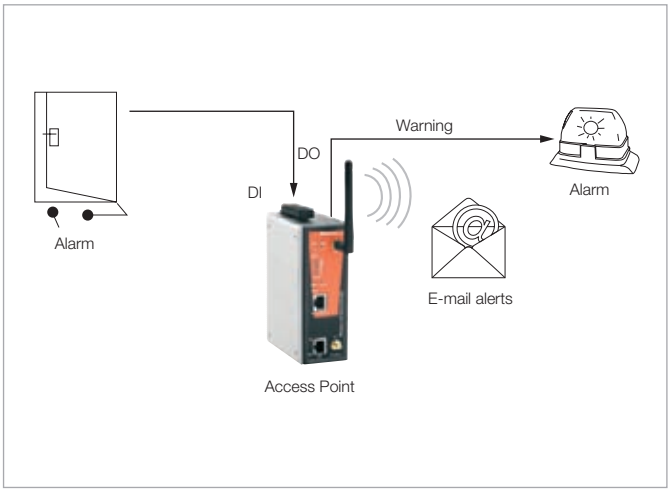
Turbo roaming for uninterrupted connections

A WLAN radio cell has a limited range depending on the antenna used. To maintain communications between devices which move over a long distance requires the connection to be passed from one access point to another. Performance can be affected where there are many moving devices and a large number of transfer points without powerful roaming technology. The roaming technology offers a seamless wireless connection and permits a swift change between different wireless access points without the risk of an interruption to the data communication.



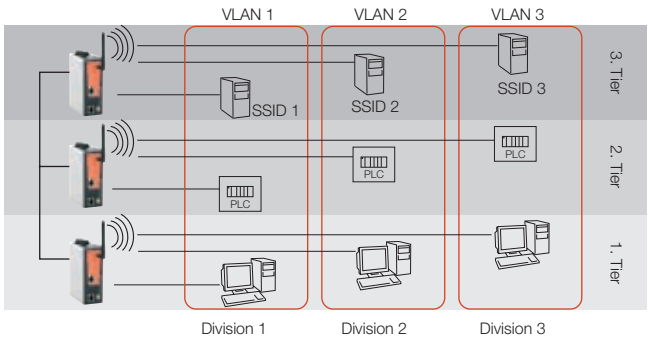
Integrated digital inputs / outputs

Wireless access points are often located in distant or inaccessible places in an industrial plant. This makes monitoring the status of a device or its environment by the system administrators a difficult task. Weidmüller's WLAN access points therefore have an integrated digital input/output which sends alarm messages over the network in real time to the responsible maintenance personnel when errors, like power supply failure or link breaks occur.



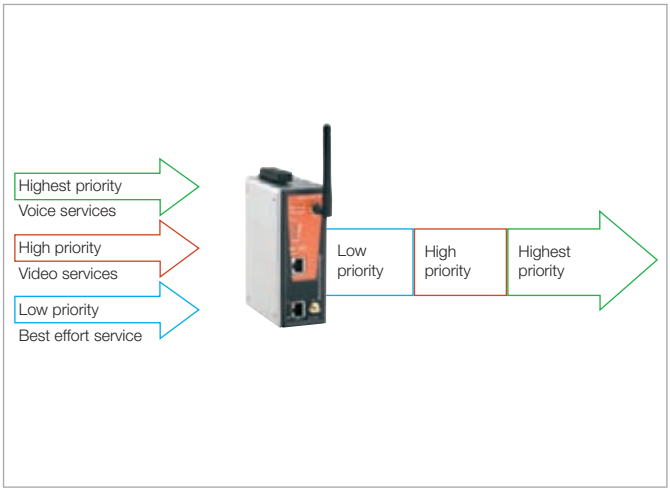
Wireless VLAN (Multi-SSID)

VLAN stands for virtual LAN. It is a network structure with all the characteristics of a normal LAN, but not geographically constrained.
Based on the SSID two or more clients can be added into a VLAN and integrated into a LAN independently of their geographical location. Without the use of routers, a level 2 switch in conjunction with Weidmüller WLAN access points can distinguish broadcast domains from each other. In this way VLANs offer administrators flexibility regarding network security, network management and scalability.



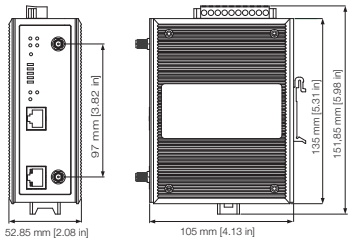
WMM for prioritising communications

Quality of Service (QoS) is a network term for controlling and measuring data transmission rates, throughput and error rates. It is an essential part of wireless communication when transmitting multimedia data like audio and video. Important data, for example, require a high priority with respect to the data throughput and low error rates. WMM (Wi-Fi multimedia) is based on the IEEE 802.11e protocol which was designed to integrate QoS functionality into a WLAN. The advantages lie in the prioritising of important data and the associated improvement of the communication quality.



Industrial Wireless - AP/bridge/client

- IEEE 802.11a/b/g compliant
- Power input by redundant 24 V DC power inputs or Power-over-Ethernet
- Multi-SSID and VLAN support
- Turbo Roaming for seamless wireless connections
- Integrated DI/DO for on-site monitoring and warning
- QoS (WMM) support



Technical data

WLAN Interface	
Standards	IEEE 802.11a/b/g/h for Wireless LAN IEEE 802.11i for Wireless Security IEEE 802.3u for 10/100BaseT(X) IEEE 802.3af for Power-over-Ethernet IEEE 802.1D for Spanning Tree Protocol IEEE 802.1w for Rapid STP IEEE 802.1Q VLAN
Spread Spectrum and Modulation (typical)	• DSSS with DBPSK, DQPSK, CCK • OFDM with BPSK, QPSK, 16QAM, 64QAM • 802.11b: CCK @ 11/5.5 Mbps, DQPSK @ 2 Mbps,DBPSK @ 11 Mbps • 802.11a/g: 64QAM @ 54/48 Mbps, 16QAM @ 36/24 Mbps, QPSK @ 18/12 Mbps, BPSK @ 9/6 Mbps
Operating Channels (central frequency)	US: 2.412 to 2.462 GHz (11 channels) 5.18 to 5.24 GHz (4 channels) EU: 2.412 to 2.472 GHz (13 channels) 5.18 to 5.24 GHz (4 channels)
Security	• SSID broadcast enable/disable • Firewall for MAC/IP/Protocol/Port-based filtering • 64-bit and 128-bit WEP encryption, WPA /WPA2-Personal and Enterprise (IEEE 802.1X/RADIUS, TKIP and AES)
Transmission Rates	802.11b: 1, 2, 5.5, 11 Mbps 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
TX Transmit Power	802.11b: Typ. 23±1.5 dBm @ 1 to 11 Mbps 802.11g: Typ. 20±1.5 dBm @ 6 to 24 Mbps, Typ. 19±1.5 dBm @ 36 Mbps, Typ. 18±1.5 dBm @ 48 Mbps, Typ. 17±1.5 dBm @ 54 Mbps 802.11a: Typ. 18±1.5 dBm @ 6 to 24 Mbps, Typ. 16±1.5 dBm @ 36 to 48 Mbps, Typ. 15±1.5 dBm @ 54 Mbps
RX Sensitivity	802.11b: -97 dBm @ 1 Mbps, -94 dBm @ 2 Mbps, -92 dBm @ 5.5 Mbps, -90 dBm @ 11 Mbps 802.11g: -93 dBm @ 6 Mbps, -91 dBm @ 9 Mbps, -90 dBm @ 12 Mbps, -88 dBm @ 18 Mbps, -84 dBm @ 24 Mbps, -80 dBm @ 36 Mbps, -76 dBm @ 48 Mbps, -74 dBm @ 54 Mbps 802.11a: -90 dBm @ 6 Mbps, -89 dBm @ 9 Mbps, -89 dBm @ 12 Mbps, -85 dBm @ 18 Mbps, -83 dBm @ 24 Mbps, -79 dBm @ 36 Mbps, -75 dBm @ 48 Mbps, -74 dBm @ 54 Mbps
Protocol Support	
General Protocols:	Proxy ARP, DNS, HTTP, HTTPS, IP, ICMP, SNTP, TCP, UDP, RADIUS, SNMP, PPPoE, DHCP
AP-only Protocols:	ARP, BOOTP, DHCP, dynamic VLAN-Tags for 802.1X-Clients, STP/RSTP (IEEE 802.1D/w)

Interface	
Default Antenna	2 dBi dual-band omni-directional antenna, RP-SMA (male)
Connector for External Antennas	RP-SMA (female)
LAN Port	10/100BaseT(X), auto negotiation speed (RJ45-type)
Console Port	RS-232 (RJ45-type)
LED Indicators	PWR1, PWR2, PoE, FAULT, STATE, signal strength, CLIENT MODE, BRIDGE MODE, WLAN, 10M, 100M
Alarm Contact	1 relay output with current carrying capacity of 1 A @ 24 V DC
Digital Inputs	2 electrically isolated inputs • +13 to +30 V for state “1” • +3 to -30 V for state “0” • Max. input current: 8 mA
Physical Characteristics	
Housing	Metal, IP30 protection
Weight	850 g
Dimensions	53.6 x 135 x 105 mm (2.11 x 5.31 x 4.13 in)
Installation	DIN-Rail mounting
Environmental Limits	
Operating Temperature	0 to 60 °C (32 to 140 °F)
Storage Temperature	-40 to 85 °C (-40 to 185 °F)
Ambient Relative Humidity	5% to 95% (non-condensing)
Power Requirements	
Input Voltage	12 to 48 V DC, redundant dual DC power inputs or 48 V DC Power-over-Ethernet (IEEE 802.3af compliant)
Connector	10-pin removable terminal block
Power Consumption	• 0.121 to 0.494 A @ 12 to 48 V DC • 0.3 A @ 24 V DC
Reverse Polarity Protection	Present
Regulatory Approvals	
Safety	EN60950-1, UL60950-1
Radio	EN300 328, EN301 893,
EMC	EN301 489-1/-17, FCC Part 15 Subpart B Class B, EN55022/55024
Hazardous Location	UL/cUL Class I, Div. 2; ATEX Class I, Zone 2
MTBF	392.209 hrs
Warrenty	
Warranty Period	5 years

Ordering Information

Models	Model Type	Operating Temperature	Order No.
IEEE 802.11a/b/g wireless AP/ Bridge/Client for european market	IE-WL-AP-BR-CL-ABG-EU	0 to +60 °C	**1242100000**
IEEE 802.11a/b/g wireless AP/ Bridge/Client for american market	IE-WL-AP-BR-CL-ABG-US	0 to +60 °C	**1242110000**

Accessories

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

1-port Gigabit Ethernet SFP modules

- Compliant with IEEE 802.3z
- Differential LVPECL inputs and outputs
- TTL signal detect indicator
- Hot pluggable LC duplex connector
- Class 1 laser product; complies with EN60825-1

Technical data

Interface								
Ethernet Ports	1							
Connectors	Duplex LC Connector or Simplex LC							
Optical Fiber								
	Gigabit Ethernet							
	SFP-SX	SFP-LSX	SFP-LX	SFP-LHX	SFP-10A	SFP-10B	SFP-20A	SFP-20B
Wavelength	850 nm	1310 nm	1310 nm	1310 nm	TX 1310 nm, RX 1550 nm	TX 1550 nm, RX 1310 nm	TX 1 310 nm, RX 1550 nm	TX 1550 nm, RX 1310 nm
Max. TX	-4 dBm	-1 dBm	-3 dBm	1 dBm	-3 dBm		-2 dBm	
Min. TX	-9.5 dBm	- 9 dBm	-9.5 dBm	-4 dBm	-9 dBm		-8 dBm	
RX Sensitivity	-18 dBm	-19 dBm	-20 dBm	-24 dBm	-21 dBm		-23 dBm	
Link Budget	8.5 dB	10 dB	10.5 dB	20 dB	12 dB		15 dB	
Typical Distance	550 m [a]	2 km [b]	10 km [c]	40 km [c]	10 km [c]		20 km [c]	
Saturation	0 dBm	-3 dBm	-3 dBm	-3 dBm	-1 dBm		-1 dBm	

[a] 50/125 µm, 400 MHz * km or 62.5/125 µm, 500 MHz * km @ 850 nm multimode fiber optic cable

[b] 62.5/125 µm, 750 MHz * km @ 1310 nm multimode fiber optic cable

[c] 9/125 µm singlemode fiber optic cable

Note: The actual communication distance depends on many factors, including connector loss, cable deployment, and the age of the cabling system. We recommend doing a link budget analysis and reserving a 3 dB margin for such factors.

Environmental Limits	
Operating Temperature	0 to 60 °C (32 to 140 °F)
Storage Temperature	-40 to 85 °C (-40 to 185 °F)
Ambient Relative Humidity	5 to 95 % (non-condensing)
Regulatory Approvals	
Safety	UL, TÜV
Warranty	
Warranty Period	3 years

Ordering Information

SFP Variants	Model Type	Operating Temperature	Order No.
Gigabit Ethernet, Multimode, LC Connector, 500 m	IE-SFP-1GSXLC	0 to +60 °C	**1241490000**
Gigabit Ethernet, Multimode, LC Connector, 2 km	IE-SFP-1GLSXLC	0 to +60 °C	**1241500000**
Gigabit Ethernet, Singlemode, LC Connector, 10 km	IE-SFP-1GLXLC	0 to +60 °C	**1241510000**
Gigabit Ethernet, Singlemode, LC Connector, 40 km	IE-SFP-1GLHXLC	0 to +60 °C	**1241520000**
WDM-Type, Gigabit Ethernet, LC Connector, 10 km, Tx 1310 nm, Rx 1550 nm, must be paired with IE-SFP-1G10BLC	IE-SFP-1G10ALC	0 to +60 °C	**1241530000**
WDM-Type, Gigabit Ethernet, LC Connector, 10 km, Tx 1550 nm, Rx 1310 nm, must be paired with IE-SFP-1G10ALC	IE-SFP-1G10BLC	0 to +60 °C	**1241540000**
WDM-Type, Gigabit Ethernet, LC Connector, 20 km, Tx 1310 nm, Rx 1550 nm, must be paired with IE-SFP-1G20BLC	IE-SFP-1G20ALC	0 to +60 °C	**1241550000**
WDM-Type, Gigabit Ethernet, LC Connector, 20 km, Tx 1550 nm, Rx 1310 nm, must be paired with IE-SFP-1G20ALC	IE-SFP-1G20BLC	0 to +60 °C	**1241570000**

Note: WDM-type SFP modules must be used in pairs (e.g. SFP-1GXXALC and SFP-1GXXBLC)

1-port Fast Ethernet SFP modules

- Compliant with IEEE 802.3u
- Differential PECL inputs and outputs
- TTL signal detect indicator
- Hot pluggable LC duplex connector
- Class 1 laser product; complies with EN60825-1

Technical data

Interface			
Ethernet Ports	1		
Connectors	Duplex LC Connector		
Optical Fiber			
	Fast Ethernet		
	SFP-M	SFP-S	SFP-L
Wavelength	1300 nm	1310 nm	1550 nm
Max. TX	-18 dBm	0 dBm	0 dBm
Min. TX	-8 dBm	-5 dBm	-5 dBm
RX Sensitivity	-34 dBm	-34 dBm	-34 dBm
Link Budget	26 dB	29 dB	29 dB
Typical Distance	4 km [a]	40 km [b]	80 km [b]
Saturation	0 dBm	-3 dBm	-3 dBm

[a] 50/125 µm or 62.5/125 µm, 800 MHz * km @ 1300 nm multimode fiber optic cable

[b] 9/125 µm singlemode fiber optic cable

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)
Regulatory Approvals	
Safety	UL, TÜV
Warranty	
Warranty Period	3 years

Ordering Infor mation

Port Variants	Model Type	Operating Temperature	Order No.
Fast Ethernet, Multimode, LC Connector, 4 km	IE-SFP-1FEMLC-T	-40 to +85 °C	**1241450000**
Fast Ethernet, Singlemode, LC Connector, 40 km	IE-SFP-1FESLC-T	-40 to +85 °C	**1241470000**
Fast Ethernet, Singlemode, LC Connector, 80 km	IE-SFP-1FELLC-T	-40 to +85 °C	**1241480000**

External Backup and Restore Module for System Configuration

- Reduce system downtime by simple reconfiguration in case of replacing devices
- Plug-n-Play system backup and restoration
- Compact, rugged, reliable design
- Supports all managed Ethernet switches

Technical data

Basic Operation	
Connector	RS-232 RJ45 port
Configuration	Use the WEB-Console of managed Switches
Power Requirements	
Input Voltage	3 to 5 V DC (through the RS-232 port's RTS signal)
Physical Characteristics	
Housing	PVC molding, IP40 protection
Dimensions	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)
Regulatory Approvals	
EMI	FCC Part 15, CISPR (EN55022) Class A
EMS	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
Warranty	
Warranty Period	5 years

Ordering Information

Models	Type	Order No.
External Backup and Restore Module	EBR-Module RS232	**1241430000**

Kit for 19"-rack mounting

- For assembling top-hat rail-based devices in 19" racks

Technical data

Physical Characteristics	
Dimensions	481 x 177.8 x 202.4 mm

Ordering Information

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

Passive components

Passive components

IE-line connector		C.2
Differences between industrial and office Ethernet		C.4
IE-LINE connectors: the modular principle		C.5
IE-LINE connectors: selection chart		C.6
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Ethernet/IP cabling solutions		C.12
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IP 65 FrontCom® Micro service interface		C.26
IP 67 plug-in connector		
	PushPull V14	C.28
	Bayonet V1	C.34
	PushPull V4	C.44
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IP 65 connection components		
	FreeCon V14	C.72
	FreeCon Active PROFINET FO repeater	C.75
	V1 junction boxes	C.76
	FreeCon V4	C.78
	V4 junction boxes	C.79
	V5 junction boxes	C.80
	V6 junction box	C.81

The Weidmüller IE-LINE plug-in connectors with *STEADYTEC*® technology

STEADY*TEC*® – this name stands for the future of connection technology in the field of data and signal transmissions. Established by the leading names in this branch of industry, the technology brand ***STEADY****TEC*® forms the foundation for reliable, application-centric and conforming solutions, for offices and 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, professional and consistent solutions.

The result: An extremely reliable, extraordinarily practical, flexible and especially efficient plug-in connector system for office and industrial applications. Using products whose characteristics reflect perfectly the values from which they originated:

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

The Ethernet connector system:
clever – flexible – modular

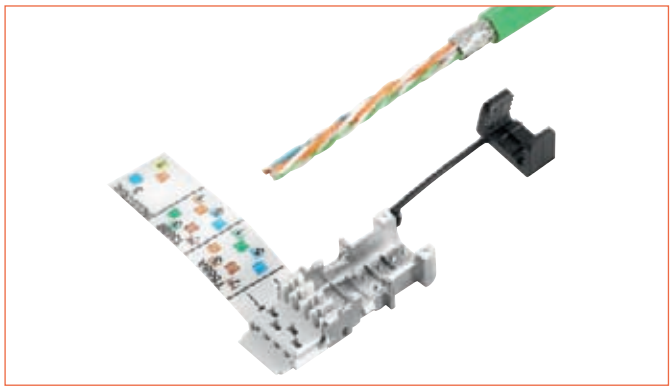
Connectors for modern industrial applications need to be designed in such a way that they simplify processes and cope with faster data transmission. Weidmüller's Ethernet connectors keep you a step ahead. These products are not only ready for 10 gigabit, they are also standardised for IEC 61076-3-106 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 are 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 extra robust and therefore suitable for industrial applications. It is also fitted with a protected locking clip for tough industrial applications. Weidmüllers IE product line fulfils the requirements for 10 GBit Ethernet, according to IEEE 802.3an, up to 500 MHz.

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

- **Cat.6_A 10 GBit System Class E_A**
- **Assembly without tools in the field**
- **Countless variations thanks to highly diverse combinations of inserts**
- **Unrestricted compatibility because standardised to IEC 61076-3-106**
- **Reliable and long-lasting thanks to use of diecast zinc**
- **Suitable for industry thanks to IP 67 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

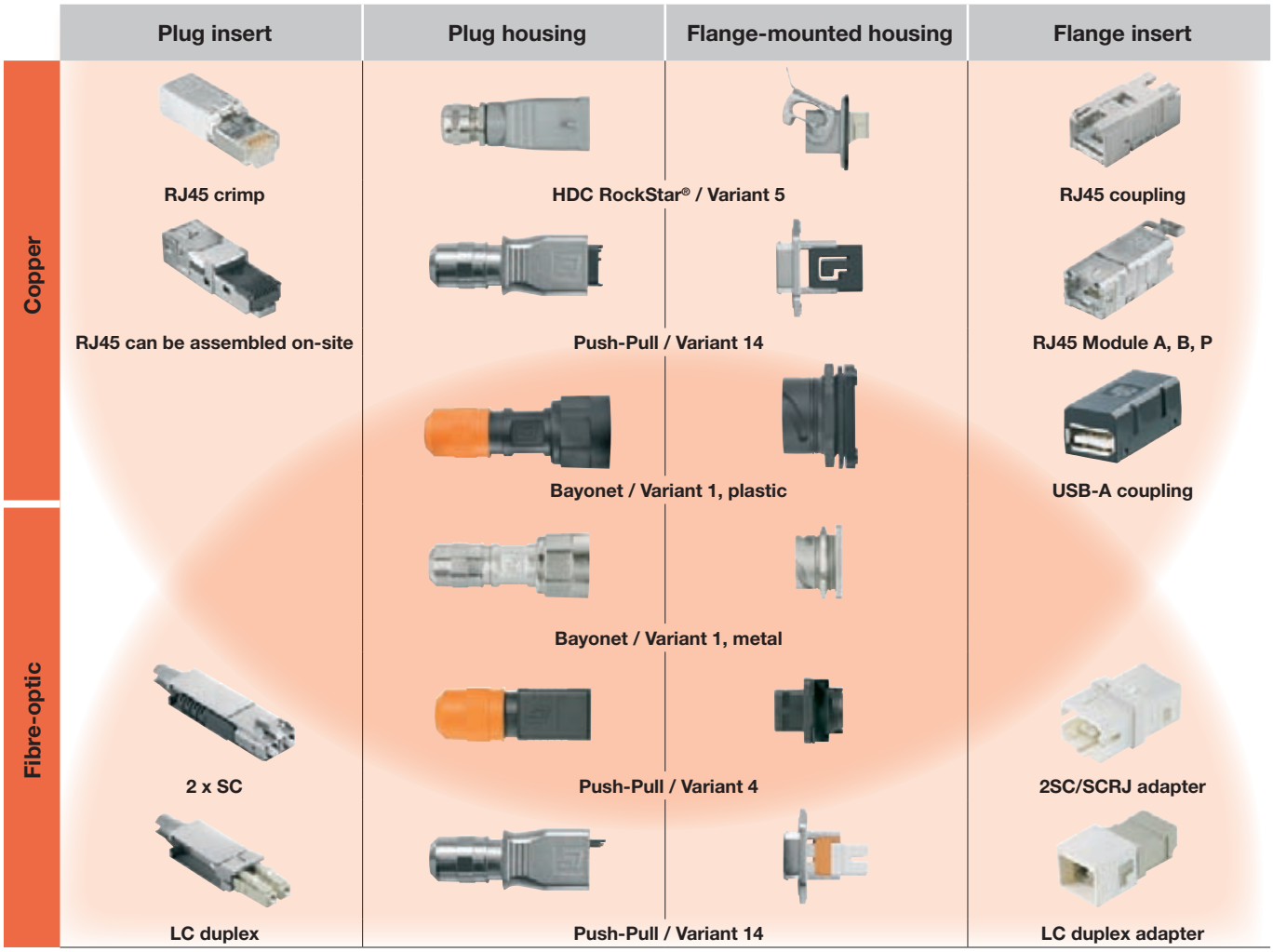
3. Snap together the two pluggable elements

4. Finished

Differences between industrial and office Ethernet

	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

Unlimited combinations: the modular principle



Take advantage of maximum flexibility! The range of products guarantees you decisive advantages for your industrial applications. During planning, assembling and everyday operations. All variants are designed for class of protection IP 67.

The Weidmüller products take account of the latest market conditions and most recent international standards. In doing so we offer you the option of unrestricted choice. What that means is that you get exactly the products you need for your application!

Features

- The only 8-core, on-site assembled, RJ45 connector for 10 Gigabit-Ethernet (Cat.6_A / Class E_A).
- Larger cable sheath diameter range (up to 10 mm) for variants V4, V1, and V14. For V5 up to 12 mm.
- Suitable for connecting stranded conductors in sizes AWG 27/7 to AWG 22/7; solid conductors in sizes AWG 27/1 to 22/1.
- Modules and couplers have a robust diecast zinc housing.
- Design results in enhanced vibration and shock resistance for couplers and RJ45 modules.
- Variable bulkhead housing fixing options for variants V1 and V4.
- Additional marking surfaces on plug and bulkhead housing, subsequent colour coding of IP 20 and IP 67 plug-in connectors.
- Dirt-resistant housing design with enhanced resistance to oils, greases, acids and alkalis.

IE-LINE connectors: selection chart

STEADY TEC

Metal plug

	Inserts		Housings	Variant 1 Bayonet		Variant 14 PushPull RJ		Variant 14 PushPull fibre-optic		Variant 5 HDC
				With KS	Without KS	With KS	Without KS	With KS	Without KS	Without KS
				1962560000	1962550000	1011570000	1011560000	1058110000	1058100000	1962540000
	RJ45 AWG 24 crimp		1962720000	1963150000	1963140000	1012070000	1012160000			1963110000
	RJ45 AWG 22 tool-free	TIA-A/-B/-P TIA-A TIA-B PROFINET	1962730000 1132010000 1132020000 1132030000	1963130000	1963120000	1012090000	 1012170000			1963200000 1271250000
	LWL SC	multimode	1067380000	1963270000	1963260000			Please order separately		
		singlemode	1067390000	1963310000	1963300000			Please order separately		
		POF	1067410000	1963290000	1963280000				1191550000	
	LWL LC	multimode	1962780000	1963230000	1963220000			Please order separately		
		singlemode	1962790000	1963250000	1963240000			Please order separately		
	Protective cap			1965690000		1058280000		1058280000		1968930002

KS = anti-kink protection

Plastic plug

	Inserts		Housings	Variant 1 Bayonet		Variant 4 PushPull	
				With KS	Without KS	With KS	Without KS
				1012460000	1012440000	1962530000	1962520000
	RJ45 AWG 24 crimp		1962720000	1012560000	1012470000	1963190000	1963180000
	RJ45 AWG 22 tool-free	TIA-A/-B/-P TIA-A TIA-B PROFINET	1962730000 1132010000 1132020000 1132030000	1012570000	1012490000	1963170000	1963160000 1271240000
	LWL SC	multimode	1067380000	Please order separately		1963370000	1963360000
		singlemode	1067390000	Please order separately		1963410000	1963400000
		POF	1067410000	Please order separately		1963390000	1963380000
	LWL LC	multimode	1962780000	Please order separately		1963330000	1963320000
		singlemode	1962790000	Please order separately		1963350000	1963340000
	Protective cap			1965690000		1963890000	

KS = anti-kink protection

Individual components

Sets

V1 with SC multimode
1963260000

V5 with RJ45 crimp
1963110000

V4 with LC multimode
1063320000

V14 with RJ45 tool-free
1012170000

Metal flange

	Inserts		Housings	Variant 1 Bayonet	Variant 14 PushPull RJ		Variant 14 PushPull fibre-optic		Variant 5 HDC
					Standardised flange	Central flange	Standardised flange	Central flange	
				1963540000	1011540000	1047950000			1963530000
	RJ45 coupling		1962840000	1963470000	1012310000	1058250000			1963510000
	RJ45 module	TIA-A	1962850000	1963480000	1012320000	1058270000			1963460000
		TIA-B	1963840000	Please order separately	Please order separately	Please order separately			Please order separately
		PROFINET	1963830000	Please order separately	1085260000	Please order separately			1963700000
	SC/SCRJ coupling	multimode	1964430000	1964450000			1058120000	1062590000	
		singlemode	1962870000	1963440000			1058140000	1062600000	
	LC Duplex coupling	multimode	1964420000	1964440000			1058130000	1062610000	
		singlemode	1962880000	1963430000			1058150000	1062620000	
	USB coupling		1019570000	Please order separately	Please order separately	Please order separately			Please order separately
	Protective cap			1965700000	1058310000	1058310000	1058310000	1058310000	1968930000

Plastic flange

	Inserts		Housings	Variant 1 Bayonet	Variant 4 PushPull
				1016960000	1963520000
	RJ45 coupling		1962840000	1012370000	1963490000
	RJ45 module	TIA-A	1962850000	1012380000	1963500000
		TIA-B	1963840000	Please order separately	1963730000
		PROFINET	1963830000	Please order separately	Please order separately
	SC/SCRJ coupling	multimode	1964430000	Please order separately	1964470000
		singlemode	1962870000	Please order separately	1963420000
	LC Duplex coupling	multimode	1964420000	Please order separately	1964460000
		singlemode	1962880000	Please order separately	1963450000
	USB coupling		1019570000	Please order separately	Please order separately
	Protective cap			1965700000	1963900000

Individual components

Sets

V5 with RJ45 coupling
1963510000

V1 with SC multimode
1964450000

V4 with LC multimode
1964460000

V14 with RJ45 module
1012320000

PROFINET and SERCOS III cabling solutions

Weidmüller offers all cabling products to create a profile specific infrastructure which meets all the needs of PROFINET and SERCOS III.

The cabling components for copper and fibre-optic cables are designed and tested for use in hard 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 both 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 synchronisations, 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 also have a remarkable ease of handling 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:

- IP 20 RJ45
- IP 20 SC-RJ
- IP 67 PushPull RJ45
- IP 67 PushPull Power
- IP 67 PushPull SC-RJ
- IP 67 M12 D coding

Weidmüller offers you a wide range of cabling solutions for PROFINET and SERCOS III applications. IP 20 plug-in connectors for copper and fibre-optic cables belong to the program as well as IP 67 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.

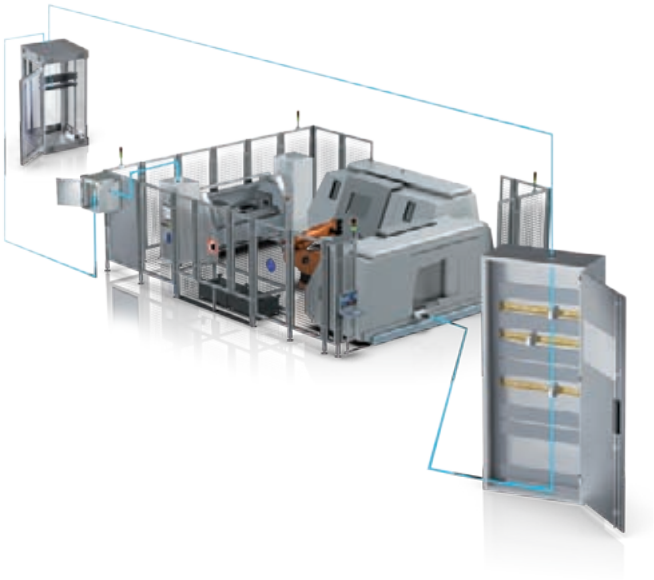
IP 67
assembled RJ45 cables

IP 67
assembled M12 cables

IP 67
plug-in M12 connectors

IP 67
connection components

Cable by the metre
copper and fibre-optic



IP 67
plug-in connectors data / power

19" patch panel

IP 67
flanges data / power

IP 20
plug-in connector

IP 20
assembled cables

IP 20
mounting rail outlets

IP 65
service interfaces

Selection table

IP 20 plug-in connector

Description	Type	Order No.	See page
RJ 45 tool-free PROFINET printing	IE-PS-RJ45-FH-BK-P	**1132060000**	C.16
SC-RJ for 1 mm POF fibres	IE-PS-SCRJ1-POF	**1206720000**	C.18
SC-RJ for multimode fibres 50/62.5 µm	IE-PS-SCRJ1-MM	**1206730000**	C.18
SC-RJ for singlemode fibres 9 µm	IE-PS-SCRJ1-SM	**1206740000**	C.18

IP 20 assembled data cables

Description	Type	Order No.	See page
RJ 45 PUR patch cable - type C - 1 m	IE-C5DD4UG0010A20A20-E	**1173030010**	D.20
RJ 45 PUR patch cable - type C - 3 m	IE-C5DD4UG0030A20A20-E	**1173030030**	D.20
RJ 45 PUR patch cable - type C - 5 m	IE-C5DD4UG0050A20A20-E	**1173030050**	D.20
RJ 45 PUR patch cable - type C - 10 m	IE-C5DD4UG0100A20A20-E	**1173030100**	D.20
SC-RJ zipcord patch cable - POF - 1 m	IE-FPOZ2EE0001MSJ0SJ0-X	**1273430010**	D.35
SC-RJ zipcord patch cable - POF - 3 m	IE-FPOZ2EE0003MSJ0SJ0-X	**1273430030**	D.35
SC-RJ zipcord patch cable - POF - 5 m	IE-FPOZ2EE0005MSJ0SJ0-X	**1273430050**	D.35
SC-RJ zipcord patch cable - POF - 10 m	IE-FPOZ2EE0010MSJ0SJ0-X	**1273430100**	D.35
Further PROFINET cables are available on request - SERCOS 3 cables on request			

IP 20 mounting rail outlets

Description	Type	Order No.	See page
RJ45 coupling	IE-TO-RJ45-C	**8946920000**	C.20
RJ45 module PROFINET printing	IE-TO-RJ45-FJ-P	**8946950000**	C.21
SC-RJ POF coupling / multimode	IE-TO-SCRJ-MM	**8946990000**	C.23
SC-RJ singlemode coupling	IE-TO-SCRJ-SM	**8947000000**	C.23

19" patch panel

Description	Type	Order No.	See page
With adaptor, without RJ45 inserts	IE-PPA19-24P	**1049270000**	C.25
RJ 45 module PROFINET printing	IE-BI-RJ45-FJ-P	**1963830000**	C.25
fitted with 24 RJ45 couplings	IE-PPA19-24P-RJ45-C	**1049930000**	C.25
other inserts from page C.61			

IP 65 service interface

Description	Type	Order No.	See page
FrontCom® Micro RJ45 coupling	IE-FCM-RJ45-C	**1018790000**	C.26
FrontCom® Micro RJ45 module PROFINET printing	IE-FCM-RJ45-FJ-P	**1018830000**	C.26

IP 67 flange data

Description	Type	Order No.	See page
PushPull standard flange RJ45 coupling	IE-BSS-V14M-RJ45-C	**1012310000**	C.29
PushPull central cable gland RJ45 coupling	IE-BSC-V14M-RJ45-C	**1058250000**	C.29
PushPull standardised flange RJ45 module PROFINET printing	IE-BSS-V14M-RJ45-FJ-P	**1085260000**	C.29
PushPull standardised flange hybrid (Q10) 10-pole module without contacts	IE-BSS-V14M-HYB-10P-FJ	**1072900000**	C.31
Contacts for Hybrid (Q10) module 0.5 mm² - 0.75 mm² VPE 300	IE-BIC-HYB-P-0,75-300	**1068970000**	C.31
Contacts for Hybrid (Q10) module 0.2 mm² - 0.5 mm² VPE 300	IE-BIC-HYB-P-0,5-300	**1096150000**	C.31
PushPull standardised flange SC-RJ coupling POF / multimode	IE-BSS-V14M-SCRJ-MM-C	**1058120000**	C.33
PushPull standardised flange SC-RJ coupling singlemode	IE-BSS-V14M-SCRJ-SM-C	**1058140000**	C.33
PushPull central cable gland SC-RJ coupling POF / multimode	IE-BSC-V14M-SCRJ-MM-C	**1062590000**	C.33
PushPull central cable gland SC-RJ coupling singlemode	IE-BSC-V14M-SCRJ-SM-C	**1062600000**	C.33
PushPull device flange	IE-BHD-V14M	**1047940000**	C.33
PushPull flange protective cap IP 67	IE-BP-V14P	**1058310000**	E.18
other inserts from page C.61			

IP 67 flange power

Description	Type	Order No.	See page
PushPull Power standardised flange with 24 V / 16 A use	IE-BSS-VAPM-24V	**1069030000**	C.69
PushPull Power device flange	IE-BHD-VAPM	**1068920000**	C.69
PushPull Power flange protective cap IP 67	IE-BP-VAPP	**1068930000**	E.18

IP 67 data connectors

Description	Type	Order No.	See page
PushPull RJ45 tool-free module PROFINET printing	IE-PS-V14M-RJ45-FH-P	**1012170000**	C.28
PushPull Hybrid (Q10) use, 10-pole module without contacts	IE-PS-V14M-HYB-10P	**1072910000**	C.30
Contacts for Hybrid (Q10) use 0.75 mm² VPE 300	IE-PIC-HYB-S-0,75-300	**1068950000**	C.30
Contacts for Hybrid (Q10) use 0.2 mm² - 0.5 mm² VPE 300	IE-PIC-HYB-S-0,5-300	**1096180000**	C.30
PushPull SC-RJ use POF 1 mm	IE-PS-V14M-2SC-POF	**1191550000**	C.32
PushPull plug protective cap IP 67	IE-PP-V14P	**1058280000**	E.18

IP 67 assembled data cables

Description	Type	Order No.	See page
PushPull RJ 45 patch cable PUR - Type C - 1 m	IE-C5DD4UG0010A2EA2E-X	**1119730010**	D.20
PushPull RJ 45 patch cable PUR - Type C - 3 m	IE-C5DD4UG0030A2EA2E-X	**1119730030**	D.20
PushPull RJ 45 patch cable PUR - Type C - 5 m	IE-C5DD4UG0050A2EA2E-X	**1119730050**	D.20
PushPull RJ 45 patch cable PUR - Type C - 10 m	IE-C5DD4UG0100A2EA2E-X	**1119730100**	D.20
Further PROFINET cables are available on request - SERCOS 3 cables on request			

IP 67 Power connectors

Description	Type	Order No.	See page
PushPull Power with 24 V / 16 A use	IE-PS-VAPM-24V	**1068910000**	C.68

IP 67 plug-in M12 connectors

M 12 components can be found from page C.58

IP 65 connection components

Description	Type	Order No.	See page
FreeCon passive double socket junction box RJ45/Power	IE-CD-V14MRJ/VAPM24V-FJ	**1068830000**	C.70
FreeCon passive single socket junction box RJ45	IE-CD-V14MRJ-FJ	**1068880000**	C.70
FreeCon passive single socket junction box Hybrid (Q10) without contacts	IE-CD-V14MHYB-10P-FJ	**1068850000**	C.72
Contacts for Hybrid (Q10) module 0.75 mm² VPE 300	IE-BIC-HYB-P-0,75-300	**1068970000**	C.31
Contacts for Hybrid (Q10) module 0.2 mm² - 0.5 mm² VPE 300	IE-BIC-HYB-P-0,5-300	**1096150000**	C.31
Mounting foot for junction boxes	IE-CD-MA	**1099580000**	C.70
FreeCon passive double connection RJ45/Power	IE-CD-V14MRJ/VAPM24V-C-MA	**1068820000**	C.71
FreeCon passive single connection RJ45	IE-CD-V14MRJ-C-MA	**1068870000**	C.71
FreeCon active FO PROFINET repeater	IE-CDR-V14MSCPOF/VAPM-C	**1253240000**	C.73
PushPull flange protective cap IP 67	IE-BP-V14P	**1058310000**	E.18

Bulk stock copper cable

Description	Type	Order No.	See page
100 m ring installation cable PVC type A	IE-C5AS4V1000	**8899000000**	D.12
Bulk stock installation cable PVC type A from 110 m	IE-C5AS4VG-MW	**8955950000**	D.12
100 m ring connection cable PVC type B	IE-C5DS4V1000	**8898990000**	D.12
Bulk stock connection cable PVC type B from 110 m	IE-C5DS4VG-MW	**8955560000**	D.12
100 m ring dragline cable PUR type C	IE-C5DD4U1000	**8899010000**	D.13
Bulk stock dragline cable PUR type C from 110 m	IE-C5DD4UG-MW	**8947670000**	D.13
Bulk stock hybrid cable PVC from 110 m	IE-C5DHAG-MW	**1172250000**	D.14

Bulk stock fibre-optic cable

Description	Type	Order No.	See page
Multimode breakout cable 2x50 µm PUR from 50 m	IE-FM5B2UE-MW	**8946000000**	D.31
POF zip-cord cable 2X980/1000 µm TPE, from 50 m	IE-FPOZ2EE-MW	**1242820000**	D.32
POF breakout cable 2X980/1000 µm TPE, from 50 m	IE-FPOD2UE-MW	**1172280000**	D.32

Ethernet/IP cabling solutions

The wiring guidelines for Ethernet/IP clearly defines 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 use 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 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:

- IP 20 RJ45 
- IP 20 SC-RJ 
- IP 67 bayonet RJ45 
- IP 67 bayonet SC-RJ 
- IP 67 M12 D coding 

Weidmüller offers you a wide range of cabling solutions for Ethernet/IP applications. IP 20 plug-in connectors for copper and fibre-optic cables belong to the program as well as IP 67 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.

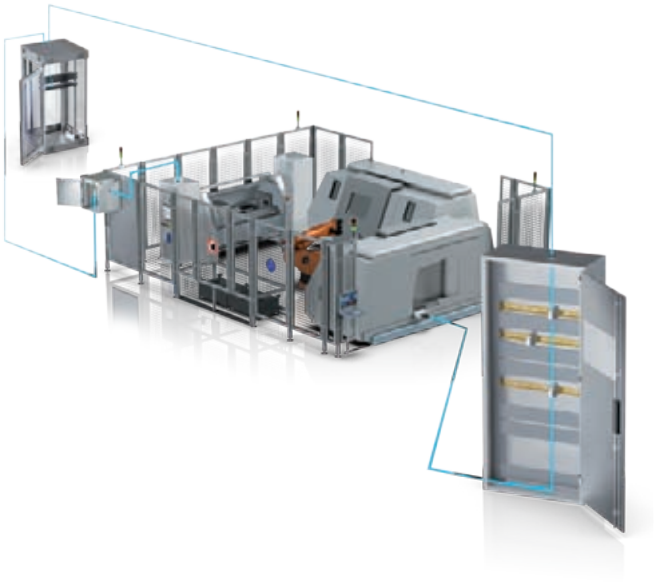
IP 67
assembled RJ45 cables

IP 67
assembled M12 cables

IP 67
plug-in M12 connectors

IP 67
connection components

Cable by the metre
copper and fibre-optic



IP 67
plug-in connectors data

19“ patch panel

IP 67
flanges data / power

IP 20
plug-in connector

IP 20
assembled cables

IP 20
mounting rail outlets

IP 65
service interfaces

Selection table

IP 20 plug-in connector

Description	Type	Order No.	See page
RJ45 crimp	IE-PS-RJ45-TH-BK	**1963590000**	C.17
RJ 45 tool-free TIA-A printing	IE-PS-RJ45-FH-BK-A	**1132040000**	C.16
RJ 45 tool-free TIA-B printing	IE-PS-RJ45-FH-BK-B	**1132050000**	C.16
SC-RJ for 1 mm POF fibres	IE-PS-SCRJ1-POF	**1206720000**	C.18
SC-RJ for multimode fibres 50/62.5 µm	IE-PS-SCRJ1-MM	**1206730000**	C.18
SC-RJ for singlemode fibres 9 µm	IE-PS-SCRJ1-SM	**1206740000**	C.18

IP 20 assembled data cables

Description	Type	Order No.	See page
RJ 45 patch cables - see CabinetLine			
SC-RJ zipcord patch cable - POF - 1 m	IE-FPOZ2EE0001MSJ0SJ0-X	**1273430010**	D.35
SC-RJ zipcord patch cable - POF - 3 m	IE-FPOZ2EE0003MSJ0SJ0-X	**1273430030**	D.35
SC-RJ zipcord patch cable - POF - 5 m	IE-FPOZ2EE0005MSJ0SJ0-X	**1273430050**	D.35
SC-RJ zipcord patch cable - POF - 10 m	IE-FPOZ2EE0010MSJ0SJ0-X	**1273430100**	D.35
Other Ethernet/IP cables available on request			

IP 20 mounting rail outlets

Description	Type	Order No.	See page
RJ45 coupling	IE-TO-RJ45-C	**8946920000**	C.20
RJ45 Module TIA-A printing	IE-TO-RJ45-FJ-A	**8946930000**	C.21
RJ45 Module TIA-B printing	IE-TO-RJ45-FJ-B	**8946940000**	C.21
SC-RJ POF coupling / multimode	IE-TO-SCRJ-MM	**8946990000**	C.23
SC-RJ singlemode coupling	IE-TO-SCRJ-SM	**8947000000**	C.23

19“ patch panel

Description	Type	Order No.	See page
fitted with 24 RJ45 modules TIA-A printing	IE-PPA19-24P-RJ45-FJ-A	**1049910000**	C.25
fitted with 24 RJ45 modules TIA-B printing	IE-PPA19-24P-RJ45-FJ-B	**1049920000**	C.25
fitted with 24 RJ45 couplings	IE-PPA19-24P-RJ45-C	**1049930000**	C.25
other inserts from page C.61			

IP 65 service interface

Description	Type	Order No.	See page
FrontCom® Micro RJ45 coupling	IE-FCM-RJ45-C	**1018790000**	C.26
FrontCom® Micro RJ45 module TIA-A printing	IE-FCM-RJ45-FJ-A	**1018810000**	C.26
FrontCom® Micro RJ45 module TIA-B printing	IE-FCM-RJ45-FJ-B	**1018820000**	C.26

IP 67 flange data

Description	Type	Order No.	See page
Bayonet flange metal RJ45 coupling	IE-BS-V01M-RJ45-C	**1963470000**	C.35
Bayonet flange metal RJ45 module TIA-A printing	IE-BS-V01M-RJ45-FJ-A	**1963480000**	C.35
Bayonet flange plastic RJ45 coupling	IE-BS-V01P-RJ45-C	**1012370000**	C.41
Bayonet flange metal RJ45 module TIA-A printing	IE-BS-V01P-RJ45-FJ-A	**1012380000**	C.41
Bayonet flange metal SC-RJ POF / multimode	IE-BS-V01M-SCRJ-MM	**1221010000**	C.37
Bayonet flange metal SC-RJ singlemode	IE-BS-V01M-SCRJ-SM	**1221020000**	C.37
Bayonet flange protective cap IP 67	IE-BP-V01P	**1965700000**	C.37
other inserts from page C.61			

IP 67 data connectors

Description	Type	Order No.	See page
Bayonet plug metal RJ45 crimped	IE-PS-V01M-RJ45-TH	**1963140000**	C.34
Bayonet plug metal RJ45 tool-free	IE-PS-V01M-RJ45-FH	**1963120000**	C.34
Bayonet plug plastic RJ45 crimped	IE-PS-V01P-RJ45-TH	**1012470000**	C.40
Bayonet plug plastic RJ45 tool-free	IE-PS-V01P-RJ45-FH	**1012490000**	C.40
Bayonet plug metal SC-RJ use POF	IE-PS-V01M-2SC-POF	**1963280000**	C.36
Bayonet plug metal SC-RJ use multimode	IE-PS-V01M-2SC-MM	**1963260000**	C.36
Bayonet plug metal SC-RJ use singlemode	IE-PS-V01M-2SC-SM	**1963300000**	C.36
Bayonet plug protective cap IP 67	IE-PP-V01P	**1965690000**	C.36

IP 67 assembled data cables

Description	Type	Order No.	See page
Bayonet metal RJ 45 patch cable PUR 1 m	IE-C5ES8UG0010B41B41-E	**1066850000**	D.23
Bayonet metal RJ 45 patch cable PUR 2 m	IE-C5ES8UG0020B41B41-E	**1066860000**	D.23
Bayonet metal RJ 45 patch cable PUR 5 m	IE-C5ES8UG0050B41B41-E	**1066870000**	D.23
Bayonet metal RJ 45 patch cable PUR 10 m	IE-C5ES8UG0100B41B41-E	**1066880000**	D.23
Bayonet plastic RJ 45 patch cable PUR 1 m	IE-C5ES8UG0010P41P41-E	**1106010000**	D.23
Bayonet plastic RJ 45 patch cable PUR 2 m	IE-C5ES8UG0020P41P41-E	**1106020000**	D.23
Bayonet plastic RJ 45 patch cable PUR 5 m	IE-C5ES8UG0050P41P41-E	**1106030000**	D.23
Bayonet plastic RJ 45 patch cable PUR 10 m	IE-C5ES8UG0100P41P41-E	**1106040000**	D.23
Other Ethernet/IP cables available on request			

IP 67 plug-in M12 connectors

M 12 components can be found from page C.58

IP 65 connection components

Description	Type	Order No.	See page
Single junction box, metal straight	IE-OM-V01M-K11-1S	**1966300000**	C.74
Double junction box, metal straight	IE-OM-V01M-K21-2S	**1966330000**	C.74
Double junction box, metal left	IE-OM-V01M-K21-2L	**1966320000**	C.74
Double junction box, metal right	IE-OM-V01M-K21-2R	**1966310000**	C.74
Single junction box, plastic	IE-OP-V01P-1S	**1061830000**	C.75
Plastic cable coupling	IE-CC-V01P	**1061820000**	C.42
RJ45 module TIA-A printing	IE-BI-RJ45-FJ-A	**1962850000**	C.62
RJ45 module TIA-B printing	IE-BI-RJ45-FJ-B	**1963840000**	C.62

Bulk stock copper cable

Description	Type	Order No.	See page
100 m ring installation cable PVC Cat. 5 SF/UTP	IE-5IC4x2xAWG24/1-PVC	**8813150000**	D.6
Bulk stock installation cable PVC Cat. 5 SF/UTP from 110 m	IE-C5CS8VG-MW	**8953160000**	D.6
100 m ring installation cable PUR Cat. 5 SF/UTP	IE-5IC4x2xAWG24/1-PUR	**8813160000**	D.6
Bulk stock installation cable PUR Cat. 5 SF/UTP from 110 m	IE-C5CS8UG-MW	**8944310000**	D.6
100 m ring connection cable PVC Cat. 5 SF/UTP	IE-5CC4x2xAWG26/7-PVC	**8813190000**	D.8
Bulk stock connection cable PVC Cat. 5 SF/UTP from 110 m	IE-C5ES8VG-MW	**8955490000**	D.8
100 m ring connection cable PUR Cat. 5 SF/UTP	IE-5CC4x2xAWG26/7-PUR	**8813200000**	D.8
Bulk stock connection cable PUR Cat. 5 SF/UTP from 110 m	IE-C5ES8UG-MW	**8938880000**	D.8
Other Ethernet/IP cables available on request			

Bulk stock fibre-optic cable

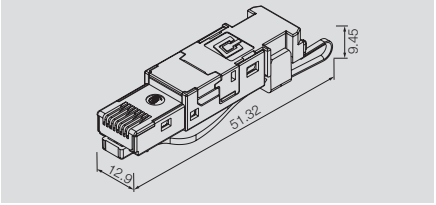
Description	Type	Order No.	See page
Multimode breakout cable 2x50 µm PUR from 50 m	IE-FM5B2UE-MW	**8946000000**	D.31
POF zip-cord cable 2X980/1000 µm TPE, from 50 m	IE-FPOZ2EE-MW	**1242820000**	D.32
POF breakout cable 2X980/1000 µm TPE, from 50 m	IE-FPOD2UE-MW	**1172280000**	D.32

IP20 plug-in connector

RJ45 plug

- Cat.6_A
- IP 20

tool-free



Technical data

Category	Cat.6_A / Class E_A (ISO/IEC 11801 2010)
Degree of protection	IP 20
Housing main material	Zinc diecast
Wire cross-section, flexible, min. / max.	0.48 mm / 0.76 mm
Wire cross-section, flexible, min. / max.	AWG 26 / AWG 22
Wire cross-section, solid, min. / max.	0.4 mm / 0.64 mm
Wire cross-section, solid, min. / max.	AWG 24 / AWG 22
Insulation cross-section, max.	1.6 mm
Sheath diameter, min. / max.	5.5 mm / 8.5 mm
Shielding	360° all-round enclosure
Plugging cycles	750
Configuration	Eight-wire field-assembled RJ45 plug with colour coding on the plug, TIA A/B/ProfiNet, multiport-ready
Ambient temperature (operational), min. / max.	-40 °C...+70 °C
Connector standard	IEC 60603-7-51
Current-carrying capacity at 50 °C	1 A
Note	

Ordering data

Plug	Type	Qty.	Order No.
with tear-off flags: EIA / TIA 568 A/B/PROFINET	IE-PS-RJ45-FH-BK	10	**1963600000**
with printing: PROFINET	IE-PS-RJ45-FH-BK-P	10	**1132060000**
with printing: EIA / TIA 568 A	IE-PS-RJ45-FH-BK-A	10	**1132040000**
with printing: EIA / TIA 568 B	IE-PS-RJ45-FH-BK-B	10	**1132050000**

Note

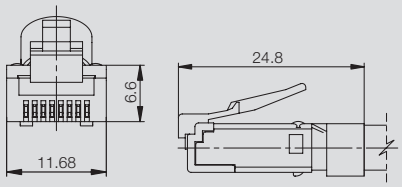
Accessories

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

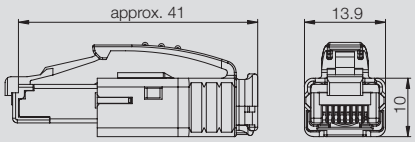
RJ45 plug

- Cat.6
- With kink prevention
- With protective mechanism for locking lever

Crimp / housing 1-part



Crimp / housing 2-part



Technical data

Category	Cat.6_A / Class E_A (ISO/IEC 11801 2010)	Cat.6_A / Class E_A (ISO/IEC 11801 2010)
Degree of protection	IP 20	IP 20
Wire cross-section, flexible, min. / max.	0.46 mm / 0.61 mm	0.46 mm / 0.61 mm
Wire cross-section, flexible, min. / max.	AWG 27 / AWG 24	AWG 27 / AWG 24
Wire cross-section, solid, min. / max.	0.36 mm / 0.51 mm	0.36 mm / 0.51 mm
Wire cross-section, solid, min. / max.	AWG 27 / AWG 24	AWG 27 / AWG 24
Insulation cross-section, max.	1.02 mm	1.05 mm
Sheath diameter, min. / max.	6.2 mm / 7.1 mm	5 mm / 7.3 mm
Shielding	360° all-round enclosure	360° all-round enclosure
Plugging cycles	750	750
Ambient temperature (operational), min. / max.	-40 °C...+70 °C	-40 °C...+70 °C
Connector standard	IEC 60603-7-51	IEC 60603-7-51
Bending protection sleeve material	Polyamide PA6, UL94-V0	Polycarbonate PC, UL94 V-0
Material insulator	PC UL 94 V-0	PC UL 94 V-0
Contact material / Contact surface	Phosphor bronze / gold-plated	Phosphor bronze / gold-plated
Shielding material	0,5 mm brass, 2 µm nickel	0,5 mm brass, 2 µm nickel
Cable pull-out force, min.	89 N	89 N
Contact resistance	≤ 20 mΩ	≤ 20 mΩ
Insulation resistance	500 MΩ	500 MΩ
Dielectric strength, contact / contact	≤ 1000 V DC	≤ 1000 V DC
Dielectric strength, contact / shield	≤ 1500 V DC	≤ 1500 V DC
Current-carrying capacity at 50 °C	1 A	1 A
Note		

Ordering data

Plug	Type	Qty.	Order No.	Type	Qty.	Order No.
with kink prevention; 5,5 - 6,2 mm	IE-P63	10	**8813110000**			
with kink prevention; 6,2 - 7,1 mm	IE-P70	10	**8813120000**			
with kink prevention sleeve, black				IE-PS-RJ45-TH-BK	10	**1963590000**
without kink prevention sleeve				IE-PM-RJ45-TH	100	**1963580000**
Note						

Accessories

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

IP20 plug-in connector

FO connector

- IP 20

SC-RJ

Technical data

Degree of protection	IP 20
Plugging cycles	1000
Ambient temperature (operational), min. / max.	-20 °C...+80 °C
Connector standard	IEC 61754-24
Insertion loss (attenuation)	≤ 0.5 dB
Return loss (attenuation)	≥ 40 dB
Individual wire diameter, min. / max.	0.6 mm...1.4 mm
Crimp barrel material	Copper, nickel-plated
Pressure spring material	Stainless steel
Ferrule material	Zirconia, Hole 125.5 µm
Dust protection cap material	TPE
Bending protection sleeve material	TPE
Cable pull-out force, min.	100 N
Housing main material	PC UL 94 V0
Housing material, insert	Zinc diecast
Humidity	0...93 % rel. humidity
Sheath diameter, min. / max.	2.8 mm / 3 mm

Note

Ordering data

	Type	Qty.	Order No.
Singlemode	IE-PS-SCRJ1-SM	10	**1206740000**
Multimode	IE-PS-SCRJ1-MM	10	**1206730000**
POF	IE-PS-SCRJ1-POF	10	**1206720000**

Note

Accessories

Tools	Type	Qty.	Order No.
Crimping pliers POF	HTX-IE-POF	1	**1208870000**

FO connector

- IP 20

SC Duplex

LC Duplex

Technical data

	SC Duplex	LC Duplex
Degree of protection	IP 20	IP 20
Plugging cycles	1000	1000
Ambient temperature (operational), min. / max.	-40 °C...+70 °C	-40 °C...+70 °C
Connector standard	IEC 61754-4	IEC 61754-20
Insertion loss (attenuation)	≤ 0.4 dB	≤ 0.4 dB
Return loss (attenuation)	≥ 30 dB	≥ 30 dB
Individual wire diameter, min. / max.	0.6 mm...1.4 mm	0.6 mm...1.4 mm
Crimp barrel material	Copper, nickel-plated	Copper, nickel-plated
Pressure spring material	Stainless steel	Stainless steel
Ferrule material	Zirconia, Hole 127 µm	Zirconia, Hole 127 µm
Dust protection cap material	TPE	TPE
Bending protection sleeve material	TPE	TPE
Cable pull-out force, min.	100 N	100 N
Housing main material	PC UL 94 V0	PC UL 94 V0
Housing material, insert	Zinc diecast	Zinc diecast
Humidity	0...93 % rel. humidity	0...93 % rel. humidity
Sheath diameter, min. / max.	2.8 mm / 3 mm	2.8 mm / 3 mm
Note		

Ordering data

	SC Duplex			LC Duplex		
	Type	**Qty.**	**Order No.**	**Type**	**Qty.**	**Order No.**
Singlemode	IE-PS-SCD-SM	10	**1964410000**	IE-PS-LCD-SM	10	**1962980000**
Multimode	IE-PS-SCD-MM	10	**1964480000**	IE-PS-LCD-MM	10	**1962970000**

Note

Accessories

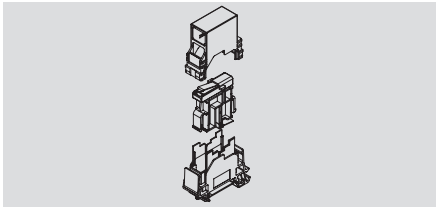
Fibre-optic plug clip	SC Duplex			LC Duplex		
	Type	**Qty.**	**Order No.**	**Type**	**Qty.**	**Order No.**
SC duplex, multi-mode, beige	IE-PB-SCD-MM	10	**1962900000**			

IP20 mounting rail outlets

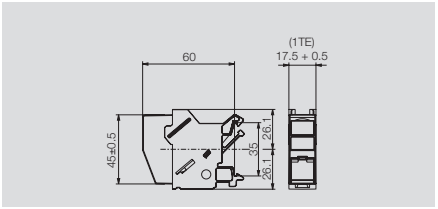
Coupling RJ45

- Cat.6_A
- IP 20
- TS35

Outlet direction straight



Outlet direction diagonal



Technical data

Category	Cat.6_A / Class E_A (ISO/IEC 11801 2010)	Cat.6 (ISO/IEC 11801)
Degree of protection	IP 20	IP 20
Housing main material	PA UL 94 V0	PA 66, UL 94: V-0
Colour	light grey	light grey
Type of mounting	TS 35	TS 35
Plugging cycles	750	750
Configuration	Switchable voltage connection from module / coupling to mounting rail	Inspection window for labelling 1 TE pitch dimension acc. to DIN 43880. insta-compatible
Ambient temperature (operational), min. / max.	-25 °C...+70 °C	
Humidity	0...93 % rel. humidity	
Shock resistance acc. to IEC 60512-4	250 ms^{-2}	
Vibration resistance acc. to IEC 60512-4	50 ms^{-2} sinusoidal (9 – 500 Hz)	
Housing material, insert	Zinc diecast	
Contact material / Contact surface	Spring steel, Ni 1.2 µm / AU ≥ 0.8 µm	
Connector standard	IEC 60603-7-51	IEC 60603-7-5
Electrical properties		
PoE+	conforming to IEEE 802.3af	
Contact resistance	≤ 20 mΩ	≤ 20 mΩ
Current-carrying capacity at 50 °C	1 A	1 A
Dielectric strength, contact / contact	≥ 1000 V DC	≥ 1000 V DC
Dielectric strength, contact / shield	≥ 1500 V DC	≥ 1500 V DC
Insulation resistance	500 MΩ	500 MΩ
Note		

Ordering data

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

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

Note

Accessories

Labels	Type	Qty.	Order No.
9*11 mm, blue	LM MT DIN A5 9/11 BL	10	**1964100000**
9*11 mm, green	LM MT DIN A5 9/11 GN	10	**1964120000**
9*11 mm, grey	LM MT DIN A5 9/11 GR	10	**1964080000**
9*11 mm, orange	LM MT DIN A5 9/11 OR	10	**1964090000**
9*11 mm, white	LM MT DIN A5 9/11 WS	10	**1964070000**
9*11 mm, yellow	LM MT DIN A5 9/11 GE	10	**1964110000**
Markers			
9*11 mm, white	ESG 9/11K MC NEUTRAL	200	**1857440000**
Marking tag			

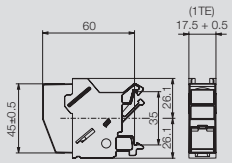
Type	Qty.	Order No.
IE-DM	50	**8813500000**

Module RJ45

- Cat.6_A
- IP 20
- TS35

Outlet direction straight

Outlet direction diagonal



Technical data

Category	Cat.6_A / Class E_A (ISO/IEC 11801 2010)	Cat.6 (ISO/IEC 11801)
Degree of protection	IP 20	IP 20
Housing main material	PA UL 94 V0	PA 66, UL 94: V-0
Colour	light grey	light grey
Type of mounting	TS 35	TS 35
Plugging cycles	750	750
Configuration	Switchable voltage connection from module / coupling to mounting rail	Inspection window for labelling 1 TE pitch dimension acc. to DIN 43880. insta-compatible
Ambient temperature (operational), min. / max.	-25 °C...+70 °C	
Connector standard	IEC 60603-7-51	IEC 60603-7-5
Electrical properties		
PoE+	conforming to IEEE 802.3af	
Contact resistance	≤ 20 mΩ	≤ 20 mΩ
Current-carrying capacity at 50 °C	1 A	1 A
Dielectric strength, contact / contact	≥ 1000 V DC	≥ 1000 V DC
Dielectric strength, contact / shield	≥ 1500 V DC	≥ 1500 V DC
Insulation resistance	500 MΩ	500 MΩ
Wire cross-section, flexible, min. / max.	AWG 26 / AWG 22	AWG 26 / AWG 26
Wire cross-section, flexible, min. / max.	0.48 mm / 0.76 mm	0.48 mm² / 0.48 mm²
Wire cross-section, solid, min. / max.	AWG 24 / AWG 22	AWG 24 / AWG 22
Wire cross-section, solid, min. / max.	0.4 mm / 0.64 mm	0.4 mm² / 0.64 mm²
Note		

Ordering data

	Type	Qty.	Order No.	Type	Qty.	Order No.
Outlet RJ45 A-coded	IE-TO-RJ45-FJ-A	10	**8946930000**	IE-XM-RJ45/IDC	1	**8808360000**
Outlet RJ45 B-coded	IE-TO-RJ45-FJ-B	10	**8946940000**	IE-XM-RJ45/IDC-B	1	**8891980000**
Outlet RJ45 PROFINET-coded	IE-TO-RJ45-FJ-P	10	**8946950000**			
Note						

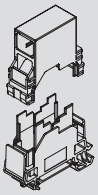
Accessories

	Type	Qty.	Order No.	Type	Qty.	Order No.
Labels						
9*11 mm, blue	LM MT DIN A5 9/11 BL	10	**1964100000**			
9*11 mm, green	LM MT DIN A5 9/11 GN	10	**1964120000**			
9*11 mm, grey	LM MT DIN A5 9/11 GR	10	**1964080000**			
9*11 mm, orange	LM MT DIN A5 9/11 OR	10	**1964090000**			
9*11 mm, white	LM MT DIN A5 9/11 WS	10	**1964070000**			
9*11 mm, yellow	LM MT DIN A5 9/11 GE	10	**1964110000**			
Markers						
9*11 mm, white	ESG 9/11K MC NEUTRAL	200	**1857440000**			
Marking tag				IE-DM	50	**8813500000**

IP20 mounting rail outlets

Coupling USB

Outlet direction straight



Technical data

Degree of protection	IP 20
Housing main material	PA UL 94 V0
Colour	light grey
Type of mounting	TS 35
Ambient temperature (operational), min. / max.	-25 °C...+70 °C
Connector standard	IEC 61076-3-107
Connection 1 / 2	USB A / USB A
Note	

Ordering data

USB

Type	Qty.	Order No.
IE-TO-USB	10	**8946960000**

Note

Accessories

Labels

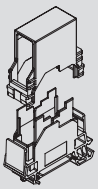
Type	Qty.	Order No.
9*11 mm, blue	10	**1964100000**
9*11 mm, green	10	**1964120000**
9*11 mm, grey	10	**1964080000**
9*11 mm, orange	10	**1964090000**
9*11 mm, white	10	**1964070000**
9*11 mm, yellow	10	**1964110000**

Markers

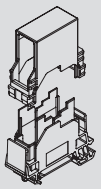
9*11 mm, white	200	**1857440000**

Coupling fibre-optic

SC duplex



SC-RJ



Technical data

	SC duplex	SC-RJ
Degree of protection	IP 20	IP 20
Housing main material	PA UL 94 V0	PA UL 94 V0
Colour	light grey	light grey
Type of mounting	TS 35	TS 35
Plugging cycles	1000	1000
Ambient temperature (operational), min. / max.	-25 °C...+70 °C	-25 °C...+70 °C
Connector standard	IEC 61754-4	IEC 61754-24
Note		

Ordering data

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

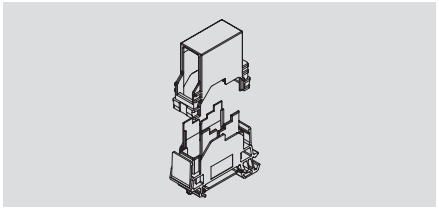
Accessories

Labels	SC duplex			SC-RJ		
	Type	**Qty.**	**Order No.**	**Type**	**Qty.**	**Order No.**
9*11 mm, blue	LM MT DIN A5 9/11 BL	10	**1964100000**	LM MT DIN A5 9/11 BL	10	**1964100000**
9*11 mm, green	LM MT DIN A5 9/11 GN	10	**1964120000**	LM MT DIN A5 9/11 GN	10	**1964120000**
9*11 mm, grey	LM MT DIN A5 9/11 GR	10	**1964080000**	LM MT DIN A5 9/11 GR	10	**1964080000**
9*11 mm, orange	LM MT DIN A5 9/11 OR	10	**1964090000**	LM MT DIN A5 9/11 OR	10	**1964090000**
9*11 mm, white	LM MT DIN A5 9/11 WS	10	**1964070000**	LM MT DIN A5 9/11 WS	10	**1964070000**
9*11 mm, yellow	LM MT DIN A5 9/11 GE	10	**1964110000**	LM MT DIN A5 9/11 GE	10	**1964110000**
Markers						
9*11 mm, white	ESG 9/11K MC NEUTRAL	200	**1857440000**	ESG 9/11K MC NEUTRAL	200	**1857440000**

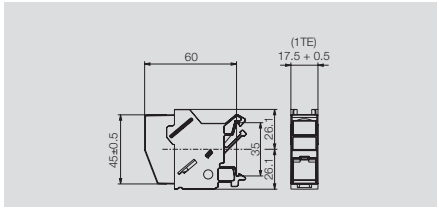
IP20 mounting rail outlets

Coupling fibre-optic

LC Duplex



ST



Technical data

Degree of protection	IP 20	IP 20
Housing main material	PA UL 94 V0	PA 66, UL 94: V-0
Colour	light grey	light grey
Type of mounting	TS 35	TS 35
Plugging cycles	1000	750
Ambient temperature (operational), min. / max.	-25 °C...+70 °C	
Connector standard	IEC 61754-20	IEC 61754-2
Note		

Ordering data

	Type	Qty.	Order No.	Type	Qty.	Order No.
Singlemode	IE-TO-LCD-SM	10	**8947020000**			
Multimode	IE-TO-LCD-MM	10	**8947010000**	IE-XM-ST/ST	1	**8808340000**
Note						

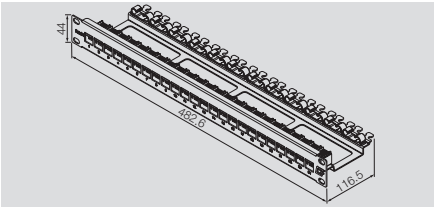
Accessories

Labels	**Type**	**Qty.**	**Order No.**	**Type**	**Qty.**	**Order No.**
9*11 mm, blue	LM MT DIN A5 9/11 BL	10	**1964100000**			
9*11 mm, green	LM MT DIN A5 9/11 GN	10	**1964120000**			
9*11 mm, grey	LM MT DIN A5 9/11 GR	10	**1964080000**			
9*11 mm, orange	LM MT DIN A5 9/11 OR	10	**1964090000**			
9*11 mm, white	LM MT DIN A5 9/11 WS	10	**1964070000**			
9*11 mm, yellow	LM MT DIN A5 9/11 GE	10	**1964110000**			
Markers						
Marking tag				IE-DM	50	**8813500000**
9*11 mm, white	ESG 9/11K MC NEUTRAL	200	**1857440000**			

RJ45

- Cat.6_A
- IP 20

RJ45



Technical data

Category	Cat.6_A / Class E_A (ISO/IEC 11801 2010)
Degree of protection	IP 20
Housing main material	Powder-coated steel sheet
Colour	light grey
Plugging cycles	750
Ambient temperature (operational), min. / max.	-40 °C...+70 °C

Note

Ordering data

19“ Patch Panel

	Type	Qty.	Order No.
with 24 RJ45 couplings	IE-PPA19-24P-RJ45-C	1	**1049930000**
with 24 RJ45 modules A	IE-PPA19-24P-RJ45-FJ-A	1	**1049910000**
with 24 RJ45 modules B	IE-PPA19-24P-RJ45-FJ-B	1	**1049920000**
with 24 RJ45 adapters, without inserts	IE-PPA19-24P	1	**1049270000**

Note

Accessories

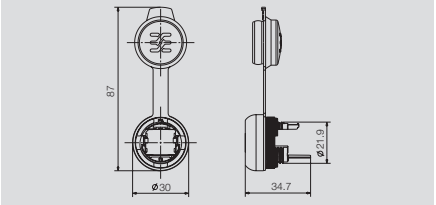
Flange insert

	Type	Qty.	Order No.
RJ45 EIA/TIA 568 A	IE-BI-RJ45-FJ-A	10	**1962850000**
RJ45 EIA/TIA 568 B	IE-BI-RJ45-FJ-B	10	**1963840000**
RJ45 PROFINET	IE-BI-RJ45-FJ-P	10	**1963830000**
USB coupling, type A	IE-BI-USB-A	10	**1019570000**

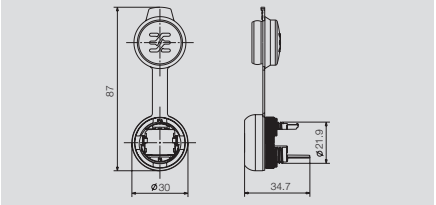
IP 65 FrontCom® Micro service interface

FrontCom® Micro RJ45

Module



Coupling



Technical data

	Module	Coupling
Category	Cat.6_A / Class E_A (ISO/IEC 11801 2010)	Cat.6_A / Class E_A (ISO/IEC 11801 2010)
Degree of protection	IP 65 according to DIN EN 60529	IP 65 according to DIN EN 60529
Housing main material	PA UL 94 V0	PA UL 94 V0
Colour	black	black
Shielding	360° shield contact	360° shield contact
Type of mounting	Cabinet, Distribution box	Cabinet, Distribution box
Plugging cycles	750	750
Connector standard	IEC 60603-7-51	IEC 60603-7-51
Connection 1 / 2	RJ45 / IDC	RJ45 / RJ45
Dust protection cap material	EPDM	EPDM
Note		

Ordering data

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

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

Note

Accessories

Fixing tool

Type	Qty.	Order No.
IE-FISP-V4	2	**9204370000**

Type	Qty.	Order No.
IE-FISP-V4	2	**9204370000**

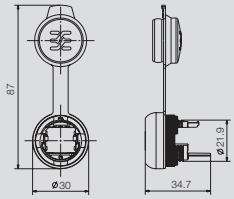
Markers

	Type	Qty.	Order No.
SwitchMark markers, white	SM 27/18 NEUTRAL WS	80	**1699860000**
SwitchMark holder	SM-H 27/18 SW	25	**1716630000**

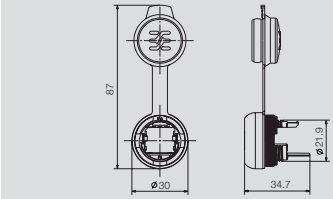
Type	Qty.	Order No.
SM 27/18 NEUTRAL WS	80	**1699860000**
SM-H 27/18 SW	25	**1716630000**

FrontCom® Micro USB

Coupling AA



Coupling AB



Technical data

	Coupling AA	Coupling AB
Operating temperature	-40 °C...+70 °C	-40 °C...+70 °C
Degree of protection	IP 65 according to DIN EN 60529	IP 65 according to DIN EN 60529
Housing main material	PA UL 94 V0	PA UL 94 V0
Colour	black	black
Shielding	360° shield contact	360° shield contact
Type of mounting	Cabinet, Distribution box	Cabinet, Distribution box
Connector standard	IEC 61076-3-107	IEC 61076-3-107
Connection 1 / 2	USB A / USB A	USB A / USB B
Dust protection cap material	EPDM	EPDM
Note		

Ordering data

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

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

Note

Accessories

Fixing tool

Type	Qty.	Order No.
IE-FISP-V4	2	**9204370000**

Type	Qty.	Order No.
IE-FISP-V4	2	**9204370000**

Markers

	Type	Qty.	Order No.
SwitchMark markers, white	SM 27/18 NEUTRAL WS	80	**1699860000**
SwitchMark holder	SM-H 27/18 SW	25	**1716630000**

Type	Qty.	Order No.
SM 27/18 NEUTRAL WS	80	**1699860000**
SM-H 27/18 SW	25	**1716630000**

IP67 plug-in connector

Plug PushPull V14 - RJ45

- 8-wire, on-site-assembled RJ45 plug with colour-coding on plug

With kink prevention

Tear-off flags with TIA-A/-B/PROFINET

Without kink prevention

PROFINET printing

Technical data

	With kink prevention	Without kink prevention
Degree of protection	IP 67	IP 67
Housing main material	Zinc diecast	Zinc diecast
Sheath diameter, min. / max.	5 mm / 10 mm	5 mm / 10 mm
Plugging cycles	750	750
Ambient temperature (operational), min. / max.	-40 °C...+70 °C	-40 °C...+70 °C
Connector standard	IEC 61076-3-117 Var. 14, IEC 60603-7-51	IEC 61076-3-117 Var. 14, IEC 60603-7-51
Wire cross-section, flexible, min. / max.	AWG 26 / AWG 22	AWG 26 / AWG 22
Wire cross-section, flexible, min. / max.	0.48 mm / 0.76 mm	0.48 mm / 0.76 mm
Wire cross-section, solid, min. / max.	AWG 24 / AWG 22	AWG 24 / AWG 22
Wire cross-section, solid, min. / max.	0.4 mm² / 0.64 mm²	0.4 mm² / 0.64 mm²
Note		

Ordering data - Sets

	Type	Qty.	Order No.
RJ45 tool-free	IE-PS-V14M-RJ45-FH-BP	10	**1012090000**
Note			

	Type	Qty.	Order No.
	IE-PS-V14M-RJ45-FH-P	10	**1012170000**

Ordering data - Empty housings

	Type	Qty.	Order No.
	IE-PH-V14M-RJ-BP	10	**1011570000**
Note			

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

Accessories

Colour coding	Type	Qty.	Order No.
blue	IE-CR-IP67-WS20-BU	10	**1963020000**
orange	IE-CR-IP67-WS20-OG	10	**1963010000**
green	IE-CR-IP67-WS20-GN	10	**1963040000**
grey	IE-CR-IP67-WS20-GY	10	**1963000000**
white	IE-CR-IP67-WS20-WH	10	**1962990000**
yellow	IE-CR-IP67-WS20-YE	10	**1963030000**
Dust protection cap			
	IE-PP-V14P	10	**1058280000**

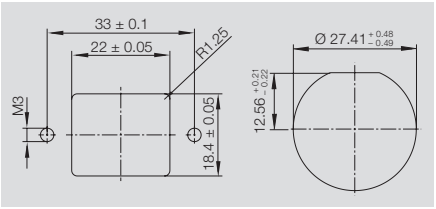
Type	Qty.	Order No.
IE-CR-IP67-WS20-BU	10	**1963020000**
IE-CR-IP67-WS20-OG	10	**1963010000**
IE-CR-IP67-WS20-GN	10	**1963040000**
IE-CR-IP67-WS20-GY	10	**1963000000**
IE-CR-IP67-WS20-WH	10	**1962990000**
IE-CR-IP67-WS20-YE	10	**1963030000**
IE-PP-V14P	10	**1058280000**

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

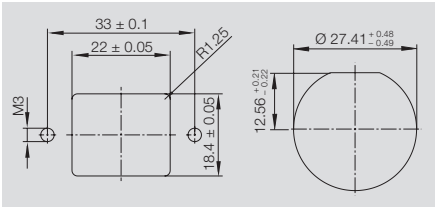
Plug inserts can also be ordered separately. Refer to Inserts.

Flange PushPull V14 - RJ45

Module



Coupling



Technical data

	Module	Coupling
Degree of protection	IP 67	IP 67
Housing main material	Zinc diecast	Zinc diecast
Sheath diameter, min. / max.	5 mm / 10 mm	5 mm / 10 mm
Plugging cycles	750	750
Ambient temperature (operational), min. / max.	-40 °C...+70 °C	-40 °C...+70 °C
Connector standard	IEC 61076-3-117 Var. 14, IEC 60603-7-51	IEC 61076-3-117 Var. 14, IEC 60603-7-51
Wire cross-section, flexible, min. / max.	AWG 26 / AWG 22	
Wire cross-section, flexible, min. / max.	0.48 mm / 0.76 mm	
Wire cross-section, solid, min. / max.	AWG 24 / AWG 22	
Wire cross-section, solid, min. / max.	0.4 mm / 0.64 mm	

Note

Ordering data - Sets

	Type	Qty.	Order No.	Type	Qty.	Order No.
Standardised flange, PROFINET	IE-BSS-V14M-RJ45-FJ-P	10	**1085260000**			
Standardised flange				IE-BSS-V14M-RJ45-C	10	**1012310000**
Central flange TIA-A	IE-BSC-V14M-RJ45-FJ-A	10	**1058270000**			
Central flange				IE-BSC-V14M-RJ45-C	10	**1058250000**

Note

Ordering data - Empty housings

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

Note

Accessories

Dust protection cap

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

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

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

IP67 plug-in connector

Plug PushPull V14 - hybrid

Without kink prevention

Technical data

Category	Cat.5 (ISO/IEC 11801)
Degree of protection	IP 67
Housing main material	Zinc diecast
Sheath diameter, min. / max.	5 mm / 10 mm
Plugging cycles	500
Ambient temperature (operational), min. / max.	-40 °C...+70 °C
Connection 1 / 2	Hybrid (Q10) / Crimp
Connector standard	IEC 61076-3-117 Var. 14
Wire cross-section, flexible, min. / max.	AWG 27 / AWG 20
Wire cross-section, flexible, min. / max.	0.08 mm² / 0.75 mm²
Rated current	3 A per contact
Volume resistance	< 10 mΩ
Note	

Ordering data - Sets

Type	Qty.	Order No.
IE-PS-V14M-HYB-10P	10	**1072910000**

Note

Order contacts separately

Ordering data - Empty housings

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

Note

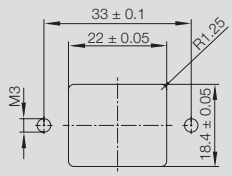
Accessories

	Type	Qty.	Order No.
Crimp contacts			
0,33...0,5 mm²	IE-PIC-HYB-S-0,5-300	300	**1096180000**
0,75 mm²	IE-PIC-HYB-S-0,75-300	300	**1068950000**
0,08...0,2 mm²	IE-PIC-HYB-S-0,2-300	300	**1135150000**
Crimping tool			
	HTF HYB	1	**1119580000**
Cable			
Hybrid cable	IE-C5DHAG-MW	1	**1172250000**
Dust protection cap			
	IE-PP-V14P	10	**1058280000**

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

Flange PushPull V14 - hybrid

Standardised flange



Technical data

Category	Cat.5 (ISO/IEC 11801)
Degree of protection	IP 67
Housing main material	Zinc diecast
Sheath diameter, min. / max.	5 mm / 10 mm
Plugging cycles	500
Ambient temperature (operational), min. / max.	-40 °C...+70 °C
Connection 1 / 2	Hybrid (Q10) / Crimp
Connector standard	IEC 61076-3-117 Var. 14
Wire cross-section, flexible, min. / max.	AWG 27 / AWG 20
Wire cross-section, flexible, min. / max.	0.08 mm² / 0.75 mm²
Rated current	3 A per contact
Volume resistance	< 10 mΩ
Note	

Ordering data - Sets

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

Note

Order contacts separately

Ordering data - Empty housings

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

Note

Standardised flange

Accessories

Crimp contacts

Type	Qty.	Order No.
IE-BIC-HYB-P-0,5-300	300	**1096150000**
IE-BIC-HYB-P-0,75-300	300	**1068970000**
IE-BIC-HYB-P-0,2-300	300	**1135160000**

0,33...0,5 mm²
0,75 mm²
0,08...0,2 mm²

Crimping tool

HTF HYB	1	**1119580000**

Cable

IE-C5DHAG-MW	1	**1172250000**

Hybrid cable

Dust protection cap

IE-BP-V14P	10	**1058310000**

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

IP67 plug-in connector

Plug PushPull V14 - fibre-optic

With kink prevention

Without kink prevention

Technical data

	With kink prevention	Without kink prevention
Degree of protection	IP 67	IP 67
Housing main material	Zinc diecast	Zinc diecast
Sheath diameter, min. / max.	5 mm / 10 mm	5 mm / 10 mm
Plugging cycles	750	750
Ambient temperature (operational), min. / max.	-40 °C...+70 °C	-40 °C...+70 °C
Connector standard	IEC 61076-3-117 Var. 14	IEC 61076-3-117 Var. 14, IEC 61754-24
Insertion loss (attenuation)		1.5 dB
Note		

Ordering data - Sets

	With kink prevention			Without kink prevention		
	Type	**Qty.**	**Order No.**	**Type**	**Qty.**	**Order No.**
POF				IE-PS-V14M-2SC-POF	1	**1191550000**
Note						

Ordering data - Empty housings

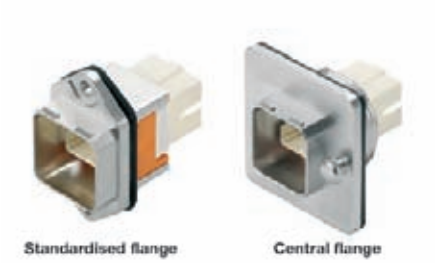
	With kink prevention			Without kink prevention		
	Type	**Qty.**	**Order No.**	**Type**	**Qty.**	**Order No.**
	IE-PH-V14M-FO-BP	10	**1058110000**	IE-PH-V14M-FO	10	**1058100000**
Note	Only empty housings; order inserts separately					

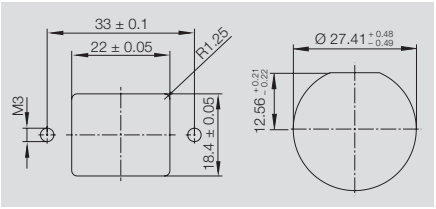
Accessories

	With kink prevention			Without kink prevention		
Inserts	**Type**	**Qty.**	**Order No.**	**Type**	**Qty.**	**Order No.**
 Singlemode	IE-PI-SCRJ-SM	10	**1067390000**	IE-PI-SCRJ-SM	10	**1067390000**
Multimode	IE-PI-SCRJ-MM	10	**1067380000**	IE-PI-SCRJ-MM	10	**1067380000**
POF	IE-PI-SCRJ-POF	10	**1067410000**	IE-PI-SCRJ-POF	10	**1067410000**
Colour coding						
blue	IE-CR-IP67-WS20-BU	10	**1963020000**	IE-CR-IP67-WS20-BU	10	**1963020000**
orange	IE-CR-IP67-WS20-OG	10	**1963010000**	IE-CR-IP67-WS20-OG	10	**1963010000**
 green	IE-CR-IP67-WS20-GN	10	**1963040000**	IE-CR-IP67-WS20-GN	10	**1963040000**
grey	IE-CR-IP67-WS20-GY	10	**1963000000**	IE-CR-IP67-WS20-GY	10	**1963000000**
white	IE-CR-IP67-WS20-WH	10	**1962990000**	IE-CR-IP67-WS20-WH	10	**1962990000**
yellow	IE-CR-IP67-WS20-YE	10	**1963030000**	IE-CR-IP67-WS20-YE	10	**1963030000**
Dust protection cap						
 Plug housing protective cap	IE-PP-V01P	10	**1965690000**	IE-PP-V01P	10	**1965690000**
	Plug inserts can also be ordered separately. Refer to Inserts.			Plug inserts can also be ordered separately. Refer to Inserts.		

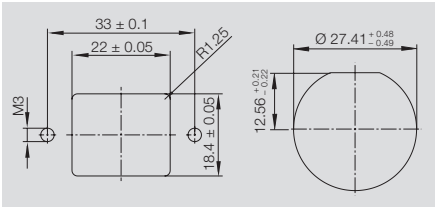
Flange PushPull V14 - fibre-optic

SC-RJ





LC Duplex



Technical data

	SC-RJ	LC Duplex
Degree of protection	IP 67	IP 67
Housing main material	Zinc diecast	Zinc diecast
Plugging cycles	500	500
Ambient temperature (operational), min. / max.	-40 °C...+70 °C	-40 °C...+70 °C
Insertion loss (attenuation)	< 0.2 dB	< 0.2 dB
Connector standard	IEC 61076-3-117 Var. 14, IEC 61754-24	IEC 61076-3-117 Var. 14, IEC 61754-20
Note		

Ordering data - Sets

	SC-RJ			LC Duplex		
	Type	**Qty.**	**Order No.**	**Type**	**Qty.**	**Order No.**
Central flange Singlemode	IE-BSC-V14M-SCRJ-SM-C	10	**1062600000**	IE-BSC-V14M-LCD-SM-C	10	**1062620000**
Standardised flange Singlemode	IE-BSS-V14M-SCRJ-SM-C	10	**1058140000**	IE-BSS-V14M-LCD-SM-C	10	**1058150000**
Central flange Multimode/POF	IE-BSC-V14M-SCRJ-MM-C	10	**1062590000**	IE-BSC-V14M-LCD-MM-C	10	**1062610000**
Standardised flange Multimode/POF	IE-BSS-V14M-SCRJ-MM-C	10	**1058120000**	IE-BSS-V14M-LCD-MM-C	10	**1058130000**

Note

Ordering data - Empty housings

	SC-RJ			LC Duplex		
	Type	**Qty.**	**Order No.**	**Type**	**Qty.**	**Order No.**
Device flange	IE-BHD-V14M	10	**1047940000**	IE-BHD-V14M	10	**1047940000**

Note

Accessories

Dust protection cap

SC-RJ			LC Duplex		
Type	**Qty.**	**Order No.**	**Type**	**Qty.**	**Order No.**
IE-BP-V14P	10	**1058310000**	IE-BP-V14P	10	**1058310000**

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

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

IP67 plug-in connector

Plug bayonet V1 metal - RJ45

With kink prevention

Without kink prevention

Technical data

	With kink prevention	Without kink prevention
Degree of protection	IP 67	IP 67
Housing main material	Zinc diecast	Zinc diecast
Sheath diameter, min. / max.	5 mm / 10 mm	5 mm / 10 mm
Plugging cycles	750	750
Ambient temperature (operational), min. / max.	-40 °C...+70 °C	-40 °C...+70 °C
Wire cross-section, flexible, min. / max.	AWG 27 / AWG 24	AWG 27 / AWG 24
Wire cross-section, flexible, min. / max.	0.46 mm / 0.61 mm	0.46 mm / 0.61 mm
Wire cross-section, solid, min. / max.	AWG 24 / AWG 22	AWG 24 / AWG 22
Wire cross-section, solid, min. / max.	0.36 mm / 0.51 mm	0.36 mm / 0.51 mm
Connector standard	IEC 61076-3-106 Var. 1, IEC 60603-7-51	IEC 61076-3-106 Var. 1, IEC 60603-7-51
Note		

Ordering data - Sets

	Type	Qty.	Order No.	Type	Qty.	Order No.
RJ45 tool-free, AWG 26-22, TIA-A/-B/-PROFINET	IE-PS-V01M-RJ45-FH-BP	10	**1963130000**	IE-PS-V01M-RJ45-FH	10	**1963120000**
RJ45 Crimp, AWG 27-24	IE-PS-V01M-RJ45-TH-BP	10	**1963150000**	IE-PS-V01M-RJ45-TH	10	**1963140000**

Note

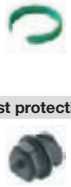
Ordering data - Empty housings

	Type	Qty.	Order No.	Type	Qty.	Order No.
	IE-PH-V01M-BP	10	**1962560000**	IE-PH-V01M	10	**1962550000**

Note

Accessories

Colour coding	Type	Qty.	Order No.	Type	Qty.	Order No.
blue	IE-CR-IP67-WS20-BU	10	**1963020000**	IE-CR-IP67-WS20-BU	10	**1963020000**
orange	IE-CR-IP67-WS20-OG	10	**1963010000**	IE-CR-IP67-WS20-OG	10	**1963010000**
green	IE-CR-IP67-WS20-GN	10	**1963040000**	IE-CR-IP67-WS20-GN	10	**1963040000**
grey	IE-CR-IP67-WS20-GY	10	**1963000000**	IE-CR-IP67-WS20-GY	10	**1963000000**
white	IE-CR-IP67-WS20-WH	10	**1962990000**	IE-CR-IP67-WS20-WH	10	**1962990000**
yellow	IE-CR-IP67-WS20-YE	10	**1963030000**	IE-CR-IP67-WS20-YE	10	**1963030000**
Dust protection cap						
Plug housing protective cap	IE-PP-V01P	10	**1965690000**	IE-PP-V01P	10	**1965690000**



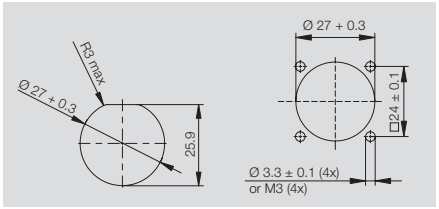
Plug inserts can also be ordered separately. Refer to Inserts.

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

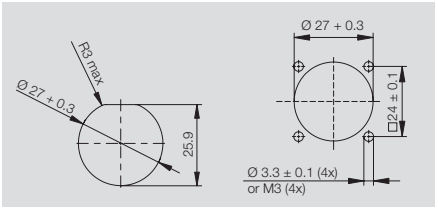
Flange bayonet V1 metal - RJ45

Module

TIA-A



Coupling



Technical data

	Module	Coupling
Degree of protection	IP 67	IP 67
Housing main material	Zinc diecast	Zinc diecast
Plugging cycles	750	750
Ambient temperature (operational), min. / max.	-40 °C...+70 °C	-40 °C...+70 °C
Connector standard	IEC 61076-3-106 Var. 1, IEC 60603-7-51	IEC 61076-3-106 Var. 1, IEC 60603-7-51
Wire cross-section, flexible, min. / max.	AWG 26 / AWG 22	
Wire cross-section, flexible, min. / max.	0.48 mm / 0.76 mm	
Wire cross-section, solid, min. / max.	AWG 24 / AWG 22	
Wire cross-section, solid, min. / max.	0.4 mm / 0.64 mm	
Note		

Ordering data - Sets

Type	Qty.	Order No.
IE-BS-V01M-RJ45-FJ-A	10	**1963480000**

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

Note

Ordering data - Empty housings

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

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

Note

Accessories

Dust protection cap

Flange-mounted housing, protective cap

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

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

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

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

IP67 plug-in connector

Plug bayonet V1 metal - fibre-optic-SC

With kink prevention

Without kink prevention

Technical data

	With kink prevention	Without kink prevention
Degree of protection	IP 67	IP 67
Housing main material	Zinc diecast	Zinc diecast
Sheath diameter, min. / max.	5 mm / 10 mm	5 mm / 10 mm
Plugging cycles	500	500
Ambient temperature (operational), min. / max.	-40 °C...+70 °C	-40 °C...+70 °C
Connector standard	IEC 61076-3-106 Var. 1, IEC 61754-24	IEC 61076-3-106 Var. 1, IEC 61754-24
Insertion loss (attenuation)	0.5 dB singlemode; 0.4 dB multimode; 1.5 dB POF	0.5 dB singlemode; 0.4 dB multimode; 1.5 dB POF
Return loss (attenuation)	40 dB singlemode; 30 dB multimode	40 dB singlemode; 30 dB multimode
Note		

Ordering data - Sets

	With kink prevention			Without kink prevention		
	Type	**Qty.**	**Order No.**	**Type**	**Qty.**	**Order No.**
Singlemode	IE-PS-V01M-2SC-SM-BP	10	**1963310000**	IE-PS-V01M-2SC-SM	10	**1963300000**
Multimode	IE-PS-V01M-2SC-MM-BP	10	**1963270000**	IE-PS-V01M-2SC-MM	10	**1963260000**
POF	IE-PS-V01M-2SC-POF-BP	10	**1963290000**	IE-PS-V01M-2SC-POF	10	**1963280000**
Note						

Ordering data - Empty housings

	With kink prevention			Without kink prevention		
	Type	**Qty.**	**Order No.**	**Type**	**Qty.**	**Order No.**
	IE-PH-V01M-BP	10	**1962560000**	IE-PH-V01M	10	**1962550000**
Note						

Accessories

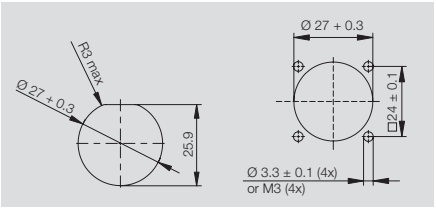
	With kink prevention			Without kink prevention		
Colour coding	**Type**	**Qty.**	**Order No.**	**Type**	**Qty.**	**Order No.**
blue	IE-CR-IP67-WS20-BU	10	**1963020000**	IE-CR-IP67-WS20-BU	10	**1963020000**
orange	IE-CR-IP67-WS20-OG	10	**1963010000**	IE-CR-IP67-WS20-OG	10	**1963010000**
green	IE-CR-IP67-WS20-GN	10	**1963040000**	IE-CR-IP67-WS20-GN	10	**1963040000**
grey	IE-CR-IP67-WS20-GY	10	**1963000000**	IE-CR-IP67-WS20-GY	10	**1963000000**
white	IE-CR-IP67-WS20-WH	10	**1962990000**	IE-CR-IP67-WS20-WH	10	**1962990000**
yellow	IE-CR-IP67-WS20-YE	10	**1963030000**	IE-CR-IP67-WS20-YE	10	**1963030000**
Tools						
POF tool set	TOOL SET IE-POF	1	**1208930000**	TOOL SET IE-POF	1	**1208930000**
Fibre-optic tool case	IE-CTC-SCST-GOF	1	**1032030000**	IE-CTC-SCST-GOF	1	**1032030000**
Dust protection cap						
Plug housing protective cap	IE-PP-V01P	10	**1965690000**	IE-PP-V01P	10	**1965690000**

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

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

Flange bayonet V1 metal - fibre-optic-SC

Standardised flange



Technical data

Degree of protection	IP 67
Housing main material	Zinc diecast
Plugging cycles	500
Ambient temperature (operational), min. / max.	-40 °C...+70 °C
Connector standard	IEC 61076-3-106 Var. 1, IEC 61754-24

Note

Ordering data - Sets

	Type	Qty.	Order No.
Singlemode	IE-BS-V01M-SCRJ-SM	10	**1221020000**
Multimode/POF	IE-BS-V01M-SCRJ-MM	10	**1221010000**

Note

Ordering data - Empty housings

Type	Qty.	Order No.
IE-BHD-V01M-SCA	10	**1221030000**

Note

Accessories

Dust protection cap

Flange-mounted housing, protective cap

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

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

IP67 plug-in connector

Plug bayonet V1 metal - fibre-optic-LC

With kink prevention

Without kink prevention

Technical data

	With kink prevention	Without kink prevention
Degree of protection	IP 67	IP 67
Housing main material	Zinc diecast	Zinc diecast
Sheath diameter, min. / max.	5 mm / 10 mm	5 mm / 10 mm
Plugging cycles	500	500
Ambient temperature (operational), min. / max.	-40 °C...+70 °C	-40 °C...+70 °C
Connector standard	IEC 61076-3-106 Var. 1, IEC 61754-20	IEC 61076-3-106 Var. 1, IEC 61754-20
Insertion loss (attenuation)	0.5 dB singlemode; 0.4 dB multimode; 1.5 dB POF	0.5 dB singlemode; 0.4 dB multimode; 1.5 dB POF
Return loss (attenuation)	40 dB Singlemode; 30 dB multimode	40 dB singlemode; 30 dB multimode
Note		

Ordering data - Sets

	With kink prevention			Without kink prevention		
	Type	**Qty.**	**Order No.**	**Type**	**Qty.**	**Order No.**
Singlemode	IE-PS-V01M-2LC-SM-BP	10	**1963250000**	IE-PS-V01M-2LC-SM	10	**1963240000**
Multimode	IE-PS-V01M-2LC-MM-BP	10	**1963230000**	IE-PS-V01M-2LC-MM	10	**1963220000**

Note

Ordering data - Empty housings

	With kink prevention			Without kink prevention		
	Type	**Qty.**	**Order No.**	**Type**	**Qty.**	**Order No.**
	IE-PH-V01M-BP	10	**1962560000**	IE-PH-V01M	10	**1962550000**

Note

Accessories

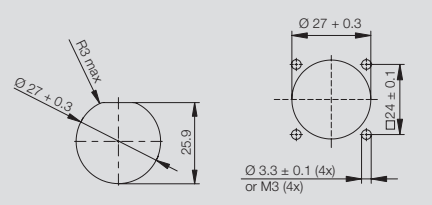
	With kink prevention			Without kink prevention		
Colour coding	**Type**	**Qty.**	**Order No.**	**Type**	**Qty.**	**Order No.**
blue	IE-CR-IP67-WS20-BU	10	**1963020000**	IE-CR-IP67-WS20-BU	10	**1963020000**
orange	IE-CR-IP67-WS20-OG	10	**1963010000**	IE-CR-IP67-WS20-OG	10	**1963010000**
green	IE-CR-IP67-WS20-GN	10	**1963040000**	IE-CR-IP67-WS20-GN	10	**1963040000**
grey	IE-CR-IP67-WS20-GY	10	**1963000000**	IE-CR-IP67-WS20-GY	10	**1963000000**
white	IE-CR-IP67-WS20-WH	10	**1962990000**	IE-CR-IP67-WS20-WH	10	**1962990000**
yellow	IE-CR-IP67-WS20-YE	10	**1963030000**	IE-CR-IP67-WS20-YE	10	**1963030000**
Tools						
Fibre-optic tool case	IE-CTC-SCST-GOF	1	**1032030000**	IE-CTC-SCST-GOF	1	**1032030000**
Dust protection cap						
Plug housing protective cap	IE-PP-V01P	10	**1965690000**	IE-PP-V01P	10	**1965690000**

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

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

Flange bayonet V1 metal - fibre-optic-LC

Standardised flange



Technical data

Degree of protection	IP 67
Housing main material	Zinc diecast
Plugging cycles	500
Ambient temperature (operational), min. / max.	-40 °C...+70 °C
Connector standard	IEC 61076-3-106 Var. 1, IEC 61754-20

Note

Ordering data - Sets

	Type	Qty.	Order No.
Singlemode	IE-BS-V01M-LCD-SM-C	10	**1963430000**
Multimode	IE-BS-V01M-LCD-MM-C	10	**1964440000**

Note

Ordering data - Empty housings

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

Note

Accessories

Dust protection cap

Flange-mounted housing, protective cap

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

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

IP67 plug-in connector

Plug bayonet V1 plastic - RJ45

With kink prevention

Without kink prevention

Technical data

	With kink prevention	Without kink prevention
Degree of protection	IP 67	IP 67
Housing main material	PA UL 94 V0	PA UL 94 V0
Sheath diameter, min. / max.	5 mm / 10 mm	5 mm / 10 mm
Plugging cycles	750	750
Ambient temperature (operational), min. / max.	-40 °C...+70 °C	-40 °C...+70 °C
Wire cross-section, flexible, min. / max.	AWG 26 / AWG 22	AWG 26 / AWG 22
Wire cross-section, flexible, min. / max.	0.48 mm / 0.76 mm	0.48 mm / 0.76 mm
Wire cross-section, solid, min. / max.	AWG 24 / AWG 22	AWG 24 / AWG 22
Wire cross-section, solid, min. / max.	0.4 mm / 0.64 mm	0.4 mm / 0.64 mm
Connector standard	IEC 61076-3-106 Var. 1, IEC 60603-7-51	IEC 61076-3-106 Var. 1, IEC 60603-7-51
Note		

Ordering data - Sets

	Type	Qty.	Order No.	Type	Qty.	Order No.
RJ45 tool-free, AWG 26-22, TIA-A/-B/-PROFINET	IE-PS-V01P-RJ45-FH-BP	10	**1012570000**	IE-PS-V01P-RJ45-FH	10	**1012490000**
RJ45 Crimp, AWG 27-24	IE-PS-V01P-RJ45-TH-BP	10	**1012560000**	IE-PS-V01P-RJ45-TH	10	**1012470000**

Note

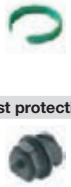
Ordering data - Empty housings

	Type	Qty.	Order No.	Type	Qty.	Order No.
	IE-PH-V01P-BP	10	**1012460000**	IE-PH-V01P	10	**1012440000**

Note

Accessories

Colour coding	Type	Qty.	Order No.	Type	Qty.	Order No.
blue	IE-CR-IP67-WS20-BU	10	**1963020000**	IE-CR-IP67-WS20-BU	10	**1963020000**
orange	IE-CR-IP67-WS20-OG	10	**1963010000**	IE-CR-IP67-WS20-OG	10	**1963010000**
green	IE-CR-IP67-WS20-GN	10	**1963040000**	IE-CR-IP67-WS20-GN	10	**1963040000**
grey	IE-CR-IP67-WS20-GY	10	**1963000000**	IE-CR-IP67-WS20-GY	10	**1963000000**
white	IE-CR-IP67-WS20-WH	10	**1962990000**	IE-CR-IP67-WS20-WH	10	**1962990000**
yellow	IE-CR-IP67-WS20-YE	10	**1963030000**	IE-CR-IP67-WS20-YE	10	**1963030000**
Dust protection cap						
Plug housing protective cap	IE-PP-V01P	10	**1965690000**	IE-PP-V01P	10	**1965690000**



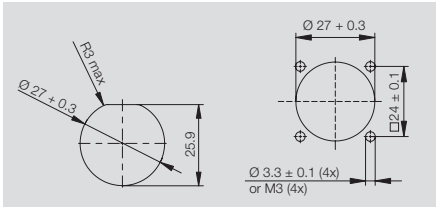
Plug inserts can also be ordered separately. Refer to Inserts.

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

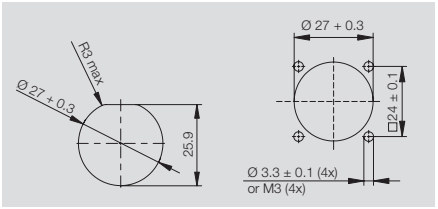
Flange bayonet V1 plastic - RJ45

Module

TIA-A



Coupling



Technical data

Degree of protection	IP 67	IP 67
Housing main material	PA UL 94 V0	PA UL 94 V0
Plugging cycles	750	750
Ambient temperature (operational), min. / max.	-40 °C...+70 °C	-40 °C...+70 °C
Connector standard	IEC 61076-3-106 Var. 1, IEC 60603-7-51	IEC 61076-3-106 Var. 1, IEC 60603-7-51
Wire cross-section, flexible, min. / max.	AWG 26 / AWG 22	
Wire cross-section, flexible, min. / max.	0.48 mm² / 0.76 mm²	
Wire cross-section, solid, min. / max.	AWG 24 / AWG 22	
Wire cross-section, solid, min. / max.	0.4 mm / 0.64 mm	
Note		

Ordering data - Sets

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

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

Note

Ordering data - Empty housings

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

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

Note

Accessories

Dust protection cap

Flange-mounted housing, protective cap

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

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

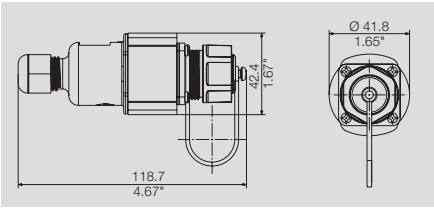
Plug inserts can also be ordered separately. Refer to Inserts.

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

IP67 plug-in connector

Cable coupling bayonet V1 plastic - RJ45

Cable coupling



Technical data

Degree of protection	IP 67
Housing main material	PA UL 94 V0
Plugging cycles	750
Ambient temperature (operational), min. / max.	-40 °C...+70 °C
Connector standard	IEC 61076-3-106 Var. 1
Note	

Ordering data

Variant 1	Type	Qty.	Order No.
Cable coupling	IE-CC-V01P	10	**1061820000**
Note	RJ45 modules can be ordered separately		

Accessories

Flange insert	Type	Qty.	Order No.
 RJ45 EIA/TIA 568 A	IE-BI-RJ45-FJ-A	10	**1962850000**
RJ45 EIA/TIA 568 B	IE-BI-RJ45-FJ-B	10	**1963840000**
RJ45 PROFINET	IE-BI-RJ45-FJ-P	10	**1963830000**

IP67 plug-in connector

Plug PushPull V4 - RJ45

With kink prevention

Without kink prevention

Technical data

	With kink prevention	Without kink prevention
Category	Cat.6$_A$ / Class E$_A$ (ISO/IEC 11801 2010)	Cat.6$_A$ / Class E$_A$ (ISO/IEC 11801 2010)
Degree of protection	IP 67	IP 67
Housing main material	PA UL 94 V0	PA UL 94 V0
Sheath diameter, min. / max.	5 mm / 10 mm	5 mm / 10 mm
Plugging cycles	750	750
Ambient temperature (operational), min. / max.	-40 °C...+70 °C	-40 °C...+70 °C
Wire cross-section, flexible, min. / max.	AWG 27 / AWG 24	AWG 27 / AWG 24
Wire cross-section, flexible, min. / max.	0.46 mm / 0.61 mm	0.46 mm / 0.61 mm
Wire cross-section, solid, min. / max.	AWG 24 / AWG 22	AWG 24 / AWG 22
Wire cross-section, solid, min. / max.	0.36 mm / 0.51 mm	0.36 mm / 0.51 mm
Connector standard	IEC 61076-3-106 Var. 4, IEC 60603-7-51	IEC 61076-3-106 Var. 4, IEC 60603-7-51
Note		

Ordering data - Sets

	With kink prevention			Without kink prevention		
	Type	**Qty.**	**Order No.**	**Type**	**Qty.**	**Order No.**
RJ45 tool-free, AWG 26-22, TIA-A/-B/-PROFINET	IE-PS-V04P-RJ45-FH-BP	10	**1963170000**	IE-PS-V04P-RJ45-FH	10	**1963160000**
RJ45 tool-free, AWG 26-22, TIA-B				IE-PS-V04P-RJ45-FH-B	10	**1271240000**
RJ45 Crimp, AWG 27-24	IE-PS-V04P-RJ45-TH-BP	10	**1963190000**	IE-PS-V04P-RJ45-TH	10	**1963180000**
Note						

Ordering data - Empty housings

With kink prevention				Without kink prevention		
	Type	**Qty.**	**Order No.**	**Type**	**Qty.**	**Order No.**
	IE-PH-V04P-BP	10	**1962530000**	IE-PH-V04P	10	**1962520000**
Note						

Accessories

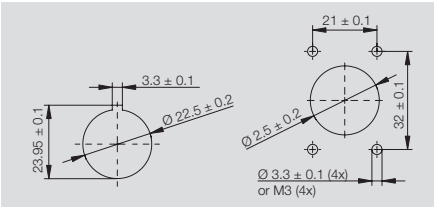
	With kink prevention			Without kink prevention		
Colour coding	**Type**	**Qty.**	**Order No.**	**Type**	**Qty.**	**Order No.**
blue	IE-CR-IP67-WS20-BU	10	**1963020000**	IE-CR-IP67-WS20-BU	10	**1963020000**
orange	IE-CR-IP67-WS20-OG	10	**1963010000**	IE-CR-IP67-WS20-OG	10	**1963010000**
 green	IE-CR-IP67-WS20-GN	10	**1963040000**	IE-CR-IP67-WS20-GN	10	**1963040000**
grey	IE-CR-IP67-WS20-GY	10	**1963000000**	IE-CR-IP67-WS20-GY	10	**1963000000**
white	IE-CR-IP67-WS20-WH	10	**1962990000**	IE-CR-IP67-WS20-WH	10	**1962990000**
yellow	IE-CR-IP67-WS20-YE	10	**1963030000**	IE-CR-IP67-WS20-YE	10	**1963030000**
Dust protection cap						
 Plug housing protective cap	IE-PP-V04P	10	**1963890000**	IE-PP-V04P	10	**1963890000**

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

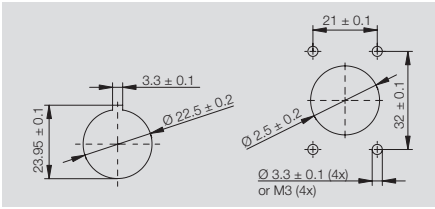
Plug inserts can also be ordered separately. Refer to Inserts.

Flange PushPull V4 - RJ45

Module



Coupling



Technical data

	Module	Coupling
Degree of protection	IP 67	IP 67
Housing main material	PA UL 94 V0	PA UL 94 V0
Plugging cycles	750	750
Ambient temperature (operational), min. / max.	-40 °C...+70 °C	-40 °C...+70 °C
Connector standard	IEC 61076-3-106 Var. 4, IEC 60603-7-51	IEC 61076-3-106 Var. 4, IEC 60603-7-51
Wire cross-section, flexible, min. / max.	AWG 26 / AWG 22	
Wire cross-section, flexible, min. / max.	0.48 mm / 0.76 mm	
Wire cross-section, solid, min. / max.	AWG 24 / AWG 22	
Wire cross-section, solid, min. / max.	0.4 mm / 0.64 mm	
Note		

Ordering data - Sets

	Module Type	Qty.	Order No.	Coupling Type	Qty.	Order No.
RJ45 module TIA-B	IE-BS-V04P-RJ45-FJ-B	10	**1963730000**			
RJ45 module TIA-A	IE-BS-V04P-RJ45-FJ-A	10	**1963500000**			
Coupling				IE-BS-V04P-RJ45-C	10	**1963490000**

Note

Ordering data - Empty housings

Module Type	Qty.	Order No.	Coupling Type	Qty.	Order No.
IE-BH-V04P	10	**1963520000**	IE-BH-V04P	10	**1963520000**

Note

Accessories

Dust protection cap

Flange-mounted housing, protective cap

Module Type	Qty.	Order No.	Coupling Type	Qty.	Order No.
IE-BP-V04P	10	**1963900000**	IE-BP-V04P	10	**1963900000**

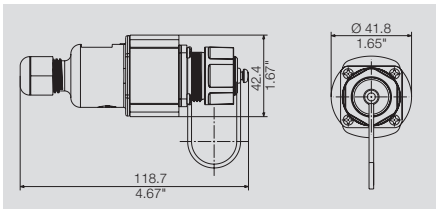
Plug inserts can also be ordered separately. Refer to Inserts.

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

IP67 plug-in connector

Cable coupling PushPull V4 - RJ45

Cable coupling



Technical data

Degree of protection	IP 67
Housing main material	PA UL 94 V0
Plugging cycles	750
Ambient temperature (operational), min. / max.	-40 °C...+70 °C
Connector standard	IEC 61076-3-106 Var. 4

Note

Ordering data

	Type	Qty.	Order No.
Cable coupling	IE-CC-V04P	10	**1045960000**

Note

RJ45 modules can be ordered separately

Accessories

Flange insert

	Type	Qty.	Order No.
RJ45 EIA/TIA 568 A	IE-BI-RJ45-FJ-A	10	**1962850000**
RJ45 EIA/TIA 568 B	IE-BI-RJ45-FJ-B	10	**1963840000**
RJ45 PROFINET	IE-BI-RJ45-FJ-P	10	**1963830000**

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

IP67 plug-in connector

Plug PushPull V4 - fibre-optic-SC

With kink prevention

Without kink prevention

Technical data

	With kink prevention	Without kink prevention
Degree of protection	IP 67	IP 67
Housing main material	PA UL 94 V0	PA UL 94 V0
Sheath diameter, min. / max.	5 mm / 10 mm	5 mm / 10 mm
Plugging cycles	500	500
Ambient temperature (operational), min. / max.	-40 °C...+70 °C	-40 °C...+70 °C
Connector standard	IEC 61076-3-106 Var. 4, IEC 61754-24	IEC 61076-3-106 Var. 4, IEC 61754-24
Insertion loss (attenuation)	0.5 dB singlemode; 0.4 dB multimode; 1.5 dB POF	0.5 dB singlemode; 0.4 dB multimode; 1.5 dB POF
Return loss (attenuation)	40 dB singlemode; 30 dB multimode	40 dB singlemode; 30 dB multimode
Note		

Ordering data - Sets

	With kink prevention			Without kink prevention		
	Type	**Qty.**	**Order No.**	**Type**	**Qty.**	**Order No.**
Singlemode	IE-PS-V04P-2SC-SM-BP	10	**1963410000**	IE-PS-V04P-2SC-SM	10	**1963400000**
Multimode	IE-PS-V04P-2SC-MM-BP	10	**1963370000**	IE-PS-V04P-2SC-MM	10	**1963360000**
POF	IE-PS-V04P-2SC-POF-BP	10	**1963390000**	IE-PS-V04P-2SC-POF	10	**1963380000**

Note

Ordering data - Empty housings

With kink prevention			Without kink prevention		
Type	**Qty.**	**Order No.**	**Type**	**Qty.**	**Order No.**
IE-PH-V04P-BP	10	**1962530000**	IE-PH-V04P	10	**1962520000**

Note

Accessories

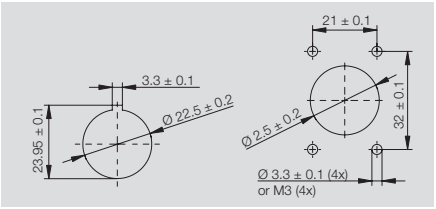
	With kink prevention			Without kink prevention		
Colour coding	**Type**	**Qty.**	**Order No.**	**Type**	**Qty.**	**Order No.**
blue	IE-CR-IP67-WS20-BU	10	**1963020000**	IE-CR-IP67-WS20-BU	10	**1963020000**
orange	IE-CR-IP67-WS20-OG	10	**1963010000**	IE-CR-IP67-WS20-OG	10	**1963010000**
green	IE-CR-IP67-WS20-GN	10	**1963040000**	IE-CR-IP67-WS20-GN	10	**1963040000**
grey	IE-CR-IP67-WS20-GY	10	**1963000000**	IE-CR-IP67-WS20-GY	10	**1963000000**
white	IE-CR-IP67-WS20-WH	10	**1962990000**	IE-CR-IP67-WS20-WH	10	**1962990000**
yellow	IE-CR-IP67-WS20-YE	10	**1963030000**	IE-CR-IP67-WS20-YE	10	**1963030000**
Tools						
POF tool set	TOOL SET IE-POF	1	**1208930000**	TOOL SET IE-POF	1	**1208930000**
Fibre-optic tool case	IE-CTC-SCST-GOF	1	**1032030000**	IE-CTC-SCST-GOF	1	**1032030000**
Dust protection cap						
Plug housing protective cap	IE-PP-V04P	10	**1963890000**	IE-PP-V04P	10	**1963890000**

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

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

Flange PushPull V4 - fibre-optic-SC

Standardised flange



Technical data

Degree of protection	IP 67
Housing main material	PA UL 94 V0
Plugging cycles	500
Ambient temperature (operational), min. / max.	-40 °C...+70 °C
Connector standard	IEC 61076-3-106 Var. 4, IEC 61754-4, IEC 61754-24

Note

Ordering data - Sets

	Type	Qty.	Order No.
Singlemode	IE-BS-V04P-SCRJ2SC-SM-C	10	**1963420000**
Multimode/POF	IE-BS-V04P-SCRJ2SC-MM-C	10	**1964470000**

Note

Ordering data - Empty housings

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

Note

Accessories

Dust protection cap

Flange-mounted housing, protective cap

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

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

IP67 plug-in connector

Plug PushPull V4 - fibre-optic-LC

With kink prevention

Without kink prevention

Technical data

	With kink prevention	Without kink prevention
Degree of protection	IP 67	IP 67
Housing main material	PA UL 94 V0	PA UL 94 V0
Sheath diameter, min. / max.	5 mm / 10 mm	5 mm / 10 mm
Plugging cycles	500	500
Ambient temperature (operational), min. / max.	-40 °C...+70 °C	-40 °C...+70 °C
Connector standard	IEC 61076-3-106 Var. 4, IEC 61754-20	IEC 61076-3-106 Var. 4, IEC 61754-20
Insertion loss (attenuation)	0.5 dB singlemode; 0.4 dB multimode; 1.5 dB POF	0.5 dB singlemode; 0.4 dB multimode; 1.5 dB POF
Return loss (attenuation)	40 dB singlemode; 30 dB multimode	40 dB singlemode; 30 dB multimode
Note		

Ordering data - Sets

	With kink prevention			Without kink prevention		
	Type	**Qty.**	**Order No.**	**Type**	**Qty.**	**Order No.**
Singlemode	IE-PS-V04P-2LC-SM-BP	10	**1963350000**	IE-PS-V04P-2LC-SM	10	**1963340000**
Multimode	IE-PS-V04P-2LC-MM-BP	10	**1963330000**	IE-PS-V04P-2LC-MM	10	**1963320000**

Note

Ordering data - Empty housings

	With kink prevention			Without kink prevention		
	Type	**Qty.**	**Order No.**	**Type**	**Qty.**	**Order No.**
	IE-PH-V04P-BP	10	**1962530000**	IE-PH-V04P	10	**1962520000**

Note

Accessories

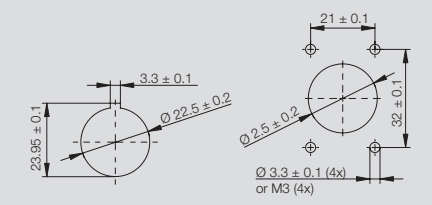
	With kink prevention			Without kink prevention		
Colour coding	**Type**	**Qty.**	**Order No.**	**Type**	**Qty.**	**Order No.**
blue	IE-CR-IP67-WS20-BU	10	**1963020000**	IE-CR-IP67-WS20-BU	10	**1963020000**
orange	IE-CR-IP67-WS20-OG	10	**1963010000**	IE-CR-IP67-WS20-OG	10	**1963010000**
green	IE-CR-IP67-WS20-GN	10	**1963040000**	IE-CR-IP67-WS20-GN	10	**1963040000**
grey	IE-CR-IP67-WS20-GY	10	**1963000000**	IE-CR-IP67-WS20-GY	10	**1963000000**
white	IE-CR-IP67-WS20-WH	10	**1962990000**	IE-CR-IP67-WS20-WH	10	**1962990000**
yellow	IE-CR-IP67-WS20-YE	10	**1963030000**	IE-CR-IP67-WS20-YE	10	**1963030000**
Tools						
Fibre-optic tool case	IE-CTC-SCST-GOF	1	**1032030000**	IE-CTC-SCST-GOF	1	**1032030000**
Dust protection cap						
Plug housing protective cap	IE-PP-V04P	10	**1963890000**	IE-PP-V04P	10	**1963890000**

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

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

Flange PushPull V4 - fibre-optic-LC

Standardised flange



Technical data

Degree of protection	IP 67
Housing main material	PA UL 94 V0
Plugging cycles	500
Ambient temperature (operational), min. / max.	-40 °C...+70 °C
Connector standard	IEC 61076-3-106 Var. 4, IEC 61754-20

Note

Ordering data - Sets

	Type	Qty.	Order No.
Singlemode	IE-BS-V04P-LCD-SM-C	10	**1963450000**
Multimode	IE-BS-V04P-LCD-MM-C	10	**1964460000**

Note

Ordering data - Empty housings

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

Note

Accessories

Dust protection cap

Flange-mounted housing, protective cap

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

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

IP67 plug-in connector

Plug RockStar® V5 - RJ45

V5 - RJ45 plug, straight

V5-RJ45 plug, angled

Technical data

	V5 - RJ45 plug, straight	V5-RJ45 plug, angled
Degree of protection	IP 67	IP 67
Housing main material	diecast aluminium	diecast aluminium
Sheath diameter, min. / max.	5 mm / 12 mm	5 mm / 10 mm
Plugging cycles	750	750
Ambient temperature (operational), min. / max.	-40 °C...+70 °C	-40 °C...+70 °C
Connector standard	IEC 61076-3-106 Var. 5, IEC 60603-7-51	IEC 61076-3-106 Var. 5, IEC 60603-7-51
Note		

Ordering data - Sets

	Type	Qty.	Order No.	Type	Qty.	Order No.
RJ45 tool-free, AWG 26-22, TIA-A/-B/-PROFINET	IE-PS-V05M-RJ45-FH	10	**1963200000**	IE-PS-V05M-A-RJ45-FH	10	**1077300000**
RJ45 tool-free, AWG 26-22 , TIA-B	IE-PS-V05M-RJ45-FH-B	10	**1271250000**			
RJ45 Crimp, AWG 27-24	IE-PS-V05M-RJ45-TH	10	**1963110000**			
Note						

Ordering data - Empty housings

	Type	Qty.	Order No.	Type	Qty.	Order No.
	IE-PH-V05M	10	**1962540000**			
Note						

Accessories

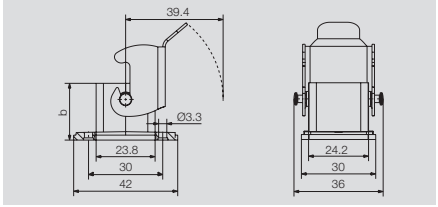
Dust protection cap	Type	Qty.	Order No.	Type	Qty.	Order No.
Plug housing protective cap	IE-PP-V05M	10	**1968920000**	IE-PP-V05M	10	**1968920000**

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

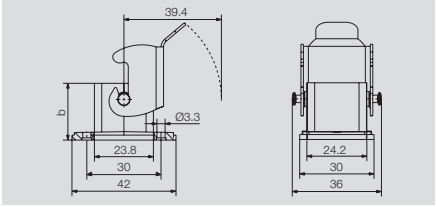
Plug inserts can also be ordered separately. Refer to Inserts.

Flange RockStar® V5 - RJ45

Module



Coupling



Technical data

	Module	Coupling
Degree of protection	IP 67	IP 67
Housing main material	diecast aluminium	diecast aluminium
Plugging cycles	750	750
Ambient temperature (operational), min. / max.	-40 °C...+70 °C	-40 °C...+70 °C
Connector standard	IEC 61076-3-106 Var. 5, IEC 60603-7-51	IEC 61076-3-106 Var. 5, IEC 60603-7-51
Wire cross-section, flexible, min. / max.	AWG 26 / AWG 22	
Wire cross-section, flexible, min. / max.	0.48 mm / 0.76 mm	
Wire cross-section, solid, min. / max.	AWG 24 / AWG 22	
Wire cross-section, solid, min. / max.	0.4 mm / 0.64 mm	
Note		

Ordering data - Sets

	Type	Qty.	Order No.
PROFINET module	IE-BS-V05M-RJ45-FJ-P	10	**1963700000**
TIA-A modul	IE-BS-V05M-RJ45-FJ-A	10	**1963460000**
Coupling	IE-BS-V05M-RJ45-C	10	**1963510000**

Note

Ordering data - Empty housings

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

Note

Accessories

Dust protection cap	Type	Qty.	Order No.
Flange-mounted housing, protective cap	IE-BP-V05M	10	**1968930000**

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

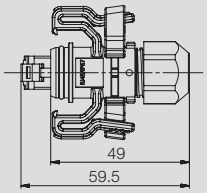
Plug inserts can also be ordered separately. Refer to Inserts.

IP67 plug-in connector

Plug SnapIn V6 - RJ45

- Cat.6
- IP 67

Without kink prevention



Technical data

Category	Cat.6 (ISO/IEC 11801)
Degree of protection	IP 67
Shielding	360° shield contact
Housing main material	PA 66, UL 94: V-0
Colour	light grey
Plugging cycles	750
Type of mounting	Floor-mounted, for exposed connections, Wall-mounted
Wiring	Colour-coded pin assignment to EIA/TIA T568 A.
Ambient temperature (operational), min. / max.	-40 °C...+70 °C
Connector standard	IEC 61076-3-106 Var. 6, IEC 60603-7-5

Note

Ordering data

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

Note

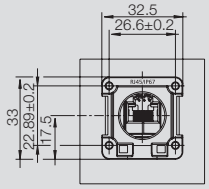
Accessories

See also the „Accessories“ chapter.

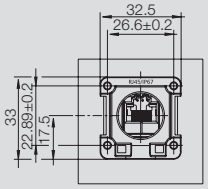
Flange SnapIn V6 - RJ45

- Cat.6
- IP 67

Module



Coupling



Technical data

Category	Cat.6 (ISO/IEC 11801)	Cat.6 (ISO/IEC 11801)
Degree of protection	IP 67	IP 67
Shielding	360° shield contact	360° shield contact
Housing main material	PA 66, UL 94: V-0	PA 66, UL 94: V-0
Colour	light grey	light grey
Plugging cycles	750	750
Type of mounting	Cabinet, Distribution box	Cabinet, Distribution box
Wiring	Colour-coded pin assignment to EIA/TIA T568 A.	
Ambient temperature (operational), min. / max.	-40 °C...+70 °C	-40 °C...+70 °C
Connector standard	IEC 61076-3-106 Var. 6, IEC 60603-7-5	IEC 61076-3-106 Var. 6, IEC 60603-7-5
Note		

Ordering data

	Type	Qty.	Order No.
Straight	IE-XM-RJ45/IDC-IP67	1	**8808440000**
Angled, downwards			
Angled, upwards			

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

Note

Accessories

Flange insert	Type	Qty.	Order No.
RJ45 module A, straight	IE-XRJ45/IDC	1	**8808330000**

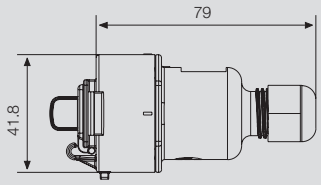
Type	Qty.	Order No.
IE-XRJ45/IDC	1	**8808330000**

IP67 plug-in connector

Cable coupling SnapIn V6 - RJ45

- Cat.6
- IP 67

Cable coupling



Technical data

Category	Cat.6 (ISO/IEC 11801)
Degree of protection	IP 67
Shielding	360° shield contact
Housing main material	PA 66, UL 94: V-0
Colour	light grey
Plugging cycles	750
Type of mounting	Floor-mounted, for exposed connections, Wall-mounted
Wiring	Colour-coded pin assignment to EIA/TIA T568 A.
Ambient temperature (operational), min. / max.	-40 °C...+70 °C
Connector standard	IEC 61076-3-106 Var. 6, IEC 60603-7-5

Note

Ordering data

Type	Qty.	Order No.
Cable coupling IE-C-IP67	1	**8813090000**

Note

Accessories

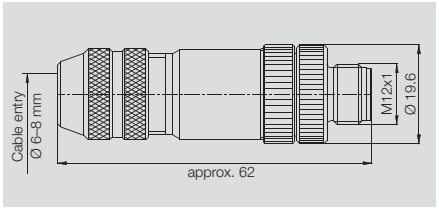
See also the „Accessories“ chapter.

IP67 plug-in connector

M12 plug

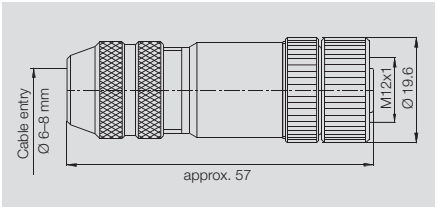
Male pin contact

straight



Female socket contact

straight



Technical data

Degree of protection	IP 67	IP 67
Type of connection	Tension clamp connection	Tension clamp connection
Housing main material	CuZn	CuZn
Contact tube diameter	M12	M12
Cable diameter, min.	6 mm / 8 mm	6 mm / 8 mm
Cross-section for connected wire	0.25 - 0.5 mm²	0.25 - 0.5 mm²
Ambient temperature (operational), min. / max.	-25 °C...+85 °C	-25 °C...+85 °C
Connector standard	IEC 61076-2-101	IEC 61076-2-101
Note		

Ordering data

Tension-clamp connection	**Type**	**Qty.**	**Order No.**	**Type**	**Qty.**	**Order No.**
Straight	SAISM-4/8S-M12 4P D-ZF	1	**1892120001**	SAIBM-4/8S-M12 4P D-ZF	1	**1892130001**
Angled	SAISW-4/8S-M12 4P D-ZF	1	**1803930001**			
Screw connection						
Straight	SAISM-4/8S-M12-4P D-COD	1	**1892120000**	SAIBM-4/8S-M12-4P D-COD	1	**1892130000**
Note						

Accessories

Adapter / coupling M12

- Cat.5
- IP 67

Adapter M12-RJ45

M12 D-coded on RJ45

Coupling M12-M12

M12 D-coded

Technical data

Category	Cat.5 (ISO/IEC 11801)	Cat.5 (ISO/IEC 11801)
Degree of protection	IP 67	IP 67
Housing main material	Polyamide, fully shielded metal housing	Polyamide, fully shielded metal housing
Shielding	360° shield contact	360° shield contact
Ambient temperature (operational), min. / max.	-5 °C...+60 °C	-5 °C...+60 °C
Connector standard	IEC 60603-7-5, IEC 61076-2-101	IEC 61076-2-101
Note		

Ordering data

Adaptor	**Type**	**Qty.**	**Order No.**	**Type**	**Qty.**	**Order No.**
Straight	IE-M12-ADAP S	1	**8901620000**			
Angled	IE-M12-ADAP A	1	**8901630000**			
Coupling						
				IE-M12-COUP	1	**8901640000**
Note						

Accessories

IP67 plug-in connector

M12 PCB connection element

- Cat.5
- For installation into the end device

Standard assembly

Additional fastening mechanism

Technical data

	Standard assembly	Additional fastening mechanism
Category	Cat.5 (ISO/IEC 11801)	Cat.5 (ISO/IEC 11801)
Degree of protection	IP 65 according to DIN EN 60529	IP 65 according to DIN EN 60529
Configuration	Reflow compatible	Reflow compatible
Housing main material	CuZn, Polyamide, nickel-plated	CuZn, Polyamide, nickel-plated
Shielding	360° shield contact	360° shield contact
Ambient temperature (operational), min. / max.	-40 °C...+85 °C	-25 °C...+85 °C
Connector standard	IEC 61076-2-101	IEC 61076-2-101
Note		

Ordering data

Connection element

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

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

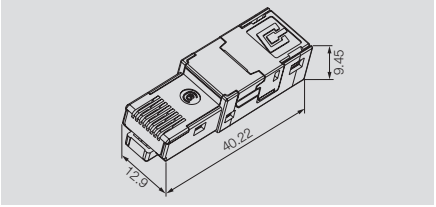
Note

Accessories

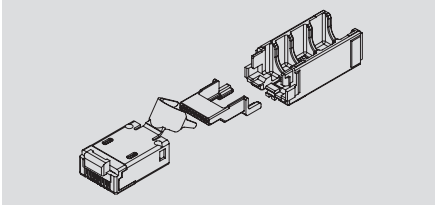
Plug inserts RJ45

- Cat.6_A
- IP 20
- For Variant 1, 4, 5 and 14 housings

tool-free



Crimp



Technical data

	tool-free	Crimp
Category	Cat.6_A / Class E_A (ISO/IEC 11801 2010)	Cat.6_A / Class E_A (ISO/IEC 11801 2010)
Degree of protection	IP 67 with housing	IP 67 with housing
Plugging cycles	750	750
Shielding	360° all-round enclosure	360° all-round enclosure
Housing main material	Zinc diecast	Brass, PC UL 94 V0
Contact material / Contact surface		Phosphor bronze / AU ≥ 0.8 µm, Ni 2.54 µm
Wire cross-section, flexible, min. / max.	AWG 26 / AWG 22	AWG 27 / AWG 24
Wire cross-section, flexible, min. / max.	0.48 mm / 0.76 mm	0.46 mm / 0.61 mm
Wire cross-section, solid, min. / max.	AWG 24 / AWG 24	AWG 24 / AWG 24
Wire cross-section, solid, min. / max.	0.4 mm / 0.64 mm	0.4 mm / 0.51 mm
Insulation cross-section, max.	1.6 mm	1.05 mm
Humidity		0...93 % rel. humidity
Ambient temperature (operational), min. / max.	-40 °C...+70 °C	-40 °C...+70 °C
Insulation resistance	500 MΩ	500 MΩ
Dielectric strength, contact / contact	≥ 1000 V DC	≥ 1000 V DC
Dielectric strength, contact / shield	≥ 1500 V DC	≥ 1500 V DC
Current-carrying capacity at 50 °C	1 A	1 A
PoE+		conforming to IEEE 802.3af
Speed	10 GBit	10 GBit
Connector standard	IEC 60603-7-51	IEC 60603-7-51
Note		

Ordering data

tool-free	**Type**	**Qty.**	**Order No.**	**Type**	**Qty.**	**Order No.**
TIA-A/B/PROFINET	IE-PI-RJ45-FH	10	**1962730000**			
TIA-A	IE-PI-RJ45-FH-A	10	**1132010000**			
TIA-B	IE-PI-RJ45-FH-B	10	**1132020000**			
PROFINET	IE-PI-RJ45-FH-P	10	**1132030000**			
Crimp						
				IE-PI-RJ45-TH	10	**1962720000**
Note						

Accessories

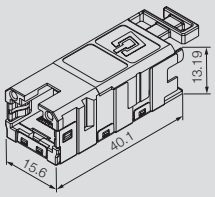
Tools	**Type**	**Qty.**	**Order No.**	**Type**	**Qty.**	**Order No.**
Crimping tool				TT 8 RS MP 8	1	**9202800000**
Optional pressing tool	PWZ RJ45	1	**1118040000**			

IP67 plug-in connector

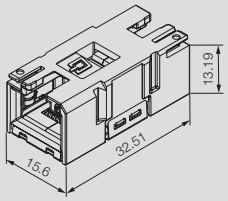
Flange inserts RJ45

- Cat.6_A
- IP 20
- For Variant 1, 4, 5 and 14 housings

Module



Coupling



Technical data

Category	Cat.6_A / Class E_A (ISO/IEC 11801 2010)	Cat.6_A / Class E_A (ISO/IEC 11801 2010)
Degree of protection	IP 67 with housing	IP 67 with housing
Plugging cycles	750	750
Shielding	360° all-round enclosure	360° all-round enclosure
Housing main material	Zinc diecast	Zinc diecast
Wire cross-section, flexible, min. / max.	AWG 26 / AWG 22	
Wire cross-section, solid, min. / max.	AWG 24 / AWG 24	
Insulation cross-section, max.	1.6 mm	
Connector standard	IEC 60603-7-51	IEC 60603-7-51
Ambient temperature (operational), min. / max.	-40 °C...+70 °C	-40 °C...+70 °C
Note		

Ordering data

No tools needed	**Type**	**Qty.**	**Order No.**	**Type**	**Qty.**	**Order No.**
TIA-A	IE-BI-RJ45-FJ-A	10	**1962850000**			
TIA-B	IE-BI-RJ45-FJ-B	10	**1963840000**			
PROFINET	IE-BI-RJ45-FJ-P	10	**1963830000**			
Coupling				IE-BI-RJ45-C	10	**1962840000**
Note						

Accessories

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

Hybrid plug inserts

- Cat.5
- IP 20
- For Variant 1, 4 and 14 housings

Crimp

Technical data

Category	Cat.5 (ISO/IEC 11801)
Degree of protection	IP 67 with housing
Plugging cycles	500
Shielding	360° all-round enclosure
Housing main material	Nickel silver, PA 66
Wire cross-section, flexible, min. / max.	AWG 27 / AWG 20
Wire cross-section, flexible, min. / max.	0.08 mm² / 0.75 mm²
Ambient temperature (operational), min. / max.	-40 °C...+70 °C
Volume resistance	< 10 mΩ
Rated current	3 A per contact
Note	

Ordering data

Type	Qty.	Order No.
IE-PI-HYB-10P	10	**1068990000**

Note

Accessories

Crimp contacts

Type	Qty.	Order No.
IE-PIC-HYB-S-0,5-300	300	**1096180000**
IE-PIC-HYB-S-0,75-300	300	**1068950000**
IE-PIC-HYB-S-0,2-300	300	**1135150000**

0,33...0,5 mm²
0,75 mm²
0,08...0,2 mm²

Crimping tool

HTF HYB	1	**1119580000**

IP67 plug-in connector

Hybrid flange inserts

- Cat.5
- IP 20
- For Variant 1, 4 and 14 housings

Module

Technical data

Category	Cat.5 (ISO/IEC 11801)
Degree of protection	IP 67 with housing
Plugging cycles	500
Shielding	360° all-round enclosure
Housing main material	Zinc diecast, Nickel silver, PA 66
Wire cross-section, flexible, min. / max.	AWG 27 / AWG 20
Wire cross-section, flexible, min. / max.	0.08 mm² / 0.75 mm²
Rated current	3 A per contact
Volume resistance	< 10 mΩ
Ambient temperature (operational), min. / max.	-40 °C...+70 °C

Note

Ordering data

Type	Qty.	Order No.
IE-BI-HYB-10P	10	**1069010000**

Note

Accessories

Crimp contacts

0,33...0,5 mm²	
0,75 mm²	
0,08...0,2 mm²	

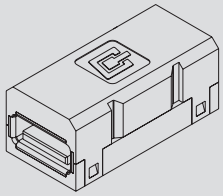
Crimping tool

Type	Qty.	Order No.
IE-BIC-HYB-P-0,5-300	300	**1096150000**
IE-BIC-HYB-P-0,75-300	300	**1068970000**
IE-BIC-HYB-P-0,2-300	300	**1135160000**
HTF HYB	1	**1119580000**

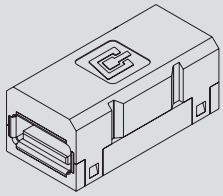
Flange inserts USB

- IP 20
- For Variant 1, 4, 5 and 14 housings

Coupling USB A/A



Coupling USB A/B



Technical data

	Coupling USB A/A	Coupling USB A/B
Degree of protection	IP 67 with housing	IP 67 with housing
Shielding	360° all-round enclosure	360° all-round enclosure
Ambient temperature (operational), min. / max.	-40 °C...+70 °C	-40 °C...+70 °C
Connection 1 / 2	USB A / USB A	USB A / USB B
Connector standard	IEC 61076-3-107	IEC 61076-3-107
Note		

Ordering data

	Type	Qty.	Order No.	Type	Qty.	Order No.
USB coupling	IE-BI-USB-A	10	**1019570000**	IE-BI-USB-AB	10	**1131380000**
Note						

Accessories

IP67 plug-in connector

Plug inserts SC

- IP 20
- For Variant 1, 4 and 14 housings

Plug inserts SC

Technical data

Degree of protection	IP 67 with housing
Housing main material	Zinc diecast
Plugging cycles	1000
Ambient temperature (operational), min. / max.	-40 °C...+70 °C
Connector standard	IEC 61754-24
Note	

Ordering data

	Type	Qty.	Order No.
Singlemode	IE-PI-SCRJ-SM	10	**1067390000**
Multimode	IE-PI-SCRJ-MM	10	**1067380000**
POF	IE-PI-SCRJ-POF	10	**1067410000**

Note

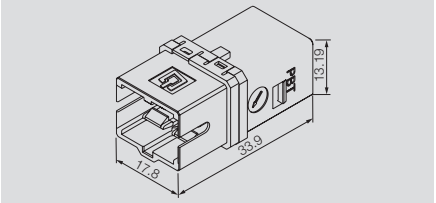
Accessories

Tools	Type	Qty.	Order No.
POF tool set	TOOL SET IE-POF	1	**1208930000**
Crimping pliers POF	HTX-IE-POF	1	**1208870000**
Fibre-optic tool case	IE-CTC-SCST-GOF	1	**1032030000**
Crimping pliers GOF SC	IE-CT-SC-GOF	1	**9205320000**
Crimping pliers GOF PROFINET	IE-CT-SC-GOF-P	1	**9205350000**

Flange inserts SC

- IP 20
- SC-RJ on 2 SC
- For Variant 1, 4 and 14 housings

Flange inserts SC



Technical data

Degree of protection	IP 67 with housing
Housing main material	PA
Plugging cycles	1000
Ambient temperature (operational), min. / max.	-40 °C...+70 °C

Note

Ordering data

Flange insert	Type	Qty.	Order No.
Singlemode	IE-BI-SCRJ2SC-SM-C	10	**1962870000**
Multimode/POF	IE-BI-SCRJ2SC-MM-C	10	**1964430000**

Note

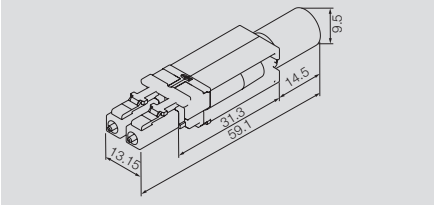
Accessories

IP67 plug-in connector

Plug inserts LC

- IP 20
- For Variant 1, 4 and 14 housings

Plug inserts LC



Technical data

Degree of protection	IP 67 with housing
Housing main material	PBT diecast zinc
Plugging cycles	1000
Ambient temperature (operational), min. / max.	-40 °C...+70 °C
Connector standard	IEC 61754-20
Note	

Ordering data

Plug insert	Type	Qty.	Order No.
2 LC, Singlemode	IE-PI-2LC-SM	10	**1962790000**
2 LC, Multimode	IE-PI-2LC-MM	10	**1962780000**

Note

Other versions on request

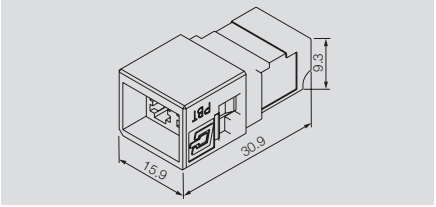
Accessories

Tools	Type	Qty.	Order No.
 Crimping pliers GOF LC	IE-CT-LC-GOF	1	**9205330000**
Fibre-optic tool case	IE-CTC-SCST-GOF	1	**1032030000**

Flange inserts LC

- IP 20
- For Variant 1, 4 and 14 housings

Flange inserts LC



Technical data

Degree of protection	IP 67 with housing
Housing main material	PBT diecast zinc
Plugging cycles	1000
Ambient temperature (operational), min. / max.	-40 °C...+70 °C
Connector standard	IEC 61754-20
Note	

Ordering data

Flange insert	Type	Qty.	Order No.
LC duplex, Singlemode	IE-BI-LCD-SM-C	10	**1962880000**
LC duplex, Multimode	IE-BI-LCD-MM-C	10	**1964420000**

Note	Other versions on request

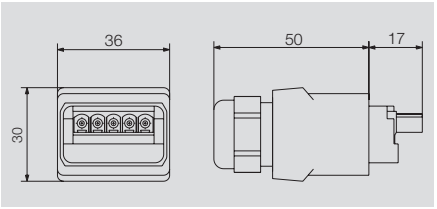
Accessories

Tools	Type	Qty.	Order No.
 Crimping pliers GOF LC	IE-CT-LC-GOF	1	**9205330000**
Fibre-optic tool case	IE-CTC-SCST-GOF	1	**1032030000**

IP67 plug-in connector

Plug PushPull Power

Power plug



Technical data

General data	
Degree of protection	IP 67
Connector standard	According to PROFINET specification
Material properties	
Housing base material	Zinc diecast, nickel-plated
Sealing material	NBR
Cable sealing material	TPE
Contact material	Copper alloy
Flammability class UL 94	V-2
Pollution severity level	2
Plugging cycles	≤ 100
Electrical properties	
Current-carrying capacity at 50 °C	16 A
Rated voltage	24 V
Ambient temperature (operational), min. / max.	-40 °C...+70 °C
No. of poles	5
Wire cross-section, flexible, min. / max.	0.75 mm² / 2.5 mm²
Sheath diameter, min. / max.	9 mm / 13 mm
Connection 2	Tension clamp
Note	

Ordering data - Sets

Type	Qty.	Order No.
IE-PS-VAPM-24V	10	**1068910000**

Note

Ordering data - Empty housings

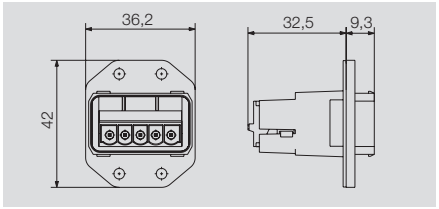
Type	Qty.	Order No.

Note

Accessories

Flange PushPull Power

Flange Power



Technical data

General data	
Degree of protection	IP 67
Connector standard	According to PROFINET specification
Material properties	
Housing base material	Zinc diecast, nickel-plated
Sealing material	NBR
Cable sealing material	TPE
Contact carrier material	PA
Contact material	Copper alloy
Flammability class UL 94	V-2
Pollution severity level	2
Plugging cycles	≤ 100
Electrical properties	
Current-carrying capacity at 50 °C	16 A
Rated voltage	24 V
Ambient temperature (operational), min. / max.	-40 °C...+70 °C
No. of poles	5
Connection 1	Tension clamp
Installation	4 screws
Note	

Ordering data - Sets

Type	Qty.	Order No.
IE-BSS-VAPM-24V	10	**1069030000**

Note

Ordering data - Empty housings

Type	Qty.	Order No.
Device flange		
IE-BHD-VAPM	10	**1068920000**

Note

Accessories

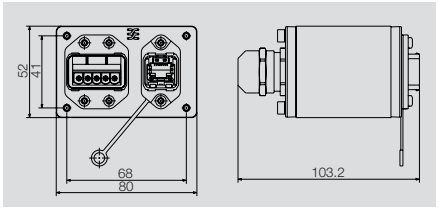
Dust protection cap

Type	Qty.	Order No.
IE-BP-VAPP	10	**1068930000**

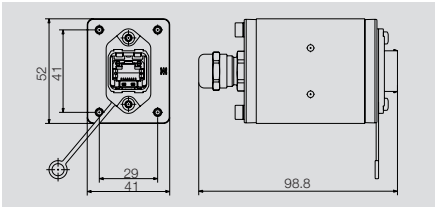
IP65 connection components

FreeCon V14 - Junction box

Double junction box



Single junction box



Technical data

General data		
Housing main material	Aluminium profile, Cover: zinc diecast, painted	Aluminium profile, Cover: zinc diecast, painted
Degree of protection	IP 65	IP 65
Ambient temperature (operational), min. / max.	-40 °C...+70 °C	-40 °C...+70 °C
Connector standard	IEC 61076-3-117 Var. 14, IEC 60603-7-5	IEC 61076-3-117 Var. 14, IEC 60603-7-5
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	
Electrical properties power connector		
Current-carrying capacity at 50 °C	16 A @ 20 °C	
Rated voltage	24 V	
No. of poles	5	
Sheath diameter, min. / max.	6 mm / 12 mm	
Connection 2	Tension clamp	
Technical specifications RJ45		
Housing base material	Zinc diecast, nickel-plated	Zinc diecast, nickel-plated
Contact surface	Gold over nickel	Gold over nickel
Sheath diameter, min. / max.	5 / 10 mm	5 / 10 mm
Electrical properties RJ45		
Category	Cat.6_A / Class E_A (ISO/IEC 11801 2010)	Cat.6_A / Class E_A (ISO/IEC 11801 2010)
Contact resistance	≤ 20 mΩ	≤ 20 mΩ
Insulation resistance	> 500 MΩ	> 500 MΩ
Dielectric strength, contact – contact, max.	≤ 1000 V DC	≤ 1000 V DC
Dielectric strength, contact – contact, min.	≤ 1500 V DC	≤ 1500 V DC
Current carrying capacity	1 A	1 A
Wire cross-section, flexible, min. / max.	AWG 26 / AWG 22	AWG 26 / AWG 22
Connection 1, RJ 45 module	IDC	IDC
Note		

Ordering data

Type	Qty.	Order No.
IE-CD-V14MRJ/VAPM24V-FJ	1	**1068830000**

Type	Qty.	Order No.
IE-CD-V14MRJ-FJ	1	**1068880000**

Note

Accessories

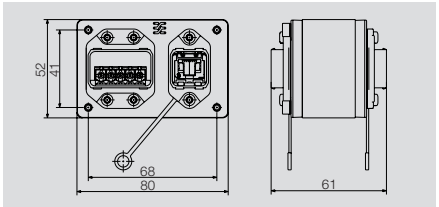
Mounting foot

Type	Qty.	Order No.
IE-CD-MA	10	**1099580000**

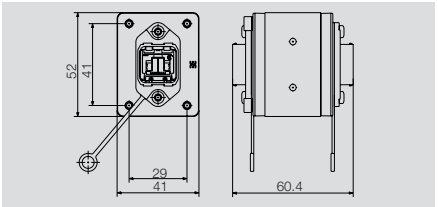
Type	Qty.	Order No.
IE-CD-MA	10	**1099580000**

FreeCon V14 - Coupling

Double coupling



Single coupling



Technical data

General data		
Housing main material	Aluminium profile, Cover: zinc diecast, painted	Aluminium profile, Cover: zinc diecast, painted
Degree of protection	IP 65	IP 65
Ambient temperature (operational), min. / max.	-40 °C...+70 °C	-40 °C...+70 °C
Connector standard	IEC 61076-3-117 Var. 14, IEC 60603-7-5	IEC 61076-3-117 Var. 14, IEC 60603-7-5
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	
Electrical properties power connector		
Current-carrying capacity at 50 °C	16 A @ 20 °C	
Rated voltage	24 V	
No. of poles	5	
Sheath diameter, min. / max.	6 mm / 12 mm	
Connection 2	Tension clamp	
Technical specifications RJ45		
Housing base material	Zinc diecast, PA 66	Zinc diecast, PA 66
Electrical properties RJ45 coupling		
Category	Cat.6_A / Class E_A (ISO/IEC 11801 2010)	Cat.6_A / Class E_A (ISO/IEC 11801 2010)
Contact resistance	≤ 20 mΩ	≤ 20 mΩ
Insulation resistance	> 500 MΩ	> 500 MΩ
Dielectric strength, contact – contact, min.	≥ 1000 V DC	≥ 1000 V DC
Dielectric strength, contact – shielding, max.	≥ 1500 V DC	≥ 1500 V DC
Current carrying capacity	1 A	1 A
Note		

Ordering data

Type	Qty.	Order No.
IE-CD-V14MRJ/VAPM24V-C-MA	1	**1068820000**

Note	Including mounting foot

Type	Qty.	Order No.
IE-CD-V14MRJ-C-MA	1	**1068870000**

Note	Including mounting foot

Accessories

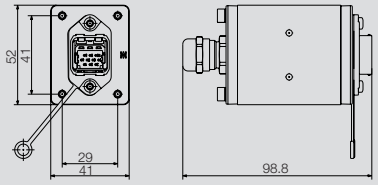
IP65 connection components

FreeCon V14 - Junction box

- in PUR

Single junction box

Hybrid



Technical data

General data	
Housing main material	Aluminium profile, Cover: zinc diecast, painted
Degree of protection	IP 65
Ambient temperature (operational), min. / max.	-40 °C...+75 °C
Technical specifications hybrid connector	
Housing base material	Zinc diecast (flange), PA 66
Sealing material	NBR
Contact material	Copper alloy
Contact surface	Gold over nickel
Plugging cycles	≤ 100
Electrical properties hybrid connector	
Current-carrying capacity at 50 °C	3 A
Rated voltage (DIN EN 61984)	24 V
Contact resistance	≤ 10 mΩ
Pole count, Hybrid	10
Wire cross-section, flexible, min. / max.	AWG 27 / AWG 20
Wire cross-section, flexible, min. / max.	0.08 mm² / 0.75 mm²
Note	

Ordering data

Type	Qty.	Order No.
IE-CD-V14MHYB-10P-FJ	1	**1068850000**

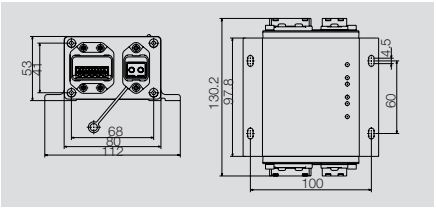
Note

Accessories

Type	Qty.	Order No.
Mounting foot		
IE-CD-MA	10	**1099580000**
Crimp contacts		
0,33...0,5 mm²		
IE-BIC-HYB-P-0,5-300	300	**1096150000**
0,75 mm²		
IE-BIC-HYB-P-0,75-300	300	**1068970000**
0,08...0,2 mm²		
IE-BIC-HYB-P-0,2-300	300	**1135160000**
Crimping tool		
HTF HYB	1	**1119580000**

FreeCon Active PROFINET FO
Repeater with diagnostic functions

FreeCon Active



Technical data

General data	
Housing main material	Aluminium profile, Cover: zinc diecast, painted
Weight	780 g
Data interface	PROFINET PushPull SCRJ POF (V14)
Power interface	PROFINET PushPull Power
Degree of protection	IP 65
Ambient temperature (operational), min. / max.	-20 °C...+55 °C
Network standard	IEC 61158, IEC 61784
Electrical data	
Operating voltage	24 V DC
Operational voltage range	18…30 V DC
Current consumption	200 mA typical
Baud rate	100 MB
Protocol	PROFINET iRT
LED indication	FO1: port active, FO2: port active, SF: general error, BF: bus error, US1: voltage 1 (electronics), US2: voltage 2

Note

Ordering data

Type	Qty.	Order No.
IE-CDR-V14MSCPOF/VAPM-C	1	**1253240000**

Note

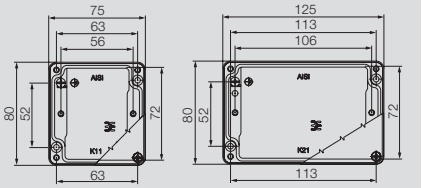
Accessories

IP65 connection components

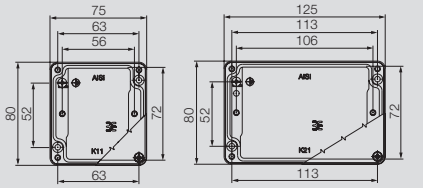
V1 junction boxes - Metal

- IP 67
- For floor or wall mounting

Double junction box



Single junction box



Technical data

	Double junction box	Single junction box
Degree of protection	IP 67	IP 67
Housing main material	Al - Si 12	Al - Si 12
Colour	grey	grey
Type of mounting	Floor-mounted, Wall-mounted	Floor-mounted, Wall-mounted
Ambient temperature (operational), min. / max.	-40 °C...+70 °C	-40 °C...+70 °C
Plugging cycles	750	750
Connector standard	IEC 61076-3-106 Var. 1	IEC 61076-3-106 Var. 1
Note	Delivered with protective caps.	Delivered with protective caps.

Ordering data

Variant 1

	Type	Qty.	Order No.
2 ports, straight	IE-OM-V01M-K21-2S	1	**1966330000**
2 ports, left	IE-OM-V01M-K21-2L	1	**1966320000**
2 ports, right	IE-OM-V01M-K21-2R	1	**1966310000**
1 port, straight	IE-OM-V01M-K11-1S	1	**1966300000**
Note	RJ45 modules can be ordered separately		

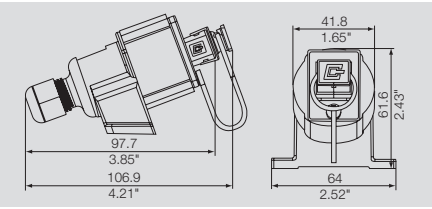
Accessories

Flange insert

	Type	Qty.	Order No.
RJ45 EIA/TIA 568 A	IE-BI-RJ45-FJ-A	10	**1962850000**
RJ45 EIA/TIA 568 B	IE-BI-RJ45-FJ-B	10	**1963840000**
RJ45 PROFINET	IE-BI-RJ45-FJ-P	10	**1963830000**

V1 junction boxes - Plastic

Single junction box



Technical data

Degree of protection	IP 67
Housing main material	PA UL 94 V0
Plugging cycles	750
Ambient temperature (operational), min. / max.	-40 °C...+70 °C
Connector standard	IEC 61076-3-106 Var. 1

Note

Ordering data

Variant 1

	Type	Qty.	Order No.
Junction box	IE-OP-V01P-1S	10	**1061830000**

Note

RJ45 modules can be ordered separately

Accessories

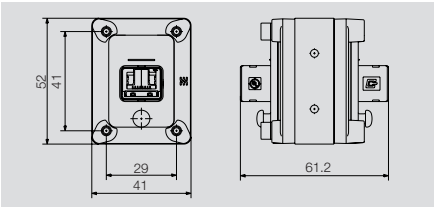
Flange insert

	Type	Qty.	Order No.
RJ45 EIA/TIA 568 A	IE-BI-RJ45-FJ-A	10	**1962850000**
RJ45 EIA/TIA 568 B	IE-BI-RJ45-FJ-B	10	**1963840000**
RJ45 PROFINET	IE-BI-RJ45-FJ-P	10	**1963830000**

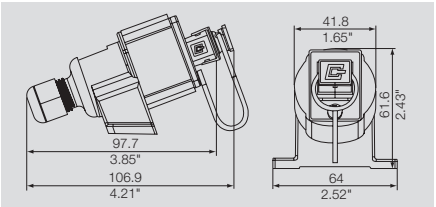
IP65 connection components

FreeCon V4 junction box

Single coupling



Single junction box



Technical data

General data		
Plugging cycles	750	750
Housing main material	Aluminium profile, Cover: zinc diecast, painted	PA
Flammability class UL 94		V-0
Connector standard	IEC 61076-3-106 Var. 4, IEC 60603-7-5	IEC 61076-3-106 Var. 4
Degree of protection	IP 65	IP 67
Ambient temperature (operational), min. / max.	-40 °C...+70 °C	-40 °C...+70 °C
Electrical properties RJ45 coupling		
Category	Cat.6_A / Class E_A (ISO/IEC 11801 2010)	
Contact resistance	≤ 20 mΩ	
Insulation resistance	> 500 MΩ	
Dielectric strength, contact – contact, min.	≥ 1000 V DC	
Dielectric strength, contact – shielding, max.	≥ 1500 V DC	
Current carrying capacity	1 A	
Material properties RJ45 coupling		
Housing base material	Zinc diecast, PA 66	
Note		

Ordering data

	Type	Qty.	Order No.
Junction box			
Coupling	IE-CD-V04PRJ-C-MA	1	**1122710000**
Note	Including mounting foot		

Type	Qty.	Order No.
IE-OP-V04P-1S	10	**1045780000**
RJ45 modules can be ordered separately		

Accessories

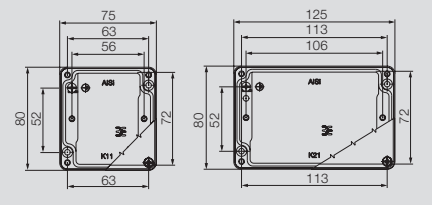
Flange insert	Type	Qty.	Order No.
 RJ45 EIA/TIA 568 A			
RJ45 EIA/TIA 568 B			
RJ45 PROFINET			

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**

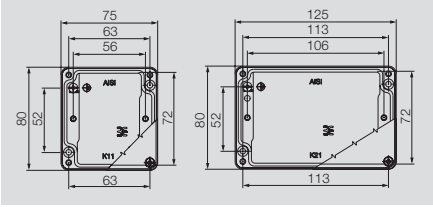
V4 junction boxes

- IP 67
- For floor or wall mounting

Double junction box



Single junction box



Technical data

Degree of protection	IP 67	IP 67
Housing main material	Al - Si 12	Al - Si 12
Colour	grey	grey
Type of mounting	Floor-mounted, Wall-mounted	Floor-mounted, Wall-mounted
Ambient temperature (operational), min. / max.	-40 °C...+70 °C	-40 °C...+70 °C
Plugging cycles	750	750
Connector standard	IEC 61076-3-106 Var. 4	IEC 61076-3-106 Var. 4
Note		

Ordering data

Variant 4

Type	Qty.	Order No.
2 ports, straight	IE-OM-V04P-K21-2S	1	**1966250000**
2 ports, left	IE-OM-V04P-K21-2L	1	**1966240000**
2 ports, right	IE-OM-V04P-K21-2R	1	**1966230000**
1 port, straight			

Type	Qty.	Order No.
IE-OM-V04P-K11-1S	1	**1966220000**

Note

RJ45 modules can be ordered separately

RJ45 modules can be ordered separately

Accessories

Flange insert

Type	Qty.	Order No.
RJ45 EIA/TIA 568 A	IE-BI-RJ45-FJ-A	10	**1962850000**
RJ45 EIA/TIA 568 B	IE-BI-RJ45-FJ-B	10	**1963840000**
RJ45 PROFINET	IE-BI-RJ45-FJ-P	10	**1963830000**

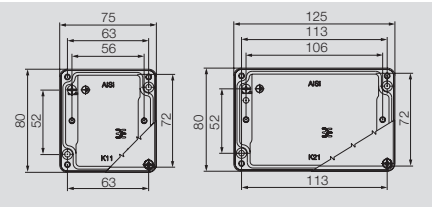
Type	Qty.	Order No.
IE-BI-RJ45-FJ-A	10	**1962850000**
IE-BI-RJ45-FJ-B	10	**1963840000**
IE-BI-RJ45-FJ-P	10	**1963830000**

IP65 connection components

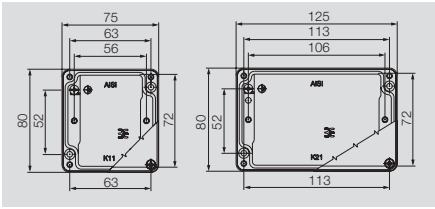
V5 junction boxes

- IP 67
- For floor or wall mounting

Double junction box



Single junction box



Technical data

Degree of protection	IP 67	IP 67
Housing main material	Al - Si 12	Al - Si 12
Colour	grey	grey
Type of mounting	Floor-mounted, Wall-mounted	Floor-mounted, Wall-mounted
Ambient temperature (operational), min. / max.	-40 °C...+70 °C	-40 °C...+70 °C
Plugging cycles	750	750
Connector standard	IEC 61076-3-106 Var. 5	IEC 61076-3-106 Var. 5
Note		

Ordering data

Variant 5	Type	Qty.	Order No.	Type	Qty.	Order No.
2 ports, straight	IE-OM-V05M-K21-2S	1	**1966290000**			
2 ports, left	IE-OM-V05M-K21-2L	1	**1966280000**			
2 ports, right	IE-OM-V05M-K21-2R	1	**1966270000**			
1 port, straight				IE-OM-V05M-K11-1S	1	**1966260000**
Note	RJ45 modules can be ordered separately			RJ45 modules can be ordered separately		

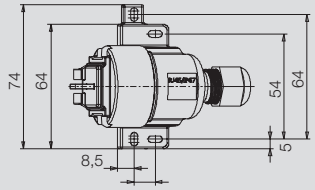
Accessories

Flange insert	Type	Qty.	Order No.	Type	Qty.	Order No.
 RJ45 EIA/TIA 568 A	IE-BI-RJ45-FJ-A	10	**1962850000**	IE-BI-RJ45-FJ-A	10	**1962850000**
RJ45 EIA/TIA 568 B	IE-BI-RJ45-FJ-B	10	**1963840000**	IE-BI-RJ45-FJ-B	10	**1963840000**
RJ45 PROFINET	IE-BI-RJ45-FJ-P	10	**1963830000**	IE-BI-RJ45-FJ-P	10	**1963830000**

V6 junction box

- Cat.6
- IP 67

Single junction box



Technical data

Degree of protection	IP 67
Housing main material	PA 66, UL 94: V-0
Colour	light grey
Type of mounting	Floor-mounted, for exposed connections, Wall-mounted
Configuration	Screw-on junction box incl. RJ45 module with IDC
Ambient temperature (operational), min. / max.	-40 °C+70 °C
Plugging cycles	750
Connector standard	IEC 61076-3-106 Var. 6

Note

Ordering data

	Type	Qty.	Order No.
Junction box	IE-S-IP67	1	**8808370000**

Note

Accessories

Tools

	Type	Qty.	Order No.
 Crimping tool	TT 8 RS MP 8	1	**9202800000**

Cables

Cables

Introduction		D.2
Product configurator – Copper cables		D.3
Overview – Copper cables		D.4
Copper cabling solutions		
	Bulk stock - installation cable	D.6
	Bulk stock - connection cable	D.8
	Bulk stock - dragline cable	D.11
	Bulk stock - PROFINET cable	D.12
	Bulk stock - hybrid cable	D.14
	Assembled cables - patch cable	D.15
	Assembled cables - PROFINET cable	D.20
	Assembled cables - Ethernet/IP cable	D.23
	Assembled cables - rail cable	D.24
Overview – Fibre-optic cables		D.28
Product configurator – Fibre-optic cables		D.30
Fibre-optic cabling solutions		
	Bulk stock - FO connection cable / dragline cable	D.31
	Assembled cables - FO patch cable	D.33
	Assembled cables - FO PROFINET cable	D.35
	Assembled cables - FO system cable	D.36
	Assembled cables - FO dragline cable	D.37

Passive components

Advanced Line

The Advanced Line 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 Advanced Line 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

Cabinet Line

The new Cabinet Line range of patch cables from Weidmüller is available in a variety of colours for visually differentiating between various networks.

Additional advantage:
all Cabinet Line cables are fitted with Weidmüller TM marking sleeves for clearly labelling cables and ports. Cabinet Line is available in the colours grey, blue, red and violet in combination with LSZH sheathing material and transmission power Cat.6_A. Furthermore, Cabinet Line 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 0 to +60 °C
- Simple shielding

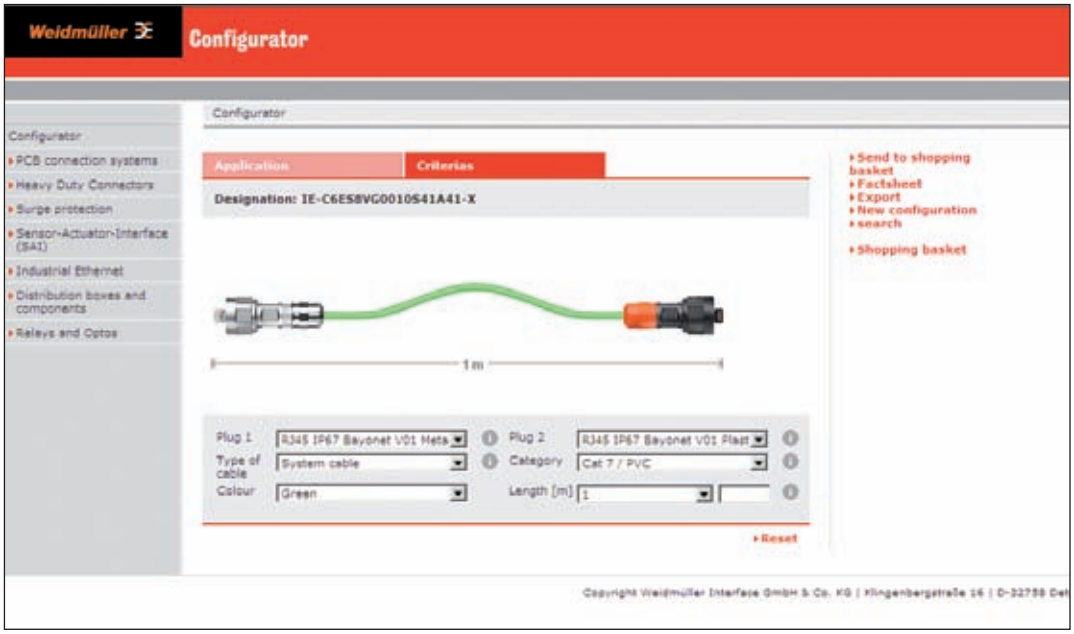
Product configurator – Copper cables

The cable configurator in Weidmüller's online catalogue makes it possible for you to create fully-assembled cables adapted 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
- Variant 4, plastic
- Variant 5, metal
- Variant 6, plastic
- M12 connector and additional housing variants to follow shortly

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
- Additional cable variants to follow shortly.

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 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.

Overview of copper cables

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 / Metre goods

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 installations 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 installations 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

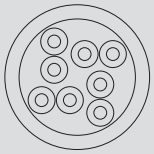
...pre-assembled cable in Cat.5 with PUR sheath and IP67 protection – can be used on railway vehicles for both interior and exterior installations.
- In Cat. 5
- Also for PROFINET
- With Radox sheath

Ordering data for copper cables

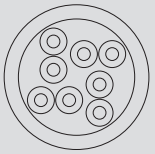
Type	Cat./Class	Colour	Plug-in connector left	right	Length					
Industrial installation cables					**100 m**	**Metre goods**				
IE-5IC4x2xAWG24/1-PUR	Cat.5		-	-	**8813160000**	**8944310000**				
IE-5IC4x2xAWG24/1-PVC	Cat.5		-	-	**8813150000**	**8953160000**				
IE-7IC4x2xAWG23/1-PUR	Cat.7		-	-	**8813140000**	**8955350000**				
IE-7IC4x2xAWG23/1-PVC	Cat.7		-	-	**8813130000**	**8955360000**				
IE-C5AS4Vxx	Cat.5 PROFINET		-	-	**8899000000**	**8955950000**				
Industrial connecting cables					**100 m**					
IE-5CC4x2xAWG26/7-PUR	Cat.5		-	-	**8813200000**	**8938880000**				
IE-5CC4x2xAWG26/7-PVC	Cat.5		-	-	**8813190000**	**8955490000**				
IE-7CC4x2xAWG26/7-PUR	Cat.7		-	-	**8813180000**	**8954300000**				
IE-7CC4x2xAWG26/7-PVC	Cat.7		-	-	**8813170000**	**8955480000**				
IE-C5DS4Vxx	Cat.5 PROFINET		-	-	**8898990000**	**8955560000**				
IE-C5DHAGxx	Cat.5 PROFINET		-	-		**1172250000**				
Industrial trailing cables					**Metre goods**					
IE-5TC4x2xAWG26/7-PUR	Cat.5		-	-	**8813210000**					
IE-C5DD4Uxx	Cat.5 PROFINET		-	-	**8899010000**	**8947670000**				
Industrial trailing cables					**1 m**	**2 m**	**5 m**	**10 m**	**15 m**	**20 m**
IE-C5ED8UGxxxxA46A46-X	Cat.5		RJ45-IP67	RJ45-IP67	**8829710000**	**8829720000**	**8829730000**	**8829740000**	**8829750000**	**8829760000**
					1.5 m	**3 m**	**5 m**	**10 m**		
IE-C5AS4UGxxxxMCSMCS-X	Cat.5		M12	M12	**8877610015**	**8877610030**	**8877610050**	**8877610100**		
Industrial patch cables					**0.5 m**	**1 m**	**2 m**	**3 m**	**5 m**	**10 m**
IE-C6FP8LDxxxxM40M40-D	Cat.6	grey	RJ45	RJ45	**1165940005**	**1165940010**	**1165940020**	**1165940030**	**1165940050**	**1165940100**
IE-C6FP8LBxxxxM40M40-B	Cat.6	blue	RJ45	RJ45	**1165900005**	**1165900010**	**1165900020**	**1165900030**	**1165900050**	**1165900100**
IE-C6FP8LRxxxxM40M40-R	Cat.6	red	RJ45	RJ45	**1166030005**	**1166030010**	**1166030020**	**1166030030**	**1166030050**	**1166030100**
IE-C6FP8LMxxxxM40M40-M	Cat.6	magenta	RJ45	RJ45	**1201270005**	**1201270010**	**1201270020**	**1201270030**	**1201270050**	**1201270100**
IE-C6FP8LYxxxxM40M40-Y	Cat.6	yellow	RJ45	RJ45	**1251580005**	**1251580010**	**1251580020**	**1251580030**	**1251580050**	**1251580100**
IE-C6FP8LExxxxM40M40-E	Cat.6	black	RJ45	RJ45	**1251610005**	**1251610010**	**1251610020**	**1251610030**	**1251610050**	**1251610100**
IE-C6FP8LGxxxxM40M40-G	Cat.6	green	RJ45	RJ45	**1251590005**	**1251590010**	**1251590020**	**1251590030**	**1251590050**	**1251590100**
IE-C6FP8LDxxxxM40W40-D	Cat.6	grey	RJ45 spiralled 270°	RJ45	**1233160005**	**1233160010**	**1233160020**	**1233160030**	**1233160050**	**1233160100**
IE-C6FP8LDxxxxM40V40-D	Cat.6	grey	RJ45 spiralled 90°	RJ45	**1248280005**	**1248280010**	**1248280020**	**1248280030**	**1248280050**	**1248280100**
IE-C5ES8VGxxxxM40M40-G	Cat.5	green	RJ45	RJ45	**1166020005**	**1166020010**	**1166020020**	**1166020030**	**1166020050**	**1166020100**
IE-C5ES8UGxxxxM40M40-G	Cat.5	green	RJ45	RJ45	**1166000005**	**1166000010**	**1166000020**	**1166000030**	**1166000050**	**1166000100**
Industrial system cables					**0.5 m**	**1 m**	**2 m**	**3 m**	**5 m**	**10 m**
IE-C5DD4UGxxxxA20A20-E	Cat.5	green	RJ45	RJ45		**1173030010**		**1173030030**	**1173030050**	**1173030100**
IE-C5DD4UGxxxxA2EA2E-X	Cat.5	green	V14 RJ45	V14 RJ45		**1119730010**		**1119730030**	**1119730050**	**1119730100**
IE-C5ES8UGxxxxB41B41-E	Cat.5	green	V01 RJ45	V01 RJ45		**1066850000**	**1066860000**		**1066870000**	**1066880000**
IE-C5ES8UGxxxxP41P41-E	Cat.5	green	V01 RJ45	V01 RJ45		**1106010000**	**1106020000**		**1106030000**	**1106040000**

Metre goods
Cat. 5 installation cable

PUR



PVC



Technical data

	PUR	PVC
Product type	Installation cable	Installation cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA 568-B)	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA 568-B)
Shielding	SF/UTP	SF/UTP
Cross-section	4*2*AWG 24/1 - 4*2*0.205 mm²	4*2*AWG 24/1 - 4*2*0.205 mm²
Sheath diameter, max.	6.7 mm	6.3 mm
Material sheath	PUR	PVC
Sheathing colour	green (RAL 6018)	green (RAL 6018)
Insulation cross-section	1 mm	1 mm
Min. bending radius, repetitive	10 x conductor cross-section	10 x conductor cross-section
Min. bending radius, once only	5 x conductor cross-section	5 x conductor cross-section
Ambient temperature (operational)	-40 °C...+80 °C	-40 °C...+80 °C
Installation temperature	-15 °C...+60 °C	-15 °C...+60 °C
Storage temperature	-40 °C...+80 °C	-40 °C...+80 °C
Abrasion resistance	very good	good
Halogen	to IEC 60754-2	
Resistance to spread of flame	acc. to IEC 60332-1	acc. to IEC 60332-1
Resistance to oils	acc. to IEC 60811-2-1	
Note		

Ordering data

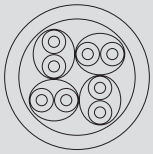
	Type	Qty.	Order No.	Type	Qty.	Order No.
100 m	IE-5IC4x2xAWG24/1-PUR	1	**8813160000**	IE-5IC4x2xAWG24/1-PVC	1	**8813150000**
Bulk stock starting at 110 m	IE-C5CS8UG-MW	1	**8944310000**	IE-C5CS8VG-MW	1	**8953160000**
Note	Order example, for bulk: 150 x „article number" = 150 m on drum			Order example, for bulk: 150 x „article number" = 150 m on drum		

Accessories

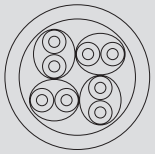
	Type	Qty.	Order No.	Type	Qty.	Order No.
Sheathing stripper						
For UTP and STP data cables	AM 12	1	**9030060000**	AM 12	1	**9030060000**
For coaxial and round data cables	IE-CST	1	**9204350000**	IE-CST	1	**9204350000**
Markers						
Insertion label, yellow, 12 mm	TM-I 12 NEUTRAL GE	320	**1718411687**	TM-I 12 NEUTRAL GE	320	**1718411687**
Insertion label, yellow, 18 mm	TM-I 18 NEUTRAL GE	320	**1718431687**	TM-I 18 NEUTRAL GE	320	**1718431687**
Transparent sleeves, 12-mm length	TM 4/12 HF/HB	500	**1719840000**	TM 4/12 HF/HB	500	**1719840000**
Transparent sleeves, 18-mm length	TM 4/18 HF/HB	500	**1719850000**	TM 4/18 HF/HB	500	**1719850000**
Wire and cable marker, ø 4,7 - 7,4 mm	VT SF 5/21 NEUTRAL WS V0	160	**1689470001**	VT SF 5/21 NEUTRAL WS V0	160	**1689470001**
Wire and cable marker, ø 5,8 - 7,8 mm	VT SF 6/21 NEUTRAL WS V0	160	**1730560001**	VT SF 6/21 NEUTRAL WS V0	160	**1730560001**

Metre goods
Cat. 7 installation cable

PUR



PVC



Technical data

	PUR	PVC
Product type	Installation cable	Installation cable
Category	Cat.7 (ISO/IEC 11801)	Cat.7 (ISO/IEC 11801)
Shielding	S/FTP	S/FTP
Cross-section	4*2*AWG 23/1 - 4*2*0.255 mm²	4*2*AWG 23/1 - 4*2*0.255 mm²
Sheath diameter, max.	8.4 mm	8.4 mm
Material sheath	PUR	PVC
Sheathing colour	green (RAL 6018)	green (RAL 6018)
Insulation cross-section	1.4 mm	1.4 mm
Min. bending radius, repetitive	10 x conductor cross-section	10 x conductor cross-section
Min. bending radius, once only	5 x conductor cross-section	5 x conductor cross-section
Ambient temperature (operational)	-40 °C...+80 °C	-40 °C...+80 °C
Installation temperature	-15 °C...+60 °C	-15 °C...+60 °C
Storage temperature	-40 °C...+80 °C	-40 °C...+80 °C
Abrasion resistance	very good	good
Halogen	to IEC 60754-2	
Resistance to spread of flame	acc. to IEC 60332-1	acc. to IEC 60332-1
Resistance to oils	acc. to IEC 60811-2-1	
Note		

Ordering data

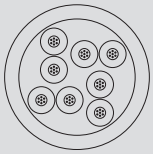
	Type	Qty.	Order No.	Type	Qty.	Order No.
100 m	IE-7IC4x2xAWG23/1-PUR	1	**8813140000**	IE-7IC4x2xAWG23/1-PVC	1	**8813130000**
Bulk stock starting at 110 m	IE-C7BS8UG-MW	1	**8955350000**	IE-C7BS8VG-MW	1	**8955360000**
Note	Order example, for bulk: 150 x „article number" = 150 m on drum			Order example, for bulk: 150 x „article number" = 150 m on drum		

Accessories

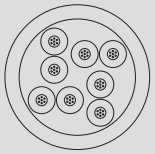
	Type	Qty.	Order No.	Type	Qty.	Order No.
Sheathing stripper						
For UTP and STP data cables	AM 12	1	**9030060000**	AM 12	1	**9030060000**
For coaxial and round data cables	IE-CST	1	**9204350000**	IE-CST	1	**9204350000**
Markers						
Insertion label, yellow, 12 mm	TM-I 12 NEUTRAL GE	320	**1718411687**	TM-I 12 NEUTRAL GE	320	**1718411687**
Insertion label, yellow, 18 mm	TM-I 18 NEUTRAL GE	320	**1718431687**	TM-I 18 NEUTRAL GE	320	**1718431687**
Transparent sleeves, 12-mm length	TM 4/12 HF/HB	500	**1719840000**	TM 4/12 HF/HB	500	**1719840000**
Transparent sleeves, 18-mm length	TM 4/18 HF/HB	500	**1719850000**	TM 4/18 HF/HB	500	**1719850000**
Wire and cable marker, ø 4,7 - 7,4 mm	VT SF 5/21 NEUTRAL WS V0	160	**1689470001**	VT SF 5/21 NEUTRAL WS V0	160	**1689470001**
Wire and cable marker, ø 5,8 - 7,8 mm	VT SF 6/21 NEUTRAL WS V0	160	**1730560001**	VT SF 6/21 NEUTRAL WS V0	160	**1730560001**

Metre goods
Cat. 5 connection cable

PUR



PVC



Technical data

	PUR	PVC
Product type	System cable	System cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA 568-B)	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA 568-B)
Shielding	SF/UTP	SF/UTP
Cross-section	4*2*AWG 26/7 - 4*2*0.128 mm²	4*2*AWG 26/7 - 4*2*0.128 mm²
Sheath diameter, max.	6.1 mm	5.8 mm
Material sheath	PUR	PVC
Sheathing colour	green (RAL 6018)	green (RAL 6018)
Insulation cross-section	1 mm	1 mm
Min. bending radius, repetitive	10 x conductor cross-section	10 x conductor cross-section
Min. bending radius, once only	5 x conductor cross-section	5 x conductor cross-section
Ambient temperature (operational)	-40 °C...+80 °C	-40 °C...+80 °C
Installation temperature	-10 °C...+60 °C	-15 °C...+60 °C
Storage temperature	-40 °C...+80 °C	-40 °C...+80 °C
Abrasion resistance	very good	good
Halogen	to IEC 60754-2	
Resistance to spread of flame	acc. to IEC 60332-1	acc. to IEC 60332-1
Resistance to oils	acc. to IEC 60811-2-1	
Note		

Ordering data

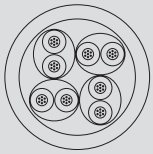
	Type	Qty.	Order No.	Type	Qty.	Order No.
100 m	IE-5CC4x2xAWG26/7-PUR	1	**8813200000**	IE-5CC4x2xAWG26/7-PVC	1	**8813190000**
Bulk stock starting at 110 m	IE-C5ES8UG-MW	1	**8938880000**	IE-C5ES8VG-MW	1	**8955490000**
Note	Order example, for bulk: 150 x „article number" = 150 m on drum			Order example, for bulk: 150 x „article number" = 150 m on drum		

Accessories

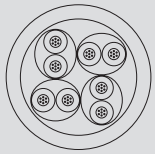
Sheathing stripper	Type	Qty.	Order No.	Type	Qty.	Order No.
For UTP and STP data cables	AM 12	1	**9030060000**	AM 12	1	**9030060000**
For coaxial and round data cables	IE-CST	1	**9204350000**	IE-CST	1	**9204350000**
Markers						
Insertion label, yellow, 12 mm	TM-I 12 NEUTRAL GE	320	**1718411687**	TM-I 12 NEUTRAL GE	320	**1718411687**
Insertion label, yellow, 18 mm	TM-I 18 NEUTRAL GE	320	**1718431687**	TM-I 18 NEUTRAL GE	320	**1718431687**
Transparent sleeves, 12-mm length	TM 4/12 HF/HB	500	**1719840000**	TM 4/12 HF/HB	500	**1719840000**
Transparent sleeves, 18-mm length	TM 4/18 HF/HB	500	**1719850000**	TM 4/18 HF/HB	500	**1719850000**
Wire and cable marker, ø 4,7 - 7,4 mm	VT SF 5/21 NEUTRAL WS V0	160	**1689470001**	VT SF 5/21 NEUTRAL WS V0	160	**1689470001**
Wire and cable marker, ø 5,8 - 7,8 mm	VT SF 6/21 NEUTRAL WS V0	160	**1730560001**	VT SF 6/21 NEUTRAL WS V0	160	**1730560001**

Metre goods
Cat. 7 connection cable

PUR



PVC



Technical data

	PUR	PVC
Product type	System cable	System cable
Category	Cat.7 (ISO/IEC 11801)	Cat.7 (ISO/IEC 11801)
Shielding	S/FTP	S/FTP
Cross-section	4*2*AWG 26/7 - 4*2*0.128 mm²	4*2*AWG 26/7 - 4*2*0.128 mm²
Sheath diameter, max.	6.6 mm	6.7 mm
Material sheath	PUR	PVC
Sheathing colour	green (RAL 6018)	green (RAL 6018)
Insulation cross-section	1.03 mm	0.98 mm
Min. bending radius, repetitive	10 x conductor cross-section	10 x conductor cross-section
Min. bending radius, once only	5 x conductor cross-section	5 x conductor cross-section
Ambient temperature (operational)	-40 °C...+80 °C	-40 °C...+80 °C
Installation temperature	-15 °C...+60 °C	-15 °C...+60 °C
Storage temperature	-40 °C...+80 °C	-40 °C...+80 °C
Abrasion resistance	very good	good
Halogen	to IEC 60754-2	
Resistance to spread of flame	acc. to IEC 60332-1	acc. to IEC 60332-1
Resistance to oils	acc. to IEC 60811-2-1	
Note		

Ordering data

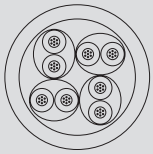
	Type	Qty.	Order No.	Type	Qty.	Order No.
100 m	IE-7CC4x2xAWG26/7-PUR	1	**8813180000**	IE-C7ES8VG-MW	1	**8813170000**
Bulk stock starting at 110 m	IE-C7ES8UG-MW	1	**8954300000**	IE-7CC4x2xAWG26/7-PVC	1	**8955480000**
Note	Order example, for bulk: 150 x „article number" = 150 m on drum			Order example, for bulk: 150 x „article number" = 150 m on drum		

Accessories

Sheathing stripper	Type	Qty.	Order No.	Type	Qty.	Order No.
For UTP and STP data cables	AM 12	1	**9030060000**	AM 12	1	**9030060000**
For coaxial and round data cables	IE-CST	1	**9204350000**	IE-CST	1	**9204350000**
Markers						
Insertion label, yellow, 12 mm	TM-I 12 NEUTRAL GE	320	**1718411687**	TM-I 12 NEUTRAL GE	320	**1718411687**
Insertion label, yellow, 18 mm	TM-I 18 NEUTRAL GE	320	**1718431687**	TM-I 18 NEUTRAL GE	320	**1718431687**
Transparent sleeves, 12-mm length	TM 4/12 HF/HB	500	**1719840000**	TM 4/12 HF/HB	500	**1719840000**
Transparent sleeves, 18-mm length	TM 4/18 HF/HB	500	**1719850000**	TM 4/18 HF/HB	500	**1719850000**
Wire and cable marker, ø 4,7 - 7,4 mm	VT SF 5/21 NEUTRAL WS V0	160	**1689470001**	VT SF 5/21 NEUTRAL WS V0	160	**1689470001**
Wire and cable marker, ø 5,8 - 7,8 mm	VT SF 6/21 NEUTRAL WS V0	160	**1730560001**	VT SF 6/21 NEUTRAL WS V0	160	**1730560001**

Metre goods
Cat. 7 connection cable

LSZH



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 mm²
Sheath diameter, max.	5.9 mm
Material sheath	LSZH
Sheathing colour	light grey (RAL 7035)
Insulation cross-section	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	acc. to IEC 60332-1
Resistance to oils	

Note

Ordering data

	Type	Qty.	Order No.
305 m / 1000 ft	IE-C7FS8LD-305M	1	**1273090000**

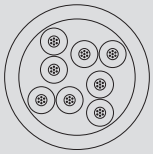
Note

Accessories

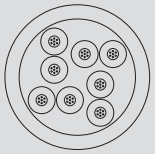
Sheathing stripper	Type	Qty.	Order No.
For UTP and STP data cables	AM 12	1	**9030060000**
For coaxial and round data cables	IE-CST	1	**9204350000**
Markers			
Insertion label, yellow, 12 mm	TM-I 12 NEUTRAL GE	320	**1718411687**
Insertion label, yellow, 18 mm	TM-I 18 NEUTRAL GE	320	**1718431687**
Transparent sleeves, 12-mm length	TM 4/12 HF/HB	500	**1719840000**
Transparent sleeves, 18-mm length	TM 4/18 HF/HB	500	**1719850000**
Wire and cable marker, ø 4,7 - 7,4 mm	VT SF 5/21 NEUTRAL WS V0	160	**1689470001**
Wire and cable marker, ø 5,8 - 7,8 mm	VT SF 6/21 NEUTRAL WS V0	160	**1730560001**

Metre goods
Cat. 5 dragline cable

PUR, green



PUR, blue



Technical data

	PUR, green	PUR, blue
Product type	Dragline cable	Dragline cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA 568-B)	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA 568-B)
Shielding	SF/UTP	SF/UTP
Cross-section	4*2*AWG 26/7 - 4*2*0.128 mm²	4*2*AWG 26/7 - 4*2*0.128 mm²
Sheath diameter, max.	6.8 mm	6.8 mm
Material sheath	PUR	PUR
Sheathing colour	green (RAL 6018)	blue (RAL 5015)
Insulation cross-section	0.95 mm	0.95 mm
Min. bending radius, repetitive	7.5 *diameter	7.5 *diameter
Min. bending radius, once only	4 x conductor cross-section	4 x conductor cross-section
Bending cycles	5 Mio	5 Mio
Ambient temperature (operational)	-40 °C...+80 °C	-40 °C...+80 °C
Installation temperature	-20 °C...+60 °C	-20 °C...+60 °C
Storage temperature	-40 °C...+80 °C	-40 °C...+80 °C
Abrasion resistance	very good	very good
Halogen	to IEC 60754-2	to IEC 60754-2
Resistance to spread of flame	acc. to IEC 60332-1	acc. to IEC 60332-1
Resistance to oils	acc. to IEC 60811-2-1	acc. to IEC 60811-2-1
Note		

Ordering data

	Type	Qty.	Order No.	Type	Qty.	Order No.
100 m	IE-5TC4x2xAWG26/7-PUR	1	**8813210000**	IE-C5ED8UB-100M	1	**8960670000**
Bulk stock starting at 110 m	IE-C5ED8UG-MW	1	**8936390000**	IE-C5ED8UB-MW	1	**8949760000**
Note	Order example, for bulk: 150 x „article number" = 150 m on drum			Order example, for bulk: 150 x „article number" = 150 m on drum		

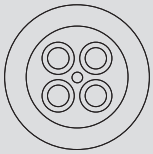
Accessories

Sheathing stripper	Type	Qty.	Order No.	Type	Qty.	Order No.
For UTP and STP data cables	AM 12	1	**9030060000**	AM 12	1	**9030060000**
For coaxial and round data cables	IE-CST	1	**9204350000**	IE-CST	1	**9204350000**
Markers						
Insertion label, yellow, 12 mm	TM-I 12 NEUTRAL GE	320	**1718411687**	TM-I 12 NEUTRAL GE	320	**1718411687**
Insertion label, yellow, 18 mm	TM-I 18 NEUTRAL GE	320	**1718431687**	TM-I 18 NEUTRAL GE	320	**1718431687**
Transparent sleeves, 12-mm length	TM 4/12 HF/HB	500	**1719840000**	TM 4/12 HF/HB	500	**1719840000**
Transparent sleeves, 18-mm length	TM 4/18 HF/HB	500	**1719850000**	TM 4/18 HF/HB	500	**1719850000**
Wire and cable marker, ø 4,7 - 7,4 mm	VT SF 5/21 NEUTRAL WS V0	160	**1689470001**	VT SF 5/21 NEUTRAL WS V0	160	**1689470001**
Wire and cable marker, ø 5,8 - 7,8 mm	VT SF 6/21 NEUTRAL WS V0	160	**1730560001**	VT SF 6/21 NEUTRAL WS V0	160	**1730560001**

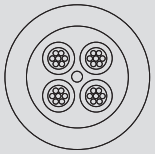
Metre goods
PROFINET cable

• PVC

Installation cable type A



Connection cable type B



Technical data

Product type	Installation cable	System cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA 568-B)	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA 568-B)
Shielding	SF/UTP	SF/UTP
Cross-section	4*AWG 22/1 - 0.33 mm²	4*AWG 22/7 - 0.36 mm²
Sheath diameter, max.	6.7 mm	6.7 mm
Material sheath	PVC	PVC
Sheathing colour	green (RAL 6018)	green (RAL 6018)
Insulation cross-section	1.5 mm	1.5 mm
Min. bending radius, repetitive	7.5 *diameter	7.5 *diameter
Min. bending radius, once only	3.5 x conductor cross-section	3.5 x conductor cross-section
Ambient temperature (operational)	-40 °C...+75 °C	-40 °C...+70 °C
Installation temperature	-20 °C...+60 °C	-20 °C...+60 °C
Storage temperature	-40 °C...+75 °C	-40 °C...+70 °C
Abrasion resistance	good	good
Resistance to spread of flame	acc. to IEC 60332-1 / UL 1685	acc. to IEC 60332-1 / UL 1685
Note		

Ordering data

	Type	Qty.	Order No.	Type	Qty.	Order No.
100 m	IE-C5AS4V1000	1	**8899000000**	IE-C5DS4V1000	1	**8898990000**
Bulk stock starting at 110 m	IE-C5AS4VG-MW	1	**8955950000**	IE-C5DS4VG-MW	1	**8955560000**
Note	Order example, for bulk: 150 x „article number“ = 150 m on drum			Order example, for bulk: 150 x „article number“ = 150 m on drum		

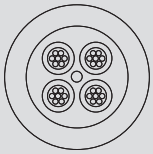
Accessories

Sheathing stripper	Type	Qty.	Order No.	Type	Qty.	Order No.
For UTP and STP data cables	AM 12	1	**9030060000**	AM 12	1	**9030060000**
For coaxial and round data cables	IE-CST	1	**9204350000**	IE-CST	1	**9204350000**
Markers						
Insertion label, yellow, 12 mm	TM-I 12 NEUTRAL GE	320	**1718411687**	TM-I 12 NEUTRAL GE	320	**1718411687**
Insertion label, yellow, 18 mm	TM-I 18 NEUTRAL GE	320	**1718431687**	TM-I 18 NEUTRAL GE	320	**1718431687**
Transparent sleeves, 12-mm length	TM 4/12 HF/HB	500	**1719840000**	TM 4/12 HF/HB	500	**1719840000**
Transparent sleeves, 18-mm length	TM 4/18 HF/HB	500	**1719850000**	TM 4/18 HF/HB	500	**1719850000**
Wire and cable marker, ø 4,7 - 7,4 mm	VT SF 5/21 NEUTRAL WS V0	160	**1689470001**	VT SF 5/21 NEUTRAL WS V0	160	**1689470001**
Wire and cable marker, ø 5,8 - 7,8 mm	VT SF 6/21 NEUTRAL WS V0	160	**1730560001**	VT SF 6/21 NEUTRAL WS V0	160	**1730560001**

Metre goods
PROFINET cable

- PUR

Dragline cable type C



Technical data

Product type	Dragline cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA 568-B)
Shielding	SF/UTP
Cross-section	4*AWG 22/7 - 0.36 mm²
Sheath diameter, max.	6.7 mm
Material sheath	PUR
Sheathing colour	green (RAL 6018)
Insulation cross-section	1.5 mm
Min. bending radius, repetitive	7.5 *diameter
Min. bending radius, once only	5 x conductor cross-section
Bending cycles	3 Mio
Ambient temperature (operational)	-40 °C...+70 °C
Installation temperature	-20 °C...+60 °C
Storage temperature	-50 °C...+70 °C
Abrasion resistance	very good
Halogen	to IEC 60754-2
Resistance to spread of flame	acc. to IEC 60332-1
Resistance to oils	acc. to IEC 60811-2-1
Note	

Ordering data

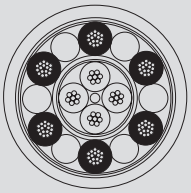
Cat,5 PROFINET, PUR	**Type**	**Qty.**	**Order No.**
100 m	IE-C5DD4U1000	1	**8899010000**
Bulk stock starting at 110 m	IE-C5DD4UG-MW	1	**8947670000**
Note	Order example, for bulk: 150 x „article number“ = 150 m on drum		

Accessories

Sheathing stripper	**Type**	**Qty.**	**Order No.**
For UTP and STP data cables	AM 12	1	**9030060000**
For coaxial and round data cables	IE-CST	1	**9204350000**
Markers			
Insertion label, yellow, 12 mm	TM-I 12 NEUTRAL GE	320	**1718411687**
Insertion label, yellow, 18 mm	TM-I 18 NEUTRAL GE	320	**1718431687**
Transparent sleeves, 12-mm length	TM 4/12 HF/HB	500	**1719840000**
Transparent sleeves, 18-mm length	TM 4/18 HF/HB	500	**1719850000**
Wire and cable marker, ø 4,7 - 7,4 mm	VT SF 5/21 NEUTRAL WS V0	160	**1689470001**
Wire and cable marker, ø 5,8 - 7,8 mm	VT SF 6/21 NEUTRAL WS V0	160	**1730560001**

Metre goods hybrid cable

PVC



Technical data

Product type	Connecting cables
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA 568-B)
Shielding	SF/UTP
Cross-section	4*AWG 22/7 - 0.36 mm², 6*0.5 mm²
Sheath diameter, max.	9.5 mm
Material sheath	PVC
Sheathing colour	green (RAL 6018)
Insulation cross-section / Insulation diameter 2	1.5 mm / 1.75 mm
Min. bending radius, repetitive	7.5 *diameter
Min. bending radius, once only	3.5 x conductor cross-section
Ambient temperature (operational)	-40 °C...+70 °C
Installation temperature	-20 °C...+60 °C
Storage temperature	-40 °C...+70 °C
Abrasion resistance	good
Halogen	Yes
Resistance to spread of flame	acc. to IEC 60332-1 / UL 1685
Resistance to oils	Limited
Note	

Ordering data

Type	Qty.	Order No.
IE-C5DHAG-MW	1	**1172250000**

Note

Order example, for bulk: 150 x „article number“ = 150 m on drum

Accessories

	Type	Qty.	Order No.
Sheathing stripper			
For UTP and STP data cables	AM 12	1	**9030060000**
For coaxial and round data cables	IE-CST	1	**9204350000**
Markers			
Insertion label, yellow, 12 mm	TM-I 12 NEUTRAL GE	320	**1718411687**
Insertion label, yellow, 18 mm	TM-I 18 NEUTRAL GE	320	**1718431687**
Transparent sleeves, 12-mm length	TM 4/12 HF/HB	500	**1719840000**
Transparent sleeves, 18-mm length	TM 4/18 HF/HB	500	**1719850000**
Wire and cable marker, ø 4,7 - 7,4 mm	VT SF 5/21 NEUTRAL WS V0	160	**1689470001**
Wire and cable marker, ø 5,8 - 7,8 mm	VT SF 6/21 NEUTRAL WS V0	160	**1730560001**

Assembled cables
Cat. 6 patch cable, straight, Cabinet Line

LSZH grey

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

LSZH blue

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	Patch cable	Patch cable
Category	Cat.6_A / Class E_A (ISO/IEC 11801 2010)	Cat.6_A / Class E_A (ISO/IEC 11801 2010)
Shielding	S/FTP	S/FTP
Version connector left / Version connector right	RJ45 IP20 / RJ45 IP 20	RJ45 IP20 / RJ45 IP 20
Cross-section	4*2*AWG 27/7 - 4*2*0.1 mm²	4*2*AWG 27/7 - 4*2*0.1 mm²
Sheath diameter, max.	5.9 mm	5.9 mm
Material sheath	LSZH	LSZH
Colour	grey	blue
Insulation cross-section	1.04 mm	1.04 mm
Min. bending radius, repetitive	50 mm	50 mm
Min. bending radius, once only	25 mm	25 mm
Ambient temperature (operational)	-20 °C...+60 °C	-20 °C...+60 °C
Installation temperature	0 °C...+50 °C	0 °C...+50 °C
Storage temperature	-20 °C...+60 °C	-20 °C...+60 °C
Halogen	to IEC 60754-2	to IEC 60754-2
Resistance to spread of flame	to IEC 60332-1/ UL 1581 FT2	to IEC 60332-1/ UL 1581 FT2
Note		

Ordering data

	Type	Qty.	Order No.	Type	Qty.	Order No.
0,5 m	IE-C6FP8LD0005M40M40-D	1	**1165940005**	IE-C6FP8LB0005M40M40-B	1	**1165900005**
1 m	IE-C6FP8LD0010M40M40-D	1	**1165940010**	IE-C6FP8LB0010M40M40-B	1	**1165900010**
1,5 m	IE-C6FP8LD0015M40M40-D	1	**1165940015**	IE-C6FP8LB0015M40M40-B	1	**1165900015**
2 m	IE-C6FP8LD0020M40M40-D	1	**1165940020**	IE-C6FP8LB0020M40M40-B	1	**1165900020**
3 m	IE-C6FP8LD0030M40M40-D	1	**1165940030**	IE-C6FP8LB0030M40M40-B	1	**1165900030**
5 m	IE-C6FP8LD0050M40M40-D	1	**1165940050**	IE-C6FP8LB0050M40M40-B	1	**1165900050**
7,5 m	IE-C6FP8LD0075M40M40-D	1	**1165940075**			
10 m	IE-C6FP8LD0100M40M40-D	1	**1165940100**	IE-C6FP8LB0100M40M40-B	1	**1165900100**
15 m	IE-C6FP8LD0150M40M40-D	1	**1165940150**	IE-C6FP8LB0150M40M40-B	1	**1165900150**
20 m	IE-C6FP8LD0200M40M40-D	1	**1165940200**	IE-C6FP8LB0200M40M40-B	1	**1165900200**
25 m	IE-C6FP8LD0250M40M40-D	1	**1165940250**	IE-C6FP8LB0250M40M40-B	1	**1165900250**
Note						

Accessories

Sheathing stripper	Type	Qty.	Order No.	Type	Qty.	Order No.
For UTP and STP data cables	AM 12	1	**9030060000**	AM 12	1	**9030060000**
For coaxial and round data cables	IE-CST	1	**9204350000**	IE-CST	1	**9204350000**
Markers						
Insertion label, yellow, 12 mm	TM-I 12 NEUTRAL GE	320	**1718411687**	TM-I 12 NEUTRAL GE	320	**1718411687**
Insertion label, yellow, 18 mm	TM-I 18 NEUTRAL GE	320	**1718431687**	TM-I 18 NEUTRAL GE	320	**1718431687**
Transparent sleeves, 12-mm length	TM 4/12 HF/HB	500	**1719840000**	TM 4/12 HF/HB	500	**1719840000**
Transparent sleeves, 18-mm length	TM 4/18 HF/HB	500	**1719850000**	TM 4/18 HF/HB	500	**1719850000**
Wire and cable marker, ø 4,7 - 7,4 mm	VT SF 5/21 NEUTRAL WS V0	160	**1689470001**	VT SF 5/21 NEUTRAL WS V0	160	**1689470001**
Wire and cable marker, ø 5,8 - 7,8 mm	VT SF 6/21 NEUTRAL WS V0	160	**1730560001**	VT SF 6/21 NEUTRAL WS V0	160	**1730560001**

Assembled cables
Cat. 6 patch cable, straight, Cabinet Line

LSZH black

LSZH green

Technical data

Product type	Patch cable	Patch cable
Category	Cat.6_A / Class E_A (ISO/IEC 11801 2010)	Cat.6_A / Class E_A (ISO/IEC 11801 2010)
Shielding	S/FTP	S/FTP
Version connector left / Version connector right	RJ45 IP20 / RJ45 IP 20	RJ45 IP20 / RJ45 IP 20
Cross-section	4*2*AWG 27/7 - 4*2*0.1 mm²	4*2*AWG 27/7 - 4*2*0.1 mm²
Sheath diameter, max.	5.9 mm	5.9 mm
Material sheath	LSZH	LSZH
Colour	black	green
Insulation cross-section	1.04 mm	1.04 mm
Min. bending radius, repetitive	50 mm	50 mm
Min. bending radius, once only	25 mm	25 mm
Ambient temperature (operational)	-20 °C...+60 °C	-20 °C...+60 °C
Installation temperature	0 °C...+50 °C	0 °C...+50 °C
Storage temperature	-20 °C...+60 °C	-20 °C...+60 °C
Halogen	to IEC 60754-2	to IEC 60754-2
Resistance to spread of flame	to IEC 60332-1/ UL 1581 FT2	to IEC 60332-1/ UL 1581 FT2
Note		

Ordering data

	Type	Qty.	Order No.	Type	Qty.	Order No.
0,5 m	IE-C6FP8LE0005M40M40-E	1	**1251610005**	IE-C6FP8LG0005M40M40-G	1	**1251590005**
1 m	IE-C6FP8LE0010M40M40-E	1	**1251610010**	IE-C6FP8LG0010M40M40-G	1	**1251590010**
1,5 m	IE-C6FP8LE0015M40M40-E	1	**1251610015**	IE-C6FP8LG0015M40M40-G	1	**1251590015**
2 m	IE-C6FP8LE0020M40M40-E	1	**1251610020**	IE-C6FP8LG0020M40M40-G	1	**1251590020**
3 m	IE-C6FP8LE0030M40M40-E	1	**1251610030**	IE-C6FP8LG0030M40M40-G	1	**1251590030**
5 m	IE-C6FP8LE0050M40M40-E	1	**1251610050**	IE-C6FP8LG0050M40M40-G	1	**1251590050**
10 m	IE-C6FP8LE0100M40M40-E	1	**1251610100**	IE-C6FP8LG0100M40M40-G	1	**1251590100**
15 m	IE-C6FP8LE0150M40M40-E	1	**1251610150**	IE-C6FP8LG0150M40M40-G	1	**1251590150**
20 m	IE-C6FP8LE0200M40M40-E	1	**1251610200**	IE-C6FP8LG0200M40M40-G	1	**1251590200**
25 m	IE-C6FP8LE0250M40M40-E	1	**1251610250**	IE-C6FP8LG0250M40M40-G	1	**1251590250**
Note						

Accessories

Sheathing stripper	Type	Qty.	Order No.	Type	Qty.	Order No.
For UTP and STP data cables	AM 12	1	**9030060000**	AM 12	1	**9030060000**
For coaxial and round data cables	IE-CST	1	**9204350000**	IE-CST	1	**9204350000**
Markers						
Insertion label, yellow, 12 mm	TM-I 12 NEUTRAL GE	320	**1718411687**	TM-I 12 NEUTRAL GE	320	**1718411687**
Insertion label, yellow, 18 mm	TM-I 18 NEUTRAL GE	320	**1718431687**	TM-I 18 NEUTRAL GE	320	**1718431687**
Transparent sleeves, 12-mm length	TM 4/12 HF/HB	500	**1719840000**	TM 4/12 HF/HB	500	**1719840000**
Transparent sleeves, 18-mm length	TM 4/18 HF/HB	500	**1719850000**	TM 4/18 HF/HB	500	**1719850000**
Wire and cable marker, ø 4,7 - 7,4 mm	VT SF 5/21 NEUTRAL WS V0	160	**1689470001**	VT SF 5/21 NEUTRAL WS V0	160	**1689470001**
Wire and cable marker, ø 5,8 - 7,8 mm	VT SF 6/21 NEUTRAL WS V0	160	**1730560001**	VT SF 6/21 NEUTRAL WS V0	160	**1730560001**

LSZH red

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

Patch cable
Cat.6$_A$ / Class E$_A$ (ISO/IEC 11801 2010)
S/FTP
RJ45 IP20 / RJ45 IP 20
4*2*AWG 27/7 - 4*2*0.1 mm²
5.9 mm
LSZH
red
1.04 mm
50 mm
25 mm
-20 °C...+60 °C
0 °C...+50 °C
-20 °C...+60 °C
to IEC 60754-2
to IEC 60332-1/ UL 1581 FT2

Type	Qty.	Order No.
IE-C6FP8LR0005M40M40-R	1	**1166030005**
IE-C6FP8LR0010M40M40-R	1	**1166030010**
IE-C6FP8LR0015M40M40-R	1	**1166030015**
IE-C6FP8LR0020M40M40-R	1	**1166030020**
IE-C6FP8LR0030M40M40-R	1	**1166030030**
IE-C6FP8LR0050M40M40-R	1	**1166030050**
IE-C6FP8LR0100M40M40-R	1	**1166030100**
IE-C6FP8LR0150M40M40-R	1	**1166030150**
IE-C6FP8LR0200M40M40-R	1	**1166030200**
IE-C6FP8LR0250M40M40-R	1	**1166030250**

Type	Qty.	Order No.
AM 12	1	**9030060000**
IE-CST	1	**9204350000**
TM-I 12 NEUTRAL GE	320	**1718411687**
TM-I 18 NEUTRAL GE	320	**1718431687**
TM 4/12 HF/HB	500	**1719840000**
TM 4/18 HF/HB	500	**1719850000**
VT SF 5/21 NEUTRAL WS V0	160	**1689470001**
VT SF 6/21 NEUTRAL WS V0	160	**1730560001**

LSZH magenta

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

Patch cable
Cat.6$_A$ / Class E$_A$ (ISO/IEC 11801 2010)
S/FTP
RJ45 IP20 / RJ45 IP 20
4*2*AWG 27/7 - 4*2*0.1 mm²
5.9 mm
LSZH
magenta
1.04 mm
50 mm
25 mm
-20 °C...+60 °C
0 °C...+50 °C
-20 °C...+60 °C
to IEC 60754-2
to IEC 60332-1/ UL 1581 FT2

Type	Qty.	Order No.
IE-C6FP8LM0005M40M40-M	1	**1201270005**
IE-C6FP8LM0010M40M40-M	1	**1201270010**
IE-C6FP8LM0015M40M40-M	1	**1201270015**
IE-C6FP8LM0020M40M40-M	1	**1201270020**
IE-C6FP8LM0030M40M40-M	1	**1201270030**
IE-C6FP8LM0050M40M40-M	1	**1201270050**
IE-C6FP8LM0100M40M40-M	1	**1201270100**
IE-C6FP8LM0150M40M40-M	1	**1201270150**
IE-C6FP8LM0200M40M40-M	1	**1201270200**

Type	Qty.	Order No.
AM 12	1	**9030060000**
IE-CST	1	**9204350000**
TM-I 12 NEUTRAL GE	320	**1718411687**
TM-I 18 NEUTRAL GE	320	**1718431687**
TM 4/12 HF/HB	500	**1719840000**
TM 4/18 HF/HB	500	**1719850000**
VT SF 5/21 NEUTRAL WS V0	160	**1689470001**
VT SF 6/21 NEUTRAL WS V0	160	**1730560001**

LSZH yellow

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

Patch cable
Cat.6$_A$ / Class E$_A$ (ISO/IEC 11801 2010)
S/FTP
RJ45 IP20 / RJ45 IP 20
4*2*AWG 27/7 - 4*2*0.1 mm²
5.9 mm
LSZH
yellow
1.04 mm
50 mm
25 mm
-20 °C...+60 °C
0 °C...+50 °C
-20 °C...+60 °C
to IEC 60754-2
to IEC 60332-1/ UL 1581 FT2

Type	Qty.	Order No.
IE-C6FP8LY0005M40M40-Y	1	**1251580005**
IE-C6FP8LY0010M40M40-Y	1	**1251580010**
IE-C6FP8LY0015M40M40-Y	1	**1251580015**
IE-C6FP8LY0020M40M40-Y	1	**1251580020**
IE-C6FP8LY0030M40M40-Y	1	**1251580030**
IE-C6FP8LY0050M40M40-Y	1	**1251580050**
IE-C6FP8LY0100M40M40-Y	1	**1251580100**
IE-C6FP8LY0150M40M40-Y	1	**1251580150**
IE-C6FP8LY0200M40M40-Y	1	**1251580200**
IE-C6FP8LY0250M40M40-Y	1	**1251580250**

Type	Qty.	Order No.
AM 12	1	**9030060000**
IE-CST	1	**9204350000**
TM-I 12 NEUTRAL GE	320	**1718411687**
TM-I 18 NEUTRAL GE	320	**1718431687**
TM 4/12 HF/HB	500	**1719840000**
TM 4/18 HF/HB	500	**1719850000**
VT SF 5/21 NEUTRAL WS V0	160	**1689470001**
VT SF 6/21 NEUTRAL WS V0	160	**1730560001**

Assembled cables
Cat. 6 Cabinet Line patch cable angled

LSZH grey 270°

LSZH grey 90°

Technical data

Product type	Patch cable	Patch cable
Category	Cat.6_A / Class E_A (ISO/IEC 11801 2010)	Cat.6_A / Class E_A (ISO/IEC 11801 2010)
Shielding	S/FTP	S/FTP
Version connector left / Version connector right	RJ45 IP20, Angled 270° / RJ45 IP 20	RJ45 IP20, Angled 90° / RJ45 IP 20
Cross-section	4*2*AWG 27/7 - 4*2*0.1 mm²	4*2*AWG 27/7 - 4*2*0.1 mm²
Sheath diameter, max.	5.9 mm	5.9 mm
Material sheath	LSZH	LSZH
Colour	grey	grey
Insulation cross-section	1.04 mm	1.04 mm
Min. bending radius, repetitive	50 mm	50 mm
Min. bending radius, once only	25 mm	25 mm
Ambient temperature (operational)	-20 °C...+60 °C	-20 °C...+60 °C
Installation temperature	0 °C...+50 °C	0 °C...+50 °C
Storage temperature	-20 °C...+60 °C	-20 °C...+60 °C
Halogen	to IEC 60754-2	to IEC 60754-2
Resistance to spread of flame	to IEC 60332-1/ UL 1581 FT2	to IEC 60332-1/ UL 1581 FT2
Note		

Ordering data

	Type	Qty.	Order No.	Type	Qty.	Order No.
0,5 m	IE-C6FP8LD0005M40W40-D	1	**1233160005**	IE-C6FP8LD0005M40V40-D	1	**1248280005**
1 m	IE-C6FP8LD0010M40W40-D	1	**1233160010**	IE-C6FP8LD0010M40V40-D	1	**1248280010**
1,2 m	IE-C6FP8LD0012M40W40-D	1	**1233160012**	IE-C6FP8LD0012M40V40-D	1	**1248280012**
1,5 m	IE-C6FP8LD0015M40W40-D	1	**1233160015**	IE-C6FP8LD0015M40V40-D	1	**1248280015**
2 m	IE-C6FP8LD0020M40W40-D	1	**1233160020**	IE-C6FP8LD0020M40V40-D	1	**1248280020**
3 m	IE-C6FP8LD0030M40W40-D	1	**1233160030**	IE-C6FP8LD0030M40V40-D	1	**1248280030**
5 m	IE-C6FP8LD0050M40W40-D	1	**1233160050**	IE-C6FP8LD0050M40V40-D	1	**1248280050**
10 m	IE-C6FP8LD0100M40W40-D	1	**1233160100**	IE-C6FP8LD0100M40V40-D	1	**1248280100**

Note

Accessories

Sheathing stripper	Type	Qty.	Order No.	Type	Qty.	Order No.
For UTP and STP data cables	AM 12	1	**9030060000**	AM 12	1	**9030060000**
For coaxial and round data cables	IE-CST	1	**9204350000**	IE-CST	1	**9204350000**
Markers						
Insertion label, yellow, 12 mm	TM-I 12 NEUTRAL GE	320	**1718411687**	TM-I 12 NEUTRAL GE	320	**1718411687**
Insertion label, yellow, 18 mm	TM-I 18 NEUTRAL GE	320	**1718431687**	TM-I 18 NEUTRAL GE	320	**1718431687**
Transparent sleeves, 12-mm length	TM 4/12 HF/HB	500	**1719840000**	TM 4/12 HF/HB	500	**1719840000**
Transparent sleeves, 18-mm length	TM 4/18 HF/HB	500	**1719850000**	TM 4/18 HF/HB	500	**1719850000**
Wire and cable marker, ø 4,7 - 7,4 mm	VT SF 5/21 NEUTRAL WS V0	160	**1689470001**	VT SF 5/21 NEUTRAL WS V0	160	**1689470001**
Wire and cable marker, ø 5,8 - 7,8 mm	VT SF 6/21 NEUTRAL WS V0	160	**1730560001**	VT SF 6/21 NEUTRAL WS V0	160	**1730560001**

Assembled cables
Cat. 5 patch cable, straight, Cabinet Line

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	System cable
Category	Cat.6 (ISO/IEC 11801)	Cat.5 (ISO/IEC 11801)
Shielding	S/FTP	S/FTP
Version connector left / Version connector right	RJ45 IP20 crimp / RJ45 IP20 crimp	RJ45 IP20 crimp / RJ45 IP20 crimp
Cross-section	4*2*AWG 26/7 - 4*2*0.128 mm²	4*2*AWG 26/7 - 4*2*0.128 mm²
Sheath diameter, max.	6.4 mm	6 mm
Material sheath	PVC	PUR
Sheathing colour	green (RAL 6018)	green (RAL 6018)
Insulation cross-section	0.98 mm	0.98 mm
Min. bending radius, repetitive	10 x conductor cross-section	10 x conductor cross-section
Min. bending radius, once only	5 x conductor cross-section	5 x conductor cross-section
Ambient temperature (operational)	-40 °C...+75 °C	-40 °C...+75 °C
Abrasion resistance	good	very good
Halogen		No
Resistance to spread of flame	acc. to IEC 60332-1	acc. to IEC 60332-1
Resistance to oils		EN 50305
Note		

Ordering data

	Type	Qty.	Order No.	Type	Qty.	Order No.
0,5 m	IE-C5ES8VG0005M40M40-G	1	**1166020005**	IE-C5ES8UG0005M40M40-G	1	**1166000005**
1 m	IE-C5ES8VG0010M40M40-G	1	**1166020010**	IE-C5ES8UG0010M40M40-G	1	**1166000010**
1,5 m	IE-C5ES8VG0015M40M40-G	1	**1166020015**	IE-C5ES8UG0015M40M40-G	1	**1166000015**
2 m	IE-C5ES8VG0020M40M40-G	1	**1166020020**	IE-C5ES8UG0020M40M40-G	1	**1166000020**
3 m	IE-C5ES8VG0030M40M40-G	1	**1166020030**	IE-C5ES8UG0030M40M40-G	1	**1166000030**
5 m	IE-C5ES8VG0050M40M40-G	1	**1166020050**	IE-C5ES8UG0050M40M40-G	1	**1166000050**
10 m	IE-C5ES8VG0100M40M40-G	1	**1166020100**	IE-C5ES8UG0100M40M40-G	1	**1166000100**
15 m	IE-C5ES8VG0150M40M40-G	1	**1166020150**	IE-C5ES8UG0150M40M40-G	1	**1166000150**
20 m	IE-C5ES8VG0200M40M40-G	1	**1166020200**	IE-C5ES8UG0200M40M40-G	1	**1166000200**
Note						

Accessories

Sheathing stripper	Type	Qty.	Order No.	Type	Qty.	Order No.
For UTP and STP data cables	AM 12	1	**9030060000**	AM 12	1	**9030060000**
For coaxial and round data cables	IE-CST	1	**9204350000**	IE-CST	1	**9204350000**
Markers						
Insertion label, yellow, 12 mm	TM-I 12 NEUTRAL GE	320	**1718411687**	TM-I 12 NEUTRAL GE	320	**1718411687**
Insertion label, yellow, 18 mm	TM-I 18 NEUTRAL GE	320	**1718431687**	TM-I 18 NEUTRAL GE	320	**1718431687**
Transparent sleeves, 12-mm length	TM 4/12 HF/HB	500	**1719840000**	TM 4/12 HF/HB	500	**1719840000**
Transparent sleeves, 18-mm length	TM 4/18 HF/HB	500	**1719850000**	TM 4/18 HF/HB	500	**1719850000**
Wire and cable marker, ø 4,7 - 7,4 mm	VT SF 5/21 NEUTRAL WS V0	160	**1689470001**	VT SF 5/21 NEUTRAL WS V0	160	**1689470001**
Wire and cable marker, ø 5,8 - 7,8 mm	VT SF 6/21 NEUTRAL WS V0	160	**1730560001**	VT SF 6/21 NEUTRAL WS V0	160	**1730560001**

Assembled cables
Cat. 5 patch cable, PROFINET dragline cable (type C)

V14 RJ45 IP67

RJ45		RJ45
1	yellow	1
2	orange	2
3	white	3
6	blue	6

RJ45 IP20

RJ45		RJ45
1	yellow	1
2	orange	2
3	white	3
6	blue	6

Technical data

Product type	Dragline cable	Dragline cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA 568-B)	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA 568-B)
Shielding	SF/UTP	SF/UTP
Version connector left / Version connector right	RJ45 IP67 PushPull V14 metal / RJ45 IP67 PushPull V14 metal	RJ45 IP20 / RJ45 IP 20
Cross-section	4*AWG 22/7 - 0.36 mm²	4*AWG 22/7 - 0.36 mm²
Sheath diameter, max.	6.7 mm	6.7 mm
Material sheath	PUR	PUR
Insulation cross-section	1.5 mm	1.5 mm
Min. bending radius, repetitive / Min. bending radius, once only	7.5 *diameter / 5 x conductor cross-section	7.5 *diameter / 5 x conductor cross-section
Bending cycles	3 Mio	3 Mio
Speed	180 m/min	180 m/min
Acceleration	4 m/s²	4 m/s²
Pulling force	≤ 150 N	≤ 150 N
Ambient temperature (operational)	-40 °C...+70 °C	-40 °C...+70 °C
Installation temperature	-20 °C...+60 °C	-20 °C...+60 °C
Storage temperature	-50 °C...+70 °C	-50 °C...+70 °C
Abrasion resistance	very good	very good
Halogen	to IEC 60754-2	to IEC 60754-2
Resistance to spread of flame	acc. to IEC 60332-1	acc. to IEC 60332-1
Resistance to oils	acc. to IEC 60811-2-1	acc. to IEC 60811-2-1
Note		

Ordering data

	Type	Qty.	Order No.	Type	Qty.	Order No.
0,5 m				IE-C5DD4UG0005A20A20-E	1	**1173030005**
1 m	IE-C5DD4UG0010A2EA2E-X	1	**1119730010**	IE-C5DD4UG0010A20A20-E	1	**1173030010**
2 m	IE-C5DD4UG0020A2EA2E-X	1	**1119730020**	IE-C5DD4UG0020A20A20-E	1	**1173030020**
3 m	IE-C5DD4UG0030A2EA2E-X	1	**1119730030**	IE-C5DD4UG0030A20A20-E	1	**1173030030**
5 m	IE-C5DD4UG0050A2EA2E-X	1	**1119730050**	IE-C5DD4UG0050A20A20-E	1	**1173030050**
10 m	IE-C5DD4UG0100A2EA2E-X	1	**1119730100**	IE-C5DD4UG0100A20A20-E	1	**1173030100**
15 m	IE-C5DD4UG0150A2EA2E-X	1	**1119730150**	IE-C5DD4UG0150A20A20-E	1	**1173030150**
20 m	IE-C5DD4UG0200A2EA2E-X	1	**1119730200**	IE-C5DD4UG0200A20A20-E	1	**1173030200**
Note						

Accessories

Sheathing stripper	Type	Qty.	Order No.	Type	Qty.	Order No.
For UTP and STP data cables	AM 12	1	**9030060000**	AM 12	1	**9030060000**
For coaxial and round data cables	IE-CST	1	**9204350000**	IE-CST	1	**9204350000**
Markers						
Insertion label, yellow, 12 mm	TM-I 12 NEUTRAL GE	320	**1718411687**	TM-I 12 NEUTRAL GE	320	**1718411687**
Insertion label, yellow, 18 mm	TM-I 18 NEUTRAL GE	320	**1718431687**	TM-I 18 NEUTRAL GE	320	**1718431687**
Transparent sleeves, 12-mm length	TM 4/12 HF/HB	500	**1719840000**	TM 4/12 HF/HB	500	**1719840000**
Transparent sleeves, 18-mm length	TM 4/18 HF/HB	500	**1719850000**	TM 4/18 HF/HB	500	**1719850000**
Wire and cable marker, ø 4,7 - 7,4 mm	VT SF 5/21 NEUTRAL WS V0	160	**1689470001**	VT SF 5/21 NEUTRAL WS V0	160	**1689470001**
Wire and cable marker, ø 5,8 - 7,8 mm	VT SF 6/21 NEUTRAL WS V0	160	**1730560001**	VT SF 6/21 NEUTRAL WS V0	160	**1730560001**

Assembled cables dragline cable M12

- Cat.5
- PUR
- D-coded
- PROFINET type C

M12 - M12

plug / plug

M12		M12
1	yellow	1
2	white	2
3	orange	3
4	blue	4

M12 - M12

plug / socket

M12		M12
1	yellow	1
2	white	2
3	orange	3
4	blue	4

Technical data

Product type	Dragline cable	Dragline cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA 568-B)	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA 568-B)
Shielding	SF/UTP	SF/UTP
Version connector left / Version connector right	M12 IP67 straight male / M12 IP67 straight male	M12 IP67 straight male / M12 IP67 straight socket
Cross-section	4*AWG 22/7 - 0.36 mm²	4*AWG 22/7 - 0.36 mm²
Sheath diameter, max.	6.7 mm	6.7 mm
Material sheath	PUR	PUR
Sheathing colour	green (RAL 6018)	green (RAL 6018)
Insulation cross-section	1.5 mm	1.5 mm
Min. bending radius, repetitive	7.5 *diameter	7.5 *diameter
Min. bending radius, once only	5 x conductor cross-section	5 x conductor cross-section
Bending cycles	3 Mio	3 Mio
Speed	180 m/min	180 m/min
Acceleration	4 m/s²	4 m/s²
Pulling force	≤ 150 N	≤ 150 N
Ambient temperature (operational)	-40 °C...+70 °C	-40 °C...+70 °C
Installation temperature	-20 °C...+60 °C	-20 °C...+60 °C
Storage temperature	-50 °C...+70 °C	-50 °C...+70 °C
Abrasion resistance	very good	very good
Halogen	to IEC 60754-2	to IEC 60754-2
Resistance to spread of flame	acc. to IEC 60332-1	acc. to IEC 60332-1
Resistance to oils	acc. to IEC 60811-2-1	acc. to IEC 60811-2-1
Note		

Ordering data

	Type	Qty.	Order No.	Type	Qty.	Order No.
0,5 m	IE-C5DD4UG0005MCSMCS-E	1	**1025950005**			
1,5 m	IE-C5DD4UG0015MCSMCS-E	1	**1025950015**	IE-C5DD4UG0015MSSMCS-E	1	**1059330015**
3 m	IE-C5DD4UG0030MCSMCS-E	1	**1025950030**	IE-C5DD4UG0030MSSMCS-E	1	**1059330030**
5 m	IE-C5DD4UG0050MCSMCS-E	1	**1025950050**	IE-C5DD4UG0050MSSMCS-E	1	**1059330050**
10 m	IE-C5DD4UG0100MCSMCS-E	1	**1025950100**	IE-C5DD4UG0100MSSMCS-E	1	**1059330100**

Note

Accessories

Sheathing stripper	Type	Qty.	Order No.	Type	Qty.	Order No.
For UTP and STP data cables	AM 12	1	**9030060000**	AM 12	1	**9030060000**
For coaxial and round data cables	IE-CST	1	**9204350000**	IE-CST	1	**9204350000**
Markers						
Insertion label, yellow, 12 mm	TM-I 12 NEUTRAL GE	320	**1718411687**	TM-I 12 NEUTRAL GE	320	**1718411687**
Insertion label, yellow, 18 mm	TM-I 18 NEUTRAL GE	320	**1718431687**	TM-I 18 NEUTRAL GE	320	**1718431687**
Transparent sleeves, 12-mm length	TM 4/12 HF/HB	500	**1719840000**	TM 4/12 HF/HB	500	**1719840000**
Transparent sleeves, 18-mm length	TM 4/18 HF/HB	500	**1719850000**	TM 4/18 HF/HB	500	**1719850000**
Wire and cable marker, ø 4,7 - 7,4 mm	VT SF 5/21 NEUTRAL WS V0	160	**1689470001**	VT SF 5/21 NEUTRAL WS V0	160	**1689470001**
Wire and cable marker, ø 5,8 - 7,8 mm	VT SF 6/21 NEUTRAL WS V0	160	**1730560001**	VT SF 6/21 NEUTRAL WS V0	160	**1730560001**

Assembled cables dragline cable M12

- Cat.5
- PUR
- D-coded
- PROFINET type C

M12 - open

plug / -

	M12
yellow	1
white	2
orange	3
blue	4

M12 - RJ45

plug / plug

RJ45		M12
1	yellow	1
3	white	2
2	orange	3
6	blue	4

Technical data

Product type	Dragline cable	Dragline cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA 568-B)	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA 568-B)
Shielding	SF/UTP	SF/UTP
Version connector left / Version connector right	M12 IP67 straight male / Open	M12 IP67 straight male / RJ45 IP 20
Cross-section	4*AWG 22/7 - 0.36 mm²	4*AWG 22/7 - 0.36 mm²
Sheath diameter, max.	6.7 mm	6.7 mm
Material sheath	PUR	PUR
Sheathing colour	green (RAL 6018)	green (RAL 6018)
Insulation cross-section	1.5 mm	1.5 mm
Min. bending radius, repetitive	7.5 *diameter	7.5 *diameter
Min. bending radius, once only	5 x conductor cross-section	5 x conductor cross-section
Bending cycles	3 Mio	3 Mio
Speed	180 m/min	180 m/min
Acceleration	4 m/s²	4 m/s²
Pulling force	≤ 150 N	≤ 150 N
Ambient temperature (operational)	-40 °C...+70 °C	-40 °C...+70 °C
Installation temperature	-20 °C...+60 °C	-20 °C...+60 °C
Storage temperature	-50 °C...+70 °C	-50 °C...+70 °C
Abrasion resistance	very good	very good
Halogen	to IEC 60754-2	to IEC 60754-2
Resistance to spread of flame	acc. to IEC 60332-1	acc. to IEC 60332-1
Resistance to oils	acc. to IEC 60811-2-1	acc. to IEC 60811-2-1
Note		

Ordering data

	Type	Qty.	Order No.	Type	Qty.	Order No.
1 m				IE-C5DD4UG0010MCSA20-E	1	**1044470010**
1,5 m	IE-C5DD4UG0015MCSXXX-X	1	**1025940015**	IE-C5DD4UG0015MCSA20-E	1	**1044470015**
3 m	IE-C5DD4UG0030MCSXXX-X	1	**1025940030**	IE-C5DD4UG0030MCSA20-E	1	**1044470030**
5 m	IE-C5DD4UG0050MCSXXX-X	1	**1025940050**	IE-C5DD4UG0050MCSA20-E	1	**1044470050**
10 m	IE-C5DD4UG0100MCSXXX-X	1	**1025940100**	IE-C5DD4UG0100MCSA20-E	1	**1044470100**
Note						

Accessories

Sheathing stripper	Type	Qty.	Order No.	Type	Qty.	Order No.
For UTP and STP data cables	AM 12	1	**9030060000**	AM 12	1	**9030060000**
For coaxial and round data cables	IE-CST	1	**9204350000**	IE-CST	1	**9204350000**
Markers						
Insertion label, yellow, 12 mm	TM-I 12 NEUTRAL GE	320	**1718411687**	TM-I 12 NEUTRAL GE	320	**1718411687**
Insertion label, yellow, 18 mm	TM-I 18 NEUTRAL GE	320	**1718431687**	TM-I 18 NEUTRAL GE	320	**1718431687**
Transparent sleeves, 12-mm length	TM 4/12 HF/HB	500	**1719840000**	TM 4/12 HF/HB	500	**1719840000**
Transparent sleeves, 18-mm length	TM 4/18 HF/HB	500	**1719850000**	TM 4/18 HF/HB	500	**1719850000**
Wire and cable marker, ø 4,7 - 7,4 mm	VT SF 5/21 NEUTRAL WS V0	160	**1689470001**	VT SF 5/21 NEUTRAL WS V0	160	**1689470001**
Wire and cable marker, ø 5,8 - 7,8 mm	VT SF 6/21 NEUTRAL WS V0	160	**1730560001**	VT SF 6/21 NEUTRAL WS V0	160	**1730560001**

Assembled cables
EtherNet/IP patch cable

- In PUR

V1 RJ45 IP67 - metal

RJ45		RJ45
1	white, orange	1
2	orange	2
3	white, green	3
4	blue	4
5	white, blue	5
6	green	6
7	white, brown	7
8	brown	8

V1 RJ45 IP67 - plastic

RJ45		RJ45
1	white, orange	1
2	orange	2
3	white, green	3
4	blue	4
5	white, blue	5
6	green	6
7	white, brown	7
8	brown	8

Technical data

Product type	System cable	System cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA 568-B)	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA 568-B)
Shielding	SF/UTP	SF/UTP
Version connector left / Version connector right	RJ45 IP67 Baymo V01 metal / RJ45 IP67 Baymo V01 metal	RJ45 IP67 Baymo V01 plastic / RJ45 IP67 Baymo V01 plastic
Cross-section	4*2*AWG 26/7 - 4*2*0.128 mm²	4*2*AWG 26/7 - 4*2*0.128 mm²
Sheath diameter, max.	6.1 mm	6.1 mm
Material sheath	PUR	PUR
Sheathing colour	green (RAL 6018)	green (RAL 6018)
Insulation cross-section	1 mm	1 mm
Min. bending radius, repetitive	10 x conductor cross-section	10 x conductor cross-section
Min. bending radius, once only	5 x conductor cross-section	5 x conductor cross-section
Ambient temperature (operational)	-40 °C...+80 °C	-40 °C...+80 °C
Installation temperature	-10 °C...+60 °C	-10 °C...+60 °C
Storage temperature	-40 °C...+80 °C	-40 °C...+80 °C
Abrasion resistance	very good	very good
Halogen	to IEC 60754-2	to IEC 60754-2
Resistance to spread of flame	acc. to IEC 60332-1	acc. to IEC 60332-1
Resistance to oils	acc. to IEC 60811-2-1	acc. to IEC 60811-2-1
Note		

Ordering data

	Type	Qty.	Order No.	Type	Qty.	Order No.
1 m	IE-C5ES8UG0010B41B41-E	1	**1066850000**	IE-C5ES8UG0010P41P41-E	1	**1106010000**
2 m	IE-C5ES8UG0020B41B41-E	1	**1066860000**	IE-C5ES8UG0020P41P41-E	1	**1106020000**
5 m	IE-C5ES8UG0050B41B41-E	1	**1066870000**	IE-C5ES8UG0050P41P41-E	1	**1106030000**
10 m	IE-C5ES8UG0100B41B41-E	1	**1066880000**	IE-C5ES8UG0100P41P41-E	1	**1106040000**

Note

Accessories

Sheathing stripper	Type	Qty.	Order No.	Type	Qty.	Order No.
For UTP and STP data cables	AM 12	1	**9030060000**	AM 12	1	**9030060000**
For coaxial and round data cables	IE-CST	1	**9204350000**	IE-CST	1	**9204350000**
Markers						
Insertion label, yellow, 12 mm	TM-I 12 NEUTRAL GE	320	**1718411687**	TM-I 12 NEUTRAL GE	320	**1718411687**
Insertion label, yellow, 18 mm	TM-I 18 NEUTRAL GE	320	**1718431687**	TM-I 18 NEUTRAL GE	320	**1718431687**
Transparent sleeves, 12-mm length	TM 4/12 HF/HB	500	**1719840000**	TM 4/12 HF/HB	500	**1719840000**
Transparent sleeves, 18-mm length	TM 4/18 HF/HB	500	**1719850000**	TM 4/18 HF/HB	500	**1719850000**
Wire and cable marker, ø 4,7 - 7,4 mm	VT SF 5/21 NEUTRAL WS V0	160	**1689470001**	VT SF 5/21 NEUTRAL WS V0	160	**1689470001**
Wire and cable marker, ø 5,8 - 7,8 mm	VT SF 6/21 NEUTRAL WS V0	160	**1730560001**	VT SF 6/21 NEUTRAL WS V0	160	**1730560001**

Assembled cables
M12 Railway cabling

- Cat.5
- Radox
- D-coded

M12 - M12

plug / plug

M12		M12
1	yellow	1
2	white	2
3	orange	3
4	blue	4

M12 - M12

plug / socket

M12		M12
1	yellow	1
2	white	2
3	orange	3
4	blue	4

Technical data

Product type	System cable	System cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA 568-B)	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA 568-B)
Shielding	SF/UTP	SF/UTP
Version connector left / Version connector right	M12 IP67 straight male / M12 IP67 straight male	M12 IP67 straight male / M12 IP67 straight socket
Cross-section	2*2*AWG 22/7 - 2*2*0.36 mm²	2*2*AWG 22/7 - 2*2*0.36 mm²
Sheath diameter, max.	7.55 mm	7.55 mm
Material sheath	Radox GKW S	Radox GKW S
Sheathing colour	black	black
Insulation cross-section	1.95 mm	1.95 mm
Min. bending radius, repetitive	6 x conductor cross-section	6 x conductor cross-section
Ambient temperature (operational)	-40 °C...+90 °C	-40 °C...+90 °C
Installation temperature	-25 °C...+90 °C	-25 °C...+90 °C
Storage temperature	-40 °C...+90 °C	-40 °C...+90 °C
Abrasion resistance	very good	very good
Halogen	to IEC 60754-2	to IEC 60754-2
Resistance to oils	acc. EN 50306-3	acc. 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 DIN 5510-2 fire safety levels 1,2,3,4, According to BS 6853, According to EN50288-2-2
Note		

Ordering data

	Type	Qty.	Order No.	Type	Qty.	Order No.
1,5 m	IE-C5DB4RE0015MCSMCS-E	1	**1010850015**	IE-C5DB4RE0015MSSMCS-E	1	**1059340015**
3 m	IE-C5DB4RE0030MCSMCS-E	1	**1010850030**	IE-C5DB4RE0030MSSMCS-E	1	**1059340030**
5 m	IE-C5DB4RE0050MCSMCS-E	1	**1010850050**	IE-C5DB4RE0050MSSMCS-E	1	**1059340050**
10 m	IE-C5DB4RE0100MCSMCS-E	1	**1010850100**	IE-C5DB4RE0100MSSMCS-E	1	**1059340100**
Note						

Accessories

Sheathing stripper	Type	Qty.	Order No.	Type	Qty.	Order No.
For UTP and STP data cables	AM 12	1	**9030060000**	AM 12	1	**9030060000**
For coaxial and round data cables	IE-CST	1	**9204350000**	IE-CST	1	**9204350000**
Markers						
Insertion label, yellow, 12 mm	TM-I 12 NEUTRAL GE	320	**1718411687**	TM-I 12 NEUTRAL GE	320	**1718411687**
Insertion label, yellow, 18 mm	TM-I 18 NEUTRAL GE	320	**1718431687**	TM-I 18 NEUTRAL GE	320	**1718431687**
Transparent sleeves, 12-mm length	TM 4/12 HF/HB	500	**1719840000**	TM 4/12 HF/HB	500	**1719840000**
Transparent sleeves, 18-mm length	TM 4/18 HF/HB	500	**1719850000**	TM 4/18 HF/HB	500	**1719850000**
Wire and cable marker, ø 4,7 - 7,4 mm	VT SF 5/21 NEUTRAL WS V0	160	**1689470001**	VT SF 5/21 NEUTRAL WS V0	160	**1689470001**
Wire and cable marker, ø 5,8 - 7,8 mm	VT SF 6/21 NEUTRAL WS V0	160	**1730560001**	VT SF 6/21 NEUTRAL WS V0	160	**1730560001**

Assembled cables
M12 Railway cabling

- 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 568-B)
Shielding	SF/UTP
Version connector left / Version connector right	M12 IP67 straight male / Open
Cross-section	2*2*AWG 22/7 - 2*2*0.36 mm²
Sheath diameter, max.	7.55 mm
Material sheath	Radox GKW S
Sheathing colour	black
Insulation cross-section	1.95 mm
Min. bending radius, repetitive	6 x conductor cross-section
Ambient temperature (operational)	-40 °C...+90 °C
Installation temperature	-25 °C...+90 °C
Storage temperature	-40 °C...+90 °C
Abrasion resistance	very good
Halogen	to IEC 60754-2
Resistance to oils	acc. 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

Note

Ordering data

	Type	Qty.	Order No.
1,5 m	IE-C5DB4RE0015MCSXXX-X	1	**1010840015**
3 m	IE-C5DB4RE0030MCSXXX-X	1	**1010840030**
5 m	IE-C5DB4RE0050MCSXXX-X	1	**1010840050**
10 m	IE-C5DB4RE0100MCSXXX-X	1	**1010840100**

Note

Accessories

Sheathing stripper	**Type**	**Qty.**	**Order No.**
For UTP and STP data cables	AM 12	1	**9030060000**
For coaxial and round data cables	IE-CST	1	**9204350000**
Markers			
Insertion label, yellow, 12 mm	TM-I 12 NEUTRAL GE	320	**1718411687**
Insertion label, yellow, 18 mm	TM-I 18 NEUTRAL GE	320	**1718431687**
Transparent sleeves, 12-mm length	TM 4/12 HF/HB	500	**1719840000**
Transparent sleeves, 18-mm length	TM 4/18 HF/HB	500	**1719850000**
Wire and cable marker, ø 4,7 - 7,4 mm	VT SF 5/21 NEUTRAL WS V0	160	**1689470001**
Wire and cable marker, ø 5,8 - 7,8 mm	VT SF 6/21 NEUTRAL WS V0	160	**1730560001**

Assembled cables
Railway cabling RW M12

- Cat.5
- Radox
- D-coded
- RW (reduced wire): suitable for RJ45 connectors

M12 open

plug / -

	M12
yellow	1
white	2
orange	3
blue	4

M12 - RJ45

plug / plug

RJ45		M12
1	yellow	1
3	white	2
2	orange	3
6	blue	4

Technical data

Product type	System cable	System cable
Category	Cat.5 (ISO/IEC 11801)	Cat.5 (ISO/IEC 11801)
Shielding	SF/UTP	SF/UTP
Version connector left / Version connector right	M12 IP67 straight male / Open	M12 IP67 straight male / RJ45 IP20 no tools needed
Cross-section	2*2*AWG 22/7 - 2*2*0.36 mm²	2*2*AWG 22/7 - 2*2*0.36 mm²
Sheath diameter, max.	7 mm	7 mm
Material sheath	Radox GKW S	Radox GKW S
Sheathing colour	black	black
Insulation cross-section	1.58 mm	1.58 mm
Min. bending radius, repetitive	6 x conductor cross-section	6 x conductor cross-section
Ambient temperature (operational)	-40 °C...+90 °C	-40 °C...+90 °C
Storage temperature	-40 °C...+90 °C	-40 °C...+90 °C
Abrasion resistance	very good	very good
Halogen	to IEC 60754-2	to IEC 60754-2
Resistance to oils	acc. EN 50306-3	acc. 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 DIN 5510-2 fire safety levels 1,2,3,4, According to BS 6853, According to EN50288-2-2
Note		

Ordering data

	Type	Qty.	Order No.	Type	Qty.	Order No.
4 m				IE-C5DB4WE0040MCSA20-E	1	**1220310040**
5 m	IE-C5DB4WE0050MCSXXX-E	1	**1269740050**			
10 m	IE-C5DB4WE0100MCSXXX-E	1	**1269740100**			
Note						

Accessories

	Type	Qty.	Order No.	Type	Qty.	Order No.
Sheathing stripper						
For UTP and STP data cables	AM 12	1	**9030060000**	AM 12	1	**9030060000**
For coaxial and round data cables	IE-CST	1	**9204350000**	IE-CST	1	**9204350000**
Markers						
Insertion label, yellow, 12 mm	TM-I 12 NEUTRAL GE	320	**1718411687**	TM-I 12 NEUTRAL GE	320	**1718411687**
Insertion label, yellow, 18 mm	TM-I 18 NEUTRAL GE	320	**1718431687**	TM-I 18 NEUTRAL GE	320	**1718431687**
Transparent sleeves, 12-mm length	TM 4/12 HF/HB	500	**1719840000**	TM 4/12 HF/HB	500	**1719840000**
Transparent sleeves, 18-mm length	TM 4/18 HF/HB	500	**1719850000**	TM 4/18 HF/HB	500	**1719850000**
Wire and cable marker, ø 4,7 - 7,4 mm	VT SF 5/21 NEUTRAL WS V0	160	**1689470001**	VT SF 5/21 NEUTRAL WS V0	160	**1689470001**
Wire and cable marker, ø 5,8 - 7,8 mm	VT SF 6/21 NEUTRAL WS V0	160	**1730560001**	VT SF 6/21 NEUTRAL WS V0	160	**1730560001**

Overview – Fibre-optic cables (FO)

Fibre-optic cables are your best choice for working in harsh industrial environments - 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 FO connecting cables

For flexible installations in and around machinery and plants – for harsh, industrial surroundings, dragline cable compatible

- Polymer optic fibre (POF)
- Multimode glass fibre
- Breakout cable
- Zipcord cable
- Cable by the metre 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 system cables

...for flexible installations in and around machinery and plants – for harsh, industrial surroundings, dragline cable compatible

- Multimode fibre-optic
- Breakout cable
- Pre-assembled cable

Ordering data for Fibre-optic cables (FO)

Type	Breakout/ Zipcord	Plug-in connector left	right	Length						
Industrial FO connecting cables				Metre goods	1 m	3 m	5 m	10 m	50 m	100 m
IE-FM5B2UE-MW	Breakout	-	-	**8946000000**						
IE-FM6B2UE-MW	Breakout	-	-	**8956060000**						
IE-FPOZ2EE-MW	Zipcord	-	-	**1242820000**						
IE-FPOD2UE-MW	Breakout	-	-	**1172280000**						
IE-FM5D2UExxxxMSD0SD0X	Breakout	SC Duplex	SC Duplex		**8876430010**	**8876430030**	**8876430050**	**8876430100**		
IE-FM6D2UExxxxMSD0SD0X	Breakout	SC Duplex	SC Duplex		**8876440010**	**8876440030**	**8876430050**	**8876440100**		
IE-FM5D2UExxxxMST0ST0X	Breakout	ST	ST		**8876450010**	**8876450030**	**8876450050**	**8876450100**	**8876450500**	**8876451000**
IE-FM6D2UExxxxMST0ST0X	Breakout	ST	ST		**8876460010**	**8876460030**	**8876460050**	**8876460100**		
IE-FM5B2UExxxxMLD0LD0X	Breakout	LC Duplex	LC Duplex					**8979020000**	**8979040000**	**8979030000**
IE-FM6B2UExxxxMLD0LD0X	Breakout	LC Duplex	LC Duplex				**1220930000**	**1276680000**	**8993220000**	
Industrial FO patch cables				**1 m**	**2 m**	**3 m**	**5 m**	**10 m**		
IE-FM5Z2VOxxxxMSD0SD0X	Zipcord	SC Duplex	SC Duplex	**8813300000**	**8813310000**	**8813320000**	**8876350050**	**8876350100**		
IE-FM6Z2VOxxxxMSD0SD0X	Zipcord	SC Duplex	SC Duplex	**8813330000**	**8813340000**	**8813350000**	**8876360050**	**8876360100**		
IE-FM5Z2VOxxxxMST0ST0X	Zipcord	ST	ST	**8813240000**	**8813250000**	**8813260000**	**8876370050**	**8876370100**		
IE-FM6Z2VOxxxxMST0ST0X	Zipcord	ST	ST	**8813270000**	**8813280000**	**8813290000**	**8876380050**	**8876380100**		
IE-FPOZ2EExxxxMSJ0SJ0-X	Zipcord	SCRJ	SCRJ	**1273430010**		**1273430030**	**1273430050**	**1273430100**		
Industrial FO adapter cables				**2 m**						
IE-FM5Z2VOxxxxMST0SD0X	Zipcord	SC Duplex	ST	**8813390000**						
IE-FM6Z2VOxxxxMST0SD0X	Zipcord	SC Duplex	ST	**8813400000**						

Product configurator – Fibre-optic cables

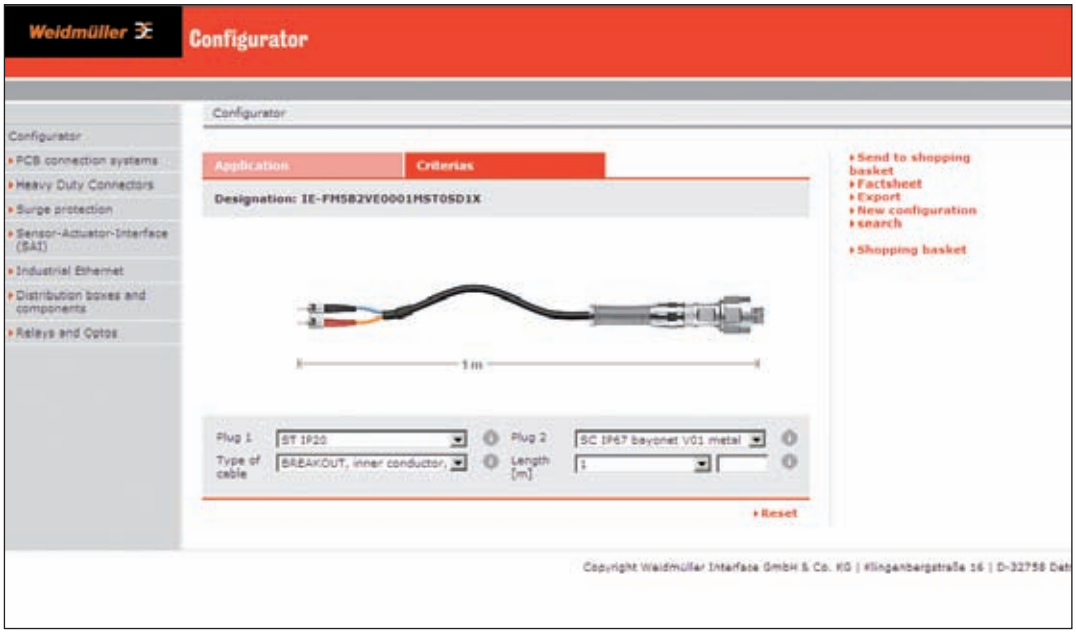
The cable configurator in Weidmüller's online catalogue makes it possible for you to create a fully-assembled cable adapted to your requirements and specifications.

A variety of plug types in the following protective classes are available:

IP 20
- SCRJ
- ST
- LC Duplex
- SC duplex

IP 67
- Variant 1, metal with SC- or LC-Duplex plugs
- Variant 4, plastic with SC- or LC-Duplex plugs
- Additional housing variants to follow shortly.

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, interior wire 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, interior wire G50 µm/125 µm and G62.5 µm/125 µm with PUR sheath. The cable length can also be customised:

The cable length can also be customised:

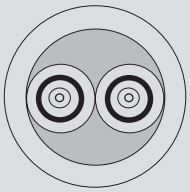
- From 0.3 m to 9.9 m, in 0.1 m steps
- From 10 m to 9999 m, in 1 m steps

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.

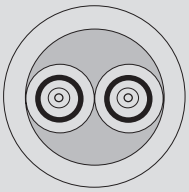
Metre goods

- Multimode fibre-optic
- Customisable

Connecting cables



Dragline cable



Technical data

Product type	System cable	Dragline cable
Cable layout	BREAKOUT	BREAKOUT dragline cable G50/125
Sheath diameter	6 mm	6 mm
Material sheath	PUR	PUR
Sheathing colour	black	black
Ambient temperature (operational)	-40 °C...+85 °C	-55 °C...+80 °C
Installation temperature	-10 °C...+85 °C	-55 °C...+85 °C
Storage temperature	-55 °C...+85 °C	-70 °C...+80 °C
Note		

Ordering data

Core 62,5 µm	**Type**	**Qty.**	**Order No.**	**Type**	**Qty.**	**Order No.**
Bulk stock starting at 50 m	IE-FM6D2UE-MW	1	**8956060000**	IE-FM6D2UE-MW	1	**8956050000**
Core 50 µm						
Bulk stock starting at 50 m	IE-FM5D2UE-MW	1	**8946000000**	IE-FM5D2UE-MW	1	**8956070000**
Note	Order example, for bulk: 150 x „article number“ = 150 m on drum			Order example, for bulk: 150 x „article number“ = 150 m on drum		

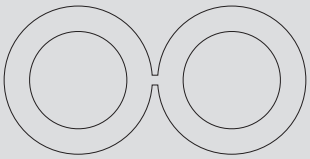
Accessories

Markers	**Type**	**Qty.**	**Order No.**	**Type**	**Qty.**	**Order No.**
Insertion label, yellow, 12 mm	TM-I 12 NEUTRAL GE	320	**1718411687**	TM-I 12 NEUTRAL GE	320	**1718411687**
Insertion label, yellow, 18 mm	TM-I 18 NEUTRAL GE	320	**1718431687**	TM-I 18 NEUTRAL GE	320	**1718431687**
Transparent sleeves, 12-mm length	TM 4/12 HF/HB	500	**1719840000**	TM 4/12 HF/HB	500	**1719840000**
Transparent sleeves, 18-mm length	TM 4/18 HF/HB	500	**1719850000**	TM 4/18 HF/HB	500	**1719850000**
Wire and cable marker, ø 4,7 - 7,4 mm	VT SF 5/21 NEUTRAL WS V0	160	**1689470001**	VT SF 5/21 NEUTRAL WS V0	160	**1689470001**
Wire and cable marker, ø 5,8 - 7,8 mm	VT SF 6/21 NEUTRAL WS V0	160	**1730560001**	VT SF 6/21 NEUTRAL WS V0	160	**1730560001**
Tools						
Crimping pliers GOF LC	IE-CT-LC-GOF	1	**9205330000**	IE-CT-LC-GOF	1	**9205330000**
Crimping pliers GOF SC	IE-CT-SC-GOF	1	**9205320000**	IE-CT-SC-GOF	1	**9205320000**
Fibre-optic tool case	IE-CTC-SCST-GOF	1	**1032030000**	IE-CTC-SCST-GOF	1	**1032030000**

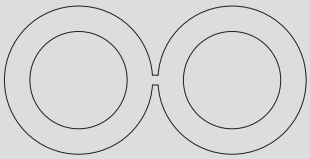
Metre goods

- Polymer optical fibre
- Customisable

Zipcord



Breakout



Technical data

Product type	Connecting cables	Dragline cable
Cable layout		
Sheath diameter	2.2*4.5 mm	7,5 mm
Material sheath		PUR
Insulation	PE	
Sheathing colour		
Ambient temperature (operational)	-55 °C...+85 °C	-40 °C...+85 °C
Installation temperature	-5 °C...+85 °C	-30 °C...+60 °C
Storage temperature	-55 °C...+85 °C	-40 °C...+85 °C
Halogen	No	No
Note		

Ordering data

POF 980/1000 µm	**Type**	**Qty.**	**Order No.**	**Type**	**Qty.**	**Order No.**
Bulk stock starting at 50 m	IE-FPOZ2EE-MW	1	**1242820000**	IE-FPOD2UE-MW	1	**1172280000**
Note	Order example, for bulk: 150 x „article number“ = 150 m on drum			Order example, for bulk: 150 x „article number“ = 150 m on drum		

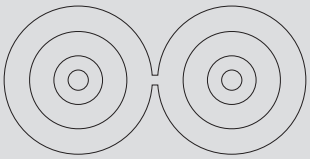
Accessories

Markers	**Type**	**Qty.**	**Order No.**	**Type**	**Qty.**	**Order No.**
Insertion label, yellow, 12 mm	TM-I 12 NEUTRAL GE	320	**1718411687**	TM-I 12 NEUTRAL GE	320	**1718411687**
Insertion label, yellow, 18 mm	TM-I 18 NEUTRAL GE	320	**1718431687**	TM-I 18 NEUTRAL GE	320	**1718431687**
Transparent sleeves, 12-mm length	TM 4/12 HF/HB	500	**1719840000**	TM 4/12 HF/HB	500	**1719840000**
Transparent sleeves, 18-mm length	TM 4/18 HF/HB	500	**1719850000**	TM 4/18 HF/HB	500	**1719850000**
Wire and cable marker, ø 4,7 - 7,4 mm	VT SF 5/21 NEUTRAL WS V0	160	**1689470001**	VT SF 5/21 NEUTRAL WS V0	160	**1689470001**
Wire and cable marker, ø 5,8 - 7,8 mm	VT SF 6/21 NEUTRAL WS V0	160	**1730560001**	VT SF 6/21 NEUTRAL WS V0	160	**1730560001**
Tools						
Crimping pliers POF	HTX-IE-POF	1	**1208870000**	HTX-IE-POF	1	**1208870000**
POF tool set	TOOL SET IE-POF	1	**1208930000**	TOOL SET IE-POF	1	**1208930000**

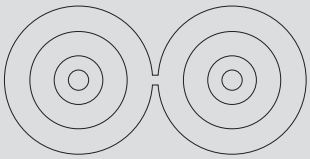
Assembled cables
Fibre-optic patch cable

- Multimode fibre-optic

SC-Duplex / SC-Duplex



ST / ST



Technical data

Product type	Patch cable	Patch cable
Cable layout	Zipcord	Zipcord
Sheath diameter	3*6 mm	3*6 mm
Material sheath	PVC	PVC
Sheathing colour	orange	orange
Ambient temperature (operational)	-5 °C...+75 °C	-5 °C...+75 °C
Installation temperature	-5 °C...+50 °C	-5 °C...+50 °C
Storage temperature	-25 °C...+75 °C	-25 °C...+75 °C
Note		

Ordering data

Core 62,5 µm	**Type**	**Qty.**	**Order No.**	**Type**	**Qty.**	**Order No.**
1 m	IE-FM6Z2VO0001MSD0SD0X	1	**8813330000**	IE-FM6Z2VO0001MST0ST0X	1	**8813270000**
2 m	IE-FM6Z2VO0002MSD0SD0X	1	**8813340000**	IE-FM6Z2VO0002MST0ST0X	1	**8813280000**
3 m	IE-FM6Z2VO0003MSD0SD0X	1	**8813350000**	IE-FM6Z2VO0003MST0ST0X	1	**8813290000**
5 m	IE-FM6Z2VO0005MSD0SD0X	1	**8876360050**	IE-FM6Z2VO0005MST0ST0X	1	**8876380050**
10 m	IE-FM6Z2VO0010MSD0SD0X	1	**8876360100**	IE-FM6Z2VO0010MST0ST0X	1	**8876380100**
Core 50 µm						
1 m	IE-FM5Z2VO0001MSD0SD0X	1	**8813300000**	IE-FM5Z2VO0001MST0ST0X	1	**8813240000**
2 m	IE-FM5Z2VO0002MSD0SD0X	1	**8813310000**	IE-FM5Z2VO0002MST0ST0X	1	**8813250000**
3 m	IE-FM5Z2VO0003MSD0SD0X	1	**8813320000**	IE-FM5Z2VO0003MST0ST0X	1	**8813260000**
5 m	IE-FM5Z2VO0005MSD0SD0X	1	**8876350050**	IE-FM5Z2VO0005MST0ST0X	1	**8876370050**
10 m	IE-FM5Z2VO0010MSD0SD0X	1	**8876350100**	IE-FM5Z2VO0010MST0ST0X	1	**8876370100**
Note						

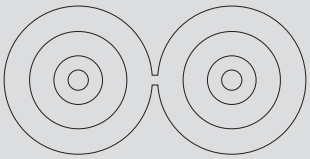
Accessories

Markers	**Type**	**Qty.**	**Order No.**	**Type**	**Qty.**	**Order No.**
Wire and cable marker, ø 4,7 - 7,4 mm	VT SF 5/21 NEUTRAL WS V0	160	**1689470001**	VT SF 5/21 NEUTRAL WS V0	160	**1689470001**
Wire and cable marker, ø 5,8 - 7,8 mm	VT SF 6/21 NEUTRAL WS V0	160	**1730560001**	VT SF 6/21 NEUTRAL WS V0	160	**1730560001**

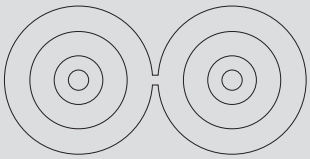
Assembled cables
Fibre-optic patch cable

• Multimode fibre-optic

ST / SC-Duplex



LC-Duplex / LC-Duplex



Technical data

Product type	Patch cable	Patch cable
Cable layout	Zipcord	Zipcord
Sheath diameter	3*6 mm	3*6 mm
Material sheath	PVC	PVC
Sheathing colour	orange	orange
Ambient temperature (operational)	-5 °C...+75 °C	-5 °C...+75 °C
Installation temperature	-5 °C...+50 °C	-5 °C...+50 °C
Storage temperature	-25 °C...+75 °C	-25 °C...+75 °C
Note		

Ordering data

Core 62,5 µm	**Type**	**Qty.**	**Order No.**	**Type**	**Qty.**	**Order No.**
2 m	IE-FM6Z2VO0002MST0SD0X	1	**8813400000**	IE-FM6Z2VO0002MLD0LD0X	1	**1062450000**
100 m				IE-FM6Z2VO0100MLD0LD0X	1	**8992990000**
Core 50 µm						
1 m				IE-FM5Z2VO0001MLD0LD0X	1	**1276880000**
2 m	IE-FM5Z2VO0002MST0SD0X	1	**8813390000**	IE-FM5Z2VO0002MLD0LD0X	1	**1062570000**
5 m				IE-FM5Z2VO0005MLD0LD0X	1	**1062550000**
10 m				IE-FM5Z2VO0010MLD0LD0X	1	**1062580000**
Note						

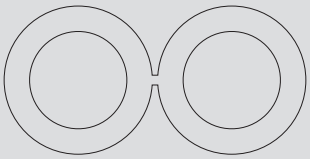
Accessories

Markers	**Type**	**Qty.**	**Order No.**	**Type**	**Qty.**	**Order No.**
Wire and cable marker, ø 4,7 - 7,4 mm	VT SF 5/21 NEUTRAL WS V0	160	**1689470001**	VT SF 5/21 NEUTRAL WS V0	160	**1689470001**
Wire and cable marker, ø 5,8 - 7,8 mm	VT SF 6/21 NEUTRAL WS V0	160	**1730560001**	VT SF 6/21 NEUTRAL WS V0	160	**1730560001**

Assembled cables
Fibre-optic patch cable PROFINET

- Polymer optical fibre

SC-RJ / SC-RJ



Technical data

Product type	Connecting cables
Version connector left / Version connector right	SCRJ IP 20 / SCRJ IP20
Cable layout	Zipcord
Sheath diameter	2.2*4.5 mm
Insulation	PE
Sheathing colour	black
Ambient temperature (operational)	-20 °C...+80 °C
Attenuation	≤ 160 dB/km at 650 nm
Bandwidth	≥ 10 MHz bei 650 nm
Halogen	No
Note	

Ordering data

POF 980/1000 µm	Type	Qty.	Order No.
1 m	IE-FPOZ2EE0001MSJ0SJ0-X	1	**1273430010**
3 m	IE-FPOZ2EE0003MSJ0SJ0-X	1	**1273430030**
5 m	IE-FPOZ2EE0005MSJ0SJ0-X	1	**1273430050**
10 m	IE-FPOZ2EE0010MSJ0SJ0-X	1	**1273430100**

Note

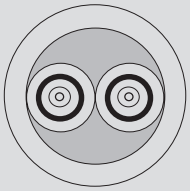
Accessories

Markers	Type	Qty.	Order No.
Wire and cable marker, ø 4,7 - 7,4 mm	VT SF 5/21 NEUTRAL WS V0	160	**1689470001**
Wire and cable marker, ø 5,8 - 7,8 mm	VT SF 6/21 NEUTRAL WS V0	160	**1730560001**

Assembled cables
Fibre-optic system cable

- Multimode fibre-optic

LC-Duplex / LC-Duplex



Technical data

Product type	System cable
Version connector left / Version connector right	LC-Duplex IP20 / LC-Duplex IP 20
Cable layout	BREAKOUT
Sheath diameter	6 mm
Material sheath	PUR
Sheathing colour	black
Ambient temperature (operational)	-40 °C...+85 °C
Installation temperature	-10 °C...+85 °C
Storage temperature	-55 °C...+85 °C
Note	

Ordering data

Core 62,5 µm	**Type**	**Qty.**	**Order No.**
5 m	IE-FM6D2UE0005MLD0LD0X	1	**1220930000**
10 m	IE-FM6D2UE0010MLD0LD0X	1	**1276680000**
Core 50 µm			
10 m	IE-FM5D2UE0010MLD0LD0X	1	**8979020000**
100 m	IE-FM5D2UE0100MLD0LD0X	1	**8979030000**

Note

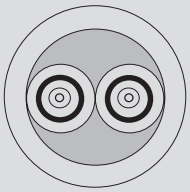
Accessories

Markers	**Type**	**Qty.**	**Order No.**
Wire and cable marker, ø 4,7 - 7,4 mm	VT SF 5/21 NEUTRAL WS V0	160	**1689470001**
Wire and cable marker, ø 5,8 - 7,8 mm	VT SF 6/21 NEUTRAL WS V0	160	**1730560001**

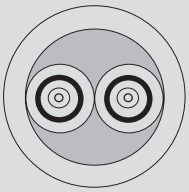
Assembled cables
Fibre-optic dragline cable

- Multimode fibre-optic

SC-Duplex / SC-Duplex



ST / ST



Technical data

Product type	Dragline cable	Dragline cable
Cable layout	BREAKOUT dragline cable G62.5/125	BREAKOUT dragline cable G62.5/125
Sheath diameter	6 mm	6 mm
Material sheath	PUR	PUR
Sheathing colour	black	black
Ambient temperature (operational)	-55 °C...+80 °C	-55 °C...+80 °C
Installation temperature	-55 °C...+85 °C	-55 °C...+85 °C
Storage temperature	-70 °C...+80 °C	-70 °C...+80 °C
Note		

Ordering data

Core 62,5 µm	**Type**	**Qty.**	**Order No.**	**Type**	**Qty.**	**Order No.**
1 m	IE-FM6D2UE0001MSD0SD0X	1	**8876440010**	IE-FM6D2UE0001MST0ST0X	1	**8876460010**
3 m	IE-FM6D2UE0003MSD0SD0X	1	**8876440030**	IE-FM6D2UE0003MST0ST0X	1	**8876460030**
5 m	IE-FM6D2UE0005MSD0SD0X	1	**8876440050**	IE-FM6D2UE0005MST0ST0X	1	**8876460050**
10 m	IE-FM6D2UE0010MSD0SD0X	1	**8876440100**	IE-FM6D2UE0010MST0ST0X	1	**8876460100**
Core 50 µm						
1 m	IE-FM5D2UE0001MSD0SD0X	1	**8876430010**	IE-FM5D2UE0001MST0ST0X	1	**8876450010**
3 m	IE-FM5D2UE0003MSD0SD0X	1	**8876430030**	IE-FM5D2UE0003MST0ST0X	1	**8876450030**
5 m	IE-FM5D2UE0005MSD0SD0X	1	**8876430050**	IE-FM5D2UE0005MST0ST0X	1	**8876450050**
10 m	IE-FM5D2UE0010MSD0SD0X	1	**8876430100**	IE-FM5D2UE0010MST0ST0X	1	**8876450100**
Note						

Accessories

Markers	**Type**	**Qty.**	**Order No.**	**Type**	**Qty.**	**Order No.**
Wire and cable marker, ø 4,7 - 7,4 mm	VT SF 5/21 NEUTRAL WS V0	160	**1689470001**	VT SF 5/21 NEUTRAL WS V0	160	**1689470001**
Wire and cable marker, ø 5,8 - 7,8 mm	VT SF 6/21 NEUTRAL WS V0	160	**1730560001**	VT SF 6/21 NEUTRAL WS V0	160	**1730560001**

Accessories

Accessories

Introduction	E.2
Copper cabling tools	E.3
Fibre-optic cabling tools	E.9
General tools	E.15
Cabtite cable entry system	E.17
Protective caps / colour-coded rings	E.18
Inkjet printer	E.19
Markers for cables and ***STEADY****TEC*®	E.20
Electronics	E.21

Overview of accessories

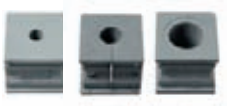
Like with other products from Weidmüller, choosing a Weidmüller accessory means you can obtain everything from one source.

Copper cabling tools

For assembling
- RJ45 crimp
- Hybrid insert

for stripping
to test the wiring

Cabtite



System-based cable entry

- Cable entry strips
- Cable grommets

Fibre-optic cabling tools

For assembling

- SC-GOF
- ST-GOF

Protective caps

to protect all IE-LINE connectors with ***STEADY****TEC*® technology

General tools

... for pressing conductors into IDC terminals and pressing RJ45 contacts

- Indentation tool
- Pressing tool

Marker

... for identifying conductors, plugs and devices

- Line markers
- Housing and plug marker

Stripping tools

IE-CST

1- and 2- step stripping in one operation

Stripping tool for round (shielded) data cables of 2.5...8 mm ø

- Specially designed for Ethernet cables
- Strips sheathing and cuts shield in one operation
- Blue blade cartridge included in delivery

AM12

- Cutting of UTP and STP data cables and other flexible copper cables with a diameter of up to 4 mm² (~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

Technical data

		CST	AM12
Max. cutting performance copper cable			
Cable model		coaxial & round data cables	UTP and STP data cables
Conductor cross-section	AWG		AWG 20 … AWG 11
Conductor diameter	mm	2.5 … 8	0.5 … 12.5
Adjustable depth of cut	mm		adjustable
Cutting performance			
Non-shielded & shielded data cables	mm		8
Flexible copper cable	mm²		4
Tool data			
Length	mm	100	97
Weight	g	65	36
Information			

Ordering data

Type	Qty.	Order No.
IE-CST	1	**9204350000**

Type	Qty.	Order No.
AM 12	1	**9030060000**

Accessories

Type	Qty.	Order No.
Spare cutter cassette	1	**9032020000**

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

STEADY TEC

Technical data

Description of contact		TT 8 RS MP 8
No. of poles		8
Tool data		
Length	mm	255
Weight	g	1251
Note		

Ordering data

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

Note

Pressing tools

- Optional crimping tool for Ethernet connectors to facilitate the joining of the upper and lower parts of the plug.

PWZ RJ45

STEADY TEC

Technical data

Tool data		PWZ RJ45
Weight	g	367

Note	

Ordering data

Version	Type	Qty.	Order No.
	PWZ RJ45	1	1118040000

Note	

Copper cabling tools

Cable tester

LAN USB

IE-CT

Technical data

	LAN USB	IE-CT
Functionality	Device for testing	Device for testing
	Ethernet cables for:	Ethernet cables for:
	line interruption	interference voltage
	core interruption	line interruption
	short-circuits	core interruption
	examination of the twist	short-circuits
		crossed wires
		examination of the twist
Error display play	LED display	7-segment display
External voltage		80 V AC / DC
Testable cable lenght	max. 1000 m	max. 1000 m
Supply tery	9V battery (Art. Nr.- 9004810000)	9 V battery
Connection for core	RJ 45; USB TypA; USB TypB	RJ45
Weight basic device	174 g	185 g
Dimensions basic device	65 x 135 x 27 mm	70 x 140 x 36 mm
Remote box weight	30 g	
Remote box dimensions	65 x 28 x 27 mm	
Weight testbox		31 g
Dimensions testbox		30 x 68 x 23 mm

Ordering data

Type	Qty.	Order No.
LAN USB TESTER	1	**9205400000**

Note
Battery, accessories and bag included in delivery

Type	Qty.	Order No.
IE-CT	1	**8808420000**

Note
9 V battery included

Cutting tools

- Cutting formation for different cable sizes increases the quality of the cuts for smaller cross-sections
- Not suitable for steel wires, steel-armoured cables, aluminium alloys and hard-drawn copper conductors!
- Cutting without deformation of the conductor

KT 8

max. 8 mm

max. 16 mm²

max. 16 mm²

max. 16 mm²

Technical data

Max. cutting performance, copper cable		KT8
Solid (max. conductor cross-section)	mm²/-	16 / 6
Stranded (max. conductor cross-section)	mm²/-	16 / 6
Flexible (max. conductor cross-section)	mm²/-	16 / 6
Flexible, stranded (max. conductor diameter)	mm	8
Max. cutting performance, aluminium cable		
Stranded (max. conductor cross-section)	mm²/-	16 / 6
Stranded (max. conductor diameter)	mm	8
solid	mm²	16
Data / telephone / control cable		
Max. outer diameter	mm	8
Tool data		
Length / Width / Height	mm	165 / 65 / 25
Weight	g	180
Note		Tool closed

Ordering data

Version	Type	Qty.	Order No.
	KT 8	1	9002650000

Note	

Copper cabling tools

SEE ESD 120

Electronic ESD diagonal-cutting pliers with pointed head

- Hard wire (spring wire or steel nails): 0.4 mm/AWG 26
- 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): 0.8 mm/AWG 20
- 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 15

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 15

Ordering data

Type	Qty.	Order No.
SUPER CUT	1	9205150000

Technical data

Weight	78 g

KOF SET ESD

Electronic ESD case set

Contents:

- Diagonal-cutting pliers
- Snipe-nosed pliers
- Flat-nose pliers
- Angle-cutting pliers

Ordering data

Type	Qty.	Order No.
KOF SET ESD	1	9205210000

Technical data

Weight	547 g

Crimping tools

For stripping, crimping and cutting of POF fibres and cables Tools for working with POF fibres in compliance with IEC 60793-2 A4A fibre (1000 µm/980 µm POF).

Tool-Set IE-POF

- **Contents:**
  Assortment kit PSC 80,
  shears for Aramid fibres, Kevlar scissors,
  multi-tool HTX-IE-POF, stripping tool
  multi-stripax® IE-POF

- Multi tool for POF fibres
- For working with duplex POF fibres
- Stripping tools for working with POF fibres and POF cables
- The new blade set for POF cables makes it easy to strip off the outer sheathing on POF fibres
- Cable shears are specially for Aramid fibres
- Only for cutting Aramid fibres (for strain relief on fibre-optic cables)

Technical data

Tool data	Tool-Set IE-POF
Width / Length / Height	41 / 338 / 79 mm
Weight	1800 g
Note	

Ordering data

Version	Type	Qty.	Order No.
	Tool-Set IE-POF	1	1208930000
Note			

Accessories

	Type	Qty.	Order No.
Note			

Crimping tools

- Ratchet mechanism for precise crimping
- 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 working with Duplex POF fibres
- For stripping Duplex POF fibres
- The plug is crimped and the POF fibres are separated in a single step.
- Cut surfaces do not need to be polished after the cut
- Locator for precise positioning of the SC-RJ plugs
- Ergonomic grip
- High repeat accuracy

The IP67 plug is ready in only three steps:
1) Strip the POF fibres
2) Crimp and separate
3) Crimp the strain relief

Scissor Kevlar

- Cable shears are specially for Aramid fibres
- Only for cutting Aramid fibres (for strain relief on fibre-optic cables)
- Not suitable for other materials
- Special cutting shape
- Smoothed cut
- With serrated cutting edge
- Riveted joint
- Ergonomic, impact resistant plastic grip

Technical data

Tool data	HTX-IE-POF	Kevlar scissors
Length	220 mm	147 mm
Weight	450 g	100 g
Note		

Ordering data

Version	Type	Qty.	Order No.	Type	Qty.	Order No.
	HTX-IE-POF	1	1208870000	Scissor Kevlar	1	1208910000
Note						

Accessories

	Type	Qty.	Order No.	Type	Qty.	Order No.
Note						

Multi-stripax POF

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.

- Excellent stripping quality for industrial applications
- Specially shaped blades enable stripping of special types of insulation and conductor configurations
- Stripping results reproduced accurately time and time again
- No damage to the conductor
- A long-lasting, reliable tool thanks to its robust design
- Integral cutting function

Technical data

Cable model	Duplex stripping tool for quick processing of POF fibres and cables according to IEC 60793-2 A4A fibre (1000µm/980µm POF)
Length / Width / Height	250 / 85 / 40 mm
Weight	250 g
Note	

Ordering data

Version	Type	Qty.	Order No.
	multi-stripax® POF	1	**1208880000**
Note			

Accessories

	Type	Qty.	Order No.
	AIE multi-stripax® POF	1	**1212770000**
Note			

Assembly case for fibre-optic connectors

Our fibre-optic assembly case is an indispensible set for helping you to assemble fibre-optic cables on-site.

Contents:

- Crimping pliers for ST and SC plugs
- Kevlar shears
- Stripping tool for cable sheath and primary coating
- Stripping tool for secondary coating
- Fluorescent light with pluggable adapter
- Polishing and cleaning fluid
- Cleaning cloths
- Cleaning rod
- Polishing base support for pre-polishing and surface finishing
- Polishing foils
- Sapphire stylus
- Microscope, 100X magnification

Ordering data

Type	Qty.	Order No.
IE-CTC-SCST-GOF	1	**1032030000**

Accessories

Type		Qty.	Order No.
Accessory set for LC plugs	IE-CTC-AS-LC-GOF	1	**1033350000**
Accessory set for SC-POF plugs	IE-CTC-AS-SC-POF	1	**1033360000**

Crimping tools for other contacts

- Ratchet for precise crimping.
- Release option in the event of incorrect operation

IE-CT-LC-GOF

Crimping tools for IP 67 plugs

- For fibre-optic 0.9 mm LC and IP 67 connectors

IE-CT-SC-GOF

Crimping tools for IP 67 plugs

- For fibre-optic 0.9 mm, PROFINET, Mobil cable SC/ST and IP 67 connectors

Technical data

Tool data	IE-CT-LC-GOF	IE-CT-SC-GOF
Length	250	250
Weight	730	730
Note		

Ordering data

Version	Type	Qty.	Order No.	Type	Qty.	Order No.
	IE-CT-LC-GOF	1	**9205330000**	IE-CT-SC-GOF	1	**9205320000**
Note						

Accessories

	Type	Qty.	Order No.	Type	Qty.	Order No.
Note						

Special stripping tools

- Quick and accurate stripping
- No need to adjust cutting depth
- No damage to inner conductors

LWL-stripax

Stripping and cutting tool for plastic fibre-optic cables with 1-mm diameter inner conductor

- Stripping length adjustable via end stop
- Automatic opening of the clamping jaws after stripping

Technical data

Max. stripping performance		M-D-STRIPAX LWL
Cable type		POF conductor with an inner conductor of 1 mm Ø
Conductor diameter	-	...1
Stripping length, max.	-	7.5
Tool data		
Length	mm	135
Weight	g	110
Note		POF: polymer optical fibre

Ordering data

Version	Type	Qty.	Order No.
	M-D-STRIPAX LWL	1	9003750000
Note			

Accessories

	Type	Qty.	Order No.
	Spare stripping blades	1	9003760000
Note			

Insertion tool for twisted-pair cable

For connecting twisted-pair cable to terminal rails with IDC contacts e. g. in main and floor distributors, and in modular wall junction boxes for structured building cabling.

PDT

The punch-down tool has the following features:

- Mechanics made from metal components
- Adjustable pressing force for conductor sizes AWG 20 to AWG 28
- Different blades for connector blocks of type 110 from AT&T, type 66, type LSA Plus from Krone (Standard and scissors cutting function) as well as for telephone outlets 630A6
- Incision blades with 2 functions: incision or incision with cutting off of remaining conductor
- Storage compartment for one blade

A = PD blade 110
B = PD blade 66
C = PD blade 630
D = PD blade Krone LSA (standard)
E = PD blade Krone LSA (scissor)

IE-FISP-V4

Fastening tool for the hexagon cap nut from ***STEADY****TEC*® V4 flange and FrontCom® Micro.

Technical data

		PUNCH DOWN TOOL PDT	Fixing tool
Length / Width / Height	mm	160 / 37 / 29	115 / 28 / 28
Weight	g	142	21
Note			

Ordering data

Version	Type	Qty.	Order No.	Type	Qty.	Order No.
	PUNCH DOWN TOOL PDT	1	**9013970000**	IE-FISP-V4	2	**9204370000**
Note	(without blade)					

Accessories

	Type	Qty.	Order No.	Type	Qty.	Order No.
	PD blade Krone LSA Plus (scissor)	1	**9014050000**			
	PD blade 110	1	**9013960000**			
	PD blade 630	1	**9013990000**			
	PD blade 66	1	**9013980000**			
	PD blade Krone LSA Plus (standard)	1	**9014000000**			
Note						

Hydraulic hole punch

IE-KO-HAT

- Pressure-relief valve protects against overload
- Cylinder head angled 90°
- Angled head, 360° turnable
- Ergonomic handle springs back by itself
- Waste pieces no longer become jammed thanks to the three-way splitting
- Hydraulic punch made from high-strength aluminium (approx. 40 % weight savings)

Technical data

		IE-KO-HAT
Maximum steel-sheet punching performance		
Round holes up to	Ø 85 mm	2.0 mm F = 370 N/mm²
Round holes up to	Ø 64 mm	3.0 mm F = 370 N/mm²
Square holes up to	68 x 68 mm	2.0 mm F = 370 N/mm²
Rectangular holes up to	36 x 112 mm	2.0 mm F = 370 N/mm²
Maximum stainless-steel-sheet punching performance		
Round holes up to	Ø 64 mm	2.5 mm F = 600 N/mm²
Tool data		
Length / width / height	mm	290/120/70
Weight	kg	1.9
Punching force	kN	75
Max. operating pressure	bar	650
Including accessories (contents)		1 hydraulic screw Ø 19 mm 1 hydraulic screw Ø 19 x 9.5 mm 1 HSS pre-drill Ø 10 mm 1 spacer nut set (3-part) 1 bridge
Information		

Ordering data

Version	Type	Qty.	Order No.
	IE-KO-HAT	1	**1966810000**
Information			

Custom stamp for Industrial Ethernet connections

Type	Description	Dimensions	Qty.	Order No.
IE-KOK-V1	Custom shape for Bajonet 01 metal	Ø 27 mm x single-sided 25.9 mm	1	**1966780000**
IE-KOK-V4	Custom shape for Push Pull V04 plastic	Ø 23.2 mm x double-sided 20.2 mm	1	**1966790000**
IE-KOK-V5	Custom shape for RockStar® V05 metal	22.0 x 22.0 mm	1	**9204790000**

HDC KT ...

Cable grommets, small

HDC KEL 16

Cable entry strip

KEL 16/8 with 8 small grommets

KEL 16/4 with closed half-shell for 4 small grommets

Snap frame
KEL 16 SNAP

Technical data

Material, grey	free from elastomers, halogens and silicone
Material, black	elastomers with very high chemical resistance
Temperature range	–20 °C ... 80 °C
UL 94 flammability rating	V0

Technical data

Material	Polyamide, halogenfree, siliconfree
Colour	black
Temperature range	–20 °C ... 80 °C
Ingress protection class	IP 54, when correct cable grommet is used
UL 94 flammability rating	V0

Ordering data

Type	Clamping range [mm]	Qty.	Order No. grey	Order No. black
HDC KT 5	5-6	10	**1826480000**	**1827810000**
HDC KT 6	6-7	10	**1826490000**	**1827830000**
HDC KT 7	7-8	10	**1826500000**	**1827840000**
HDC KT 8	8-9	10	**1826510000**	**1827850000**
Blanking plugs, small				
HDC BTK		10	**1828170000**	**1828200000**

Ordering data

Type	No. of grommet positions small	large	Qty.	Order No. black
HDC KEL 16/8	8	–	10	**1825910000**
HDC KEL 16/4	4	–	10	**1825900000**
Blanking plugs, small				
HDC KEL 16 SNAP			10	**1827770000**

KVT 32

KVT 32 and locknut for D-Sub 9

KVT 32

Locknut for D-Sub 9
KGM-SUB-D9

Technical data

Material	Polyamide, free from halogens and silicone
Class of protection	IP54, when the correct cable grommet is selected
Temperature range	–5 °C ... 70 °C
UL 94 flammability rating	V0

Ordering data

Type	Thread	For grommet small	large	Qty.	Order No. white	Order No. black
HDC KVT 32	M 32 x 1.5	1	-	10	**1826670000**	**1828270000**
Locknut for D-Sub 9						
KGM-SUB-D9	M 32 x 1.5			10	**1828250000**	**1828300000**

Note: Please refer to catalogue 5 for the complete range.

Protective caps / colour-coded rings

Staubschutzstecker zum Schutz unbelegter Ports

- RJ45
- ***STEADY**TEC*® Varianten

IE-DPC

Dust Cap RJ45

- Dust cap RJ45 with finger grip

IE Line with ***STEADY**TEC*®

- Protective caps for all ***STEADY**TEC*® variants

Ordering data

Type	Qty.	Order No.
IE-DPC	100	**8813490000**

Note

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**

colour-coded rings

For variant 1, 4 and 14 plugs

IE-CR

Ordering data

	Type	Qty.	Order No.
blue	IE-CR-IP67-WS20-BU	10	**1963020000**
orange	IE-CR-IP67-WS20-OG	10	**1963010000**
green	IE-CR-IP67-WS20-GN	10	**1963040000**
grey	IE-CR-IP67-WS20-GY	10	**1963000000**
white	IE-CR-IP67-WS20-WH	10	**1962990000**
yellow	IE-CR-IP67-WS20-YE	10	**1963030000**

Note

PrintJet PRO

The **PrintJet PRO** inkjet printer prints markers for electric connectivity. These markers can be used for clear equipment identification on devices, cables and connectors. The labelling makes servicing, maintenance and troubleshooting much easier. Water-based ink is used for the black or spot colour printing. The print is crystal clear and resistant to environmental influences.
The **PrintJet PRO** prints plastic markers in **MultiCard** format. In combination with the user-friendly **M-Print® PRO** software and the attached loader, the printer becomes an essential part of the production.The inkjet process being used, the subsequent fusing, as well as the printer cartridge and ink have all been specially adapted by Weidmüller for industrial use. The printer has excellent long-term use capabilities, thanks to its integrated loader.

- Top-quality, resistant printing
- Spot colour print
- Perfect for constant use
- Integrated loader for 20 MultiCards
- Ideal for large quantities
- The display shows all relevant information
- Flexible connection options, from LAN ports to USB ports

Technical data

PrintJet PRO	
Type	PrintJet PRO
Application	Prints MultiCard markers
Technology	Inkjet process
Print quality	600 / 1.200 dpi
Printer drivers	Windows® 2000/XP/VISTA/7
Print software	M-Print® PRO
System requirements	Windows® 2000/XP/VISTA/7
Feed	Integrated loader
Fusing	Thermal fusing
Interface	USB, LAN
Power supply	AC 230 V or AC 115 V
Location	Office conditions
Ambient temperature	20° to 35 °C
Dimensions (L x W x H)	1060 x 500 x 310 mm
Weight	33 kg
Cartridge system	Ink cartridge, CMYK (up to 1.000.000 characters, Arial font size 6)
Scope of supply	PrintJet PRO, power cable, printer drivers, manuals (CD), Ink tank starter set colour, USB cable, M-Print® PRO software

Ordering data

PrintJet PRO

Type		Order No.
PrintJet PRO 115V		1024050000
PrintJet PRO 230V		1001180001
Accessories		
PJ PRO TNTK INK SET COL	Ink tank starter set, colour	1027110000
PJ PRO TNTK INK K	● Ink tank Black	1027040000
PJ PRO TNTK INK C	● Ink tank Cyan	1027050000
PJ PRO TNTK INK M	● Ink tank Magenta	1027060000
PJ PRO TNTK INK Y	● Ink tank Yellow	1027070000
PJ PRO TNAW	waste pad	1024140000
Ink tank PrintJet II		1858920000
Clean Unit PrintJet II		1858950000
Ink tank PrintJet		1797460000
Clean Unit PrintJet		4062150000

Markers for cables and *STEADY*TEC®

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 BLANK WS V0	160	**1689470001**
VT SF 6/21 BLANK WS V0	160	**1730560001**

Note: Can be printed with PrintJet PRO.

Markers for IE-Line *STEADY*TEC®

MultiCard ESG 9/11 K for IE-Line *STEADY*TEC®

- 9 x 11 mms
- White

Ordering data

Type	Qty.	Order No.
ESG 9/11K MC white	200	**1857440000**

Note: Can be printed with PrintJet PRO.

TM-I for pre-assembled M12 cables

MultiCard markers for labelling transparent M12 TM-I sleeves

- Tag length: 18 mm
- Tag length: 4 mm

Ordering data

Type	Qty.	Order No.
TM-I 18 BLANK WS	320	**1718431044**
TM-I 18 NEUTRAL GE	320	**1718431687**

Note

Accessories

Type	Qty.	Order No.
TM 4/12 HF/HB	500	**1719840000**
TM 4/18 HF/HB	500	**1719850000**

Note: Can be printed with PrintJet PRO.

LM MT DIN A5 for IE-Line *STEADY*TEC®

Cable labels made from polyester:

- With a special coating for laser printers
- Abrasion-resistant
- 168 labels/sheet
- 1 shipping unit = 10 sheets
- In six colours

Ordering data

Type		Qty.	Order No.
white	LM MT DIN A5 9/11 WS	10	**1964070000**
grey	LM MT DIN A5 9/11 GR	10	**1964080000**
orange	LM MT DIN A5 9/11 OR	10	**1964090000**
blue	LM MT DIN A5 9/11 BL	10	**1964100000**
yellow	LM MT DIN A5 9/11 GE	10	**1964110000**
green	LM MT DIN A5 9/11 GN	10	**1964120000**

Note

Accessories

Type		Qty.	Order No.
Marking pen	STI-Stift SW	10	**0508401694**

Note: self-adhesive, for labelling or printing

Electronics

Analogue Signal Conditioning

Order number: 1203510000

- Product overview analogue signal conditioning
- Intrinsically safe signal converter
- Signal converters and monitoring components
- Trip amplifier for monitoring AC/DC circuits
- Signal converters and monitoring components in 6 mm width
- Process monitoring
- Process-value display and counters
- Interface converter, AD/DA converter
- Analogue signal processing accessories
- Fieldbus distributor

Relays and Optos

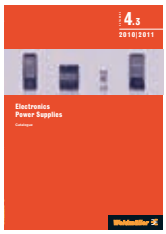
Order number: 1282330000

- Relay modules and opto modules in 6 mm width
- Industrial relay modules and opto modules
- Power electronics
- Timer
- JACKPAC® (IP67) / functional components

Surge protection

Order number: 1271290000

- The bacics of surge protection
- Surge protection News 2010/2011
- Surge protection for low-voltage supplies
- Surge protection for instrumentation and control equipment
- Surge protection for data interfaces
- Surge protection for photovoltaic systems
- Things worth knowing about surge protection



Power Supplies

Order number: 1282390000

- Switch-mode power supplies
- Unregulated power supplies
- UPS control unit
- Fuse protection for 24 V DC circuits
- IP 65 switched-mode power supply / electrical-cabinet socket outlet

Interface units and PLC solutions

Order number: 1252080000

- Interface units
- Card holders
- PLC interfaces – H-, R- and S-system
- Byte precabling solution

Technical appendix

Technical appendix

Online services W.2

Cable configurator W.5

Service and certificates W.6

Glossary W.8

Network infrastructure micro-site

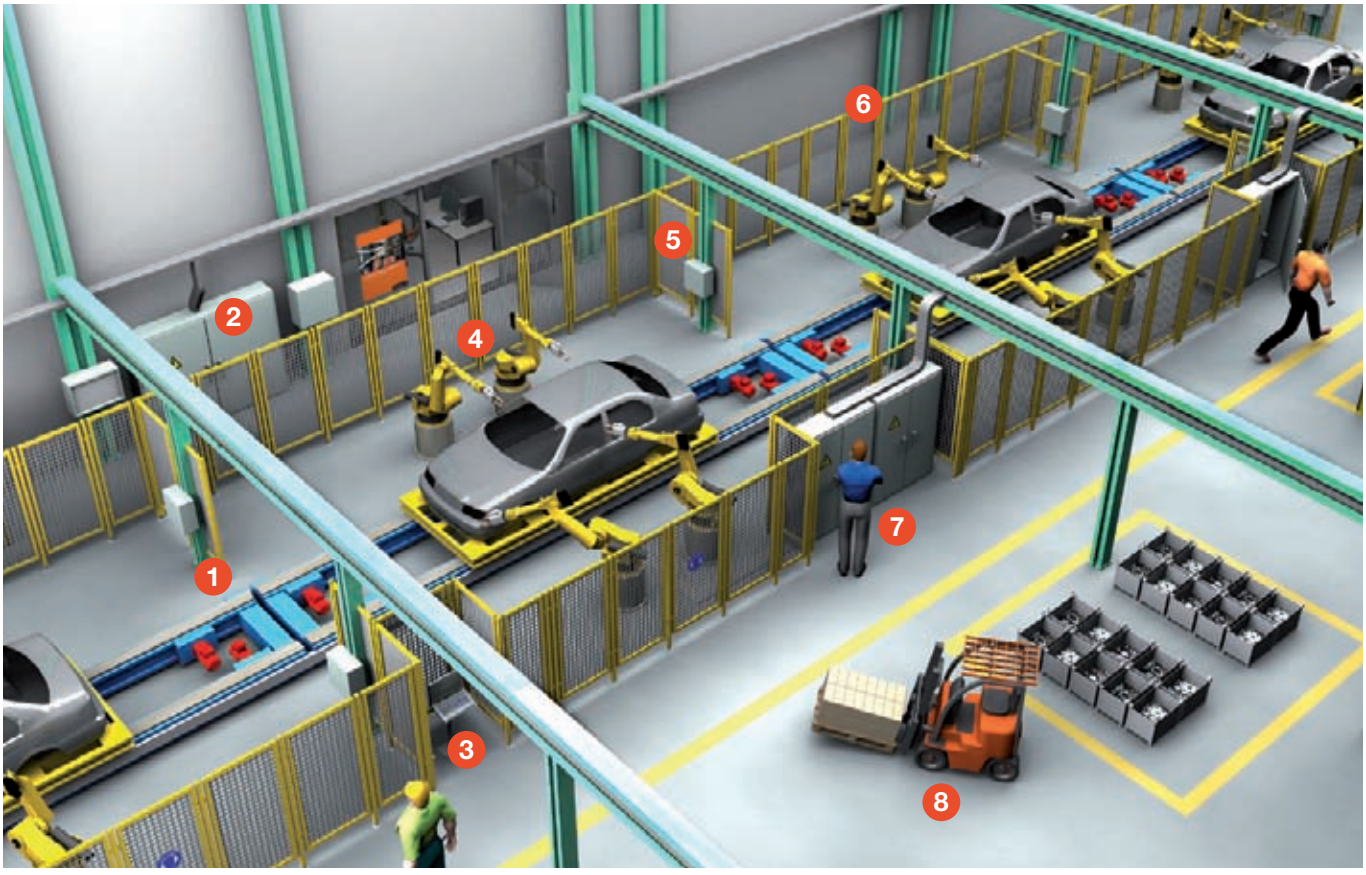
Visit our network infrastructure micro-site at
http://networkcomponents.weidmueller.com

- Videos on applications for network components
- Downloading current product brochures
- The Weidmüller screen saver
- Audio podcasts
- Current schedules
- Direct contact form

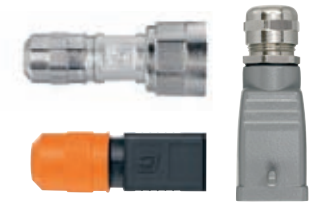
The micro-site is updated continuously and is available in German, English and Spanish. We look forward to your mouse click!

3D factory workshop

Our factory workshop is found at our micro-site. Click on the various sections of the assembly line to learn more about the application fields for our products. The 3D factory workshop is an interactive experience, with 3-D product animations, drawings and films.



1 Materials handling



- IE-line connector line, in IP67 with ***STEADY****TEC*® technology

2 Switchgear cabinet in the facility / Power distribution

- FrontCom® Micro IP 65 service interface
- Managed switches with fast ring redundancy and multiple connection options (copper and fibre-optic)

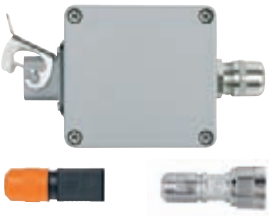
3 Human Machine Interface

- Rugged unmanaged switches with Fast Ethernet and Gigabit Ethernet ports

4 Robots

- Sturdy connection with the M12 connection system

5 Sub-distribution board

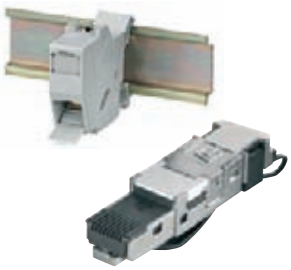


- Sturdy junction boxes in die-cast aluminium housing, for implementing Ethernet in the harshest IP67 industrial environments.

6 Cable conduit

- Cabling of machine workshops, with installation or connection conductors using copper or fibre-optic cable

7 Robotics switchgear cabinet



- Reliable connection for your installation cable with mounting-rail outlets
- RJ45 Gigabit connector

8 Forklift

- Industrial Wireless access point / Client / Bridge to connect mobile devices into Ethernet networks.

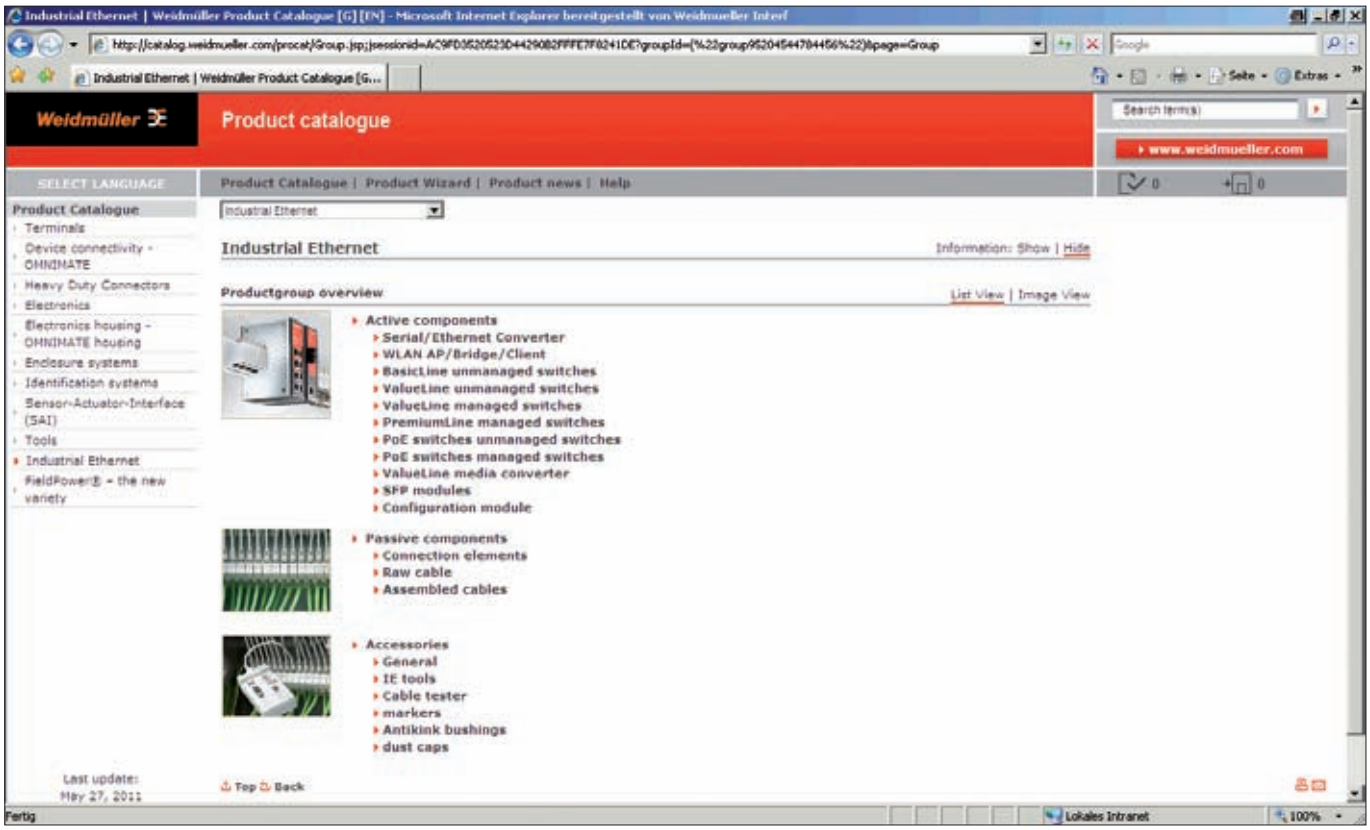
Online product catalogue

If you have questions about the specifications and details of our products, perhaps even outside normal business hours,

then our online catalogue at
http://catalog.weidmueller.com
– open 24 hours a day, 365 days a year – is the perfect source of information. Besides product features and part numbers, it contains extensive additional information on all product groups. For further information, offers and your personal contact, simply consult the Weidmüller website at

www.weidmueller.com

With one-click selection for the product data sheet of your choice.



Cable configurator

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

Make your selection from the list of available cables (material for cable sheathing, category, colour, …). Then choose the connector for the right and left cable end. 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.

A variety of cables and connectors are available from our Industrial Ethernet product line. These selections include category 5 or 7 cable, with PVC sheathing, in PUR, and of course PROFINET-specific cable. A number of versions are available on the plug side of the RJ45, including: IP20, an extra-strong IP67 PushPull (V4) versions, bayonet (V1) and RockStar® HDC (V5). The fibre-optic cable is configured similarly: simply choose the fibre-optic (MM/SM) and the desired connector in order to build your customised cable. IP67 versions are also available here.

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

- Bring up 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 for a request for quote or order.

The cable configurator is your quickest path to finding the specific industrial Ethernet cable which you need.

Whether you are looking for a fibre-optic or copper cable, the configurator will find it for you.

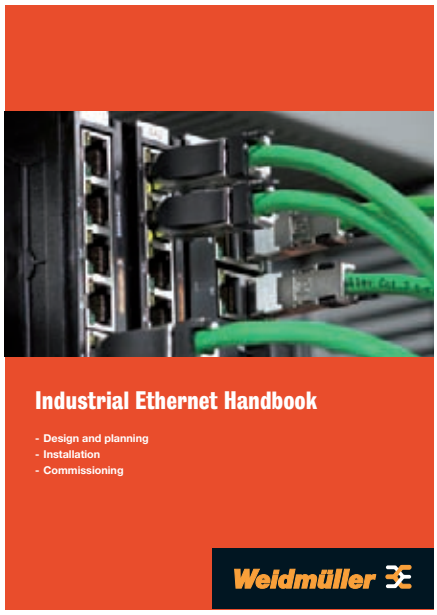
Best service

Practical Guidelines for Industrial Ethernet

Are you an electrical engineer, installer or contractor in search of assistance, tricks and checklists for working on Industrial Ethernets? Our practical guidelines provide detailed descriptions for the installation and implementation of industrial networks.

- You'll find helpful tips and recommendations for selecting the proper components and for documenting your network
- Real-world practical advice for assembling copper and fibre-optic cables
- Pointers to the current standards and regulations in the industrial networking sector
- Simple network implementation, including tips for operation and security
- Maintenance tips for preventing crashes
- ...and much more!

Please ask your personal sales representative about these practical guidelines.

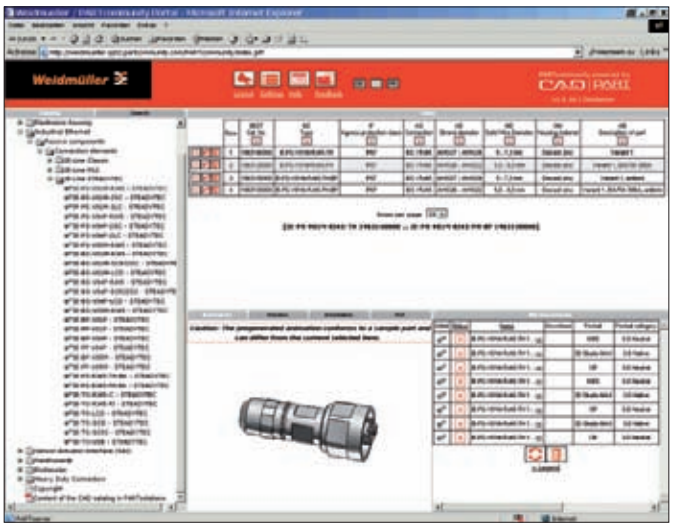


3-D data

Do you require 3-D models of your components so you can design them into your application? And precisely in your own CAD format?

The parts are located in our Online Catalogue with a direct link to the Partserver (www.partserver.com). You can then input your product, CAD format and e-mail address, and you will quickly receive an e-mail with your 3-D model as an attachment.

You can also login at the web site http://Weidmüller.sp02.partcommunity.com/ to view and download 3-D files.

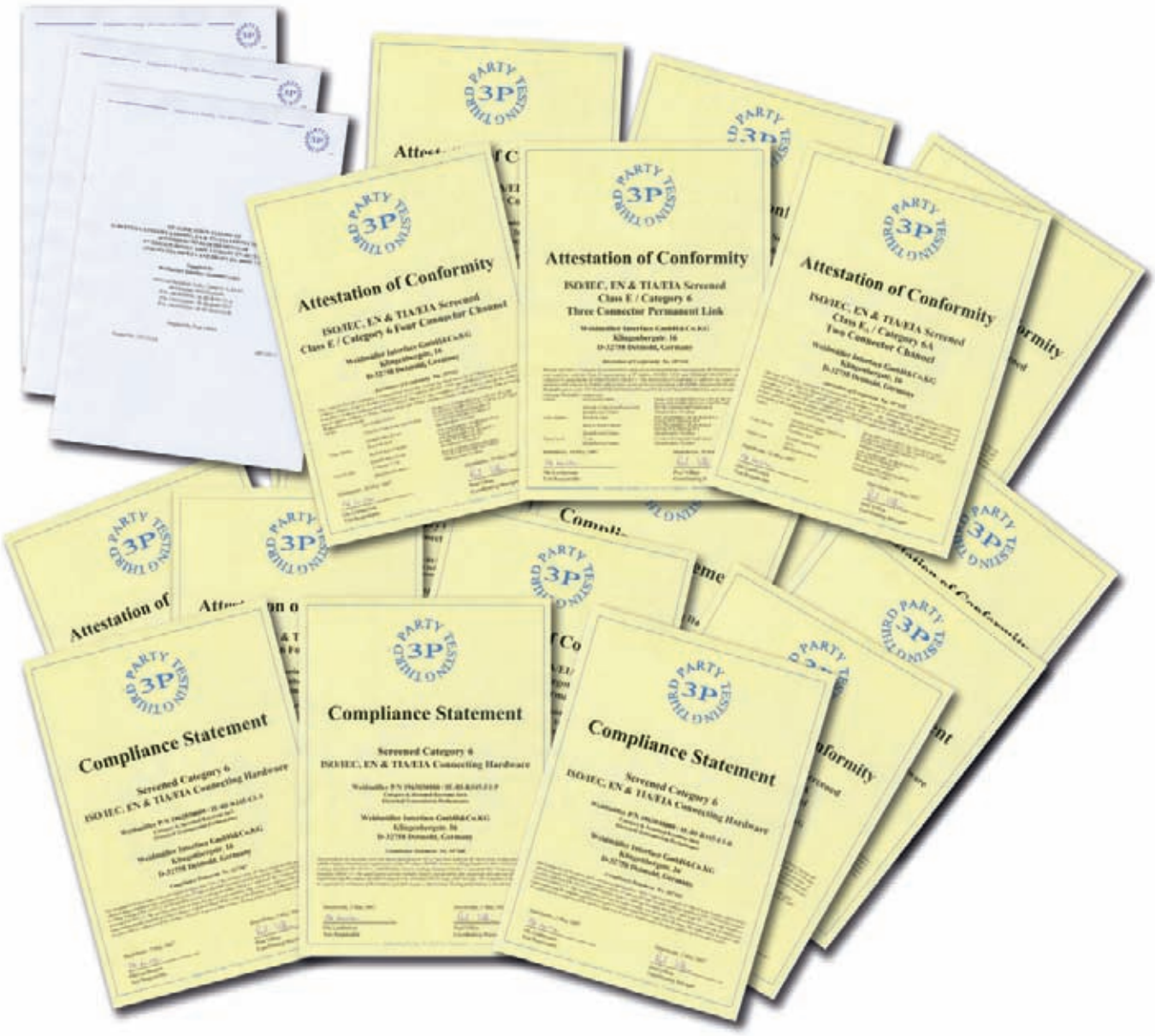


... and what more can Weidmüller do for you?

Certificates

Do you want to prove to your customer that you have installed only the best components? The GHMT (Society for High-frequency Measuring Technology) and the 3P (Third Party Testing) are independent testing institutes and recognised specialists for industrial cabling. The institutes support the industry by means of test certifications for communication cables, connection hardware, patch cords and permanent links and channels.

Their other primary functions are brand testing, safety testing, quality analyses, and error analyses.
By means of these proven certificates, we can assure you of our high quality and performance expectations. Please ask your personal sales partner if you would like to see a copy of our certifications. You can also download the individual certificates from our online catalogue.



Glossary

Interest in Industrial Ethernet has produced an entirely new dictionary with specialist terms. Some of the most important terms are briefly explained here.

4B/5B
A block encoding system for FDDI and ATM. In 4B/5B encoding, all data is divided into 4-bit units (a nibble) and converted to 5-bit units (symbols) by reference to a matrix.

100BaseFX
100 Mpbs Fast Ethernet, based on 4B/5B encoding with fibre optics.

100BaseSX
100 Mbps Fast Ethernet system, identical to operations in the 100BaseFx, but 850 nm fibre-optic technology is used.

100BaseTX
100 Mbps Fast Ethernet system based on 4B/5B encoding and transmission via two copper cables.

100BaseX
This term is used to describe Fast Ethernet technologies based on the 4B/5B encoding. Includes 100BaseTX and 100BaseFX systems.

802.3.IEEE
The CSMA/CD group is the oldest working group in the 802 project. It defines the norms according to the CSMA/CD access procedures proposed by the DIX-group. This working group focuses on discussing high-speed protocols.

AUI
Stands for “Attachment Unit Interface”. Interface between the transceiver and the network board.

Auto-negotiation
Auto-negotiation means automatic recognition of the opposite end’s functions. By using RJ45 plugs for the different protocols, from 10Base-T to 100Base-T, a compatibility problem occurs which is solved due automatic recognition of the opposite end. Using the auto-negotiation procedure, repeaters or terminal equipment can determine what functions the other end has, so that different devices can be configured automatically.

Bandwidth
Bandwidth states how much information can flow within a set period from one location to the other. Units: Bps, Kbps, Mbps, Gbps.

Baud
Baud is the unit of step speed. A step always lasts for a pre-set time e. g. 1 bit, 1_character. If you multiply the number of bits per state with the baud rate you obtain the transmission speed. Only if the number of states is exactly two (i.e. encoding was carried out at a state of exactly 1 bit), is the baud rate exactly the same as the bit rate.

Bit
Bit is an artificial word made up of binary and digit and constitutes the smallest unit of digital information, either a 0 or a 1.

Bitrate
Bitrate is also referred to as transmission speed, transmission rate or data rate. It is the number of bits that are transmitted per unit of time (typically one second). The bitrate is stated in Bps (bits per second) or in the appropriate powers of 10 as Kbps, Mbps and Gbps. In American English the abbreviation Bps is used.

Blowfish
In the digital information age, the handling of sensitive data is becoming ever more important. Therefore, we have incorporated Blowfish, a symmetrical encryption algorithm, into the software of our routers in order to guarantee a secure link between a pair of Weidmüller routers.

Bridge
According to their OSI definition, bridges connect sub-network protocols on layer 2 of the OSI reference model.

Broadcast
A broadcast transmission is a simultaneous transmission from one point to all network stations.

Bus
Buses are connection systems for electronic and electrical components. The topology of a bus is always a physical medium which the individual components are connected to and which is terminated at both ends. Transmission on a bus can be done bit or byte parallel, as in the PC-bus, or serially, as for networks in bus topology.

Category 5
Signifies compliance to features specified in EIA/TIA-568-5. With category 5 (cat. 5) components, networks can be set up that are suitable for all twisted-pair cable Ethernet transmission systems up to 100 Mbps, including 10Base-T and 100Base-TX.

Category 5e
The cat. 5e-cable is an extended version of cat. 5 for use in 1000-Base-T networks or for long-distance 100-Base-T network connections (350 m, compared with 100 m for cat. 5). It must fulfil the EIA/TIA 568A-5 specification.

Category 6
A Cat.6 twisted-pair cable is sufficient for Gigabit Ethernet, with a 250-MHz performance. This is an extension of the CAT5e cable.

Category 7
Cat.7 cable is suitable for operating frequencies up to 600 MHz. It is made with four individually-shielded core pairs, all within another shielding.

Collision
Collision is when two or more stations transmit at the same time in a joint data channel – e.g. a semi-duplex Ethernet or a shared Ethernet. This means that the data transmitted are worthless because they overlay. By overlaying both signals, the signal level increases to what is known as the collision level. This aborts the transmission to both stations.

Collision domain
A collision domain is a segment of a CSMA/CD network. In 802.3 Ethernet networks all terminal equipment is on a physical Ethernet segment, also including equipment that is interconnected via a repeater, on the same collision domain. In contrast to repeaters that do not affect the collision domain, bridges and routers separate the collision domains.

CRC
CRC is an error correction method that creates checksums based on binary numbers by calculating the sums of data groups prior to transmission. CRC is based on the division of polynomials. The principal is that during cyclical block checking, the bits to be monitored are successively fed into a feedback shift register. The length and the number and position of the feedback from the register are stated according to each procedure. The checksum procedure detects individual errors reliably and multiple errors with a high degree of probability.

Crossover-cable
A crossover-cable is a special patch cable where the transmitter and receiver lines at one end have been swapped. Crossover-cables are used to connect two pieces of terminal equipment (computers) or two infrastructure components (switches). Modern switches, because of their auto-crossing function, make connecting normal patch cables with one another possible.

CSMA/CD
An access procedure where several network stations have access to the transmission medium. In the CSMA-system the transmitting station listens to the channel (carrier sensing) before it transmits. A station can then only transmit if the transmission medium has not yet been occupied by another station. If the transmission medium is occupied, the station waits till it is free and can transmit. Because of the signalling times it is still possible for two devices to transmit at the same time. To avoid data loss in this type of collision, both transmitters have to detect the collision (collision detect) and after a randomly-selected waiting time send each of their data packets again. CSMA/CD is a widespread standard process in 10-MBit-networks with hubs. In Industrial Ethernet networks the CSMA/CD system is only used rarely nowadays, because of high demands on network performance.

DCE
(Data Communication Equipment)
Any facility that can relay data between data terminal equipment. DCEs are part of the infrastructure and not terminal equipment.

DHCP
DHCP (Dynamic Host Configuration Protocol) enables a specially configured server to allocate dynamic IP addresses and other network parameters to the computers in a network.

DNS Server
On the Internet, computers are addressed using their numeric IP address (e.g., 211.163.5.38). The DNS server maintains the structure of the domain name system (DNS). It administers and updates the logical names which are associated with the IP addresses. The name server converts less-accessible dotted-decimal-notation numbers into domain addresses. It then makes this information available to DNS clients on request. A network may include an unlimited number of name servers. Since DNS servers must have built-in redundancy, a server implementation consists of two servers: the primary (PNS) and secondary (SNS) name server. If the primary name server is down, the secondary name server, running in parallel, takes over.

DTE
(Data Terminal Equipment) data terminal unit: Every device in the network where a communications route starts or finishes. A station (computer or host) in the network that can transmit or receive data.

DynDNS
DynDNS stands for dynamic domain name system. DNS is responsible for resolving host names to IP addresses. Services such as DynDNS were developed for users using a DSL connection with dynamic IP addresses. DynDNS enables the registration of a dynamic (changeable) IP address to a host name. For this to work, a DSL router must support it or a DynDNS client must be installed on a PC.

Error Detection
The error detection code is a detection code (CRC or checksum) used where errors are identified but not corrected as in ECC.

Ethernet
Ethernet is computer networking technology for local networks (LANs). It refers to cable types and signalling for the bit transfer layer (physical layer), packet formats and protocols for checking media access (media access control, MAC) / link layer of the OSI model. Ethernet is standardised to a large extent in the IEEE norm 802.3.

Fast Ethernet
Nowadays a very widespread version of the Ethernet with 100 Mbps over twisted pair cable according to category 5 or higher. The maximum range is 100 m.

Fibre-optic cables
A type of cable with fibre-optics or plastic core that transmits digital signals in the form of light pulses. (Wave lengths 850 nm in 10BaseFL and 100BaseSX or 1300 nm in 100BaseFX).

Flow Control
This is a function to modify transmission to the capacity of the receiver. Flow control regulates transmission between the transmitter and receiver by causing the transmitter only to send as much data as the receiver can deal with. The different types of Ethernet have different flow control systems. In credit systems (FO cable) the receiver relays to the transmitter the number of data packets that can be transmitted without confirmation. Duplex connections use the PAUSE signal for flow control and back pressure is used in semi-duplex systems to control the data rate.

Forwarding
The process whereby frames are relayed from one port to another in the switch.

Frame
A frame is a data transmission frame on the link layer (layer 2 in the OSI model), which includes the header and trailer information that the bits transmission layer requires for transmission. All frame formats together form the start delimiter of a frame, the destination and source address (destination and source address), the data itself of course and an errorchecking device (a frame check sequence). A maximum of 1500 bytes, with VPN-information of 1524 bytes of payload data per packet are possible in the Ethernet.

Full Duplex Operation
In full duplex operation or duplex operation both communications partners can communicate bi-directionally at the same time.

Gigabit Ethernet
A version of the Ethernet operating at a data transmission rate of 1000 Mbps.

Hub
A hub is data communications facility (DCE) that makes it possible to connect three or more devices in a star topology. Modern Ethernet installations hardly use hubs any more but use switches for this purpose because of the higher network output that occurs as a result and the probable transmission times.

IEEE
Association of American Engineers dealing with norm issues.

IGMP snooping
A switch equipped with IGMP (Internet Group Multicast Protocol) snooping can check whether join requests for a multicast group occur behind the ports. If this is the case, the port concerned is accepted in the forward table for this group. This reduces the load on the network because the switch does not flood all ports with multicast traffic.

Jabber
The jabber messaging protocol is a method in Ethernet networks that prevents a station from occupying the transmission medium for longer than permitted. The jabber function is an element of the IEEE 802.3 standard and provides an interrupt mechanism with which a MAU (Medium Attachment Unit) is interrupted during the transmission process when this transmits data on the cable for longer than 30 ms, or the standard defined packet length of 1518 bytes is exceeded. SQE (Signal Quality Error) signals are sent to the terminal equipment at the same time as the interruption and these cause the terminal equipment to terminate the data transfer. An error function in which a network component continuously sends meaningless signals to the network is also known as a jabber.

LAN
(Local Area Network) local network e.g. within a building.

Link Integrity Test
This test ensures that the Ethernet link is connected properly and that the signals are transmitted correctly. This is a helpful extra but does not guarantee that the link functions perfectly.

Link Layer
The link layer in the OSI reference model.

Link Pulse
The NLP pulse is a recognition pulse that is transmitted from 10Base-T-stations to 100Base-T stations for auto-negotiation. The NLP is a periodic pulse with an interval of 16 +/– 8ms.

LLDP - Link Layer Discovery Protocol
LLDP is a layer-2 protocol in compliance with the IEEE-802.1AB standard. It defines the possibilities for exchanging information with neighbouring devices. Information is periodically sent from supported devices to all devices on the network. Neighbouring devices which support LLDP are then able to receive this data independently.

M12 d-coded
M12, d-coded is a 4-pole plug-in connector variation for Industrial Ethernet according to ISO IEC 61076-2-101. It carries out data transmissions according to Cat.5 and guarantees class of protection IP 67.

MAC Adress
The MAC address is the six byte long hardware address that uniquely identifies a node in the network. The MAC address is hard-coded onto a chip and cannot be manipulated. MAC addresses are assigned according to a particular key that includes unique adapter recognition, identification of the manufacturer and an ID for operating and managing.

Manchester Encoding
Signal encoding where the binary information is shown by the sign of a change in voltage within the bit time. This means that transmitters and receivers are very easy to synchronise, as the transfer in the middle of the bit time produces a reliable frequency. The first half of the bit time includes representing the complementary bit value to be transmitted, the second half represents the bit value (specified for IEEE 802.3 Ethernet and used in 10 Mbit networks).

MDI
The Physical Medium Attachment (PMA) and the Medium Dependent Interface (MDI) both form the actual transceiver (MAU) for the 802.3 standard. The MDI is the physical (electrical, optical) and mechanical interface up to the medium. In the different 802.3-types the interface has a different structure.

MDI-X
MDI stands for Medium Dependent Interface and refers to an Ethernet connection. Auto MDI/MDIX (autocrossing) makes the automatic modification of the transmitting and receiving line of a port possible, i.e. the connected Ethernet cable (crossed/uncrossed) and the configuration of the opposite station (MDI/MDIX) are recognised automatically and its own port is configured appropriately. So all auto MDI/MDIX ports can be used as uplink port.

Media converters
Media converters connect different types of cable to one another and the structure and maintain the functions of the network. In its simplest form a media converter is a quadrupole in the form of a box or network adapter card with a power supply. It modifies different cables – coaxial cables, TP-cables and FO cables – and different plugs to fit one another. In this way media converters can for example be used to modify 100Base-TX to 100Base-FX or to convert monomode fibres to multimode fibres. By using media converters the boundaries of network extension can be increased for example by using fibre-optic routes, on the other hand existing networks can be inexpensively integrated into new network concepts. The Weidmüller range includes media converters on copper-based 10Base-T or 100Base-TX on fibre-optic transmission and vice versa.

Multicast
Multicast is a type of transmission from a single point to several subscribers at the same time (group).

NIC
A network adapter board is a circuit board or another hardware component that connects the network directly with the terminal equipment. It can be a plug-in board for the bus system in the terminal equipment. The network adapter board is the physical interface to the communications network. It includes the appropriate jacks for connection to the physical medium.

OLE
Object Linking and Embedding (OLE) is an interface developed by Microsoft to link and embed data across different applications. In this way external, but OLE-compatible, texts, graphics or tables can be embedded in other OLE applications. Linking OLE-compatible data is carried out via a link to the appropriate file. The original file remains untouched. During embedding, a copy of the file is inserted into the document.

OSI
OSI are internationally-agreed standards which open systems should work with and define the rules for implementing these norms. Communications systems are a combination of network hardware and network and systems software in a group of networked devices that permit free exchange of information between these devices on the basis of joint protocol agreements and interfaces, independently of the type of these devices or how they are equipped. Systems that implement OSI protocols are an example of this. The OSI standards are freely available and not protected by licences.

Packet
A data packet is a defined arrangement of characters as part of the data network, that are treated as a unit in transmission services with data packet transmission. As well as the payload data, data packets also include control information for addressing, sequence of transmission, flow control and error adjustment at all protocol levels. A data packet can be of a predetermined or variable length, but a maximum length is specified. If the whole destination address is included in each data packet, it is called a datagramme. On the other hand in a virtual connection only the first data packet has the whole address, whereas in the following data packets an assignment is made to the appropriate connection.

Patch cable
In the floor distribution point the patch cable creates a flexible connection between floor distribution point and the horizontal wiring. Patch cables are FO cables or copper cables and are also called jumper cords. Patch cables should be very flexible, have a tight bending radius and if possible should max the fixed cable. Patch cables are taken into account in the ISO/IEC 11801 and EN 50173 standards, but are not included in the transmission features specified for the link classes. This should be changed when the cable standards are revised. The patch cable should then, at a length of up to 5 m, be part of a new definition, the channel specification and included in all the transmission features. The jumper cord and a connection cable, also 5 m long, will then be taken into account in this specification.

PAUSE
A single frame is sent via the full-duplex mode to the available stations, to signify that transmissions are to be reduced.

PHY
Physical Layer device. This term is mostly used for a transceiver in Fast and Gigabit Ethernet.

Physical Layer
The Physical Layer (PHY) is the top sublayer or physical layer consisting of the PMD-sublayer and the PHY-sublayer. The PHY-sublayer is underneath the MAC layer and encodes, decodes and synchronises the station with the transmission frequency and the regeneration of the transmission frequency.

Point-to-Point Technology
A type of connection where a connection is generated between two pieces of terminal equipment. Point-to-Point connections occur in the networked environment, in radio broadcasting in beam radio and in the service area. In networks, where point-to-point connections are concerned, instead of a user network interface, an interface to a central facility in the network can also be operated. The connection permanent or on demand.

Port
Connector on a hardware unit. Usually an input/output channel on the computer or other hardware unit such as modem, router, hub or multiplexer.

Port Mirroring
Port mirroring means that the data traffic of a switch port can be mirrored, in order to detect errors or to measure throughput, onto another port to which a management station can be connected.

PPPoE
The PPoE (Point to Point Protocol over Ethernet) was developed in order to connect components and LANs to the Internet. It takes advantage of the divided Ethernet environment together with the trusted and secure dialup-access user model from PPP. It allows individual PCs to establish PPP sections to various target networks simultaneously. A LAN and multiple components can also establish multiple simultaneous PPP sessions for connection to various target networks.

Promiscuous Mode
The Promiscuous Mode is a particular receiver mode for network equipment. In this mode the device reads all the incoming data traffic sent to the network interface that has been switched to this mode and transmits the data to be processed to the operating system. Normally this device would only process packets directed to itself, which is done for example in Ethernet networks by evaluating the MAC address.

Propagation Delay
The delay is the time that the signal requires to go from one point in a transmission channel to another. Depending on the transmission medium, the delay is the speed of light, as in satellite transmission, or less when transmitting in data cables and FO cables. It does not depend on the speed of light and depends mostly on the dielectric constant of the medium or in FO cables on the refraction.

Protocol
A data transmission protocol establishes the rules for the exchange of information in the form of a directory. This includes all formats, parameters and specifications for a complete, perfect and effective transmission of data. Protocols include conventions on data formats, times and how errors are treated when exchanging data between computers. A protocol is a convention on setting up connections, monitoring connections and terminating connections. Different protocols are necessary in a data connection. Protocols can be assigned to each layer of the reference model. There are communication protocols for the bottom four layers of the reference model and higher protocols for control and data provisioning and its application.

Quality of Service (QoS)
QoS are all procedures that influence the flow of data in LANs and WANs so that the service arrives at the receiver in a particular quality. The ITU has developed a hierarchical QoS model, which takes both the technical aspects of the service into account and the availability and handling of the terminal equipment. The ITU defined three QoS classes on this basis.

Rapid Spanning Tree
The IEEE Standard Rapid Spanning Tree protocol (RSTP, IEEE 802.3w) is – apart from RapidRing™ – another option to provide redundancy in a network. The RSTP makes a structure similar to the network possible. In this way multi-redundancy can be achieved. Using RSTP in a network is not as simple as using RapidRing™, but RSTP does have a lot of interesting options.

Remote Management
Remote Management of a switch from every network station equipped with Telnet or web browsers. Remote Management assumes that each switch has its own IP address.

RJ45
The advantages of the RJ45 slot system are its compactness and simplicity. It is using for horizontal wiring and wiring work places. The RJ45 slot system is an eight pole miniature slot system for use in connections with SDP and UTP cables. The plug's eight contacts have serial numbers and are protected from corrosion and mechanical stress with a thin gold layer. The contact points are situated between guide rails the cable is connected with insulation piercing. On the side opposite to the contact side, the RJ45 plug has a fluke that locks the slot when sticking it into a RJ45 jack.

SC-plug-in connection
The SC-plug is a small polarised push/pull plug with high packing density. This LWL-plug is square and can be used for multimode fibres and monomode fibres. Typical insertion loss is at 0.2 dB to 0.4 dB, operating loss in monomode fibres at 50 dB and multimode fibres at least 40 dB. If monomode fibres with skew angle coupler are used instead of oval coupler, the operating loss increases to at least 70 dB. In the duplex type, as a SC-Duplex plug, the plug must be used where there is fibre-optic wiring to the terminal equipment. It is also increasingly used in new installations and in FCS and ATM applications.

Segment
The term segment has many meanings. In networks a segment is a network section delimited by bridges, routers or switches. Where LANs are concerned, a LAN segment or a collision domain is referred to. In token ring networks the transmission section between two neighbouring data stations is meant. In the TCP specifications, a segment describes a single infor-mation unit on the communication network.

Semi-duplex operation
The semi-duplex procedure allows bidirectional use of a single transmission line. The interfaces however can only either transmit or receive at any given time.

Slot time
This is an important Ethernet value. The slot time is twice the speed of the signal propagation time between the two networks that are farthest away from one another and the minimum packet length of 64 bytes or 512 bits. At a frequency clock speed of 10 Mbps, or a frequency clock cycle of a 100 ns, this produces a slot time of 51.2 µs. At 100 Mbps the frequency is 10 ns, so therefore the slot time for the same packet length is 51.2 µs. The greater the slot time, the poorer the Ethernet performance.

SNMP
The SNMP protocol means that central network management for many network components is possible. SNMP's main objectives are to decrease the complexity of the management functions, to extend the protocol and to be independent of any network components. The SNMP protocol supports monitoring, controlling and administration of networks. According to the SNMP architecture model a network is divided into network management stations (NMS) and network components. The network management stations carry out applications to monitor and control the network components. The network components have management agents, which carry out management functions.

Spanning Tree Protocol
-> see Rapid Spanning Tree.

ST connector
This LWL-plug (IEC-SC 86B) specified by AT&T is suitable for both monomode fibres and multimode fibres. The ST-plug is a commonly-available plug, used in LANs. It uses a bayonet lock as its locking system. In this LWL-plug the FO cables is guided through a ceramic or metal ferrule with a pin diameter of 2.5 mm and is prevented from twisting by a metal pin. The ceramic ferrule has been grounded to make its contact area convex. A spring means that there is constant contact to the front of the fibres to be connected.

Star topology
In star topology the transmission stations are connected in a star shape to a central node. Star topologies can only exchange data indirectly via the central node. There is a difference between active and passive star systems. In the former, the middle node is a computer that takes over relaying the messages. Its capacity determines the performance of the network. For example: private exchanges. Passive systems only have one node in the middle that combines the routes. This node does not have any exchange role, its purpose is signal regeneration. Passive star systems can for example be operated with TDMA, CSMA/CD or token access procedures.

Straight-through
A type of cable where the cable connections at both ends are the same. This type of cable is mostly used to connect devices such as switches with the station. Straight-through is the normal way of wiring cables – in contrast to crossover cables.

Station
Each hardware component in a network and the terminal equipment connected to the network. Server, router, telephone, fax machine etc and all communication devices connected with a network adapter (NIC).

Switching Hub
Switches are network components that have switching functions. These switching functions can also take place as exchange functions in long-distance networks and in local networks. In long-distance networks the local exchanges have local switches and the remote exchanges have central switches.

Topology
The configuration of the network nodes and connections is called the physical topology. The logical connections of network nodes possible are referred to as the logical topology. This states which node pairs can communicate with one another and whether they have a direct physical connection. The physical and logical topology does not have to be identical in networks. As a rule network topologies can be divided into two classes, where in the first class connections from one node to the next one are set up and in the second class all network nodes are directly connected to the transmission medium. The most well-known network topologies are ring topology, bus topology, tree topology and star topology. There is also meshed topology in long-distance networks

Transceiver
Transceiver is a compound word made up of transmitter and receiver and signifying a transmitting/receiving device. The transceiver implements network access of a station to the Ethernet and is sometimes called a MAU.

Trunking
The term trunking occurs in Ethernet networks but also in private exchanges and in mobile communication. In large Ethernet networks trunking is the parallel switching of several Ethernet links. The transmission via the parallel links is used to scale the bandwidth and is activated by the spanning tree algorithm. As the spanning tree protocol is unsuitable for granular bandwidth scaling, this technology has been standardised in the IEE 802.3ad working group and called “Aggregation of multiple link segments”.

Twisted-Pair Cable
A twisted-pair cable is a symmetrical copper cable consisting of two wires that are twisted together. The conductors consist of insulated copper conductors. In contrast to asymmetrical cables, such as coaxial cables, symmetrical cables do not have reference potential. The advantage is that wires can be arranged to prevent interference between the lines.

VLAN
Virtual networks or virtual LANs (VLAN) are a technological concept for implementing logical work groups within a network. This type of network is implemented using LAN-switching or virtual routing on the link layer or on the network layer.

Webserver
A web server is a server programme that provides files via HTTP protocol. These files are usually websites, pictures and style sheets. It makes no difference to the webserver what type of files it supplies. Each time a web site is requested (for example by clicking a link), the browser sends an HTTP query to a web server. This web server can then send the site requested back. The standard ports for the web server are 84 HTTP protocol and 443 for HTTPS, the encrypted HTTP (for example with SSL). Usually all page requests are saved in a log file, from where - by using log file analysis - different statistics on access can be generated. However these do not give the full picture, as HTTP is a connectionless protocol.

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IE-C6FP8LM0050M40M40-M	1201270050	D.17
IE-C6FP8LM0100M40M40-M	1201270100	D.17
IE-C6FP8LM0150M40M40-M	1201270150	D.17
IE-C6FP8LM0200M40M40-M	1201270200	D.17
IE-C6FP8LR0005M40M40-R	1166030005	D.17
IE-C6FP8LR0010M40M40-R	1166030010	D.17
IE-C6FP8LR0015M40M40-R	1166030015	D.17
IE-C6FP8LR0020M40M40-R	1166030020	D.17
IE-C6FP8LR0030M40M40-R	1166030030	D.17
IE-C6FP8LR0050M40M40-R	1166030050	D.17
IE-C6FP8LR0100M40M40-R	1166030100	D.17
IE-C6FP8LR0150M40M40-R	1166030150	D.17
IE-C6FP8LR0200M40M40-R	1166030200	D.17
IE-C6FP8LR0250M40M40-R	1166030250	D.17
IE-C6FP8LY0005M40M40-Y	1251580005	D.17
IE-C6FP8LY0010M40M40-Y	1251580010	D.17
IE-C6FP8LY0015M40M40-Y	1251580015	D.17
IE-C6FP8LY0020M40M40-Y	1251580020	D.17
IE-C6FP8LY0030M40M40-Y	1251580030	D.17
IE-C6FP8LY0050M40M40-Y	1251580050	D.17
IE-C6FP8LY0100M40M40-Y	1251580100	D.17
IE-C6FP8LY0150M40M40-Y	1251580150	D.17
IE-C6FP8LY0200M40M40-Y	1251580200	D.17
IE-C6FP8LY0250M40M40-Y	1251580250	D.17
IE-C7BS8UG-MW	8955350000	D.7
IE-C7BS8VG-MW	8955360000	D.7
IE-C7ES8UG-MW	8954300000	D.9
IE-C7ES8VG-MW	8955480000	D.9
IE-CC-V01P	1061820000	C.42
IE-CC-V04P	1045960000	C.46
IE-CDR-V14MSCPOF/VAPM-C	1253240000	C.75
IE-CD-V04PRJ-C-MA	1122710000	C.78
IE-CD-V14MHYB-10P-FJ	1068850000	C.74
IE-CD-V14MRJ/VAPM24V-C-MA	1068820000	C.73
IE-CD-V14MRJ/VAPM24V-FJ	1068830000	C.72
IE-CD-V14MRJ-C-MA	1068870000	C.73
IE-CD-V14MRJ-FJ	1068880000	C.72
IE-C-IP67	8813090000	C.56
IE-CR-IP20-RJ45-FH-BU	1963080000	C.16
IE-CR-IP20-RJ45-FH-GN	1963100000	C.16
IE-CR-IP20-RJ45-FH-GY	1963060000	C.16
IE-CR-IP20-RJ45-FH-OG	1963070000	C.16
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IE-CR-IP20-RJ45-FH-YE	1963090000	C.16
IE-CR-IP67-WS20-BU	1963020000	E.18
IE-CR-IP67-WS20-GN	1963040000	E.18
IE-CR-IP67-WS20-GY	1963000000	E.18
IE-CR-IP67-WS20-OG	1963010000	E.18
IE-CR-IP67-WS20-WH	1962990000	E.18
IE-CR-IP67-WS20-YE	1963030000	E.18
IE-CS-2TX-1RS232/485	1242080000	B.29
IE-CS-2TX-2RS232/485	1242090000	B.29
IE-CST	9204350000	E.3
IE-CT	8808420000	E.6
IE-CTC-AS-LC-GOF	1033350000	E.12
IE-CTC-AS-SC-POF	1033360000	E.12
IE-CTC-SCST-GOF	1032030000	C.36
IE-CTC-SCST-GOF	1032030000	E.12
IE-CT-LC-GOF	9205330000	E.13
IE-CT-SC-GOF	9205320000	E.13
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IE-FCM-RJ45-FJ-B	1018820000	C.26
IE-FCM-RJ45-FJ-P	1018830000	C.26
IE-FCM-USB-A	1018840000	C.27
IE-FCM-USB-AB	1222550000	C.27
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IE-FM5B2UE0100MLD0LD0X	8979030000	D.36
IE-FM5B2UE-MW	8946000000	D.31
IE-FM5D2UE0001MSD0SD0X	8876430010	D.37
IE-FM5D2UE0001MST0ST0X	8876450010	D.37
IE-FM5D2UE0003MSD0SD0X	8876430030	D.37
IE-FM5D2UE0003MST0ST0X	8876450030	D.37
IE-FM5D2UE0005MSD0SD0X	8876430050	D.37
IE-FM5D2UE0005MST0ST0X	8876450050	D.37
IE-FM5D2UE0010MSD0SD0X	8876430100	D.37
IE-FM5D2UE0010MST0ST0X	8876450100	D.37
IE-FM5D2UE-MW	8956070000	D.31
IE-FM5Z2VO0001MLD0LD0X	1276880000	D.34
IE-FM5Z2VO0001MSD0SD0X	8813300000	D.33
IE-FM5Z2VO0001MST0ST0X	8813240000	D.33
IE-FM5Z2VO0002MLD0LD0X	1062570000	D.34
IE-FM5Z2VO0002MSD0SD0X	8813310000	D.33
IE-FM5Z2VO0002MST0SD0X	8813390000	D.34
IE-FM5Z2VO0002MST0ST0X	8813250000	D.33
IE-FM5Z2VO0003MSD0SD0X	8813320000	D.33
IE-FM5Z2VO0003MST0ST0X	8813260000	D.33
IE-FM5Z2VO0005MLD0LD0X	1062550000	D.34
IE-FM5Z2VO0005MSD0SD0X	8876350050	D.33
IE-FM5Z2VO0005MST0ST0X	8876370050	D.33
IE-FM5Z2VO0010MLD0LD0X	1062580000	D.34
IE-FM5Z2VO0010MSD0SD0X	8876350100	D.33
IE-FM5Z2VO0010MST0ST0X	8876370100	D.33
IE-FM6B2UE0005MLD0LD0X	1220930000	D.36
IE-FM6B2UE0010MLD0LD0X	1276680000	D.36
IE-FM6B2UE-MW	8956060000	D.31
IE-FM6D2UE0001MSD0SD0X	8876440010	D.37
IE-FM6D2UE0001MST0ST0X	8876460010	D.37
IE-FM6D2UE0003MSD0SD0X	8876440030	D.37
IE-FM6D2UE0003MST0ST0X	8876460030	D.37
IE-FM6D2UE0005MSD0SD0X	8876440050	D.37
IE-FM6D2UE0005MST0ST0X	8876460050	D.37
IE-FM6D2UE0010MSD0SD0X	8876440100	D.37
IE-FM6D2UE0010MST0ST0X	8876460100	D.37
IE-FM6D2UE-MW	8956050000	D.31
IE-FM6Z2VO0001MSD0SD0X	8813330000	D.33
IE-FM6Z2VO0001MST0ST0X	8813270000	D.33
IE-FM6Z2VO0002MLD0LD0X	1062450000	D.34
IE-FM6Z2VO0002MSD0SD0X	8813340000	D.33
IE-FM6Z2VO0002MST0SD0X	8813400000	D.34
IE-FM6Z2VO0002MST0ST0X	8813280000	D.33
IE-FM6Z2VO0003MSD0SD0X	8813350000	D.33
IE-FM6Z2VO0003MST0ST0X	8813290000	D.33
IE-FM6Z2VO0005MSD0SD0X	8876360050	D.33
IE-FM6Z2VO0005MST0ST0X	8876380050	D.33
IE-FM6Z2VO0010MSD0SD0X	8876360100	D.33
IE-FM6Z2VO0010MST0ST0X	8876380100	D.33
IE-FM6Z2VO0100MLD0LD0X	8992990000	D.34
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IE-FPOZ2EE0003MSJ0SJ0-X	1273430030	D.35
IE-FPOZ2EE0005MSJ0SJ0-X	1273430050	D.35
IE-FPOZ2EE0010MSJ0SJ0-X	1273430100	D.35
IE-FPOZ2EE-MW	1242820000	D.32
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IE-KOK-V1	1966780000	E.16
IE-KOK-V4	1966790000	E.16
IE-KOK-V5	9204790000	E.16
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IE-M12-ADAP S	8901620000	C.59
IE-M12-COUP	8901640000	C.59
IE-M12-PCBCE	8902810000	C.60
IE-M12-PCBCE-PANEL	8902820000	C.60
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IE-MC-VL-1TX-1SCS	1241420000	B.27
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IE-SFP-1GLSXLC	1241500000	B.34
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IE-SW-BL05-5TX	1240840000	B.9
IE-SW-BL05T-5TX	1240850000	B.9
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1010840100	IE-C5DB4RE0100MCSXXX-X	D.25
1010850015	IE-C5DB4RE0015MCSMCS-E	D.24
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1012440000	IE-PH-V01P	C.40
1012460000	IE-PH-V01P-BP	C.40
1012470000	IE-PS-V01P-RJ45-TH	C.40
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1024140000	PJ PRO TINTENAUFFANGWANNE	E.19
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1025940030	IE-C5DD4UG0030MCSXXX-X	D.22
1025940050	IE-C5DD4UG0050MCSXXX-X	D.22
1025940100	IE-C5DD4UG0100MCSXXX-X	D.22
1025950005	IE-C5DD4UG0005MCSMCS-E	D.21
1025950015	IE-C5DD4UG0015MCSMCS-E	D.21
1025950030	IE-C5DD4UG0030MCSMCS-E	D.21
1025950050	IE-C5DD4UG0050MCSMCS-E	D.21
1025950100	IE-C5DD4UG0100MCSMCS-E	D.21
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1044470015	IE-C5DD4UG0015MCSA20-E	D.22
1044470030	IE-C5DD4UG0030MCSA20-E	D.22
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1059340030	IE-C5DB4RE0030MSSMCS-E	D.24
1059340050	IE-C5DB4RE0050MSSMCS-E	D.24
1059340100	IE-C5DB4RE0100MSSMCS-E	D.24

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1062570000	IE-FM5Z2VO0002MLD0LD0X	D.34
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1066870000	IE-C5ES8UG0050B41B41-E	D.23
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1077300000	IE-PS-V05M-A-RJ45-FH	C.52

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1119730020	IE-C5DD4UG0020A2EA2E-X	D.20
1119730030	IE-C5DD4UG0030A2EA2E-X	D.20
1119730050	IE-C5DD4UG0050A2EA2E-X	D.20
1119730100	IE-C5DD4UG0100A2EA2E-X	D.20
1119730150	IE-C5DD4UG0150A2EA2E-X	D.20
1119730200	IE-C5DD4UG0200A2EA2E-X	D.20

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1132040000	IE-PS-RJ45-FH-BK-A	C.16
1132050000	IE-PS-RJ45-FH-BK-B	C.16
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1135160000	IE-BIC-HYB-P-0,2-300	C.31

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1165900020	IE-C6FP8LB0020M40M40-B	D.15
1165900030	IE-C6FP8LB0030M40M40-B	D.15
1165900050	IE-C6FP8LB0050M40M40-B	D.15
1165900100	IE-C6FP8LB0100M40M40-B	D.15
1165900150	IE-C6FP8LB0150M40M40-B	D.15
1165900200	IE-C6FP8LB0200M40M40-B	D.15
1165900250	IE-C6FP8LB0250M40M40-B	D.15
1165940005	IE-C6FP8LD0005M40M40-D	D.15
1165940010	IE-C6FP8LD0010M40M40-D	D.15
1165940015	IE-C6FP8LD0015M40M40-D	D.15
1165940020	IE-C6FP8LD0020M40M40-D	D.15
1165940030	IE-C6FP8LD0030M40M40-D	D.15
1165940050	IE-C6FP8LD0050M40M40-D	D.15
1165940075	IE-C6FP8LD0075M40M40-D	D.15
1165940100	IE-C6FP8LD0100M40M40-D	D.15
1165940150	IE-C6FP8LD0150M40M40-D	D.15
1165940200	IE-C6FP8LD0200M40M40-D	D.15
1165940250	IE-C6FP8LD0250M40M40-D	D.15
1166000005	IE-C5ES8UG0005M40M40-G	D.19
1166000010	IE-C5ES8UG0010M40M40-G	D.19
1166000015	IE-C5ES8UG0015M40M40-G	D.19
1166000020	IE-C5ES8UG0020M40M40-G	D.19
1166000030	IE-C5ES8UG0030M40M40-G	D.19
1166000050	IE-C5ES8UG0050M40M40-G	D.19
1166000100	IE-C5ES8UG0100M40M40-G	D.19
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1166020050	IE-C5ES8VG0050M40M40-G	D.19
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1166030005	IE-C6FP8LR0005M40M40-R	D.17
1166030010	IE-C6FP8LR0010M40M40-R	D.17
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1166030100	IE-C6FP8LR0100M40M40-R	D.17
1166030150	IE-C6FP8LR0150M40M40-R	D.17
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1173030005	IE-C5DD4UG0005A20A20-E	D.20
1173030010	IE-C5DD4UG0010A20A20-E	D.20
1173030020	IE-C5DD4UG0020A20A20-E	D.20
1173030030	IE-C5DD4UG0030A20A20-E	D.20
1173030050	IE-C5DD4UG0050A20A20-E	D.20
1173030100	IE-C5DD4UG0100A20A20-E	D.20
1173030150	IE-C5DD4UG0150A20A20-E	D.20
1173030200	IE-C5DD4UG0200A20A20-E	D.20

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1201270010	IE-C6FP8LM0010M40M40-M	D.17
1201270015	IE-C6FP8LM0015M40M40-M	D.17
1201270020	IE-C6FP8LM0020M40M40-M	D.17
1201270030	IE-C6FP8LM0030M40M40-M	D.17
1201270050	IE-C6FP8LM0050M40M40-M	D.17
1201270100	IE-C6FP8LM0100M40M40-M	D.17
1201270150	IE-C6FP8LM0150M40M40-M	D.17
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1233160012	IE-C6FP8LD0012M40W40-D	D.18
1233160015	IE-C6FP8LD0015M40W40-D	D.18
1233160020	IE-C6FP8LD0020M40W40-D	D.18
1233160030	IE-C6FP8LD0030M40W40-D	D.18
1233160050	IE-C6FP8LD0050M40W40-D	D.18
1233160100	IE-C6FP8LD0100M40W40-D	D.18

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1240880000	IE-SW-BL05-4TX-1ST	B.9
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1240900000	IE-SW-BL08-8TX	B.9
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1240920000	IE-SW-BL08T-6TX-2SC	B.9
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1240940000	IE-SW-VL08MT-8TX	B.17
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1240970000	IE-SW-VL08MT-5TX-3SC	B.17
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1248280012	IE-C6FP8LD0012M40V40-D	D.18
1248280015	IE-C6FP8LD0015M40V40-D	D.18
1248280020	IE-C6FP8LD0020M40V40-D	D.18
1248280030	IE-C6FP8LD0030M40V40-D	D.18
1248280050	IE-C6FP8LD0050M40V40-D	D.18
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Addresses worldwide

AE United Arab Emirates
Weidmuller Middle East FZE
P.O. Box 8591
SAIF-Zone
Sharjah – U. A. E.
Phone +971 6 5572723
Fax +971 6 5572724
wme.info@weidmueller.com

AR Argentina
CPI SA
Bauness 2660
1431 Buenos Aires
Phone +54 11 45238008
Fax + 54 11 45220546
info@cpi.com.ar
www.cpi.com.ar

AT Austria
Weidmüller GmbH.
Industriezentrum Nö Süd
Straße 2, Objekt M2
2355 Wiener Neudorf
Phone +43 2236 6708-0
Fax +43 2236 6708-199
office.at@weidmueller.com

AU Australia
Weidmüller Pty. Ltd.
P.O.Box 6944
Huntingwood Drive 43
Huntingwood,
NSW, 2148
Phone +61 2 9671-9999
Fax +61 2 9671-9911
info@weidmueller.com.au
www.weidmueller.com.au

AZ Azerbaijan
West Industries Ltd.
Caspian Plaza, 5-th Floor
44 J. Jabbarly Str., Baku
Phone +99412 499 15 15
Fax +99412 499 14 93
sales@west-i.com

BA Bosnia and Herzegovina
BH ES ELEKTROSISTEM d.o.o.
Bul. Vojvode S.
Stepanovica kod br. 272
78000 BiH - Banja Luka
Phone +387 51 420-340
Fax +387 51 420-341
elsist@inecco.net
www.elektrosistem.ba

BE Belgium
Weidmüller Benelux B.V.
Mechelsesteenweg 519 bus 6 en 7
1930 Nossegem
Phone +32 2 752 4070
Fax +32 2 751 3606
info@weidmueller.be
www.weidmueller.be

BG Bulgaria
Weid-Bul EOOD
1756 Sofia
13, bul. "Kliment Ohridski"
Phone +359 2 9632560
Fax +359 2 9631098
sofia@weidbul.com
www.weidbul.com

BH Bahrain
Khayber Trading Company
P.O. Box 1976 Manama,
Phone +973 720747
Fax +973 720331
khayber@batelco.com.bh

BR Brazil
Weidmüller Conexel do Brasil
Rua Garcia Lorca, 176
09695-900, Sao Paulo SP
Phone +55 11 43669600
Fax +55 11 43621677
vendas@conexel.com.br
www.conexel.com.br

BY Belarus
TECHNIKON Ltd.
Oktyabrskaya Str. 16/5
Apt. 704, Minsk 220801
Phone +375 17 2275830
Fax +375 17 2275830
technikon@belsonet.net

CA Canada
W Interconnections CANADA Ltd.
10 Spy Court, Markham,
Ontario L3 R5 H6
Phone +1 905 475-1507
Fax +1 905 475-2798
info1@weidmuller.ca
www.weidmuller.ca

CH Switzerland
Weidmüller Schweiz AG
Rundbuckstraße 2
8212 Neuhausen am Rheinfall
Phone +41 52 6740707
Fax +41 52 6740708
info@weidmueller.ch
www.weidmueller.ch

CL Chile
Felipe Bahamondes S.A./ATS AGRO
Maria Luisa Santander 0475
Casilla 3425
Santiago
Phone +56 2 341-1271
Fax +56 2 341-1275
felipe@atsintech.com

CN China
Weidmüller Interface International
Trading (Shanghai) Co., Ltd.
25F, BM Intercontinental Business
Center,
100 Yutong Road,Shanghai 200070
P.R. China
Phone +86 21 22195008
Fax +86 21 22195009
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CO Colombia
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Phone +57 1 5478510
Fax +57 1 4223044
comercial@
automatizacionavanzada.com
www.automatizacionavanzada.com

CR Costa Rica
ELVATRON S.A.
la Uruca 400 Norte
Banco Costa Rica
San José Costa Rica
Phone +506 2 961060
Fax +506 5 200609
dirk.haase@elvatron.com
www.elvatron.com

CZ Czech Republic
Weidmüller s. r. o.
Lomnického 5/1705
14000 Praha 4
Phone +420 2 44001400
Fax +420 2 44001499
office@weidmueller.cz
www.weidmueller.cz

DE Germany
Weidmüller GmbH & Co. KG
P.O. Box 3054
32720 Detmold
Ohmstraße 9
32758 Detmold
Phone +49 5231 1428-0
Fax +49 5231 1428-116
weidmueller@weidmueller.de
www.weidmueller.de

DK Denmark
Wexøe A/S
Lejrvej 31
3500 Vaerloese
Phone +45 45465800
Fax +45 45465801
wexoe@wexoe.dk
www.wexoe.dk

EC Ecuador
Elsystec S. A. Electricidad
Sistemas y Tecnología
Vasco de Contreras N35-25
y Mañosca, Quito
Phone +593 2 2456510
Fax+593 2 2456755
Elsystec@uio.satnet.net

EE Estonia
Soots Interface OÜ
Pärnu mnt 142
11317 Tallinn
Phone +372 5296177
Fax +372 6096933
info@sootsinterface.ee
www.sootsinterface.ee

EG Egypt
Standard Electric (OMEGA)
87, Mohamed Farid Street
Heliopolis, Cairo
Phone +20 26422977
Fax +20 26422955
stdelec@rite.com

ES Spain
Weidmüller S. A.
Narcis Monturiol 11-13
Pol. Ind. Sudoeste
08960 Sant Just Desvern
Barcelona
Phone +34 93 4803386
Fax +34 93 3718055
weidmuller@weidmuller.es
www.weidmuller.es

FI Finland
JUHA-ELEKTRO OY
P. O. Box 57, 641 Helsinki
Kylvöpolku 6, 680 Helsinki
Phone +358 10 8328 100
Fax +358 10 8328 109
info@juha-elektro.fi
www.juha-elektro.fi

FR France
Weidmüller E. U. R. L.
12, Chaussée Jules César
B.P. 263 Osny
95523 Cergy Pontoise Cedex
Phone +33 1 34245500
Fax +33 1 34245501
mail@weidmuller.fr

GB Great Britain
Weidmüller Ltd.
1 Abbey Wood Road
Kings, West Malling
ME19 4YT
Phone +44 1732 877000
Fax +44 1732 874296
marketing@weidmuller.co.uk

GR Greece
Electrorama S.A.
1 An. Martali Str.
41335 Larissa
Phone +30 2410 552533188
Fax +30 2410 283463189
valvizos@electrorama.com.gr

Greece
GA Contact Solutions
11, Ippokratous Str.
14452 Metamorfosi Attika
Phone +30 210 2823233
Fax +30 210 2823233
gasaless@gmail.com

HK Hong Kong
United Equity Limited
Suite B, 11/F International Industrial
Centre
2-8 Kwei Tei Street, Fotan, Shatin
Phone +852 26876739
Fax +852 26876735
united_equity@sinatown.com

HR Croatia
Elektro Partner d.o.o.
Slavonska Avenija 24/6
10000 Zagreb
Phone +385 1 6184793
Fax +385 1 6184795
elektropartner@zg.t-com.hr

HU Hungary
Weidmüller Kft
Gubacsi út 6
1097 Budapest
Phone +36 1 3827700
Fax +36 1 3827701
info@weidmueller.hu

ID Indonesia
PT. Nego Electrindo
Ruko Mega Grosir Cempaka Mas,
Blok I No 20 – 22
Jl. Let.Jend. Suprato –
Jakarta 10640
Phone +62 21 42882255
Fax +62 21 42882266
sales@negoelectrindo.co.id

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Great Britain

IL Israel
A.U.Shay Ltd.
P.O. Box 10049
Embar Street 23/25
Petch-Tikwa 49222
Phone +972 3 9233601
Fax +972 3 9234601

Israel
ATEKA Ltd.
23 Hayetzira St.
Kiryat Aryeh
49130 Petach-Tikva, Israel
Phone +972 3 9392344
Fax +972 3 9243273
marketing@ateka.co.il
www.ateka.co.il

IN India
Weidmuller Electronics India Pvt. Ltd
Plot # 32, 3rd Floor, North Court
Lane North Avenue, Opp Jogger's Park
Kalyani Nagar, Maharastra
411006 Pune
Phone +91 9049800960
Nitish.Rajan@weidmueller.de

IR Iran
Tamin Ehtiajat Fani Tehran (TAF Co.)
72, Iranshahr Ave.(Unit # 5)
15816 Tehran
Phone +98 21 8831-7851
Fax +98 21 8882-0268
tafco@safineh.net

IS Iceland
Samey Automation Center
Lyngas 13, 210 Garoabaer,
Phone +354 510 5200
Fax +354 510 5201
samey@samey.is

IT Italy
Weidmüller S.R.L.
Via Albert Einstein 4
20092 Cinisello Balsamo
Milano
Phone +39 02 660681
Fax +39 02 6124945
weidmuller@weidmuller.it
www.weidmuller.it

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HORIZONS
P.O.Box: 330607
Amman Jordan 11133
Phone +962 6 4882114
Fax +962 6 4882115
horizons@go.com.jo

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Nihon Weidmüller Co. Ltd.
Sphere Tower Tennoz,
2-2-8 Higashi-Shinagawa,
Shinagawa-Ku, Tokyo 140-0002
Phone +81 3 6711-5300
Fax +81 3 6711-5333
www.weidmuller.co.jp

KR Korea
Weidmüller Korea Co., Ltd.
6floor, Sukyoung building, 242-54
Nonhyun-dong, Kangnam-Gu
Seoul, Korea
Zip: 135-830
Phone +82 2 5160003
Fax +82 2 5160090
info@weidmuller.co.kr

KW Kuwait
KANA CONTROLS General
Trading & Cont. CO. W.L.L.
Al Rai Industrial Area,
Plot 28-30, St. 31
P.O.Box: 25593
Safat, 13016
Phone +966-474 1373/4
Fax +966-474 1537
info@kanacontrols.com

Group companies DE
Agency abroad DE
Without own Agency DE

LB Lebanon
Progress Engineering & Trading Enterprises
Al Nahr Street
Beirut
Phone +961 1 444664
Fax +961 1 561880
progress@inco.com.lb

LT Lithuania
ELEKTROS IRANGA
Tinklu g.29a, 5319 Panevezys
Phone +370 45582828
Fax +370 45582727
info@eliranga.lt

LU Luxembourg
Please contact Weidmüller Benelux B.V. in the Netherlands

LV Latvia
SIA "ABI4"
56A Daugavgrivas str.
1007 Riga
Phone +371 67470999
Fax +371 67465637
abi_4@tvnet.lv

MD Moldova
BERHORD A&D srl
44, srt. Sarmizegetusa 37/3
Off 414. b-dul Decebal, 3,
Chisinau, MD 2001
Phone +373 22 507137
Fax +373 22 507134
atiuleanu@berhord.com

ME Montenegro
Please contact
ES-YU Elektrosistem in Serbia

MK Macedonia
ELEKTRO – SMK dooel
UL. III Makedonska brigada b.b.
1000 Skopje
Phone +389 22 460 295
Fax +389 22 460 298
Elektro-smk@telekabel.net.mk

MT Malta
E. S. S., Electrical Supplies & Services Ltd
104 J. Sciberras Str.
Hamrun HMR 08
Phone +356 21 255 777
Fax +356 21 255 999
robert@ess.com.mt

MU Mauritius
MUBELO Electrical Ltd
Office 26, Gateway building,
St Jean Road, Quatre Bornes
Phone +230 467 0989
Fax +230 465 4051
richard.mubelo@orange.mu

MX Mexico
W Interconnections, S.A. DE C.V.
Blvd. Hermanos Serdán No. 698
Col. San Rafael Oriente
Puebla, C.P. 72029
Phone +52 222 22686227
clientes@weidmuller.com.mx

MY Malaysia
Connect Plus Technology Sdn Bhd
No. 43, Jalan PJS 11/22,
Bandar Sunway, 46150 Petaling Jaya
Selangor Darul Ehsan
Phone +60 3 5633 7363
Fax +60 3-5633 6562
paul@cptech.com.my
www.cptech.com.my

NL Netherlands
Weidmüller Benelux B.V.
Franciscusweg 221
1216 SE Hilversum
Postbus 1505
1200 BM Hilversum
Phone +31 35 6261261
Fax +31 35 6232044
info@weidmuller.nl

NO Norway
Siv. Ing. J. F. Knudtzen A/S
Billingstadsletta 97
P.O. Box 160
1378 Nesbru
Phone +47 66 983350
Fax +47 66 980955
firmapost@jfknudtzen.no
www.jfknudtzen.no

NZ New Zealand
Cuthbert S. Steward Limited
27 Te Puni Street
POB 38496
Petone, Wellington
Phone +64 4 5686156
Fax +64 4 5686056
info@weidmueller.de

OM Oman
DAN INTERNATIONAL LLC.
PO.BOX 2901
111 Seeb
Phone +968 503 677
Fax +968 503 755
yedu@danintl.com

PE Peru
IMGEPRO DEL PERU S.A.C.
Jr. Arequipa 3410, Lima 31, Peru
Phone / Fax +51 1 569-7678
dbernardo@imgepro.com.pe
www.imgepro.pe

PH Philippines
Enclosure Systems Specialists Inc
W-15 La Fuerza Compound
2241 Don Chino Roces Avenue
Makati City 1231
Phone +63 2 813 8580
Fax +63 2 813 8596
sales_encsys@pldtdsl.net

PK Pakistan
Kana Controls (Pak)
Apartment No. 33 C III
Chenab Block,
Allama Iqbal Town
Lahore, Pakistan
Phone +92 42 5419948
+92 42 7845160
Fax +92 42 5422895
nadeem@kanapak.com
www.kanapak.com

PL Poland
Weidmüller Sp. z o.o.
Ul. Goledzinowska 10
03-302 Warszawa
Phone +48 22 5100940
Fax +48 22 5100941
biuro@weidmuller.com.pl
www.weidmuller.pl

PT Portugal
Weidmüller Sistemas de Interface S. A.
Estrada Outeiro Polima, R. Augusto Dias da Silva, Lote B, Esct. 2
2785-515 Abóboda -São Domingos de Rana
Phone +351 21 4459191
Fax +351 21 4455871
www.weidmueller.pt

QA Qatar
Doha Motors Trading Co.
(Technical Division)
Post Box No. 145
Airport Road
Doha - Qatar
Phone +974 465 1441
Fax +974 465 0925
dmtctech@qatar.net.qa

RO Romania
Rominterface Impex SRL
Str. Gh. Dem Teodorescu 30 A
30916 Bucuresti - sector 3
Phone +40 21 3220230
Fax + 40 21 3228857
office@rominterface.ro

RS Serbia
ES-YU Elektrosistem
Pariske komune 41
11070 Novi Beograd, Serbia
Phone +381 11 3018660
Fax +381 11 2693608
esyu@eunet.rs
www.elektrosistem.co.rs

RU Russia
Weidmüller Interface GmbH & Co. KG
Representative Office
Warshavskoye highway, 25A, bld. 6
117105 Moscow
Phone +7 4 95 771-6940
Fax +7 4 95 771-6941
info@weidmueller.ru
www.weidmueller.rus

SA Saudi Arabia
Al Abdulkarim Holding Co.
P.O Box. 4
Dammam 31411
Phone +9668337110
Fax +9668338242
salehsk@akh.com.sa
www.akte.com.sa

Saudi Electric Supply Co.
P.O. Box 3298
Al Khobar 31952
Phone +966 3 882 9546227
Fax +966 3 882 9547
Safdar.malik@sesco-ge.com

SE Sweden
Weidmüller AB
Axel Daniessons väg 271
P.O. box 31025
200 49 Malmö
Phone +46 (0) 7 71 43 00 44
Fax +46 (0) 40 37 48 60
info@weidmuller.se
www.weidmuller.se

SG Singapore
Weidmuller Pte. Ltd.
70 Bendemeer Road
#04-03 Luzerne
Singapore 339940
Phone +65 6841 5311
Fax +65 6841 5377
info@weidmuller.com.sg
www.weidmuller.com.sg

SI Slovenia
ELEKTROSPOJI d.o.o.
Stegne 25, 1000 Ljubljana
Phone +386 15113810
Fax +386 15111604
info@elektrospoji.si
www.elektrospoji.si

SK Slovakia
ELEKTRIS s.r.o.
Elektrárenská 1
83104 Bratislava
Phone +421 2 49200113
Fax +421 2 49200119
bratislava@elektris.sk

TH Thailand
Pisanu Engineering Co., Ltd
800/43-45 Soi Trakulsuk
Asoke-dindaeng Road,
Dindaeng, Bangkok 10400
Phone +66 2 245 9113
Fax +66 2 6429220
jayasankar@pisanu.co.th
www.pisanu.co.th

TN Tunisia
Please contact
Weidmüller E.U.R.L. in France

TR Turkey
Weidmüller Elektronik Ticaret Ltd.
Sirketi
Kavacik Mah. Orhan Veli Kanik
Caddesi 9/1
34810 Beykoz – İstanbul
Phone +90 216 5371070 (Pbx)
Fax +90 216 5371077
info@weidmuller.com.tr
www.weidmuller.com.tr

TW Taiwan
Fittatek Co., Ltd.
12F No. 185 Fu-Kuo Road,
Tso Ying Dist, Kaohsiung
Phone +886 7 556 0858
Fax +886 7 556 3279
stanley@fittatek.com.tw
www.fittatek.com.tw

Taiwan
Eucan Enterprise Ltd.
No. 145 He Ping 2nd Rd
Kaohsiung
Phone +886 7 715 6610
Fax +886 7 715 8748
mark@eucan.com.tw
www.eucan.com.tw

UA Ukraine
TEKO INTERFACE ooo
ul. Lewanewskogo 6
03058 Kiev
Phone +38 044 401 09 90
Fax +38 044 401 08 64
weidmueller@tekointerface.com
www.tekointerface.com.ua

US United States
W-Interconnections Inc.
821 Southlake Boulevard,
Virginia - Richmond 23236
Phone +1 804 7942877
Fax +1 804 3792593
info@weidmuller.com
www.weidmuller.com

UY Uruguay
REWO Uruguay S.A
Av. Bolivia 2001 Esq Rocafuerte
Carrasco Montevideo 11300
Phone / Fax +598 260 48439
clorda@rewouruguay.com.uy

UZ Uzbekistan
OOO "Elektro Potential"
Gani Mavljanova str., 2B
100084 Tashkent
Phone +998 98-3003821
Fax +998 71-1249286
mz1958@yandex.ru

VE Venezuela
Somerinca C.A.
Quinta Sagrado Corazon de Jesus - 3ra Transversal - Los Dos Caminos,
Caracas 1070 - A
Phone +58 212 2352748
Fax +58 212 2399341
klocmoeller@cantv.net
www.kmsomerinca.com.ve

VN Vietnam
AUMI Co., Ltd
E1, La Thanh Hotel,
218 Doi Can Street,
Lieu Giai Ward, Ba Dinh District,
Hanoi City
Phone +84 4762 8601
Fax +84 4266 1391
aumi@aumi.com.vn

Linh Kim Hai Co,. Ltd
78 Hoa Cuc Street Ward 7,
Phu Bhuan District,
Ho Chi Minh City
Phone +84 8517 1717
Fax +84 8517 1818
lkh@linhkimhai.com.vn

New Sky Co., Ltd
44/28 Tan Hai Street,
Ward 13, Tan Binh District,
Ho Chi Minh City
Phone +84 8812 6593
Fax +84 8812 6594
newsky-e@hcm.vnn.vn
www.newsky-e.com

ZA South Africa
Phambili Interface (Pty) Ltd
P.O. Box 193, 1609 Johannesburg
5 Bundo Road, Sebenza
1610 Johannesburg, Endenvale
Phone +27 11 452 1930
Fax +27 11 452 6455
sales@weidmuller.co.za
www.radinterface.co.za

DE Other countries
Weidmüller Interface GmbH & Co. KG
Postfach 3030
32720 Detmold
Klingenbergstraße 16
32758 Detmold
Phone +49 5231 14-0
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