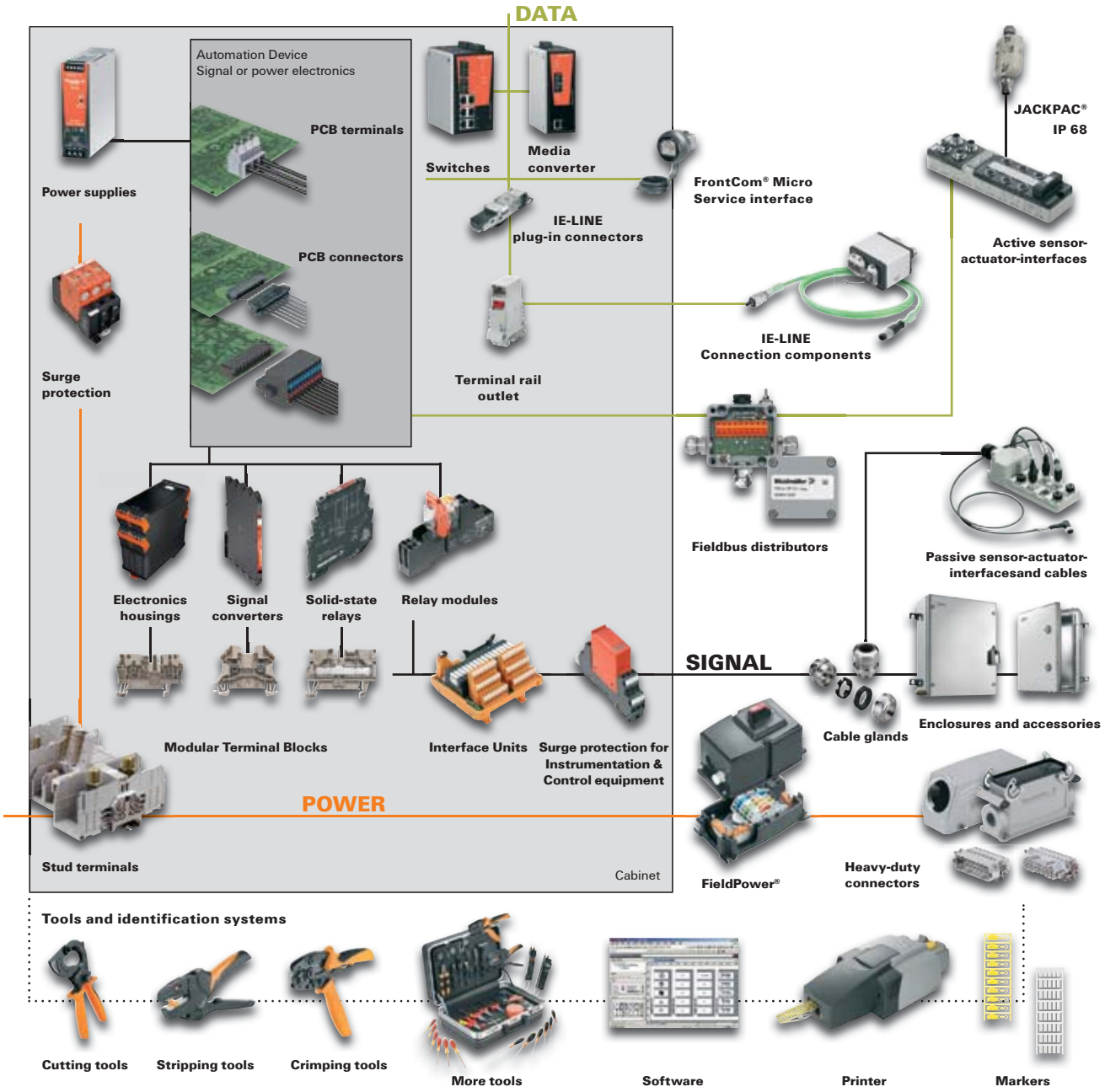
Industrial Ethernet
Catalogue 2013

Industrial Data Communication

Weidmüller

The World of Industrial Connectivity

As experienced experts we support our customers and partners around the world with products, solutions and services in the industrial environment of power, signal and data. Immerse yourself in our world of Industrial Connectivity.
Let's connect.



Industrial Ethernet
Catalogue 9

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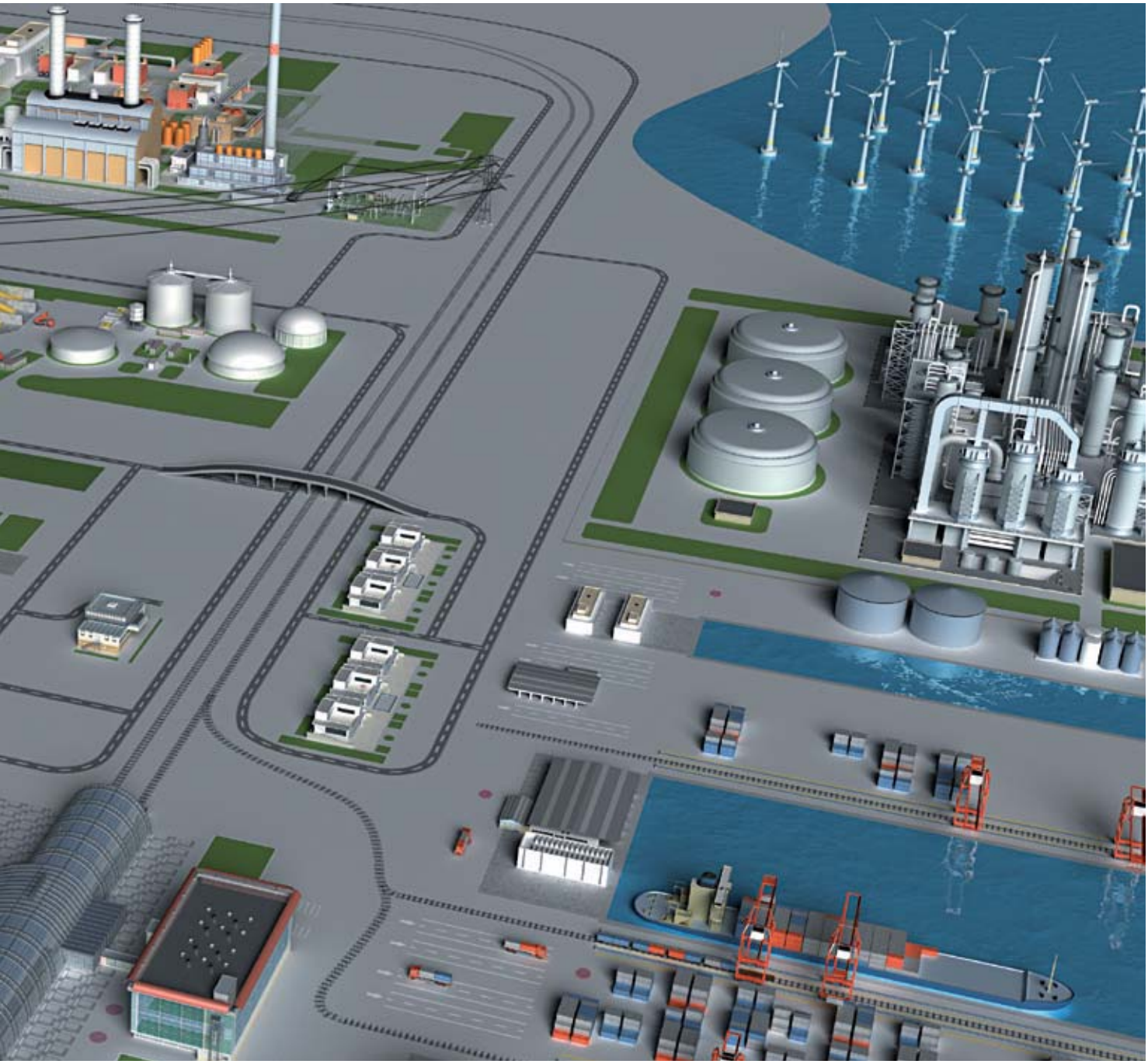
Industrial Ethernet

Intended use for 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; including automotive, general machine construction, process industry, transportation and energy branch. The requirements of these differ in term of the protocols, environmental conditions, certifications and standards. 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 these industrial markets 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.

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 corporate management level down to production.

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.

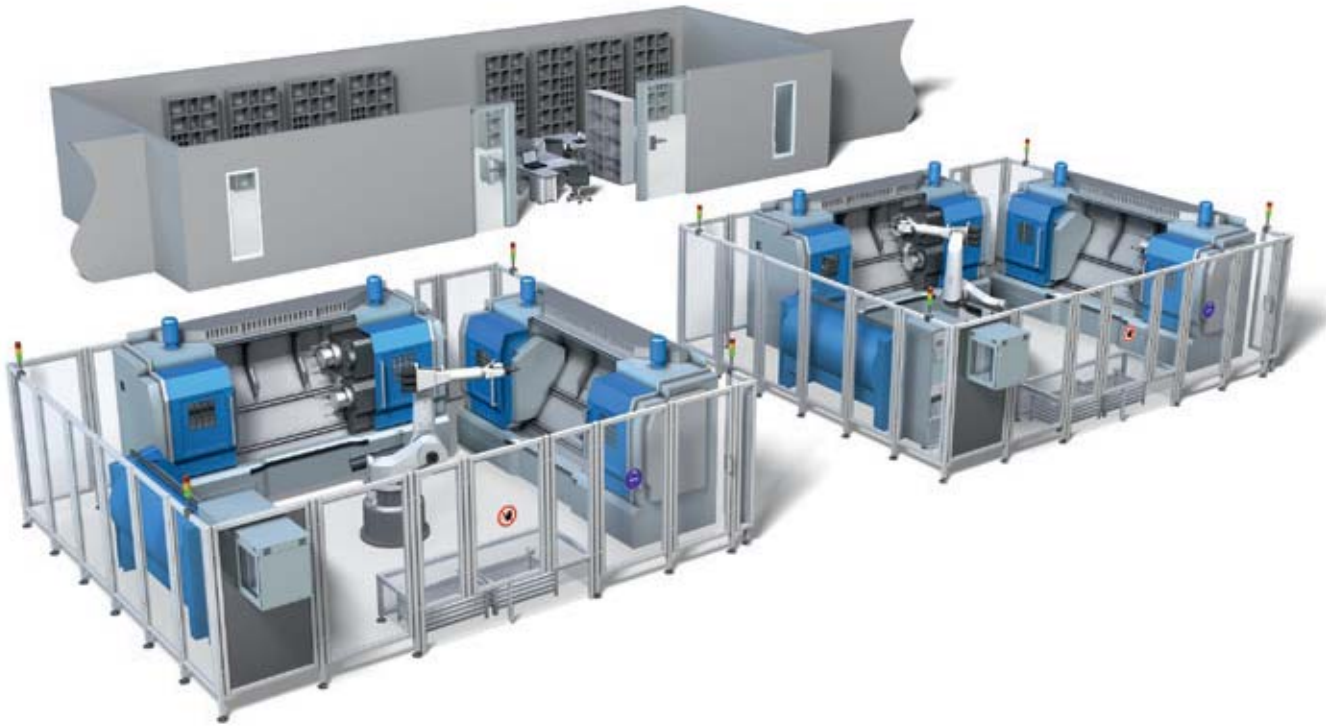
The volume of data in networks is steadily rising with the applications used, for example with camera-based quality control. Weidmüller easily meets these increased demands with its product range of high-performance Gigabit switches and plug-in connectors capable of 10 Gigabit transfer.

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.

Machinery - in detail

Your robots are always in action
We enable them to let you know what they are up to
Let's connect.

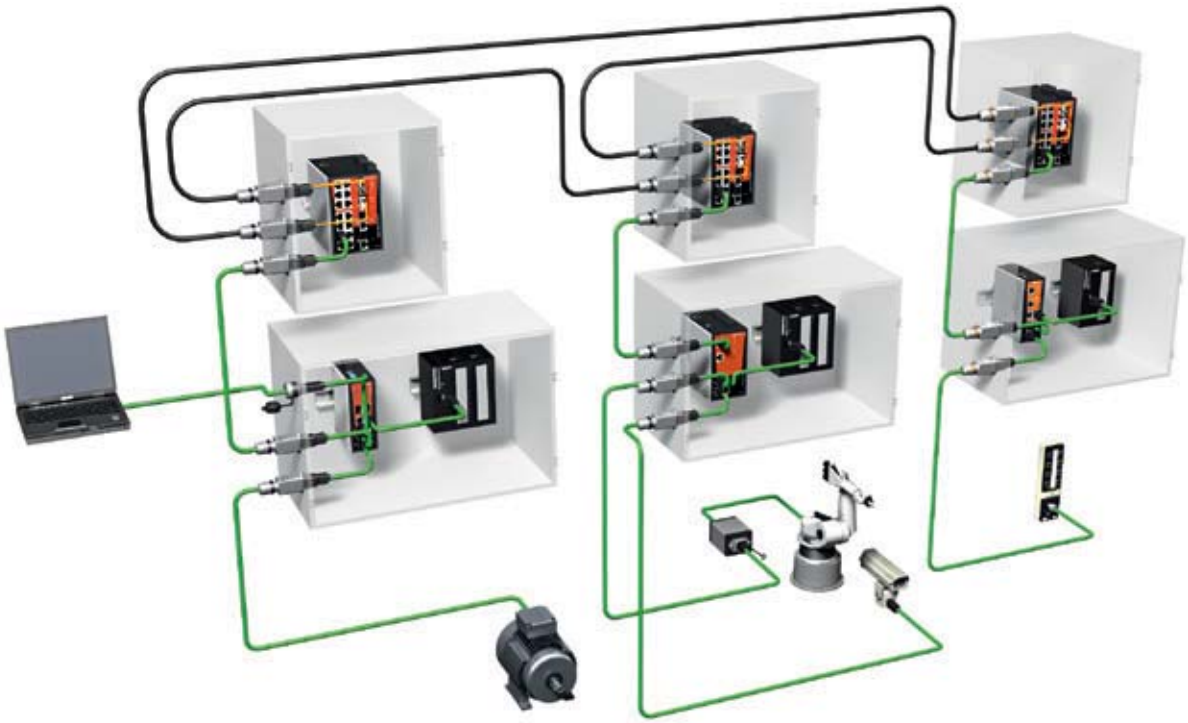


You require a seamless flow of information to optimise the output and efficiency of your production cells – from networking the communication between machine segments, to the exchange of information with higher-level office networks. In this way you can constantly monitor the activities of your robots.

To provide you with seamless communication without media disruption, we offer you a comprehensive Industrial Ethernet product portfolio from field to control level – with significant advantages. Thanks to the innovative ***STEADY****TEC*® technology used, our plug-in connectors create the basis for reliable and standardised connection solutions in data communication, both in the office and in harsh production environments. With functions such as high-speed ring redundancy or redundant power supply, our active Industrial Ethernet components guarantee uninterrupted operation of your production network.
Extensive network management functions effectively manage your data traffic. Our Power-over-Ethernet switches supply the operating voltage to the cameras that monitor your manufacturing processes, in parallel to data traffic.

With these and many other functions, our multifaceted Industrial Ethernet portfolio supports your communication at control, infrastructure and machine levels. This means that channels of communication with your robots are always open.

Let's connect.



Plug-in connectors and cabling system

- IEC-standardised connector, in variants 1, 4, 5 , 6 and 14
- All in Cat.6_A and with ***STEADY****TEC*® technology
- Cables pre-assembled and sold by the metre
- Copper and fibre-optic cables
- IP 20 and IP 67
- All relevant Industrial Ethernet industrial connections
- Comprehensive range of accessories

Active Industrial Ethernet components

- Unmanaged switches (Fast Ethernet, Gigabit Ethernet)
- Managed switches (Fast Ethernet, Gigabit Ethernet)
- Power-over-Ethernet switches (unmanaged, managed)
- Media converters (copper, fibre-optic cables)
- Serial/Ethernet converters
- Industrial wireless components
- Industrial security routers

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 and 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. 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 plant to the controller and then to the wider IT network.

Active components

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, for example:

- Installation conditions
- Environmental conditions
- Protocols
- Approvals

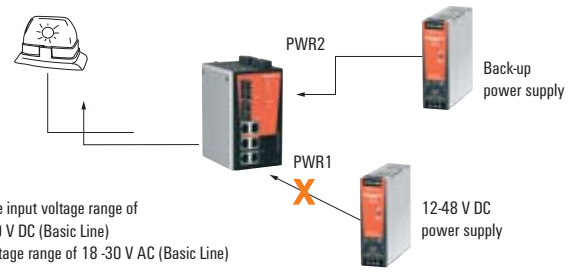
Weidmüller's Industrial Ethernet components meet all of these requirements as they have the properties listed below:

- 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.

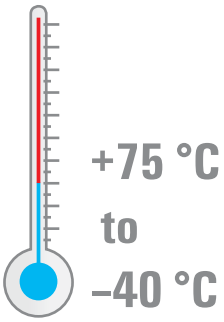
Stable and versatile power supply inputs for industrial applications

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. For instance, with a rated 48 V DC input, a fluctuation of +20 % is acceptable and yet, in one of 12 V DC, a voltage drop of up to 20 % presents no problems for the attached devices.



Suitable for use in extreme temperature environments

Industrial environments often experience extreme temperature conditions. This means that devices are needed which can operate flawlessly with the vast temperature fluctuations. All of our 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 robust 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

An extensive range of certifications confirm the reliability of Weidmüller's Industrial Ethernet components

- UL 508 and UL 60950-1
- Class I, Division2 / ATEX Zone 2 for safe use in hazardous 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 service life and 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 IP 30 rated aluminium housing. The devices are available with Fast Ethernet and Gigabit Ethernet and provide an economical solution for Industrial Ethernet 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 internationally available for different applications.

- Plug & Play switches in a rugged aluminium housing (IP 30)
- 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 IP 30 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 (IP 30)
- 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, ie. 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 option to use SFP transceivers offer a high degree of flexibility and the Gigabit variants also allow their use in networks with high traffic loads.

- Managed Fast Ethernet variants in a high quality metal housing (IP 30)
- 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

		Ports total	5		6	8				
		Ports copper	5	4	6	8	5	6	6	7
		Ports fibre		1			3	2		1
		Ports SFP							2	
Order No.	Type									
Industrial Ethernet Switches										
1240840000	IE-SW-BL05-5TX		●							
1240850000	IE-SW-BL05T-5TX		●							
1240870000	IE-SW-BL05-4TX-1SCS			●						
1286530000	IE-SW-BL05T-4TX-1SCS			●						
1240880000	IE-SW-BL05-4TX-1ST			●						
1286540000	IE-SW-BL05T-4TX-1ST			●						
1240890000	IE-SW-BL05-4TX-1SC			●						
1286550000	IE-SW-BL05T-4TX-1SC			●						
1240900000	IE-SW-BL08-8TX					●				
1286560000	IE-SW-BL08T-8TX					●				
1240910000	IE-SW-BL08-6TX-2SC							●		
1240920000	IE-SW-BL08T-6TX-2SC							●		
1240930000	IE-SW-BL08-6TX-2ST							●		
1286570000	IE-SW-BL08T-6TX-2ST							●		
1412070000	IE-SW-BL08-7TX-1SC									●
1412080000	IE-SW-BL08T-7TX-1SC									●
1412090000	IE-SW-BL08-7TX-1ST									●
1412100000	IE-SW-BL08T-7TX-1ST									●
1240950000	IE-SW-BL08-7TX-1SCS									●
1286580000	IE-SW-BL08T-7TX-1SCS									●
1412110000	IE-SW-BL08-6TX-2SCS							●		
1412120000	IE-SW-BL08T-6TX-2SCS							●		
1241250000	IE-SW-BL05-5GT		5 GE							
1286850000	IE-SW-BL05T-5GT		5 GE							
1241270000	IE-SW-VL08-8GT					8 GE				
1286860000	IE-SW-VL08T-8GT					8 GE				
1241280000	IE-SW-VL08-6GT-2GS								6 GE 2 GEC	
1286870000	IE-SW-VL08T-6GT-2GS								6 GE 2 GEC	
1240980000	IE-SW-VL09T-6TX-3SC									
1241000000	IE-SW-VL16-16TX									
1286590000	IE-SW-VL16T-16TX									
1241030000	IE-SW-VL16-14TX-2SC									
1286610000	IE-SW-VL16T-14TX-2SC									
1241050000	IE-SW-VL16-14TX-2ST									
1286620000	IE-SW-VL16T-14TX-2ST									
1240940000	IE-SW-VL08MT-8TX					●				
1240970000	IE-SW-VL08MT-5TX-3SC						●			
1345240000	IE-SW-VL08MT-5TX-1SC-2SCS						●			
1344770000	IE-SW-VL08MT-6TX-2SC							●		
1240990000	IE-SW-VL08MT-6TX-2ST							●		
1241020000	IE-SW-VL08MT-6TX-2SCS							●		
1241040000	IE-SW-PL08M-8TX					●				
1286780000	IE-SW-PL08MT-8TX					●				

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

9		10		16		18		Unmanaged	Managed	Temperature	Fibre-optic interface	Page
6	4	10	8	16	14	16	14					
3					2		2					
	5		2			2	2					
								●		-10 ... +60 °C		B.11
								●		-40 ... +75 °C		B.11
								●		-10 ... +60 °C	SC-Singlemode	B.11
								●		-40 ... +75 °C	SC-Singlemode	B.11
								●		-10 ... +60 °C	ST-Multimode	B.11
								●		-40 ... +75 °C	ST-Multimode	B.11
								●		-10 ... +60 °C	SC-Multimode	B.11
								●		-40 ... +75 °C	SC-Multimode	B.11
								●		-10 ... +60 °C		B.11
								●		-40 ... +75 °C		B.11
								●		-10 ... +60 °C	SC-Multimode	B.11
								●		-40 ... +75 °C	SC-Multimode	B.11
								●		-10 ... +60 °C	ST-Multimode	B.11
								●		-40 ... +75 °C	ST-Multimode	B.11
								●		-10 ... +60 °C	SC-Multimode	B.11
								●		-40 ... +75 °C	SC-Multimode	B.11
								●		-10 ... +60 °C	ST-Multimode	B.11
								●		-40 ... +75 °C	ST-Multimode	B.11
								●		-10 ... +60 °C	SC-Singlemode	B.11
								●		-40 ... +75 °C	SC-Singlemode	B.11
								●		-10 ... +60 °C	SC-Singlemode	B.11
								●		-40 ... +75 °C	SC-Singlemode	B.11
								●		0 ... +60 °C		B.13
								●		-40 ... +75 °C		B.13
								●		0 ... +60 °C		B.13
								●		-40 ... +75 °C		B.13
								●		0 ... +60 °C	SFP-Slot	B.13
								●		-40 ... +75 °C	SFP-Slot	B.13
●								●		-40 ... +75 °C	SC-Multimode	B.12
				●				●		0 ... +60 °C		B.12
				●				●		-40 ... +75 °C		B.12
					●			●		0 ... +60 °C	SC-Multimode	B.12
					●			●		-40 ... +75 °C	SC-Multimode	B.12
					●			●		0 ... +60 °C	ST-Multimode	B.12
					●			●		-40 ... +75 °C	ST-Multimode	B.12
									●	-40 ... +75 °C		B.19
									●	-40 ... +75 °C	SC-Multimode	B.19
									●	-40 ... +75 °C	SC-Multimode/SC-Singelmode	B.19
									●	-40 ... +75 °C	SC-Multimode	B.19
									●	-40 ... +75 °C	ST-Multimode	B.19
									●	-40 ... +75 °C	SC-Singlemode	B.19
									●	0 ... +60 °C		B.20
									●	-40 ... +75 °C		B.20

Order No.	Type	Ports total	5		6	8				
		Ports copper	5	4	6	8	5	6	6	7
		Ports fibre		1			3	2		1
		Ports SFP							2	
Industrial Ethernet Switches										
1241070000	IE-SW-PL08M-6TX-2SC							●		
1286790000	IE-SW-PL08MT-6TX-2SC							●		
1241080000	IE-SW-PL08M-6TX-2ST							●		
1286800000	IE-SW-PL08MT-6TX-2ST							●		
1241090000	IE-SW-PL08M-6TX-2SCS							●		
1286810000	IE-SW-PL08MT-6TX-2SCS							●		
1241100000	IE-SW-PL16M-16TX									
1286820000	IE-SW-PL16MT-16TX									
1241120000	IE-SW-PL16M-14TX-2SC									
1286830000	IE-SW-PL16MT-14TX-2SC									
1241130000	IE-SW-PL16M-14TX-2ST									
1286840000	IE-SW-PL16MT-14TX-2ST									
1241290000	IE-SW-PL10M-3GT-7TX									
1286930000	IE-SW-PL10MT-3GT-7TX									
1241300000	IE-SW-PL10M-1GT-2GS-7TX									
1286940000	IE-SW-PL10MT-1GT-2GS-7TX									
1241320000	IE-SW-PL18M-2GC-16TX									
1286970000	IE-SW-PL18MT-2GC-16TX									
1241330000	IE-SW-PL18M-2GC-14TX2SC									
1286990000	IE-SW-PL18MT-2GC14TX2SC									
1241340000	IE-SW-PL18M-2GC14TX2ST									
1287000000	IE-SW-PL18MT-2GC14TX2ST									
1241350000	IE-SW-PL18M-2GC14TX2SCS									
1287010000	IE-SW-PL18MT-2GC14TX2SCS									
1241370000	IE-SW-PL09M-5GC-4GT									
1287020000	IE-SW-PL09MT-5GC-4GT									
Power over Ethernet Switches										
1241380000	IE-SW-BL06-2TX-4PoE				2 FE 4 PoE+					
1286920000	IE-SW-BL06T-2TX-4PoE				2 FE 4 PoE+					
1241390000	IE-SW-PL06M-2TX-4PoE				2 FE 4 PoE+					
1286910000	IE-SW-PL06MT-2TX-4PoE				2 FE 4 PoE+					

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

9		10		16		18		Unmanaged	Managed	Temperature	Fibre-optic interface	Page
6	4	10	8	16	14	16	14					
3			2		2		2					
	5		2			2	2					
									●	0 ... +60 °C	SC-Multimode	B.20
									●	-40 ... +75 °C	SC-Multimode	B.20
									●	0 ... +60 °C	ST-Multimode	B.20
									●	-40 ... +75 °C	ST-Multimode	B.20
									●	0 ... +60 °C	SC-Singlemode	B.20
									●	-40 ... +75 °C	SC-Singlemode	B.20
				●					●	0 ... +60 °C		B.20
				●					●	-40 ... +75 °C		B.20
					●				●	0 ... +60 °C	SC-Multimode	B.20
					●				●	-40 ... +75 °C	SC-Multimode	B.20
					●				●	0 ... +60 °C	ST-Multimode	B.20
					●				●	-40 ... +75 °C	ST-Multimode	B.20
		3 GE 7 FE							●	0 ... +60 °C		B.21
		3 GE 7 FE							●	-40 ... +75 °C		B.21
			1GE 2 GEC 7 FE						●	0 ... +60 °C	SFP-Slot	B.21
			1GE 2 GEC 7 FE						●	-40 ... +75 °C	SFP-Slot	B.21
						2 GEC 16 FE			●	0 ... +60 °C	SFP-Slot	B.22
						2 GEC 16 FE			●	-40 ... +75 °C	SFP-Slot	B.22
							2 GEC 14 FE		●	0 ... +60 °C	SC-Multimode / SFP-Slot	B.22
							2 GEC 14 FE		●	-40 ... +75 °C	SC-Multimode / SFP-Slot	B.22
							2 GEC 14 FE		●	0 ... +60 °C	ST-Multimode / SFP-Slot	B.22
							2 GEC 14 FE		●	-40 ... +75 °C	ST-Multimode / SFP-Slot	B.22
							2 GEC 14 FE		●	0 ... +60 °C	SC-Singlemode / SFP-Slot	B.22
							2 GEC 14 FE		●	-40 ... +75 °C	SC-Singlemode / SFP-Slot	B.22
	5 GEC 4 GE								●	0 ... +60 °C	SFP-Slot	B.23
	5 GEC 4 GE								●	-40 ... +75 °C	SFP-Slot	B.23
								●		0 ... +60 °C		B.25
								●		-40 ... +75 °C		B.25
									●	0 ... +60 °C		B.26
									●	-40 ... +75 °C		B.26

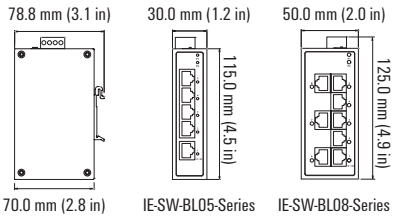
Unmanaged Switches

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, such as 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
- IP 30 aluminum housing
- Rugged hardware design well suited for hazardous locations (Class I Div. 2 /ATEX) and maritime environments (DNV/GL)
- -40 °C to 75 °C operating temperature range (T models)



Technical data

Technology		
Standards	IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT (X) and 100BaseFX IEEE 802.3x for Flow Control	
Processing Type	Store and Forward	
Flow Control	IEEE 802.3x flow control, back pressure flow control	
Switch Properties		
MAC Table Size	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. Transmit power	-10 dBm	0 dBm
Min. Transmit power	-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 1SC/1ST/1SCS: 0.11 A @ 24 V IE SW BL08 8TX: 0.13 A @ 24 V IE SW BL08 2SC/2ST/2SCS: 0.22 A @ 24 V IE SW BL08 1SC/1ST/1SCS: 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, IP 30 protection	
Dimensions (W x H x D)	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 (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)	

Environmental Limits	
Ambient Relative Humidity	5 to 95 % (non-condensing)
Regulatory Approvals	
Safety	UL 508
Hazardous Location	UL/cUL Class I, Division 2, Groups A, B, C and D; ATEX Zone 2, Ex nC IIC
EMI	FCC Part 15, CISPR (EN55022) class A
EMC	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 (not for 1412110000, 1412120000, 1412070000, 1412080000, 1412090000, 1412100000)
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

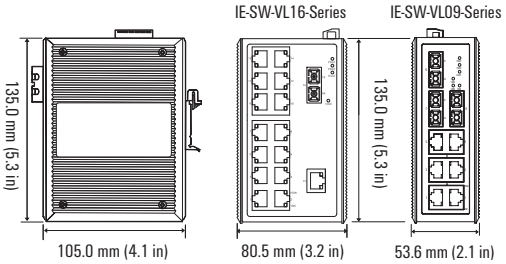
Port Variants	Model Type	Operating Temperature	Order No.
5 * RJ45	IE-SW-BL05-5TX	-10 to +60 °C	1240840000
	IE-SW-BL05T-5TX	-40 to +75 °C	1240850000
4 * RJ45, 1 * SC-Multimode	IE-SW-BL05-4TX-1SC	-10 to +60 °C	1240890000
	IE-SW-BL05T-4TX-1SC	-40 to +75 °C	1286550000
4 * RJ45, 1 * ST-Multimode	IE-SW-BL05-4TX-1ST	-10 to +60 °C	1240880000
	IE-SW-BL05T-4TX-1ST	-40 to +75 °C	1286540000
4 * RJ45, 1 * SC-Singlemode	IE-SW-BL05-4TX-1SCS	-10 to +60 °C	1240870000
	IE-SW-BL05T-4TX-1SCS	-40 to +75 °C	1286530000
8 * RJ45	IE-SW-BL08-8TX	-10 to +60 °C	1240900000
	IE-SW-BL08T-8TX	-40 to +75 °C	1286560000
6 * RJ45, 2 * SC-Multimode	IE-SW-BL08-6TX-2SC	-10 to +60 °C	1240910000
	IE-SW-BL08T-6TX-2SC	-40 to +75 °C	1240920000
6 * RJ45, 2 * ST-Multimode	IE-SW-BL08-6TX-2ST	-10 to +60 °C	1240930000
	IE-SW-BL08T-6TX-2ST	-40 to +75 °C	1286570000
6 * RJ45, 2 * SC-Singlemode	IE-SW-BL08-6TX-2SCS	-10 to +60 °C	1412110000
	IE-SW-BL08T-6TX-2SCS	-40 to +75 °C	1412120000
7 * RJ45, 1 * SC-Multimode	IE-SW-BL08-7TX-1SC	-10 to +60 °C	1412070000
	IE-SW-BL08T-7TX-1SC	-40 to +75 °C	1412080000
7 * RJ45, 1 * ST-Multimode	IE-SW-BL08-7TX-1ST	-10 to +60 °C	1412090000
	IE-SW-BL08T-7TX-1ST	-40 to +75 °C	1412100000
7 * RJ45, 1 * SC-Singlemode	IE-SW-BL08-7TX-1SCS	-10 to +60 °C	1240950000
	IE-SW-BL08T-7TX-1SCS	-40 to +75 °C	1286580000

Accessories

	Model Type	Order No.
19" Rack Mounting Kit	RM-KIT	1241440000
Cable fixing kit	IE-CFK-05	1339610000

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 °C to 75 °C operating temperature range (T models)



Technical data

Technology	
Standards	IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT(X) and 100BaseFX IEEE 802.3x for Flow Control
Processing Type	Store and Forward
Flow Control	IEEE 802.3x flow control, back pressure flow control
Switch Properties	
MAC Table Size	1 K (IE-SW-VL09...Series), 4 K (IE-SW-VL16...Series)
Packet Buffer Size	512 Kbit (IE-SW-VL09...Series), 1.25 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 fault alarm Enable/disable broadcast storm protection
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: 24 V DC (12 to 45 V DC), redundant dual inputs IE-SW-VL16: 12/24/48 V DC (9.6 to 60 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
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, IP 30 protection
Dimensions (W x H x D)	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: 790 g IE-SW-VL16: 1140 g

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: UL 508, UL 60950-1, CSA C22.2 No. 60950-1, EN60950-1 IE-SW-VL16...Series: UL 508, UL 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
EMC	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 (mean time 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	0 to +60 °C	**1241000000**
	IE-SW-VL16T-16TX	-40 to +75 °C	**1286590000**
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	0 to +60 °C	**1241030000**
	IE-SW-VL16T-14TX-2SC	-40 to +75 °C	**1286610000**
14 * RJ45, 2 * ST-Multimode	IE-SW-VL16-14TX-2ST	0 to +60 °C	**1241050000**
	IE-SW-VL16T-14TX-2ST	-40 to +75 °C	**1286620000**

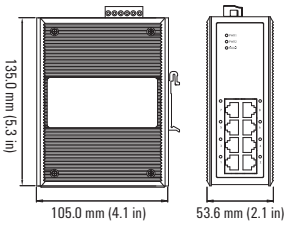
Accessories

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

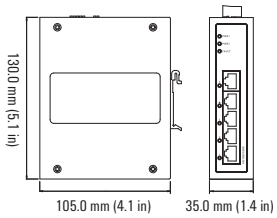
Unmanaged Gigabit Ethernet Switches

- Full Gigabit Ethernet on all ports
- Variants with slots for Gigabit SFP transceivers
- Redundant dual 12/24/48 V DC power inputs
- Relay output warning for power failure and port break alarm
- Broadcast storm protection
- Supports jumbo frame transmission (up to 9.6 KB)

IE-SW-VL08-xGT-Series



IE-SW-BL05GT-Series



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)
Jumbo frame support	up to 9.6 KB
Interface	
Fiber Ports	100/1000BaseSFP slot (only for 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	Port fault alarm Enable/disable broadcast storm protection Enable/disable jumbo frame support
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, IP 30 protection
Dimensions (W x H x D)	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-VL08-8GT 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	UL 508
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	
EMC	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 (mean time between failures)	
Time	478.000 hrs (Serie IE-SW-BL05-5GT) 325.000 hrs (Serie IE-SW-VL08-XGT)
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**
	IE-SW-BL05T-5GT	-40 to +75 °C	**1286850000**
8 * RJ45 10/100/1000BaseT(X)	IE-SW-VL08-8GT	0 to +60 °C	**1241270000**
	IE-SW-VL08T-8GT	-40 to +75 °C	**1286860000**
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**
	IE-SW-VL08T-6GT-2GS	-40 to +75 °C	**1286870000**

Accessories

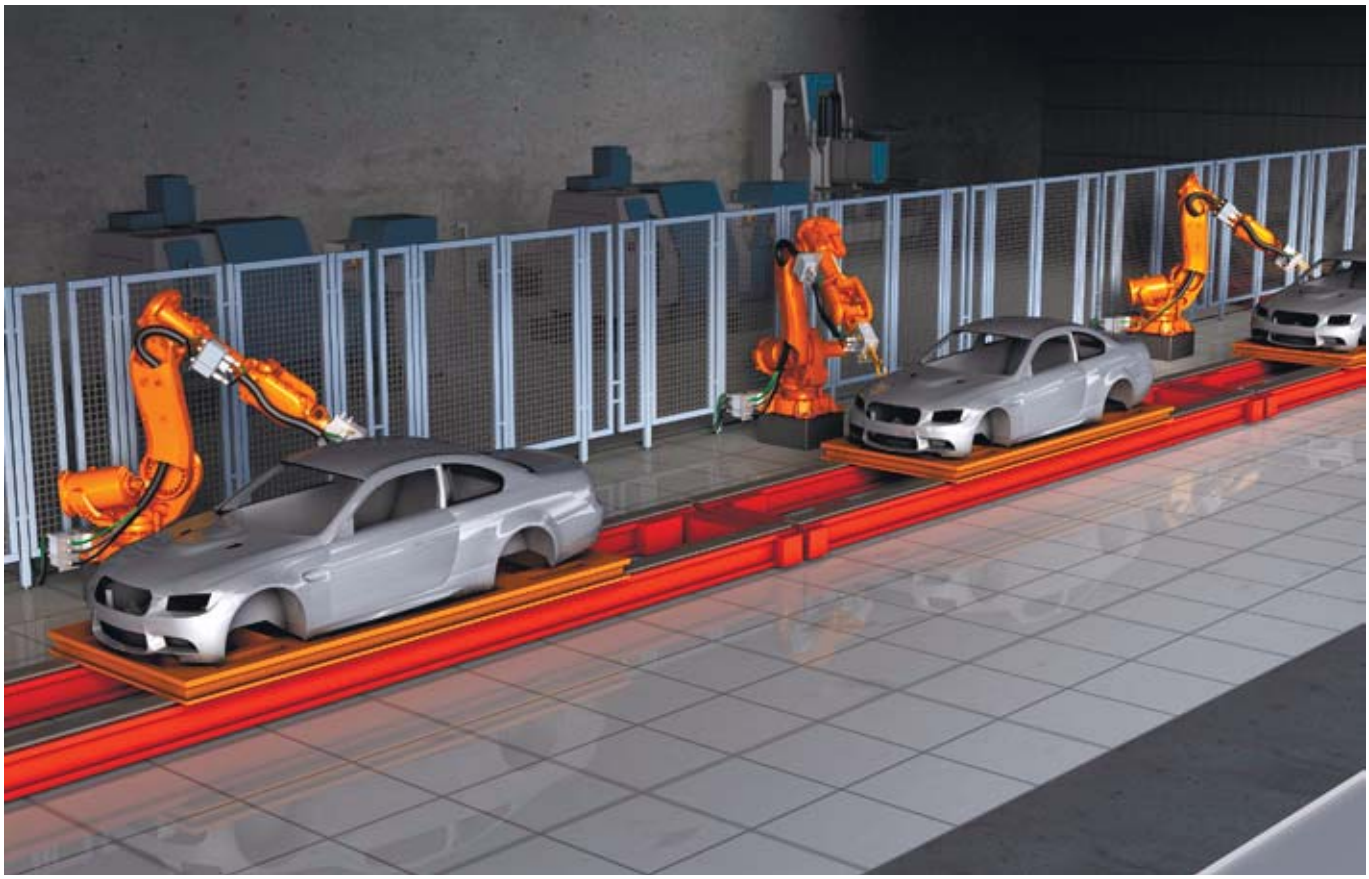
	Model Type	Order No.
19" Rack Mounting Kit	RM-KIT	**1241440000**

Managed Switches

Managed switches offer extensive control mechanisms for data distribution and bandwidth management to co-ordinate and cope with the different requirements of communication participants in an industrial network. Configuration is web-based using a simple and intuitive user interface.

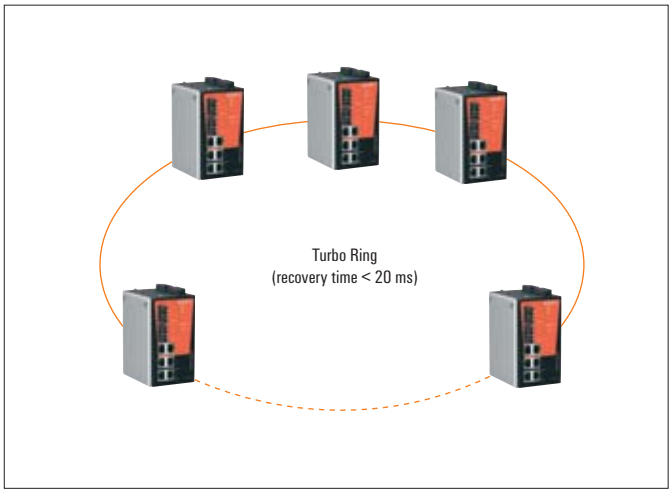
Powerful and reliable network redundancy

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.



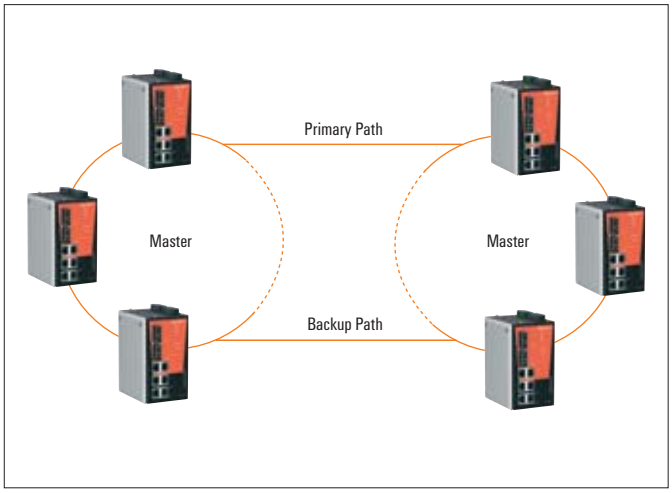
Ring redundancy

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.



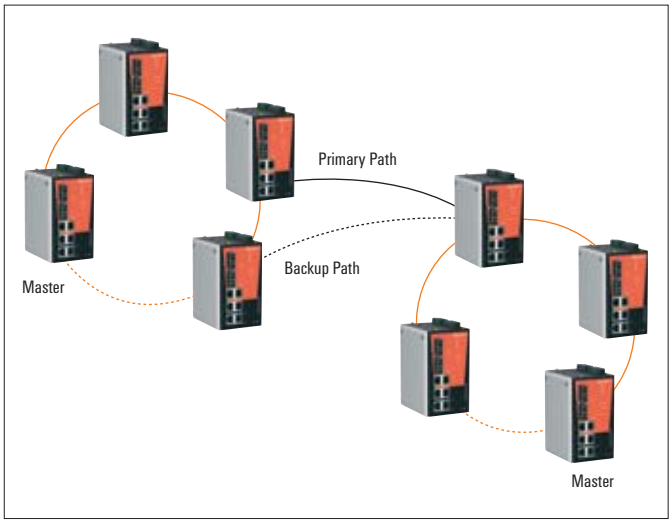
Ring-Coupling

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.



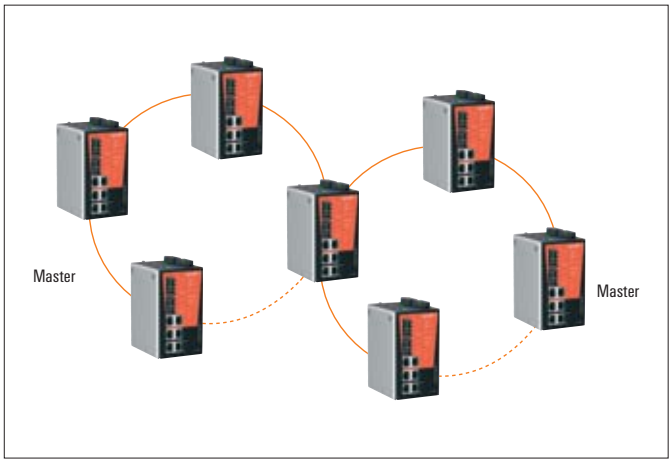
Dual-Homing

With 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

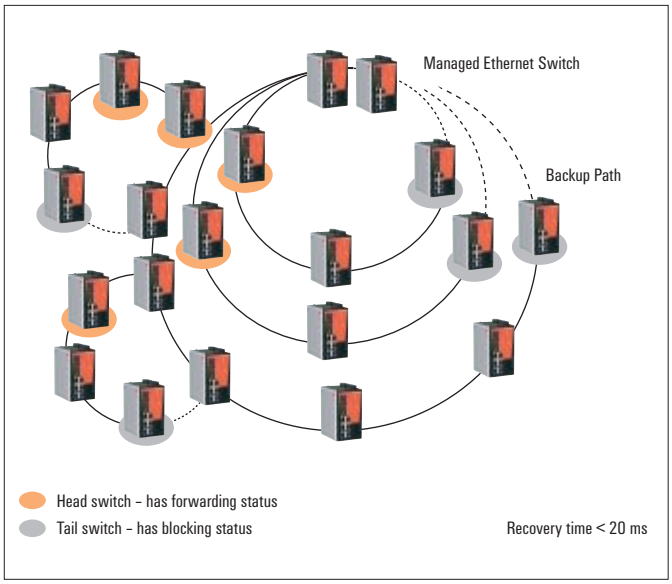
In a Dual-Ring, two neighbouring rings are connected with one another using one switch, without the need for additional ports or cabling. This configuration reduces the total number of ports and saves cabling costs, as an additional primary and back-up line is not needed.



Turbo-Chain

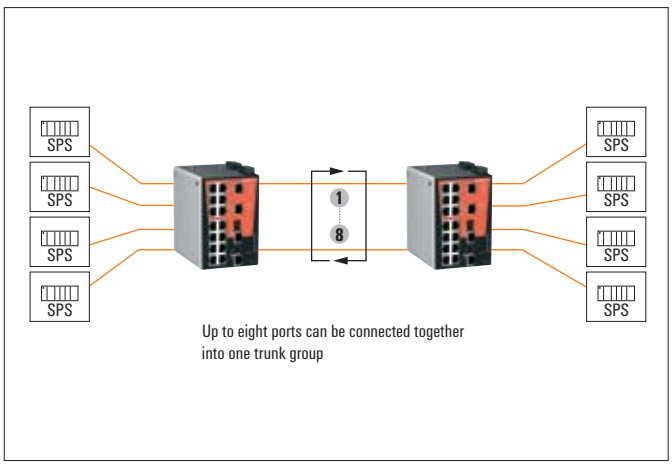
Turbo-Chain offers the possibility of creating multiple redundant networks without the limitations of ring technology. Turbo-Chain can be simply configured by defining two end-points in a segment. This means you can connect or extend existing redundant networks. When compared with traditional ring coupling 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. In addition Turbo Chain also supports 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



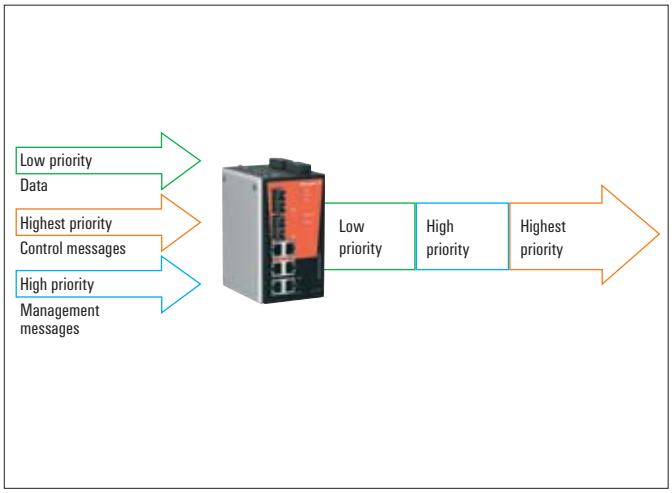
Port trunking for flexible connections

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



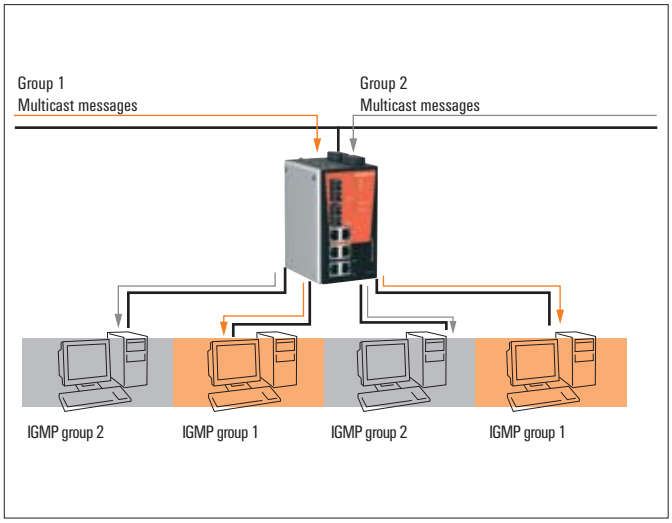
QoS supports real-time capability

Quality of Service (QoS) enables the possibility of prioritisation of data traffic in a network and ensures that important data is consistently 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.



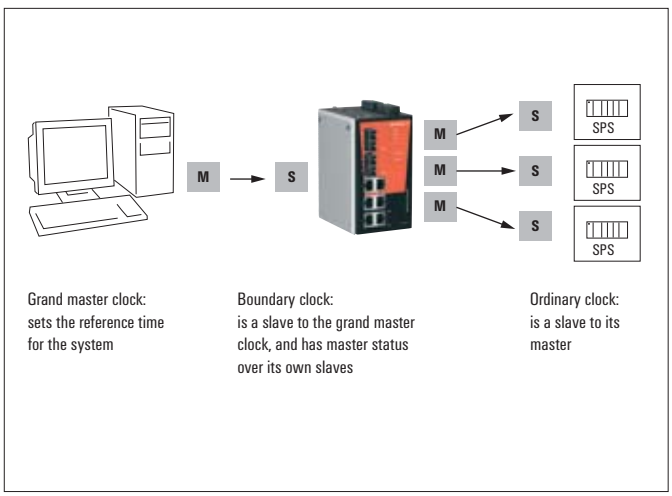
IGMP snooping and GMRP for filtering multicast data traffic

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.



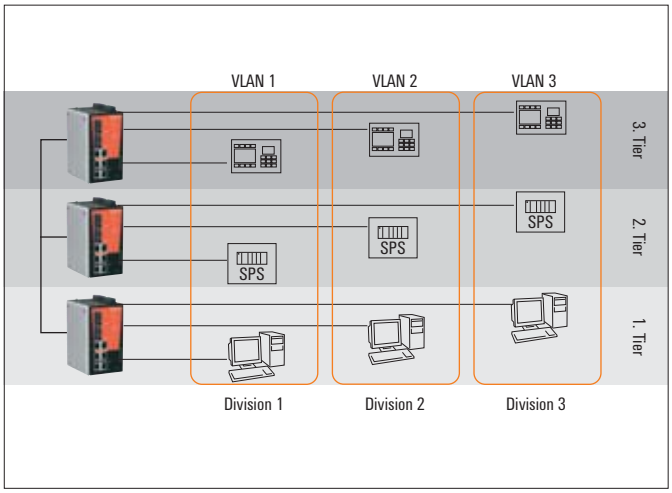
IEEE 1588 PTP - improves time synchronisation of automation devices

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 managed switches with IEEE 1588 PTP are particularly suited for motion control applications where distributed clocks must be synchronised with high levels of accuracy.



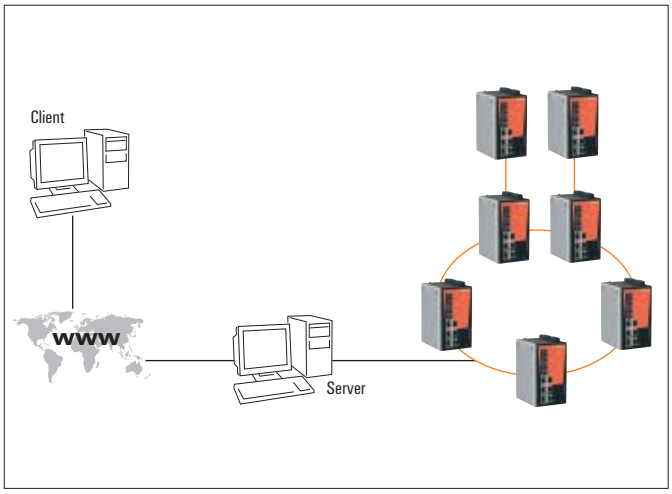
VLAN – simplifies network planning

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 option for isolating VLANs completely from one another serves to increase the security of data transfer and offers additional protection from unauthorised access or unauthorised data traffic.



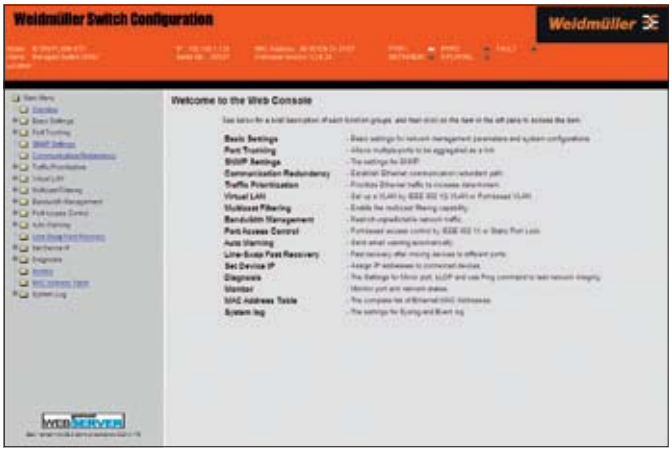
Automatic topology detection using LLDP

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.



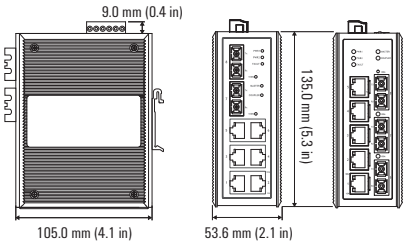
Simple browser based configuration

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)
- IGMP snooping, QoS, port- and tag-based VLAN
- Configurable error messages via SNMP trap, e-mail or relay output
- User-friendly, web-based configuration and management
- External Backup and Restoring Module for easy system reconfiguration (optional accessory)



Technical data

Standards	
IEEE 802.3 for 10BaseT ▪ IEEE 802.3u for 100BaseT(X) and 100BaseFX ▪ IEEE 802.3x for Flow Control ▪ IEEE 802.1D 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
Overload Current Protection	Present
Connection	1 removable 6-contact terminal block
Reverse Polarity Protection	Present

Physical Characteristics	
Housing	Metal, IP 30 protection
Dimensions (W x H x D)	53.6 x 135 x 105 mm (2.11 x 5.31 x 4.13 in)
Weight	IE-SW-VL08MT-...8TX/6TX-2SC/6TX-2ST/6TX-2SCS: 650 g IE-SW-VL08MT-...5TX/3SC/5TX-1SC-2SCS: 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	UL 508, UL 60950-1, CSA C22.2 No. 60950-1, EN60950-1
Hazardous Location	UL/cUL Class I, Division 2, Groups A, B, C and D; ATEX-Zone 2, Ex nC IIC (not for 1345240000)
EMI	FCC Part 15, CISPR (EN55022) class A
EMC	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 (not for 1345240000 and 1241020000)
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Vibration	IEC 60068-2-6
MTBF (mean time between failures)	
Time	363,000 hrs
Database	Telcordia (Bellcore), GB
Warranty	
Warranty Period	5 years

Ordering Information

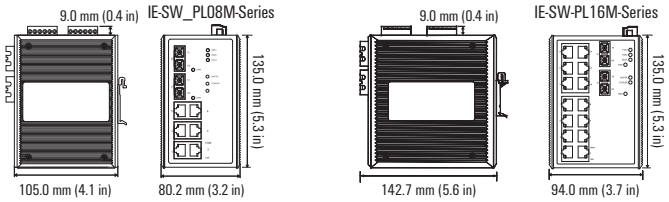
Port Variants	Model Type	Operating Temperature	Order No.
8 * RJ45	IE-SW-VL08MT-8TX	-40 to +75 °C	**1240940000**
5 * RJ45, 3 * SC-Multimode	IE-SW-VL08MT-5TX-3SC	-40 to +75 °C	**1240970000**
5 * RJ45, 1 * SC-Multimode, 2 * SC-Singlemode	IE-SW-VL08MT-5TX-1SC-2SCS	-40 to +75 °C	**1345240000**
6 * RJ45, 2 * ST-Multimode	IE-SW-VL08MT-6TX-2ST	-40 to +75 °C	**1240990000**
6 * RJ45, 2 * SC-Multimode	IE-SW-VL08MT-6TX-2SC	-40 to +75 °C	**1344770000**
6 * RJ45, 2 * SC-Singlemode	IE-SW-VL08MT-6TX-2SCS	-40 to +75 °C	**1241020000**

Accessories

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

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

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 (only IE-SW-PL08M)
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

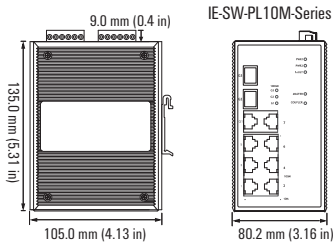
Power Requirements	
Overload Current Protection	Present
Connection	2 removable 6-contact terminal blocks
Reverse Polarity Protection	Present
Physical Characteristics	
Housing	Metal, IP 30 protection
Dimensions (W x H x D)	IE-SW-PL08M: 80.2 x 135 x 105 mm (3.16 x 5.31 x 4.13 in) IE-SW-PL16M: 94 x 135 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	UL 508, UL 60950-1, CSA C22.2 No. 60950-1, EN60950-1
Hazardous Location	UL/cUL Class I, Division 2, Groups A, B, C and D; ATEX-Zone 2, Ex nC IIC
EMI	FCC Part 15, CISPR (EN55022) class A
EMC	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 3; EN61000-4-5 (Surge) level 3; EN61000-4-6 (CS) level 3; EN61000-4-8
Maritime	DNV, GL
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Vibration	IEC 60068-2-6
MTBF (mean time between failures)	
Time	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
	IE-SW-PL08MT-8TX	-40 to +75 °C	1286780000
6 * RJ45, 2 * SC-Multimode	IE-SW-PL08M-6TX-2SC	0 to 60 °C	1241070000
	IE-SW-PL08MT-6TX-2SC	-40 to +75 °C	1286790000
6 * RJ45, 2 * ST-Multimode	IE-SW-PL08M-6TX-2ST	0 to 60 °C	1241080000
	IE-SW-PL08MT-6TX-2ST	-40 to +75 °C	1286800000
6 * RJ45, 2 * SC-Singlemode	IE-SW-PL08M-6TX-2SCS	0 to 60 °C	1241090000
	IE-SW-PL08MT-6TX-2SCS	-40 to +75 °C	1286810000
16 * RJ45	IE-SW-PL16M-16TX	0 to 60 °C	1241100000
	IE-SW-PL16MT-16TX	-40 to +75 °C	1286820000
14 * RJ45, 2 * SC-Multimode	IE-SW-PL16M-14TX-2SC	0 to 60 °C	1241120000
	IE-SW-PL16MT-14TX-2SC	-40 to +75 °C	1286830000
14 * RJ45, 2 * ST-Multimode	IE-SW-PL16M-14TX-2ST	0 to 60 °C	1241130000
	IE-SW-PL16MT-14TX-2ST	-40 to +75 °C	1286840000

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

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) oder 10/100/1000BaseT(X) auto negotiation
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, IP 30 protection
Dimensions (W x H x D)	80.2 x 135 x 105 mm (3.16 x 5.31 x 4.13 in)
Weight	1170 g
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	UL 508, UL 60950-1, CSA C22.2 No. 60950-1, EN60950-1
Hazardous Location	UL/cUL Class I, Division 2, Groups A, B, C and D; ATEX-Zone 2, Ex nC IIC
EMI	FCC Part 15, CISPR (EN55022) Class A
EMC	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 (mean time between failures)	
Time	204.000 hrs
Database	MIL-HDBK-217J, GB 25 °C
Warranty	
Warranty Period	5 years

Ordering Information

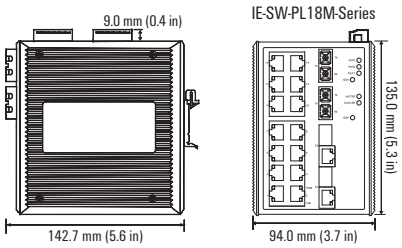
Port Variants	Model Type	Operating Temperature	Order No.
3 * RJ45 10/100/1000BaseT(X), 7 * RJ45 10/100BaseT(X)	IE-SW-PL10M-3GT-7TX	0 to 60 °C	1241290000
	IE-SW-PL10MT-3GT-7TX	-40 to +75 °C	1286930000
1 * RJ45 10/100/1000BaseT(X), 2 * Slots 1000BaseSFP, 7 * RJ45 10/100BaseT(X)	IE-SW-PL10M-1GT-2GS-7TX	0 to 60 °C	1241300000
	IE-SW-PL10MT-1GT-2GS-7TX	-40 to +75 °C	1286940000

Accessories

	Model Type	Order No.
External Backup and Restore Module	EBR-Modul RS232	1241430000
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

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 mit LACP	
Protocols	
IGMPv1/v2 ▪ GMRP, GVRP ▪ SNMPv1/v2c/v3 ▪ DHCP Server/Client ▪ BootP ▪ TFTP ▪ SNTP ▪ SMTP ▪ RARP ▪ RMON ▪ HTTP ▪ HTTPS ▪ Telnet ▪ Syslog ▪ DHCP-Option 66/67/82 ▪ SSH ▪ SNMP Inform ▪ Modbus/TCP ▪ LLDP ▪ EEE 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) oder 10/100/1000BaseT(X) auto negotiation
Console Port	RS 232 (RJ45 connector)
LED Indicators	PWR1, PWR2, FAULT, 10/100M (TP-Port), 100M (Glasfaser-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, IP 30 protection
Dimensions (W x H x D)	94 x 135 x 142.7 mm (3.7 x 5.31 x 5.62 in)
Weight	1630 g
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	UL 508, UL 60950-1, CSA C22.2 No. 60950-1, EN60950-1
Hazardous Location	UL/cUL Class I, Division 2, Groups A, B, C and D; ATEX-Zone 2, Ex nC IIC
EMI	FCC Part 15, CISPR (EN55022) Class A
EMC	EN61000-4-2 (ESD), level 2; EN61000-4-3 (RS), level 3; EN61000-4-4 (EFT), level 2; EN61000-4-5 (Surge), level 3; EN61000-4-6 (CS), level 3; EN61000-4-8; EN61000-4-12
Maritime	DNV, GL
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Vibration	IEC 60068-2-6
MTBF (mean time between failures)	
Time	240.000 hrs
Database	Telcordia (Bellcore), GB
Warranty	
Warranty Period	5 years

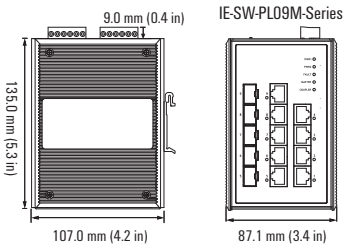
Ordering Information

Port Variants	Model Type	Operating Temperature	Order No.
16 * RJ45 10/100BaseT(X), 2 * Kombi-Ports[1]	IE-SW-PL18M-2GC-16TX IE-SW-PL18MT-2GC-16TX	0 to +60 °C -40 to +75 °C	**1241320000** **1286970000**
14 * RJ45 10/100BaseT(X), 2 * SC-Multimode 100FX, 2 * Kombi-Ports[1]	IE-SW-PL18M-2GC14TX2SC IE-SW-PL18MT-2GC14TX2SC	0 to +60 °C -40 to +75 °C	**1241330000** **1286990000**
14 * RJ45 10/100BaseT(X), 2 * ST-Multimode 100FX, 2 * Kombi-Ports[1]	IE-SW-PL18M-2GC14TX2ST IE-SW-PL18MT-2GC14TX2ST	0 to +60 °C -40 to +75 °C	**1241340000** **1287000000**
14 * RJ45 10/100BaseT(X), 2 * SC-Singlemode 100FX, 2 * Kombi-Ports[1]	IE-SW-PL18M-2GC14TX2SCS IE-SW-PL18MT-2GC14TX2SCS	0 to +60 °C -40 to +75 °C	**1241350000** **1287010000**

[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

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
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, IP 30 protection
Dimensions (W x H x D)	87.1 × 135 × 107 mm (3.43 × 5.31 × 4.21 in)
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)
Storage Temperature	-40 to 85 °C (-40 to 185 °F)
Ambient Relative Humidity	5 to 95 % (non-condensing)
Regulatory Approvals	
Safety	UL 508, 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
EMC	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 (mean time 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 * Kombi-Ports 10/100/1000BaseT(X) oder 100/1000BaseSFP	IE-SW-PL09M-5GC-4GT IE-SW-PL09MT-5GC-4GT	0 to 60 °C -40 to +75 °C	**1241370000** **1287020000**

Accessories

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

PoE Switches

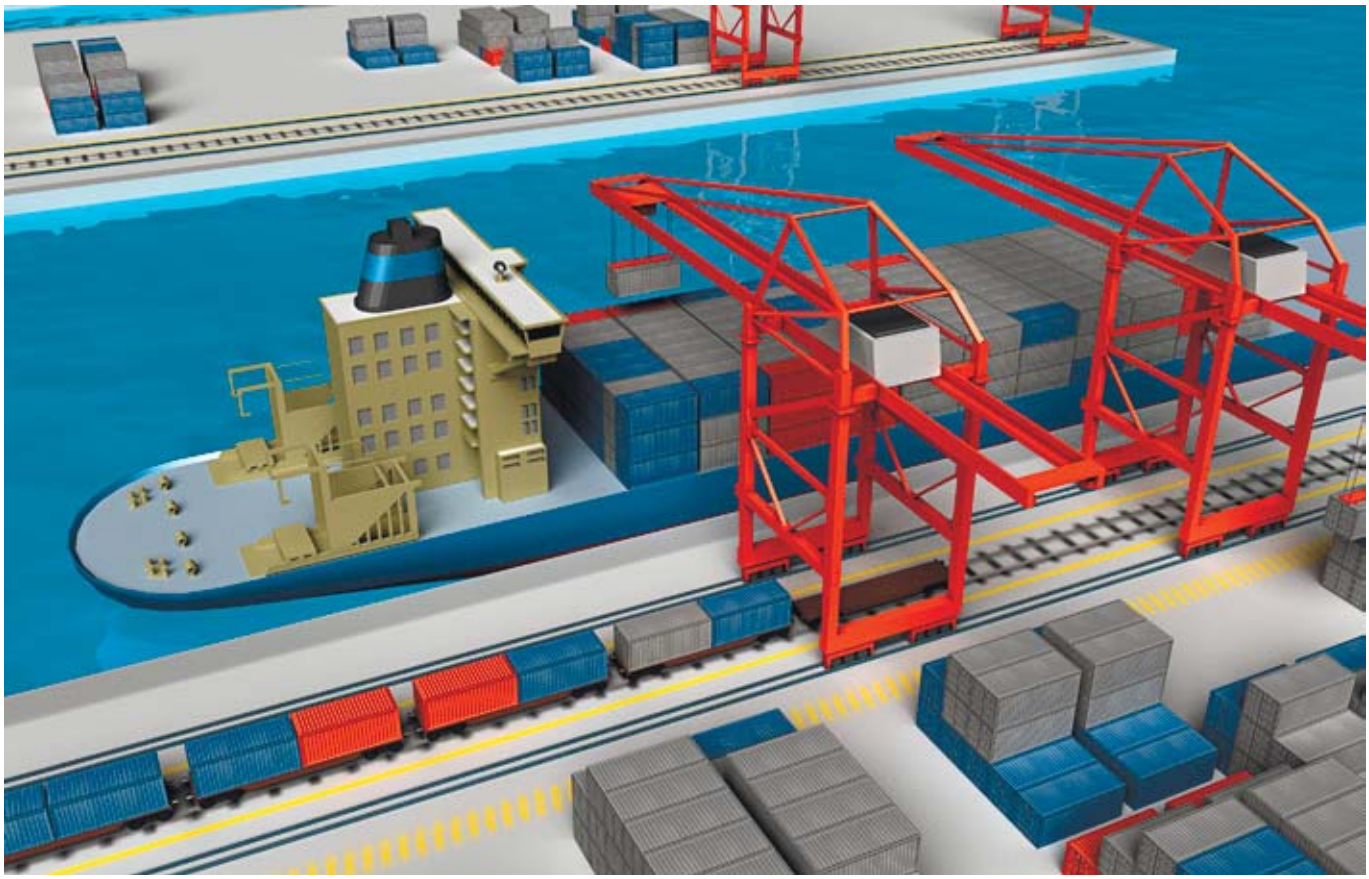
Power over Ethernet (PoE) describes a process where power can be supplied to a network compatible device over the 8-wire Ethernet cable. In a narrower sense, PoE today means the IEEE 802.3af (DTE Power over MDI) standard which was adopted in June 2003.

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 panels or wireless communications devices such as WLAN access points.

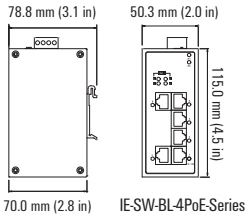
Weidmüller PoE switches support the IEE 802.3at standard (also known as PoE+) and can therefore supply end devices with up to 30 W per PoE port.

Weidmüller PoE switches also offer further advantages by their simple power supply needs. 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 ports
- Up to 30 watts per PoE port
- 24/48 V DC redundant wide-range power supply
- Integrated DC/DC converter can supply 48 V-PoE devices across the entire input voltage range of 24 to 48 V DC
- Intelligent power consumption detection and classification
- Redundant dual V DC power inputs
- Broadcast Storm Protection



IE-SW-BL-4PoE-Series

Technical data

Technology	
Standards	802.3af/at 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
Switch Properties	
MAC table size	1 K
Packet buffer size	512 KB
Interface	
RJ45 Ports	10/100BaseT(X) auto negotiation speed, Full/Half duplex mode and auto MDI/MDI-X connection
DIP Switches	Enable/disable broadcast storm protection
PoE pin assignment	V-, V-, V+, V+ for pin 1, 2, 3, 6 (endspan, MDI-X alternative A)
LED Indicators	PWR1, PWR2, 10/100M, PoE
Power Requirements	
Input Voltage	24/48 (20 to 60 V) V DC, 2 redundant inputs
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	Aluminium, IP 30 protection
Dimensions (W x H x D)	50 × 115 × 70 mm (1.96 x 4.52 x 2.76 in)
Weight	375 g
Installation	TS 35
Environmental Limits	
Operating Temperature	Standard Models: 0 to 60 °C (32 to 140 °F) Wide Temp. Models: -40 to 75 °C (-40 to 167 °F)
Storage Temperature	-40 to 85 °C (-40 to 185 °F)
Ambient Relative Humidity	5 to 95 % (non-condensing)
Regulatory Approvals	
Safety	UL 508
EMI	FCC Part 15, CISPR (EN55022) class A
EMC	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
MTBF (mean time between failures)	
Time	645.138 hrs
Database	Telcordia (Bellcore), GB
Warranty	
Warranty Period	5 years

Ordering Information

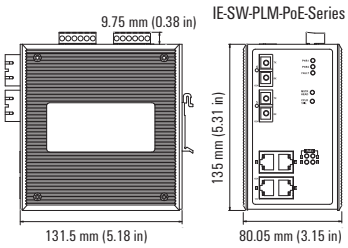
Port Variants	Type	Operating Temperature	Order No.
2 * RJ45 10/100 BaseT(X), 4 * RJ45 10/100 BaseT(X) PoE+	IE-SW-BL06-2TX-4POE	0 to 60 °C	1241380000
	IE-SW-BL06T-2TX-4POE	-40 to +75 °C	1286920000

Accessories

	Type	Order No.
19" Rack Mounting Kit	RM-KIT	1241440000
Cable fixing kit	IE-CFK-05	1339610000

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

- 4 IEEE 802.3af/at compliant PoE ports
- Up to 30 watts per PoE port
- 24/48 V DC redundant wide-range power supply
- Integrated DC/DC converter can supply 48 V-PoE devices across the entire input voltage range of 24 to 48 V DC
- Extended PoE management functions, including PoE error checking or configuring the operational times of connected PoE devices



Technical data

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
PoE pin assignment	V-, V-, V+, V+ for pin 1, 2, 3, 6 (endspan, MDI-X alternative A)
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
Alarm Contact	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 (20 to 60 V) 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
Technical data	
Housing	Metal, IP 30 protection
Dimensions (W x H x D)	80 x 135 x 131.5 mm (3.15 x 5.31 x 5.18 in)
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)
Storage Temperature	-40 to 85 °C (-40 to 185 °F)
Ambient Relative Humidity	5 to 95 % (non-condensing)
Regulatory Approvals	
Safety	UL 508
EMI	FCC Part 15, CISPR (EN55022) class A
EMC	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
MTBF (mean time between failures)	
Time	433.000 hrs
Database	Telcordia (Bellcore), GB
Warranty	
Warranty Period	5 years

Ordering data

Port Variants	Type	Operating Temperature	Order No.
2 * RJ45 10/100 BaseT(X), 4 * RJ45	IE-SW-PL06M-2TX-4PoE	0 to 60 °C	**1241390000**
10/100 BaseT(X) PoE+	IE-SW-PL06MT-2TX-4PoE	-40 to +75 °C	**1286910000**

Accessories

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

Gigabit Industrial Security Router

Secure data communication between Ethernet networks, with integrated VPN remote maintenance functions.

You want to be able to communicate with your machinery and systems securely, reliably, and from anywhere? Should only verified data gain access to your industrial network? Then the new Industrial Security Router from Weidmüller is just the right choice.

Due to the steady increase in networking data and information in office-based communication, a strong trend has evolved where the advantages of Ethernet communication are progressively being used in the area of industrial automation technology.

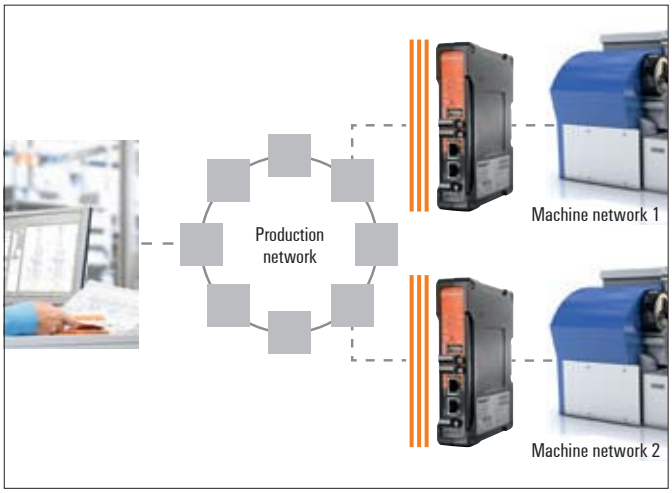
As well as the standardisation provided by Ethernet technology, vertical data integration from the field/ production level across the office network to the Internet is an important driver for its rapid spread in industrial applications.

In addition to LAN switching technologies, we are seeing increased use of industrial routers for enhanced security and for efficient management of data traffic between LANs.

Routers with integrated VPN technologies are also ideally suited to secure remote access to components and systems in the LAN, via either a wired or wireless Internet connection.

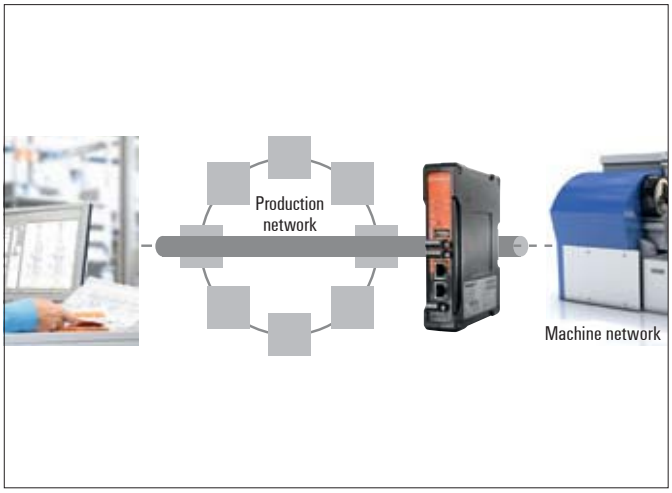
Securely integrate machines in a production network with Gigabit Ethernet

The router can translate between the addresses of various networks with protocols such as port forwarding, 1:1 NAT or masquerading. These functions conceal all a machine's Ethernet devices, such as PLCs or remote I/Os downstream of a router, so that they are protected. The router communicates via Gigabit Ethernet LAN/WAN interfaces.



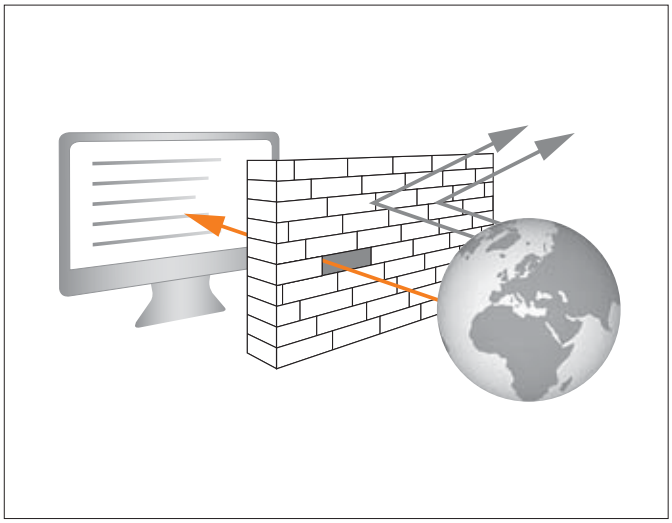
Remote access via secure VPN connections

Weidmüller Industrial Ethernet routers use encrypted VPN connections (OpenVPN and IPsec) to allow worldwide access to machines and systems. Diagnosis and error rectification are therefore possible from any location. In many cases, this eliminates the need for on-site service technicians.



Intelligent Firewall: Stateful Packet Inspection

The integrated firewall with variable and comprehensive filter functions recognises verified messages and lets them through. Unauthorised data is blocked from access to the network.



Universal availability

The router variant with integrated 3G/UMTS modem grants wireless access to machinery and systems without the need for a land line connection.

Control via integrated digital inputs

A pre-configured VPN connection can be activated and/or deactivated and connections to the WAN port broken using a digital input on the router or, using software, via the integrated modbus TCP server.

Gigabit Industrial Security Router

- 2 Gigabit ports (LAN/WAN)
- Integrated firewall
- NAT masquerading, 1:1 network mapping and port forwarding
- Remote access via VPN (OpenVPN, IPsec, L2TP)
- Key switch function for activation/deactivation of WAN/VPN connection
- Variant with integrated 3G/UMTS modem for rapid, Internet-based wireless access
- Back-up and recovery of device configuration using SIM card

Technical data

Operation modes	
IP Router	Static or dynamic routing, supporting RIPv2 / OSPF
Transparent Bridge	2-port switch with additional layer-2 filter
Network Services	
	• DHCP server / DHCP relay • DNS relay • NTP client • DynDNS (DHCP client by RFC 2136)
Firewall	
	• IPv4 Stateful inspection Firewall (incoming/outgoing) • NAT-Masquerading, 1:1 NAT, Portforwarding • Layer-2/3-Filter (VLAN ID, VLAN, QoS tag, MAC address, Ethertype frame) • "Auto learning" feature to create packet filter rules (analysis of network traffic) • Layer 2/3-based packet prioritization (Ethernet frame, IP header, VLAN tag)
VPN	
OpenVPN	• Configurable as OpenVPN server or client (Layer 2 and Layer 3) • Authentication with X.509 Certificates • Tunnel support via HTTP proxy • Maximum of 10 different client or server configurations • Unlimited number of client connections in server mode
IPsec	• Can be configured as an IPsec server or client • PSK authentication (user ID, password) or X.509 certificates • Hardware-based encryption for faster data throughput • A maximum of 64 simultaneous connections (subnet to subnet or as an IPsec server) • Encryption algorithms DES-56, 3DES-168, AES 128, AES 192, AES-256
Management	
	• Configuration via WEB interface (HTTP / HTTPS) • Web interface in German or English • Configuration support through detailed help information (tooltip) • Configurable multi-user access with definable rights mask • Support of SNMP v1/v2/v3, event log / syslog
Miscellaneous	
Modbus/TCP	Integrated Modbus TCP Server for status queries, and software-based activation / de-activation of VPN connections
Diagnosis	"Remote Capture" feature for network diagnostics via a connected PC (Wireshark)
Monitoring	Client Monitoring (via ICMP) with alarm function in case of error

Interfaces	
RJ45 ports	2x10/100/1000BaseT(X)
USB port	Option for future expansion
SCM card reader	Save and restore of the configuration using a smart card (memory chip)
LED indicators	Signaling states for power, status, cut, alert, active VPN connection and an active UMTS connection
Digital outputs	• "Alarm" –> Indicates a configurable network status or error (24 V out) • "VPN-active" –> Indicates an active VPN connection (24 V out)
Digital inputs	• „Cut" –> Disconnects physically (link down) the WAN port (24 V) • "VPN-initiate" –> Enables a pre-configured VPN connection (24 V)
Reset button	Restoring the factory default
Power Requirements	
Input Voltage	1x 24 V DC (7 to 36 volts)
Current consumption	max. 600 mA @ 24 V DC
Technical data (housing)	
Housing	Metal, IP 30 protection
Dimensions (W x H x D)	35 x 159 x 134 mm (without antenna) 35 x 255 x 134 mm (with UMTS antenna)
Installation	TS 35
Environmental Limits	
Operating temperature	-20 °C to +70 °C
Storage Temperature	-20 °C to +85 °C
Ambient humidity	6 to 90 % not condensing
DSL and UMTS/HSPA	
DSL	Connection to the DSL modem via LAN or WAN port Free configuration of the PPPoE login
DynDNS	Support automatic registration
UMTS/3G	• Built-in quad-band UMTS / HSPA modem (only variant IE-SR-2GT-UMTS/3G) • 7.2 Mbps peak downlink, uplink 5.8 Mbps peak • WCDMA 850/1900/2100 MHz GSM/GPRS/EDGE 850/900/1800/1900 MHz • FCC, IC, CE, GCF, PTCRB, A-Tick, AT&T, Telstra, NTT, DoCoMo, Softbank, Bell
Approvals	
Security	UL 508 (in preparation)
EMC	FCC Part 15 Class A, EN 55022 Class A, EN61000-4-2 (ESD), EN61000-4-3 (RS) EN61000-4-4 (EFT), EN61000-4-5 (Surge), EN61000-4-6 (CS)
Shock	DIN EN 60068-2-27
Vibration	DIN EN 60068-2-6
Warranty	
Warranty Period	3 years

Ordering data

Models	Type	Order No.
LAN/WAN router	IE-SR-2GT-LAN	**1345270000**
LAN/WAN router with integrated UMTS/3G modem	IE-SR-2GT-UMTS/3G	**1345250000**

Media converter

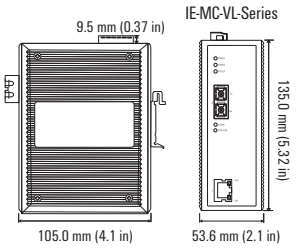
If high interference immunity is needed or long transmission distances are involved, then fibre-optic cables are advisable. Another advantage of using fibre-optic cabling is the insensitivity to lightning or voltage surges. The use of fibre-optic based systems is already established in the process industry, plant engineering, energy distribution and the wind energy branches.

One simple and inexpensive solution is 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	
Interfaces		
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
Current consumption	0.16 A (@ 24 V)
Connection	Removable terminal block
Overload Current Protection	1.1 A
Reverse Polarity Protection	Present
Technical data	
Housing	Metal, IP 30 protection
Dimensions (W x H x D)	53.6 x 135 x 105 mm (2.11 x 5.31 x 4.13 in)
Weight	630 g
Installation	TS 35
Environmental Limits	
Operating temperature	Standard Models: 0 to 60 °C (32 to 140 °F) Wide Temp. Models: -40 to 75 °C (-40 to 167 °F)
Operating Humidity	5 to 95 % RH
Storage Temperature	-40 to 85 °C (-40 to 185 °F)

Approvals	
Security	UL 508, UL 60950-1, CSA C22.2 No. 60950-1, EN60950-1
EMI	FCC Part 15, CISPR (EN55022) class A
EMC	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
Maritime	DNV, GL
Freefall	IEC60068-2-32
Shock	IEC60068-2-27
Vibration	IEC60068-2-6
MTBF (mean time between failures)	
Time	401.000 hrs
Database	MIL-HDBK-217F: GB 25 °C
Warranty	
Warranty Period	5 years

Ordering data

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

Accessories

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

Serial/Ethernet converter

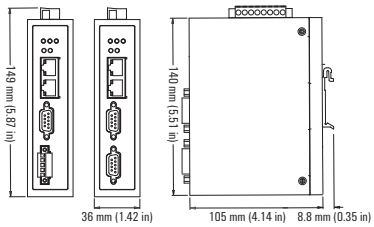
Serial interfaces such as RS 232, RS 422 or RS 485 are widespread today in automation systems. To integrate these devices into modern Industrial Ethernets, Serial/Ethernet converters are used which offer investment protection for existing automation components. These devices include control systems,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

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

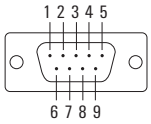


Technical data

Ethernet Interface	
Number of Ports	2
Speed	10/100 MBit/s, auto MDI/MDIX
Connection	8-pin RJ45
Magnetic Isolation Protection	1.5 KV built-in
Ethernet Line Protection	1 KV (level 2) surge protection
Serial Interface	
Number of Ports	IE-CS-2TX-1RS232/485: 1, IE-CS-2TX-2RS232/485: 2
Serial Standards	RS 232/422/485
Connection	IE-CS-2TX-1RS232/485: DB9 for RS 232, terminal block for RS 422/485 IE-CS-2TX-2RS232/485: DB9 for RS 232/422/485
Serial Line Protection	• 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 bit/s to 921.6 kbit/s
Serial Signals	
RS 232	TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND
RS 422	Tx+, Tx-, Rx+, Rx-, GND
RS 485 4w	Tx+, Tx-, Rx+, Rx-, GND
RS 485 2w	Data+, Data-, GND
Software	
Network Protocols	ICMP, IP, TCP, UDP, DHCP, BOOTP, Telnet, Rtelnet, DNS, SNMP, HTTP, SMTP, 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
Technical data	
Housing	Metal, IP 30 protection
Weight	IE-CS-2TX-1RS232/485: 475 g IE-CS-2TX-2RS232/485: 485 g
Dimensions (W x H x D)	36 x 105 x 140 mm (1.42 x 4.13 x 5.51 in)
Environmental Limits	
Operating temperature	Standard Models: 0 to 60 °C (32 to 140 °F) Wide Temp. Models: -40 to 75 °C (-40 to 167 °F)
Ambient Relative Humidity	5 to 95 % RH
Storage Temperature	-40 to 85 °C (-40 to 185 °F)
Power Requirements	
Input Voltage	12 to 48 V DC
Current consumption	IE-CS-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

Approvals	
EMC	CE (EN55022 Class A, EN55024), FCC Part 15 Subpart B Class A
Security	UL 508
Hazardous Location	UL/cUL Class 1 Division 2 Groups A, B, C and D
ATEX	Class I, Zone 2 (Pending)
EMC	EN61000-4-2 (ESE), 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)
MTBF (mean time between failures)	
Time	262.805 hrs
Database	Telcordia (Bellcore), GB
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 data

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

Accessories

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

Serial/fibre-optic converter

Serial/fibre-optic converter

If high interference immunity is needed or long transmission distances are involved, then fibre-optic transmission is advisable. Another benefit of using fibre-optic transmission is that it is not sensitive to electromagnetic influences.

One simple and inexpensive solution is media converters, which can convert serial signals from from a RS 232/422/485 port on a fiber optic port with an SC or ST glass fibre connection. Fibre-optics with multimode technology make it possible to transmit over distances of up to 5000 m without additional power boosters.

Ring operation

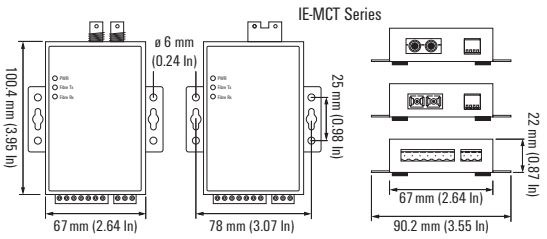
The converter is able to connect several serial devices to form a glass fibre ring. This simply involves connecting the TX port of one converter with the Rx port of a neighbouring converter. Ring mode can then be activated using the DIP switch on the device. A signal which is transmitted by a node is then forwarded in the ring until it is gets back to the sender, where it is blocked. In this way, glass fibre rings can be configured with an spread of up to 100 km.

Automatic baud rate detection

The serial/fibre-optic converter can automatically detect the serial baud rate of connected devices. This ensures that signals can be forwarded by the media converter without any data loss even if the baud rate of a connected device changes.

Serial/fibre-optic converters

- "Ring" and "point-to-point" modes of transmission
- Extension of RS 232/422/485 transmission to up to 5 km
- Supports baud rates of 50 bps to 921.6 Kbps
- Extended temperature range of -40 to 75 °C
- Compact design



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Technical data

LWL Interface	
Connection type	SC or ST connector, multimode
Wavelength	850 nm
Tx Transmit Power	> - 5 dBM
Rx Sensitivity	-20 dBM
Typical Distance	5 km (50/125, 62,5/125, 100/140 µm multimode cable)
Transmission mode: "Point-to-point"	Full/Half duplex
Transmission mode: "Ring"	Half duplex
Serial Interface	
Serial Standards	RS 232/422/485
Connector	terminal block
Serial Line Protection	15 kV ESD protection for all signals
Baud rate	50 bit/s to 921,6 kbit/s
RS 485 Data Direction Control	ADDC® (automatic data direction control)
Serial Signals	
RS 232	Tx, Rx, GND
RS 422	TxD+, TxD-, RxD+, RxD-, GND
RS 485 4w	TxD+, TxD-, RxD+, RxD-, GND
RS 485 2w	Data+, Data-, GND
Technical data	
Housing	Aluminum, IP 30 protection
LED Indicators	PWR, fibre Tx, fibre Rx
Weight	320 g
Dimensions W x H x D	with wall mounting: 67 x 100 x 22 mm (2.64 x 3.94 x 0.87 in) without wall mounting: 90 x 100 x 22 mm (3.54 x 3.94 x 0.87 in)
Environmental Limits	
Operating temperature	-40 to 75 °C (-40 to 167 °F)
Storage temperature	-40 to 75 °C (-40 to 167 °F)
Operating Humidity	5 to 95 % RH
Power Requirements	
Input voltage	12 to 48 V DC
Power consumption	140 mA @ 12 V
Serial Line Protection	2 KV Burst (EFT), EN61000-4-4 2 KV Surge, EN61000-4-5
Reverse Polarity Protection	Present
Overload Current Protection	1,1 A
Approvals	
Safety	UL 60950-1
EMC	FCC Part 15, EN55022 1998, Class B EN61000-4-2 (ESD), criterion A, level 3 EN61000-4-3 (RS), criterion A, level 2 EN61000-4-4 (EFT), criterion A, level 2 EN61000-4-5 (Surge), criterion A, level 3 EN61000-4-6 (CS), criterion A, level 2 EN61000-4-8 (SFMF), criterion A, level 1
MTBF (mean time between failures)	
Time	780.480 hrs
Database	Telcordia (Bellcore), GB
Warranty	
Warranty Period	5 years

Ordering data

Models	Type	Operating temperature	Order No.
1 * Serial (RS232/422/485: terminal block), 1 * SC multimode	IE-MCT-1RS232/485-1SC	-40 to +75 °C	**1344760000**
1 * Serial (RS232/422/485: terminal block), 1 * ST multimode	IE-MCT-1RS232/485-1ST	-40 to +75 °C	**1362950000**

Industrial wireless

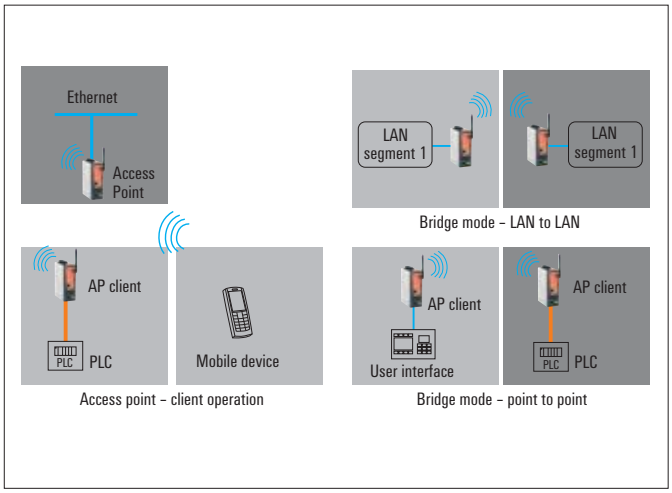
Wireless communications are preferred when working with mobile applications or difficult-to-reach areas. Currently, wireless LAN can be used for industrial manufacturing plants or facilities; it is ideal for use anywhere where traditional cabling is not suitable or where a mobile network connection is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

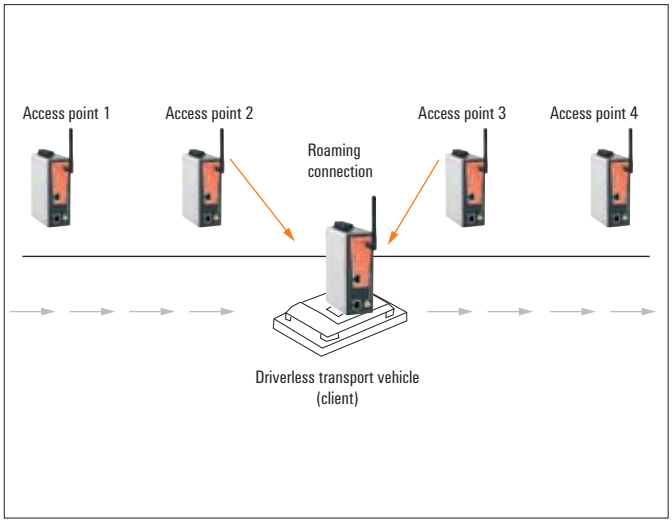
Wireless operating modes

The most common operating mode for wireless networks are AP client mode (Access Point) and bridge mode.
In AP-client mode an Access Point is necessary to set up a Basic Service Set (BSS) for a wirless connection. 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.



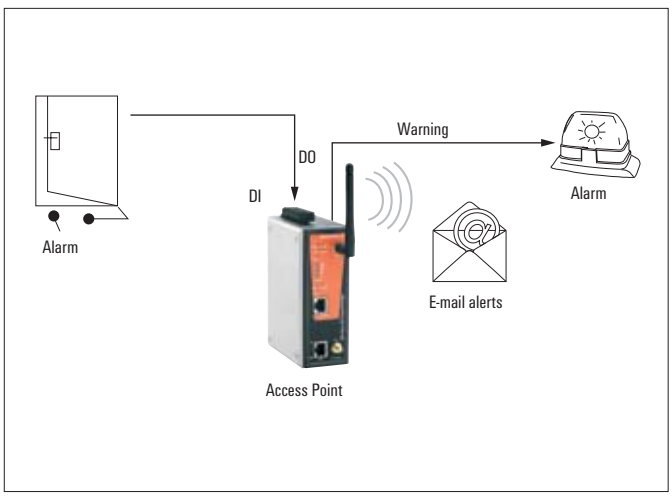
Turbo roaming for uninterrupted connections

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. It is the roaming technology that offers a seamless wireless connection and permits a swift change between different wireless access points without the risk of interruption to the data communication.



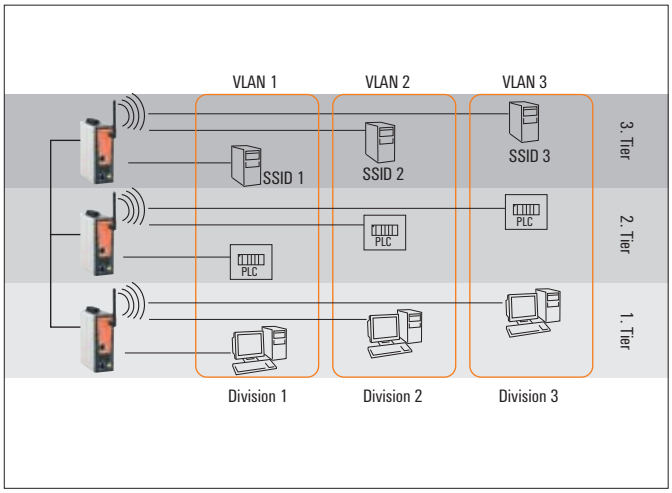
Integrated digital inputs / outputs

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 failures, or link breaks, occur.



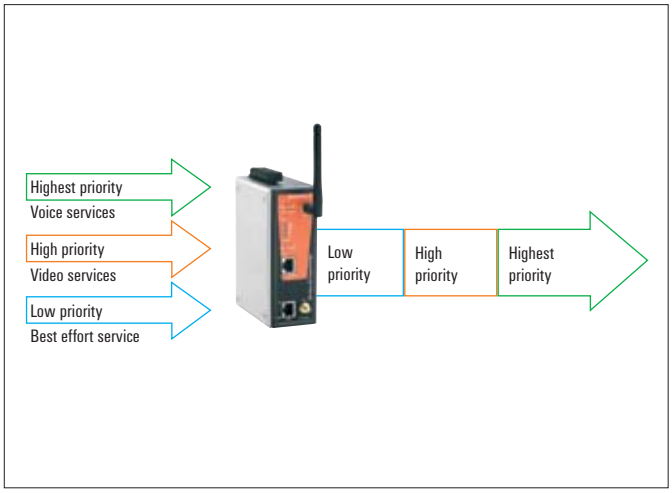
Wireless VLAN (Multi-SSID)

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.



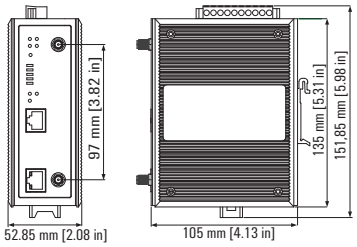
WMM for prioritising communications

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. Critical data, for example, requires 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 - Access point/bridge/client

- IEEE 802.11a/b/g compatible single radio module (2.4 GHz or 5 GHz band)
- 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 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 24Mbps, 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)

Interfaces	
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
Technical data	
Housing	Metal, IP 30 protection
Weight	850 g
Dimensions (W x H x D)	53.6 x 135 x 105 mm (2.11 x 5.31 x 4.13 in)
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)
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)
Connection	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
Approvals	
Security	EN60950-1, UL 60950-1
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
Warranty	
Warranty Period	5 years

Ordering data

Models	Type	Operating Temperature	Order No.
IEEE 802.11a/b/g Wireless AP/Bridge/ Client (European version)	IE-WL-AP-BR-CL-ABG-EU	0 to +60 °C	1242100000
	IE-WLT-AP-BR-CL-ABG-EU	-40 to +75 °C	1286480000
IEEE 802.11a/b/g Wireless AP/Bridge/ Client (US version)	IE-WL-AP-BR-CL-ABG-US	0 to +60 °C	1242110000
	IE-WLT-AP-BR-CL-ABG-US	-40 to +75 °C	1286490000

Accessories

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

WLAN antennas and connection cable - page B.42

WLAN antennas

IE-ANT-O-BG-360-6-NF

IE-ANT-O-AH-360-5-NF

Technical data

Electrical data		
Frequency range (Mhz)	2400 - 2500 (Mhz)	5150 - 5875 (Mhz)
VSWR	1.8	< 1.7
Antenna gain	6 dBi	5 dBi
3dB beamwidth (horizontal)	360°	360°
3dB beamwidth (vertical)	30°	25°
Front-to-back ratio	-	-
Vertical electrical tilt	0°	0°
General data		
Radiation	Omnidirectional	Omnidirectional
Impedance	50 ohm	50 ohm
Polarisation	Vertical	Vertical
Connector type	1 x N-type female	1 x N-type female
Connector position	Bottom	Bottom
Composite power max.	25 W	6 W
Mechanical specifications		
Dimensions	250 x 22 mm (height x diameter)	160 x 16 mm (height x diameter)
Weight	300 g	300 g
Wind load	Frontal: 3N @ 160 km/h, side 3N 160 km/h	Frontal: 7N @ 160 km/h, side 7N @ 160 km/h
Mast diameter min.	-	38.1 mm
Mast diameter max.	-	76.2 mm
Environmental Limits		
Area of application	outdoors	outdoors
Operating temperature	- 40 to 80 °C	- 45 to 70 °C
Storage Temperature	- 40 to 80 °C	- 45 to 70 °C
IP protection class	IP 67	IP 64
Enclosure material		
Radome colour	RAL 7035 (light grey)	RAL 9002 (grey white)
Radome material	Fibre glass	PP
Material for base plate	-	-

Ordering data

Models	Type	Operating temperature	Order No.
802.11 b/g wireless antenna; omnidirectional	IE-ANT-O-BG-360-6-NF	- 40 to 80 °C	**1367090000**
802.11 a/h wireless antenna; omnidirectional	IE-ANT-O-AH-360-5-NF	- 45 to 70 °C	**1367120000**
Note	Assembly material included in scope of supply		
	Assembly material included in scope of supply		

WLAN antennas

	IE-ANT-P-ABG-75-9-NF	IE-ANT-O-ABG-360-7-NF
		

Technical data

Electrical data		
Frequency range (Mhz)	Band 1: 2400 - 2500 (Mhz) Band 2: 5150 - 5875 (Mhz)	Band 1: 2400 - 2500 (Mhz) Band 2: 5150 - 5875 (Mhz) Band 3: 3400 - 3700 (Mhz) Band 4: 4900 - 5470 (Mhz) Band 5: 5470 - 5935 (Mhz)
VSWR	< 2	Band 1: < 1.8 Band 2: < 2 Band 3: < 2 Band 4: < 1.8 Band 5: < 1.8
Antenna gain	9 dBi band 1/2	Band 1: 6 dBi Band 2: 6 dBi Band 3: 7 dBi Band 4: 8 dBi Band 5: 8 dBi
3dB beamwidth (horizontal)	75° band 1 ; 55° band 2	–
3dB beamwidth (vertical)	55° band 1/2	–
Front-to-back ratio	15 dB band 1/2	–
Vertical electrical tilt	0° band 1/2	–
General data		
Radiation	Directional	Omnidirectional
Impedance	50 ohm	50 ohm
Polarisation	Vertical	Vertical
Connector type	1 x N-type female	1 x N-type female
Connector position	Bottom	Bottom
Composite power max.	10 W	75 W
Mechanical specifications		
Dimensions	101 x 80 x 35 mm (height x width x depth)	50.6 x 86 mm (height x diameter)
Weight	110 g	300 g
Wind load	Frontal: 7N @ 160 km/h, side 7N @ 160 km/h	Frontal: 10N @ 160 km/h
Mast diameter min.	40 mm	–
Mast diameter max.	60 mm	–
Environmental Limits		
Area of application	outdoors	outdoors
Operating temperature	– 40 to 80 °C	– 40 to 80 °C
Storage Temperature	– 40 to 80 °C	– 40 to 80 °C
IP protection class	IP 67	IP 68
Enclosure material		
Radome colour	RAL 7044 (grey)	RAL 7043 (grey)
Radome material	PC	ASA_SAN
Material for base plate	–	Stainless steel

Ordering data

Models	Type	Operating temperature	Order No.	Type	Operating temperature	Order No.
802.11 a/b/g/h wireless antenna; directional	IE-ANT-P-ABG-75-9-NF	– 40 to 80 °C	**1367140000**			
802.11 a/b/g/h wireless antenna; omnidirectional				IE-ANT-P-ABG-75-9-NF	– 40 to 80 °C	**1367130000**
Note	Assembly material included in scope of supply			Assembly material included in scope of supply		

Antenna cable

IE-CC-NM-RPSMAM-2M

IE-CC-NM-RPSMAM-4M

Technical data

Electrical data		
Impedance	50 Ohm +/- 2	50 Ohm +/- 2
Max. operating frequency	6 Ghz	6 Ghz
Signal delay	4.08 ns/m	4.08 ns/m
Attenuation @ 2.4 Ghz	approx. 0.55 dB/m	approx. 0.55 dB/m
Attenuation @ 5 Ghz	approx. 0.87 dB/m	approx. 0.87 dB/m
Mechanical specifications		
Length	2 m	4 m
Weight	6.3 kg/100 m	6.3 kg/100 m
Min. bending radius (continuous)	28 mm	28 mm
Connector type	Connection 1: N-type male Connection 2: RP-SMA male	Connection 1: N-type male Connection 2: RP-SMA male
Environmental Limits		
Operating temperature	–40 to 85 °C	–40 to 85 °C
Installation temperature	–20 to 60 °C	–20 to 60 °C
Flammability	IEC 60332-1, UL 1581 § 1080 (VW-1)	IEC 60332-1, UL 1581 § 1080 (VW-1)
Halogen-free	IEC 60754	IEC 60754
UV resistance	ISO 4892-2A	ISO 4892-2A
Material data		
Jacket	LSFH (modified polyethylene)	LSFH (modified polyethylene)
Outside diameter	5.7 mm	5.7 mm

Ordering data

Models	Type	Order No.	Type	Order No.
Antenna cable, 2m long, N-type (male) –> RP-SMA (male), impedance 50 ohm	IE-CC-NM-RPSMAM-2M	**1367110000**		
Antenna cable, 4m long, N-type (male) –> RP-SMA (male), impedance 50 ohm			IE-CC-NM-RPSMAM-4M	**1367100000**
Note				

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

Interfaces								
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, Empf. 1550 nm	TX 1550 nm, Empf. 1310 nm	TX 1 310 nm, Empf. 1550 nm	TX 1550 nm, Empf. 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	Standard Models: 0 to 60 °C (32 to 140 °F) Wide Temp. Models: -40 to 75 °C (-40 to 167 °F)
Storage Temperature	-40 to 85 °C (-40 to 185 °F)
Ambient Relative Humidity	5 to 95 % (non-condensing)
Approvals	
Security	UL, TÜV
Warranty	
Warranty Period	3 years

Ordering data

SFP Variants	Type	Operating Temperature	Order No.
Gigabit-Ethernet, Multimode, LC Connector, 500 m	IE-SFP-1GSXLC	0 to +60 °C	**1241490000**
	IE-SFP-1GSXLC-T	-20 to 75 °C	**1286700000**
Gigabit-Ethernet, Multimode, LC Connector, 2 km	IE-SFP-1GLSXLC	0 to +60 °C	**1241500000**
	IE-SFP-1GLSXLC-T	-40 to 85 °C	**1286710000**
Gigabit-Ethernet, Singlemode, LC Connector, 10 km	IE-SFP-1GLXLC	0 to +60 °C	**1241510000**
	IE-SFP-1GLXLC-T	-40 to 85 °C	**1286720000**
Gigabit-Ethernet, Singlemode, LC Connector, 40 km	IE-SFP-1GLHXLC	0 to +60 °C	**1241520000**
	IE-SFP-1GLHXLC-T	-40 to 85 °C	**1286730000**
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**
	IE-SFP-1G10ALC-T	-40 to 85 °C	**1286740000**
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**
	IE-SFP-1G10BLC-T	-40 to 85 °C	**1286750000**
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**
	IE-SFP-1G20ALC-T	-40 to 85 °C	**1286760000**
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**
	IE-SFP-1G20BLC-T	-40 to 85 °C	**1286770000**

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

Interfaces			
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)
Approvals	
Security	UL, TÜV
Warranty	
Warranty Period	3 years

Ordering data

Port Variants	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
- Can be used for all Weidmüller managed switches and WLAN components

Technical data

Basic Operation	
Connection	RS 232-Interface with RJ45-Connector
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)
Technical data	
Housing	PVC molding, IP 40 protection
Dimensions (W x H x D)	32.5 x 97 x 12 mm (8.07 x 3.82 x 0.47 in)
Weight	50 g
Mounting possibility	M4 screw (< 4 mm)
Cable Length	35 cm (including connector)
Environmental Limits	
Operating temperature	0 to 60 °C (32 to 140 °F)
Storage Temperature	-20 to 70 °C (-4 to 158 °F)
Ambient Relative Humidity	5 to 95 % (non-condensing)
Approvals	
EMI	FCC Part 15, CISPR (EN55022) Class A
EMC	EN61000-4-2 (ESD), level 2; EN61000-4-3 (RS), level 3; EN61000-4-4 (EFT), level 3; EN61000-4-5 (Surge), level 3; EN61000-4-6 (CS), level 3
Warranty	
Warranty Period	5 years

Ordering data

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

Kit for 19" rack-mounting

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

Technical data

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

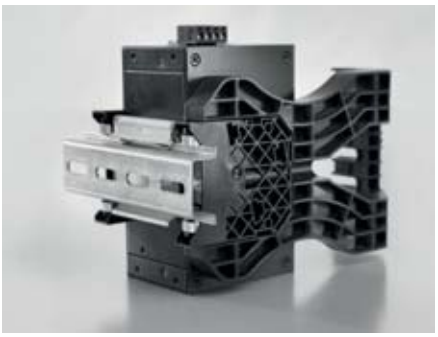
Ordering data

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

Cable fixing kit

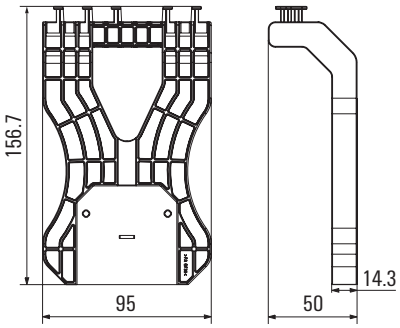
- Quick and easy fixing of Ethernet cable to industrial switches by clamping cable insulation
- Decoupling of Ethernet cable from inharmonious vibrations in vibrating applications
- Reliable connection contact even in the event of vibration
- Up to 10 cables can be fixed at the same time (2 per fixing groove)
- Fixing on DIN-rail using Weidmüller standard end bracket (included in scope of delivery)

IE-CFK-05



Technical data

General data	
Usage	Can be used with all Weidmüller BasicLine switches of the BL05/06/08 families
Max. build height of plug connector	40 mm (with 70 mm switch installation depth)
Max. no. of cables which can be connected	10 (2 per fixing groove)
Cable diameter which can be clamped	5 mm to max. 6.8 mm
Mechanical specifications	
Dimensions (W x H x D)	50 mm x 95 mm x 157 mm
Weight	92 g
Installation	TS 35 (retaining bracket for mounting included in scope of supply)
Environmental Limits	
Flammability	V-0 (UL94)
Vibration	IEC 600068-2-6
Shock	IEC 600068-2-27
Material	
Base material	PA GF30 (glass fibre-reinforced plastic)
Colour	black



Ordering data

	Type	Qty.	Order No.
	IE-CFK-05	1	**1339610000**
Note	Scope of delivery: 1 x cable fixing kit / 1 x retaining bracket for mounting on DIN-rail / 5 x cable tie for additional fixing		

Passive components

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

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

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

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

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

The Ethernet connector system: clever – flexible

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

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

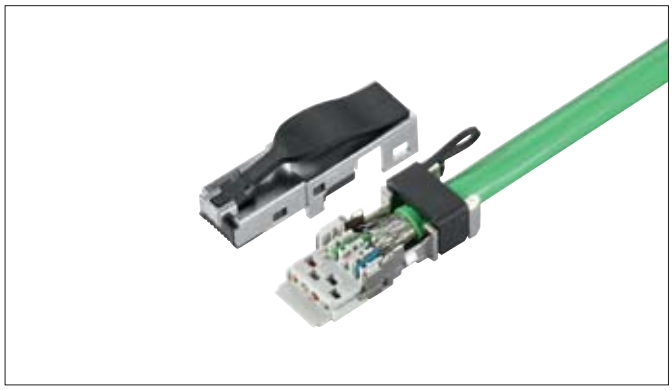
You can now securely plug the connector you need directly into your machinery with very little effort – and without a single tool! The 10-gigabit connector, with IDC-connection, was developed to provide quick, simple, secure and, most importantly, tool-free wiring.
In addition, zinc die-casting makes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

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

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

	Plug insert	Plug housing	Flange-mounted housing	Flange insert
Copper	 RJ45 crimp		 HDC RockStar® / Variant 5	 RJ45 coupling
	 RJ45 can be assembled on-site		 Push-Pull / Variant 14	 RJ45 Modul A, B, P
			 Bayonet / Variant 1, plastic	 USB-A coupling
Fibre-optic			 Bayonet / Variant 1, metal	
	 2xSC		 Push-Pull / Variant 4	 2SC/SCRJ adapter
	 LC duplex		 Push-Pull / Variant 14	 LC duplex adapter

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

The Weidmüller products take account of the latest market conditions and most recent international standards. In doing so we offer you a limitless 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

STEADYTEC

Metal plug

	Inserts			Housings	Variant 1 Bayonet		Variant 14 PushPull RJ		Variant 14 PushPull fibre-optic		Var. 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	1962730000		1963130000	1963120000	1012090000				1963200000
		TIA-A	1132010000								
		TIA-B	1132020000								1271250000
		PROFINET	1132030000					1012170000			
	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		1968920000

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	1962730000		1012570000	1012490000	1963170000	1963160000
		TIA-A	1132010000					
		TIA-B	1132020000					1271240000
		PROFINET	1132030000					
	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's cabling products enable you to create a specific infrastructure that meets all the requirements of PROFINET and SERCOS III.

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

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

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

PROFINET INDUSTRIAL ETHERNET

sercos the automation bus

Profile specific guidelines for the connection components

Cable:

- Quad-star design of AWG 22

Connector:

- 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 are also included 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.

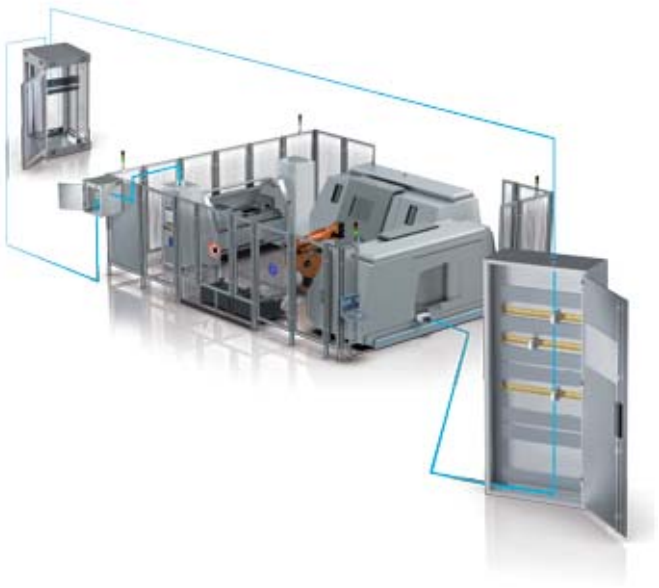
IP 67
assembled RJ45 cables

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
RJ45 tool-free PROFINET printing	IE-PS-RJ45-FH-BK-P	1132060000	C.16
SC-RJ for POF fibres 1 mm	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
RJ45 PUR patch cable - type C - 1 m	IE-C5DD4UG0010A20A20-E	1173030010	D.24
RJ45 PUR patch cable - type C - 3 m	IE-C5DD4UG0030A20A20-E	1173030030	D.24
RJ45 PUR patch cable - type C - 5 m	IE-C5DD4UG0050A20A20-E	1173030050	D.24
RJ45 PUR patch cable - type C - 10 m	IE-C5DD4UG0100A20A20-E	1173030100	D.24
SC-RJ zipcord patch cable - POF - 1 m	IE-FPOZ2EE0001MSJ0SJ0-X	1273430010	D.43
SC-RJ zipcord patch cable - POF - 3 m	IE-FPOZ2EE0003MSJ0SJ0-X	1273430030	D.43
SC-RJ zipcord patch cable - POF - 5 m	IE-FPOZ2EE0005MSJ0SJ0-X	1273430050	D.43
SC-RJ zipcord patch cable - POF - 10 m	IE-FPOZ2EE0010MSJ0SJ0-X	1273430100	D.43
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.23
RJ45 module PROFINET printing	IE-TO-RJ45-FJ-P	8946950000	C.22
SC-RJ POF coupling / multimode	IE-TO-SCRJ-MM	8946990000	C.25
SC-RJ singlemode coupling	IE-TO-SCRJ-SM	8947000000	C.25

19" patch panel

Description	Type	Order No.	See page
With adaptor, without RJ45 inserts	IE-PPA19-24P	1049270000	C.27
RJ45 module PROFINET printing	IE-BI-RJ45-FJ-P	1963830000	C.27
fitted with 24 RJ45 couplings	IE-PPA19-24P-RJ45-C	1049930000	C.27
other inserts from page C.68			

IP 65 service interface

Description	Type	Order No.	See page
FrontCom® Micro RJ45 coupling	IE-FCM-RJ45-C	1018790000	C.28
FrontCom® Micro RJ45 module PROFINET printing	IE-FCM-RJ45-FJ-P	1018830000	C.28

IP 67 flange data

Description	Type	Order No.	See page
PushPull standard flange RJ45 coupling	IE-BSS-V14M-RJ45-C	1012310000	C.31
PushPull central cable gland RJ45 coupling	IE-BSC-V14M-RJ45-C	1058250000	C.31
PushPull standardised flange RJ45 module PROFINET printing	IE-BSS-V14M-RJ45-FJ-P	1085260000	C.31
PushPull standardised flange hybrid (Q10) 10-pole module without contacts	IE-BSS-V14M-HYB-10P-FJ	1072900000	C.33
Contacts for Hybrid (Q10) module 0.5 mm² - 0.75 mm² VPE 300	IE-BIC-HYB-P-0,75-300	1068970000	C.33
Contacts for Hybrid (Q10) module 0.2 mm² - 0.5 mm² VPE 300	IE-BIC-HYB-P-0,5-300	1096150000	C.33
PushPull standardised flange SC-RJ coupling POF / multimode	IE-BSS-V14M-SCRJ-MM-C	1058120000	C.37
PushPull standardised flange SC-RJ coupling singlemode	IE-BSS-V14M-SCRJ-SM-C	1058140000	C.37
PushPull central cable gland SC-RJ coupling POF / multimode	IE-BSC-V14M-SCRJ-MM-C	1062590000	C.37
PushPull central cable gland SC-RJ coupling singlemode	IE-BSC-V14M-SCRJ-SM-C	1062600000	C.37
PushPull device flange	IE-BHD-V14M	1047940000	C.37
PushPull flange protective cap IP 67	IE-BP-V14P	1058310000	E.21
other inserts from page C.68			

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.79
PushPull Power standardised flange with 400 V / 16 A use	IE-BSS-VAPM-400V	1323950000	C.79
PushPull Power device flange	IE-BHD-VAPM	1068920000	C.79
PushPull Power flange protective cap IP 67	IE-BP-VAPP	1068930000	E.21

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.30
PushPull Hybrid (Q10) use, 10-pole module without contacts	IE-PS-V14M-HYB-10P	**1072910000**	C.32
Contacts for Hybrid (Q10) use 0.75 mm² VPE 300	IE-PIC-HYB-S-0,75-300	**1068950000**	C.32
Contacts for Hybrid (Q10) use 0.2 mm² - 0.5 mm² VPE 300	IE-PIC-HYB-S-0,5-300	**1096180000**	C.32
PushPull SC-RJ use POF 1 mm	IE-PS-V14M-2SC-POF	**1191550000**	C.36
PushPull plug protective cap IP 67	IE-PP-V14P	**1058280000**	E.21

IP 67 assembled data cables

Description	Type	Order No.	See page
PushPull RJ45 patch cable PUR - Type C - 1 m	IE-C5DD4UG0010A2EA2E-X	**1119730010**	D.25
PushPull RJ45 patch cable PUR - Type C - 3 m	IE-C5DD4UG0030A2EA2E-X	**1119730030**	D.25
PushPull RJ45 patch cable PUR - Type C - 5 m	IE-C5DD4UG0050A2EA2E-X	**1119730050**	D.25
PushPull RJ45 patch cable PUR - Type C - 10 m	IE-C5DD4UG0100A2EA2E-X	**1119730100**	D.25
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.76
PushPull Power with 400 V / 16 A use	IE-PS-VAPM-400V	**1323940000**	C.76

IP 67 plug connector M12 d-coded and X type

M 12 components can be found from page C.62

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.80
FreeCon passive single socket junction box RJ45	IE-CD-V14MRJ-FJ	**1068880000**	C.80
FreeCon passive single socket junction box Hybrid (Q10) without contacts	IE-CD-V14MHYB-10P-FJ	**1068850000**	C.84
Contacts for Hybrid (Q10) module 0.75 mm² VPE 300	IE-BIC-HYB-P-0,75-300	**1068970000**	C.33
Contacts for Hybrid (Q10) module 0.2 mm² - 0.5 mm² VPE 300	IE-BIC-HYB-P-0,5-300	**1096150000**	C.33
Mounting foot for junction boxes	IE-CD-MA	**1099580000**	C.80
FreeCon passive double connection RJ45/Power	IE-CD-V14MRJ/VAPM24V-C-MA	**1068820000**	C.81
FreeCon passive single connection RJ45	IE-CD-V14MRJ-C-MA	**1068870000**	C.81
FreeCon passive single connection hybrid (Q10)	IE-CD-V14MHYB-10P-C-MA	**1068840000**	C.85
FreeCon PushPull Power Y-distributor	IE-CD-VAPM24V-Y-MA	**1297010000**	C.83
FreeCon passive single connection SCRJ	IE-CD-V14MSCRJ-MM-C-MA	**1318150000**	C.82
FreeCon active FO PROFINET repeater	IE-CDR-V14MSCPOF/VAPM-C	**1253240000**	C.86
FreeCon active PROFINET media converter	IE-CDM-V14MRJSCP/VAPM-C	**1324440000**	C.86
PushPull flange protective cap IP 67	IE-BP-V14P	**1058310000**	E.21

Bulk stock copper cable

Description	Type	Order No.	See page
100 m ring installation cable PVC type A	IE-C5AS4V1000	**8899000000**	D.14
Bulk stock installation cable PVC type A from 110 m	IE-C5AS4VG-MW	**8955950000**	D.14
100 m ring connection cable PVC type B	IE-C5DS4V1000	**8898990000**	D.14
Bulk stock connection cable PVC type B from 110 m	IE-C5DS4VG-MW	**8955560000**	D.14
100 m ring dragline cable PUR type C	IE-C5DD4U1000	**8899010000**	D.15
Bulk stock dragline cable PUR type C from 110 m	IE-C5DD4UG-MW	**8947670000**	D.15
Torsion cable PUR type C available by the metre from 110 m	IE-C5IT4UG-MW	**1103010000**	D.15
Bulk stock hybrid cable PVC from 110 m	IE-C5DHAG-MW	**1172250000**	D.16

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.39
POF zip-cord cable 2X980/1000 µm TPE, from 50 m	IE-FPOZ2EE-MW	**1242820000**	D.40
POF breakout cable 2X980/1000 µm TPE, from 50 m	IE-FPOD2UE-MW	**1172280000**	D.40

EtherNet/IP cabling solutions

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

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

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

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

The cables are 8-wire twisted-pair cables for RJ45 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 cables can all be assembled on-site. This reduces installation time, reduces errors and simplifies maintenance.

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

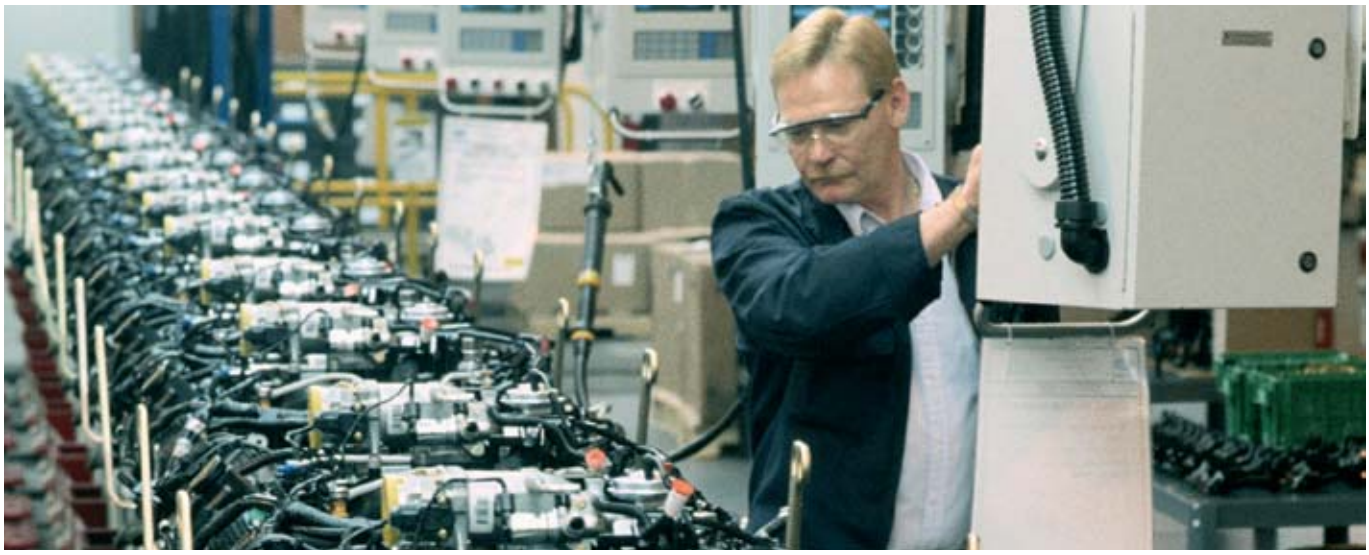
Profile specific guidelines for the connection components

Cable:

- 8-wire twisted-pair shielded cables

Connector:

- 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 are available, as well as IP 67 connectors and junction boxes for the most exacting requirements. The components are designed to be used together from the floor distributors down to the machines.

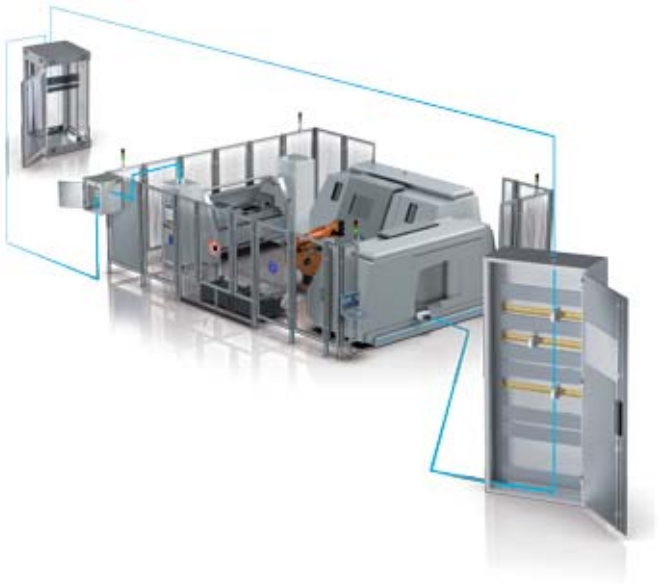
IP 67
assembled RJ45 cables

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

EtherNet/IP™

IP 20 plug-in connector

Description	Type	Order No.	See page
RJ45 crimp	IE-PS-RJ45-TH-BK	1963590000	C.17
RJ45 tool-free TIA-A printing	IE-PS-RJ45-FH-BK-A	1132040000	C.16
RJ45 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
RJ45 patch cables - see CabinetLine			
SC-RJ zipcord patch cable - POF - 1 m	IE-FPOZ2EE0001MSJ0SJ0-X	1273430010	D.43
SC-RJ zipcord patch cable - POF - 3 m	IE-FPOZ2EE0003MSJ0SJ0-X	1273430030	D.43
SC-RJ zipcord patch cable - POF - 5 m	IE-FPOZ2EE0005MSJ0SJ0-X	1273430050	D.43
SC-RJ zipcord patch cable - POF - 10 m	IE-FPOZ2EE0010MSJ0SJ0-X	1273430100	D.43
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.23
RJ45 Module TIA-A printing	IE-TO-RJ45-FJ-A	8946930000	C.22
RJ45 Module TIA-B printing	IE-TO-RJ45-FJ-B	8946940000	C.22
SC-RJ POF coupling / multimode	IE-TO-SCRJ-MM	8946990000	C.25
SC-RJ singlemode coupling	IE-TO-SCRJ-SM	8947000000	C.25

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.27
fitted with 24 RJ45 modules TIA-B printing	IE-PPA19-24P-RJ45-FJ-B	1049920000	C.27
fitted with 24 RJ45 couplings	IE-PPA19-24P-RJ45-C	1049930000	C.27
other inserts from page C.68			

IP 65 service interface

Description	Type	Order No.	See page
FrontCom® Micro RJ45 coupling	IE-FCM-RJ45-C	1018790000	C.28
FrontCom® Micro RJ45 module TIA-A printing	IE-FCM-RJ45-FJ-A	1018810000	C.28
FrontCom® Micro RJ45 module TIA-B printing	IE-FCM-RJ45-FJ-B	1018820000	C.28

IP 67 flange data

Description	Type	Order No.	See page
Bayonet flange metal RJ45 coupling	IE-BS-V01M-RJ45-C	1963470000	C.39
Bayonet flange metal RJ45 module TIA-A printing	IE-BS-V01M-RJ45-FJ-A	1963480000	C.39
Bayonet flange plastic RJ45 coupling	IE-BS-V01P-RJ45-C	1012370000	C.45
Bayonet flange metal RJ45 module TIA-A printing	IE-BS-V01P-RJ45-FJ-A	1012380000	C.45
Bayonet flange metal SC-RJ POF / multimode	IE-BS-V01M-SCRJ-MM	1221010000	C.41
Bayonet flange metal SC-RJ singlemode	IE-BS-V01M-SCRJ-SM	1221020000	C.41
Bayonet flange protective cap IP 67	IE-BP-V01P	1965700000	E.21
other inserts from page C.68			

IP 67 data connectors

Description	Type	Order No.	See page
Bayonet plug metal RJ45 crimped	IE-PS-V01M-RJ45-TH	1963140000	C.38
Bayonet plug metal RJ45 tool-free	IE-PS-V01M-RJ45-FH	1963120000	C.38
Bayonet plug plastic RJ45 crimped	IE-PS-V01P-RJ45-TH	1012470000	C.44
Bayonet plug plastic RJ45 tool-free	IE-PS-V01P-RJ45-FH	1012490000	C.44
Bayonet plug metal SC-RJ use POF	IE-PS-V01M-2SC-POF	1963280000	C.40
Bayonet plug metal SC-RJ use multimode	IE-PS-V01M-2SC-MM	1963260000	C.40
Bayonet plug metal SC-RJ use singlemode	IE-PS-V01M-2SC-SM	1963300000	C.40
Bayonet plug protective cap IP 67	IE-PP-V01P	1965690000	E.21

IP 67 assembled data cables

Description	Type	Order No.	See page
Bayonet metal RJ45 patch cable PUR 1 m	IE-C5ES8UG0010B41B41-E	1066850000	D.30
Bayonet metal RJ45 patch cable PUR 2 m	IE-C5ES8UG0020B41B41-E	1066860000	D.30
Bayonet metal RJ45 patch cable PUR 5 m	IE-C5ES8UG0050B41B41-E	1066870000	D.30
Bayonet metal RJ45 patch cable PUR 10 m	IE-C5ES8UG0100B41B41-E	1066880000	D.30
Bayonet plastic RJ45 patch cable PUR 1 m	IE-C5ES8UG0010P41P41-E	1106010000	D.30
Bayonet plastic RJ45 patch cable PUR 2 m	IE-C5ES8UG0020P41P41-E	1106020000	D.30
Bayonet plastic RJ45 patch cable PUR 5 m	IE-C5ES8UG0050P41P41-E	1106030000	D.30
Bayonet plastic RJ45 patch cable PUR 10 m	IE-C5ES8UG0100P41P41-E	1106040000	D.30
Other EtherNet/IP cables available on request			

IP 67 plug-in M12 connectors

M 12 components can be found from page C.62

IP 65 connection components

Description	Type	Order No.	See page
Double junction box, metal straight	IE-OM-V01M-K21-2S	1966330000	C.87
Double junction box, metal left	IE-OM-V01M-K21-2L	1966320000	C.87
Double junction box, metal right	IE-OM-V01M-K21-2R	1966310000	C.87
Single junction box, plastic	IE-OP-V01P-1S	1061830000	C.88
Plastic cable coupling	IE-CC-V01P	1061820000	C.46
RJ45 module TIA-A printing	IE-BI-RJ45-FJ-A	1962850000	C.69
RJ45 module TIA-B printing	IE-BI-RJ45-FJ-B	1963840000	C.69

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			

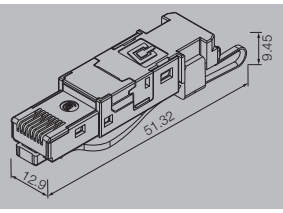
Bulk stock fibre-optic cable

Description	Type	Order No.	See page
Multimode breakout cable 2x50 µm PUR from 50 m	IE-FM5B2UE-MW	8946000000	D.39
POF zip-cord cable 2X980/1000 µm TPE, from 50 m	IE-FPOZ2EE-MW	1242820000	D.40
POF breakout cable 2X980/1000 µm TPE, from 50 m	IE-FPOD2UE-MW	1172280000	D.40

RJ45 plug

- Cat.6_A
- IP 20

tool-free



Technical data

Category	Cat.6_A / Class E_A (ISO/IEC 11801 2010)
Protection degree	IP 20
Housing main material	Zinc diecast
Wire connection diameter, flexible, min./max.	0.48 mm / 0.76 mm
Wire cross-section, flexible, min. / max.	AWG 26 / AWG 22
Wire connection diameter, solid, min./max.	0.4 / 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
Contact surface	Gold over nickel
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
PoE / PoE+	conforming to IEEE 802.3at
Approvals	
Note	Approvals available on request

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

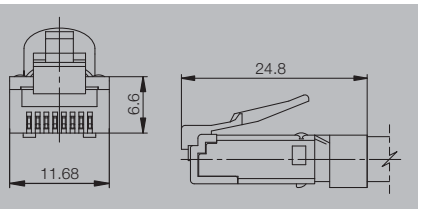
Strain relief	**Type**	**Qty.**	**Order No.**
blue	IE-CR-IP20-RJ45-FH-BU	10	**1963080000**
orange	IE-CR-IP20-RJ45-FH-OG	10	**1963070000**
green	IE-CR-IP20-RJ45-FH-GN	10	**1963100000**
grey	IE-CR-IP20-RJ45-FH-GY	10	**1963060000**
white	IE-CR-IP20-RJ45-FH-WH	10	**1963050000**
yellow	IE-CR-IP20-RJ45-FH-YE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

Note

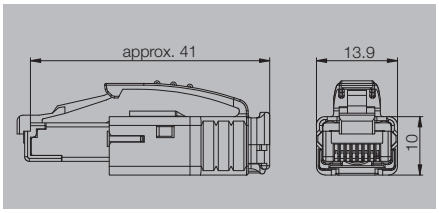
RJ45 plug

- 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)
Protection degree	IP 20	IP 20
Wire connection diameter, 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 connection diameter, 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, UL 94 V-0	PC UL 94 V-0
Material insulator	Polycarbonate (PC) UL 94 V-0	Polycarbonate (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
PoE / PoE+	conforming to IEEE 802.3af	conforming to IEEE 802.3af
Approvals	GOSTME25	CURUS; GOSTME25
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						

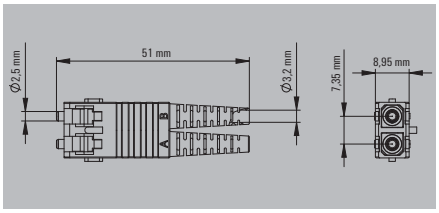
Accessories

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**
Note						

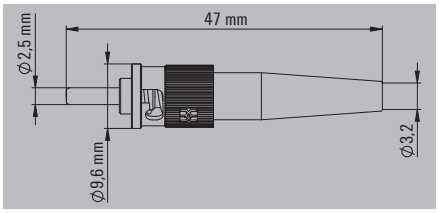
FO connector

- IP 20

SC-RJ



ST



Technical data

	SC-RJ	ST
Protection degree	IP 20	IP 20
Plugging cycles	1000	1000
Ambient temperature (operational), min. / max.	-20 °C...+80 °C	-20 °C...+80 °C
Connector standard	IEC 61754-24	IEC 61754-2
Insertion loss	≤ 0.5 dB	≤ 0.4 dB
Return loss (attenuation)	≥ 40 dB	≥ 30 dB
Individual wire diameter, min. / max.	0.6 mm...1.4 mm	
Crimp barrel material	Copper, nickel-plated	Copper, nickel-plated
Pressure spring material	Stainless steel	
Ferrule material	Zirconia, Hole 125.5 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	Zinc diecast
Housing material, insert	Zinc diecast	
Humidity	0...93 % rel. humidity	
Sheath diameter, min. / max.	2.8 mm / 3 mm	2.8 mm / 3 mm
Approvals		
Note		

Ordering data

	Type	Qty.	Order No.	Type	Qty.	Order No.
Singlemode	IE-PS-SCRJ1-SM	10	**1206740000**			
Multimode	IE-PS-SCRJ1-MM	10	**1206730000**	IE-PS-ST-MM	1	**1968150000**
POF	IE-PS-SCRJ1-POF	10	**1206720000**			
Note						

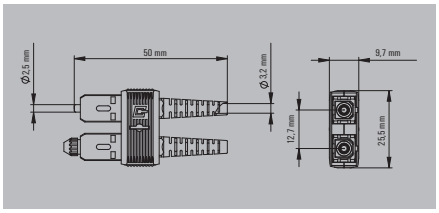
Accessories

Tools	Type	Qty.	Order No.	Type	Qty.	Order No.
Fibre-optic tool case	IE-CTC-SCST-GOF	1	**1032030000**	IE-CTC-SCST-GOF	1	**1032030000**
Crimping tool POF	HTX-IE-POF	1	**1208870000**			
Note						

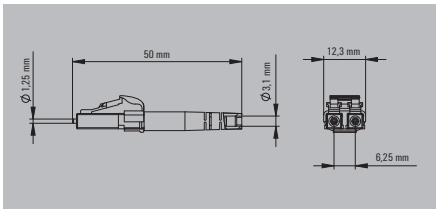
FO connector

- IP 20

SC Duplex



LC duplex



Technical data

Protection degree	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	≤ 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
Approvals		
Note		

Ordering data

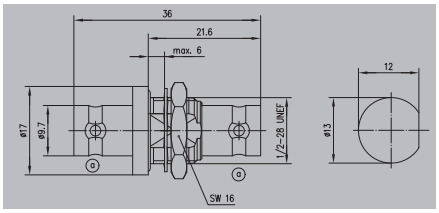
	Type	Qty.	Order No.	Type	Qty.	Order No.
Singlemode	IE-PS-SCD-SM	10	**1964410000**	IE-PS-LCD-SM	10	**1962980000**
Multimode	IE-PS-SCD-MM	10	**1964480000**	IE-PS-LCD-MM	10	**1962970000**
Note						

Accessories

Fibre-optic plug clip	Type	Qty.	Order No.	Type	Qty.	Order No.
SC duplex, multimode, beige	IE-PB-SCD-MM	10	**1962900000**			
SC duplex, singlemode, blue	IE-PB-SCD-SM	10	**1965860000**			
Tools						
Fibre-optic tool case	IE-CTC-SCST-GOF	1	**1032030000**	IE-CTC-SCST-GOF	1	**1032030000**
Accessory set for LC plugs				IE-CTC-AS-LC-GOF	1	**1033350000**
Note						

Coupling BNC

BNC



Technical data

Housing main material	Brass, nickel-plated
Insulation	PTFE
Return loss (attenuation)	23 dB at 4 GHz, 27 dB at 1 GHz
Characteristic impedance	50 Ω
O-Ring	NBR
Connector standard	IEC 61169-8
Approvals	

Note

Ordering data

Type	Qty.	Order No.
IE-BI-BNC-C	1	**1345020000**

Note

Accessories

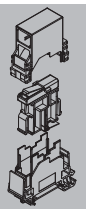
Note

IP 20 mounting rail outlets

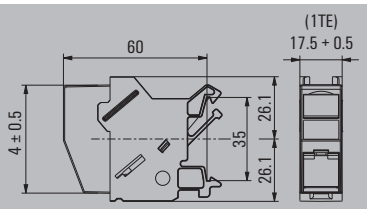
Module RJ45

- Cat.6_A
- IP 20
- TS 35

Outlet direction straight



Outlet direction diagonal



Technical data

Category	Cat.6_A / Class E_A (ISO/IEC 11801 2010)	Cat.6 (ISO/IEC 11801)
Protection degree	IP 20	IP 20
Housing main material	PA UL 94 V0	PA 66, UL 94: V-0
Contact surface	Au ≥ 0.8 µm	
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	-25 °C...+70 °C
Connector standard	IEC 60603-7-51	IEC 60603-7-5
Wire connection diameter, flexible, min./max.	0.48 mm / 0.76 mm	0.48 mm / 0.48 mm
Wire cross-section, flexible, min. / max.	AWG 26 / AWG 22	AWG 26 / AWG 26
Wire connection diameter, solid, min./max.	0.4 mm / 0.64 mm	0.4 mm / 0.64 mm
Wire cross-section, solid, min. / max.	AWG 24 / AWG 22	AWG 24 / AWG 22
Electrical properties		
PoE / 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
Approvals	GOSTME25	GERMLLOYD; GOSTME25
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						

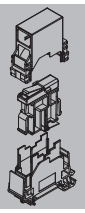
Accessories

	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						
Marking tag				IE-DM	50	**8813500000**
9*11 mm, white	ESG 9/11 K MC NE WS	200	**1857440000**			
Note						

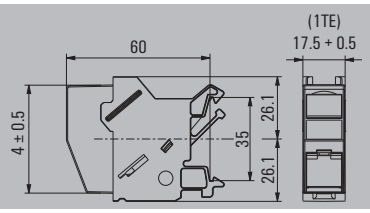
Coupling RJ45

- Cat.6_A
- IP 20
- TS 35

Outlet direction straight



Outlet direction diagonal



Technical data

Category	Cat.6_A / Class E_A (ISO/IEC 11801 2010)	Cat.6 (ISO/IEC 11801)
Protection degree	IP 20	IP 20
Housing main material	PA UL 94 V0	PA 66, UL 94: V-0
Contact material / Contact surface	Spring steel, Ni 1.2 µm / Au ≥ 0.8 µm	
Colour	Light Grey	Light Grey
Type of mounting	TS 35	TS 35
Plugging cycles	750	750
Configuration	Switchable 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	-25 °C...+70 °C
Humidity	0...93 % rel. humidity	
Shock resistance acc. to IEC 60512-4	250 ms^{-2}	
Vibration resistance acc. to IEC 60512-4	50 ms^{-2} sinusoidal (9 – 500 Hz)	
Housing material, insert	Zinc diecast	
Connector standard	IEC 60603-7-51	IEC 60603-7-5
Electrical properties		
PoE / PoE+	conforming to IEEE 802.3af	
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
Approvals	GOSTME25	GERMLLOYD; GOSTME25
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			
Marking tag			
9*11 mm, white	ESG 9/11 K MC NE WS	200	**1857440000**

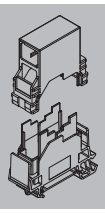
Type	Qty.	Order No.
IE-DM	50	**8813500000**

Note

USB connection

- IP 20
- TS 35

Outlet direction straight



Technical data

Protection degree	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
Approvals	GOSTME25
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

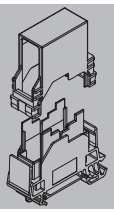
9*11 mm, white	200	**1857440000**

Note

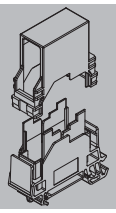
Coupling fibre-optic

- IP 20
- TS 35

SC duplex



SC-RJ



Technical data

Protection degree	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
Approvals	GOSTME25	GOSTME25

Note

Ordering data

Fibre-optic	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

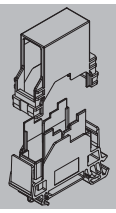
Labels	Type	Qty.	Order No.	Type	Qty.	Order No.
9*11 mm, blue	LM MT DIN A5 9/11 BL	10	**1964100000**	LM MT DIN A5 9/11 BL	10	**1964100000**
9*11 mm, green	LM MT DIN A5 9/11 GN	10	**1964120000**	LM MT DIN A5 9/11 GN	10	**1964120000**
9*11 mm, grey	LM MT DIN A5 9/11 GR	10	**1964080000**	LM MT DIN A5 9/11 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 9/11 K MC NE WS	200	**1857440000**	ESG 9/11 K MC NE WS	200	**1857440000**

Note

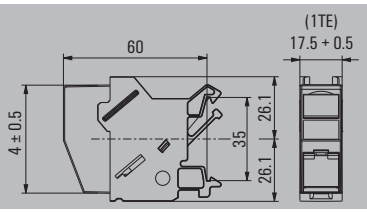
Coupling fibre-optic

- IP 20
- TS 35

LC Duplex



ST



Technical data

Protection degree	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	-25 °C...+70 °C
Connector standard	IEC 61754-20	IEC 61754-2
Approvals	GOSTME25	GOSTME25

Note

Ordering data

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

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

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

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

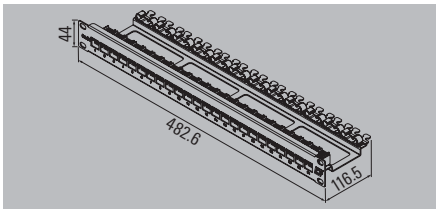
Type	Qty.	Order No.
IE-DM	50	**8813500000**

Note

RJ45 19“ patch panel

- Cat.6_A
- IP 20

RJ45



Technical data

Category	Cat.6_A / Class E_A (ISO/IEC 11801 2010)
Protection degree	IP 20
Housing main material	Powder-coated steel sheet
Colour	Light Grey
Plugging cycles	750
Ambient temperature (operational), min. / max.	-40 °C...+70 °C
Approvals	

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

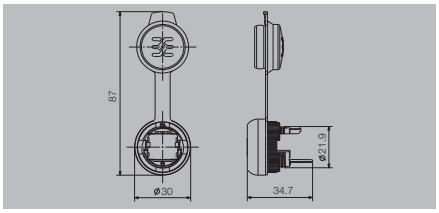
Accessories

Flange insert	Type	Qty.	Order No.
 RJ45 EIA/TIA T568 A	IE-BI-RJ45-FJ-A	10	**1962850000**
RJ45 EIA/TIA T568 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**

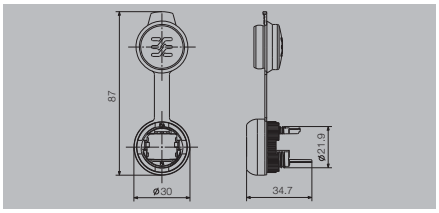
Note

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)
Protection degree	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
Contact surface	Gold over nickel	Gold over nickel
Colour	Black	Black
Shielding	360° shield contact	360° shield contact
Type of mounting	Cabinet, Distribution box	Cabinet, Distribution box
Plugging cycles	750	750
Connector standard	IEC 60603-7-51	IEC 60603-7-51
Connection 1 / 2	RJ45 / IDC	RJ45 / RJ45
Wall thickness, min./max.	1 mm / 3 mm	1 mm / 3 mm
Dust protection cap material	EPDM	EPDM
PoE / PoE+	conforming to IEEE 802.3af	conforming to IEEE 802.3af
Approvals	CULUS	CULUS
Note		

Ordering data

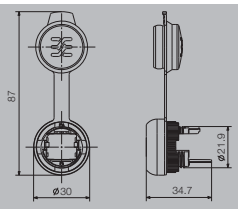
	Type	Qty.	Order No.	Type	Qty.	Order No.
PROFINET module	IE-FCM-RJ45-FJ-P	10	**1018830000**			
TIA-A module	IE-FCM-RJ45-FJ-A	10	**1018810000**			
TIA-B module	IE-FCM-RJ45-FJ-B	10	**1018820000**			
Coupling				IE-FCM-RJ45-C	10	**1018790000**
Note						

Accessories

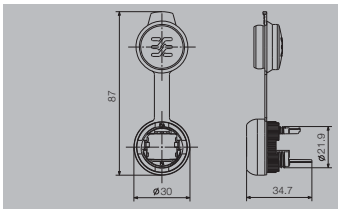
	Type	Qty.	Order No.	Type	Qty.	Order No.
Fixing tool	IE-FISP-V4	2	**9204370000**	IE-FISP-V4	2	**9204370000**
						
Markers						
 SwitchMark markers white	SM 27/18 MC NE WS	80	**1699860000**	SM 27/18 MC NE WS	80	**1699860000**
SwitchMark holder	SM-H 27/18 SW	25	**1716630000**	SM-H 27/18 SW	25	**1716630000**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

FrontCom® Micro USB

Coupling AA



Coupling AB



Technical data

Ambient temperature (operational), min. / max.	-40 °C...+70 °C	-40 °C...+70 °C
Protection degree	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
Wall thickness, min./max.	1 mm / 3 mm	1 mm / 3 mm
Approvals	CULUS	CULUS
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

SwitchMark markers white	80	**1699860000**
SwitchMark holder	25	**1716630000**

SM 27/18 MC NE WS	80	**1699860000**
SM-H 27/18 SW	25	**1716630000**

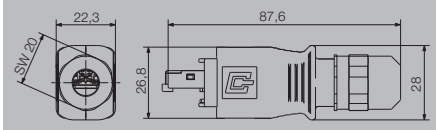
Note

Plug PushPull V14 - RJ45

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

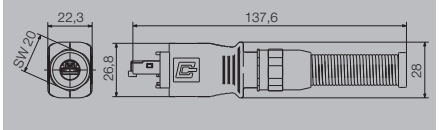
Without kink prevention

PROFINET printing



With kink prevention

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



Technical data

Protection degree	IP 67	IP 67
Housing main material	Zinc diecast	Zinc diecast
Contact surface	Gold over nickel	Gold over nickel
Sheath diameter, min. / max.	5 mm / 10 mm	5 mm / 10 mm
Plugging cycles	750	750
Ambient temperature (operational), 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 connection diameter, flexible, min./max.	0.48 mm / 0.76 mm	0.48 mm / 0.76 mm
Wire cross-section, flexible, min. / max.	AWG 26 / AWG 22	AWG 26 / AWG 22
Wire connection diameter, solid, min./max.	0.4 mm / 0.64 mm	0.4 mm / 0.64 mm
Wire cross-section, solid, min. / max.	AWG 24 / AWG 22	AWG 24 / AWG 22
Approvals	GOSTME25	GOSTME25
Note	Other approvals for individual parts of the set available.	Other approvals for individual parts of the set available.

Ordering data - Sets

	Type	Qty.	Order No.	Type	Qty.	Order No.
RJ45 tool-free	IE-PS-V14M-RJ45-FH-P	10	**1012170000**	IE-PS-V14M-RJ45-FH-BP	10	**1012090000**
Note						

Ordering data - Empty housings

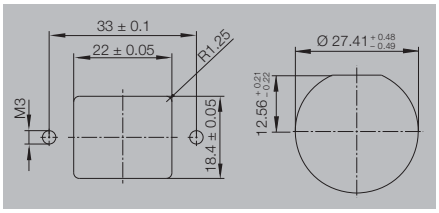
	Type	Qty.	Order No.	Type	Qty.	Order No.
	IE-PH-V14M-RJ	10	**1011560000**	IE-PH-V14M-RJ-BP	10	**1011570000**
Note						

Accessories

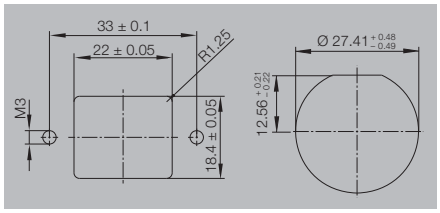
Colour coding	Type	Qty.	Order No.	Type	Qty.	Order No.
blue	IE-CR-IP67-WS20-BU	10	**1963020000**	IE-CR-IP67-WS20-BU	10	**1963020000**
orange	IE-CR-IP67-WS20-OG	10	**1963010000**	IE-CR-IP67-WS20-OG	10	**1963010000**
green	IE-CR-IP67-WS20-GN	10	**1963040000**	IE-CR-IP67-WS20-GN	10	**1963040000**
grey	IE-CR-IP67-WS20-GY	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						
	IE-PP-V14P	10	**1058280000**	IE-PP-V14P	10	**1058280000**
Note	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

Protection degree	IP 67	IP 67
Housing main material	Zinc diecast	Zinc diecast
Contact surface	Gold over nickel	Gold over nickel
Sheath diameter, min. / max.	5 mm / 10 mm	5 mm / 10 mm
Plugging cycles	750	750
Ambient temperature (operational), 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 connection diameter, flexible, min./max.	0.48 mm / 0.76 mm	
Wire cross-section, flexible, min. / max.	AWG 26 / AWG 22	
Wire connection diameter, solid, min./max.	0.4 mm / 0.64 mm	
Wire cross-section, solid, min. / max.	AWG 24 / AWG 22	
Approvals	GOSTME25	GOSTME25
Note	Other approvals for individual parts of the set available.	Other approvals for individual parts of the set available.

Ordering data - Sets

	Type	Qty.	Order No.	Type	Qty.	Order No.
Standardised flange, PROFINET	IE-BSS-V14M-RJ45-FJ-P	10	**1085260000**	IE-BSS-V14M-RJ45-C	10	**1012310000**
Standardised flange TIA-A	IE-BSS-V14M-RJ45-FJ-A	10	**1012320000**	IE-BSC-V14M-RJ45-C	10	**1058250000**
Central flange TIA-A	IE-BSC-V14M-RJ45-FJ-A	10	**1058270000**			

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**
Standardised flange	IE-BHS-V14M-RJA	10	**1011540000**	IE-BHS-V14M-RJA	10	**1011540000**
Device flange	IE-BHD-V14M	10	**1047940000**	IE-BHD-V14M	10	**1047940000**

Note

Accessories

Dust protection cap

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

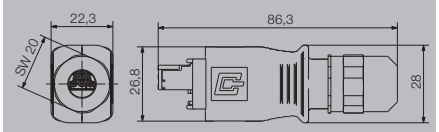
Note

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

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

Plug PushPull V14 - hybrid

Without kink prevention



Technical data

Category	Cat.5 (ISO/IEC 11801)
Protection degree	IP 67
Housing main material	Zinc diecast
Contact surface	Gold over nickel
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 connection diameter, flexible, min./max.	0.08 mm² / 0.75 mm²
Rated current (hybrid connector)	3 A per contact
Volume resistance	< 10 mΩ
Approvals	GOSTME25
Note	Other approvals for individual parts of the set available.

Ordering data - Sets

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

Note — Order contacts separately

Ordering data - Empty housings

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

Note

Accessories

Crimp contacts

Type	Qty.	Order No.
0,33...0,5 mm²	300	**1096180000**
0,75 mm²	300	**1068950000**
0,08...0,2 mm²	300	**1135150000**

Crimping tool

HTF HYB	1	**1119580000**

Cable

Hybrid cable	IE-C5DHAG-MW	1	**1172250000**

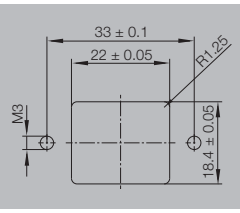
Dust protection cap

IE-PP-V14P	10	**1058280000**

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

Flange PushPull V14 - hybrid

Standardised flange



Technical data

Category	Cat.5 (ISO/IEC 11801)
Protection degree	IP 67
Housing main material	Zinc diecast
Contact surface	Gold over nickel
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 connection diameter, flexible, min./max.	0.08 mm² / 0.75 mm²
Rated current	3 A per contact
Volume resistance	< 10 mΩ
Approvals	GOSTME25
Note	Other approvals for individual parts of the set available.

Ordering data - Sets

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

Note — Order contacts separately

Ordering data - Empty housings

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

Standardised flange

Note

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

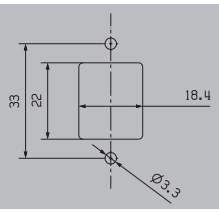
Dust protection cap

IE-BP-V14P	10	**1058310000**

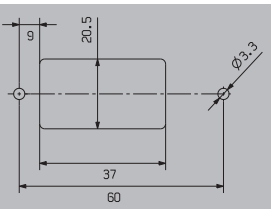
Note — Plug inserts can also be ordered separately. Refer to Inserts.

V14 flange adapter

Straight



Angled



Technical data

	Straight	Angled
Protection degree	IP 67	IP 67
Housing main material	Zinc diecast	Zinc diecast
Type of mounting	2 screws, M3	2 screws, M3
Ambient temperature (operational)	-40...+70 °C	-40...+70 °C
Note		

Ordering data

Type	Qty.	Order No.
IE-AD-BHS-V14M-RJA	1	**1302000000**

Note: Bulkhead inserts must be ordered separately, see Inserts.

Type	Qty.	Order No.
IE-BHS-V14M-RJA-45	10	**1296710000**

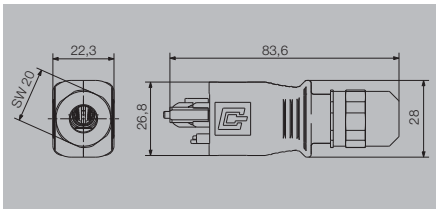
Note: Bulkhead inserts must be ordered separately, see Inserts.

Accessories

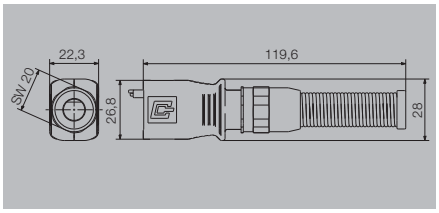
Note

PushPull V14 plug - fibre-optic

Without kink prevention



With kink prevention



Technical data

	Without kink prevention	With kink prevention
Protection degree	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)	-40...+70 °C	-40...+70 °C
Connector standard	IEC 61076-3-117 Var. 14, IEC 61754-24	IEC 61076-3-117 Var. 14
Approvals		CULUS; GOSTME25
Note		

Ordering data - Sets

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

Ordering data - Empty housings

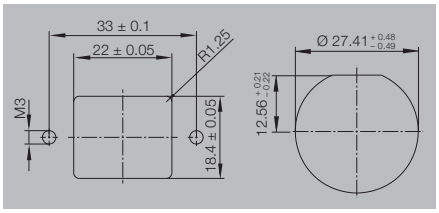
	Type	Qty.	Order No.	Type	Qty.	Order No.
	IE-PH-V14M-FO	10	**1058100000**	IE-PH-V14M-FO-BP	10	**1058110000**
Note				Only empty housings; order inserts separately.		

Accessories

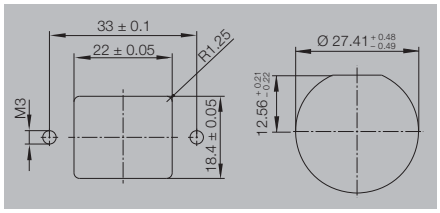
	Type	Qty.	Order No.	Type	Qty.	Order No.
Inserts						
 Multimode	IE-PI-SCRJ-MM	10	**1067380000**	IE-PI-SCRJ-MM	10	**1067380000**
POF	IE-PI-SCRJ-POF	10	**1067410000**	IE-PI-SCRJ-POF	10	**1067410000**
Singlemode	IE-PI-SCRJ-SM	10	**1067390000**	IE-PI-SCRJ-SM	10	**1067390000**
Colour coding						
blue	IE-CR-IP67-WS20-BU	10	**1963020000**	IE-CR-IP67-WS20-BU	10	**1963020000**
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**
orange	IE-CR-IP67-WS20-OG	10	**1963010000**	IE-CR-IP67-WS20-OG	10	**1963010000**
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						
	IE-PP-V14P	10	**1058280000**	IE-PP-V14P	10	**1058280000**
Tools						
 Fibre-optic tool case	IE-CTC-SCST-GOF	1	**1032030000**	IE-CTC-SCST-GOF	1	**1032030000**
POF tool set	TOOL SET IE-POF	1	**1208930000**	TOOL SET IE-POF	1	**1208930000**
Note	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
Protection degree	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	< 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
Approvals	GOSTME25	GOSTME25
Note		

Ordering data - Sets

	SC-RJ Type	Qty.	Order No.	LC Duplex 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	IE-BSC-V14M-SCRJ-MM-C	10	**1062590000**	IE-BSC-V14M-LCD-MM-C	10	**1062610000**
Standardised flange Multimode	IE-BSS-V14M-SCRJ-MM-C	10	**1058120000**	IE-BSS-V14M-LCD-MM-C	10	**1058130000**
Note	Multimode also suitable for POF					

Ordering data - Empty housings

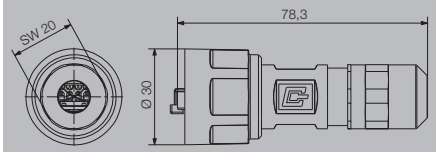
	SC-RJ Type	Qty.	Order No.	LC Duplex Type	Qty.	Order No.
Device flange	IE-BHD-V14M	10	**1047940000**	IE-BHD-V14M	10	**1047940000**
Note						

Accessories

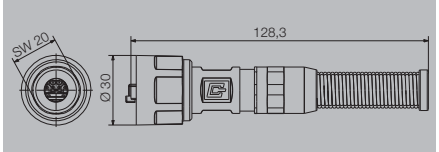
Dust protection cap	SC-RJ Type	Qty.	Order No.	LC Duplex Type	Qty.	Order No.
	IE-BP-V14P	10	**1058310000**	IE-BP-V14P	10	**1058310000**
Note	Plug inserts can also be ordered separately. Refer to Inserts.			Plug inserts can also be ordered separately. Refer to Inserts.		

Plug bayonet V1 metal - RJ45

Without kink prevention



With kink prevention



Technical data

	Without kink prevention	With kink prevention
Protection degree	IP 67	IP 67
Housing main material	Zinc diecast	Zinc diecast
Contact surface	Gold over nickel	Gold over nickel
Sheath diameter, min. / max.	5 mm / 10 mm	5 mm / 10 mm
Plugging cycles	750	750
Ambient temperature (operational), 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 connection diameter, 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 connection diameter, 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
Approvals	CULUS; GOSTME25	CULUS; GOSTME25
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	10	**1963120000**	IE-PS-V01M-RJ45-FH-BP	10	**1963130000**
RJ45 Crimp, AWG 27-24	IE-PS-V01M-RJ45-TH	10	**1963140000**	IE-PS-V01M-RJ45-TH-BP	10	**1963150000**

Note

Ordering data - Empty housings

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

Note

Accessories

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**

Note

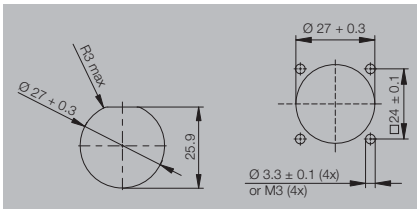
Plug inserts can also be ordered separately. Refer to Inserts.

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

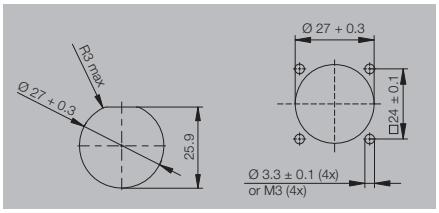
Flange bayonet V1 metal - RJ45

Module

TIA-A



Coupling



Technical data

Protection degree	IP 67	IP 67
Housing main material	Zinc diecast	Zinc diecast
Contact surface	Gold over nickel	Gold over nickel
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 connection diameter, flexible, min./max.	0.48 mm / 0.76 mm	
Wire cross-section, solid, min. / max.	AWG 24 / AWG 22	
Wire connection diameter, solid, min./max.	0.4 mm / 0.64 mm	
Approvals	CULUS; GOSTME25	CULUS; GOSTME25
Note		

Ordering data - Sets

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

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

Note

Ordering data - Empty housings

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

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

Note

Accessories

Dust protection cap

Flange-mounted housing protective cap

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

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

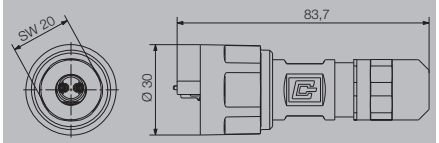
Note

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

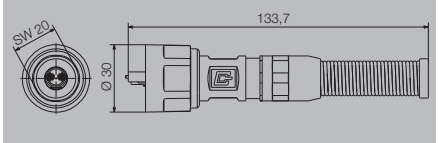
Plug inserts can also be ordered separately. Refer to Inserts.

Plug bayonet V1 metal - fibre-optic-SC

Without kink prevention



With kink prevention



Technical data

	Without kink prevention	With kink prevention
Protection degree	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	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
Approvals	GOSTME25	GOSTME25
Note		

Ordering data - Sets

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

Ordering data - Empty housings

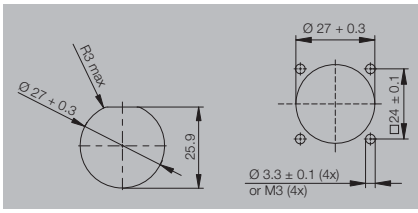
	Without kink prevention			With kink prevention		
	Type	**Qty.**	**Order No.**	**Type**	**Qty.**	**Order No.**
	IE-PH-V01M	10	**1962550000**	IE-PH-V01M-BP	10	**1962560000**
Note						

Accessories

	Without kink prevention			With 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**
Note	Plug inserts can also be ordered separately. Refer to Inserts.			Plug inserts can also be ordered separately. Refer to Inserts.		

Flange bayonet V1 metal - fibre-optic-SC

Standardised flange



Technical data

Protection degree	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
Approvals	GOSTME25

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

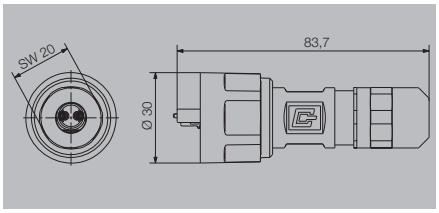
Type	Qty.	Order No.
IE-BP-V01P	10	**1965700000**

Note

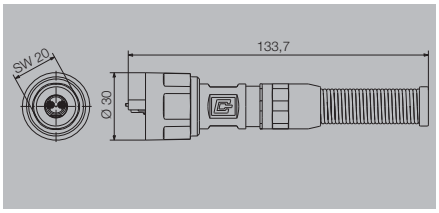
Plug inserts can also be ordered separately. Refer to Inserts.

Plug bayonet V1 metal - fibre-optic-LC

Without kink prevention



With kink prevention



Technical data

	Without kink prevention	With kink prevention
Protection degree	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	0.5 dB singlemode, 0.4 dB multimode	0.5 dB singlemode, 0.4 dB multimode
Return loss (attenuation)	40 dB singlemode; 30 dB multimode	40 dB singlemode; 30 dB multimode
Approvals	GOSTME25	GOSTME25
Note		

Ordering data - Sets

	Type	Qty.	Order No.	Type	Qty.	Order No.
Singlemode	IE-PS-V01M-2LC-SM	10	**1963240000**	IE-PS-V01M-2LC-SM-BP	10	**1963250000**
Multimode	IE-PS-V01M-2LC-MM	10	**1963220000**	IE-PS-V01M-2LC-MM-BP	10	**1963230000**
Note						

Ordering data - Empty housings

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

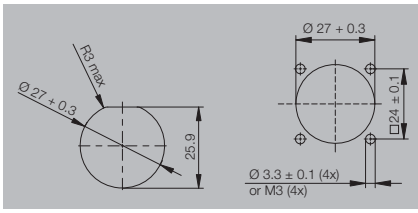
Accessories

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**
Accessory set for LC plugs	IE-CTC-AS-LC-GOF	1	**1033350000**	IE-CTC-AS-LC-GOF	1	**1033350000**
Dust protection cap						
Plug housing protective cap	IE-PP-V01P	10	**1965690000**	IE-PP-V01P	10	**1965690000**

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

Flange bayonet V1 metal - fibre-optic-LC

Standardised flange



Technical data

Protection degree	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
Approvals	GOSTME25
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

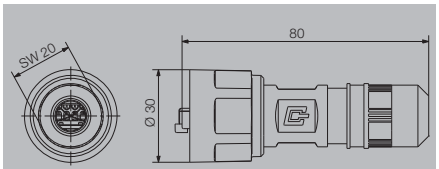
Type	Qty.	Order No.
IE-BP-V01P	10	**1965700000**

Note

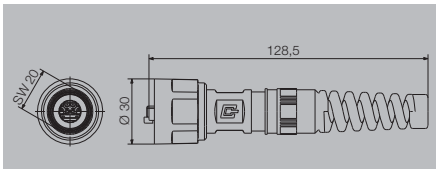
Plug inserts can also be ordered separately. Refer to Inserts.

Plug bayonet V1 plastic - RJ45

Without kink prevention



With kink prevention



Technical data

	Without kink prevention	With kink prevention
Protection degree	IP 67	IP 67
Housing main material	PA UL 94 V0	PA UL 94 V0
Contact surface	Gold over nickel	Gold over nickel
Sheath diameter, min. / max.	5 mm / 10 mm	5 mm / 10 mm
Plugging cycles	750	750
Ambient temperature (operational), 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 connection diameter, 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 connection diameter, solid, min./max.	0.4 mm / 0.64 mm	0.4 mm / 0.64 mm
Connector standard	IEC 61076-3-106 Var. 1, IEC 60603-7-51	IEC 61076-3-106 Var. 1, IEC 60603-7-51
Approvals	CULUS; GOSTME25	CULUS; GOSTME25
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	10	**1012490000**	IE-PS-V01P-RJ45-FH-BP	10	**1012570000**
RJ45 Crimp, AWG 27-24	IE-PS-V01P-RJ45-TH	10	**1012470000**	IE-PS-V01P-RJ45-TH-BP	10	**1012560000**

Note

Ordering data - Empty housings

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

Note

Accessories

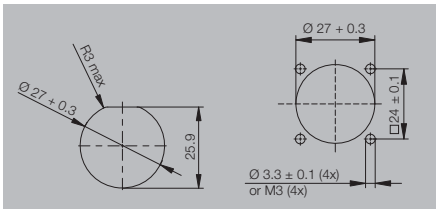
Colour coding	Type	Qty.	Order No.	Type	Qty.	Order No.
blue	IE-CR-IP67-WS20-BU	10	**1963020000**	IE-CR-IP67-WS20-BU	10	**1963020000**
orange	IE-CR-IP67-WS20-OG	10	**1963010000**	IE-CR-IP67-WS20-OG	10	**1963010000**
green	IE-CR-IP67-WS20-GN	10	**1963040000**	IE-CR-IP67-WS20-GN	10	**1963040000**
grey	IE-CR-IP67-WS20-GY	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**

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

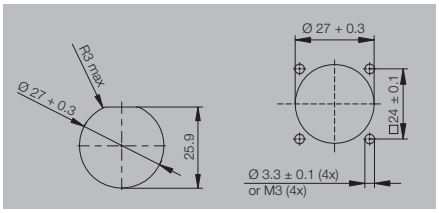
Flange bayonet V1 plastic - RJ45

Module

TIA-A



Coupling



Technical data

Protection degree	IP 67	IP 67
Housing main material	PA UL 94 V0	PA UL 94 V0
Contact surface	Gold over nickel	Gold over nickel
Plugging cycles	750	750
Ambient temperature (operational), 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 connection diameter, flexible, min./max.	0.48 mm / 0.76 mm	
Wire cross-section, solid, min. / max.	AWG 24 / AWG 22	
Wire connection diameter, solid, min./max.	0.4 mm / 0.64 mm	
Approvals	CULUS; GOSTME25	CULUS; GOSTME25
Note		

Ordering data - Sets

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

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

Note

Ordering data - Empty housings

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

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

Note

Accessories

Dust protection cap

Flange-mounted housing protective cap

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

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

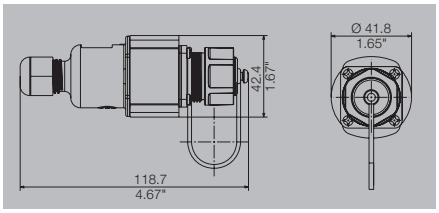
Note

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

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

Cable coupling bayonet V1 plastic - RJ45

Cable coupling



Technical data

Protection degree	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
Sheath diameter, min. / max.	6 mm / 9.5 mm
Approvals	GOSTME25
Note	

Ordering data

Variant 1	Type	Qty.	Order No.
Cable coupling	IE-CC-V01P	10	**1061820000**

Note	
	RJ45 modules can be ordered separately

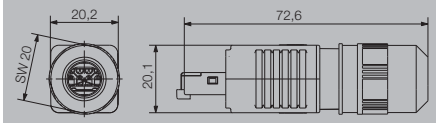
Accessories

Flange insert	Type	Qty.	Order No.
 RJ45 EIA/TIA T568 A	IE-BI-RJ45-FJ-A	10	**1962850000**
RJ45 EIA/TIA T568 B	IE-BI-RJ45-FJ-B	10	**1963840000**
RJ45 PROFINET	IE-BI-RJ45-FJ-P	10	**1963830000**

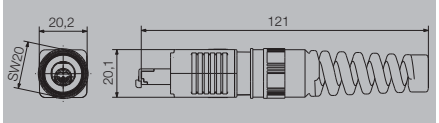
Note	

Plug PushPull V4 - RJ45

Without kink prevention



With kink prevention



Technical data

	Without kink prevention	With kink prevention
Category	Cat.6$_A$ / Class E$_A$ (ISO/IEC 11801 2010)	Cat.6$_A$ / Class E$_A$ (ISO/IEC 11801 2010)
Protection degree	IP 67	IP 67
Housing main material	PA UL 94 V0	PA UL 94 V0
Contact surface	Gold over nickel	Gold over nickel
Sheath diameter, min. / max.	5 mm / 10 mm	5 mm / 10 mm
Plugging cycles	750	750
Ambient temperature (operational), 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 connection diameter, 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 connection diameter, solid, min./max.	0.36 mm / 0.51 mm	0.36 mm / 0.51 mm
Connector standard	IEC 61076-3-106 Var. 4, IEC 60603-7-51	IEC 61076-3-106 Var. 4, IEC 60603-7-51
Approvals	CULUS; GOSTME25	CULUS; GOSTME25
Note		

Ordering data - Sets

	Type	Qty.	Order No.	Type	Qty.	Order No.
RJ45 tool-free, AWG 26-22, TIA-A/-B/-PROFINET	IE-PS-V04P-RJ45-FH	10	**1963160000**	IE-PS-V04P-RJ45-FH-BP	10	**1963170000**
RJ45 tool-free, AWG 26-22 , TIA-B	IE-PS-V04P-RJ45-FH-B	10	**1271240000**	IE-PS-V04P-RJ45-TH-BP	10	**1963190000**
RJ45 Crimp, AWG 27-24	IE-PS-V04P-RJ45-TH	10	**1963180000**			
Note						

Ordering data - Empty housings

	Type	Qty.	Order No.	Type	Qty.	Order No.
	IE-PH-V04P	10	**1962520000**	IE-PH-V04P-BP	10	**1962530000**
Note						

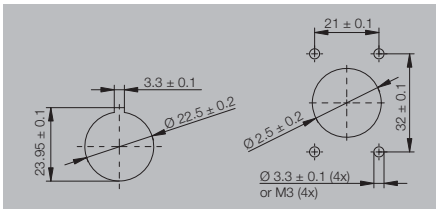
Accessories

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**

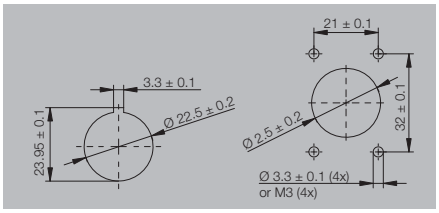
Note		
	Plug inserts can also be ordered separately. Refer to Inserts.	Plug inserts can also be ordered separately. Refer to Inserts.

Flange PushPull V4 - RJ45

Module



Coupling



Technical data

	Module	Coupling
Protection degree	IP 67	IP 67
Housing main material	PA UL 94 V0	PA UL 94 V0
Contact surface	Gold over nickel	Gold over nickel
Plugging cycles	750	750
Ambient temperature (operational), 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 connection diameter, flexible, min./max.	0.48 mm / 0.76 mm	
Wire cross-section, solid, min. / max.	AWG 24 / AWG 22	
Wire connection diameter, solid, min./max.	0.4 mm / 0.64 mm	
Approvals	GOSTME25	CULUS; GOSTME25
Note	Other approvals for individual parts of the set available.	

Ordering data - Sets

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

Note

Ordering data - Empty housings

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

Note

Accessories

Dust protection cap	Type	Qty.	Order No.	Type	Qty.	Order No.
 Flange-mounted housing protective cap	IE-BP-V04P	10	**1963900000**	IE-BP-V04P	10	**1963900000**

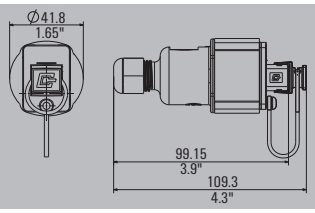
Note

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

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

Cable coupling PushPull V4 - RJ45

Cable coupling



Technical data

Protection degree	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
Sheath diameter, min. / max.	6 mm / 9.5 mm
Approvals	GOSTME25
Note	

Ordering data

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

Note	RJ45 modules can be ordered separately.

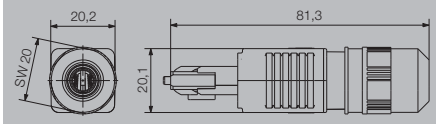
Accessories

Flange insert	**Type**	**Qty.**	**Order No.**
RJ45 EIA/TIA T568 A	IE-BI-RJ45-FJ-A	10	**1962850000**
RJ45 EIA/TIA T568 B	IE-BI-RJ45-FJ-B	10	**1963840000**
RJ45 PROFINET	IE-BI-RJ45-FJ-P	10	**1963830000**

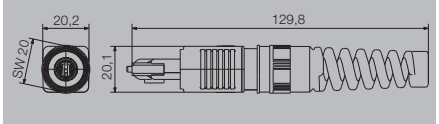
Note	Plug inserts can also be ordered separately. Refer to Inserts.

Plug PushPull V4 - fibre-optic-SC

Without kink prevention



With kink prevention



Technical data

	Without kink prevention	With kink prevention
Protection degree	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	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
Approvals	GOSTME25	GOSTME25
Note		

Ordering data - Sets

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

Note

Ordering data - Empty housings

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

Note

Accessories

	Without kink prevention			With 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**

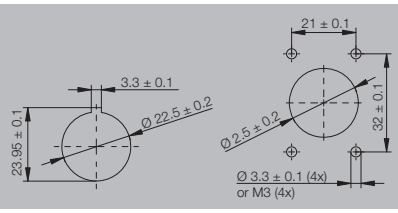
Note

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

Protection degree	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
Approvals	GOSTME25

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

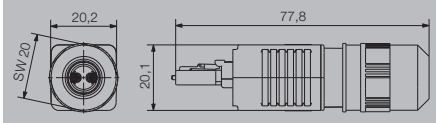
Type	Qty.	Order No.
IE-BP-V04P	10	**1963900000**

Note

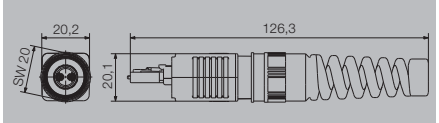
Plug inserts can also be ordered separately. Refer to Inserts.

Plug PushPull V4 - fibre-optic-LC

Without kink prevention



With kink prevention



Technical data

	Without kink prevention	With kink prevention
Protection degree	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	0.5 dB singlemode, 0.4 dB multimode	0.5 dB singlemode, 0.4 dB multimode
Return loss (attenuation)	40 dB singlemode; 30 dB multimode	40 dB singlemode; 30 dB multimode
Approvals	GOSTME25	GOSTME25
Note		

Ordering data - Sets

	Type	Qty.	Order No.	Type	Qty.	Order No.
Singlemode	IE-PS-V04P-2LC-SM	10	**1963340000**	IE-PS-V04P-2LC-SM-BP	10	**1963350000**
Multimode	IE-PS-V04P-2LC-MM	10	**1963320000**	IE-PS-V04P-2LC-MM-BP	10	**1963330000**

Note

Ordering data - Empty housings

	Type	Qty.	Order No.	Type	Qty.	Order No.
	IE-PH-V04P	10	**1962520000**	IE-PH-V04P-BP	10	**1962530000**

Note

Accessories

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**
Accessory set for LC plugs	IE-CTC-AS-LC-GOF	1	**1033350000**	IE-CTC-AS-LC-GOF	1	**1033350000**
Dust protection cap						
Plug housing protective cap	IE-PP-V04P	10	**1963890000**	IE-PP-V04P	10	**1963890000**

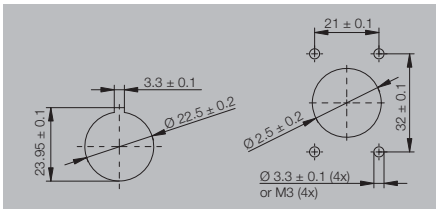
Note

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

Protection degree	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
Approvals	GOSTME25

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

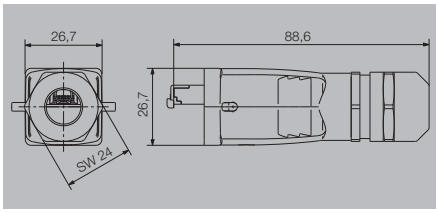
Type	Qty.	Order No.
IE-BP-V04P	10	**1963900000**

Note

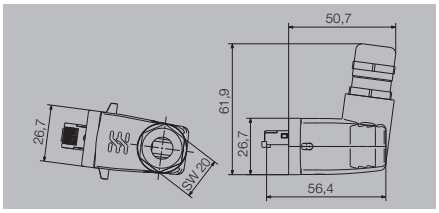
Plug inserts can also be ordered separately. Refer to Inserts.

RockStar® heavy-duty connectors V5 - RJ45

Straight V5 - RJ45 plug



V5-RJ45 plug, angled



Technical data

Protection degree	IP 67	IP 67
Housing main material	diecast aluminium	diecast aluminium
Contact surface	Gold over nickel	Gold over nickel
Sheath diameter, min. / max.	5 mm / 12 mm	5 mm / 10 mm
Plugging cycles	750	750
Ambient temperature (operational), 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
Approvals	CULUS; GOSTME25	GOSTME25
Note		Other approvals for individual parts of the set available

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**

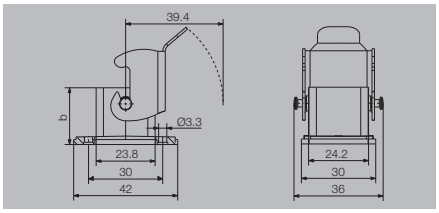
Note

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

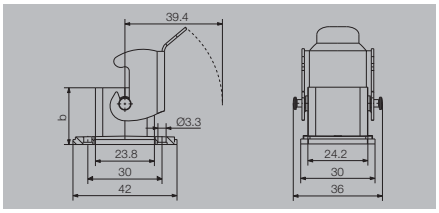
Plug inserts can also be ordered separately. Refer to Inserts.

RockStar® heavy-duty connectors V5 - RJ45

Module



Coupling



Technical data

	Module	Coupling
Protection degree	IP 67	IP 67
Housing main material	diecast aluminium	diecast aluminium
Contact surface	Gold over nickel	Gold over nickel
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 connection diameter, flexible, min./max.	0.48 mm / 0.76 mm	
Wire cross-section, solid, min. / max.	AWG 24 / AWG 22	
Wire connection diameter, solid, min./max.	0.4 mm / 0.64 mm	
Approvals	CULUS; GOSTME25	CULUS; GOSTME25
Note		

Ordering data - Sets

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

Note

Ordering data - Empty housings

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

Note

Accessories

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

Note

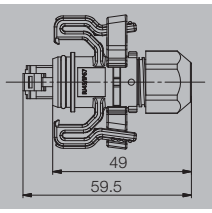
Plug inserts can also be ordered separately. Refer to Inserts.

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

Plug SnapIn V6 - RJ45

- Cat.6
- IP 67

Without kink prevention



Technical data

Category	Cat.6 (ISO/IEC 11801)
Protection degree	IP 67
Shielding	360° shield contact
Housing main material	PA 66, UL 94: V-0
Contact surface	Gold over nickel
Colour	Light Grey
Plugging cycles	750
Type of mounting	Floor-mounted, for exposed connections, Wall-mounted
Ambient temperature (operational), min. / max.	-40 °C...+70 °C
Connector standard	IEC 61076-3-106 Var. 6, IEC 60603-7-5
Approvals	GERMLLOYD

Note

Ordering data

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

Note

Accessories

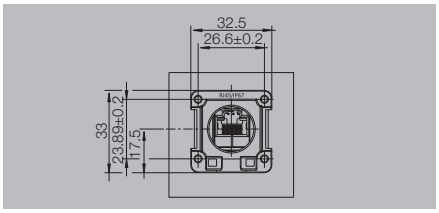
Note

See also the „Accessories“ chapter.

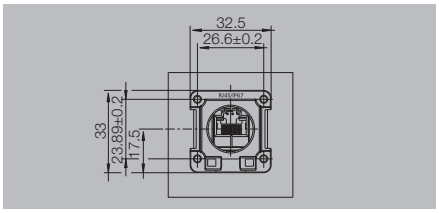
Flange SnapIn V6 - RJ45

- Cat.6
- IP 67

Module



Coupling



Technical data

	Module	Coupling
Category	Cat.6 (ISO/IEC 11801)	Cat.6 (ISO/IEC 11801)
Protection degree	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
Contact surface	Gold over nickel	Gold over nickel
Colour	Light Grey	Light Grey
Plugging cycles	750	750
Type of mounting	Cabinet, Distribution box	Cabinet, Distribution box
Wiring	Colour-coded pin assignment according to EIA/TIA T568 A .	
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
Approvals	GERMLLOYD; GOSTME25	GERMLLOYD; GOSTME25
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 coupling, straight			
RJ45 module A, straight	IE-XRJ45/IDC	1	**8808330000**

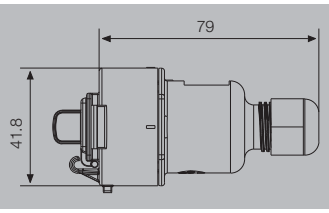
Type	Qty.	Order No.
IE-XR-RJ45/RJ45-2	24	**8952950000**

Note

Cable coupling SnapIn V6 - RJ45

- Cat.6
- IP 67

Cable coupling



Technical data

Category	Cat.6 (ISO/IEC 11801)
Protection degree	IP 67
Shielding	360° shield contact
Housing main material	PA 66, UL 94: V-0
Contact surface	Gold over nickel
Colour	Light Grey
Plugging cycles	750
Type of mounting	Floor-mounted, for exposed connections, Wall-mounted
Wiring	Colour-coded pin assignment according 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
Sheath diameter, min. / max.	6 mm / 9.5 mm
Approvals	GERMLLOYD; GOSTME25

Note

Ordering data

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

Note

Accessories

Note

See also the „Accessories“ chapter.

M12 plug, Tension-clamp connection, D-coded

SAISM / SAIBM

Straight

SAISW / SAIBW

angled

Ordering data

Male			
	4-pole. PG 9		
Socket			
	4-pole. PG 9		
Note			

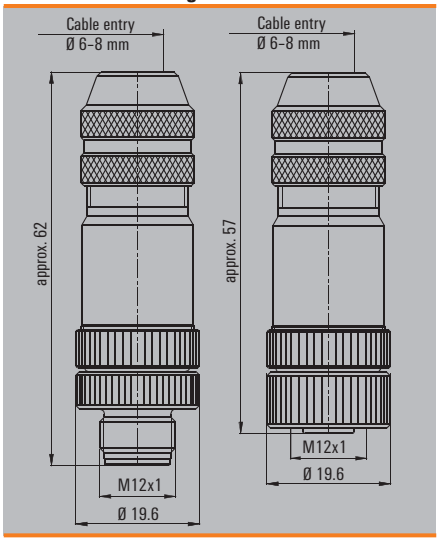
Type	Qty.	Order No.
SAIBM-4/8S-M12 4P D-ZF	1	**1892130001**
SAISM-4/8S-M12 4P D-ZF	1	**1892120001**

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

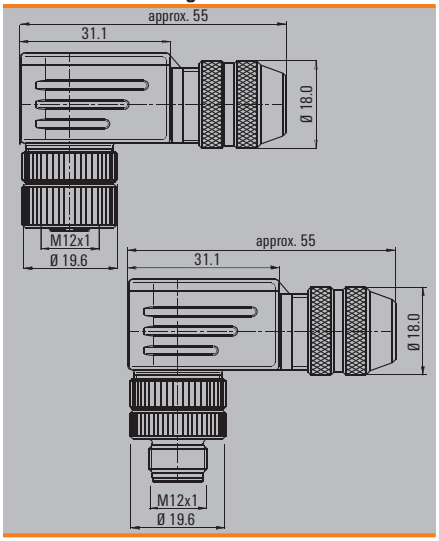
Type of connection	Tension clamp connection
Housing main material	CuZn
Ambient temperature (operational), min. / max.	-25 °C...+85 °C
Connector standard	IEC 61076-2-101
Contact tube diameter	M12
Cable diameter	6...8 mm (PG9)
Wire cross-section, min. / max.	0.25 / 0.5 mm²
Rated current	4
Rated voltage	250
Temperature range of housing	-25...+85 °C
Protection degree	IP 67
Contact surface	Gold-plated
Note	

Tension clamp connection
CuZn
-25 °C...+85 °C
IEC 61076-2-101
M12
6...8 mm (PG9)
0.25 / 0.5 mm²
4
250
-25...+85 °C
IP 67
Gold-plated

Dimensioned drawing



Dimensioned drawing



M12 plug,
Screw connection,
D-coded

SAISM / SAIBM

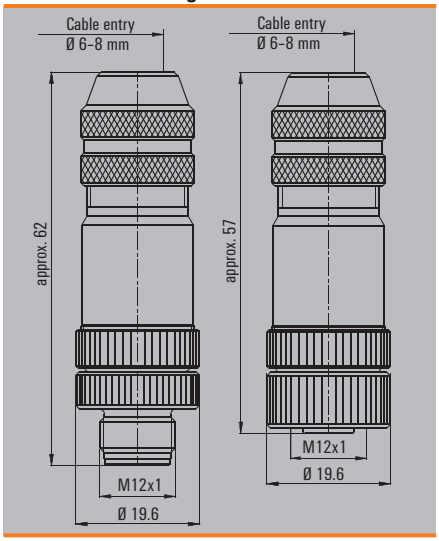
Straight

Ordering data

Male			
	4-pole. PG 9	SAISM-4/8S-M12-4P D-COD	1892120000
Socket			
	4-pole. PG 9	SAIBM-4/8S-M12-4P D-COD	1892130000
Note			

Type of connection	Screw connection
Housing main material	CuZn
Ambient temperature (operational), min. / max.	-25 °C...+85 °C
Connector standard	IEC 61076-2-101
Contact tube diameter	M12
Cable diameter	6...8 mm (PG9)
Wire cross-section, min. / max.	0.25 / 0.75 mm²
Rated current	4
Rated voltage	250
Temperature range of housing	-25...+85 °C
Protection degree	IP 67
Contact surface	Gold-plated
Note	

Dimensioned drawing



Adapter / coupling M12

- Cat.5
- IP 67
- D-coded

Adapter M12-RJ45

Coupling M12-M12

Technical data

	Adapter M12-RJ45	Coupling M12-M12
Category	Cat.5 (ISO/IEC 11801)	Cat.5 (ISO/IEC 11801)
Protection degree	IP 67	IP 67
Housing main material	Polyamide, fully shielded metal housing	Polyamide, Brass, nickel-plated
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
Approvals	GOSTME25	GOSTME25
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

Note						

M12 PCB connection element

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

Standard assembly

Additional fastening mechanism

Technical data

	Standard assembly	Additional fastening mechanism
Category	Cat.5 (ISO/IEC 11801)	Cat.5 (ISO/IEC 11801)
Protection degree	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)	-25...+85 °C	-25...+85 °C
Connector standard	IEC 61076-2-101	IEC 61076-2-101
Approvals	GOSTME25	GOSTME25
Note		

Ordering data

Connection element	Standard assembly Type	Qty.	Order No.	Additional fastening mechanism Type	Qty.	Order No.
Straight	IE-M12-PCBCE	60	**8902810000**	IE-M12-PCBCE-PANEL	10	**8902820000**
Angled				IE-M12-PCBCE-PANEL-A	10	**1393470000**

Note

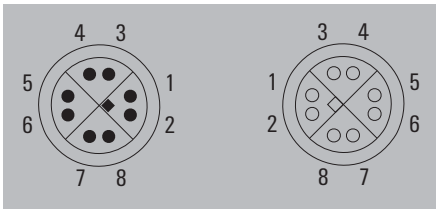
Accessories

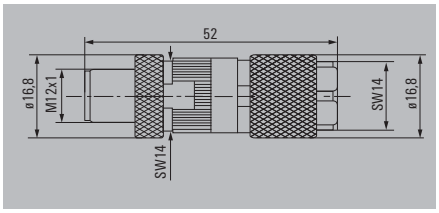
Note

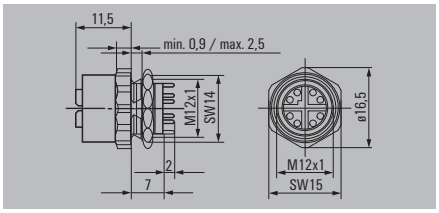
M12 connector / PCB socket
M12 X-type Cat. 6_A

Plug

PCB socket







Technical data

	Plug	PCB socket
Category	Cat.6_A / Class E_A (ISO/IEC 11801 2010)	Cat.6_A / Class E_A (ISO/IEC 11801 2010)
Protection degree	IP 65, IP 67	IP 67 (when screwed in)
Connection 1 / 2	M12 / Insulation displacement technology	M12 / Solder connection
Housing main material	Zinc diecast	CuZn
Contact holder materials		
Contact tube diameter	M12	M12
Contact material / Contact surface	CuZn / Gold-plated	
Ambient temperature (operational)	-25 °C...+85 °C	-25 °C...+85 °C
Connector standard	IEC 61076-2-109	IEC 61076-2-109
Current-carrying capacity at 50 °C	0.5 A @ 40 °C	0.5 A @ 40 °C
Rated voltage	48 V	48 V
Insulation resistance	100 MΩ	100 MΩ
Plugging cycles	≥ 100	≥ 100
Configuration		Reflow compatible
Shielding	360° all-round enclosure	360° all-round enclosure
Wire connection diameter, flexible, min./max.	0.48 mm / 0.76 mm	
Wire cross-section, flexible, min. / max.	AWG 26 / AWG 22	
Wire connection diameter, 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 mm / 9.7 mm	
Approvals		
Note		

Ordering data

	Type	Qty.	Order No.
pre-assembled	IE-PS-M12X-P-FH	10	**1324020000**
2-piece design			
Note			

Type	Qty.	Order No.
IE-PCB-M12X-S-180	10	**1324010000**
IE-PCB2-M12X-S-180	10	**1393080000**

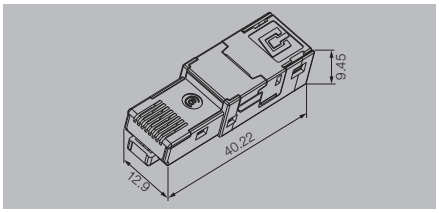
Accessories

Note

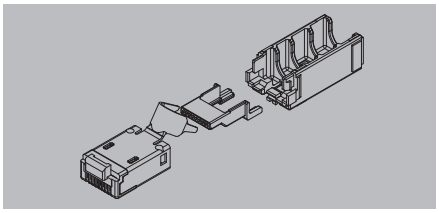
Plug inserts RJ45

- 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)
Protection degree	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		Phosphor bronze
Contact surface	Gold over nickel	Au ≥ 0.8 µm, Ni 2.54 µm
Wire cross-section, flexible, min. / max.	AWG 26 / AWG 22	AWG 27 / AWG 24
Wire connection diameter, flexible, min.	0.48 mm / 0.76 mm	0.46 mm / 0.61 mm
Wire cross-section, solid, min. / max.	AWG 24 / AWG 22	AWG 24 / AWG 24
Wire connection diameter, solid, min.	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 / PoE+	conforming to IEEE 802.3at	conforming to IEEE 802.3af
Speed	10 GBit	10 GBit
Connector standard	IEC 60603-7-51	IEC 60603-7-51
Approvals		CURUS
Note	Approvals available on request	

Ordering data

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

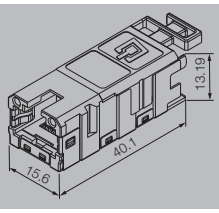
Accessories

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**			
Note						

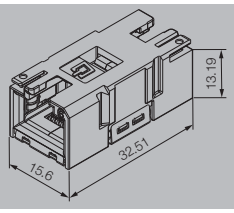
Flange inserts RJ45

- 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)
Protection degree	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
Contact surface	Au ≥ 0.8 µm	Gold over nickel
Wire cross-section, flexible, min. / max.	AWG 26 / AWG 22	
Wire cross-section, solid, min. / max.	AWG 24 / AWG 22	
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
PoE / PoE+	conforming to IEEE 802.3af	conforming to IEEE 802.3af
Approvals	CULUS; GOSTME25	CULUS; GOSTME25
Note		

Ordering data

tool-free	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			

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

Note

Accessories

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

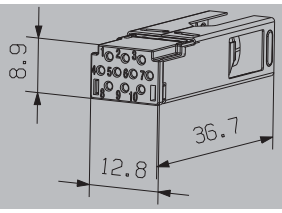
Type	Qty.	Order No.

Note

Plug inserts Hybrid

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

Crimp



Technical data

Category	Cat.5 (ISO/IEC 11801)
Protection degree	IP 67 with housing
Plugging cycles	500
Shielding	360° all-round enclosure
Housing main material	Nickel silver, PA 66
Contact surface	Gold over nickel
No. of poles	10
Wire cross-section, flexible, min. / max.	AWG 27 / AWG 20
Wire connection diameter, 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
Rated voltage	24
Contact resistance	≤ 5 mΩ
Approvals	CULUS; GOSTME25
Note	

Ordering data

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

Note

Accessories

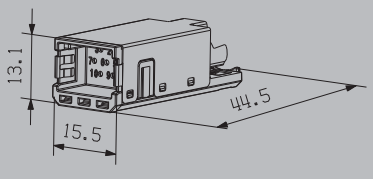
Crimp contacts			
	0.33...0.5 mm²	IE-PIC-HYB-S-0,5-300	300	**1096180000**
	0.75 mm²	IE-PIC-HYB-S-0,75-300	300	**1068950000**
	0.08...0.2 mm²	IE-PIC-HYB-S-0,2-300	300	**1135150000**
Crimping tool				
		HTF HYB	1	**1119580000**

Note

Flange inserts Hybrid

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

Module



Technical data

Category	Cat.5 (ISO/IEC 11801)
Protection degree	IP 67 with housing
Plugging cycles	500
Shielding	360° all-round enclosure
Housing main material	Zinc diecast, Nickel silver, PA 66
Contact surface	Gold over nickel
No. of poles	10
Wire cross-section, flexible, min. / max.	AWG 27 / AWG 20
Wire connection diameter, flexible, min./max.	0.08 mm² / 0.75 mm²
Rated current	3 A per contact
Rated voltage	24
Contact resistance	≤ 10 mΩ
Volume resistance	< 10 mΩ
Ambient temperature (operational), min. / max.	-40 °C...+70 °C
Approvals	CULUS; GOSTME25

Note

Ordering data

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

Note

Accessories

Crimp contacts

Type	Qty.	Order No.
0.33...0.5 mm²	300	**1096150000**
0.75 mm²	300	**1068970000**
0.08...0.2 mm²	300	**1135160000**

Crimping tool

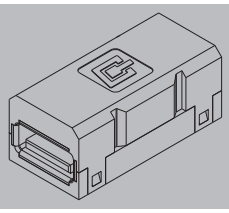
HTF HYB	1	**1119580000**

Note

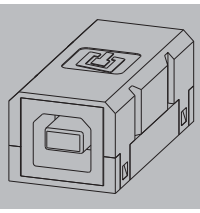
Flange inserts USB

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

Coupling USB A/A



Coupling USB A/B



Technical data

Protection degree	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
Approvals	GOSTME25	GOSTME25
Note		

Ordering data

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

Note

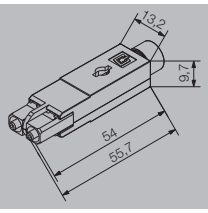
Accessories

Note

Plug inserts SC

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

Plug inserts SC



Technical data

Protection degree	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
Approvals	

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

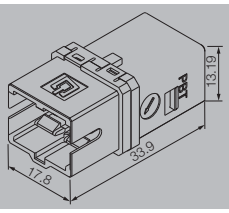
	Type	Qty.	Order No.
POF tool set	TOOL SET IE-POF	1	**1208930000**
Crimping tool POF	HTX-IE-POF	1	**1208870000**
Fibre-optic tool case	IE-CTC-SCST-GOF	1	**1032030000**

Note

Flange inserts SC

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

Flange inserts SC



Technical data

Protection degree	IP 67 with housing
Housing main material	PA
Plugging cycles	1000
Ambient temperature (operational), min. / max.	-40 °C...+70 °C
Approvals	GOSTME25

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

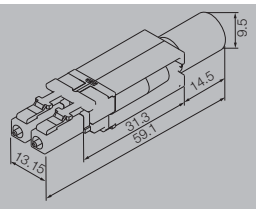
Accessories

Note

Plug inserts LC

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

Plug inserts LC



Technical data

Protection degree	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
Approvals	GOSTME25
Note	

Ordering data

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

Note

Accessories

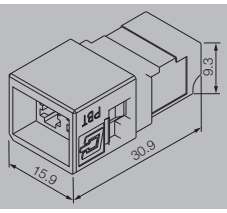
Tools	Type	Qty.	Order No.
 Fibre-optic tool case	IE-CTC-SCST-GOF	1	**1032030000**
Crimping pliers GOF LC	IE-CT-LC-GOF	1	**9205330000**
	SCDV 3.81/26/90F 3.2SN BK BX	20	**1033050000**
	SCDV 3.81/26/90F 3.2SN BK BX	20	**1033050000**
	SCDV 3.81/26/90F 3.2SN BK BX	20	**1033050000**

Note

Flange inserts LC

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

Flange inserts LC



Technical data

Protection degree	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
Approvals	GOSTME25

Note

Ordering data

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

Note

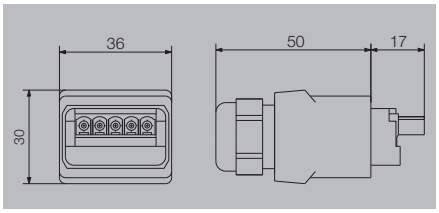
Accessories

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

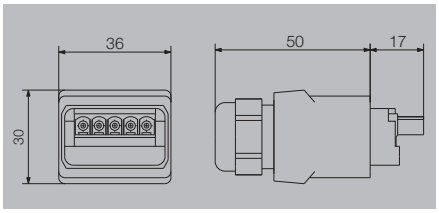
Note

Plug PushPull Power

Power 24 V plug



Power 400 V plug



Technical data

General data		
Protection degree	IP 67	IP 67
Connector standard	in accordance with PROFINET specification	in accordance with PROFINET specification
Approvals	GOSTME25	
Material properties		
Housing base material	Zinc diecast, nickel-plated	Zinc diecast, nickel-plated
Sealing material	NBR	NBR
Cable sealing material	TPE	TPE
Contact material / Contact surface	Copper alloy / Gold over nickel	Copper alloy / Gold over nickel
UL 94 flammability rating	V-2	V-2
Pollution severity level	2	2
Plugging cycles	≤ 100	≤ 100
Electrical properties		
Current-carrying capacity at 50 °C	16 A	16 A
Rated voltage	24 V	400 V
Ambient temperature (operational), min. / max.	-40 °C...+70 °C	-40 °C...+70 °C
No. of poles	5	5
Wire cross-section, flexible, min. / max.	0.75 mm² / 2.5 mm²	0.75 mm² / 2.5 mm²
Sheath diameter, min. / max.	9 mm / 13 mm	9 mm / 13 mm
Connection 2	Tension clamp	Tension clamp
Note		

Ordering data - Sets

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

Type	Qty.	Order No.
IE-PS-VAPM-400V	10	**1323940000**

Note

Ordering data - Empty housings

Type	Qty.	Order No.

Type	Qty.	Order No.

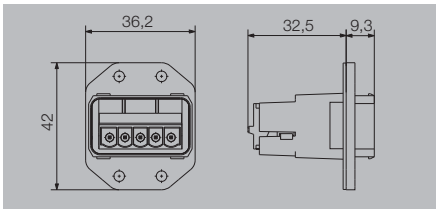
Note

Accessories

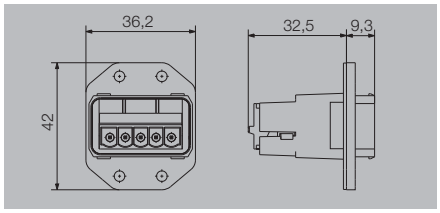
Note

Flange PushPull Power

Power 24 V flange



Power 400 V flange



Technical data

General data		
Protection degree	IP 67	IP 67
Connector standard	in accordance with PROFINET specification	in accordance with PROFINET specification
Approvals	GOSTME25	
Material properties		
Housing base material	Zinc diecast, nickel-plated	Zinc diecast, nickel-plated
Sealing material	NBR	NBR
Cable sealing material	TPE	TPE
Contact carrier material	PA	PA
Contact material / Contact surface	Copper alloy / Gold over nickel	Copper alloy / Gold over nickel
UL 94 flammability rating	V-2	V-2
Pollution severity level	2	2
Plugging cycles	≤ 100	≤ 100
Electrical properties		
Current-carrying capacity at 50 °C	16 A	16 A
Rated voltage	24 V	400 V
Ambient temperature (operational), min. / max.	-40 °C...+70 °C	-40 °C...+70 °C
No. of poles	5	5
Connection 1	Tension clamp	Tension clamp
Installation	4 screws	4 screws
Note		

Ordering data - Sets

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

Type	Qty.	Order No.
IE-BSS-VAPM-400V	10	**1323950000**

Note

Ordering data - Empty housings

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

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

Note

Accessories

Dust protection cap

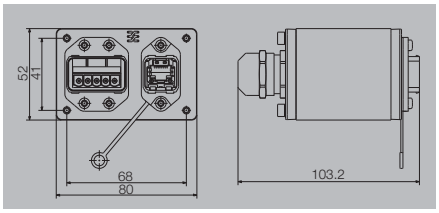
Type	Qty.	Order No.
IE-BP-VAPP	10	**1068930000**

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

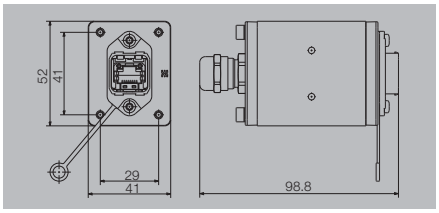
Note

FreeCon V14 - junction box

Double junction box, Power / RJ45



Single junction box, RJ45



Technical data

General data		
Housing main material	Aluminium profile, Cover: die-cast zinc, painted	Aluminium profile, Cover: die-cast zinc, painted
Protection degree	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
Approvals	CULUS; GOSTME25	CULUS; GOSTME25
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	
Rated voltage	24 V	
No. of poles	5	
Sheath diameter, min. / max.	6 mm / 12 mm	
Connection 2	Tension clamp	
Technical specifications for RJ45 module		
Housing base material	Zinc diecast, nickel-plated	Zinc diecast, nickel-plated
Contact surface	Gold over nickel	Gold over nickel
Sheath diameter, min. / max.	5 mm / 10 mm	5 mm / 10 mm
Electrical properties RJ45 module		
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	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

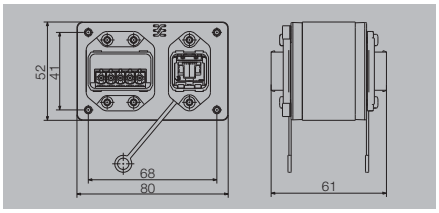
Type	Qty.	Order No.
IE-CD-MA	10	**1099580000**

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

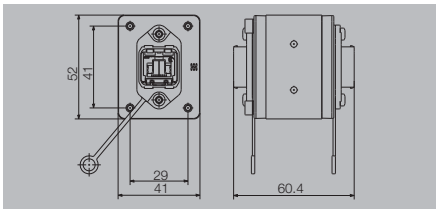
Note

FreeCon V14 - coupling

Double coupling, Power / RJ45



Single coupling, RJ45



Technical data

General data		
Housing main material	Aluminium profile, Cover: die-cast zinc, painted	Aluminium profile, Cover: die-cast zinc, painted
Protection degree	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
Approvals	CULUS; GOSTME25	CULUS; GOSTME25
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	
Rated voltage	24 V	
No. of poles	5	
Sheath diameter, min. / max.	6 mm / 12 mm	
Connection 2	Tension clamp	
Technical specifications for RJ45 coupling		
Housing base material	Zinc diecast, PA 66	Zinc diecast, PA 66
Electrical specifications for RJ45 coupling		
Category	Cat.6_A / Class E_A (ISO/IEC 11801 2010)	Cat.6_A / Class E_A (ISO/IEC 11801 2010)
Contact resistance	≤ 20 mΩ	≤ 20 mΩ
Contact surface	Gold over nickel	Gold over nickel
Insulation resistance	> 500 MΩ	> 500 MΩ
Dielectric strength, contact – contact, min.	≥ 1000 V DC	≥ 1000 V DC
Dielectric strength, contact – shielding, max.	≥ 1500 V DC	≥ 1500 V DC
Current carrying capacity	1 A	1 A
Note		

Ordering data

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

Note: Including mounting foot

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

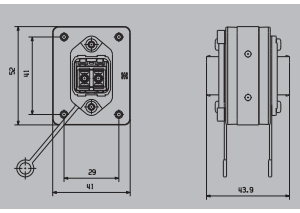
Note: Including mounting foot

Accessories

Note

FreeCon V14 single coupling

Single coupling, SCRJ



Technical data

General data	
Housing main material	Aluminium profile, Cover: die-cast zinc, painted
Protection degree	IP 65
Ambient temperature (operational)	-40...+70 °C
Connector standard	IEC 61076-3-117 Var. 14, IEC 61754-24
Approvals	
Technical specifications - fibre-optic coupler	
Housing base material (fibre-optic coupling)	PA
Plugging cycles (fibre-optic coupling)	≥ 500
Seal material (fibre-optic coupling)	NBR
Connection 1 / 2	SCRJ / SCRJ
Insertion attenuation (fibre-optic coupling)	< 0.2 dB
Fibre type	Multimode, POF

Note

Ordering data

Type	Qty.	Order No.
IE-CD-V14MSCRJ-MM-C-MA	1	1318150000

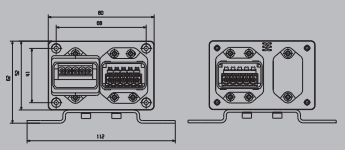
Note

Accessories

Note

FreeCon V14 Y-distributor

Y-distributor Power



Technical data

General data	
Housing main material	Aluminium profile, Cover: die-cast zinc, painted
Protection degree	IP 65
Ambient temperature (operational)	-40...+70 °C
Connector standard	in accordance with PROFINET specification
Approvals	
Technical specifications power connector	
Housing base material	Zinc diecast, nickel-plated
Sealing material	NBR
Cable sealing material	TPE
Contact material	Copper alloy
Contact carrier material	PA
Contact surface	Gold over nickel
UL 94 flammability rating	V-0
Plugging cycles	≥ 100
Pollution severity level	2
Electrical properties power connector	
Current-carrying capacity at 50 °C	16 A @ 20 °C
Rated voltage	24 V
No. of poles	5
Note	

Ordering data

Type	Qty.	Order No.
IE-CD-VAPM24V-Y-MA	1	1297010000

Note

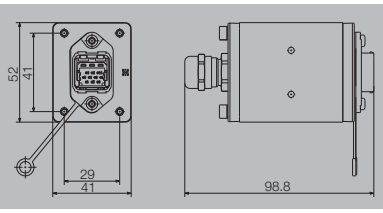
Accessories

Note

FreeCon V14 - junction box

- in PUR

Single junction box, Hybrid



Technical data

General data	
Housing main material	Aluminium profile, Cover: die-cast zinc, painted
Protection degree	IP 65
Ambient temperature (operational), min. / max.	-40 °C...+70 °C
Technical specifications hybrid connector	
Housing base material	Zinc diecast (flange), PA 66
Sealing material	NBR
Contact material	Copper alloy
Contact surface	Gold over nickel
Plugging cycles	500
Electrical properties hybrid connector	
Rated current (hybrid connector)	3 A per contact
Rated voltage (DIN EN 61984)	24 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
Approvals	CULUS; GOSTME25
Note	

Ordering data

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

Note	
	Order contacts separately

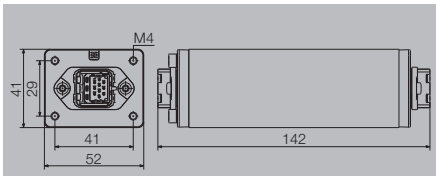
Accessories

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**

Note	

FreeCon V14 single coupling

Single coupling, hybrid



Technical data

General data	
Housing main material	Aluminium profile, Cover: die-cast zinc, painted
Protection degree	IP 65
Ambient temperature (operational)	-40...+70 °C
Technical specifications power connector	
Housing base material	Zinc diecast (flange), PA 66
Sealing material	NBR
Contact material	Copper alloy
Contact surface	Gold over nickel
Plugging cycles	500
Electrical properties power connector	
Rated current (hybrid connector)	3 A per contact
Rated voltage (DIN EN 61984)	24
Contact resistance	≤ 10 mΩ
Pole count, Hybrid	10
Approvals	
Note	

Ordering data

Type	Qty.	Order No.
IE-CD-V14MHYB-10P-C-MA	1	1068840000

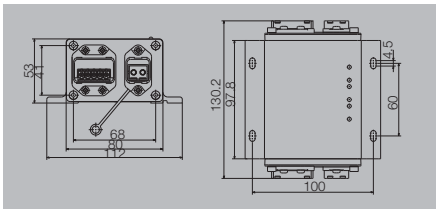
Note

Accessories

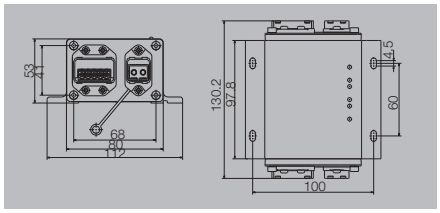
Note

FreeCon Active PROFINET with diagnostics functionality

FO repeater



Media converter



Technical data

General data		
Housing main material	Aluminium profile, Cover: die-cast zinc, painted	Aluminium profile, Cover: die-cast zinc, painted
Weight	780 g	780 g
Data interface	PROFINET PushPull SCRJ POF (V14)	PROFINET PushPull SCRJ POF (V14), PROFINET PushPull RJ45 (V14)
Power interface	PROFINET PushPull Power	PROFINET PushPull Power
Protection degree	IP 65	IP 65
Ambient temperature (operational), min. / max.	-20 °C...+55 °C	-20 °C...+55 °C
Network standard	IEC 61158, IEC 61784	IEC 61158, IEC 61784
Connector standard	IEC 61076-3-117 Var. 14, IEC 61754-24	IEC 61076-3-117 Var. 14, IEC 61754-24, IEC 60603-7-51
Electrical data		
Operating voltage	24 V DC	24 V DC
Operational voltage range	18...30 V DC	18...30 V DC
Current consumption	200 mA typical	200 mA typical
Baud rate	100 MB	100 MB
Protocol	PROFINET iRT	PROFINET iRT
LED indicator	FO1: port active, FO2: port active, SF: general error, BF: bus error, US1: voltage 1 (electronics), US2: voltage 2	P1: port active, P2: port active, SF: general error, BF: bus error, US1: voltage 1 (electronics), US2: voltage 2
Approvals	CULUS; GOSTME25	
Note		

Ordering data

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

Note

Type	Qty.	Order No.
IE-CDM-V14MRJSCP/VAPM-C	1	1324440000

Note

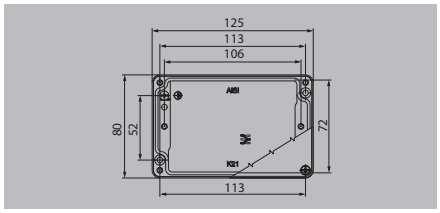
Accessories

Note

V1 junction boxes - metal

- IP 67
- For floor or wall mounting

Double junction box



Technical data

Protection degree	IP 67
Housing main material	Al - Si 12
Colour	Grey
Type of mounting	Floor-mounted, Wall-mounted
Ambient temperature (operational), min. / max.	-40 °C...+70 °C
Plugging cycles	750
Connector standard	IEC 61076-3-106 Var. 1
Sheath diameter, min. / max.	5 mm / 10 mm
Approvals	
Note	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**

Note

RJ45 modules can be ordered separately

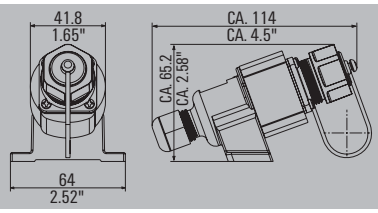
Accessories

Flange insert	Type	Qty.	Order No.
 RJ45 EIA/TIA T568 A	IE-BI-RJ45-FJ-A	10	**1962850000**
RJ45 EIA/TIA T568 B	IE-BI-RJ45-FJ-B	10	**1963840000**
RJ45 PROFINET	IE-BI-RJ45-FJ-P	10	**1963830000**

Note

V1 junction boxes - plastic

Single junction box



Technical data

Protection degree	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
Sheath diameter, min. / max.	6 mm / 9.5 mm
Approvals	GOSTME25
Note	

Ordering data

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

Note	
	RJ45 modules can be ordered separately

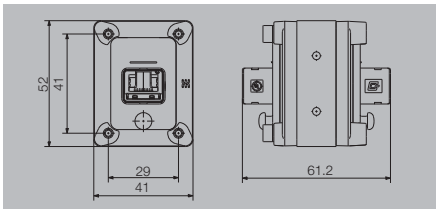
Accessories

Flange insert	Type	Qty.	Order No.
 RJ45 EIA/TIA T568 A	IE-BI-RJ45-FJ-A	10	**1962850000**
RJ45 EIA/TIA T568 B	IE-BI-RJ45-FJ-B	10	**1963840000**
RJ45 PROFINET	IE-BI-RJ45-FJ-P	10	**1963830000**

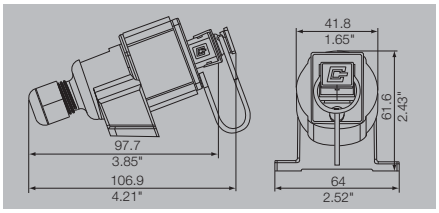
Note	

FreeCon V4 junction box

Single coupling, RJ45



Single junction box



Technical data

General data		
Plugging cycles	750	750
Housing main material	Aluminium profile, Cover: die-cast zinc, painted	PA
Contact surface	Gold over nickel	Gold over nickel
UL 94 flammability rating		V-0
Connector standard	IEC 61076-3-106 Var. 4, IEC 60603-7-5	IEC 61076-3-106 Var. 4
Protection degree	IP 65	IP 67
Ambient temperature (operational), min. / max.	-40 °C...+70 °C	-40 °C...+70 °C
Sheath diameter, min. / max.		6 mm / 9.5 mm
Approvals	CULUS; GOSTME25	GOSTME25
Electrical properties RJ45 module		
Category	Cat.6_A / Class E_A (ISO/IEC 11801 2010)	
Contact resistance	≤ 20 mΩ	
Insulation resistance	> 500 MΩ	
Dielectric strength, contact – contact, min.	≥ 1000 V DC	
Dielectric strength, contact – shielding, max.	≥ 1500 V DC	
Current carrying capacity	1 A	
Material properties RJ45 coupling		
Housing base material	Zinc diecast, PA 66	
Note		

Ordering data

	Type	Qty.	Order No.
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 T568 A			
RJ45 EIA/TIA T568 B			
RJ45 PROFINET			

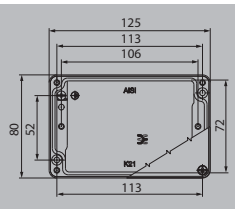
Type	Qty.	Order No.
IE-BI-RJ45-FJ-A	10	**1962850000**
IE-BI-RJ45-FJ-B	10	**1963840000**
IE-BI-RJ45-FJ-P	10	**1963830000**

Note

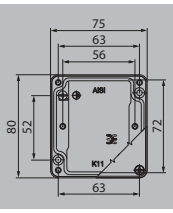
V4 junction boxes

- IP 67
- For floor or wall mounting

Double junction box



Single junction box



Technical data

Protection degree	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
Sheath diameter, min. / max.	5 mm / 10 mm	5 mm / 10 mm
Approvals		
Note		

Ordering data

Variant 4	Type	Qty.	Order No.	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				IE-OM-V04P-K11-1S	1	**1966220000**
Note	RJ45 modules can be ordered separately			RJ45 modules can be ordered separately		

Accessories

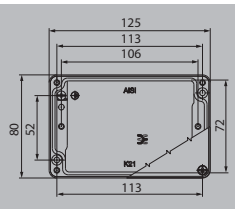
Flange insert	Type	Qty.	Order No.	Type	Qty.	Order No.
 RJ45 EIA/TIA T568 A	IE-BI-RJ45-FJ-A	10	**1962850000**	IE-BI-RJ45-FJ-A	10	**1962850000**
RJ45 EIA/TIA T568 B	IE-BI-RJ45-FJ-B	10	**1963840000**	IE-BI-RJ45-FJ-B	10	**1963840000**
RJ45 PROFINET	IE-BI-RJ45-FJ-P	10	**1963830000**	IE-BI-RJ45-FJ-P	10	**1963830000**

Note

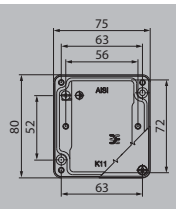
V5 junction boxes

- IP 67
- For floor or wall mounting

Double junction box



Single junction box



Technical data

Protection degree	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
Sheath diameter, min. / max.	5 / 10 mm	5 / 10 mm
Approvals		
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

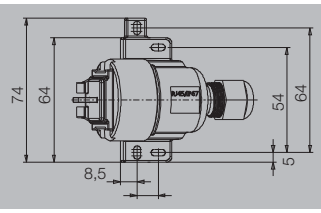
Flange insert	Type	Qty.	Order No.	Type	Qty.	Order No.
 RJ45 EIA/TIA T568 A	IE-BI-RJ45-FJ-A	10	**1962850000**	IE-BI-RJ45-FJ-A	10	**1962850000**
RJ45 EIA/TIA T568 B	IE-BI-RJ45-FJ-B	10	**1963840000**	IE-BI-RJ45-FJ-B	10	**1963840000**
RJ45 PROFINET	IE-BI-RJ45-FJ-P	10	**1963830000**	IE-BI-RJ45-FJ-P	10	**1963830000**

Note		

V6 junction box

- Cat.6
- IP 67

Single junction box, RJ45



Technical data

Protection degree	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 including RJ45 module with IDC connection
Ambient temperature (operational), min. / max.	-40 °C...+70 °C
Plugging cycles	750
Connector standard	IEC 61076-3-106 Var. 6
Sheath diameter, min. / max.	6 mm / 9.5 mm
Approvals	GERMLLOYD
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**

Note

Cables

Passive components

AdvancedLine

The AdvancedLine from Weidmüller offers all combinations of cables that are possible with the extensive range of plug connections.

This means flexibility and robustness through the high quality of the used components. The range comprises standard cables and customer-specific versions. Standard cables can be found in the catalogue; customer-specific versions can be freely configured online using the “Galaxy” configuration software. All AdvancedLine cables are particularly suitable for industrial use.

- High-quality cables with very good technical characteristics
- Suitable for demanding IP 20 to IP 67 applications
- Suitable for temperatures from -40 to +70 °C
- High-quality shielding

CabinetLine

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

Additional benefits:
All CabinetLine cables are fitted with Weidmüller TM marking sleeves for clearly labelling cables and ports. CabinetLine is available in the colours grey, blue, red and violet in combination with LSZH sheathing material and transmission power Cat.6_A.
CabinetLine is also available in the colour green and Cat.5 with PUR or PVC sheathing material. All variants are fitted with protected clips which facilitate, e.g., pulling through a cable duct.

- For applications in switching cabinets and simple environmental conditions
- Suitable for temperatures from 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 customised specifically to your requirements and specifications.

An RJ45 plug with IP 20 protection is available. The following variants are also available with IP 67 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 automatically create technical data sheets for all of your customised cable variants.

All of your cable selections can be sent to Weidmüller using the "request list". You will then quickly receive a price proposal for the cables from your local Weidmüller representative.

Overview of copper cables

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 installation in machines and plants in industrial applications and difficult environments

- Cat.5 or Cat.7
- Available for PROFINET as well
- With PUR or PVC sheathing

Industrial trailing cables

...for applications subjected to constant movement

- Cat.5
- Available for PROFINET as well
- With PUR sheathing

Assembled cables

Industrial patch cables / CabinetLine

...not only for office applications, but also in switching cabinets for industrial applications

- Cat.6
- With LSZH sheathing – low smoke and zero halogens
- In straight and crossover versions

Industrial system cables

...pre-assembled cables for flexible installation in machines and plants in industrial applications and difficult environments

- Cat.5 or Cat.6
- With PUR sheathing

Industrial trailing cables

...pre-assembled cable for constant motion, e.g., with draglines

- Cat.5
- Available for PROFINET as well
- With PUR sheathing

System cable for railway applications

...pre-assembled cable for flexible wiring on railway vehicles for both interior and exterior installations.

- In Cat.5
- Also for PROFINET
- With Radox sheath

Ordering data for copper cables, metre goods

Type	Cat./Class	Colour	Plug-in connector left	right	Length					
Industrial installation cables					100 m	Metre goods	305 m			
IE-5IC4x2xAWG24/1-PUR	Cat.5	green	-	-	8813160000	8944310000				
IE-5IC4x2xAWG24/1-PVC	Cat.5	green	-	-	8813150000	8953160000				
IE-7IC4x2xAWG23/1-PUR	Cat.7	green	-	-	8813140000	8955350000				
IE-7IC4x2xAWG23/1-PVC	Cat.7	green	-	-	8813130000	8955360000				
IE-C5AS4Vxx	Cat.5 PROFINET	green	-	-	8899000000	8955950000				
Industrial connecting cables										
IE-5CC4x2xAWG26/7-PUR	Cat.5	green	-	-	8813200000	8938880000				
IE-5CC4x2xAWG26/7-PVC	Cat.5	green	-	-	8813190000	8955490000				
IE-7CC4x2xAWG26/7-PUR	Cat.7	green	-	-	8813180000	8954300000				
IE-7CC4x2xAWG26/7-PVC	Cat.7	green	-	-	8813170000	8955480000				
IE-C5DS4Vxx	Cat.5 PROFINET	green	-	-	8898990000	8955560000				
IE-C5DHAGxx	Cat.5 PROFINET	green	-	-		1172250000				
IE-C7FS8LD-305M	Cat.7	grey	-	-			1273090000			
IE-C7FS8LB-305M	Cat.7	blue	-	-			1326540000			
IE-C7FS8LE-305M	Cat.7	black	-	-			1344690000			
IE-C7FS8LG-305M	Cat.7	green	-	-			1344680000			
IE-C7FS8LR-305M	Cat.7	red	-	-			1287910000			
IE-C7FS8LM-305M	Cat.7	magenta	-	-			1333160000			
IE-C7FS8LY-305M	Cat.7	yellow	-	-			1344670000			
Industrial trailing cables										
IE-5TC4x2xAWG26/7-PUR	Cat.5	green	-	-	8813210000	8936390000				
IE-C5ED8UBxx	Cat.5	blue	-	-	8960670000	8949760000				
IE-C5DD4UGx	Cat.5 PROFINET	green	-	-	8899010000	8947670000				
IE-C5IT4UGx	Cat.5 PROFINET	green	-	-		1103010000				

Order overview for assembled copper cable - RJ45

Industrial trailing cables					0,5 m	1 m	2 m	3 m	5 m	10 m
IE-C5DD4UGxxxxA20A20-E	Cat.5	green	RJ45	RJ45	1173030005	1173030010	1173030020	1173030030	1173030050	1173030100
IE-C5DD4UGxxxxA2DA2D-E	Cat.5	green	RJ45 + DC	RJ45 + DC	1376510005	1376510010	1376510020	1376510030	1376510050	1376510100
IE-C5DD4UGxxxxA2EA2E-X	Cat.5	green	V14 RJ45	V14 RJ45		1119730010	1119730020	1119730030	1119730050	1119730100
IE-C5DD4UGxxxxB2EB2E-X	Cat.5	green	V14 RJ45	V14 RJ45		1307610010	1307610020	1307610030	1307610050	1307610100
IE-C5IT4UGxxxxB2EB2E-X	Cat.5	green	V14 RJ45	V14 RJ45		1312690010	1312690020	1312690030	1312690050	1312690100
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	violet	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-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
Industrial power patch cable					0,5 m	1 m	2 m	3 m	5 m	10 m
IE-CSPS5VSxxxxVAPVAP-X	Cat.5	grey	PushPull Power	PushPull Power		1350120010	1350120020	1350120030	1350120050	1350120100

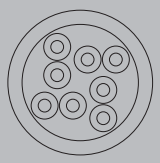
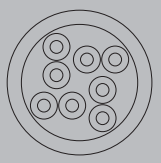
Order overview for assembled copper cable - M12

Industrial trailing cables					0,5 m	1,5 m		3 m	5 m	10 m
IE-C5DD4UGxxxxMCSMCS-E	Cat.5		M12 plug	M12 plug	1025950005	1025950015		1025950030	1025950050	1025950100
IE-C5DD4UGxxxxMSSMCS-E	Cat.5		M12 plug	M12 socket		1059330015		1059330030	1059330050	1059330100
IE-C5DD4UGxxxxMCSXXX-X	Cat.5		M12 plug	RJ45 plug		1025940015		1025940030	1025940050	1025940100
					1 m	1,5 m		3 m	5 m	10 m
IE-C5DD4UGxxxxMCSMCS-E	Cat.5		M12 plug	RJ45 plug	1044470010	1044470015		1044470030	1044470050	1044470100

Raw cables

Cat.5 installation cable

- In lengths from 100 to 1,000 metres

	PUR	PVC
		
		

Technical data

	PUR	PVC
Product type	Installation cable	Installation cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
Shielding	SF/UTP	SF/UTP
Cross-section	4*2*AWG 24/1 - 4*2*0.205 mm²	4*2*AWG 24/1 - 4*2*0.205 mm²
Sheath diameter, max.	6.7 mm	6.3 mm
Material sheath	PUR	PVC
Sheathing colour	green (RAL 6018)	green (RAL 6018)
Insulation cross-section	1 mm	1 mm
Min. bending radius, repetitive	10 *diameter	10 *diameter
Min. bending radius, once only	5 *diameter	5 *diameter
Ambient temperature (operational)	-40 °C...+80 °C	-40 °C...+80 °C
Installation temperature	-15 °C...+60 °C	-15 °C...+60 °C
Storage temperature	-40 °C...+80 °C	-40 °C...+80 °C
Abrasion resistance	very good	good
Halogen	in accordance with IEC 60754-2	
Resistance to spread of flame	in accordance with IEC 60332-1	in accordance with IEC 60332-1
Resistance to oils	in accordance with IEC 60811-2-1	
Approvals		
Note		

Ordering data

	Type	Qty.	Order No.	Type	Qty.	Order No.
100,0 m	IE-5IC4x2xAWG24/1-PUR	1	**8813160000**	IE-5IC4x2xAWG24/1-PVC	1	**8813150000**
Cut to metre starting at 110,0 m	IE-C5CS8UG-MW		**8944310000**	IE-C5CS8VG-MW		**8953160000**
Note	Order example, for cut cable: 150 x „article number" = 150 m on drum			Order example, for cut cable: 150 x „article number" = 150 m on drum		

Accessories

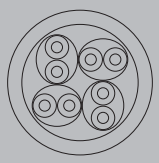
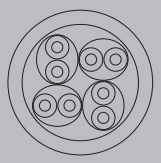
Sheathing stripper	Type	Qty.	Order No.	Type	Qty.	Order No.
For UTP and STP data cables	AM 12	1	**9030060000**	AM 12	1	**9030060000**
For coaxial and round data cables	IE-CST	1	**9204350000**	IE-CST	1	**9204350000**
Markers						
Insertion label, yellow, 12 mm	TM-I 12 MC NE GE	320	**1718411687**	TM-I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

Note

Raw cables

Cat.7 installation cable

- In lengths from 100 to 1,000 metres

	PUR	PVC
		
		

Technical data

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

Ordering data

	Type	Qty.	Order No.	Type	Qty.	Order No.
100,0 m	IE-7IC4x2xAWG23/1-PUR	1	**8813140000**	IE-7IC4x2xAWG23/1-PVC	1	**8813130000**
Cut to metre starting at 110,0 m	IE-C7BS8UG-MW		**8955350000**	IE-C7BS8VG-MW		**8955360000**
Note	Order example, for cut cable: 150 x „article number" = 150 m on drum			Order example, for cut cable: 150 x „article number" = 150 m on drum		

Accessories

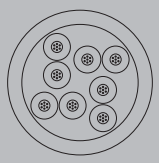
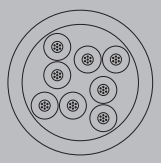
Sheathing stripper	Type	Qty.	Order No.	Type	Qty.	Order No.
For UTP and STP data cables	AM 12	1	**9030060000**	AM 12	1	**9030060000**
For coaxial and round data cables	IE-CST	1	**9204350000**	IE-CST	1	**9204350000**
Markers						
Insertion label, yellow, 12 mm	TM-I 12 MC NE GE	320	**1718411687**	TM-I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

Note

Raw cables

Cat.5 connection cable

- In lengths from 100 to 1,000 metres

	PUR	PVC
		
		

Technical data

	PUR	PVC
Product type	System cable	System cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
Shielding	SF/UTP	SF/UTP
Cross-section	4*2*AWG 26/7 - 4*2*0.128 mm²	4*2*AWG 26/7 - 4*2*0.128 mm²
Sheath diameter, max.	6.1 mm	5.8 mm
Material sheath	PUR	PVC
Sheathing colour	green (RAL 6018)	green (RAL 6018)
Insulation cross-section	1 mm	1 mm
Min. bending radius, repetitive	10 *diameter	10 *diameter
Min. bending radius, once only	5 *diameter	5 *diameter
Ambient temperature (operational)	-40 °C...+80 °C	-40 °C...+80 °C
Installation temperature	-10 °C...+60 °C	-15 °C...+60 °C
Storage temperature	-40 °C...+80 °C	-40 °C...+80 °C
Abrasion resistance	very good	good
Halogen	in accordance with IEC 60754-2	
Resistance to spread of flame	in accordance with IEC 60332-1	in accordance with IEC 60332-1
Resistance to oils	in accordance with IEC 60811-2-1	
Standard, assembly	UL-Style 20963 (80 °C / 30 V)	
Approvals		
Note		

Ordering data

	PUR			PVC		
	Type	**Qty.**	**Order No.**	**Type**	**Qty.**	**Order No.**
100,0 m	IE-5CC4x2xAWG26/7-PUR	1	**8813200000**	IE-5CC4x2xAWG26/7-PVC	1	**8813190000**
Cut to metre starting at 110,0 m	IE-C5ES8UG-MW		**8938880000**	IE-C5ES8VG-MW		**8955490000**
Note	Order example, for cut cable: 150 x „article number" = 150 m on drum			Order example, for cut cable: 150 x „article number" = 150 m on drum		

Accessories

Sheathing stripper	PUR			PVC		
	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 MC NE GE	320	**1718411687**	TM-I 12 MC NE GE	320	**1718411687**
Insertion label, yellow, 18 mm	TM-I 18 MC NE GE	320	**1718431687**	TM-I 18 MC NE GE	320	**1718431687**
Transparent sleeves, 12-mm length	TM 4/12 HF/HB	500	**1719840000**	TM 4/12 HF/HB	500	**1719840000**
Transparent sleeves, 18-mm length	TM 4/18 HF/HB	500	**1719850000**	TM 4/18 HF/HB	500	**1719850000**
Wire and cable marker, ø 4,7 - 7,4 mm	VT SF 5/21 NE WS V0	160	**1689470001**	VT SF 5/21 NE WS V0	160	**1689470001**
Wire and cable marker, ø 5,8 - 7,8 mm	VT SF 6/21 NE WS V0	160	**1730560001**	VT SF 6/21 NE WS V0	160	**1730560001**

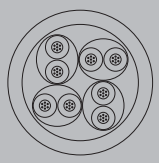
Note

Raw cables

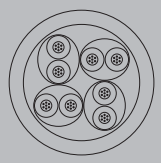
Cat.7 connection cable

- In lengths from 100 to 1,000 metres

PUR



PVC



Technical data

	PUR	PVC
Product type	System cable	System cable
Category	Cat.7 (ISO/IEC 11801)	Cat.7 (ISO/IEC 11801)
Shielding	S/FTP	S/FTP
Cross-section	4*2*AWG 26/7 - 4*2*0.128 mm²	4*2*AWG 26/7 - 4*2*0.128 mm²
Sheath diameter, max.	6.6 mm	6.7 mm
Material sheath	PUR	PVC
Sheathing colour	green (RAL 6018)	green (RAL 6018)
Insulation cross-section	1.03 mm	0.98 mm
Min. bending radius, repetitive	10 *diameter	10 *diameter
Min. bending radius, once only	5 *diameter	5 *diameter
Ambient temperature (operational)	-40 °C...+80 °C	-40 °C...+80 °C
Installation temperature	-15 °C...+60 °C	-15 °C...+60 °C
Storage temperature	-40 °C...+80 °C	-40 °C...+80 °C
Abrasion resistance	very good	good
Halogen	in accordance with IEC 60754-2	
Resistance to spread of flame	in accordance with IEC 60332-1	in accordance with IEC 60332-1
Resistance to oils	in accordance with IEC 60811-2-1	
Standard, assembly	UL-Style 20963 (80 °C / 30 V)	UL-Style 2879 (80 °C / 30 V)
Approvals		
Note		

Ordering data

	Type	Qty.	Order No.	Type	Qty.	Order No.
100,0 m	IE-7CC4x2xAWG26/7-PUR	1	**8813180000**	IE-7CC4x2xAWG26/7-PVC	1	**8813170000**
Cut to metre starting at 110,0 m	IE-C7ES8UG-MW		**8954300000**	IE-C7ES8VG-MW		**8955480000**
Note	Order example, for cut cable: 150 x „article number" = 150 m on drum			Order example, for cut cable: 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 MC NE GE	320	**1718411687**	TM-I 12 MC NE GE	320	**1718411687**
Insertion label, yellow, 18 mm	TM-I 18 MC NE GE	320	**1718431687**	TM-I 18 MC NE GE	320	**1718431687**
Transparent sleeves, 12-mm length	TM 4/12 HF/HB	500	**1719840000**	TM 4/12 HF/HB	500	**1719840000**
Transparent sleeves, 18-mm length	TM 4/18 HF/HB	500	**1719850000**	TM 4/18 HF/HB	500	**1719850000**
Wire and cable marker, ø 4,7 - 7,4 mm	VT SF 5/21 NE WS V0	160	**1689470001**	VT SF 5/21 NE WS V0	160	**1689470001**
Wire and cable marker, ø 5,8 - 7,8 mm	VT SF 6/21 NE WS V0	160	**1730560001**	VT SF 6/21 NE WS V0	160	**1730560001**

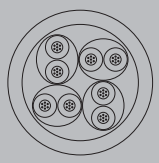
Note

Raw cables

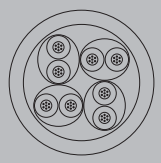
Cat.7 connection cable

- 305 m / 1,000 ft

LSZH grey



LSZH blue



Technical data

	LSZH grey	LSZH blue
Product type	System cable	System cable
Category	Cat.7 (ISO/IEC 11801)	Cat.7 (ISO/IEC 11801)
Shielding	S/FTP	S/FTP
Cross-section	4*2*AWG 27/7 - 4*2*0.1 mm²	4*2*AWG 27/7 - 4*2*0.1 mm²
Sheath diameter, max.	5.9 mm	5.9 mm
Material sheath	LSZH	LSZH
Sheathing colour	light grey (RAL 7035)	blue (RAL 5015)
Insulation 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
Halogen	No	No
Resistance to spread of flame	in accordance with IEC 60332-1	in accordance with IEC 60332-1
Resistance to oils		
Approvals	CULUS	CULUS
Note		

Ordering data

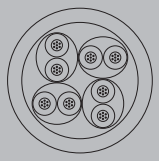
	Type	Qty.	Order No.	Type	Qty.	Order No.
305 m / 1000 ft	IE-C7FS8LD-305M	1	**1273090000**	IE-C7FS8LB-305M	1	**1326540000**
Note						

Accessories

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 MC NE GE	320	**1718411687**	TM-I 12 MC NE GE	320	**1718411687**
Insertion label, yellow, 18 mm	TM-I 18 MC NE GE	320	**1718431687**	TM-I 18 MC NE GE	320	**1718431687**
Transparent sleeves, 12-mm length	TM 4/12 HF/HB	500	**1719840000**	TM 4/12 HF/HB	500	**1719840000**
Transparent sleeves, 18-mm length	TM 4/18 HF/HB	500	**1719850000**	TM 4/18 HF/HB	500	**1719850000**
Wire and cable marker, ø 4,7 - 7,4 mm	VT SF 5/21 NE WS V0	160	**1689470001**	VT SF 5/21 NE WS V0	160	**1689470001**
Wire and cable marker, ø 5,8 - 7,8 mm	VT SF 6/21 NE WS V0	160	**1730560001**	VT SF 6/21 NE WS V0	160	**1730560001**

Note

LSZH black

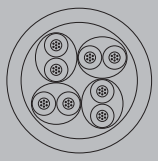


System cable
Cat.7 (ISO/IEC 11801)
S/FTP
4*2*AWG 27/7 - 4*2*0.1 mm²
5.9 mm
LSZH
Black
1.04 mm
50 mm
25 mm
-20 °C...+60 °C
0 °C...+50 °C
No
in accordance with IEC 60332-1
CULUS

Type	Qty.	Order No.
IE-C7FS8LE-305M	1	**1344690000**

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

LSZH green

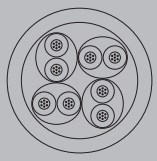


System cable
Cat.7 (ISO/IEC 11801)
S/FTP
4*2*AWG 27/7 - 4*2*0.1 mm²
5.9 mm
LSZH
Green
1.04 mm
50 mm
25 mm
-20 °C...+60 °C
0 °C...+50 °C
No
in accordance with IEC 60332-1
CULUS

Type	Qty.	Order No.
IE-C7FS8LG-305M	1	**1344680000**

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

LSZH red



System cable
Cat.7 (ISO/IEC 11801)
S/FTP
4*2*AWG 27/7 - 4*2*0.1 mm²
5.9 mm
LSZH
Red
1.04 mm
50 mm
25 mm
-20 °C...+60 °C
0 °C...+50 °C
No
in accordance with IEC 60332-1
CULUS

Type	Qty.	Order No.
IE-C7FS8LR-305M	1	**1287910000**

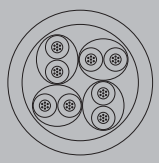
Type	Qty.	Order No.
AM 12	1	**9030060000**
IE-CST	1	**9204350000**
TM-I 12 MC NE GE	320	**1718411687**
TM-I 18 MC NE GE	320	**1718431687**
TM 4/12 HF/HB	500	**1719840000**
TM 4/18 HF/HB	500	**1719850000**
VT SF 5/21 NE WS V0	160	**1689470001**
VT SF 6/21 NE WS V0	160	**1730560001**

Raw cables

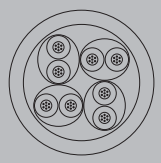
Connecting cable Cat.7

- 305 m / 1,000 ft

LSZH magenta



LSZH yellow



Technical data

	LSZH magenta	LSZH yellow
Product type	System cable	System cable
Category	Cat.7 (ISO/IEC 11801)	Cat.7 (ISO/IEC 11801)
Shielding	S/FTP	S/FTP
Cross-section	4*2*AWG 27/7 - 4*2*0.1 mm²	4*2*AWG 27/7 - 4*2*0.1 mm²
Sheath diameter, max.	5.9 mm	5.9 mm
Material sheath	LSZH	LSZH
Sheathing colour	Magenta	Yellow
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
Halogen	No	No
Resistance to spread of flame	in accordance with IEC 60332-1	in accordance with IEC 60332-1
Resistance to oils		
Approvals	CULUS	CULUS
Note		

Ordering data

	Type	Qty.	Order No.	Type	Qty.	Order No.
305 m / 1000 ft	IE-C7FS8LM-305M	1	**1333160000**	IE-C7FS8LY-305M	1	**1344670000**
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 MC NE GE	320	**1718411687**	TM-I 12 MC NE GE	320	**1718411687**
Insertion label, yellow, 18 mm	TM-I 18 MC NE GE	320	**1718431687**	TM-I 18 MC NE GE	320	**1718431687**
Transparent sleeves, 12-mm length	TM 4/12 HF/HB	500	**1719840000**	TM 4/12 HF/HB	500	**1719840000**
Transparent sleeves, 18-mm length	TM 4/18 HF/HB	500	**1719850000**	TM 4/18 HF/HB	500	**1719850000**
Wire and cable marker, ø 4,7 - 7,4 mm	VT SF 5/21 NE WS V0	160	**1689470001**	VT SF 5/21 NE WS V0	160	**1689470001**
Wire and cable marker, ø 5,8 - 7,8 mm	VT SF 6/21 NE WS V0	160	**1730560001**	VT SF 6/21 NE WS V0	160	**1730560001**

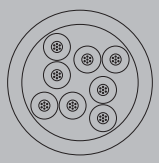
Note

Raw cables

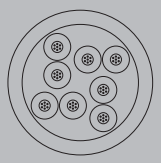
Cat.5 dragline cable

- In lengths from 100 to 1,000 metres

PUR green



PUR blue



Technical data

	PUR green	PUR blue
Product type	Dragline cable	Dragline cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
Shielding	SF/UTP	SF/UTP
Cross-section	4*2*AWG 26/7 - 4*2*0.128 mm²	4*2*AWG 26/7 - 4*2*0.128 mm²
Sheath diameter, max.	6.8 mm	6.8 mm
Material sheath	PUR	PUR
Sheathing colour	green (RAL 6018)	blue (RAL 5015)
Insulation cross-section	0.95 mm	0.95 mm
Min. bending radius, repetitive	7.5 *diameter	7.5 *diameter
Min. bending radius, once only	4 *diameter	4 *diameter
Bending cycles	5 Mio	5 Mio
Ambient temperature (operational)	-40 °C...+80 °C	-40 °C...+80 °C
Installation temperature	-20 °C...+60 °C	-20 °C...+60 °C
Storage temperature	-40 °C...+80 °C	-40 °C...+80 °C
Abrasion resistance	very good	very good
Halogen	in accordance with IEC 60754-2	in accordance with IEC 60754-2
Resistance to spread of flame	in accordance with IEC 60332-1	in accordance with IEC 60332-1
Resistance to oils	in accordance with IEC 60811-2-1	in accordance with IEC 60811-2-1
Standard, assembly	UL-Style 20963 (80 °C / 30 V)	UL-Style 20963 (80 °C / 30 V)
Approvals		
Note		

Ordering data

	Type	Qty.	Order No.	Type	Qty.	Order No.
100,0 m	IE-5TC4x2xAWG26/7-PUR	1	**8813210000**	IE-C5ED8UB-100M	1	**8960670000**
Cut to metre starting at 110,0 m	IE-C5ED8UG-MW		**8936390000**	IE-C5ED8UB-MW		**8949760000**
Note	Order example, for cut cable: 150 x „article number" = 150 m on drum			Order example, for cut cable: 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 MC NE GE	320	**1718411687**	TM-I 12 MC NE GE	320	**1718411687**
Insertion label, yellow, 18 mm	TM-I 18 MC NE GE	320	**1718431687**	TM-I 18 MC NE GE	320	**1718431687**
Transparent sleeves, 12-mm length	TM 4/12 HF/HB	500	**1719840000**	TM 4/12 HF/HB	500	**1719840000**
Transparent sleeves, 18-mm length	TM 4/18 HF/HB	500	**1719850000**	TM 4/18 HF/HB	500	**1719850000**
Wire and cable marker, ø 4,7 - 7,4 mm	VT SF 5/21 NE WS V0	160	**1689470001**	VT SF 5/21 NE WS V0	160	**1689470001**
Wire and cable marker, ø 5,8 - 7,8 mm	VT SF 6/21 NE WS V0	160	**1730560001**	VT SF 6/21 NE WS V0	160	**1730560001**

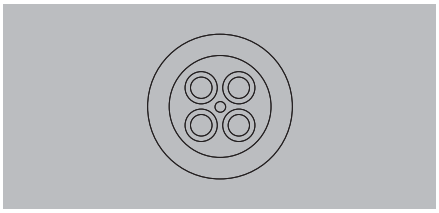
Note

Raw cables

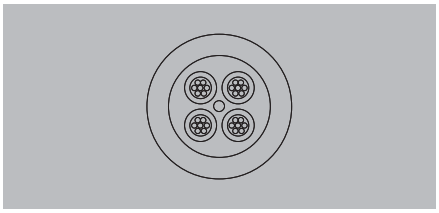
PROFINET cable

- In lengths from 100 to 1,000 metres

Installation cable type A, PVC



Connection cable type B, PVC



Technical data

Product type	Installation cable	System cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
Shielding	SF/UTP	SF/UTP
Cross-section	4*AWG 22/1 - 0.33 mm²	4*AWG 22/7 - 0.36 mm²
Sheath diameter, max.	6.7 mm	6.7 mm
Material sheath	PVC	PVC
Sheathing colour	green (RAL 6018)	green (RAL 6018)
Insulation 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 *diameter	3.5 *diameter
Ambient temperature (operational)	-40 °C...+75 °C	-40 °C...+70 °C
Installation temperature	-20 °C...+60 °C	-20 °C...+60 °C
Storage temperature	-40 °C...+75 °C	-40 °C...+70 °C
Abrasion resistance	good	good
Resistance to spread of flame	in accordance with IEC 60332-1 / UL 1685	in accordance with IEC 60332-1 / UL 1685
Standard, assembly	UL-Style 21694	UL Style 20201
Approvals		
Note		

Ordering data

	Type	Qty.	Order No.
100,0 m	IE-C5AS4V1000	1	**8899000000**
Cut to metre starting at 110,0 m	IE-C5AS4VG-MW		**8955950000**
Note	Order example, for cut cable: 150 x „article number" = 150 m on drum		

	Type	Qty.	Order No.
100,0 m	IE-C5DS4V1000	1	**8898990000**
Cut to metre starting at 110,0 m	IE-C5DS4VG-MW		**8955560000**
Note	Order example, for cut cable: 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 MC NE GE	320	**1718411687**
Insertion label, yellow, 18 mm	TM-I 18 MC NE GE	320	**1718431687**
Transparent sleeves, 12-mm length	TM 4/12 HF/HB	500	**1719840000**
Transparent sleeves, 18-mm length	TM 4/18 HF/HB	500	**1719850000**
Wire and cable marker, ø 4,7 - 7,4 mm	VT SF 5/21 NE WS V0	160	**1689470001**
Wire and cable marker, ø 5,8 - 7,8 mm	VT SF 6/21 NE WS V0	160	**1730560001**

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 MC NE GE	320	**1718411687**
Insertion label, yellow, 18 mm	TM-I 18 MC NE GE	320	**1718431687**
Transparent sleeves, 12-mm length	TM 4/12 HF/HB	500	**1719840000**
Transparent sleeves, 18-mm length	TM 4/18 HF/HB	500	**1719850000**
Wire and cable marker, ø 4,7 - 7,4 mm	VT SF 5/21 NE WS V0	160	**1689470001**
Wire and cable marker, ø 5,8 - 7,8 mm	VT SF 6/21 NE WS V0	160	**1730560001**

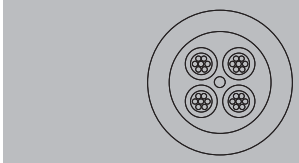
Note

Raw cables

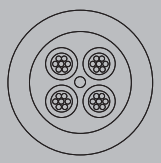
PROFINET cable

- In lengths from 100 to 1,000 metres

Dragline cable type C, PUR



Torsion cable type C, PUR



Technical data

	Dragline cable type C, PUR	Torsion cable type C, PUR
Product type	Dragline cable	Torsion cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
Shielding	SF/UTP	S/UTP
Cross-section	4*AWG 22/7 - 0.36 mm²	4* AWG 22/19 - 0.38 mm²
Sheath diameter, max.	6.7 mm	6.7 mm
Material sheath	PUR	PUR
Sheathing colour	green (RAL 6018)	green (RAL 6018)
Insulation cross-section	1.5 mm	1.5 mm
Min. bending radius, repetitive	7.5 *diameter	10 *diameter
Min. bending radius, once only	5 *diameter	5 *diameter
Bending cycles	3 Mio	
Ambient temperature (operational)	-40 °C...+70 °C	-40 °C...+80 °C
Installation temperature	-20 °C...+60 °C	-40 °C...+80 °C
Storage temperature	-50 °C...+70 °C	-40 °C...+80 °C
Abrasion resistance	very good	very good
Halogen	in accordance with IEC 60754-2	in accordance with IEC 60754-2
Resistance to spread of flame	in accordance with IEC 60332-1	in accordance with IEC 60332-1
Resistance to oils	in accordance with IEC 60811-2-1	in accordance with IEC 60811-2-1
Standard, assembly		UL Style 21161
Approvals		
Note		

Ordering data

Cat.5 PROFINET, PUR	**Type**	**Qty.**	**Order No.**
100,0 m	IE-C5DD4U1000	1	**8899010000**
Cut to metre starting at 110,0 m	IE-C5DD4UG-MW		**8947670000**
Note	Order example, for cut cable: 150 x „article number" = 150 m on drum		

Type	**Qty.**	**Order No.**
IE-C5IT4UG-MW		**1103010000**
Order example, for cut cable: 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 MC NE GE	320	**1718411687**
Insertion label, yellow, 18 mm	TM-I 18 MC NE GE	320	**1718431687**
Transparent sleeves, 12-mm length	TM 4/12 HF/HB	500	**1719840000**
Transparent sleeves, 18-mm length	TM 4/18 HF/HB	500	**1719850000**
Wire and cable marker, ø 4,7 - 7,4 mm	VT SF 5/21 NE WS V0	160	**1689470001**
Wire and cable marker, ø 5,8 - 7,8 mm	VT SF 6/21 NE WS V0	160	**1730560001**

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

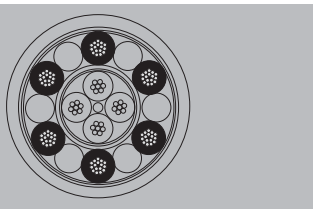
Note

Raw cables

hybrid cable

- In lengths from 100 to 1,000 metres

PVC



Technical data

Product type	Connecting cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
Shielding	SF/UTP
Cross-section	4*AWG 22/7 - 0.36 mm², 6*0.5 mm²
Sheath diameter, max.	9.5 mm
Material sheath	PVC
Sheathing colour	green (RAL 6018)
Insulation 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 *diameter
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	in accordance with IEC 60332-1 / UL 1685
Resistance to oils	Limited
Standard, assembly	
Approvals	

Note

Ordering data

	Type	Qty.	Order No.
Cut to metre starting at 110,0 m	IE-C5DHAG-MW		**1172250000**

Note

Order example, for cut cable: 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 MC NE GE	320	**1718411687**
Insertion label, yellow, 18 mm	TM-I 18 MC NE GE	320	**1718431687**
Transparent sleeves, 12-mm length	TM 4/12 HF/HB	500	**1719840000**
Transparent sleeves, 18-mm length	TM 4/18 HF/HB	500	**1719850000**
Wire and cable marker, ø 4,7 - 7,4 mm	VT SF 5/21 NE WS V0	160	**1689470001**
Wire and cable marker, ø 5,8 - 7,8 mm	VT SF 6/21 NE WS V0	160	**1730560001**

Note

Assembled cables

Cat.6 Cabinet Line patch cable, straight

LSZH grey

LSZH blue

Technical data

Product type	Patch cable	Patch cable
Category	Cat.6_A / Class E_A (ISO/IEC 11801 2010)	Cat.6_A / Class E_A (ISO/IEC 11801 2010)
Shielding	S/FTP	S/FTP
Version connector left / Version connector right	RJ45 IP 20 / RJ45 IP 20	RJ45 IP 20 / RJ45 IP 20
Connector standard	IEC 60603-7-51	IEC 60603-7-51
PoE / PoE+	conforming to IEEE 802.3at	conforming to IEEE 802.3at
Cross-section	4*2*AWG 27/7 - 4*2*0.1 mm²	4*2*AWG 27/7 - 4*2*0.1 mm²
Sheath diameter, max.	5.9 mm	5.9 mm
Material sheath	LSZH	LSZH
Colour	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	in accordance with IEC 60754-2	in accordance with IEC 60754-2
Resistance to spread of flame	in accordance with IEC 60332-1 / UL 1685	in accordance with IEC 60332-1 / UL 1685
Approvals	CULUS; GOSTME25	CULUS; GOSTME25
Note		

Ordering data

	Type	Qty.	Order No.	Type	Qty.	Order No.
0,2 m	IE-C6FP8LD0002M40M40-D	1	**1165940002**	IE-C6FP8LB0002M40M40-B	1	**1165900002**
0,5 m	IE-C6FP8LD0005M40M40-D	1	**1165940005**	IE-C6FP8LB0005M40M40-B	1	**1165900005**
1,0 m	IE-C6FP8LD0010M40M40-D	1	**1165940010**	IE-C6FP8LB0010M40M40-B	1	**1165900010**
1,5 m	IE-C6FP8LD0015M40M40-D	1	**1165940015**	IE-C6FP8LB0015M40M40-B	1	**1165900015**
2,0 m	IE-C6FP8LD0020M40M40-D	1	**1165940020**	IE-C6FP8LB0020M40M40-B	1	**1165900020**
3,0 m	IE-C6FP8LD0030M40M40-D	1	**1165940030**	IE-C6FP8LB0030M40M40-B	1	**1165900030**
5,0 m	IE-C6FP8LD0050M40M40-D	1	**1165940050**	IE-C6FP8LB0050M40M40-B	1	**1165900050**
7,5 m	IE-C6FP8LD0075M40M40-D	1	**1165940075**	IE-C6FP8LB0075M40M40-B	1	**1165900075**
10,0 m	IE-C6FP8LD0100M40M40-D	1	**1165940100**	IE-C6FP8LB0100M40M40-B	1	**1165900100**
15,0 m	IE-C6FP8LD0150M40M40-D	1	**1165940150**	IE-C6FP8LB0150M40M40-B	1	**1165900150**
20,0 m	IE-C6FP8LD0200M40M40-D	1	**1165940200**	IE-C6FP8LB0200M40M40-B	1	**1165900200**
25,0 m	IE-C6FP8LD0250M40M40-D	1	**1165940250**	IE-C6FP8LB0250M40M40-B	1	**1165900250**
Note	Other lengths available on request					

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 MC NE GE	320	**1718411687**	TM-I 12 MC NE GE	320	**1718411687**
Insertion label, yellow, 18 mm	TM-I 18 MC NE GE	320	**1718431687**	TM-I 18 MC NE GE	320	**1718431687**
Note						

Assembled cables

Cat.6 Cabinet Line patch cable, straight

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 IP 20 / RJ45 IP 20	RJ45 IP 20 / RJ45 IP 20
PoE / PoE+	conforming to IEEE 802.3at	conforming to IEEE 802.3at
Connector standard	IEC 60603-7-51	IEC 60603-7-51
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	in accordance with IEC 60754-2	in accordance with IEC 60754-2
Resistance to spread of flame	in accordance with IEC 60332-1 / UL 1685	in accordance with IEC 60332-1 / UL 1685
Approvals	CULUS; GOSTME25	CULUS; GOSTME25
Note		

Ordering data

	Type	Qty.	Order No.	Type	Qty.	Order No.
0,5 m	IE-C6FP8LE0005M40M40-E	1	**1251610005**	IE-C6FP8LG0005M40M40-G	1	**1251590005**
1,0 m	IE-C6FP8LE0010M40M40-E	1	**1251610010**	IE-C6FP8LG0010M40M40-G	1	**1251590010**
1,5 m	IE-C6FP8LE0015M40M40-E	1	**1251610015**	IE-C6FP8LG0015M40M40-G	1	**1251590015**
2,0 m	IE-C6FP8LE0020M40M40-E	1	**1251610020**	IE-C6FP8LG0020M40M40-G	1	**1251590020**
3,0 m	IE-C6FP8LE0030M40M40-E	1	**1251610030**	IE-C6FP8LG0030M40M40-G	1	**1251590030**
5,0 m	IE-C6FP8LE0050M40M40-E	1	**1251610050**	IE-C6FP8LG0050M40M40-G	1	**1251590050**
10,0 m	IE-C6FP8LE0100M40M40-E	1	**1251610100**	IE-C6FP8LG0100M40M40-G	1	**1251590100**
15,0 m	IE-C6FP8LE0150M40M40-E	1	**1251610150**	IE-C6FP8LG0150M40M40-G	1	**1251590150**
20,0 m	IE-C6FP8LE0200M40M40-E	1	**1251610200**	IE-C6FP8LG0200M40M40-G	1	**1251590200**
25,0 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 MC NE GE	320	**1718411687**	TM-I 12 MC NE GE	320	**1718411687**
Insertion label, yellow, 18 mm	TM-I 18 MC NE GE	320	**1718431687**	TM-I 18 MC NE GE	320	**1718431687**
Note						

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 IP 20 / RJ45 IP 20
conforming to IEEE 802.3at
IEC 60603-7-51
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
in accordance with IEC 60754-2
in accordance with IEC 60332-1 / UL 1685
CULUS; GOSTME25

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 MC NE GE	320	**1718411687**
TM-I 18 MC NE GE	320	**1718431687**

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 IP 20 / RJ45 IP 20
conforming to IEEE 802.3at
IEC 60603-7-51
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
in accordance with IEC 60754-2
in accordance with IEC 60332-1 / UL 1685
CULUS; GOSTME25

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 MC NE GE	320	**1718411687**
TM-I 18 MC NE GE	320	**1718431687**

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 IP 20 / RJ45 IP 20
conforming to IEEE 802.3at
IEC 60603-7-51
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
in accordance with IEC 60754-2
in accordance with IEC 60332-1 / UL 1685
CULUS; GOSTME25

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 MC NE GE	320	**1718411687**
TM-I 18 MC NE GE	320	**1718431687**

Assembled cables
Cat.6 Cabinet Line patch cable
angled

LSZH grey 270°

LSZH grey 90°

Technical data

	LSZH grey 270°	LSZH grey 90°
Connector standard	IEC 60603-7-51	IEC 60603-7-51
PoE / PoE+	conforming to IEEE 802.3at	conforming to IEEE 802.3at
Product type	Patch cable	Patch cable
Category	Cat.6_A / Class E_A (ISO/IEC 11801 2010)	Cat.6_A / Class E_A (ISO/IEC 11801 2010)
Shielding	S/FTP	S/FTP
Version connector left / Version connector right	RJ45 IP 20, Angled 270° / RJ45 IP 20	RJ45 IP 20, Angled 90° / RJ45 IP 20
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	in accordance with IEC 60754-2	in accordance with IEC 60754-2
Resistance to spread of flame	in accordance with IEC 60332-1 / UL 1685	in accordance with IEC 60332-1 / UL 1685
Approvals	CULUS; GOSTME25	CULUS; GOSTME25
Note		

Ordering data

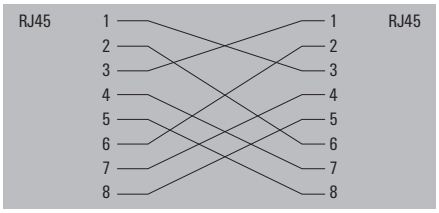
	LSZH grey 270°			LSZH grey 90°		
	Type	Qty.	Order No.	Type	Qty.	Order No.
0,5 m	IE-C6FP8LD0005M40W40-D	1	**1233160005**	IE-C6FP8LD0005M40V40-D	1	**1248280005**
1,2 m	IE-C6FP8LD0012M40W40-D	1	**1233160012**	IE-C6FP8LD0012M40V40-D	1	**1248280012**
1,0 m	IE-C6FP8LD0010M40W40-D	1	**1233160010**	IE-C6FP8LD0010M40V40-D	1	**1248280010**
1,5 m	IE-C6FP8LD0015M40W40-D	1	**1233160015**	IE-C6FP8LD0015M40V40-D	1	**1248280015**
2,0 m	IE-C6FP8LD0020M40W40-D	1	**1233160020**	IE-C6FP8LD0020M40V40-D	1	**1248280020**
3,0 m	IE-C6FP8LD0030M40W40-D	1	**1233160030**	IE-C6FP8LD0030M40V40-D	1	**1248280030**
5,0 m	IE-C6FP8LD0050M40W40-D	1	**1233160050**	IE-C6FP8LD0050M40V40-D	1	**1248280050**
10,0 m	IE-C6FP8LD0100M40W40-D	1	**1233160100**	IE-C6FP8LD0100M40V40-D	1	**1248280100**
Note						

Accessories

	LSZH grey 270°			LSZH grey 90°		
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 MC NE GE	320	**1718411687**	TM-I 12 MC NE GE	320	**1718411687**
Insertion label, yellow, 18 mm	TM-I 18 MC NE GE	320	**1718431687**	TM-I 18 MC NE GE	320	**1718431687**
Note						

Assembled cables
Patch cable CabinetLine Cat.6
crossover

LSZH grey



Technical data

Product type	Patch cable, crossover
Category	Cat.6_A / Class E_A (ISO/IEC 11801 2010)
Shielding	S/FTP
Version connector left / Version connector right	RJ45 IP 20 / RJ45 IP 20
Connector standard	IEC 60603-7-51
PoE / PoE+	conforming to IEEE 802.3at
Cross-section	4*2*AWG 27/7 - 4*2*0.1 mm²
Sheath diameter, max.	5.9 mm
Material sheath	LSZH
Colour	Grey
Insulation 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
Storage temperature	-20 °C...+60 °C
Halogen	in accordance with IEC 60754-2
Resistance to spread of flame	in accordance with IEC 60332-1 / UL 1685
Approvals	CULUS; GOSTME25

Note

Ordering data

	Type	Qty.	Order No.
0,3 m	IE-C6FP8LD0003X40X40-Y	1	**1312160003**
0,4 m	IE-C6FP8LD0004X40X40-Y	1	**1312160004**
0,5 m	IE-C6FP8LD0005X40X40-Y	1	**1312160005**
1,0 m	IE-C6FP8LD0010X40X40-Y	1	**1312160010**
2,0 m	IE-C6FP8LD0020X40X40-Y	1	**1312160020**
3,0 m	IE-C6FP8LD0030X40X40-Y	1	**1312160030**
5,0 m	IE-C6FP8LD0050X40X40-Y	1	**1312160050**
10,0 m	IE-C6FP8LD0100X40X40-Y	1	**1312160100**
15,0 m	IE-C6FP8LD0150X40X40-Y	1	**1312160150**
20,0 m	IE-C6FP8LD0200X40X40-Y	1	**1312160200**

Note

Accessories

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 MC NE GE	320	**1718411687**
Insertion label, yellow, 18 mm	TM-I 18 MC NE GE	320	**1718431687**

Note

Assembled cables

Cat.5 Cabinet Line patch cable, straight

PVC green

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

PUR green

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

Technical data

Product type	System cable	System cable
Category	Cat.5 (ISO/IEC 11801)	Cat.5 (ISO/IEC 11801)
Shielding	SF/UTP	S/FTP
Version connector left / Version connector right	RJ45 IP 20 crimp / RJ45 IP 20 crimp	RJ45 IP 20 crimp / RJ45 IP 20 crimp
Connector standard	IEC 60603-7-51	IEC 60603-7-51
PoE / PoE+	conforming to IEEE 802.3at	conforming to IEEE 802.3at
Cross-section	4*2*AWG 26/7 - 4*2*0.128 mm²	4*2*AWG 26/7 - 4*2*0.128 mm²
Sheath diameter, max.	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 *diameter	10 *diameter
Min. bending radius, once only	5 *diameter	5 *diameter
Ambient temperature (operational)	-40 °C...+75 °C	-40 °C...+75 °C
Abrasion resistance	good	very good
Halogen		in accordance with IEC 60754-2
Resistance to spread of flame	in accordance with IEC 60332-1	in accordance with IEC 60332-1
Resistance to oils		EN 50305
Approvals	CULUS	CULUS
Note		

Ordering data

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

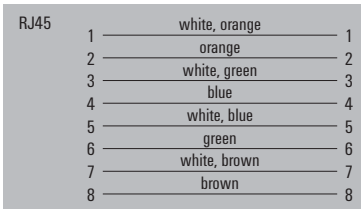
Accessories

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 MC NE GE	320	**1718411687**	TM-I 12 MC NE GE	320	**1718411687**
Insertion label, yellow, 18 mm	TM-I 18 MC NE GE	320	**1718431687**	TM-I 18 MC NE GE	320	**1718431687**
Note						

Assembled cables

Patch cable CabinetLine Cat.6 straight

PUR green



Technical data

Product type	System cable
Category	Cat.6 (ISO/IEC 11801)
Shielding	SF/UTP
Version connector left / Version connector right	RJ45 IP 20 / RJ45 IP 20
Connector standard	IEC 60603-7-51
PoE / PoE+	conforming to IEEE 802.3at
Cross-section	4*2*AWG 27/7 - 4*2*0.1 mm²
Sheath diameter, max.	6.4 mm
Material sheath	PUR
Sheathing colour	green (RAL 6018)
Insulation cross-section	1.02 mm
Min. bending radius, repetitive	10 *diameter
Min. bending radius, once only	5 *diameter
Ambient temperature (operational)	-40 °C...+85 °C
Abrasion resistance	very good
Halogen	in accordance with IEC 60754-2
Resistance to spread of flame	in accordance with IEC 60332-1 / UL 1685
Resistance to oils	in accordance with IEC 60811-2-1
Approvals	CULUS
Note	

Ordering data

	Type	Qty.	Order No.
0,3 m	IE-C6FS8UG0003A40A40-G	1	**8941350003**
0,5 m	IE-C6FS8UG0005A40A40-G	1	**8941350005**
1,0 m	IE-C6FS8UG0010A40A40-G	1	**8941350010**
1,5 m	IE-C6FS8UG0015A40A40-G	1	**8941350015**
2,0 m	IE-C6FS8UG0020A40A40-G	1	**8941350020**
3,0 m	IE-C6FS8UG0030A40A40-G	1	**8941350030**
5,0 m	IE-C6FS8UG0050A40A40-G	1	**8941350050**
10,0 m	IE-C6FS8UG0100A40A40-G	1	**8941350100**
15,0 m	IE-C6FS8UG0150A40A40-G	1	**8941350150**
20,0 m	IE-C6FS8UG0200A40A40-G	1	**8941350200**

Note — Other lengths available on request

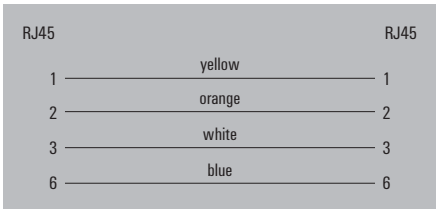
Accessories

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 MC NE GE	320	**1718411687**
Insertion label, yellow, 18 mm	TM-I 18 MC NE GE	320	**1718431687**
Transparent sleeves, 12-mm length	TM 4/12 HF/HB	500	**1719840000**
Transparent sleeves, 18-mm length	TM 4/18 HF/HB	500	**1719850000**
Wire and cable marker, ø 4,7 - 7,4 mm	VT SF 5/21 NE WS V0	160	**1689470001**
Wire and cable marker, ø 5,8 - 7,8 mm	VT SF 6/21 NE WS V0	160	**1730560001**

Note

Assembled cables
Patch cable PROFINET dragline cable (Type C)
Cat.5
IP 20

RJ45 IP 20



RJ45 IP 20

Technical data

Product type	Dragline cable	Dragline cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
Shielding	SF/UTP	SF/UTP
Version connector left / Version connector right	RJ45 IP 20 / RJ45 IP 20	RJ45 IP 20 with protective cap / RJ45 IP 20 with protective cap
Cross-section	4*AWG 22/7 - 0.36 mm²	4*AWG 22/7 - 0.36 mm²
Sheath diameter, max.	6.7 mm	6.7 mm
Material sheath	PUR	PUR
Insulation cross-section	1.5 mm	1.5 mm
Min. bending radius, repetitive / Min. bending radius, once only	7.5 *diameter / 5 *diameter	7.5 *diameter / 5 *diameter
Bending cycles	3 Mio	3 Mio
Speed	180 m/min	180 m/min
Acceleration	4 m/s²	4 m/s²
Pulling force	≤ 150 N	≤ 150 N
Ambient temperature (operational)	-40 °C...+70 °C	-40 °C...+70 °C
Installation temperature	-20 °C...+60 °C	-20 °C...+60 °C
Storage temperature	-50 °C...+70 °C	-50 °C...+70 °C
Abrasion resistance	very good	very good
Halogen	in accordance with IEC 60754-2	in accordance with IEC 60754-2
Resistance to spread of flame	in accordance with IEC 60332-1	in accordance with IEC 60332-1
Resistance to oils	in accordance with IEC 60811-2-1	in accordance with IEC 60811-2-1
Approvals	GOSTME25	GOSTME25
Note		

Ordering data

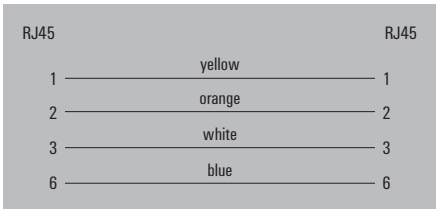
	Type	Qty.	Order No.	Type	Qty.	Order No.
0,5 m	IE-C5DD4UG0005A20A20-E	1	**1173030005**	IE-C5DD4UG0005A2DA2D-E	1	**1376510005**
1,0 m	IE-C5DD4UG0010A20A20-E	1	**1173030010**	IE-C5DD4UG0010A2DA2D-E	1	**1376510010**
2,0 m	IE-C5DD4UG0020A20A20-E	1	**1173030020**	IE-C5DD4UG0020A2DA2D-E	1	**1376510020**
3,0 m	IE-C5DD4UG0030A20A20-E	1	**1173030030**	IE-C5DD4UG0030A2DA2D-E	1	**1376510030**
5,0 m	IE-C5DD4UG0050A20A20-E	1	**1173030050**	IE-C5DD4UG0050A2DA2D-E	1	**1376510050**
10,0 m	IE-C5DD4UG0100A20A20-E	1	**1173030100**	IE-C5DD4UG0100A2DA2D-E	1	**1376510100**
15,0 m	IE-C5DD4UG0150A20A20-E	1	**1173030150**	IE-C5DD4UG0150A2DA2D-E	1	**1376510150**
20,0 m	IE-C5DD4UG0200A20A20-E	1	**1173030200**	IE-C5DD4UG0200A2DA2D-E	1	**1376510200**
Note						

Accessories

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 MC NE GE	320	**1718411687**	TM-I 12 MC NE GE	320	**1718411687**
Insertion label, yellow, 18 mm	TM-I 18 MC NE GE	320	**1718431687**	TM-I 18 MC NE GE	320	**1718431687**
Note						

Assembled cables
Patch cable PROFINET dragline cable (Type C)
Cat.5
IP 67

V14 RJ45 IP 67



Technical data

Product type	Dragline cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
Connector standard	IEC 61076-3-117 Var. 14, IEC 60603-7-51
Shielding	SF/UTP
Version connector left / Version connector right	RJ45 IP 67 PushPull V14 metal / RJ45 IP 67 PushPull V14 metal
Cross-section	4*AWG 22/7 - 0.36 mm²
Sheath diameter, max.	6.7 mm
Material sheath	PUR
Insulation cross-section	1.5 mm
Min. bending radius, repetitive / Min. bending radius, once only	7.5 *diameter / 5 *diameter
Bending cycles	3 Mio
Speed	180 m/min
Acceleration	4 m/s²
Pulling force	≤ 150 N
Ambient temperature (operational)	-40 °C...+70 °C
Installation temperature	-20 °C...+60 °C
Storage temperature	-50 °C...+70 °C
Abrasion resistance	very good
Halogen	in accordance with IEC 60754-2
Resistance to spread of flame	in accordance with IEC 60332-1
Resistance to oils	in accordance with IEC 60811-2-1
Approvals	GOSTME25

Note

Ordering data

	Type	Qty.	Order No.
1,0 m	IE-C5DD4UG0010A2EA2E-X	1	**1119730010**
2,0 m	IE-C5DD4UG0020A2EA2E-X	1	**1119730020**
3,0 m	IE-C5DD4UG0030A2EA2E-X	1	**1119730030**
5,0 m	IE-C5DD4UG0050A2EA2E-X	1	**1119730050**
10,0 m	IE-C5DD4UG0100A2EA2E-X	1	**1119730100**
15,0 m	IE-C5DD4UG0150A2EA2E-X	1	**1119730150**
20,0 m	IE-C5DD4UG0200A2EA2E-X	1	**1119730200**

Note

Accessories

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 MC NE GE	320	**1718411687**
Insertion label, yellow, 18 mm	TM-I 18 MC NE GE	320	**1718431687**

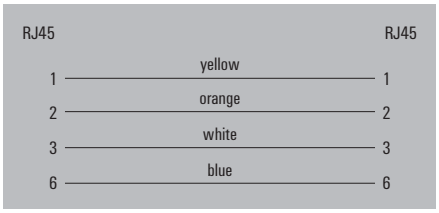
Note

Assembled cables

Patch cable PROFINET (Type C) Cat.5 moulded IP 67

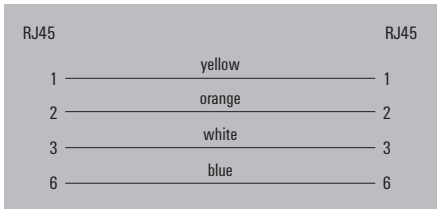
V14 RJ45 IP 67

Dragline cable



V14 RJ45 IP 67

Torsion cable



Technical data

Product type	Dragline cable	Torsion cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
Connector standard	IEC 61076-3-107	IEC 61076-3-107
Shielding	SF/UTP	S/UTP
Version connector left / Version connector right	RJ45 IP 67 PushPull moulded V14 metal / RJ45 IP 67 PushPull moulded V14 metal	RJ45 IP 67 PushPull moulded V14 metal / RJ45 IP 67 PushPull moulded V14 metal
Cross-section	4*AWG 22/7 - 0.36 mm²	4* AWG 22/19 - 0.38 mm²
Sheath diameter, max.	6.7 mm	6.7 mm
Material sheath	PUR	PUR
Insulation cross-section	1.5 mm	1.5 mm
Min. bending radius, repetitive / Min. bending radius, once only	7.5 *diameter / 5 *diameter	10 *diameter / 5 *diameter
Bending cycles / Pulling force	3 Mio / ≤ 150 N	
Torsion cycles / Torsion resistance		1 mill. / 180 °/m
Speed / Acceleration	180 m/min / 4 m/s²	m/min / m/s²
Ambient temperature (operational)	-40 °C...+70 °C	-40 °C...+80 °C
Installation temperature	-20 °C...+60 °C	-40 °C...+80 °C
Storage temperature	-50 °C...+70 °C	-40 °C...+80 °C
Abrasion resistance	very good	very good
Halogen	in accordance with IEC 60754-2	in accordance with IEC 60754-2
Resistance to spread of flame	in accordance with IEC 60332-1	in accordance with IEC 60332-1
Resistance to oils	in accordance with IEC 60811-2-1	in accordance with IEC 60811-2-1
Approvals	GOSTME25	
Note		

Ordering data

	Type	Qty.	Order No.	Type	Qty.	Order No.
1,0 m	IE-C5DD4UG0010B2EB2E-X	1	**1307610010**	IE-C5IT4UG0010B2EB2E-X	1	**1312690010**
2,0 m	IE-C5DD4UG0020B2EB2E-X	1	**1307610020**	IE-C5IT4UG0020B2EB2E-X	1	**1312690020**
3,0 m	IE-C5DD4UG0030B2EB2E-X	1	**1307610030**	IE-C5IT4UG0030B2EB2E-X	1	**1312690030**
5,0 m	IE-C5DD4UG0050B2EB2E-X	1	**1307610050**	IE-C5IT4UG0050B2EB2E-X	1	**1312690050**
10,0 m	IE-C5DD4UG0100B2EB2E-X	1	**1307610100**	IE-C5IT4UG0100B2EB2E-X	1	**1312690100**
Note						

Accessories

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 MC NE GE	320	**1718411687**	TM-I 12 MC NE GE	320	**1718411687**
Insertion label, yellow, 18 mm	TM-I 18 MC NE GE	320	**1718431687**	TM-I 18 MC NE GE	320	**1718431687**
Note						

Assembled cables

Patch cable PushPull Power

Power IP 67

Technical data

Connector standard	in accordance with PROFINET specification
Version connector left / Version connector right	PushPull Power / PushPull Power
Ambient temperature (operational)	-40 °C...+70 °C
Wire connection cross section AWG, max.	AWG 16
Sheath diameter, max.	8.1 mm
Material sheath	PVC
Sheathing colour	grey (similar to RAL 7001)
Insulation	PVC
No. of wires	5
Min. bending radius, once only	4 *diameter
Rated voltage	24 V
Current-carrying capacity at 50 °C	16 A
Approvals	

Note

Ordering data

	Type	Qty.	Order No.
1,0 m	IE-CSPS5VS0010VAPVAP-X	1	**1350120010**
3,0 m	IE-CSPS5VS0030VAPVAP-X	1	**1350120030**
5,0 m	IE-CSPS5VS0050VAPVAP-X	1	**1350120050**
10,0 m	IE-CSPS5VS0100VAPVAP-X	1	**1350120100**
15,0 m	IE-CSPS5VS0150VAPVAP-X	1	**1350120150**
20,0 m	IE-CSPS5VS0200VAPVAP-X	1	**1350120200**

Note

Other lengths available on request

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 MC NE GE	320	**1718411687**
Insertion label, yellow, 18 mm	TM-I 18 MC NE GE	320	**1718431687**

Note

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 T568-B)	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
Shielding	SF/UTP	SF/UTP
Version connector left / Version connector right	M12 IP 67 straight male / M12 IP 67 straight male	M12 IP 67 straight male / M12 IP 67 straight socket
Cross-section	4*AWG 22/7 - 0.36 mm²	4*AWG 22/7 - 0.36 mm²
Sheath diameter, max.	6.7 mm	6.7 mm
Material sheath	PUR	PUR
Sheathing colour	green (RAL 6018)	green (RAL 6018)
Insulation cross-section	1.5 mm	1.5 mm
Min. bending radius, repetitive	7.5 *diameter	7.5 *diameter
Min. bending radius, once only	5 *diameter	5 *diameter
Bending cycles	3 Mio	3 Mio
Speed	180 m/min	180 m/min
Acceleration	4 m/s²	4 m/s²
Pulling force	≤ 150 N	≤ 150 N
Ambient temperature (operational)	-40 °C...+70 °C	-40 °C...+70 °C
Installation temperature	-20 °C...+60 °C	-20 °C...+60 °C
Storage temperature	-50 °C...+70 °C	-50 °C...+70 °C
Abrasion resistance	very good	very good
Halogen	in accordance with IEC 60754-2	in accordance with IEC 60754-2
Resistance to spread of flame	in accordance with IEC 60332-1	in accordance with IEC 60332-1
Resistance to oils	in accordance with IEC 60811-2-1	in accordance with IEC 60811-2-1
Approvals	CULUS; GOSTME25	CULUS; GOSTME25
Note		

Ordering data

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

Accessories

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 MC NE GE	320	**1718411687**	TM-I 12 MC NE GE	320	**1718411687**
Insertion label, yellow, 18 mm	TM-I 18 MC NE GE	320	**1718431687**	TM-I 18 MC NE GE	320	**1718431687**
Note						

Assembled cables

dragline cable M12

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

M12 - open

Plug / -

M12 - RJ45

Plug / plug

Technical data

Product type	Dragline cable	Dragline cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
Shielding	SF/UTP	SF/UTP
Version connector left / Version connector right	M12 IP 67 straight male / Open	M12 IP 67 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 *diameter	5 *diameter
Bending cycles	3 Mio	3 Mio
Speed	180 m/min	180 m/min
Acceleration	4 m/s²	4 m/s²
Pulling force	≤ 150 N	≤ 150 N
Ambient temperature (operational)	-40 °C...+70 °C	-40 °C...+70 °C
Installation temperature	-20 °C...+60 °C	-20 °C...+60 °C
Storage temperature	-50 °C...+70 °C	-50 °C...+70 °C
Abrasion resistance	very good	very good
Halogen	in accordance with IEC 60754-2	in accordance with IEC 60754-2
Resistance to spread of flame	in accordance with IEC 60332-1	in accordance with IEC 60332-1
Resistance to oils	in accordance with IEC 60811-2-1	in accordance with IEC 60811-2-1
Approvals	CULUS; GOSTME25	GOSTME25
Note		

Ordering data

	Type	Qty.	Order No.	Type	Qty.	Order No.
1,0 m				IE-C5DD4UG0010MCSA20-E	1	**1044470010**
1,5 m	IE-C5DD4UG0015MCSXXX-X	1	**1025940015**	IE-C5DD4UG0015MCSA20-E	1	**1044470015**
3,0 m	IE-C5DD4UG0030MCSXXX-X	1	**1025940030**	IE-C5DD4UG0030MCSA20-E	1	**1044470030**
5,0 m	IE-C5DD4UG0050MCSXXX-X	1	**1025940050**	IE-C5DD4UG0050MCSA20-E	1	**1044470050**
10,0 m	IE-C5DD4UG0100MCSXXX-X	1	**1025940100**	IE-C5DD4UG0100MCSA20-E	1	**1044470100**
Note						

Accessories

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 MC NE GE	320	**1718411687**	TM-I 12 MC NE GE	320	**1718411687**
Insertion label, yellow, 18 mm	TM-I 18 MC NE GE	320	**1718431687**	TM-I 18 MC NE GE	320	**1718431687**
Note						

Assembled cables

EtherNet/IP patch cable

- In PUR

V1 RJ45 IP 67 - metal

V1 RJ45 IP 67 - plastic

Technical data

	V1 RJ45 IP 67 - metal	V1 RJ45 IP 67 - plastic
Product type	System cable	System cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
Shielding	SF/UTP	SF/UTP
Version connector left / Version connector right	RJ45 IP 67 Baymo V01 metal / RJ45 IP 67 Baymo V01 metal	RJ45 IP 67 Baymo V01 plastic / RJ45 IP 67 Baymo V01 plastic
Cross-section	4*2*AWG 26/7 - 4*2*0.128 mm²	4*2*AWG 26/7 - 4*2*0.128 mm²
Sheath diameter, max.	6.1 mm	6.1 mm
Material sheath	PUR	PUR
Sheathing colour	green (RAL 6018)	green (RAL 6018)
Insulation cross-section	1 mm	1 mm
Min. bending radius, repetitive	10 *diameter	10 *diameter
Min. bending radius, once only	5 *diameter	5 *diameter
Ambient temperature (operational)	-40 °C...+80 °C	-40 °C...+80 °C
Installation temperature	-10 °C...+60 °C	-10 °C...+60 °C
Storage temperature	-40 °C...+80 °C	-40 °C...+80 °C
Abrasion resistance	very good	very good
Halogen	in accordance with IEC 60754-2	in accordance with IEC 60754-2
Resistance to spread of flame	in accordance with IEC 60332-1	in accordance with IEC 60332-1
Resistance to oils	in accordance with IEC 60811-2-1	in accordance with IEC 60811-2-1
Approvals	CULUS; GOSTME25	CULUS; GOSTME25
Note		

Ordering data

	Type	Qty.	Order No.	Type	Qty.	Order No.
1,0 m	IE-C5ES8UG0010B41B41-E	1	**1066850000**	IE-C5ES8UG0010P41P41-E	1	**1106010000**
2,0 m	IE-C5ES8UG0020B41B41-E	1	**1066860000**	IE-C5ES8UG0020P41P41-E	1	**1106020000**
5,0 m	IE-C5ES8UG0050B41B41-E	1	**1066870000**	IE-C5ES8UG0050P41P41-E	1	**1106030000**
10,0 m	IE-C5ES8UG0100B41B41-E	1	**1066880000**	IE-C5ES8UG0100P41P41-E	1	**1106040000**
Note						

Accessories

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 MC NE GE	320	**1718411687**	TM-I 12 MC NE GE	320	**1718411687**
Insertion label, yellow, 18 mm	TM-I 18 MC NE GE	320	**1718431687**	TM-I 18 MC NE GE	320	**1718431687**
Note						

Assembled cables

M12 Railway cable

- Cat.5
- Radox
- D-coded

M12 - M12

Plug / plug

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

M12 - M12

Plug / socket

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

Technical data

Product type	System cable	System cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
Shielding	SF/UTP	SF/UTP
Version connector left / Version connector right	M12 IP 67 straight male / M12 IP 67 straight male	M12 IP 67 straight male / M12 IP 67 straight socket
Cross-section	2*2*AWG 22/7 - 2*2*0.36 mm²	2*2*AWG 22/7 - 2*2*0.36 mm²
Sheath diameter, max.	7.55 mm	7.55 mm
Material sheath	Radox GKW S	Radox GKW S
Sheathing colour	Black	Black
Insulation cross-section	1.95 mm	1.95 mm
Min. bending radius, repetitive	6 *diameter	6 *diameter
Ambient temperature (operational)	-40 °C...+90 °C	-40 °C...+90 °C
Installation temperature	-25 °C...+90 °C	-25 °C...+90 °C
Storage temperature	-40 °C...+90 °C	-40 °C...+90 °C
Abrasion resistance	very good	very good
Halogen	in accordance with IEC 60754-2	in accordance with IEC 60754-2
Resistance to oils	in accordance with EN 50306-3	in accordance with EN 50306-3
Fire safety for railway vehicles	According to DIN 5510-2 fire safety levels 1,2,3,4, According to BS 6853, According to EN50288-2-2	According to DIN 5510-2 fire safety levels 1,2,3,4, According to BS 6853, According to EN50288-2-2
Approvals	CULUS	CULUS
Note		

Ordering data

	Type	Qty.	Order No.	Type	Qty.	Order No.
1,5 m	IE-C5DB4RE0015MCSMCS-E	1	**1010850015**	IE-C5DB4RE0015MSSMCS-E	1	**1059340015**
3,0 m	IE-C5DB4RE0030MCSMCS-E	1	**1010850030**	IE-C5DB4RE0030MSSMCS-E	1	**1059340030**
5,0 m	IE-C5DB4RE0050MCSMCS-E	1	**1010850050**	IE-C5DB4RE0050MSSMCS-E	1	**1059340050**
10,0 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 MC NE GE	320	**1718411687**	TM-I 12 MC NE GE	320	**1718411687**
Insertion label, yellow, 18 mm	TM-I 18 MC NE GE	320	**1718431687**	TM-I 18 MC NE GE	320	**1718431687**
Note						

Assembled cables

M12 Railway cable

- Cat.5
- Radox
- D-coded

M12 - open

Plug / -

	M12
yellow	1
white	2
orange	3
blue	4

Technical data

Product type	System cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
Shielding	SF/UTP
Version connector left / Version connector right	M12 IP 67 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 *diameter
Ambient temperature (operational)	-40 °C...+90 °C
Installation temperature	-25 °C...+90 °C
Storage temperature	-40 °C...+90 °C
Abrasion resistance	very good
Halogen	in accordance with IEC 60754-2
Resistance to oils	in accordance with EN 50306-3
Fire safety for railway vehicles	According to DIN 5510-2 fire safety levels 1,2,3,4, According to BS 6853, According to EN50288-2-2
Approvals	CULUS

Note

Ordering data

	Type	Qty.	Order No.
1,5 m	IE-C5DB4RE0015MCSXXX-X	1	**1010840015**
3,0 m	IE-C5DB4RE0030MCSXXX-X	1	**1010840030**
5,0 m	IE-C5DB4RE0050MCSXXX-X	1	**1010840050**
10,0 m	IE-C5DB4RE0100MCSXXX-X	1	**1010840100**

Note

Accessories

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 MC NE GE	320	**1718411687**
Insertion label, yellow, 18 mm	TM-I 18 MC NE GE	320	**1718431687**

Note

Assembled cables

Railway cable RW M12

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

M12 open

Plug / -

	M12
yellow	1
white	2
orange	3
blue	4

M12 - RJ45

Plug / plug

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

Technical data

Product type	System cable	System cable
Category	Cat.5 (ISO/IEC 11801)	Cat.5 (ISO/IEC 11801)
Shielding	SF/UTP	SF/UTP
Version connector left / Version connector right	M12 IP 67 straight male / Open	M12 IP 67 straight male / RJ45 IP 20 no tools needed
Cross-section	2*2*AWG 22 / 7 - 2*2*0.36 mm²	2*2*AWG 22 / 7 - 2*2*0.36 mm²
Sheath diameter, max.	7 mm	7 mm
Material sheath	Radox GKW S	Radox GKW S
Sheathing colour	Black	Black
Insulation cross-section	1.58 mm	1.58 mm
Min. bending radius, repetitive	6 *diameter	6 *diameter
Ambient temperature (operational)	-40 °C...+90 °C	-40 °C...+90 °C
Storage temperature	-40 °C...+90 °C	-40 °C...+90 °C
Abrasion resistance	very good	very good
Halogen	in accordance with IEC 60754-2	in accordance with IEC 60754-2
Resistance to oils	in accordance with EN 50306-3	in accordance with EN 50306-3
Fire safety for railway vehicles	According to DIN 5510-2 fire safety levels 1,2,3,4, According to BS 6853, According to EN50288-2-2	According to DIN 5510-2 fire safety levels 1,2,3,4, According to BS 6853, According to EN50288-2-2
Approvals		
Note		

Ordering data

	Type	Qty.	Order No.	Type	Qty.	Order No.
4,0 m				IE-C5DB4WE0040MCSA20-E	1	**1220310040**
5,0 m	IE-C5DB4WE0050MCSXXX-E	1	**1269740050**			
10,0 m	IE-C5DB4WE0100MCSXXX-E	1	**1269740100**			
Note						

Accessories

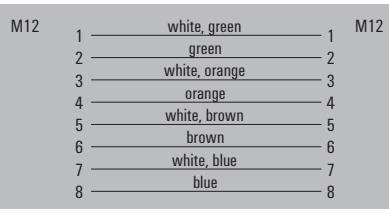
Sheathing stripper	Type	Qty.	Order No.	Type	Qty.	Order No.
For UTP and STP data cables	AM 12	1	**9030060000**	AM 12	1	**9030060000**
For coaxial and round data cables	IE-CST	1	**9204350000**	IE-CST	1	**9204350000**
Markers						
Transparent sleeves, 12-mm length	TM 4/12 HF/HB	500	**1719840000**	TM 4/12 HF/HB	500	**1719840000**
Transparent sleeves, 18-mm length	TM 4/18 HF/HB	500	**1719850000**	TM 4/18 HF/HB	500	**1719850000**
Note						

Assembled cables

M12 connection cable

- Cat.6
- PVC
- X-Type
- PROFINET type B

M12 - M12



Technical data

Product type	Connecting cable
Category	Cat.6_A / Class E_A (ISO/IEC 11801 2010)
Shielding	S/FTP
Version connector left / Version connector right	M12 X-type IP 67 straight male / M12 X-type IP 67 straight male
Cross-section	4*2*AWG 23 / 7
Sheath diameter, max.	8.8 mm
Material sheath	PVC
Sheathing colour	green (RAL 6018)
Insulation cross-section	1.58 mm
Min. bending radius, repetitive	8 *diameter
Min. bending radius, once only	4 *diameter
Pulling force	≤ 150 N
Ambient temperature (operational)	-40 °C...+80 °C
Installation temperature	-40 °C...+80 °C
Storage temperature	-40 °C...+80 °C
Halogen	
Resistance to spread of flame	in accordance with IEC 60332-1-2
Standard, assembly	UL-Style 2461
Approvals	

Note

Ordering data

	Type	Qty.	Order No.
0,5 m	IE-C6KS8VG0005XCSXCS-E	1	**1398070005**
1,5 m	IE-C6KS8VG0015XCSXCS-E	1	**1398070015**
3,0 m	IE-C6KS8VG0030XCSXCS-E	1	**1398070030**
5,0 m	IE-C6KS8VG0050XCSXCS-E	1	**1398070050**
10,0 m	IE-C6KS8VG0100XCSXCS-E	1	**1398070100**

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 MC NE GE	320	**1718411687**
Insertion label, yellow, 18 mm	TM-I 18 MC NE GE	320	**1718431687**

Note

Overview – Fibre-optic cables (FO)

Fibre-optic cables are the best option for working in harsh industrial environments, especially if you:

- Need long transmission paths (up to 120 km!)
- Need to take account of EMC issues
- Must ensure electrical isolation in the case of potential differences

Raw cables

Industrial fibre-optic dragline cable

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

- Polymer optic fibre (POF)
- 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 dragline cable

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

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

Ordering data for Fibre-optic cables (FO), sold by the metre

Type	Breakout/ Zipcord	Plug-in connector left	right	Length						
GOF dragline, standard temperature range				**Metre goods**						
IE-FM5D2UE-MW	Breakout	-	-	**8946000000**						
IE-FM6D2UE-MW	Breakout	-	-	**8956060000**						
GOF dragline, extended temperature range										
IE-FM5C2UE-MW	Breakout	-	-	**8956070000**						
IE-FM6C2UE-MW	Breakout	-	-	**8956050000**						
POF										
IE-FPOZ2EE-MW	Zipcord	-	-	**1242820000**						
IE-FPOD2UE-MW	Breakout, black	-	-	**1172280000**						
IE-FPOD2UG-MW	Breakout, green	-	-	**1398770000**						

Ordering data for Fibre-optic cables (FO) assembled

Fibre-optic dragline cable, standard temperature range				1 m	2 m	3 m	5 m	10 m	50 m	100 m
IE-FM5D2UExxxxMSDOSDOX	Breakout	SC Duplex	SC Duplex	**8876430010**		**8876430030**	**8876430050**	**8876430100**		
IE-FM6D2UExxxxMSDOSDOX	Breakout	SC Duplex	SC Duplex	**8876440010**		**8876440030**	**8876430050**	**8876440100**		
IE-FM5D2UExxxxMSTOSTOX	Breakout	ST	ST	**8876450010**		**8876450030**	**8876450050**	**8876450100**	**8876450500**	**8876451000**
IE-FM6D2UExxxxMSTOSTOX	Breakout	ST	ST	**8876460010**		**8876460030**	**8876460050**	**8876460100**		
IE-FM5D2UExxxxMLDOLDOX	Breakout	LC Duplex	LC Duplex					**8979020000**	**8979040000**	**8979030000**
IE-FM6D2UExxxxMLDOLDOX	Breakout	LC Duplex	LC Duplex				**1220930000**	**1276680000**	**8993220000**	
Fibre-optic dragline cable, extended temperature range										
IE-FM6C2UExxxxSD1SD1X	Breakout	LC Duplex	LC Duplex							**1318011000**
GOF FO patch cable										
IE-FM5Z2VOxxxxMSDOSDOX	Zipcord	SC Duplex	SC Duplex	**8813300000**	**8813310000**	**8813320000**	**8876350050**	**8876350100**		
IE-FM6Z2VOxxxxMSDOSDOX	Zipcord	SC Duplex	SC Duplex	**8813330000**	**8813340000**	**8813350000**	**8876360050**	**8876360100**		
IE-FM5Z2VOxxxxMSTOSTOX	Zipcord	ST	ST	**8813240000**	**8813250000**	**8813260000**	**8876370050**	**8876370100**		
IE-FM6Z2VOxxxxMSTOSTOX	Zipcord	ST	ST	**8813270000**	**8813280000**	**8813290000**	**8876380050**	**8876380100**		
IE-FM5Z2VOxxxxMLDOLDOX	Zipcord	LC Duplex	LC Duplex	**1276880000**	**1062570000**		**1062550000**	**1062580000**		
IE-FM6Z2VOxxxxMLDOLDOX	Zipcord	LC Duplex	LC Duplex		**1062450000**					**8992990000**
POF FO patch cable										
IE-FPOZ2EExxxxMSJOSJO-X	Zipcord	SCRJ	SCRJ	**1273430010**		**1273430030**	**1273430050**	**1273430100**		
Industrial FO adapter cables										
IE-FM5Z2VOxxxxMSTOSDOX	Zipcord	SC Duplex	ST		**8813390000**					
IE-FM6Z2VOxxxxMSTOSDOX	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:

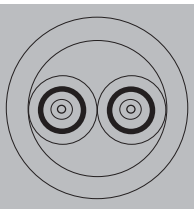
- From 0.3 m to 9.9 m, in 0.1 m steps
- From 10 m to 9999 m, in 1 m steps

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.

Raw cables

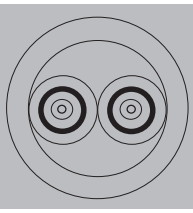
- Multimode glass optical fibre
- Customisable

Dragline cable



Dragline cable

Extended temperature range



Technical data

Product type	Dragline cable	Dragline cable
Cable layout	Break-out dragline	Break-out dragline
Sheath diameter	6 mm	7,5 mm
Material sheath	PUR	PUR
Sheathing colour	Black	Black
Ambient temperature (operational)	-40 °C...+80 °C	-40 °C...+85 °C
Installation temperature	-20 °C...+60 °C	-55 °C...+60 °C
Storage temperature	-40 °C...+80 °C	-55 °C...+85 °C
Approvals		
Note		

Ordering data

Core 62,5 µm, OM1	**Type**	**Qty.**	**Order No.**	**Type**	**Qty.**	**Order No.**
Cut to metre starting at 50,0 m	IE-FM6D2UE-MW		**8956060000**	IE-FM6C2UE-MW		**8956050000**
Core 50 µm, OM2						
Cut to metre starting at 50,0 m	IE-FM5D2UE-MW		**8946000000**	IE-FM5C2UE-MW		**8956070000**
Note	Order example, for cut cable: 150 x „article number" = 150 m on drum			Order example, for cut cable: 150 x „article number" = 150 m on drum		

Accessories

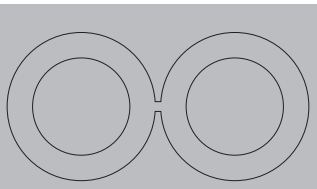
Markers	**Type**	**Qty.**	**Order No.**	**Type**	**Qty.**	**Order No.**
Insertion label, yellow, 12 mm	TM-I 12 MC NE GE	320	**1718411687**	TM-I 12 MC NE GE	320	**1718411687**
Insertion label, yellow, 18 mm	TM-I 18 MC NE GE	320	**1718431687**	TM-I 18 MC NE GE	320	**1718431687**
Transparent sleeves, 12-mm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

Note

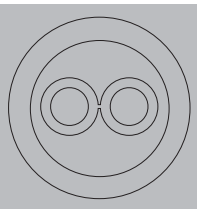
Raw cables

- Polymer optical fibre
- Customisable

Zipcord



Breakout



Technical data

Product type	Connecting cables	Dragline cable
Cable layout	ZIPCORD	Break-out dragline
Sheath diameter	2.2*4.5 mm	7,5 mm
Material sheath		PUR
Insulation	PE	
Colour	Black	Black
Ambient temperature (operational)	-55 °C...+85 °C	-40 °C...+85 °C
Fibre type	POF	POF
Bandwidth	≥ 100 MHz*km at 650 nm	> 350 MHz*km at 650 nm
Attenuation	≤ 160 dB/km at 650 nm	≤ 160 dB/km at 650 nm
Core diameter	980	980
Installation temperature	-5 °C...+50 °C	-30 °C...+60 °C
Storage temperature	-55 °C...+85 °C	-40 °C...+85 °C
Halogen	No	No
Approvals	GOSTME25	
Note		

Ordering data

POF 980/1000 µm	**Type**	**Qty.**	**Order No.**	**Type**	**Qty.**	**Order No.**
Cut to metre starting at 50,0 m, black	IE-FPOZ2EE-MW		**1242820000**	IE-FPOD2UE-MW		**1172280000**
Cut to metre starting at 50,0 m, green				IE-FPOD2UG-MW		**1398770000**
Note	Order example, for cut cable: 150 x „article number" = 150 m on drum			Order example, for cut cable: 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 MC NE GE	320	**1718411687**	TM-I 12 MC NE GE	320	**1718411687**
Insertion label, yellow, 18 mm	TM-I 18 MC NE GE	320	**1718431687**	TM-I 18 MC NE GE	320	**1718431687**
Transparent sleeves, 12-mm length	TM 4/12 HF/HB	500	**1719840000**	TM 4/12 HF/HB	500	**1719840000**
Transparent sleeves, 18-mm length	TM 4/18 HF/HB	500	**1719850000**	TM 4/18 HF/HB	500	**1719850000**
Wire and cable marker, ø 4,7 - 7,4 mm	VT SF 5/21 NE WS V0	160	**1689470001**	VT SF 5/21 NE WS V0	160	**1689470001**
Wire and cable marker, ø 5,8 - 7,8 mm	VT SF 6/21 NE WS V0	160	**1730560001**	VT SF 6/21 NE WS V0	160	**1730560001**
Tools						
Crimping tool POF	HTX-IE-POF	1	**1208870000**	HTX-IE-POF	1	**1208870000**
POF tool set	TOOL SET IE-POF	1	**1208930000**	TOOL SET IE-POF	1	**1208930000**

Note

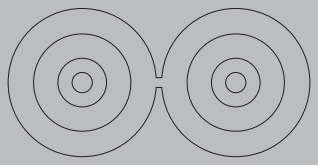
Assembled cables

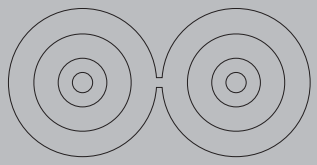
Glass optical fibre patch cable

- Multimode glass optical fibre

SC-Duplex / SC-Duplex

ST / ST





Technical data

	SC-Duplex / SC-Duplex	ST / ST
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
Approvals		
Note		

Ordering data

Core 62,5 µm, OM1	**Type**	**Qty.**	**Order No.**	**Type**	**Qty.**	**Order No.**
1,0 m	IE-FM6Z2V00001MSD0SD0X	1	**8813330000**	IE-FM6Z2V00001MST0ST0X	1	**8813270000**
2,0 m	IE-FM6Z2V00002MSD0SD0X	1	**8813340000**	IE-FM6Z2V00002MST0ST0X	1	**8813280000**
3,0 m	IE-FM6Z2V00003MSD0SD0X	1	**8813350000**	IE-FM6Z2V00003MST0ST0X	1	**8813290000**
5,0 m	IE-FM6Z2V00005MSD0SD0X	1	**8876360050**	IE-FM6Z2V00005MST0ST0X	1	**8876380050**
10,0 m	IE-FM6Z2V00010MSD0SD0X	1	**8876360100**	IE-FM6Z2V00010MST0ST0X	1	**8876380100**
Core 50 µm, OM2						
1,0 m	IE-FM5Z2V00001MSD0SD0X	1	**8813300000**	IE-FM5Z2V00001MST0ST0X	1	**8813240000**
2,0 m	IE-FM5Z2V00002MSD0SD0X	1	**8813310000**	IE-FM5Z2V00002MST0ST0X	1	**8813250000**
3,0 m	IE-FM5Z2V00003MSD0SD0X	1	**8813320000**	IE-FM5Z2V00003MST0ST0X	1	**8813260000**
5,0 m	IE-FM5Z2V00005MSD0SD0X	1	**8876350050**	IE-FM5Z2V00005MST0ST0X	1	**8876370050**
10,0 m	IE-FM5Z2V00010MSD0SD0X	1	**8876350100**	IE-FM5Z2V00010MST0ST0X	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 NE WS V0	160	**1689470001**	VT SF 5/21 NE WS V0	160	**1689470001**
Wire and cable marker, ø 5,8 - 7,8 mm	VT SF 6/21 NE WS V0	160	**1730560001**	VT SF 6/21 NE WS V0	160	**1730560001**
Note						

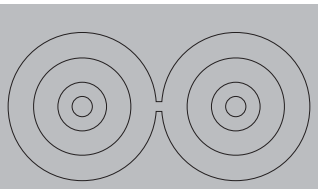
Assembled cables

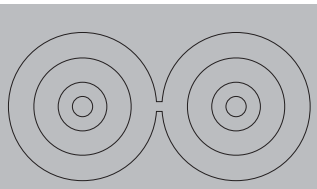
Glass optical fibre patch cable

- Multimode glass optical fibre

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
Approvals		
Note		

Ordering data

Core 62,5 µm, OM1	**Type**	**Qty.**	**Order No.**	**Type**	**Qty.**	**Order No.**
2,0 m	IE-FM6Z2V00002MST0SD0X	1	**8813400000**	IE-FM6Z2V00002MLD0LD0X	1	**1062450000**
100,0 m				IE-FM6Z2V00100MLD0LD0X	1	**8992990000**
Core 50 µm, OM2						
1,0 m				IE-FM5Z2V00001MLD0LD0X	1	**1276880000**
2,0 m	IE-FM5Z2V00002MST0SD0X	1	**8813390000**	IE-FM5Z2V00002MLD0LD0X	1	**1062570000**
5,0 m				IE-FM5Z2V00005MLD0LD0X	1	**1062550000**
10,0 m				IE-FM5Z2V00010MLD0LD0X	1	**1062580000**
Note						

Accessories

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

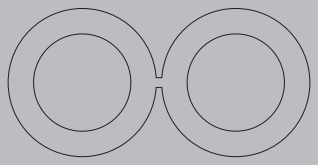
Note

Assembled cables

Glass optical fibre patch cable PROFINET

- Polymer optical fibre

SC-RJ / SC-RJ



Technical data

Product type	Connecting cable
Version connector left / Version connector right	SCRJ IP 20 / SCRJ IP 20
Cable layout	ZIPCORD
Sheath diameter	2.2*4.5 mm
Insulation	PE
Sheathing colour	Black
Fibre type	POF
Core diameter	980 µm
Ambient temperature (operational)	-20 °C...+80 °C
Attenuation	≤ 160 dB/km at 650 nm
Bandwidth	≥ 100 MHz*km at 650 nm
Halogen	No
Approvals	GOSTME25
Note	

Ordering data

POF 980/1000 µm	Type	Qty.	Order No.
1,0 m	IE-FPOZ2EE0001MSJOSJ0-X	1	**1273430010**
3,0 m	IE-FPOZ2EE0003MSJOSJ0-X	1	**1273430030**
5,0 m	IE-FPOZ2EE0005MSJOSJ0-X	1	**1273430050**
10,0 m	IE-FPOZ2EE0010MSJOSJ0-X	1	**1273430100**

Note

Accessories

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

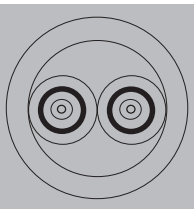
Note

Assembled cables

FO dragline cable

- Multimode glass optical fibre

LC-Duplex / LC-Duplex



Technical data

Product type	Dragline cable
Version connector left / Version connector right	LC-Duplex IP 20 / LC-Duplex IP 20
Cable layout	Break-out dragline
Sheath diameter	6 mm
Material sheath	PUR
Sheathing colour	Black
Ambient temperature (operational)	-40 °C...+80 °C
Installation temperature	-20 °C...+60 °C
Storage temperature	-40 °C...+80 °C
Approvals	

Note

Ordering data

Core 62,5 µm, OM1	Type	Qty.	Order No.
5,0 m	IE-FM6D2UE0005MLD0LD0X	1	**1220930000**
10,0 m	IE-FM6D2UE0010MLD0LD0X	1	**1276680000**
50,0 m	IE-FM6D2UE0050MLD0LD0X	1	**8993220000**
Core 50 µm, OM2			
10,0 m	IE-FM5D2UE0010MLD0LD0X	1	**8979020000**
50,0 m	IE-FM5D2UE0050MLD0LD0X	1	**8979040000**
100,0 m	IE-FM5D2UE0100MLD0LD0X	1	**8979030000**

Note

Accessories

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

Note

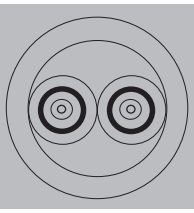
Assembled cables

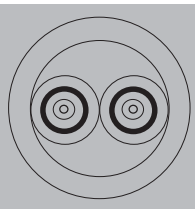
Glass optical fibre dragline cable

- Multimode glass optical fibre

SC-Duplex / SC-Duplex

ST / ST





Technical data

	SC-Duplex / SC-Duplex	ST / ST
Product type	Dragline cable	Dragline cable
Cable layout	Break-out dragline	Break-out dragline
Sheath diameter	6 mm	6 mm
Material sheath	PUR	PUR
Sheathing colour	Black	Black
Ambient temperature (operational)	-40 °C...+80 °C	-40 °C...+80 °C
Installation temperature	-20 °C...+60 °C	-20 °C...+60 °C
Storage temperature	-40 °C...+80 °C	-40 °C...+80 °C
Approvals		
Note		

Ordering data

	SC-Duplex / SC-Duplex			ST / ST		
Core 62,5 µm, OM1	**Type**	**Qty.**	**Order No.**	**Type**	**Qty.**	**Order No.**
1,0 m	IE-FM6D2UE0001MSD0SD0X	1	**8876440010**	IE-FM6D2UE0001MST0ST0X	1	**8876460010**
3,0 m	IE-FM6D2UE0003MSD0SD0X	1	**8876440030**	IE-FM6D2UE0003MST0ST0X	1	**8876460030**
5,0 m	IE-FM6D2UE0005MSD0SD0X	1	**8876440050**	IE-FM6D2UE0005MST0ST0X	1	**8876460050**
10,0 m	IE-FM6D2UE0010MSD0SD0X	1	**8876440100**			
100,0 m				IE-FM6D2UE0010MST0ST0X	1	**8876460100**
Core 50 µm, OM2						
1,0 m	IE-FM5D2UE0001MSD0SD0X	1	**8876430010**	IE-FM5D2UE0001MST0ST0X	1	**8876450010**
3,0 m	IE-FM5D2UE0003MSD0SD0X	1	**8876430030**	IE-FM5D2UE0003MST0ST0X	1	**8876450030**
5,0 m	IE-FM5D2UE0005MSD0SD0X	1	**8876430050**	IE-FM5D2UE0005MST0ST0X	1	**8876450050**
10,0 m	IE-FM5D2UE0010MSD0SD0X	1	**8876430100**	IE-FM5D2UE0010MST0ST0X	1	**8876450100**
50,0 m				IE-FM5D2UE0050MST0ST0X	1	**8876450500**
100,0 m				IE-FM5D2UE0100MST0ST0X	1	**8876451000**
Note						

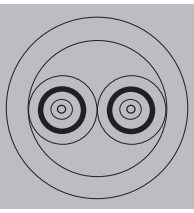
Accessories

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

Assembled cables
FO dragline cable with extended temperature range

- Multimode glass optical fibre

V1 SC-D IP 67



Technical data

Product type	Dragline cable
Cable layout	Break-out dragline
Version connector left / Version connector right	SC IP 67 bayonet V01 metal / SC IP 67 bayonet V01 metal
Sheath diameter	7,5 mm
Material sheath	PUR
Sheathing colour	Black
Fibre type	GOF, Multimode, OM1
Bandwidth	200 MHz*km at 850 nm, 500 MHz*km at 1300 nm
Attenuation	2.7 dB/km at 850 nm, ≤ 0.5 dB/km at 1300 nm
Ambient temperature (operational)	-40 °C...+85 °C
Installation temperature	-55 °C...+60 °C
Storage temperature	-55 °C...+85 °C
Approvals	

Note

Ordering data

Core 62,5 µm, OM1	Type	Qty.	Order No.
100,0 m	IE-FM6C2UE0100MSD1SD1X	1	**1318011000**
180,0 m	IE-FM6C2UE0180MSD1SD1X	1	**1318011800**
200,0 m	IE-FM6C2UE0200MSD1SD1X	1	**1318012000**
250,0 m	IE-FM6C2UE0250MSD1SD1X	1	**1318012500**
300,0 m	IE-FM6C2UE0300MSD1SD1X	1	**1318013000**
350,0 m	IE-FM6C2UE0350MSD1SD1X	1	**1318013500**
500,0 m	IE-FM6C2UE0500MSD1SD1X	1	**1318015000**

Note

Accessories

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

Note

Accessories

Overview of accessories

Like with other products from Weidmüller, choosing a Weidmüller accessory means you can get all you need from a single 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 Ø 2.5...8 mm

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

AM 12

For UTP and STP data cables

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

Max. cutting performance copper cable		IE-CST	AM 12
Cable model		coaxial & round data cables	UTP and STP data cables
Conductor cross-section	AWG		
Conductor diameter	mm	2.5 ... 8	0.5...12.5
Adjustable depth of cut	mm		adjustable
Cutting performance			
Non-shielded & shielded data cables	mm		8
Flexible copper cable	mm²		4
Tool data			
Length	mm	100	97
Weight	g	85	36
Note			

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 operationg

TT 8 RS MP 8

For 8-pole shielded RJ45 plug

- AWG 27...24

Technical data

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

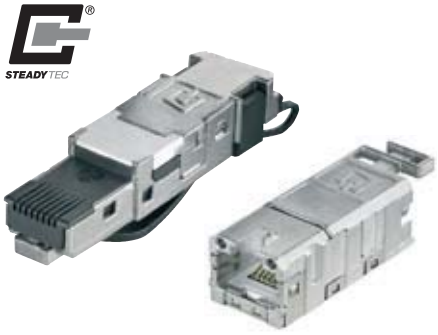
Ordering data

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 RJ45 plug/module

PWZ RJ45



Technical data

Tool data		PWZ RJ45
Weight	g	367

Note	

Ordering data

Version	Type	Qty.	Order No.
	PWZ RJ45	1	1118040000

Note	

Cable Tester

Test devices for testing Ethernet cables, including remote box

LAN USB TESTER

- Indication of connection errors:
  Connection error
  Interrupt
  Short-circuit
  Permutation
- Network cable tester for LAN and USB connections

IE-CT

- Indication of connection errors:
  Connection error
  Interrupt
  Short-circuit
  Permutation
  Wire mix-up (split pair)
  External voltage
- External voltage resistance: 80 V AC / DC

Technical data

Display		LED	7-segment display
Supply tery		9 V battery	9 V battery
Type of connection		RJ45, USB A, USB B	RJ45
Remote box dimensions		65 x 28 x 27 mm	30 x 68 x 23 mm
Remote box weight		30 g	31 g
Length / Width / Height	mm	135 / 65 / 27	140 / 70 / 36
Weight		174 g	185 g
Note			

Ordering data

Version	Type	Qty.	Order No.	Type	Qty.	Order No.
	LAN USB TESTER	1	**9205400000**	IE-CT	1	**8808420000**
Note	Battery, accessories and bag included in delivery.			Battery, accessories and bag included in delivery. Further test boxes on request		

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**
Copper cable - single-core, max.	mm²/-	16 / 6
Copper cable - stranded, max.	mm²/-	16 / 6
Copper cable - flexible, max.	mm²/-	16 / 6
Copper cable, max. diameter	mm	8
Max. cutting performance, aluminium cable		
Stranded aluminium cable, max (mm²)	mm²/-	16 / 6
Stranded aluminium cable, max. diameter	mm	8
Single-core aluminium cable, max.(mm²)	mm²	16
Data / telephone / control cable		
Data / telephone / control cable, max. 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			

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 16

Ordering data

Type	Qty.	Order No.
SVSE ESD 130	1	9205140000

Technical data

Weight	90 g

SUPER CUT

Electronic diagonal-cutting pliers

- Soft wire (copper or aluminium): 1.2 mm/AWG 16

Ordering data

Type	Qty.	Order No.
SUPER CUT	1	**9205150000**

Technical data

Weight	78 g

KOF SET ESD

Electronic ESD case set

Contents:

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

Ordering data

Type	Qty.	Order No.
KOF SET ESD	1	**9205210000**

Technical data

Weight	547 g

Crimping tools

Cutting, stripping and crimping tools
for processing POF fibres in compliance with
IEC 60793-2 A4A fibres (1000 µm/980 µm POF)

- Multifunction tool for POF fibres
- Processing the duplex POF fibres
- Stripping tool for processing POF fibres and cables
- The new set of blades for POF cables makes stripping the outer covering and the POF fibres simple
- Cable shears specially designed for aramid fibres
- Only for cutting aramid fibres (strain relief in fibre-optic cables)

Tool-Set IE-POF

Contents:

- Assortment case PSC 80
- Kevlar scissors for aramid fibres
- Multifunction tool HTX-IE-POF
- Stripping tool multi-stripax® IE-POF

multi-stripax® POF

- Excellent stripping quality for industrial applications
- Specially shaped blades enable stripping of special types of insulation and conductor configurations
- Stripping length with end stop, adjustable from 2.3...30 mm
- Very versatile thanks to interchangeable stripping units
- Stripping results reproduced accurately over and over again
- No damage to the conductor
- A long-lasting, reliable tool thanks to its sturdy design
- Integrated cutting function up to 6 mm²

Technical data

Length / Width / Height	mm	241 / 338 / 79	250 / 85 / 40
Weight	g	1800	250
Note			

Ordering data

Version	Type	Qty.	Order No.	Type	Qty.	Order No.
	TOOL SET IE-POF	1	**1208930000**	MULTI-STRIPAX IE-POF	1	**1208880000**
Note						

Accessories

	Type	Qty.	Order No.	Type	Qty.	Order No.
	HTX-IE-POF	1	**1208870000**	Replacement cutting blade	1	**9203100000**
	MULTI-STRIPAX IE-POF	1	**1208880000**	Replacement stop set	1	**9203070000**
	SCISSORS KEVLAR	1	**1208910000**	AIE MULTI-STRIPAX POF	1	**1212770000**
Note						

Crimping tools

- Ratchet 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 processing 1 mm thick polymer optical fibres, especially for the PROFINET and EtherNet/IP-SC-RJ connectors
- For stripping Duplex polymer optical fibres
- The plug is crimped and the polymer optical fibres are separated, all in a single step
- Cut surfaces do not need to be polished after cutting
- Locator for precise positioning of the SC-RJ plugs
- Ergonomic handles
- High repeat accuracy

Three steps to produce IP 67 connectors:
1) Strip the Duplex polymer optical fibres
2) Crimp and separate
3) Crimp the strain relief

SCISSOR Kevlar

- Cable shears specially designed for aramid fibres
- Only for cutting aramid fibres (strain relief in fibre-optic cables)
- Do not use for other materials
- Special blade geometry
- Blades ground
- With teeth on the cutting edge
- Riveted joint
- Hand-friendly, impact-resistant plastic handles

Technical data

Material data	HTX-IE-POF	SCISSORS KEVLAR
Length	220	147
Weight	450	100
Note		

Ordering data

Version	Type	Qty.	Order No.	Type	Qty.	Order No.
	HTX-IE-POF	1	1208870000	SCISSORS KEVLAR	1	1208910000
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.

IE-CTC-SCST-GOF

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

Note

Accessories

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

Note

Crimping tools for other contacts

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

IE-CT-SC-GOF / IE-CT-LC-GOF

Crimping tools for IP 20 + 67 connectors

- For fibre-optic SC/ST, IP 20 and IP 67 connectors
- For fibre-optic LC and IP 67 connectors

Technical data

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

Ordering data

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

Accessories

	Type	Qty.	Order No.
	IE-CTI-LC-GOF	1	9205290000
	IE-CTI-SC-GOF	1	9205280000
Note			

Crimping tool for other contacts

- Ratchet for precise crimping
- Release option in the event of incorrect operation
- With end stop for exact positioning of the contacts
- Contact and insulation are crimped in one step

HTF HYB

0.08...1.0 mm²

For Weidmüller hybrid sockets and pins
- ~AWG 28...AWG 17

Technical data

Description of contact		HTF HYB
Type of contact		Hybrid sockets / plugs
Crimping range	mm²	0.08...1
Crimping range 1 (with multiple crimping positions)	mm²	0.08....0.2
Crimping range 2 (with multiple crimping positions)	mm²	0.2...0.5
Crimping range 3 (with multiple crimping positions)	mm²	0.75...1
Tool data		
Length	mm	200
Weight	g	438
Note		

Ordering data

Version	Type	Qty.	Order No.
	HTF HYB	1	1119580000
Note			

Special stripping tools

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

LWL-stripax®

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

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

Technical data

Max. stripping performance		M-D-STRIPAX LWL
Cable type		POF conductor with an inner conductor of 1 mm Ø
Conductor diameter	–	...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			

Incision tool for twisted-pair cable

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

PDT

The punch-down tool has the following features:

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

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

IE-FISP-V4

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

Technical data

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

Ordering data

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

Accessories

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

Hydraulic sheet holes

Incl. accessories:
- 1 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

IE-KO-HAT

- Overpressure valve protects against overloading
- Cylinder head angled 90°
- Angled head can be rotated through 360°
- Ergonomic handle springs back automatically
- The piece of waste no longer becomes jammed thanks to 3-fold cleaving
- Hydraulic punch manufactured from high-strength aluminium (approx. 40 % less weight)

Technical data

		IE-KO-HAT
Maximum steel-sheet punching performance		
Round holes from 1 to Ø 85 mm	-	2.0 mm F = 370 N/mm²
Round holes from 2 to Ø 64 mm		3.0 mm F = 370 N/mm²
Square holes up to	-	68 x 68 mm; 2.0 mm F = 370 N/mm²
Rectangular holes up to	-	36 x 112 mm; 2.0 mm F = 370 N/mm²
Maximum stainless steel sheet punching performance		
Round holes from 3 to Ø 64 mm		2.5 mm F = 600 N/mm²
Tool data		
Length x width x height	mm	290 / 120 / 70
Weight	kg	1.9
Punching force	kN	75
Max. operating pressure	bar	650
Note		

Ordering data

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

Accessories

	Type	Qty.	Order No.
	KOHS 19	1	**9205010000**
	KOHS 9.5+19	1	**9205000000**
	KOPD 10.0	1	**9205020000**
Note			

Custom stamp for Industrial Ethernet connections

Type	Description	Dimensions	Qty.	Order No.
IE-KOK-V1	Custom shape for Bajonet 01 metal	Diameter 27 mm x 1 side 25.9 mm	1	**1966780000**
IE-KOK-V4	Custom shape for Push Pull V04 plastic	Diameter 23.2 mm x 2 sides 20.2 mm	1	**1966790000**
IE-KOK-V5	Custom shape for RockStar® V05 metal	22.0 x 22.0 mm	1	**9204790000**
IE-KOK-V14	Custom shape for V14 flange	22.0 x 18.5 mm	1	**1135240000**

HDC KT ...

Cable grommets, small, grey

HDC KT ...

Cable grommets, small, black

Technical data

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

Ordering data

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

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

Note

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	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
Note	

Ordering data

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

Note

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
Colour	white
Temperature range	–5 °C ... 70 °C
Ingress protection class	IP 54, when the correct cable grommet is selected
UL 94 flammability rating	V0
Note	

Ordering data

Type	Thread	For grommet small	For grommet large	Qty.	Order No.
HDC KVT 32	M 32 x 1.5	1	–	10	**1826670000**
Locknut for D-Sub 9					
KGM-SUB-D9	M 32 x 1.5			10	**1828250000**
Note	Please refer to catalogue 5 for the complete range.				

Dust-protection plugs for protecting empty ports

- RJ45
- ***STEADY****TEC*® variants

IE-DPC

Dust Cap RJ45

- Dust Cap RJ45 with finger grip

IE-Line with ***STEADY****TEC*®

Dust Cap RJ45

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

Ordering data

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

Type	Qty.	Order No.
V1 Bayonet plug	10	**1965690000**
V1 Bayonet flange	10	**1965700000**
V4 PushPull plug	10	**1963890000**
V4 PushPull flange	10	**1963900000**
V5 HDC plug	10	**1968920000**
V5 HDC flange	10	**1968930000**
V14 PushPull plug	10	**1058280000**
V14 PushPull flange	10	**1058310000**
PushPull Power flange	10	**1068930000**

Note

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 electrical connectivity components. 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 is 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 marker
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/AC 115 V
Location	Office conditions
Ambient temperature	20 °C 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 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

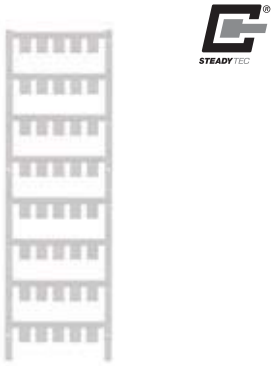
Type	Qty.	Order No.
VT SF 5/21 NEUTRAL WS V0	160	**1689470001**
VT SF 6/21 NEUTRAL WS V0	160	**1730560001**

Note: Can be printed with PrintJet PRO.

Accessories

Type	Qty.	Order No.

Markers for IE-Line STEADYTEC®



MultiCard ESG 9/11 K for IE-Line STEADYTEC®

- 9 x 11 mm
- White

Ordering data

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

Note: Can be printed with PrintJet PRO.

Accessories

Type	Qty.	Order No.

TM-I for pre-assembled M12 cables

MultiCard markers for labelling transparent M12 TM-I sleeves

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

Ordering data

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

Accessories

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

Note: Can be printed with PrintJet PRO.

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**

Accessories

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

Note: Self-adhesive, for labelling or printing

Technical appendix

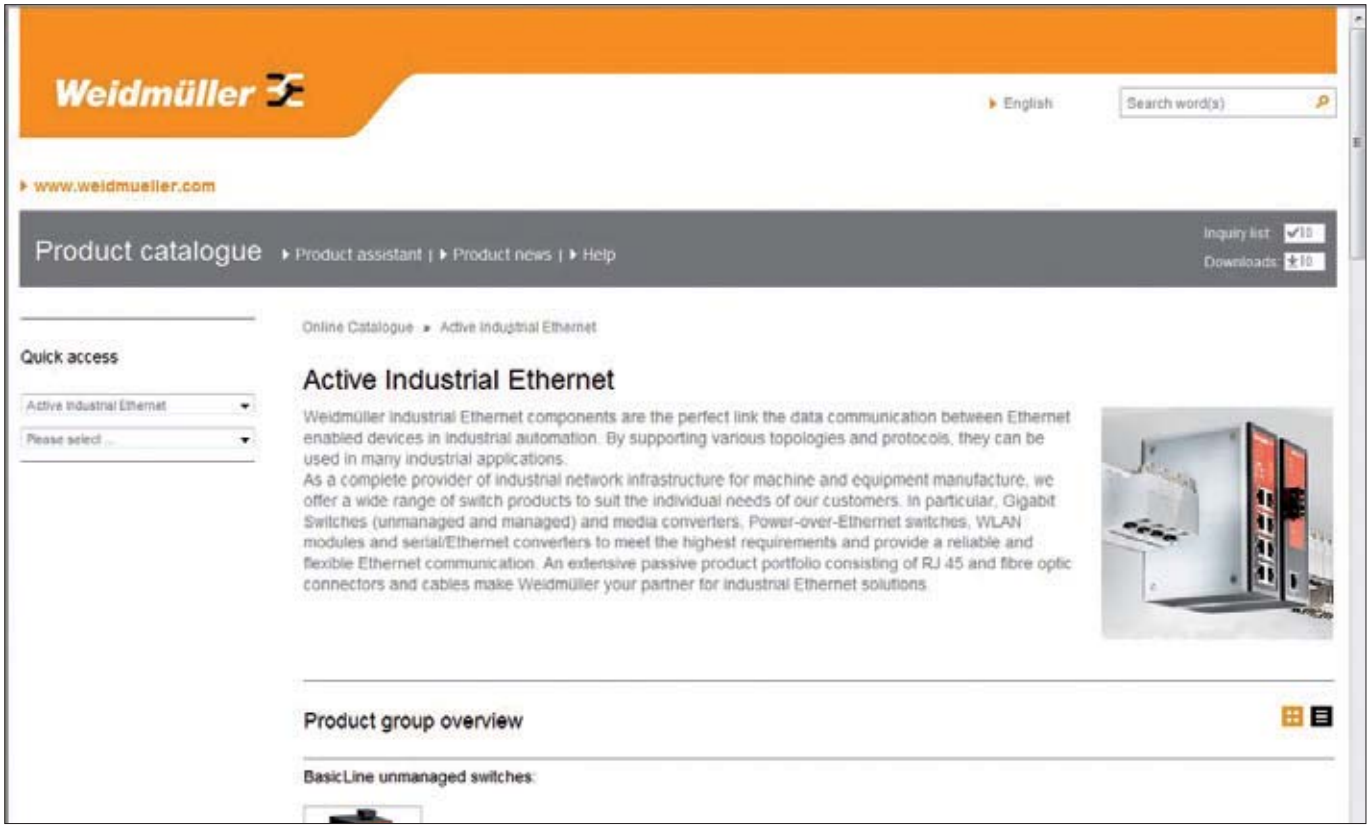
Online product catalogue

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

then our online catalogue at:
http://catalog.weidmueller.com
is open 24 hours a day, 365 days a year. As well as product features and part numbers, it contains extensive information on all our product groups.
For further information, simply visit our Weidmuller 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 you are finished!

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

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: IP 20, an extra-strong IP 67 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. IP 67 versions are also available.

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

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

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.

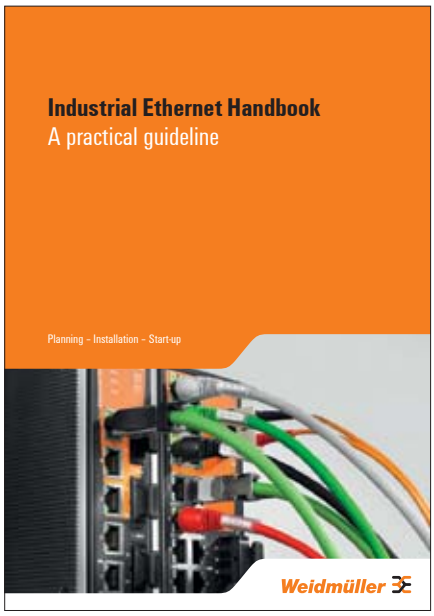
Best service

Practical Guidelines for Industrial Ethernet

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

- You'll find helpful tips and recommendations for selecting the proper components and for documenting your network
- 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.

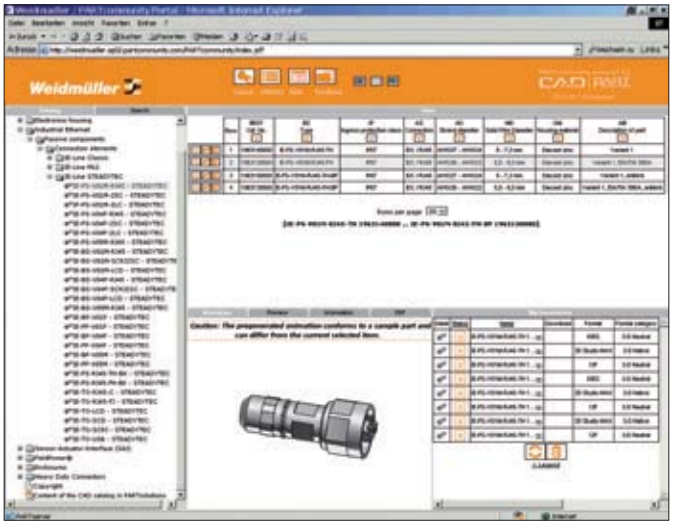


3-D data

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

Each component part is located in our Online Catalogue with a direct link to the Partserver (www.partserver.com). You simply input your product specification, CAD format and e-mail address and you will then receive a rapid e-mail response from us with your 3-D model attached.

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

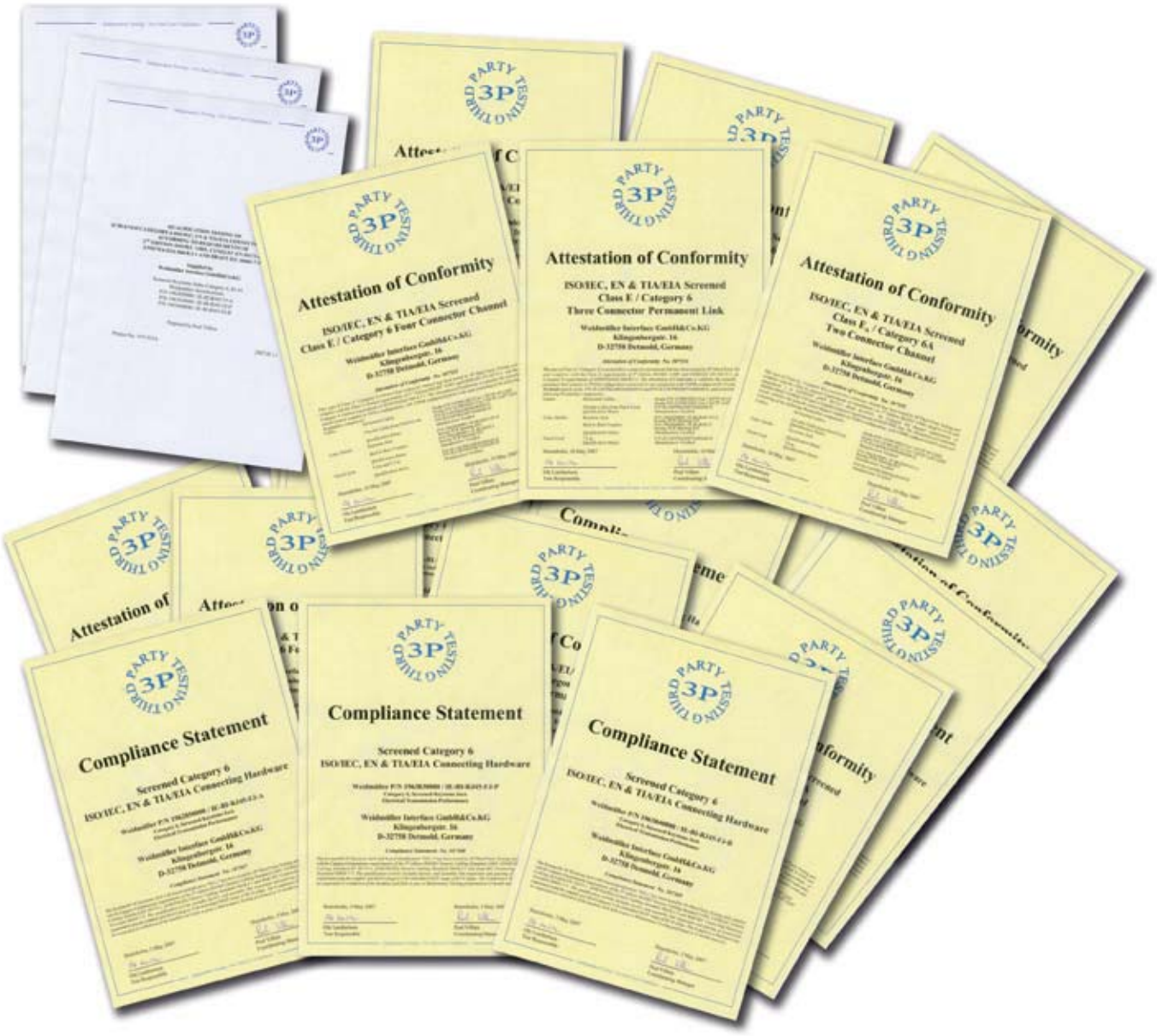


... and how else can we help you?

Certificates

Do you want to prove to your customer that you have installed only the highest quality 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. These 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.
These certificates of are solid proof of the superior quality and performance expectations from our products. 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. The focus of this working group is on 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 to 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.

Cable material / properties

- **LSZH**
  LSZH is the abbreviation for Low Smoke Zero Halogen. This material is used in the wire and cable industry for cable sheathing. It consists of a thermoplastic or duroplastic compound. In the event of fire, the LSZH cable only releases very small quantities of toxic and corrosive gases and no halogens. It is mainly used in offices and the IP 20 part of the electrical cabinet. The cable is light and environmentally friendly.
- **FRNC**
  FRNC is the abbreviation for Flame Retardant Non Corrosive. FRNC cables are specified, fire-retardant, special cables with low waste gas levels according to IEC standards 60332, 60754 and VDE0472/804. The FRNC cable contains no halogen and so only produces very little waste gas and a low fire load. One disadvantage of the cables is that they are not resistant to oil or chemicals and absorb a lot of water.
- **PUR (polyurethane)**
  PUR is one of the so-called thermoplastic elastomers and possesses properties similar to rubber. PUR contains no halogen, is self-extinguishing and has very good resistance to UV light, chemicals and oil. It is suited to outdoor use and for heavily polluted, industrial environments. Compared with PVC, PUR offers major advantages in terms of its high tensile strength, wear resistance and increased resistance to chemical substances. Examples include mineral oils, alcohol-free benzine and many solvents.
- **PVC (polyvinyl chloride)**
  PVC is an amorphous, thermoplastic synthetic material. It burns with a yellow, sooty flame and goes out quickly without further external sources of flame. Given its high chlorine content, unlike other technical synthetic materials such as polyethylene or polypropylene, PVC is flame-resistant. PVC is not halogen-free and releases toxic and corrosive gases in the event of fire. PVC is an easily processed material, is cheap and has good insulating properties.

Category 5
Signifies compliance to features specified in EIA/TIA–T568-5. 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-T568A-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 is 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, 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 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 Ethernet with 100 Mbps over a 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 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 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 can be helpful but does not guarantee that the link is fully functional.

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 IP 67 protection.

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 and maintain the structure and 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 by using fibre-optic routes. In addition, 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 ie. the channel 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 dial-up 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 used 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 and 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 a skew angle coupler are used instead of an 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, it means the transmission section between two neighbouring data stations. In the TCP specifications, a segment describes a single information 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 cable 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-PS-SCRJ1-MM	1206730000	C.10
IE-PS-SCRJ1-POF	1206720000	C.10
IE-PS-SCRJ1-SM	1206740000	C.10
IE-PS-ST-MM	1968150000	C.18
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IE-PS-V01M-2LC-MM-BP	1963230000	C.6
IE-PS-V01M-2LC-SM	1963240000	C.6
IE-PS-V01M-2LC-SM-BP	1963250000	C.6
IE-PS-V01M-2SC-MM	1963260000	C.6
IE-PS-V01M-2SC-MM-BP	1963270000	C.6
IE-PS-V01M-2SC-POF	1963280000	C.6
IE-PS-V01M-2SC-POF-BP	1963290000	C.6
IE-PS-V01M-2SC-SM	1963300000	C.6
IE-PS-V01M-2SC-SM-BP	1963310000	C.6
IE-PS-V01M-RJ45-FH	1963120000	C.6
IE-PS-V01M-RJ45-FH-BP	1963130000	C.6
IE-PS-V01M-RJ45-TH	1963140000	C.6
IE-PS-V01M-RJ45-TH-BP	1963150000	C.6
IE-PS-V01P-RJ45-FH	1012490000	C.6
IE-PS-V01P-RJ45-FH-BP	1012570000	C.6
IE-PS-V01P-RJ45-TH	1012470000	C.6
IE-PS-V01P-RJ45-TH-BP	1012560000	C.6
IE-PS-V04P-2LC-MM	1963320000	C.6
IE-PS-V04P-2LC-MM-BP	1963330000	C.6
IE-PS-V04P-2LC-SM	1963340000	C.6
IE-PS-V04P-2LC-SM-BP	1963350000	C.6
IE-PS-V04P-2SC-MM	1963360000	C.6
IE-PS-V04P-2SC-MM-BP	1963370000	C.6
IE-PS-V04P-2SC-POF	1963380000	C.6
IE-PS-V04P-2SC-POF-BP	1963390000	C.6
IE-PS-V04P-2SC-SM	1963400000	C.6
IE-PS-V04P-2SC-SM-BP	1963410000	C.6
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IE-PS-V04P-RJ45-FH-BP	1963170000	C.6
IE-PS-V04P-RJ45-TH	1963180000	C.6
IE-PS-V04P-RJ45-TH-BP	1963190000	C.6
IE-PS-V05M-A-RJ45-FH	1077300000	C.56
IE-PS-V05M-RJ45-FH	1963200000	C.6
IE-PS-V05M-RJ45-FH-B	1271250000	C.6
IE-PS-V05M-RJ45-TH	1963110000	C.6
IE-PS-V14M-2SC-POF	1191550000	C.6
IE-PS-V14M-HYB-10P	1072910000	C.11
IE-PS-V14M-RJ45-FH-BP	1012090000	C.6
IE-PS-V14M-RJ45-FH-P	1012170000	C.6
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IE-SFP-1FEMLC-T	1241450000	B.46
IE-SFP-1FESLC-T	1241470000	B.46
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IE-SFP-1GLHXLC	1241520000	B.46
IE-SFP-1GLHXLC-T	1286730000	B.46
IE-SFP-1GLSXLC	1241500000	B.46
IE-SFP-1GLSXLC-T	1286710000	B.46
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IE-SFP-1GSXLC	1241490000	B.46
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IE-SW-BL05-5GT	1241250000	B.13
IE-SW-BL05-5TX	1240840000	B.11
IE-SW-BL05T-4TX-1SC	1286550000	B.11
IE-SW-BL05T-4TX-1SCS	1286530000	B.11
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IE-SW-PL06M-2TX-4POE	1241390000	B.26
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IE-SW-PL10MT-1GT-2GS-7TX	1286940000	B.21
IE-SW-PL10MT-3GT-7TX	1286930000	B.21
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IE-SW-PL18M-2GC14TX2SC	1241330000	B.22
IE-SW-PL18M-2GC14TX2SCS	1241350000	B.22
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IE-SW-PL18MT-2GC14TX2SC	1286990000	B.22
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IE-SW-VL08MT-6TX-2ST	1240990000	B.19
IE-SW-VL08MT-8TX	1240940000	B.19
IE-SW-VL08T-6GT-2GS	1286870000	B.13
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IE-SW-VL09T-6TX-3SC	1240980000	B.12
IE-SW-VL16-14TX-2SC	1241030000	B.12
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1010840030	IE-C5DB4RE0030MCSXXX-X	D.32
1010840050	IE-C5DB4RE0050MCSXXX-X	D.32
1010840100	IE-C5DB4RE0100MCSXXX-X	D.32
1010850015	IE-C5DB4RE0015MCSMCS-E	D.31
1010850030	IE-C5DB4RE0030MCSMCS-E	D.31
1010850050	IE-C5DB4RE0050MCSMCS-E	D.31
1010850100	IE-C5DB4RE0100MCSMCS-E	D.31
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1025940050	IE-C5DD4UG0050MCSXXX-X	D.5
1025940100	IE-C5DD4UG0100MCSXXX-X	D.5
1025950005	IE-C5DD4UG0005MCSMCS-E	D.5
1025950015	IE-C5DD4UG0015MCSMCS-E	D.5
1025950030	IE-C5DD4UG0030MCSMCS-E	D.5
1025950050	IE-C5DD4UG0050MCSMCS-E	D.5
1025950100	IE-C5DD4UG0100MCSMCS-E	D.5
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1044470050	IE-C5DD4UG0050MCSA20-E	D.5
1044470100	IE-C5DD4UG0100MCSA20-E	D.5
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1058150000	IE-BSS-V14M-LCD-SM-C	C.7
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1059330100	IE-C5DD4UG0100MSSMCS-E	D.5
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1059340030	IE-C5DB4RE0030MSSMCS-E	D.31
1059340050	IE-C5DB4RE0050MSSMCS-E	D.31
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1062610000	IE-BSC-V14M-LCD-MM-C	C.7
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1066860000	IE-C5ES8UG0020B41B41-E	D.5
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1067380000	IE-PI-SCRJ-MM	C.6
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1068820000	IE-CD-V14MRJ/VAPM24V-C-MA	C.11
1068830000	IE-CD-V14MRJ/VAPM24V-FJ	C.11
1068840000	IE-CD-V14MHYB-10P-C-MA	C.11
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1068870000	IE-CD-V14MRJ-C-MA	C.11
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1069010000	IE-BI-HYB-10P	C.71
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1072910000	IE-PS-V14M-HYB-10P	C.11
1077300000	IE-PS-V05M-A-RJ45-FH	C.56

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1085260000	IE-BSS-V14M-RJ45-FJ-P	C.7

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1103010000	IE-C5IT4UG-MW	C.11
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1106020000	IE-C5ES8UG0020P41P41-E	D.5
1106030000	IE-C5ES8UG0050P41P41-E	D.5
1106040000	IE-C5ES8UG0100P41P41-E	D.5

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1119730020	IE-C5DD4UG0020A2EA2E-X	D.5
1119730030	IE-C5DD4UG0030A2EA2E-X	D.5
1119730050	IE-C5DD4UG0050A2EA2E-X	D.5
1119730100	IE-C5DD4UG0100A2EA2E-X	D.5
1119730150	IE-C5DD4UG0150A2EA2E-X	D.25
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1132010000	IE-PI-RJ45-FH-A	C.6
1132020000	IE-PI-RJ45-FH-B	C.6
1132030000	IE-PI-RJ45-FH-P	C.6
1132040000	IE-PS-RJ45-FH-BK-A	C.14
1132050000	IE-PS-RJ45-FH-BK-B	C.14
1132060000	IE-PS-RJ45-FH-BK-P	C.10
1135150000	IE-PIC-HYB-S-0,2-300	C.32
1135160000	IE-BIC-HYB-P-0,2-300	C.33
1135240000	IE-K0K-V14	E.17
1139330000	SAIBW-4/8S-M12 4P D-ZF	C.62

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1165900002	IE-C6FP8LB0002M40M40-B	D.17
1165900005	IE-C6FP8LB0005M40M40-B	D.5
1165900010	IE-C6FP8LB0010M40M40-B	D.5
1165900015	IE-C6FP8LB0015M40M40-B	D.17
1165900020	IE-C6FP8LB0020M40M40-B	D.5
1165900030	IE-C6FP8LB0030M40M40-B	D.5
1165900050	IE-C6FP8LB0050M40M40-B	D.5
1165900075	IE-C6FP8LB0075M40M40-B	D.17
1165900100	IE-C6FP8LB0100M40M40-B	D.5
1165900150	IE-C6FP8LB0150M40M40-B	D.17
1165900200	IE-C6FP8LB0200M40M40-B	D.17
1165900250	IE-C6FP8LB0250M40M40-B	D.17
1165940002	IE-C6FP8LD0002M40M40-D	D.17
1165940005	IE-C6FP8LD0005M40M40-D	D.5
1165940010	IE-C6FP8LD0010M40M40-D	D.5
1165940015	IE-C6FP8LD0015M40M40-D	D.17
1165940020	IE-C6FP8LD0020M40M40-D	D.5
1165940030	IE-C6FP8LD0030M40M40-D	D.5
1165940050	IE-C6FP8LD0050M40M40-D	D.5
1165940075	IE-C6FP8LD0075M40M40-D	D.17
1165940100	IE-C6FP8LD0100M40M40-D	D.5
1165940150	IE-C6FP8LD0150M40M40-D	D.17
1165940200	IE-C6FP8LD0200M40M40-D	D.17
1165940250	IE-C6FP8LD0250M40M40-D	D.17
1166000005	IE-C5ES8UG0005M40M40-G	D.5
1166000010	IE-C5ES8UG0010M40M40-G	D.5
1166000015	IE-C5ES8UG0015M40M40-G	D.22
1166000020	IE-C5ES8UG0020M40M40-G	D.5
1166000030	IE-C5ES8UG0030M40M40-G	D.5
1166000050	IE-C5ES8UG0050M40M40-G	D.5
1166000100	IE-C5ES8UG0100M40M40-G	D.5
1166000150	IE-C5ES8UG0150M40M40-G	D.22
1166000200	IE-C5ES8UG0200M40M40-G	D.22
1166020005	IE-C5ES8VG0005M40M40-G	D.5
1166020010	IE-C5ES8VG0010M40M40-G	D.5
1166020015	IE-C5ES8VG0015M40M40-G	D.22
1166020020	IE-C5ES8VG0020M40M40-G	D.5
1166020030	IE-C5ES8VG0030M40M40-G	D.5
1166020050	IE-C5ES8VG0050M40M40-G	D.5
1166020100	IE-C5ES8VG0100M40M40-G	D.5
1166020150	IE-C5ES8VG0150M40M40-G	D.22
1166020200	IE-C5ES8VG0200M40M40-G	D.22
1166030005	IE-C6FP8LR0005M40M40-R	D.5
1166030010	IE-C6FP8LR0010M40M40-R	D.5
1166030015	IE-C6FP8LR0015M40M40-R	D.19
1166030020	IE-C6FP8LR0020M40M40-R	D.5
1166030030	IE-C6FP8LR0030M40M40-R	D.5
1166030050	IE-C6FP8LR0050M40M40-R	D.5
1166030100	IE-C6FP8LR0100M40M40-R	D.5
1166030150	IE-C6FP8LR0150M40M40-R	D.19
1166030200	IE-C6FP8LR0200M40M40-R	D.19
1166030250	IE-C6FP8LR0250M40M40-R	D.19

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1172250000	IE-C5DHAG-MW	D.5
1172280000	IE-FPOD2UE-MW	C.11
1173030005	IE-C5DD4UG0005A20A20-E	D.5
1173030010	IE-C5DD4UG0010A20A20-E	D.5
1173030020	IE-C5DD4UG0020A20A20-E	D.5
1173030030	IE-C5DD4UG0030A20A20-E	D.5
1173030050	IE-C5DD4UG0050A20A20-E	D.5
1173030100	IE-C5DD4UG0100A20A20-E	D.5
1173030150	IE-C5DD4UG0150A20A20-E	D.24
1173030200	IE-C5DD4UG0200A20A20-E	D.24

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1191550000	IE-PS-V14M-2SC-POF	C.6

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1201270005	IE-C6FP8LM0005M40M40-M	D.5
1201270010	IE-C6FP8LM0010M40M40-M	D.5
1201270015	IE-C6FP8LM0015M40M40-M	D.19
1201270020	IE-C6FP8LM0020M40M40-M	D.5
1201270030	IE-C6FP8LM0030M40M40-M	D.5
1201270050	IE-C6FP8LM0050M40M40-M	D.5
1201270100	IE-C6FP8LM0100M40M40-M	D.5
1201270150	IE-C6FP8LM0150M40M40-M	D.19
1201270200	IE-C6FP8LM0200M40M40-M	D.19
1206720000	IE-PS-SCRJ1-POF	C.10
1206730000	IE-PS-SCRJ1-MM	C.10
1206740000	IE-PS-SCRJ1-SM	C.10
1208870000	HTX-IE-POF	E.10
1208880000	MULTI-STRIPAX IE-POF	E.10
1208910000	SCISSORS KEVLAR	E.10
1208930000	TOOL SET IE-POF	E.10

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1212770000	AIE MULTI-STRIPAX POF	E.10

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1220310040	IE-C5DB4WE0040MCSA20-E	D.33
1220930000	IE-FM6D2UE0005MLD0LD0X	D.37
1221010000	IE-BS-V01M-SCRJ-MM	C.14
1221020000	IE-BS-V01M-SCRJ-SM	C.14
1221030000	IE-BHD-V01M-SCA	C.41
1222550000	IE-FCM-USB-AB	C.29

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1233160005	IE-C6FP8LD0005M40W40-D	D.5
1233160010	IE-C6FP8LD0010M40W40-D	D.5
1233160012	IE-C6FP8LD0012M40W40-D	D.20
1233160015	IE-C6FP8LD0015M40W40-D	D.20
1233160020	IE-C6FP8LD0020M40W40-D	D.5
1233160030	IE-C6FP8LD0030M40W40-D	D.5
1233160050	IE-C6FP8LD0050M40W40-D	D.5
1233160100	IE-C6FP8LD0100M40W40-D	D.5

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1240840000	IE-SW-BL05-5TX	B.11
1240850000	IE-SW-BL05T-5TX	B.11
1240870000	IE-SW-BL05-4TX-1SCS	B.11
1240880000	IE-SW-BL05-4TX-1ST	B.11
1240890000	IE-SW-BL05-4TX-1SC	B.11
1240900000	IE-SW-BL08-8TX	B.11
1240910000	IE-SW-BL08-6TX-2SC	B.11
1240920000	IE-SW-BL08T-6TX-2SC	B.11
1240930000	IE-SW-BL08-6TX-2ST	B.11
1240940000	IE-SW-VL08MT-8TX	B.19
1240950000	IE-SW-BL08-7TX-1SCS	B.11
1240970000	IE-SW-VL08MT-5TX-3SC	B.19
1240980000	IE-SW-VL09T-6TX-3SC	B.12
1240990000	IE-SW-VL08MT-6TX-2ST	B.19
1241000000	IE-SW-VL16-16TX	B.12
1241020000	IE-SW-VL08MT-6TX-2SCS	B.19
1241030000	IE-SW-VL16-14TX-2SC	B.12
1241040000	IE-SW-PL08M-8TX	B.20
1241050000	IE-SW-VL16-14TX-2ST	B.12
1241070000	IE-SW-PL08M-6TX-2SC	B.20
1241080000	IE-SW-PL08M-6TX-2ST	B.20
1241090000	IE-SW-PL08M-6TX-2SCS	B.20
1241100000	IE-SW-PL16M-16TX	B.20
1241120000	IE-SW-PL16M-14TX-2SC	B.20
1241130000	IE-SW-PL16M-14TX-2ST	B.20
1241250000	IE-SW-BL05-5GT	B.13
1241270000	IE-SW-VL08-8GT	B.13
1241280000	IE-SW-VL08-6GT-2GS	B.13
1241290000	IE-SW-PL10M-3GT-7TX	B.21
1241300000	IE-SW-PL10M-1GT-2GS-7TX	B.21
1241320000	IE-SW-PL18M-2GC-16TX	B.22
1241330000	IE-SW-PL18M-2GC14TX2SC	B.22
1241340000	IE-SW-PL18M-2GC14TX2ST	B.22
1241350000	IE-SW-PL18M-2GC14TX2SCS	B.22
1241370000	IE-SW-PL09M-5GC-4GT	B.23
1241380000	IE-SW-BL06-2TX-4POE	B.25
1241390000	IE-SW-PL06M-2TX-4POE	B.26
1241400000	IE-MC-VL-1TX-1SC	B.33
1241410000	IE-MC-VL-1TX-1ST	B.33
1241420000	IE-MC-VL-1TX-1SCS	B.33
1241430000	EBR-MODULE RS232	B.19
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1241450000	IE-SFP-1FEMLC-T	B.46
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1241480000	IE-SFP-1FELLC-T	B.46
1241490000	IE-SFP-1GSXLC	B.46
1241500000	IE-SFP-1GLSXLC	B.46
1241510000	IE-SFP-1GLXLC	B.46
1241520000	IE-SFP-1GLHXLC	B.46
1241530000	IE-SFP-1G10ALC	B.46
1241540000	IE-SFP-1G10BLC	B.46
1241550000	IE-SFP-1G20ALC	B.46
1241570000	IE-SFP-1G20BLC	B.46
1242080000	IE-CS-2TX-1RS232/485	B.35
1242090000	IE-CS-2TX-2RS232/485	B.35
1242100000	IE-WL-AP-BR-CL-ABG-EU	B.41
1242110000	IE-WL-AP-BR-CL-ABG-US	B.41
1242820000	IE-FPOZ2EE-MW	C.11
1248280005	IE-C6FP8LD0005M40V40-D	D.5
1248280010	IE-C6FP8LD0010M40V40-D	D.5
1248280012	IE-C6FP8LD0012M40V40-D	D.20
1248280015	IE-C6FP8LD0015M40V40-D	D.20
1248280020	IE-C6FP8LD0020M40V40-D	D.5
1248280030	IE-C6FP8LD0030M40V40-D	D.5
1248280050	IE-C6FP8LD0050M40V40-D	D.5
1248280100	IE-C6FP8LD0100M40V40-D	D.5

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1251580005	IE-C6FP8LY0005M40M40-Y	D.5
1251580010	IE-C6FP8LY0010M40M40-Y	D.5
1251580015	IE-C6FP8LY0015M40M40-Y	D.19
1251580020	IE-C6FP8LY0020M40M40-Y	D.5
1251580030	IE-C6FP8LY0030M40M40-Y	D.5
1251580050	IE-C6FP8LY0050M40M40-Y	D.5
1251580100	IE-C6FP8LY0100M40M40-Y	D.5
1251580150	IE-C6FP8LY0150M40M40-Y	D.19
1251580200	IE-C6FP8LY0200M40M40-Y	D.19
1251580250	IE-C6FP8LY0250M40M40-Y	D.19
1251590005	IE-C6FP8LG0005M40M40-G	D.5
1251590010	IE-C6FP8LG0010M40M40-G	D.5
1251590015	IE-C6FP8LG0015M40M40-G	D.18
1251590020	IE-C6FP8LG0020M40M40-G	D.5
1251590030	IE-C6FP8LG0030M40M40-G	D.5
1251590050	IE-C6FP8LG0050M40M40-G	D.5
1251590100	IE-C6FP8LG0100M40M40-G	D.5

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1251590200	IE-C6FP8LG0200M40M40-G	D.18
1251590250	IE-C6FP8LG0250M40M40-G	D.18
1251610005	IE-C6FP8LE0005M40M40-E	D.5
1251610010	IE-C6FP8LE0010M40M40-E	D.5
1251610015	IE-C6FP8LE0015M40M40-E	D.18
1251610020	IE-C6FP8LE0020M40M40-E	D.5
1251610030	IE-C6FP8LE0030M40M40-E	D.5
1251610050	IE-C6FP8LE0050M40M40-E	D.5
1251610100	IE-C6FP8LE0100M40M40-E	D.5
1251610150	IE-C6FP8LE0150M40M40-E	D.18
1251610200	IE-C6FP8LE0200M40M40-E	D.18
1251610250	IE-C6FP8LE0250M40M40-E	D.18
1253240000	IE-CDR-V14MSCPOF/VAPM-C	C.11

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1269740050	IE-C5DB4WE0050MCSXXX-E	D.33
1269740100	IE-C5DB4WE0100MCSXXX-E	D.33

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1271240000	IE-PS-V04P-RJ45-FH-B	C.6
1271250000	IE-PS-V05M-RJ45-FH-B	C.6
1273090000	IE-C7FS8LD-305M	D.5
1273430010	IE-FPOZ2EE0001MSJOSJO-X	C.10
1273430030	IE-FPOZ2EE0003MSJOSJO-X	C.10
1273430050	IE-FPOZ2EE0005MSJOSJO-X	C.10
1273430100	IE-FPOZ2EE0010MSJOSJO-X	C.10
1276680000	IE-FM6D2UE0010MLD0LD0X	D.37
1276880000	IE-FM5Z2V00001MLD0LD0X	D.37

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1285840000	IE-CST-2TX-2RS232/485	B.35
1286480000	IE-WLT-AP-BR-CL-ABG-EU	B.41
1286490000	IE-WLT-AP-BR-CL-ABG-US	B.41
1286530000	IE-SW-BL05T-4TX-1SCS	B.11
1286540000	IE-SW-BL05T-4TX-1ST	B.11
1286550000	IE-SW-BL05T-4TX-1SC	B.11
1286560000	IE-SW-BL08T-8TX	B.11
1286570000	IE-SW-BL08T-6TX-2ST	B.11
1286580000	IE-SW-BL08T-7TX-1SCS	B.11
1286590000	IE-SW-VL16T-16TX	B.12
1286610000	IE-SW-VL16T-14TX-2SC	B.12
1286620000	IE-SW-VL16T-14TX-2ST	B.12
1286700000	IE-SFP-1GSXLC-T	B.46
1286710000	IE-SFP-1GLSXLC-T	B.46
1286720000	IE-SFP-1GLXLC-T	B.46
1286730000	IE-SFP-1GLHXLC-T	B.46
1286740000	IE-SFP-1G10ALC-T	B.46
1286750000	IE-SFP-1G10BLC-T	B.46
1286760000	IE-SFP-1G20ALC-T	B.46
1286770000	IE-SFP-1G20BLC-T	B.46
1286780000	IE-SW-PL08MT-8TX	B.20
1286790000	IE-SW-PL08MT-6TX-2SC	B.20
1286800000	IE-SW-PL08MT-6TX-2ST	B.20
1286810000	IE-SW-PL08MT-6TX-2SCS	B.20
1286820000	IE-SW-PL16MT-16TX	B.20
1286830000	IE-SW-PL16MT-14TX-2SC	B.20
1286840000	IE-SW-PL16MT-14TX-2ST	B.20
1286850000	IE-SW-BL05T-5GT	B.13
1286860000	IE-SW-VL08T-8GT	B.13
1286870000	IE-SW-VL08T-6GT-2GS	B.13
1286880000	IE-MC-VLT-1TX-1SC	B.33
1286890000	IE-MC-VLT-1TX-1ST	B.33
1286900000	IE-MC-VLT-1TX-1SCS	B.33
1286910000	IE-SW-PL06MT-2TX-4POE	B.26
1286920000	IE-SW-BL06T-2TX-4POE	B.25
1286930000	IE-SW-PL10MT-3GT-7TX	B.21
1286940000	IE-SW-PL10MT-1GT-2GS-7TX	B.21
1286970000	IE-SW-PL18MT-2GC-16TX	B.22
1286990000	IE-SW-PL18MT-2GC14TX2SC	B.22
1287000000	IE-SW-PL18MT-2GC14TX2ST	B.22
1287010000	IE-SW-PL18MT-2GC14TX2SCS	B.22
1287020000	IE-SW-PL09MT-5GC-4GT	B.23
1287910000	IE-C7FS8LR-305M	D.5
1296710000	IE-BHS-V14M-RJA-45	C.34

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1297010000	IE-CD-VAPM24V-Y-MA	C.11

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1302000000	IE-AD-BHS-V14M-RJA	C.34
1307610010	IE-C5DD4UG0010B2EB2E-X	D.5
1307610020	IE-C5DD4UG0020B2EB2E-X	D.5
1307610030	IE-C5DD4UG0030B2EB2E-X	D.5
1307610050	IE-C5DD4UG0050B2EB2E-X	D.5
1307610100	IE-C5DD4UG0100B2EB2E-X	D.5

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1312160003	IE-C6FP8LD0003X40X40-Y	D.21
1312160004	IE-C6FP8LD0004X40X40-Y	D.21
1312160005	IE-C6FP8LD0005X40X40-Y	D.21
1312160010	IE-C6FP8LD0010X40X40-Y	D.21

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1312160030	IE-C6FP8LD0030X40X40-Y	D.21
1312160050	IE-C6FP8LD0050X40X40-Y	D.21
1312160100	IE-C6FP8LD0100X40X40-Y	D.21
1312160150	IE-C6FP8LD0150X40X40-Y	D.21
1312160200	IE-C6FP8LD0200X40X40-Y	D.21
1312690010	IE-C5IT4UG0010B2EB2E-X	D.5
1312690020	IE-C5IT4UG0020B2EB2E-X	D.5
1312690030	IE-C5IT4UG0030B2EB2E-X	D.5
1312690050	IE-C5IT4UG0050B2EB2E-X	D.5
1312690100	IE-C5IT4UG0100B2EB2E-X	D.5
1318011000	IE-FM6C2UE0100MSD1SD1X	D.37
1318011800	IE-FM6C2UE0180MSD1SD1X	D.46
1318012000	IE-FM6C2UE0200MSD1SD1X	D.46
1318012500	IE-FM6C2UE0250MSD1SD1X	D.46
1318013000	IE-FM6C2UE0300MSD1SD1X	D.46
1318013500	IE-FM6C2UE0350MSD1SD1X	D.46
1318015000	IE-FM6C2UE0500MSD1SD1X	D.46
1318150000	IE-CD-V14MSCRJ-MM-C-MA	C.11

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1323940000	IE-PS-VAPM-400V	C.11
1323950000	IE-BSS-VAPM-400V	C.10
1324010000	IE-PCB-M12X-S-180	C.66
1324020000	IE-PS-M12X-P-FH	C.66
1324440000	IE-CDM-V14MRJSCP/VAPM-C	C.11
1326540000	IE-C7FS8LB-305M	D.5

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1333160000	IE-C7FS8LM-305M	D.5
1339610000	IE-CFK-05	B.11

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1344670000	IE-C7FS8LY-305M	D.5
1344680000	IE-C7FS8LG-305M	D.5
1344690000	IE-C7FS8LE-305M	D.5
1344760000	IE-MCT-1RS232/485-1SC	B.37
1344770000	IE-SW-VL08MT-6TX-2SC	B.19
1345020000	IE-BI-BNC-C	C.20
1345240000	IE-SW-VL08MT-5TX-1SC-2SCS	B.19
1345250000	IE-SR-2GT-UMTS/3G	B.31
1345270000	IE-SR-2GT-LAN	B.31

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1350120010	IE-CSPS5VS0010VAPVAP-X	D.5
1350120020	IE-CSPS5VS0020VAPVAP-X	D.5
1350120030	IE-CSPS5VS0030VAPVAP-X	D.5
1350120050	IE-CSPS5VS0050VAPVAP-X	D.5
1350120100	IE-CSPS5VS0100VAPVAP-X	D.5
1350120150	IE-CSPS5VS0150VAPVAP-X	D.27
1350120200	IE-CSPS5VS0200VAPVAP-X	D.27

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1362950000	IE-MCT-1RS232/485-1ST	B.37
1367090000	IE-ANT-O-BG-360-6-NF	B.42
1367100000	IE-CC-NM-RPSMAM-4M	B.44
1367110000	IE-CC-NM-RPSMAM-2M	B.44
1367120000	IE-ANT-O-AH-360-5-NF	B.42
1367130000	IE-ANT-O-ABG-360-7-NF	B.43
1367140000	IE-ANT-P-ABG-75-9-NF	B.43

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1376510005	IE-C5DD4UG0005A2DA2D-E	D.5
1376510010	IE-C5DD4UG0010A2DA2D-E	D.5
1376510020	IE-C5DD4UG0020A2DA2D-E	D.5
1376510030	IE-C5DD4UG0030A2DA2D-E	D.5
1376510050	IE-C5DD4UG0050A2DA2D-E	D.5
1376510100	IE-C5DD4UG0100A2DA2D-E	D.5
1376510150	IE-C5DD4UG0150A2DA2D-E	D.24
1376510200	IE-C5DD4UG0200A2DA2D-E	D.24

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1393080000	IE-PCB2-M12X-S-180	C.66
1393470000	IE-M12-PCBCE-PANEL-A	C.65
1398070005	IE-C6KS8VG0005XCSXCS-E	D.34
1398070015	IE-C6KS8VG0015XCSXCS-E	D.34
1398070030	IE-C6KS8VG0030XCSXCS-E	D.34
1398070050	IE-C6KS8VG0050XCSXCS-E	D.34
1398070100	IE-C6KS8VG0100XCSXCS-E	D.34
1398770000	IE-FPOD2UG-MW	D.37

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1412070000	IE-SW-BL08-7TX-1SC	B.11
1412080000	IE-SW-BL08T-7TX-1SC	B.11
1412090000	IE-SW-BL08-7TX-1ST	B.11
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