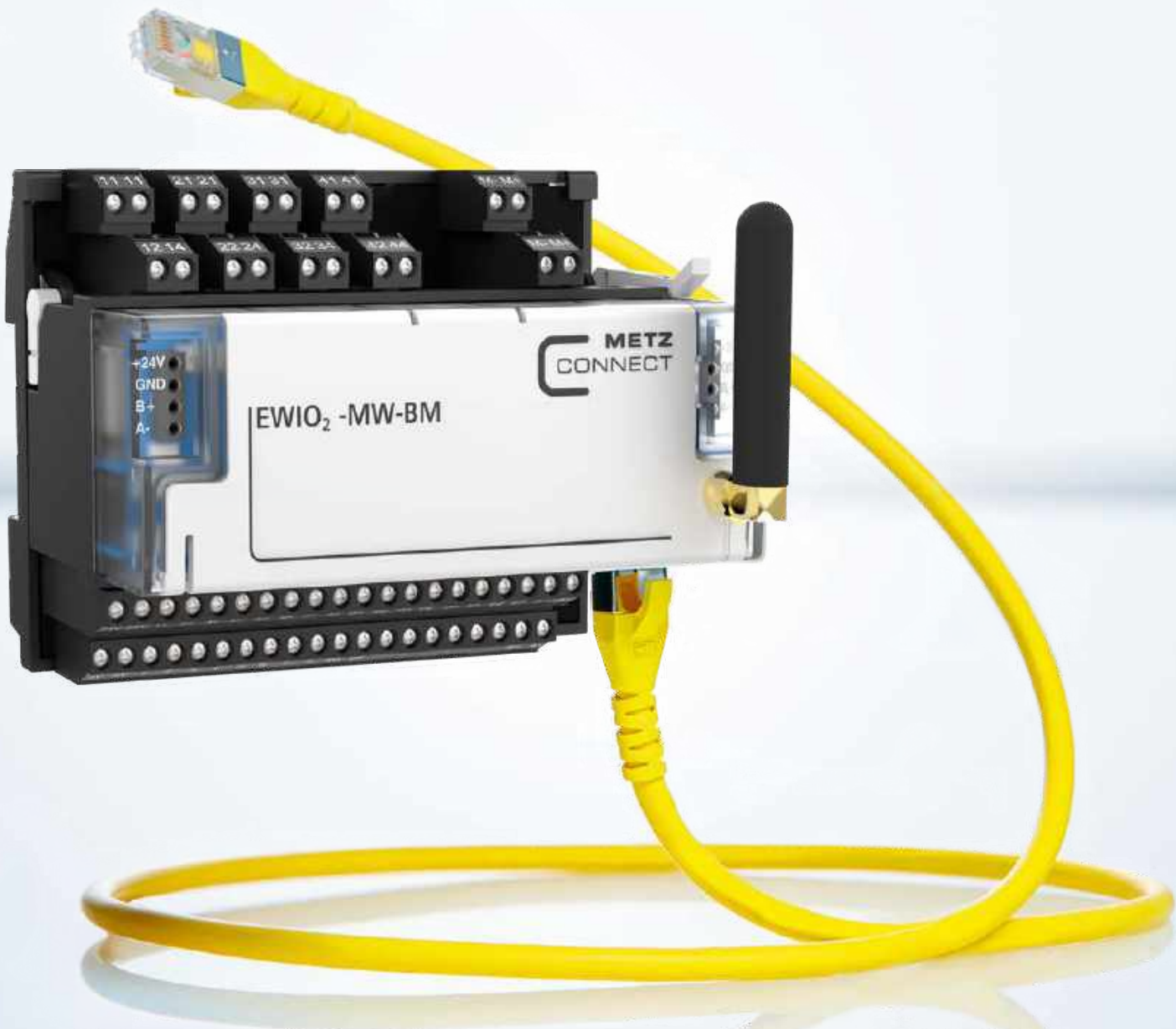


Intelligent components for systems and switch cabinets



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C | Logline

Intelligent components for systems and switch cabinets

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Christian and Jochen Metz in the local Blumberg

We are continuing where history left off and will still rely on optimal connections in the future!

Dear business partners,
dear customers,

The family-owned company METZ CONNECT has stood for precision, reliability and ingenuity for more than four decades. Virtues that we put into practice every day at all of our worldwide production and distribution sites.

As pioneers in the communication between people and equipment, it goes without saying that we also pass on our experience and knowledge across generations. And grow steadily in the process!

The METZ CONNECT range is divided into three core areas and offers a wide range of solutions for the most demanding needs:

- P|Cabling** Copper and glass fiber components as well as automated infrastructure management for structured network cabling
- U|Contact** PCB connection technology for the connection of devices and controls in building and industrial automation
- C|Logline** Intelligent system and switch cabinet components for building and process automation.

You will encounter products from METZ CONNECT several times a day, often without seeing them: whether PCB components or connection terminals in control elements, copper and fiber optic components for network cabling or intelligent I/O components in the control cabinet for building automation. Many areas of everyday life, including complex industrial supply and production chains, require the intelligent networking of the involved devices and components. For all these application situations, METZ CONNECT offers full service, from the printed circuit board to the Internet.

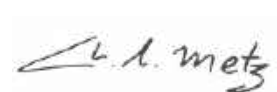
As a partner of numerous international companies, we offer expertise resulting from 40 years of experience in standardised and, above all, customer-specific system solutions for a variety of applications in connection technology. We see ourselves as a problem solver and do not settle for the second-best solution. The search for perfection may seem expensive, but it is worth it.

Join us in mutual projects concerning equipment and plant construction as well as the structured cabling of buildings and industrial sites. We are looking forward to working with you!

Best regards



Jochen Metz
Managing Partner



Christian Metz
Managing Partner

and the entire team from METZ CONNECT.

Innovation and consistency – from the printed circuit board to the end device.

Our high-quality, user-friendly and internationally standardised components and systems are divided into three clear ranges:



P | Cabling

Copper and Fiber Optics solutions for networks

Highly specialised, internationally standardised and high-performance network solutions in copper and fiber optic technology are impressive due to their comfortable installation, maximum quality and highest system capability across all relevant performance classes. They are used in structured building and industrial cabling as well as in data centres.



Connectors



Wall outlets,
distributors



patch cables,
lines

The increasing demand for data transmission volumes requires the ever greater performance and consistency of the data networks. IT technologies can be found in many applications in buildings, data centres and industrial plants.



U | Contact

Connection systems for printed circuit boards

Innovative products, solutions and systems for the connection technology of printed circuit boards and devices. Products that are compatible with market standards as well as customised product solutions, including for industrial control and building automation, reflect our core competence in this area.



Terminal blocks,
pin headers



Connectors



Board-to-board



C | Logline

Intelligent components for systems and switch cabinets

Intelligent system components for highly communicative and decentralised control in the areas of building and process control, relay technology and telecommunications



Bus modules



Interface modules



Timer, process- and
monitoring relays

Uniform automation – central engineering



Building automation, Process engineering

C | Logline

high performance components for integrated control tasks



Technical networks and safety solutions in buildings and industrial plants are becoming increasingly more intelligent. They offer the possibility of integrating internal and external processes so they can be controlled and monitored efficiently. METZ CONNECT has the perfect solutions for this.

With the C|Logline product group, METZ CONNECT provides consistent, system-capable and intelligent network components for sustainable building automation, maximum protection, optimum process control and efficient energy controlling. Advantages: High performance components shorten assembly time, reduce energy consumption, create transparency or make it possible to resolve several tasks with just one device, for example.

Energy Controlling



Simple energy consumption data acquisition

The market for energy management is currently growing rapidly. As a result of the trend towards digitisation and government support programmes, such as special equalisation schemes and peak balancing, more and more small and medium-sized enterprises (SMEs) in Germany are becoming involved in energy management. The solution approaches range from a simple visualization of the energy consumption to automation, and all the way up to a certified energy management system. The consistent

energy data collection is a prerequisite, in order to introduce an effective energy management in the company. The collection of all relevant energy data plays an important role for the improvement of energy consumption. The collection and analysis of the energy data can be submitted for the so-called peak balancing in accordance with § 55 Energy Tax Act and § 10 Electricity Tax Act. This allows companies to benefit from tax advantages and also save electricity tax.

Energy Controlling

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3	M-Bus Components Converter	15
4	M-Bus Components M-Bus distributor	18
5	M-Bus Components Software	19
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Only three steps are necessary to take advantage of tax savings:

- Step 1:** Energy data acquisition - acquisition of energy flows and energy sources
- Step 2:** Analysis of the energy data and determination of important characteristic values
- Step 3:** Documentation of the energy consumed in the plants, machinery and equipment

The application for peak balancing must be submitted to an environmental verifier or an accredited certification body as proof of the introduction of an energy management system in accordance with DIN ISO 50001.

With the new EWIO₂-M data logger and a large number of expansion modules, METZ CONNECT offers the optimum solution for a simple energy consumption data acquisition, and makes it easier for companies to introduce energy management.

Matching accessory for EWIO₂-M / EWIO₂-M-BM

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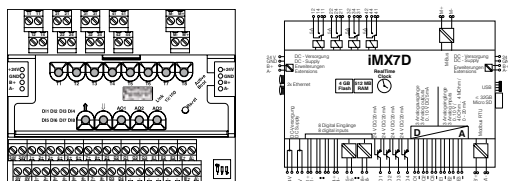


EWIO₂-M
(M-Bus)

The EWIO₂-M is a powerful data logger for the energy consumption monitoring and energy monitoring in buildings, on machines, plants and systems. Two Ethernet ports with a Daisy Chain function are available for the chain further Data logger and connection to the LAN network. The system is parameterised, configured and commissioned through a platform-independent web browser. The M-Bus and Modbus RTU interfaces enable to read different meters: e.g. electricity, water, gas and heat. Optionally, the measured values can either be sent from the data base (push) or read out (pull) via mail (SSL) or FTP (SFTP). Simple functions and control tasks in building and industrial automation can be realized via the webinterface with the integrated digital and analog I/Os. An integrated μ SD memory card expands the range of functions of the EWIO₂-M for save settings, data and applications.

Operating voltage	24 V DC +/- 10 %
Power consumption (max.)	550 mA
Operating temperature	-5 °C to +55 °C
Network	2 x RJ45 LAN 10/100BaseT (Daisy Chain)
Protocol	TCP/IP
Controller	NXP i.MX7D Dual Core ARM-A7, 1 GHz RAM 512 MB / Flash max. 32 GB / ext. 2 GB μ SD
Operating system	Linux embedded, Kernel 4.14, 32 Bit
Interfaces	Extension bus, max. 6 MR-I/O bus modules Modbus RTU, max. 32 participants M-Bus (DIN EN 13757-T1,2,3), max. 80 M-Bus charges
I/Os	8 x digital inputs 3 x analog universal inputs 8 x digital outputs 3 x analog outputs

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
110930	black		

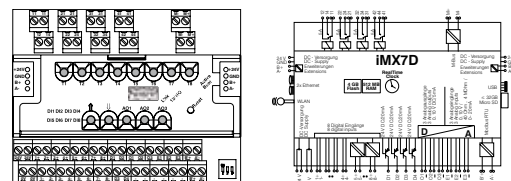


EWIO₂-M-BM
(M-Bus/BACnet/Modbus)

Das EWIO₂-M-BM is a powerful data logger for the energy consumption monitoring and energy monitoring in buildings, on machines, plants and systems. Two Ethernet ports with a Daisy Chain function are available for the chain further Data logger and connection to a LAN network. The EWIO₂-M-BM can be integrated into a Modbus TCP or BACnet/IP network to perform control tasks. The system is parameterised, configured and commissioned through a platform-independent web browser. The M-Bus and Modbus RTU interfaces enable to read different meters: e.g. electricity, water, gas and heat. Optionally, the measured values can either be sent from the data base (push) or read out (pull) via mail (SSL) or FTP (SFTP), from a BACnet or Modbus controller. The integrated digital and analog I/Os allow to realize different tasks in the building automation or industrial automation via a BACnet/Modbus control or the web interface. An integrated μ SD memory card expands the range of functions of the EWIO₂-M-BM for save settings, data and applications.

Operating voltage	24 V DC +/- 10 %
Power consumption (max.)	550 mA
Operating temperature	-5 °C to +55 °C
Network	2 x RJ45 LAN 10/100BaseT (Daisy Chain)
Protocol	TCP/IP, BACnet/IP, Modbus TCP
Controller	NXP i.MX7D Dual Core ARM-A7, 1 GHz RAM 512 MB / Flash max. 32 GB / ext. 2 GB μ SD
Operating system	Linux embedded, Kernel 4.14, 32 Bit
Interfaces	Extension bus, max. 6 MR-I/O bus modules Modbus RTU, max. 32 participants M-Bus (DIN EN 13757-T1,2,3), max. 80 M-Bus charges
I/Os	8 x digital inputs 3 x analog universal inputs 8 x digital outputs 3 x analog outputs

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
110935	black		

Matching accessory for EWIO₂-MW / EWIO₂-MW-BM

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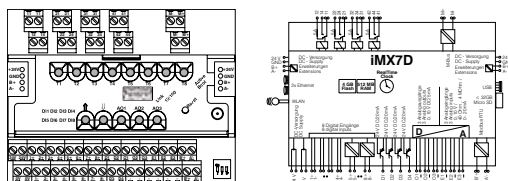


EWIO₂-MW
(M-Bus/WLAN)

The EWIO₂-MW is a powerful data logger for the energy consumption monitoring and energy monitoring in buildings, on machines, plants and systems. Two Ethernet ports with a Daisy Chain function for the chain further Data logger and a WLAN interface are available for the connection to the LAN or WLAN network. In addition, the WLAN interface can be used as an access point for the configuration with a mobile device (e.g. smartphone, tablet, notebook). The system is parameterised, configured and commissioned through a platform-independent web browser. The M-Bus and Modbus RTU interfaces enable to read different meters: e.g. electricity, water, gas and heat. Optionally, the measured values can either be sent from the data base (push) or read out (pull) via mail (SSL) or FTP (SFTP). The integrated digital and analog I/Os allow to realize different tasks in the building automation or industrial automation via the web interface. An integrated μ SD memory card expands the range of functions of the EWIO₂-MW for save settings, data and applications.

Operating voltage	24 V DC +/- 10 %
Power consumption (max.)	550 mA
Operating temperature	-5 °C to +55 °C
Network	2 x RJ45 LAN 10/100BaseT (Daisy Chain) WLAN, b/g/n, 2,4 GHz
Protocol	TCP/IP
Controller	NXP i.MX7D Dual Core ARM-A7, 1 GHz RAM 512 MB / Flash max. 32 GB / ext. 2 GB μ SD
Operating system	Linux embedded, Kernel 4.14, 32 Bit
Interfaces	Extension bus, max. 6 MR-I/O bus modules Modbus RTU, max. 32 participants M-Bus (DIN EN 13757-T1,2,3), max. 80 M-Bus charges
I/Os	8 x digital inputs 3 x analog universal inputs 8 x digital outputs 3 x analog outputs

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
110931	black		

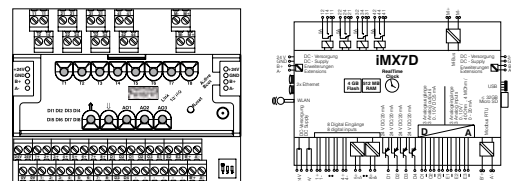


EWIO₂-MW-BM
(M-Bus/WLAN/BACnet/Modbus)

The EWIO₂-MW-BM is a powerful data logger for the energy consumption monitoring and energy monitoring in buildings, on machines, plants and systems. Two Ethernet ports with a Daisy Chain function for the further Data logger and a WLAN interface are available for the connection to the LAN or WLAN network. In addition, the WLAN interface can be used as an access point for the configuration with a mobile device (e.g. smartphone, tablet, notebook). The EWIO₂-MW-BM can be integrated into a Modbus TCP or BACnet/IP network to perform control tasks. The system is parameterised, configured and commissioned through a platform-independent web browser. The M-Bus and Modbus RTU interfaces enable to read different meters: e.g. electricity, water, gas and heat. Optionally, the measured values can either be sent from the data base (push) or read out (pull) via mail (SSL) or FTP (SFTP), from a BACnet or Modbus controller. The integrated digital and analog I/Os allow to realize different tasks in the building automation or industrial automation via a BACnet/Modbus control or the web interface. An integrated μ SD memory card expands the range of functions of the EWIO₂-MW-BM for save settings, data and applications.

Operating voltage	24 V DC +/- 10 %
Power consumption (max.)	550 mA
Operating temperature	-5 °C to +55 °C
Network	2 x RJ45 LAN 10/100BaseT (Daisy Chain) WLAN, b/g/n, 2,4 GHz
Protocol	TCP/IP, BACnet/IP, Modbus TCP
Controller	NXP i.MX7D Dual Core ARM-A7, 1 GHz RAM 512 MB / Flash max. 32 GB / ext. 2 GB μ SD
Operating system	Linux embedded, Kernel 4.14, 32 Bit
Interfaces	Extension bus, max. 6 MR-I/O bus modules Modbus RTU, max. 32 participants M-Bus (DIN EN 13757-T1,2,3), max. 80 M-Bus charges
I/Os	8 x digital inputs 3 x analog universal inputs 8 x digital outputs 3 x analog outputs

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
110934	black		

WLAN / UMTS antenna is matching accessory for

	Page
EWIO ₂ -MW	13
EWIO ₂ -MW-BM	13
EWIO ₂ -MW	25
EWIO ₂ -W-BM	25



WLAN / UMTS antenna

Antenna with cable for the Ethernet-I/O (EWIO₂) and Datenlogger (EWIO₂-M).

- SMA plug
- Antenna with magnetic base
- Diameter magnetic base approx. 29.0 mm
- Cable length including connection 2 m
- Cable diameter approx. 2.7 mm

P/N	Color	Feature 1	Feature 2
11094830			

Matching accessory for
S0/M converter 4 fold and
S0/M converter double-rate

Page

Power supply NG4 gray 20



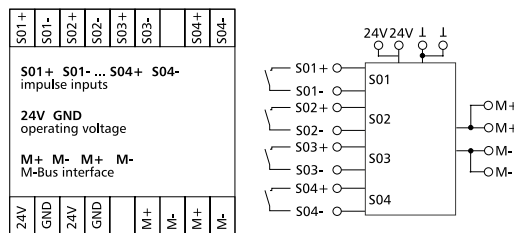
S0/M converter 4 fold

4-channel impulse counter for counting impulses that are generated by energy counters via reed contacts or passive transistor outputs (open collectors) in proportion to the energy measured. Impulses of any potential-free contacts can be recorded for counting, for example, events up to a frequency of 15 Hz.

The impulses generated by the energy counters are recorded by means of a standardized current interface to DIN EN 62053-31 class A. The 4-channel impulse counter occupies a clear M-Bus address specified by the manufacturer. Suitable for decentralized mounting on DIN TH35 rail according to IEC 60715 in electrical distribution cabinets.

Protocol	M-Bus
Bus interface	Two-wire bus
Transmission rate	300 to 9600 bit/s
Operating voltage	24 V DC +/- 10 % (SELV)
Current consumption	50 mA DC
Inputs	4 x S0 according to DIN EN 62053-31 Class A
Display	green LED flashes at incoming pulse
Dimensions (W x H x D)	50 x 69.3 x 60 mm
Weight	approx. 70 g
Operating temperature range	-10 °C to +50 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
110556	gray		



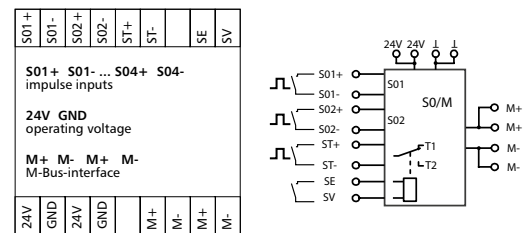
S0/M converter double-rate

Pulse counter to count pulses that are generated by energy counters via reed contacts or passive transistor outputs (open collector) in proportion to the measured energy. The device has 2 single S0 inputs and a third switchable S0 pulse input to record for example double rate meters. It is also possible to collect pulses from any potential-free contact to count for example events up to a frequency of 15 Hz. The pulses generated by the energy counters are recorded by means of a standardized current interface to DIN EN 62053-3. The pulse counter is feeding the pulse generator that works like a passive two-pole with a direct voltage of 24 V and with a current between 10 and 27 mA for the switching state ON (active) and with 0 to 2 mA for the switching state OFF (passive). The input ST+/ST- is a double rate meter input that stores the S0 pulses of a counter in the counter register T1 or T2 depending on the wiring of input SE/SV.

Suitable for decentralized mounting on DIN TH35 rail according to IEC 60715 in electrical distribution cabinets.

Protocol	M-Bus
Transmission rate	1200 to 19200 bit/s
Operating voltage	24 V DC
Current consumption	50 mA
Inputs	3 x S0 according to DIN EN 62053-31 Class A
Display	LED
Dimensions (W x H x D)	50 x 68 x 65 mm
Weight	about 70 g
Operating temperature range	-10 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
11055601	gray		

Matching accessory for
S0/M converter-IP65 and
T/M converter

Page

Power supply NG4 gray 20

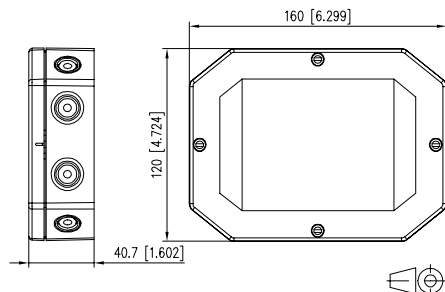


S0/M converter-IP65

Pulse counter to count pulses that are generated by energy counters via reed contacts or passive transistor outputs (open collector) in proportion to the measured energy. The device in an IP65 housing has 2 single S0 inputs and a third switchable S0 pulse input to collect for example double rate meters. It is also possible to collect pulses from any potential-free contact to count for example events up to a frequency of 15 Hz. The pulses generated by the energy counters are recorded by means of a standardized current interface to DIN EN 62053-3. The pulse counter is feeding the pulse generator that works like a passive two-pole with a direct voltage of 24 V and with a current between 10 and 27 mA for the switching state ON (active) and with 0 to 2 mA for the switching state OFF (passive). The input ST+ / ST- is a double rate meter input that stores the S0 pulses of a counter in the counter register T1 or T2 depending on the wiring of input SE / SV.

Protocol	M-Bus
Transmission rate	300 to 9600 bit/s
Operating voltage	24 V DC
Current consumption	50 mA
Inputs	3 x S0 according to DIN EN 62053-31 Class A
Display	LED
Dimensions (W x H x D)	159 x 41.5 x 12 mm
Weight	about 294 g
Operating temperature range	-10 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal block	IP65 / IP20

Dimensional drawing



P/N	Color	Feature 1	Feature 2
11055601P	gray		

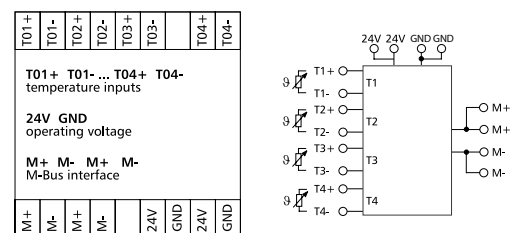


T/M converter

Temperature converter to connect up to four different resistance temperature sensors in dual cable technology with a resolution in 0.1 K. The addressing of the four temperature sensors is done via four M-Bus addresses according to M-Bus standard DIN EN-1434-3. The temperature is directly converted in the device. The temperature converter occupies four clear M-Bus addresses specified by the manufacturer. It is possible to set for each channel one of eleven stored temperature sensor characteristics with the M-Bus configuration tool (www.metz-connect.com) or to transmit the resistance value directly. The cable length compensation is done with the push-button assigned to the respective temperature input. The factory setting is: -30 °C to +130 °C / PT1000.

Selectable characteristics	sensor
-30 °C to +130 °C	PT100, PT500, PT1000, Ni100, Ni1000, NTC1k8, NTC10k, NTC20k, KTY10
0 °C to +400 °C	PT100, PT1000
Resistance value	index = 1 (all sensors)
Protocol	M-Bus
Bus interface	two-wire bus
Transmission rate	300 to 9600 bit/s
Operating voltage	24 V DC (SELV)
Current consumption	50 mA DC
Inputs	4 x temperature input (see selectable characteristics or resistance input 40 to 4 MOhm)
Display	LED
Dimensions (W x H x D)	50 x 69.3 x 60 mm
Weight	approx. 70 g
Operating temperature range	-10 °C to +50 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
110562	gray		

Matching accessory for
T/M converter-IP65

Power supply NG4 gray Page
20

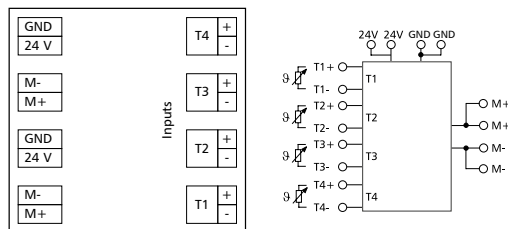


T/M converter-IP65

Temperature converter with an IP65 housing to connect up to four different resistance temperature sensors in dual cable technology with a resolution in 0.1 K. The addressing of the four temperature sensors is done via four M-Bus addresses according to M-Bus standard DIN EN-1434-3. The temperature is directly converted in the device. The temperature converter occupies four clear M-Bus addresses specified by the manufacturer. It is possible to set for each channel one of eleven stored temperature sensor characteristics with the M-Bus configuration tool (www.metz-connect.com) or to transmit the resistance value directly. The cable length compensation is done with the push-button assigned to the respective temperature input. The factory setting is: -30 °C to 130 °C / PT1000. Suitable for decentralized mounting on DIN TH35 rail according to IEC 60715 in electrical distribution cabinets.

Selectable characteristics	sensor
-30 °C to +130 °C	PT100, PT500, PT1000, Ni100, Ni1000, NTC1k8, NTC10k, NTC20k, KTY10
0 °C to +400 °C	PT100, PT1000
Resistance value	index = 1 (all sensors)
Protocol	M-Bus
Bus interface	Two-wire bus
Transmission rate	300 to 9600 bit/s
Operating voltage	24 V DC (SELV)
Current consumption	50 mA DC
Inputs	4 x temperature input (see selectable characteristics or resistance input 40 to 4 MOhm)
Display	LED
Dimensions (W x H x D)	159 x 41.5 x 120 mm
Weight	approx. 350 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal block	IP65

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
110562IP	gray		



MYD IP65

The M-Bus distributor in a flush-mount IP65 housing is used in structured M-Bus cabling as well as in servicing and maintaining the operation of M-Bus structures.

- Detachable spring clamp terminal blocks with printed contact designation
- Color of contact housing same as wire color of the M-Bus cable J-Y(St)Y
- Voltage supply possible at the spring clamp terminal blocks
- Uninterrupted M-Bus current measurement possible
- Sealable cover with quick release fasteners

Protocol	M-Bus, free topology
Bus interface	MYD (free-topology bus)
Transmission rate	300 to 38400 bit/s
Rated voltage	24 V
Rated current	10 A
M-Bus voltage	36 V
M-Bus current	500 mA
Cable cross section	1.5 mm ²
Wire cross section	0.321 - 1.29 mm ² AWG 28 - 16
Outputs	4 x M-Bus 4 x voltage supply

Dimensions (W x H x D)	160 x 40.7 x 120 mm
Weight	330 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal block	IP65 / IP20

P/N	Color	Feature 1	Feature 2
11056301	grau		
11056302	grau		



MYD-1M1V

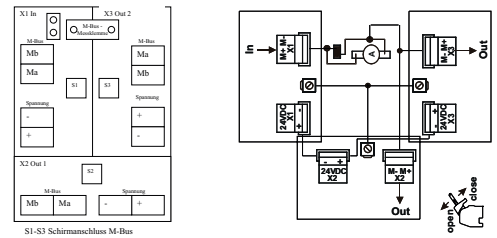
The M-Bus distributor is used in structured M-Bus cabling as well as in servicing and maintaining the operation of M-Bus structures. Suitable for decentralized mounting on DIN TH35 rail according to IEC 60715 in electrical distribution cabinets.

- Detachable spring clamp terminal blocks with printed contact designation
- Color of contact housing same as wire color of the M-Bus cable J-Y(St)Y
- Voltage supply possible at the spring clamp terminal blocks
- Uninterrupted M-Bus current measurement possible

Protocol	M-Bus, free topology
Bus interface	MYD (free-topology bus)
Transmission rate	300 to 38400 bit/s
Rated voltage	24 V
M-Bus voltage	36 V
M-Bus current	500 mA
Cable cross section	1.5 mm ²
Wire cross section	0.321 - 1.29 mm ² AWG 28 - 16
Outputs	2 x M-Bus 2 x voltage supply

Dimensions (W x H x D)	45 x 82.4 x 47 mm
Weight	53 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal block	IP20 / IP20

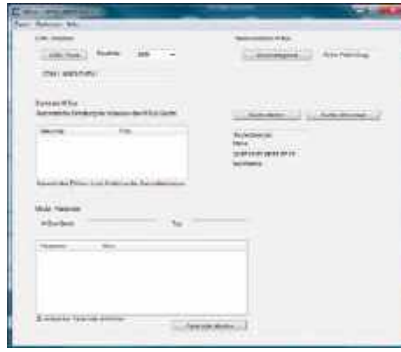
Wiring/Circuit diagram



P/N	Color	Feature 1	Feature 2
11056303	green		

M-Bus CT software is matching accessory for

	Page
S0/M converter 4 fold	15
T/M converter	16



M-Bus CT software

The M-Bus-CT software is used for the simple and uncomplicated commissioning of M-Bus devices. The functional scope of this configuration and parameterisation software also includes the specification of primary addresses, baud rates and temperature characteristics. Thereby, it doesn't matter whether there are one or more M-Bus stations on the bus. Through the scan function, the software can also be used as a diagnostics tool.

The software does not require any installation. It can be copied to any location on the PC or a removable drive (e.g. USB stick) and started from there. An M-Bus master (level converter), which is connected to an interface of the PC (COM, USB), is required to physically reach the M-Bus participants.

Minimum system requirements: WinXP (32/64 bit), Win7 (32/64 bit), M-Bus master (level converter).

P/N	Color	Feature 1	Feature 2
www.metz-connect.com			

Matching accessory for NG4

	Page
Terminal block for I/O Components	71
Jumper plug for I/O components	71

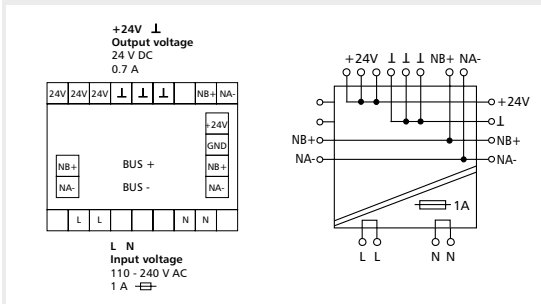


NG4

The NG4 HS power supply supplies a regulated direct voltage of 24 V DC / 16 W for supplying power to the respective devices of the product family of I/O components. The secondary voltage can only be tapped at the right side of the device front at a pluggable terminal block and at the screw-type terminal blocks. The bus communication can be tapped on both sides of the device front. A parallel operation of various power supply units is not allowed. Suitable for decentralized mounting on DIN TH35 rail according to IEC 60715 in electrical distribution cabinets.

Field of application	LON-Bus (LF-xxx) BACnet (BMT-xxx), Modbus (MR-xxx)
Input voltage range	110 - 240 V AC, 50 / 60 Hz
Internal fuse, soldered fuse	T 1,0 A/250 V
Output / power	16 W
Output / voltage	+24 V DC (SELV)
Output / current	700 mA
Load and control accuracy	+/-3 %
Mains failure backup	smaller than 40 ms
Display	green LED
Dimensions (W x H x D)	50 x 69.3 x 60 mm
Weight	108 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20
Terminal blocks	
Wire cross section solid wire	max. 4 mm ²
Wire cross section stranded wire	max. 2,5 mm ²
Wire diameter	0.3 mm up to max. 2.7 mm

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
110561	gray		with jumper plug

I/O components



I/O components with BACnet/IP, Modbus TCP, BACnet MS/TP-, Modbus RTU, M-Bus, LON®- and CAN technologies

Automation of buildings, machines and systems

In order to safely and efficiently operate today not only large but also small buildings, it has become indispensable to automate the most important service functions such as monitoring, air conditioning and lighting systems. This, however, leads to rising demands in terms of building installation, which in general can no longer be met by conventional techniques.

This is the reason why building automation relies ever more on serial bus systems controlling the transmission of information between sensors and actuators, switches and higher control systems.

Contents | I/O components

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These bus systems offer different advantages:

- ease of planning and installing of building functions
- strong flexibility in the use of buildings since functions can be programmed freely and can thus be re-configured at any time.

Thanks to the availability of microcontrollers and to the reduction of the sizes and prices of the installed electronic components, automation has now also found its way into areas, which due to the implied costs were not suited for field bus solutions before. In particular in the linking of sensors, actuators and control units within machines and of devices used for measuring, control and monitoring systems, serial bus systems offer strong advantages.

Matching accessory for EWIO₂ / EWIO₂-BM

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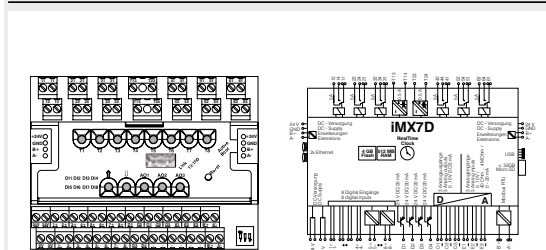


EWIO₂
(Ethernet-I/O)

The EWIO₂ is a compact Ethernet I/O controller based on Linux, which connects digital and analogue signals from the sensor and actuator level with an IP network. Simple tasks in building and industrial automation can be implemented with logic functions integrated onto the webserver. Immediately executable applications can also be created via the web interface in a displayed Linux Shell. Two Ethernet-Ports with a Daisy Chain function are available for the connection to the LAN network. The system is parameterised, configured and commissioned through a platform-independent web browser. For the upgrade of the sensor/actuator level, MR-I/O upgrade modules can be connected using plug & play jumper plugs and wiring to a second interface of EWIO₂, Modbus RTU devices. An integrated μ SD memory card expands the range of functions of the EWIO₂ for save settings, data and applications.

Operating voltage	24 V DC +/- 10 %
Power consumption (max.)	400 mA
Operating temperature	-5 °C to +55 °C
Network	2 x RJ45 LAN 10/100BaseT (Daisy Chain)
Protocol	TCP/IP
Controller	NXP i.MX7D Dual Core ARM-A7, 1 GHz RAM 512 MB / Flash max. 32 GB / ext. 2 GB μ SD
Operating system	Linux embedded, Kernel 4.14, 32 Bit
Interfaces	Extension bus, max. 6 MR-I/O bus modules Modbus RTU, max. 32 participants
I/Os	8 x digital inputs 3 x analog universal inputs 10 x digital outputs 3 x analog outputs

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
110905	black		

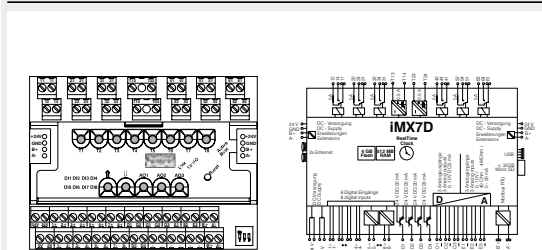


EWIO₂-BM
(Ethernet-I/O/BACnet/Modbus)

Depending on the configuration, the EWIO₂-BM is a compact Modbus and/or BACnet Server, which connects digital and analogue signals from the sensor and actuator level with a Modbus TCP and/or BACnet IP network. With a Modbus or BACnet Client, various tasks can be realised in building and industrial automation. Simple automation tasks can be implemented with an integrated logic function. Two Ethernet Ports with a Daisy Chain function are available for the connection to the LAN network and the chain further Ethernet I/O devices. The system is parameterised, configured and commissioned through a platform-independent web browser. For the upgrade of the sensor/actuator level, MR-I/O upgrade modules can be connected using plug & play jumper plugs and wiring to a second interface of EWIO₂-BM, Modbus RTU devices. An integrated μ SD memory card expands the range of functions of the EWIO₂-BM for save settings, data and applications.

Operating voltage	24 V DC +/- 10 %
Power consumption (max.)	400 mA
Operating temperature	-5 °C to +55 °C
Network	2 x RJ45 LAN 10/100BaseT (Daisy Chain)
Protocol	TCP/IP, BACnet/IP, Modbus TCP
Controller	NXP i.MX7D Dual Core ARM-A7, 1 GHz RAM 512 MB / Flash max. 32 GB / ext. 2 GB μ SD
Operating system	Linux embedded, Kernel 4.14, 32 Bit
Interfaces	Extension Bus, max. 6 MR-I/O bus modules Modbus RTU, max. 32 participants
I/Os	8 x digital inputs 3 x analog universal inputs 10 x digital outputs 3 x analog outputs

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
110904	black		

Matching accessory for EWIO₂-W / EWIO₂-W-BM

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WLAN / UMTS antenna	14
Power supply NG4 gray	20
Terminal block for I/O Components	71
Jumper plug for I/O components	71

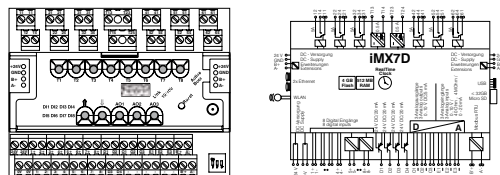


EWIO₂-W (Ethernet-I/O/WLAN)

The EWIO₂-W is a compact Ethernet I/O controller based on Linux, which connects digital and analogue signals from the sensor and actuator level with an IP network. Simple tasks in building and industrial automation can be implemented with logic functions integrated onto the webserver. Immediately executable applications can also be created via the web interface in a displayed Linux Shell. Two Ethernet-Ports with a Daisy Chain function for the chain further Ethernet I/O devices and a WLAN interface are available for the connection to the LAN or WLAN network. In addition, the WLAN interface can be used as an access point for the configuration with a mobile device (e.g. smartphone, tablet, notebook). The system is parameterised, configured and commissioned through a platform-independent web browser. For the upgrade modules can be connected using plug & play jumper plugs and wiring to a second interface of EWIO₂-W, Modbus RTU devices. An integrated μ SD memory card expands the range of functions of the EWIO₂-W for save settings, data and applications.

Operating voltage	24 V DC +/- 10 %
Power consumption (max.)	400 mA
Operating temperature	-5 °C to +55 °C
Network	2 x RJ45 LAN 10/100BaseT (Daisy Chain) WLAN, b/g/n, 2,4 GHz
Protocol	TCP/IP
Controller	NXP i.MX7D Dual Core ARM-A7, 1 GHz RAM 512 MB / Flash max. 32 GB / ext. 2 GB μ SD
Operating system	Linux embedded, Kernel 4.14, 32 Bit
Interfaces	Extension bus, max. 6 MR-I/O bus modules Modbus RTU, max. 32 participants
I/Os	8 x digital inputs 3 x analog universal inputs 10 x digital outputs 3 x analog outputs

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
110906	black		

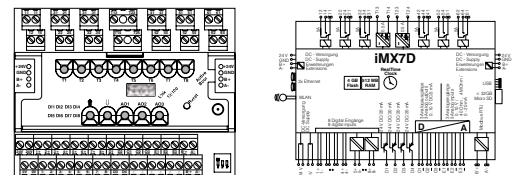


EWIO₂-W-BM (Ethernet-I/O/WLAN/BACnet/Modbus)

Depending on the configuration, the EWIO₂-W-BM is a compact Modbus and/or BACnet/IP network. With a Modbus or BACnet Client, various tasks can be realised in building and industrial automation. Simple automation tasks can be implemented with an integrated logic function. Two Ethernet-Ports with a Daisy Chain function are available for the connection to the LAN or WLAN network. In addition, the WLAN interface can be used as an access point for the configuration with a mobile device (e.g. smartphone, tablet, notebook). The system is parameterised, configured and commissioned through a platform-independent web browser. For the upgrade of the sensor/actuator level, MR-I/O upgrade modules can be connected using plug & play jumper plugs and wiring to a second interface of EWIO₂-W-BM, Modbus RTU devices. An integrated μ SD memory card expands the range of functions of the EWIO₂-W-BM for save settings, data and applications.

Operating voltage	24 V DC +/- 10 %
Power consumption (max.)	400 mA
Operating temperature	-5 °C to +55 °C
Network	2 x RJ45 LAN 10/100BaseT (Daisy Chain) WLAN, b/g/n, 2,4 GHz
Protocol	TCP/IP, BACnet/IP, Modbus TCP
Controller	NXP i.MX7D Dual Core ARM-A7, 1 GHz RAM 512 MB / Flash max. 32 GB / ext. 2 GB μ SD
Operating system	Linux embedded, Kernel 4.14, 32 Bit
Interfaces	Extension bus, max. 6 MR-I/O bus modules Modbus RTU, max. 32 participants
I/Os	8 x digital inputs 3 x analog universal inputs 10 x digital outputs 3 x analog outputs

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
110909	black		

Matching accessory for MR-DI4

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Power supply NG4 gray	20
Terminal block for I/O Components	71
Jumper plug for I/O components	71

Matching accessory for MR-DI4-IP65

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Power supply NG4 gray	20



MR-DI4

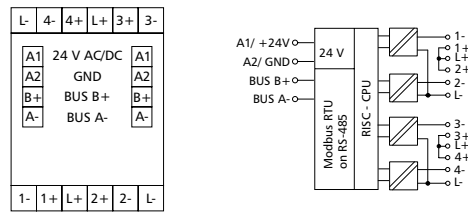
The Modbus module with 4 digital inputs was developed for decentralized switching tasks. It is suitable for detecting potential-free switch states, for example electrical limit switches on vent valves or auxiliary contacts of power contactors. The inputs can be operated by means of potential-free switches or contacts or used as voltage inputs. The inputs can be scanned by means of standard registers via a Modbus master. Module address, bit rate and parity are set with two rotary switches on the front or by software.

Suitable for decentralized mounting on DIN TH35 rail according to IEC 60715 in electrical distribution cabinets.

Protocol	Modbus RTU
Address range	00 to 99
Bus interface	RS485 (two-wire bus)
Transmission rate	1200 to 115200 bit/s
Operating voltage	24 V AC/DC +/- 10 % (SELV)
Current consumption	50 mA (AC) / 20 mA (DC)
Relative duty cycle	100 %
Inputs	4 x digital
Input / voltage	30 V AC/DC
Input / high signal	more than 7 V AC/DC
Display	Green, red and yellow LED

Dimensions (W x H x D)	35 x 69.3 x 60 mm
Weight	95 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
1108341319	gray	4x IN (U or contact)	



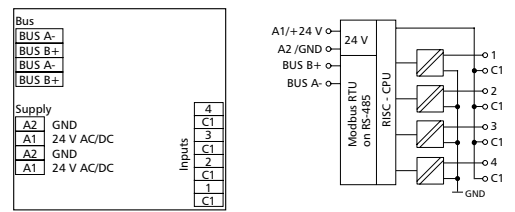
MR-DI4-IP65

The Modbus module in an IP65 housing with 4 digital inputs was developed for decentralized switching tasks. It is suitable for detecting potential-free switch states from electrical limit switches and their external status display such as fire dampers or vent valves. The inputs can be operated by means of potential-free switches or contacts or used as voltage inputs. The inputs can be scanned by means of standard registers via a Modbus master. Module address, bit rate and parity are set with two rotary switches or by software.

Protocol	Modbus RTU
Address range	00 to 99
Bus interface	RS485 (two-wire bus)
Transmission rate	1200 to 115200 bit/s
Operating voltage	24 V AC/DC +/- 10 % (SELV)
Current consumption	50 mA (AC) / 20 mA (DC)
Relative duty cycle	100 %
Inputs	4 x digital
Input / voltage	30 V AC/DC
Input / high signal	more than 7 V AC/DC
Display	Green, red and yellow LED

Dimensions (W x H x D)	160 x 40.7 x 120 mm
Weight	300 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal block	IP65 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
1108341319IP	gray	4x IN (U or contact)	

Matching accessory for MR-DI4-IP65 with external display

	Page
Power supply NG4 gray	20

Matching accessory for MR-DI10

	Page
Power supply NG4 gray	20

Terminal block for I/O Components

Jumper plug for I/O components

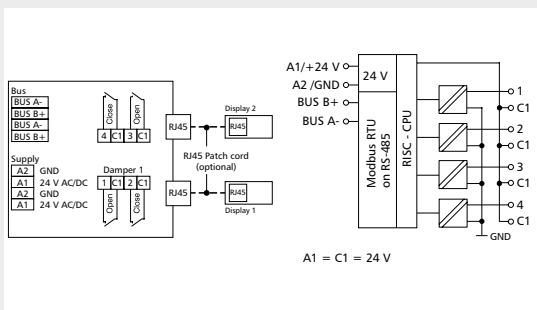


MR-DI4-IP65 with external display

The Modbus module in a surface mounting housing with 4 digital inputs was developed for decentralized switching tasks. It is suitable for detecting potential-free switch states from electrical limit switches and their external status display such as fire dampers or vent valves. The inputs can be operated by means of potential-free switches or contacts or used as voltage inputs. The inputs can be scanned by means of standard registers via a Modbus master. Module address, bit rate and parity are set with two rotary switches on the front or by software. The device has two externally connectable display modules.

Protocol	Modbus RTU
Address range	00 to 99
Bus interface	RS485 (two-wire bus)
Transmission rate	1200 to 115200 bit/s
Operating voltage	24 V AC/DC +/- 10 % (SELV)
Current consumption	50 mA (AC) / 20 mA (DC)
Relative duty cycle	100 %
Inputs	4 x digital
Input / voltage	30 V DC
Input / high signal	more than 7 V AC/DC
Display (internal)	Green, red and yellow LED
Display (external)	multi color LED
Dimensions (W x H x D)	160 x 40.7 x 120 mm
Weight	300 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal block	IP20 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
110834131901IP	gray	4x IN (U or contact)	

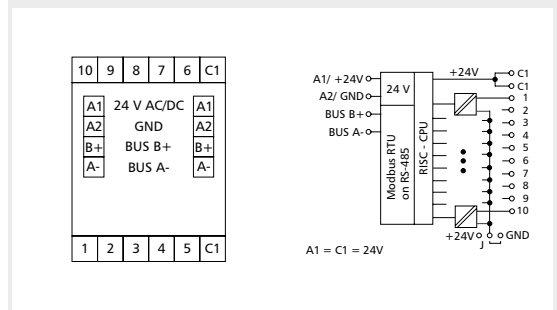


MR-DI10

The Modbus module with 10 digital inputs was developed for decentralized switching tasks. It is suitable for detecting potential-free switch states, for example electrical limit switches on vent valves or auxiliary contacts of power contactors. The inputs can be used as contact or voltage inputs. The inputs can be scanned by means of standard registers via a Modbus master. Module address, bit rate and parity are set with two rotary switches on the front or by software. Suitable for decentralized mounting on DIN TH35 rail according to IEC 60715 in electrical distribution cabinets.

Protocol	Modbus RTU
Address range	00 to 99
Bus interface	RS485 (two-wire bus)
Transmission rate	1200 to 115200 Bit/s
Operating voltage	24 V AC/DC +/- 10 % (SELV)
Current consumption	200 mA (AC) / 75 mA (DC)
Relative duty cycle	100 %
Inputs	10 x digital
Input / voltage	30 V DC
Input / high signal	more than 7 V AC/DC
Display	Green, red and yellow LED
Dimensions (W x H x D)	35 x 69.3 x 60 mm
Weight	83 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
1108311319	gray	10x IN (U or contact)	

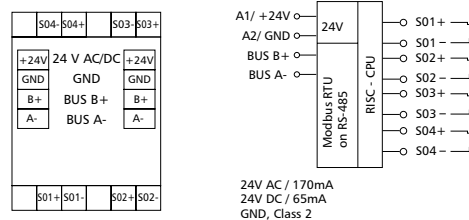
Matching accessory for MR-SI4

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Power supply NG4 gray	20
Terminal block for I/O Components	71
Jumper plug for I/O components	71


MR-SI4

The Modbus module with 4 S0 inputs to DIN EN 62053-31 class A was developed for decentralized switching tasks. It is suitable for counting S0 counter pulses. This allows very good integration of the module into an energy controlling system. In case of a power failure, the last counter readings are saved. The inputs can be scanned by means of standard registers via a Modbus master. Module address, bit rate and parity are set with two rotary switches on the front or by software. Suitable for decentralized mounting on DIN TH35 rail according to IEC 60715 in electrical distribution cabinets.

Protocol	Modbus RTU
Address range	00 to 99
Bus interface	RS485 (two-wire bus)
Transmission rate	1200 to 115200 Bit/s
Operating voltage	20 V to 28 V AC/DC (SELV)
Current consumption	170 mA (AC) / 65 mA (DC)
Relative duty cycle	100 %
Inputs	4 x S0 input, class A
Input / acc. to standard	DIN EN 62053-31
Display	Green, red and yellow LED
Dimensions (W x H x D)	35 x 69.3 x 60 mm
Weight	83 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Principle diagram


P/N	Color	Feature 1	Feature 2
11083913	gray	4x IN (S0 impulse)	

Matching accessory for MR-AI8

	Page
Power supply NG4 gray	20
Terminal block for I/O Components	71
Jumper plug for I/O components	71

Matching accessory for MR-CI4

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Power supply NG4 gray	20
Terminal block for I/O Components	71
Jumper plug for I/O components	71

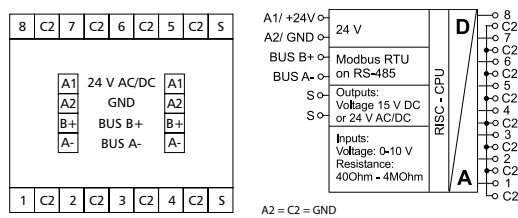


MR-AI8

The Modbus module with 8 individually configurable resistance or voltage inputs was developed for decentralized switching tasks. It is suitable for detecting resistances and voltages of, for example, passive and active temperature sensors, electrical vent and mixing valves, valve positions, etc. The inputs can be configured universally by means of standard registers via a Modbus master. Module address, bit rate and parity are set with two rotary switches on the front or by software. Suitable for decentralized mounting on DIN TH35 rail according to IEC 60715 in electrical distribution cabinets.

Protocol	Modbus RTU
Address range	00 to 99
Bus interface	RS485 (two-wire bus)
Transmission rate	1200 to 115200 bit/s
Operating voltage	24 V AC/DC +/- 10 % (SELV)
Current consumption	65 mA (AC) / 25 mA (DC)
Relative duty cycle	100 %
Inputs	8 x individually configurable
Input / resistance	40 Ohm to 4 MOhm
Input / voltage	0 to 10 V DC
Input / resolution	10 mV (0 to 100 %)
Input / error	approx. +/- 100 mV
Display	Green and red LED
Dimensions (W x H x D)	50 x 69.3 x 60 mm
Weight	104 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
11083213	gray	8x IN (U or R)	



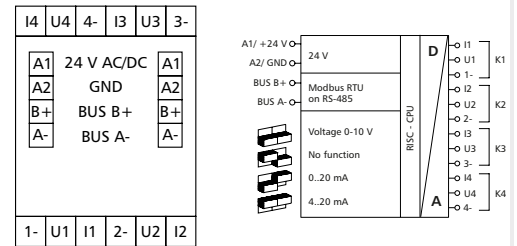
MR-CI4

The Modbus module with 4 analog inputs was developed for decentralized switching tasks. It is suitable for detecting currents and voltages of, for example, active temperature sensors, electrical vent and mixing valves, valve positions, etc. Each input can be set as current or voltage input by DIP switches on the front. The inputs can be scanned with standard registers via a Modbus master. The module address, the baud rate and the parity are set with two rotary switches on the front or by software.

Suitable for decentralized mounting on TH35 rails according to IEC 60715 in electrical distribution cabinets.

Protocol	Modbus RTU
Address range	00 to 99
Bus interface	RS485 (two-wire bus)
Transmission rate	1200 to 115200 Bit/s
Operating voltage	24 V AC/DC +/- 10 % (SELV)
Current consumption	25 mA (AC) / 10 mA (DC)
Relative duty cycle	100 %
Inputs	4 x analog
Input / voltage (U1-U4)	0 V to 10 V DC
Input / resolution	1 mV (0 to 100 %)
Input / error	10 mV
Input / current (I1-I4)	0 (4) to 20 mA DC
Input / resolution	2 µA
Input / error	20 µA
Display	Green, red LED
Dimensions (W x H x D)	35 x 69.3 x 60 mm
Weight	84 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
1108401332	gray	4x IN (U or I) active	

Matching accessory for MR-SM3

	Page
Power supply NG4 gray	20
Terminal block for I/O Components	71
Jumper plug for I/O components	71

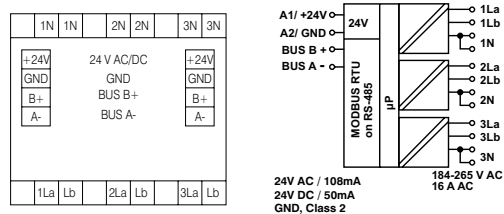


MR-SM3

The module MR-SM3 is a smart meter component for building automation. Current, voltage, power and many other values can be captured by three 230 Volt current circuits. In addition, the device provides monitoring functions of for example asymmetry, phase failure, phase sequence, overvoltage and undervoltage. These values can be queried via a Modbus-Master. Module address, bit rate and parity are set with two rotary switches on the front or by software. Suitable for decentralized mounting on DIN TH35 rail according to IEC 60715 in electrical distribution cabinets.

Protocol	Modbus RTU
Address range	00 to 99
Bus interface	RS485 (two-wire bus)
Transmission rate	1200 to 115200 bit/s
Operating voltage	24 V AC/DC +/- 10 % (SELV)
Current consumption	108 mA (AC) / 50 mA (DC)
Relative duty cycle	100 %
Inputs	3 x analog
Input / voltage	230 V AC -20 to +15 %
Input / voltage range	184 to 265 V AC
Input / current	0 to 16 A AC
Display	LED green, red
Dimensions (W x H x D)	50 x 69.3 x 60 mm
Weight	110 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
11084113	gray		

Matching accessory for MR-DO4

	Page
Power supply NG4 gray	20
Terminal block for I/O Components	71
Jumper plug for I/O components	71

Matching accessory for MR-DOA4

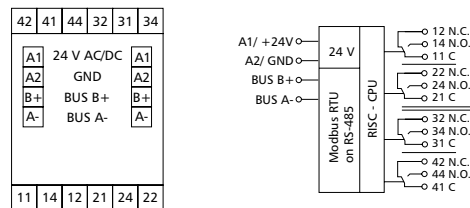
	Page
Power supply NG4 gray	20
Terminal block for I/O Components	71
Jumper plug for I/O components	71


MR-DO4

The Modbus module with 4 digital outputs was developed for decentralized switching tasks. It is suitable for switching electrical components, such as motors, contactors, lamps, louvers, etc. In this case it is necessary to protect the relay contacts by appropriate load-dependent measures. The module is provided with a manual control for manually switching the relays. The outputs can be switched by means of standard registers via a Modbus master. Module address, bit rate and parity are set with two rotary switches on the front or by software.

Suitable for decentralized mounting on DIN TH35 rail according to IEC 60715 in electrical distribution cabinets.

Protocol	Modbus RTU
Address range	00 to 99
Bus interface	RS485 (two-wire bus)
Transmission rate	1200 to 115200 bit/s
Operating voltage	24 V AC/DC +/- 10 % (SELV)
Current consumption	200 mA (AC) / 70 mA (DC)
Relative duty cycle	100 %
Output / contacts	4 changeover contacts (4PDT)
Output / switching voltage	250 V AC
Output / continuous current	5 A / output
Output / switching frequency	360 cycles/h
Display	Green, red and yellow LED
Dimensions (W x H x D)	35 x 69.3 x 60 mm
Weight	95 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Principle diagram


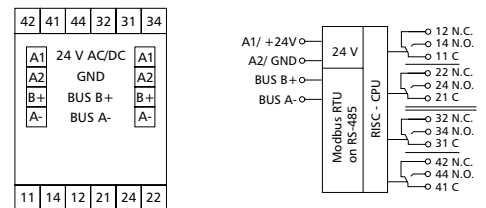
P/N	Color	Feature 1	Feature 2
1108361321	gray	4x OUT (relay CO)	manual/automatic


MR-DOA4

The Modbus module with 4 digital outputs was developed for decentralized switching tasks. It is suitable for switching electrical components, such as motors, contactors, lamps, louvers, etc. In this case it is necessary to protect the relay contacts by appropriate load-dependent measures. The outputs can be switched by means of standard registers via a Modbus master. Module address, bit rate and parity are set with two rotary switches on the front or by software.

Suitable for decentralized mounting on DIN TH35 rail according to IEC 60715 in electrical distribution cabinets.

Protocol	Modbus RTU
Address range	00 to 99
Bus interface	RS485 (two-wire bus)
Transmission rate	1200 to 115200 Bit/s
Operating voltage	24 V AC/DC +/- 10 % (SELV)
Current consumption	200 mA (AC) / 70 mA (DC)
Relative duty cycle	100 %
Output / contacts	4 changeover contacts (4PST)
Output / switching voltage	250 V AC
Output / continuous current	5 A / output
Output / switching frequency	360 cycles/h
Display	Green, red and yellow LED
Dimensions (W x H x D)	35 x 69.3 x 60 mm
Weight	95 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Principle diagram


P/N	Color	Feature 1	Feature 2
110836132101	gray	4x OUT (relay CO)	

Matching accessory for MR-TO4

	Page
Power supply NG4 gray	20
Terminal block for I/O Components	71
Jumper plug for I/O components	71



MR-TO4

The Modbus module with 4 digital triac outputs was developed for decentralized switching tasks. It is suitable for switching electrical components, such as relays, contactors, HVAC valves, etc.

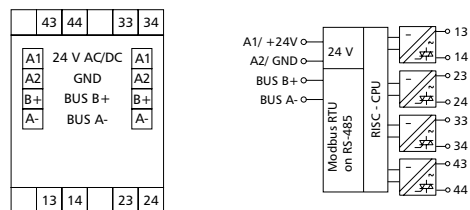
The outputs can be switched by means of standard registers via a Modbus master. In addition, the outputs can be overridden manually by means of switches on the device. Module address, bit rate and parity are set with two rotary switches on the front or by software.

Suitable for decentralized mounting on DIN TH35 rail according to IEC 60715 in electrical distribution cabinets.

Protocol	Modbus RTU
Address range	00 to 99
Bus interface	RS485 (two-wire bus)
Transmission rate	1200 to 115200 bit/s
Operating voltage	24 V AC/DC +/- 10 % (SELV)
Current consumption	100 mA (AC) / 40 mA (DC)
Relative duty cycle	100 %
Output / contacts	4 digital outputs (triac)
Output / switching voltage	24 V AC up to max. 250 V AC
Output / continuous current	0.5 A / output
Output / switching current	0.8 A (less than 30 s)
Output / switch-on current	10 A (less than 20 ms)
Display	Green, red and yellow LED

Dimensions (W x H x D)	35 x 69.3 x 60 mm
Weight	95 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
11083013	gray	4x OUT (triac)	

Matching accessory for MR-AOP4

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Power supply NG4 gray	20
Terminal block for I/O Components	71
Jumper plug for I/O components	71

Matching accessory for MR-AO4

	Page
Power supply NG4 gray	20
Terminal block for I/O Components	71
Jumper plug for I/O components	71



MR-AOP4

The Modbus module with 4 analog outputs was developed for decentralized switching tasks. It is suitable as encoder for control variables, for example for electrical vent and mixing valves, valve positions, etc.

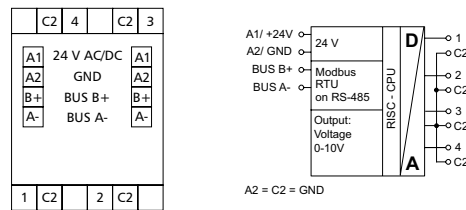
The outputs can be output by means of standard registers via a Modbus master. Each output can be set for automatic or manual operation by means of 4 potentiometers at the front. Module address, bit rate and parity are set with two rotary switches on the front or by software.

Suitable for decentralized mounting on DIN TH35 rail according to IEC 60715 in electrical distribution cabinets.

Protocol	Modbus RTU
Address range	00 to 99
Bus interface	RS485 (two-wire bus)
Transmission rate	1200 to 115200 bit/s
Operating voltage	24 V AC/DC +/- 10 % (SELV)
Current consumption	50 mA (AC) / 20 mA (AC)
Relative duty cycle	100 %
Outputs	4 x analog
Output / voltage	0 V to 10 V DC
Output / current	5 mA at 10 V DC
Output / resolution	10 mV / digit
Display	Green and red LED

Dimensions (W x H x D)	35 x 69.3 x 60 mm
Weight	72 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal blocks	IP40 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
1108371302	gray	4x OUT (U)	manual/automatic



MR-AO4

The Modbus module with 4 analog outputs was developed for decentralized switching tasks. It is suitable as encoder for control variables, for example for electrical vent and mixing valves, valve positions, etc.

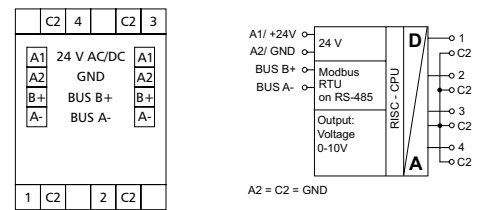
The outputs can be output by means of standard registers via a Modbus master. Module address, bit rate and parity are set with two rotary switches on the front or by software.

Suitable for decentralized mounting on DIN TH35 rail according to IEC 60715 in electrical distribution cabinets.

Protocol	Modbus RTU
Address range	00 to 99
Bus interface	RS485 (two-wire bus)
Transmission rate	1200 to 115200 bit/s
Operating voltage	24 V AC/DC +/- 10 % (SELV)
Current consumption	50 mA (AC) / 20 mA (AC)
Relative duty cycle	100 %
Outputs	4 x analog
Output / voltage	0 V to 10 V DC
Output / current	5 mA to 10 V DC
Output / resolution	10 mV / Digit
Display	Green and red LED

Dimensions (W x H x D)	35 x 69.3 x 60 mm
Weight	72 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal blocks	IP40 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
1108351302	gray	4x OUT (relay CO)	

Matching accessory for MR-Multi-I/O

Power supply NG4 gray	20
Terminal block for I/O Components	71
Jumper plug for I/O components	71

Matching accessory for MR-AIO4/2-IP65

Power supply NG4 gray	20
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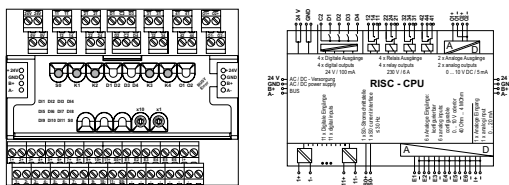


MR-Multi-I/O

The Modbus module MR-Multi I/O is a compact and rapidly to install solution to connect digital and analog signals from the actor and sensor level directly to a control unit in building automation via Modbus RTU protocol. 29 I/Os, some of them are configurable, are available for different tasks. With strong inductive loads, we recommend protecting the relay contacts with an RC element. The inputs and outputs can be switched and scanned by means of standard registers via a Modbus master. Module address, bit rate and parity are set with two rotary switches on the front or by software. Suitable for decentralized mounting on DIN TH35 rail according to IEC 60715 in electrical distribution cabinets.

Protocol	Modbus RTU
Address range	00 to 99
Bus interface	RS485 (two-wire bus)
Transmission rate	1200 bis 115200 Bit/s
Operating voltage	24 V AC/DC +/- 10 % (SELV)
Current consumption	220 mA (AC) / 110 mA (DC)
Relative duty cycle	100 %
Inputs / digital	11 x Optocoupler, galvanically isolated
Input / SO	1 x per DIN EN 62053-31, Class A
Inputs analog for resistance or for voltage	configurable 6 x 40 Ohm to 4 MOhm 6 x 0 to 10 V DC
Input / current	1 x analog 0 to 20 mA DC
Dimensions (W x H x D)	125 x 93 x 60.81 mm, 7 TE, TH35
Weight	385 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-25 °C to +70 °C
Protection class	IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
11084313	gray		

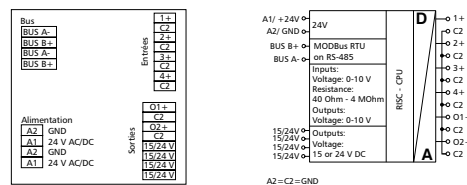


MR-AIO4/2-IP65

The Modbus module in an IP65 housing with 4 individually configurable resistance or voltage inputs and 2 analog outputs was developed for decentralized tasks. The inputs are suitable for detecting resistances and voltages of for example, passive and active temperature sensors, electrical vent and mixing valves, valve positions, etc. The outputs are suitable as encoder for control variables for example for electrical vent and mixing valves, valve positions, etc. Via a Modbus master the inputs can be configured universally by standard registers and the outputs can be set. The module address, the bit rate and the parity are set with two rotary switches or by software.

Protocol	Modbus RTU
Address range	00 to 99
Bus interface	RS485 (two-wire-bus)
Transmission rate	1200 to 115200 Bit/s
Operating voltage	24 V AC/DC +/- 10 % (SELV)
Current consumption	90 mA (AC) / 35 mA (DC)
Relative duty cycle	100 %
Inputs	4 x individually configurable
Input / resistance	40 Ohm to 4 MOhm
Input / voltage	0 to 10 V DC
Outputs	2 x analog
Output / voltage	0 V to 10 V DC
Output / current	5 mA at 10 V DC
Display	LED green, red, yellow
Dimensions (W x H x D)	160 x 40.7 x 120 mm
Weight	104 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal blocks	IP65 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
11084213IP	gray	4x IN (U or R)	

Matching accessory for MR-DIO4/2

	Page
Power supply NG4 gray	20
Terminal block for I/O Components	71
Jumper plug for I/O components	71

Matching accessory for MR-AIO4/2-IP65

	Page
Power supply NG4 gray	20



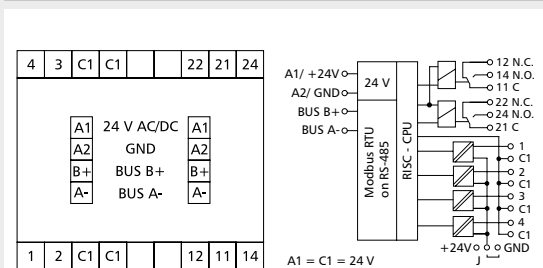
MR-DIO4/2

The Modbus module with 4 digital inputs and 2 relay outputs with manual control was developed for decentralized switching tasks. It is suitable for accommodating, for example, light switches and window contacts in a room, switching two light strips or controlling louvers. It can also be used to control 2 motorized fire dampers. In this case it is necessary to protect the relay contacts by appropriate load-dependent measures. The inputs can be used as contact or voltage inputs. The inputs and outputs can be switched and scanned by means of standard registers via a Modbus master. Module address, bit rate and parity are set with two rotary switches on the front or by software.

Suitable for decentralized mounting on DIN TH35 rail according to IEC 60715 in electrical distribution cabinets.

Protocol	Modbus RTU
Address range	00 to 99
Bus interface	RS485 (two-wire bus)
Transmission rate	1200 to 115200 bit/s
Operating voltage	24 V AC/DC +/- 10 % (SELV)
Current consumption	200 mA (AC) / 75 mA (DC)
Relative duty cycle	100 %
Inputs	4 x digital
Input / voltage	30 V DC
Input / high signal	more than 8 V AC/DC
Output / contacts	2 changeover contacts (DPDT)
Output / switching voltage	250 V AC
Output / continuous current	16 A / output
Output / switch-on current	80 A (less than 20 ms)
Display	Green, red and yellow LED
Dimensions (W x H x D)	50 x 69.3 x 60 mm
Weight	126 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal blocks	IP40 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
1108331326	gray	4x IN (U or contact)	2x OUT (relay CO)
110833132601	gray	4x IN (U or contact)	2x OUT (relay NO)

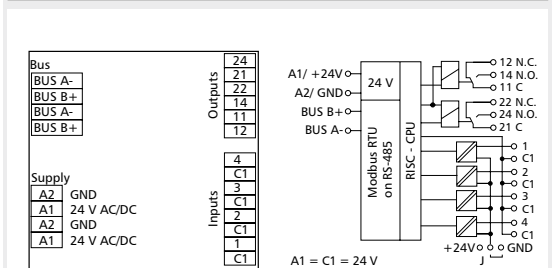


MR-DIO4/2-IP65

The Modbus module in an IP65 housing with 4 digital inputs and 2 relay outputs was developed for decentralized switching tasks. It is suitable for accommodating, for example, light switches and window contacts in a room, switching two light strips or controlling louvers. It can also be used to control 2 motorized fire dampers. In this case it is necessary to protect the relay contacts by appropriate load-dependent measures. The inputs can be used as contact or voltage inputs. The inputs and outputs can be switched and scanned by means of standard registers via a Modbus master. Module address, bit rate and parity are set by means of two address switches.

Protocol	Modbus RTU
Address range	00 to 99
Bus interface	RS485 (two-wire bus)
Transmission rate	1200 to 115200 bit/s
Operating voltage	24 V AC/DC +/- 10 % (SELV)
Current consumption	200 mA (AC) / 75 mA (DC)
Relative duty cycle	100 %
Inputs	4 x digital
Input / voltage	30 V DC
Input / high signal	more than 8 V AC/DC
Output / contacts	2 changeover contacts (DPDT)
Output / contacts	250 V AC
Output / continuous current (UL)	8 A / output
Output / continuous current (VDE)	10 A / output
Output / switch-on current	80 A (less than 20 ms)
Display	Green, red and yellow LED
Dimensions (W x H x D)	160 x 40 x 120 mm
Weight	350 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal blocks	IP65 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
1108331326IP	gray	4x IN (U or contact)	2x OUT (relay CO)

Matching accessory for MR-DIO4/2-IP65 230 V

Power supply NG4 gray 20

Matching accessory for MR-TP

Power supply NG4 gray 20

Terminal block for I/O Components 71

Jumper plug for I/O components 71

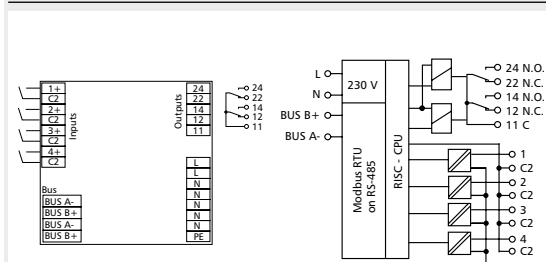


MR-DIO4/2-IP65 230 V

The Modbus module in an IP65 housing with 4 digital inputs and 2 relay outputs with manual control was developed for decentralized switching tasks. It is suitable for accommodating, for example, light switches and window contacts in a room, switching two light strips or controlling louvers. It can also be used to control 2 motorized fire dampers. In this case it is necessary to protect the relay contacts by appropriate load-dependent measures. The inputs have to be connected to potential-free contacts. The inputs and outputs can be switched and scanned by means of standard registers via a Modbus master. Module address, bit rate and parity are set with two rotary switches. Bit rate and parity are also set by software.

Protocol	Modbus RTU
Address range	00 to 99
Bus interface	RS485 two wire bus with potential equalization in bus or line topology terminate with 120 Ohm
Transmission rate	1200 to 115200 bit/s, Factory setting 19200 bit/s Even
Operating voltage	230 V +/- 10 %
Current consumption	12 mA
Relative duty cycle	100 %
Inputs Digital inputs	4
Voltage input	30 V AC/DC
High signal recognition	>8 V AC/DC
Outputs Output contacts	2 changeover contacts (DPST)
Switching voltage max.	250 V AC
Continuous current max.	10 A per relay (65 A for 20 ms) max. current via terminal „11“ 10 A)
Housing Dimensions W x H x D	160 x 40.7 x 120 mm
Weight	350 g
Mounting position	any
Mounting	directly on a flat surface 8 knock-out openings for M12 and M16 cable glands

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
11083305261P	gray		



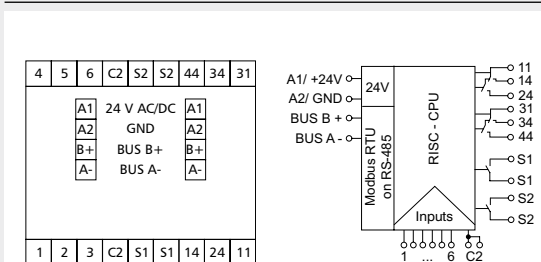
MR-TP

The Modbus three-point module with 6 digital inputs, 2 two-level relay outputs and 2 digital outputs was developed for decentralized switching tasks. It is suitable for switching, for example, multi-level pumps and fans or louvers. In this case it is necessary to protect the relay contacts by appropriate load-dependent measures. The inputs and outputs can be switched and scanned by means of standard registers via a Modbus master. The input terminals 1 to 6 are wired with the C2 terminals on two poles to potential-free switches or contacts. The module has a manual control for the outputs. Module address, bit rate and parity are set with two rotary switches on the front or by software.

Suitable for decentralized mounting on DIN TH35 rail according to IEC 60715 in electrical distribution cabinets.

Protocol	Modbus RTU
Address range	00 to 99
Bus interface	RS485 (two-wire bus)
Transmission rate	1200 to 115200 bit/s
Operating voltage	24 V AC/DC +/- 10 % (SELV)
Current consumption	100 mA (AC) / 40 mA (DC)
Relative duty cycle	100 %
Inputs	6 x digital contacts
Input / Voltage	30 V DC
Input / switching threshold	4,5 V DC
Outputs (relay)	2 x two-level
Output / switching voltage	250 V AC
Output / current	6 A / output
Outputs (digital)	2 NO contacts (DPST-NO) (photoMOS)
Output / switching voltage	40 V AC/DC
Output / current	100 mA
Display	Green, red and yellow LED
Dimensions (W x H x D)	50 x 69.3 x 60 mm
Weight	125 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal blocks	IP40 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
11083813	gray	6x IN (contact)	2x OUT (relay CO), 2x OUT (opto NO)

Matching accessory for MR-LD6

	Page
Power supply NG4 gray	20
Leakage sensor LKS1, LKS-ZD	38
Submersible Electrode TE1	38
Terminal block for I/O Components	71
Jumper plug for I/O components	71

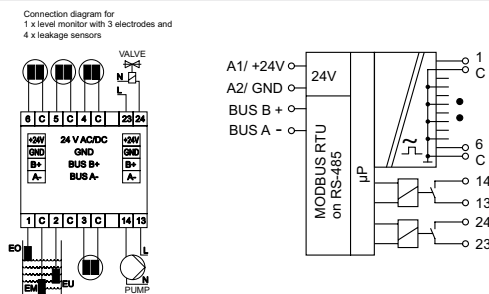


MR-LD6

The Modbus module with 6 analog inputs and 2 relay outputs was developed for decentralized switching tasks. Suitable to monitor electrodes of leakage sensors or the fill level of fluid containers and to switch pumps or magnetic valves. In this case it is necessary to protect the relay contacts by appropriate load-dependent measures. The resistance of the conductive fluid is measured when the electrodes are immersed. It is also possible to signal a cable break (requires sensor LKS-ZD). The module can be operated independently or via a Modbus master. Inputs and outputs can be switched and scanned via standard registers. Module address, bit rate and parity are set with two rotary switches on the front or by software. Suitable for decentralized mounting on DIN TH35 rail according to IEC 60715 in electrical distribution cabinets.

Protocol	Modbus RTU
Address range	00 to 99
Bus interface	RS485 (two-wire bus)
Transmission rate	1200 to 115200 bit/s
Operating voltage	24 V AC/DC +/- 10 % (SELV)
Current consumption	80 mA (AC) / 43 mA (DC)
Relative duty cycle	100 %
Input / contacts 1 to 6	connection of the electrodes
Input / contacts C	common reference potential
Internal resistance	20 kOhm
Sinus voltage	3 Veff, 70 Hz
	at resistance measurement
Measuring accuracy	+/-10 % with sensor resistance 4 to 40 kOhm +/- 20 % with sensor resistance 2 to 100 kOhm
Pulse voltage	+/-16 V at wire break monitoring
Zener diodes	6.2 to 10 V can be used as line termination
Lines capacity	40 nF max. equates 400 m at 100 nF/km
Measuring interval	1.5 s
Output / contacts	2 NO contacts (SPST-NO)
Output / switching voltage	250 V AC
Output / continuous current	6 A / output

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
11084413	gray		

Submersible Electrode TE1 and Leakage sensor LKS1, LKS-ZD is matching accessory for

MR-LD6
ENW-E12

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Submersible Electrode TE1

One-pole submersible electrode made of stainless steel in plastic housing. To monitor filling levels of conductive liquids. To be connected to the level sensor ENW-E12 P/N 110308xx. Contents of the packaging: 1 submersible electrode, 1 sleeve, 1 strain relief

Connecting cable	H 07 RN-F 1.5 mm ²
Submersible electrode	High-alloy steel Material number 1.4104 (C12CrMoS12)
Dimensions (diameter x length)	23 mm x 130 mm

P/N	Color	Feature 1	Feature 2
110324	silver		



Leakage sensor LKS1, LKS-ZD

Leakage sensors are connected to level monitors such as ENW-E12 (P/N 110308xx) and MR-LD6 (11084413) to detect conductive liquids, e.g. in the event of a pipe break. If an electrically conductive liquid (e.g. water) enters the area between the two electrodes, an electrical connection will be created which triggers the alarm on the connected level monitor ENW-E12 or MR-LD6. The leakage sensor LKS-ZD also includes the feature for wire breakage monitoring on the leakage monitoring device MR-LD6. Variants: Color grey

Variants:

- LKS1, without wire break monitoring
- LKS-ZD, with wire break monitoring

Wire breakage monitoring unit	no
Connecting cable	2 x 0.75 mm ²
Cable length	2 m
Electrode	Stainless steel
Dimensions (W x H x D)	44 x 16 x 29 mm
Mounting	Mounting with 1 screw

P/N	Color	Feature 1	Feature 2
110329	gray/black	LKS1	
11032902	gray/black	LKS-ZD	wire break monitoring

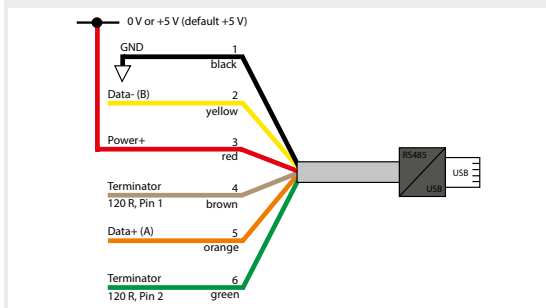


USB/RS485 converter

The USB to RS485 converter allows to connect devices with serial UART interface quickly and easily to USB. The transparent USB plug includes LEDs to view the Tx and Rx traffic on the cable. The other end of the cable consists of bare, tinned wires. Combined with our configuration software, the Modbus devices of the MR series can be connected and configured directly. The converter is USB and USB 2.0 full speed compatible and supports a data transfer rate up to 3 Mbps. The required USB-RS485 drivers are available to download for free from <http://www.ftdichip.com>.

Cable end 1	USB plug, transparent
Cable end 2	bare wires, tinned
USB performance	2.0, full speed compatible
RS485 acc.	EIA/TIA 485
Cable length	1.8 m
Data transfer rates	300 bit/s to 3 mbit/s
Handshake	X-On / X-Off (software)
Visual indication Tx and Rx	LED integrated in USB plug
Weight	80 g
Operating temperature range	-40 °C to +85 °C

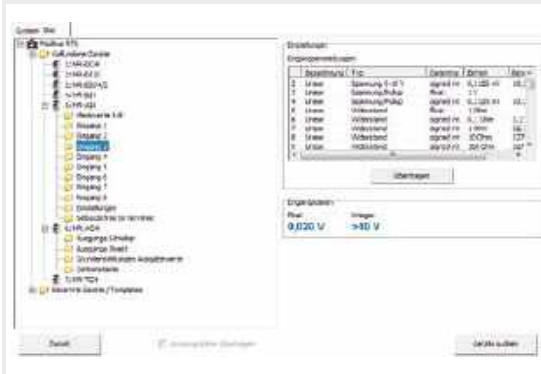
Principle diagram



P/N	Color	Feature 1	Feature 2
11080101	gray		

Modbus configuration tool is matching accessory for

- MR I/O-Module Page ab 26
- USB/RS485 converter 39



Modbus configuration tool

Simple configuration and test program for the METZ CONNECT Modbus RTU I/O-Module.

- Search all connected devices (no special addresses)
- Selected search (specific address range)
- Templates for METZ CONNECT Modbus RTU MR I/O-Module
- Setting the transmission rate and parity
- Readout of input signals and control of Outputs on METZ CONNECT Modbus RTU I/O-Modulen

P/N	Color	Feature 1	Feature 2
www.metz-connect.com			

Matching accessory for NG4

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Terminal block for I/O Components	71
Jumper plug for I/O components	71

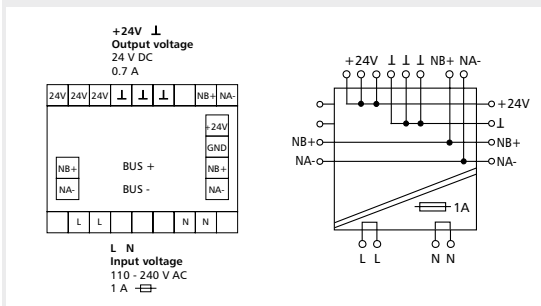


NG4

The NG4 HS power supply supplies a regulated direct voltage of 24 V DC / 16 W for supplying power to the respective devices of the product family of I/O components. The secondary voltage can only be tapped at the right side of the device front at a pluggable terminal block and at the screw-type terminal blocks. The bus communication can be tapped on both sides of the device front. A parallel operation of various power supply units is not allowed. Suitable for decentralized mounting on DIN TH35 rail according to IEC 60715 in electrical distribution cabinets.

Field of application	LON-Bus (LF-xxx) BACnet (BMT-xxx), Modbus (MR-xxx)
Input voltage range	110 - 240 V AC, 50 / 60 Hz
Internal fuse, soldered fuse	T 1,0 A/250 V
Output / power	16 W
Output / voltage	+24 V DC (SELV)
Output / current	700 mA
Load and control accuracy	+/-3 %
Mains failure backup	smaller than 40 ms
Display	green LED
Dimensions (W x H x D)	50 x 69.3 x 60 mm
Weight	108 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20
Terminal blocks	
Wire cross section solid wire	max. 4 mm ²
Wire cross section stranded wire	max. 2.5 mm ²
Wire diameter	0.3 mm up to max. 2.7 mm

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
110561	gray		with jumper plug

Matching accessory for BMT-DI4

	Page
Power supply NG4 gray	20
Terminal block for I/O Components	71
Jumper plug for I/O components	71



BMT-DI4

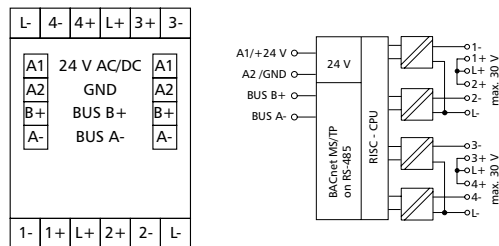
The BACnet MS/TP module with 4 digital inputs was developed for decentralized switching tasks. It is suitable for detecting potential-free switch states, for example electrical limit switches on vent valves or auxiliary contacts of power contactors. The inputs can be operated by means of potential-free switches or contacts or used as voltage inputs. The inputs can be scanned by means of standard objects via a BACnet client. The module is addressed and the baud rate is set by means of two address switches on the front.

Suitable for decentralized mounting on DIN TH35 rail according to IEC 60715 in electrical distribution cabinets.

Protocol	BACnet MS/TP
Address range	00 to F9
Bus interface	RS485 (two-wire bus)
Transmission rate	9600 to 115200 bit/s
Operating voltage	24 V AC/DC +/- 10 % (SELV)
Current consumption	50 mA (AC) / 20 mA (DC)
Relative duty cycle	100 %
Inputs	4 x digital
Input / voltage	30 V AC/DC
Input / high signal	more than 7 V AC/DC
Display	Green, red and yellow LED

Dimensions (W x H x D)	35 x 69.3 x 60 mm
Weight	95 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal blocks	IP40 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
1108841319	gray	4x IN (U or contact)	



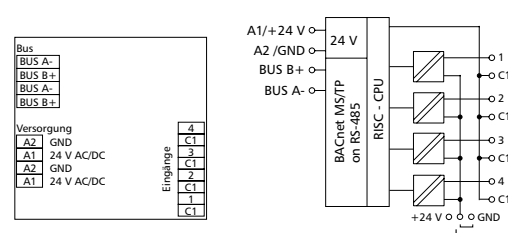
BMT-DI4-IP65

The BACnet MS/TP module in IP65 housing with 4 digital inputs was developed for decentralized switching tasks. It is suitable for detecting potential-free switch states, for example electrical limit switches on vent valves or auxiliary contacts of power contactors. The inputs can be operated by means of potential-free switches or contacts or used as voltage inputs. The inputs can be scanned by means of standard objects via a BACnet client. The module address and the baud rate are set by means of two address switches.

Protocol	BACnet MS/TP
Address range	00 to F9
Bus interface	RS485 (two-wire bus)
Transmission rate	9600 to 115200 bit/s
Operating voltage	24 V AC/DC +/- 10 % (SELV)
Current consumption	64 mA (AC) / 35 mA (DC)
Relative duty cycle	100 %
Inputs	4 x digital
Input / voltage	30 V AC/DC
Input / high signal	more than 7 V AC/DC
Display	Green, red and yellow LED

Dimensions (W x H x D)	160 x 40.7 x 120 mm
Weight	350 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal blocks	IP65 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
1108841319IP	gray	4x IN (U or contact)	

Matching accessory for BMT-DI10

	Page
Power supply NG4 gray	20
Terminal block for I/O Components	71
Jumper plug for I/O components	71

Matching accessory for BMT-SI4

	Page
Power supply NG4 gray	20
Terminal block for I/O Components	71
Jumper plug for I/O components	71

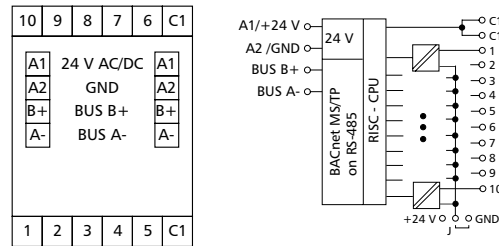


BMT-DI10

The BACnet MS/TP module with 10 digital inputs was developed for decentralized switching tasks. It is suitable for detecting potential-free switch states, for example electrical limit switches on vent valves or auxiliary contacts of power contactors. The inputs can be used as contact or voltage inputs. The inputs can be scanned by means of standard objects via a BACnet client. The module is addressed and the baud rate is set by means of two address switches on the front. Suitable for decentralized mounting on DIN TH35 rail according to IEC 60715 in electrical distribution cabinets.

Protocol	BACnet MS/TP
Address range	00 to F9
Bus interface	RS485 (two-wire bus)
Transmission rate	9600 to 115200 bit/s
Operating voltage	24 V AC/DC +/- 10 % (SELV)
Current consumption	200 mA (AC) / 75 mA (DC)
Relative duty cycle	100 %
Inputs	10 x digital
Input / voltage	0 - 24 V AC/DC
Input / high signal	more than 7 V AC/DC
Display	Green, red and yellow LED
Dimensions (W x H x D)	35 x 69.3 x 60 mm
Weight	83 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal blocks	IP40 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
1108811319	gray	10x IN (U or contact)	



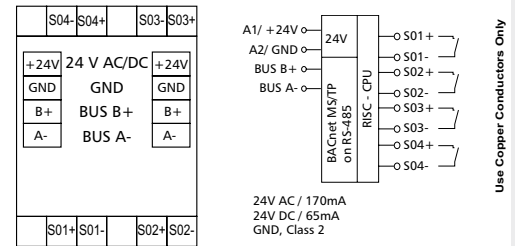
BMT-SI4

The BACnet MS/TP module with 4 S0 inputs to DIN EN 62053-31 class A was developed for decentralized switching tasks. It is suitable for counting S0 counter pulses. This allows very good integration of the module into an energy controlling system. In case of a power failure, the last counter readings are saved. The inputs can be scanned by means of standard objects via a BACnet client. The module is addressed and the baud rate is set by means of two address switches on the front.

Suitable for decentralized mounting on DIN TH35 rail according to IEC 60715 in electrical distribution cabinets.

Protocol	BACnet MS/TP
Address range	00 to F9
Bus interface	RS485 (two-wire bus)
Transmission rate	9600 to 115200 bit/s
Operating voltage	24 V AC/DC +/- 10 % (SELV)
Current consumption	170 mA (AC) / 65 mA (DC)
Relative duty cycle	100 %
Inputs	4 x S0 input, class A
Input / acc. to standard	DIN EN 62053-31
Display	Green, red and yellow LED
Dimensions (W x H x D)	35 x 69.3 x 60 mm
Weight	83 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal blocks	IP40 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
11088913	gray	4x IN (S0 impulse)	

Matching accessory for BMT-AI8

	Page
Power supply NG4 gray	20
Terminal block for I/O Components	71
Jumper plug for I/O components	71

Matching accessory for BMT-CI4

	Page
Power supply NG4 gray	20
Terminal block for I/O Components	71
Jumper plug for I/O components	71



BMT-AI8

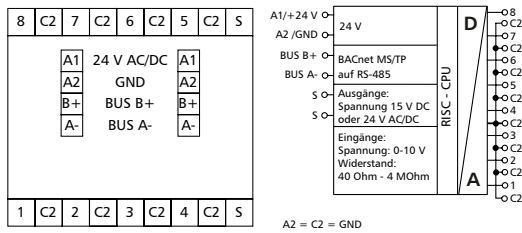
The BACnet MS/TP module with 8 individually configurable resistance or voltage inputs was developed for decentralized switching tasks. It is suitable for detecting resistances and voltages of, for example, passive and active temperature sensors, electrical vent and mixing valves, valve positions, etc. The inputs can be configured universally by means of standard objects via a BACnet client. The module is addressed and the baud rate is set by means of two address switches on the front.

Suitable for decentralized mounting on DIN TH35 rail according to IEC 60715 in electrical distribution cabinets.

Protocol	BACnet MS/TP
Address range	00 to F9
Bus interface	RS485 (two-wire bus)
Transmission rate	9600 to 115200 bit/s
Operating voltage	24 V AC/DC +/- 10 % (SELV)
Current consumption	65 mA (AC) / 25 mA (DC)
Relative duty cycle	100 %
Inputs	8 x individually configurable
Input / resistance	40 Ohm to 4 MOhm
Input / voltage	0 to 10 V DC
Input / resolution	10 mV (0 to 100 %)
Input / error	approx. +/- 100 mV
Display	Green, red and yellow LED

Dimensions (W x H x D)	50 x 69.3 x 60 mm
Weight	104 g
Operating temperature range	5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal blocks	IP40 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
11088213	gray	8x IN (U or R)	



BMT-CI4

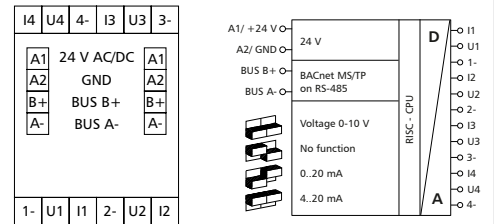
The BACnet MS/TP with 4 analog inputs was developed for decentralized switching tasks. It is suitable for detecting currents and voltages of, for example, active temperature sensors, electrical vent and mixing valves, valve positions, etc. Each input can be set as current or voltage input by DIP switches on the front. The inputs can be scanned with standard objects via a BACnet client. Module address and bit rate are set with the two rotary switches on the front.

Suitable for decentralized mounting on TH35 rails according to IEC 60715 in electrical distribution cabinets.

Protocol	BACnet MS/TP
Address range	00 to F9
Bus interface	RS485 (two-wire bus)
Transmission rate	9600 to 115200 bit/s
Operating voltage	24 V AC/DC +/- 10 % (SELV)
Current consumption	25 mA (AC) / 10 mA (DC)
Relative duty cycle	100 %
Inputs	4 x analog
Input / voltage	0 V to 10 V DC
Input / resolution	1 mV (0 to 100 %)
Input / error	10 mV
Input / current	0 (4) to 20 mA DC
Input / resolution	2 µA
Input / error	20 µA
Display	Green, red and yellow LED

Dimensions (W x H x D)	35 x 70 x 65 mm
Weight	84 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal blocks	IP40 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
1108901332	gray	4x IN (U or I) activ	

Matching accessory for BMT-DO4

	Page
Power supply NG4 gray	20
Terminal block for I/O Components	71
Jumper plug for I/O components	71

Matching accessory for BMT-TO4

	Page
Power supply NG4 gray	20
Terminal block for I/O Components	71
Jumper plug for I/O components	71



BMT-DO4

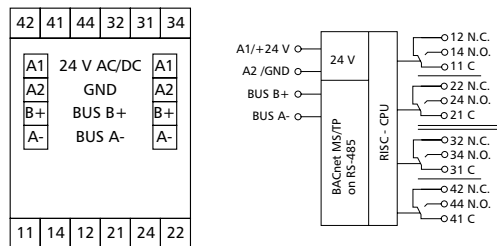
The BACnet MS/TP module with 4 digital outputs was developed for decentralized switching tasks. It is suitable for switching electrical components, such as motors, contactors, lamps, louvers, etc. In this case it is necessary to protect the relay contacts by appropriate load-dependent measures. The module is provided with a manual control for manually switching the relays. The outputs can be switched by means of standard objects via a BACnet client. The module is addressed and the baud rate is set by means of two address switches on the front.

Suitable for decentralized mounting on DIN TH35 rail according to IEC 60715 in electrical distribution cabinets.

Protocol	BACnet MS/TP
Address range	00 to F9
Bus interface	RS485 (two-wire bus)
Transmission rate	9600 to 115200 bit/s
Operating voltage	24 V AC/DC +/- 10 % (SELV)
Current consumption	200 mA (AC) / 70 mA (DC)
Relative duty cycle	100 %
Output / contacts	4 changeover contacts (4PST)
Output / switching voltage	250 V AC
Output / continuous current	5 A / output
Output / switching frequency	360 cycles/h
Display	Green, red and yellow LED

Dimensions (W x H x D)	35 x 69.3 x 60 mm
Weight	95 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal blocks	IP40 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
1108861321	gray	4x OUT (relay CO)	



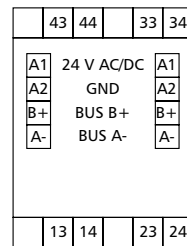
BMT-TO4

The BACnet MS/TP module with 4 digital triac outputs was developed for decentralized switching tasks. It is suitable for switching electrical components, such as relays, contactors, HLK valves, etc. The outputs can be switched by means of standard objects via a BACnet client. In addition, the outputs can be overridden manually by means of switches on the device. The module is addressed and the baud rate is set by means of two address switches on the front. Suitable for decentralized mounting on DIN TH35 rail according to IEC 60715 in electrical distribution cabinets.

Protocol	BACnet MS/TP
Address range	00 to F9
Bus interface	RS485 (two-wire bus)
Transmission rate	9600 to 115200 bit/s
Operating voltage	24 V AC/DC +/- 10 % (SELV)
Current consumption	100 mA (AC) / 40 mA (DC)
Relative duty cycle	100 %
Output / contacts	4 digital outputs (triac)
Output / switching voltage	24 V AC up to max. 250 V AC
Output / continuous current	0.5 A / output
Output / switching current	0.8 A (less than 30 s)
Output / switch-on current	10 A (less than 20 ms)
Display	Green, red and yellow LED

Dimensions (W x H x D)	35 x 69.3 x 60 mm
Weight	95 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal blocks	IP40 / IP20

Wiring



P/N	Color	Feature 1	Feature 2
11088013	gray	4x OUT (triac)	

Matching accessory for BMT-AOP4

	Page
Power supply NG4 gray	20
Terminal block for I/O Components	71
Jumper plug for I/O components	71

Matching accessory for BMT-AO4

	Page
Power supply NG4 gray	20
Terminal block for I/O Components	71
Jumper plug for I/O components	71



BMT-AOP4

The BACnet MS/TP module with 4 analog outputs was developed for decentralized switching tasks. It is suitable as encoder for control variables, for example for electrical vent and mixing valves, valve positions, etc.

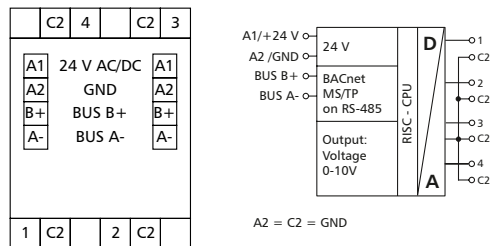
The outputs can be output by means of standard objects via a BACnet client. Each output can be set for automatic or manual operation by means of 4 potentiometers at the front. The module is addressed and the baud rate is set by means of two address switches on the front.

Suitable for decentralized mounting on DIN TH35 rail according to IEC 60715 in electrical distribution cabinets.

Protocol	BACnet MS/TP
Address range	00 to F9
Bus interface	RS485 (two-wire bus)
Transmission rate	9600 to 115200 bit/s
Operating voltage	24 V AC/DC +/- 10 % (SELV)
Current consumption	50 mA (AC) / 20 mA (DC)
Relative duty cycle	100 %
Outputs	4 x analog
Output / voltage	0 V to 10 V DC
Output / current	5 mA at 10 V DC
Output / resolution	10 mV / Digit
Display	Green and red LED

Dimensions (W x H x D)	35 x 69.3 x 60 mm
Weight	72 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal blocks	IP40 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
1108871302	gray	4x OUT (U)	manual/automatic



BMT-AO4

The BACnet MS/TP module with 4 analog outputs was developed for decentralized switching tasks. It is suitable as encoder for control variables, for example for electrical vent and mixing valves, valve positions, etc.

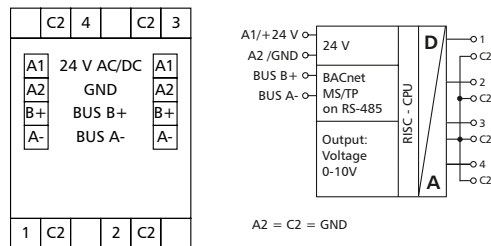
The outputs can be output by means of standard objects via a BACnet client. The module is addressed and the baud rate is set by means of two address switches on the front.

Suitable for decentralized mounting on DIN TH35 rail according to IEC 60715 in electrical distribution cabinets.

Protocol	BACnet MS/TP
Address range	00 to F9
Bus interface	RS485 (two-wire bus)
Transmission rate	9600 to 115200 bit/s
Operating voltage	24 V AC/DC +/- 10 % (SELV)
Current consumption	50 mA (AC) / 20 mA (DC)
Relative duty cycle	100 %
Outputs	4 x analog
Output / voltage	0 V to 10 V DC
Output / current	5 mA at 10 V DC
Output / resolution	10 mV / digit
Display	Green and red LED

Dimensions (W x H x D)	35 x 69.3 x 60 mm
Weight	72 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal blocks	IP40 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
1108851302	gray	4x OUT (U)	

Matching accessory for BMT-Multi-I/O

	Page
Power supply NG4 gray	20
Terminal block for I/O Components	71
Jumper plug for I/O components	71

Matching accessory for BMT-DIO4/2

	Page
Power supply NG4 gray	20
Terminal block for I/O Components	71
Jumper plug for I/O components	71

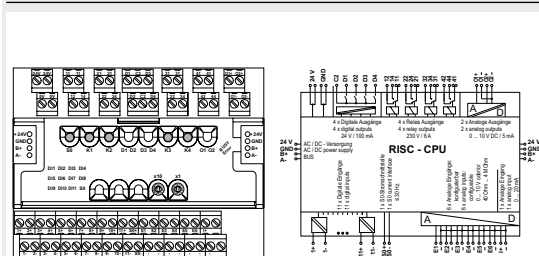


BMT-Multi-I/O

The BACnet module BMT-Multi I/O is a compact and rapidly to install solution to connect digital and analog signals from the actor and sensor level directly to a control unit in building automation via BACnet MS/TP protocol. 29 I/Os, some of them are configurable, are available for different tasks. The inputs and outputs can be controlled and scanned by standard objects via a BACnet Client. Module address and bit rate are set with two rotary switches on the front or by software. The relays K1 to K4 are equipped with a manual control and allow manual intervention. In this case it is necessary to protect the relay contacts by appropriate load-dependent measures. Suitable for decentralized mounting on DIN TH35 rail according to IEC 60715 in electrical distribution cabinets.

Protocol	BACnet MS/TP
Address range	00 to F9 hex
Bus interface	RS485 (two-wire bus)
Transmission rate	9600 to 115200 bit/s
Operating voltage	24 V AC/DC +/- 10 % (SELV)
Current consumption	220 mA (AC) / 110 mA (DC)
Relative duty cycle	100 %
Inputs / digital	11 x optocoupler, galvanically isolated
Input / SO	1 x per DIN EN 62053-31, Class A
Inputs analog for resistance or for voltage	configurable 6 x 40 Ohm to 4 MOhm 6 x 0 to 10 V DC
Input / current	1 x analog 0 to 20 mA DC
Outputs / Relay	4 x changeover (4PDT) / 250 V AC / 6 A
Manual control	push buttons, shift from automatic to manual operation by pressing > 1 s
Outputs / PhotoMOS	4 x 24 V AC/DC / 100 mA, galvanically isolated

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
11089313	gray		



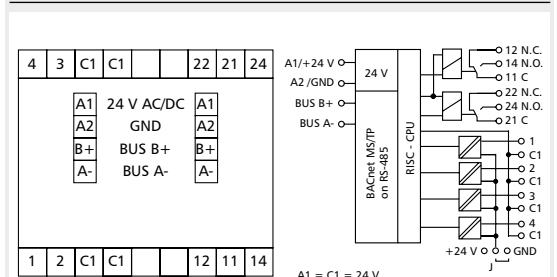
BMT-DIO4/2

The BACnet MS/TP module with 4 digital inputs and 2 relay outputs with manual control was developed for decentralized switching tasks. It is suitable for accommodating, for example, light switches and window contacts in a room, switching two light strips or controlling louvers. It can also be used to control 2 motorized fire dampers. In this case it is necessary to protect the relay contacts by appropriate load-dependent measures. The inputs can be used as contact or voltage inputs. The inputs and outputs can be switched and scanned by means of standard objects via a BACnet client. The module address and the baud rate are set by means of two address switches on the front.

Suitable for decentralized mounting on DIN TH35 rail according to IEC 60715 in electrical distribution cabinets.

Protocol	BACnet MS/TP
Address range	00 to F9
Bus interface	RS485 (two-wire bus)
Transmission rate	9600 to 115200 bit/s
Operating voltage	24 V AC/DC +/- 10 % (SELV)
Current consumption	200 mA (AC) / 75 mA (DC)
Relative duty cycle	100 %
Inputs	4 x digital
Input / voltage	0 - 24 V AC/DC
Input / high signal	more than 7 V AC/DC
Output / contacts	2 changeover contacts (DPDT)
Output / switching voltage	250 V AC
Output / continuous current	16 A / output
Output / switch-on current	80 A (less than 20 ms)
Display	Green, red and yellow LED
Dimensions (W x H x D)	50 x 69.3 x 60 mm
Weight	126 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal blocks	IP40 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
1108831326	gray	4x IN (U or contact)	2x OUT (relay CO)

Matching accessory for
BMT-DIO4/2-IP65 and
BMT-DIO4/2-IP 230 V

Page

Power supply NG4 gray 20

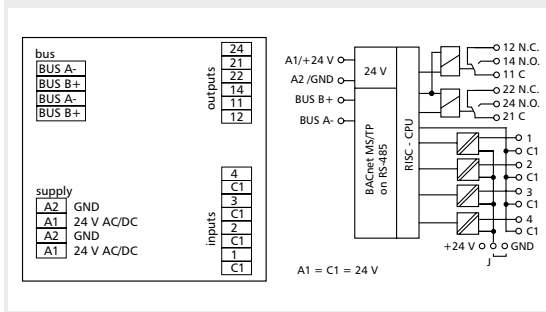


BMT-DIO4/2-IP65

The BACnet MS/TP module in IP65 housing with 4 digital inputs and 2 relay outputs with manual control was developed for decentralized switching tasks. It is suitable for accommodating, for example, light switches and window contacts in a room, switching two light strips or controlling louvers. It can also be used to control 2 motorized fire dampers. In this case it is necessary to protect the relay contacts by appropriate load-dependent measures. The inputs can be used as contact or voltage inputs. The inputs and outputs can be switched and scanned by means of standard objects via a BACnet client. The module address and the baud rate are set by means of two address switches.

Protocol	BACnet MS/TP
Address range	00 to F9
Bus interface	RS485 (two-wire bus)
Transmission rate	9600 to 115200 bit/s
Operating voltage	24 V AC/DC +/- 10 % (SELV)
Current consumption	200 mA (AC) / 75 mA (DC)
Relative duty cycle	100 %
Inputs	4 x digital
Input / voltage	0 - 24 V AC/DC
Input / high signal	more than 7 V AC/DC
Output / contacts	2 changeover contacts (DPDT)
Output / switching voltage	250 V AC
Output / continuous current (UL)	8 A / output
Output / continuous current (VDE)	10 A / output
Output / switch-on current	80 A (less than 20 ms)
Display	Green, red and yellow LED
Dimensions (W x H x D)	160 x 40.7 x 120 mm
Weight	350 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal blocks	IP65 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
1108831326IP	gray	4x IN (U or contact)	2x OUT (relay CO)

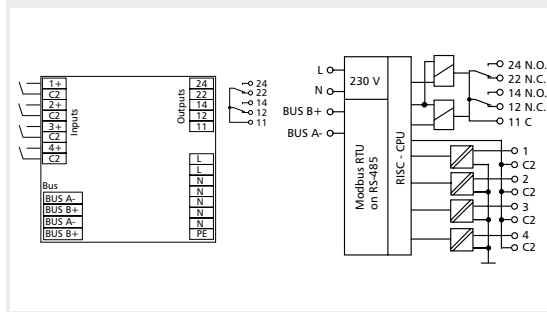


BMT-DIO4/2-IP 230 V

The BACnet MS/TP module in IP65 housing with 4 digital inputs and 2 relay outputs with manual control was developed for decentralized switching tasks. It is suitable for accommodating, for example, light switches and window contacts in a room, switching two light strips or controlling louvers. It can also be used to control 2 motorized fire dampers. In this case it is necessary to protect the relay contacts by appropriate load-dependent measures. The inputs can be used as contact or voltage inputs. The inputs and outputs can be switched and scanned by means of standard objects via a BACnet client. Module address and bit rate are set with two rotary switches.

Protocol	BACnet MS/TP
Address range	00 to F9
Bus interface	RS485 (two-wire bus)
Transmission rate	9600 to 115200 bit/s
Operating voltage	230 V +/-10 %
Current consumption	200 mA (AC) / 12 mA (DC)
Relative duty cycle	100 %
Inputs	4 x digital (contact)
Output / contacts	2 changeover contacts (DPST)
Output / switching voltage	250 V AC
Output / continuous current (UL)	8 A / output
Output / continuous current (VDE)	10 A / output
Display	Green, red and yellow LED
Dimensions (W x H x D)	159 x 41.5 x 120 mm
Weight	350 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal blocks	IP65 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
1108830526IP	gray		

Matching accessory for BMT-TP

	Page
Power supply NG4 gray	20
Terminal block for I/O Components	71
Jumper plug for I/O components	71



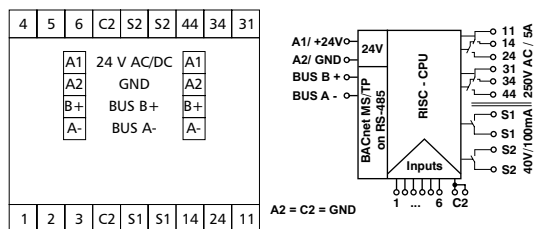
BMT-TP

The BACnet MS/TP three-point module with 6 digital inputs, 2 two-level relay outputs and 2 digital outputs was developed for decentralized switching tasks. It is suitable for switching, for example, multi-level pumps and fans or louvers. In this case it is necessary to protect the relay contacts by appropriate load-dependent measures. The inputs and outputs can be switched and scanned by means of standard objects via a BACnet client. The input terminals 1 to 6 are wired with the C2 terminals on two poles to potential-free switches or contacts. The module has a manual control for the outputs. The module address and the baud rate are set by means of two address switches on the front.

Suitable for decentralized mounting in serial sub-distributor.

Protocol	BACnet MS/TP
Address range	00 to F9
Bus interface	RS485 (two-wire bus)
Transmission rate	9600 to 115200 bit/s
Operating voltage	24 V AC/DC +/- 10 % (SELV)
Current consumption	100 mA (AC) / 40 mA (DC)
Relative duty cycle	100 %
Inputs	6 x digital contacts
Input / switching threshold	4.5 V DC
Outputs (relay)	2 x two-level
Output / switching voltage	250 V AC
Output / current	6 A / output
Outputs (digital)	2 NO (DPST-NO) (photoMOS)
Output / switching voltage	40 V AC/DC
Output / current	100 mA
Display	Green, red and yellow LED
Dimensions (W x H x D)	50 x 69.3 x 60 mm
Weight	125 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal blocks	IP40 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
11088813	gray	6x IN (contact)	2x OUT (relay CO), 2x OUT (opto NO)

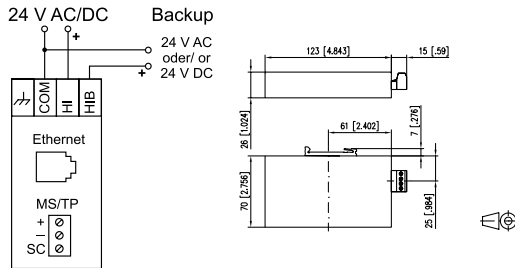


BACnet IP / BACnet MS/TP Router

The BACnet IP / BACnet MS/TP Router provides stand-alone routing between BACnet networks such as BACnet/IP, BACnet Ethernet, and BACnet MS/TP - thereby allowing the system integrator to mix BACnet network technologies within a single BACnet internetwork. One 10/100 Mbps Ethernet port and an MS/TP port are used as communication interface to the respective BACnet networks. An integrated web server allows the configuration, status monitoring, and troubleshooting.

Operating voltage	24 V AC/DC +/- 10 %
Power consumption	4 VA (AC) or 2 W (DC)
Ethernet communications	IEEE 802.3, 10/100 Mbps, 10BASE-T, 100BASE-TX
MS/TP communications	ANSI/ASHRAE 135, ISO16484-5, EIA/TIA 485 9600, 19200, 38400 and 76800 bit/s
Display (Power)	LED, green
Ethernet	100 Mbps = LED, green 10 Mbps = LED, yellow Activity = LED, flashing
MS/TP	Activity = LED, green flashing
Montage	TH35 acc. IEC60715
Weight	220 g
Operating temperature range	0 °C to +60 °C
Storage temperature range	-40 °C to +85 °C
Relative humidity	10 to 95 %, non condensing
Ingress protection	IP30

Wiring/Dimensional drawing



P/N	Color	Feature 1	Feature 2
11080001	black	6x IN (contact)	2x OUT (relay CO), 2x OUT (opto NO)

Matching accessory for NG4

	Page
Terminal block for I/O Components	71
Jumper plug for I/O components	71

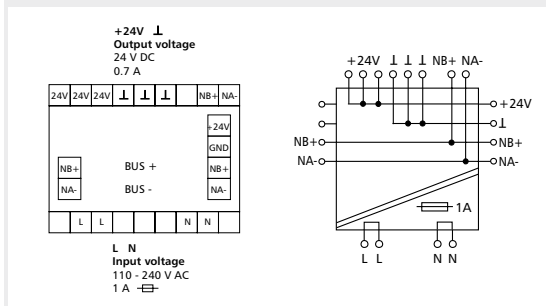


NG4

The NG4 HS power supply supplies a regulated direct voltage of 24 V DC / 16 W for supplying power to the respective devices of the product family of I/O components. The secondary voltage can only be tapped at the right side of the device front at a pluggable terminal block and at the screw-type terminal blocks. The bus communication can be tapped on both sides of the device front. A parallel operation of various power supply units is not allowed. Suitable for decentralized mounting on DIN TH35 rail according to IEC 60715 in electrical distribution cabinets.

Field of application	LON-Bus (LF-xxx) BACnet (BMT-xxx), Modbus (MR-xxx)
Input voltage range	110 - 240 V AC, 50 / 60 Hz
Internal fuse, soldered fuse	T 1,0 A/250 V
Output / power	16 W
Output / voltage	+24 V DC (SELV)
Output / current	700 mA
Load and control accuracy	+/-3 %
Mains failure backup	smaller than 40 ms
Display	green LED
Dimensions (W x H x D)	50 x 69.3 x 60 mm
Weight	108 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20
Terminal blocks	
Wire cross section solid wire	max. 4 mm ²
Wire cross section stranded wire	max. 2.5 mm ²
Wire diameter	0.3 mm up to max. 2.7 mm

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
110561	gray		with jumper plug

Matching accessory for LF-DI4

	Page
Power supply NG4 gray	20
Terminal block for I/O Components	71
Jumper plug for I/O components	71

Matching accessory for LF-DI10

	Page
Power supply NG4 gray	20
Terminal block for I/O Components	71
Jumper plug for I/O components	71

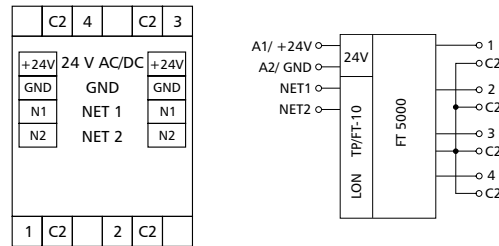


LF-DI4

The LON module with 4 digital inputs was developed for decentralized switching tasks. It is suitable for detecting potential-free switch states, for example electrical limit switches on vent valves or auxiliary contacts of power contactors. The input terminals 1 to 4 are wired with the C2 terminals to potential-free switches or contacts. The inputs can be scanned individually or simultaneously by SNVT network variables. Suitable for decentralized mounting on DIN TH35 rail according to IEC 60715 in electrical distribution cabinets.

Protocol	TP/FT-10, free topology
Neuron	FT5000
Transmission rate	78 KBit/s
Operating voltage	24 V AC/DC +/- 10 % (SELV)
Current consumption	63 mA (AC) / 24 mA (DC)
Relative duty cycle	100 %
Recovery time	550 ms
Inputs	4 contact inputs
Input / switching threshold	4,5 V DC
Display	Green and yellow LED
Dimensions (W x H x D)	35 x 69.3 x 60 mm
Weight	72 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal blocks	IP40 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
1108501319	gray	4x IN (U or contact)	

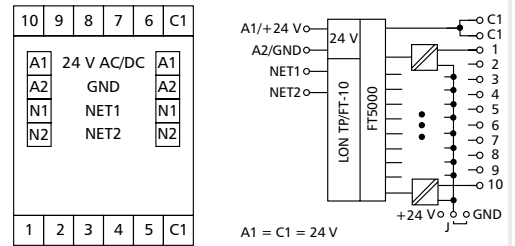


LF-DI10

The LON module with 10 digital inputs was developed for decentralized switching tasks. It is suitable for detecting potential-free switch states, for example electrical limit switches on vent valves or auxiliary contacts of power contactors. The inputs can be used as contact or voltage inputs and scanned individually or simultaneously by SNVT network variables. Suitable for decentralized mounting on DIN TH35 rail according to IEC 60715 in electrical distribution cabinets.

Protocol	TP/FT-10, free topology
Neuron	FT5000
Transmission rate	78 KBit/s
Operating voltage	24 V AC/DC +/- 10 % (SELV)
Current consumption	63 mA (AC) / 21 mA (DC)
Relative duty cycle	100 %
Recovery time	550 ms
Inputs	10 x contact or voltage
Input / voltage	24 V AC/DC
Input / high signal	more than 8 V AC/DC
Display	Green and yellow LED
Dimensions (W x H x D)	35 x 69.3 x 60 mm
Weight	83 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal blocks	IP40 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
1108511319	gray	10x IN (U or contact)	

Matching accessory for LF-DI10-IP65

Power supply NG4 gray Page 20

Matching accessory for LF-DI230

Power supply NG4 gray Page 20

Terminal block for I/O Components Page 71

Jumper plug for I/O components Page 71



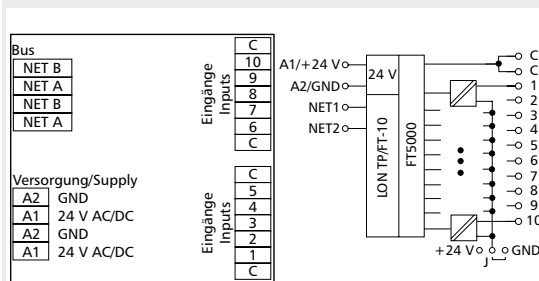
LF-DI10-IP65

The LON module in an IP65 housing with 10 digital inputs was developed for decentralized switching tasks. It is suitable for detecting potential-free switch states, for example electrical limit switches on vent valves or auxiliary contacts of power contactors. The inputs can be used as contact or voltage inputs and scanned individually or simultaneously by SNVT network variables. Suitable for decentralized mounting in serial sub-distributor.

Protocol	TP/FT-10, free topology
Neuron	FT5000
Transmission rate	78 KBit/s
Operating voltage	24 V AC/DC +/- 10 % (SELV)
Current consumption	63 mA (AC) / 21 mA (DC)
Relative duty cycle	100 %
Recovery time	550 ms
Inputs	10 x contact or voltage
Input / voltage	24 V AC/DC
Input / high signal	more than 8 V AC/DC
Display	Green and yellow LED

Dimensions (W x H x D)	160 x 40.7 x 120 mm
Weight	300 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal blocks	IP65 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
1108511319IP	gray	10x IN (U or contact)	



LF-DI230

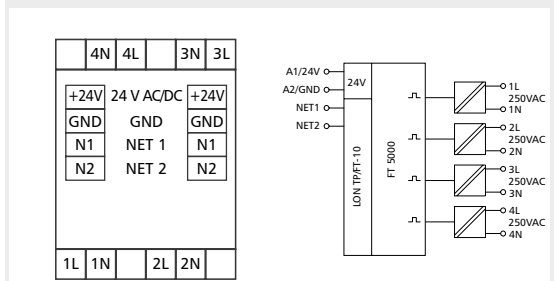
The LON module with 4 digital inputs was developed for decentralized switching tasks. It is suitable for detecting 230 V AC switch states, for example, switches or buttons for light control. The input terminals 1L to 4L are wired with 1N to 4N terminals to 230 V AC via switches or contacts. The inputs can be integrated individually or simultaneously by SNVT network variables.

Suitable for decentralized mounting on DIN TH35 rail according to IEC 60715 in electrical distribution cabinets.

Protocol	TP/FT-10, free topology
Neuron	FT5000
Transmission rate	78 KBit/s
Operating voltage	24 V AC/DC +/- 10 % (SELV)
Current consumption	63 mA (AC) / 24 mA (DC)
Relative duty cycle	100 %
Recovery time	550 ms
Inputs	4 x digital
Input / input voltage	230 V AC
Display	Green and yellow LED

Dimensions (W x H x D)	35 x 69.3 x 60 mm
Weight	72 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal blocks	IP40 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
11086313	gray	4x IN (U=230 V AC)	

Matching accessory for LF-SI4

	Page
Power supply NG4 gray	20
Terminal block for I/O Components	71
Jumper plug for I/O components	71



LF-SI4

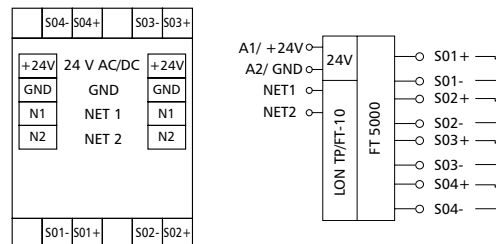
The LON module with 4 S0 inputs to DIN EN 62053-31 class A was developed for decentralized switching tasks. It is suitable for counting S0 counter pulses. The software contains the LONMARK profile 2201-10 utility meter. This allows very good integration of the module into a LON-based energy controlling system. For each channel, the module saves up to 500 data records consisting of counter pulses and time stamps by means of a real-time clock (RTC). This makes it possible to use the LF-SI4 also as data logger. In case of a power failure, the data records remain saved. SNVT network variables allow scanning the inputs individually or simultaneously.

Suitable for decentralized mounting on DIN TH35 rail according to IEC 60715 in electrical distribution cabinets.

Protocol	TP/FT-10, free topology
Neuron	FT5000
Transmission rate	78 KBit/s
Operating voltage	24 V AC/DC +/- 10 % (SELV)
Current consumption	210 mA (AC) / 82 mA (DC)
Relative duty cycle	100 %
Recovery time	550 ms
Inputs	4 x S0 input, class A
Input / acc. to standard	DIN EN 62053-31
Display	Green and yellow LED

Dimensions (W x H x D)	35 x 69.3 x 60 mm
Weight	83 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal blocks	IP40 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
11085813	gray	4x IN (S0 impulse)	

Matching accessory for LF-AI8

	Page
Power supply NG4 gray	20
Terminal block for I/O Components	71
Jumper plug for I/O components	71

Matching accessory for LF-CI4

	Page
Power supply NG4 gray	20
Terminal block for I/O Components	71
Jumper plug for I/O components	71

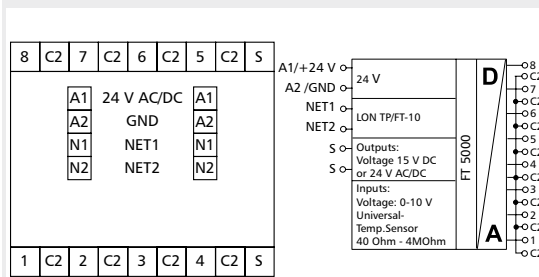


LF-AI8

The LON module with 8 individually configurable resistance or voltage inputs was developed for decentralized switching tasks. It is suitable for detecting resistances and voltages of, for example, passive and active temperature sensors, electrical vent and mixing valves, valve positions, etc. The inputs can be scanned simultaneously by SNVT network variables. Suitable for decentralized mounting on DIN TH35 rail according to IEC 60715 in electrical distribution cabinets.

Protocol	TP/FT-10, free topology
Neuron	FT5000
Transmission rate	78 KBit/s
Operating voltage	24 V AC/DC +/- 10 % (SELV)
Current consumption	65 mA (AC) / 25 mA (DC)
Relative duty cycle	100 %
Recovery time	550 ms
Inputs	8 x individually configurable
Input / resistance	40 Ohm to 4 MOhm
Input / voltage	0 to 10 V DC
Input / resolution	10 mV (0 to 100 %)
Input / error	approx. +/- 10 mV
Display	Green and yellow LED
Dimensions (W x H x D)	50 x 69.3 x 60 mm
Weight	126 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal blocks	IP40 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
11085313	gray	8x IN (U or R)	

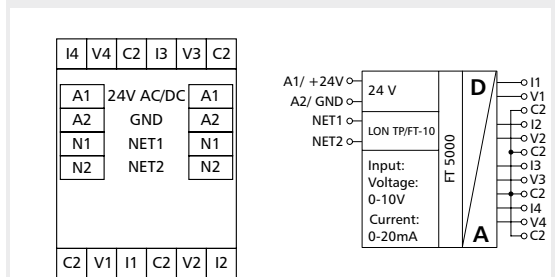


LF-CI4

The LON module with analog inputs was developed for decentralized switching tasks. It is suitable for detecting 4 currents and 4 voltages of, for example, active temperature sensors, electrical vent and mixing valves, valve positions, etc. The inputs can be scanned by SNVT network variables. Suitable for decentralized mounting on TH35 rails according to IEC 60715 in electrical distribution cabinets.

Protocol	TP/FT-10, free topology
Neuron	FT5000
Transmission rate	78 KBit/s
Operating voltage	24 V AC/DC +/- 10 % (SELV)
Current consumption	67 mA (AC) / 24 mA (DC)
Relative duty cycle	100 %
Recovery time	550 ms
Inputs	4 x voltage, 4 x current
Input / voltage	0 V to 10 V DC
Input / resolution	10 mV (0 to 100 %)
Input / resistance	10 kOhm
Input / current	0 to 20 mA DC
Input / resolution	0.05 mA
Input / error	1 %
Display	Green and yellow LED
Dimensions (W x H x D)	35 x 69.3 x 60 mm
Weight	84 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal blocks	IP40 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
1108601332	gray	4x IN (U or I) activ	

Matching accessory for LF-DO4

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Power supply NG4 gray	20
Terminal block for I/O Components	71
Jumper plug for I/O components	71

Matching accessory for LF-DO4-IP65

	Page
Power supply NG4 gray	20

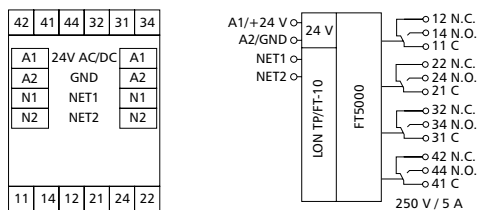


LF-DO4

The LON module with 4 digital outputs was developed for decentralized switching tasks. It is suitable for switching electrical components, such as motors, contactors, lamps, louvers, etc. In this case it is necessary to protect the relay contacts by appropriate load-dependent measures. The outputs can be actuated by SNVT network variables. The module has a manual control activated only in configured mode. In addition, an adjustable wipe function is integrated. Suitable for decentralized mounting on DIN TH35 rail according to IEC 60715 in electrical distribution cabinets.

Protocol	TP/FT-10, free topology
Neuron	FT5000
Transmission rate	78 KBit/s
Operating voltage	24 V AC/DC +/- 10 % (SELV)
Current consumption	205 mA (AC) / 67 mA (DC)
Relative duty cycle	100 %
Recovery time	550 ms
Outputs	4 changeover contacts (4PDT)
Output / switching voltage	max. 250 V AC
Output / continuous current	5 A / output
Output / total current	max. 12 A / all outputs
Output / switching frequency	360 cycles/h
Display	Green and yellow LED
Dimensions (W x H x D)	35 x 69.3 x 60 mm
Weight	95 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal blocks	IP40 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
1108521321	gray	4x OUT (relay CO)	manual/automatic

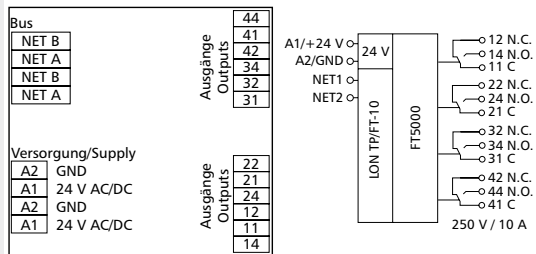


LF-DO4-IP65

The LON module in an IP65 housing with 4 digital outputs was developed for decentralized switching tasks. It is suitable for switching electrical components, such as motors, contactors, lamps, louvers, etc. In this case it is necessary to protect the relay contacts by appropriate load-dependent measures. The outputs can be actuated by SNVT network variables. The module has a manual control activated only in configured mode. In addition, an adjustable wipe function is integrated.

Protocol	TP/FT-10, free topology
Neuron	FT5000
Transmission rate	78 KBit/s
Operating voltage	24 V AC/DC +/- 10 % (SELV)
Current consumption	205 mA (AC) / 67 mA (DC)
Relative duty cycle	100 %
Recovery time	550 ms
Outputs	4 changeover contacts (4PST)
Output / switching voltage	max. 250 V AC
Output / switch-on, switch-off current	80 A, 20 ms
Output / continuous current	10 A / output
Output / total current	max. 25 A / all outputs
Output / switching frequency	360 cycles/h
Display	Green and yellow LED
Dimensions (W x H x D)	160 x 40.7 x 120 mm
Weight	368 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal blocks	IP65 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
1108521321IP	gray	4x OUT (relay CO)	manual/automatic

Matching accessory for LF-TO4

	Page
Power supply NG4 gray	20
Terminal block for I/O Components	71
Jumper plug for I/O components	71

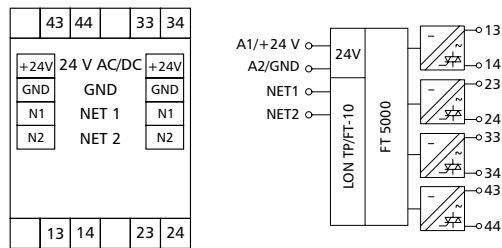


LF-TO4

The LON module with 4 digital outputs was developed for decentralized switching tasks. It is suitable for switching electrical components, such as relays, contactors, HLK valves, etc. The 4 triacs can be controlled individually in a LON installation by means of standard network variables. The module has a manual control activated only in configured mode. In addition, an adjustable pulse/pause function is integrated. Suitable for decentralized mounting in serial sub-distributor.

Protocol	TP/FT-10, free topology
Neuron	FT5000
Transmission rate	78 KBit/s
Operating voltage	24 V AC/DC +/- 10 % (SELV)
Current consumption	63 mA (AC) / 24 mA (DC)
Relative duty cycle	100 %
Recovery time	550 ms
Outputs	4 digital outputs (triac)
Output / switching voltage	20 V to 250 V AC
Output / continuous current	0.8 A / output
Output / total current	2.4 A / all outputs
Display	Green and yellow LED
Dimensions (W x H x D)	35 x 69.3 x 60 mm
Weight	104 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal blocks	IP40 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
11086213	gray	4x OUT (triac)	

Matching accessory for LF-AOP4

	Page
Power supply NG4 gray	20
Terminal block for I/O Components	71
Jumper plug for I/O components	71

Matching accessory for LF-AO4-IP65

	Page
Power supply NG4 gray	20

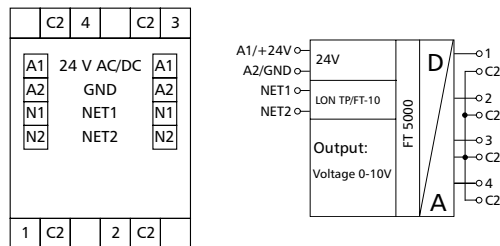


LF-AOP4

The LON module with 4 analog outputs was developed for decentralized switching tasks. It is suitable as encoder for control variables, for example for electrical vent and mixing valves, valve positions, etc. The analog outputs can be activated proportionally by SNVT network variables, or previously defined voltage values can be adjusted. Each output can be set for automatic or manual operation by means of 4 potentiometers at the front. Suitable for decentralized mounting on DIN TH35 rail according to IEC 60715 in electrical distribution cabinets.

Protocol	TP/FT-10, free topology
Neuron	FT5000
Transmission rate	78 KBit/s
Operating voltage	24 V AC/DC +/- 10 % (SELV)
Current consumption	100 mA (AC) / 40 mA (DC)
Relative duty cycle	100 %
Recovery time	550 ms
Outputs	4 x analog
Output / voltage	0 V to 10 V DC
Output / current	5 mA to 10 V DC
Output / resolution	0.625 mV / digit
Output / error	100 mV
Display	Green and yellow LED
Dimensions (W x H x D)	35 x 69.3 x 60 mm
Weight	84 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal blocks	IP40 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
11085413	gray	4x OUT (U)	manual/automatic

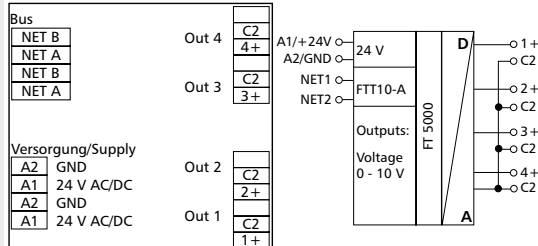


LF-AO4-IP65

The LON module with 4 analog outputs was developed for decentralized switching tasks. It is suitable as encoder for control variables, for example for electrical vent and mixing valves, valve positions, etc. The analog outputs can be activated proportionally by SNVT network variables, or previously defined voltage values can be adjusted.

Protocol	TP/FT-10, free topology
Neuron	FT5000
Transmission rate	78 KBit/s
Operating voltage	24 V AC/DC +/- 10 % (SELV)
Current consumption	50 mA (AC) / 20 mA (DC)
Relative duty cycle	100 %
Recovery time	550 ms
Outputs	4 x analog
Output / voltage	0 V to 10 V DC
Output / current	5 mA to 10 V DC
Output / resolution	0.625 mV / digit
Output / error	100 mV
Display	Green and yellow LED
Dimensions (W x H x D)	160 x 40.7 x 120 mm
Weight	300 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal blocks	IP65 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
11085413IP	gray	4x OUT (U)	

Matching accessory for LF-AM2/4

	Page
Power supply NG4 gray	20
Terminal block for I/O Components	71
Jumper plug for I/O components	71

Matching accessory for LF-TI-IP65

	Page
Power supply NG4 gray	20
Terminal block for I/O Components	71
Jumper plug for I/O components	71

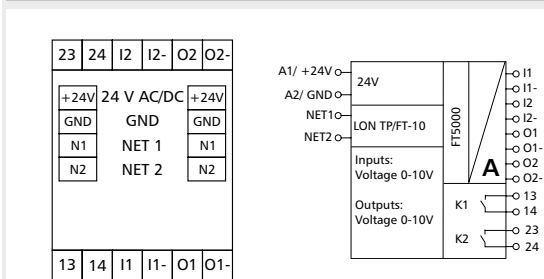


LF-AM2/4

The LON I/O module with 2 analog inputs, 2 analog outputs and 2 digital outputs. It is suitable for controlling, for example, motorized vent valves and switching on alarm at the set threshold value. The inputs and outputs are scanned and activated by SNVT network variables. The analog inputs can be scanned simultaneously. The analog outputs can be activated proportionally, or previously defined voltage values can be adjusted. Both digital outputs can be activated individually or as a function of an adjustable threshold value. Suitable for decentralized mounting on DIN TH35 rail according to IEC 60715 in electrical distribution cabinets.

Protocol	TP/FT-10, free topology
Neuron	FT5000
Transmission rate	78 KBit/s
Operating voltage	24 V AC/DC +/- 10 % (SELV)
Current consumption	95 mA (AC) / 35 mA (DC)
Relative duty cycle	100 %
Inputs	2 x analog
Input / voltage	0 V to 10 V DC
Input / resolution	10 mV (0 to 100 %)
Outputs	2 x analog
Output / voltage	0 V to 10 V DC
Output / current	5 mA at 10 V DC
Output / resolution	10 mV (0 to 100 %)
Output	2 x digital
Output / contacts	2 NO (DPST-NO) photoMOS relay
Switching voltage	max. 40 V AC/DC
Continuous current	max. 100 mA
Operation and bus display	Green and yellow LED
Dimensions (W x H x D)	35 x 69.3 x 60 mm
Weight	82 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal blocks	IP40 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
11085713	gray	2x IN (U)	2x OUT (U), 2x OUT (opto NO)

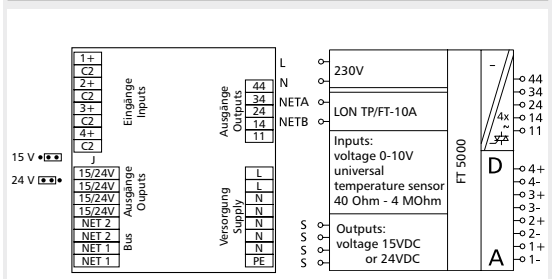


LF-TI-IP65

The LON module in an IP65 housing with 4 universal inputs and 4 digital outputs was developed for decentralized switching tasks. It is suitable for detecting temperatures or voltages or for switching 4 thermal valve drives with triacs. The inputs and outputs are scanned and activated by SNVT network variables. The outputs can be operated either only switching or in clocking mode with adjustable pulse/pause ratio.

Protocol	TP/FT-10, free topology
Neuron	FT5000
Transmission rate	78 KBit/s
Operating voltage	230 V AC, 50 Hz
Current consumption	less than 25 mA
Relative duty cycle	100 %
Inputs	4 x analog
Input / resistance	40 Ohm to 4 MOhm
Input / voltage	0 V to 10 V DC
Input / resolution	10 mV (0 to 100 %)
Outputs	4 x digital, triac
Output / switching voltage	20 V to 250 V AC
Output / current	0.8 A
Output / total current	2.4 A / all outputs
Output / fuse	2 A / output
Operation and bus display	Green and yellow LED
Dimensions (W x H x D)	159 x 41.5 x 120 mm
Weight	330 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal blocks	IP65 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
11086105IP	gray	4x IN (U or R)	4x OUT (triac)

Matching accessory for LF-DM4/4

	Page
Power supply NG4 gray	20
Terminal block for I/O Components	71
Jumper plug for I/O components	71

Matching accessory for LF-TP

	Page
Power supply NG4 gray	20
Terminal block for I/O Components	71
Jumper plug for I/O components	71



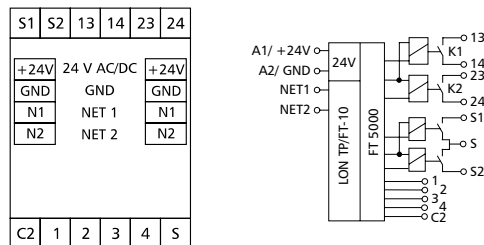
LF-DM4/4

The LON I/O module with 4 digital inputs, 2 relay outputs and 2 digital outputs was developed for decentralized switching tasks. It is suitable for querying, for example, switching states and, as a result, switching motors or other actuators. In this case it is necessary to protect the relay contacts by appropriate load-dependent measures. The inputs and outputs are scanned and activated by SNVT network variables. The input terminals 1 to 4 are wired with the C2 terminals on two poles to potential-free switches or contacts. In addition, a wipe function is integrated.

Suitable for decentralized mounting on DIN TH35 rail according to IEC 60715 in electrical distribution cabinets.

Protocol	TP/FT-10, free topology
Neuron	FT5000
Transmission rate	78 KBit/s
Operating voltage	24 V AC/DC +/- 10 % (SELV)
Current consumption	200 mA (AC) / 65 mA (DC)
Relative duty cycle	100 %
Recovery time	550 ms
Inputs	4 x digital contacts
Input / switching threshold	4,5 V DC
Outputs (relay)	2 NO (DPST-NO)
Output / switching voltage	250 V AC
Output / current	6 A / output
Outputs (digital)	2 NO (DPST-NO) (photoMOS)
Output / switching voltage	40 V AC/DC
Output / current	100 mA
Operation and bus display	Green and yellow LED
Dimensions (W x H x D)	35 x 70 x 65 mm
Weight	90 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal blocks	IP40 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
1108561326	gray	4x IN (contact)	2x OUT (relay NO), 2x OUT (opto NO)



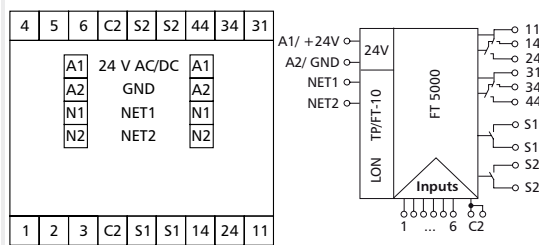
LF-TP

The LON three-point module with 6 digital inputs, 2 two-level relay outputs and 2 digital outputs was developed for decentralized switching tasks. It is suitable for switching, for example, multi-level pumps, fans, burners or similar. In this case it is necessary to protect the relay contacts by appropriate load-dependent measures. The inputs and outputs are scanned and activated by SNVT network variables. The input terminals 1 to 6 are wired with the C2 terminals on two poles to potential-free switches or contacts. The module has a manual control for the outputs, which is activated only in configured mode.

Suitable for decentralized mounting in serial sub-distributor.

Protocol	TP/FT-10, free topology
Neuron	FT5000
Transmission rate	78 KBit/s
Operating voltage	24 V AC/DC +/- 10 % (SELV)
Current consumption	220 mA (AC) / 90 mA (DC)
Relative duty cycle	100 %
Recovery time	550 ms
Inputs	6 x digital contacts
Input / switching threshold	4.5 V DC
Outputs (relay)	2 x two-level
Output / switching voltage	250 V AC
Output / current	6 A / output
Outputs (digital)	2 NO (DPST-NO) (photoMOS)
Output / switching voltage	40 V AC/DC
Output / current	100 mA
Operation and bus display	Green and yellow LED
Dimensions (W x H x D)	50 x 69.3 x 60 mm
Weight	126 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal blocks	IP40 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
11085913	gray	6x IN (contact)	2x OUT (relay CO), 2x OUT (opto NO)

Matching accessory for LF-DIO4/2

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Power supply NG4 gray	20
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Jumper plug for I/O components	71

Matching accessory for LF-DIO4/2-IP65

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Power supply NG4 gray	20

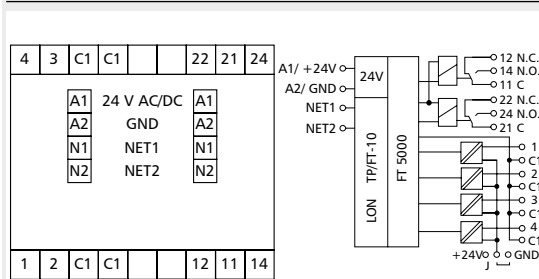


LF-DIO4/2

The LON module with 4 digital inputs and 2 relay outputs was developed for decentralized switching tasks. It is suitable for accommodating, for example, light switches and window contacts in a room, switching two light strips or controlling louvers. It can also be used to control 2 motorized fire dampers. In this case it is necessary to protect the relay contacts by appropriate load-dependent measures. The inputs can be used either as contact or voltage inputs. SNVT network variables switch and scan the inputs and outputs. The outputs have a manual control activated only in configured mode. In addition, an adjustable wipe function is integrated. Suitable for decentralized mounting on DIN TH35 rail according to IEC 60715 in electrical distribution cabinets.

Protocol	TP/FT-10, free topology
Neuron	FT5000
Transmission rate	78 KBit/s
Operating voltage	24 V AC/DC +/- 10 % (SELV)
Current consumption	220 mA (AC) / 90 mA (DC)
Relative duty cycle	100 %
Recovery time	550 ms
Inputs	4 x digital
Input / voltage	24 V AC/DC
Input / high signal	more than 8 V AC/DC
Outputs	2 changeover contacts (DPDT)
Output / switching voltage	250 V AC
Output / current	16 A / output
Output / total current	25 A across all outputs
Operation and bus display	Green and yellow LED
Dimensions (W x H x D)	50 x 69.3 x 60 mm
Weight	126 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal blocks	IP40 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
1108551326	gray	4x IN (U or contact)	2x OUT (relay CO)

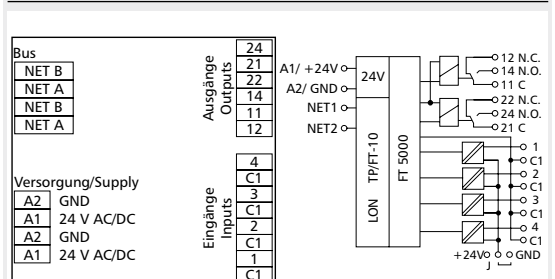


LF-DIO4/2-IP65

The LON module in an IP65 housing with 4 digital inputs and 2 relay outputs was developed for decentralized switching tasks. It is suitable for accommodating, for example, light switches and window contacts in a room, switching two light strips or controlling louvers. It can also be used to control 2 motorized fire dampers. In this case it is necessary to protect the relay contacts by appropriate load-dependent measures. The inputs can be used either as contact or voltage inputs. SNVT network variables switch and scan the inputs and outputs. The outputs have a manual control activated only in configured mode. In addition, an adjustable wipe function is integrated.

Protocol	TP/FT-10, free topology
Neuron	FT5000
Transmission rate	78 KBit/s
Operating voltage	24 V AC/DC +/- 10 % (SELV)
Current consumption	220 mA (AC) / 90 mA (DC)
Relative duty cycle	100 %
Recovery time	550 ms
Inputs	4 x digital
Input / voltage	24 V AC/DC
Input / high signal	more than 8 V AC/DC
Outputs	2 changeover contacts (DPDT)
Output / switching voltage	250 V AC
Output / continuous current (UL)	8 A / output
Output / continuous current (VDE)	10 A / output
Output / total current	20 A across all outputs
Operation and bus display	Green and yellow LED
Dimensions (W x H x D)	160 x 40.7 x 120 mm
Weight	330 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal blocks	IP65 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
1108551326P	gray	4x IN (U or contact)	2x OUT (relay CO)

Matching accessory for LF-FAM

Terminal block for I/O Components	Page
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LF-FAM

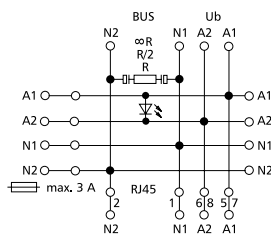
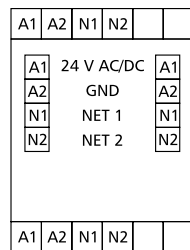
Switch-on module for bus connection, supply voltage and adjustable bus termination. The switch-on module was developed as wiring help for supplying the supply voltage and a two-wire bus to the LON bus modules. The supply voltage and the two-wire bus are led to the upper part of the housing over a sturdy terminal block with a cross section of max. 2.5 mm² and connected to the modules by means of the jumper. Using a suitable interface cable, the two-wire bus can be connected to a PC over the two RJ45 jacks. A bus terminating resistor of 52.3 Ohm (R/2) for free network topology and 105 Ohm (R) for line topology can be set by means of the jumper under the removable cover.

Suitable for decentralized mounting on DIN TH35 rail according to IEC 60715 in electrical distribution cabinets.

Operating voltage	24 V AC/DC +/- 10 % (SELV)
Current consumption	less than 5 mA
Switch-on duration	relative 100 %
Display	Green LED

Dimensions (W x H x D)	35 x 69.3 x 60 mm
Weight	75 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal blocks	IP40 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
11087913	gray		

Matching accessory for NG4

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Terminal block for I/O Components	71
Jumper plug for I/O components	71

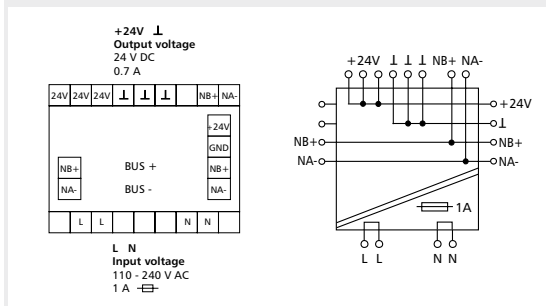


NG4

The NG4 HS power supply supplies a regulated direct voltage of 24 V DC / 16 W for supplying power to the respective devices of the product family of I/O components. The secondary voltage can only be tapped at the right side of the device front at a pluggable terminal block and at the screw-type terminal blocks. The bus communication can be tapped on both sides of the device front. A parallel operation of various power supply units is not allowed. Suitable for decentralized mounting on DIN TH35 rail according to IEC 60715 in electrical distribution cabinets.

Field of application	LON-Bus (LF-xxx) BACnet (BMT-xxx), Modbus (MR-xxx)
Input voltage range	110 - 240 V AC, 50 / 60 Hz
Internal fuse, soldered fuse	T 1,0 A/250 V
Output / power	16 W
Output / voltage	+24 V DC (SELV)
Output / current	700 mA
Load and control accuracy	+/-3 %
Mains failure backup	smaller than 40 ms
Display	green LED
Dimensions (W x H x D)	50 x 69.3 x 60 mm
Weight	108 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20
Terminal blocks	
Wire cross section solid wire	max. 4 mm ²
Wire cross section stranded wire	max. 2,5 mm ²
Wire diameter	0.3 mm up to max. 2.7 mm

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
110561	gray		with jumper plug

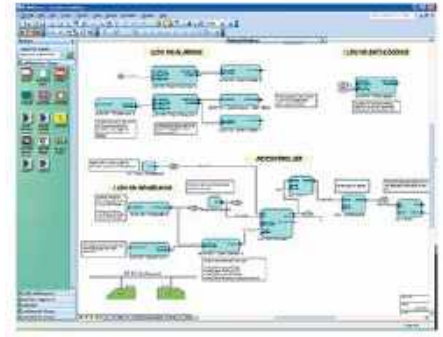
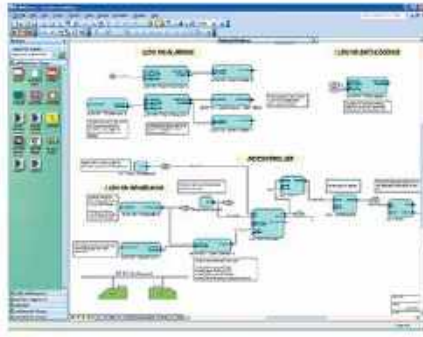
Echelon IzoT® CT 4.1 Standard and Echelon IzoT® CT 4.1 Professional is matching accessory for

LF-I/O-Module

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Echelon U10 USB Network Interface

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Echelon IzoT® CT 4.1 Standard

IzoT CT (Commissioning Tool) Standard
Open LNS Server
Visio 2016 Standard
DVD
max. number of networks limited to 5

(Echelon Model-No.: 38100-401)

Echelon IzoT® CT 4.1 Professional

IzoT CT (Commissioning Tool) Professional
OpenLNS Server
Visio 2016 Professional
DVD

(Echelon Model-No.: 38000-401)

P/N	Color	Feature 1	Feature 2
110208			

P/N	Color	Feature 1	Feature 2
110209			

Other Echelon products on request.



Echelon U10 USB Network Interface

The USB network interface is a low-cost, high-performance LONWORKS interface for USB-capable personal computers and controllers. The U10 USB network interface is connected directly to a TP/FT10 free-topology twisted-pair (ANSI/CEA-709.3) LONWORKS channel by means of a high-quality removable connector. It is fully compatible with link powered channels.

- High network throughput and performance
- Sturdy design, removable plugs
- Plug-and-play driver for Windows 2000, XP and Server 2003
- Compatible with LNS® and OpenLDV™ based applications
- Compatible with LonScanner™ protocol analyzer
- CE marking, UL and cUL listed, TÜV certification

Dimensions (W x H x D) 22.4 x 18.2 x 113.2 mm
 Operating temperature range 0 °C to +70 °C
 Storage temperature range -20 °C to +85 °C
 Echelon Model-No.: 75010R

P/N	Color	Feature 1	Feature 2
110214		TP/FT-10 Channel	

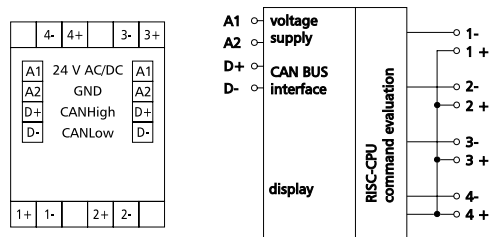
Matching accessory for FDE 4

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Jumper plug for I/O components	71


FDE 4

CAN module with 4 digital inputs, which can be operated as contact or voltage inputs. It is suitable for detecting switch states, for example, of electrical limit switches on vent valves or auxiliary contacts of power contactors. The fieldbus module is an input module for universal use. It is controlled by means of the CAN bus. The module is addressed by means of an adjustable address, and the input states are transmitted in data bytes. If there is one (or more) relay output module(s) with the same address in the system, the respective outputs are switched.

Protocol	CAN
Addressing range	00 to 99
Bus interface ©CiA standard	2.0B passive (two-wire bus)
Transmission rate	20 to 500 kBit/s
Operating voltage	24 V AC/DC +/- 10 % (SELV)
Current consumption	63 mA (AC) / 21 mA (DC)
Relative duty cycle	100 %
Recovery time	550 ms
Inputs	4 x digital
Input / high signal	less than 7 V DC
Display	Green, red and yellow LED
Dimensions (W x H x D)	35 x 69.3 x 60 mm
Weight	83 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Principle diagram


P/N	Color	Feature 1	Feature 2
1105751319	gray		

Matching accessory for FAE 4

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Power supply NG4 gray	20
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Jumper plug for I/O components	71



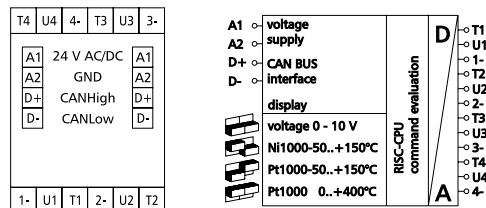
FAE 4

CAN module with 4 temperature and 4 voltage inputs. It is suitable for recording temperatures with Ni1000 or PT1000 sensors and voltages of, for example, electrical vent and mixing valves, valve positions, etc.

The fieldbus module is an input module for universal use. It is controlled by means of the CAN bus. The module is addressed by means of an adjustable address, and the input states are transmitted in data bytes. If there is one (or more) analog output module(s) with the same address in the system, the voltage measured there is issued at the respective output. Each input can be adjusted either from 0 to 10 V DC, to Ni1000 (-50 °C to +150 °C), PT1000 (-50 °C to +150 °C) or PT1000 (0 °C to +400 °C) by means of a DIP switch.

Protocol	CAN
Addressing range	00 to 99
Bus interface ©CiA standard	2.0B passive (two-wire bus)
Transmission rate	20 to 500 kBit/s
Operating voltage	24 V AC/DC +/- 10 % (SELV)
Current consumption	67 mA (AC) / 24 mA (DC)
Relative duty cycle	100 %
Recovery time	550 ms
Inputs	4 x analog
Input / voltage	0 to 10 V DC
Input / resolution	10 mV / (0 % to 100 %)
Input / error	approx. +/- 20 mV
Input / temperature range	Ni1000, -50 to +150 °C
Input / temperature range	PT1000, -50 to +150 °C
Input / temperature range	PT1000, 0 to +400 °C
Display	Green and red LED
Dimensions (W x H x D)	35 x 69.3 x 60 mm
Weight	84 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
1105741306	gray		

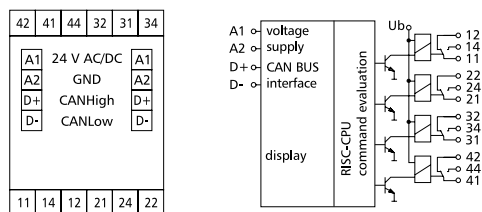
Matching accessory for FRAS 4/21

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FRAS 4/21

CAN module with 4 digital outputs. It is suitable for switching electrical components, for example motors, contactors, lamps, louvers, etc. With strong inductive loads, we recommend protecting the relay contacts additionally with an RC element. The fieldbus module is an input module for universal use. It is controlled by means of the CAN bus. The module is addressed by means of an adjustable address. Data bytes transmit whether data are queried or commands are executed. If there is a digital input module with the same address in the system, the module can be operated by remote control.

Protocol	CAN
Addressing range	00 to 99
Bus interface ©CiA standard	2.0B passive (two-wire bus)
Transmission rate	20 to 500 kBit/s
Operating voltage	24 V AC/DC +/- 10 % (SELV)
Current consumption	205 mA (AC) / 67 mA (DC)
Relative duty cycle	100 %
Recovery time	550 ms
Output / contacts	4 x changeover contacts (4 DPST)
Output / switching voltage	250 V AC
Output / continuous current	5 A / output
Output / total current	max. 12 A / all outputs
Display	Green, red and yellow LED
Dimensions (W x H x D)	35 x 69.3 x 60 mm
Weight	104 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Principle diagram


P/N	Color	Feature 1	Feature 2
1105701321	gray		

Matching accessory for FAA 4

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FAA 4

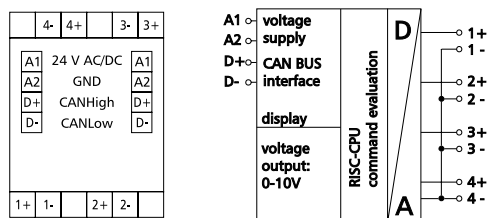
CAN module with 4 analog outputs. It is suitable as encoder for control variables, for example for electrical vent and mixing valves, valve positions, etc.

The fieldbus module is an output module for universal use. It is controlled by means of the CAN bus. The module is addressed by means of an adjustable address, and the output states are transmitted in data bytes. If there is an analog input module with the same address in the system, the voltage measured there is issued at the respective output.

Protocol	CAN
Addressing range	00 to 99
Bus interface ©CiA standard	2.0B passive (two-wire bus)
Transmission rate	20 to 500 kBit/s
Operating voltage	24 V AC/DC +/- 10 % (SELV)
Current consumption	90 mA (AC) / 32 mA (DC)
Relative duty cycle	100 %
Recovery time	550 ms
Outputs	4 x analog
Output / voltage	0 to 10 V DC
Output / current	5 mA at 10 V DC
Output / resolution	10 mV / digit
Output / switching voltage	+/- 1 %
Display	Green and red LED

Dimensions (W x H x D)	35 x 69.3 x 60 mm
Weight	84 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
1105731302	gray		

Matching accessory for NG4

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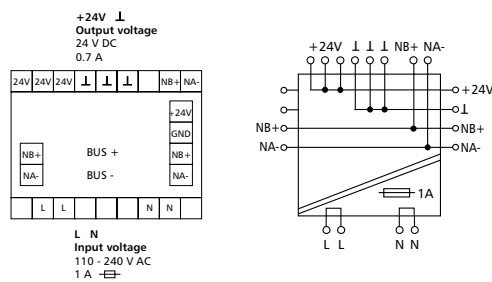


NG4

The NG4 HS power supply supplies a regulated direct voltage of 24 V DC / 16 W for supplying power to the respective devices of the product family of I/O components. The secondary voltage can only be tapped at the right side of the device front at a pluggable terminal block and at the screw-type terminal blocks. The bus communication can be tapped on both sides of the device front. A parallel operation of various power supply units is not allowed. Suitable for decentralized mounting on DIN TH35 rail according to IEC 60715 in electrical distribution cabinets.

Field of application	LON-Bus (LF-xxx) BACnet (BMT-xxx), Modbus (MR-xxx)
Input voltage range	110 - 240 V AC, 50 / 60 Hz
Internal fuse, soldered fuse	T 1,0 A/250 V
Output / power	16 W
Output / voltage	+24 V DC (SELV)
Output / current	700 mA
Load and control accuracy	+/-3 %
Mains failure backup	smaller than 40 ms
Display	green LED
Dimensions (W x H x D)	50 x 69.3 x 60 mm
Weight	108 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20
Terminal blocks	
Wire cross section solid wire	max. 4 mm ²
Wire cross section stranded wire	max. 2.5 mm ²
Wire diameter	0.3 mm up to max. 2.7 mm

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
110561	gray		with jumper plug

Jumper plug for I/O components is matching accessory for

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Terminal block for I/O components is matching accessory for

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Jumper plug for I/O components

Jumper plug for quickly connecting I/O components without tools. The jumper plug connects bus and power supply of I/O modules mounted next to each other.

- pluggable, 4-pole
 - Grid dimension 3.5 mm
 - Black
- | | |
|-------------------------|------------------|
| Rated voltage UL | 150 V |
| Rated voltage SEV | 125 V AC/DC eff. |
| Rated current | max. 4 A |
| Pin diameter | 0.9 mm |
| Pin material | CuZn |
| Upper temperature limit | 125 °C |
| Lower temperature limit | -30 °C |

P/N	Color	Feature 1	Feature 2
31135104	black		



Terminal block for I/O components

Terminal block to feed bus and power supply of I/O components.

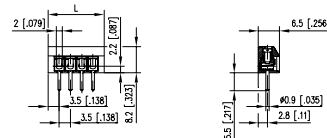
- Screw-type terminal block, solderable, 4-pole
- Grid dimension 3.5 mm, connection direction 90°
- Wire protection
- Black

- | | |
|--------------------------------------|----------------------|
| Rated voltage UL/CSA | 300 V |
| Rated current UL/CSA | 10 A |
| Conductor connection UL/CSA | AWG 28 to AWG 16 |
| Wire diameter SEV | 0.2 mm to 1.38 mm |
| Cross-section (solid wire) | 1.5 mm ² |
| Cross-section (finely stranded wire) | 0.75 mm ² |

- | | |
|------------------------------|-----------------|
| Insulation coordination to | EN 60664-1 |
| Minimum air gap and creepage | min. 2.1 mm |
| Overtoltage category | III / III / II |
| Degree of pollution | 3 / 2 / 2 |
| Rated voltage V | 160 / 400 / 130 |
| Rated surge voltage | 2.5 / 4 / 2.5 |

- | | |
|---------------------------------|--------------|
| Ingress protection to IEC 60529 | IP00 |
| Tightening torque SEV | max. 0.15 Nm |
| Stripping length | min. 5 mm |

Dimensional drawing



P/N	Color	Feature 1	Feature 2
110369	black		

Switches



METZ CONNECT – your partner for building automation

EAs one of the leading suppliers of I/O bus modules, we and our partners have set up a cooperation structure addressing the challenges implied in modern building automation and that – thanks to its innovations – counts among the best on the market – to the advantage of our investors, planners, fitters and operators.

Through the products from our partners Echelon and Moxa, METZ CONNECT offers system components such as routers and switches that you will need to set up and to operate networks. This includes, as a matter of fact, also competent advice on how to plan, install and operate networks.

Contents | Switches

Switches

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Other Moxa switches on request.



MOXA EtherDevice Switch EDS 205

The industrial Ethernet switch EDS205 is an entry-level switch supporting IEEE 802.3/802.3u/802.3x with 10/100M, full/half duplex, MDI/MDIX auto-sensing. Switches of the EDS205 series can be easily and conveniently mounted on and dismantled from a standard top hat rail.

- 5 ports with 10/100BaseT(X) RJ45
- Supports IEEE 802.3/802.3u/802.3x
- Power supply: DC 12 to 48 V
- Mounting on standard top hat rail
- Powerful network switch technology
- Protected against broadcast storm
- Store and forward switching mode

Dimensions (W x H x D)	25 x 109 x 88 mm
Operating temperature range	-10 °C to +60 °C
Storage temperature range	-40 °C to +70 °C
Ingress protection	IP30

P/N	Color	Feature 1	Feature 2
110195	gray	5 port RJ45	



MOXA EtherDevice Switch 8 port

The industrial Ethernet switch EDS208 is an entry-level switch supporting IEEE 802.3/802.3u/802.3x with 10/100M, full/half duplex, MDI/MDIX auto-sensing. Switches of the EDS208 series can be easily and conveniently mounted on and dismantled from a standard top hat rail.

Variants:

EDS208: 8 x 10/100BaseT(X) RJ45
 EDS208-M-SC: 7 x 10/100BaseT(X) RJ45,
 1 x 100BaseFX Multi-mode SC-connector

- 8 ports with 10/100BaseT(X) RJ45 or 7 ports with 10/100BaseT(X) RJ45 and 1 port 100BaseFX multi-mode SC connector
- Supports IEEE 802.3/802.3u/802.3x
- Powerful network switch technology
- Protected against broadcast storm
- Store and Forward Switching Mode

Operating voltage DC	12 bis 48 V
Operating voltage AC	18 bis 30 V

Dimensions (W x H x D)	40 x 109 x 95 mm
Operating temperature range	-10 °C to +60 °C
Storage temperature range	-40 °C to +70 °C
Ingress protection	IP30

P/N	Color	Feature 1	Feature 2
110196	gray	8 port RJ45	
11019601	gray	7 port RJ45	1 Port SC MM

Control cabinet components



Interface modules

In the control and automation technology, METZ CONNECT interface modules form the separation between the logic level and the load level. Interface technology means separating, forming, processing, converting and adapting signals. METZ CONNECT offers solutions for almost any application in various housing designs for the DIN rail mounting.

In addition to universally applicable coupling modules, we also offer sensor and actuator interface modules as optocouplers, potential distributors, diode modules, signalling modules, threshold switches, analogue value transmitters, analogue-digital converters and as potential isolators. The product range is supplemented by powerful and compact, pluggable 14-pole industrial relays.

Control cabinet components | Interface modules

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Relays for measuring and monitoring purposes

Monitoring relays are used to protect people and machines and to control electrical cycles in line with the electrical or physical parameters and, according to the low voltage directives certain individual applications have to be equipped with these relays.

The range of products from METZ CONNECT offers a broad spectrum of measuring and monitoring relays suited for a multitude of applications: current monitors for universal applications, phase monitors as protection against destruction/deterioration of system parts, phase sequence relays to monitor the rotating field, asymmetric relays for a safe detection of phase failures, multifunctional 3-phase monitors, level relays for fill level monitoring.

Switching, controlling, visualizing – Electronic time relays

A timer relay is a special version of a relay which can be used, for example, in the field of control and automation technology to achieve switch-on or switch-off delays. The product range includes timer relays with multiple functions and adjustable time ranges as well as relays with special functions such as on-delay, off-delay, on-wiping, flashing, clocking and star-delta relays.

**Matching accessory for
KRA-F8/21**

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Connecting bridge, 10 pole	108
Labeling plate Series KRA F8/F10	108

**Matching accessory for
KRA-S-F8/21**

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Connecting bridge, 10 pole	108
Labeling plate Series KRA F8/F10	108

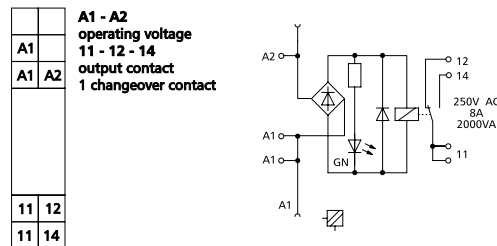

KRA-F8/21

Coupling devices are used to secure electrical isolation between logic and load.

- Connection with spring-clamp terminal
- Additional terminals for jumper
- Test contacts for each terminal
- Safe separation

Operating voltage	24 V AC/DC
Current consumption max.	13 mA
Output / contact	1 changeover contact (SPDT)
Output / contact material	AgSnO ₂
Output / switching voltage	250 V AC/DC
Output / continuous current	8 A
Output / switching frequency	300 cycles/h
Response time typical	10 ms
Release time typical	5 ms
Mechanical endurance	1 x 10 ⁷ switching cycles
Electrical endurance	1 x 10 ⁵ switching cycles
Solid wire cross-section	0.08 mm ² - 2.5 mm ²
Stranded wire without end sleeve	0.08 mm ² - 2.5 mm ²
Stranded wire with end sleeve	0.08 mm ² - 1.5 mm ²
Display	Green LED

Dimensions (W x H x D)	11.2 x 87.5 x 60 mm
Weight	43 g
Operating temperature range	-20 °C to +55 °C
Storage temperature range	-25 °C to +70 °C
Ingress protection of the housing	IP20

Wiring/Circuit diagram


P/N	Color	Feature 1	Feature 2
11070013	gray	24 V AC/DC	1 DPST

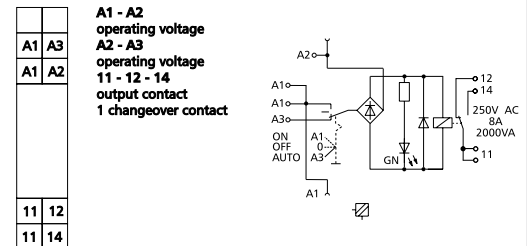

KRA-S-F8/21

Coupling devices are used to secure electrical isolation between logic and load.

- Connection with spring-clamp terminal
- Additional terminals for jumper
- Test contacts for each terminal
- Safe separation
- with manual control level

Operating voltage AC/DC	24 V AC/DC
Power consumption: 24 V AC/DC	approx. 13 mA
Output / contacts	1 changeover contact (SPDT)
Output / contact material	AgSnO ₂
Output / switching voltage	250 V AC/DC
Output / continuous current	8 A
Output / switching frequency	300 cycles/h
Response time	approx. 10 ms
Release time	approx. 5 ms
Mechanical endurance	1 x 10 ⁷ switching cycles
Electrical endurance	1 x 10 ⁵ switching cycles
Solid wire cross-section	0.08 mm ² - 2.5 mm ²
Stranded wire without end sleeve	0.08 mm ² - 2.5 mm ²
Stranded wire with end sleeve	0.08 mm ² - 1.5 mm ²
Display	Green LED

Dimensions (W x H x D)	11.2 x 87.5 x 60 mm
Weight	43 g
Operating temperature range	-20 °C to +55 °C
Storage temperature range	-25 °C to +70 °C
Ingress protection	IP20

Wiring/Circuit diagram


P/N	Color	Feature 1	Feature 2
11070613	gray	24 V AC/DC	1 DPST

Matching accessory for KRA-SR-F10/21

Connecting bridge, 10 pole	Page 108
Labeling plate Series KRA F8/F10	Page 108

Matching accessory for KRA-SRA-F10/21

Connecting bridge, 10 pole	Page 108
Labeling plate Series KRA F8/F10	Page 108



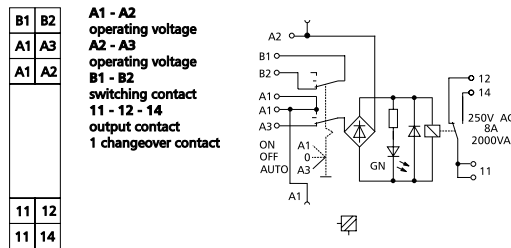
KRA-SR-F10/21

Coupling devices are used to secure electrical isolation between logic and load.

- connection with spring-clamp terminal
- additional terminals for jumper
- test contacts for each terminal
- safe separation
- with manual control level and automatic-checkback function

Operating voltage	24 V AC/DC
Current consumption	approx. 13 mA
Output / contacts	1 changeover contact (SPDT)
Output / contact material	AgSnO ₂
Output / switching voltage	250 V AC/DC
Output / continuous current	8 A
Output / switching frequency	300 cycles/h
Response time	approx. 10 ms
Release time	approx. 5 ms
Mechanical endurance	1 x 10 ⁷ switching cycles
Electrical endurance	1 x 10 ⁵ switching cycles
Solid wire cross-section	0.08 mm ² - 2.5 mm ²
Stranded wire without end sleeve	0.08 mm ² - 2.5 mm ²
Stranded wire with end sleeve	0.08 mm ² - 1.5 mm ²
Display	Green LED
Dimensions (W x H x D)	11.2 x 87.5 x 60 mm
Weight	43 g
Operating temperature range	-20 °C to +55 °C
Storage temperature range	-25 °C to +70 °C
Ingress protection	IP20

Wiring/Circuit diagram



P/N	Color	Feature 1	Feature 2
11070813	gray	24 V AC/DC	1 DPST



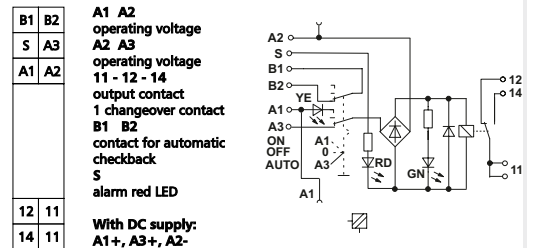
KRA-SRA-F10/21

Coupling devices are used to secure electrical isolation between logic and load.

- Connection with spring-clamp terminal
- Additional terminals for jumper
- Test contacts for each terminal
- safe separation
- with manual control level and automatic-checkback function
- 3 LED-Indicator, status displays

Operating voltage	24 V AC/DC
Current consumption	approx. 13 mA
Outputs / contact	1 changeover contact (SPDT)
Output / contact material	AgSnO ₂
Output / switching voltage	250 V AC/DC
Output / continuous current	8 A
Output / switching frequency	360 cycles/h
Response time	approx. 10 ms
Release time	approx. 5 ms
Mechanical endurance	1 x 10 ⁷ switching cycles
Electrical endurance	1 x 10 ⁵ switching cycles
Solid wire cross-section	0.08 mm ² - 2.5 mm ²
Stranded wire without end sleeve	0.08 mm ² - 2.5 mm ²
Stranded wire with end sleeve	0.08 mm ² - 1.5 mm ²
Display	Green, red and yellow LED
Dimensions (W x H x D)	11.2 x 87.5 x 60 mm
Weight	43 g
Operating temperature range	-20 °C to +55 °C
Storage temperature range	-25 °C to +70 °C
Ingress protection of the housing	IP20

Wiring/Circuit diagram



P/N	Color	Feature 1	Feature 2
11071013	gray	24 V AC/DC	1 DPST

Matching accessory for KRA-F10/21-21

Connecting bridge, 10 pole	Page 108
Labeling plate Series KRA F8/F10	Page 108

Matching accessory for KRA-S-F10/21-21

Connecting bridge, 10 pole	Page 108
Labeling plate Series KRA F8/F10	Page 108



KRA-F10/21-21

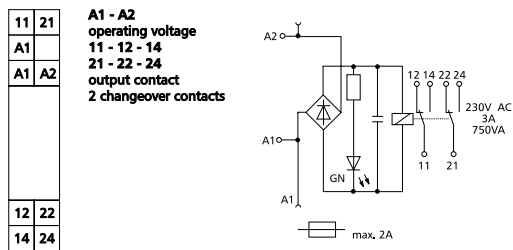
Coupling devices are used to electrical isolation between logic and load.

- Connection with spring-clamp terminal
- Additional terminals for jumper
- Test contacts for each terminal
- safe separation

Operating voltage	24 V AC/DC
Current consumption	approx. 16 mA
Outputs / contact	2 changeover contacts (DPDT)
Output / contact material	AgSnO ₂
Output / switching voltage	250 V AC/DC
Output / continuous current	3 A
Output / switching frequency	300 cycles/h
Response time	approx. 10 ms
Release time	approx. 5 ms
Mechanical endurance	1 x 10 ⁷ switching cycles
Electrical endurance	1 x 10 ⁵ switching cycles
Solid wire cross-section	0.08 mm ² - 2.5 mm ²
Stranded wire without end sleeve	0.08 mm ² - 2.5 mm ²
Stranded wire with end sleeve	0.08 mm ² - 1.5 mm ²
Display	Green LED

Dimensions (W x H x D)	11.2 x 87.5 x 60 mm
Weight	43 g
Operating temperature range	-20 °C to +55 °C
Storage temperature range	-25 °C to +70 °C
Ingress protection of the housing	IP20

Wiring/Circuit diagram



P/N	Color	Feature 1	Feature 2
11070213	gray	24 V AC/DC	2 DPST



KRA-S-F10/21-21

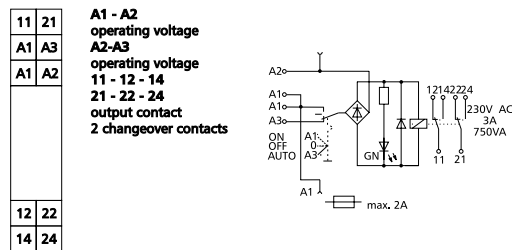
Coupling devices are used to electrical isolation between logic and load.

- Connection with spring-clamp terminal
- Additional terminals for jumper
- Test contacts for each terminal
- safe separation
- with manual control level

Operating voltage AC/DC	24 V AC/DC
Power consumption: 24 V AC/DC	approx. 16 mA
Output / contacts	2 changeover contacts (DPDT)
Output / contact material	AgSnO ₂
Output / switching voltage	250 V AC/DC
Output / continuous current	3 A
Output / switching frequency	300 cycles/h
Response time	approx. 10 ms
Release time	approx. 5 ms
Mechanical endurance	1 x 10 ⁷ switching cycles
Electrical endurance	1 x 10 ⁵ switching cycles
Solid wire cross-section	0.08 mm ² - 2.5 mm ²
Stranded wire without end sleeve	0.08 mm ² - 2.5 mm ²
Stranded wire with end sleeve	0.08 mm ² - 1.5 mm ²
Display	Green LED

Dimensions (W x H x D)	11.2 x 87.5 x 60 mm
Weight	43 g
Operating temperature range	-20 °C to +55 °C
Storage temperature range	-25 °C to +70 °C
Ingress protection	IP20

Wiring/Circuit diagram



P/N	Color	Feature 1	Feature 2
11070713	gray	24 V AC/DC	2 DPST

Matching accessory for KRA-M4/1, 1 normally open contact, 24 V AC/DC

Connecting bridge Series KRA M4/M6/M8	Page 109
Labeling plate Series KRA M4/M6/M8	Page 110

Matching accessory for KRA-M4/1, 1 normally open contact, 24 V DC

Connecting bridge Series KRA M4/M6/M8	Page 110
Labeling plate Series KRA M4/M6/M8	Page 110

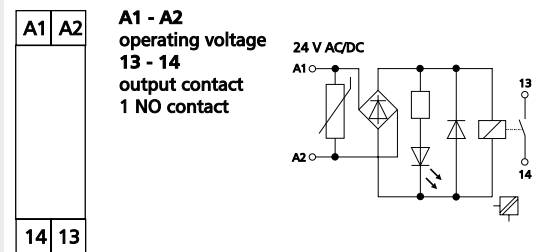

KRA-M4/1, 1 normally open contact, 24 V AC/DC

Coupling devices are used to secure electrical isolation between logic and load.

- Connection with screw-type terminals
- closed compact series
- integrated protective circuit
- safe separation

Operating voltage	24 V AC/DC
Current consumption	approx. 13 mA
Output / contact	1 normally open contact (SPST-NO)
Output / contact material	AgSnO ₂
Output / switching voltage	250 V AC/DC
Output / continuous current	6 A
Output / switch-on current	8 A
Output / switching frequency	600 cycles/h
Response time	10 ms
Release time	5 ms
Mechanical endurance	1 x 10 ⁷ switching cycles
Electrical endurance	1 x 10 ⁵ switching cycles
Cross-section	2.5 mm ²
Display	Red LED

Dimensions (W x H x D)	11.2 x 61.3 x 43 mm
Weight	45 g
Operating temperature range	-20 °C to +55 °C
Storage temperature range	-25 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Circuit diagram


P/N	Color	Feature 1	Feature 2
11061313	gray	24 V AC/DC	1 normally open contact

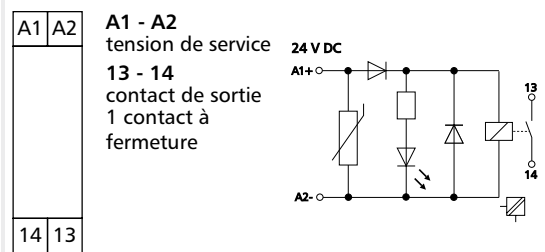

KRA-M4/1, 1 normally open contact, 24 V DC

Coupling devices are used to secure electrical isolation between logic and load.

- Connection with screw-type terminals
- closed compact series
- integrated protective circuit
- safe separation

Operating voltage	24 V DC
Current consumption	approx. 13 mA
Output / contact	1 normally open contact (SPST-NO)
Output / contact material	AgSnO ₂
Output / switching voltage	250 V AC/DC
Output / continuous current	6 A
Output / switch-on current	8 A
Output / switching frequency	600 cycles/h
Response time	10 ms
Release time	5 ms
Mechanical endurance	1 x 10 ⁷ switching cycles
Electrical endurance	1 x 10 ⁵ switching cycles
Cross-section	2.5 mm ²
Display	Red LED

Dimensions (W x H x D)	11.2 x 61.3 x 43 mm
Weight	45 g
Operating temperature range	-20 °C to +55 °C
Storage temperature range	-25 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Circuit diagram


P/N	Color	Feature 1	Feature 2
11061325	gray	24 V DC	1 normally open contact

Matching accessory for KRA-M4/1, 1 normally open contact, 230 V AC

	Page
Connecting bridge Series KRA M4/M6/M8	110
Labeling plate Series KRA M4/M6/M8	110

Matching accessory for KRA-M6/21, 1 changeover contact, 12 or 24 V AC/DC

	Page
Connecting bridge Series KRA M4/M6/M8	110
Labeling plate Series KRA M4/M6/M8	110



KRA-M4/1, 1 normally open contact, 230 V AC

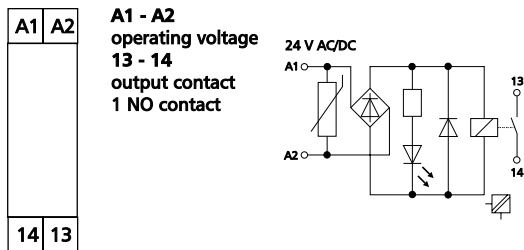
Coupling devices are used to secure electrical isolation between logic and load.

- Connection with screw-type terminals
- closed compact series
- integrated protective circuit
- safe separation

Operating voltage	230 V AC
Current consumption	approx. 5 mA
Output / contact	1 normally open contact (SPST-NO)
Output / contact material	AgSnO ₂
Output / switching voltage	250 V AC/DC
Output / continuous current	6 A
Output / switch-on current	8 A
Output / switching frequency	600 cycles/h
Response time	10 ms
Release time	5 ms
Mechanical endurance	1 x 10 ⁷ switching cycles
Electrical endurance	1 x 10 ⁵ switching cycles
Cross-section	2.5 mm ²
Display	Red LED

Dimensions (W x H x D)	11.2 x 61.3 x 43 mm
Weight	45 g
Operating temperature range	-20 °C to +55 °C
Storage temperature range	-25 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Circuit diagram



P/N	Color	Feature 1	Feature 2
11061305	gray	230 V AC	1 normally open contact



KRA-M6/21, 1 changeover contact, 12 or 24 V AC/DC

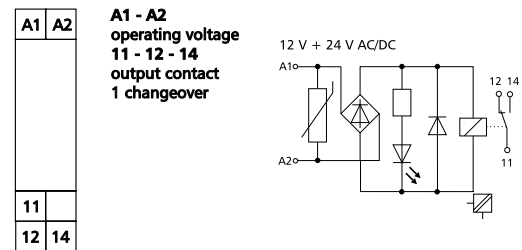
Coupling devices are used to secure electrical isolation between logic and load.

- Connection with screw-type terminals
- closed compact series
- integrated protective circuit
- safe separation

Operating voltage	12 V or 24 V AC/DC
Current consumption 12 V AC/DC	20 mA
Current consumption 24 V AC/DC	13 mA
Output / contacts	1 changeover contact (1 SPDT)
Output / contact material	AgSnO ₂
Output / switching voltage	250 V AC/DC
Output / continuous current	6 A
Output / switch-on current	8 A
Output / switching frequency	600 cycles/h
Response time	10 ms
Release time	5 ms
Mechanical endurance	1 x 10 ⁷ switching cycles
Electrical endurance	1 x 10 ⁵ switching cycles
Cross-section	2.5 mm ²
Display	Red LED

Dimensions (W x H x D)	11.2 x 61.3 x 60 mm
Weight	45 g
Operating temperature range	-20 °C to +55 °C
Storage temperature range	-25 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Circuit diagram



P/N	Color	Feature 1	Feature 2
11061550	gray	12 V AC/DC	1 DPST
11061513	gray	24 V AC/DC	1 DPST

Matching accessory for KRA-M6/21, 1 changeover contact, 24 V DC

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Connecting bridge Series KRA M4/M6/M8	110
Labeling plate Series KRA M4/M6/M8	110

Matching accessory for KRA-M6/21, 1 changeover contact, 230 V AC

	Page
Connecting bridge Series KRA M4/M6/M8	110
Labeling plate Series KRA M4/M6/M8	110

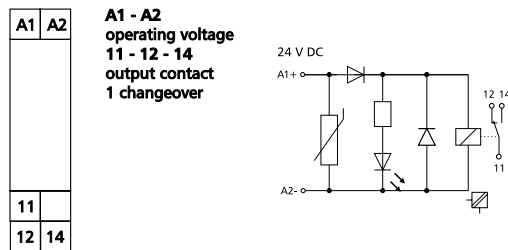

KRA-M6/21, 1 changeover contact, 24 V DC

Coupling devices are used to secure electrical isolation between logic and load.

- Connection with screw-type terminals
- closed compact series
- integrated protective circuit
- safe separation

Operating voltage	24 V DC
Current consumption	13 mA
Output / contacts	1 changeover contact (SPDT)
Output / contact material	AgSnO ₂
Output / switching voltage	250 V AC/DC
Output / continuous current	6 A
Output / switch-on current	8 A
Output / switching frequency	600 cycles/h
Response time	10 ms
Release time	5 ms
Mechanical endurance	1 x 10 ⁷ switching cycles
Electrical endurance	1 x 10 ⁵ switching cycles
Cross-section	2.5 mm ²
Display	Red LED

Dimensions (W x H x D)	11.2 x 61.3 x 60 mm
Weight	45 g
Operating temperature range	-20 °C to +55 °C
Storage temperature range	-25 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Circuit diagram


P/N	Color	Feature 1	Feature 2
11061525	gray	24 V DC	1 changeover contact

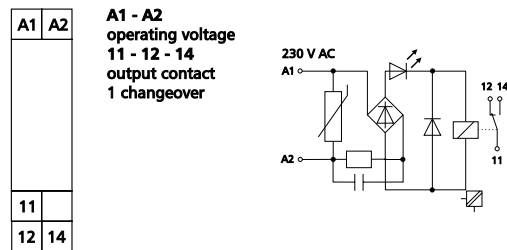

KRA-M6/21, 1 changeover contact, 230 V AC

Coupling devices are used to secure electrical isolation between logic and load.

- Connection with screw-type terminals
- closed compact series
- integrated protective circuit
- safe separation

Operating voltage	230 V AC
Current consumption	5 mA
Output / contacts	1 changeover contact (1 SPDT)
Output / contact material	AgSnO ₂
Output / switching voltage	250 V AC/DC
Output / continuous current	6 A
Output / switch-on current	8 A
Output / switching frequency	360 cycles/h
Response time	10 ms
Release time	15 ms
Mechanical endurance	1 x 10 ⁷ switching cycles
Electrical endurance	1 x 10 ⁵ switching cycles
Cross-section	2.5 mm ²
Display	Red LED

Dimensions (W x H x D)	11.2 x 61.3 x 60 mm
Weight	45 g
Operating temperature range	-20 °C to +55 °C
Storage temperature range	-25 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Circuit diagram


P/N	Color	Feature 1	Feature 2
11061505	gray	230 V AC	1 changeover contact

Matching accessory for KRA-S-M6/21	Page
Connecting bridge Series KRA M4/M6/M8	110
Labeling plate Series KRA M4/M6/M8	110
Matching accessory for KRA-SR-M8/21	Page
Connecting bridge Series KRA M4/M6/M8	110
Labeling plate Series KRA M4/M6/M8	110



KRA-S-M6/21

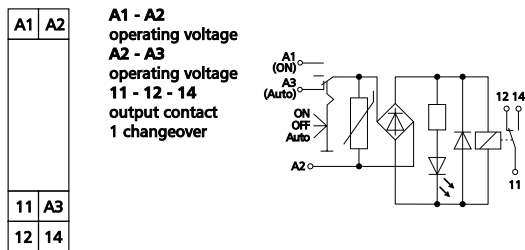
Coupling devices are used to electrical isolation between logic and load.

- Connection with screw-type terminals
- closed compact series
- integrated protective circuit
- with manual control level

Operating voltage AC/DC	24 V AC/DC
Current consumption 24 V AC/DC	13 mA
Output / contacts	1 changeover contact (1 SPDT)
Output / contact material	AgSnO ₂
Output / switching voltage	250 V AC/DC
Output / continuous current	6 A
Output / switch-on current	8 A
Output / switching frequency	600 cycles/h
Response time	10 ms
Release time	5 ms
Mechanical endurance	1 x 10 ⁷ switching cycles
Electrical endurance	1 x 10 ⁵ switching cycles
Cross-section	2.5 mm ²
Display	LED rot

Dimensions (W x H x D)	11.2 x 61.3 x 60 mm
Weight	45 g
Operating temperature range	-20 °C to +55 °C
Storage temperature range	-25 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Circuit diagram



P/N	Color	Feature 1	Feature 2
11061213	gray	24 V AC/DC	1 changeover contact



KRA-SR-M8/21

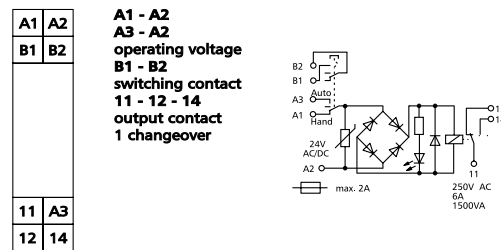
Coupling devices are used to electrical isolation between logic and load.

- Connection with screw-type terminals
- closed compact series
- integrated protective circuit
- with manual control level and automatic checkback

Operating voltage AC/DC	24 V AC/DC
Current consumption 24 V AC/DC	13 mA
Output / contacts	1 changeover contact (SPDT)
Output / contact material	AgSnO ₂
Output / switching voltage	250 V AC/DC
Output / continuous current	6 A
Output / switch-on current	8 A
Output / switching frequency	600 cycles/h
Response time	10 ms
Release time	5 ms
Mechanical endurance	1 x 10 ⁷ switching cycles
Electrical endurance	1 x 10 ⁵ switching cycles
Cross-section	2.5 mm ²
Display	Red LED

Dimensions (W x H x D)	11.2 x 61.3 x 60 mm
Weight	45 g
Operating temperature range	-20 °C to +55 °C
Storage temperature range	-25 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Circuit diagram



P/N	Color	Feature 1	Feature 2
11064513	gray	24 V AC/DC	1 changeover contact

Matching accessory for KRA-M8/21-21, 2 changeover contact, 12V or 24 V AC/DC

Page

Connecting bridge Series KRA M4/M6/M8 110

Labeling plate Series KRA M4/M6/M8 110

Matching accessory for KRA-M8/21-21, 2 changeover contact, 24 V DC

Page

Connecting bridge Series KRA M4/M6/M8 110

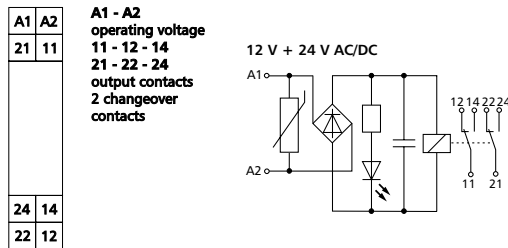
Labeling plate Series KRA M4/M6/M8 110


KRA-M8/21-21, 2 changeover contact, 12 V or 24 V AC/DC

Coupling devices are used to secure electrical isolation between logic and load.

- Connection with screw-type terminals
- closed compact series
- integrated protective circuit
- safe separation

Operating voltage	12 V or 24 V AC/DC
Current consumption 12 V AC/DC	25 mA
Current consumption 24 V AC/DC	16 mA
Output / contacts	2 changeover contacts (DPDT)
Output / contact material	AgSnO ₂
Output / switching voltage	250 V AC/DC
Output / continuous current	4 A
Output / switching frequency	360 cycles/h
Response time	10 ms
Release time AC	15 ms
Release time DC	5 ms
Mechanical endurance	1 x 10 ⁷ switching cycles
Electrical endurance	6 x 10 ⁴ switching cycles
Cross-section	2.5 mm ²
Display	Red LED
Dimensions (W x H x D)	11.2 x 61.3 x 60 mm
Weight	45 g
Operating temperature range	-20 °C to +55 °C
Storage temperature range	-25 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Circuit diagram


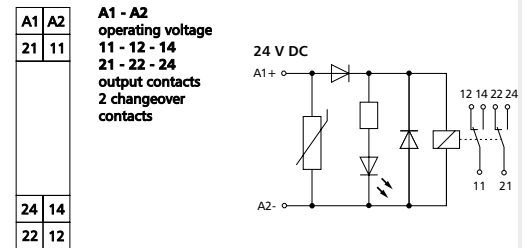
P/N	Color	Feature 1	Feature 2
11061950	gray	12 V AC/DC	2 changeover contact
11061913	gray	24 V AC/DC	2 changeover contact


KRA-M8/21-21, 2 changeover contact, 24 V DC

Coupling devices are used to electrical isolation between logic and load.

- Connection with screw-type terminals
- closed compact series
- integrated protective circuit
- safe separation

Operating voltage	24 V DC
Current consumption	16 mA
Output / contacts	2 changeover contacts (DPDT)
Output / contact material	AgSnO ₂
Output / switching voltage	250 V AC/DC
Output / continuous current	4 A
Output / switching frequency	360 cycles/h
Response time	10 ms
Release time	5 ms
Mechanical endurance	1 x 10 ⁷ switching cycles
Electrical endurance	6 x 10 ⁴ switching cycles
Cross-section	2.5 mm ²
Display	Red LED
Dimensions (W x H x D)	11.2 x 61.3 x 60 mm
Weight	45 g
Operating temperature range	-20 °C to +55 °C
Storage temperature range	-25 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Circuit diagram


P/N	Color	Feature 1	Feature 2
11061925	gray	24 V DC	2 changeover contact

Matching accessory for
KRA-M8/21-21,
2 changeover contact,
230 V AC

Page

Connecting bridge Series
KRA M4/M6/M8 110

Labeling plate Series
KRA M4/M6/M8 110



**KRA-M8/21-21, 2 changeover contact,
230 V AC**

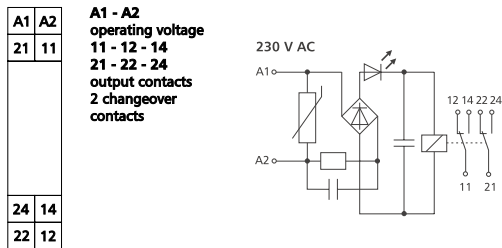
Coupling devices are used to electrical isolation between logic and load.

- Connection with screw-type terminals
- closed compact series
- integrated protective circuit
- safe separation

Operating voltage	230 V AC
Current consumption	16 mA
Output / contacts	2 changeover contacts (DPDT)
Output / contact material	AgSnO ₂
Output / switching voltage	250 V AC/DC
Output / continuous current	4 A
Output / switching frequency	360 cycles/h
Response time	10 ms
Release time	15 ms
Mechanical endurance	1 x 10 ⁷ switching cycles
Electrical endurance	6 x 10 ⁴ switching cycles
Cross-section	2.5 mm ²
Display	Red LED

Dimensions (W x H x D)	11.2 x 61.3 x 60 mm
Weight	45 g
Operating temperature range	-20 °C to +55 °C
Storage temperature range	-25 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Circuit diagram



P/N	Color	Feature 1	Feature 2
11061905	gray	230 V AC	2 changeover contact



KRA-S12/21-21-21

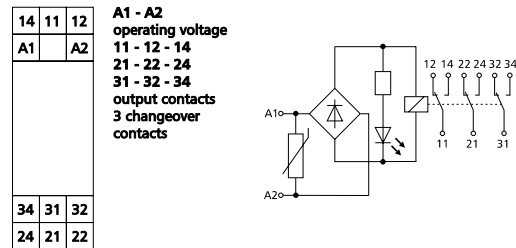
Coupling devices are used to electrical isolation between logic and load.

- Connection with screw-type terminals

Operating voltage AC/DC	24 V AC/DC
Current consumption 24 V AC/DC	50 mA
Output / contacts	3 changeover contacts (3PDT)
Output / contact material	AgSnO ₂
Output / switching voltage	250 V AC/DC
Output / continuous current	6 A
Output / switch-on current	8 A
Output / switching frequency	360 cycles/h
Response time	10 ms
Release time	5 ms
Mechanical endurance	1 x 10 ⁷ switching cycles
Electrical endurance	1 x 10 ⁵ switching cycles
Cross-section	2.5 mm ²
Display	Red LED

Dimensions (W x H x D)	22.5 x 75 x 95 mm
Weight	140 g
Operating temperature range	-20 °C to +55 °C
Storage temperature range	-25 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Circuit diagram



P/N	Color	Feature 1	Feature 2
11060913	gray	24 V AC/DC	3 changeover contact

Matching accessory for
RM21-21 24 V DC

Page

RC module for industrial
sockets

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Matching accessory for
RM21-21 24 V AC
or 230 V AC

Page

RC module for industrial
sockets

111



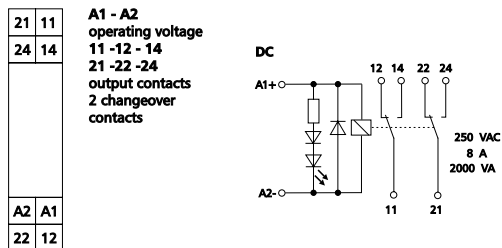
RM21-21 24 V DC

Relay module for electrical isolation between logic and load.

- Connection with screw-type terminals
- pluggable relay
- with labeling field

Operating voltage	24 V DC
Current consumption	17 mA
Output / contacts	2 changeover contacts (DPDT)
Output / contact material	AgNi 90/10
Output / switching voltage	250 V AC
Output / continuous current	8 A
Output / switching frequency	360 cycles/h
Mechanical endurance	30 x 10 ⁶ switching cycles
Electrical endurance	1 x 10 ⁶ switching cycles
Anschlussquerschnitt	2 x 2.5 mm ²
Display	Red LED
Dimensions (W x H x D)	15.5 x 75 x 65 mm
Weight	95 g
Operating temperature range	-20 °C to +55 °C
Storage temperature range	-25 °C to +70 °C

Wiring/Circuit diagram



P/N	Color	Feature 1	Feature 2
11050725	black	24 V DC	2 changeover contact



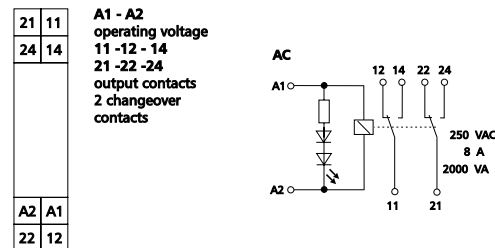
RM21-21 24 V AC or 230 V AC

Relay module for electrical isolation between logic and load.

- Connection with screw-type terminals
- pluggable relay
- with labeling field

Operating voltage	24 V or 230 V AC
Current consumption 24 V AC	32 mA
Current consumption 230 V AC	3,3 mA
Output / contacts	2 changeover contacts (DPDT)
Output / contact material	AgNi 90/10
Output / switching voltage	250 V AC
Output / continuous current	8 A
Output / switching frequency	360 cycles/h
Mechanical endurance	5 x 10 ⁶ switching cycles
Electrical endurance	1 x 10 ⁶ switching cycles
Cross-section	2 x 2.5 mm ²
Display	Red LED
Dimensions (W x H x D)	15.5 x 75 x 65 mm
Weight	95 g
Operating temperature range	-20 °C to +55 °C
Storage temperature range	-25 °C to +70 °C

Wiring/Circuit diagram



P/N	Color	Feature 1	Feature 2
11050710	black	24 V AC	2 changeover contact
11050705	black	230 V AC	2 changeover contact

Matching accessory for
RM3-2W 24 V DC

RC module for industrial
sockets

Matching accessory for
RM3-2W 24 V AC
or 230 V AC

RC module for industrial
sockets



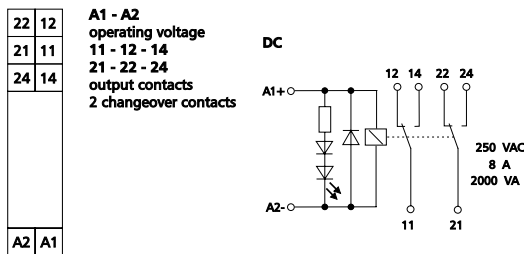
RM3-2W 24 V DC

Relay module for electrical isolation between logic and load.

- Connection with screw-type terminals
- pluggable relay
- with labeling field

Operating voltage	24 V DC
Current consumption	17 mA
Output / contacts	2 changeover contacts (DPDT)
Output / contact material	AgNi 90/10
Output / switching voltage	250 V AC
Output / continuous current	8 A
Output / switching frequency	360 cycles/h
Mechanical endurance	30 x 10 ⁶ switching cycles
Electrical endurance	1 x 10 ⁶ switching cycles
Cross-section	2 x 2.5 mm ²
Display	Red LED
Dimensions (W x H x D)	15.5 x 75 x 65 mm
Weight	95 g
Operating temperature range	-20 °C to +55 °C
Storage temperature range	-25 °C to +70 °C

Wiring/Circuit diagram



P/N	Color	Feature 1	Feature 2
11051025	black	24 V DC	2 changeover contact



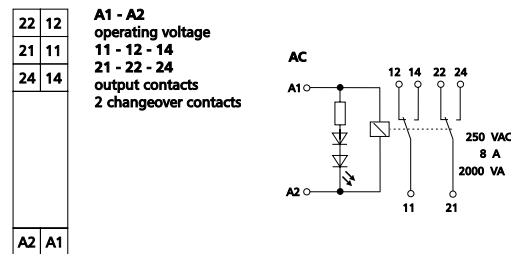
RM3-2W 24 V AC or 230 V AC

Relay module for electrical isolation between logic and load.

- Connection with screw-type terminals
- pluggable relay
- with labeling field

Operating voltage	24 V or 230 V AC
Current consumption 24 V AC	32 mA
Current consumption 230 V AC	3,3 mA
Output / contacts	2 changeover contacts (DPDT)
Output / contact material	AgNi 90/10
Output / switching voltage	250 V AC
Output / continuous current	8 A
Output / switching frequency	360 cycles/h
Mechanical endurance	5 x 10 ⁶ switching cycles
Electrical endurance	1 x 10 ⁶ switching cycles
Cross-section	2 x 2.5 mm ²
Display	Red LED
Dimensions (W x H x D)	15.5 x 75 x 65 mm
Weight	95 g
Operating temperature range	-20 °C to +55 °C
Storage temperature range	-25 °C to +70 °C

Wiring/Circuit diagram



P/N	Color	Feature 1	Feature 2
11051010	black	24 V AC	2 changeover contact
11051005	black	230 V AC	2 changeover contact



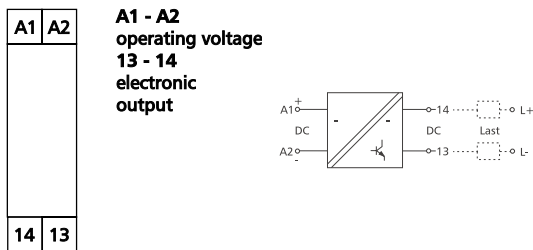
KRE-M4/1 DC

Transistor couplers are used for switching DC loads.

- Connection with screw-type terminals
- Protective diode

Input / operating voltage	24 V DC
Input / power consumption	10 mA
Output / switching voltage	4 to 48 V DC
Output / continuous current	0.8 A
Output / current pulse	2 A / 1 s
Cross-section	2.5 mm
Display	Green LED
Dimensions (W x H x D)	11.2 x 61.3 x 43 mm
Weight	35 g
Operating temperature range	0 °C to +50 °C
Storage temperature range	-10 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Circuit diagram



P/N	Color	Feature 1	Feature 2
1106302517	gray		



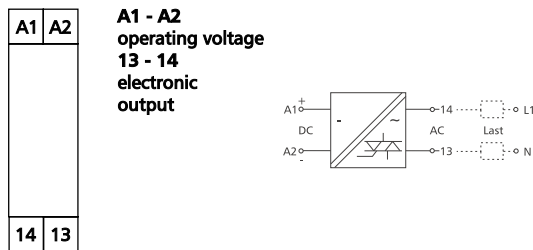
KRE-M4/1 AC

Triac couplers are used for switching AC loads.

- Connection with screw-type terminals
- Zero point switch
- RC element

Input / operating voltage	24 V DC
Input / power consumption	10 mA
Output / switching voltage	26 to 250 V AC
Output / continuous current	0.8 A
Output / current pulse	2 A / 1 s
Cross-section	2.5 mm ²
Display	Green LED
Dimensions (W x H x D)	11.2 x 61.3 x 43 mm
Weight	35 g
Operating temperature range	0 °C to +50 °C
Storage temperature range	-10 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Circuit diagram



P/N	Color	Feature 1	Feature 2
1106312518	gray		

Matching accessory for KMA-F8

Connecting bridge, 10 pole	Page 108
Labeling plate Series KMA F8	Page 109

Matching accessory for KMAi-F8

Connecting bridge, 10 pole	Page 108
Labeling plate Series KMA F8	Page 109



KMA-F8

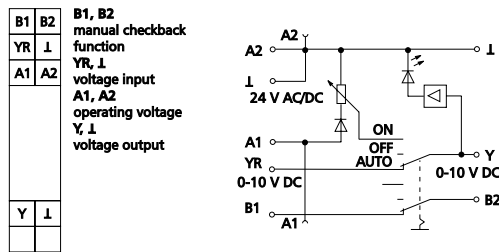
The analog encoder is used as encoder for manual control variable definition, e.g. mixing valves, valve positions, temperature values, etc. The module can be operated in three modes, which can be commuted by means of integrated three-level switches (ON, OFF, automatic). The switch position is signaled by external control contact terminals B1 and B2. The control variable can be set on the potentiometer at the front. The output signal 0 to 10 V is available on the Y terminal. If the switch is in "AUTO" position, the control variable is looped through over the YR terminal to the Y output without change.

- Connection by spring clamp terminal blocks (push-in)
- Setpoint device
- Manual control level with checkback
- LED brightness proportional to control variable

Input / operating voltage	24 V AC/DC
Input / power consumption	30 mA
Input / power consumption	19 mA
Input / voltage	0 to 10 V DC
Output / voltage	0 to 10 V DC
Display	Red LED

Dimensions (W x H x D)	11.2 x 87.5 x 60 mm
Weight	43 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Circuit diagram



P/N	Color	Feature 1	Feature 2
110730	gray	24 V AC/DC	0-10 V DC
11073001	gray	24 V AC/DC	0 - 10 V DC Return voltage proof



KMAi-F8

The analog encoder is used for manual control variable settings for example for mixing valves, valve positions, temperature values etc. The module can be controlled in two operating modes that are set by means of the three level switch (ON, OFF, AUTO) on the front. The switch position is confirmed via the two external control contacts B1 and B2. Switch position "ON" The control variable can be set with the potentiometer on the front. The output signal 0 to 20 mA is available at contact Y. The current flow at input YR is not interrupted when the switch is in position ON or OFF.

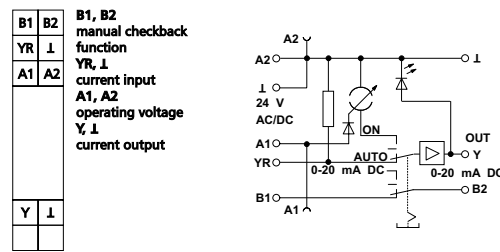
Switch position "AUTO"
 The input current (YR) is transmitted to the control variable output Y with a tolerance of +/-5 % (full scale value).

- Connection by spring clamp terminal blocks (push-in)
- Setpoint generator
- Manual control level with checkback function
- LED brightness proportional to control variable

Input / operating voltage	24 V AC/DC
Input / Current consumption AC	30 mA
Input / Current consumption DC	19 mA
Input / voltage	0 to 20 mA DC
Output / voltage	0 to 20 mA DC
Display	Red LED

Dimensions (W x H x D)	11.2 x 87.5 x 60 mm
Weight	43 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Circuit diagram



P/N	Color	Feature 1	Feature 2
110731	gray	24 V AC/DC	0 - 20 mA



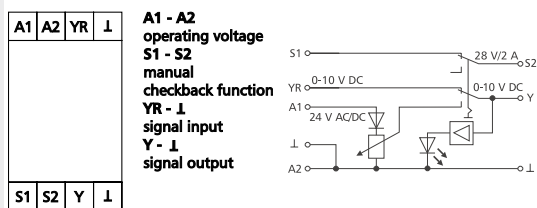
KMA-E08

The analog encoder is used as encoder for manual control variable definition, e.g. mixing valves, valve positions, temperature values, etc. The module can be operated in two modes, which can be commuted by means of integrated two-level switches (manual, automatic). The switch position is signalized by external control contact terminals S1 and S2. The control variable can be set on the potentiometer at the front. The output signal 0 to 10 V is available on the Y terminal. If the switch is in "AUTO" position, the control variable is looped through over the YR terminal to the Y output without change.

- Setpoint device
- Manual control level with checkback
- LED brightness proportional to control variable

Input / Operating voltage	24 V AC/DC
Input / Current consumption AC	24 mA
Input / Current consumption DC	19 mA
Input / voltage	0 to 10 V DC
Output / voltage	0 to 10 V DC
Display	Red LED
Dimensions (W x H x D)	22.5 x 61.3 x 60 mm
Weight	70 g
Operating temperature range	-10 °C to +50 °C
Storage temperature range	-25 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Circuit diagram



P/N	Color	Feature 1	Feature 2
110660	gray	24 V AC/DC	0 - 10 V
11066001	gray	24 V AC/DC	0 - 10 V DC Return voltage proof



KMAi-E08

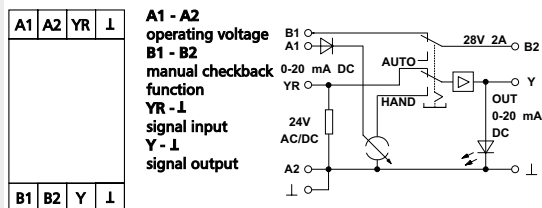
The analog encoder is used for manual control variable settings for example for mixing valves, valve positions, temperature values etc. The module can be controlled in two operating modes that are set by means of the two level switch (Hand, Auto) on the front. The switch position is confirmed via the two external control contacts B1 and B2. Switch position "Hand" (manual mode)The control variable can be set with the potentiometer on the front. The output signal 0 to 20 mA is available at contact Y. The current flow at input YR is not interrupted.

Switch position "Auto"
The input current (YR) is transmitted to the control variable output Y with a tolerance of +/- 5 % (full scale value).

- Setpoint generator
- Manual control level with checkback function
- LED brightness proportional to control variable

Input / operating voltage	24 V AC/DC
Input / Current consumption AC	50 mA
Input / Current consumption DC	30 mA
Input / current	0 to 20 mA DC
Output / current	0 to 20 mA DC
Display	Red LED
Dimensions (W x H x D)	22.5 x 61.3 x 60 mm
Weight	70 g
Operating temperature range	-10 °C to +50 °C
Storage temperature range	-25 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Circuit diagram



P/N	Color	Feature 1	Feature 2
110659	gray	24 V AC/DC	0 - 20 mA

Matching accessory for
PV10 F10

Labeling plate Series
KRA-F8/F10

Page
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PV10 F10

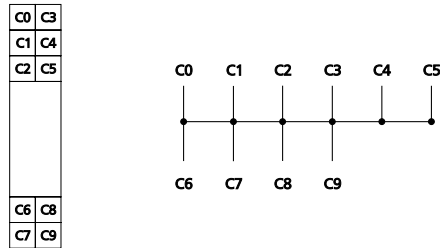
The potential distributor distributes the potential of up to 10 lines on the top hat rail.

- Potential distributor
- Connection with spring-clamp terminal blocks (push-in)
- Test contacts for each terminal block

Operating voltage	250 V AC/DC
Total current	16 A AC/DC
Solid wire cross-section	0.08 mm ² - 2.5 mm ²
Stranded wire without end sleeve	0.08 mm ² - 2.5 mm ²
Stranded wire with end sleeve	0.08 mm ² - 1.5 mm ²

Dimensions (W x H x D)	11.2 x 87.5 x 60 mm
Weight	30 g
Operating temperature range	-20 °C to +55 °C
Storage temperature range	-25 °C to +70 °C
Type of protection	IP20

Wiring/Circuit diagram



P/N	Color	Feature 1	Feature 2
110720	gray	250 V AC/DC	



KRS-E06

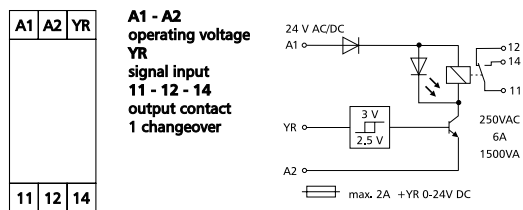
The threshold gate switches units, pumps, fans, burners, etc. As soon as the input voltage reaches the switching threshold, the relay is activated. When the input voltage falls below the switch-off threshold, the relay is released again.

- Connection with screw-type terminals

Operating voltage	24 V AC/DC
Current consumption 24 V AC	80 mA
Current consumption 24 V DC	16 mA
Threshold voltage	3.0 V DC
Switch-off voltage	2.5 V DC
Output / voltage	250 V AC
Output / contact	1 changeover contact (SPST)
Output / contact material	AgSnO ₂
Output / continuous current	6 A
Output / switching frequency	1200 cycles/h
Mechanical endurance	1 x 10 ⁷ switching cycles
Electrical endurance	1 x 10 ⁵ switching cycles
Display	Yellow LED

Dimensions (W x H x D)	17.5 x 61.3 x 60 mm
Weight	70 g
Operating temperature range	-10 °C to +50 °C
Storage temperature range	-25 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Circuit diagram



P/N	Color	Feature 1	Feature 2
110655	gray	2.5 V off 3 V on	w/o manual control



KRS-E06 H

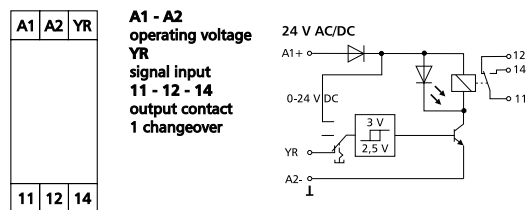
The threshold gate switches units, pumps, fans, burners, etc. As soon as the input voltage reaches the switching threshold, the relay is activated. When the input voltage falls below the switch-off threshold, the relay is released again.

- with manual control level
- Connection with screw-type terminals

Operating voltage	24 V AC/DC
Current consumption 24 V AC	80 mA
Current consumption 24 V DC	16 mA
Threshold voltage	3.0 V DC
Switch-off voltage	2.5 V DC
Output / voltage	250 V AC
Output / contact	1 changeover contact (SPDT)
Output / contact material	AgSnO ₂
Output / continuous current	6 A
Output / switching frequency	1200 cycles/h
Mechanical endurance	1 x 10 ⁷ switching cycles
Electrical endurance	1 x 10 ⁵ switching cycles
Display	Yellow LED

Dimensions (W x H x D)	17.5 x 61.3 x 60 mm
Weight	70 g
Operating temperature range	-10 °C to +50 °C
Storage temperature range	-25 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Circuit diagram



P/N	Color	Feature 1	Feature 2
110661	gray	2.5 V off 3 V on	with manual control



KRS-E08 HR

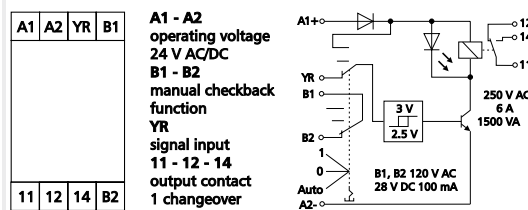
The threshold gate switches units, pumps, fans, burners, etc. As soon as the input voltage reaches the switching threshold, the relay is activated. When the input voltage falls below the switch-off threshold, the relay is released again.

- with manual control level
- Connection with screw-type terminals

Operating voltage	24 V AC/DC
Current consumption 24 V AC	80 mA
Current consumption 24 V DC	16 mA
Threshold voltage	3.0 V DC
Switch-off voltage	2.5 V DC
Output / voltage	250 V AC
Output / contact	1 changeover contact (SPDT)
Output / contact material	AgSnO ₂
Output / continuous current	6 A
Output / switching frequency	1200 cycles/h
Mechanical endurance	1 x 10 ⁷ switching cycles
Electrical endurance	1 x 10 ⁵ switching cycles
Display	Yellow LED

Dimensions (W x H x D)	22.5 x 61.3 x 60 mm
Weight	70 g
Operating temperature range	-10 °C to +50 °C
Storage temperature range	-25 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Circuit diagram



P/N	Color	Feature 1	Feature 2
110667	gray	2.5 V off 3 V on	1 DPST



KRS-E08 HRP

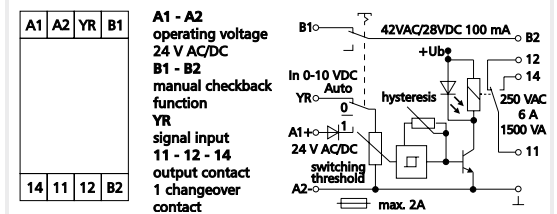
The threshold gate switches units, pumps, fans, burners, etc. As soon as the input voltage reaches the switching threshold, the relay is activated. When the input voltage falls below the switch-off threshold, the relay is released again.

- with manual control level
- Adjustable switch-on voltage and hysteresis
- Connection with screw-type terminals

Operating voltage	24 V AC/DC
Current consumption 24 V AC	80 mA
Current consumption 24 V DC	20 mA
Adjustable threshold voltage	1 to 10 V DC
Adjustable hysteresis	5 to 75 %
Switch-off voltage	2.5 V DC
Output / voltage	250 V AC
Output / contact	1 changeover contact (SPDT)
Output / contact material	AgSnO ₂
Output / continuous current	6 A
Output / switching frequency	1200 cycles/h
Mechanical endurance	1 x 10 ⁷ switching cycles
Electrical endurance	1 x 10 ⁵ switching cycles
Display	Green LED

Dimensions (W x H x D)	22.5 x 61.3 x 60 mm
Weight	70 g
Operating temperature range	-10 °C to +50 °C
Storage temperature range	-25 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Circuit diagram



P/N	Color	Feature 1	Feature 2
110666	gray	selectable	1 DPST



KRS-E08 3

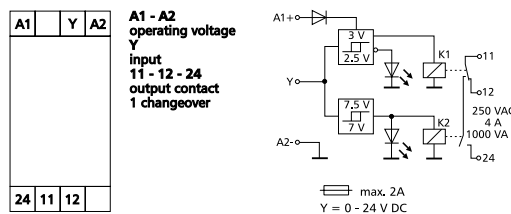
The threshold gate switches units, pumps, fans, burners, etc. As soon as the input voltage reaches the switching threshold, the relay is activated. When the input voltage falls below the switch-off threshold, the relay is released again. The module is designed for a two-level control by means of an analog 0 to 10 V DC control signal.

- Control signal 0 V DC = Level 1 active
- Control signal 5 V DC = No level is active (OFF)
- Control signal 10 V DC = Level 2 active
- Connection with screw-type terminals

Operating voltage	24 V AC/DC
Current consumption 24 V AC	100 mA
Current consumption 24 V DC	35 mA
Output / voltage	250 V AC
Output / contact	1 changeover contact with 0 position
Output / contact material	AgSnO ₂
Output / continuous current	4 A
Output / switching frequency	1200 cycles/h
Mechanical endurance	1 x 10 ⁷ switching cycles
Electrical endurance	1 x 10 ⁵ switching cycles
Display	Yellow and red LED

Dimensions (W x H x D)	22.5 x 61.3 x 60 mm
Weight	70 g
Operating temperature range	-10 °C to +50 °C
Storage temperature range	-25 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Circuit diagram



P/N	Color	Feature 1	Feature 2
110673	gray	2.5 V off 7 V on	3 V off 7.5 V on



KRS1-E08 HR3

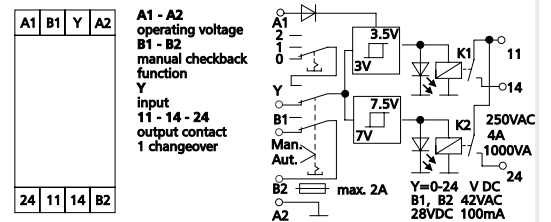
The threshold gate switches units, pumps, fans, burners, etc. As soon as the input voltage reaches the switching threshold, the relay is activated. When the input voltage falls below the switch-off threshold, the relay is released again. The module is designed for a two-level control by means of an analog 0 to 10 V DC control signal.

- Control signal 0 V DC = No level is active (OFF)
- Control signal 5 V DC = Level 1 active
- Control signal 10 V DC = Level 1 and Level 2 active
- with manual control level
- Connection with screw-type terminals

Operating voltage	24 V AC/DC
Current consumption 24 V AC	100 mA
Current consumption 24 V DC	35 mA
Output / voltage	250 V AC
Output / contact	2 levels with 0 position
Output / contact material	AgSnO ₂
Output / continuous current	4 A
Output / switching frequency	1200 cycles/h
Mechanical endurance	1 x 10 ⁷ switching cycles
Electrical endurance	1 x 10 ⁵ switching cycles
Display	Yellow and red LED

Dimensions (W x H x D)	22.5 x 61.3 x 60 mm
Weight	70 g
Operating temperature range	-10 °C to +50 °C
Storage temperature range	-25 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Circuit diagram



P/N	Color	Feature 1	Feature 2
110672	gray	2.5 V off 7 V on	3 V off 7.5 V on



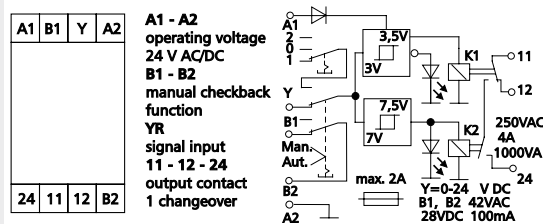
KRS-E08 HR3

The threshold gate switches units, pumps, fans, burners, etc. As soon as the input voltage reaches the switching threshold, the relay is activated. When the input voltage falls below the switch-off threshold, the relay is released again. The module is designed for a two-level control by means of an analog 0 to 10 V DC control signal.

- Control signal 0 V DC = Level 1 active
- Control signal 5 V DC = No level is active (OFF)
- Control signal 10 V DC = Level 2 active
- with manual control level
- Connection with screw-type terminals

Operating voltage	24 V AC/DC
Current consumption 24 V AC	100 mA
Current consumption 24 V DC	35 mA
Output / voltage	250 V AC
Output / contact	1 changeover contact with 0 position
Output / contact material	AgSnO ₂
Output / continuous current	4 A
Output / switching frequency	1200 cycles/h
Mechanical endurance	1 x 10 ⁷ switching cycles
Electrical endurance	1 x 10 ⁵ switching cycles
Display	Yellow and red LED
Dimensions (W x H x D)	22.5 x 61.3 x 60 mm
Weight	70 g
Operating temperature range	-10 °C to +50 °C
Storage temperature range	-25 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Circuit diagram



P/N	Color	Feature 1	Feature 2
110665	gray	2.5 V, 7 V off	3 V, 7.5 V on



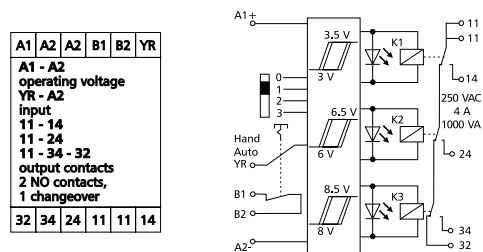
KRS-C12 3VHR

The threshold gate was developed for three-level motor control. Three LEDs are integrated in the module for visually checking the switching state.

- Activation by just one analog input
- Manual control level with checkback
- integrated timer relay
- 3 changeover contacts (3PDT) with automatic locking
- Connection with screw-type terminals

Operating voltage	24 V AC/DC
Current consumption 24 V AC	60 mA
Current consumption 24 V DC	22 mA
Output / voltage	250 V AC
Output / contact	3 changeover contacts (3PDT)
Output / contact material	AgSnO ₂
Output / continuous current	4 A
Output / switching frequency	360 cycles/h
Mechanical endurance	1 x 10 ⁷ switching cycles
Electrical endurance	1 x 10 ⁵ switching cycles
Display	Yellow LED
Dimensions (W x H x D)	35 x 68 x 60 mm
Weight	95 g
Operating temperature range	-10 °C to +50 °C
Storage temperature range	-25 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Circuit diagram



P/N	Color	Feature 1	Feature 2
11043413	gray		



KRZ-E08 HR

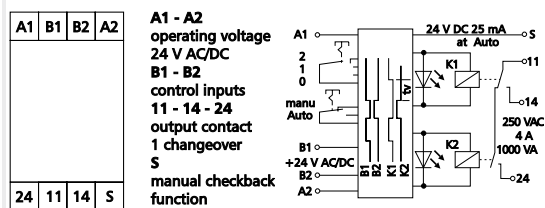
The coupling module is designed for two-level motor control.

- Interlocked relays
- Manual control level
- Connection with screw-type terminals

Operating voltage	24 V AC/DC
Power consumption 24 V AC/DC	30 mA
Output / contacts	1 changeover contact (SPDT)
Output / contact material	AgSnO ₂
Output / switching voltage	250 V AC/DC
Output / continuous current	4 A
Output / switch-on current	6 A
Output / switching frequency	1200 cycles/h
Response time	20 ms
Release time AC/DC	20 ms
Mechanical endurance	1 x 10 ⁷ switching cycles
Electrical endurance	1 x 10 ⁵ switching cycles
Cross-section	2.5 mm ²
Display	2 red LEDs

Dimensions (W x H x D)	22.5 x 61.3 x 60 mm
Weight	70 g
Operating temperature range	-20 °C to +55 °C
Storage temperature range	-25 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Circuit diagram



P/N	Color	Feature 1	Feature 2
110668132722	gray	switchover	0-1-2
110676132722	gray	switchover	1-0-2



PT-C12 / PTi-C12

The potential isolator / signal converter is used for isolating analog signals in the range from 0 to 10 V DC, and 0 to 20 mA DC or for a signal conversion from 0 to 10 V DC to 0 to 20 mA DC or 0 to 20 mA DC to 0 to 10 V DC. The input and output signals as well as the supply voltage are electrically isolated from each other. An input signal from 0 to 10 V or 0 to 20 mA can be connected to the device.

Electrical isolation function:

With the PT-C12, the input signal 0 to 10 V is adjusted proportionally to the output signal 0 to 10 V. The PTi-C12 adjusts the input signal from 0 to 20 mA proportional to the output signal from 0 to 20 mA.

Function Signal conversion with potential separation:

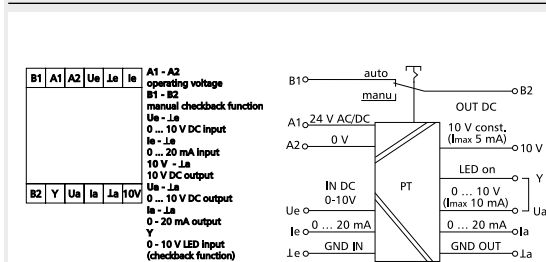
With a signal conversion from 0 to 10 V to 0 to 20 mA, or from 0 to 20 mA to 0 to 10 V, the output signal converted thereby can be readjusted using an integrated spindle trimmer.

In addition, a manual emergency operating option with a MANUAL AUTO switch with feedback contact is also integrated. The output signal from 0 to 10 V or 0 to 20 mA can be set via the front potentiometer when the switch is in the MANUAL position. A constant output voltage of max. 10 V DC and 5 mA is available at the 10V terminal. Input Y is used for the LED display of the output voltage U_a. The brightness of the LED depends on the level of the output signal (bridge between U_a and Y). Alternatively, an external signal at the input Y can be connected to the LED display from 0 to 10 V DC.

Operating voltage	24 V AC/DC
Test voltage / separation	1000 V DC
Input / voltage	0 to 10 V DC
Input / current	0 to 20 mA DC
Output / fix voltage	10 V DC / 5 mA, fix
Output / proportional voltage	0 to 10 V / max. 10 mA
Output / proportional current	0 to 20 mA
Output / current load	max. 500 Ohm
Display	Green LED

Dimensions (W x H x D)	35 x 69.3 x 60 mm
Weight	78 g
Operating temperature range	0 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Circuit diagram



P/N	Color	Feature 1	Feature 2
110501	gray	24 V AC/DC	voltage balanced
11050108	gray	24 V AC/DC	current balanced



PT-C12 230 / PTi-C12 230

The potential isolator / signal converter is used for isolating analog signals in the range from 0 to 10 V DC, and 0 to 20 mA DC or for a signal conversion from 0 to 10 V DC to 0 to 20 mA DC or 0 to 20 mA DC to 0 to 10 V DC. The input and output signals as well as the supply voltage are electrically isolated from each other. An input signal from 0 to 10 V or 0 to 20 mA can be connected to the device.

Electrical isolation function:

With the PT-C12 230, the input signal 0 to 10 V is adjusted proportionally to the output signal 0 to 10 V. The PTi-C12 230 adjusts the input signal from 0 to 20 mA proportional to the output signal from 0 to 20 mA.

Function Signal conversion with potential separation:

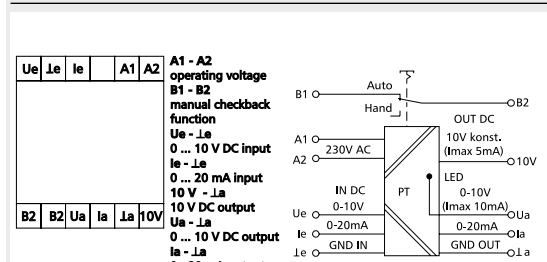
With a signal conversion from 0 to 10 V to 0 to 20 mA, or from 0 to 20 mA to 0 to 10 V, the output signal converted thereby can be readjusted using an integrated spindle trimmer.

In addition, a manual emergency operating option with a MANUAL AUTO switch with feedback contact is also integrated. The output signal from 0 to 10 V or 0 to 20 mA can be set via the front potentiometer when the switch is in the MANUAL position. A constant output voltage of max. 10 V DC and 5 mA is available at the 10V terminal. The integrated LED is used to display the brightness depending on the level of the output signal U_a.

Operating voltage	230 V AC
Test voltage / separation	1000 V DC
Input / voltage	0 to 10 V DC
Input / current	0 to 20 mA DC
Output / fix voltage	10 V DC / 5 mA, fix
Output / proportional voltage	0 to 10 V / max. 10 mA
Output / proportional current	0 to 20 mA
Output / current load	max. 500 Ohm
Display	Green LED

Dimensions (W x H x D)	35 x 69.3 x 60 mm
Weight	78 g
Operating temperature range	0 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
110502	gray	230 V AC	voltage balanced
11050208	gray	230 V AC	current balanced



KAD-C12

The digital/analog converter is designed to convert contacts into an analog signal. The inputs are scanned in steps of 0.5 V. They can be connected to and scanned at a compact control with an analog input (0-10 V). The bridged inputs are signaled by means of LEDs. Example: S1 and S4 bridged corresponds to an output voltage of 4.5 V.

- Switching states are indicated by means of LEDs
- Connection with screw-type terminals

Operating voltage	24 V AC/DC
Current consumption 24 V AC	60 mA
Current consumption 24 V DC	50 mA
Input / scanning	0.5 V steps
Output / voltage	0 to 7.5 V DC
Display	Yellow LED
Dimensions (W x H x D)	35 x 69.3 x 60 mm
Weight	30 g
Operating temperature range	-10 °C to +50 °C
Storage temperature range	-25 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

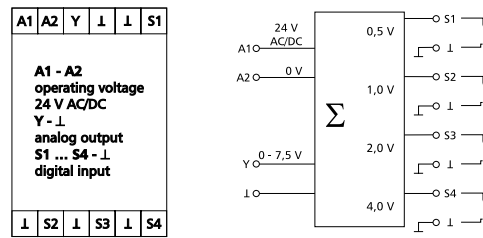
Table of switching conditions

Output V DC	Inputs S 1 2 3 4	Output V DC	Inputs S 1 2 3 4
0.0 V	0 0 0 0	4.5 V	1 0 0 1
0.5 V	1 0 0 0	5.0 V	0 1 0 1
1.0 V	0 1 0 0	5.5 V	1 1 0 1
1.5 V	1 1 0 0	6.0 V	0 0 1 1
2.0 V	0 0 1 0	6.5 V	1 0 1 1
2.5 V	1 0 1 0	7.0 V	0 1 1 1
3.0 V	0 1 1 0	7.5 V	1 1 1 1
3.5 V	1 1 1 0	>7.5 V	1 1 1 1
4.0 V	0 0 0 1		

Value of the inputs

S1 = 0.5 V	S2 = 1.0 V	S3 = 2.0 V	S4 = 4.0 V
------------	------------	------------	------------

Wiring/Circuit diagram



P/N	Color	Feature 1	Feature 2
110656	gray	4 x D/A converter	0 - 7.5 V output



ADU-C12

The analog/digital converter ADU-C12 processes input voltages from 0 to 7.5 V DC in 0.5 V steps. The digital outputs switch according to the applied input voltage. The outputs are updated every 1.5 seconds, and the switching state is signaled by means of an LED.

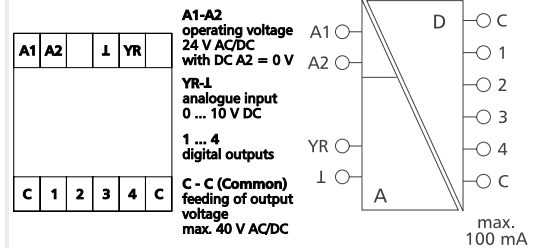
- Switching states are indicated by means of LEDs
- Connection with screw-type terminals

Operating voltage	24 V AC/DC
Current consumption 24 V AC	35 mA
Current consumption 24 V DC	16 mA
Input / voltage	0 to 10 V
Input / scanning	0.5 V steps
Output / voltage	up to 40 V AC/DC
Output / power consumption	max. 100 mA / channel
Display	Green and yellow LED
Dimensions (W x H x D)	35 x 69.3 x 60 mm
Weight	30 g
Operating temperature range	-10 °C to +50 °C
Storage temperature range	-25 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Table of switching conditions

Input V DC	Outputs 1 2 3 4	Input V DC	Outputs 1 2 3 4
0.0 V	0 0 0 0	4.5 V	1 0 0 1
0.5 V	1 0 0 0	5.0 V	0 1 0 1
1.0 V	0 1 0 0	5.5 V	1 1 0 1
1.5 V	1 1 0 0	6.0 V	0 0 1 1
2.0 V	0 0 1 0	6.5 V	1 0 1 1
2.5 V	1 0 1 0	7.0 V	0 1 1 1
3.0 V	0 1 1 0	7.5 V	1 1 1 1
3.5 V	1 1 1 0	>7.5 V	1 1 1 1
4.0 V	0 0 0 1		

Wiring/Circuit diagram



P/N	Color	Feature 1	Feature 2
11043513	gray	4 x A/D converter	0 - 10 V input



RTM-C12

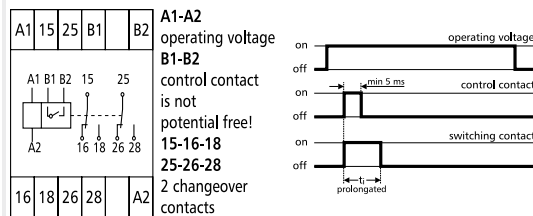
The timer relay is used for pulse prolongation. When the control contact is closed min. 5 ms, the relay is activated and releases after the adjusted pulse time has lapsed. Further control pulses during the pulse time do not have any effect.

- Adjustable pulse length: 0.15 to 3 s
- Connection with screw-type terminals

Operating voltage	24 V AC/DC
Current consumption max.	less than or equal to 15 mA
Continuous current max.	8 A
Output / contact	2 changeover contacts (DPDT)
Output / contact material	AgNi 90/10 gold plated
Response time typical	20 ms
Release time typical	20 ms
Recovery time	greater than or equal to 20 ms
Minimum switch-on duration	greater than or equal to 5 ms
Mechanical endurance	3 x 10 ⁷ switching cycles
Electrical endurance	1 x 10 ⁵ switching cycles
Wire cross section solid wire	2.5 mm ² / AWG 14

Dimensions (W x H x D)	35 x 69.3 x 60 mm
Weight	160 g
Operating temperature range	-10 °C to +50 °C
Storage temperature range	-25 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Function diagram



P/N	Color	Feature 1	Feature 2
11027613	gray	24 V AC/DC	2 DPST



RTM-C12 230 V

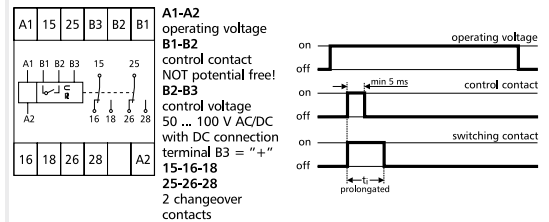
The timer relay is used for pulse prolongation. When the control contact is closed min. 5 ms, the relay is activated and releases after the adjusted pulse time has lapsed. Further control pulses during the pulse time do not have any effect.

- Adjustable pulse length: 0.15 to 3 s
- Connection with screw-type terminals

Operating voltage	230 V AC
Current consumption max.	less than or equal to 15 mA
Continuous current max.	8 A
Output / contact	2 changeover contacts (DPDT)
Output / contact material	AgNi 90/10 gold plated
Response time typical	20 ms
Release time typical	20 ms
Recovery time	greater than or equal to 20 ms
Minimum switch-on duration	greater than or equal to 5 ms
Mechanical endurance	3 x 10 ⁷ switching cycles
Electrical endurance	1 x 10 ⁵ switching cycles
Wire cross section solid wire	2.5 mm ² / AWG 14

Dimensions (W x H x D)	35 x 69.3 x 60 mm
Weight	160 g
Operating temperature range	-10 °C to +50 °C
Storage temperature range	-25 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Function diagram



P/N	Color	Feature 1	Feature 2
11027605	gray	230 V AC	2 DPST



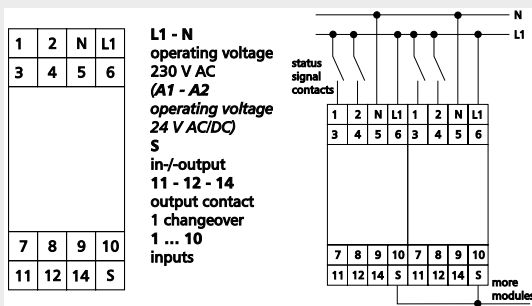
SMM-E16

The annunciator module can indicate to 10 incoming messages by means of a relay. The relay is activated as soon as a voltage is applied to min. one of the 10 inputs. The supply voltage has to be applied continuously to the terminals L1 - N. Several modules with the same voltage can be grouped over the input/output "S". As soon as one relay of the modules is activated, all other relays of the modules operated in parallel are activated.

- Cascade connection of the devices possible
- 10 signal inputs
- Connection with screw-type terminals

Operating voltage	24 V AC/DC, 230 V AC/DC
Power consumption: 24 V AC/DC	20 mA
Power consumption: 230 V AC/DC	20 mA
Output / contact	1 changeover contact (SPDT)
Output / contact material	AgSnO ₂
Output / switching voltage	250 V
Output / continuous current	4 A
Output / switching frequency	1200 cycles/h
Response time	10 ms
Release time	5 ms
Mechanical endurance	1 x 10 ⁷ switching cycles
Electrical endurance	1 x 10 ⁵ switching cycles
Cross-section	2.5 mm ²
Dimensions (W x H x D)	22.5 x 61.3 x 60 mm
Weight	70 g
Operating temperature range	-10 °C to +55 °C
Storage temperature range	-25 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Circuit diagram



P/N	Color	Feature 1	Feature 2
110518	gray	230 V AC	1 DPST
11051813	gray	24 V AC/DC	1 DPST



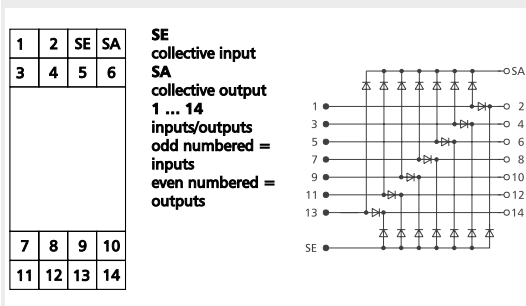
LTM-E16

The lamp test module combines several functions in one module (individual and collective messages and lamp test). The incoming fault messages are applied to the inputs (1, 3, 5, 7, 9, 11, 13). The signal lamps are connected to the outputs (2, 4, 6, 8, 10, 12, 14). When there is a message at an input, the belonging signal lamp lights up. At the same time, a signal is transmitted to the SA output. When a signal is applied to the SE input, all signal lamps light up without a signal being transmitted to the SA output. Please do not use it for 230 V LEDs! (capacitor power supply units)

- for 7 lamps
- Output for collective message
- Input for lamp test
- Connection with screw-type terminals

Input / voltage	250 V AC/DC
Input / cut-off voltage	1000 V
Input / cut-off current	30 µA at 75 °C
Input / forward current	1 A
Total current through all diodes	max. 3.5 A
Dimensions (W x H x D)	22.5 x 61.3 x 60 mm
Weight	100 g
Operating temperature range	-20 °C to +55 °C
Storage temperature range	-25 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Circuit diagram



P/N	Color	Feature 1	Feature 2
110280	gray		



STM-C12

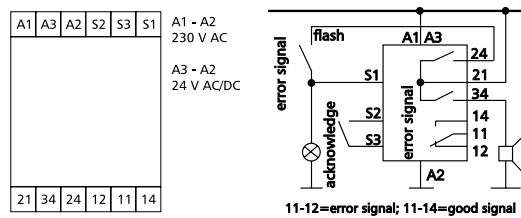
When a fault message is applied, an alarm signal, a flashing signal and a horn relay are activated. The horn relay can be switched off by means of the incorporated pushbutton or an externally applied signal. An active alarm signal is shown as long as it is applied.

- acknowledgeable horn output
- Connection with screw-type terminals

Operating voltage	24 V AC/DC, 230 V AC/DC
Current consumption	less than 60 mA
Output / contact	3 relay outputs
Output / contact material	AgSnO ₂
Output / switching voltage	250 V
Output / continuous current	4 A
Output / switching frequency	360 cycles/h
Mechanical endurance	1 x 10 ⁷ switching cycles
Electrical endurance	6 x 10 ⁴ Schaltspiele
Cross-section	2.5 mm ²
Display	Yellow LED

Dimensions (W x H x D)	35 x 69.3 x 60 mm
Weight	70 g
Operating temperature range	0 °C to +55 °C
Storage temperature range	-25 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Circuit diagram



P/N	Color	Feature 1	Feature 2
110520	gray		



KD-M8/4E

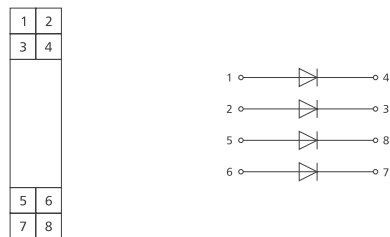
The diode module is equipped with 4 individual diodes. The modules are used for inverse-polarity protection, decoupling and arc extinction.

- individual circuit
- Connection with screw-type terminals

Cut-off voltage	1000 V
Input / voltage	250 V AC/DC
Forward current	1 A
Forward voltage	1.1 V at 1 A
Total current through all diodes	less than or equal to 1.8 A
Cut-off current	30 μ A at 75 °C

Dimensions (W x H x D)	11.2 x 61.3 x 60 mm
Weight	30 g
Operating temperature range	-10 °C to +50 °C
Storage temperature range	-25 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Circuit diagram



P/N	Color	Feature 1	Feature 2
110639	gray	individual	4 diodes



KD-M8/7K

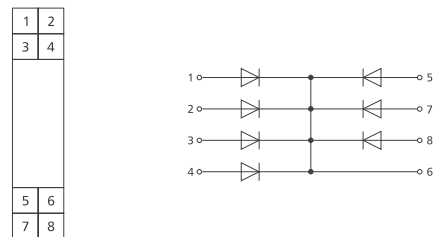
The diode module is equipped with 7 diodes. The cathodes of the diodes are all connected to each other. The module is used for failure indication systems (collective fault message).

- common cathode
- Connection with screw-type terminals

Cut-off voltage	1000 V
Input / voltage	250 V AC/DC
Forward current	1 A
Forward voltage	1.1 V at 1 A
Total current through all diodes	ess than or equal to 1.8 A
Cut-off current	30 μ A at 75 °C

Dimensions (W x H x D)	11.2 x 61.3 x 60 mm
Weight	20 g
Operating temperature range	-10 °C to +50 °C
Storage temperature range	-25 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Circuit diagram



P/N	Color	Feature 1	Feature 2
110641	gray	common cathode	7 diodes



KD-M8/7A

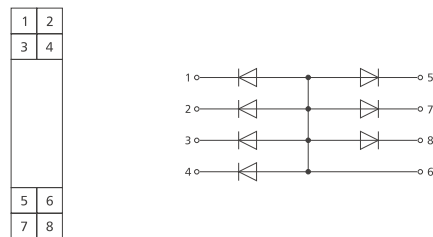
The diode module is equipped with 7 diodes. The anodes of the diodes are all connected to each other. The module is used for failure indication systems (lamp tests).

- common anode
- Connection with screw-type terminals

Cut-off voltage	1000 V
Input / voltage	250 V AC/DC
Forward current	1 A
Forward voltage	1.1 V at 1 A
Total current through all diodes	less than or equal to 1.8 A
Cut-off current	30 μ A at 75 °C

Dimensions (W x H x D)	11.2 x 61.3 x 60 mm
Weight	20 g
Operating temperature range	-10 °C to +50 °C
Storage temperature range	-25 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Circuit diagram



P/N	Color	Feature 1	Feature 2
110640	gray	common anode	7 diodes



KD-S12/11K

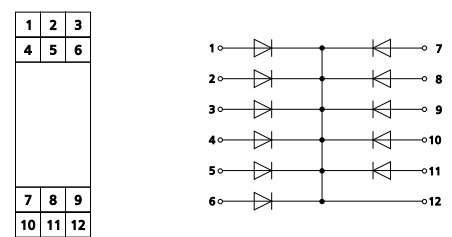
The diode module is equipped with 11 diodes. The cathodes of the diodes are all connected to each other. The module is used for failure indication systems (collective fault message).

- common cathode
- Connection with screw-type terminals

Cut-off voltage	1000 V
Input / voltage	250 V AC/DC
Forward current	1 A
Forward voltage	1.1 V at 1 A
Total current through all diodes	less than or equal to 3.2 A
Cut-off current	30 μ A at 75 °C

Dimensions (W x H x D)	22.5 x 75 x 95 mm
Weight	20 g
Operating temperature range	-10 °C to +50 °C
Storage temperature range	-25 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Circuit diagram



P/N	Color	Feature 1	Feature 2
110629	gray	common anode	11 diodes



KD-S12/11A

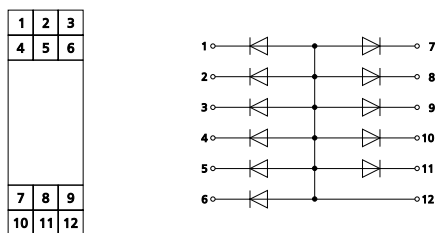
The diode module is equipped with 11 diodes. The anodes of the diodes are all connected to each other. The module is used for failure indication systems (lamp tests).

- common anode
- Connection with screw-type terminals

Cut-off voltage	1000 V
Input / voltage	250 V AC/DC
Forward current	1 A
Forward voltage	1.1 V at 1 A
Total current through all diodes	less than or equal to 3.2 A
Cut-off current	30 μ A at 75 °C

Dimensions (W x H x D)	22.5 x 75 x 95 mm
Weight	20 g
Operating temperature range	-10 °C to +50 °C
Storage temperature range	-25 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Circuit diagram



P/N	Color	Feature 1	Feature 2
110628	gray	common anode	11 diodes

Matching accessory for MC274-4W

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Matching accessory for Socket 14 poles

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MC274-4W

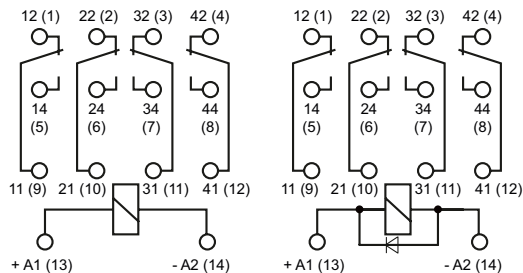
Compact, pluggable relay for industrial use.

- Socket pins as soldering lugs
- mechanical switch position display
- With manual test button
- cadmium-free contacts
- LED-Indicator

Operating voltage AC	24 V AC or 230 V AC
Operating voltage DC	24 V DC
Current consumption 24 V AC	65 mA
Current consumption 24 V DC	41 mA
Current consumption 230 V AC	8 mA
Continuous current	7 A
Output / contact	4 changeover contacts (4DPST)
Output / contact material	Silver alloy
Output / switching capacity	1500 VA
Mechanical endurance	1 x 10 ⁷ switching cycles
Display	LED and mechanical

Dimensions (W x H x D)	21 x 35.5 x 27.4 mm
Weight	35 g
Operating temperature range	-40 °C to +55 °C
Storage temperature range	-40 °C to +85 °C

Wiring AC/Wiring DC



P/N	Color	Feature 1	Feature 2
110017051407	gray	230 V AC	4 DPST
110017101407	gray	24 V AC	4 DPST
110017251407	gray	24 V DC	4 DPST



Socket 14 poles

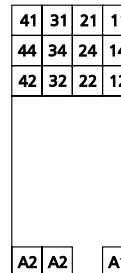
14-pole relay socket for commercially available industrial relays with screw-type terminals. All metal parts are arranged under cover to protect them against contact. The relay socket matches MC274.

- Optional bracket
- integrated quick fastening for DIN rail
- Terminal designation to EN 50022
- separate input and output

Nominal current	10 A
Nominal voltage	300 V AC
Electric strength	
Coil / contact	2500 V / 50 Hz / 1min
Isoliationsgruppe	VDE 0110b C250
Ambient temperature	+70 °C
Protection against contact	VBG 4
Solid wire cross-section	2 x 2.5 mm ²
Stranded wire with end sleeve	2 x 1.5 mm ²
Screw torque	max. 0.8 Nm

Housing dimensions (W x H x D)	27.2 x 75 x 61.2 mm
Weight	63 g
Operating temperature range	0 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection	IP20

Wiring



P/N	Color	Feature 1	Feature 2
110175	black	3 floors	

Matching accessory for Socket 14 poles for electronic modules

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Matching accessory for Socket with spring-clamp terminals

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Holding bracket plastic	112



Socket 14 poles for electronic modules

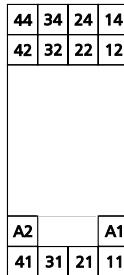
14-pole relay socket for commercially available industrial relays with screw-type terminals. All metal parts are arranged under cover to protect them against contact. The relay socket matches R274. Electronic modules, such as LED or RC modules, can be plugged in the socket optionally.

- Optional bracket
- integrated quick fastening for DIN rail
- Terminal designation to EN 50022
- separate input and output

Nominal current	10 A
Nominal voltage	300 V AC
Electric strength	
Coil / contact	2500 V / 50 Hz / 1 min
Isolation group	VDE 0110b C250
Ambient temperature	+70 °C
Protection against contact	VBG 4
Solid wire cross-section	2 x 2.5 mm ²
Stranded wire with end sleeve	2 x 1.5 mm ²
Screw torque	max. 0.8 Nm

Housing dimensions (W x H x D)	27.2 x 75 x 42.6 mm
Weight	56 g
Operating temperature range	0 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection	IP20

Wiring



P/N	Color	Feature 1	Feature 2
110178	black	2 floors	



Socket with spring-clamp terminals

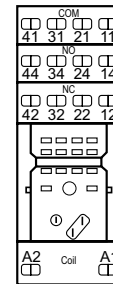
14-pole relay socket with spring-loaded terminals for commercially available industrial relays. All metal parts are arranged under cover to protect them against contact. The relay socket matches to industrial relay MC274. Electronic modules, such as LED or RC modules, can be plugged in the socket optionally.

- Optional bracket
- integrated quick fastening for DIN rail
- Terminal designation to EN 50022
- separate input and output

Nominal current	10 A
Nominal voltage	300 V AC
Electric strength	
Coil / contact	2500 V
Isolation group	VDE 0110b C250
Protection against contact	VBG 4
Solid wire	2 x 0.2 - 1.5 mm ²
Stranded wire with end sleeve	2 x 0.2 - 1.5 mm ²
Insulation strip length	7 mm
Pulling force (contact)	at least 35 N

Housing dimensions (W x H x D)	31 x 96.35 x 42.65 mm
Weight	88 g
Operating temperature range	0 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection	IP20

Wiring



P/N	Color	Feature 1	Feature 2
110185	black	3 floors	

Connecting bridge, 10 pole is matching accessory for

	Page
KRA-F8/21	78
KRA-S-F8/21	78
KRA-SR-F10/21	79
KRA-SRA-F10/21	79
KRA-F10/21-21	80
KRA-S-F10/21-21	80
KMA-F8	90
KMAi-F8	90

Labeling plate Series KRA-F8/F10 is matching accessory for

	Page
KRA-F8/21	78
KRA-S-F8/21	78
KRA-SR-F10/21	79
KRA-SRA-F10/21	79
KRA-F10/21-21	80
KRA-S-F10/21-21	80
PV10 F10	92

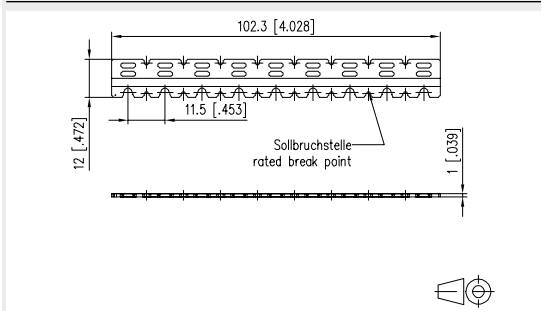


Connecting bridge, 10 pole

The connecting bridge easily connects the terminal blocks A1 and/or A2 of the coupling modules of series F8 and F10 by just plugging in, without having to wire the individual leads. The connecting bridge has 10 poles and is available with grid dimension 11.5 mm.

- Hot air tin-plated, lead-free surface
 - flame retardant, self-extinguishing to UL 94V-2
- | | |
|----------------------------------|------------|
| Rated voltage | 24 V AC/DC |
| Rated current | 2 A |
| Number of poles | 10 |
| Grid dimension | 11.5 mm |
| Upper temperature limit | 100 °C |
| Lower temperature limit | -20 °C |
| Material / printed circuit board | FR4 |

Dimensional drawing



P/N	Color	Feature 1	Feature 2
110728	green		

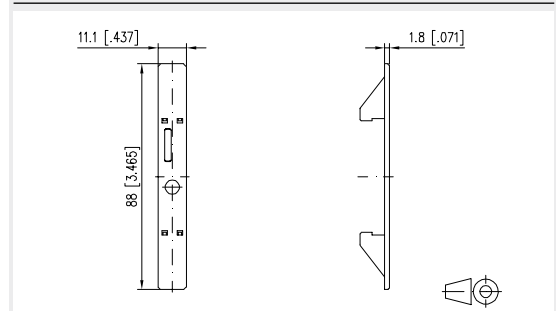


Labeling plate Series KRA-F8/F10

The labeling plate was designed especially for coupling modules with spring-clamp terminal blocks of the series F8 and F10. Great importance was attached to an area for the device tag and one for identification.

- Material: ABS, transparent

Dimensional drawing



P/N	Color	Feature 1	Feature 2
110729	transparent		

Labeling plate Series KMA F8 is matching accessory for

	Page
KMA-F8	90
KMAi-F8	90

Matching accessory for Connecting bridge Series KRA-M4/M6/M8

	Page
End mount	110

Connecting bridge Series KRA-M4/M6/M8 is matching accessory for

	Page
KRA-M4/1	from 81
KRA-M6	from 82
KRA-M8	from 85
KRA-SR-M8/21	from 86
KRA-M8/21-21	from 86

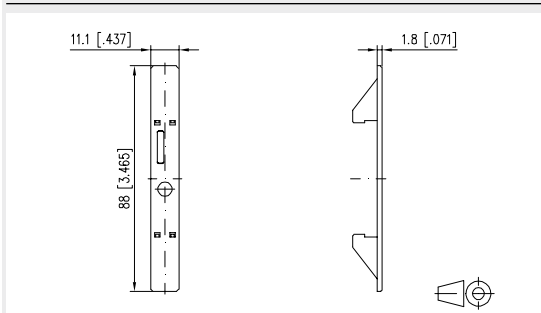


Labeling plate Series KMA F8

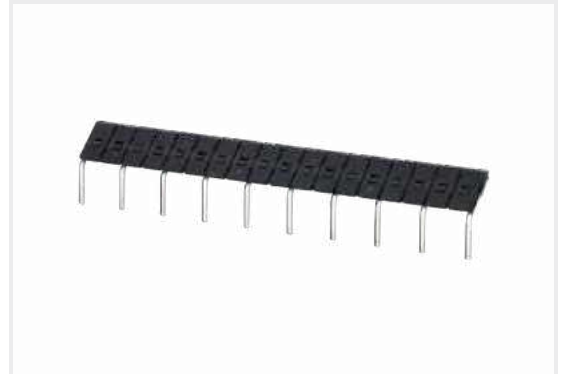
The labeling plate was designed especially for analog encoders with spring-clamp terminals. Great importance was attached to an area for the device tag and one for identification.

- Material: ABS, transparent

Dimensional drawing



P/N	Color	Feature 1	Feature 2
110727	transparent		



Connecting bridge Series KRA-M4/M6/M8

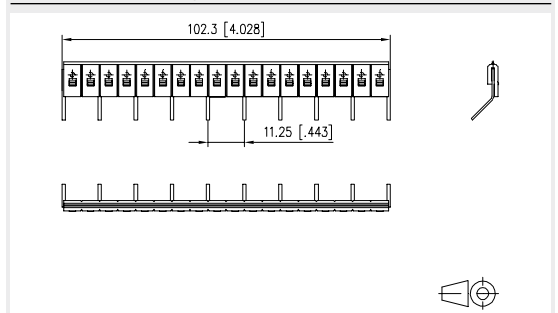
The connecting bridge easily connects the terminal blocks of the coupling modules of series KRA-M4/M6/M8, without having to wire them individually. The connecting bridge has 10 poles and is available with grid dimension 11.5 mm. The end mounts completely insulate the comb-type back to provide finger protection.

- Mechanically polished surface
- flame retardant, self-extinguishing to UL 94V-2

Rated voltage	250 V
Rated current	10 A
Number of poles	10
Grid dimension	11.5 mm
Upper temperature limit	100 °C
Lower temperature limit	-40 °C

Material / jumper	CuZn 37 F54
Ingress protection	IP20

Dimensional drawing



P/N	Color	Feature 1	Feature 2
850349-02	black	10 poles	

Labeling plate Series KRA-M4/M6/M8 is matching accessory for

	Page
KRA-M4/1	from 81
KRA-M6	from 82
KRA-M8	from 85
KRA-SR-M8/21	86
KRA-M8/21-21	86

End mount for connecting bridge is matching accessory for

	Page
Connecting bridge, 10 pole	108
Connecting bridge, 5 pole	111

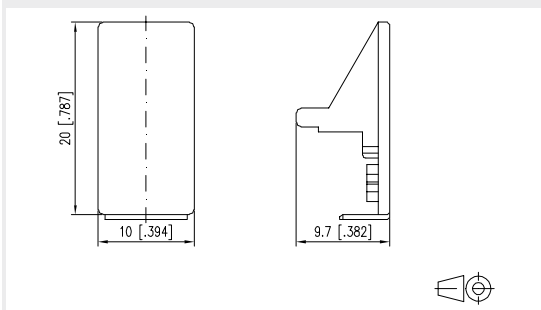


Labeling plate Series KRA-M4/M6/M8

The labeling plate was designed especially for coupling modules with switch because the labeling cannot be attached to the coupling module due to the incorporated switch.

- Material: PA 66, flame retardant and self-extinguishing to UL-94-V2

Dimensional drawing



P/N	Color	Feature 1	Feature 2
820234-01-9	white		

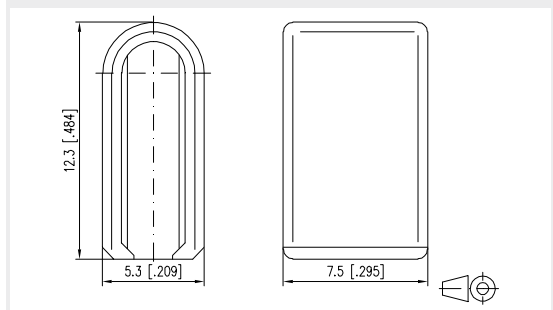


End mount for connecting bridge

To be placed on the ends of the connecting bridge. The end mount completely insulates the comb-type back to provide finger protection.

- Material: PC Makrolon 2805 mat finish, eroded

Dimensional drawing



P/N	Color	Feature 1	Feature 2
820165-2	black		

Connecting bridge for industrial sockets is matching accessory for

	Page
Socket 14 poles 3 floors	106
Socket 14 poles 2 floors for electronic modules	107

Matching accessory for Connecting bridge for industrial sockets

	Page
End mount	110

RC module for industrial sockets is matching accessory for

	Page
RM 21-21	87
RM3-2W	88
Socket 14 poles 2 floors for electronic modules	107

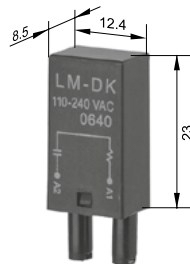


RC module for industrial sockets

RC module for 230 V AC or 24 V AC to suppress interference.

- for relay modules of the RM series and 14-pole Industry sockets

Dimensional drawing



P/N	Color	Feature 1	Feature 2
11017910	black	24 V AC	
11017905	black	230 V AC	



Connecting bridge for industrial sockets

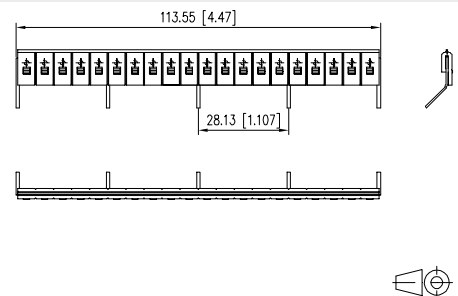
The connecting bridge easily connects the terminal blocks of the 14-pole Industry sockets 110175 and 110178, without having to wire them individually. The connecting bridge has 5 poles and is available with grid dimension 28.1 mm. The end mounts completely insulate the comb-type back to provide finger protection.

- Mechanically polished surface
- flame retardant, self-extinguishing to UL 94V-2

Rated voltage	250 V
Rated current	10 A
Number of poles	5
Grid dimension	28.1 mm
Upper temperature limit	100 °C
Lower temperature limit	-40 °C

Material / jumper	CuZn 37 F54
Ingress protection	IP20

Dimensional drawing



P/N	Color	Feature 1	Feature 2
850349-03	black	5 poles	

**Holding Bracket Wire /
Holding bracket plastic
is matching accessory for**

	Page
Socket 14 poles 3 floors	106
Socket 14 poles 2 floors for electronic modules	107
Socket with spring-clamp terminals	107



Holding bracket wire

Metal holding bracket for securing the relay in the relay socket. It avoids that the relay gets loose due to vibrations.



Holding bracket plastic

Plastic holding bracket for securing the relay in the relay socket. It avoids that the relay gets loose due to vibrations.

P/N	Color	Feature 1	Feature 2
817133	black	Holder	Wire

P/N	Color	Feature 1	Feature 2
110189	black	Holder	Plastics

Control cabinet components | Measuring and monitoring relays

1	Measuring and monitoring relays Fan timer	114
2	Measuring and monitoring relays Speed Monitoring	115
3	Measuring and monitoring relays cosPhi monitoring	117
4	Measuring and monitoring relays Motor protecion	118
5	Measuring and monitoring relays Level monitoring	119
6	Measuring and monitoring relays Phase monitoring	121
7	Measuring and monitoring relays Undervoltage monitor	123
8	Measuring and monitoring relays Current/Voltage monitoring	124
9	Measuring and monitoring relays Current Converter	125



LTRk-E12

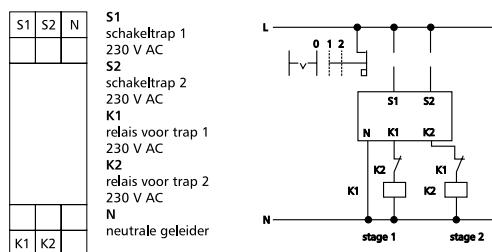
The fan timer relay was designed especially for controlling two-level motors. Response and switch-off delay can be adjusted separately and infinitely. A two-level switch is used for activation. The motor contactors are activated by two mutually blocking outputs.

Mode of operation:

- 1. If you directly select level 2, level 1 is first activated for the adjusted start-up time so that the fan can accelerate to nominal speed. Then level 2 is activated.
- 2. When switching from level 2 back to level 1 or switching off, a switch-off delay is activated allowing the fan to run down before level 1 is activated.
- 3. If level 1 has been activated for minimum the adjusted start-up time, it is immediately switched to level 2. When switching from level 1 to 2, the interruption may be max. 250 ms. If this time is exceeded, the procedure is as described under point 1.

Operating voltage AC	230 V AC
Operating voltage AC/DC	24 V AC/DC
Recovery time	approx. 20 ms
Output / voltage	Operating voltage
Output / max. current	6 A AC1 / 1.5 A AC3
Response time for level 1	0 ms
Response time for level 2	approx. 30 ms
Start-up delay	adjustable time of up to 30 s
Switch-off delay	adjustable time of up to 60 s
Dimensions (W x H x D)	22.5 x 75 x 95 mm
Weight	150 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Circuit diagram



P/N	Color	Feature 1	Feature 2
11028313	gray	24 V AC	
1102830530	gray	230 V AC	

**Matching accessory for
DRIW-E16**

	Page
Two-wire sensor	115
Mounting bracket HWR	116
Mounting bracket HWF	116
Two-wire sensor is matching accessory for	
DRIW-E16	115

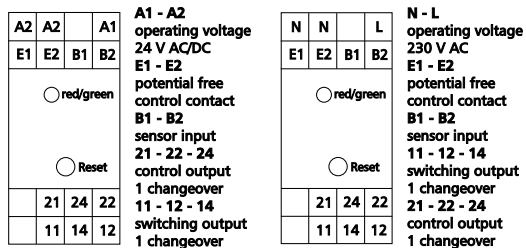


DRIW-E16

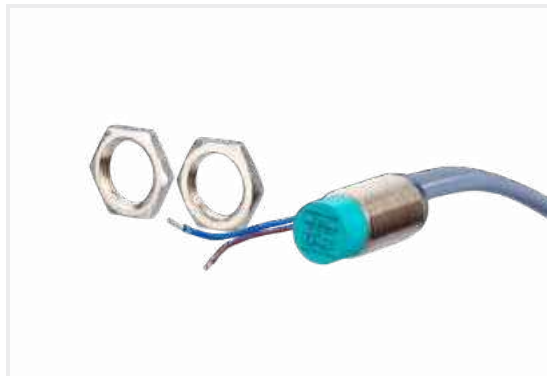
The speed and V-belt monitor is used for monitoring the rotary movement (insufficient speed) of motor and V-belt driven shafts. Inductive proximity switches are used for capturing the speed. Pulses are generated by the sensor without contact by means of driven control cams, toothed wheels, segmented discs, metal signal flags or similar. The relay is activated when the operating voltage is applied. After start-up bridging has finished, the monitoring function is started on the E1 and E2 terminals by means of the power contactor of the drive. When the drive speed falls below the switch-off speed, the relay is deactivated. The fault message of the speed or V-belt monitor is reset by means of the reset function and by switching off the operating voltage.

Operating voltage AC/DC	24 V AC/DC
Operating voltage AC	230 V AC
Recovery time	400 ms
Type of monitoring	Low speed
Max. monitoring range	4200 pulses/min
Switch-off range	120 pulses/min
Sensor input	Two-wire
Start-up bridging	60 s
Outputs	2 changeover contacts (DPDT)
Output / switching voltage	250 V
Output / current	6 A
Output / total current	8 A / across all contacts
Display	Green and red LED
Dimensions (W x H x D)	22.5 x 61.3 x 60 mm
Weight	70 g
Operating temperature range	0 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring AC/DC / Wiring AC



P/N	Color	Feature 1	Feature 2
1101501322	gray	24 V AC/DC	
1101500522	gray	230 V AC	



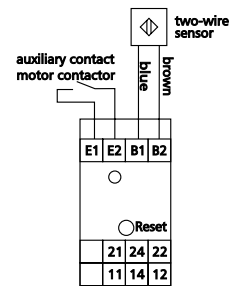
Two-wire sensor

The sensor consists of a cylindrical nickel-plated metal body with M18 thread and 2 thin nuts. The cable output is located at the rear. Laterally, there is a yellow LED lighted in an attenuated state. The oscillator creates a high-frequency electromagnetic field emerging at the front of the sensor. It generates a field over the active area, which is called active pulse zone. When an electrically conductive material enters the field, it takes energy from the oscillator. This attenuates the oscillations so that they stop completely or partially. When the conductive material is removed from the active zone, the oscillator can again oscillate with its full amplitude. These two states can be evaluated electronically by the DRIW-E16.

The sensor has the following main components:

- 1. Oscillator (LC resonator)
- 2. Demodulator
- 3. Bistable amplifier
- 4. Amplifier

Wiring



P/N	Color	Feature 1	Feature 2
110149	silver		

Mounting bracket HWR is matching accessory for

DRIW-E16 Page 115

Mounting bracket HWF ist passendes Zubehör zu

DRIW-E16 Page 115



Mounting bracket HWR

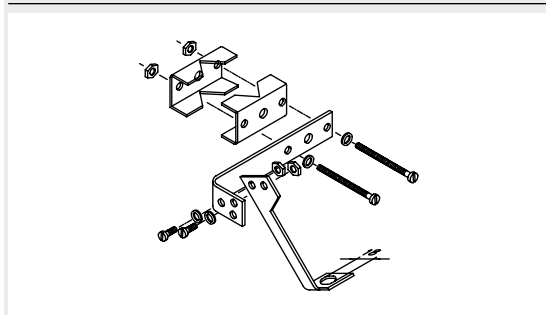
To fasten sensors with max. diameters of 18 mm. For universal mounting. An auxiliary cam for shafts with diameters of up to 45 mm is included in the delivery.



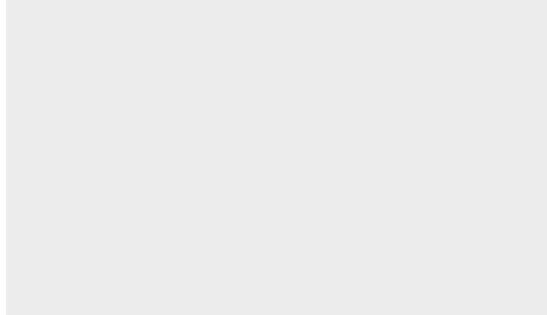
Mounting bracket HWF

To fasten sensors with max. diameters of 18 mm. Ideal for fastening on flat irons. An auxiliary cam for shafts with diameters of up to 45 mm is included in the delivery.

Principle diagram



P/N	Color	Feature 1	Feature 2
110146	silver		



P/N	Color	Feature 1	Feature 2
110151	silver		

Matching accessory for CPW-E12

	Page
Current Converter TAmini 50/5 A	125
Current Converter TAmini 100/5 A	125



CPW-E12

The cosPhi monitor is used for detecting underload. The response value and the response time can be adjusted. It can also be used in combination with a frequency converter (frequency: 2 to 200 Hz). Monitoring is accomplished by recognizing the phase shift between current and voltage. This phase angle varies depending on the motor load. The functions can be adjusted by means of bridges S1 - S2 - S3
 S1 - S2 open = relay deactivated with underload
 S1 - S2 bridged = relay activated with underload
 S1 - S3 open = with fault memory
 S1 - S3 bridged = without fault memory

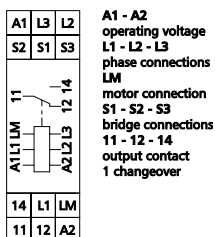
The module can be unblocked remotely by means of a closing contact on S1 - S3.

If there is a fault memory (no bridge over S1-S3), the fault message is active until it is acknowledged or the supply voltage is interrupted.

Operating voltage	230 V AC
Frequency range	2 to 200 Hz
Input / motor voltage	230 V AC / 400 V AC
Input / current	min. 0.2 A / max. 10 A
Input / cosPhi response value	0 to 0.97, adjustable
Input / response time	1 to 100 s, adjustable
Output	1 changeover contact (SPDT)
Output / switching voltage	max. 250 V AC
Output / continuous current	max. 4 A
Output / switching frequency	1200 cycles/h
Display	Green and red LED

Dimensions (W x H x D)	22.5 x 75 x 95 mm
Weight	170 g
Operating temperature range	0 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring



P/N	Color	Feature 1	Feature 2
1102810520	gray	measuring range	1 - 10 A
110281052013	gray	measuring range	0.2 - 2.5 A



TMR-E12 without error memory

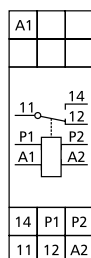
The thermistor relay is used as protection relay for motors against thermal overload (inadmissible heating). This heating might be caused by mechanical overload on the shaft or when operating the motor with inadmissible voltages. A PTC thermistor is used as sensor. It should be mounted to the part of the motor that heats most in case of overload (e.g. integrated in motor winding). The device can also be used for motors with integrated thermo switch.

Variants:

- 230 V AC or 24 V AC/DC
- 1 or 2 changeover contacts (1 or 2 DPST)

Operating voltage AC	230 V AC
Operating voltage AC/DC	24 V AC/DC
Start-up delay	100 ms
Input / thermistor voltage	12 V
Input / thermistor current	1 mA
Input / switch-on resistance	1.8 kOhm
Input / switch-off resistance	3.0 kOhm, +/- 5 %
Output / contact	1 (SPDT) or 2 (DPST) changeover contacts
Output / switching voltage	250 V
Output / continuous current	4 A
Mechanical endurance	1 x 10 ⁷ switching cycles
Electrical endurance	1 x 10 ⁵ switching cycles
Switching frequency	1200 cycles/h
Display	Green and red LED
Dimensions (W x H x D)	22.5 x 75 x 95 mm
Weight	150 g
Operating temperature range	0 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring



A1 - A2
operating voltage
230 V AC or 24 V AC/DC
P1 - P2
PTC thermistor
11 - 12 - 14
output contact
1 changeover contact

P/N	Color	Feature 1	Feature 2
11031505	gray	230 V AC, 1W	w/o error memory
1103150522	gray	230 V AC, 2W	w/o error memory
1103151322	gray	24 V AC/DC, 2W	w/o error memory



TMR-E12 with error memory

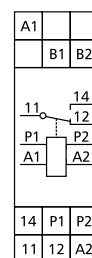
The thermistor relay is used as protection relay for motors against thermal overload (inadmissible heating). This heating might be caused by mechanical overload on the shaft or when operating the motor with inadmissible voltages. A PTC thermistor is used as sensor. It should be mounted to the part of the motor that heats most in case of overload (e.g. integrated in motor winding). The device can also be used for motors with integrated thermo switch. Integrated fault memory with reset key at the front.

Variants:

- 230 V AC or 24 V AC/DC
- 1 or 2 changeover contacts (1 or 2 DPST)

Operating voltage AC	230 V AC
Operating voltage AC/DC	24 V AC/DC
Start-up delay	10 ms
Input / thermistor voltage	12 V
Input / thermistor current	1 mA
Input / switch-on resistance	1.8 kOhm
Input / switch-off resistance	3.0 kOhm, +/- 5 %
Output / contact	1 (SPDT) or 2 (DPDT) changeover contacts
Output / switching voltage	250 V
Output / continuous current	4 A
Mechanical endurance	1 x 10 ⁷ switching cycles
Electrical endurance	1 x 10 ⁵ switching cycles
Switching frequency	1200 cycles/h
Display	Green and red LED
Dimensions (W x H x D)	22.5 x 75 x 95 mm
Weight	150 g
Operating temperature range	0 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring



A1 - A2
operating voltage
230 V AC or 24 V AC
P1 - P2
PTC thermistor
11 - 12 - 14
output contact
1 changeover
B1 - B2
external reset
(error memory)

P/N	Color	Feature 1	Feature 2
11031605	gray	230 V AC, 1W	with error memory
1103160522	gray	230 V AC, 2W	with error memory
1103161322	gray	24 V AC/DC, 2W	with error memory

Matching accessory for ENW-E12

	Page
Submersible Electrode TE1	38, 119
Leakage sensor LKS1, LKS-ZD	38
Leakage sensor LKS1	120
Submersible Electrode TE1 is matching accessory for	
	Page
ENW-E12	119

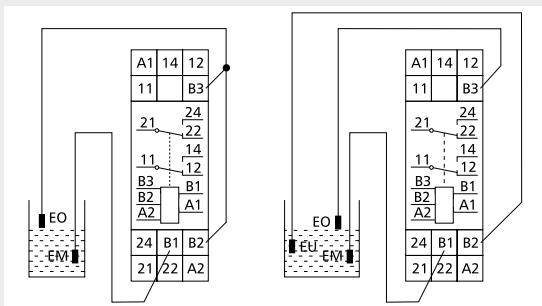


ENW-E12

The level sensor monitors filling levels or leakage of all conductive, noncombustible media. The trigger can be adjusted by means of a proportional potentiometer. As monitor, the device works with an electrode (EO) and the ground connection (EM), e.g. for minimum and maximum levels, to protect submersible pumps from overflowing or running dry. If the surface of the fluid is subject to disturbance, we recommend another electrode (EU). As two-level controller, the device controls pumps or valves for automatically filling and emptying containers by means of the EO and EU electrodes and the EM ground connection. A container wall, being conductive to the medium, can also be used as ground connection. With 2 electrodes connected the contacts B2 and B3 must be connected with a bridge! Variants: 230 V AC or 24 V AC

Operating voltage	230 V AC / 24 V AC
Response sensitivity	5 to 50 kOhm, adjustable
Input	up to 3 electrodes
Input / electrode voltage	12 V
Output / contact	2 changeover contacts (DPDT)
Output / switching voltage	250 V
Output / continuous current	6 A
Output / total current	8 A / across all contacts
Mechanical endurance	1 x 10 ⁷ switching cycles
Electrical endurance	1 x 10 ⁵ switching cycles
Switching frequency	600 cycles/h
Display	Green LED
Dimensions (W x H x D) 22.5 x 75 x 95 mm	
Weight 300 g	
Operating temperature range 0 °C to +55 °C	
Storage temperature range -20 °C to +70 °C	
Ingress protection for housing / terminal block IP40 / IP20	

Wiring



P/N	Color	Feature 1	Feature 2
11030805	gray	230 V AC	
11030810	gray	24 V AC	



Submersible Electrode TE1

One-pole submersible electrode made of stainless steel in plastic housing. To monitor filling levels of conductive liquids. To be connected to the level sensor ENW-E12 P/N 110308xx. Contents of the packaging: 1 submersible electrode, 1 sleeve, 1 strain relief

Connecting cable	H 07 RN-F 1.5 mm ²
Submersible electrode	high-alloy steel, Material number 1.4104 (C12CrMoS12)
Dimensions (diameter x length)	23 mm x 130 mm

P/N	Color	Feature 1	Feature 2
110324	silver		

Leakage sensor LKS1 is matching accessory for

	Seite
MR-LD6	37
ENW-E12	119



Leakage sensor LKS1

Leakage sensors are connected to level sensors, such as ENW-E12 (P/N 110308xx), to detect conductive liquids, for example, when a pipe bursts. If an electrically conductive liquid (e.g. water) comes between the two electrodes, an electrical connection is produced, which triggers an alarm in the connected level sensor ENW-E12.

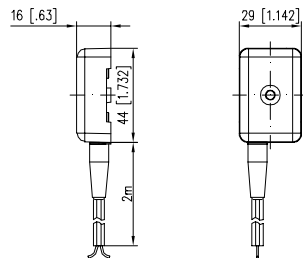
Variants: Gray

Variants:

- LKS1, without wire break monitoring
- LKS-ZD, with wire break monitoring

Wire breakage monitoring unit	no
Connecting cable	2 x 0.75 mm ²
Cable length	2 m
Elektrode	Stainless steel
Dimensions (W x H x D)	44 x 16 x 29 mm
Mounting	Mounting with 1 screw

Dimensional drawing



P/N	Color	Feature 1	Feature 2
110329	gray/black	LKS1	



ASD-C18

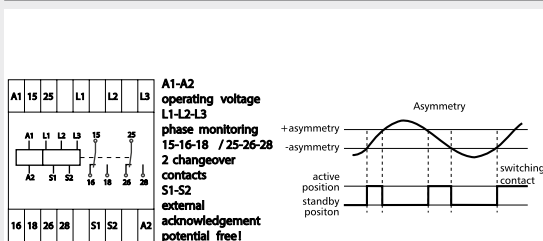
Monitoring relay for monitoring asymmetry, phase failure, phase sequence errors, overvoltage and undervoltage of a three-phase connection. With external fault acknowledgement.

- Adjustable response delay
- Adjustable asymmetry
- Selectable fault memory
- 7-segment display

Operating voltage	230 V AC / 50 Hz
Current consumption	less than 15 mA
Response delay	0.1 to 9.9 s, adjustable
Asymmetry	5% to 20%, adjustable
Switching hysteresis	20 %
Monitoring voltage	3 x 230/400 V AC, 50 Hz
Output contact	2 changeover contacts (DPDT)
Max. switching voltage	250 V AC/DC
Max. continuous current	8 A
Mechanical endurance	3 x 10 ⁷ switching cycles
Electrical endurance	1 x 10 ⁵ switching cycles

Dimensions (W x H x D)	50 x 69.3 x 60 mm
Weight	200 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Function diagram



P/N	Color	Feature 1	Feature 2
110270	gray		



PFD2-E12

The monitoring relay monitors the correct phase sequence L1-L2-L3 (direction of rotation to the right) and complete failures of individual phase voltages.

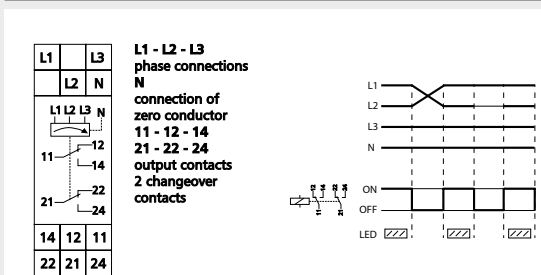
The phase voltages to be monitored are connected to the terminals L1-L2-L3; the terminals 11, 14 or 21, 24 of the relay output contacts are connected ahead of the field coil of the motor relay.

If the phase sequence is correct, the output relay is activated (green LED is on). In case of total failure of a phase, the output relay returns to its neutral position (green LED is off).

A special supply voltage is not required for the monitoring relay. Only connect the device to N if the three phases to monitored are connected to N over an electric circuit (e.g. temperature monitoring or similar).

Supply and measuring voltage	L1-L2-L3 400 V
Current consumption	10 mA
Response delay	< = 1 s
Response delay by error	> = 100 ms
Contacts	2x changeover contact (DPDT)
Contact material	AgNi
Switching voltage	max. 250 V
Continuous current	max. 6 A
Switching frequency	1200 cycles/h
Mechanical endurance	3 x 10 ⁷ switching cycles
Electrical endurance	1 x 10 ⁵ switching cycles
Display	Green LED
Housing Dimensions (W x H x D)	22.5 x 75 x 95 mm
Weight	120 g
Mounting acc. IEC 60715	TH35 rail DIN
Mounting position	any
Side-by-side mounting	without space
Material Housing	Polyamid 6.6 V0
Terminal blocks	Polyamid 6.6 V0
Ingress protection for housing / terminal block (IEC 60529)	IP40 / IP20
Temperature range Operation	-5 °C to +55 °C
Storage	-20 °C to +70 °C

Wiring/Function diagram



P/N	Color	Feature 1	Feature 2
110292032215	gray		



PFD3-E12

The monitoring relay monitors the correct phase sequence L1-L2-L3 (direction of rotation to the right) and complete failures of individual phase voltages.

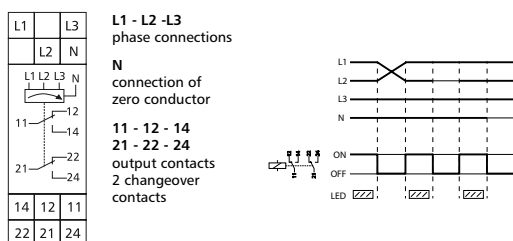
The phase voltages to be monitored are connected to the terminals L1-L2-L3; the terminals 11, 14 or 21, 24 of the relay output contacts are connected ahead of the field coil of the motor relay.

If the phase sequence is correct, the output relay is activated (green LED is on). In case of total failure of a phase, the output relay returns to its neutral position (green LED is off).

A special supply voltage is not required for the monitoring relay. Connect the device to N. In case of total failure of N (zero conductor), the output relay returns to its neutral position (green LED is off).

Supply and measuring voltage	L1-L2-L3-N 400 V / 230 V
Current consumption	10 mA
Response delay	< = 1 s
Response delay by error	> = 100 ms
Contacts	2x changeover contact (DPDT)
Contact material	AgNi
Switching voltage	max. 250 V
Continuous current	max. 6 A
Switching frequency	1200 cycles/h
Mechanical endurance	3 x 10 ⁷ switching cycles
Electrical endurance	1 x 10 ⁵ switching cycles
Display	Green LED
Housing Dimensions (W x H x D)	22.5 x 75 x 95 mm
Weight	120 g
Mounting acc. IEC 60715	TH35 rail DIN
Mounting position	any
Side-by-side mounting	without space
Material Housing	Polyamid 6.6 V0
Terminal blocks	Polyamid 6.6 V0
Ingress protection for housing / terminal block (IEC 60529)	IP40 / IP20
Temperature range Operation	-5 °C to +55 °C
Storage	-20 °C to +70 °C

Wiring/Function diagram



P/N	Color	Feature 1	Feature 2
110292032230	gray	Neutral connection	

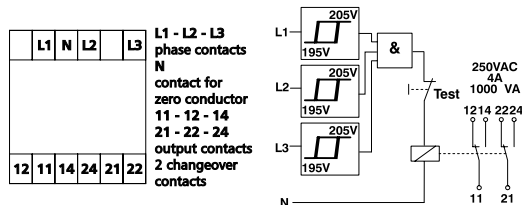


DUW-C12

Undervoltage monitor in three-phase mains (each phase against neutral) with fixed threshold value, fixed hysteresis and integrated testing key. It has been developed especially for emergency lighting to DIN VDE 0108. The device can also be used for monitoring an individual phase. All unoccupied inputs have to be connected to the connected phase. If there is an inverse voltage due to the consumer, which exceeds the adjusted threshold value, there is not any fault message. OK message: Relay is activated (contacts 11-14 and 21-24 closed), LED is off. Fault message: Relay is deactivated (contacts 11-14 and 21-24 open), LED is on. Key pressed: Relay is being deactivated (contacts 11-14 and 21-24 open), LED lights up.

Operating voltage	3N 400/230 V, 50 Hz
Tolerance	-30 % to +10 %
Consumption	16 VA (1.7 W)
Recovery time	less than 300 ms
Dropout voltage	less than 85 %
Trigger delay	approx. 100 ms
Threshold value	195 V AC, fixed
Hysteresis	approx. 5 %, fixed
Output / Contact	2 changeover contacts (DPDT), potential-free
Output / switching voltage	max. 250 V AC/DC
Mechanical endurance	3 x 10 ⁷ switching cycles
Electrical endurance	1 x 10 ⁵ switching cycles
Display	Green and red LED
Dimensions (W x H x D)	35 x 69.3 x 60 mm
Weight	110 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2
110271	gray		

Matching accessory for
EIW-C18

	Page
Current Converter TAmi 50/5 A	125
Current Converter TAmi 100/5 A	125

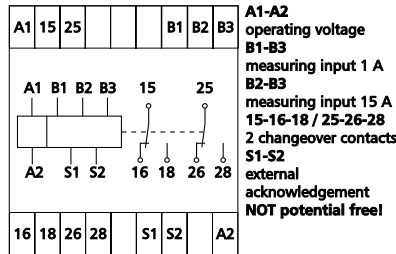


EIW-C18

Monitoring of direct or alternating currents in live systems. It is displayed whether the adjusted values are exceeded or not reached, and a switching process is triggered. The integrated 7-segment display indicates the sources of the fault. The current to be measured (AC or DC), an upper and a lower threshold value, a response delay and the fault memory (ON or OFF) can be adjusted manually on the device. The two current measuring ranges can be selected by means of the terminal blocks. Faults can be acknowledged directly on the device or by means of an external contact. Variants: 230 V AC or 24 V AC

Operating voltage	230 V AC, 50 Hz
Current consumption	max. 15 mA
Current measuring input B1 - B3	0.01 A to 1 A
Current measuring input B2 - B3	0.1 A to 15 A
Response delay	0.1 to 9.9 s, adjustable
Output	2 changeover contacts (DPDT)
Output / switching voltage	max. 250 V AC/DC
Output / continuous current	max. 8 A
Mechanical endurance	3 x 10 ⁷ switching cycles
Electrical endurance	1 x 10 ⁵ switching cycles
Display / error	Two 7-segment displays
Display	Green and red LED
Dimensions (W x H x D)	50 x 69.3 x 60 mm
Weight	200 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring



P/N	Color	Feature 1	Feature 2
11027205	gray		

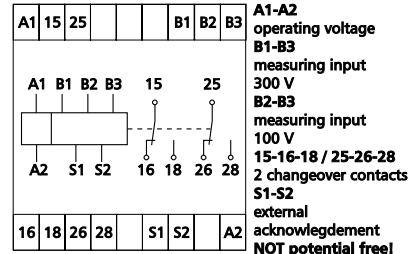


EUW-C18

Monitoring of direct or alternating voltages in live systems. It is displayed whether the adjusted values are exceeded or not reached, and a switching process is triggered. The integrated 7-segment display indicates the sources of the fault. The voltage to be measured (AC or DC), two measuring ranges, an upper and a lower threshold value, a response delay and the fault memory (ON or OFF) can be adjusted manually on the device. Faults can be acknowledged directly on the device or by means of an external contact.

Operating voltage	230 V AC, 50 Hz
Current consumption	max. 15 mA
Voltage measuring input B1 - B3	10 V to 300 V
Voltage measuring input B2 - B3	1 V to 100 V
Response delay	0.1 to 9.9 s, adjustable
Output / contact	2 changeover contacts (DPDT)
Output / switching voltage	max. 250 V AC/DC
Output / continuous current	max. 8 A
Mechanical endurance	3 x 10 ⁷ switching cycles
Electrical endurance	1 x 10 ⁵ switching cycles
Display / error	Two 7-segment displays
Display	Green and red LED
Dimensions (W x H x D)	50 x 69.3 x 60 mm
Weight	200 g
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring



P/N	Color	Feature 1	Feature 2
11027405	gray		

TAmmini 50 A / 5 A is matching accessory for

	Page
CPW-E12	117
EIW-C18	124

TAmmini 100 A / 5 A is matching accessory for

	Page
CPW-E12	117
EIW-C18	124



TAmmini 50 A / 5 A

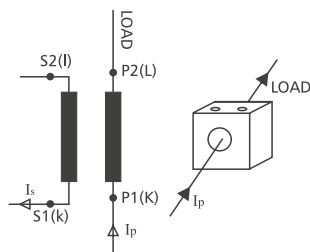
The current converter TAmmini is used for measuring currents that are beyond the measuring range of the directly connected measuring instrument.

- small current converter for mounting on 35 mm DIN rail
- Hole diameter: 21 mm; suitable for cables and rail 20 x 5 mm

Transformer ratio	50 A / 5 A
Nominal frequency	50 Hz
Operating frequency	47 to 63 Hz
Secondary nominal current	5 A
Max. switch-on current	60 x nominal current smaller than 1 s
Max. internal consumption	less than 3 VA
Classification	UL-94 V0

Dimensions (W x H x D)	30 x 44 x 65 mm
Operating temperature range	-25 °C to +50 °C
Storage temperature range	-40 °C to +85 °C

Wiring



P/N	Color	Feature 1	Feature 2
1101810507	brown	transformer ration	50 A/5 A



TAmmini 100 A / 5 A

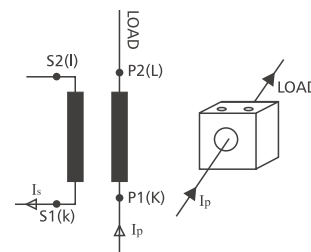
The current converter TAmmini is used for measuring currents that are beyond the measuring range of the directly connected measuring instrument.

- small current converter for mounting on 35 mm DIN rail
- Hole diameter: 21 mm; suitable for cables and rail 20 x 5 mm

Transformer ratio	100 A / 5 A
Nominal frequency	50 Hz
Operating frequency	47 to 63 Hz
Secondary nominal current	5 A
Max. switch-on current	60 x nominal current smaller than 1 s
Max. internal consumption	less than 3 VA
Classification	UL-94 V0

Dimensions (W x H x D)	30 x 44 x 65 mm
Operating temperature range	-25 °C to +50 °C
Storage temperature range	-40 °C to +85 °C

Wiring



P/N	Color	Feature 1	Feature 2
1101810508	brown	transformer ration	100 A/5 A

Control cabinet components | Timer relay

1	Timer relay Multi-function.....	128
2	Timer relay Delay on make	130
3	Timer relay Delay on break	131
4	Timer relay Circuit closing, wiping	132
5	Timer relay Clock generator.....	133
6	Timer relay Flashing	134
7	Timer relay Star-delta	135



MARK-E08

Multi-functional timer relay with incorporated coding switches to set functions. The time is set by means of a linear potentiometer on a relative scale.

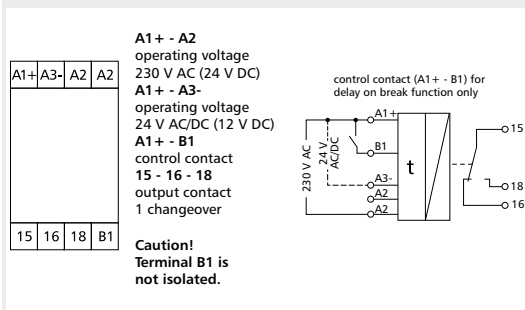
Eight adjustable time ranges from 0.15 s to 10 h.
Five selectable functions

- 1. On-delayed
- 2. Off-delayed
- 3. Making-pulse interval
- 4. Flashing for pause start
- 5. Flashing for pulse start

Operating voltage AC / AC/DC	230 V AC / 24 V AC/DC
Operating voltage DC	24 V DC / 12 V DC
Output / contact	1 changeover contact (SPST)
Output / contact material	AgSnO ₂
Output / switching voltage	250 V
Output / continuous current	6 A
Output / switching frequency	1200 cycles/h
Recovery time	greater than 50 ms
Mechanical endurance	1 x 10 ⁷ switching cycles
Electrical endurance	1 x 10 ⁵ switching cycles
Cross-section	2.5 mm ²
Display	Green and red LED

Dimensions (W x H x D)	22.5 x 61.3 x 60 mm
Weight	70 g
Operating temperature range	-10 °C to +55 °C
Storage temperature range	-25 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Circuit diagram



P/N	Color	Feature 1	Feature 2
110657	gray	5 functions	230 V AC / 24 V AC/DC
11065727	gray	5 functions	24 V DC / 12 V DC



MARK-E08 U

Multi-functional timer relay with incorporated coding switches to set functions. The time is set by means of a linear potentiometer on a relative scale.

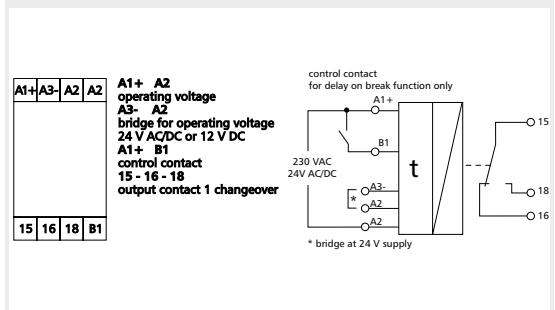
Eight adjustable time ranges from 0.15 s to 10 h.
Two selectable functions

- 1. On-delayed
- 2. Off-delayed

Operating voltage	230 V AC / 24 V AC/DC
Output / contact	1 changeover contact (SPDT)
Output / contact material	AgSnO ₂
Output / switching voltage	250 V
Output / continuous current	6 A
Output / switching frequency	1200 1200 cycles/h
Recovery time	greater than 50 ms
Mechanical endurance	1 x 10 ⁷ switching cycles
Electrical endurance	1 x 10 ⁵ switching cycles
Cross-section	2.5 mm ²
Display	Green and red LED

Dimensions (W x H x D)	22.5 x 61.3 x 60 mm
Weight	70 g
Operating temperature range	-10 °C to +55 °C
Storage temperature range	-25 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Circuit diagram



P/N	Color	Feature 1	Feature 2
1106574133	gray	2 functions	with voltage input



MFRk-E08 / MFRk-E08 F

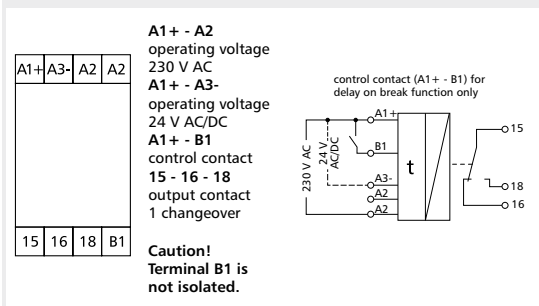
Multi-functional timer relay with incorporated coding switches to set functions. The time is set by means of a linear potentiometer on a relative scale.

Ten adjustable time ranges from 0.05 s to 30 h.
Six selectable functions

- 1. On-delayed
- 2. Making-pulse interval
- 3. Off-delay
- 4. Breaking-pulse interval
- 5. Flashing for pause start
- 6. Flashing for pulse start

Operating voltage	230 V AC / 24 V AC/DC
Output / contact	1 changeover contact (SPDT)
Output / contact material	AgSnO ₂
Output / switching voltage	250 V AC/DC
Output / continuous current	6 A
Output / switching frequency	1200 cycles/h
Mechanical endurance	1 x 10 ⁷ switching cycles
Electrical endurance	1 x 10 ⁵ switching cycles
Recovery time	MFRk-E08 / MFRk-E08 F
at 24 V AC	60 ms / 10 to 30 ms
at 24 V DC	50 ms / 10 to 30 ms
at 230 V AC	100 ms / 10 to 30 ms
Cross-section	2.5 mm ²
Display	Green and red LED
Dimensions (W x H x D)	22.5 x 61.3 x 60 mm
Weight	70 g
Operating temperature range	-10 °C to +55 °C
Storage temperature range	-25 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Circuit diagram



P/N	Color	Feature 1	Feature 2
110658	gray	recovery time tw	50 - 100 ms
110658412014	gray	recovery time tw	10 - 30 ms



MFRk-E12

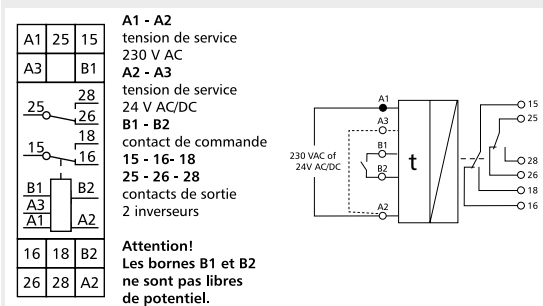
Multi-functional timer relay with incorporated coding switches to set functions. The time is set by means of a linear potentiometer on a relative scale.

Four adjustable time ranges for each device 0.15 to 800 s / 0.1 min to 10 h
Six selectable functions

- 1. On-delayed
- 2. Making-pulse interval
- 3. Off-delay
- 4. Breaking-pulse interval
- 5. Flashing for pause start
- 6. Flashing for pulse start

Operating voltage	230 V AC / 24 V AC/DC
Output / contact	2 changeover contacts (DPDT)
Output / contact material	AgNi
Output / switching voltage	250 V
Output / continuous current	4 A
Output / switching frequency	1200 cycles/h
Mechanical endurance	3 x 10 ⁷ switching cycles
Electrical endurance	2 x 10 ⁵ switching cycles
Recovery time	greater than or equal to 250 ms
Cross-section	2.5 mm ²
Display	Green and red LED
Dimensions (W x H x D)	22.5 x 75 x 95 mm
Weight	150 g
Operating temperature range	-10 °C to +55 °C
Storage temperature range	-25 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Circuit diagram



P/N	Color	Feature 1	Feature 2
110310412230	gray	Time ranges	0.15 s - 800 s
110310412231	gray	Time ranges	0.1 min - 10 h

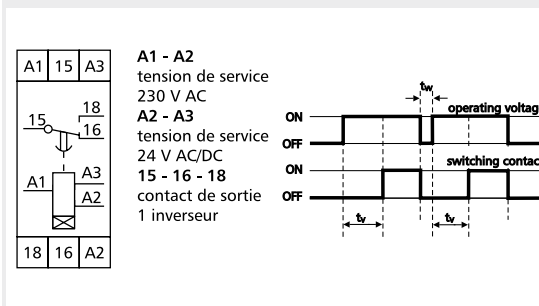


MZAk-E10

Multi-functional timer relay with incorporated coding switches to select time ranges. The time is set by means of a linear potentiometer on a relative scale.

- four adjustable time ranges from 0.15 to 800 s
 - On-delayed
- | | |
|---|--------------------------------------|
| Operating voltage | 230 V AC / 24 V AC/DC |
| Output / contact | 1 changeover contact (SPDT) |
| Output / contact material | AgSnO ₂ |
| Output / switching voltage | 250 V |
| Output / continuous current | 6 A |
| Output / switching frequency | 1200 cycles/h |
| Mechanical endurance | 1 x 10 ⁷ switching cycles |
| Electrical endurance | 1 x 10 ⁵ switching cycles |
| Recovery time | greater than or equal to 100 ms |
| Cross-section | 2.5 mm ² |
| Display | Green and red LED |
| Dimensions (W x H x D) | 22.5 x 75 x 100 mm |
| Weight | 150 g |
| Operating temperature range | -10 °C to +55 °C |
| Storage temperature range | -25 °C to +70 °C |
| Ingress protection for housing / terminal block | IP40 / IP20 |

Wiring/Function diagram



P/N	Color	Feature 1	Feature 2
110295412030	gray		

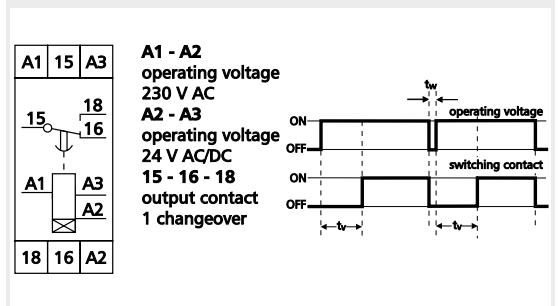


RTLk-E10

On-delayed timer relay with time setting. The time is set by means of a linear potentiometer on a relative scale.

- On-delayed
- | | |
|---|--------------------------------------|
| Operating voltage | 230 V AC / 24 V AC/DC |
| Output / contact | 1 changeover contact (SPDT) |
| Output / contact material | AgSnO ₂ |
| Output / switching voltage | 250 V |
| Output / continuous current | 6 A |
| Output / switching frequency | 1200 cycles/h |
| Mechanical endurance | 1 x 10 ⁷ switching cycles |
| Electrical endurance | 1 x 10 ⁵ switching cycles |
| Recovery time | greater than or equal to 100 ms |
| Cross-section | 2.5 mm ² |
| Display | Green and red LED |
| Dimensions (W x H x D) | 22.5 x 70 x 90 mm |
| Weight | 150 g |
| Operating temperature range | -10 °C to +55 °C |
| Storage temperature range | -25 °C to +70 °C |
| Ingress protection for housing / terminal block | IP40 / IP20 |

Wiring/Function diagram



P/N	Color	Feature 1	Feature 2
110352412003	gray	Time Ranges	0.5 - 10 s
110352412004	gray	Time Ranges	1.5 - 30 s
110352412005	gray	Time Ranges	3 - 60 s
110352412006	gray	Time Ranges	5 - 100 s
110352412008	gray	Time Ranges	15 - 300 s



RKAK-E10

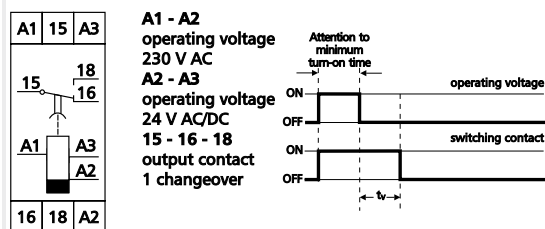
Off delayed timer relay with time setting. The time is set by means of a linear potentiometer on a relative scale.

- Off-delayed

Operating voltage	230 V AC / 24 V AC/DC
Output / contact	1 changeover contact (SPDT)
Output / contact material	AgSnO ₂
Output / switching voltage	250 V
Output / continuous current	6 A
Output / switching frequency	1200 cycles/h
Mechanical endurance	1 x 10 ⁷ switching cycles
Electrical endurance	1 x 10 ⁵ switching cycles
Cross-section	2.5 mm ²
Display	Green LED

Dimensions (W x H x D)	22.5 x 70 x 90 mm
Weight	150 g
Operating temperature range	-10 °C to +55 °C
Storage temperature range	-25 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Function diagram



P/N	Color	Feature 1	Feature 2
110304412003	gray	Time Ranges	0.5 - 10 s
110304412004	gray	Time Ranges	1.5 - 30 s
110304412005	gray	Time Ranges	3 - 60 s
110304412008	gray	Time Ranges	15 - 300 s
110304412011	gray	Time Ranges	3 - 60 min



EWEk-E10

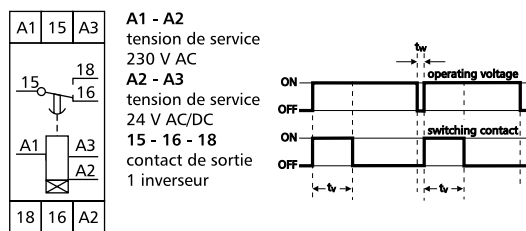
Wiping circuit-closing timer relay with time setting. The time is set by means of a linear potentiometer on a relative scale.

- Making-pulse interval
- Adjustable interval time

Operating voltage	230 V AC / 24 V AC/DC
Output / contact	1 changeover contact (SPDT)
Output / contact material	AgSnO ₂
Output / switching voltage	250 V
Output / continuous current	6 A
Output / switching frequency	1200 cycles/h
Mechanical endurance	1 x 10 ⁷ switching cycles
Electrical endurance	1 x 10 ⁵ switching cycles
Cross-section	2.5 mm ²
Display	Green and red LED

Dimensions (W x H x D)	22.5 x 70 x 95 mm
Weight	150 g
Operating temperature range	-10 °C to +55 °C
Storage temperature range	-25 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Function diagram



P/N	Color	Feature 1	Feature 2
110296412003	gray	Time Ranges	0.5 - 10 s
110296412004	gray	Time Ranges	1.5 - 30 s



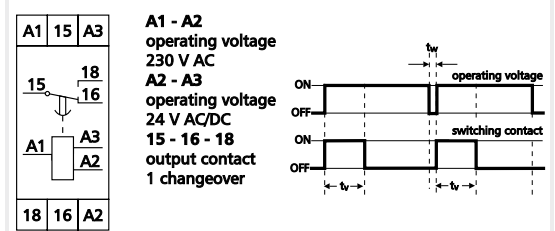
REWk-E10

Wiping circuit-closing timer relay with factory-set interval time of 0.5 s.

Operating voltage	230 V AC / 24 V AC/DC
Recovery time	greater than or equal to 100 ms
Output / contact	1 changeover contact (SPDT)
Output / contact material	AgSnO ₂
Output / switching voltage	250 V
Output / continuous current	6 A
Output / switching frequency	1200 cycles/h
Mechanical endurance	3 x 10 ⁷ switching cycles
Electrical endurance	1 x 10 ⁵ switching cycles
Cross-section	2.5 mm ²
Display	Green and red LED

Dimensions (W x H x D)	22.5 x 70 x 95 mm
Weight	150 g
Operating temperature range	-10 °C to +55 °C
Storage temperature range	-25 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Function diagram



P/N	Color	Feature 1	Feature 2
110354412016	gray		



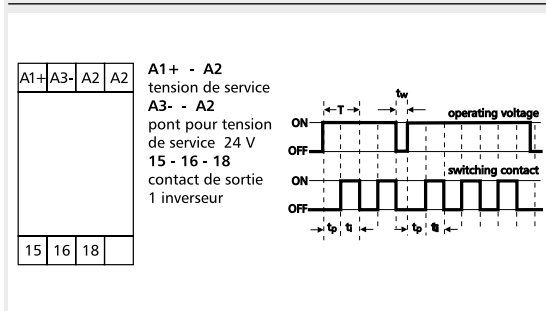
TERK-E08

Clock generator with separately adjustable delay and pulse times. The time ranges can be programmed by means of the coding switches incorporated in the front.

- Clock generating
- Adjustable time ranges

Operating voltage	230 V AC / 24 V AC/DC
Recovery time	greater than or equal to 50 ms
Output / contact	1 changeover contact (SPDT)
Output / contact material	AgSnO ₂
Output / switching voltage	250 V
Output / continuous current	6 A
Output / switching frequency	1200 cycles/h
Mechanical endurance	1 x 10 ⁷ switching cycles
Electrical endurance	1 x 10 ⁵ switching cycles
Cross-section	2.5 mm ²
Display	Green and red LED
Dimensions (W x H x D)	22.5 x 61.3 x 60 mm
Weight	70 g
Operating temperature range	-10 °C to +55 °C
Storage temperature range	-25 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Function diagram



P/N	Color	Feature 1	Feature 2
11067441203030	gray	tp 0.15 - 800 s	ti 0.15 - 800 s
11067441203031	gray	tp 0.15 - 800 s	ti 0.1 min - 10h
11067441203130	gray	tp 0.1 min - 10 h	ti 0.15 - 800 s
11067441203131	gray	tp 0.1 min - 10 h	ti 0.1 min - 10h

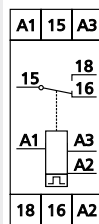


RTBk-E10

Flashing relay with factory-set fixed pause/pulse time of 0.5 s each at a 1:1 ratio.

Operating voltage	230 V AC / 24 V AC/DC
Recovery time	greater than or equal to 100 ms
Output / contact	1 changeover contact (SPDT)
Output / contact material	AgSnO ₂
Output / switching voltage	250 V
Output / continuous current	6 A
Output / switching frequency	1200 cycles/h
Mechanical endurance	1 x 10 ⁷ switching cycles
Electrical endurance	1 x 10 ⁵ switching cycles
Cross-section	2.5 mm ²
Display	Green and red LED
Dimensions (W x H x D)	22.5 x 70 x 90 mm
Weight	150 g
Operating temperature range	-10 °C to +55 °C
Storage temperature range	-25 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

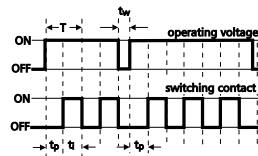
Wiring/Function diagram



A1 - A2
operating voltage
230 V AC

A2 - A3
operating voltage
24 V AC/DC

15 - 16 - 18
output contact
1 changeover



P/N	Color	Feature 1	Feature 2
110355412016	gray		



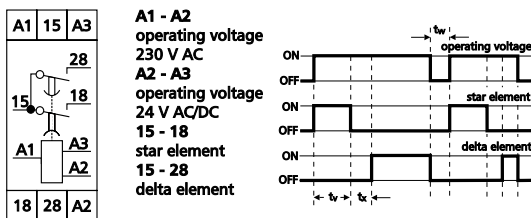
RSDw-E10

Star-delta relay with adjustable switching time for switching three-phase motors. The time is set by means of a linear potentiometer on a relative scale.

- Star-delta relay
- fixed switching time of 50 ms

Operating voltage	230 V AC / 24 V AC/DC
Recovery time	greater than or equal to 250 ms
Switching time	50 ms
Output / contact	1 changeover contact (SPDT)
Output / contact material	AgSnO ₂
Output / switching voltage	250 V
Output / continuous current	6 A
Output / switching frequency	1200 cycles/h
Mechanical endurance	1 x 10 ⁷ switching cycles
Electrical endurance	1 x 10 ⁵ switching cycles
Cross-section	2.5 mm ²
Display	Red LED
Dimensions (W x H x D)	22.5 x 70 x 90 mm
Weight	150 g
Operating temperature range	-10 °C to +50 °C
Storage temperature range	-25 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Function diagram



P/N	Color	Feature 1	Feature 2
11016141280417	gray	230 V AC	1.5 - 30 s
11016141280517	gray	230 V AC	3 - 60 s



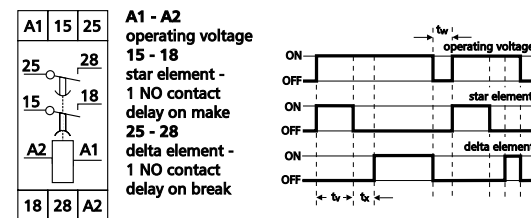
RSD-E10

Star-delta relay with adjustable switching time for switching three-phase motors. The time is set by means of a linear potentiometer on a relative scale.

- Star-delta relay
- fixed switching time of 50 ms

Operating voltage	230 V AC / 24 V AC/DC
Recovery time	greater than or equal to 250 ms
Switching time	50 ms
Output / contact	2 normally open contacts (DPST-NO)
Output / contact material	AgSnO ₂
Output / switching voltage	250 V
Output / continuous current	6 A
Output / switching frequency	1200 cycles/h
Mechanical endurance	1 x 10 ⁷ switching cycles
Electrical endurance	1 x 10 ⁵ switching cycles
Cross-section	2.5 mm ²
Display	Red LED
Dimensions (W x H x D)	22.5 x 70 x 90 mm
Weight	150 g
Operating temperature range	-10 °C to +50 °C
Storage temperature range	-25 °C to +70 °C
Ingress protection for housing / terminal block	IP40 / IP20

Wiring/Function diagram



P/N	Color	Feature 1	Feature 2
11016005270317	gray	230 V AC	0.5 - 10 s
11016005270417	gray	230 V AC	1.5 - 30 s
11016005270517	gray	230 V AC	3 - 60 s
11016013270317	gray	24 V AC/DC	0.5 - 10 s

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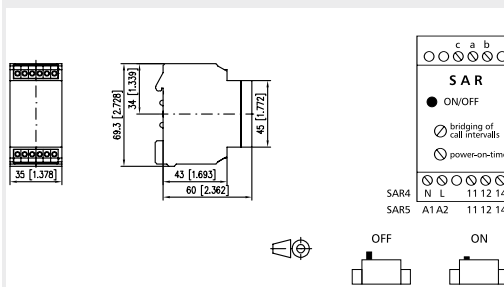


SAR 4 / SAR 5

The SAR4 and SAR5 can be connected to a telecommunications access line or separate control voltage source (AC/DC) and are activated by the call voltage or control voltage. The SAR reacts either only to the call voltage or to the control voltage. It activates an external signal emitter with its own or separate power supply (e.g. bell, horn, or lamp).

Operating voltage SAR4	230 V AC / 50 Hz
Operating voltage SAR5 DC	24 V DC / 10 mA
Operating voltage SAR5 AC	24 V AC / 10 mA
Input / a/b telecommunications access line	
Input / call voltage	32 to 80 V AC
Input / frequency range	23 to 54 Hz
Input / impedance	10 kOhm at 75 V, 25 Hz
Input / insertion loss	less than 0.5 dB
Input / leakage resistance	more than 5 MOhm at 100 V
Input / a/c external voltage	
Input / control voltage DC	5 to 40 V
Input / control voltage AC	5 to 40 V, 50 Hz
Input / resistance	approx. 6 kOhm
Output / switching current	max. 8 A
Output / continuous current	max. 6 A
Output / switching voltage	max. 250 V AC
Output / switching capacity	1500 VA (AC) 30 W (less than 30 V DC) 60 W (greater than 30 V DC)
Call interval bridging	0 to 12 s
Limitation of power-on time	0.25 to 12 s
Electrical safety	acc. to EN 60950
Dimensions (W x H x D)	35 x 69.3 x 60 mm
Operating temperature range	-5 °C to + 55 °C
Storage temperature range	-20 °C to + 70 °C

Dimensional drawing/Circuit diagram



P/N	Color	Feature 1	Feature 2
130283-I	white	SAR4	230 V AC
130284-I	white	SAR5	24 V AC/DC

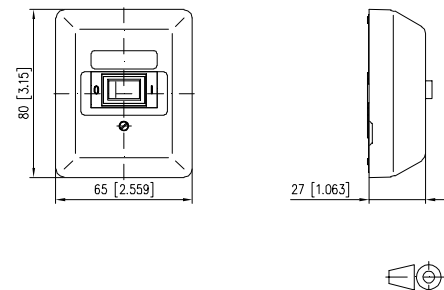


SAR 1

The SAR 1 is connected to a telecommunications line and controlled by the call voltage. The SAR 1 only reacts to the call voltage, not to dialing pulses (IWW). It activates an external signal emitter with its own or separate power supply (e.g. bell, horn, or lamp) by means of a contact. The incorporated switch can be used to activate and deactivate external signals.

Input / call voltage	32 to 80 V AC
Input / frequency range	23 to 54 Hz
Input / impedance	10 kOhm at 75 V, 25 Hz
Input / insertion loss	less than 0.5 dB
Input / leakage resistance	more than 5 MOhm at 100 V
Output / switching current	max. 8 A
Output / continuous current	max. 6 A
Output / switching voltage	max. 250 V AC
Output / switching capacity	2000 VA (AC) 30 W (less than 30 V DC) 60 W (greater than 30 V DC)
Electrical safety	acc. to EN 60950
Dimensions (W x H x D)	65 x 80 x 27 mm
Operating temperature range	-5 °C to + 55 °C
Storage temperature range	-25 °C to + 70 °C

Dimensional drawing



P/N	Color	Feature 1	Feature 2
130280-I	pearl white	surface-mount / surface-mounted	



TZG WK 955 AP

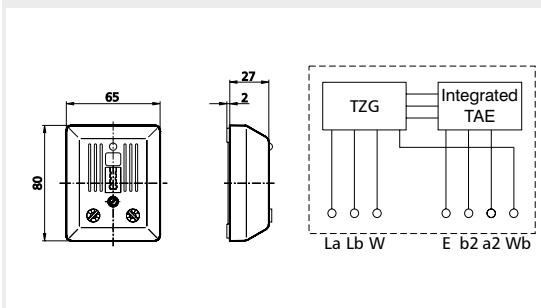
The secondary call signaler allows additionally signaling incoming calls by means of acoustic and optical signals. An incoming call is signaled simultaneously by the telephone and the secondary call signaler. The called persons are able to notice calls even if they are not close to the telephone.

- Surface-mounted termination unit
- Adjustable sound intensity and clock frequency
- Three-sound call 95 dB
- visual signal for incoming calls
- Audible signal can be deactivated if the telephone is plugged into a TAE jack

Input / call voltage	32 to 80 V AC
Input / frequency range	23 to 54 Hz
Input / impedance	10 kOhm at 75 V, 25 Hz
Input / insertion loss	less than 0.5 dB
Input / leakage resistance	more than 5 MOhm at 100 V
Output / internal	TAE-F jack

Dimensions (W x H x D)	65 x 80 x 27 mm
Operating temperature range	-5 °C to + 55 °C
Storage temperature range	-20 °C to + 70 °C

Dimensional drawing/Wiring



P/N	Color	Feature 1	Feature 2
130592-I	pearl white	surface-mount / surface-mounted	



TZG WK 955 UP

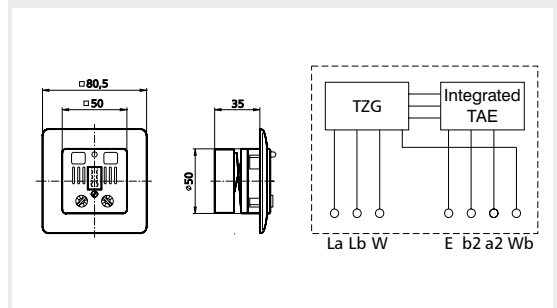
The secondary call signaler allows additionally signaling incoming calls by means of acoustic and optical signals. An incoming call is signaled simultaneously by the telephone and the secondary call signaler. The called persons are able to notice calls even if they are not close to the telephone.

- Flush-mounted termination unit
- Adjustable sound intensity and clock frequency
- Three-sound call 95 dB
- visual signal for incoming calls
- Audible signal can be deactivated if the telephone is plugged into a TAE jack

Input / call voltage	32 to 80 V AC
Input / frequency range	23 to 54 Hz
Input / impedance	10 kOhm at 75 V, 25 Hz
Input / insertion loss	less than 0.5 dB
Input / leakage resistance	more than 5 MOhm at 100 V
Output / internal	TAE-F jack

Dimensions (W x H x D)	80.5 x 80.5 x 35 mm
Operating temperature range	-5 °C to + 55 °C
Storage temperature range	-20 °C to + 70 °C

Dimensional drawing/Wiring



P/N	Color	Feature 1	Feature 2
130593-I	pearl white	Flush mount	

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<http://www.metz-connect.com/en/contact-search>

Please note

General Information

All the information, descriptions and illustrations given in this catalog are non-binding. It does in no way entitle to deduce warranty claims.

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General Terms and Conditions (GTC)

of METZ CONNECT GmbH | Im Tal 2 | 78176 Blumberg | Germany

Managing Director: Jochen Metz

registered at the Freiburg Register Court in Breisgau under HRB [Commercial Register Department B] 611606

I. Application, validity

- 1.1 The following General Terms and Conditions apply to all transactions and deliveries between us and companies (Section 14 BGB) as well as with legal persons under public law and special funds under public law.
- 1.2 We do not recognise the general terms and conditions of the customer unless we have expressly agreed to their validity. Our terms and conditions also apply exclusively if we perform the delivery to the customer without reference to these terms and conditions, despite being aware of terms and conditions of the customer that conflict with or deviate from our terms and conditions.

II. Contract conclusion, scope of delivery

- 2.1 We are entitled, without giving any reason, to revoke our offers until receipt of the declaration of acceptance (offers are non-binding). We can accept orders of the customer (offer within the meaning of Sections 145 et seqq. BGB [German Civil Code]) within two weeks.
- 2.2 If we do not respond to the customer's order by providing the customer with an order confirmation, the order will be accepted by transmitting the delivery and/or delivery note.
- 2.3 The customer has to check all of its dimension and product specifications. We are not obliged to check the dimensions, product data or specifications provided by the customer. When using our products with other components (e.g. connectors to our modules), the customer is responsible for verifying the usability of the components which the customer uses for our product as well as for complying with national and EU standards and guidelines.

III. Delivery time, force majeure, transfer of risk

- 3.1 Only agreed delivery times are binding. An agreed delivery period begins upon receipt of the order confirmation or the commercial confirmation letter, etc., but not prior to the provision of any documents, approvals or releases which might have to be procured by the customer prior to the provision of the supply or before the receipt of an agreed down payment or required advance payment. The delivery deadline is met if the readiness for dispatch (non-loaded provision) has been prepared and communicated to the customer by the respective expiry date and time; this only applies in the case of delivery EXW Blumberg, Incoterms 2010.
- 3.2 In the event of force majeure, the agreed delivery times shall be extended appropriately. If the force majeure lasts longer than six weeks, both parties are entitled to withdraw from the contract after setting a further deadline of two weeks. Force majeure is an external event caused by elementary forces of nature or by actions of third parties, which is unforeseeable according to human insight and experience, and cannot be prevented or rendered harmless by economically acceptable means by the utmost care reasonably expected under the circumstances and cannot be accepted due to its frequency. This also includes fault-free interruptions in operation, such as strikes, lockouts as well as delays in delivery that are not caused by us.
- 3.3 Unless agreed otherwise, deliveries are performed ex works Blumberg, Germany (EXW Blumberg, Incoterms 2010). Unless contractually deviating from the EXW Incoterm clause, the risk for the respective delivery is transferred to the customer if the delivery (packaged goods) has been unloaded and made available to the customer in the Blumberg factory and the customer has been informed thereof in advance in good time. If the provision of the goods to the carrier or customer is delayed at the request of the customer or for other reasons for which we are not responsible or if the customer is in default of acceptance, the risk passes to the customer upon notification of the readiness for shipment or for collection. From that point on, the goods are stored at the expense and risk of the customer.
- 3.4 Partial deliveries and partial services are permissible insofar as they are reasonable for the customer. They are considered as independent deliveries and can be billed immediately.
- 3.5 For custom-made products, we reserve the right to over- or under-deliveries of up to 10% of the ordered and/or order-confirmed delivery quantities.

IV. Prices, payments

- 4.1 Unless otherwise agreed, our prices are ex works Blumberg in Euro plus VAT in the respective statutory amount.
- 4.2 If we agree to cancellations due to reasons of goodwill, the costs incurred by us as well as any additional costs are borne by the customer. The same applies to a change of contracts as initiated by the customer, provided that we agree to these changes out of goodwill.
- 4.3 Unless otherwise agreed, the payments are to be made net within 30 days of the invoice date, provided that the customer has received the goods and the invoice within 10 days of the date which follows the invoice date.

- 4.4 The customer is not entitled to withhold payments or offset them with counterclaims if these do not result from the same contractual relationship and are subject to deficiency. Moreover, offsetting is only permissible with legally determined, recognised or undisputed counterclaims.

V. Reservation of proprietary rights

- 5.1 The delivered goods remain our property until full payment of the purchase price and all claims from the entire business relationship, regardless of which type. Ownership of the property is only transferred once all claims, including all ancillary claims, have been settled. The customer is not entitled to pledge the goods or assign them as security.
- 5.2 If the customer defaults on the payment of a considerable amount of claims arising from the entire business condition, we are entitled to reclaim the reserved goods. The request for release implies a withdrawal from the contract. In such cases, it is not necessary to set a performance period. The assertion of damages remains reserved even in the case of a withdrawal from the contract.
- 5.3 The customer is entitled to resell the goods only in the ordinary course of business and under the condition of a reservation by the customer that the ownership only passes to the customer's purchaser if the latter has completely fulfilled its payment obligations in respect of the reserved goods. The customer hereby assigns to us the claim that results from the resale of the goods in the amount of our final invoice amount, including VAT; the customer is moreover obliged to provide us, upon request, with the name and address of the third party debtors as well as the amounts of the claims. The claim from any resale of our goods may not be assigned to third parties, including banks.
- 5.4 The customer is authorised to collect assigned claims. The collection authorisation expires in the case of a default in payment. In such cases, we are entitled to inform the customers' purchaser of the assignment as well as to collect the claims ourselves. For the assertion of the assigned claims, the customer has to provide the necessary information and to allow the verification of this information. In particular, upon request of a detailed list of the receivables arising from the resale of our goods, the customer has to provide us with the name and address of the purchaser, the amount of the individual claims, the invoice date, etc. as well as to allow access to the customer's business premises for the sake of verification.
- 5.5 If the reserved goods are connected, mixed or processed by the customer to a new item, this occurs for us without our being obliged in this regard. The connection, mixing and processing does not result in the customer acquiring sole ownership in the new product pursuant to Sections 947 et seqq. BGB. Rather, we acquire co-ownership of the new product according to the ratio of the invoice value of our reserved goods to the total value.
- 5.6 The customer undertakes to notify us immediately in the event of seizure, the suspension of payments or the substantial deterioration of its financial circumstances. Garnishers are to be specified, including a statement of their addresses. The customer bears all costs for the revocation of the access of garnishers to our goods as well as for the replacement of the respective goods.
- 5.7 The customer is obliged to ensure any unpaid goods against damage, particularly vandalism, theft, transport damage, fire, water and breakage. The customer agrees to tell us the name of the respective damage insurer and hereby conditionally assigns to us the customer's claim towards the respective insurer for any unpaid goods through the commencement of the insurance case on account of performance.
- 5.8 The customer shall hold the reserved goods for us free of charge; the customer is not entitled to justify a warehouseman's lien.
- 5.9 If, in the case of export deliveries, the above reservation of title pursuant to the law of the country of importation is not effective or needs to be supplemented and/or registered in order to be effective, the customer shall be obliged, as justified, to conclude a security agreement (pursuant to the law of the country of importation) which comes closest to the economic purpose of our purchase price security, as well as to perform the necessary registration.

VI. Obligation to examine and to provide notice of defects, guarantee, liability

- 6.1 **Customer's obligation to examine, provide notice of defects and take precautionary measures**
 - 6.1.1 The customer has to inspect the delivered goods and to provide notification of any apparent defects or quantity deviations (hereafter uniformly: defects) immediately, but no later than within seven days after receipt of the goods. Notification of any unrecognisable defects is also to take place immediate upon discovery, but no later than seven days after they have been discovered. The notice period applies likewise for direct deliveries to third parties designated by the customer; in such cases, the customer also has to ensure a timely notification of any complaints.
 - 6.1.2 If purchasers of the customer provide notifications of defects to the customer, the customer has to forward these complaints to us immediately. The customer undertakes that supplementary performance towards its purchasers or authorised purchasers from the supply chain shall only occur in coordination with us concerning the respective technical and economic measures.

General Terms and Conditions (GTC)

of METZ CONNECT GmbH | Im Tal 2 | 78176 Blumberg | Germany

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registered at the Freiburg Register Court in Breisgau under HRB [Commercial Register Department B] 611606

- 6.1.3 If the customer intends to install, affix or further process the goods which are supplied by us, the customer has to inspect the goods prior to said installing, affixing or further processing. If the customer fails to do so, it acts negligently pursuant to Section 439 para. 3, Sections 442 para. 1 sentence 2 BGB. In such a case, the customer is only entitled to warranty claims if we have deliberately caused or fraudulently concealed the defect or if a guarantee in terms of quality has been accepted.
- 6.1.4 If the customer identifies defects in the goods, the customer undertakes not to resell, process, install or affix the respective goods until an agreement has been reached concerning the settlement of the warranty case or until a judicial or extrajudicial preservation of evidence has been performed. The customer is obliged to provide us with the rejected goods for the purpose of checking whether a warranty claim exists. If the customer culpably refuses to do so, any and all warranty claims are void.
- 6.2 Warranty**
- 6.2.1 In the case of insignificant defects, the customer is not entitled to damages in place of full performance and has no right to withdraw.
- 6.2.2 If the final purchaser in the supply chain is not a consumer and if the customer's purchaser asserts claims for defects, the customer has, in deviation from Section 445a para. 2 BGB, to set a reasonable deadline for supplementary performance before being entitled to assert the other rights described in Section 437 BGB instead of the subsequent fulfilment (right of second delivery). The customer reserves the right to second delivery vis-à-vis the customer's purchaser provided that this purchaser is not a consumer. In cases in which we are entitled to a second delivery, we are entitled and obliged, at our discretion and within a reasonable period, to perform repair or re-deliver (free of charge) up to three times (subsequent performance), as long as the defect occurs within the limitation period and notification thereof is provided immediately upon its being recognised, provided that the cause of the defect was already present at the time of transfer of risk. The customer is required to provide evidence in this regard. If the supplementary performance fails, the customer can withdraw from the contract or reduce the remuneration without prejudice to any claims for damages according to Item 6.
- 6.2.3 If the customer has installed a defective product or attached it to another item pursuant to the product's type and intended use, the following applies:
- a) The customer has to give us the opportunity to remove the defective goods and to install or affix the repaired or newly delivered goods. This does not apply in cases in which the customer's purchaser refuses this procedure (a fact of which the customer has to notify us) or cases in which the customer's purchaser is a consumer.
 - b) If we are obliged to pay for removal and installation costs pursuant to Section 439 para. 3 BGB, we are only responsible for those costs relating to the removal, installation and/or affixing of corresponding goods that are customary in the marketplace and which have been verified by the customer through the submission of appropriate documents. A right by the customer to advanced payment for removal and installation costs or the affixing of identical goods is excluded unless the customer's purchaser is a consumer that requires advanced payment from the customer.
- 6.2.4 Claims for defects expire one year from the date of delivery in accordance with Item 3.3. This does not apply if the law requires longer periods pursuant to Section 439 para. 1 No. 2 BGB (buildings and property for buildings), Section 438 para. 3 BGB (malicious concealment), Section 445 b para. 1 BGB (right of recourse), Section 476 para. 2 BGB (reduction of the limitation period if the end user is a consumer) and Section 634a para. 1 No. 2 BGB (construction defects). The statutory provisions concerning the expiry suspension, suspension and recommencement of the periods remain unaffected thereby.
- 6.2.5 For damages claims due to defects, item 6.3 applies. The customer is not entitled to any warranty claims concerning the regulated claims in items 6.1, 6.2 in conjunction with item 6.3.
- 6.2.6 If the customer is responsible for unjustifiable providing us with a notification of defects, we are entitled to demand that the customer pay us compensation for incurred expenses as well as for other damages.
- 6.3 Liability**
- 6.3.1 Irrespective of the legal grounds, damage claims by the customer, particularly due to a breach of obligations arising from the contractual relationship and from tort, are excluded subject to the following provisions.
- 6.3.2 The exclusion of liability pursuant to Item 6.3.1 does not apply
- to the intentional or grossly negligent breach of duty by either oneself, representatives or vicarious agents,
 - to the breach of essential contractual obligations, with contractual obligations being deemed to be essential if their fulfilment is made possible in the first place by the proper execution of the contract, and upon the compliance of which the customer may regularly rely,
 - if, in the case of a breach of other duties within the meaning of Section 241 para. 2 BGB (obligation to take due consideration), the customer no longer expects our services,
 - in the event of an injury to life, limb or health,
 - pursuant to the Product Liability Act, or
 - pursuant to any other mandatory statutory liability.
- 6.3.3 In the case of liability for a breach of essential contractual obligations as well as initial impossibility and in the case of mandatory liability for legal defects, we are liable (when only slight negligence exists) solely for the contractually typical and predictable average loss. This does not apply in cases of a simultaneous injury to life, limb or health or to product liability cases.
- 6.3.4 Except for cases of injury to life, limb or health, intent, gross negligence or product liability as well as other mandatory statutory liability regulations, our liability is limited in total to the coverage of our public liability insurance, provided that there is coverage in the scope that is usual in the industry.
- 6.3.5 The above exclusions or limitations of liability apply to the same extent in favour of the executive and non-executive employees as well as in the case of liability for our vicarious agents.
- 6.3.6 Claims of the customers for damage compensation can only be asserted within a limitation period of one year from the beginning of the statutory limitation period. Claims for damages due to material defects (Item 6.1) are statute-barred pursuant to Item 6.2.4.
- The above exclusion period and limitation period reduction do not apply if we are liable for intent or gross negligence or for injury to life, body or health, pursuant to the Product Liability Act or other mandatory, statutory facts of liability.
- 6.3.7 If our goods are exported by the customer and processed, as well as in the case of the use of components, installation or attachment abroad, we are not liable for the exportability of the goods, particularly not for obstacles such as export control regulations, embargoes, state approval or import freedom in the export countries of the customer. Compliance with the national regulations of the respective exporting country is subject to the examination and responsibility of the customer.
- 6.3.8 The above exclusions and limitations of liability apply to the same extent for violations of data protection regulations, particularly according to the General Data Protection Regulation (GDPR). This does not apply in cases of a violation of the prohibition on the processing of personal data within the meaning of para. 9 GDPR.
- 6.3.9 A change in the burden of proof to the detriment of the customer is not connected with the regulations in this Item 6.3.
- VII. Acceptance of a guarantee**
- 7.1 In principle, we do not assume any guarantees, including those regarding quality or durability. In particular, quality provisions, performance descriptions and/or product specifications do not contain any statements of guarantee.
- 7.2 Acceptances of guarantee are not made by conclusive behaviour, but rather only by express declaration.
- VIII. Place of performance, jurisdiction, applicable law**
- 8.1 The place of performance and jurisdiction arising from the business relationship with our customer for the delivery and payment is Blumberg.
- 8.2 These GTC as well as all contractual relationships regarding deliveries and services with customers are subject to substantive German law and German procedural law, excluding the conflict of laws. The application of the United Nations Convention on Contracts for the International Sale of Goods Sale of goods (CISG) is excluded.

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Copper and Fiber Optics solutions for networks

10G 25G

OM5

10G 40G 100G



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Copper and Fiber Optics solutions for networks

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Christian and Jochen Metz in the local Blumberg

We are continuing where history left off and will still rely on optimal connections in the future!

Dear business partners,
dear customers,

The family-owned company METZ CONNECT has stood for precision, reliability and ingenuity for more than four decades. Virtues that we put into practice every day at all of our worldwide production and distribution sites.

As pioneers in the communication between people and equipment, it goes without saying that we also pass on our experience and knowledge across generations. And grow steadily in the process!

The METZ CONNECT range is divided into three core areas and offers a wide range of solutions for the most demanding needs:

- P|Cabling** Copper and glass fiber components as well as automated infrastructure management for structured network cabling
- U|Contact** PCB connection technology for the connection of devices and controls in building and industrial automation
- C|Logline** Intelligent system and switch cabinet components for building and process automation.

You will encounter products from METZ CONNECT several times a day, often without seeing them: whether PCB components or connection terminals in control elements, copper and fiber optic components for network cabling or intelligent I/O components in the control cabinet for building automation. Many areas of everyday life, including complex industrial supply and production chains, require the intelligent networking of the involved devices and components. For all these application situations, METZ CONNECT offers full service, from the printed circuit board to the Internet.

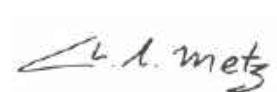
As a partner of numerous international companies, we offer expertise resulting from 40 years of experience in standardised and, above all, customer-specific system solutions for a variety of applications in connection technology. We see ourselves as a problem solver and do not settle for the second-best solution. The search for perfection may seem expensive, but it is worth it.

Join us in mutual projects concerning equipment and plant construction as well as the structured cabling of buildings and industrial sites. We are looking forward to working with you!

Best regards



Jochen Metz
Managing Partner



Christian Metz
Managing Partner

and the entire team from METZ CONNECT.

Innovation and consistency – from the printed circuit board to the end device.

Our high-quality, user-friendly and internationally standardised components and systems are divided into three clear ranges:



P | Cabling

Copper and Fiber Optics solutions for networks

Highly specialised, internationally standardised and high-performance network solutions in copper and fiber optic technology are impressive due to their comfortable installation, maximum quality and highest system capability across all relevant performance classes. They are used in structured building and industrial cabling as well as in data centres.



Connectors



Wall outlets,
distributors



patch cables,
lines

The increasing demand for data transmission volumes requires the ever greater performance and consistency of the data networks. IT technologies can be found in many applications in buildings, data centres and industrial plants.

[Introduction and overview P|Cabling from page 9](#)



U | Contact

Connection systems for printed circuit boards

Innovative products, solutions and systems for the connection technology of printed circuit boards and devices. Products that are compatible with market standards as well as customised product solutions, including for industrial control and building automation, reflect our core competence in this area.



Terminal blocks,
pin headers



Connectors



Board-to-board



C | Logline

Intelligent components for systems and switch cabinets

Intelligent system components for highly communicative and decentralised control in the areas of building and process control, relay technology and telecommunications



Bus modules



Interface modules



Timer, process- and
monitoring relays

Copper Solutions

1	Cat.6 Cable.....	10
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3	Cat.6 Modules.....	12
4	Cat.6 RJ45 field plugs	13
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6	RJ45 Configurator (Application neutral connection cable)	15
7	Cat.6 _A Cables	16
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9	Cat.6 _A Modules.....	18
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11	Cat.6 _A DIN RAIL Products.....	21
12	Cat.6 _A Panels.....	22
13	RJ45 Configurator (Trunk- and consolidation point link cable)..	24
14	Cat.6 _A Patch Cables.....	26
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23	Tools	45

Matching accessories
for GC400 SL23 Cat.6 U/UTP
LSHF

Jokari dismantle tool

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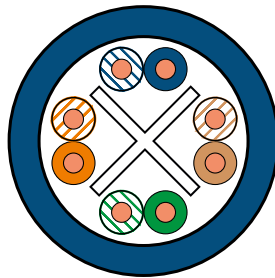
GC400 SL23 Cat.6 U/UTP LSHF

- 1 GBit installation cable, simplex
- unshielded installation cable Cat.6 class E AWG 23 U/UTP
- 4 pairs with separator (spline)
- outer diameter 5.3 mm
- coupling attenuation not less than 40 dB
- applicable standards: EN 50173-1:2011-09; ISO/IEC 11801 Ed.2.2:2011-06; EN 50288-6-1, IEC 61156-5, EIA/TIA 568B
- cable jacket: LSHF (LSOH)
- flame-retardant to IEC 60332-1; IEC 60754-2 and IEC 61034
- fire behaviour: Class E_{ca} (classification acc. to EN 13501-6)

Shipping Units:

1000 ft (305 m)	in a box
1640 ft (500 m)	on drum
3280 ft (1000 m)	on drum

Principle diagram



P/N	Color	Feature 1	Feature 2
1308406032140	blue	305 m (1000 ft)	box
1308406032141	blue	500 m (1640 ft)	drum
1308406032142	blue	1000 m (3280 ft)	drum

E-DAT modul coupler 180° is matching accessories for
Page

- Keystone 19 inch module frame 0.5RU 24 port black unequipped 22
- Keystone module frame 3RU, 7HP 6 port stainless steel / unequipped 25

E-DAT modul coupler 90° is matching accessories for
Page

- Keystone 19 inch module frame 0.5RU 24 port black unequipped 22



E-DAT modul coupler 180°

- RJ45 cable coupler Cat.6 class E_A
- compliance with class E_A to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09
- suitable for 10 GBit Ethernet (IEEE 802.3an), Remote Powering (PoE, PoE plus and UPoE) and HDBaseT
- fully shielded 180° coupler made of refined zinc die-casting
- especially suitable for consolidation points and cross-connect cabling
- 2 mounting versions in a coupler; fits in module or keystone applications

Suitable applications for module design

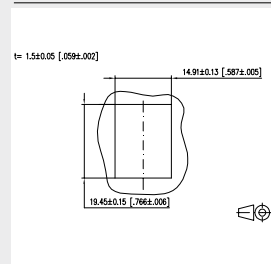
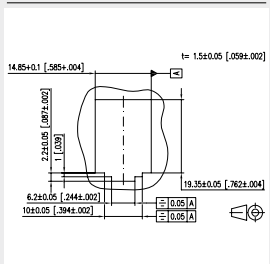
- module wall outlets
- module face plates
- 19 inch module frame
- surface mounted housing
- Subway
- E-DATmodul REG
- Modul REG IP20
- Industry built in flange EBM

for keystone design

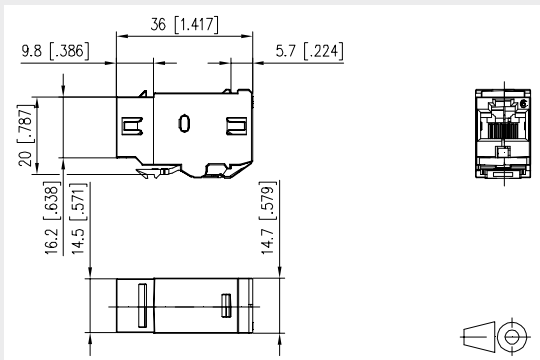
- keystone wall outlets
- keystone face plates
- 19 inch keystone frame
- Subway Keystone
- Keystone REG IP20
- Industry built in flange EBK

Module cut-out

Keystone module cut-out



Dimensional drawing



P/N	Color	Feature 1	Feature 2
1309A0-I		8(8) coupler	180°

E-DAT modul coupler 90°

- RJ45 cable coupler Cat.6 class E_A
- compliance with class E_A to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09
- suitable for 10 GBit Ethernet (IEEE 802.3an), Remote Powering (PoE, PoE plus and UPoE) and HDBaseT
- fully shielded 90° coupler made of refined zinc die-casting
- especially suitable for consolidation points and cross-connect cabling
- 2 mounting versions in a coupler; fits in module or keystone applications

Suitable applications for module design

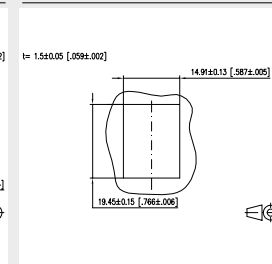
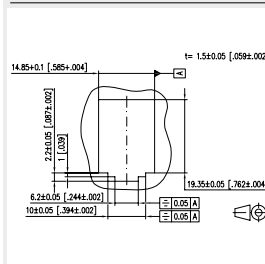
- module wall outlets
- module face plates
- Modul REG IP20
- Industry built in flange EBM

for keystone design

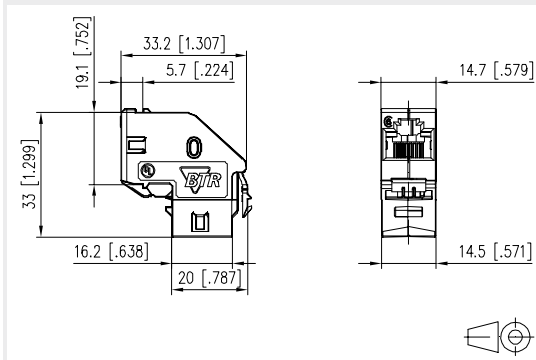
- keystone wall outlets
- keystone face plates
- Keystone REG IP20
- Industry built in flange EBK

Module cut-out

Keystone module cut-out



Dimensional drawing



P/N	Color	Feature 1	Feature 2
1309A1-I		8(8) coupler	90°

UTP module Cat.6 | keystone | pearl white is matching accessories for

Page

Keystone 19 inch module frame 0.5RU 24 port black unequipped

22

UTP module Cat.6 | keystone | black is matching accessories for

Page

Keystone 19 inch module frame 0.5RU 24 port black unequipped

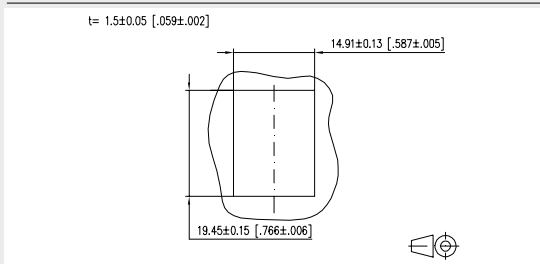
22



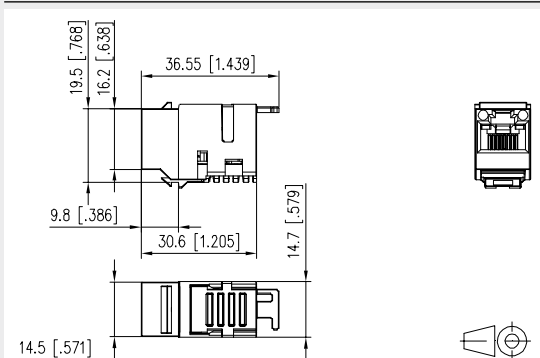
UTP module Cat.6 | keystone | pearl white

- unshielded Cat.6 class E UTP module
- for Gigabit Ethernet
- compliance with class E to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09
- suitable for Power over Ethernet (PoE, PoE plus and UPoE)
- easy to install connection of 2 to 4-pair data lines AWG 24/1 - 22/1 and stranded wires with 7 copper conductors AWG 26/7 to BTR 8-fold insulation displacement connectors (IDC)
- optional strain relief with cable tie at UTP module
- installation shape: Keystone

Keystone module cut-out



Dimensional drawing



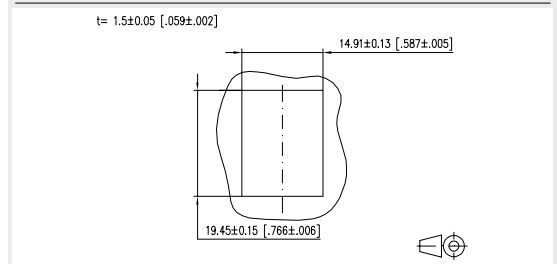
P/N	Color	Feature 1	Feature 2
130A10-I-B1	pearl white	Cat.6 T568B	Keystone module cut-out



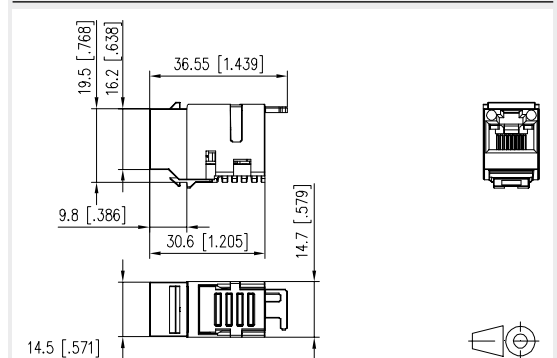
UTP module Cat.6 | keystone | black

- unshielded Cat.6 class E UTP module
- for Gigabit Ethernet
- compliance with class E to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09
- suitable for Power over Ethernet (PoE, PoE plus and UPoE)
- easy to install connection of 2 to 4-pair data lines AWG 24/1 - 22/1 and stranded wires with 7 copper conductors AWG 26/7 to BTR 8-fold insulation displacement connectors (IDC)
- optional strain relief with cable tie at UTP module
- installation shape: Keystone

Keystone module cut-out



Dimensional drawing



P/N	Color	Feature 1	Feature 2
130A10-29-I-B1	black	Cat.6 T568B	Keystone module cut-out

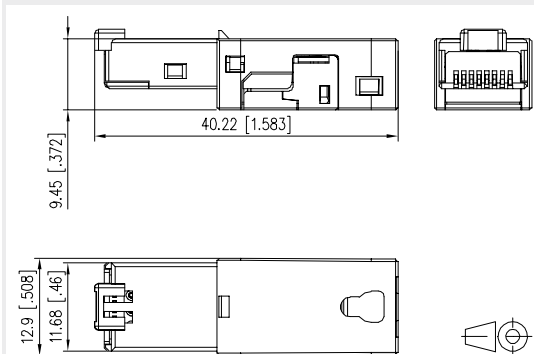


**E-DAT Industry RJ45 field plug insert
Cat.6 Class E_A**

- Cat.6 class E_A plug to be assembled in the field and mounted in IP67 plug housings of variants 1, 4, 5 and 14
 - compliance with class E_A to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09
 - suitable for 10 GBit Ethernet (IEEE 802.3an), Remote Powering (PoE, PoE plus and UPoE) and HDBaseT
 - 8-wire RJ45 plug for AWG 22 to be assembled in the field
 - connection of AWG 26/7 - 22/7; AWG 26/1 - 22/1 possible
 - solid copper wire diameter from 0.4 to 0.64 mm
 - stranded copper wire diameter from 0.48 to 0.76 mm
 - conductor diameter up to 1.6 mm
 - cable jacket from 5.5 to 8.5 mm
 - consists of only 2 parts
 - easy assembly - connection without special tools
 - zinc die-cast housing for industrial use
 - can be used as test plug at IP67 end of variants 1, 4, 5, 6 and 14
- variants: T568A, T568B, Industry

Gehäuse siehe Seite 60

Dimensional drawing



P/N	Color	Feature 1	Feature 2
1401400810-I		8(8) field plug	for plugs

Matching accessories for 19 inch Module frame 1RU aluminium unequipped for UTP Keystone

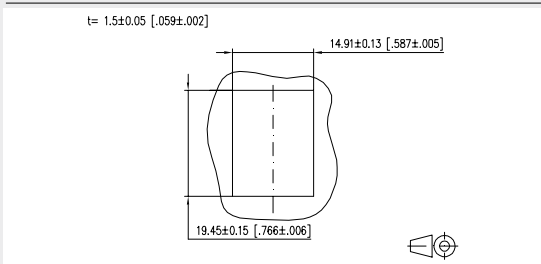
Dust protection covers for Modul patch panels / subway / REG yellow	Page 41
Dust protection covers for Modul patch panels / subway / REG blue	41
Dust protection covers for Modul patch panels / subway / REG green	41
Dust protection covers for Modul patch panels / subway / REG red	41



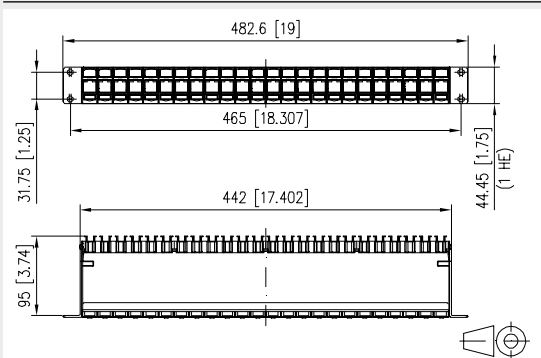
19 inch Module frame 1RU aluminium unequipped for UTP Keystone

- 19 inch 1RU module frame for 24 individual modules; Keystone design
- module frame front made of black anodized aluminum
- plastic module support with dust protection covers (other colors available as accessory); detachable to the front
- integrated cable support with optional strain relief
- label window for enclosed identification labels
- label sheet 210 x 297 mm see accessory
- grounding bolt M6 x 10 with nut and lock washer

Keystone module cut-out



Dimensional drawing



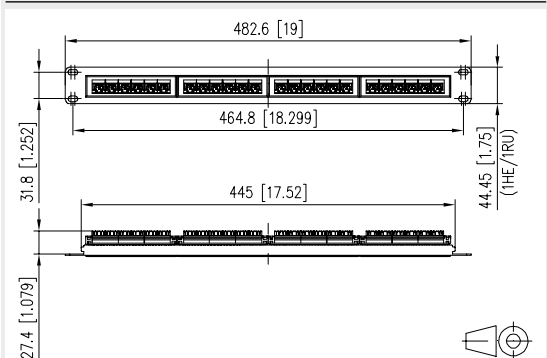
P/N	Color	Feature 1	Feature 2
130A20-BK-E	black	24 Port w/o modules	Keystone module cut-out
130A20-00-E	light grey	24 Port w/o modules	Keystone module cut-out



UTP 24 port 1RU LSA Cat.6 patch panel

- 19 inch 1RU Cat.6 patch panel with 24 RJ45 ports 8(8)
- 19 inch module frame made of black sheet steel
- 4 individual 6 port connection blocks, unshielded
- connection of the unshielded data cables to LSA insulation displacement connectors (AWG 22 to 26)
- wire connection possible according to T568A and T568B
- with 4 clip-in plastic cable brackets
- punch down patch panel

Dimensional drawing



P/N	Color	Feature 1	Feature 2
130A10-AP29-E	black	24 Port	

Application neutral connection cable

- High quality ready made application neutral connection cable for structured building cabling
- Very wide range of possible combinations thanks to various copper cable types, jacks and plugs possible

- Online cable configurator can be found on our homepage <http://www.metz-connect.com/en/configurator-copper-and-fiber-optique-cables>



Example 1: Application neutral connection cable

141 F 4 7 00 7 00 10

Application neutral connection cable GC1000plus AWG 23/1 Cat.7 LSHF S/FTP, 1-1 (T568A), E-DAT modul, E-DAT modul, Length 1 m

Example 2: Application neutral connection cable

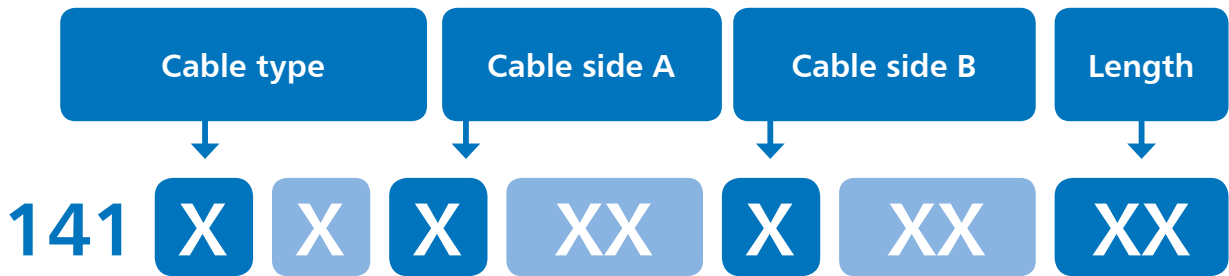
141 T 1 D 00 M 00 60

Application neutral connection cable PK AWG 26/7 Cat.6_A LSHF S/FTP, 1-1 (T568B), C6_Amodul 180°, RJ45 field plug pro, Length 6 m

Part number key for further versions

*** Only possible in combination with GC1300 and GC1500

<p>D = GC600 AWG 23/1 Cat.6_A LSHF U/FTP</p> <p>F = GC1000 plus AWG 23/1 Cat.7 LSHF S/FTP</p> <p>G = GC1000 plus 2xAWG 23/1 Cat.7 LSHF S/FTP</p> <p>H = GC1300 pro AWG 22/1 Cat.7_A LSHF-FR S/FTP</p> <p>M = GC1300 pro 2xAWG 22/1 Cat.7_A LSHF-FR S/FTP</p> <p>L = GC1500 pro AWG 22/1 Cat.7_A LSHF-FR S/FTP</p> <p>T = PK AWG 26/7 Cat.6_A LSHF S/FTP</p>	<p>Plug</p> <p>1 = RJ45 plug</p> <p>2 = RJ45 field plug black</p> <p>M = RJ45 field plug pro</p> <p>P = RJ45 field plug pro 360° ***</p>	<p>Jacks</p> <p>7 = E-DAT modul</p> <p>K = E-DAT modul K</p> <p>8 = C6_Amodul 180°</p> <p>9 = C6_Amodul K 180°</p> <p>B = C6_Amodul 270°</p> <p>D = C6_Amodul K 270°</p> <p>U = 25Gmodul ***</p> <p>V = 25Gmodul K ***</p>	<p>05 = 0.5 m</p> <p>10 = 1.0 m</p> <p>95 = 9.5 m</p> <p>A0 = 10.0 m</p> <p>A9 = 19.0 m</p> <p>B0 = 20.0 m</p> <p>B5 = 25.0 m</p> <p>C9 = 39.0 m</p>
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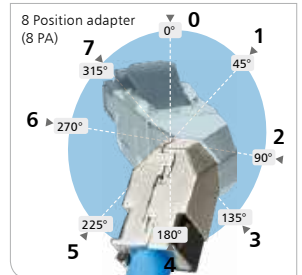
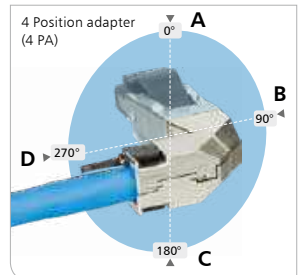


Allocation

1 = 1-1 T568B
2 = Crossover
4 = 1-1 T568A

***** Field Plug Pro 360° Position adapter key**

4PA	8PA
A = 0°	0 = 0°
B = 90°	1 = 45°
C = 180°	2 = 90°
D = 270°	3 = 135°
	4 = 180°
	5 = 225°
	6 = 270°
	7 = 315°

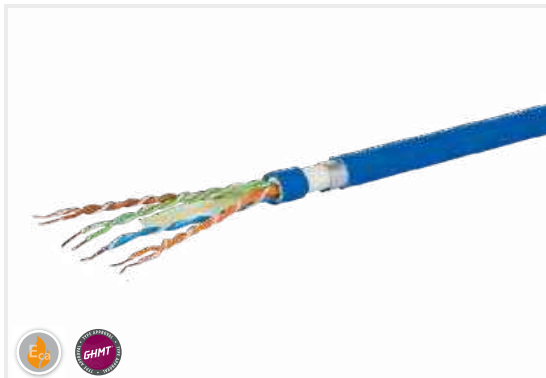


Please note:
These cables will be manufactured according to your specifications. They can therefore neither be exchanged nor returned.

Matching accessories
for GC600 F1 23 Cat.6_A
U/FTP 4P LSFH

Jokari dismantle tool

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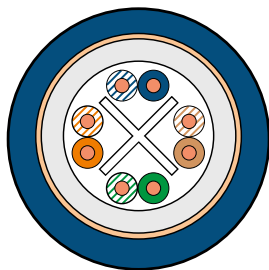


MC GC500 Z2F23 Cat.6_A U/UTP 4P LSHF 1640 ft

- 10 GBit installation cable, simplex
- unshielded installation cable Cat.6_A Class E_{ca}, AWG 23 U/UTP
- 4 pairs with separator (spline)
- foils wrapped diagonally with gaps as separating layers in the cable jacket
- outer cable diameter: 8.2 mm
- color of the cable jacket: blue
- coupling attenuation not less than 40 dB
- applicable standards: EN 50173-1:2011-09; ISO/IEC 11801 Ed.2.2:2011-06; EN 50288-11-1, IEC 61156-5, EIA/TIA 568-C.2
- cable jacket LSHF (LSOH)
- flame retardant to IEC 60332-1; IEC 60754-2 and IEC 61034
- fire behaviour: Class E_{ca} (classification acc. to EN 13501-6)

Delivery units:
500 m on drum

Principle diagram



P/N	Color	Feature 1	Feature 2
1308406A32141	blue	500 m (1640 ft)	drum

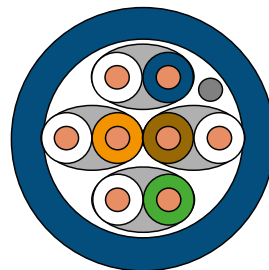


GC600 F1 23 Cat.6_A U/FTP 4P LSFH

- 10 GBit installation cable, simplex
- installation cable cat. 6A AWG 23 U/FTP with wires shielded in pairs
- 4 pairs (PiMF)
- pair shield: plastic foil with aluminum coating
- outer diameter 7.0 mm
- color of the cabel jacket: blue
- coupling attenuation not less than 55 dB
- applicable standards: EN 50173-1:2011-09; ISO/IEC 11801 Ed.2.2:2011-06; EN 50288-5-1, IEC 61156-5 und EIA/TIA 568B
- cable jacket: LSHF (LSOH)
- flame-retardant to IEC 60332-1; IEC 60754-2 and IEC 61034
- fire behaviour: Class E_{ca} (classification acc. to EN 13501-6)

Shipping Units:
sold by meter on drum
1640 ft (500 m) on drum
3280 ft (1000 m) on drum

Principle diagram



P/N	Color	Feature 1	Feature 2
1308436A32141	blue	500 m (1640 ft)	drum
1308436A32142	blue	1000 m (3280 ft)	drum

UTP modul 8(8) Cat.6_A keystone pearl white is matching accessories for

Page

Keystone 19 inch module frame 0.5RU 24 port black unequipped

22

UTP modul 8(8) Cat.6_A keystone black is matching accessories for

Page

Keystone 19 inch module frame 0.5RU 24 port black unequipped

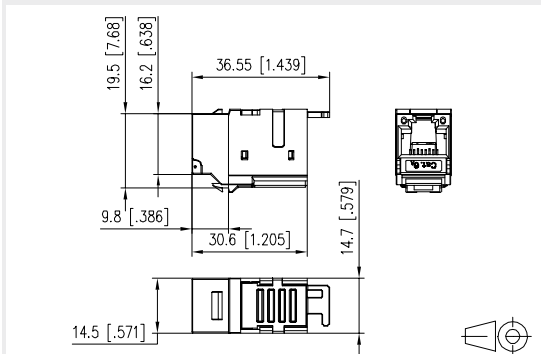
22



UTP modul 8(8) Cat.6_A keystone pearl white

- unshielded modular termination unit Cat.6_A, RJ45
- component testing for Cat.6_A to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09, TIA/EIA-568-C.2 (2009-08) and IEC 60603-7-41 Ed.1 (12/2008), certified by GHMT
- component testing for Cat.6_A to TIA/EIA-568-C.2 and IEC 60512-27-100, certified by GHMT
- compliance with class E_A to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09, certified by GHMT
- tested: component up to 600 MHz, link up to 800 MHz
- suitable for 10 GBit Ethernet (IEEE 802.3an), Remote Powering (PoE, PoE plus and UPoE) and HDBaseT
- easy to install connection of 2 to 4 pair data cables AWG 26/1 to 22/1 (solid wire) and stranded wires with 7 Cu strands AWG 26/7 to 22/7 (stranded wire) to insulation displacement connectors (IDC)
- marking of conductor assignment T568A and T568B
- easy and rapid insertion of the wire pairs into the UTP stuffer cap
- plastic module housing
- mounting without special tool
- strain relief possible with cable ties at the module
- mounting of colored dust protection covers to the module possible
- design: Keystone
- cable feed 180°
- variants: white and black

Dimensional drawing



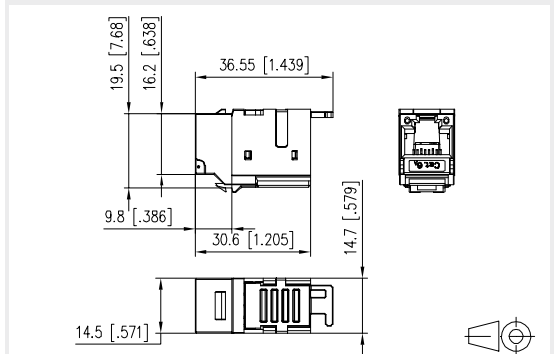
P/N	Color	Feature 1	Feature 2
130A11KI		180°	Keystone module cut-out



UTP modul 8(8) Cat.6_A keystone black

- unshielded modular termination unit Cat.6_A, RJ45
- component testing for Cat.6_A to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09, TIA/EIA-568-C.2 (2009-08) and IEC 60603-7-41 Ed.1 (12/2008), certified by GHMT
- component testing for Cat.6_A to TIA/EIA-568-C.2 and IEC 60512-27-100, certified by GHMT
- compliance with class E_A to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09, certified by GHMT
- tested: component up to 600 MHz, link up to 800 MHz
- suitable for 10 GBit Ethernet (IEEE 802.3an), Remote Powering (PoE, PoE plus and UPoE) and HDBaseT
- easy to install connection of 2 to 4 pair data cables AWG 26/1 to 22/1 (solid wire) and stranded wires with 7 Cu strands AWG 26/7 to 22/7 (stranded wire) to insulation displacement connectors (IDC)
- marking of conductor assignment T568A and T568B
- easy and rapid insertion of the wire pairs into the UTP stuffer cap
- plastic module housing
- mounting without special tool
- strain relief possible with cable ties at the module
- mounting of colored dust protection covers to the module possible
- design: Keystone
- cable feed 180°
- variants: white and black

Dimensional drawing



P/N	Color	Feature 1	Feature 2
130A11-29KI		270°	Keystone module cut-out

Matching accessories for E-DAT modul Cat.6_A K jack - Keystone style

Dust protection cover for C6 _A modul black	40
Dust protection cover for C6 _A modul pure white	40
Dust protection cover for C6 _A modul light gray	40
Dust protection cover for C6 _A modul yellow	40
Dust protection cover for C6 _A modul blue	40
Dust protection cover for C6 _A modul green	40
Dust protection cover for C6 _A modul red	40

Matching accessories for C6_A modul K 180°

Dust protection cover for C6 _A modul black	40
Dust protection cover for C6 _A modul pure white	40
Dust protection cover for C6 _A modul light gray	40
Dust protection cover for C6 _A modul yellow	40
Dust protection cover for C6 _A modul blue	40
Dust protection cover for C6 _A modul green	40
Dust protection cover for C6 _A modul red	40

C6_A modul K 180° is matching accessories for

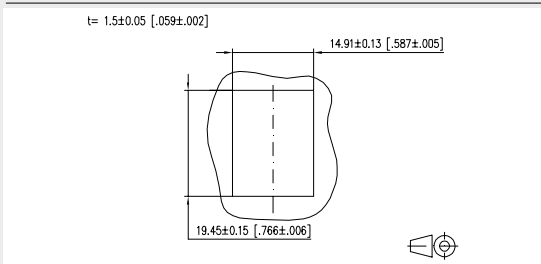
Keystone 19 inch module frame 0.5RU 24 port black unequipped	22
Keystone module frame 3RU, 7HP 6 port stainless steel / unequipped	25



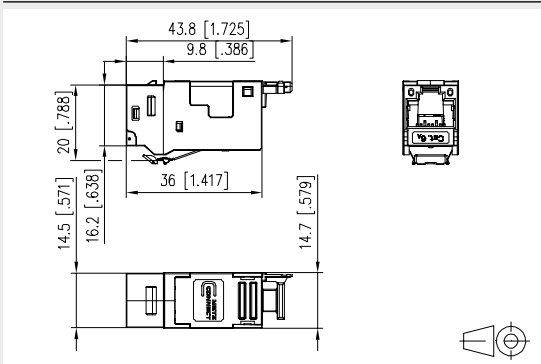
E-DAT modul Cat.6_A K jack - Keystone style

- modular termination unit Cat.6_A RJ45
- component testing for Cat.6_A to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09, TIA/EIA-568-C.2 (2009-08) and IEC 60603-7-51 Ed.1 (12/2008), certified to GHMT
- compliance with class E_A to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09
- tested: component up to 600 MHz, link up to 800 MHz
- suitable for 10 GBit Ethernet (IEEE 802.3an), Remote Powering (PoE, PoE plus and UPoE) and HDBaseT
- easy to install connection of 2 to 4 pair data cables AWG 26/1 to 22/1 (solid wire) and stranded wires with 7 copper conductors AWG 26/7 to 22/7 to insulation displacement connectors (IDC)
- marking of conductor assignment to T568A and T568B
- easy and fast insertion of wire pairs in E-DAT modul stuffer cap
- module housing made of refined zinc die-casting
- mounting without special tools
- strain relief with cable tie at the module
- mounting version: Keystone
- cable feed 180°

Keystone module cut-out



Dimensional drawing



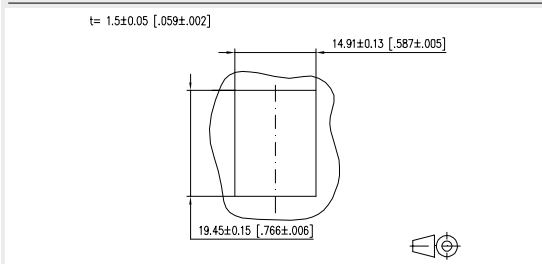
P/N	Color	Feature 1	Feature 2
130910KI		180°	Keystone module cut-out



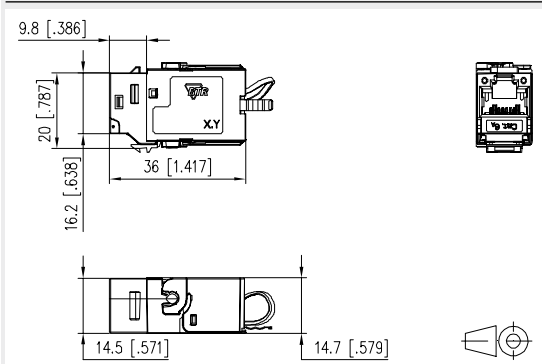
C6_A modul K 180°

- modular Cat.6_A termination unit RJ45
- mounting version: Keystone, 180° cable feed
- solid, one-piece and reusable module housing refined with zinc die-casting
- mounting without special tools; strain relief directly snapped on to stuffer cap
- easy to install connection of data lines AWG 26/1 to 22/1 (solid wire) and AWG 26/7 to 22/7 (stranded wire) to insulation displacement connectors (IDC)
- intelligent cable management in stuffer cap - also suitable for heavily twisted cables
- conductor assignment to T568A and T568B is directly printed on the stuffer cap
- certified to GHMT Cat.6_A re-embedded PVP
- component testing for Cat.6_A to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09, TIA/EIA-568-C.2 (2009-08) and IEC 60603-7-51 Ed.1 (12/2008), certified to GHMT
- compliance with class E_A up to 500 MHz to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09
- tested: component up to 600 MHz, link up to 800 MHz
- for 10 GBit Ethernet (IEEE 802.3an)
- suitable for Power over Ethernet (PoE, PoE plus and UPoE)

Keystone module cut-out



Dimensional drawing



P/N	Color	Feature 1	Feature 2
130B21-E		180°	Keystone module cut-out

Matching accessories for C6_A modul K 270°

Dust protection cover for C6 _A modul black	Page 40
Dust protection cover for C6 _A modul pure white	40
Dust protection cover for C6 _A modul light gray	40
Dust protection cover for C6 _A modul yellow	40
Dust protection cover for C6 _A modul blue	40
Dust protection cover for C6 _A modul green	40
Dust protection cover for C6 _A modul red	40

C6_A modul K 270° is matching accessories for

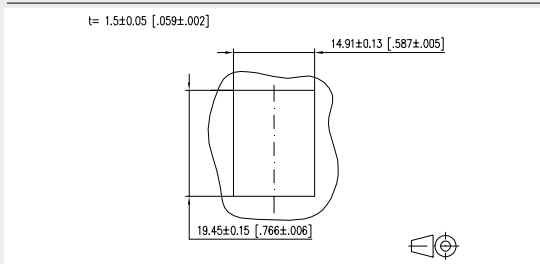
Keystone 19 inch module frame 0.5RU 24 port black unequipped	Page 22
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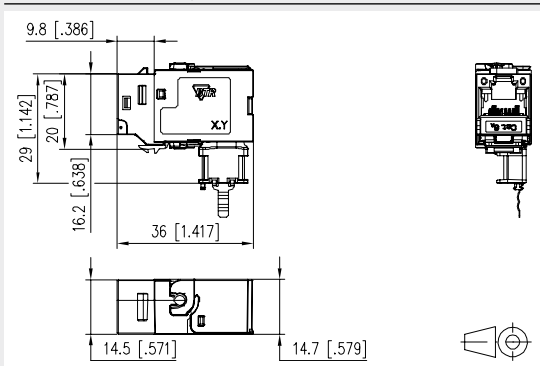
C6_A modul K 270°

- modular Cat.6_A termination unit RJ45
- mounting version: Keystone, 270° cable feed
- solid, one-piece and reusable module housing refined with zinc die-casting
- mounting without special tools; strain relief directly snapped on to stuffer cap
- easy to install connection of data lines AWG 26/1 to 22/1 (solid wire) and AWG 26/7 to 22/7 (stranded wire) to insulation displacement connectors (IDC)
- intelligent cable management in stuffer cap - also suitable for heavily twisted cables
- conductor assignment to T568A and T568B is directly printed on the stuffer cap
- certified to GHMT Cat.6_A re-embedded PVP
- component testing for Cat.6_A to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09, TIA/EIA-568-C.2 (2009-08) and IEC 60603-7-51 Ed.1 (12/2008), certified to GHMT
- compliance with class E_A up to 500 MHz to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09
- tested: component up to 600 MHz, link up to 800 MHz
- for 10 GBit Ethernet (IEEE 802.3an)
- suitable for Power over Ethernet (PoE, PoE plus and UPoE)

Keystone module cut-out



Dimensional drawing



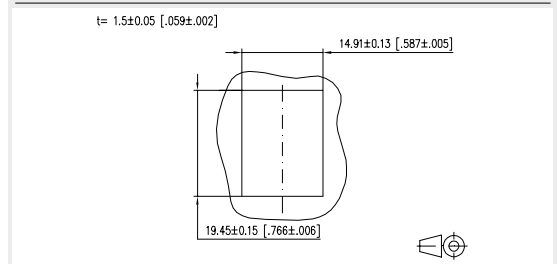
P/N	Color	Feature 1	Feature 2
130B22-E		270°	Keystone module cut-out



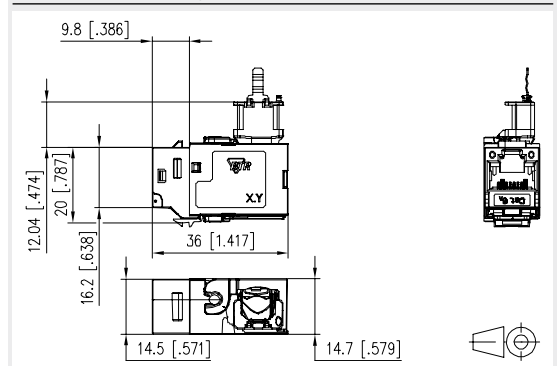
C6_A modul K 90° - Keystone

- modular Cat.6_A termination unit RJ45
- mounting version: Keystone, 90° cable feed
- solid, one-piece and reusable module housing refined with zinc die-casting
- mounting without special tools; strain relief directly snapped on to stuffer cap
- easy to install connection of data lines AWG 26/1 to 22/1 (solid wire) and AWG 26/7 to 22/7 (stranded wire) to insulation displacement connectors (IDC)
- intelligent cable management in stuffer cap - also suitable for heavily twisted cables
- conductor assignment to T568A and T568B is directly printed on the stuffer cap
- certified to GHMT Cat.6_A re-embedded PVP
- component testing for Cat.6_A to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09, TIA/EIA-568-C.2 (2009-08) and IEC 60603-7-51 Ed.1 (12/2008), certified to GHMT
- compliance with class E_A up to 500 MHz to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09
- tested: component up to 600 MHz, link up to 800 MHz
- for 10 GBit Ethernet (IEEE 802.3an)
- suitable for Power over Ethernet (PoE, PoE plus and UPoE)

Keystone module cut-out



Dimensional drawing



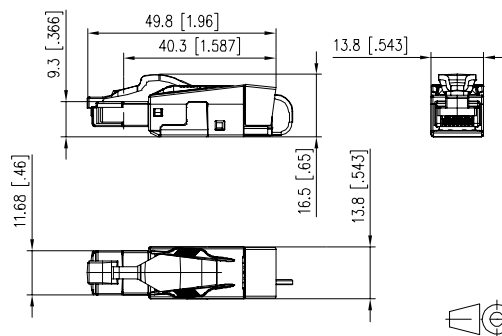
P/N	Color	Feature 1	Feature 2
130B23-E		90°	Keystone module cut-out



C6_A RJ45 field plug pro

- Cat.6_A class E_A RJ45 plug to be assembled in the field
- fully shielded and multi-port capable
- straight (180°) cable feed
- easy assembly - connection without special tools
- wire connection: stranded wire AWG 27/7 to 22/7, wire diameter from 0.46 to 0.76 mm
- wire connection: solid wire AWG 26/1 to 22/1, wire diameter from 0.4 to 0.64 mm
- transmission characteristics Cat.6_A per ISO/IEC 11801 Ed.2.2:2011-06
- compliance with class E_A to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09
- 10 GBit suitable according to IEEE 802.3an
- suitable for Power over Ethernet (PoE, PoE plus and UPoE)
- degree of protection IP20
- for cable jacket diameter from 5.5 to 10.5 mm
- zinc die-cast housing for industrial use consists of only 2 parts
- strain relief by latching clip directly on the stuffer cap
- protected locking hook
- reconnectable

Dimensional drawing



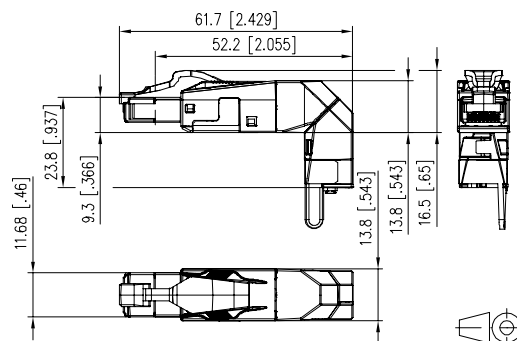
P/N	Color	Feature 1	Feature 2
130E405032-E	black	8(8) field plug	



C6_A RJ45 field plug pro 360

- Cat.6_A class E_A RJ45 plug to be assembled in the field
- fully shielded and multi-port capable
- variable (360°) cable feed, freely selectable
- easy assembly - connection without special tools
- wire connection: stranded wire AWG 27/7 to 22/7, wire diameter from 0.46 to 0.76 mm
- wire connection: solid wire AWG 26/1 to 22/1, wire diameter from 0.4 to 0.64 mm
- transmission characteristics Cat.6_A per ISO/IEC 11801 Ed.2.2:2011-06
- compliance with class E_A to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09
- 10 GBit suitable according to IEEE 802.3an
- suitable for Power over Ethernet (PoE, PoE plus and UPoE)
- degree of protection IP20
- for cable jacket from 5.5 to 10.5 mm
- zinc die-cast housing for industrial use
- strain relief by latching clip directly on the stuffer cap
- protected locking hook
- reconnectable

Dimensional drawing



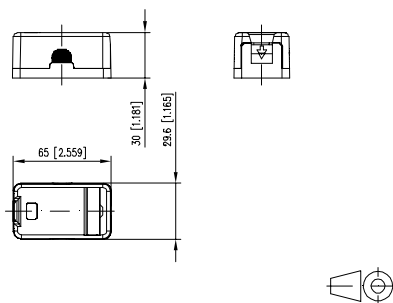
P/N	Color	Feature 1	Feature 2
130E405042-E	black	8(8) field plug	



Extension box APL

- for connection of the termination point line network (APL), equipped with C6_A modul K 180°
 - suitable for mounting on support rail in counter panel of general power supply below cover in room for additional applications to VDE-AR-N 4101:2011-08
 - failsafe contact with integrated dust protector slide
 - for connection of an MUC communication module
 - certified to GHMT Cat.6_A re-embedded PVP
 - component testing for Cat.6_A to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09, TIA/EIA-568-C.2 (2009-08) and IEC 60603-7-51 Ed.1 (12/2008), certified to GHMT
 - compliance with class E_A up to 500 MHz to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09
 - tested: components up to 600 MHz, link up to 800 MHz
 - for 10 GBit Ethernet (IEEE 802.3an)
 - suitable for Power over Ethernet (PoE, PoE plus and UPoE)
 - connection of data lines AWG 26/1 to 22/1 (solid wire) and AWG 26/7 to 22/7 (stranded wire) to insulation displacement connectors (IDC)
 - plug direction of module inclined at 90° to top hat rail
 - strain relief snapped on to stuffer cap
 - with label window for enclosed identification labels
 - cover parts in pure white RAL 9010, glossy surface
- variants: APL, APL with red patch cord (0.5 m)

Dimensional drawing



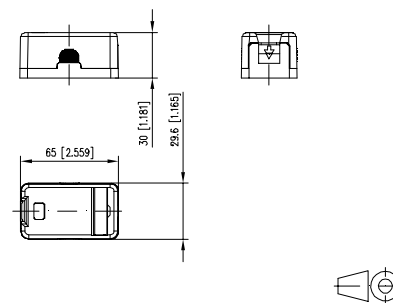
P/N	Color	Feature 1	Feature 2
130B21D1APL-E	pure white	AP 1 Port	
130B21D1APLP-E	pure white	AP 1 Port	with patch cord



Extension box APL E-DAT modul keystone

- for connection of the termination point line network (APL), equipped with E-DAT modul K
- suitable for mounting on support rail in counter panel of general power supply below cover in room for additional applications to VDE-AR-N 4101:2011-08
- failsafe contact with integrated dust protector slide
- for connection of an MUC communication module
- component testing for Cat.6A to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09, TIA/EIA-568-C.2 (2009-08) and IEC 60603-7-51 Ed.1 (12/2008), certified to GHMT
- compliance with class E_A up to 500 MHz to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09
- tested: components up to 600 MHz, link up to 800 MHz
- suitable for 10 GBit Ethernet (IEEE 802.3an), Remote Powering (PoE, PoE plus and UPoE) and HDBaseT
- connection of data lines AWG 26/1 to 22/1 (solid wire) and AWG 26/7 to 22/7 (stranded wire) to insulation displacement connectors (IDC)
- plug direction of module inclined at 90° to top hat rail
- strain relief snapped on to stuffer cap
- with label window for enclosed identification labels
- cover parts in pure white RAL 9010, glossy surface

Dimensional drawing



P/N	Color	Feature 1	Feature 2
130910D1APLKE	pure white		

**Matching accessories
for Keystone 19 inch
module frame 0.5RU 24
port black unequipped**

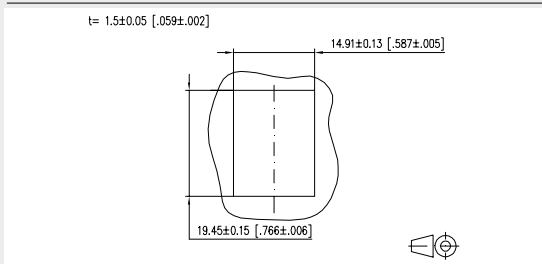
	Page
E-DAT modul Coupler 8(8) 180° Cat.6	11
E-DAT modul Coupler 8(8) 90° Cat.6	11
UTP modul 8(8) Cat.6 pearl white	12
UTP modul 8(8) Cat.6 black	12
UTP modul 8(8) Cat.6 _A keystone pearl white	17
UTP modul 8(8) Cat.6 _A keystone black	17
C6 _A modul K 180° jack - Keystone style	18
C6 _A modul K 270° jack - Keystone style	19
C6 _A modul K 90° jack - keystone style	19



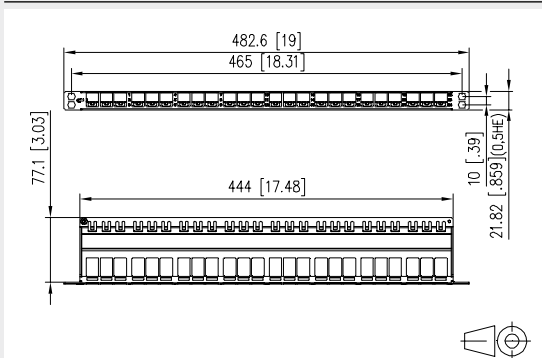
**Keystone 19 inch module frame 0.5RU
24 port black unequipped**

- 19 inch module frame 0.5RU 24 port unequipped, black
- for 24 individual modules in Keystone design
- additional strain relief on patch panel possible by cable ties, cable ties included in delivery
- suitable modules: E-DAT modul K, UTP modul Cat.6_A, UTP modul Cat.6, UTP modul Cat.5e
- design: Keystone

Keystone module cut-out



Dimensional drawing



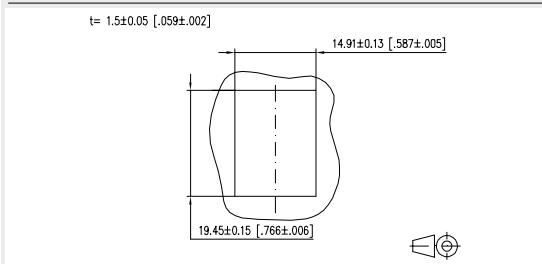
P/N	Color	Feature 1	Feature 2
130925-BKKE	black	24 port unequipped	Keystone module cut-out



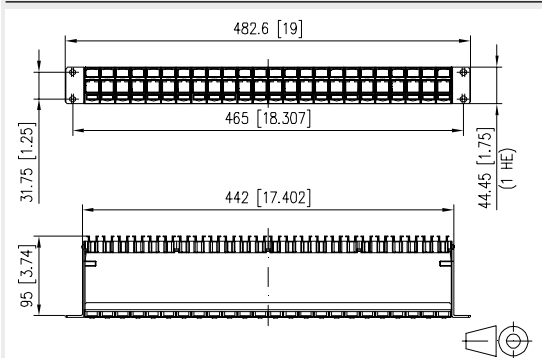
**19 inch module frame 1RU aluminium
unequipped for shielded Keystone**

- 19 inch 1RU module frame for 24 individual modules; Keystone design
- module frame front made of black anodized aluminum
- plastic module support with dust protection covers (other colors available as accessories); detachable to the front
- integrated cable support with optional strain relief
- label window for identification labels
- label sheet 210 x 297 mm see accessories
- grounding bolt M6 x 10 with nut and lock washer
- incl. 30 cm grounding cable
- all fully shielded modules connected by means of grounding rail

Keystone module cut-out



Dimensional drawing



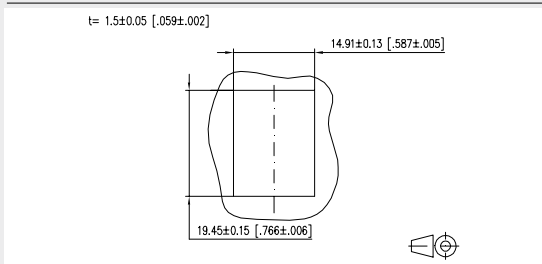
P/N	Color	Feature 1	Feature 2
130920-BKKE	black	24 port unequipped	Keystone module cut-out
130920-00KE	grey	24 port unequipped	Keystone module cut-out



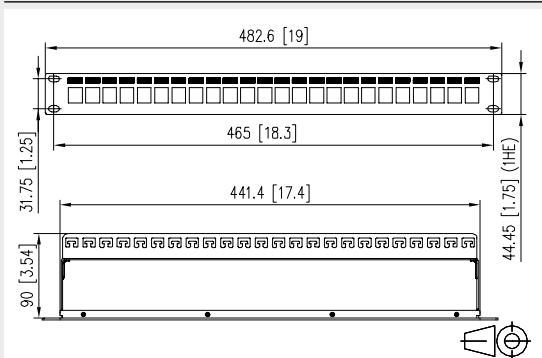
Keystone module frame 1RU, 24 port black unequipped

- Keystone 19 inch module frame 1RU 24 port unequipped, shielded
- for 24 individual modules, Keystone design
- module frame front made powder-coated steel
- module supports made of galvanized sheet steel
- additional strain relief possible on module support by cable ties
- grounding skrew with lock washer
- incl. 40 cm grounding cable
- all fully shielded modules are interconnected through the module support
- variants: black or gray

Keystone module cut-out



Dimensional drawing



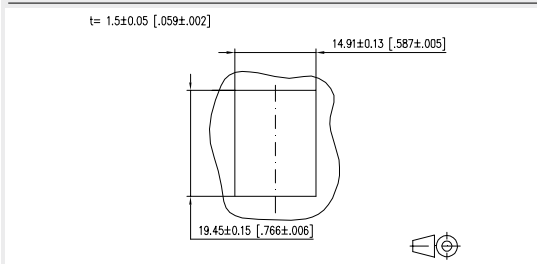
P/N	Color	Feature 1	Feature 2
130926-0029KE	black	24 port unequipped	Keystone module cut-out



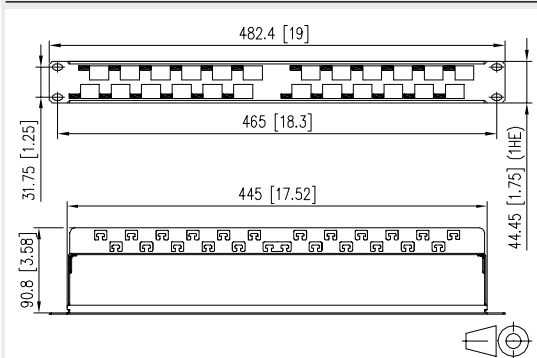
Keystone module frame 1RU, 24 port angled black unequipped

- Keystone 19 inch module frame 1RU 24 port angled, unequipped, shielded
- for 24 individual modules, Keystone design
- module frame front made of powder-coated steel
- angled port openings, ports 1 to 12 angled by about 30° to the right, ports 13 to 24 angled by about 30° to the left
- module support made of galvanized sheet steel
- additional strain relief possible by cable ties on module support
- grounding screw with lock washer
- 40 cm grounding cable included
- all fully shielded modules are interconnected through the module support
- variants: black or gray

Keystone module cut-out



Dimensional drawing



P/N	Color	Feature 1	Feature 2
130926A0029KE	black	24 port unequipped	Keystone module cut-out

Trunk- and consolidation point link cable

- High quality assembled CP link / trunk cable
- Various copper cable types possible
- Umwicking of up to 12 cables with grading fanout of the modules/connectors ready for assembly
- Very wide range of possible combinations through different jacks and plugs possible
- Online cable configurator can be found on our homepage <http://www.metz-connect.com/en/configurator-copper-and-fiber-optique-cables>
- Fanout length is added to the total length of the cable tray (plug/jacks at plug/jack)



Example 1: CP link / trunk cable

141 F B 7 50 7 30 A0

CP link / trunk cable GC1000plus AWG 23/1, Cat.7 LSHF S/FTP, 2-fold, 2 x E-DAT modul 50 cm, 2 x E-DAT modul 30 cm, Length 10 m



Example 2: CP link cable

141 L D 8 70 8 50 A5

CP link / trunk cable GC1500pro AWG 21/1, Cat.7_A LSHF-FR S/FTP, 6-fold, 6 x C6_Amodul 70 cm, 6 x C6_Amodul 50 cm, Length 15 m

Part number key for further versions

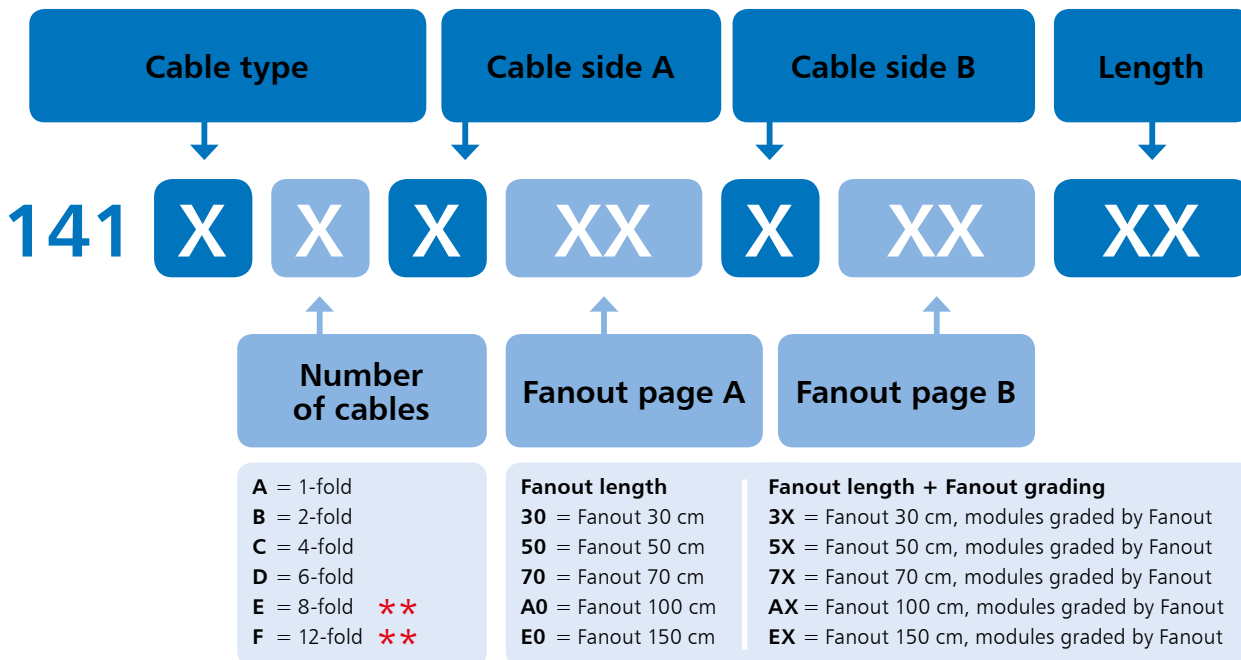
* Only possible in combination with GC1300 and GC 1500

- D** = GC600 AWG 23/1 Cat.6_A LSHF U/FTP
- F** = GC1000 plus AWG 23/1 Cat.7 LSHF S/FTP
- G** = GC1000 plus 2xAWG 23/1 Cat.7 LSHF S/FTP
- H** = GC1300 pro AWG 22/1 Cat.7_A LSHF-FR S/FTP
- M** = GC1300 pro 2xAWG 22/1 Cat.7_A LSHF-FR S/FTP
- L** = GC1500 pro AWG 22/1 Cat.7_A LSHF-FR S/FTP
- T** = PK AWG 26/7 Cat.6_A LSHF S/FTP

- Plug**
- 1** = RJ45 plug
 - 2** = RJ45 field plug black
 - M** = RJ45 field plug pro

- Jacks**
- 7** = E-DAT modul
 - K** = E-DAT modul K
 - 8** = C6_Amodul 180°
 - 9** = C6_Amodul K 180°
 - U** = 25Gmodul *
 - V** = 25Gmodul K *

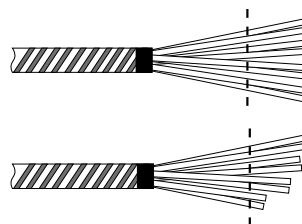
- 05** = 0.5 m
- 10** = 1.0 m
- 95** = 9.5 m
- A0** = 10.0 m
- B0** = 20.0 m
- B5** = 25.0 m
- D9** = 49.0 m



** Only possible in combination with PK AWG 26/7 Cat.6_A

Please note:

These cables will be manufactured according to your specifications. They can therefore neither be exchanged nor returned.



Fanout of equal length
Length in cm: 30 / 50 / 70

Modules graded by Fanout

**Matching accessories
for Module frame 6 port
3RU 7HP unequipped for
Keystone**

	Page
E-DAT modul Coupler 8(8) 180° Cat.6	11
C6 _A modul K 180° jack - Keystone style	18

**Module frame 6 port 3RU
7HP unequipped for
Keystone is matching
accessories for**

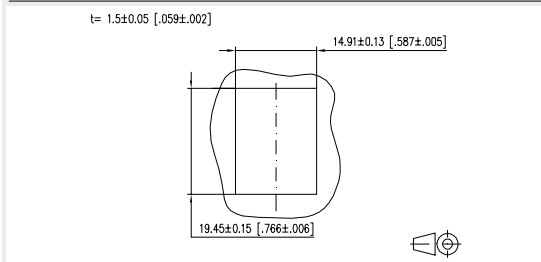
	Page
OpDAT REGpro24 housing w/o splice tray	117
OpDAT REGpro housing w/o splice tray	117
OpDAT REGpro housing with splice tray	117



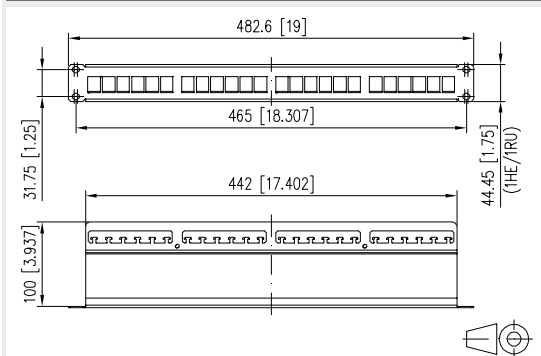
**19 inch module frame 1RU stainless steel
unequipped for Keystone**

- 19 inch 1RU stainless steel module frame for 24 individual modules; Keystone design
- optional strain relief on patch panel using cable ties
- grounding bolt M6 x 10 with nut and lock washer
- incl. 30 cm grounding cable
- all fully shielded Keystone modules are connected by means of the stainless steel module frame

Keystone module cut-out



Dimensional drawing



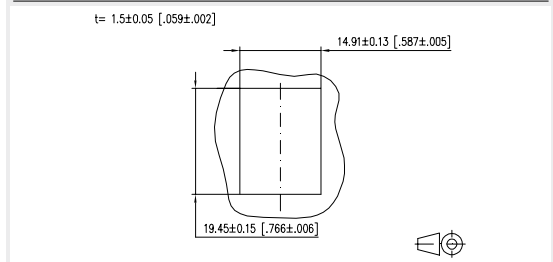
P/N	Color	Feature 1	Feature 2
130A21-00-E	stainless steel	24 port unequipped	Keystone module cut-out



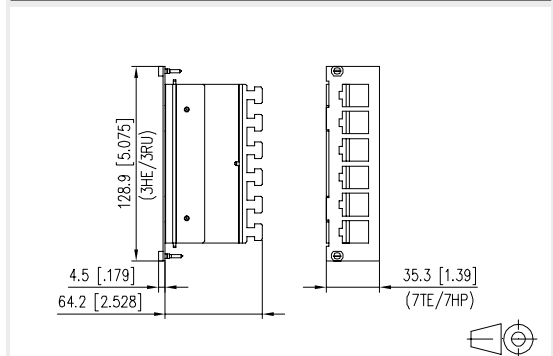
**Module frame 6 port 3RU 7HP
unequipped for Keystone**

- stainless steel module frame for 6 individual modules in Keystone design
- strain relief at the module
- 3RU 7HP module frame with very short dimensions
- mounts in OpDAT REGpro, OpDAT REGpro24, OpDAT CM or 3HP module frame
- additional strain relief possible by cable tie
- grounding possible by flat plug

Keystone module cut-out



Dimensional drawing



P/N	Color	Feature 1	Feature 2
130B20E2E-E	stainless steel	6 port empty	Keystone module cut-out

Patch cords

- especially suitable for shielded and unshielded class E_A systems
- fully shielded Cat.6_A patch cable AWG 26/7
- two shielded RJ45 connectors; 1:1 assignment
- cable type: S/FTP 4x2xAWG 26/7 PIMF
- cable sheath: LSHF(LSOH), halogen free
- Cat.6_A to ISO/IEC 11801 Ed.2.2 (2011-06) and IEC 61935-2 Ed. 3.0 (2010-07), certified to GHMT
- class E_A Link up to 500 MHz to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09
- suitable for 10 GBit Ethernet (IEEE 802.3an) and Remote Powering (PoE, PoE plus and UPoE) and HDBaseT
- snagless boot with integrated lever protection
- colors may differ slightly due to different protection lots
- standard length: 0,5; 1; 1,5; 2; 3; 4; 5; 6; 7; 8; 10; 15 and 20 m
- special lengths available on demand

Example

130845 **05** **77** -E



Part number key for further versions

05 = 0.5 m	70 = 7.0 m
10 = 1.0 m	A0 = 10.0 m
15 = 1.5 m	A5 = 15.0 m
20 = 2.0 m	B0 = 20.0 m
30 = 3.0 m	B5 = 25.0 m
50 = 5.0 m	C0 = 30.0 m

Length

130845 **XX** **XX** -E

Color

00 = black	66 = red
33 = grey	77 = yellow
44 = blue	88 = white
55 = green	

**Matching accessories
for GC1000 pro23 Cat.7
S/FTP 4P LSHF-FR**

Jokari dismantle tool Page
46

**Matching accessories
for GC1000 plus23 Cat.7
S/FTP 4P LSHF**

Jokari dismantle tool Page
46

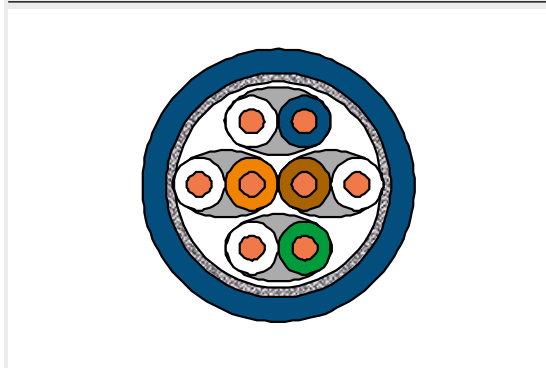


GC1000 pro23 Cat.7 S/FTP 4P LSHF-FR

- 10 GBit installation cable, simplex
- installation cable Cat.7 AWG 23 S/FTP with wires shielded in pairs
- 4 pairs (PiMF)
- pair shield: plastic foil with aluminum coating
- overall shield: tinned copper braid
- outer diameter 7.5 mm
- color of the cabel jacket: blue
- coupling attenuation 85 dB
- applicable standards: EN 50173-1:2011-09; ISO/IEC 11801 Ed.2.2:2011-06; EN 50288-4-1 and IEC 61156-5
- cable jacket: LSHF-FR (LSOH-FR)
- flame-retardant to IEC 60332-1; IEC 60332-3-24; IEC 60754-2 and IEC 61034
- fire behaviour: Class D_{ca} s2 d1 a1 acc. to EN 50399 (classification acc. to EN 13501-6)

Shipping Units:	
sold by meter	on drum
1640 ft (500 m)	on drum
3280 ft (1000 m)	on drum

Principle diagram



P/N	Color	Feature 1	Feature 2
1308427034141	blue	500 m (1640 ft)	drum
1308427034142	blue	1000 m (3280 ft)	drum

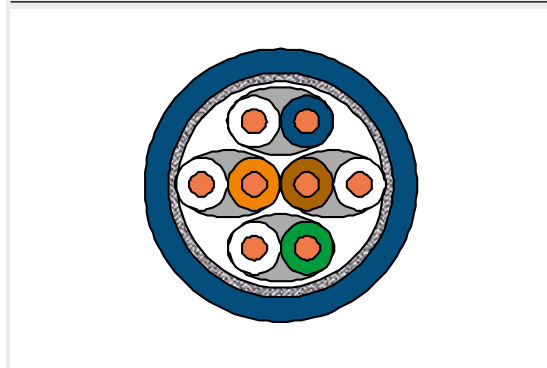


GC1000 plus23 Cat.7 S/FTP 4P LSHF

- 10 GBit installation cable, simplex
- installation cable Cat.7 AWG 23 S/FTP with wires shielded in pairs
- 4 pairs (PiMF)
- pair shield: plastic foil with aluminum coating
- overall shield: tinned copper braid
- outer diameter 7.3 mm
- color of the cabel jacket: blue
- coupling attenuation 75 dB
- applicable standards: EN 50173-1:2011-09; ISO/IEC 11801 Ed.2.2:2011-06; EN 50288-4-1 and IEC 61156-5
- cable jacket: LSHF (LSOH)
- flame-retardant to IEC 60332-1; IEC 60754-2 and IEC 61034
- fire behaviour: Class E_{ca} (classification acc. to EN 13501-6)

Shipping Units:	
sold by meter	on drum
1640 ft (500 m)	on drum
3280 ft (1000 m)	on drum

Principle diagram



P/N	Color	Feature 1	Feature 2
1308427032141	blue	500 m (1640 ft)	drum
1308427032142	blue	1000 m (3280 ft)	drum

**Matching accessories
for GC1300 pro22 Cat.7_A
S/FTP 4P LSHF-FR**

Jokari dismantle tool Page
46

**Matching accessories
for GC1500 pro22 Cat.7_A
S/FTP 4P LSHF-FR**

Jokari dismantle tool Page
46

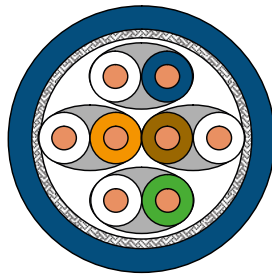


MC GC1300 pro22 Cat.7_A S/FTP 4P LSHF-FR

- 25 GBit / 10 GBit Installationskabel, simplex
- paargeschirmtes Installationskabel Cat.7_A AWG 22 S/FTP
- 4 Paare (PiMF)
- Paarschirm: Kunststoff-Verbundfolie, Aluminium beschichtet
- Gesamtschirm: Cu-Geflecht verzinkt
- Kabelaußendurchmesser 7,5 mm
- Kabelmantelfarbe: blau
- Kopplungsdämpfung größer gleich 85 dB
- elektrische Daten getestet bis 1500 MHz
- Geltende Normen: EN 50173-1; ISO/IEC 11801; EN 50288-9-1 und IEC 61156-5
- Kabelmantel LSHF-FR (LSOH-FR)
- Flammwidrigkeit: IEC 60332-1; IEC 60332-3-24; IEC 60754-2 und IEC 61034
- Brandverhalten: Klasse D_{ca} s2 d2 a1 nach EN 50399 (Klassifizierung nach EN 13501-6)

Liefereinheiten:
als Meterware auf Trommel
500 m auf Trommel
1000 m auf Trommel

Prinzipbild



Art.-Nr.	Farbe	Merkmal 1	Merkmal 2
1308427B34141	blau	500 m (1640 ft)	simplex
1308427B34142	blau	1000 m (3280 ft)	simplex

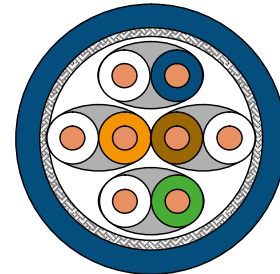


GC1500 pro22 Cat.7_A S/FTP 4P LSHF-FR

- 10 GBit installation cable, simplex
- installation cable Cat.7_A AWG 22 S/FTP with wires shielded in pairs
- 4 pairs (PiMF)
- pair shield: plastic foil with aluminum coating
- overall shield: tinned copper braid
- outer diameter 8.5 mm
- color of the cabel jacket: blue
- coupling attenuation not less than 85 dB
- applicable standards: EN 50173-1:2011-09; ISO/IEC 11801 Ed.2.2:2011-06; EN50288-9-1; IEC61156-5 and IEC61156-7
- cable jacket: LSHF-FR (LSOH-FR)
- flame-retardant to IEC 60332-1; IEC 60332-3-24; IEC 60754-2 and IEC 61034
- fire behaviour: Class D_{ca} s2 d1 a1 acc. to EN 50399 (classification acc. to EN 13501-6)

Shipping Units:
sold by meter on drum
3280 ft (1000 m) on drum

Principle diagram



P/N	Color	Feature 1	Feature 2
1308427A34142	blue	1000 m (3280 ft)	drum



Keystone wall outlet EU style

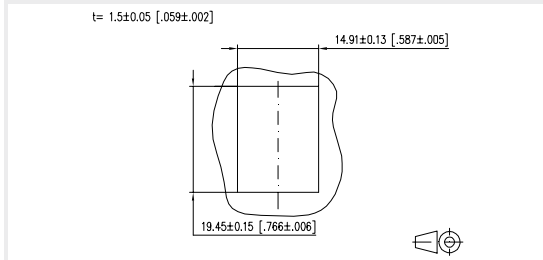
- flush-mounted termination unit for two individual Keystone modules
- EU style 86 x 86mm
- straight plug direction
- strain relief with cable tie at the module
- label window for identification labels (labels included in the delivery)
- integrated dust protection shutter
- cover parts in color similar to pure white RAL 9010, glossy surface



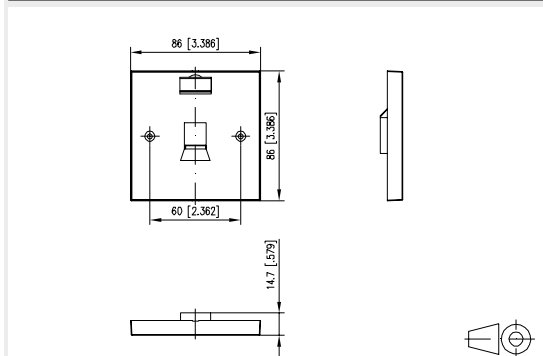
Keystone wall outlet EU style

- flush-mounted termination unit for two individual Keystone modules
- EU style 86 x 86mm
- straight plug direction
- strain relief with cable tie at the module
- label window for identification labels (labels included in the delivery)
- integrated dust protection shutter
- cover parts in color similar to pure white RAL 9010, glossy surface

Keystone module cut-out

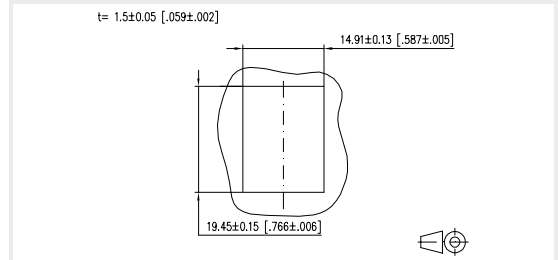


Dimensional drawing

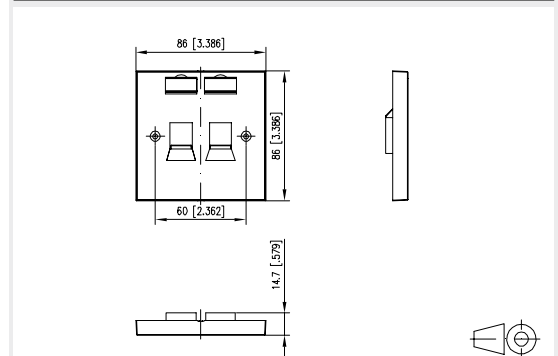


P/N	Color	Feature 1	Feature 2
1309142502KE	white	1 Port w/o modules	Keystone module cut-out

Keystone module cut-out



Dimensional drawing



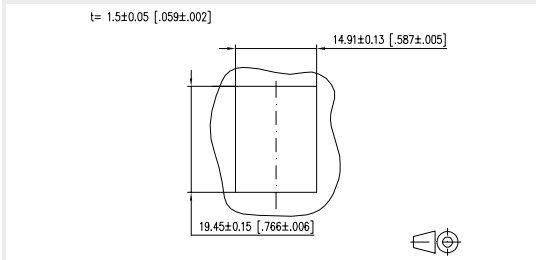
P/N	Color	Feature 1	Feature 2
1309152502KE	white	2 Port empty	Keystone module cut-out



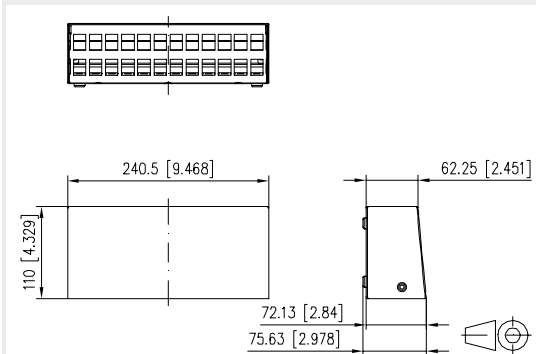
Keystone surface mount housing 24 port pure white

- surface-mounted, unequipped module housing for individual modules, Keystone design
- solid steel sheet housing
- upper part of the housing powder-coated in RAL 9010
- upper part of the housing can be put on and removed easily because no screws are used for fastening
- equipotential bonding possible by means of contact pin
- additional strain relief on lower part of housing using cable ties
- suitable for direct wall mounting, as desktop device and for DIN-rail mounting using the DIN rail adapter mini FS
- bottom of the 3-port and 4-port housing can be removed
- Additional fastening by means of 60 mm fastening clearance
- optionally available and fits in all housings: FO extension set for module and keystone surface mount housing: 130861-MSK-E
- optionally available 2 x 12 housing: Strain relief for patch cords 130861-24ZE-E
- variants: 3, 4, 6, 8, 12, 16 and 2 x 12 ports

Keystone module cut-out



Dimensional drawing



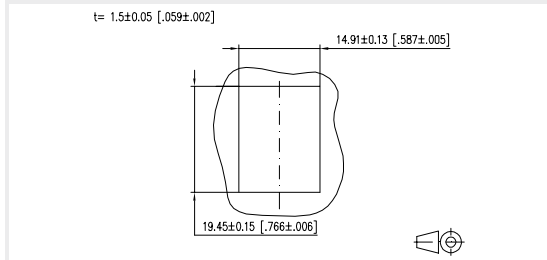
P/N	Color	Feature 1	Feature 2
130861-0302KE	pure white	3 Port	for Keystone
130861-0402KE	pure white	4 Port	for Keystone
130861-0602KE	pure white	6 Port	for Keystone
130861-0802KE	pure white	8 Port	for Keystone
130861-1202KE	pure white	12 Port	for Keystone
130861-1602KE	pure white	16 Port	for Keystone
130861-2402KE	pure white	24 Port	for Keystone



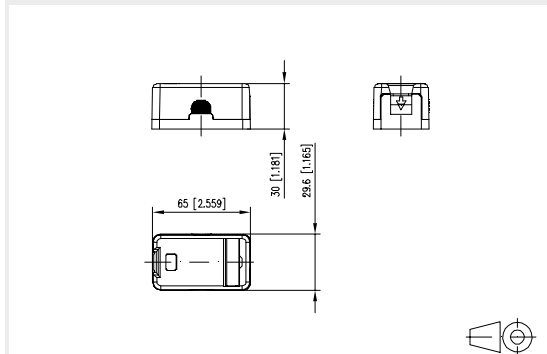
Keystone wall outlet AP | surface mounting

- very compact 1-port surface-mounted termination unit for one individual Keystone module
- module plug direction 90° downwards
- strain relief with cable tie at the module
- label window for identification labels (labels included in the delivery)
- integrated dust protection shutter
- cover parts in color similar to pure white RAL 9010, glossy surface
- not suitable for 180° couplers (anti-bend sleeves for patch cables usually too long)
- variants: 1 port, 2 ports

Keystone module cut-out



Dimensional drawing



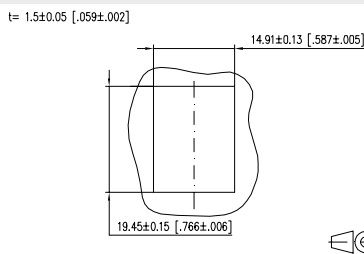
P/N	Color	Feature 1	Feature 2
1309140002KE	white	1 Port w/o modules	Keystone module cut-out
1309150002KE	white	2 Port empty	Keystone module cut-out



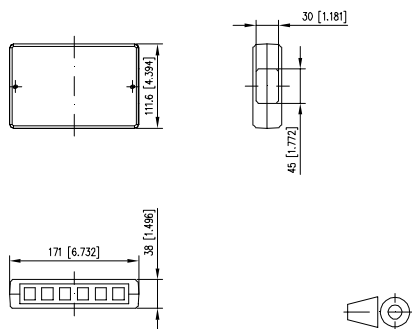
Keystone wall outlet 6/12 port surface mounting

- very compact 6/12-port surface-mounted termination unit for six/twelve individual Keystone modules
- module plug direction 90° downwards
- strain relief with cable tie at the module
- cover parts in color similar to pure white RAL 9010, glossy surface
- with shielded modules suitable for 6 modules

Keystone module cut-out



Dimensional drawing



P/N	Color	Feature 1	Feature 2
1309190002KE	white	6 Port w/o modules	Keystone module cut-out

Matching accessories for Frame for LJ6C

LJ6C Blind cover Page
33

Frame for LJ6C is matching accessories for

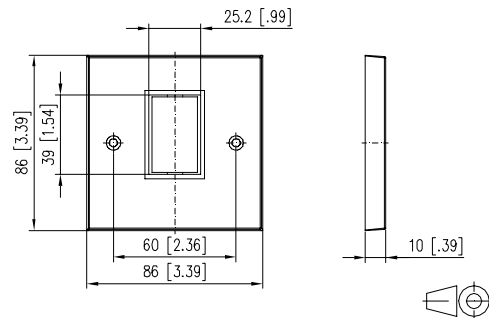
Keystone termination unit 1
port LJ6C angled, unequipped Page
33



Frame for LJ6C

- flush mount frame 86 x 86mm
- to mount terminal units with 25 x 38 mm (LJ6C style)
- color of the cover parts similar to pure white RAL 9010, glossy surface
- attention: not compatible to „design“ central units of leading switch lines
- variants: 1 port, 2 ports

Dimensional drawing



P/N	Color	Feature 1	Feature 2
130B20F1LJ6C-E	pure white	1 port unequipped	LJ6C
130B20F2LJ6C-E	pure white	2 port unequipped	LJ6C

**Matching accessories
for Keystone termination
unit LJ6C unequipped**

	Page
Frame 86 x 86 mm for 1 x LJ6C white	32
Frame 86 x 86 mm for 2 x LJ6C white	32

**Blind cover for LJ6C is
matching accessories for**

	Page
Frame 86 x 86 mm for 1 x LJ6C white	32
Frame 86 x 86 mm for 2 x LJ6C white	32



**Keystone termination unit LJ6C
unequipped**

- 1 port termination unit 25 x 38 mm (LJ6C format) for one individual Keystone module
- module plug direction approx 45° downwards
- strain relief with cable tie at the module
- label window for identification label (labels included in the delivery)
- integrated dust protection shutter
- cover parts in color similar to pure white RAL 9010, glossy surface

P/N	Color	Feature 1	Feature 2
130B20A1LJ6C-E	pure white	angled	LJ6C



Blind cover for LJ6C

- blind cover 1 piece 25 x 38 mm (LJ6C format)
- color similar to pure white RAL 9010, glossy surface

P/N	Color	Feature 1	Feature 2
130B20B1LJ6C-E	pure white	Blind cover	LJ6C

Matching accessories for Frame for 50 mm, pure white

	Page
2 x 12.5 x 50 mm Blind cover	36
25 x 50 mm Blind cover	36

Frame for 50 mm, pure white is matching accessories for

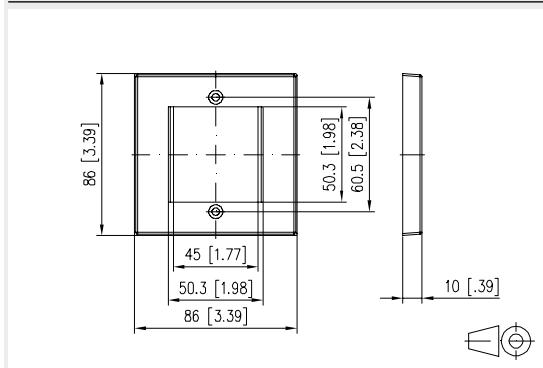
	Page
Keystone termination unit 1 port 25 x 50 mm unequipped	35



Frame for 50 mm, pure white

- flush mount frame with a height of 86 mm
- to mount terminal units with 25 x 50 mm
- color of the cover parts similar to pure white RAL 9010, glossy surface
- attention: not compatible to „design“ central units of leading switch lines
- variants: 2 ports (width 86 mm), 4 ports (width 146 mm)

Dimensional drawing



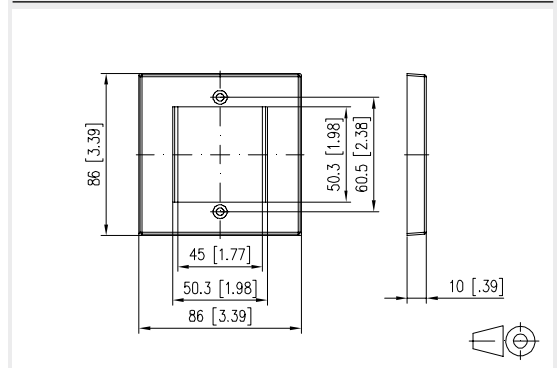
P/N	Color	Feature 1	Feature 2
130B20F125-E	pure white	2 port unequipped	25 x 50 mm
130B20F225-E	pure white	4 port unequipped	25 x 50 mm



Frame for 50 mm, chrome

- flush mount frame with a height of 86 mm
- to mount terminal units with 25 x 50 mm
- color of the cover parts chrome, high glossy surface
- attention: not compatible to „design“ central units of leading switch lines
- variants: 2 ports (width 86 mm), 4 ports (width 146 mm)

Dimensional drawing



P/N	Color	Feature 1	Feature 2
130B20F125CE	chrome	2 port unequipped	25 x 50 mm
130B20F225CE	chrome	4 port unequipped	25 x 50 mm

**Matching accessories
for Keystone termination
unit 25 x 50 mm
unequipped**

	Page
Frame 86 x 86 mm for 2 x 25 x 50 mm white	34
Frame 146 x 86 mm for 4 x 25 x 50 mm white	34

**Matching accessories
for Keystone termination
unit 25 x 50 mm
unequipped**

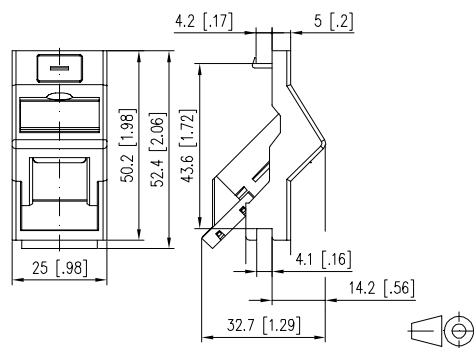
	Page
Frame 86 x 86 mm for 2 x 25 x 50 mm white	34
Frame 146 x 86 mm for 4 x 25 x 50 mm white	34



**Keystone termination unit 25 x 50 mm
unequipped**

- 1 port termination unit 25 x 50 mm for one individual Keystone module
- plug direction angled
- strain relief with cable tie at the module
- label window for identification label (labels included in the delivery)
- integrated dust protection shutter
- cover parts in color similar to pure white RAL 9010, glossy surface
- variant: plug direction straight

Dimensional drawing



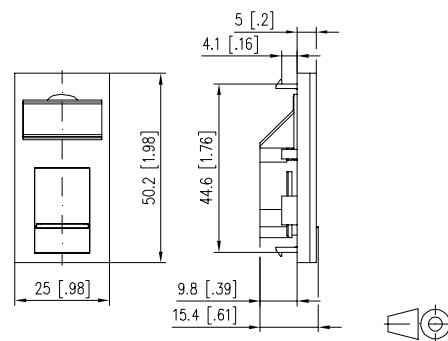
P/N	Color	Feature 1	Feature 2
130B20A125-E	pure white	angled	Keystone module cut-out



**Keystone termination unit 25 x 50 mm
unequipped**

- 1 port termination unit 25 x 50 mm for one individual Keystone module
- plug direction straight
- strain relief with cable tie at the module
- label window for identification label (labels included in the delivery)
- integrated dust protection shutter
- cover parts in color similar to pure white RAL 9010, glossy surface
- variant: plug direction angled

Dimensional drawing



P/N	Color	Feature 1	Feature 2
130B20S125-E	pure white	straight	Keystone module cut-out

Blind cover for 50 mm is matching accessories for

	Page
Frame 86 x 86 mm for 2 x 25 x 50 mm white	34
Frame 146 x 86 mm for 4 x 25 x 50 mm white	34

Blind cover for 50 mm is matching accessories for

	Page
Frame 86 x 86 mm for 2 x 25 x 50 mm white	34
Frame 146 x 86 mm for 4 x 25 x 50 mm white	34



Blind cover for 50 mm

- blind cover 50 mm frame
- color similar to pure white RAL 9010, glossy surface
- variant: 2 x 12.5 x 50 mm

P/N	Color	Feature 1	Feature 2
130B20B0525-E	pure white	Blind cover	2 x 12 x 50 mm



Blind cover for 50 mm

- blind cover 50 mm frame
- color similar to pure white RAL 9010, glossy surface
- variant: 1 x 25 x 50 mm

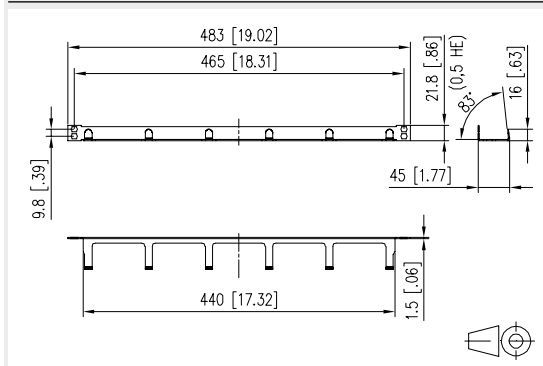
P/N	Color	Feature 1	Feature 2
130B20B125-E	pure white	Blind cover	25 x 50 mm



**Cable manager 19 inch 0.5RU 56 mm
RAL 9005 black**

- 19 inch 0.5RU distribution panel for horizontal organization of the patch cables
- cable brackets approx. 42 mm
- 5 open cable brackets
- steel powder-coated, black RAL9005

Dimensional drawing



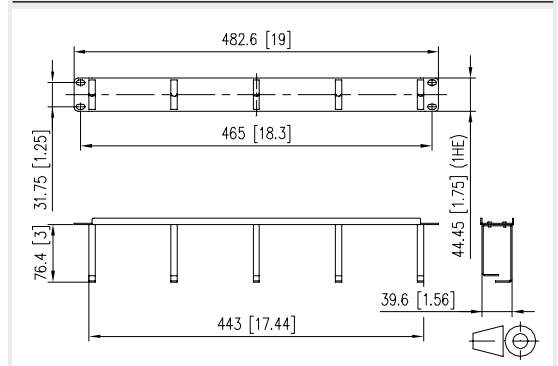
P/N	Color	Feature 1	Feature 2
130894-05-29-E	black	56 mm	



**Cable manager 19 inch 1RU 75 mm
RAL 9005 black**

- 19 inch 1 RU distribution panel for horizontal organization of the patch cables
- cable brackets approx. 75 mm
- 5 cable brackets
- steel powder-coated
- variants: black or gray

Dimensional drawing



P/N	Color	Feature 1	Feature 2
130894-03-29-E	black	75 mm	

**Matching accessories
for Cable manager 1RU
56 mm and 100 mm**

Label strip for cable manager
19 inch 1RU RAL 9005 Page
38

**Label strip for cable
manager 1RU is matching
accessories for**

Cable manager 19 inch 1RU
56 mm RAL 9005 black Page
38

Cable manager 19 inch 1RU
100 mm RAL 9005 black Page
38

Cable manager 19 inch 1RU
56 mm RAL 7035 gray Page
38

Cable manager 19 inch 1RU
100 mm RAL 7035 gray Page
38



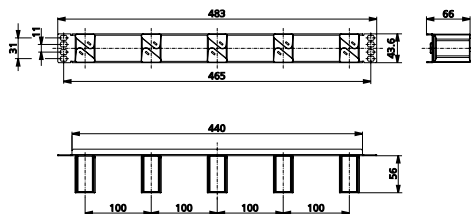
Cable manager 1RU 56 mm and 100 mm

- 19 inch 1RU distribution panel for horizontal organization of the patch cables
 - 56 and 100 mm cable bracket
 - especially suitable for fiber optic patch cables
 - 5 black plastic cable brackets with large contact surfaces
 - easy mounting of the cable brackets by twisting
 - Available as option: plug-mounted nomenclature strip
- variants: steel powder-coated grey or black, aluminum silver anodized, stainless steel

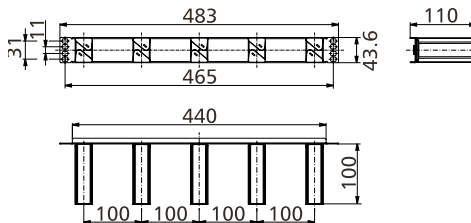
Label strip for cable manager 1RU

- black clip-on label strip for 19 inch 1RU distribution panel
- for large labeling
- included in the delivery: label strip, 2 fastening clips, paper strips and transparent foil

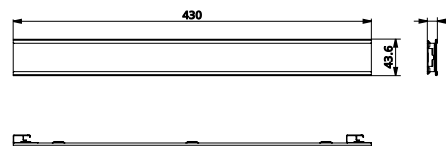
Dimensional drawing (56 mm)



Dimensional drawing (100 mm)



Dimensional drawing



P/N	Color	Feature 1	Feature 2
130894-01-29-E	black	56 mm	
130894-02-29-E	black	100 mm	
130894-01-03-E	grey	56 mm	
130894-02-03-E	grey	100 mm	

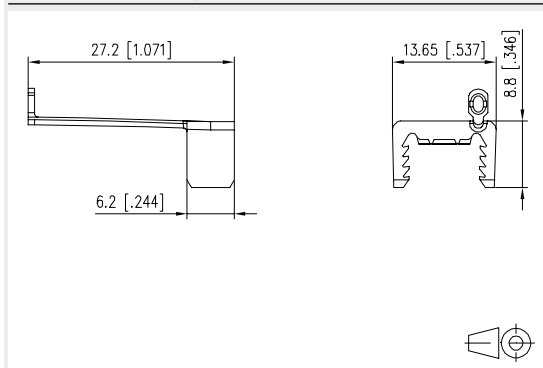
P/N	Color	Feature 1	Feature 2
130894-B5-29-E	black	slip-on	



Industry color coding field plug

- colored, easy to actuate strain relief for E-DAT Industry IP20 RJ45 field plug
- can be mounted after assembling the plug
- variants: white, light gray, orange, blue, yellow, green

Dimensional drawing



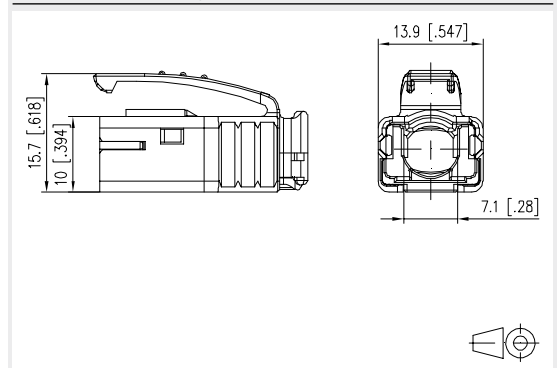
P/N	Color	Feature 1	Feature 2
1401009101-I	orange	plastics	
1401009103-I	light gray	plastics	
1401009104-I	white	plastics	
1401009105-I	yellow	plastics	
1401009106-I	blue	plastics	
1401009107-I	green	plastics	



IP20 plug bend protection

- molded snagless anti-bend sleeve for E-DAT Industry IP20 RJ45 plug
- trumpet-shaped bending protection of the connection cable
- retrofitting possible
- effective grip contours
- variants: white, light gray, blue, yellow, green, black, orange

Dimensional drawing



P/N	Color	Feature 1	Feature 2
1401008201-E	orange	plastics	
1401008202-E	black	plastics	
1401008203-E	light gray	plastics	
1401008204-E	white	plastics	
1401008205-E	yellow	plastics	
1401008206-E	blue	plastics	
1401008207-E	green	plastics	

Protection covers C6_Amodul is matching accessories for

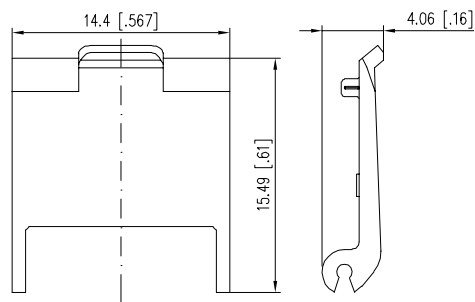
	Page
E-DAT modul Cat.6 _A K jack - Keystone style	18
C6 _A modul K 180° jack - Keystone style	18
C6 _A modul K 270° jack - Keystone style	19
C6 _A modul K 90° jack - keystone style	19



Protection covers C6_A modul

- optional dust cover for individual C6_Amodul modules in Modul and Keystone design
- suitable for modules mounted in applications without separate dust protection devices
- variants: black, pure white, light gray, yellow, blue, green, red

Dimensional drawing



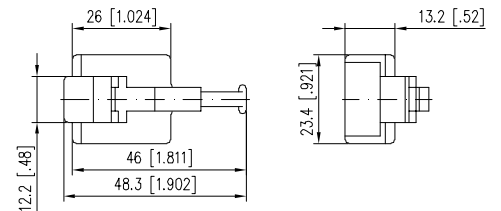
P/N	Color	Feature 1	Feature 2
820032-0129-I	black	1 port	
820032-0102-I	pure white	1 port	
820032-0103-I	light gray	1 port	
820032-0105-I	yellow	1 port	
820032-0106-I	blue	1 port	
820032-0107-I	green	1 port	
820032-0108-I	red	1 port	



Dust protection plug RJ45

- manually released locking to close unoccupied RJ45 jacks and protect them from dust
- with grip

Dimensional drawing



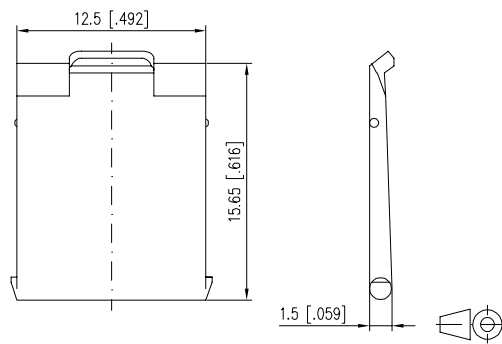
P/N	Color	Feature 1	Feature 2
816719-01-2-I	black	RJ45	



Dust protection covers for wall outlets

- for color service coding of wall outlets
- suitable for wall outlets: C6_A modul, E-DAT C6_A, E-DAT modul, E-DAT C6 wall outlets and E-DAT design
- variants: yellow, blue, green, red

Dimensional drawing



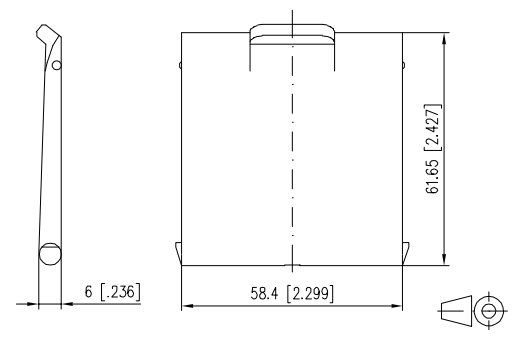
P/N	Color	Feature 1	Feature 2
820394-0105-I	yellow	1 port	
820394-0106-I	blue	1 port	
820394-0107-I	green	1 port	
820394-0108-I	red	1 port	



Dust protection covers for Modul patch panels / subway / REG

- for color service coding of patch fields, subway underfloor units and E-DAT modul REG
- suitable for: C6_A modul patch fields, E-DAT modul patch field 24x8, subway underfloor units, module wall outlet 2 port APFL as well as E-DAT modul REG and Modul REGplus
- variants: yellow, blue, green, red

Dimensional drawing



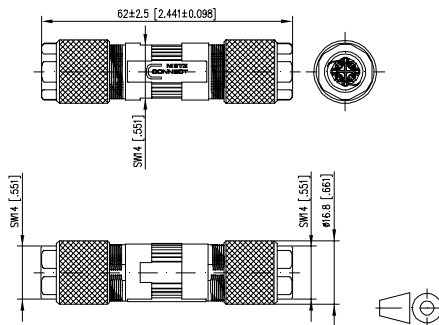
P/N	Color	Feature 1	Feature 2
816979-0105-I	yellow	1 port	
816979-0106-I	blue	1 port	
816979-0107-I	green	1 port	
816979-0108-I	red	1 port	



Cable connector class F_A

- cable connector for field assembly Class F_A for 8 wire cables
- to connect / extend / repair / relocate copper data cables up to Cat.7_A
- compliance to Class F_A up to 1000 MHz according to ISO/IEC 11801 Ed.2.2:2011-06 in connection with Cat.7_A copper cables *1
- GHMT certified to ISO/IEC 11801 Ed.2.2:2011-06 and IEC 61156-5 Ed.2.1:2012-12
- suitable for 10 GBit Ethernet (IEEE 802.3an), Remote Powering (PoE, PoE plus and UPoE) and HDBaseT
- compact design: diameter 16.8 mm x length 64 mm
- IP67 protected housing in combination with IP67 appropriate cables *2
- refined zinc die-cast housing
- easy and fast assembly without special tools
- shield connection and strain relief integrated
- easy connection of data cables AWG 26/1 to 22/1 (solid wire) and AWG 26/7 to 22/7 (stranded wire) to insulation displacement connectors (IDC)
- solid copper wire diameter 0.4 to 0.64 mm
- stranded copper wire diameter 0.48 to 0.76 mm
- conductor diameter up to 1.6 mm
- suitable for cables with an overall diameter of 5.0 to 9.7 mm *2
- fully shielded version according to DIN EN 50173-1

Dimensional drawing



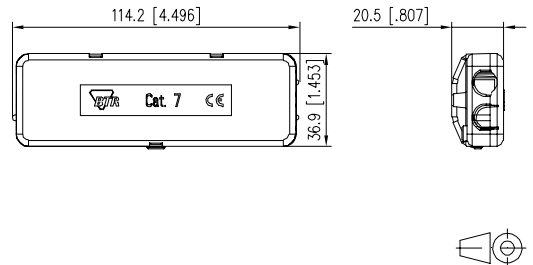
P/N	Color	Feature 1	Feature 2
130863-02-E		4x2 IP	



Cat.7 cable connector

- for connecting/extending data cables up to Cat.7_A
- class E to ISO/IEC 11801 Ed.2.2:2011-06 is complied with in combination with Cat.6, Cat.6_A, Cat.7 and Cat.7_A cables and Cat.6 connectors
- connection of data lines AWG 26/1 to 22/1 (solid wire)
- cable feed from one or two sides
- cable sharing, i.e. splitting one 8-wire cable into two 4-wire cables (one cable tie required each on input and output side)
- fully shielded metal housing
- strain relief and separate captive 360° shield connection
- 2 bore holes for wall mounting

Dimensional drawing



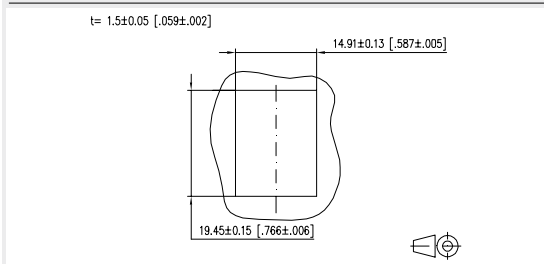
P/N	Color	Feature 1	Feature 2
130863-E		4x2	



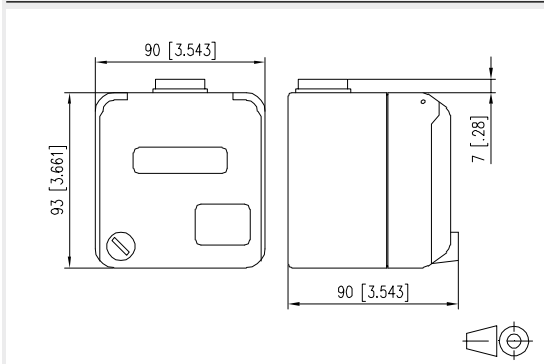
Keystone Modul IP44SG surface mounting housing unequipped

- lockable flush-mounted IP44 outlet, keyed alike with two keys (identical locks and keys)
- cover closes completely, even when patch cables are plugged in
- for two individual modules in Keystone design (not suitable for OpDAT modules)
- ball-impact resistant according to DIN 18032
- can be operated with standard patch cables
- clearly visible label window
- bottom section of housing can be turned 180°, with cable feed possible from top and bottom
- with space to install the required spare cable lengths
- grey

Keystone module cut-out



Dimensional drawing



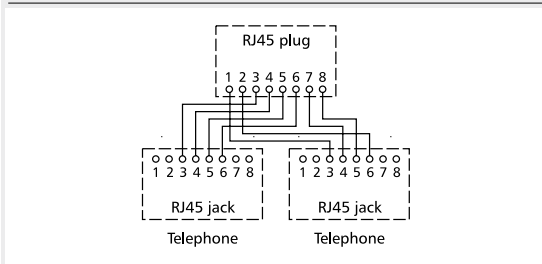
P/N	Color	Feature 1	Feature 2
1309460003KI	grey	AP 2 port empty	Keystone module cut-out



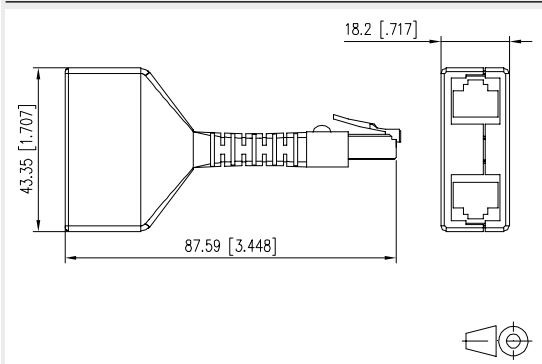
Cable Sharing Adapter pnp1

- cable sharing adapter for simultaneous operation of two 4-wire services, for example: 2 phones (ISDN), via 8-wire installation line
- use in pairs: one adapter on wall outlet, one adapter on distributor
- shielded adapter with class E transmission characteristics in Link acc. to IEC 11801 Ed.2.2:2011-06 and DIN EN 50173-1:2011-09
- slim shape allows plugging next to each other
- short, flexible connection
- delivered as set of two pieces

Wiring



Dimensional drawing



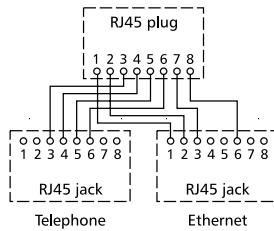
P/N	Color	Feature 1	Feature 2
130548-01-E	silver	tel.-tel.	



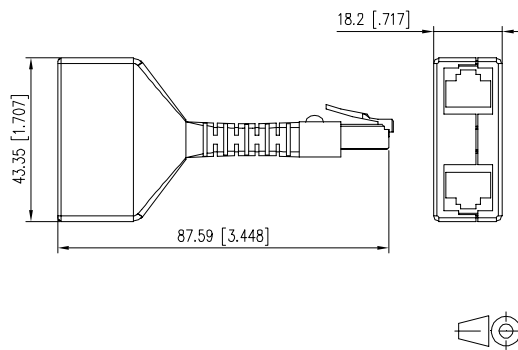
Cable Sharing Adapter pnp2

- cable sharing adapter for simultaneous operation of two 4-wire services, here: 1 x Ethernet and 1 x telephone (ISDN), via an 8-wire installation wire
- use in pairs: one adapter on wall outlet, one adapter on distributor
- shielded adapter with class E transmission characteristics in Link acc. to IEC 11801 Ed.2.2:2011-06 and DIN EN 50173-1:2011-09
- 1 x Ethernet up to 100 MBit E / Fast Ethernet
- slim shape allows plugging next to each other
- short, flexible connection
- delivered as set of two pieces

Wiring



Dimensional drawing



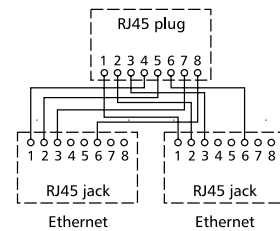
P/N	Color	Feature 1	Feature 2
130548-02-E	silver	tel.-eth.	



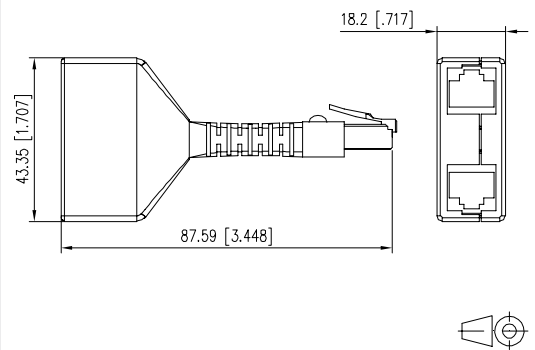
Cable Sharing Adapter pnp3

- cable sharing adapter for simultaneous operation of two 4-wire services, here: 2 x Ethernet, via an 8-wire installation line
- use in pairs: one adapter on wall outlet, one adapter on distributor
- shielded adapter with class E transmission characteristics in Link acc. to IEC 11801 Ed.2.2:2011-06 and DIN EN 50173-1:2011-09
- 2 x Ethernet up to 100 MBit E / Fast Ethernet
- slim shape allows plugging next to each other
- short, flexible connection
- delivered as set of two pieces

Wiring



Dimensional drawing



P/N	Color	Feature 1	Feature 2
130548-03-E	silver	eth.-eth.	



Parallel jaw pliers 1 3/8 inch

- adjustable parallel-jaw wrench to compress C6_A modul, E-DAT modul, E-DAT Industry field jack and E-DAT Industry field plug
- very easy handling

P/N	Color	Feature 1	Feature 2
140301-E		Parallel-jaw	



Crimp tool LSA plus

- the crimp tool S (S for sensor) pushes a cable wire in a defined position into the LSA-PLUS® insulation displacement connector and cuts the wire to length in the same step

P/N	Color	Feature 1	Feature 2
130818-E	light grey	with sensor	

Jokari dismantle tool is matching accessories for

	Page
MC GC400 SL23 Cat.6 U/UTP LSHF 1000 ft	10
MC GC400 SL23 Cat.6 U/UTP LSHF 1640 ft	10
MC GC400 SL23 Cat.6 U/UTP LSHF 3280 ft	10
MC GC600 F1 23 Cat.6 _A U/FTP 4P LSHF 1640 ft	16
MC GC600 F1 23 Cat.6 _A U/FTP 4P LSHF 3280 ft	16
MC GC1000 pro23 Cat.7 S/FTP 4P LSHF-FR 1640 ft	27
MC GC1000 pro23 Cat.7 S/FTP 4P LSHF-FR 3280 ft	27
MC GC1000 plus23 Cat.7 S/FTP 4P LSHF 1640 ft	27
MC GC1000 plus23 Cat.7 S/FTP 4P LSHF 3280 ft	27
MC GC1200 pro22 Cat.7 _A S/FTP 4P LSHF-FR 1640 ft	28
MC GC1200 pro22 Cat.7 _A S/FTP 4P LSHF-FR 3280 ft	28
MC GC1500 pro22 Cat.7 _A S/FTP 4P LSHF-FR 1640 ft	28
MC GC1500 pro22 Cat.7 _A S/FTP 4P LSHF-FR 3280 ft	28



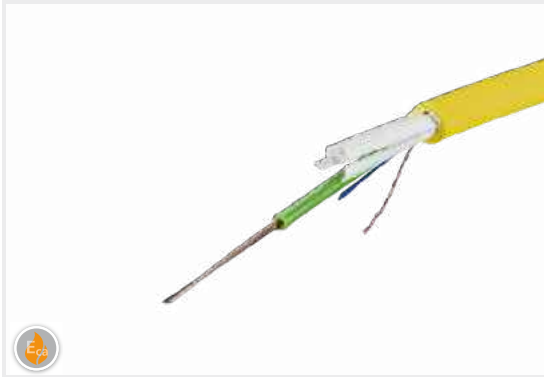
Jokari dismantle tool

- for fast and precise stripping of data cables
- with adjustable stop

P/N	Color	Feature 1	Feature 2
140302-01-E	white	dismantle tool	

Fiber Optic Solutions

1	Installation cables	
	Single mode/multi mode	48
2	Adapter	50
3	Pigtails Single mode/multi mode	52
4	Pigtails Configurator	53
5	Patch panels fixed installation	
	Single mode/multi mode	54
6	Patch panels for fixed installation	
	Configurators	55
7	Patch panels withdrawable	
	Single mode/multi mode	56
8	Patch panels withdrawable	
	Configurators	57
9	Patch cords Single mode/multi mode	58
10	Patch cords Configurator	59
11	OM5 The future of multimode fiber	60



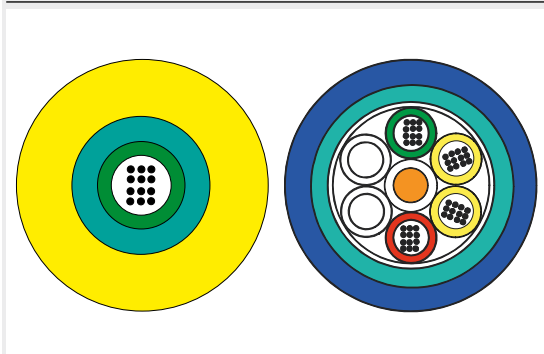
OpDAT universal cable SM

- installation cable U-DQ(ZN)BH
- universal fiber optic cable for indoors/outdoors with central loose tube
- bending resistant fiber
- UV-resistant, metal-free, longitudinally waterproof, tensile strength, rodent-protected
- cable jacket: LSHF
- cable structure: filled loose tube
- with more loose tubes: loose tubes arranged around \varnothing 2.5 mm bar made of fiber glass reinforced plastic
- loose tubes \varnothing 2.8 mm with 2-12 fibers per loose tube
- loose tubes \varnothing 3.5 mm with 18-24 fibers per loose tube
- strain relief: longitudinally waterproof lapping, glass roving elements
- for indoor cabling
- for laying in tubes or directly in the ground in suitable layer of sand
- applicable standards: EN 50173-1, ISO 11801 2nd edition, IEC 60794-1, EN 187000
- fire behaviour: Class E_{ca} (classification acc. to EN 13501-6)

variants:
number of OS2 fibers 1x4, 1x8, 1x12, 1x24, 4x12

Others on request

Principle diagram



P/N	Color	Feature 1	Feature 2
150U049000000M	yellow	4 fibers	9/125 (OS2)
150U089000000M	yellow	8 fibers	9/125 (OS2)
150U129000000M	yellow	12 fibers	9/125 (OS2)
150U249000000M	yellow	24 fibers	9/125 (OS2)
150U489000000M	blue or yellow	48 fibers	9/125 (OS2)



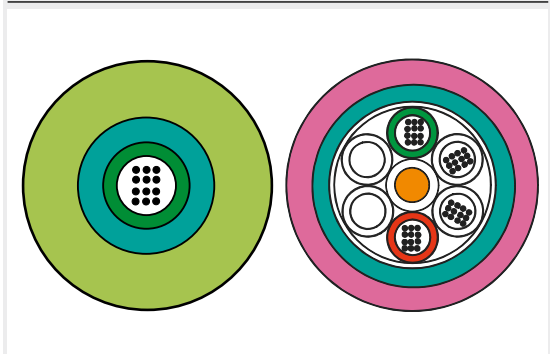
OpDAT universal cable MM

- installation cable U-DQ(ZN)BH
- universal fiber optic cable for indoors/outdoors with central loose tube
- laser-optimized, bending-resistant fiber
- bending resistant fiber
- UV-resistant, metal-free, longitudinally waterproof, tensile strength, rodent-protected
- cable jacket: LSHF
- cable structure: filled loose tube
- with more loose tubes: loose tubes arranged around \varnothing 2.5 mm bar made of fiber glass reinforced plastic
- loose tubes \varnothing 2.8 mm with 2-12 fibers per loose tube
- loose tubes \varnothing 3.5 mm with 18-24 fibers per loose tube
- strain relief: longitudinally waterproof lapping, glass roving elements
- for indoor cabling
- for laying in tubes or directly in the ground in suitable layer of sand
- applicable standards: EN 50173-1, ISO 11801 2nd edition, IEC 60794-1, EN 187000
- fire behaviour: Class E_{ca} (classification acc. to EN 13501-6)

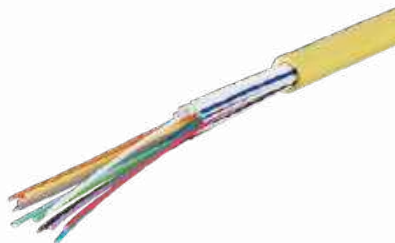
variants:
number of OM5 fibers 1x4, 1x8, 1x12, 1x24
number of OM4 fibers 1x4, 1x8, 1x12, 1x24, 4x12
number of OM3 fibers 1x4, 1x8, 1x12, 1x24, 4x12

Others on request

Principle diagram



P/N	Color	Feature 1	Feature 2
150U048000000M	lime green	4 fibers	50/125 (OM5)
150U088000000M	lime green	8 fibers	50/125 (OM5)
150U128000000M	lime green	12 fibers	50/125 (OM5)
150U248000000M	lime green	24 fibers	50/125 (OM5)
150U047000000M	violet	4 fibers	50/125 (OM4)
150U087000000M	violet	8 fibers	50/125 (OM4)
150U127000000M	violet	12 fibers	50/125 (OM4)
150U247000000M	violet	24 fibers	50/125 (OM4)
150U487000000M	blue or violet	48 fibers	50/125 (OM4)
150U045000000M	aqua	4 fibers	50/125 (OM3)
150U085000000M	aqua	8 fibers	50/125 (OM3)
150U125000000M	aqua	12 fibers	50/125 (OM3)
150U245000000M	aqua	24 fibers	50/125 (OM3)
150U485000000M	blue or aqua	48 fibers	50/125 (OM3)



OpDAT mini breakout cable

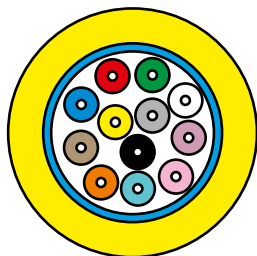
- installation cable mini-breakout (MBO) for universal cabling systems
- laser-optimized, bending-resistant fiber
- UV-resistant, metal-free, waterproof and moisture-resistant
- longitudinally water blocked and suitable for operation down to -40 °C
- cable sheath: LSHF-FR (low smoke halogen free - flame retardant)
- cable structure: 4, 12 or 24 tight buffered cables (Ø 0,9 mm)
- strain relief: Glasroving elements
- to be laid in tubes and cable ducts indoors and outdoors
- applicable standards: EN 50173-1, ISO 11801 2nd edition, IEC 60794-2, IEC 60794-2-20, EN 187000
- fire behaviour: Class D_{ca} s1 d0 a1 acc. to EN 50399 (classification acc. to EN 13501-6)

Variants:

number of OS2 fibers	4, 12 or 24
number of OM5 fibers	4, or 12
number of OM4 fibers	4, 12 or 24
number of OM3 fibers	4, 12 or 24

Others on request

Principle diagram



P/N	Color	Feature 1	Feature 2
150M049000000M	yellow	4 fibers	9/125 (OS2)
150M129000000M	yellow	12 fibers	9/125 (OS2)
150M249000000M	yellow	24 fibers	9/125 (OS2)
150M048000000M	lime green	4 fibers	50/125 (OM5)
150M128000000M	lime green	12 fibers	50/125 (OM5)
150M047000000M	violet	4 fibers	50/125 (OM4)
150M127000000M	violet	12 fibers	50/125 (OM4)
150M247000000M	violet	24 fibers	50/125 (OM4)
150M045000000M	aqua	4 fibers	50/125 (OM3)
150M125000000M	aqua	12 fibers	50/125 (OM3)
150M245000000M	aqua	24 fibers	50/125 (OM3)



OpDAT breakout cable

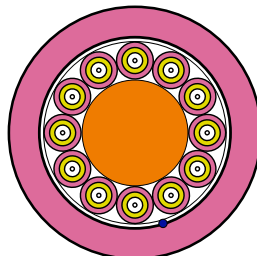
- connection cable I-V(ZN)HH
- breakout cable for direct connector termination for indoors and outdoors
- laser optimized fiber
- bend insensitive fiber
- cable jacket: LSHF-FR
- UV resistant, metal-free, longitudinally watertight
- cable structure: several separately strain relieved cables in one outer jacket
- strain relief: Aramid
- applicable standards: EN 50173-1, ISO 11801 2nd edition, IEC 60794-2, IEC 60794-2-10, EN 187000
- fire behaviour: class D_{ca} s1 d1 a1 acc. to EN 50399 (classification acc. to EN 13501-6)

Variants:

Number of OS2 fibers	4x1, 8x1, 12x1, 24x1
Number of OM5 fibers	4x1, 8x1, 12x1
Number of OM4 fibers	4x1, 8x1, 12x1, 24x1
Number of OM3 fibers	4x1, 8x1, 12x1, 24x1

Others on request

Principle diagram



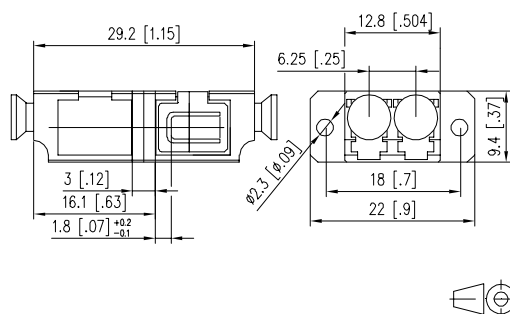
P/N	Color	Feature 1	Feature 2
150B049000000M	yellow	4 fibers	9/125 (OS2)
150B089000000M	yellow	8 fibers	9/125 (OS2)
150B129000000M	yellow	12 fibers	9/125 (OS2)
150B249000000M	yellow	24 fibers	9/125 (OS2)
150B048000000M	lime green	4 fibers	50/125 (OM5)
150B088000000M	lime green	8 fibers	50/125 (OM5)
150B128000000M	lime green	12 fibers	50/125 (OM5)
150B047000000M	violet	4 fibers	50/125 (OM4)
150B087000000M	violet	8 fibers	50/125 (OM4)
150B127000000M	violet	12 fibers	50/125 (OM4)
150B247000000M	violet	24 fibers	50/125 (OM4)
150B045000000M	aqua	4 fibers	50/125 (OM3)
150B085000000M	aqua	8 fibers	50/125 (OM3)
150B125000000M	aqua	12 fibers	50/125 (OM3)
150B245000000M	aqua	24 fibers	50/125 (OM3)



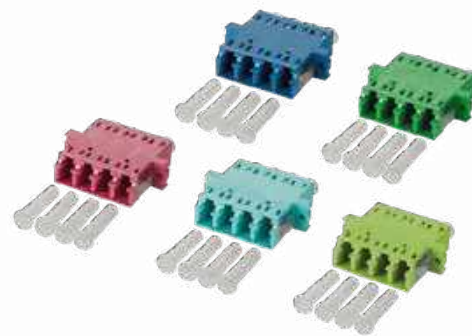
LC-D adapter

- LC duplex plastic adapter, SC simplex design with metal clip
 - slotted ceramic guide sleeves for single mode and multimode applications
 - with transparent dust protection caps for a better visibility during red light test
 - high material stability, surface quality and durability
 - durability min. 1000 mating cycles with a ceramic guide sleeve
 - screws and nuts included
- variants: blue (OS2), green (OS2 APC), lime green (OM5), violet (OM4), aqua (OM3), each variant available in packing units of 1 piece or 50 pieces

Dimensional drawing



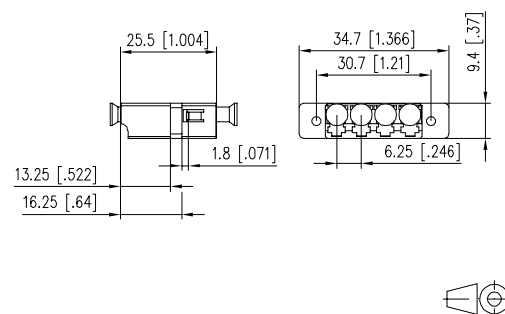
P/N	Color	Feature 1	Feature 2
15090076-I	green	LC-D APC (SM)	1 pieces
15090076-50	green	LC-D APC (SM)	50 pieces
15090074-I	blue	LC-D (SM)	1 pieces
15090074-50	blue	LC-D (SM)	50 pieces
1509007M-I	lime green	LC-D (MM)	1 pieces
1509007M-50	lime green	LC-D (MM)	50 pieces
15090075-I	violet	LC-D (MM)	1 pieces
15090075-50	violet	LC-D (MM)	50 pieces
15090077-I	aqua	LC-D (MM)	1 pieces
15090077-50	aqua	LC-D (MM)	50 pieces



LC-Q adapter

- LC Quad plastic adapter, SC duplex design with metal clip
 - slotted ceramic guide sleeves for single mode and multimode applications
 - with transparent dust protection caps for a better visibility during red light test
 - high material stability, surface quality and durability
 - durability min. 1000 mating cycles with a ceramic guide sleeve
 - screws and nuts included
- variants: blue (OS2), green (OS2 APC), lime green (OM5), violet (OM4), aqua (OM3), each variant available in packing units of 1 piece or 30 pieces

Dimensional drawing



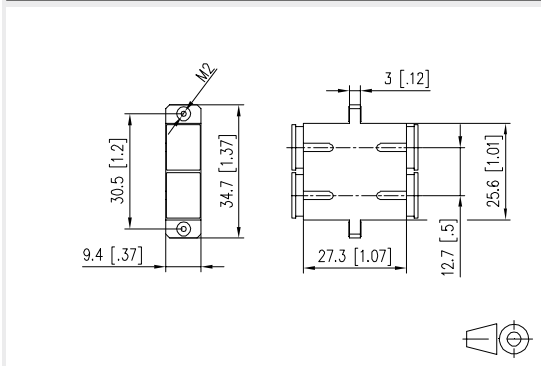
P/N	Color	Feature 1	Feature 2
1509007A-I	green	LC-Q APC (SM)	1 pieces
1509007A-30	green	LC-Q APC (SM)	30 pieces
15090071-I	blue	LC-Q (SM)	1 pieces
15090071-30	blue	LC-Q (SM)	30 pieces
1509007L-I	lime green	LC-Q (MM)	1 pieces
1509007L-30	lime green	LC-Q (MM)	30 pieces
15090079-I	violet	LC-Q (MM)	1 pieces
15090079-30	violet	LC-Q (MM)	30 pieces
15090078-I	aqua	LC-Q (MM)	1 pieces
15090078-30	aqua	LC-Q (MM)	30 pieces



SC-D adapter

- SC duplex plastic adapter with metal clip
- slotted ceramic guide sleeves for single mode and multimode applications
- with transparent dust protection caps for a better visibility during red light test
- high material stability, surface quality and durability
- durability min. 1000 mating cycles
- screws and nuts included
- variants: blue (OS2), green (OS2 APC), lime green (OM5), violet (OM4), aqua (OM3), each variant available in packing units of 1 piece or 30 pieces

Dimensional drawing



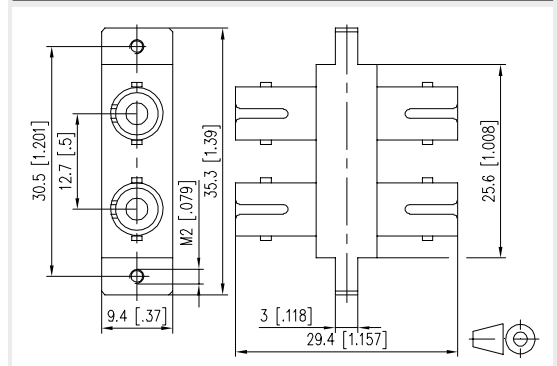
P/N	Color	Feature 1	Feature 2
150900F2-I	green	SC-D APC (SM)	1 pieces
150900F2-30	green	SC-D APC (SM)	30 pieces
150900E2-I	blue	SC-D (SM)	1 pieces
150900E2-30	blue	SC-D (SM)	30 pieces
150900BM-I	lime green	SC-D (MM)	1 pieces
150900BM-30	lime green	SC-D (MM)	30 pieces
150900BB-I	violet	SC-D (MM)	1 pieces
150900BB-30	violet	SC-D (MM)	30 pieces
150900BA-I	aqua	SC-D (MM)	1 pieces
150900BA-30	aqua	SC-D (MM)	30 pieces



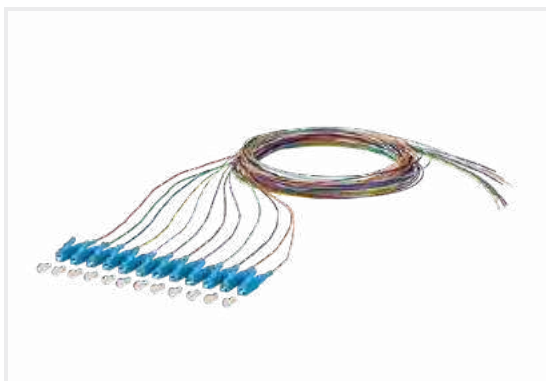
ST-D adapter

- ST duplex adapter made of zinc die-cast
- slotted ceramic guide sleeves for single mode and multimode applications
- high material stability, surface quality and durability
- durability min. 1000 mating cycles
- screws included
- variants: packing units of 1 piece or 30 pieces

Dimensional drawing



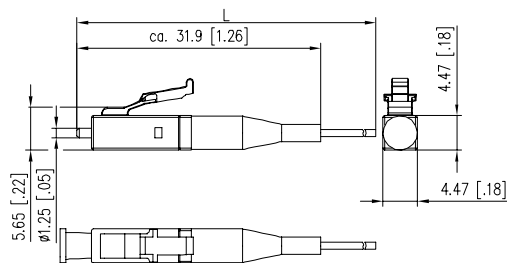
P/N	Color	Feature 1	Feature 2
150900D1-I	metallike	ST-D (SM + MM)	1 pieces
150900D1-30	metallike	ST-D (SM + MM)	30 pieces



Pigtails, 12 colors

- Pigtails with all variations of connector types LC, SC and ST
 - Fiber types: OM3, OM4, OM5, OS2. All fibers are bend insensitive
 - Single mode fiber OS2, E9/125 μm , bend insensitive cording to IEC 60793-2-50 type B6_a and B6_b and G.657.A2 and B2, compatible to G.652.D or Multi mode fiber G50/125 μm , bend insensitive according to IEC 60793-2-10 type A1a.2 (OM3) / A1a.3 (OM4) / A1a.4 (OM5)
 - Compact loose tube fiber with dia. 0.9 mm, length 2.0 m
 - Color sequence in sets according to IEC 60304: red, green, blue, yellow, white, gray, brown, violet, turquoise, black, orange, pink. Secondary and primary coating same color
 - Plug connector mounted on one side
 - With test report, insertion loss and return loss tested at 100 %
- all available variants can be created with the cable configurator

Dimensional drawing



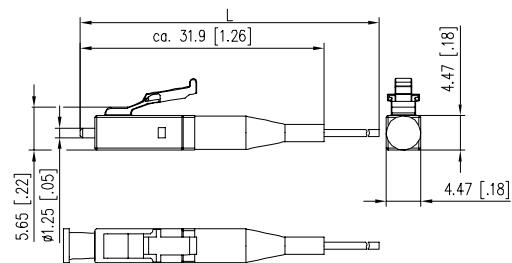
P/N	Color	Feature 1	Feature 2
150Q1JO0020E	blue	2.0 m	LC-SM (OS2)
150Q1JA0020E	green	2.0 m	LC-SM APC (OS2)
150Q1CO0020E	blue	2.0 m	SC-SM (OS2)
150Q1CA0020E	green	2.0 m	SC-SM APC (OS2)
150Q1AO0020E	metallike	2.0 m	ST-SM (OS2)
150R1JO0020E	beige	2.0 m	LC-MM (OM5)
150R1CO0020E	beige	2.0 m	SC-MM (OM5)
150N1JO0020E	violet	2.0 m	LC-MM (OM4)
150N1CO0020E	violet	2.0 m	SC-MM (OM4)
150N1AO0020E	metallike	2.0 m	ST-MM (OM4)
150M1JO0020E	aqua	2.0 m	LC-MM (OM3)
150M1CO0020E	aqua	2.0 m	SC-MM (OM3)
150M1AO0020E	metallike	2.0 m	ST-MM (OM3)



Pigtails, single color

- Pigtails with all variations of connector types LC, SC and ST
 - Fiber types: OM3, OM4, OM5, OS2. All fibers are bend insensitive
 - Single mode fiber OS2, E9/125 μm , bend insensitive according to IEC 60793-2-50 type B6_a and B6_b and G.657.A2 and B2, compatible to G.652.D or Multi mode fiber G50/125 μm , bend insensitive according to IEC 60793-2-10 type A1a.2 (OM3) / A1a.3 (OM4) / A1a.4 (OM5)
 - Compact loose tube fiber with dia. 0.9 mm, length 2.0 m
 - Secondary and primary coating same color
 - Plug connector mounted on one side
 - With test report, insertion loss and return loss tested at 100 %
- all available variants can be created with the cable configurator

Dimensional drawing



P/N	Color	Feature 1	Feature 2
150Q1JO0020S	blue	2.0 m	LC-SM APC (OS2)
150Q1JA0020S	green	2.0 m	LC-SM (OS2)
150Q1CO0020S	blue	2.0 m	SC-SM APC (OS2)
150Q1CA0020S	green	2.0 m	SC-SM (OS2)
150Q1AO0020S	metallike	2.0 m	ST-SM (OS2)
150R1JO0020S	lime green	2.0 m	LC-MM (OM5)
150R1CO0020S	lime green	2.0 m	SC-MM (OM5)
150R1AO0020S	lime green	2.0 m	ST-MM (OM5)
150N1JO0020S	violet	2.0 m	LC-MM (OM4)
150N1CO0020S	violet	2.0 m	SC-MM (OM4)
150N1AO0020S	metallike	2.0 m	ST-MM (OM4)
150M1JO0020S	aqua	2.0 m	LC-MM (OM3)
150M1CO0020S	aqua	2.0 m	SC-MM (OM3)
150M1AO0020S	metallike	2.0 m	ST-MM (OM3)

Pigtail

- Pigtails with all variations of plug types LC, SC and ST
- Fiber types: OM3, OM4, OM5, OS2. All fibers are bend insensitive
- Semi-tight buffered fiber 0.9 mm, length 2 m. Primary and secondary coating in the same color. Tight buffered fiber available on demand.
- Available as individual pigtail or in a set of 12
- Safe transport and safe storage of the set of 12 in a specially designed blister packaging
- Single mode pigtails are tested by 100 % on insertion loss and return loss at 1310 and 1550 nm. An interferometer measurement is done in addition. Multi mode pigtails are tested by 100 % on insertion loss at 850 and 1300 nm. The measuring protocol is supplied with the pigtails. The measurement is followed by a final visual control of the connectors according to IEC 61300-3-35.
- All pigtails have a serial number

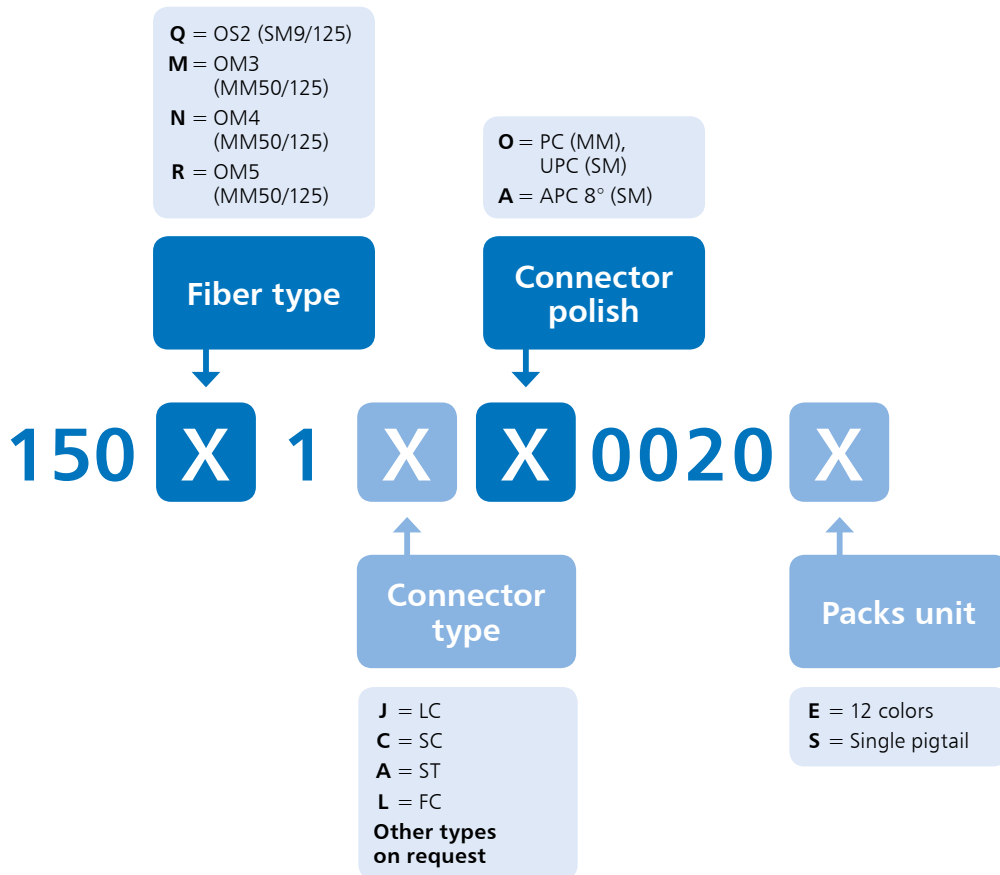
Example

150 **B** 1 **A** **O** 0020 **E**

ST (OM2) pigtail, length 2 m, orange



Part number key for further versions



Please note:

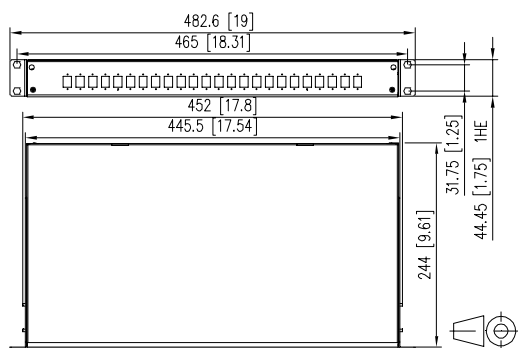
These cables will be manufactured according to your specifications. They can therefore neither be exchanged nor returned.



OpDAT fix LC-D splice

- 19 inch 1RU fiber optic patch panel for fixed installation
 - equipped with LC-D adapters and LC pigtails
 - pigtails with semi-tight buffered fiber dia. 0.9 mm, 12 colors, secondary and primary coating in the same color, length 2.0 m
 - pigtails inserted and stripped in standard splice trays with crimp splice holders
 - pigtails are cleaned and plugged in adapters
 - light aluminum construction with steel sheet front plate painted (gray or black)
 - unused cutouts are closed by blank connectors
 - removable front plate for easy adapter mounting
 - screwed on cover for easy access during service work
 - several possibilities for cable entry on the back (fastening with PG13.5, PG16 and PG21 or M20 and M25)
 - supplied with one PG16 cable gland
-
- Variants: equipped with 6, 12 or 24 LC-D adapters and pigtails, all blue (OS2), lime green (OM5), violet (OM4), aqua (OM3) or 6, 12 or 24 LC-D APC adapters and pigtails, all green (OS2)

Dimensional drawing



P/N	Color	Feature 1	Feature 2
1502597612-J	green	12xLCD APC	9/125 (OS)
1502597624-J	green	24xLCD APC	9/125 (OS)
1502597412-J	blue	12xLC-D	9/125 (OS)
1502597424-J	blue	24xLC-D	9/125 (OS)
1502587M12-J	lime green	12xLC-D	50/125 (OM5)
1502587M24-J	lime green	24xLC-D	50/125 (OM5)
1502577512-J	violet	12xLC-D	50/125 (OM4)
1502577524-J	violet	24xLC-D	50/125 (OM4)
1502577712-J	aqua	12xLC-D	50/125 (OM3)
1502577724-J	aqua	24xLC-D	50/125 (OM3)



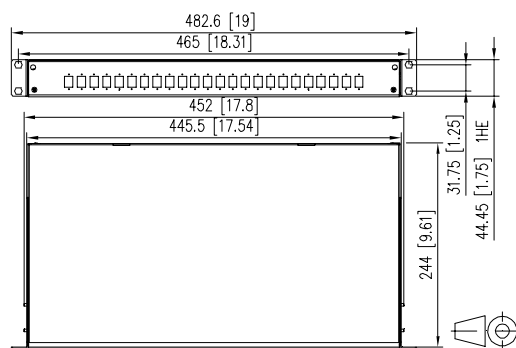
OpDAT fix LC-D VIK

- 19 inch 1RU fiber optic patch panel for fixed installation
 - light aluminum construction with steel sheet front plate painted in RAL 9005
 - equipped with LC-D adapter
 - unoccupied recesses are closed with blind connectors
 - removable front plate for easy adapter mounting
 - screwed on cover for easy access during service work
 - installation depth 240 mm (without cable gland and adapter)
 - several possibilities for cable entry on the back (fastening with PG13.5, PG16 and PG21 or M20 and M25)
 - toolless fastening of pre-assembled installation cables (OpDAT VIK) in a U-shaped cutout
-
- Variants: equipped with 6, 12 or 24 LC-D adapters, all blue (OS2), violet (OM4) or aqua (OM3)

Notes:

On pages 149-153 you will find further information about VIK cable.

Dimensional drawing



P/N	Color	Feature 1	Feature 2
1502507612-B	green	12xLC-D APC	VIK
1502507624-B	green	24xLC-D APC	VIK
1502507412-B	blue	12xLC-D	VIK
1502507424-B	blue	24xLC-D	VIK
1502507M12-B	lime green	12xLC-D	VIK
1502507M24-B	lime green	24xLC-D	VIK
1502507512-B	violet	12xLC-D	VIK
1502507524-B	violet	24xLC-D	VIK
1502507712-B	aqua	12xLC-D	VIK
1502507724-B	aqua	24xLC-D	VIK

OpDAT fix

- Fiber optic patch panels for 19-inch systems, 1 rack unit (RU)
- Service-friendly mounting by removable cover or an extendible drawer
- Light construction with steel sheet front plate
- Front plates available in gray (RAL 7035) or black (RAL 9005)
- All front plates are available with 12 or 24 adapter cutouts. Unused cutouts in the front plate are covered by blank plugs
- Available with the following adapters: LC, SC, E2000 and ST in duplex version. All adapters with ceramic sleeves. Other types available on demand.
- Pigtails are available with fiber types OM3, OM4, OM5 and OS2. All pigtails are inspected and cleaned before inserted into the adapters according to IEC 61300-3-35



Example

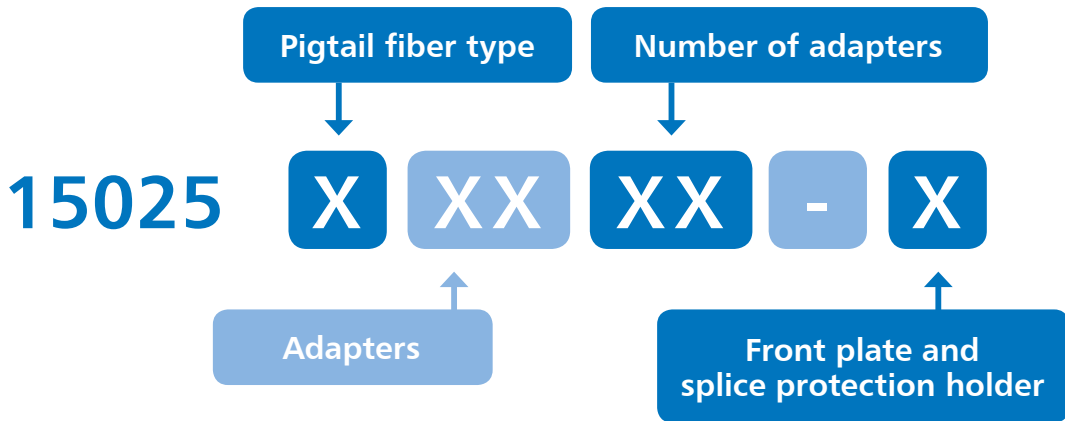
15025 **9** **74** **24** **-J**

OpDAT fix patch panel equipped with 24 LC-D (SM) adapter, 48 pigtails (OS2) inserted and stripped in four splice trays with shrink splice holders



Part number key for further versions

- 0 = variant "VIK" (without pigtails)
- 9 = OS2 (SM9/125)
- 5 = OM3 (MM50/125)
- 7 = OM4 (MM50/125)
- 8 = OM5 (MM50/125)



- 74 = LC-D, duplex, SM, blue, ceramic sleeves
- 76 = LC-D APC, duplex, SM, green, ceramic sleeves
- 75 = LC-D, duplex, OM4, violet, ceramic sleeves
- 77 = LC-D, duplex, OM3, aqua, ceramic sleeves
- E2 = SC-D, duplex, SM, blue, ceramic sleeves
- F2 = SC-D APC, duplex, SM, green, ceramic sleeves
- BB = SC-D, duplex, OM4, violet, ceramic sleeves
- BA = SC-D, duplex, OM3, aqua, ceramic sleeves
- D1 = ST-D, duplex, SM, metal, ceramic sleeves

For variant "VIK" and variant "splice" with holder for crimp splice protection

- E = gray front plate for max. 24 adapters
- F = gray front plate for max. 12 adapters
- B = black front plate for max. 24 adapters
- C = black front plate for max. 12 adapters

For variant "splice" with holder for shrink splice protections

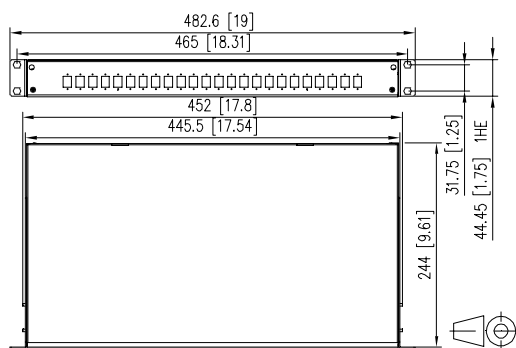
- S = gray front plate for max. 24 adapters
- H = gray front plate for max. 12 adapters
- J = black front plate for max. 24 adapters
- K = black front plate for max. 12 adapters



OpDAT slide LC-D splice

- 19 inch 1RU fiber optic patch panel with pull-out splice tray / front cover (gray or black)
 - equipped with LC-D adapters and LC pigtails
 - pigtails with semi-tight buffered fiber dia. 0.9 mm, 12 colors, secondary and primary coating in the same color, length 2.0 m
 - pigtails inserted and stripped in standard splice trays with crimp splice holders
 - pigtails are cleaned and plugged in adapters
 - splice tray can be tilted and completely removed to facilitate fitting (end stop)
 - unused cutouts are closed by blank plugs
 - installation depth 240 mm (without cable gland and adapters)
 - several possibilities for cable entry on the back (fastening with PG13.5, PG16 and PG21 or M20 and M25)
 - a PG16 mounting kit is included in delivery
- variants: equipped with 6, 12 or 24 LC-D adapters and pigtails, all blue (OS2), lime green (OM5), heather violet (OM4), aqua (OM3) or 6, 12 or 24 LC-D APC adapters and pigtails, all green (OS2)

Dimensional drawing



P/N	Color	Feature 1	Feature 2
1502697612-J	green	12xLC-D APC	9/125 (OS2)
1502697624-J	green	24xLC-D APC	9/125 (OS2)
1502697412-J	blue	12xLC-D	9/125 (OS2)
1502697424-J	blue	24xLC-D	9/125 (OS2)
1502687M12-J	lime green	12xLC-D	50/125 (OM5)
1502687M24-J	lime green	24xLC-D	50/125 (OM5)
1502677512-J	violet	12xLC-D	50/125 (OM4)
1502677524-J	violet	24xLC-D	50/125 (OM4)
1502657712-J	aqua	12xLC-D	50/125 (OM3)
1502657724-J	aqua	24xLC-D	50/125 (OM3)



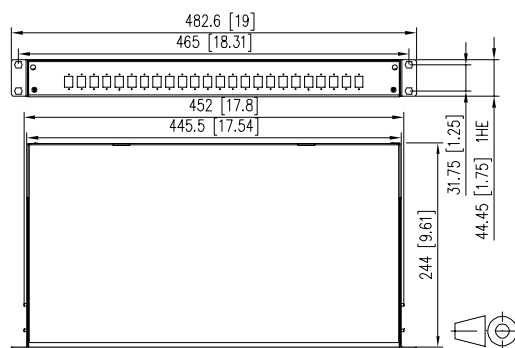
OpDAT slide LC-D VIK

- 19 inch 1RU fiber optic patch panel with pull-out splice tray / front cover in black (RAL 9005)
 - splice tray can be tilted and removed completely for better mounting (end stop)
 - equipped with LC-D couplers
 - unused cutouts are closed by blank plugs
 - installation depth 240 mm (without cable gland and coupler)
 - several possibilities for cable entry on the back (fastening with PG13.5, PG16 and PG21 or M20 and M25)
- variants: equipped with 6, 12 or 24 LC-D adapters, all blue (OS2), lime green (OM5), heather violet (OM4) or aqua (OM3) or with 6, 12 or 24 SC-D APC adapters, all green (OS2)

Notes:

On pages 149-153 you will find further information about VIK cable.

Dimensional drawing



P/N	Color	Feature 1	Feature 2
1502607612-B	green	12xLC-D APC	VIK
1502607624-B	green	24xLC-D APC	VIK
1502607412-B	blue	12xLC-D	VIK
1502607424-B	blue	24xLC-D	VIK
1502607M12-B	lime green	12xLC-D	VIK
1502607M24-B	lime green	24xLC-D	VIK
1502607512-B	violet	12xLC-D	VIK
1502607524-B	violet	24xLC-D	VIK
1502607712-B	aqua	12xLC-D	VIK
1502607724-B	aqua	24xLC-D	VIK

OpDAT slide

- Fiber optic patch panels for 19-inch systems, 1 rack unit (RU)
- Service-friendly mounting by removable cover or an extendible drawer
- Light construction with steel sheet front plate
- Front plates available in gray (RAL 7035) or black (RAL 9005)
- All front plates are available with 12 or 24 adapter cutouts. Unused cutouts in the front plate are covered by blank plugs
- Available with the following adapters: LC, SC, E2000 and ST in duplex version. All adapters with ceramic sleeves. Other types available on demand.
- Pigtails are available with fiber types OM3, OM4, OM5 and OS2. All pigtails are inspected and cleaned before inserted into the adapters according to IEC 61300-3-35



Example

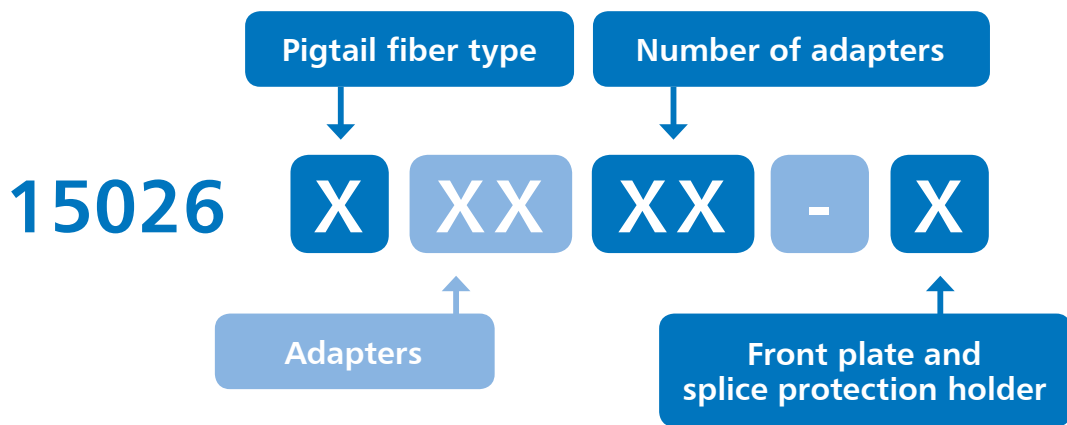
15026 **9** **75** **24** **-J**

OpDAT slide patch panel equipped with 24 LC-D (SM) adapter, 48 pigtails (OS2) inserted and stripped in a splice tray with shrink splice holders



Part number key for further versions

- 0 = variant "VIK" (without pigtails)
- 9 = OS2 (SM9/125)
- 5 = OM3 (MM50/125)
- 7 = OM4 (MM50/125)
- 8 = OM5 (MM50/125)



- 74 = LC-D, duplex, SM, blue, ceramic sleeves
- 76 = LC-D APC, duplex, SM, green, ceramic sleeves
- 75 = LC-D, duplex, OM4, violet, ceramic sleeves
- 77 = LC-D, duplex, OM3, aqua, ceramic sleeves
- E2 = SC-D, duplex, SM, blue, ceramic sleeves
- F2 = SC-D APC, duplex, SM, green, ceramic sleeves
- BB = SC-D, duplex, OM4, violet, ceramic sleeves
- BA = SC-D, duplex, OM3, aqua, ceramic sleeves
- D1 = ST-D, duplex, SM, metal, ceramic sleeves

For variant "VIK" and variant "splice" with holder for crimp splice protection

- E = gray front plate for max. 24 adapters
- F = gray front plate for max. 12 adapters
- B = black front plate for max. 24 adapters
- C = black front plate for max. 12 adapters

For variant "splice" with holder for shrink splice protections

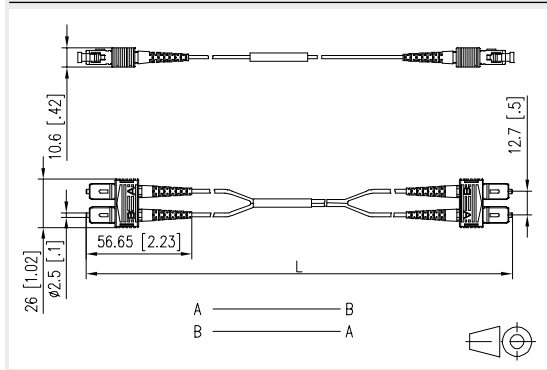
- S = gray front plate for max. 24 adapters
- H = gray front plate for max. 12 adapters
- J = black front plate for max. 24 adapters
- K = black front plate for max. 12 adapters



Fiber optic patch cord SM

- single mode patch cord I-V(ZN)H
- single mode fiber OS2, E9/125 μm, bend insensitive according to IEC 60793-2-50 type B6_a and B6_b and G.657.A, compatible to G.652.D
- outer diameter 2.0 x 4.2 mm
- halogen-free LSHF-FR sheath with low smoke development
- duplex cord as zipcord (figure 8) with two tight buffered cables and aramide strain relief
- automatic end face polish
- 100 % tested
- colors may differ due to delivery
- maximum length: 20 m
- patch cord available with all versions of connector types LC- D, SC-D and ST as well as APC; other connector types on request
- available in various lengths - replace xx in article number by desired length Acc. to diagram: 10 = 1.0 m; 20 = 2.0 m; 50 = 5.0 m; A0 = 10 m; B0 = 20 m

Dimensional drawing



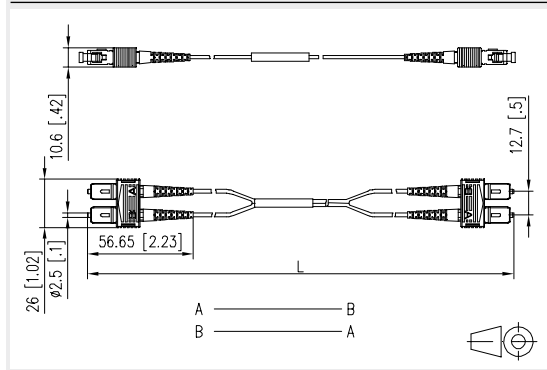
P/N	Color	Feature 1	Feature 2
151P1EOEOXXE	yellow	SC-D	9/125 (OS2)
151P1EOJOXXE	yellow	LC-D/SC-D	9/125 (OS2)
151P1EOAOXXE	yellow	SC-D/ST	9/125 (OS2)
151P1JOJOXXE	yellow	LC-D	9/125 (OS2)
151P1JOAOXXE	yellow	LC-D/ST	9/125 (OS2)
151P1AOAOXXE	yellow	ST	9/125 (OS2)
151P1EAEAXXE	yellow	SC-D APC/SC-D APC	9/125 (OS2)
151P1AJAJXXE	yellow	LC-D APC/LC-D APC	9/125 (OS2)
151P1EAJAXXE	yellow	SC-D APC/LC-D APC	9/125 (OS2)



Fiber optic patch cord MM

- multi mode patch cord I-V(ZN)H
- laser-optimized Multi mode fiber, G50/125 μm according to IEC 60793-2-10 type A1a.3 and A1a.2
- outer diameter 2.0 x 4.2 mm
- halogen-free LSHF-FR sheath with low smoke development
- duplex cord as zipcord (figure 8) with two tight buffered cables and aramide strain relief
- automatic end face polish
- 100 % tested
- colors may differ due to delivery
- maximum length: 20 m
- patch cord available with all versions of connector types LC-D, SC-D and ST; other connector types on request
- available in various lengths - replace xx in article number by desired length Acc. to diagram: 10 = 1.0 m; 20 = 2.0 m; 50 = 5.0 m; A0 = 10 m; B0 = 20 m

Dimensional drawing



P/N	Color	Feature 1	Feature 2
151R1EOEOXXE	lime green	SC-D/SC-D	50/125 (OM5)
151R1EOJOXXE	lime green	SC-D/LC-D	50/125 (OM5)
151R1JOJOXXE	lime green	LC-D/LC-D	50/125 (OM5)
151S1EOEOXXE	violet	SC-D	50/125 (OM4)
151S1EOJOXXE	violet	LC-D/SC-D	50/125 (OM4)
151S1EOAOXXE	violet	SC-D/ST	50/125 (OM4)
151S1JOJOXXE	violet	LC-D	50/125 (OM4)
151S1AOAOXXE	violet	ST	50/125 (OM4)
151J1EOEOXXE	aqua	SC-D	50/125 (OM3)
151J1EOJOXXE	aqua	LC-D/SC-D	50/125 (OM3)
151J1EOAOXXE	aqua	SC-D/ST	50/125 (OM3)
151J1JOJOXXE	aqua	LC-D	50/125 (OM3)
151J1AOAOXXE	aqua	ST	50/125 (OM3)

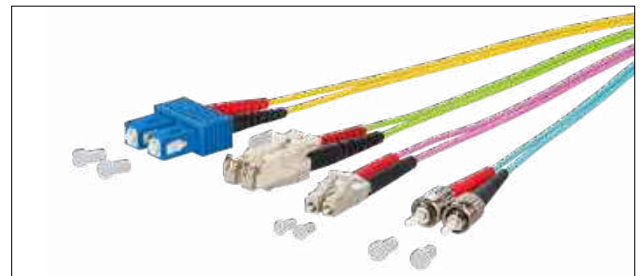
Patch cords

- Patch cords with all variants of connector types LC, SC and ST.
- Fiber types: OM3, OM4, OM5, OS2. All fibers are bend insensitive.
- Cable types:
 - Duplex patch cords („figure 8“) with two tight buffers and Aramid as strain relief
 - Duplex connection cable („figure 0“) with two tight buffers in an additional outer jacket and Aramid as strain relief
 - Simplex patch cords (only for SM) with one tight buffer and Aramid as strain relief
- Duplex patch cords are logically crossed as a standard (A->B, B->A), logically uncrossed patch cords available on request.
- SC and LC connectors of duplex patch cords are always connected by duplex clips, ST are supplied without clips.
- Available in lengths between 0.5 to 20 m. The use of duplex connection cables is recommended for lengths of more than 20 m because of the higher mechanical strength.
- Low smoke, halogen free, flame retardant cable jacket (LSHF-FR)
- Single mode patch cords are tested by 100 % on insertion loss and return loss at 1310 and 1550 nm. An interferometer measurement is done in addition.
- Multi mode patch cords are tested by 100 % on insertion loss at 850 and 1300 nm.
- The measurement is followed by a final visual control of the connectors according to IEC 61300-3-35.
- All patch cords are provided with a serial number and a bar code. This allows traceability and measured values can be made available at any time.

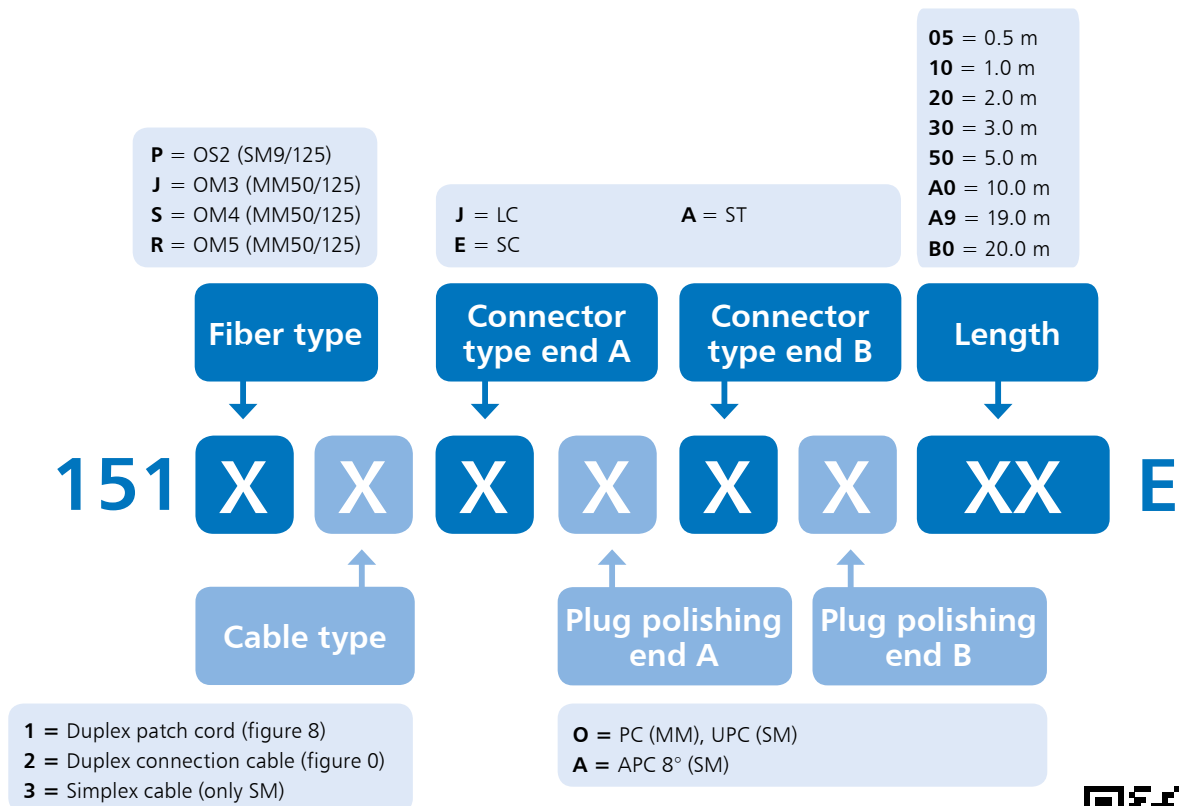
Example

151 S 1 E O A O A6 E

Duplex patch cable 50/125 OM4 with SC-D and ST Standard PC, respectively, length 16 m



Part number key for further versions



Please note:

These cables will be manufactured according to your specifications. They can therefore neither be exchanged nor returned.



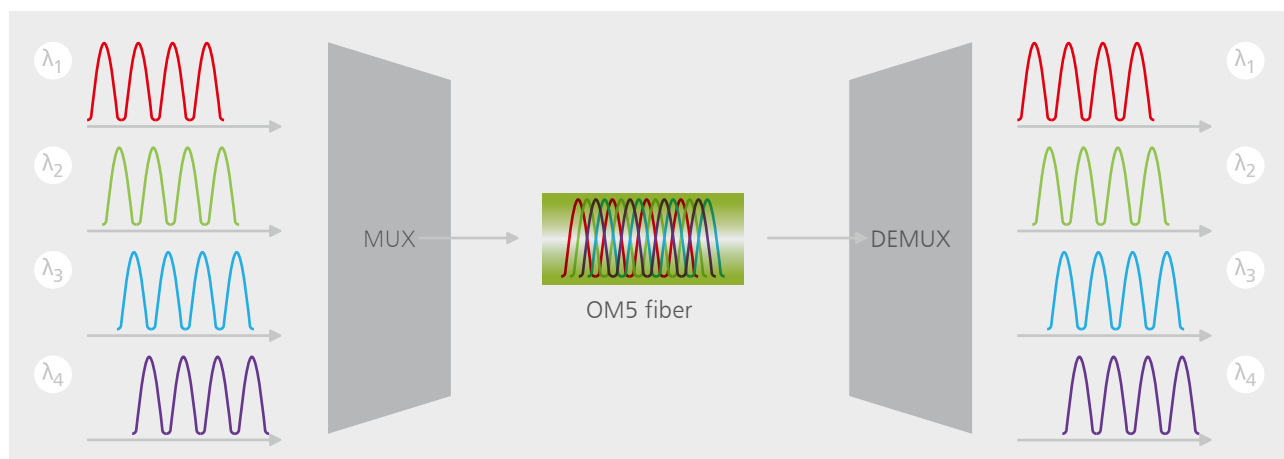
The future of multimode fiber



OM5 – future-proof multimode fiber for computing centres

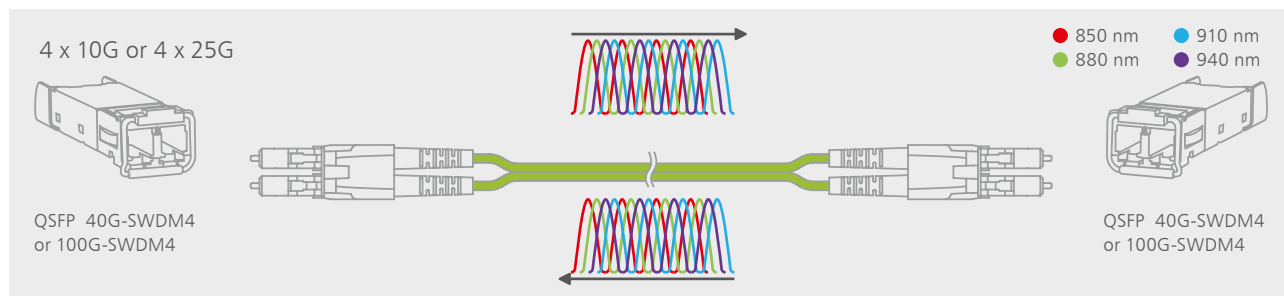
Previously, multimode fibers were only operated with a narrow band at 850 or 1300 nm. In order to meet the rapidly increasing demand for more and more bandwidth, the new OM5 fibre type with very positive transmission properties has been developed in a band of

100 nm: in the range of 850 to 950 nm, four wavelengths can be transmitted simultaneously by means of so-called wavelength division multiplexing.



The keywords are short wavelength division multiplexing (SWDM), a process that allows four times the previous transmission power. It can transmit 40 GBit/s with 4 wavelengths at 10 GBit/s via a trans-

mitting and receiving fiber. Or even 100 GBit/s through 4 times 25 GBit/s.



OM5 fibres in conjunction with SWDM transceivers thus increase capacities without having to do without the proven LC duplex connectors.

The cabling of buildings or data centres with OM5 supports all previous applications as well as OM4 or OM3. Both plug and cable are fully compatible. However, the OM5 fiber in combination with corresponding transceivers offers a longer range.

WideCap-OM5 also has very positive macro bending properties. The fibre meets or exceeds the following international specifications:

- > IEC 60793-2-10: Type A1a.4
- > ITU-T G.651.1
- > TIA/EIA-492 AAAE
- > ISO/IEC 11801 Category OM5 (in progress)

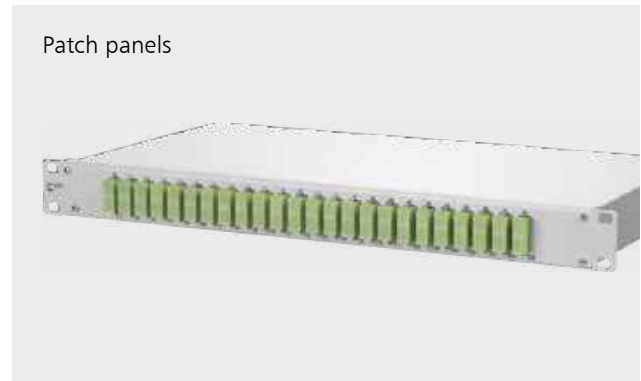
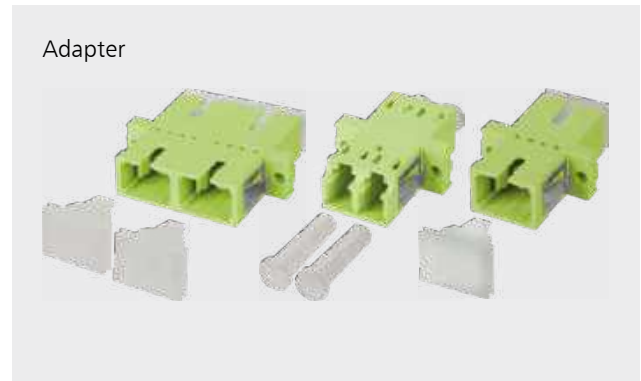
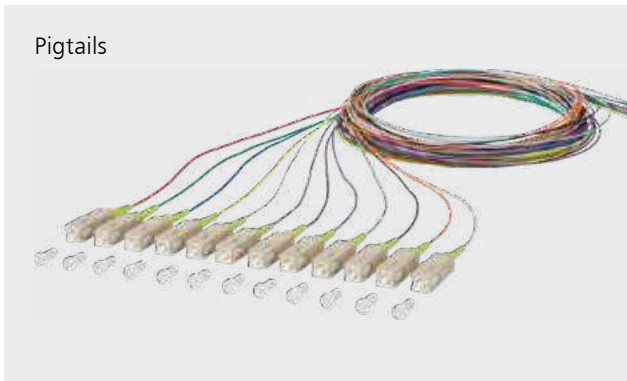
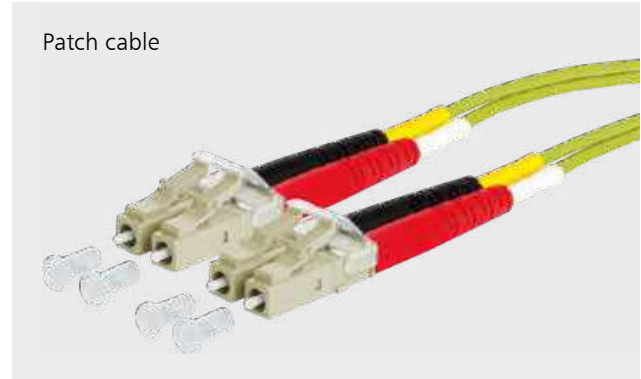
In February 2017, the TIA (Telecommunications Industry Association) defined the colour "lime green" for identifying the OM5 fiber in the USA. The respective European standards are being worked on.

With the new OM5 multimode fiber...

- > you have 4-times more capacity than with OM4
- > you can reduce the number of fibres 4 fold
- > the bandwidth is specified for the optical window of 850 to 950nm (OM4 is only specified for 850nm)

OM5 multimode fibers support...

- > new WDM technologies in order to meet the capacity requirements of the next ten years
- > Cable solutions for 40, 100 and 200G WDM systems with only 2 fibers
- > in the future, 400 and 800G over 4 fiber pairs (MPO)



Just use our configurators, which you can find on our homepage www.metz-connect.com/en/configurators. In it you will find all available variants.

Data Center Solutions

1	RJ45 Cat.6A	64
2	RJ45 Configurator	66
3	Fiber optic Single mode/multi mode	67
4	Accessories	70
5	25G System The RJ45 building cabling with future	71

Matching accessories for DCCS2 MTC1

DCCS2 BGT 19 inch 1RU subrack black

Page
70

Matching accessories for DCCS2 MTC6

DCCS2 BGT 19 inch 1RU subrack black

Page
70



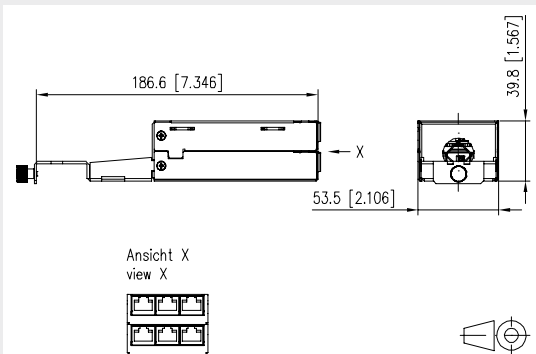
DCCS2 MTC1

- 6 port RJ45 subassembly to mount one 24-pair installation cable AWG26 or AWG23
- component testing for Cat.6_A to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09, TIA/EIA-568-C.2 (2009-08) and IEC 60603-7-51 Ed.1 (12/2008), certified by GHMT
- compliance with class E_A up to 500 MHz to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09, certified by GHMT
- tested: components up to 600 MHz, link up to 800 MHz
- suitable for Power over Ethernet (PoE, PoE plus and UPoE)
- Alien Next optimized, shielded jacks
- the locking levers of patch cords connected to DCCS2 subassemblies show upwards and are easy to handle at any time
- connection of one data cable AWG 26/1 to 22/1 (solid wire) to LSA IDC terminal blocks
- marking of conductor assignment to T568A
- solid and refined assembly housing
- shield tap for installation cable separate from strain relief
- mounting version: DCCS2

DCCS2 MTC6

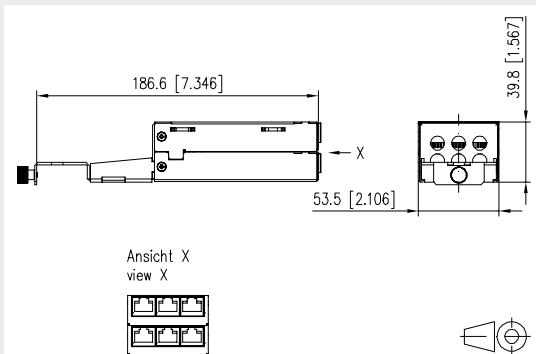
- 6 port RJ45 subassembly to connect 6 individual installation cables
- component testing for Cat.6_A to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09, TIA/EIA-568-C.2 (2009-08) and IEC 60603-7-51 Ed.1 (12/2008), certified by GHMT
- compliance with class E_A up to 500 MHz to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09, certified by GHMT
- tested: components up to 600 MHz, link up to 800 MHz
- suitable for Power over Ethernet (PoE, PoE plus and UPoE)
- Alien Next optimized, shielded jacks
- the locking levers of patch cords connected to DCCS2 subassemblies show upwards and are easy to handle at any time
- connection of one data cable AWG 26/1 to 22/1 (solid wire) to LSA IDC terminal blocks
- marking of conductor assignment to T568A
- solid and refined assembly housing
- shield tap for installation cable separate from strain relief
- mounting version: DCCS2

Dimensional drawing



P/N	Color	Feature 1	Feature 2
130D2CM1-E		6 x RJ45	for 1x24 pairs

Dimensional drawing



P/N	Color	Feature 1	Feature 2
130D2CM6-E		6 x RJ45	for 6x4 pairs

**Matching accessories
for DCCS2 PL26 Link**

DCCS2 BGT 19 inch 1RU
subrack black

Page

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**Matching accessories
for DCCS2 PL23 Link**

DCCS2 BGT 19 inch 1RU
subrack black

Page

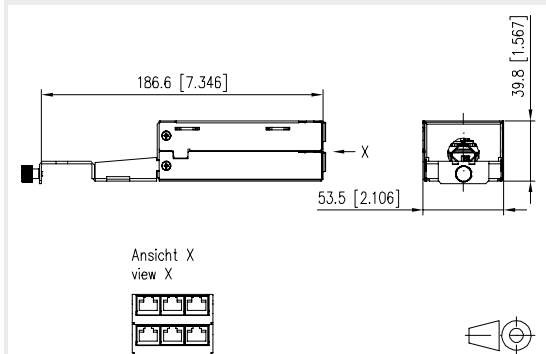
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DCCS2 PL26 Link

- DCCS2 class E_A Permanent Link consisting of two 6-port RJ45 subassemblies connected to a 24-pair installation cable AWG26/1
- component testing for Cat.6_A to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09, TIA/EIA-568-C.2 (2009-08) and IEC 60603-7-51 Ed.1 (12/2008), certified by GHMT
- compliance with class E_A up to 500 MHz to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09, certified by GHMT
- tested: components up to 600 MHz, link up to 800 MHz
- for 10 GBit Ethernet (IEEE 802.3an)
- suitable for Power over Ethernet (PoE, PoE plus and UPoE) with reduced temperature range
- Alien Next optimized, shielded jacks
- the locking levers of patch cords connected to DCCS2 subassemblies show upwards and are easy to handle at any time
- solid and refined assembly housing
- shield tap for installation cable separate from strain relief
- cable diameter less than 14 mm
- short links with less than 5 m are also available
- delivery with serial number and 6 Permanent Link measurement reports
- mounting version: DCCS2
- available in prefabricated, customer specific lengths – replace the xxx in the part number by the length – examples: 050 = 5.0 m; 100 = 10.0 m; 200 = 20.0 m; 500 = 50.0 m
- maximum length 50 m
- configuration tool in Microsoft® Excel available on request

Dimensional drawing



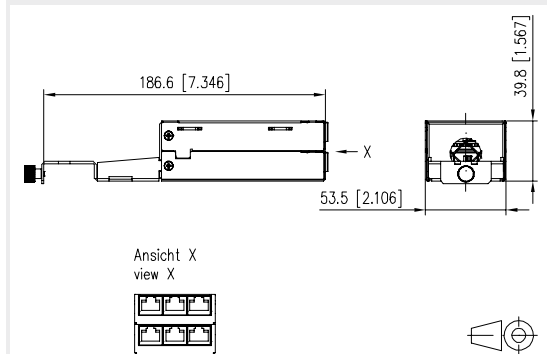
P/N	Color	Feature 1	Feature 2
130D2CL1XXXE		AWG 26	



DCCS2 PL23 Link

- DCCS2 class E_A Permanent Link consisting of two 6-port RJ45 subassemblies connected to a 24-pair installation cable AWG23/1
- component testing for Cat.6_A to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09, TIA/EIA-568-C.2 (2009-08) and IEC 60603-7-51 Ed.1 (12/2008), certified by GHMT
- compliance with class E_A up to 500 MHz to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09, certified by GHMT
- tested: components up to 600 MHz, link up to 800 MHz
- for 10 GBit Ethernet (IEEE 802.3an)
- suitable for Power over Ethernet (PoE, PoE plus and UPoE)
- Alien Next optimized, shielded jacks
- the locking levers of patch cords connected to DCCS2 subassemblies show upwards and are easy to handle at any time
- solid and refined assembly housing
- shield tap for installation cable separate from strain relief
- cable diameter less than 19 mm
- short links with less than 5 m are also available
- delivery with serial number and 6 Permanent Link measurement reports
- mounting version: DCCS2
- available in prefabricated, customer specific lengths – replace the xxx in the part number by the length – examples: 050 = 5.0 m; 100 = 10.0 m; 200 = 20.0 m; 800 = 80.0 m
- maximum length 80 m
- configuration tool in Microsoft® Excel available on request

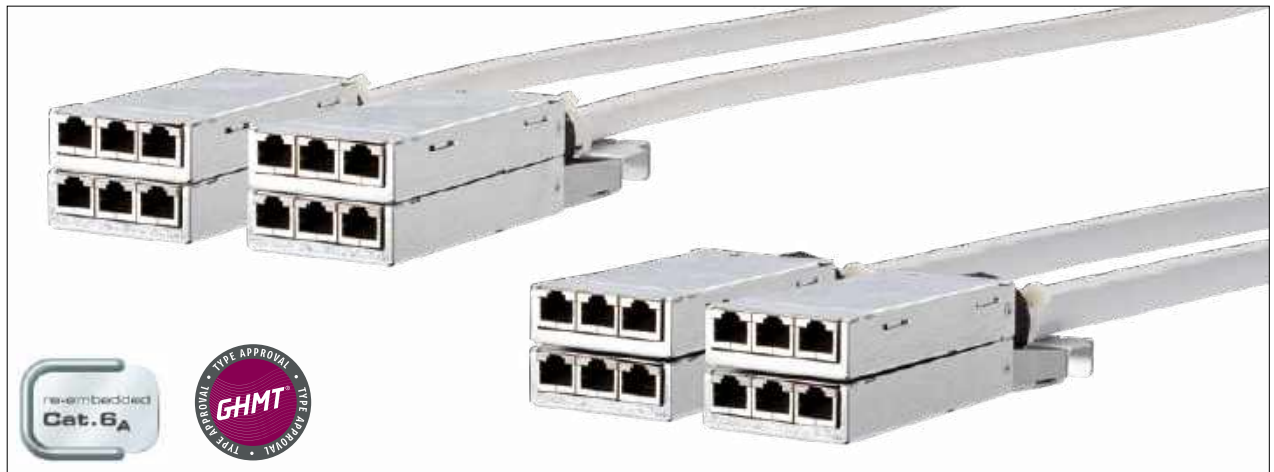
Dimensional drawing



P/N	Color	Feature 1	Feature 2
130D2CL2XXXE		AWG 23	

DCCS2 RJ45-Link

- Class E_A Permanent Link consisting of 2 subassemblies 6 ports RJ45 mounted to a 24-pair installation cable
- Cat.6_A component testing as per ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09, TIA/EIA-568-C.2 (2009-08) and IEC 60603-7-51 Ed.1 (12/2008), GHMT certified
- Class E_A up to 500 MHz as per ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09, GHMT certified
- Component testing: up to 600 MHz, link up to 800 MHz
- For up to 10 GBit Ethernet (IEEE 802.3an)
- Suitable for Power over Ethernet (PoE, PoE plus and UPoE)
- Solid, refined subassembly housing
- Shield tap for installation cable separate from strain relief
- Delivery with serial number and 6 Permanent Link measuring reports
- Installation shape: DCCS2
- Also short links with less than 5 m possible
- Configuration tool in Microsoft® Excel upon request

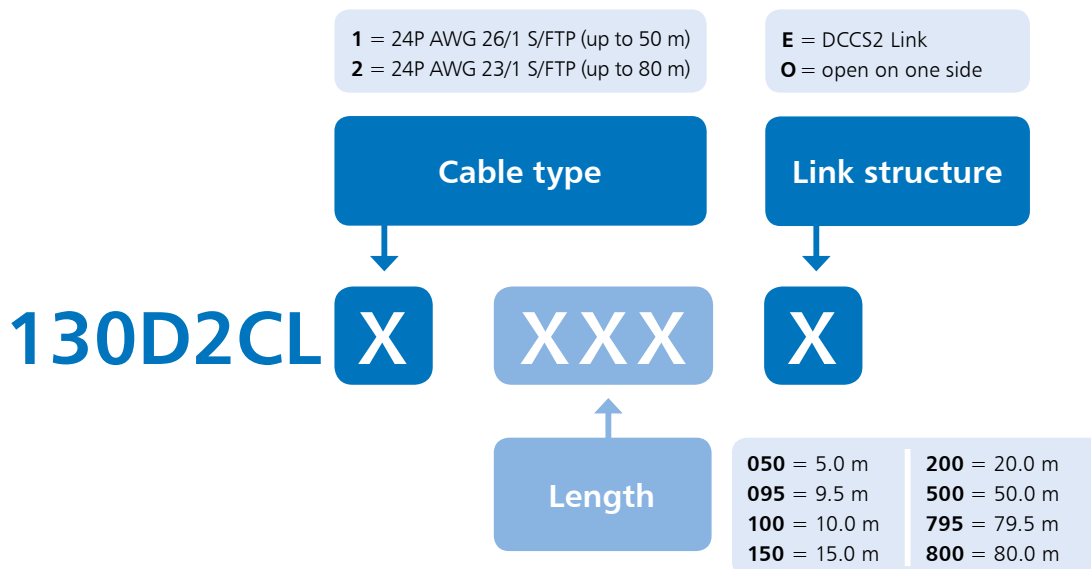


Example

130D2CL **2** **660** **E**

DCCS2 RJ45 link to 24-pair AWG23/1 S/FTP cable
length 66.0 m

Part number key for further versions



Please note:

These cables will be manufactured according to your specifications. They can therefore neither be exchanged nor returned.

**Matching accessories
for DCCS2 6 x LC-D Link**

DCCS2 BGT 19 inch 1RU subrack black	Page 70
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**Matching accessories
for DCCS2 6 x LC-D VIK Link**

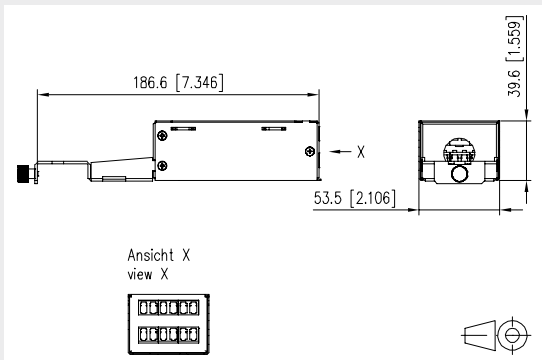
DCCS2 BGT 19 inch 1RU subrack black	Page 70
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DCCS2 6 x LC-D Link

- prefabricated fiber optic link consisting of 2 subassemblies DCCS2 with 6 LC-D adapter mounted to a 12 fiber mini breakout cable
- port numbering of the DCCS2 19" subassembly frame remains in place when installing the FO subassemblies
- for 10 GBit Ethernet (IEEE 802.3an)
- the locking levers of patch cords connected to DCCS2 subassemblies show upwards and are easy to handle at any time
- solid and refined assembly housing
- cable diameter less than 6.5 mm
- delivery with serial number and 12 attenuation measurement reports
- mounting version: DCCS2
- available in prefabricated, customer specific lengths – replace xxx in the part number by the length – examples: 0050 = 5.0 m; 0100 = 10.0 m; 0995 = 99.5 m; 2000 = 200.0 m
- maximum length: 500 m
- configuration tool in Microsoft® Excel available on request
- variants: SM (OS2), SM (OS2 APC), MM (OM5), MM (OM4), MM (OM3)

Dimensional drawing



P/N	Color	Feature 1	Feature 2
130D2F572XXXXE	aqua	6 x LC-D	50/125 (OM3)
130D2F772XXXXE	violet	6 x LC-D	50/125 (OM4)
130D2F87MXXXXE	lime green	6 x LC-D	50/125 (OM5)
130D2F971XXXXE	blue	6 x LC-D	9/125 (OS2)
130D2F976XXXXE	green	6 x LC-D APC	9/125 (OS2)



DCCS2 6 x LC-D VIK Link

- prefabricated fiber optic cable divider link consisting on one side of one subassembly DCCS 2 with 6 LC-D adapter mounted to a 12 fiber mini breakout cable. The other side is configured with 12 LC plugs with a dismantle measure of about 30 cm, in installation tube about 35 cm and a diameter of about 47 mm
- especially suited to be combined with DCCS2 subassemblies 6xLC-D
- port numbering of the DCCS2 19" subassembly frame remains in place when installing the FO subassemblies
- for 10 GBit Ethernet (IEEE 802.3an)
- the locking levers of patch cords connected to DCCS2 subassemblies show upwards and are easy to handle at any time
- solid and refined assembly housing
- cable diameter less than 6.5 mm
- delivery with serial number and 12 attenuation measurement reports
- mounting version: DCCS2
- available in prefabricated, customer specific lengths – replace xxx in the part number by the length – examples: 0050 = 5.0 m; 0100 = 10.0 m; 0995 = 99.5 m; 2000 = 200.0 m
- maximum length: 500 m
- configuration tool in Microsoft® Excel available on request
- variants: SM (OS2), SM (OS2 APC), MM (OM5), MM (OM4), MM (OM3)

P/N	Color	Feature 1	Feature 2
130D2F572XXXXZ	aqua	6 x LC-D EVZ	cable divider
130D2F772XXXXZ	violet	6 x LC-D EVZ	50/125 (OM4)
130D2F87MXXXXZ	lime green	6 x LC-D EVZ	50/125 (OM5)
130D2F971XXXXZ	blue	6 x LC-D EVZ	9/125 (OS2)
130D2F976XXXXZ	green	6 x LC-D APC EVZ	9/125 (OS2)

**Matching accessories
for DCCS2 6 x LC-D**

 DCCS2 BGT 19 inch 1RU
subrack black

Page

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**Matching accessories
for DCCS2 6 x LC-D / 1 x
MPO**

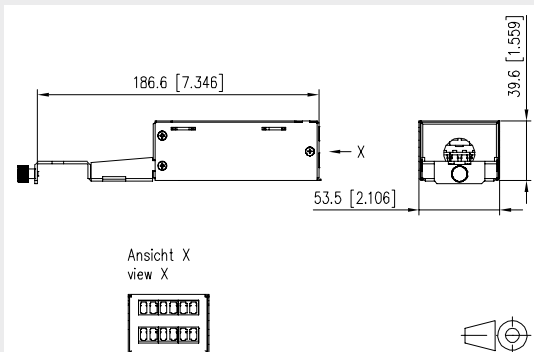
 DCCS2 BGT 19 inch 1RU
subrack black

Page

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DCCS2 6 x LC-D

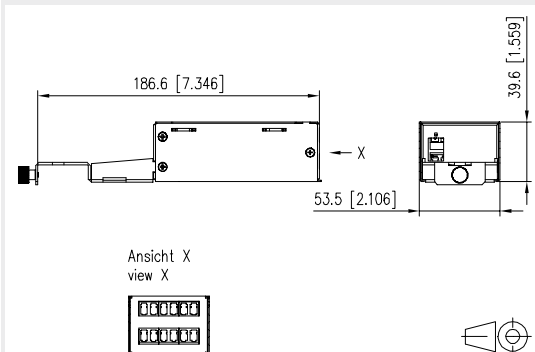
- DCCS2 fiber optic subassembly mounted with 6 LC-D adapter
- port numbering of the DCCS2 19" subassembly frame remains in place when installing the FO subassembly
- the locking levers of patch cords connected to DCCS2 subassemblies show upwards and are easy to handle at any time
- for prefabricated mini breakout cables in customer specific lengths
- solid and refined assembly housing
- mounting version: DCCS2
- variants: blue (SM), green (SM APC), lime green (OM5), violet (OM4), aqua (OM3)

Dimensional drawing


P/N	Color	Feature 1	Feature 2
130D2FB51-E	aqua	6 x LC-D	MM (ceramic)
130D2FB71-E	violet	6 x LC-D	MM (ceramic)
130D2FB81-E	lime green	6 x LC-D	MM (ceramic)
130D2FB91-E	blue	6 x LC-D	SM
130D2FBA1-E	green	6 x LC-D APC	SM


DCCS2 6 x LC-D / 1 x MPO

- DCCS2 fiber optic subassembly MPO with 6 mounted LC-D adapter
- port numbering of the DCCS2 19" subassembly frame remains in place when the fiber optic subassembly is installed
- all locking levers of patch cords connected to DCCS2 subassemblies show upwards and are easy to handle at any time
- on the back 1 x MPO coupler (exterior: key up) polarity, Method A
- solid and refined subassembly housing
- mounting version: DCCS2
- variants: SM (OS2), SM (OS2 APC), MM (OM4), MM (OM3)

Dimensional drawing


P/N	Color	Feature 1	Feature 2
130D2FM51A-E	aqua	6 x LC-D	50/125 (OM3)
130D2FM71A-E	violet	6 x LC-D	50/125 (OM4)
130D2FM91A-E	blue	6 x LC-D	9/125 (OS2)
130D2FMA1A-E	green	6 x LC-D APC	9/125 (OS2)



DCCS2 6 x MPO

- 6 port MPO subassembly for 10 / 40 / 100 MBit/s
- 6x MPO adapters Key up / Key down
- with optional strain relief
- fastening in a 19-inch subrack by a knurled screw
- easy mounting/dismounting to/from 19-inch subracks in 19-inch cabinets (plug and play)
- design: DCCS2

variants: OM3: aqua; OM4: violet; OS2 APC: green

P/N	Color	Feature 1	Feature 2
130D2FBM5A-E	aqua	6xMPO	MM
130D2FBM7A-E	violet	6xMPO	MM
130D2FBMAA-E	green	6xMPO	SM APC

DCCS2 subassembly frame black is matching accessories for

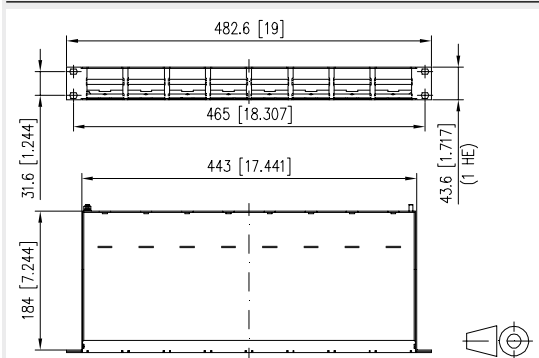
	Page
DCCS2 subassembly C6 _A MTC1	64
DCCS2 subassembly C6 _A MTC6	64
DCCS2 C6 _A PL26	65
DCCS2 C6 _A PL23	65
DCCS2 OM3 6xLC-D link	67
DCCS2 OM4 6xLC-D link	67
DCCS2 OS2 6xLC-D link	67
DCCS2 OS2 6xLC-D APC link	67
DCCS2 OM3 6xLC-D cable divider link	67
DCCS2 OM4 6xLC-D cable divider link	67
DCCS2 OS2 6xLC-D cable divider link	67
DCCS2 OS2 6xLC-D APC cable divider link	67
DCCS2 subassembly 6xLC-D MM aqua	68
DCCS2 subassembly 6xLC-D MM violet	68
DCCS2 subassembly 6xLC-D SM blue	68
DCCS2 subassembly 6xLC-D SM APC green	68
DCCS2 subassembly OM3 MPO 6xLC-D	68
DCCS2 subassembly OM4 MPO 6xLC-D	68
DCCS2 subassembly OS2 MPO 6xLC-D	68
DCCS2 subassembly OS2 MPO 6xLC-D APC	68



DCCS2 subassembly frame black

- 19 inch 1UH subassembly frame to mount up to eight DCCS2 subassemblies
- very high packaging density: up to 48 RJ45 ports or 48 fiber optic duplex adapter (96 fibers)
- black, powder coated steel sheet frame
- port numbering from 1 to 48
- port numbering remains in place when DCCS2 Twisted Pair and DCCS2 FO subassemblies are mounted
- enclosed grounding kit
- downward compatible to DCCS with low mounting effort
- mounting version: DCCS2, DCCS and double DCCS

Dimensional drawing



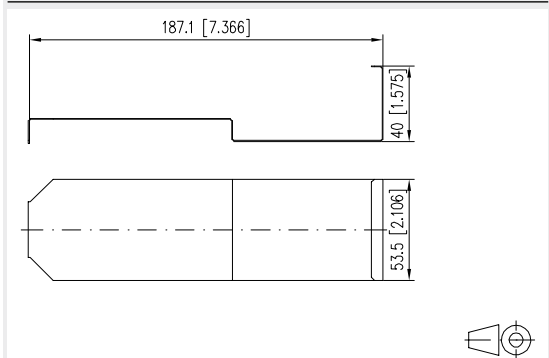
P/N	Color	Feature 1	Feature 2
130D2B1B-E	black	unequipped	



DCCS blind cover

- dummy cover for closing unused recesses in DCCS and DCCS2 assembly frame
- mounting material enclosed
- black, powder-coated steel sheet
- mounting version: DCCS

Dimensional drawing



P/N	Color	Feature 1	Feature 2
130DBL1-E	black	Blind module	

25G System – The RJ45 building cabling with future



Intelligent system solution for the highest-performing, future-oriented, structured cabling

The need today for high data transfer rates is enormous. On 12 September 2017, the Internet node in Frankfurt reported a new record of 5.88 terabits per second. By mid-March 2018, just under 6.4 terabits per second had already been measured. Five years ago, it was not even 2 terabits per second.

A forward-looking, intelligent building cabling for a wide variety of uses has a high priority among investors as basic home and building control. Investments are secured over the years, construction and maintenance costs are minimized.

System components

25Gbit high-speed data transmission requires the performance of all the components. In addition to the connection components, this also includes the installation and patch cords. With products from METZ CONNECT, you have the right components to provide you with a complete and end-to-end solution from the server to the end device.

25Gmodul

- RJ45 pursuant to 60603-7-1
- 25GBASE-T pursuant to DTR-11801-9905 in channel link with 30 m (50 m in progress)
- Completely backward compatible through compliance with Class E_A pursuant to ISO/IEC 11801-1 and DIN EN 50173-1 (in permanent link up to 90 m; in channel link to 100 m)
- without special tools migratable from C6_Amodul of 25Gmodul by swapping the metal case

Variants 25modul K
(mounting cut-out construction keystone)



25Gmodul K - P/N
Individual module package 130B21-25-E
12 Unit module package 130B21-25-Z

GC1300 pro22 and GC1500 pro22 (P/N please refer Page 24)

- 25/10 Gbit Installation cable
- Reaction to fire: Class D_{ca} after EN 50399
- pair shielded Cat.7_A AWG 22 S/FTP
- overall shield: Cu tinned braid, coupling loss \geq 85 dB

Patch cable 25G AWG 26 (P/N 13084G20xx-E)

- pair shielded 25G patch cable AWG 26/7, halogen-free
- for 25 Gbit/s (IEEE 802.3bq); 10 Gbit/s (IEEE 802.3an)
- two shielded RJ45 plugs, wiring, 1 - 1
- 2 m (no further standard lengths for 25 Gbit possible)

High performance

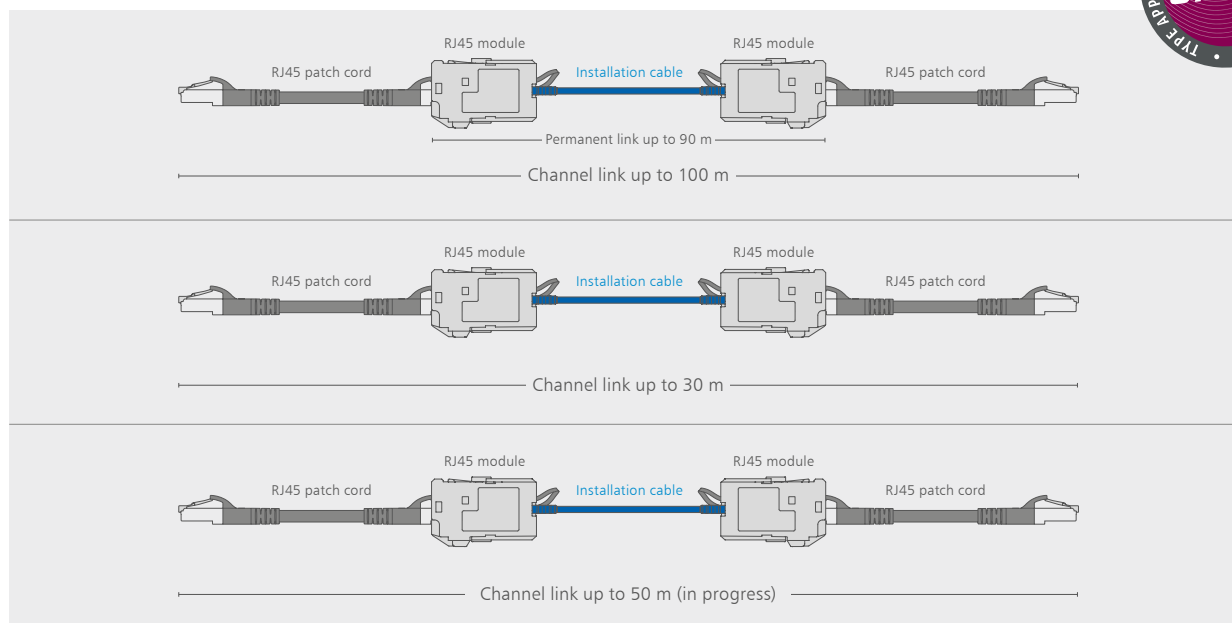
The 25G system offers high performance by fulfilling the DTR-11801-9905 for 25GBASE-T pursuant to IEEE 802.3bq (in the channel link up to 30 m) for the highest performance applications up to 1250 MHz bandwidth and 25 GBit Ethernet as well as ISO/IEC 11801-1 Class EA in permanent and channel link up to link lengths of 100 m for demanding applications in the range up to 500 MHz bandwidth and 10 GBit Ethernet pursuant to IEEE 802.3an. The high-quality product quality is further enhanced by a robust die-cast zinc housing.

Independent certification

The connection system meets international requirements for future-oriented copper-based data highways.

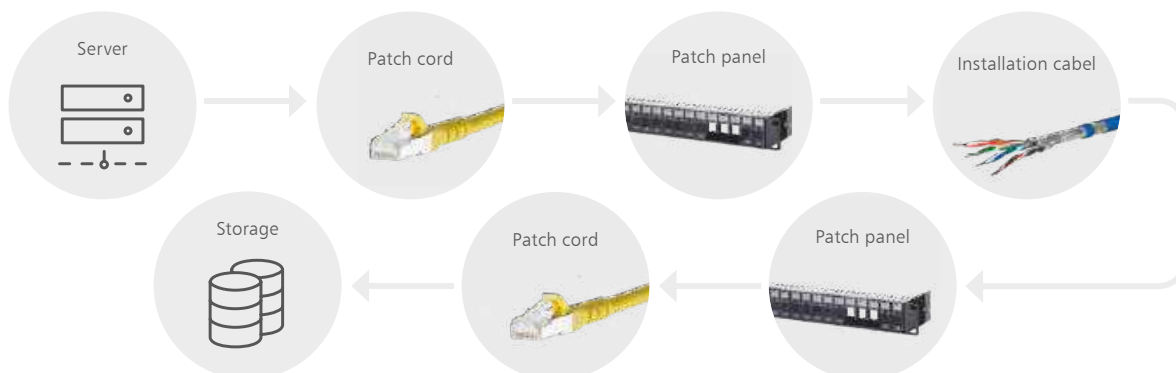
- RJ45 pursuant to 60603-7-1
- GHMT certified pursuant to DTR-11801-9905 for 25GBaseT in channel link with 30 m (50 m in progress).
- GHMT certified pursuant to Class E_A in permanent link up to 90 m pursuant to ISO/IEC 11801-1 and DIN EN 50173-1

The requirements of Class E_A are also complied with in channel link pursuant to the above-mentioned standard.



The highest compatibility for efficient use

Our new 25G System is consistent and compatible – a prerequisite for the transparent, efficient and individual use of future-oriented network and cabling systems. Build today the network infrastructure of tomorrow. The minimum additional monetary cost provides you with 2.5 times the transmission speed.



Industrial Connectors

1	IP PC Performance specifications	74	28	Modular wall outlets Flush mount built-in outlet	105
2	IP PC RJ45 plug inserts (for IP67 housings)	76	29	Standard rail Standard rail REG for RJ45 jacks & adapter	107
3	IP PC Fiber Optic inserts (for IP67 housings)	76	30	Standard rail Dust protection covers & Standard rail REG for fiber optic E2000	108
4	IP PC RJ45 jack & coupler inserts	79	31	Standard rail E-DAT Industry terminal rail TS35 RJ45	109
5	IP PC Fiber Optic adapter inserts	80	32	Standard rail E-DAT Industry terminal rail TS35 fiber optic	110
6	IP PC USB adapter inserts	81	33	Standard rail E-DAT Industry terminal rail TS35 fiber optic & USB	111
7	IP PC Variant 1 plug/flange housing	82	34	Standard rail DIN rail adapter & suitable 6 Port module frame	112
8	IP PC Var. 1 wall outlet & coupler housing	84	35	Standard rail DIN rail adapter	113
9	IP PC Variant 4 plug/flange housing	85	36	Standard rail Fiber optic	114
10	IP PC Var. 4 wall outlet & coupler housing	86	37	Standard rail Fiber optic standard rail accessories	116
11	IP PC Variant 5 plug/flange housing	87	38	Standard rail Fiber optic front cover	117
12	IP PC Variant 14 plug/flange housing	88	39	Standard rail OpDAT REG Splice Distributor for fiber optic & RJ45	119
13	IP PC Var. 14 fiber optic flange housing set	89	40	Industrial Ethernet Overview M12 products	120
14	IP PC Variant 6 plug & cable	90	41	Ethernet M12 D- & X-coded jacks	122
15	IP PC Variant 6 cable & flange housing	91	42	Ethernet M12 M12 connectors for field assembly	128
16	IP PC Var. 6 wall outlet & coupler housing	92	43	Ethernet M12 Panel feed through adapters M12 X-coded to RJ45	131
17	IP PC Var. 6 locking clamp / IP67 metal outlet	93	44	Ethernet M12 Cable and connection line	132
18	IP PC Protective caps for IP67 housings	94	45	Ethernet Device Industry switch	143
19	IP PC Universal test jack housing for Steadytec inserts	96			
20	RJ45 Plug Field plug pro	97			
21	RJ45 Plug Field plug pro 360	98			
22	RJ45 Plug E-DAT Industry IP20 RJ45 field plug	99			
23	RJ45 Plug Color coding for E-DAT Industry IP20 RJ45 field plug	100			
24	RJ45 Plug E-DAT Industry IP20 RJ45 plug & color coding	101			
25	Cable connector Cable connector	102			
26	Mod. wall outlets TH35 rail & wall outlet	103			
27	Modular wall outlets Modular wall outlets	104 + 106			

Industry cables /IP protected connectors

- High-quality pre-assembled patch or connection cables
- Different copper cable types possible
- Very large range of combination options thanks to the **STEADYTEC®** Fit-for-All principle
- IP20 up to IP67 solutions
- IP67 variants will be supplied with plug protection caps
- Online cable configurator can be found on our homepage <http://www.metz-connect.com/en/configurator-copper-and-fiber-optique-cables>

Ordering Information for other versions

Example

141 B 1 3 1K 5 3U B3

RJ45 Industrial cable 1-1 (T568B) IC1000 PUR 23/1 Cat.7 S/FTP 23 m
 RJ45 field plug insert V1 plug housing – E-DAT Industry
 field jack insert V1 flange housing AP

B = IC1000 4P AWG 23/1
 Cat.7 PUR S/FTP
 N = PK AWG 26/7
 Cat.6_A PUR S/FTP

Inserts for IP67 plug housing

- 1 = RJ45 plug IP20/ IP67 for AWG 27/7-24/7 and AWG 26/1-24/1
- 3 = RJ45 field plug insert
- 4 = RJ45 plug insert IP67 for AWG 27/7-24/7 and AWG 26/1-24/1
- O = RJ45 field plug insert PROFINET

RJ45 plug without plug housing

- 0 = open
- 1 = RJ45 plug for AWG 27/7-24/7 and AWG 26/1-24/1
- R = RJ45 plug for AWG < 24/1
- 2 = RJ45 field plug black

- M = C6_A field plug pro
- T = RJ45 ultra short plug for AWG 27/7-24/7 and AWG 26/1-24/1
- W = RJ45 ultra short plug for AWG < 24/1

Inserts for IP67 flange housing

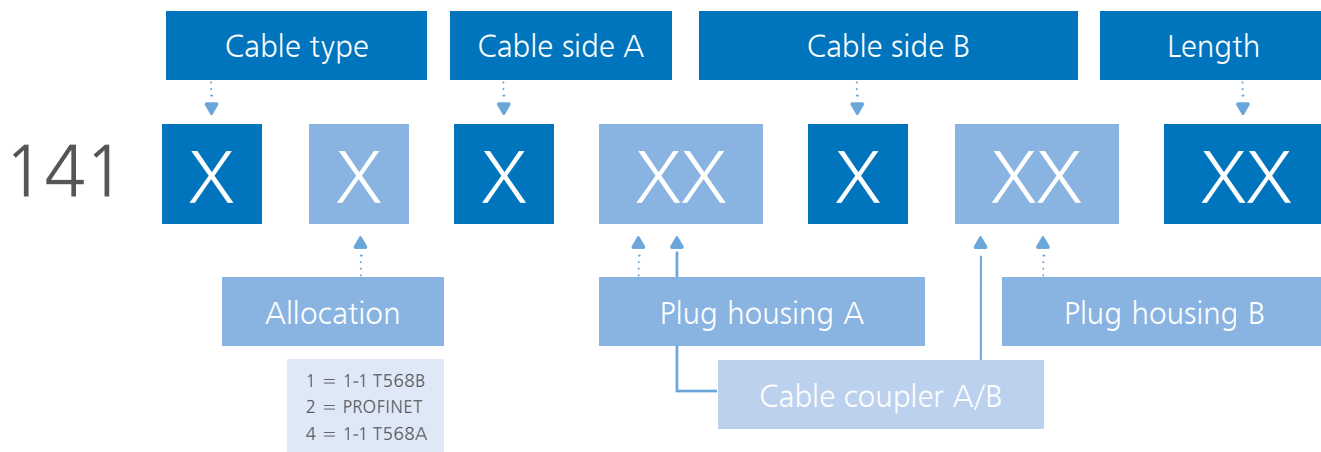
- 5 = E-DAT field jack insert
- 6 = E-DAT field jack insert PROFINET

- 7 = E-DAT modul

RJ45 without flange housing

- 8 = C6_A modul 180°
- 9 = C6_A modul K 180°
- A = C6_A modul 90°
- B = C6_A modul 270°
- C = C6_A modul K 90°
- D = C6_A modul K 270°
- K = E-DAT modul K

- 05 = 0.5 m
- 10 = 1.0 m
- 95 = 9.5 m
- A0 = 10.0 m
- A5 = 15.0 m
- A9 = 19.0 m
- B0 = 20.0 m
- E0 = 50.0 m
- 10 = 90.0 m



- 1 = 1-1 T568B
- 2 = PROFINET
- 4 = 1-1 T568A

IP67 plug housing

- 1M = V1 metal plug housing
- 2M = V1 metal plug housing bend protected
- 1K = V1 plug housing
- 2K = V1 plug housing bend protected
- 3K = V6 plug housing
- 4K = V4 plug housing
- 5K = V4 plug housing bend protected
- 6M = V5 metal plug housing
- 8M = V14 metal plug housing without plug housing
- 00 = without plug housing

IP67 Cable coupler/wall outlet for E-DAT insert field jack/PROFINET






















- 3Q = V1 Cable coupler
 - 3R = V4 Cable coupler
 - 3U = V1 Flange housing
 - 3V = V4 Flange housing
- ### IP67 Cable coupler/wall outlet for E-DAT modul jack
- 3T = V6 Cable coupler
 - 3W = V6 Flange housing

Use our cable configurator, which you can find on our homepage can be found at www.metz-connect.com/kabelkonfigurator. There you will find all available variants.

Please note that these cables are custom made to your liking are manufactured. Exchanges or returns are therefore excluded.

The technology brand **STEADYTEC®** stands for pioneering connection technology in the field of data, energy and signal transmission. Created by the industry's top three companies, it provides the foundation for reliable, user-oriented and standard-compliant solutions, both in the office as well as in the harsh environment of industry.

Pursuant to the fit-for-all principle, you simply select the required housing and the desired material! You can choose between plastic and metal. Same colour point = possible combination ■ ▲ ● ◆

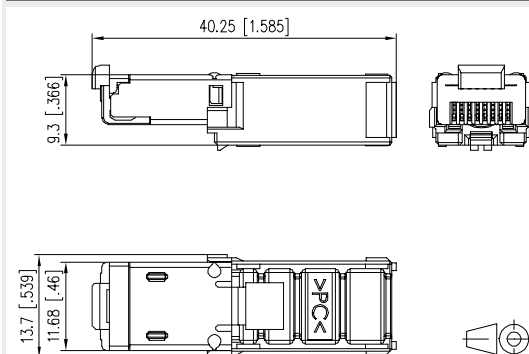
Plug inserts	Plug housings	Flange housings	Flange inserts
 <p>E-DAT Industry RJ45 plug insert * 1401500810-I</p>	 <p>Industry IP67 V1 metal plug housing * 1401015000ME 1401025000ME (bp)</p>	 <p>Industry IP67 V1 metal bulkhead * 1401013300ME</p>	 <p>E-DAT Industry RJ45 coupler insert * 1401200810MI</p>
 <p>E-DAT Industry RJ45 field plug insert profinet * 1401400810PI</p>	 <p>Industry IP67 V1 plug housing * 1401015002KE 1401025002KE (bp)</p>	 <p>Industry IP67 V1 bulkhead * 1401013302KE</p>	 <p>E-DAT Industry RJ45 field jack * 1401100810MI (TIA-A) 1401800810MI (TIA-B)</p>
 <p>E-DAT Industry RJ45 field plug insert * 1401400810-I</p>	 <p>Industry IP67 V4 plug housing * 1401045002KE 1401055002KE (bp)</p>	 <p>Industry IP67 V4 bulkhead * 1401043302KE</p>	 <p>OpDAT Industry SC-RJ/2SC adapter insert * 1402100820MI (MM) 1402K00820MI (SM)</p>
 <p>OpDAT Industry 2SC plug insert * 1402500822-I (MM) 1402600822-I (SM) 1402700822-I (POF)</p>	 <p>Industry IP67 V5 metal plug housing * 1401065000ME</p>	 <p>Industry IP67 V5 metal bulkhead * 1401063300ME</p>	 <p>OpDAT Industry LC-D adapter insert * 1402300820MI (Ph-Br) MM 1402L00820MI (ceramic) SM</p>
 <p>OpDAT Industry 2LC plug insert * 1402800820-I (MM) 1402900820-I (SM)</p>	 <p>Industry IP67 V14 plug housing * RJ45 – 14010850C0ME FO – 14010850F0ME</p>	 <p>Industry IP67 V14 bulkhead * 14010833C0MN</p>	 <p>E-DAT Industry USB 3.0 A coupler insert * 1401U10812KI</p>
 <p>E-DAT Industry USB A coupler insert * 1401U00812KI</p>	<p>* Components with STEADYTEC® reliable technology</p>		



E-DAT Industry RJ45 plug insert Cat.6 Class E_A

- Cat.6 class E_A plug to be mounted in IP67 plug housings of variants 1, 4, 5 and 14
- compliance with class E_A to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09
- suitable for 10 GBit Ethernet(IEEE 802.3an), Remote Powering (PoE, PoE plus and UPoE) and HDBaseT
- connection of AWG 27/7 - 24/7 and AWG 24/1 possible
- solid copper wire diameter from 0.36 to 0.51 mm
- solid copper wire diameter from 0.46 to 0.61 mm
- conductor diameter 0.85 mm to 1.05 mm
- cable jacket up to 7.3 mm
- without lock lever
- connection of crimp contacts and shield in one step using crimping tool
- color may differ from figure

Dimensional drawing



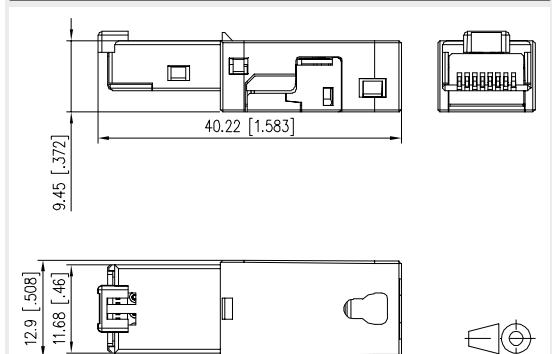
P/N	Color	Feature 1	Feature 2
1401500810-I		8(8) plug	



E-DAT Industry RJ45 field plug insert Cat.5 Class D PROFINET

- Cat.5 plug to be assembled in the field and mounted in IP67 plug housings of variants 1, 4, 5 and 14
- 100 MBit suitable according to IEEE 802.3
- suitable for Remote Powering (PoE, PoE plus and UPoE) and HDBaseT
- 4-wire RJ45 plug for AWG 22 to be assembled in the field
- connection of AWG 26/7 - 22/7; AWG 26/1 - 22/1 possible
- solid copper wire diameter from 0.4 to 0.64 mm
- stranded copper wire diameter from 0.48 to 0.76 mm
- conductor diameter up to 1.6 mm
- cable jacket from 5.5 to 8.5 mm
- consists of only 2 parts
- easy assembly - connection without special tools
- zinc die-cast housing for industrial use
- protected locking hook
- can be used as test plug at IP67 end of variants 1, 4, 5, 6 and 14

Dimensional drawing



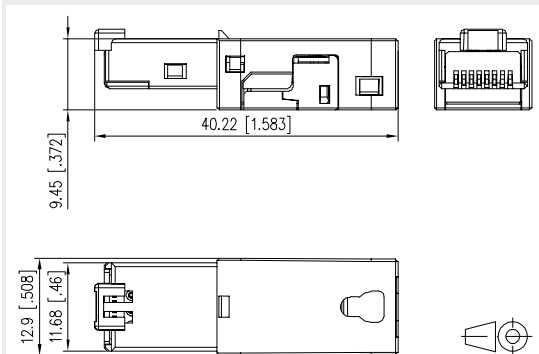
P/N	Color	Feature 1	Feature 2
1401400810PI	green	8(8) field plug	for Profinet plugs



**E-DAT Industry RJ45 field plug insert
Cat.6 Class E_A**

- Cat.6 class E_A plug to be assembled in the field and mounted in IP67 plug housings of variants 1, 4, 5 and 14
- compliance with class E_A to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09
- suitable for 10 GBit Ethernet (IEEE 802.3an), Remote Powering (PoE, PoE plus and UPoE) and HDBaseT
- 8-wire RJ45 plug for AWG 22 to be assembled in the field
- connection of AWG 26/7 - 22/7; AWG 26/1 - 22/1 possible
- solid copper wire diameter from 0.4 to 0.64 mm
- stranded copper wire diameter from 0.48 to 0.76 mm
- conductor diameter up to 1.6 mm
- cable jacket from 5.5 to 8.5 mm
- consists of only 2 parts
- easy assembly - connection without special tools
- zinc die-cast housing for industrial use
- can be used as test plug at IP67 end of variants 1, 4, 5, 6 and 14
- variants: T568A, T568B, Industry

Dimensional drawing



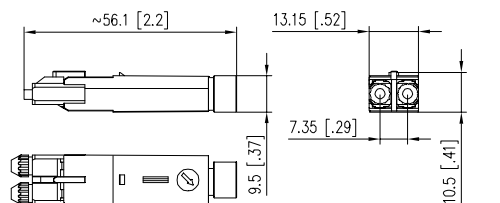
P/N	Color	Feature 1	Feature 2
1401400810-I	metallike	8(8) field plug	for plugs



OpDAT Industry 2SC MM plug insert

- SC-RJ/2SC plug for mounting in IP67 plug housing of variants 1, 4 and 14
 - compliance with EN 50173-1:2011-09 and ISO/IEC 24702 with regard to limit values for insertion and return loss
 - convex pre-polished pin made of zirconium oxide ceramics
 - plastic plug body
 - nickel-plated zinc die-cast plug receptacle
 - fiber fastened by means of adhering
 - cable fastened by means of crimping to pin body and/or to plug receptacle for breakout and mini breakout cables
 - suitable for connection to cables acc. to PROFINET specification
 - min. scope for tension relief 100 N
 - anti-bend sleeve and dust protection cover made of flame-retardant, halogen-free elastomer
 - Service life: min. 500 plug-in cycles
 - operating temperature -40 °C... +65 °C
- variants: SC-RJ/2SC (SM), SC-RJ/2SC (MM), SC-RJ/2SC (POF)

Dimensional drawing



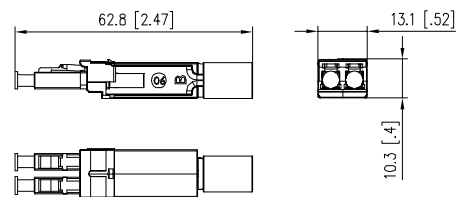
P/N	Color	Feature 1	Feature 2
1402500822-I	black	2SC (MM)	
1402600822-I	black	2SC (SM)	



OpDAT Industry 2LC MM plug insert

- 2LC plug for mounting in IP67 plug housing of variants 1, 4 and 14
 - compliance with EN 50173-1:2011-09 and ISO/IEC 24702 with regard to limit values for insertion and return loss
 - convex pre-polished pin made of zirconium oxide ceramics
 - flame-retardant and halogen-free plastic pin body
 - nickel-plated zinc die-cast plug receptacle
 - fiber fastened by means of adhering
 - cable fastened by means of crimping to pin body and/or to plug receptacle for breakout and mini breakout cables
 - min. scope for tension relief 100 N
 - anti-bend sleeve made of flame-retardant, halogen-free elastomer
 - Service life: min. 500 plug-in cycles
 - operating temperature -40 °C to +70 °C
- variants: 2LC (SM), 2LC (MM)

Dimensional drawing



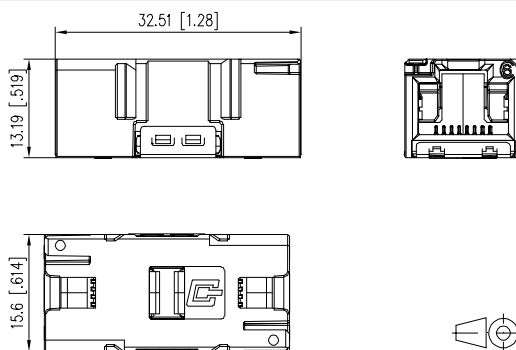
P/N	Color	Feature 1	Feature 2
1402800820-I	beige	2LC (MM)	
1402900820-I	blue	2LC (SM)	



E-DAT Industry RJ45 coupler insert Cat.6 Class E

- Cat.6 class E RJ45 jack for mounting in IP67 flange housings of variants 1, 4, 5 and 14
- use for ingress protection IP65 in combination with Universal test jack
- compliance with class E to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09
- suitable for 10 GBit Ethernet (IEEE 802.3an), Remote Powering (PoE, PoE plus and UPoE) and HDBaseT
- very compact design
- symmetrical structure; can be mounted in any position
- FS 2.8 grounding connection for equipotential bonding at both front ends
- increased resistance to vibrations and shocks due to 4 springs on the shield plates
- solid zinc die-cast housing

Dimensional drawing



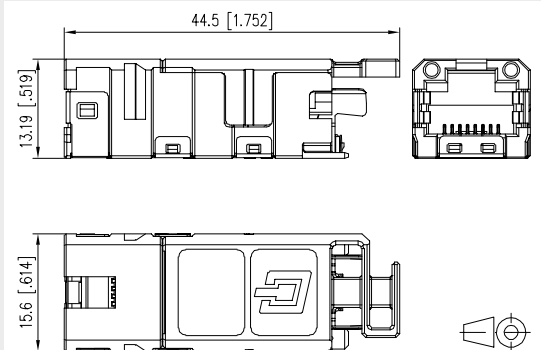
P/N	Color	Feature 1	Feature 2
1401200810MI	metallike	8(8) coupler	



E-DAT Industry RJ45 field jack insert Cat.6 Class E_A T568

- RJ45 jack Cat.6 class E_A to be assembled in the field and mounted in IP67 flange housings of variants 1, 4, 5 and 14
 - use for ingress protection IP65 in combination with Universal test jack
 - compliance with class E_A to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09
 - suitable for 10 GBit Ethernet (IEEE 802.3an), Remote Powering (PoE, PoE plus and UPoE) and HDBaseT
 - no special tools required
 - AWG 26/7 - 22/7; AWG 26/1 - 22/1 possible
 - no protruding contours
 - 2 x FS 2.8 mm grounding connection for equipotential bonding at cable end
 - increased resistance to vibrations and shocks due to 4 springs on the shield plates
 - consists of only 2 parts; easy to assemble
 - solid zinc die-cast housing
 - can be reconnected easily
- variants: pin assignment to T568A, T568B or PROFINET

Dimensional drawing



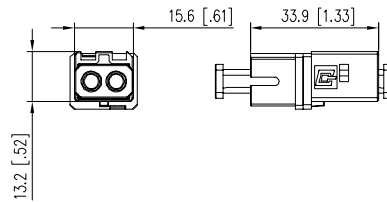
P/N	Color	Feature 1	Feature 2
1401100810MI	metallike	8(8) T568A	
1401800810MI	metallike	8(8) T568B	



OpDAT Industry SC-RJ/2SC MM adapter insert

- SC-RJ/2SC adapter
 - slotted ceramics sleeve for single mode applications
 - slotted metal sleeve (Ph-Br) for multi mode applications
 - conformity with relevant IEC framework specifications with regard to testing conditions and connector compatibility unilaterally to connector version SC to IEC 61754-4, IEC 60874-14 and SC-RJ to IEC 61745-24, EN 50377-6-1
 - compliance with EN 50173-1:2011-09 and ISO/IEC 24702 with regard to limit values for insertion loss
 - flame-retardant and halogen-free plastic housing
 - flame-retardant and halogen-free dust cover
 - in flange or wall outlet of var. 1 and 4 - suitable for integration
 - variant 14 only available in sets
 - Service life: min. 500 plug-in cycles
 - operating temperature -40°C to +70°C
- variants: blue (SM), beige (MM)

Dimensional drawing



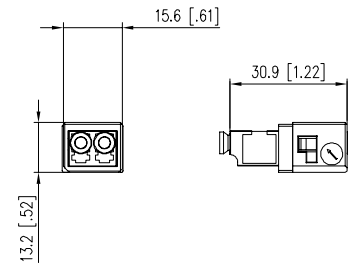
P/N	Color	Feature 1	Feature 2
1402100820MI	beige	SC-RJ/2SC (MM)	
1402K00820MI	blue	SC-RJ/2SC (SM)	



OpDAT Industry LC-D MM adapter insert

- LC-D adapter
 - slotted ceramics sleeve for single mode applications
 - slotted metal sleeve (Ph-Br) for multi mode applications
 - conformity with relevant IEC framework specifications with regard to testing conditions and connector compatibility to connector version LC to IEC 61754-20
 - compliance with EN 50173-1:2011-09 and ISO/IEC 24702 with regard to limit values for insertion loss
 - flame-retardant and halogen-free plastic housing
 - flame-retardant and halogen-free dust cover
 - in flange or wall outlet of var. 1 and 4 - suitable for integration
 - variant 14 only available in sets
 - Service life: min. 500 plug-in cycles
 - operating temperature -40 °C to +70 °C
- variants: blue (SM), beige (MM)

Dimensional drawing



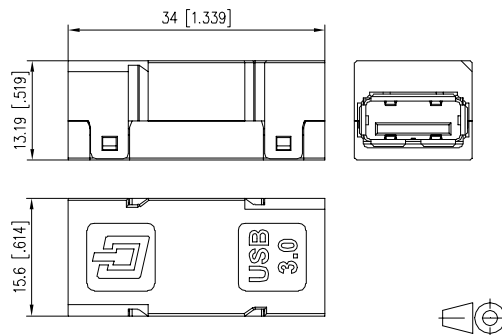
P/N	Color	Feature 1	Feature 2
1402300820MI	beige	LC-D (MM)	
1402L00820MI	blue	LC-D (ceramic)	SM



E-DAT Industry USB A 3.0 adapter insert

- USB 3.0 coupler for converting USB connections or to connect two USB cables with USB-A connectors
- use for ingress protection IP67 in combination with flange var. 1, 4, 5 and 14
- use for ingress protection IP65 in combination with Universal test jack
- for service and test jacks complying with IP67
- jack A to jack A
- note: no IP67 connector available

Dimensional drawing



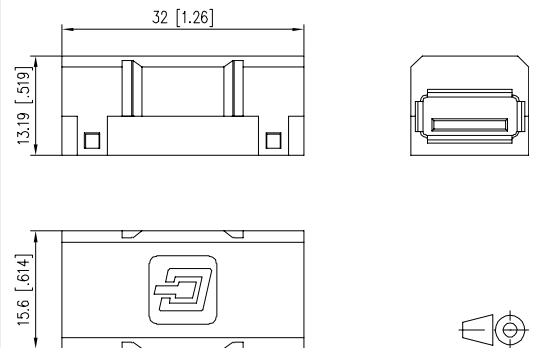
P/N	Color	Feature 1	Feature 2
1401U10812KI	black	USB A coupler	USB 3.0



E-DAT Industry USB A 2.0 adapter insert

- USB 2.0 coupler for converting USB connections or to connect two USB cables with USB-A connectors
- use for ingress protection IP67 in combination with flange var. 1, 4, 5 and 14
- use for ingress protection IP65 in combination with Universal test jack
- for service and test jacks complying with IP67
- jack A to jack A
- note: no IP67 connector available

Dimensional drawing



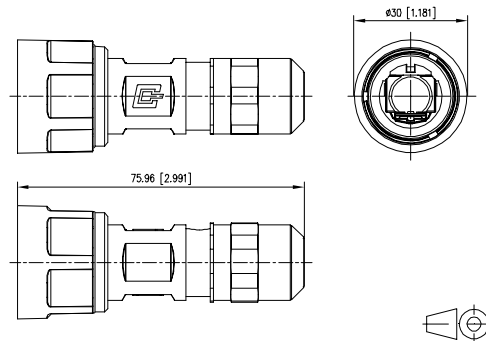
P/N	Color	Feature 1	Feature 2
1401U00812KI	black	USB A coupler	USB 2.0



Industry IP67 V1 metal plug housing

- plug housing with bayonet lock acc. to ISO/IEC 24702 and IEC 61076-3-106 var. 1
- IP67 protected housing to hold Industry plug inserts
- increased diameter range of 10 mm for connection of cable jackets
- resistant to welding sputter
- industry-compatible metal housing with improved durability
- flammability class as per UL 94V-0
- improved resistance to chemical substances
- labeling on plug housing
- snap-on clip for color coding after assembly
- cable can be pushed through preassembled plug housing
- matching plug inserts: E-DAT Industry RJ45 field plug insert, E-DAT Industry RJ45 plug insert, OpDAT Industry 2LC plug insert, OpDAT Industry 2SC plug insert
- variants: plug housing, bend-protected plug housing

Dimensional drawing



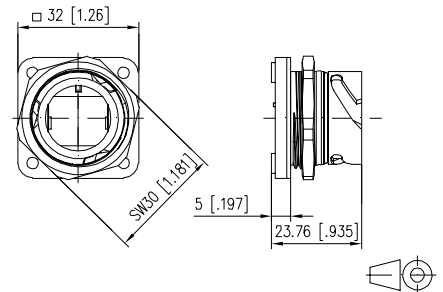
P/N	Color	Feature 1	Feature 2
1401015000ME	metallike	unequipped	
1401025000ME	metallike	unequipped	bend protection



Industry IP67 V1 metal bulkhead

- flange with bayonet lock acc. to ISO/IEC 24702 and IEC 61076-3-106 var. 1
- easy to mount due to round wall recesses made with inserts for commercially available punch pliers
- mounting type, central screwing
- alternative mounting with 4 screws (M3), not included in scope of delivery
- mounting on front and back side
- industry-compatible metal housing with improved durability
- flammability class as per UL 94V-0
- improved resistance to chemical substances
- grounding possible on RJ45 insert using 2.8 mm contact pins
- one version for all flanges
- matching inserts: E-DAT Industry RJ45 field jack insert (T568A, T568B or Profinet), E-DAT Industry RJ45 coupler insert, E-DAT Industry USB coupler insert, OpDAT Industry SC-RJ/2SC coupler insert or OpDAT Industry LC-D coupler insert

Dimensional drawing



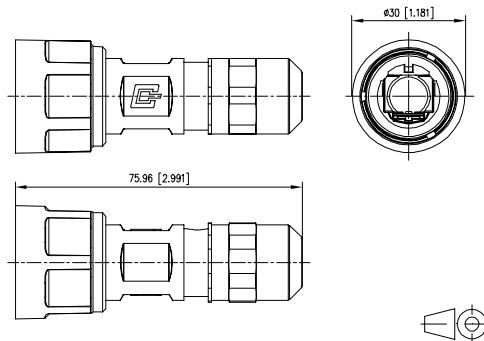
P/N	Color	Feature 1	Feature 2
1401013300ME	metallike	unequipped	metal



Industry IP67 V1 plug housing

- plug housing with bayonet lock acc. to ISO/IEC 24702 and IEC 61076-3-106 var. 1
- IP67 protected housing to hold Industry plug inserts
- increased diameter range of 10 mm for connection of cable jackets
- resistant to welding sputter
- industry-compatible plastic housing with improved durability
- flammability class as per UL 94V-0
- improved resistance to chemical substances
- labeling on plug housing
- snap-on clip for color coding after assembly
- cable can be pushed through preassembled plug housing
- matching plug inserts: E-DAT Industry RJ45 field plug housing, E-DAT Industry RJ45 plug insert, OpDAT Industry 2LC plug insert, OpDAT Industry 2SC plug insert
- variants: plug housing, bend-protected plug housing

Dimensional drawing



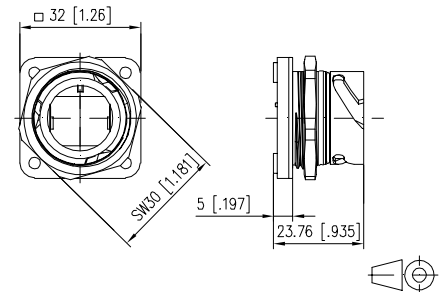
P/N	Color	Feature 1	Feature 2
1401015002KE	black	unequipped	
1401025002KE	black	unequipped	bend protection



Industry IP67 V1 bulkhead

- flange with bayonet lock acc. to ISO/IEC 24702 and IEC 61076-3-106 var. 1
- easy to mount due to round wall recesses made with inserts for commercially available punch pliers
- mounting type, central screwing
- alternative mounting with 4 screws (M3), not included in scope of delivery
- mounting on front and back side
- industry-compatible plastic housing with improved durability
- flammability class as per UL 94V-0
- improved resistance to chemical substances
- grounding possible on RJ45 insert using 2.8 mm contact pins
- one version for all flanges
- matching inserts: E-DAT Industry RJ45 field jack insert (T568A, T568B or Profinet), E-DAT Industry RJ45 coupler insert, E-DAT Industry USB coupler insert, OpDAT Industry SC-RJ/2SC adapter insert or OpDAT Industry LC-D adapter insert

Dimensional drawing



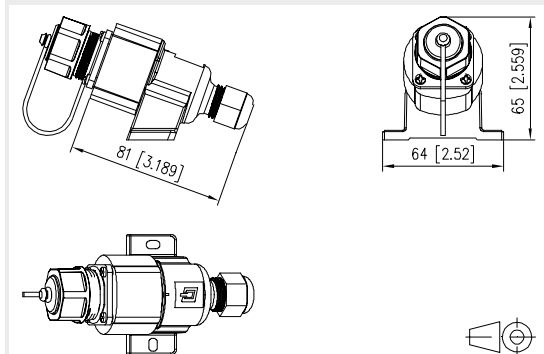
P/N	Color	Feature 1	Feature 2
1401013302KE	black	unequipped	plastics



E-DAT Industry IP67 V1 wall outlet, surface mounting + RJ45 field jack insert Cat.6 Class E_A

- RJ45 termination unit in flange housing with bayonet lock acc. to ISO/IEC 24702 and IEC 61076-3-106 standards, var. 1
 - compliance with class E_A to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09
 - suitable for 10 GBit Ethernet (IEEE 802.3an), Remote Powering (PoE, PoE plus and UPoE) and HDBaseT
 - IP67 protected housing
 - AWG 26/7 - 22/7; AWG 26/1 - 22/1 possible
 - increased resistance to vibrations and shocks due to 4 springs on the shield plates
 - no special tools required
 - possible surface-mounting in series
 - connection of RJ45 plugs available on the market (no IP protection)
 - easy, time-saving mounting
- variants: pin assignment to T568A or T568B

Dimensional drawing



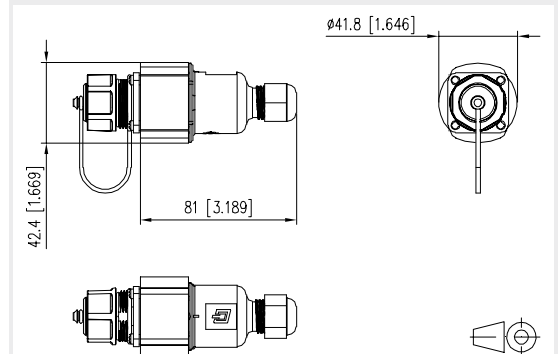
P/N	Color	Feature 1	Feature 2
1401110012KE	black	8(8) field jack T568A	surface-mount
1401810012KE	black	8(8) field jack T568B	surface-mount



E-DAT Industry IP67 V1 cable coupler + RJ45 field jack insert Cat.6 Class E_A, T568A

- RJ45 termination unit in flange housing with bayonet lock acc. to ISO/IEC 24702 and IEC 61076-3-106 standards, var. 1
- compliance with class E_A to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09
- suitable for 10 GBit Ethernet (IEEE 802.3an), Remote Powering (PoE, PoE plus and UPoE) and HDBaseT
- IP67 protected housing
- AWG 26/7 - 22/7; AWG 26/1 - 22/1 possible
- increased resistance to vibrations and shocks due to 4 springs on the shield plates
- no special tools required
- can be used as cable coupler
- connection of RJ45 plugs available on the market (no IP protection)
- easy, time-saving mounting

Dimensional drawing



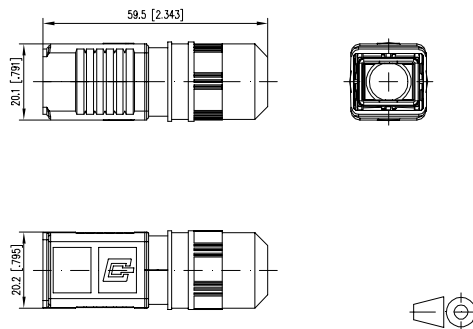
P/N	Color	Feature 1	Feature 2
1401115512KE	black	8(8) field jack T568A	cable coupler



Industry IP67 V4 plug housing

- plug housing with push-pull-lock acc. to ISO/IEC 24702 and IEC 61076-3-106 var. 4
- IP67 protected housing to hold Industry plug inserts
- increased diameter range of 10 mm for connection of cable jackets
- resistant to welding spatter
- industry-compatible plastic housing with improved durability
- flammability class as per UL 94V-0
- improved resistance to chemical substances
- labeling on plug housing
- snap-on clip for color coding after assembly
- cable can be pushed through preassembled plug housing
- matching plug inserts: E-DAT Industry RJ45 field plug insert, E-DAT Industry RJ45 plug insert, OpDAT Industry 2LC plug insert, OpDAT Industry 2SC plug insert
- variants: plug housing, bend-protected plug housing

Dimensional drawing



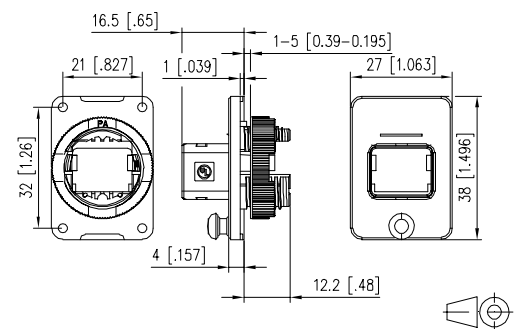
P/N	Color	Feature 1	Feature 2
1401045002KE	metallike	unequipped	
1401055002KE	metallike	unequipped	bend protection



Industry IP67 V4 bulkhead

- flange with push-pull-lock acc. to ISO/IEC 24702 and IEC 61076-3-106 var. 4 and acc. to EN 50173-1:2011-09 as well as EN 50173-3:2011-09 standards
- easy to mount due to round wall recesses made with inserts for commercially available punch pliers
- mounting type, central screwing
- alternative mounting with 4 screws (M3), not included in scope of delivery
- mounting on front and back side
- industry-compatible housing with improved durability
- flammability class as per UL 94V-0
- improved resistance to chemical substances
- grounding possible on RJ45 insert using 2.8 mm contact pins
- one version for all flanges
- matching inserts: E-DAT Industry RJ45 field jack insert (T568A, T568B or Profinet), E-DAT Industry RJ45 coupler insert, E-DAT Industry USB coupler insert, OpDAT Industry SC-RJ/2SC coupler insert or OpDAT Industry LC-D coupler insert

Dimensional drawing



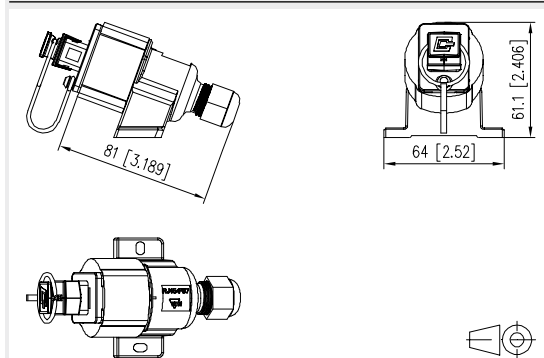
P/N	Color	Feature 1	Feature 2
1401043302KE	black	unequipped	



E-DAT Industry IP67 V4 AP + RJ45 field jack insert Cat.6 Class E_{A'} T568A

- RJ45 termination unit in flange housing with push-pull-lock acc. to ISO/IEC 24702 and IEC 61076-3-106 standards, var. 4
- compliance with class E_A to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09
- suitable for 10 GBit Ethernet (IEEE 802.3an), Remote Powering (PoE, PoE plus and UPoE) and HDBaseT
- IP67 protected housing
- AWG 26/7 - 22/7; AWG 26/1 - 22/1 possible
- increased resistance to vibrations and shocks due to 4 springs on the shield plates
- no special tools required
- possible surface-mounting in series
- connection of RJ45 plugs available on the market (no IP protection)
- easy, time-saving mounting

Dimensional drawing



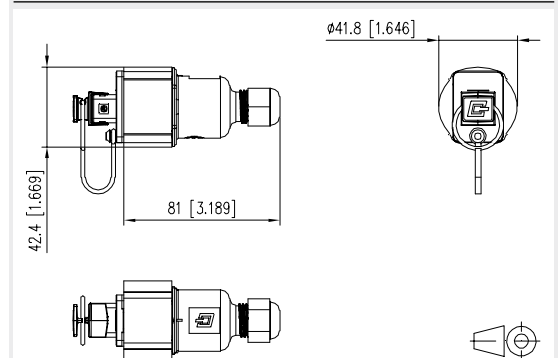
P/N	Color	Feature 1	Feature 2
1401140012KE	black	8(8) field jack T568A	surface-mount



E-DAT Industry IP67 V4 cable coupler + RJ45 field jack insert Cat.6 Class E_{A'} T568A

- RJ45 termination unit in flange housing with push-pull-lock acc. to ISO/IEC 24702 and IEC 61076-3-106 standards, var. 4
 - compliance with class E_A to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09
 - suitable for 10 GBit Ethernet (IEEE 802.3an), Remote Powering (PoE, PoE plus and UPoE) and HDBaseT
 - IP67 protected housing
 - AWG 26/7 - 22/7; AWG 26/1 - 22/1 possible
 - increased resistance to vibrations and shocks due to 4 springs on the shield plates
 - no special tools required
 - can be used as cable coupler
 - connection of RJ45 plugs available on the market (no IP protection)
 - easy, time-saving mounting
- variants: marking of conductor assignment to T568A or T568B

Dimensional drawing



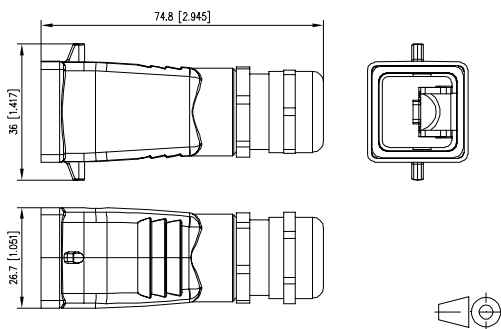
P/N	Color	Feature 1	Feature 2
1401145512KE	black	8(8) field jack T568A	cable coupler
1401845512KE	black	8(8) field jack T568B	cable coupler
1401045512KE	black	unequipped	cable coupler



Industry IP67 V5 metal plug housing

- plug housing with clamp lock acc. to ISO/IEC 24702 and IEC 61076-3-106 var. 5
- IP67 protected housing to hold Industry plug inserts
- increased diameter range of 10 mm for connection of cable jackets
- resistant to welding sputter
- industry-compatible metal housing with improved durability
- flammability class as per UL 94V-0
- improved resistance to chemical substances
- snap-on clip for color coding after assembly
- cable can be pushed through preassembled plug housing
- matching plug inserts: E-DAT Industry RJ45 field plug insert, E-DAT Industry RJ45 plug insert

Dimensional drawing



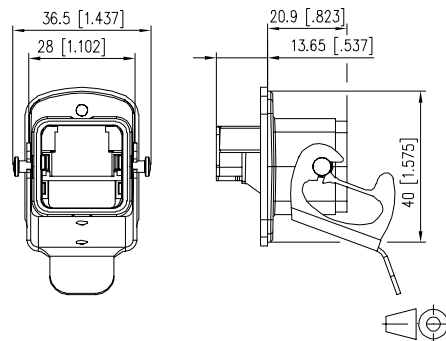
P/N	Color	Feature 1	Feature 2
1401065000ME	gray	unequipped	



Industry IP67 V5 metal bulkhead

- flange with clamp lock acc. to IEC 61076-3-106 Var. 5
- IP67 protected housing for receiving E-DAT Industry flange inserts
- easy to mount due to standard fastening by means of two screws (M3), not included in scope of delivery
- industry-compatible housing with improved durability
- flammability class as per UL 94V-0
- improved resistance to chemical substances
- grounding possible on RJ45 insert using 2.8 mm contact pins
- matching inserts: E-DAT Industry RJ45 field jack insert (T568A, T568B or Profinet), E-DAT Industry RJ45 coupler insert or E-DAT Industry USB coupler insert

Dimensional drawing



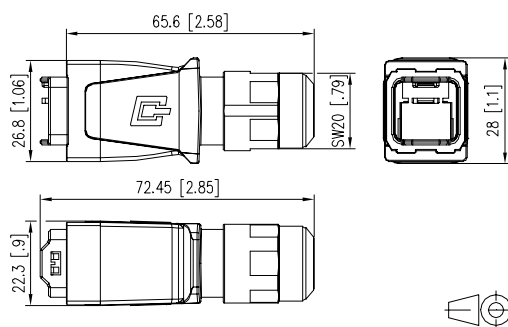
P/N	Color	Feature 1	Feature 2
1401063300ME	gray	unequipped	



E-DAT Industry IP67 V14 plug housing for RJ45 unequipped

- plug housing with push-pull-lock acc. to ISO/IEC 24702 and IEC 61076-3-117 var. 14
- IP67 protected housing to hold E-DAT Industry plug inserts
- increased diameter range of 10 mm for connection of cable jackets
- resistant to welding sputter
- industry-compatible metal housing with improved durability
- flammability class as per UL 94V-0
- improved resistance to chemical substances
- snap-on clip for color coding after assembly
- cable can be pushed through preassembled plug housing
- matching plug inserts E-DAT Industry RJ45 field plug insert, E-DAT Industry RJ45 plug insert
- variants: plug housing, bend-protected plug housing

Dimensional drawing



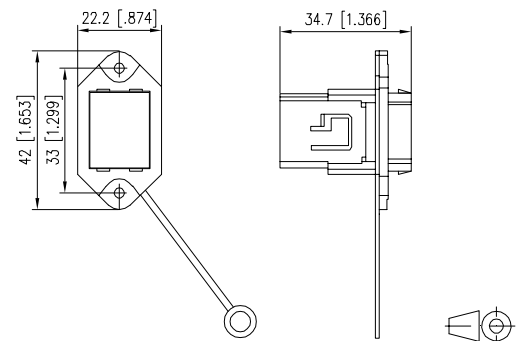
P/N	Color	Feature 1	Feature 2
14010850C0ME	metallike	unequipped for RJ45	
14010850F0ME	metallike	unequipped for FO	



E-DAT Industry IP67 V14 plug housing for RJ45 unequipped

- flange with push-pull-lock acc. to ISO/IEC 24702 and IEC 61076-3-117 var. 14
- IP67 protected housing for receiving E-DAT Industry flange inserts
- easy to mount due to standard fastening by means of two screws (M3), not included in scope of delivery
- mounting from the front
- industry-compatible metal housing with improved durability
- flammability class as per UL 94V-0
- improved resistance to chemical substances
- grounding possible on RJ45 insert using 2.8 mm contact pins
- matching inserts: E-DAT Industry RJ45 field jack insert (T568A, T568B or Profinet), E-DAT Industry RJ45 coupler insert or E-DAT Industry USB coupler insert

Dimensional drawing



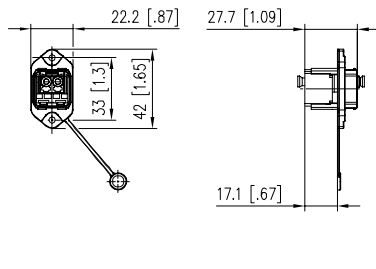
P/N	Color	Feature 1	Feature 2
14010833COMN	metallike	unequipped for RJ45	



OpDAT Industry IP67 V14 bulkhead normative mounting + LC-D SM adapter insert

- flange with push-pull-lock acc. to ISO/IEC 24702 and IEC 61076-3-117 var. 14
 - fiber optic cable adapter made of plastic
 - slotted zirconium oxide ceramics sleeve (ZrO2) for single mode applications
 - slotted metal sleeve (Ph-Br) for multi mode applications
 - compliance with EN 50173-1:2011-09 and ISO/IEC 24702 with regard to limit values for insertion loss
 - flame-retardant and halogen-free plastic housing and adapter dust covers
 - easy to mount due to standard fastening by means of two screws (M3)
 - mounting from the front
 - industry-compatible metal housing with improved durability
 - flammability class as per UL 94V-0
 - improved resistance to chemical substances
- variants:
- | | |
|-----------|-----------------------|
| LC-D | blue (SM), beige (MM) |
| SC-RJ/2SC | blue (SM), beige (MM) |

Dimensional drawing



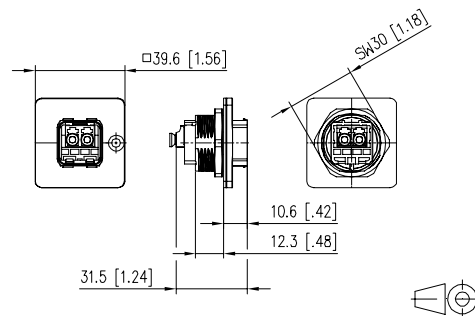
P/N	Color	Feature 1	Feature 2
1402L93320ME	metallike	LC-D (ceramic) SM	
1402K93320ME	metallike	2SC (SM)	
1402393320ME	metallike	LC-D (MM)	
1402193320ME	metallike	2SC (MM)	



OpDAT Industry IP67 V14 bulkhead central screw mounting + LC-D SM adapter insert

- flange with push-pull-lock acc. to ISO/IEC 24702 and IEC 61076-3-117 var. 14
 - fiber optic cable adapter made of plastic
 - slotted zirconium oxide ceramics sleeve (ZrO2) for single mode applications
 - slotted metal sleeve (Ph-Br) for multi mode applications
 - compliance with EN 50173-1:2011-09 and ISO/IEC 24702 with regard to limit values for insertion loss
 - flame-retardant and halogen-free plastic housing and adapter dust covers
 - easy to mount due to round wall recesses made with inserts for commercially available punch pliers
 - mounting from the front
 - industry-compatible metal housing with improved durability
 - flammability class as per UL 94V-0
 - improved resistance to chemical substances
- variants:
- | | |
|-----------|-----------------------|
| LC-D | blue (SM), beige (MM) |
| SC-RJ/2SC | blue (SM), beige (MM) |

Dimensional drawing



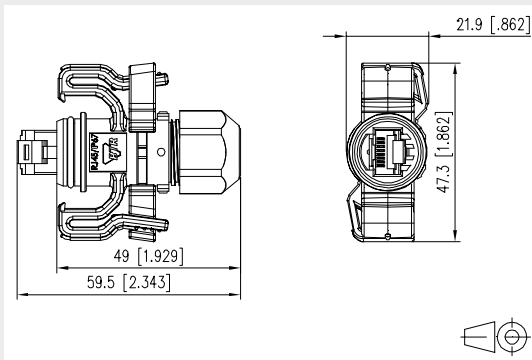
P/N	Color	Feature 1	Feature 2
1402L83320ME	metallike	LC-D (ceramic) SM	
1402K83320ME	metallike	2SC (SM)	
1402383320ME	metallike	LC-D (MM)	
1402183320ME	metallike	2SC (MM)	



E-DAT Industry IP67 V6 plug

- Cat.6 class E_A connector in connector housing to IEC 61076-3-106 var. 6
- compliance with class E_A to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09
- suitable for 10 GBit Ethernet(IEEE 802.3an) and Remote Powering(PoE, PoE plus and UPoE) and HDBaseT
- complies with ingress protection IP67 when plugged in
- AWG 27/7 - 24/7 and AWG 24/1 connection possible
- solid copper wire diameter from 0.36 to 0.51 mm
- stranded copper wire diameter from 0.46 to 0.61 mm
- conductor diameter from 0.85 to 1.05 mm
- cable jacket up to 7.3 mm can be connected
- large 360° shield contact
- locking clip can also be upgraded in its installed state
- protected against unintentional opening by means of locking clip (also colored)
- crimping of the internal and external conductors with professional crimp pliers in one process
- professional crimping tool available in the tools section

Dimensional drawing



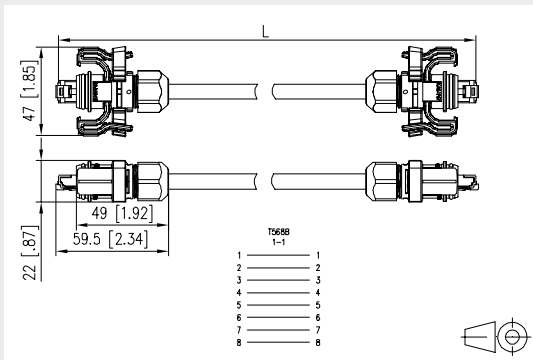
P/N	Color	Feature 1	Feature 2
130906-03-E	light gray	8(8)	



E-DAT Industry patch cord V6 IP67 - IP67

- fully shielded Cat.6 patch cable AWG 26/7 S/FTP with PUR cable sheath
 - RJ45-IP67-V6 connector shielded on both ends
 - 1:1 assignment
 - compliance with class E to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09
 - yellow cable, gray connector
 - cable colors may differ
 - other lengths available
- variants: 1, 2, 5, 10, 15 and 20 m

Dimensional drawing



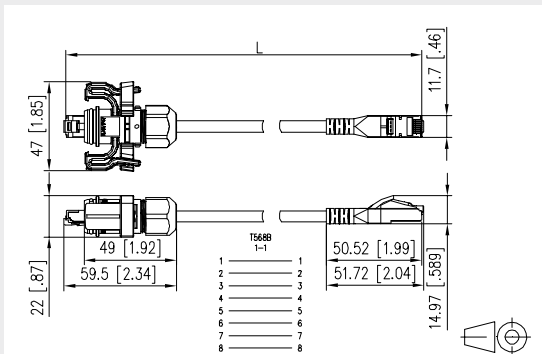
P/N	Color	Feature 1	Feature 2
141N113K13K10	yellow	1.0 m	IP67-IP67
141N113K13K20	yellow	2.0 m	IP67-IP67
141N113K13K50	yellow	5.0 m	IP67-IP67
141N113K13KA0	yellow	10.0 m	IP67-IP67
141N113K13KA5	yellow	15.0 m	IP67-IP67
141N113K13KB0	yellow	20.0 m	IP67-IP67



E-DAT Industry patch cord V6 IP67 - RJ45

- fully shielded Cat.6 patch cable AWG 26/7 S/FTP with PUR cable sheath
 - 1 x RJ45 and 1 x RJ45-IP67-V6 connector, shielded
 - 1:1 assignment
 - compliance with class E to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09
 - yellow cable, gray connector
 - cable colors may differ
 - other lengths available
- variants: 1, 2, 3, 5, 10, 15 and 20 m

Dimensional drawing



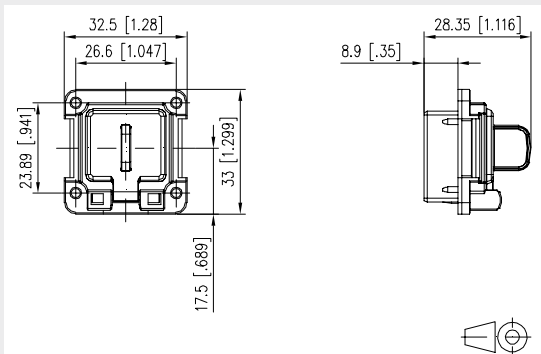
P/N	Color	Feature 1	Feature 2
141N113K10010	yellow	1.0 m	IP67-RJ45
141N113K10020	yellow	2.0 m	IP67-RJ45
141N113K10050	yellow	5.0 m	IP67-RJ45
141N113K100A0	yellow	10.0 m	IP67-RJ45
141N113K100A5	yellow	15.0 m	IP67-RJ45
141N113K100B0	yellow	20.0 m	IP67-RJ45



E-DAT Industry IP67 V6 EbM

- for mounting individual modules in Modul design
 - IP67 plug face pursuant to IEC 61076-3-106 (Variant 6)
 - connection of RJ45 plugs available on the market (no IP protection)
 - easy mounting
 - versions with and without solid counterplate made of zinc die-cast (also available as accessory)
 - color: RAL 7035 (light gray)
 - 13094130-E: mounting set consisting of solid counterplate with 4 screws
 - not suited to E-DAT industry modules and adapter
- variants: with and without mounting set

Dimensional drawing



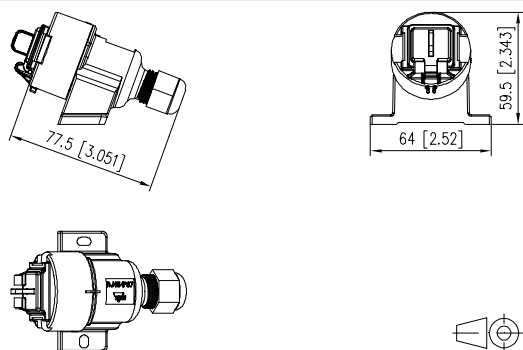
P/N	Color	Feature 1	Feature 2
1309413003-E	lightgray	w/o mounting set	Module cut-out
1309413203-E	lightgray	with mounting set	Module cut-out



E-DAT Industry IP67 V6 AP, 1 port Cat.6_A - C6_A modul

- RJ45 termination unit C6_A modul in flange housing to ISO/IEC 24702 and IEC 61076-3-106 variant 6
- certified to GHMT Cat.6_A re-embedded PVP
- component testing for Cat.6_A to ISO/IEC 11801 Ed. 2.2: 2011-06, DIN EN 50173-1:2011-09, TIA/EIA-568-C.2 (2009-08) and IEC 60603-7-51 Ed.1 (12/2008), certified to GHMT
- compliance with class E_A to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09
- tested: component up to 600 MHz, link up to 800 MHz
- suitable for 10 GBit Ethernet (IEEE 802.3an), Remote Powering (PoE, PoE plus and UPoE) and HDBaseT
- easy to install connection of data lines AWG 24/1 to 22/1 (solid wire) and AWG 26/7 to 22/7 (stranded wire) to insulation displacement connectors (IDC)
- intelligent cable management in stuffer cap - also suitable for heavily twisted cables
- conductor assignment to T568A and T568B is directly printed on the stuffer cap
- complies with ingress protection IP67 when plugged in
- plug face according to IEC 61076-3-106 (variant 6)
- large 360° shield contact
- connection of RJ45 plugs available on the market (no IP protection)
- mounting without special tools; strain relief directly snapped on to stuffer cap
- color: light gray RAL 7035

Dimensional drawing



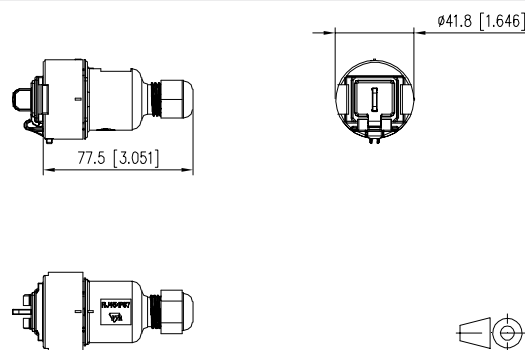
P/N	Color	Feature 1	Feature 2
1309510003-E		8(8) modul T568A	surface-mount



E-DAT Industry IP67 V6 cable coupler, 1 port Cat.6_A - C6_A modul

- RJ45 termination unit C6_A modul in flange housing to ISO/IEC 24702 and IEC 61076-3-106 variant 6
- certified to GHMT Cat.6_A re-embedded PVP
- component testing for Cat.6_A to ISO/IEC 11801 Ed. 2.2: 2011-06, DIN EN 50173-1:2011-09, TIA/EIA-568-C.2 (2009-08) and IEC 60603-7-51 Ed.1 (12/2008), certified to GHMT
- compliance with class E_A to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09
- tested: component up to 600 MHz, link up to 800 MHz
- suitable for 10 GBit Ethernet (IEEE 802.3an), Remote Powering (PoE, PoE plus and UPoE) and HDBaseT
- easy to install connection of data lines AWG 24/1 to 22/1 (solid wire) and AWG 26/7 to 22/7 (stranded wire) to insulation displacement connectors (IDC)
- intelligent cable management in stuffer cap - also suitable for heavily twisted cables
- conductor assignment to T568A and T568B is directly printed on the stuffer cap
- complies with ingress protection IP67 when plugged in
- plug face according to IEC 61076-3-106 (variant 6)
- large 360° shield contact
- can be used as cable coupler (KK) in variable applications
- connection of RJ45 plugs available on the market (no IP protection)
- mounting without special tools; strain relief directly snapped on to stuffer cap
- color: light gray RAL 7035

Dimensional drawing



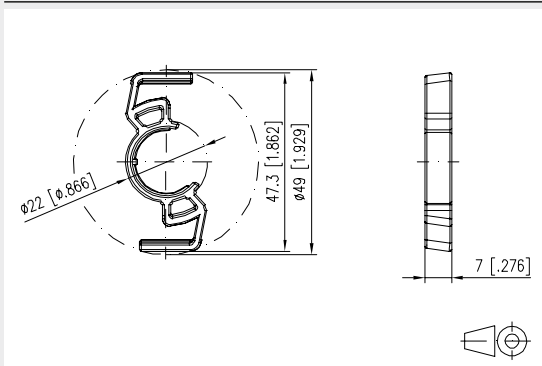
P/N	Color	Feature 1	Feature 2
1309515003-E		8(8) modul T568A	cable-coupler



Locking clamp for IP67 V6 plug

- protection against unintentional opening
- locking clip can also be upgraded in its installed state
- variants: light gray, yellow, blue, green, red

Dimensional drawing



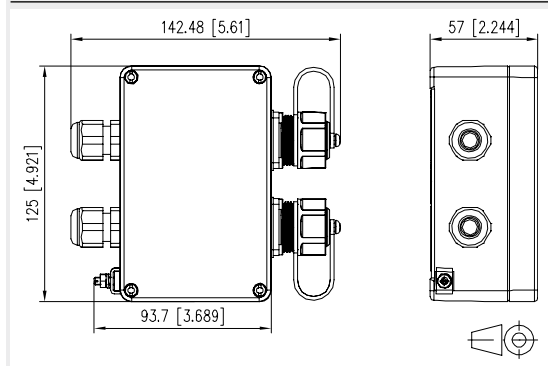
P/N	Color	Feature 1	Feature 2
130906-V3-I	light gray	plastics	
130906-V5-I	yellow	plastics	
130906-V6-I	blue	plastics	
130906-V7-I	green	plastics	
130906-V8-I	red	plastics	



E-DAT Industry IP67 V1 2 port metal outlet

- IP67 wall outlets for flexible connection of networks in industrial areas
- 2 complete ports with flange covers and cable glands
- with the output directions pointing straight downwards (with cable feed from above) or output direction to right (with cable feed from above)
- metal flange with bayonet to ISO/IEC 24702 and IEC 61076-3-106 standards, var. 1
- unequipped, without inserts
- for wall and floor mounting
- aluminum housing made of AL-Si 12
- solid powder coating in RAL 7001
- dimensions, 2 ports: 124 x 78 x 57 mm (without flanges and cable glands)
- matching inserts: E-DAT Industry RJ45 field jack insert (T568A, T568B or Profinet), E-DAT Industry RJ45 coupler insert, E-DAT Industry USB coupler insert, OpDAT Industry SC-RJ/2SC coupler insert or OpDAT Industry LC-D coupler insert

Dimensional drawing



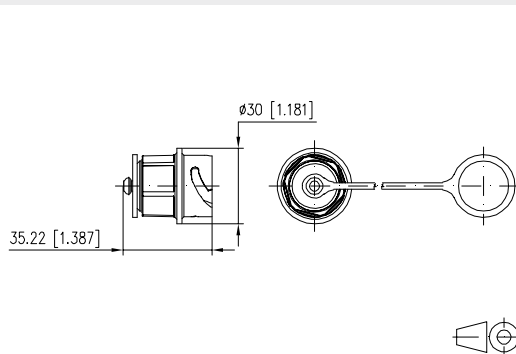
P/N	Color	Feature 1	Feature 2
1401010620ME	gray	2 port straight	unequipped
1401040620ME	gray	2 port straight	unequipped
1401060320ME	gray	2 port straight	unequipped



Industry IP67 V1 plug protective cap

- good ingress protection also if not plugged in due to tight IP67 protective cap
- flammability class as per UL 94V-0
- improved resistance to chemical substances
- captive, attached protective cap
- variants: protective cap for plug or flange

Dimensional drawing



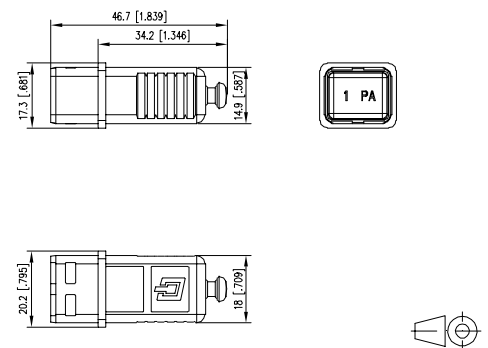
P/N	Color	Feature 1	Feature 2
1401018002KI	black	plastic	for plugs
1401018102KI	black	plastic	for flange



Industry IP67 V4 plug protective cap

- good ingress protection also if not plugged in due to tight IP67 protective cap
- flammability class as per UL 94V-0
- improved resistance to chemical substances
- captive, attached protective cap
- grip to remove it
- variants: protective cap for plug or flange

Dimensional drawing



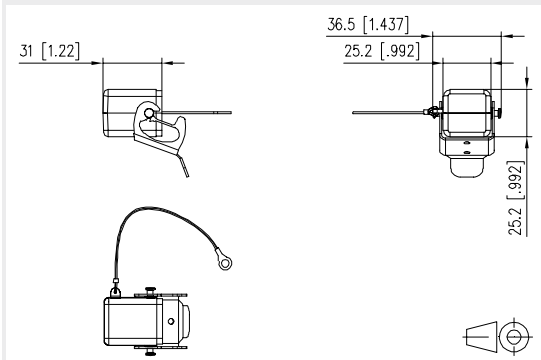
P/N	Color	Feature 1	Feature 2
1401048002KI	black	plastic	for plugs
1401048102KI	black	plastic	for flange



Industry IP67 V5 metal plug protective cap

- good ingress protection also if not plugged in due to tight IP67 protective cap
- flammability class as per UL 94V-0
- improved resistance to chemical substances
- captive, attached protective cap
- variants: protective cap for plug or flange

Dimensional drawing



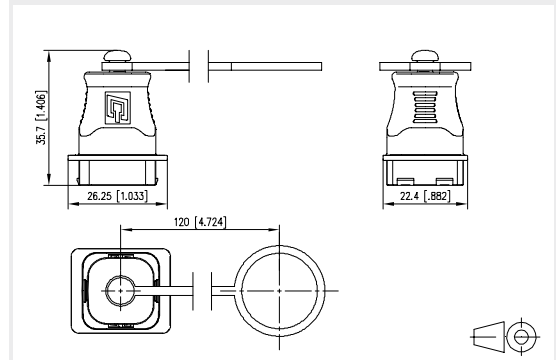
P/N	Color	Feature 1	Feature 2
1401068000MI	gray	metal	for plugs
1401068100MI	gray	metal	for flange



E-DAT Industry IP67 V14 plug protection cap

- good ingress protection also if not plugged in due to tight IP67 protective cap
- flammability class as per UL 94V-0
- high resistance to chemical substances
- captive, attached protective cap
- grip to remove it
- variants: protective cap for plug or flange

Dimensional drawing



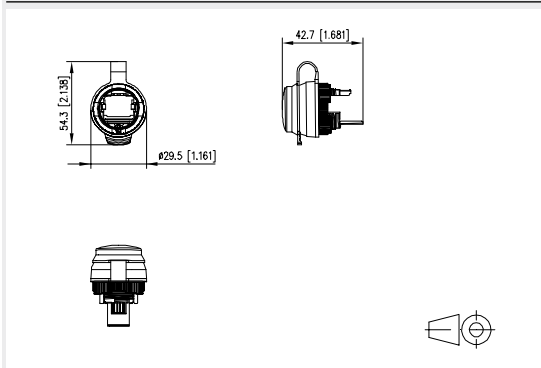
P/N	Color	Feature 1	Feature 2
1401088002KI	black	plastic	for plugs
1401088102KI	black	plastic	for flange



E-DAT Industry universal test jack IP65, unequipped

- for programming and setting parameters of an installation, a computer is accessed via standardized interfaces, such as RJ45 and USB. For industrial PCs (IPC), however, these interfaces are located in the interior of the switch cabinet.
- practical service interface for safe and flexible access to the interior of the switch cabinet
- faster, easier and more targeted start-up, service work, monitoring and system expansions
- suitable for switch cabinet walls, distributor panels and switchboards
- mounting with central screw joint in standard round hole of just 22 mm
- ingress protection IP65
- captive sealing plug
- very easy handling
- unequipped - without inserts
- matching inserts: E-DAT Industry RJ45 field jack insert (T568A, T568B or Profinet), E-DAT Industry RJ45 coupler insert or E-DAT Industry USB coupler insert

Dimensional drawing



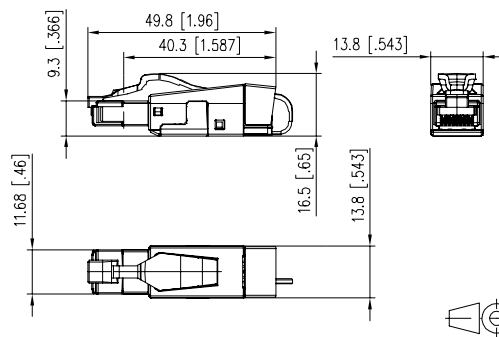
P/N	Color	Feature 1	Feature 2
140UPB-E	black	unequipped	



C6_A RJ45 field plug pro

- Cat.6_A class E_A RJ45 plug to be assembled in the field
- fully shielded and multi-port capable
- straight (180°) cable feed
- easy assembly - connection without special tools
- wire connection: stranded wire AWG 27/7 to 22/7, wire diameter from 0.46 to 0.76 mm
- wire connection: solid wire AWG 26/1 to 22/1, wire diameter from 0.4 to 0.64 mm
- transmission characteristics Cat.6_A per ISO/IEC 11801 Ed.2.2:2011-06
- compliance with class E_A to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09
- suitable for 10 GBit Ethernet (IEEE 802.3an), Remote Powering (PoE, PoE plus, UPoE and 4PPoE) and HDBaseT
- degree of protection IP20
- for cable jacket diameter from 5.5 to 10.5 mm
- zinc die-cast housing for industrial use consists of only 2 parts
- strain relief by latching clip directly on the stuffer cap
- protected locking hook
- reconnectable

Dimensional drawing



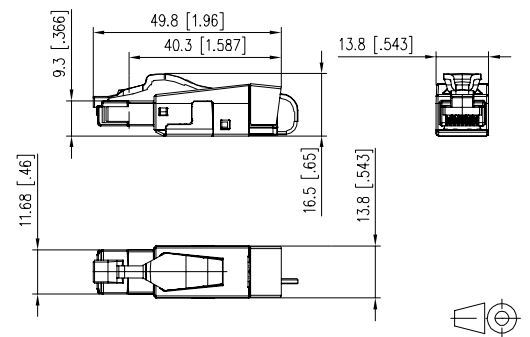
P/N	Color	Feature 1	Feature 2
130E405032-E	black	8(8) field plug	180°



C5 RJ45 field plug pro 2P PROFINET

- Cat.5 class D RJ45 plug, 2 pairs, to be assembled in the field
- fully shielded and multi-port capable
- straight (180°) cable feed
- easy assembly - connection without special tools
- wire connection: stranded wire AWG 27/7 to 22/7, wire diameter from 0.46 to 0.76 mm
- wire connection: solid wire AWG 26/1 to 22/1, wire diameter from 0.4 to 0.64 mm
- transmission characteristics Cat.5 per ISO/IEC 11801 Ed.2.2:2011-06
- compliance with class D to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09
- 100 MBit suitable according to IEEE 802.3
- suitable for Remote Powering (PoE and PoE plus) and HDBaseT
- degree of protection IP20
- for cable jacket diameter from 5.5 to 10.5 mm
- zinc die-cast housing for industrial use consists of only 2 parts
- strain relief by latching clip directly on the stuffer cap
- protected locking hook
- reconnectable

Dimensional drawing



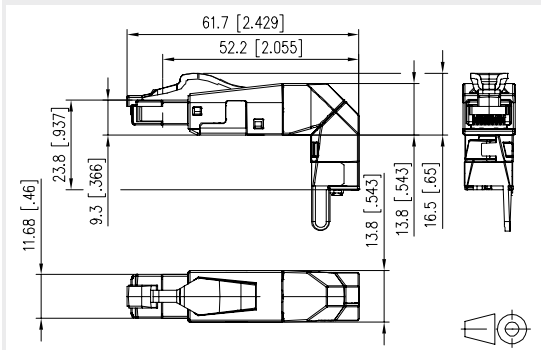
P/N	Color	Feature 1	Feature 2
130E405032PE	green	Profinet	180°



C6_A RJ45 field plug pro 360

- Cat.6_A class E_A RJ45 plug to be assembled in the field
- fully shielded and multi-port capable
- variable (360°) cable feed, freely selectable
- easy assembly - connection without special tools
- wire connection: stranded wire AWG 27/7 to 22/7, wire diameter from 0.46 to 0.76 mm
- wire connection: solid wire AWG 26/1 to 22/1, wire diameter from 0.4 to 0.64 mm
- transmission characteristics Cat.6_A per ISO/IEC 11801 Ed.2.2:2011-06
- compliance with class E_A to ISO/IEC 11801
- Ed.2.2:2011-06, DIN EN 50173-1:2011-09
- suitable for 10 GBit Ethernet (IEEE 802.3an), Remote Powering (PoE, PoE plus, UPoE and 4PPoE) and HDBaseT
- degree of protection IP20
- for cable jacket from 5.5 to 10.5 mm
- zinc die-cast housing for industrial use
- strain relief by latching clip directly on the stuffer cap
- protected locking hook
- reconnectable

Dimensional drawing



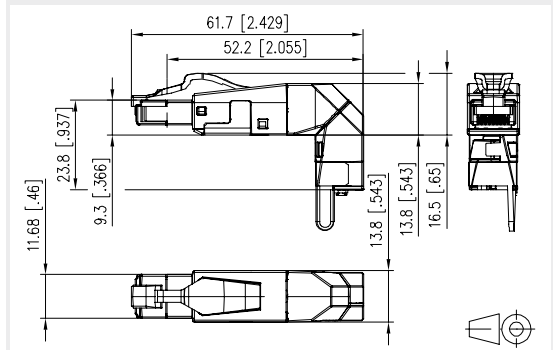
P/N	Color	Feature 1	Feature 2
130E405042-E	black	8(8) field plug	360°



C5 RJ45 field plug pro 2P 360 PROFINET

- Cat.5 class D RJ45 plug, 2 pairs, to be assembled in the field
- fully shielded and multi-port capable
- variable (360°) cable feed, freely selectable
- easy assembly - connection without special tools
- wire connection: stranded wire AWG 27/7 to 22/7, wire diameter from 0.46 to 0.76 mm
- wire connection: solid wire AWG 26/1 to 22/1, wire diameter from 0.4 to 0.64 mm
- transmission characteristics Cat.5 per ISO/IEC 11801 Ed.2.2:2011-06
- compliance with class D to ISO/IEC 11801
- Ed.2.2:2011-06, DIN EN 50173-1:2011-09
- 100 MBit suitable according to IEEE 802.3
- suitable for Remote Powering (PoE and PoE plus) and HDBaseT
- degree of protection IP20
- for cable jacket from 5.5 to 10.5 mm
- zinc die-cast housing for industrial use
- strain relief by latching clip directly on the stuffer cap
- protected locking hook
- reconnectable

Dimensional drawing



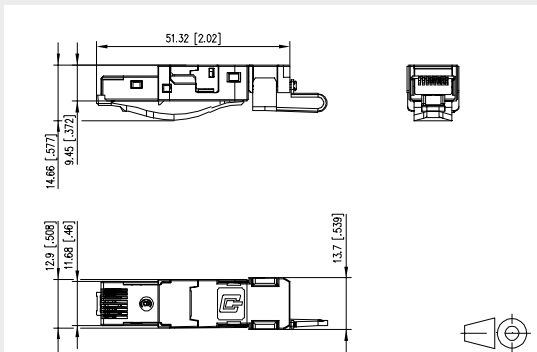
P/N	Color	Feature 1	Feature 2
130E405042PE	green	Profinet	360°



E-DAT Industry IP20 RJ45 field plug black

- multi-port Cat.6 class E_A plug to be assembled in the field
- compliance with class E_A to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09
- suitable for 10 GBit Ethernet (IEEE 802.3an), Remote Powering (PoE, PoE plus and UPoE) and HDBaseT
- 8-wire RJ45 plug for AWG 22 to be assembled in the field
- connection of AWG 26/7 - 22/7; AWG 26/1 - 22/1 possible
- solid copper wire diameter from 0.4 to 0.64 mm
- stranded copper wire diameter from 0.48 to 0.76 mm
- conductor diameter up to 1.6 mm
- cable jacket from 5.5 to 8.5 mm
- consists of only 2 parts
- easy assembly - connection without special tools
- during mounting, the cable is mechanically fastened to the stuffer cap
- easy to actuate strain relief
- strain relief can be snapped on after assembly as color coding
- zinc die-cast housing for industrial use
- protected locking hook
- can be used as test plug on IP67 protected jacks of variants 1, 4, 5, 6 and 14
- variants: T568A, T568B, Industry

Dimensional drawing



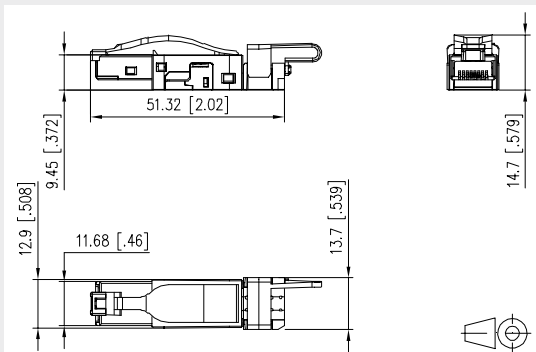
P/N	Color	Feature 1	Feature 2
1401405012-I	black	8(8) field plug	two parts



E-DAT Industry RJ45 field plug Profinet

- multi-port Cat.5 plug to be assembled in the field
- 100 MBit suitable according to IEEE 802.3an
- suitable for Remote Powering (PoE and PoE plus) and HDBaseT
- 4-wire RJ45 plug for AWG 22 to be assembled in the field
- connection of AWG 26/7 - 22/7; AWG 26/1 - 22/1 possible
- solid copper wire diameter from 0.4 to 0.64 mm
- stranded copper wire diameter from 0.48 to 0.76 mm
- conductor diameter up to 1.6 mm
- cable jacket from 5.5 to 8.5 mm
- consists of only 2 parts
- easy assembly - connection without special tools
- during mounting, the cable is mechanically fastened to the stuffer cap
- easy to actuate strain relief
- strain relief can be snapped on after assembly as color coding
- zinc die-cast housing for industrial use
- protected locking hook
- can be used as test plug on IP67 protected jacks of variants 1, 4, 5, 6 and 14

Dimensional drawing



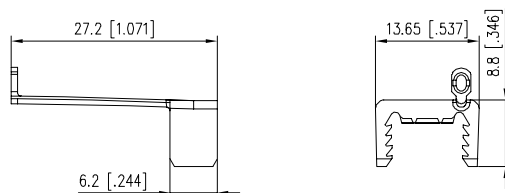
P/N	Color	Feature 1	Feature 2
1401405012PI	green	8(4) field plug	Profinet



Industry color coding field plug

- colored, easy to actuate strain relief for E-DAT Industry IP20 RJ45 field plug
- can be mounted after assembling the plug
- variants: white, light gray, orange, blue, yellow, green

Dimensional drawing



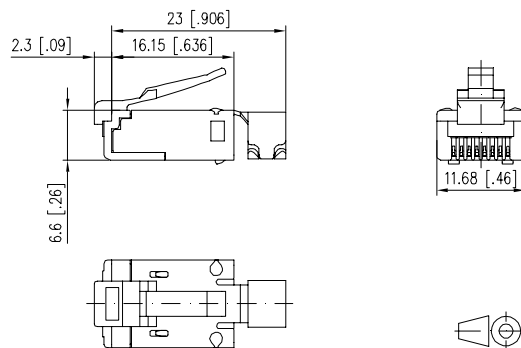
P/N	Color	Feature 1	Feature 2
1401009101-I	orange	plastics	
1401009103-I	light gray	plastics	
1401009104-I	white	plastics	
1401009105-I	yellow	plastics	
1401009106-I	blue	plastics	
1401009107-I	green	plastics	



E-DAT Industry IP20 RJ45 plug

- multi-port Cat.6 class E_A plug
- compliance with class E_A to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09
- suitable for 10 GBit Ethernet (IEEE 802.3an), Remote Powering (PoE, PoE plus and UPoE) and HDBaseT
- AWG 27/7 - 24/7 and AWG 26/1 - 24/1 connection possible
- solid copper wire diameter from 0.36 to 0.51 mm
- stranded copper wire diameter from 0.46 to 0.61 mm
- conductor diameter from 0.85 to 1.05 mm
- cable jacket up to 7.3 mm can be connected
- connection of crimp contacts and shield in one step using crimping tool
- variants with and without bend protection
- colored bend protection optionally available
- trumpet-shaped bending protection of the connection cable
- can be used as test plug on IP67 protected jacks of variants 1, 4, 5, 6 and 14
- not supplied in partial quantities
- variants: with bend protection / PU: 10 pcs, without bend protection / PU: 100 pcs

Dimensional drawing



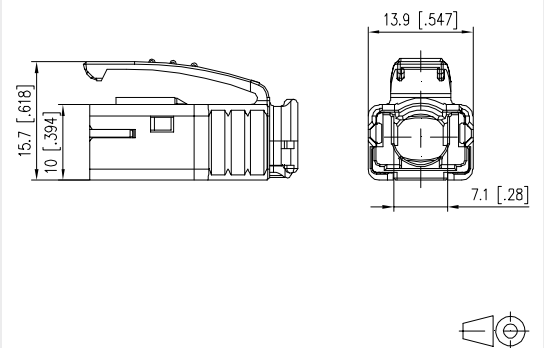
P/N	Color	Feature 1	Feature 2
1401505010-E	metallike	8(8) plug	w/o bend protection
1401505012-E	black	8(8) plug	with bend protection



IP20 plug bend protection

- molded snagless anti-bend sleeve for E-DAT Industry IP20 RJ45 plug
- trumpet-shaped bending protection of the connection cable
- retrofitting possible
- effective grip contours
- variants: white, light gray, blue, yellow, green, black, orange

Dimensional drawing



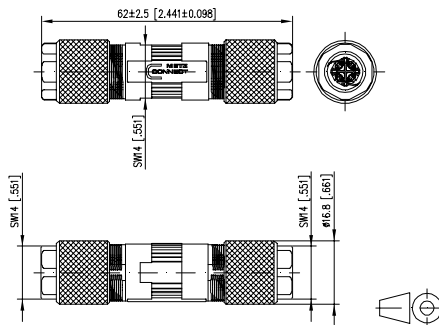
P/N	Color	Feature 1	Feature 2
1401008201-E	orange	plastics	
1401008202-E	black	plastics	
1401008203-E	light gray	plastics	
1401008204-E	white	plastics	
1401008205-E	yellow	plastics	
1401008206-E	blue	plastics	
1401008207-E	green	plastics	



Cable connector class F_A

- cable connector for field assembly Class F_A for 8 wire cables
- to connect / extend / repair / relocate copper data cables up to Cat.7_A
- compliance to Class F_A up to 1000 MHz according to ISO/IEC 11801 Ed.2.2:2011-06 in connection with Cat.7_A copper cables *1
- GHMT certified to ISO/IEC 11801 Ed.2.2:2011-06 and IEC 61156-5 Ed.2.1:2012-12
- suitable for 10 GBit Ethernet (IEEE 802.3an), Remote Powering (PoE, PoE plus and UPoE) and HDBaseT
- compact design: diameter 16.8 mm x length 64 mm
- IP67 protected housing in combination with IP67 appropriate cables *2
- refined zinc die-cast housing
- easy and fast assembly without special tools
- shield connection and strain relief integrated
- easy connection of data cables AWG 26/1 to 22/1 (solid wire) and AWG 26/7 to 22/7 (stranded wire) to insulation displacement connectors (IDC)
- solid copper wire diameter 0.4 to 0.64 mm
- stranded copper wire diameter 0.48 to 0.76 mm
- conductor diameter up to 1.6 mm
- suitable for cables with an overall diameter of 5.0 to 9.7 mm *2
- fully shielded version according to DIN EN 50173-1

Dimensional drawing



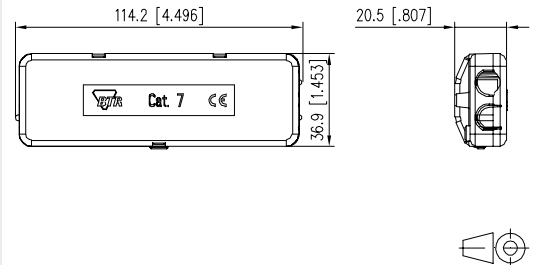
P/N	Color	Feature 1	Feature 2
130863-02-E	metallike	shielded	metal



Cat.7 cable connector

- for connecting/extending data cables up to Cat.7_A
- class E to ISO/IEC 11801 Ed.2.2:2011-06 is complied with in combination with Cat.6, Cat.6_A, Cat.7 and Cat.7_A cables and Cat.6 connectors
- connection of data lines AWG 26/1 to 22/1 (solid wire)
- cable feed from one or two sides
- cable sharing, i.e. splitting one 8-wire cable into two 4-wire cables (one cable tie required each on input and output side)
- fully shielded metal housing
- strain relief and separate captive 360° shield connection
- 2 bore holes for wall mounting

Dimensional drawing



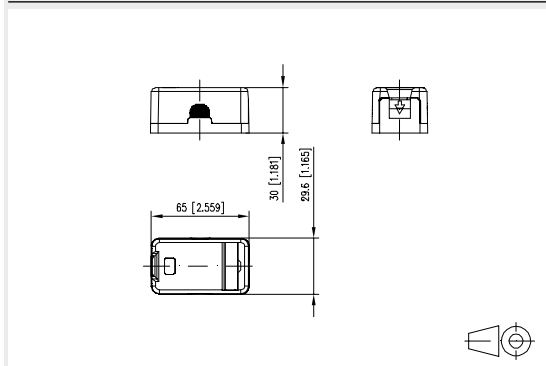
P/N	Color	Feature 1	Feature 2
130863-E	metallike	4x2	
130863-01-E	metallike	4x2 IP	IP67



Extension box APL Keystone

- for connection of the termination point line network (APL), equipped with C_{6A} modul K 180°
- suitable for mounting on support rail in counter panel of general power supply below cover in room for additional applications to VDE-AR-N 4101:2011-08
- failsafe contact with integrated dust protector slide
- for connection of an MUC communication module
- certified to GHMT Cat.6_A re-embedded PVP
- component testing for Cat.6_A to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09, TIA/EIA-568-C.2 (2009-08) and IEC 60603-7-51 Ed.1 (12/2008), certified to GHMT
- compliance with class E_A up to 500 MHz to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09
- tested: components up to 600 MHz, link up to 800 MHz
- for 10 GBit Ethernet (IEEE 802.3an)
- suitable for Power over Ethernet (PoE, PoE plus and UPoE)
- connection of data lines AWG 26/1 to 22/1 (solid wire) and AWG 26/7 to 22/7 (stranded wire) to insulation displacement connectors (IDC)
- plug direction of module inclined at 90° to top hat rail
- strain relief snapped on to stuffer cap
- with label window for enclosed identification labels
- cover parts in pure white RAL 9010, glossy surface
- variants: APL, APL with red patch cord (0.5 m)

Dimensional drawing



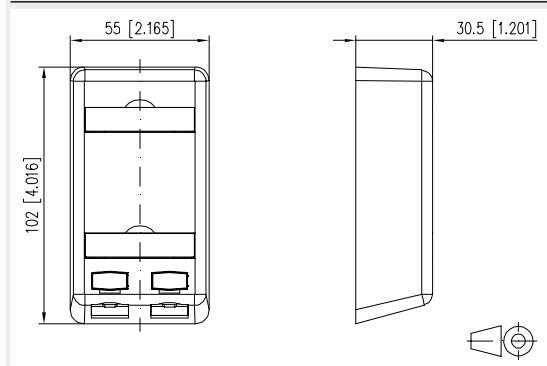
P/N	Color	Feature 1	Feature 2
130B21D1APL-E	pure white	AP 1 Port equipped	C _{6A} modul Keystone
130B21D1APLP-E	pure white	AP 1 Port equipped	with patch cord C _{6A} modul Key.
130910D1APLKE	pure white	equipped	E-DAT modul Keystone



Modul wall outlet APFL 2 port pure white unequipped

- flat surface-mounted housing for two individual modules in Modul design (E-DAT modul, C_{6A} modul)
- label window for identification labels (labels included in the delivery)
- mounting in underfloor false floors
- colored coding of the ports (red/blue)
- ideal for implementing consolidation points

Dimensional drawing



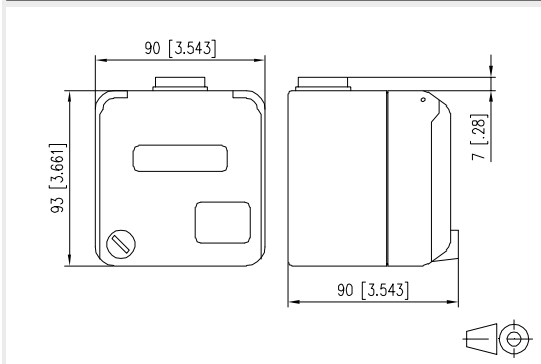
P/N	Color	Feature 1	Feature 2
1309150102-E	pure white	AP 2 Port unequipped	Module cut-out



Modul IP44SG surface mounting housing unequipped

- lockable flush-mounted IP44 outlet, keyed alike with two keys (identical locks and keys)
- cover closes completely, even when patch cables are plugged in
- for two individual modules in Modul design (not suitable for OpDAT modules)
- ball-impact resistant according to DIN 18032
- can be operated with standard patch cables
- clearly visible label window
- bottom section of housing can be turned 180°, with cable feed possible from top and bottom
- with space to install the required spare cable lengths
- gray

Dimensional drawing



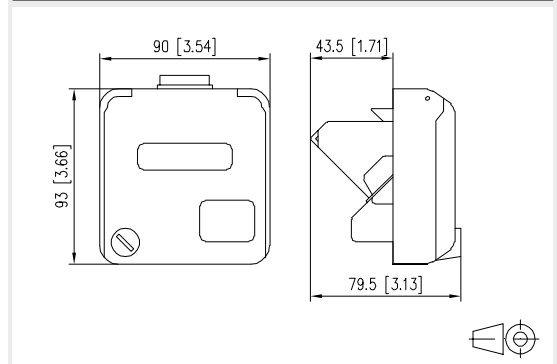
P/N	Color	Feature 1	Feature 2
1309460003-I	gray	AP 2 port unequipped	Module cut-out
1309460003KI	gray	AP 2 port unequipped	Keystone module cut-out



E-DAT modul IP44SG UP housing pure white unequipped

- lockable IP44 outlet, with two keys with lock with instantaneous locking action (identical locks and keys)
- cover closes completely, even when patch cables are plugged in
- UP housing for sill duct installation, or in conjunction with the flush-mounted UP installation outlet
- for two individual modules in Modul design
- ball-throw proof according to DIN 18032
- can be operated with standard patch cables
- clearly visible nomenclature panel
- variants: pure white, gray

Dimensional drawing



P/N	Color	Feature 1	Feature 2
1309461002-I	pure white	UP 2 Port unequipped	Module cut-out
1309461003-I	pure white	UP 2 Port unequipped	Module cut-out



Flush mount built-in outlet gray

- UP installation outlet for flush mounting of the IP44SG UP housing

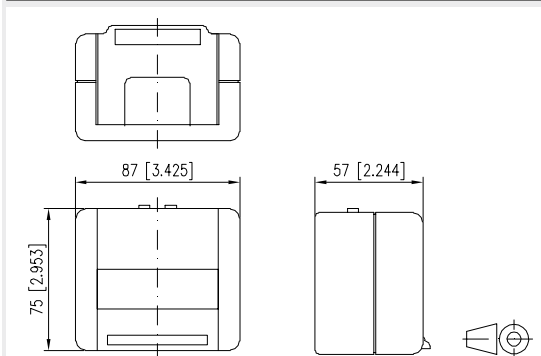
P/N	Color	Feature 1	Feature 2
1309441903-I	gray		



E-DAT modul IP20 AP Housing

- IP20 surface-mounted housing for two individual modules in Modul design
- identical to E-DAT modul IP44 AP but, due to the opening in the housing cover, it remains closed when patch cables are plugged in
- cable feed for one or two cables from the top
- break-proof
- gray color

Dimensional drawing



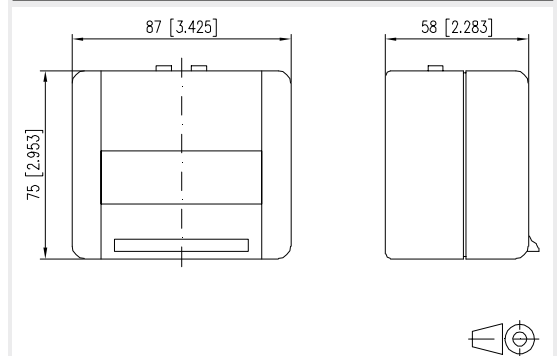
P/N	Color	Feature 1	Feature 2
1309450003-E	gray	AP 2 Port unequipped	Module cut-out



IP44 surface mounting housing unequipped

- IP44 flat surface-mounted housing for two individual modules in Modul design
- IP44 protection only when closed (without plugged in patch cable)
- cable feed for one or two cables from the top
- break-proof
- gray color

Dimensional drawing



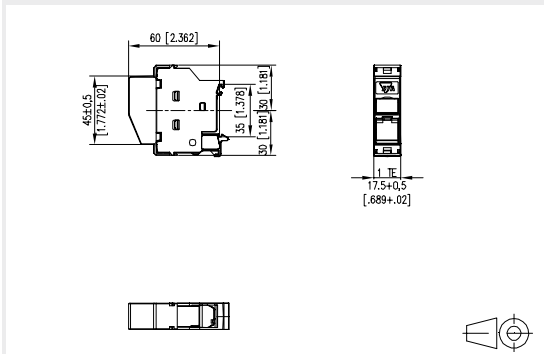
P/N	Color	Feature 1	Feature 2
1309430003-E	gray	AP 2 port unequipped	Module cut-out
1309430003KE	gray	AP 2 port unequipped	Keystone module cut-out



REGplus IP20 C6_A modul

- termination unit for mounting on TH35 rails to DIN EN 60715 in electrical distribution panels for home and industrial installations
- equipped with C6_Amodul 180° RJ45 individual module
- cable feed 45° from the top, plug direction 45° downwards
- certified to GHMT Cat.6_A re-embedded PVP
- component testing for Cat.6_A to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09, TIA/EIA-568-C.2 (2009-08) and IEC 60603-7-51 Ed.1 (12/2008), certified to GHMT
- compliance with class E_A up to 500 MHz to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09
- tested: component up to 600 MHz, link up to 800 MHz
- suitable for 10 GBit Ethernet (IEEE 802.3an), Remote Powering (PoE, PoE plus, UPoE and 4PPoE) and HDBaseT
- easy to install connection of data lines AWG 26/1 to 22/1 (solid wire) and AWG 26/7 to 22/7 (stranded wire) to insulation displacement connectors (IDC)
- conductor assignment to T568A and T568B is directly printed on the stuffer cap
- migration to 25G-systems without special tools
- width of 1HP allows mounting up to 12 REG plus in standard electrical distribution panels
- when mounted as a device of protection class I, the equipotential bonding is realized directly over the top hat rail by means of an integrated equipotential plate. This has to be connected to the equipotential bonding of the building by means of a bonding terminal
- a cover protects the module against direct contact. If mounted in distributor panels with protective insulation, protection class II is guaranteed. In this case, it is necessary to remove the equipotential bonding spring.
- integrated dust protection cover (also colored)

Dimensional drawing



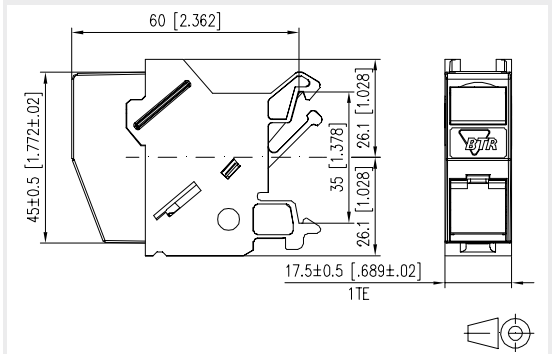
P/N	Color	Feature 1	Feature 2
130B117003-E	light gray	1 port equipped	C6 _A modul 180°
130B127003-E	light gray	1 port equipped	C6 _A modul 270°
1309107003-E	light gray	1 port equipped	E-DAT modul
1309A17003-E	light gray	1 port equipped	Coupler 90°
1309A07003-E	light gray	1 port equipped	Coupler 180°
1309427103-E	light gray	1 port unequipped	Module cut-out
1309428103-E	light gray	1 port unequipped	Key: module cut-out



E-DAT modul REG 1 Port IP20 light gray

- termination unit for mounting on TH35 rails to DIN EN 60715 in electrical distribution panels for home and industrial installations
- equipped with individual E-DAT modul RJ45 module
- cable feed 45° from the top, plug direction 45° downwards
- compliance with class EA to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09
- tested: Link up to 500 MHz
- suitable for 10 GBit Ethernet (IEEE 802.3an), Remote Powering (PoE, PoE plus and UPoE) and HDBaseT
- easy to install connection of 2 to 4 pair data lines
- AWG 26/1 - 22/1 and stranded wires with 7 copper conductors AWG 26/7 to BTR 8-fold insulation displacement connectors (IDC)
- marking of conductor assignment to T568A or T568B
- easy and fast insertion of wire pairs in E-DAT modul stuffer cap
- width of 1HP allows mounting up to 12 REG in standard electrical distribution panels
- when mounted as a device of protection class I, the equipotential bonding is realized directly over the top hat rail by means of an integrated equipotential plate. This has to be connected to the equipotential bonding of the building by means of a bonding terminal
- a cover protects the module against direct contact. If mounted in distributor panels with protective insulation, protection class II is guaranteed. In this case, it is necessary to remove the equipotential bonding spring.
- integrated dust protection cover (also colored)

Dimensional drawing



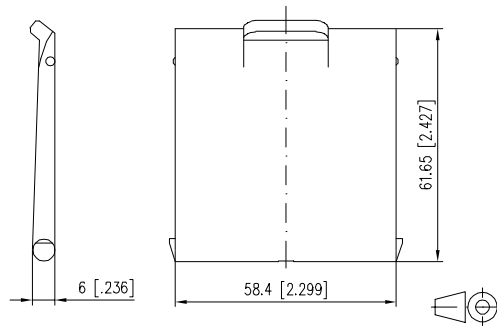
P/N	Color	Feature 1	Feature 2
1309426003-E	light gray	1 port equipped	
1309426103-E	light gray	1 port unequipped	Module cut-out



Dust protection covers for Modul patch panels / subway / REG

- for color service coding of patch fields, subway underfloor units and E-DAT modul REG
- suitable for: C6, modul patch fields, E-DAT modul patch field 24x8, subway underfloor units, module wall outlet 2 port APFL as well as E-DAT modul REG and Modul REGplus
- variants: yellow, blue, green, red

Dimensional drawing



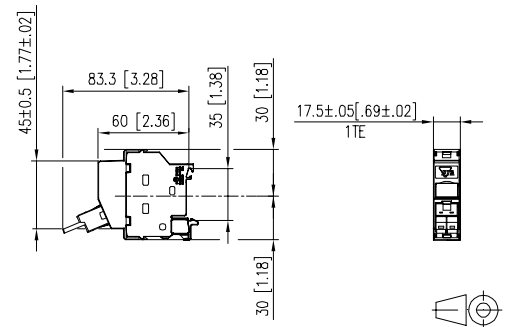
P/N	Color	Feature 1	Feature 2
816979-0105-I	yellow	1 port	
816979-0106-I	blue	1 port	
816979-0107-I	green	1 port	
816979-0108-I	red	1 port	



REGplus IP20 E2000 DC H&S

- termination with an E2000 DC adapter for mounting on TH35 rail to DIN EN 60715
- slotted zirconium oxide ceramics sleeve (ZrO2)
- high material stability and surface quality and long service life
- service life: min. 1000 plug cycles
- cable feed 45° from the top, plug direction 45° downwards
- width of 1HP allows mounting up to 12 REG in standard electrical distribution panels
- to install the adapter, the existing dust protection cover must be removed
- variants: blue (SM), green (SM APC), beige (MM)

Dimensional drawing



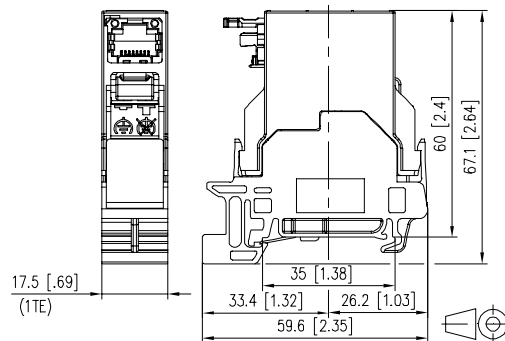
P/N	Color	Feature 1	Feature 2
130F5B7003-E	light gray	E2000 DC	SM
130F5C7003-E	light gray	E2000 DC	SM APC
130F5A7003-E	light gray	E2000 DC	MM



E-DAT Industry terminal rail TS35 field jack insert

- termination unit for mounting on TH35 rails to DIN EN 60715 in electrical distribution panels for home and industrial installations
- equipped with E-DAT Industry RJ45 field jack insert
- vertical plugging direction, 90° to rail
- compliance with class E_A to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09
- suitable for 10 GBit Ethernet (IEEE 802.3an), Remote Powering (PoE, PoE plus and UPoE) and HDBaseT
- easy to install connection of 2 to 4 pair data lines AWG 24/1 - 22/1 and stranded wires with 7 copper conductors AWG 26/7 to BTR 8-fold insulation displacement connectors (IDC)
- width of 1HP allows mounting up to 12 units in a standard electrical distribution panel
- when mounted as a device of protection class I, the equipotential bonding is realized directly over the top hat rail by means of a switchable integrated equipotential spring. This has to be connected to the equipotential bonding of the building by means of a bonding terminal
- variants: pin assignment to T568A, T568B or PROFINET

Dimensional drawing



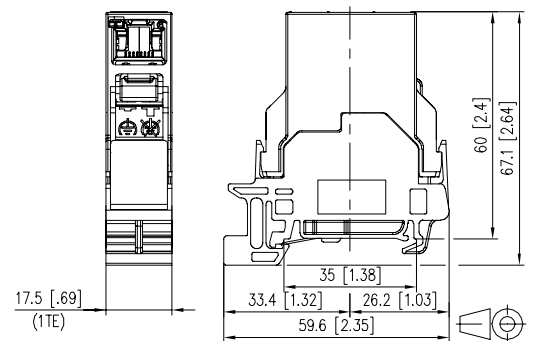
P/N	Color	Feature 1	Feature 2
1401106113KE	light gray	8(8) T568A	
1401806113KE	light gray	8(8) T568B	
1401906113KE	light gray	Profinet	



E-DAT Industry terminal rail TS35 coupler insert

- termination unit for mounting on TH35 rails to DIN EN 60715 in electrical distribution panels for home and industrial installations
- equipped with E-DAT Industry RJ45 coupler insert
- vertical plugging direction, 90° to rail
- compliance with class E to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09
- suitable for 10 GBit Ethernet (IEEE 802.3an), Remote Powering (PoE, PoE plus and UPoE) and HDBaseT
- increased resistance to vibrations and shocks due to 4 springs on the shield plates
- width of 1HP allows mounting up to 12 units in a standard electrical distribution panel
- when mounted as a device of protection class I, the equipotential bonding is realized directly over the top hat rail by means of a switchable integrated equipotential spring. This has to be connected to the equipotential bonding of the building by means of a bonding terminal

Dimensional drawing



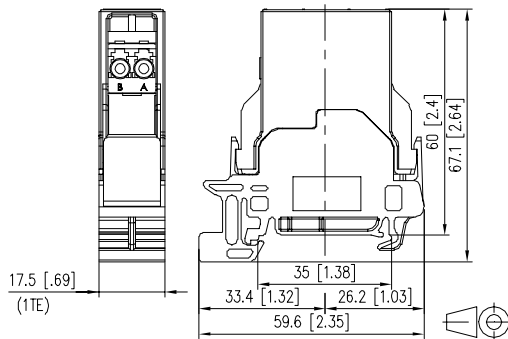
P/N	Color	Feature 1	Feature 2
1401206113KE	light gray	8(8) coupler	



OpDAT Industry terminal rail TS35 fiber LC-D

- termination unit with LC-D adapter on TH35 rail to DIN EN 60715
- slotted zirconium oxide ceramics sleeve (ZrO2) for single mode applications
- slotted metal sleeve (Ph-Br) for multi mode applications
- width of 1HP allows mounting up to 12 units in a standard electrical distribution panel
- vertical plugging direction, 90° to rail
- variants: SM, MM

Dimensional drawing



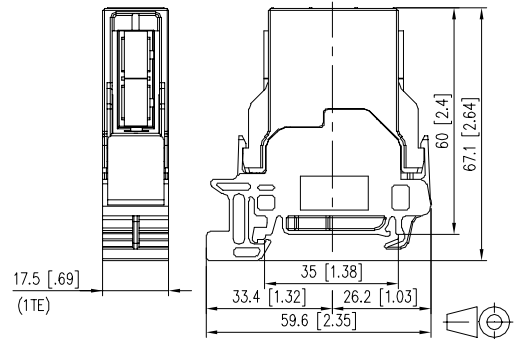
P/N	Color	Feature 1	Feature 2
1402L06113KE	light gray	LC-D (ceramic)	SM
1402306113KE	light gray	LC-D (Ph-BR)	MM



OpDAT Industry terminal rail TS35 fiber SC-D

- termination unit with SC-D adapter on TH35 rail to DIN EN 60715
- slotted zirconium oxide ceramics sleeve (ZrO2) for single mode applications
- slotted metal sleeve (Ph-Br) for multi mode applications
- width of 1HP allows mounting up to 12 units in a standard electrical distribution panel
- vertical plugging direction, 90° to rail
- variants: SM, MM

Dimensional drawing



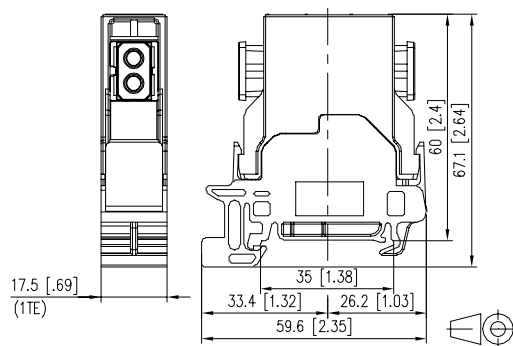
P/N	Color	Feature 1	Feature 2
1402Q06113KE	light gray	SC-D (ceramic)	SM
1402P06113KE	light gray	SC-D (PH-BR)	MM



OpDAT Industry terminal rail TS35 fiber SC-RJ/2SC

- termination unit with SC-RJ/2SC adapter on TH35 rail to DIN EN 60715
- slotted zirconium oxide ceramics sleeve (ZrO2) for single mode applications
- slotted metal sleeve (Ph-Br) for multi mode applications
- width of 1HP allows mounting up to 12 units in a standard electrical distribution panel
- vertical plugging direction, 90° to rail
- variants: SM, MM

Dimensional drawing



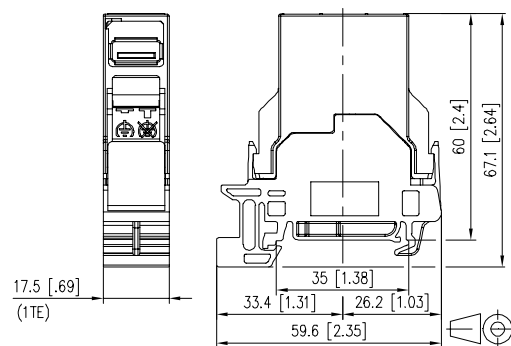
P/N	Color	Feature 1	Feature 2
1402K06113KE	light gray	SC-RJ/2SC	SM
1402106113KE	light gray	SC-RJ/2SC	MM



E-DAT Industry terminal rail TS35 USB

- termination unit for mounting on TH35 rails to DIN EN 60715 in electrical distribution panels for home and industrial installations
- equipped with USB-A coupler
- USB 2.0
- vertical plugging direction, 90° to rail
- width of 1HP allows mounting up to 12 units in a standard electrical distribution panel

Dimensional drawing



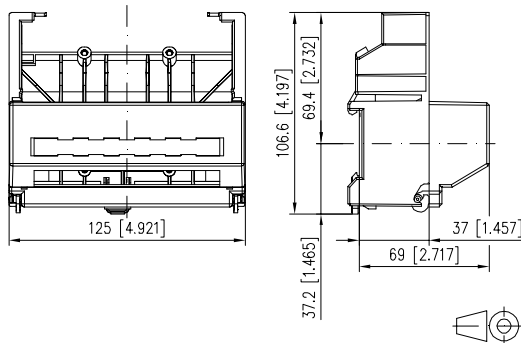
P/N	Color	Feature 1	Feature 2
1401U06113KE	light gray	USB A coupler	USB 2.0
1401U16113KE	light gray	USB A coupler	USB 3.0



DIN rail adapter

- top hat rail adapter for mounting 6-fold 1RU distributor modules in different distributor systems with top hat rail (TH35)
- matching 6-fold modules: C_{6A} modul 6 port, E-DAT C_{6A} 6 port, E-DAT module 6 port, E-DAT C₆ 6 port, OpDAT 6M

Dimensional drawing



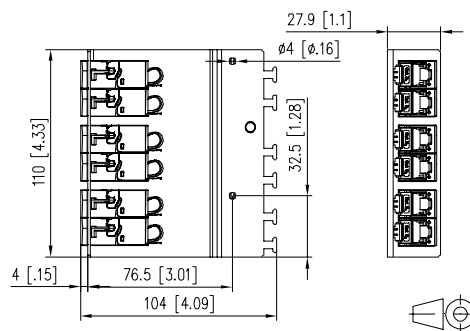
P/N	Color	Feature 1	Feature 2
1308990110-E	light gray	for 6 port modules	unequipped



C_{6A} modul 6 port 180°M 1RU

- module frame with 6 individual C_{6A} modul 180°
- certified to GHMT Cat.6_A re-embedded PVP
- component testing for Cat.6_A to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09, TIA/EIA-568-C.2 (2009-08) and IEC 60603-7-51 Ed.1 (12/2008), certified to GHMT
- compliance with class E_A up to 500 MHz to ISO/IEC 11801 Ed.2.2:2011-06, DIN EN 50173-1:2011-09
- tested: component up to 600 MHz, link up to 800 MHz
- suitable for 10 GBit Ethernet (IEEE 802.3an), Remote Powering (PoE, PoE plus, UPoE and 4PPoE) and HDBaseT
- connection of data lines AWG 26/1 to 22/1 (solid wire) and AWG 26/7 to 22/7 (stranded wire) to insulation displacement connectors (IDC)
- migration to 25G-systems without special tools
- strain relief directly snapped on to stuffer cap of C_{6A} modul
- for mounting in surface-mounted housing, top hat rail adapter or 1RU module frame
- optional strain relief using cable ties
- grounding bolt M6 x 10 with nut and lock washer

Dimensional drawing



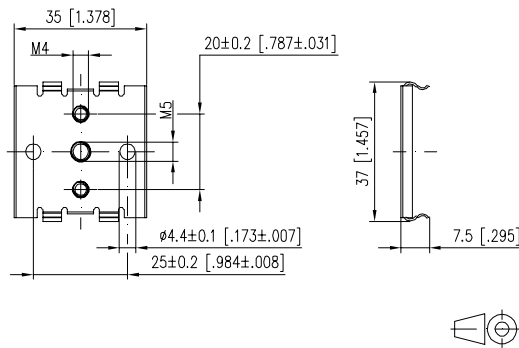
P/N	Color	Feature 1	Feature 2
130B11P2-E	stainless steel	6 port equipped	C _{6A} modul
130922-03-E	stainless steel	6 port equipped	E-DAT modul
130922-00-E	stainless steel	6 port unequipped	Module cut-out



DIN rail adapter mini

- to fasten heavy devices on a top hat rail (TH35)
- fastening screws are not included in the delivery

Dimensional drawing



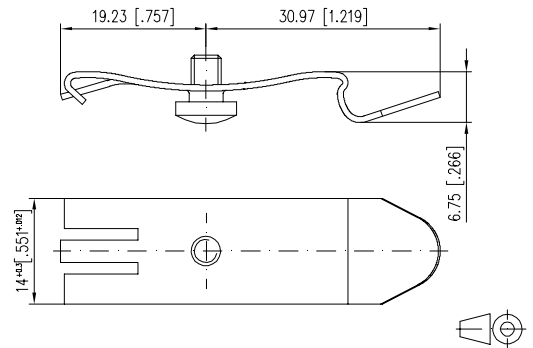
P/N	Color	Feature 1	Feature 2
1308990111-I	metallike	metal	



DIN rail adapter mini FS

- to fasten light devices, such as wall outlets, on a top hat rail (TH35)
- packing unit: adapter and screw (M4x6)
- two top hat rail adapters mini FS are required for fastening one wall outlet

Dimensional drawing



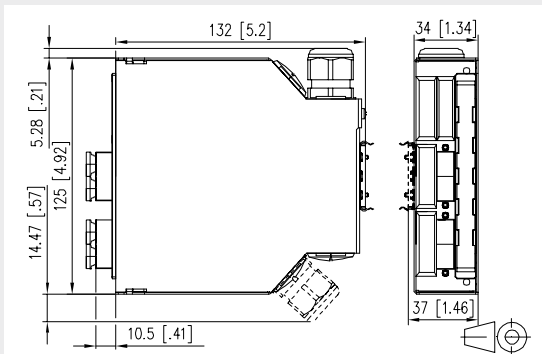
P/N	Color	Feature 1	Feature 2
1308990112-I	metallike	metal	



OpDAT REGplus 2xSC-D MM (ceramic), 1xM20, with crimp splice holder

- splice distributor for TH35 rail
 - equipped with SC-D (MM) adapters made of zinc die-casting
 - slotted ceramic sleeve for multi mode applications
 - with fiber reservoir
 - custom-labeled identification strips
 - various mounting versions on rail
 - splice tray with crimp splice holder
 - front plate can be completely removed
 - cable feed from top or bottom, straight or inclined, with M20 cable gland (up to 2 possible)
 - feed of preassembled cables is possible
 - one cable gland M20 with strain relief included in the delivery
 - housing cover fastening by means of just one captive screw
 - unoccupied adapter recesses are closed with special blind plugs
- variants: equipped with 2, 3, 4 or 6 SC-D adapters

Dimensional drawing



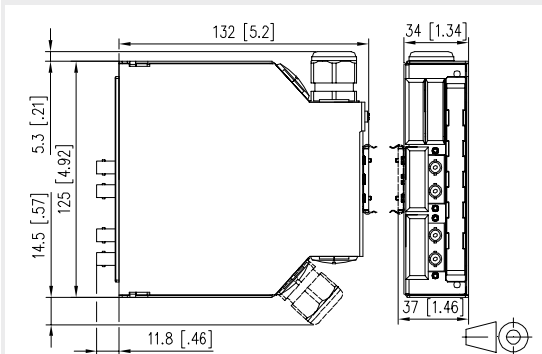
P/N	Color	Feature 1	Feature 2
150240C20210E	metallike	2xSC-D (ceramic)	MM
150240C20310E	metallike	2xSC-D (ceramic)	MM
150240C20410E	metallike	2xSC-D (ceramic)	MM
150240C20610E	metallike	2xSC-D (ceramic)	MM



OpDAT REGplus 2xSC/ST-D MM (ceramic), 1xM20, with crimp splice holder

- splice distributor for TH35 rail
 - equipped with SC-D/ST-D (MM) adapters made of zinc die-casting
 - slotted ceramic sleeve for multi mode applications
 - with fiber reservoir
 - custom-labeled identification strips
 - various mounting versions on rail
 - splice tray with crimp splice holder
 - front plate can be completely removed
 - cable feed from top or bottom, straight or inclined, with M20 cable gland (up to 2 possible)
 - feed of preassembled cables is possible
 - one cable gland M20 with strain relief included in the delivery
 - housing cover fastening by means of just one captive screw
 - unoccupied adapter recesses are closed with special blind plugs
- variants: equipped with 2, 3, 4 or 6 SC-D/ST-D adapters (SC-D interior, ST-D exterior)
- please note: if you use preassembled cables with ST plugs, use the unequipped version of the OpDAT REG plus. The ST-D adapters required in this case are available as accessory. Before mounting the adapters in the housing, plug the preassembled ST plugs in the adapters for reasons of space.

Dimensional drawing



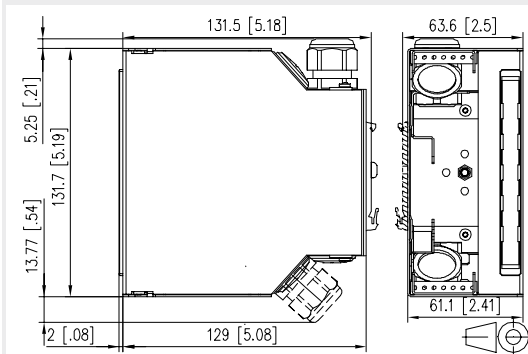
P/N	Color	Feature 1	Feature 2
150240C30210E	metallike	2xSC/ST-D (Ph-Br)	MM
150240C30310E	metallike	2xSC/ST-D (Ph-Br)	MM
150240C30410E	metallike	2xSC/ST-D (Ph-Br)	MM
150240C30610E	metallike	2xSC/ST-D (Ph-Br)	MM



OpDAT REGpro24 splice distributor

- splice distributor for TH35 rail without front cover
- to mount pigtails or pre-assembled installation cables
- gray housing
- with crimp splice holder for up to 24 splices
- installation of two shrink splice holders on splice tray is possible
- with fiber reservoir
- custom-labeled identification strips
- fastening on top hat rail by means of very sturdy top hat rail holder
- various mounting versions on rail
- for different front plates 3RU/7HP
- cable feed from top or bottom, straight or inclined, with M20 cable gland (up to 2 possible)
- width: 61 mm, height: 128 mm, depth: 132.5 mm (from rail, without adapter)
- one cable gland M20 with strain relief included in the delivery
- housing cover fastening by just one screw

Dimensional drawing



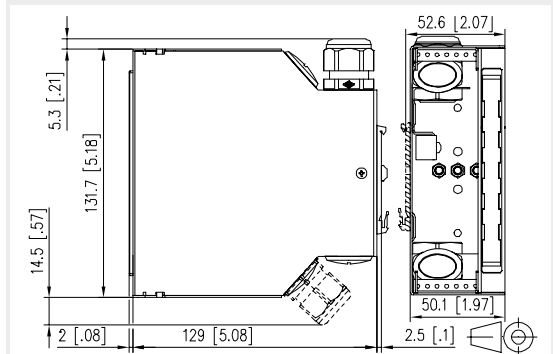
P/N	Color	Feature 1	Feature 2
15024A10-24-E	gray	unequipped	w/o splice tray



OpDAT REGpro splice distributor

- splice distributor for TH35 rail without front cover
 - gray housing
 - with or without splice tray with crimp splice holder for up to 12 splices
 - installation of two shrink splice holders on splice tray is possible
 - with fiber reservoir
 - custom-labeled identification strips
 - fastening on top hat rail by means of very sturdy top hat rail holder
 - various mounting versions on rail
 - for different front plates 3RU/7HP
 - cable feed from top or bottom, straight or inclined, with PG11 cable gland (up to 2 possible)
 - width: 50 mm, height: 128 mm, depth: 132.5 mm (from rail, without adapter)
 - feed of preassembled cables is possible
 - one cable gland PG11 with strain relief included in the delivery
 - housing cover fastening by means of just one screw
- variants: with and without splice tray
- Please note: not all front plates 3RU/7HP available on the market can be used for OpDAT REGpro. If preassembled cables are used, we recommend the version without splice tray.

Dimensional drawing



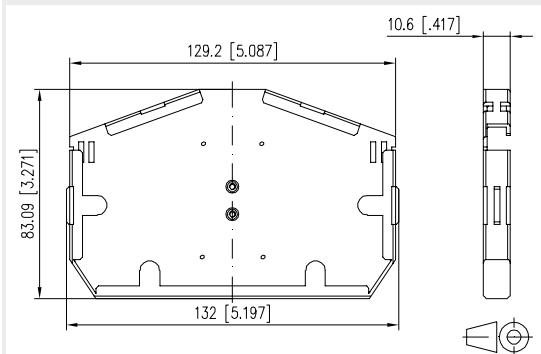
P/N	Color	Feature 1	Feature 2
15024A10-E	gray	unequipped	w/o splice tray
15024A10S-E	gray	unequipped	with splice tray



OpDAT REGpro splice tray with shrink splice holder

- splice tray for OpDAT REGpro
- with shrink splice holder for up to 12 splices

Dimensional drawing



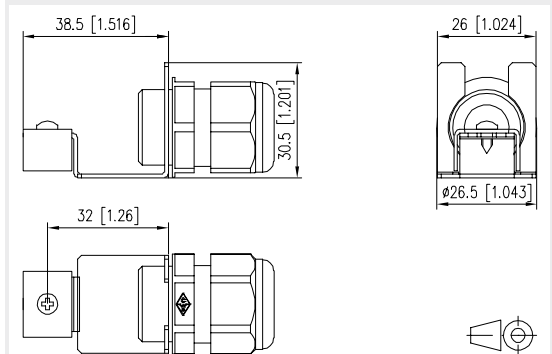
P/N	Color	Feature 1	Feature 2
15024ASK-S	gray	Splice tray	for shrink splice



OpDAT REG strain relief M20

- additional tension relief for OpDAT REGplus and/or OpDAT REGpro splice distributor
- M20 screw connection
- with tension relief for Kevlar
- additional strain relief for each splice distributor possible

Dimensional drawing



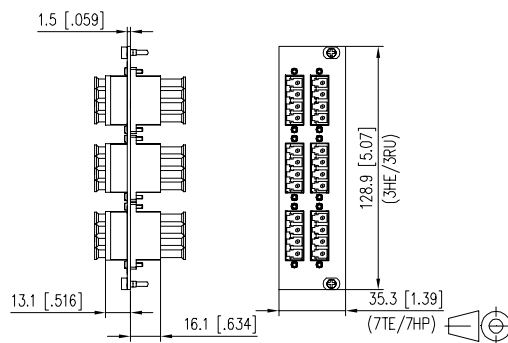
P/N	Color	Feature 1	Feature 2
150240M20Z-E	gray		



Front cover OpDAT REGpro LC-Q

- front plate 3RU/7HP LC-Q adapter
- slotted zirconium oxide ceramics sleeve (ZrO2) for single mode applications
- slotted metal sleeve (Ph-Br) for multi mode applications
- suitable for mounting in OpDAT REGpro and OpDAT REGpro24
- gray, powder-coated steel sheet
- variants: 6xLC-Q (blue), 3xLC-Q (violet), 6xLC-Q (violet), 6xLC-Q (aqua), 3xLC-Q (beige), 6xLC-Q (beige)

Dimensional drawing



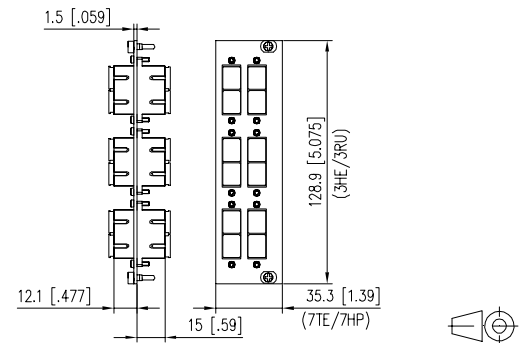
P/N	Color	Feature 1	Feature 2
15024A7106-E	blue	6xLC-Q (ceramic)	9/125 (OS2)
15024A7903-E	violet	3xLC-Q (ceramic)	50/125 (OM4)
15024A7906-E	violet	6xLC-Q (ceramic)	50/125 (OM4)
15024A7806-E	aqua	6xLC-Q (ceramic)	50/125 (OM3)
15024A7203-E	beige	3xLC-Q (Ph-Br)	9/125 (OS2) APC
15024A7206-E	beige	6xLC-Q (Ph-Br)	9/125 (OS2) APC



Front cover OpDAT REGpro 6xSC-D

- front plate 3RU/7HP with 6 SC-D adapter
- slotted zirconium oxide ceramics sleeve (ZrO2) for single mode applications
- slotted metal sleeve (Ph-Br) for multi mode applications
- suitable for mounting in OpDAT REGpro and OpDAT REGpro24
- gray, powder-coated steel sheet

Dimensional drawing



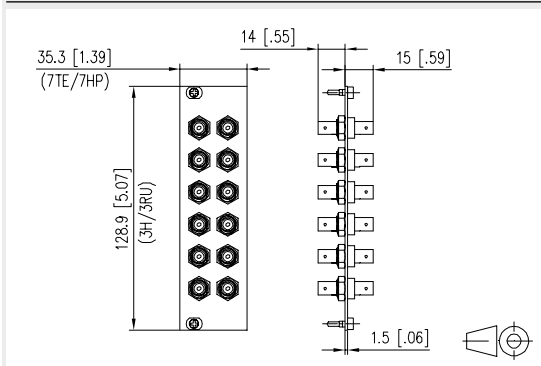
P/N	Color	Feature 1	Feature 2
15024AD206-E	metallike	6xSC-D (ceramic)	SM + MM



Front cover OpDAT REGpro 12xST

- front plate 3RU/7HP with 12 ST adapter
- slotted zirconium oxide ceramics sleeve (ZrO2) for single mode applications
- slotted metal sleeve (Ph-Br) for multi mode applications
- suitable for mounting in OpDAT REGpro and OpDAT REGpro24
- gray, powder-coated steel sheet
- variants: SM, MM

Dimensional drawing



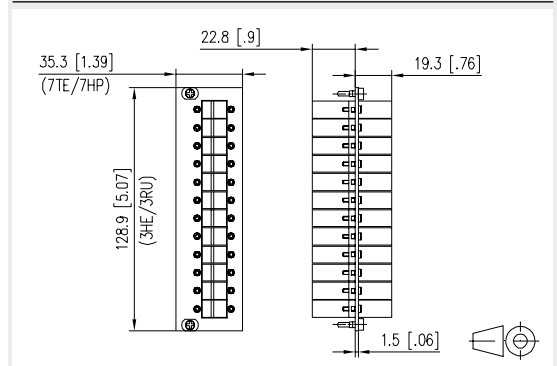
P/N	Color	Feature 1	Feature 2
15024A0112-E	gray	12xST (ceramic)	SM + MM



Front cover OpDAT REGpro 12xE2000

- front plate 3RU/7HP with 12 E2000 adapters
- slotted ceramics sleeve for single mode applications
- suitable for mounting in OpDAT REG pro and OpDAT REG S
- gray, powder-coated steel sheet
- variants: equipped with 12 E2000 adapters, each in blue (OS2) or E2000 APC adapters, each in green (OS2)

Dimensional drawing



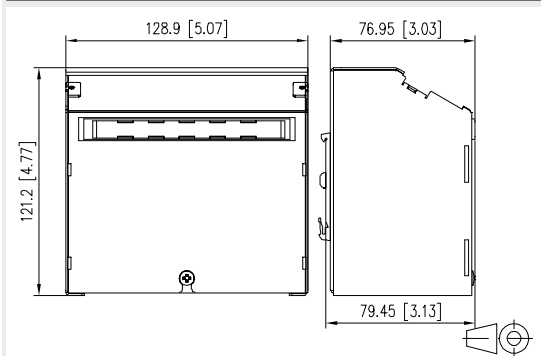
P/N	Color	Feature 1	Feature 2
15024A5812-E	blue	12xE2000 SM (ceramic)	9/125 (OS2)
15024A5912-E	green	12xE2000 SM APC (ceramic)	9/125 (OS2) APC



OpDAT REG Splice Distributor for pre-terminated cables

- Very compact splice distributor for TH35 rail
- Flat design with an inclined outlet (connections facing downward) and a large cabling space
- Great ease of use even with high cable channels in the immediate surroundings
- To mount pigtails or pre-terminated installation cables (VIKs)
- Modular design: housing, equipped front plate and splice tray are to be ordered separately
- Visible area with label strip
- The rail bracket can be mounted in different positions to the housing to allow for several mounting variants.
- Cable feed from top or bottom with a strain relief M20 (available as an option).
- Front plate (3RU/7HP) with LC-Quad, SC-Duplex, ST or E2000 adapters. Other types available on demand.
- 3 variants available:
 - OpDAT REG S V = for pre-terminated cables
 - OpDAT REG S Splice C = for 12 splices with crimp splice holders
 - OpDAT REG S Splice S = for 12 splices with shrink splice holders
- Particularly solid rail bracket
- With one captive screw of the cover
- Suitable for mixed equipment with fiber optic and copper based technology
- With a mounted blind plate it can be used on the rail as splice box only or also as a transit splice box with up to 12 (24) fibers

Dimensional drawing



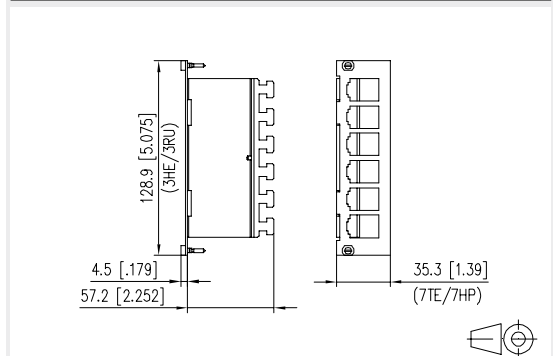
P/N	Color	Feature 1	Feature 2
15024B10-E	gray	unequipped	VIK
15024B10S-S	gray	unequipped	for shrink splice holder
15024B10S-E	gray	unequipped	for crimp splice holder



Modul module frame 3RU, 7HP 6 port stainless steel unequipped

- stainless steel module frame for 6 individual modules in Modul design
- strain relief at the module
- 3RU 7HP module frame with very short dimensions
- mounts in OpDAT REGpro, OpDAT REGpro24, OpDAT CM, OpDAT REG S or 3HP module frame
- additional strain relief possible by cable tie
- grounding possible by flat plug

Dimensional drawing



P/N	Color	Feature 1	Feature 2
130B10E2E-E	stainless steel	6 port unequipped	Module cut-out
130B20E2E-E	stainless steel	6 port unequipped	Keystone module cut-out

PCB Jacks

4-pole, D-coded



Jack M12
angled 90°, solderable, rear wall mount
P/N: MMT471A115 1.5-2.5 mm wall thickness
P/N: MMT471A115-0001 2.5-4.0 mm wall thickness
P/N: MMT471A115-0002 4.0-5.0 mm wall thickness



Jack M12
solderable, rear wall mount
P/N: MMW370A1A1



Jack M12
solderable, front mount
P/N: MMW360A1A1

8-pole, X-coded



Jack M12 in a set
solderable, rear wall mount
P/N: MMT371A3B5-0001



Jack M12
solderable, front mount
P/N: MMT361A315



Jack M12 in a set
solderable, front mount
P/N: MMT361A315-0001



Jack insert for PC boards M12
solderable
P/N: MMT060A315 (green)
P/N: MMT060A315-0001 (black)



Jack M12
solderable, rear wall mount
P/N: MMT371A3B5



Jack M12, angled 90°,
solderable, rear wall mount
P/N: MMT471A315
1.5-2.5 mm
wall thickness
P/N: MMT471A315-0001
2.5-4.0 mm
wall thickness
P/N: MMT471A315-0002
4.0-5.0 mm
wall thickness



Jack insert for PC boards
angled 90°, solderable,
rear wall mount
P/N: MMTA70A315



Jack M12, angled 90°,
solderable, rear wall mount
P/N: MMT471A315
1.5-2.5 mm
wall thickness
P/N: MMT471A315-0001
2.5-4.0 mm
wall thickness
P/N: MMT471A315-0002
4.0-5.0 mm
wall thickness

IP67
8-pole, X-coded

Jack M12
solderable, front mount, potted
P/N: MMT361A315-0009
IP67 in unmated form



Jack M12
solderable, rear wall mount, potted
P/N: MMT371A3B5-0009
IP67 in unmated form

Jacks & plugs for field assembly / Feed-through adapters M12 X-coded



M12 jack
8-pole, X-coded, IP67
for field assembly
P/N: MMF881A315



M12 jack
8-pole, X-coded, IP67
for field assembly, with flange
P/N: MMF881A315-0001



M12 plug
8-pole, X-coded, IP67
for field assembly, straight
P/N: MNF881A315-0001



M12 plug
4-pole, D-coded, IP67, for field assembly
P/N: MNF881A115



Feed-through adapter M12
8-pole, X-coded to RJ45 straight
P/N: MWN811A415



Feed-through adapter M12
8-pole, X-coded to RJ45 angled
P/N: MWN911A415

Complementary products



C6A RJ45 field plug pro
P/N: 130E405032-E



C6A RJ45 field plug pro 360
P/N: 130E405042-E



C5 RJ45 field plug pro 2P
P/N: 130E405032PE



C5 RJ45 field plug pro 2P 360
P/N: 130E405042PE



Cable connector Classe FA
P/N: 130863-02-E

Cables

4-pole, D-coded



Connection cable M12
P/N: 142M1D10xxx



Connection line M12
P/N: 142M1D11xxx



Connection line M12/RJ45
P/N: 142M4D15xxx



Connection cable M12 angled
P/N: 142M1D90xxx



Connection line
M12 angled-M12 straight
P/N: 142M1D19xxx



Connection line M12/RJ45
P/N: 142M4D25xxx



Connection line M12/RJ45
P/N: 142M4D95xxx

8-pole, X-coded



Connection cable M12
P/N: 142M2X10xxx



Connection line M12
P/N: 142M2X11xxx



Connection line M12/RJ45
P/N: 142M2X15xxx



Connection cable M12
P/N: 142M2X90xxx
P/N: 142M2XA0xxx
P/N: 142M2XB0xxx
P/N: 142M2XC0xxx



Connection line
M12 angled/M12 straight
P/N: 142M2X19xxx
P/N: 142M2X1Axxx
P/N: 142M2X1Bxxx
P/N: 142M2X1Cxxx



Connection line
M12 angled/RJ45
P/N: 142M2X95xxx
P/N: 142M2XA5xxx
P/N: 142M2XB5xxx
P/N: 142M2XC5xxx



Connection cable M12 jack
P/N: 142M2X20xxx



Connection line M12-RJ45
P/N: 142M2X25xxx



Connection line
M12 plug/jack
P/N: 142M2X12xxx



Connection line for
drag chain connector
M12 jack
P/N: 142M6X10xxx



Connection line for
drag chain connector
M12 plug/plug
P/N: 142M6X11xxx



Connection line for
drag chain connector
M12 jack
P/N: 142M6X20xxx



Connection line for
drag chain connector
M12 jack/plug
P/N: 142M6X21xxx



Connection line for
torsion connector
M12-plug
P/N: 142M7X10xxx



Connection line for
torsion connector
M12 plug/plug
P/N: 142M7X11xxx



Connection line for
torsion connector
M12 jack
P/N: 142M7X20xxx



Connection line for
torsion connector
M12 jack/plug
P/N: 142M7X21xxx

LEGEND

Standard cable length

xxx = 010 (1.0 m) xxx = 050 (5.0 m)
xxx = 020 (2.0 m) xxx = 100 (10.0 m)

Other cable lengths on request.



Position of coding at X-coded P/N with:

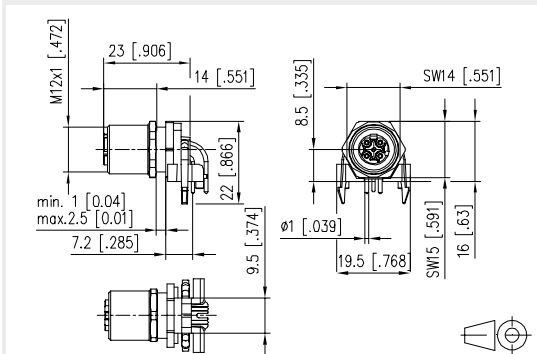
9 = 315°
A = 45°
B = 135°
C = 225°



Jack M12 solderable 90° 4-pole D-coded IP67 <2.5 mm wall thickness

- Ethernet M12 jack for PC boards
 - 4-pole, D-coded as per IEC 61076-02-101
 - angled 90°
 - solderable THR
 - side entry
 - protection degree IP67 in mated condition
 - suitable for applications in the railway industry
- Variants: suitable for a wall thickness up to 2.5 mm, up to 4 mm, up to 5 mm

Dimensional drawing



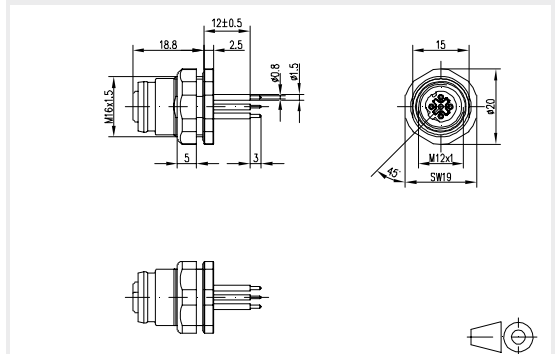
P/N	Color	Feature 1	Feature 2
MMT471A115	metallike	D-coded 90°	<2.5 mm
MMT471A115-0001	metallike	D-coded 90°	<4 mm
MMT471A115-0002	metallike	D-coded 90°	<5 mm



Jack M12 solderable through hole mounting 4-pole D-coded

- Ethernet M12 female connector for PC boards
- 4-pole, D-coded as per IEC 61076-02-101
- solderable
- through hole mounting
- green PC board insert for THR
- suitable for applications in the railway industry

Dimensional drawing



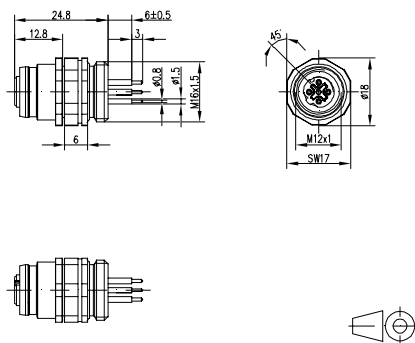
P/N	Color	Feature 1	Feature 2
MMW370A1A1	metallike	D-coded	



Jack M12 solderable front mounting 4-pole D-coded

- Ethernet M12 female connector for PC boards
- 4-pole, D-coded as per IEC 61076-02-101
- solderable
- front mounting
- green PC board insert for THR
- suitable for applications in the railway industry

Dimensional drawing



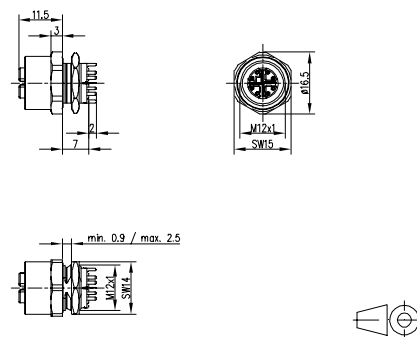
P/N	Color	Feature 1	Feature 2
MMW360A1A1	metallike	D-coded	



Jack M12 solderable 8-pole X-coded IP67, potted

- Ethernet M12 jack Cat.6_A for PC boards
- 8-pole, X-coded as per IEC 61076-02-109
- for 10 GBit Ethernet (IEEE 802.3an)
- wave solderable
- top entry
- green PC board insert
- protection degree IP67 in unmated condition
- suitable for applications in the railway industry

Dimensional drawing



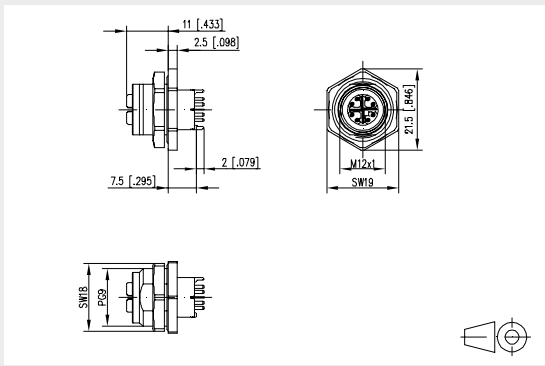
P/N	Color	Feature 1	Feature 2
MMT361A315-0009	metallike	X-coded	potted



Jack M12 solderable 8-pole X-coded IP67, rear wall mounting, potted

- Ethernet M12 jack Cat.6_A for PC boards
- 8-pole, X-coded as per IEC 61076-02-109
- rear wall mounting
- for 10 GBit Ethernet (IEEE 802.3an)
- wave solderable
- top entry
- protection degree IP67 in unmated condition

Dimensional drawing



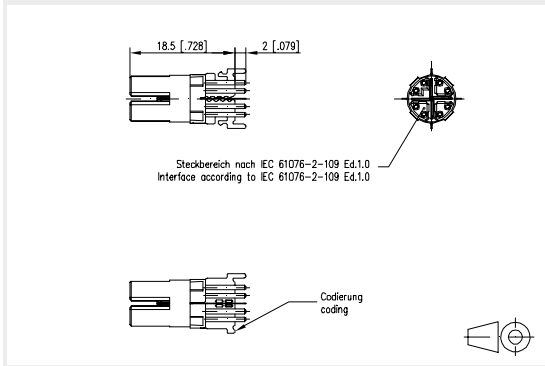
P/N	Color	Feature 1	Feature 2
MMT371A3B5-0009	metallike	X-coded	potted



Jack M12 solderable 8-pole X-coded IP67, rear wall mounting, in individual parts

- Ethernet M12 jack Cat.6_A for PC boards
- 8-pole, X-coded as per IEC 61076-02-109
- rear wall mounting
- for 10 GBit Ethernet (IEEE 802.3an)
- solderable, THR
- top entry
- protection degree IP67 in mated condition
- in individual parts

Dimensional drawing



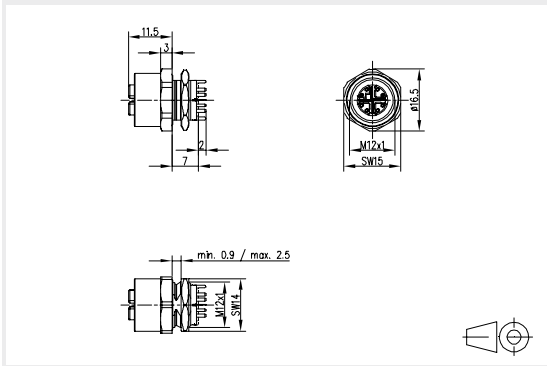
P/N	Color	Feature 1	Feature 2
MMT371A3B5-0001	metallike	X-coded	in individual parts



Jack M12 solderable 8-pole X-coded IP67

- Ethernet M12 jack Cat.6_A for PC boards
- 8-pole, X-coded as per IEC 61076-02-109
- for 10 GBit Ethernet (IEEE 802.3an)
- solderable, THR
- top entry
- green PC board insert
- suitable for applications in the railway industry

Dimensional drawing



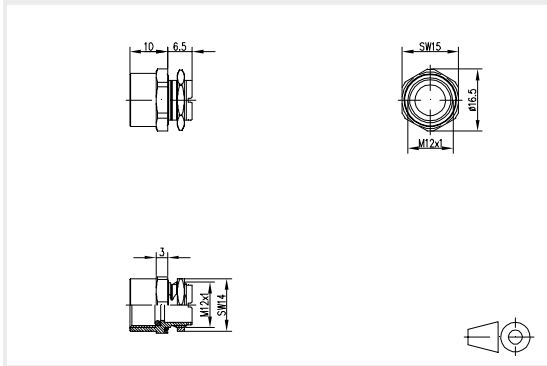
P/N	Color	Feature 1	Feature 2
MMT361A315	metallike	X-coded	



Jack M12 solderable 8-pole X-coded IP67, in individual parts

- Ethernet M12 jack Cat.6_A for PC boards
- 8-pole, X-coded as per IEC 61076-02-109
- for 10 GBit Ethernet (IEEE 802.3an)
- solderable, THR
- top entry
- green PC board insert
- in individual parts
- suitable for applications in the railway industry

Dimensional drawing



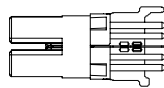
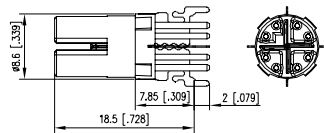
P/N	Color	Feature 1	Feature 2
MMT361A315-0001	metallike	X-coded	in individual parts



PC board insert M12 solderable 8-pole X-coded, green

- Ethernet M12 jack insert for PC boards
- 8-pole, X-coded as per IEC 61076-02-109
- for 10 GBit Ethernet (IEEE 802.3an)
- solderable (THR)
- plug-in direction vertical
- variants: green or black contact carrier

Dimensional drawing



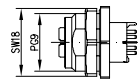
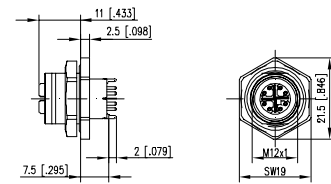
P/N	Color	Feature 1	Feature 2
MMT060A315	metallike	X-coded	
MMT060A315-0001	metallike	X-coded	



Jack M12 solderable 8-pole X-coded IP67, rear wall mounting

- Ethernet M12 jack Cat.6_A for PC boards
- 8-pole, X-coded as per IEC 61076-02-109
- rear wall mounting
- for 10 GBit Ethernet (IEEE 802.3an)
- solderable, THR
- top entry
- protection degree IP67 in mated condition

Dimensional drawing



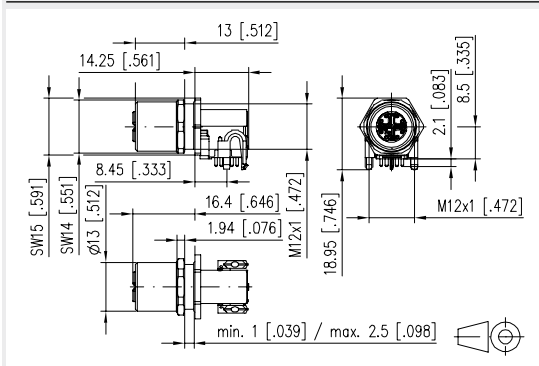
P/N	Color	Feature 1	Feature 2
MMT371A3B5	metallike	X-coded	



Jack M12 solderable 90° 8-pole X-coded IP67 < 2.5 mm wall thickness

- Ethernet M12 jack Cat.6_A for PC boards
 - 8-pole, X-coded as per IEC 61076-02-109
 - angled 90°
 - for 10 GBit Ethernet (IEEE 802.3an)
 - solderable THR
 - side entry
 - protection degree IP67 in mated condition
 - suitable for applications in the railway industry
- variants: suitable for a wall thickness up to 2.5 mm, up to 4 mm, up to 5 mm

Dimensional drawing



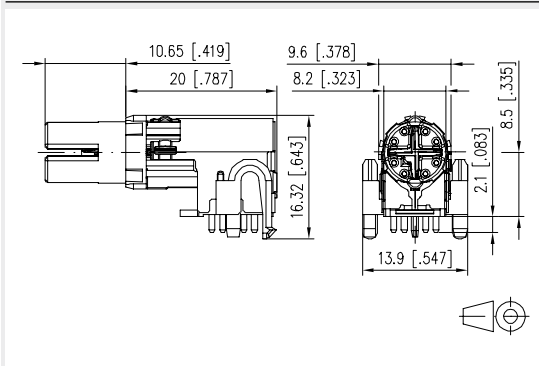
P/N	Color	Feature 1	Feature 2
MMT471A315	metallike	X-coded 90°	< 2.5 mm
MMT060A315-0001	metallike	X-coded 90°	< 4 mm
MMT060A315-0002	metallike	X-coded 90°	< 5 mm



PC board insert M12 solderable 90° 8-pole X-coded, green

- Ethernet M12 jack insert for PC boards 90°
- 8-pole, X-coded as per IEC 61076-02-109
- for 10 GBit Ethernet (IEEE 802.3an)
- solderable (THR)
- side entry
- green PC board insert

Dimensional drawing



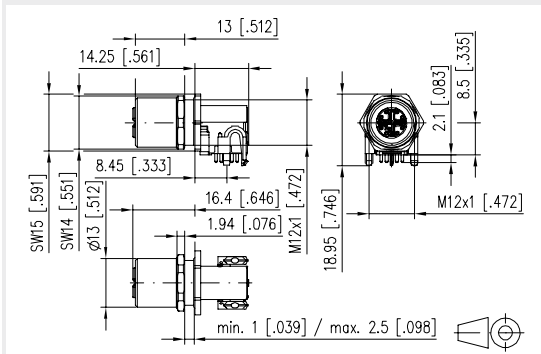
P/N	Color	Feature 1	Feature 2
MMTA70A315	metallike	X-coded	90°



Jack M12 solderable 90° 8-pole X-coded IP67 wall thickness, in individual parts

- Ethernet M12 jack Cat.6_A for PC boards
 - 8-pole, X-coded as per IEC 61076-02-109
 - angled 90°
 - for 10 GBit Ethernet (IEEE 802.3an)
 - solderable THR
 - side entry
 - protection degree IP67 in mated condition
 - in individual parts
 - suitable for applications in the railway industry
- variants: suitable for a wall thickness up to 2.5 mm, up to 4 mm, up to 5 mm

Dimensional drawing



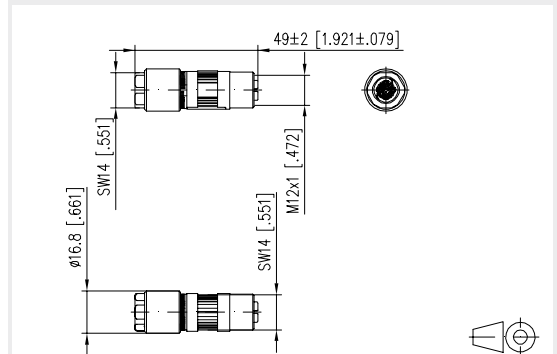
P/N	Color	Feature 1	Feature 2
MMT471A315-0003	metallike	X-coded 90°	< 2.5 mm, in individual parts
MMT471A315-0004	metallike	X-coded 90°	< 4 mm, in individual parts
MMT471A315-0005	metallike	X-coded 90°	< 5 mm, in individual parts



M12 Jack X-coded IP67, field assembly

- 8-pole M12 jack for field assembly Cat.6_A per IEC/PAS 61076-2-109
- suitable for 10 GBit as per IEEE 802.3an
- AWG 26/1-22/1, AWG 26/7-22/7 can be connected
- solid copper wire diameter 0.4 to 0.64 mm
- stranded copper wire diameter 0.48 to 0.76 mm
- wire diameter with isolation up to 1.6 mm
- overall cable diameter from 5.0 to 9.7 mm
- jack consists of only two parts
- easy assembly without special tools
- industry-compatible zinc die-cast housing
- suitable for applications in the railway industry

Dimensional drawing



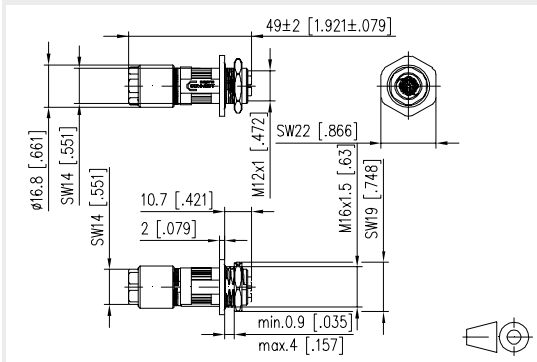
P/N	Color	Feature 1	Feature 2
MMF881A315		X-coded	



M12 Jack X-coded IP67, field assembly with flange

- 8-pole M12 jack for field assembly Cat. 6_A
- per IEC/PAS 61076-2-109 with flange
- suitable for 10 GBit as per IEEE 802.3an
- AWG 26/1 to 22/1, AWG 26/7 to 22/7 can be connected
- solid copper wire diameter 0.4 to 0.64 mm
- stranded copper wire diameter 0.48 to 0.76 mm
- wire diameter with isolation up to 1.6 mm
- overall cable diameter from 5.0 to 9.7 mm
- jack consists of only two parts
- easy assembly without special tools
- industry-compatible zinc die-cast housing
- suitable for applications in the railway industry

Dimensional drawing



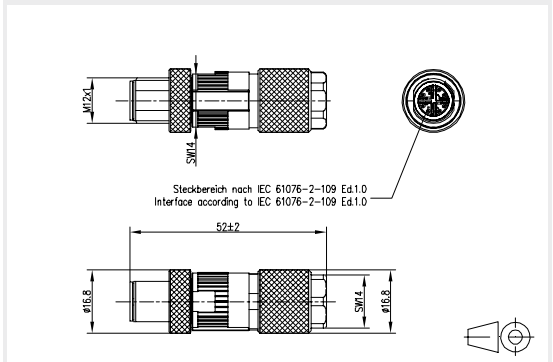
P/N	Color	Feature 1	Feature 2
MMF881A315-0001		X-coded	



M12 field plug X-coded, straight

- M12 Cat.6_A X-coded plug based on IEC PAS 61076-2-109 and suitable for field assembly
- suitable for 10 GBit Ethernet (IEEE 802.3an), Remote Powering (PoE, PoE plus and UPoE) and HDBaseT
- for a 8-wire M12 plug for AWG 22
- connection of AWG 26/1 - 22/1; AWG 26/7 - 22/7 possible
- solid copper wire diameter from 0.4 to 0.64 mm
- stranded copper wire diameter from 0.48 to 0.76 mm
- core diameter up to 1.6 mm
- cable jacket from 5.0 to 9.7 mm
- consists of only 2 parts
- easy assembly - connection without special tools
- zinc die-cast housing for industrial use
- suitable for applications in the railway industry

Dimensional drawing



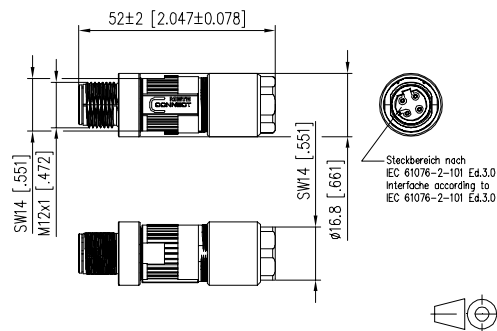
P/N	Color	Feature 1	Feature 2
MNF881A315-0001		X-coded	



M12 field plug D-coded, straight

- M12 Cat.5 D-coded plug based on IEC PAS 61076-2-101 and suitable for field packaging
- M12 field plug for AWG 22
- for a 4 wire cable connection
- 4-wire M12 plug for AWG 22 to be assembled in the field
- connection of AWG 26/7 - 22/7; AWG 24/1 - 22/1 possible
- solid copper wire diameter from 0.4 to 0.64 mm
- stranded copper wire diameter from 0.48 to 0.76 mm
- conductor diameter up to 1.6 mm
- cable jacket from 5.0 to 9.7 mm
- consists of only 2 parts
- easy assembly - connection without special tools
- zinc die-cast housing for industrial use
- suitable for applications in the railway industry

Dimensional drawing



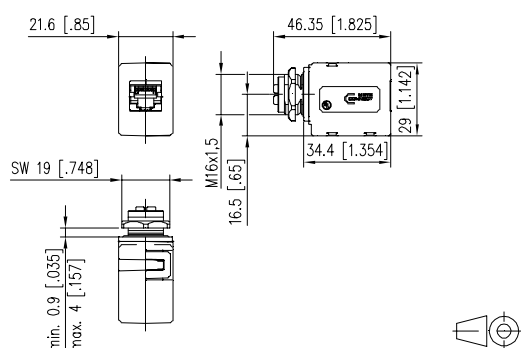
P/N	Color	Feature 1	Feature 2
MNF881A115		D-coded	



Panel feed through adapters M12 X-coded to RJ45 for electrical cabinets - straight

- panel feed-through adapter M12 to RJ45 for control cabinets
- M12 jack x-coded, IP67, per IEC/PS 61076-2-109
- RJ45 jack, IP20, per IEC 60603-7-51
- suitable for 10 GBit per IEEE802.3an
- Cat.6_A
- plug-in direction: straight
- solid refined zinc die-cast housing
- suitable for applications in the railway industry

Dimensional drawing



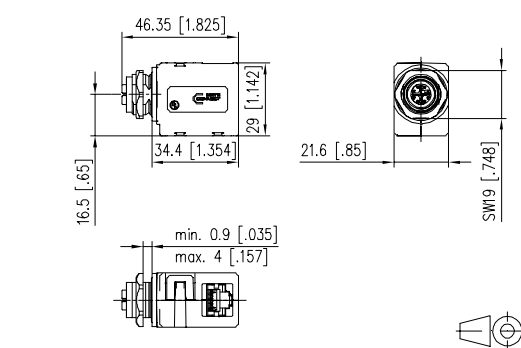
P/N	Color	Feature 1	Feature 2
MWN811A415	metallike	X-coded	180°



Panel feed through adapters M12 X-coded to RJ45 for electrical cabinets - angled

- Panel feed-through adapter M12 to RJ45 for control cabinets
- M12 connector x-coded, IP67, per IEC/PS 61076-2-109
- RJ45 jack, IP20, per IEC 60603-7-51
- suitable for 10 GBit per IEEE802.3an
- Cat.6_A
- angled
- solid housing refined with zinc die-casting
- suitable for applications in the railway industry

Dimensional drawing



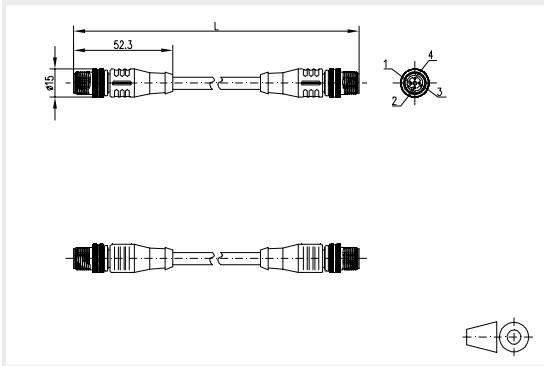
P/N	Color	Feature 1	Feature 2
MWN911A415	metallike	X-coded	90°



Connection line M12 plug straight - M12 plug straight 4-pole, D-coded

- shielded M12 Ethernet connection line
 - Cat.5e, 4-pole, D-coded to IEC 61076-2-101
 - side 1: M12-plug, straight
 - side 2: M12-plug, straight
 - extrusion-coated cable on M12 connectors
 - 2x2xAWG22/7, tinned with plastic foil
 - inner sheath FRNC, aluminum-coated plastic foil
 - overall shield: tinned copper braid, approx. 85% covered
 - Profinet (WS-GE-BL-OR) wiring
 - green cable, PUR
- standard variants: 1.0 m, 2.0 m, 5.0 m, 10.0 m
 - other cable lengths on request

Dimensional drawing



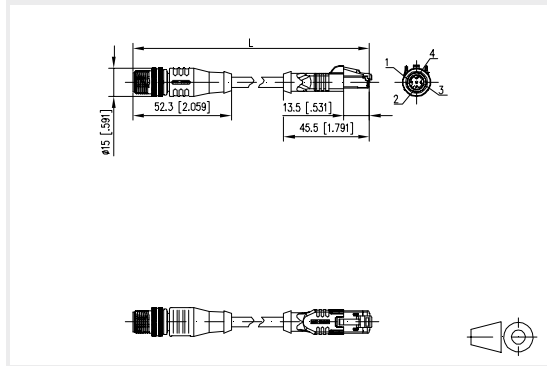
P/N	Color	Feature 1	Feature 2
142M1D11010	green	1 m	
142M1D11020	green	2 m	
142M1D11050	green	5 m	
142M1D11100	green	10 m	



Connection line M12 plug straight - RJ45 plug straight AWG 26 4-pole, D-coded

- shielded M12 to RJ45 Ethernet connection line
 - Cat.5e, 4-pole, D-coded (IEC 61076-2-101)
 - side 1: M12 plug, straight
 - side 2: RJ45 plug, straight
 - extrusion-coated cable on M12 and RJ45 connector
 - stranded wires 4x1xAWG26/19
 - overall shield tinned copper braid
 - pin assignment per Profinet
 - green cable, PUR
- standard variants: 1.0 m, 2.0 m, 5.0 m, 10.0 m
 - other cable lengths on request

Dimensional drawing



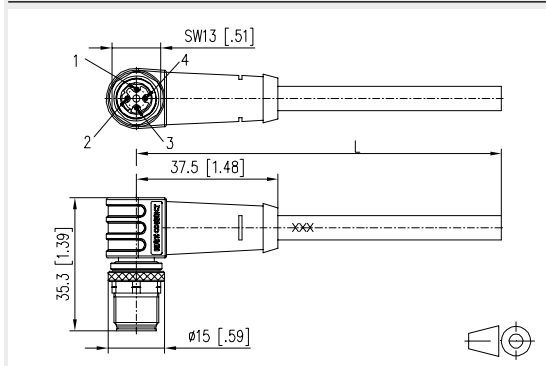
P/N	Color	Feature 1	Feature 2
142M4D15010	green	1 m	
142M4D15020	green	2 m	
142M4D15050	green	5 m	
142M4D15100	green	10 m	



Connection cable M12 plug angled - free line end 4-pole, D-coded

- shielded M12 Ethernet connection cable
 - Cat.5e, 4-pole, D-coded (IEC 61076-2-101)
 - side 1: M12-plug, angled
 - side 2: free line end
 - extrusion-coated cable on M12 connector
 - 2x2xAWG22/7, tinned with plastic foil
 - inner sheath FRNC, aluminum-coated plastic foil
 - overall shield: tinned copper braid, approx. 85% covered
 - Profinet (WS-GE-BL-OR) wiring
 - green cable, PUR
- variants: 1.0 m, 2.0 m, 5.0 m, 10.0 m
• other cable lengths on request

Dimensional drawing



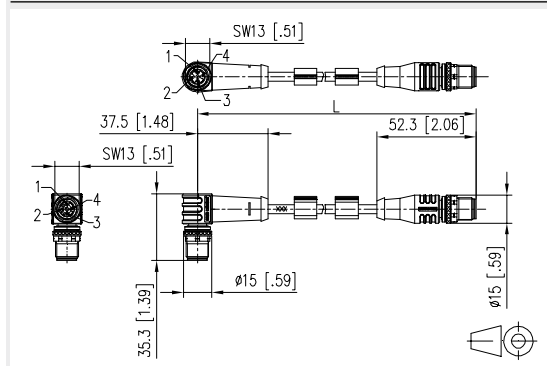
P/N	Color	Feature 1	Feature 2
142M1D90010	green	1 m	
142M1D90020	green	2 m	
142M1D90050	green	5 m	
142M1D90100	green	10 m	



Connection line M12 plug straight - M12 plug angled 4-pole, D-coded

- shielded M12 Ethernet connection line
 - Cat.5e, 4-pole, D-coded (IEC 61076-2-101)
 - side 1: M12-plug, straight
 - side 2: M12-plug, angled
 - extrusion-coated cable on M12 connectors
 - 2x2xAWG22/7, tinned with plastic foil
 - inner sheath FRNC, aluminum-coated plastic foil
 - overall shield: tinned copper braid, approx. 85% covered
 - Profinet (WS-GE-BL-OR) wiring
 - green cable, PUR
- standard variants: 1.0 m, 2.0 m, 5.0 m, 10.0 m
• other cable lengths on request

Dimensional drawing



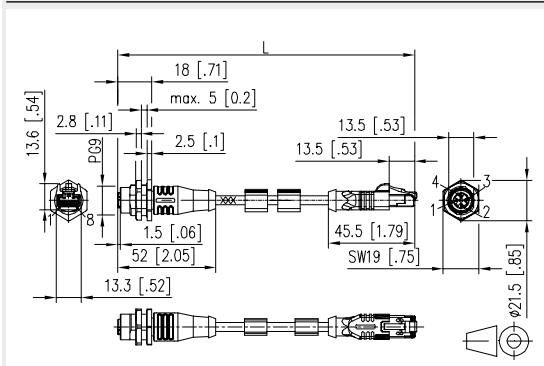
P/N	Color	Feature 1	Feature 2
142M1D19010	green	1 m	
142M1D19020	green	2 m	
142M1D19050	green	5 m	
142M1D19100	green	10 m	



Connection line M12 jack straight - RJ45 plug straight 4-pole, D-coded

- shielded M12-jack to RJ45-plug Ethernet connection line
 - Cat.5e, 4-pole, D-coded (IEC 61076-2-101)
 - side 1: M12 jack, straight
 - side 2: RJ45 plug, straight
 - extrusion-coated cable on connectors
 - stranded wires 1x4xAWG26/19
 - overall shield tinned copper braid
 - pin assignment per Profinet
 - green cable, PUR
- standard variants: 1.0 m, 2.0 m, 3.0 m, 5.0 m, 10.0 m
• other cable lengths on request

Dimensional drawing



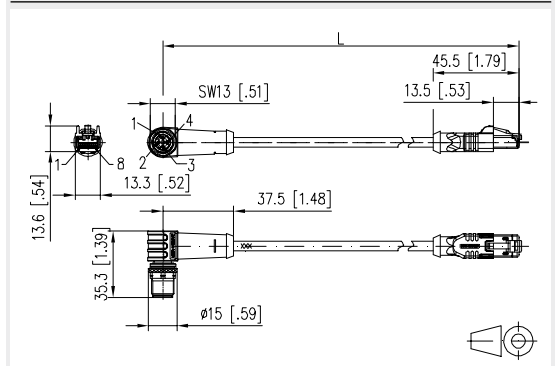
P/N	Color	Feature 1	Feature 2
142M4D25010	green	1 m	
142M4D25020	green	2 m	
142M4D25050	green	5 m	
142M4D25100	green	10 m	



Connection line M12 plug angled - RJ45 plug straight 4-pole, D-coded

- shielded M12 to RJ45 Ethernet connection line
 - Cat.5e, 4-pole, D-coded (IEC 61076-2-101)
 - side 1: M12 plug, angled
 - side 2: RJ45 plug, straight
 - extrusion-coated cable on connectors
 - stranded wires 4x1xAWG26/19
 - overall shield: tinned copper braid
 - pin assignment per Profinet
 - green cable, PUR
- variants: 1.0 m, 2.0 m, 5.0 m, 10.0 m
• other cable lengths on request

Dimensional drawing



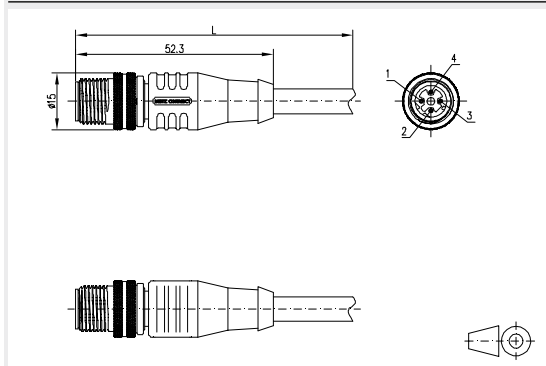
P/N	Color	Feature 1	Feature 2
142M4D95010	green	1 m	
142M4D95020	green	2 m	
142M4D95050	green	5 m	
142M4D95100	green	10 m	



Connection cable M12 plug straight - free line end 4-pole, D-coded

- shielded M12 Ethernet connection cable
 - Cat.5e, 4-pole, D-coded (IEC 61076-2-101)
 - side 1: M12-plug, straight
 - side 2: free line end
 - extrusion-coated cable on M12 connector
 - 2x2xAWG22/7, tinned with plastic foil
 - inner sheath FRNC, aluminum-coated plastic foil
 - overall shield: tinned copper braid, approx. 85% covered
 - Profinet (WS-GE-BL-OR) wiring
 - green cable, PUR
- variants: 1.0 m, 2.0 m, 5.0 m, 10.0 m
 - other cable lengths on request

Dimensional drawing



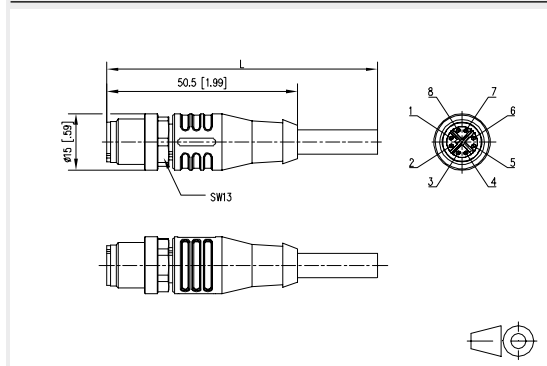
P/N	Color	Feature 1	Feature 2
142M1D10010	green	1 m	
142M1D10020	green	2 m	
142M1D10050	green	5 m	
142M1D10100	green	10 m	



Connection cable M12 plug straight - free line end 8-pole, X-coded

- shielded M12 Ethernet connection cable
 - Cat.6_A, x-coded, 8-pole
 - side 1: M12 connector, straight
 - side 2: free line end
 - M12 connector over molded
 - stranded wires 4x2xAWG26/7
 - overall shield tinned copper braid
 - green cable, PUR
- standard variants: 1.0 m, 2.0 m, 5.0 m, 10.0 m
 - other cable lengths on request

Dimensional drawing



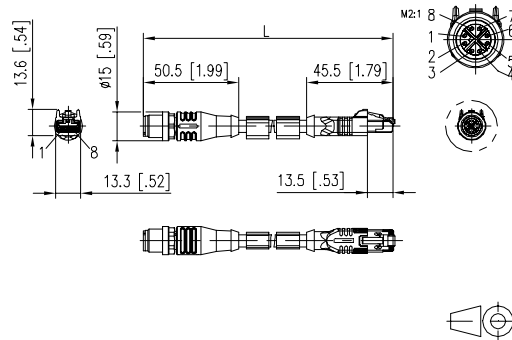
P/N	Color	Feature 1	Feature 2
142M2X10010	green	1 m	
142M2X10020	green	2 m	
142M2X10050	green	5 m	
142M2X10100	green	10 m	



Connection line M12 plug straight - RJ45 plug straight AWG 26 4-pole, D-coded

- shielded M12-plug to RJ45-plug connection line
 - Cat. 6_A, 8-pole, X-coded
 - side 1: M12-plug, straight
 - side 2: RJ45-plug, straight
 - connectors over molded
 - stranded wires 4x2xAWG26/7 PiMF
 - pin assignment per T568B
 - overall shield tinned copper braid
 - green cable, PUR
- standard variants: 1.0 m, 2.0 m, 5.0 m, 10.0 m
• other cable lengths on request

Dimensional drawing



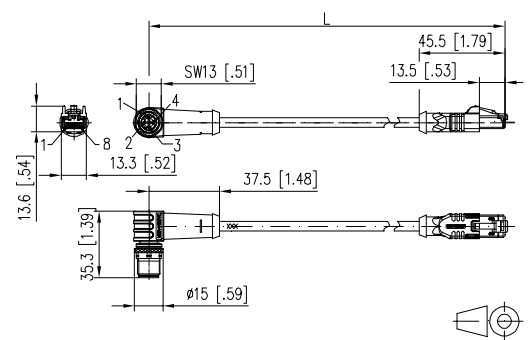
P/N	Color	Feature 1	Feature 2
142M2X15010	green	1 m	
142M2X15020	green	2 m	
142M2X15050	green	5 m	
142M2X15100	green	10 m	



Connection cable M12 X-coded, M12 plug angled - free line end 8-pole

- shielded M12 to RJ45 Ethernet connection line
 - Cat. 5e, 4-pole, D-coded (IEC 61076-2-101)
 - side 1: M12 plug, angled
 - side 2: RJ45 plug, straight
 - extrusion-coated cable on connectors
 - stranded wires 4x1xAWG26/19
 - overall shield: tinned copper braid
 - pin assignment per Profinet
 - green cable, PUR
- variants: 1.0 m, 2.0 m, 5.0 m, 10.0 m
• other cable lengths on request

Dimensional drawing



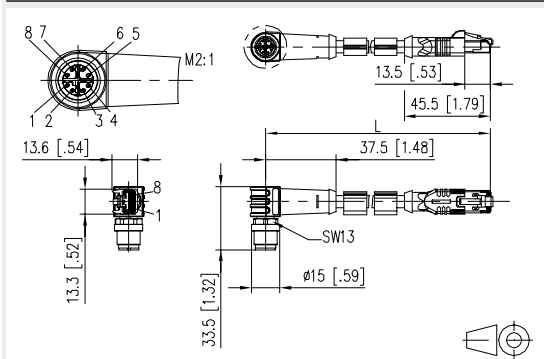
P/N	Color	Feature 1	Feature 2
142M2X90010	green	1 m	Position of coding 315°
142M2X90020	green	2 m	Position of coding 315°
142M2X90050	green	5 m	Position of coding 315°
142M2X90100	green	10 m	Position of coding 315°
142M2XA0010	green	1 m	Position of coding 45°
142M2XA0020	green	2 m	Position of coding 45°
142M2XA0050	green	5 m	Position of coding 45°
142M2XA0100	green	10 m	Position of coding 45°
142M2XB0010	green	1 m	Position of coding 135°
142M2XB0020	green	2 m	Position of coding 135°
142M2XB0050	green	5 m	Position of coding 135°
142M2XB0100	green	10 m	Position of coding 135°
142M2XC0010	green	1 m	Position of coding 225°
142M2XC0020	green	2 m	Position of coding 225°
142M2XC0050	green	5 m	Position of coding 225°
142M2XC0100	green	10 m	Position of coding 225°



Connection line M12 plug angled - RJ45 plug straight 8-pole, X-coded

- shielded M12X to RJ45 Ethernet connection line
 - Cat. 6_A, 8-pole
 - side 1: M12 connector, angled, position of coding 315°
 - side 2: RJ45 plug, straight
 - connectors over molded
 - stranded wires 4x2xAWG26/7 PiMF
 - overall shield tinned copper braid
 - pin assignment per T568B
 - green cable, PUR
- standard variants: 1.0 m, 2.0 m, 5.0 m, 10.0 m
• other cable lengths on request

Dimensional drawing



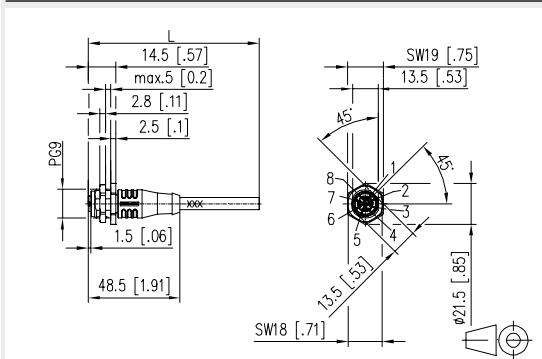
P/N	Color	Feature 1	Feature 2
142M2X95010	green	1 m	Position of coding 315°
142M2X95020	green	2 m	Position of coding 315°
142M2X95050	green	5 m	Position of coding 315°
142M2X95100	green	10 m	Position of coding 315°
142M2XA5010	green	1 m	Position of coding 45°
142M2XA5020	green	2 m	Position of coding 45°
142M2XA5050	green	5 m	Position of coding 45°
142M2XA5100	green	10 m	Position of coding 45°
142M2XB5010	green	1 m	Position of coding 135°
142M2XB5020	green	2 m	Position of coding 135°
142M2XB5050	green	5 m	Position of coding 135°
142M2XB5100	green	10 m	Position of coding 135°
142M2XC5010	green	1 m	Position of coding 225°
142M2XC5020	green	2 m	Position of coding 225°
142M2XC5050	green	5 m	Position of coding 225°
142M2XC5100	green	10 m	Position of coding 225°



Connection cable M12 jack straight - free line end 8-pole, X-coded

- shielded M12 Ethernet connection cable
 - Cat. 6_A, x-coded, 8-pole
 - side 1: M12-jack, straight
 - side 2: free line end
 - M12-jack over molded
 - stranded wires 4x2xAWG26/7
 - overall shield tinned copper braid
 - green cable, PUR
 - protective cap included in the delivery
- standard variants: 1.0 m, 2.0 m, 5.0 m, 10.0 m
• other cable lengths on request

Dimensional drawing



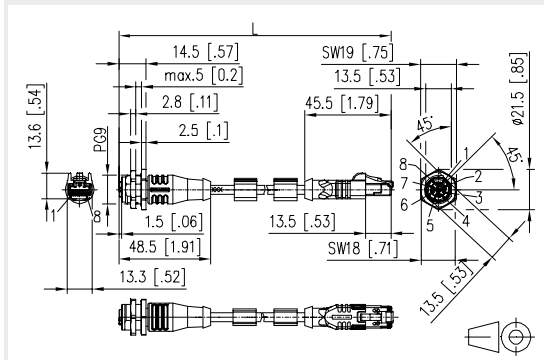
P/N	Color	Feature 1	Feature 2
142M2X20010	green	1 m	
142M2X20020	green	2 m	
142M2X20050	green	5 m	
142M2X20100	green	10 m	



Connection line M12 jack straight - RJ45 plug straight 4-pole, D-coded

- shielded M12-jack to RJ45-plug connection line
 - Cat. 6_A, 8-pole, X-coded
 - side 1: M12-jack, straight
 - side 2: RJ45-plug, straight
 - connectors over molded
 - stranded wires 4x2xAWG26/7 PiMF
 - overall shield tinned copper braid
 - pin assignment per T568B
 - green cable, PUR
- standard variants: 1.0 m, 2.0 m, 5.0 m, 10.0 m
• other cable lengths on request

Dimensional drawing



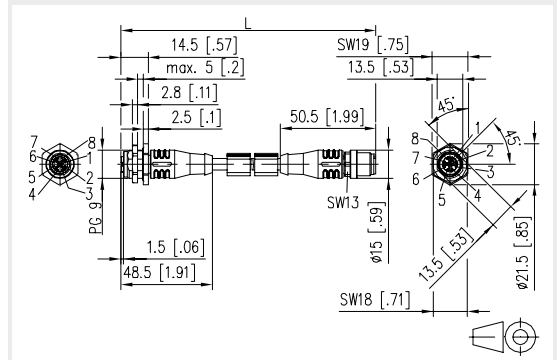
P/N	Color	Feature 1	Feature 2
142M2X25010	green	1 m	
142M2X25020	green	2 m	
142M2X25050	green	5 m	
142M2X25100	green	10 m	



Connection line M12 plug straight - M12 jack straight 8-pole, X-coded

- shielded M12 Ethernet connection line
 - Cat. 6_A, 8 pole, X-coded
 - side 1: M12-plug, straight
 - side 2: M12-jack, straight
 - extrusion-coated cable on M12 connectors
 - stranded wires 4x2xAWG26/7 PiMF
 - overall shield tinned copper braid
 - 1:1 pin assignment
 - green cable, PUR
 - a protective cap is included in scope of delivery
- variants: 1.0 m, 2.0 m, 5.0 m, 10.0 m
• other cable lengths on request

Dimensional drawing



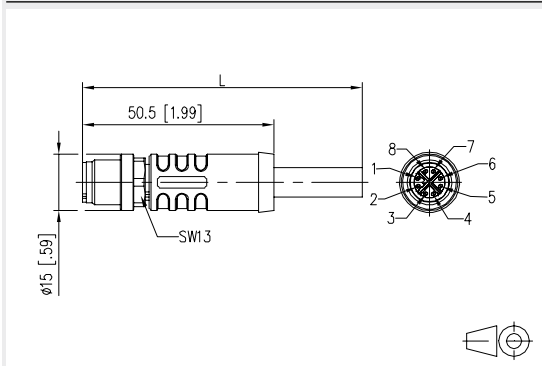
P/N	Color	Feature 1	Feature 2
142M2X12010	green	1 m	
142M2X12020	green	2 m	
142M2X12050	green	5 m	
142M2X12100	green	10 m	



Connection cable M12 plug straight - free line end drag chain suitable, 8-pole, X-coded

- shielded M12 Ethernet connection cable
 - drag chain suitable
 - Cat.6_A, 8 pole, X-coded
 - side 1: M12-plug, straight
 - side 2: free line end
 - extrusion-coated cable on M12 connector
 - stranded wires 4x2xAWG26/19
 - overall shield tinned copper braid
 - 1:1 pin assignment
 - green cable, PUR
- variants: 1.0 m, 2.0 m, 5.0 m, 10.0 m
• other cable lengths on request

Dimensional drawing



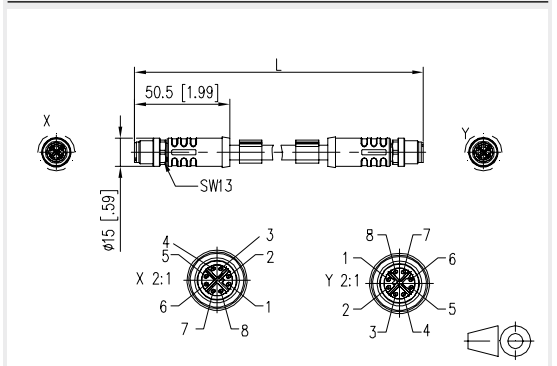
P/N	Color	Feature 1	Feature 2
142M6X10010	green	1 m	drag chain suitable
142M6X10020	green	2 m	drag chain suitable
142M6X10050	green	5 m	drag chain suitable
142M6X10100	green	10 m	drag chain suitable



Connection line M12 plug straight - M12 plug straight 4-pole, D-coded

- shielded M12 Ethernet connection cable
 - drag chain suitable
 - Cat.6_A, 8 pole, X-coded
 - side 1: M12-plug, straight
 - side 2: M12-plug, straight
 - extrusion-coated cable on M12 connectors
 - stranded wires 4x2xAWG26/19
 - overall shield tinned copper braid
 - 1:1 pin assignment
 - green cable, PUR
- variants: 1.0 m, 2.0 m, 5.0 m, 10.0 m
• other cable lengths on request

Dimensional drawing



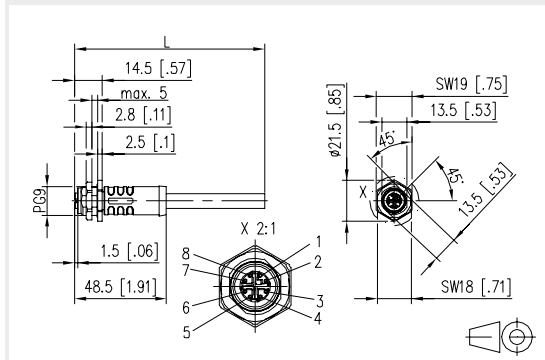
P/N	Color	Feature 1	Feature 2
142M6X11010	green	1 m	
142M6X11020	green	2 m	
142M6X11050	green	5 m	
142M6X11100	green	10 m	



Connection cable M12 jack straight - free line end drag chain suitable, 8-pole, X-coded

- shielded M12 Ethernet connection cable
 - drag chain suitable
 - Cat.6_A, 8 pole, X-coded
 - side 1: M12-jack, straight
 - side 2: free line end
 - extrusion-coated cable on M12 connector
 - stranded wires 4x2xAWG26/19
 - overall shield tinned copper braid
 - 1:1 pin assignment
 - green cable, PUR
- variants: 1.0 m, 2.0 m, 5.0 m, 10.0 m
• other cable lengths on request

Dimensional drawing



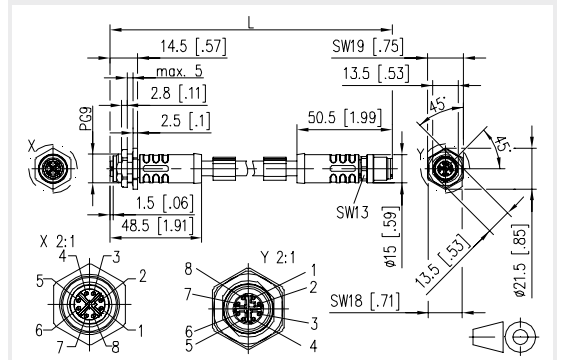
P/N	Color	Feature 1	Feature 2
142M6X20010	green	1 m	drag chain suitable
142M6X20020	green	2 m	drag chain suitable
142M6X20050	green	5 m	drag chain suitable
142M6X20100	green	10 m	drag chain suitable



Connection line M12 plug straight - M12 jack straight drag chain suitable, 8-pole, X-coded

- shielded M12 Ethernet connection cable
 - drag chain suitable
 - Cat.6_A, 8 pole, X-coded
 - side 1: M12-plug, straight
 - side 2: M12-jack, straight
 - extrusion-coated cable on M12 connectors
 - stranded wires 4x2xAWG26/19
 - overall shield tinned copper braid
 - 1:1 pin assignment
 - green cable, PUR
- variants: 1.0 m, 2.0 m, 5.0 m, 10.0 m
• other cable lengths on request

Dimensional drawing



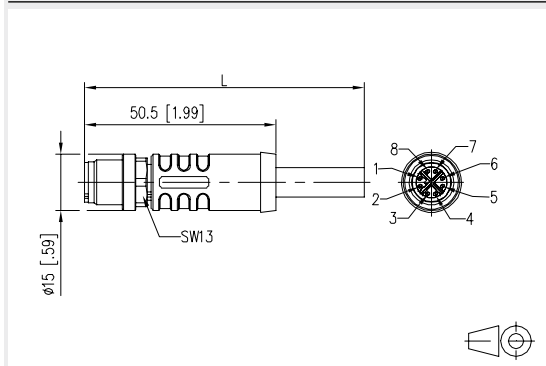
P/N	Color	Feature 1	Feature 2
142M6X21010	green	1 m	drag chain suitable
142M6X21020	green	2 m	drag chain suitable
142M6X21050	green	5 m	drag chain suitable
142M6X21100	green	10 m	drag chain suitable



Connection cable M12 plug straight - free line end 8-pole, X-coded

- shielded M12 Ethernet connection cable
 - torsion resistant
 - Cat.6_A, 8 pole, X-coded
 - side 1: M12 plug, straight
 - side 2: free line end
 - extrusion-coated cable on M12 connector
 - stranded wires 4x2xAWG24/7
 - overall shield tinned copper braid
 - 1:1 pin assignment
 - green cable, PUR
- variants: 1.0 m, 2.0 m, 5.0 m, 10.0 m
 - other cable lengths on request

Dimensional drawing



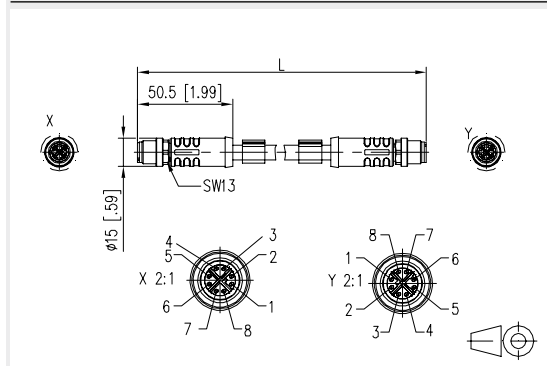
P/N	Color	Feature 1	Feature 2
142M7X10005	green	0,5 m	
142M7X10010	green	1 m	
142M7X10020	green	2 m	
142M7X10050	green	5 m	
142M7X10100	green	10 m	



Connection line M12 plug straight - M12 plug straight 4-pole, D-coded

- shielded M12 Ethernet connection line
 - torsion resistant
 - Cat.6_A, 8 pole, X-coded
 - side 1: M12 jack, straight
 - side 2: M12 jack, straight
 - extrusion-coated cable on M12 connectors
 - jacks with vibration-resistance
 - stranded wires 4x2xAWG26/7
 - overall shield tinned copper braid
 - 1:1 pin assignment
 - green cable, PUR
- variants: 1.0 m, 2.0 m, 5.0 m, 10.0 m
 - other cable lengths on request

Dimensional drawing



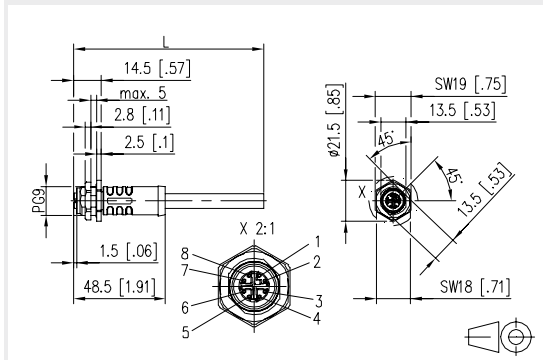
P/N	Color	Feature 1	Feature 2
142M7X11005	green	0,5 m	
142M7X11010	green	1 m	
142M7X11020	green	2 m	
142M7X11050	green	5 m	
142M7X11100	green	10 m	



Connection cable M12 jack straight - free line end 8-pole, X-coded

- shielded M12 Ethernet connection cable
 - torsion resistant
 - Cat.7, 8 pole, X-coded
 - side 1: M12-jack, straight
 - side 2: free line end
 - extrusion-coated cable on M12 connector
 - stranded wires 4x2xAWG24/7
 - overall shield tinned copper braid
 - 1:1 pin assignment
 - green cable, PUR
- variants: 1.0 m, 2.0 m, 5.0 m, 10.0 m
 - other cable lengths on request

Dimensional drawing



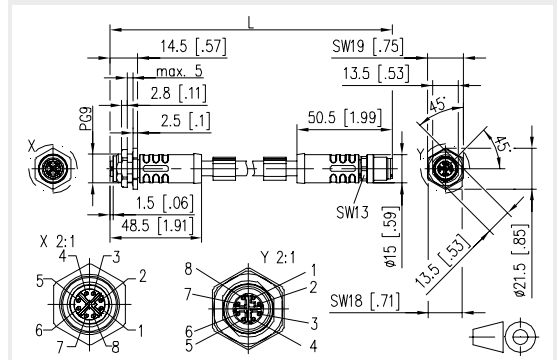
P/N	Color	Feature 1	Feature 2
142M7X20005	green	0,5 m	
142M7X20010	green	1 m	
142M7X20020	green	2 m	
142M7X20050	green	5 m	
142M7X20100	green	10 m	



Connection line M12 plug straight - M12 jack straight drag chain suitable, 8-pole, X-coded

- shielded M12 Ethernet connection line
 - torsion resistant
 - Cat.6_A, 8 pole, X-coded
 - side 1: M12-plug, straight
 - side 2: M12-jack, straight
 - extrusion-coated cable on M12 connectors
 - connectors with vibration-resistance
 - stranded wires 4x2xAWG26/7
 - overall shield tinned copper braid
 - 1:1 pin assignment
 - green cable, PUR
- variants: 1.0 m, 2.0 m, 5.0 m, 10.0 m
 - other cable lengths on request

Dimensional drawing



P/N	Color	Feature 1	Feature 2
142M7X21010	green	1 m	drag chain suitable
142M7X21020	green	2 m	drag chain suitable
142M7X21050	green	5 m	drag chain suitable
142M7X21100	green	10 m	drag chain suitable



MOXA EtherDevice Switch 5 port

The industrial Ethernet switch EDS205 is an entry-level switch supporting IEEE 802.3/802.3u/802.3x with 10/100M, full/half duplex, MDI/MDIX auto-sensing. Switches of the EDS205 series can be easily and conveniently mounted on and dismantled from a standard top hat rail.

- 5 ports with 10/100BaseT(X) RJ45
- Supports IEEE 802.3/802.3u/802.3x
- Power supply: DC 12 to 48 V, AC 18 to 30 V
- Mounting on standard top hat rail
- Powerful network switch technology
- Protected against broadcast storm
- Store and forward switching mode

Dimensions W x H x D 25 x 109 x 88 mm
 Operating temperature range -10 °C to +60 °C
 Storage temperature range -40 °C to +70 °C
 Ingress protection IP30

P/N	Color	Feature 1	Feature 2
110195	gray	5 port RJ45	



MOXA EtherDevice Switch 8 port

The industrial Ethernet switch EDS208 is an entry-level switch supporting IEEE 802.3/802.3u/802.3x with 10/100M, full/half duplex, MDI/MDIX auto-sensing. Switches of the EDS208 series can be easily and conveniently mounted on and dismantled from a standard top hat rail.

- Variants:
 EDS208: 8 x 10/100BaseT(X) RJ45
 EDS208-M-SC: 7 x 10/100BaseT(X) RJ45,
 1 x 100BaseFX Multi-mode SC-connector
- 8 ports with 10/100BaseT(X) RJ45 or 7 ports with 10/100BaseT(X) RJ45 and 1 port 100BaseFX multi-mode SC connector
 - Supports IEEE 802.3/802.3u/802.3x
 - Powerful network switch technology
 - Protected against broadcast storm
 - Store and forward switching mode

Operating voltage DC 12 to 48 V
 (P/N 110196, 11019601)
 Operating voltage AC 18 to 30 V
 (P/N 11019601)

Dimensions W x H x D 40 x 109 x 95 mm
 Operating temperature range -10 °C to +60 °C
 Storage temperature range -40 °C to +70 °C
 Ingress protection IP30

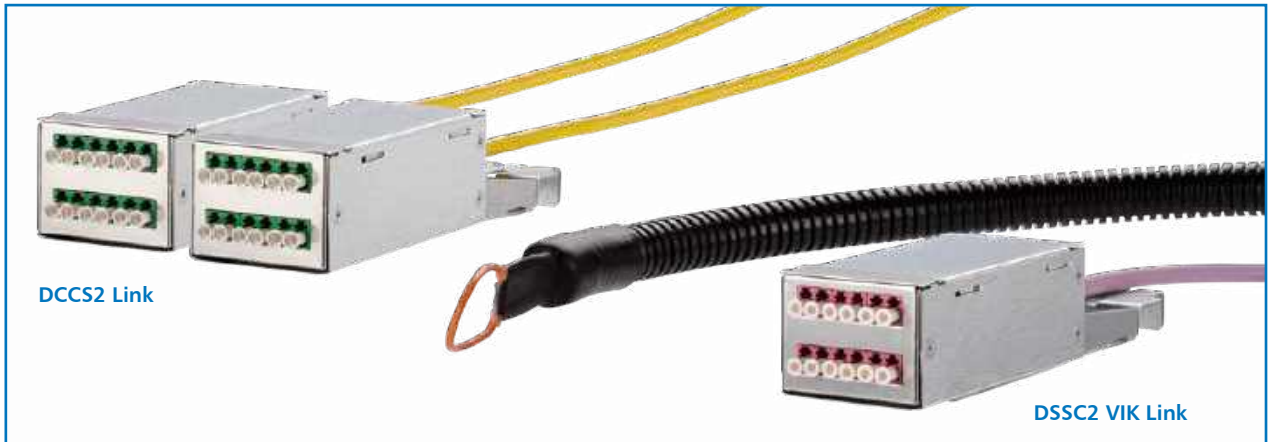
P/N	Color	Feature 1	Feature 2
110196	gray	8 port RJ45	
11019601	gray	7 port RJ45	1 port SC MM

Pre-Terminated Assemblies

1	Fiber optic Configurators	146
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4	Product information OpDAT VIK with mini breakout cable	152
5	Product information OpDAT VIK with mini breakout cable compact	153

DCCS2 fiber optic link

- Pre-assembled fiber optic link consisting of 1 or 2 subassemblies terminated to a 12-fiber mini-breakout cable
- Port numbering remains in place when DCCS2 fiber optic subassemblies are mounted
- For up to 10 GBit Ethernet (IEEE 802.3an)
- All locking levers of patch cords connected to DCCS2 subassemblies show upwards and are easy to handle at any time
- Solid, refined subassembly housing
- Cable diameter less than 6.5 mm
- Delivery with serial number and 12 attenuation measuring reports
- Maximum length 500 m
- Configuration tool in Microsoft® Excel upon request



Example

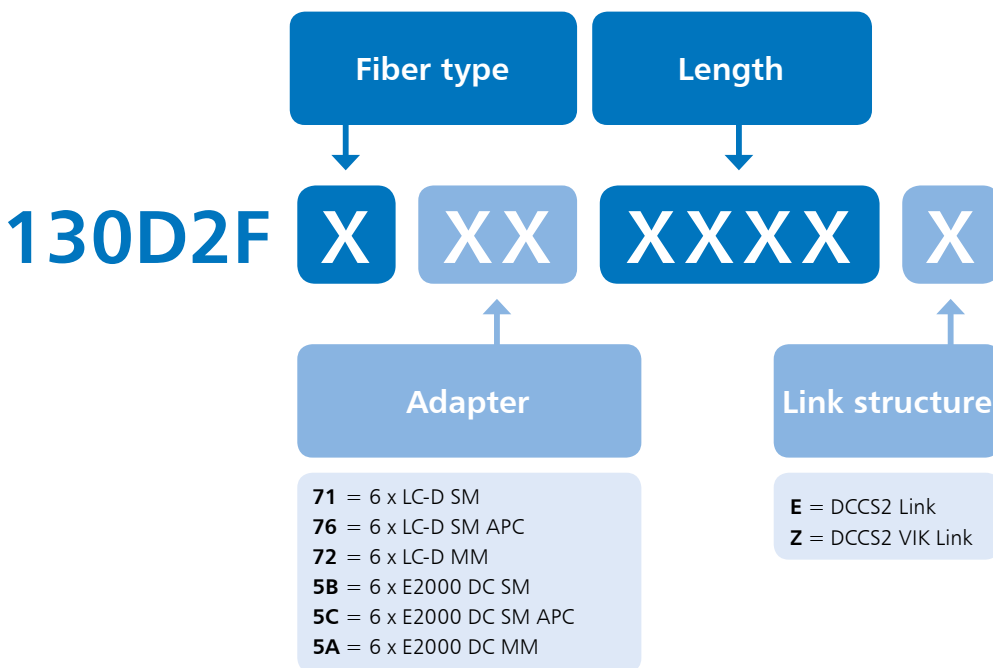
130D2F 7 5A 0855 E

DCCS2 fiber optic link 50/125 OM4 with 6 x E2000 DC adapter on each side at DCCS2 subassembly housing, length 85.5 m

Part number key for further versions

9 = E9/125 OS2
 8 = 50/125 OM5
 7 = 50/125 OM4
 5 = 50/125 OM3

0050 = 5.0 m | 0200 = 20.0 m
 0100 = 10.0 m | 0995 = 99.5 m
 0150 = 15.0 m | 1000 = 100.0 m
 5000 = 500.0 m



Please note:

These cables will be manufactured according to your specifications. They can therefore neither be exchanged nor returned.

DCCS2 fiber optic MPO link

- Pre-assembled fiber optic link consisting of one MPO plug on each side and a 12-fiber connection cable (ribbon style)
- Polarity A or C particularly suitable for DCCS2 modules 6LC-D/MPO
- For up to 10 GBit Ethernet (IEEE 802.3an) when combined with DCCS2 subassemblies MPO 6XLC-D
- Delivery with serial number and attenuation measuring reports
- Maximum length 500 m

Example

130D2F 5 MP A 0200 E

MPO Link at a 12-fiber OM3 cable, length 20 m



Part number key for further versions

9 = 12 fibers E9/125 OS2
5 = 12 fibers 50/125 OM3
7 = 12 fibers 50/125 OM4

0010 = 1.0 m **0100** = 10.0 m **0995** = 99.5 m
0015 = 1.5 m **0150** = 15.0 m **1000** = 100.0 m
0050 = 5.0 m **0200** = 20.0 m **5000** = 500.0 m

Fiber type

Length

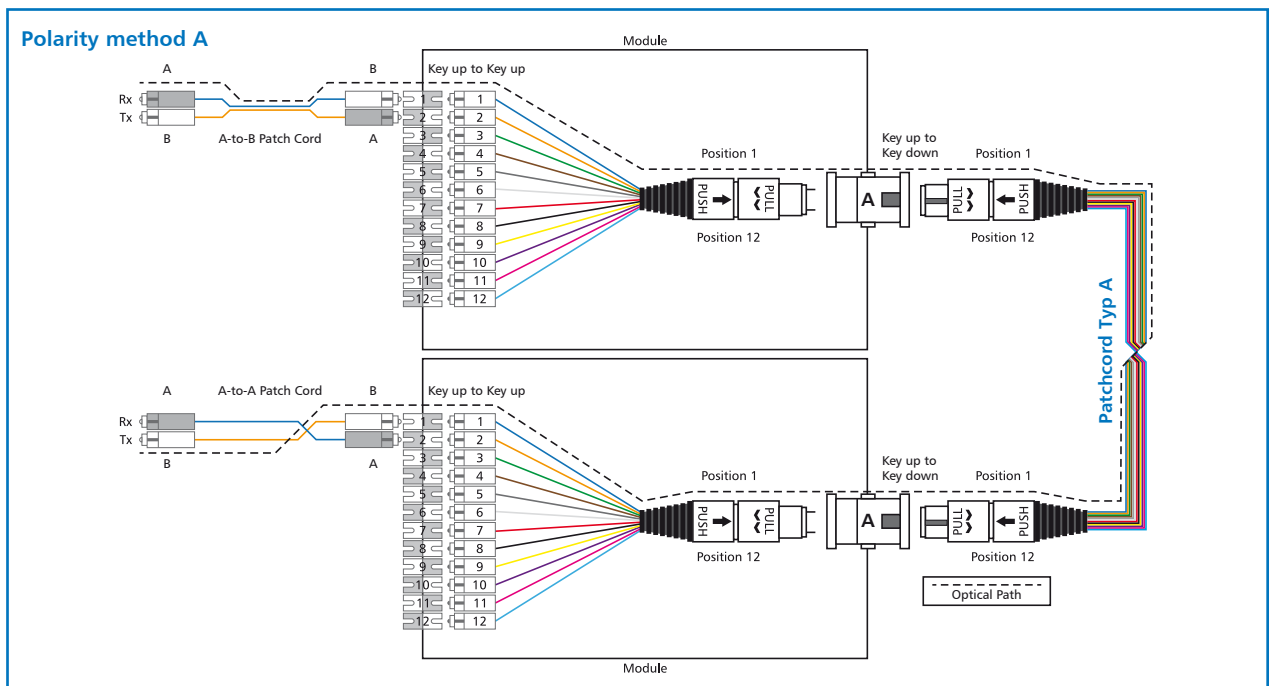
130D2F X MP X XXXX E

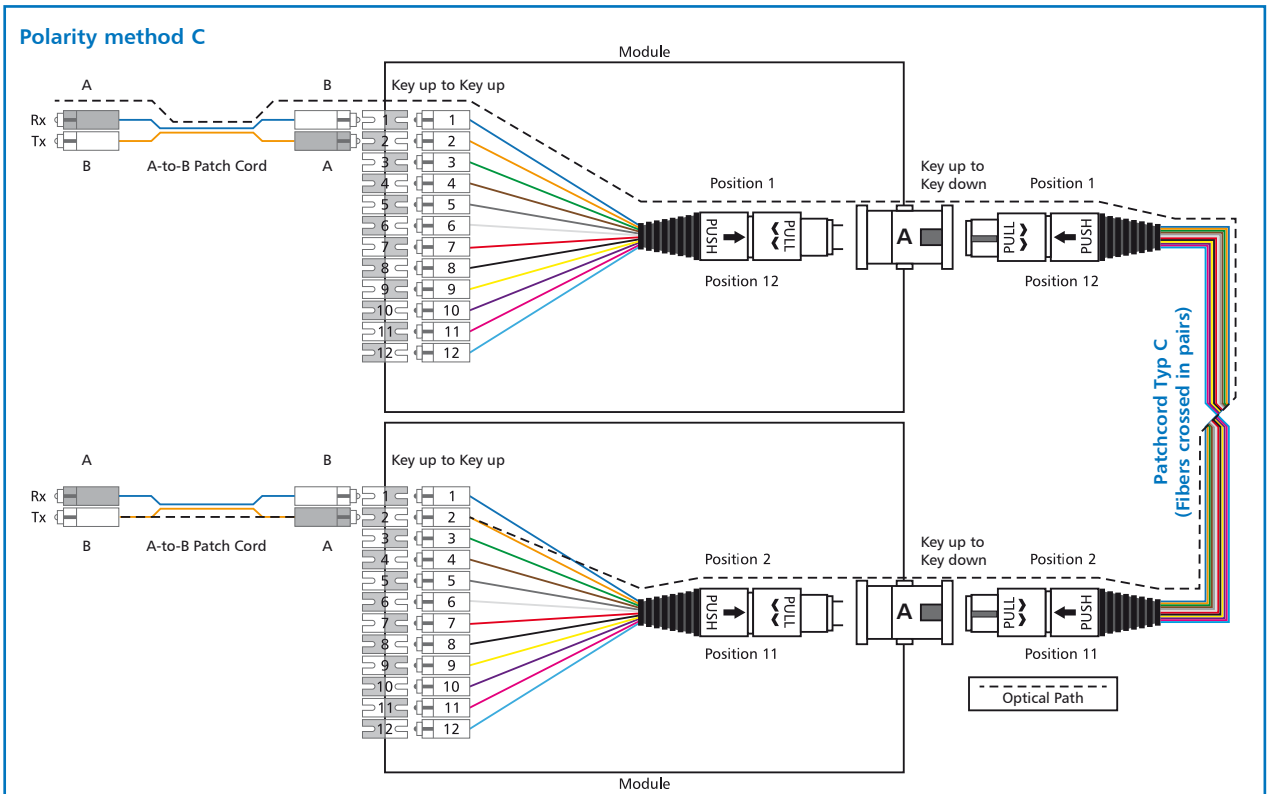
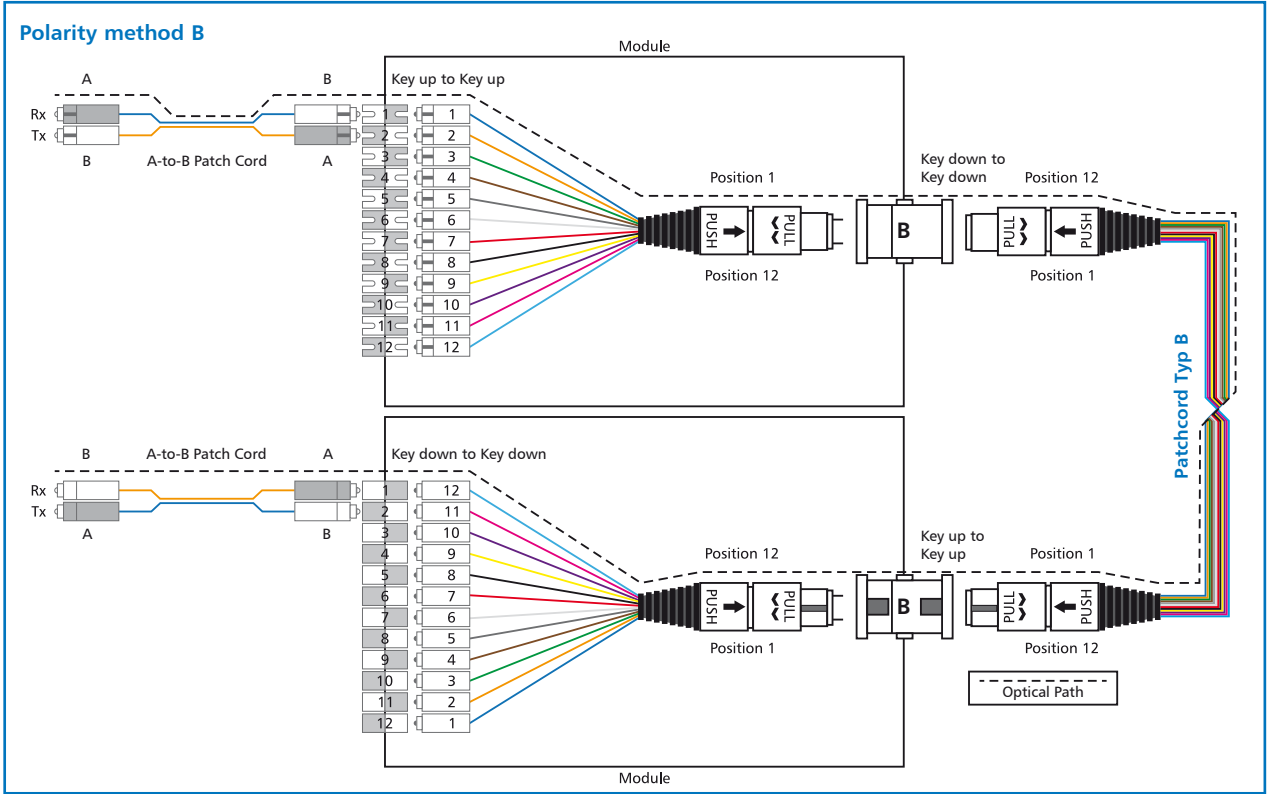
Allocation

A = Polarity, method A
B = Polarity, method B
C = Polarity, method C

Please note:

These cables will be manufactured according to your specifications. They can therefore neither be exchanged nor returned.





Please note:

These cables will be manufactured according to your specifications. They can therefore neither be exchanged nor returned.

Specifications

OpDAT VIK with universal cable



		up to 12 fibers	up to 24 fibers	up to 48 fibers		
Cable divider	Size	S	M	L		
	Length	65 mm	65 mm	80 mm		
	Max. outer diameter	23 mm	29 mm	36 mm		
	Type of fixation	slot or PG11	slot or PG21	slot or PG21		
	Drilling for fixation	19 ± 0.2 mm	28.8 ± 0.2 mm	28.8 ± 0.2 mm		
Cable	Cable type	U-DQ(ZN)BH				
	Cable structure (loose tube x number of fibers)	1x4, 1x8, 1x12	1x24	4x12		
	Outer diameter	7.5 mm	8.0 mm	11.0 mm		
	Cable weight	55 kg/km	60 kg/km	130 kg/km		
	Min. bending radius	60 mm	60 mm	150 mm		
	Fire behavior	Flame retardant according to IEC 60332-1-2 Halogene-free according to IEC 60754-1 Smoke density according to IEC 61034-2				
Fanout	Individual cables	2.1 mm, loose tube				
	Length if graded (with pull-in aid)	L _{Fmax} [mm]	4F: 680 8F: 920	6F: 800 12F: 1160	24F: 1040 mm 16F: 920 mm	48F: 1280 mm 36F: 1100 mm
		L _{Fmin} [mm]	500 mm		500 mm	500 mm
	Length if not graded (with bubble wrap or protection net)	1000 mm				
	Marking	Numbered, ① = L _{Fmax}				
Material and color of the loose tube	I-V(ZN)H, FRNC OS2 = yellow, OM4= violet, OM3= aqua, OM5= lime green					
Pull-in aid	Max. outer diameter	IP50 IP67	29.5 mm 31.5 mm	37 mm 39 mm	44 mm 46 mm	
	Max. tensile strength	IP50 IP67	500 N 700 N	500 N 650 N	500 N 700 N	
Delivery	Length L _G	2 to 100 m 101 to 1000 m	Cable coil Drum dia. 600 mm	Cable coil Drum dia. 600 mm	-	
	Length L _G	2 to 50 m 51 to 150 m 151 to 500 m	-	-	Cable coil Drum dia. 600 mm Drum dia. 710 mm	

Order information

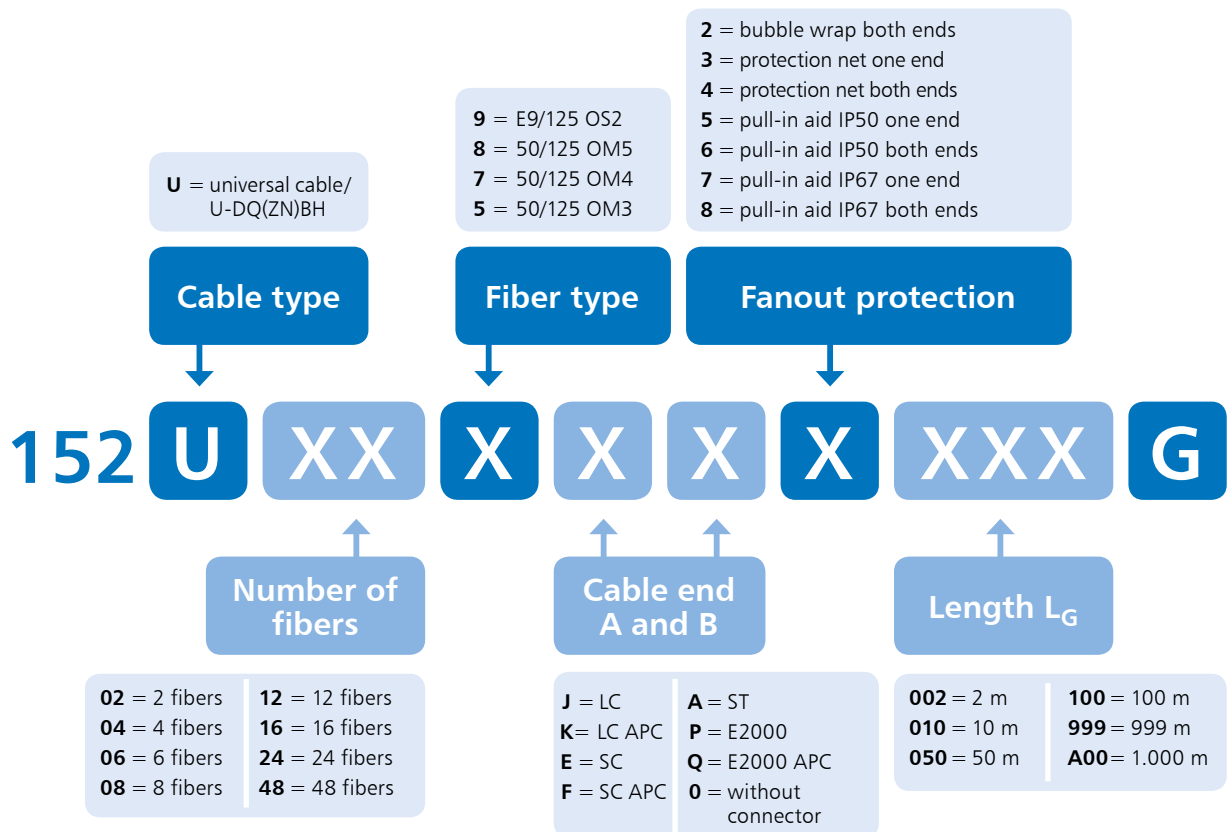
OpDAT VIK with universal cable



Product description

Pre-terminated installation cables (VIK) are fiber optic cables with connectors on one or both ends that are made in manual single item production at METZ CONNECT in Blumberg by respecting highest quality demands. Combined with universal cables they are suitable for mechanically demanding indoor or outdoor use.

VIKs are often used together with OpDAT patch panels. They allow a rapid and easy to install point-to-point connection of passive and active network components. Thus, installation time and cost are considerably reduced compared to an installation requiring splicing and pigtails or a cabling with different patch cords.



Please note:

These cables will be manufactured according to your specifications. They can therefore neither be exchanged nor returned. Technically, it is not possible to produce all possible combinations. Just use our cable configurator available on our web site at www.metz-connect.com/en/cable-configurator. There you can find all variants available.



Order information

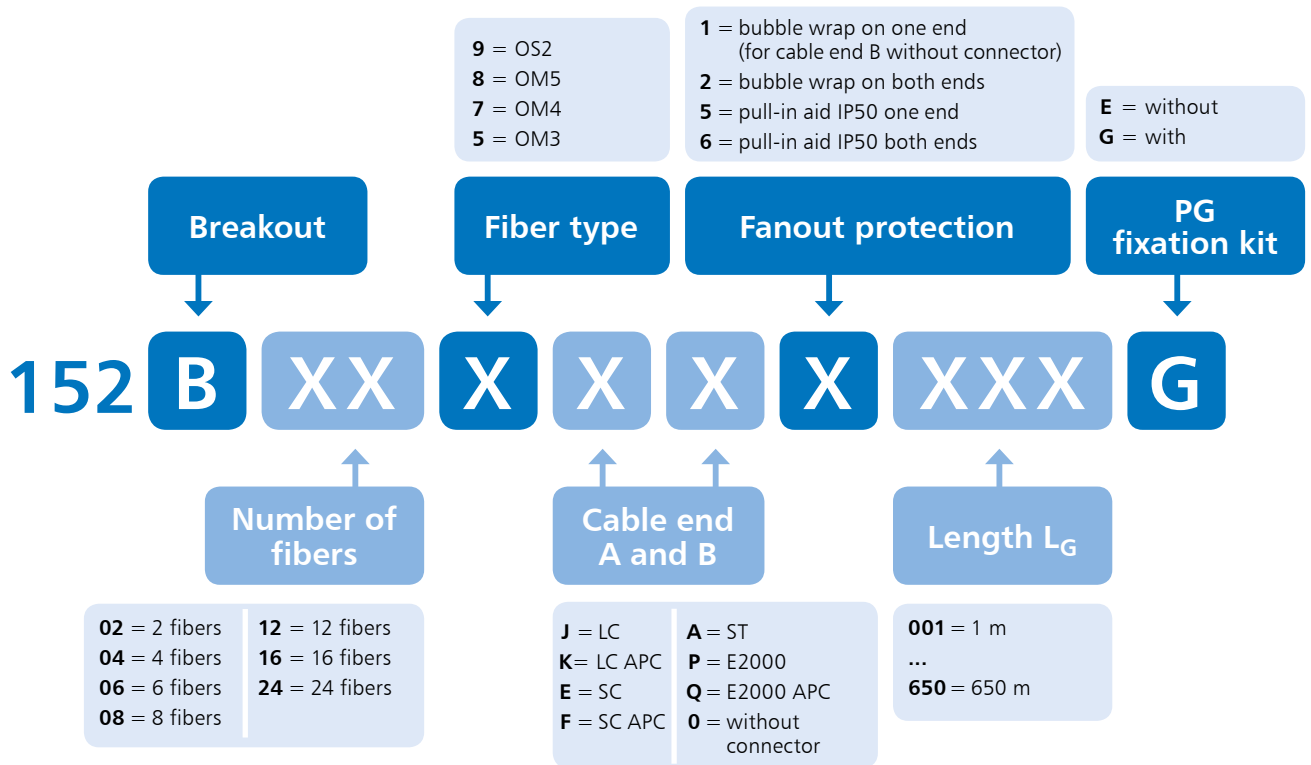
OpDAT VIK with breakout cable



Product description

Pre-terminated installation cables (VIK) are fiber optic cables with connectors on one or both ends that are made in manual singleitem production at METZ CONNECT in Blumberg by respecting highest quality demands. Combined with breakout cables (BO) they are suitable for indoor and outdoor use.

VIKs are often used together with OpDAT patch panels (types PF, PA, fix, slide). They allow a rapid and easy to install point-to-point connection. Thus, installation time and cost are considerably reduced compared to an installation requiring splicing and pigtails or a cabling with different patch cords.



Please note:

These cables will be manufactured according to your specifications. They can therefore neither be exchanged nor returned. Technically, it is not possible to produce all possible combinations. Just use our cable configurator available on our web site at www.metz-connect.com/en/cable-configurator. There you can find all variants available.



Order information

OpDAT VIK with mini breakout cable



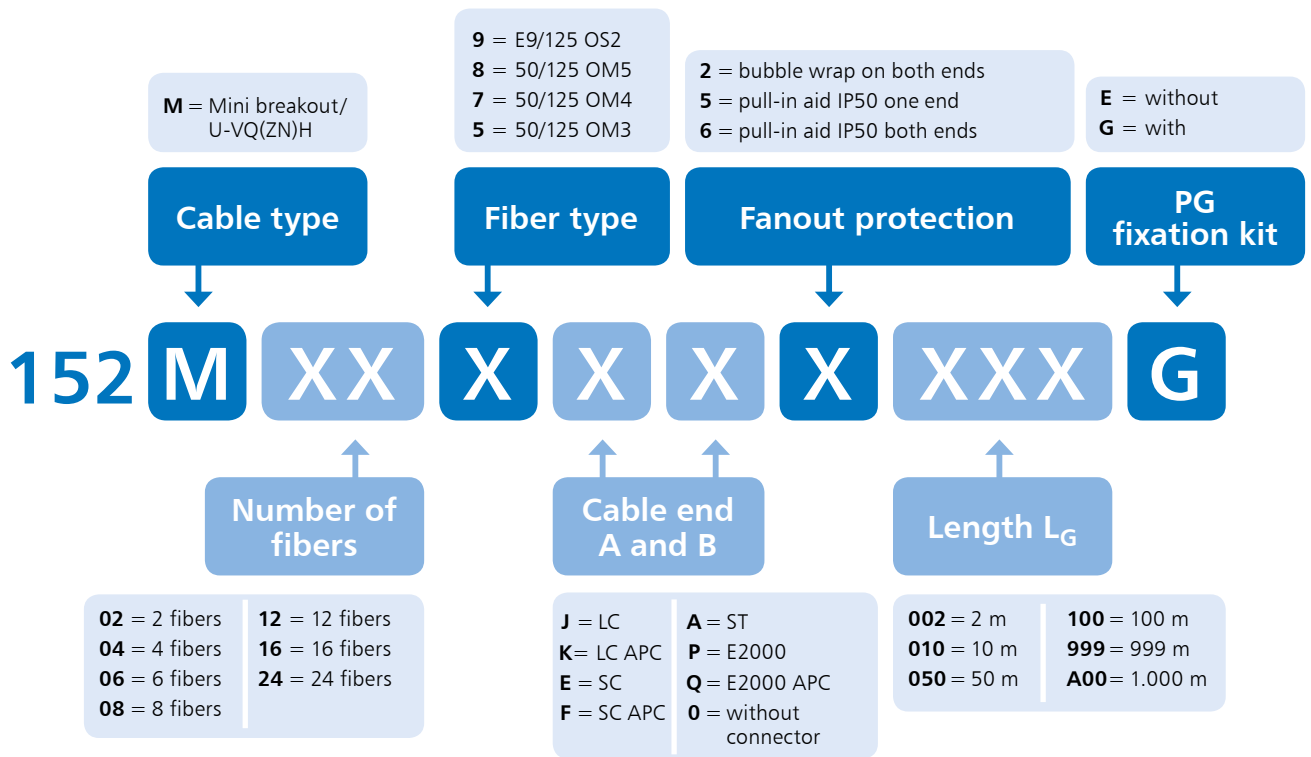
Product description

Pre-terminated installation cables (VIK) are fiber optic cables with connectors on one or both ends that are made in manual singleitem production at METZ CONNECT in Blumberg by respecting highest quality demands. Combined with mini breakout cables (MBO) they are suitable for indoor and outdoor use.

VIKs are often used together with OpDAT patch panels (types PF, PA, fix, slide). They allow a rapid and easy to install point-to-point connection of passive and active network components. Thus, installation time and cost are considerably reduced compared to an installation requiring splicing and pigtails or a cabling with different patch cords.

Pre-Terminated Assemblies

P | Cabling



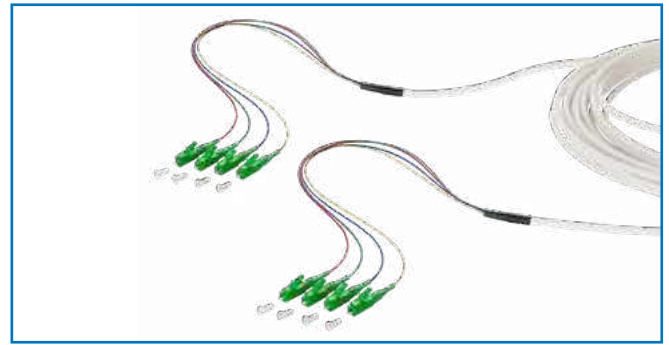
Please note:

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Order information

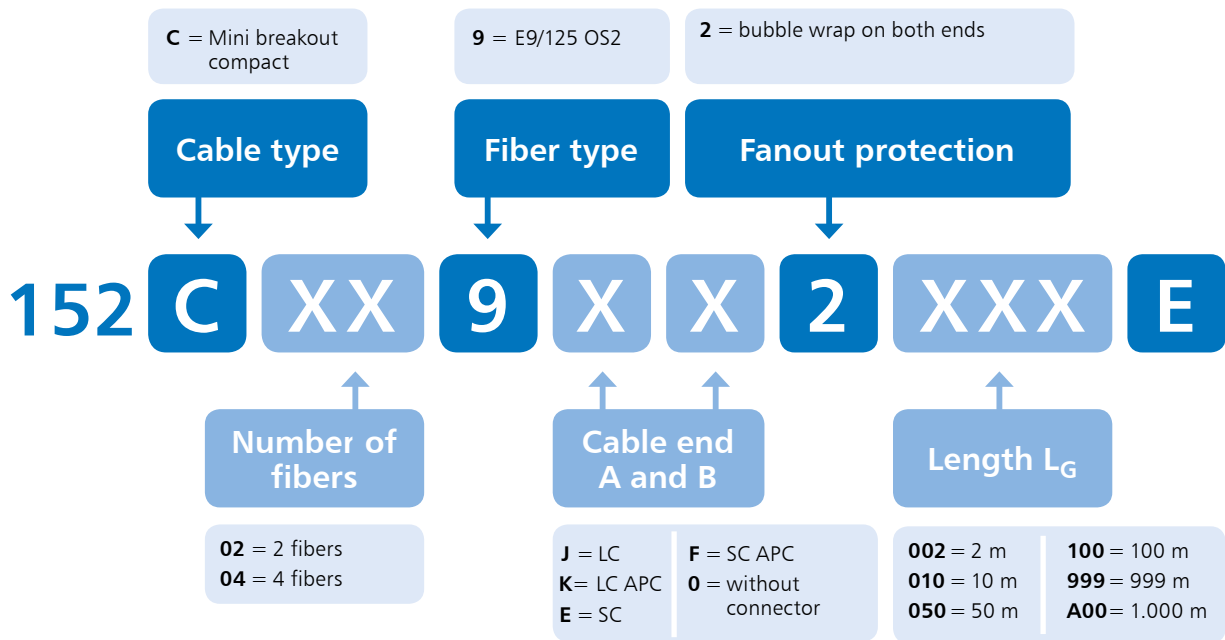
OpDAT VIK with mini breakout cable compact



Product description

Pre-terminated installation cables (VIK) are fiber optic cables with connectors on one or both ends that are made in manual singleitem production by respecting highest quality demands. Combined with Mini Breakout Cables Compact (MBO C) they are suitable for indoor use, especially for Fiber-in-the-Home applications.

VIKs are often used together with OpDAT wall outlets. They allow a rapid and easy to install point-to-point connection for example from the apartment to the equipment room.



Please note:

These cables will be manufactured according to your specifications. They can therefore neither be exchanged nor returned. Technically, it is not possible to produce all possible combinations. Just use our cable configurator available on our web site at www.metz-connect.com/en/cable-configurator. There you can find all variants available.



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