METZ CONNECT

We realize ideas

C | Logline

Intelligent components for systems and switch cabinets

Members of METZ CONNECT

RIA CONNECT BTR NETCOM MCQ TECH

Intelligent system and switch cabinet components

2012 | 2013

C | Logline

Building automation,
Process engineering

The range of product catalogues from METZ CONNECT

By our range of product catalogues we really get things handy for you: concise information and highly interesting innovations across all our three product ranges **U|Contact, C|Logline** and **P|Cabling.**
Use our product range catalogues to learn more about our connection systems for printed circuit boards and devices, our intelligent system and switch cabinet components or our network cabling options.

U | Contact

Printed circuit board and device connection techniques

P | Cabling

Cabling solutions in the copper and fiber optic techniques for building and industrial cabling applications

C | Logline

Intelligent components for systems and switch cabinets.

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C | Logline

Building automation, process engineering

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Dear business partners, dear customers,

Just as with our previous catalogs, we wish to inform you at this point about the positive developments within the METZ CONNECT group of companies.

Having informed you on our deliberate integration of our product range with its four key pillars

Customer benefit – universal communication
Product range philosophy– synergy effect
Product technology– safe connections
Claim for leadership – sustained success

in our last edition, we are pleased to present you now the new catalogs.

To allow for a structured overview of the numerous possibilities provided by METZ CONNECT, we subdivided our product range into the following three core ranges and catalogs **U|Contact, C|Logline** and **P|Cabling.** By this subdivision we set clear competence focuses:

U|Contact stands for the connection techniques related to printed circuit boards and devices,
C|Logline stands for intelligent system and switch cabinet components and
P|Cabling stands for cabling systems in the copper and fiber optic techniques for building and industrial cabling applications.

Due to the ever increasing networking also within our product range and the specifications arising from this, METZ CONNECT did not only gear its overall range of products to this market development but also adapt its sales concept correspondingly. Expert consulting services on universal connection techniques ranging from the connection of a sensor with classical compononents up to infrastructural connections (e.g. the Internet) by complete communication solutions meet the growing needs of most diverse application solutions and complex customer expectations.

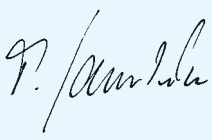
The global market activities of our customers are secured through our local support and sales structures that are still integrated into the company brands RIA CONNECT GmbH and BTR NETCOM GmbH.

In order to offer even better and more fine-tuned consulting services to our customers, we redefined our sales structure at the beginning of 2011. The sales organization is now subdivided into two customer segments:
the one for the producers of devices and machines integrating our product systems and serial individual components into their own products and the other one for those customers, who are specialized in the installation of systems and buildings and who use our system solutions and products for such activities. Also the cooperation with wholesale dealers will continue to play a key role.

And finally we would like to draw your attention to our completely revised web presence that will offer you valuable information next to the catalog that you hold in your hands.
To support your daily businesses, we developed numerous new functions and contents; – such as documents on the individual products, a planning area as well as a significantly improved navigation, not to mention the new visual design of the site. But you may want to simply check it out yourselves under **www.metz-connect.com.**

We are happy to meet the challenges that await us and are looking forward to advise and assist you as a real partner by our technically and economically sound solutions!

Your



Torsten Janwlecke

And the entire team from METZ CONNECT.

www.metz-connect.com

Detailed knowledge in a matter of seconds

Our product catalogs offer detailed product descriptions. But if you want to get even deeper into the details, visit us at www.metz-connect.com to get precise technical information within no time at all.

To do so, you may also use mobile tagging: Simply scan the shown QR-code using your smartphone and you will directly be connected to the METZ CONNECT homepage.

The most up-to-date connection to METZ CONNECT

Our website for even more efficiency

Ideal user-friendliness and non-stop availability, – our website www.metz-connect.com offers you the most recent news about METZ CONNECT and our products that you need for your daily business. And all this at a speed that will really impress you!

Our products
You may use different options to search for a product: the integrated navigation bar with its "Products" menu and concise structure, or the enterprise research option including its filter function or the online catalogs for all those, who wish to rely on our known product portfolio structure. A few clicks will lead you to the desired products and enable you to download all relevant documents such as data sheets, drawings or certificates. In the same time also compatible accessory components will be displayed.

Under "Services" a complete download overview will be shown presenting the entire download offer from information brochures and certificates up to test results and 3D-data.

Your contacts
Finding your right contact with METZ CONNECT, a distributor or special dealer is easy and comfortable using the country and zip-code search options under "Contact". You can also select here your global sales partner.

News(letter)
In our News area we inform you in real time on our product innovations, events and news.
In the same time you may want to subscribe to the METZ CONNECT newsletter. This will ensure that you will receive the latest information literally in real time directly on your computer.

Or just come and discover the web site of METZ CONNECT and play around with all its benefits – welcome to www.metz-connect.com!

Limitless connection

Globally, the importance of networks is ever increasing. The principles of universal, transparent information – from everywhere and at any time – and a communication with devices mapping different processes – define more and more our everyday life. And all this depends on reliable connection techniques.

To establish perfect connections is the core competence of METZ CONNECT. The METZ CONNECT group of companies offers a complete product range that stands out by its maximum system compatibility and continuity.

Our sophisticated portfolio and product approach in the market segments industrial electronics, data and communication technology and building services engineering guarantees smooth data flow from the printed circuit board through to connectors, cables and patch panels up to the infrastructural environment.

METZ CONNECT can thus guarantee a comprehensive, high-quality and transparent communication across all applications without system failures or performance losses. Next to the complete solutions, our group of companies offers also comprehensive services such as tailored product adaptations and new developments, qualified trainings, marketing support for our trade partners as well as a vast information program.

METZ CONNECT excels by quality – resulting from its intelligent company-internal value adds and perfectly harmonized processes from a product idea up to its delivery and commissioning. Our quality management system enables processes that are free from losses and protect the environment. An additional competitive advantage for our customers:
METZ CONNECT supplies complete solutions as one single provider.

To do so, we rely on our own stamping shops, plastic mold injection and tooling shops, testing laboratories, internal assembly units and experts in construction and programming of tools and production automation.

All from one single source – for your competitive advantage

APPLICATIONS

Intelligence

Distribution

Printed circuit boards

Function

Devices, machines

Process

Systems, installations

Structure

Buildings, commercial vehicles

Infrastructure

Processor

WLAN/Internet

Communication

Industrial electronics

Data and communication technology

Building services engineering

MARKET SEGMENTS

A product range, which connects everything

METZ CONNECT offers a universal range of products from printed circuit boards up to terminal devices. As your customer-oriented solutions partner, we subdivided our diversified, user-friendly and internationally standardized components and/or systems into three well structured arrays.

Under the name of **U|Contact** we bundle innovative connectivity products and solutions for printed circuit boards for a use with all modern techniques applied in the assembly of printed circuit boards. Products that are compatible with the standards of the markets as well as tailored product solutions for industrial controls and building automation are our core strengths in this field. This includes terminal blocks, board-to-board connectors as well as peripheral connectors (RJ, M12, USB) for different applications and protection classes.

P|Cabling includes highly specified, internationally standardized and powerful connection components and connection systems in the copper and fiber optic techniques. These solutions are used in structured building and industry cabling applications and for data centers. Convenient installation, maximum quality and perfect system compatibility across all important performance classes are the main characteristics of our modular inserts, connectors, wall outlets, patch panels, distributors, IP-protected plug connectors and patch and installation cables.

C|Logline stands for intelligent system components for a highly communicative and decentralized control in the application and product areas building automation, measurement and monitoring relays, interface modules, industrial relays and telecommunication.

In addition we offer cross range system solutions. Perfectly harmonized connection systems with a protection degree of IP67 facilitate fast, safe and flexible connections of devices using optical coupler, RJ45 or Ethernet M12 connections.

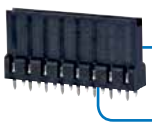
Customer-oriented solutions provider

U | Contact

Printed circuit board and device connection techniques

Terminal blocks, pin headers

Connectors



Board-to-board

C | Logline

Intelligent components

Bus modules

Interface modules

Time, measurement and monitoring relays

P | Cabling

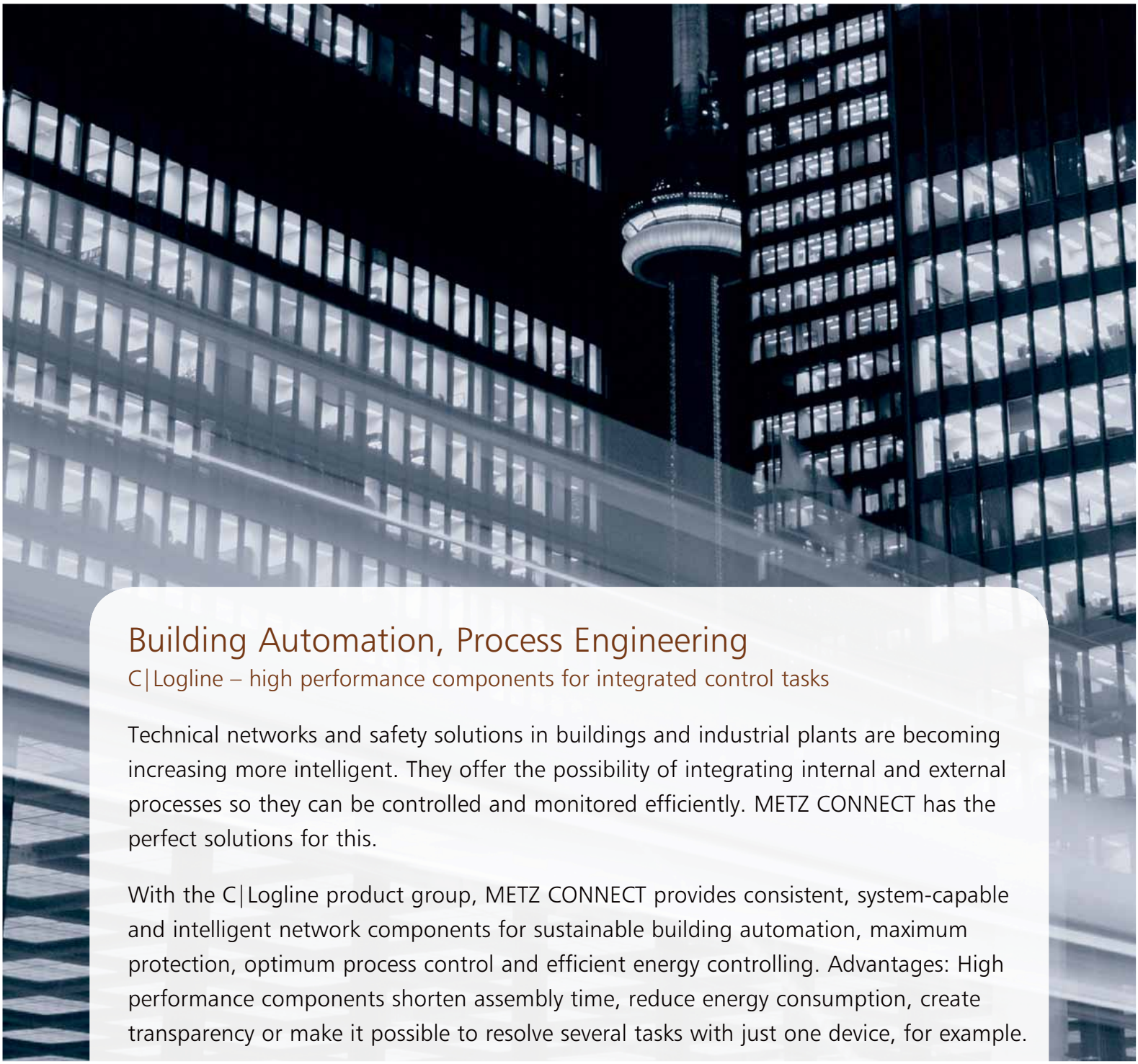
Cabling systems

Connectors

Wall outlets, distributors

Patch cables, lines

Uniform automation – central engineering

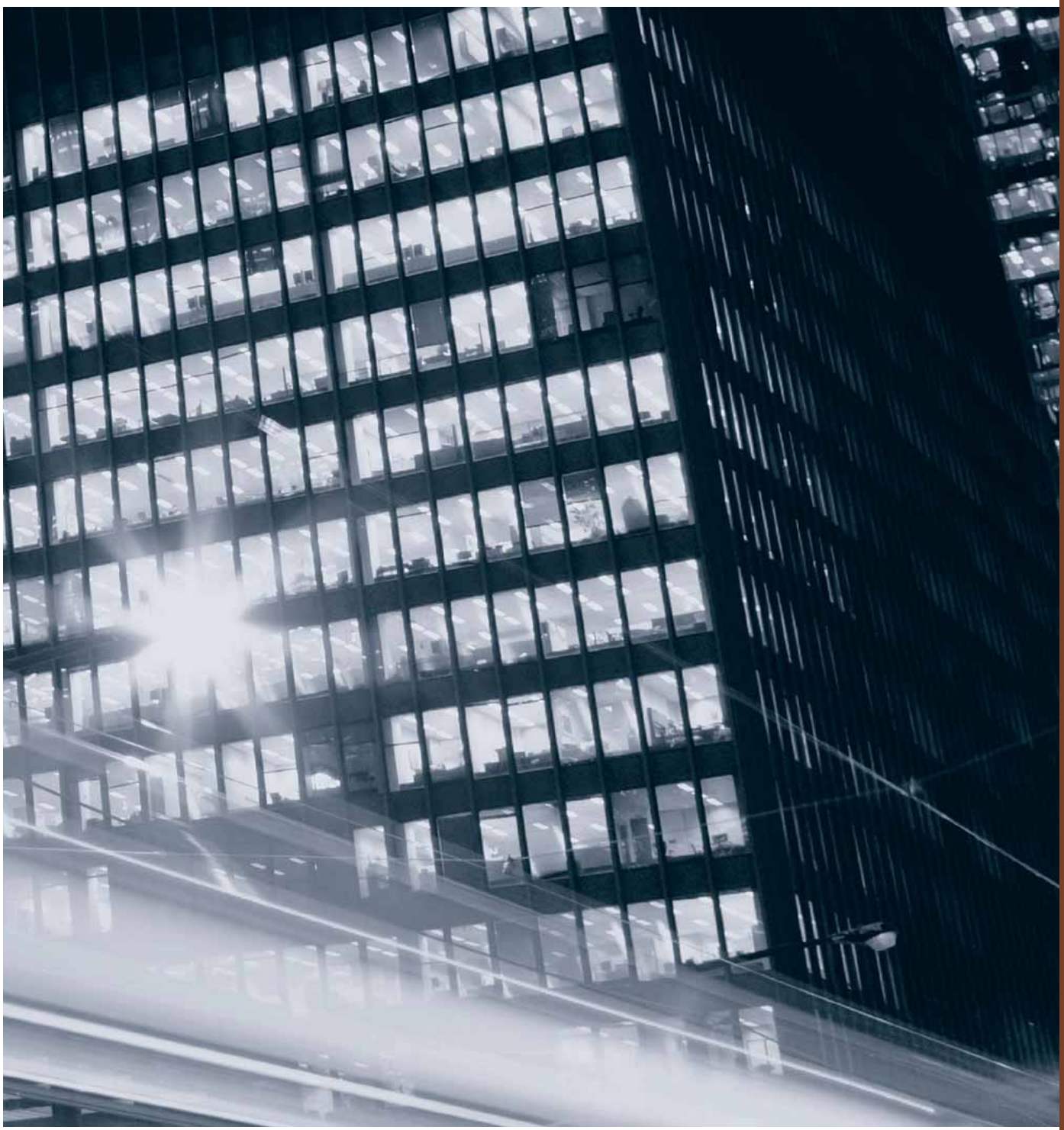


Building Automation, Process Engineering

C|Logline – high performance components for integrated control tasks

Technical networks and safety solutions in buildings and industrial plants are becoming increasing 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.



Components/Building Automation

	I/0 Components	Contoller Router/Switcher Interfaces/Adapter	Display/ Appliance	Software	Accessories
TCP/IP		Ethernet Switch			Electricity Supplies Jumper Terminal Blocks Label Door Installation Modules More
BACnet	BMT-series				
Modbus RTU	MR-series				
LON	L-series	iLON Controller Multiport Router LON Adapter LON Interfaces	Door Installation Modules	LONMaker LONScanner	
CAN	F-series				

Measuring and Monitoring Relays

	Conventional Relays Technology	Accessories
Fan Timer	LTRk-E12	
Speed	DRIW-E16	Speed Sensor, Mounting Bracket, Auxiliary Cam
Motor Protection/ V-belt	CPW-E12 TMR-E12	Current Transformer
Level Monitor	ENW-E12	Submersible Electrode, Leakage Sensor
Phase Monitoring Relays	PFD-E12 ASD-C18 DUW-C12	
Selective Protection	FSB-E12	
Voltage Moni. Relay	EUW-C18	
Current Moni. Relay	EIW-C18	

Interface Modules and Industrial Relays

	Electro-mechanic	Semi-Conductor	Filtering/Convert	Indicator	Setpoint Device	Accessories
Coupling Modules	KRA M-series KRA F-series KRZ-series	KRE-series				Labeling Plate Terminal Blocks
Potential Divider			PT-C12			
Annuciator Modules	STM-C12			LTM-E16		
AD/DA Converter			KAD-C12 ADU-C12			
Analog Data Encoder					KMA(i)-F KMA(i)-E08	
Diode Modules			KD-series			
Relay Modules	RM-series					
Industrial Relays	HF10FH R274					
Pulse Shaper			RTM-C12			
Threshold Control	KRS-series					

Electronic Timer Relays

	Multi-Time	fixed Time	Diverse Features
Multi-Function	MARK-E08 U MFRK-E08 F MARK-E08 MFRK-E08 MFRK-E12 (2W)		
Delay On Make	MZAK-E10; RTLK-E10		
Delay On Brake	RKAK-E10		
Circuit Clos., Wiping	EWEK-E10	REWk-E10	
Flashing		RTBk-E10	
Clock Generator	TERk-E08		
Delta-Star Relay			RSD-E10; RSDw-E10

Telecommunication Products

	adjustable Features	fixed Features	Multiple Changing	Additional Equipment
Power Switching Relay	SAR4 SAR5	SAR1		
Fax Change o. Switch			AMS Faxstar basic	
Automatic Changing Switch			AMS1/2 AP AMS 1/2 NF-UP AMS 1/4 AP	
Sec. Alarm Affords				TZG WK 955 AP/UP

LF-AOP4

ASD-C18

KRA-SR-M8/21

MFRk-E08

AMS 1/4 AP

C|Logline – Product overview

In total, C|Logline comprises all intelligent components of the highly-communicative and distributed controller with system components for building automation as well as measurement and monitoring relays, interface modules and industrial relays, time-controlled relays and telecommunication products.

Digital and analog input and output bus modules with LON®, CAN and BACnet protocols are also included in this.

I/O components with 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.

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.

I/O components

1	Packing Details	18
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5	LON I/Os	36
6	CAN-Bus I/Os	55
7	M-Bus I/Os	57

Ethernet I/Os | Multi I/O Controller (platform)

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
20	110900	1 pcs	167 x 147 x 95 mm	645 g
20	110901	1 pcs	167 x 147 x 95 mm	501 g

Ethernet I/Os | Digital input

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
21	1109541319	1 pcs	75 x 40 x 80 mm	103 g
21	1109511319	1 pcs	75 x 40 x 80 mm	108 g

Ethernet I/Os | Analog input

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
22	11095213	1 pcs	74 x 51 x 80 mm	123 g

Ethernet I/Os | Digital output

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
23	11095013	1 pcs	75 x 40 x 80 mm	112 g
23	1109561321	1 pcs	75 x 40 x 80 mm	126 g

Ethernet I/Os | Analog Output

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
24	1109551302	1 pcs	75 x 40 x 80 mm	100 g

Ethernet I/Os | Mixed Modules

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
25	1109531326	1 pcs	74 x 51 x 80 mm	139 g
25	1109531326IP	1 pcs	122 x 44 x 164 mm	401 g

BACnet I/Os | Digital input

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
26	1108841319	1 pcs	75 x 40 x 80 mm	108 g
26	1108811319	1 pcs	75 x 40 x 80 mm	113 g

BACnet I/Os | Analog input

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
27	11088213	1 pcs	74 x 51 x 80 mm	133 g

BACnet I/Os | Digital output

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
28	11088013	1 pcs	75 x 40 x 80 mm	116 g
28	1108861321	1 pcs	75 x 40 x 80 mm	132 g

BACnet I/Os | Analog Output

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
29	1108851302	1 pcs	75 x 40 x 80 mm	105 g
29	1108871302	1 pcs	75 x 40 x 80 mm	105 g

BACnet I/Os | Mixed Modules

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
30	1108831326	1 pcs	74 x 51 x 80 mm	145 g
30	1108831326IP	1 pcs	122 x 44 x 164 mm	400 g

Modbus I/Os | Digital input

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
31	1108341319	1 pcs	75 x 40 x 80 mm	103 g
31	1108311319	1 pcs	75 x 40 x 80 mm	108 g

Modbus I/Os | Analog input

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
32	11083213	1 pcs	74 x 51 x 80 mm	130 g

Modbus I/Os | Digital output

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
33	11083013	1 pcs	75 x 40 x 80 mm	111 g
33	1108361321	1 pcs	75 x 40 x 80 mm	132 g

Modbus I/Os | Analog Output

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
34	1108351302	1 pcs	75 x 40 x 80 mm	100 g
34	1108371302	1 pcs	75 x 40 x 80 mm	100 g

Modbus I/Os | Mixed Modules

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
35	1108331326	1 pcs	74 x 51 x 80 mm	139 g
35	1108331326IP	1 pcs	122 x 44 x 164 mm	402 g

LON I/Os | Digital input

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
36	1108501319	1 pcs	75 x 40 x 80 mm	106 g
36	1108511319	1 pcs	75 x 40 x 80 mm	115 g
37	1108511319IP	1 pcs	122 x 44 x 164 mm	330 g
37	11085813	1 pcs	75 x 40 x 80 mm	95 g

LON I/Os | Digital input

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
38	11086313	1 pcs	75 x 40 x 80 mm	110 g

LON I/Os | Analog input

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
39	11085313	1 pcs	74 x 51 x 80 mm	126 g
39	1108601332	1 pcs	75 x 40 x 80 mm	96 g

LON I/Os | Digital output

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
40	1108521321	1 pcs	75 x 40 x 80 mm	132 g
40	1108521321IP	1 pcs	122 x 44 x 164 mm	428 g
41	11086213	1 pcs	75 x 40 x 80 mm	116 g

LON I/Os | Analog Output

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
42	11085413	1 pcs	75 x 40 x 80 mm	110 g
42	11085413IP	1 pcs	122 x 44 x 164 mm	330 g

LON I/Os | Mixed Modules

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
43	1108551326	1 pcs	74 x 51 x 80 mm	148 g
43	1108551326IP	1 pcs	122 x 44 x 164 mm	360 g
44	1108561326	1 pcs	75 x 40 x 80 mm	102 g
44	11085913	1 pcs	74 x 51 x 80 mm	126 g
45	11085713	1 pcs	75 x 40 x 80 mm	94 g
45	11086105IP	1 pcs	122 x 44 x 164 mm	360 g

LON I/Os | connecting module

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
46	11087913	1 pcs	75 x 40 x 80 mm	95 g

LON I/Os | Door installation

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
47	11039125	1 pcs	46 x 43 x 142 mm	94 g
47	11039225	1 pcs	46 x 43 x 142 mm	88 g
48	11039425	1 pcs	46 x 43 x 142 mm	95 g
48	11039525	1 pcs	46 x 43 x 142 mm	92 g
49	11039613	1 pcs	46 x 43 x 142 mm	96 g
49	11039713	1 pcs	46 x 43 x 142 mm	96 g
50	11039025	1 pcs	46 x 43 x 142 mm	100 g

LON I/Os | Software

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
51	11021003E	1 pcs	310 x 235 x 85 mm	1530 g
51	11021019E	1 pcs	310 x 235 x 90 mm	1530 g
51	11021603E	1 pcs	310 x 235 x 85 mm	1530 g
51	11021619E	1 pcs	310 x 235 x 85 mm	1530 g

LON I/Os | i.LON Server

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
52	110213	1 pcs	245 x 155 x 90 mm	630 g
52	11021302	1 pcs	265 x 160 x 90 mm	646 g
52	11021303	1 pcs	245 x 155 x 90 mm	630 g
52	11021220	1 pcs	265 x 160 x 90 mm	650 g
52	11021221	1 pcs	265 x 160 x 90 mm	650 g
52	11021223	1 pcs	265 x 160 x 90 mm	650 g
52	11021243	1 pcs	265 x 160 x 90 mm	650 g

LON I/Os | Interface/Adapter

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
53	110214	1 pcs	190 x 160 x 55 mm	210 g
53	110215	1 pcs	265 x 160 x 90 mm	665 g
53	110054	1 pcs	260 x 160 x 80 mm	240 g
54	110050	1 pcs	90 x 60 x 8 mm	59 g
54	110051	1 pcs	135 x 85 x 40 mm	56 g

CAN-Bus I/Os | Input/Output digital

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
55	1105751319	1 pcs	75 x 40 x 80 mm	102 g
55	1105701321	1 pcs	75 x 40 x 80 mm	130 g

CAN-Bus I/Os | Input/Output analog

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
56	1105741306	1 pcs	75 x 40 x 80 mm	113 g
56	1105731302	1 pcs	75 x 40 x 80 mm	104 g

M-Bus I/Os | Digital/analog inputs

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
57	110556	1 pcs	74 x 51 x 80 mm	119 g
57	110562	1 pcs	74 x 51 x 80 mm	112 g

Matching accessories for EWIO-9180

	Page
Terminal block Type 259	132
Power supply NG4 gray	131
Jumper 135	132

Matching accessories for EWIO-9180-FB

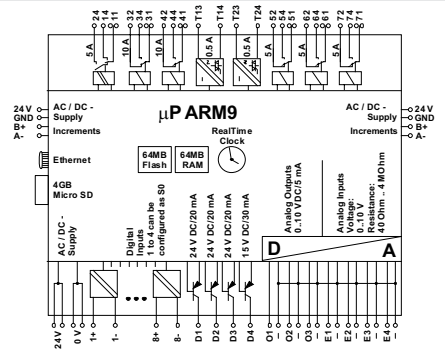
	Page
Terminal block Type 259	132
Power supply NG4 gray	131
Jumper 135	132

EWIO-9180

Compact Linux I/O platform with 27 analog/digital inputs/ outputs, some of them with manual control. Integrated web interface for developing your own decentralized automation controllers. Applications can be programmed using the Linux Shell installed on the server or using C/C++ and JAVA development environments. The network is connected by means of a standard RJ45 Ethernet interface. External I/O extension with up to 6 optional modules of the EW-xxxx series possible. Suitable for decentralized mounting in serial sub-distributor.

Operating voltage	24 V AC/DC / +/- 10% / 50/60 Hz
Current consumption	450 mA (AC) / 225 mA (DC)
Network	Ethernet RJ45, 10/100MBit, TCP/IP
Controller	ARM9 180 MHz
Internal memory	64 MB RAM / 64 MB Flash
External memory	microSD up to 4 GB
Real time clock	Error 1 s/day, 24 h power reserve
Operating system	embedded Linux
External I/O interfaces	SPI/RS485
Inputs / digital	8x; 4 of them can be used as S0 acc. to DIN EN 62053-31
Inputs / resistance	4x analog 40 Ohm to 4 MOhm
Inputs / voltage	4x analog 0 to 10 V DC
Outputs / relays	3x changeover contacts (3PST)/250 V AC/5 A 2x changeover contacts (DPST)/250 V AC/10A 1x two-level / 250 V AC / 5 A
Outputs / triac	2x 20 to 250 V AC / 0.5 A
Outputs / transistor	3x PNP / 24 V DC / 20 mA 1x PNP / 24 V DC / 30 mA
Outputs / voltage	3x analog 0 to 10 V DC
Dimensions (W x H x D)	125 x 90 x 60 mm, 7HP, TH35
Weight	430 g
Operation / storage	-5° to +55°C / -20° to + 70° C
Ingress protection	IP20

Principle diagram



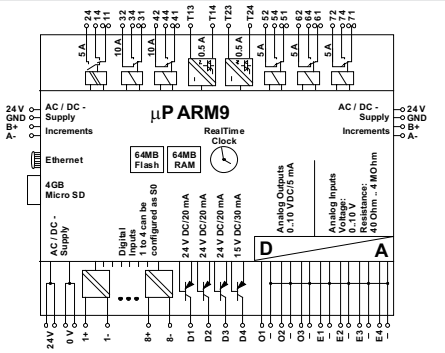
P/N	Color	Feature 1	Feature 2	EAN
110900	black			4250184130864

EWIO-9180-FB

Compact Linux I/O platform with 27 analog/digital inputs/ outputs, some of them with manual control. Integrated web interface for developing your own decentralized automation controllers. Applications can be programmed using the Linux Shell installed on the server or using C/C++ and JAVA development environments. The network is connected by means of a standard RJ45 Ethernet interface. Optional extension with fieldbus modules.
Suitable for decentralized mounting in serial sub-distributor.

Operating voltage	24 V AC/DC / +/- 10% / 50/60 Hz
Current consumption	450 mA (AC) / 225 mA (DC)
Network	Ethernet RJ45, 10/100MBit, TCP/IP
Controller	ARM9 180 MHz
Internal memory	64 MB RAM / 64 MB Flash
External memory	microSD up to 4 GB
Real time clock	Error 1 s/day, 24 h power reserve
Operating system	embedded Linux
External I/O interface	UART/RS485 for fieldbus
Inputs / digital	8x; 4 of them can be used as S0 acc. to DIN EN 62053-31
Inputs / resistance	4x analog 40 Ohm to 4 MOhm
Inputs / voltage	4x analog 0 to 10 V DC
Outputs / relays	3x changeover contacts (3PST)/250 V AC/5 A 2x changeover contacts (DPST)/250 V AC/10A 1x two-level / 250 V AC / 5 A
Outputs / triac	2x 20 to 250 V AC / 0.5 A
Outputs / transistor	3x PNP / 24 V DC / 20 mA 1x PNP / 24 V DC / 30 mA
Outputs / voltage	3x analog 0 to 10 V DC
Dimensions (W x H x D)	125 x 90 x 60 mm, 7HP, TH35
Weight	430 g
Operation / storage	-5° to +55°C / -20° to + 70° C
Ingress protection	IP20

Principle diagram



P/N	Color	Feature 1	Feature 2	EAN
110901	black			4250184151524

Matching accessories for EW-DI4

	Page
Terminal block Type 259	132
Power supply NG4 gray	131
Jumper 135	132

Matching accessories for EW-DI10

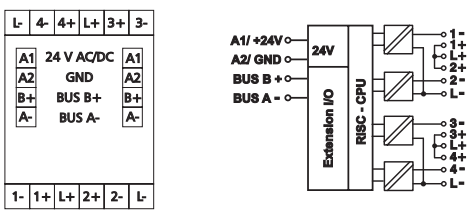
	Page
Terminal block Type 259	132
Power supply NG4 gray	131
Jumper 135	132

EW-DI4

The extension 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 extension module can only be used in combination with EWIO-9180, which scans the outputs. The module address is set by means of an address switch on the front.
Suitable for decentralized mounting in serial sub-distributor.

Protocol	EWIO internal
Addressing range	0 to 9
Bus interface	Two-wire bus
Transmission rate	115200 Bd
Operating voltage range	20 V to 28 V AC/DC (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 10 V AC/DC
Display	Green, red and yellow LED
Dimensions (W x H x D)	35 x 70 x 65 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



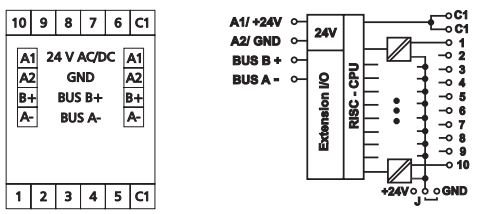
P/N	Color	Feature 1	Feature 2	EAN
1109541319	gray			4250184138051

EW-DI10

The extension 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 extension module can only be used in combination with EWIO-9180, which scans the outputs. The module address is set by means of an address switch on the front.
Suitable for decentralized mounting in serial sub-distributor.

Protocol	EWIO bus
Addressing range	0 to 9
Bus interface	RS485 (two-wire bus)
Transmission rate	9600 to 115200 baud
Operating voltage range	20 V to 28 V AC/DC (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 70 x 65 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	EAN
1109511319	gray			4250184138037

Matching accessories for EW-AI8

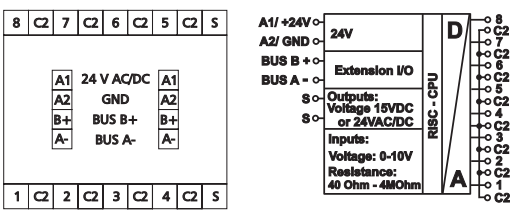
	Page
Terminal block Type 259	132
Power supply NG4 gray	131
Jumper 135	132

EW-AI8

The extension 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 extension module can only be used in combination with EWIO-9180, which universally configures the inputs.
The module address is set by means of an address switch on the front.
Suitable for decentralized mounting in serial sub-distributor.

Protocol	EWIO internal
Addressing range	0 to 9
Bus interface	Two-wire bus
Transmission rate	115200 Bd
Operating voltage range	20 V to 28 V AC/DC (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 V to 10 V DC
Input / resolution	1 mV (0 to 100 %)
Input / error	approx. +/- 10 mV
Display	Green and red LED
Dimensions (W x H x D)	50 x 70 x 65 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	EAN
11095213	gray			4250184138013

Matching accessories for EW-TO4

	Page
Terminal block Type 259	132
Power supply NG4 gray	131
Jumper 135	132

Matching accessories for EW-DO4

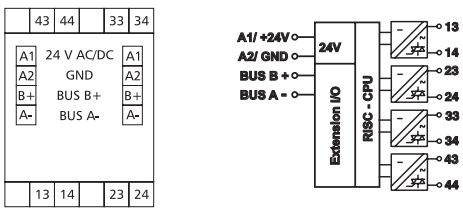
	Page
Terminal block Type 259	132
Power supply NG4 gray	131
Jumper 135	132

EW-TO4

The extension 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 extension module can only be used in combination with EWIO-9180, which switches the outputs. In addition, the outputs can be overridden manually by means of switches on the device. The module address is set by means of an address switch on the front.
Suitable for decentralized mounting in serial sub-distributor.

Protocol	EWIO internal
Addressing range	0 to 9
Bus interface	Two-wire bus
Transmission rate	115200 Bd
Operating voltage range	20 V to 28 V AC/DC (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 70 x 75 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



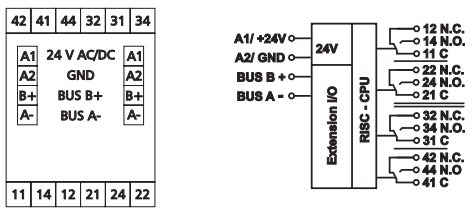
P/N	Color	Feature 1	Feature 2	EAN
11095013	gray			4250184137986

EW-DO4

The extension 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. With strong inductive loads, we recommend protecting the relay contacts additionally with an RC element. The module is provided with a manual control for manually switching the relays. The extension module can only be used in combination with EWIO-9180, which switches the outputs. The module address is set by means of an address switch on the front.
Suitable for decentralized mounting in serial sub-distributor.

Protocol	EWIO internal
Addressing range	0 to 9
Bus interface	Two-wire bus
Transmission rate	115200 Bd
Operating voltage range	20 V to 28 V AC/DC (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
Output / max. total current	12 A across all outputs
Display	Green, red and yellow LED
Dimensions (W x H x D)	35 x 70 x 75 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	EAN
1109561321	gray			4250184138044

Matching accessories for EW-AO4

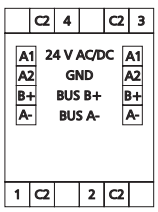
	Page
Terminal block Type 259	132
Power supply NG4 gray	131
Jumper 135	132

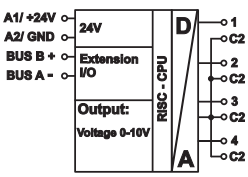
EW-AO4

The extension 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 extension module can only be used in combination with EWIO-9180, which switches the outputs. The module address is set by means of an address switch on the front.
Suitable for decentralized mounting in serial sub-distributor.

Protocol	EWIO internal
Addressing range	0 to 9
Bus interface	Two-wire bus
Transmission rate	115200 Bd
Operating voltage range	20 V to 28 V AC/DC (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 70 x 65 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 block	IP40 / IP20

Wiring/Principle diagram





P/N	Color	Feature 1	Feature 2	EAN
1109551302	gray			4250184138020

Matching accessories for EW-DIO4/2

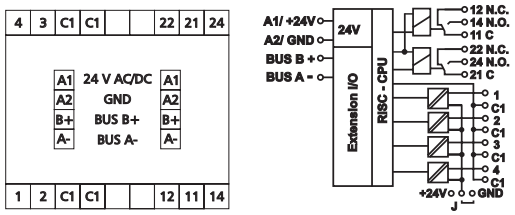
	Page
Terminal block Type 259	132
Power supply NG4 gray	131
Jumper 135	132

EW-DIO4/2

The extension 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. With strong inductive loads, we recommend protecting the relay contacts with an RC element. The inputs can be used as contact or voltage inputs.
The module can only be used in combination with EWIO-9180, which scans and switches the inputs and outputs. The module address is set by means of an address switch on the front. Suitable for decentralized mounting in serial sub-distributor.

Protocol	EWIO bus
Addressing range	0 to 9
Bus interface	RS485 (two-wire bus)
Transmission rate	9600 to 115200 baud
Operating voltage range	20 V to 28 V AC/DC (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 7 V AC/DC
Output / contacts	2 changeover contacts (DPST)
Output / switching voltage	250 V AC
Output / continuous current	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)	50 x 70 x 75 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 block	IP40 / IP20

Wiring/Principle diagram



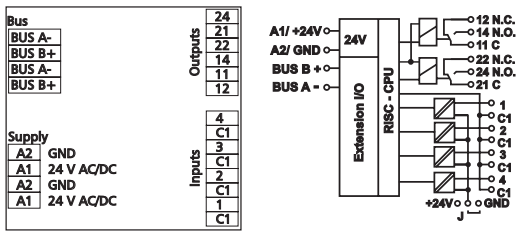
P/N	Color	Feature 1	Feature 2	EAN
1109531326	gray			4250184137993

EW-DIO4/2-IP

The extension 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. With strong inductive loads, we recommend protecting the relay contacts additionally with an RC element. The inputs can be used as contact or voltage inputs. The module can only be used in combination with EWIO-9180, which scans and switches the inputs and outputs. The module address is set by means of an address switch.

Protocol	EWIO bus
Addressing range	0 to 9
Bus interface	RS485 (two-wire bus)
Transmission rate	9600 to 115200 baud
Operating voltage range	20 V to 28 V AC/DC (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 7 V AC/DC
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
Output / switch-on current	80 A (less than 20 ms)
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 block	IP65 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2	EAN
1109531326IP	gray			4250184138006

Matching accessories for BMT-DI4

	Page
Terminal block Type 259	132
Power supply NG4 gray	131
Jumper 135	132

Matching accessories for BMT-DI10

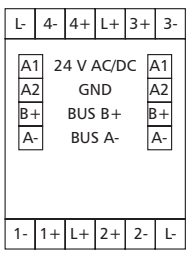
	Page
Terminal block Type 259	132
Power supply NG4 gray	131
Jumper 135	132

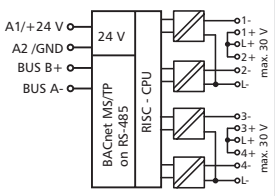
BMT-DI4

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 in serial sub-distributor.

Protocol	BACnet MS/TP
Addressing range	00 to F9
Bus interface	RS485 (two-wire bus)
Transmission rate	9600 to 115200 baud
Operating voltage range	20 V to 28 V AC/DC (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	Green, red and yellow LED
Dimensions (W x H x D)	35 x 70 x 65 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





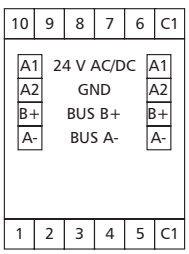
P/N	Color	Feature 1	Feature 2	EAN
1108841319	gray			4250184138747

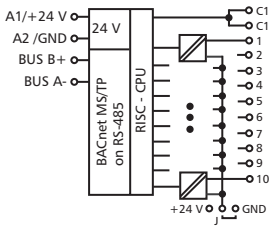
BMT-DI10

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 in serial sub-distributor.

Protocol	BACnet MS/TP
Addressing range	00 to F9
Bus interface	RS485 (two-wire bus)
Transmission rate	9600 to 115200 baud
Operating voltage range	20 V to 28 V AC/DC (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 70 x 65 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	EAN
1108811319	gray			4250184138709

Matching accessories for BMT-AI8

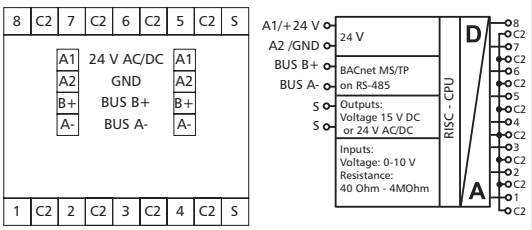
	Page
Terminal block Type 259	132
Power supply NG4 gray	131
Jumper 135	132

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 in serial sub-distributor.

Protocol	BACnet MS/TP
Addressing range	00 to F9
Bus interface	RS485 (two-wire bus)
Transmission rate	9600 to 115200 baud
Operating voltage range	20 V to 28 V AC/DC (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 V 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 70 x 65 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	EAN
11088213	gray			4250184138716

Matching accessories for BMT-TO4

	Page
Terminal block Type 259	132
Power supply NG4 gray	131
Jumper 135	132

Matching accessories for BMT-DO4

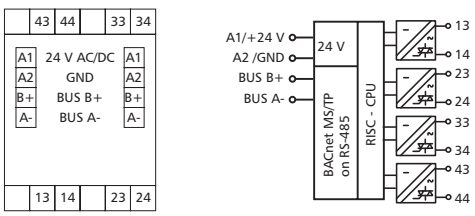
	Page
Terminal block Type 259	132
Power supply NG4 gray	131
Jumper 135	132

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 in serial sub-distributor.

Protocol	BACnet MS/TP
Addressing range	00 to F9
Bus interface	RS485 (two-wire bus)
Transmission rate	9600 to 115200 baud
Operating voltage range	20 V to 28 V AC/DC (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 70 x 75 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



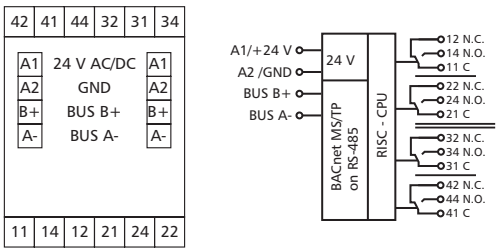
P/N	Color	Feature 1	Feature 2	EAN
11088013	gray			4250184138693

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. With strong inductive loads, we recommend protecting the relay contacts additionally with an RC element. 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 in serial sub-distributor.

Protocol	BACnet MS/TP
Addressing range	00 to F9
Bus interface	RS485 (two-wire bus)
Transmission rate	9600 to 115200 baud
Operating voltage range	20 V to 28 V AC/DC (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 70 x 75 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	EAN
1108861321	gray			4250184138761

Matching accessories for BMT-AO4

	Page
Terminal block Type 259	132
Power supply NG4 gray	131
Jumper 135	132

Matching accessories for BMT-AOP4

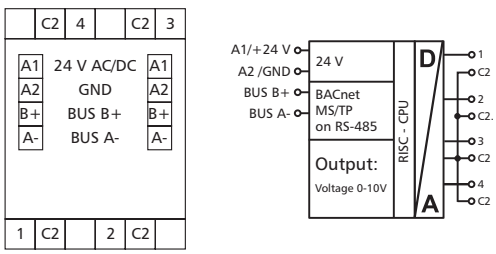
	Page
Terminal block Type 259	132
Power supply NG4 gray	131
Jumper 135	132

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 in serial sub-distributor.

Protocol	BACnet MS/TP
Addressing range	00 to F9
Bus interface	RS485 (two-wire bus)
Transmission rate	9600 to 115200 baud
Operating voltage range	20 V to 28 V AC/DC (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 70 x 65 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 block	IP40 / IP20

Wiring/Principle diagram



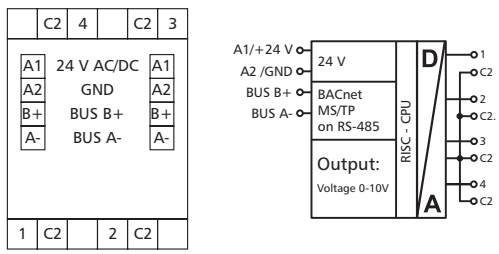
P/N	Color	Feature 1	Feature 2	EAN
1108851302	gray			4250184138754

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 in serial sub-distributor.

Protocol	BACnet MS/TP
Addressing range	00 to F9
Bus interface	RS485 (two-wire bus)
Transmission rate	9600 to 115200 baud
Operating voltage range	20 V to 28 V AC/DC (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 70 x 65 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 block	IP40 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2	EAN
1108871302	gray			4250184151937

Matching accessories for BMT-DIO4/2

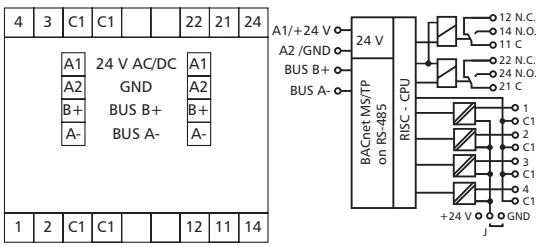
	Page
Terminal block Type 259	132
Power supply NG4 gray	131
Jumper 135	132

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. With strong inductive loads, we recommend protecting the relay contacts with an RC element. 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 in serial sub-distributor.

Protocol	BACnet MS/TP
Addressing range	00 to F9
Bus interface	RS485 (two-wire bus)
Transmission rate	9600 to 115200 baud
Operating voltage range	20 V to 28 V AC/DC (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 7 V AC/DC
Output / contacts	2 changeover contacts (DPST)
Output / switching voltage	250 V AC
Output / continuous current	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)	50 x 70 x 75 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 block	IP40 / IP20

Wiring/Principle diagram



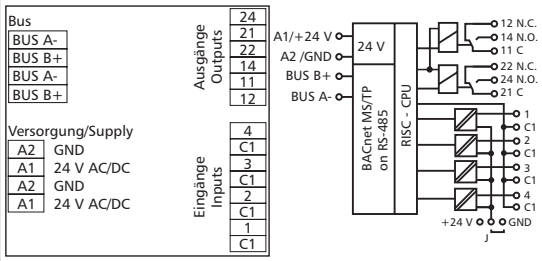
P/N	Color	Feature 1	Feature 2	EAN
1108831326	gray			4250184138723

BMT-DIO4/2-IP

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. With strong inductive loads, we recommend protecting the relay contacts additionally with an RC element. 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
Addressing range	00 to F9
Bus interface	RS485 (two-wire bus)
Transmission rate	9600 to 115200 baud
Operating voltage range	20 V to 28 V AC/DC (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 7 V AC/DC
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
Output / switch-on current	80 A (less than 20 ms)
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 block	IP65 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2	EAN
1108831326IP	gray			4250184138730

Matching accessories for MR-DI4

	Page
Terminal block Type 259	132
Power supply NG4 gray	131
Jumper 135	132

Matching accessories for MR-DI10

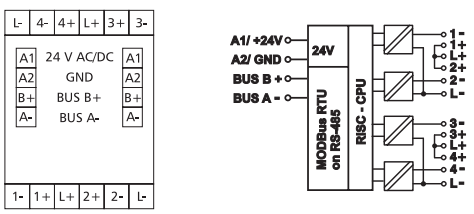
	Page
Terminal block Type 259	132
Power supply NG4 gray	131
Jumper 135	132

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 objects via a Modbus master. The module address, the baud rate and the parity are set by means of two address switches on the front.
Suitable for decentralized mounting in serial sub-distributor.

Protocol	Modbus RTU
Addressing range	00 to F9
Bus interface	RS485 (two-wire bus)
Transmission rate	1200 to 115200 baud
Operating voltage range	20 V to 28 V AC/DC (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	Green, red and yellow LED
Dimensions (W x H x D)	35 x 70 x 65 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



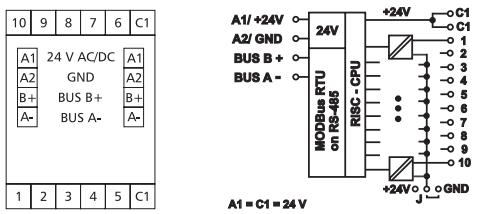
P/N	Color	Feature 1	Feature 2	EAN
1108341319	gray			4250184135647

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 objects via a Modbus master. The module address, the baud rate and the parity are set by means of two address switches on the front.
Suitable for decentralized mounting in serial sub-distributor.

Protocol	Modbus RTU
Addressing range	00 to F9
Bus interface	RS485 (two-wire bus)
Transmission rate	1200 to 115200 baud
Operating voltage range	20 V to 28 V AC/DC (SELV)
Current consumption	85 mA (AC) / 75 mA (DC)
Relative duty cycle	100 %
Inputs	10 x digital
Input / voltage	30 V DC
Input / high signal	more than 17 V AC/DC
Display	Green, red and yellow LED
Dimensions (W x H x D)	35 x 70 x 65 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	EAN
1108311319	gray			4250184135609

Matching accessories for MR-AI8

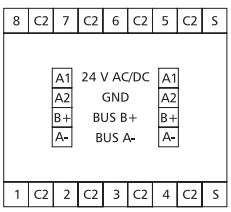
	Page
Terminal block Type 259	132
Power supply NG4 gray	131
Jumper 135	132

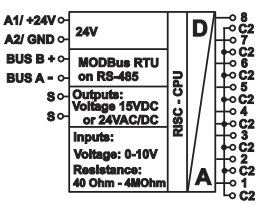
MR-AI8

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 objects via a Modbus master. The module address, the baud rate and the parity are set by means of two address switches on the front. Suitable for decentralized mounting in serial sub-distributor.

Protocol	Modbus RTU
Addressing range	00 to F9
Bus interface	RS485 (two-wire bus)
Transmission rate	1200 to 115200 baud
Operating voltage range	20 V to 28 V AC/DC (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 V 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 70 x 65 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	EAN
11083213	gray			4250184135616

Matching accessories for MR-TO4

	Page
Terminal block Type 259	132
Power supply NG4 gray	131
Jumper 135	132

Matching accessories for MR-DO4

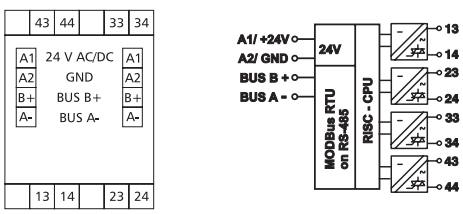
	Page
Terminal block Type 259	132
Power supply NG4 gray	131
Jumper 135	132

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, HLK valves, etc. The outputs can be switched by means of standard objects via a Modbus master. In addition, the outputs can be overridden manually by means of switches on the device. The module address, the baud rate and the parity are set by means of two address switches on the front.
Suitable for decentralized mounting in serial sub-distributor.

Protocol	Modbus RTU
Addressing range	00 to F9
Bus interface	RS485 (two-wire bus)
Transmission rate	1200 to 115200 baud
Operating voltage range	20 V to 28 V AC/DC (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 70 x 75 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



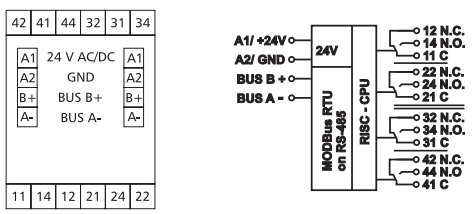
P/N	Color	Feature 1	Feature 2	EAN
11083013	gray			4250184135593

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. With strong inductive loads, we recommend protecting the relay contacts additionally with an RC element. 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 Modbus master. The module address, the baud rate and the parity are set by means of two address switches on the front.
Suitable for decentralized mounting in serial sub-distributor.

Protocol	Modbus RTU
Addressing range	00 to F9
Bus interface	RS485 (two-wire bus)
Transmission rate	1200 to 115200 baud
Operating voltage range	20 V to 28 V AC/DC (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 70 x 75 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	EAN
1108361321	gray			4250184135661

Matching accessories for MR-AO4

	Page
Terminal block Type 259	132
Power supply NG4 gray	131
Jumper 135	132

Matching accessories for MR-AOP4

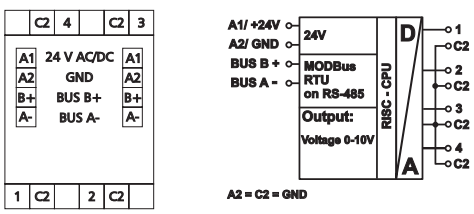
	Page
Terminal block Type 259	132
Power supply NG4 gray	131
Jumper 135	132

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 objects via a Modbus master. The module address, the baud rate and the parity are set by means of two address switches on the front.
Suitable for decentralized mounting in serial sub-distributor.

Protocol	Modbus RTU
Addressing range	00 to 99
Bus interface	RS485 (two-wire bus)
Transmission rate	1200 to 115200 baud
Operating voltage range	20 V to 28 V AC/DC (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 70 x 65 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 block	IP40 / IP20

Wiring/Principle diagram



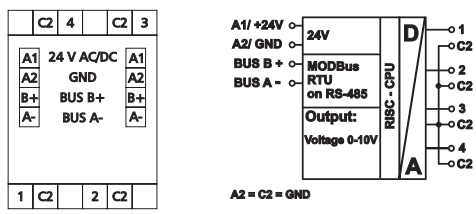
P/N	Color	Feature 1	Feature 2	EAN
1108351302	gray			4250184135654

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 objects via a Modbus master. Each output can be set for automatic or manual operation by means of 4 potentiometers at the front. The module address, the baud rate and the parity are set by means of two address switches on the front.
Suitable for decentralized mounting in serial sub-distributor.

Protocol	Modbus RTU
Addressing range	00 to 99
Bus interface	RS485 (two-wire bus)
Transmission rate	1200 to 115200 baud
Operating voltage range	20 V to 28 V AC/DC (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 70 x 65 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 block	IP40 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2	EAN
1108371302	gray			4250184151920

Matching accessories for MR-DIO4/2

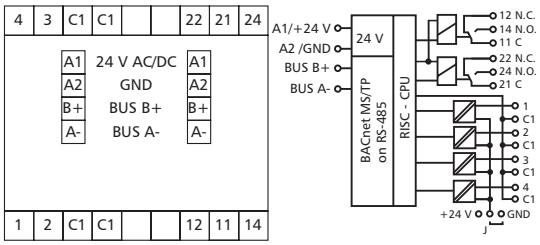
	Page
Terminal block Type 259	132
Power supply NG4 gray	131
Jumper 135	132

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. With strong inductive loads, we recommend protecting the relay contacts with an RC element. 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 Modbus master. The module address, the baud rate and the parity are set by means of two address switches on the front. Suitable for decentralized mounting in serial sub-distributor.

Protocol	Modbus RTU
Addressing range	00 to F9
Bus interface	RS485 (two-wire bus)
Transmission rate	1200 to 115200 baud
Operating voltage range	20 V to 28 V AC/DC (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 (DPST)
Output / switching voltage	250 V AC
Output / continuous current	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)	50 x 70 x 75 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 block	IP40 / IP20

Wiring/Principle diagram



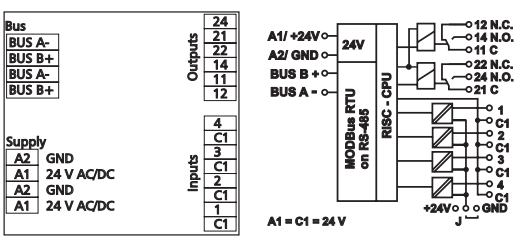
P/N	Color	Feature 1	Feature 2	EAN
1108331326	gray			4250184135623

MR-DIO4/2-IP

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. With strong inductive loads, we recommend protecting the relay contacts with an RC element. 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 Modbus master. The module address, the baud rate and the parity are set by means of two address switches.

Protocol	Modbus RTU
Addressing range	00 to F9
Bus interface	RS485 (two-wire bus)
Transmission rate	1200 to 115200 baud
Operating voltage range	20 V to 28 V AC/DC (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 (DPST)
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)	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 block	IP65 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2	EAN
1108331326IP	gray			4250184135630

Matching accessories for LF-DI4

	Page
Terminal block Type 259	132
Power supply NG4 green	131
Jumper 135	132

Matching accessories for LF-DI10

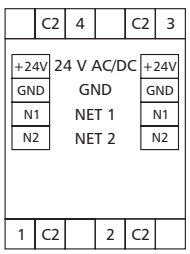
	Page
Terminal block Type 259	132
Power supply NG4 green	131
Jumper 135	132

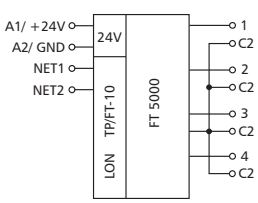
LF-DI4

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 in serial sub-distributor.

Protocol	FT/TP-10, free topology
Neuron	FT5000
Transmission rate	78 KBit/s
Operating voltage range	20 V to 28 V AC/DC (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 70 x 65 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 block	IP40 / IP20

Wiring/Principle diagram





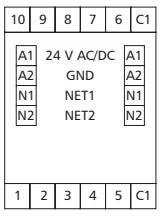
P/N	Color	Feature 1	Feature 2	EAN
1108501319	green			4250184135685

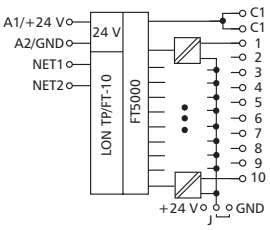
LF-DI10

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 in serial sub-distributor.

Protocol	FT/TP-10, free topology
Neuron	FT5000
Transmission rate	78 KBit/s
Operating voltage range	20 V to 28 V AC/DC (SELV)
Current consumption	63 mA (AC) / 21 mA (DC)
Relative duty cycle	100 %
Recovery time	550 ms
Inputs	10 x contact or voltage
Input / high signal	more than 8 V AC/DC
Display	Green and yellow LED
Dimensions (W x H x D)	35 x 70 x 65 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	EAN
1108511319	green			4250184135692

Matching accessories for LF-SI4

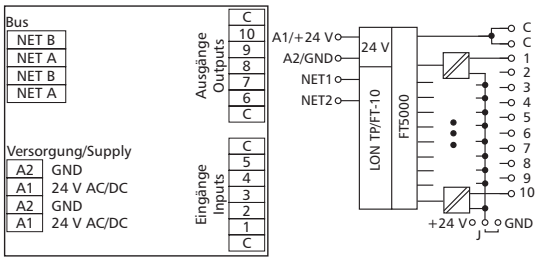
	Page
Terminal block Type 259	132
Power supply NG4 green	131
Jumper 135	132

LF-DI10-IP

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	FT/TP-10, free topology
Neuron	FT5000
Transmission rate	78 KBit/s
Operating voltage range	20 V to 28 V AC/DC (SELV)
Current consumption	63 mA (AC) / 21 mA (DC)
Relative duty cycle	100 %
Recovery time	550 ms
Inputs	10 x contact or voltage
Input / high signal	more than 8 V AC/DC
Display	Green and yellow LED
Dimensions (W x H x D)	159 x 41.5 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



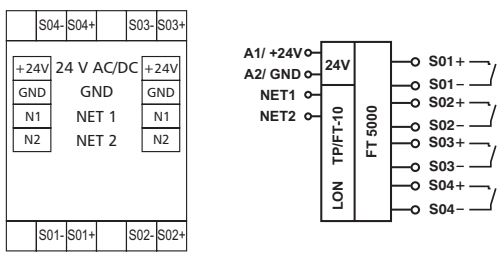
P/N	Color	Feature 1	Feature 2	EAN
1108511319IP	green			4250184135708

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 in serial sub-distributor.

Protocol	FT/TP-10, free topology
Neuron	FT5000
Transmission rate	78 KBit/s
Operating voltage range	20 V to 28 V AC/DC (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 70 x 65 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	EAN
11085813	green			4250184135807

Matching accessories for LF-DI230

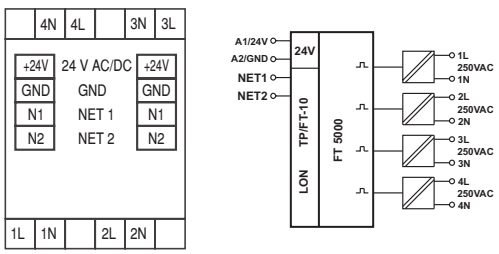
	Page
Terminal block Type 259	132
Power supply NG4 green	131
Jumper 135	132

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 1+ to 4+ are wired with 1- to 4- 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 in serial sub-distributor.

Protocol	FT/TP-10, free topology
Neuron	FT5000
Transmission rate	78 KBit/s
Operating voltage range	20 V to 28 V AC/DC (SELV)
Current consumption	63 mA (AC) / 21 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 70 x 65 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 block	IP40 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2	EAN
11086313	green			4250184146988

Matching accessories for LF-AI8

	Page
Terminal block Type 259	132
Power supply NG4 green	131
Jumper 135	132

Matching accessories for LF-CI4

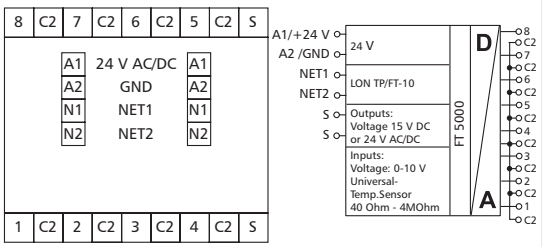
	Page
Terminal block Type 259	132
Power supply NG4 green	131
Jumper 135	132

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 in serial sub-distributor.

Protocol	FT/TP-10, free topology
Neuron	FT5000
Transmission rate	78 KBit/s
Operating voltage range	20 V to 28 V AC/DC (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 V 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 70 x 65 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 block	IP40 / IP20

Wiring/Principle diagram



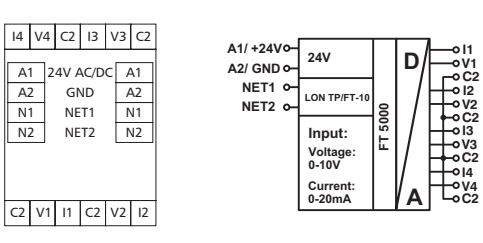
P/N	Color	Feature 1	Feature 2	EAN
11085313	green			4250184135739

LF-CI4

The LON module with 4 current and 4 voltage inputs was developed for decentralized switching tasks. It is suitable for detecting currents and voltages, for example, in industrial applications and refrigeration. The inputs can be scanned by SNVT network variables.
Suitable for decentralized mounting in serial sub-distributor.

Protocol	FT/TP-10, free topology
Neuron	FT5000
Transmission rate	78 KBit/s
Operating voltage range	20 V to 28 V AC/DC (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 V 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 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 block	IP40 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2	EAN
1108601332	green			4250184135821

Matching accessories for LF-DO4

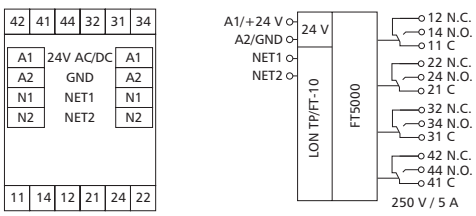
	Page
Terminal block Type 259	132
Power supply NG4 green	131
Jumper 135	132

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. With strong inductive loads, we recommend protecting the relay contacts additionally with an RC element. 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 in serial sub-distributor.

Protocol	FT/TP-10, free topology
Neuron	FT5000
Transmission rate	78 KBit/s
Operating voltage range	20 V to 28 V AC/DC (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 / 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 70 x 65 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



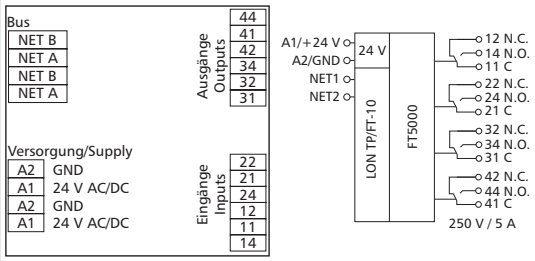
P/N	Color	Feature 1	Feature 2	EAN
1108521321	green			4250184135715

LF-DO4-IP

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. With strong inductive loads, we recommend protecting the relay contacts additionally with an RC element. 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	FT/TP-10, free topology
Neuron	FT5000
Transmission rate	78 KBit/s
Operating voltage range	20 V to 28 V AC/DC (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)	159 x 41.5 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 block	IP65 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2	EAN
1108521321IP	green			4250184135722

Matching accessories for LF-TO4

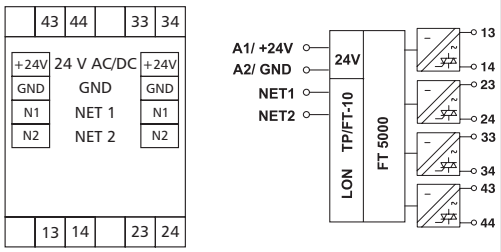
	Page
Terminal block Type 259	132
Power supply NG4 green	131
Jumper 135	132

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	FT/TP-10, free topology
Neuron	FT5000
Transmission rate	78 KBit/s
Operating voltage range	20 V to 28 V AC/DC (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 70 x 75 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	EAN
11086213	green			4250184146995

Matching accessories for LF-AOP4

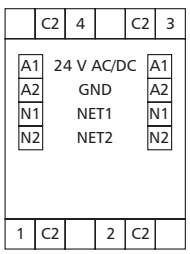
	Page
Terminal block Type 259	132
Power supply NG4 green	131
Jumper 135	132

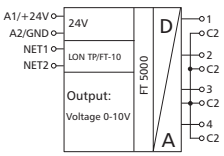
LF-AOP4

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 in serial sub-distributor.

Protocol	FT/TP-10, free topology
Neuron	FT5000
Transmission rate	78 KBit/s
Operating voltage range	20 V to 28 V AC/DC (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 at 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 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 block	IP40 / IP20

Wiring/Principle diagram





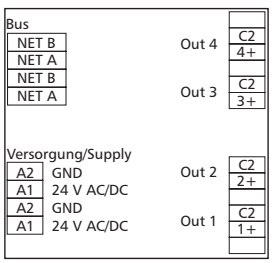
P/N	Color	Feature 1	Feature 2	EAN
11085413	green			4250184135746

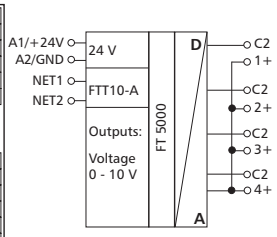
LF-AO4-IP

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	FT/TP-10, free topology
Neuron	FT5000
Transmission rate	78 KBit/s
Operating voltage range	20 V to 28 V AC/DC (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 at 10 V DC
Output / resolution	0.625 mV / digit
Output / error	100 mV
Display	Green and yellow LED
Dimensions (W x H x D)	159 x 41.5 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	EAN
11085413IP	green			4250184135753

Matching accessories for LF-DIO4/2

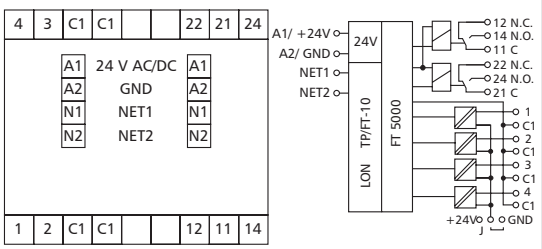
	Page
Terminal block Type 259	132
Power supply NG4 green	131
Jumper 135	132

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. With strong inductive loads, we recommend protecting the relay contacts with an RC element. 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 in serial sub-distributor.

Protocol	FT/TP-10, free topology
Neuron	FT5000
Transmission rate	78 KBit/s
Operating voltage range	20 V to 28 V AC/DC (SELV)
Current consumption	220 mA (AC) / 90 mA (DC)
Relative duty cycle	100 %
Recovery time	550 ms
Inputs	4 x digital
Input / voltage	30 V AC/DC
Input / high signal	more than 8 V AC/DC
Outputs	2 changeover contacts (DPST)
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)	60 x 70 x 75 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 block	IP40 / IP20

Wiring/Principle diagram



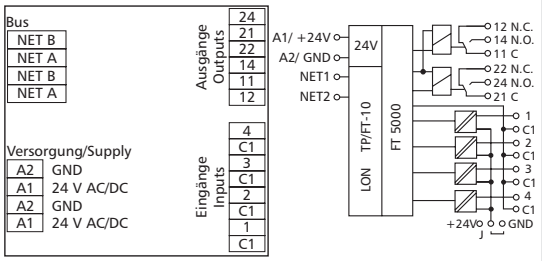
P/N	Color	Feature 1	Feature 2	EAN
1108551326	green			4250184135760

LF-DIO4/2-IP

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. With strong inductive loads, we recommend protecting the relay contacts with an RC element. 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	FT/TP-10, free topology
Neuron	FT5000
Transmission rate	78 KBit/s
Operating voltage range	20 V to 28 V AC/DC (SELV)
Current consumption	220 mA (AC) / 90 mA (DC)
Relative duty cycle	100 %
Recovery time	550 ms
Inputs	4 x digital
Input / voltage	30 V AC/DC
Input / high signal	more than 8 V AC/DC
Outputs	2 changeover contacts (DPST)
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)	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 block	IP65 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2	EAN
1108551326IP	green			4250184135777

Matching accessories for LF-DM4/4

	Page
Terminal block Type 259	132
Power supply NG4 green	131
Jumper 135	132

Matching accessories for LF-TP

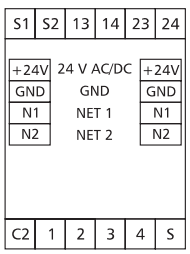
	Page
Terminal block Type 259	132
Power supply NG4 green	131
Jumper 135	132

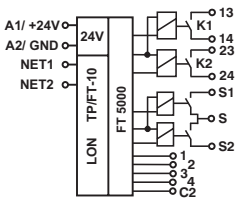
LF-DM4/4

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. With strong inductive loads, we recommend protecting the relay contacts additionally with an RC element. 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 in serial sub-distributor.

Protocol	FT/TP-10, free topology
Neuron	FT5000
Transmission rate	78 KBit/s
Operating voltage range	20 V to 28 V AC/DC (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
Output / switching voltage	250 V AC
Output / current	6 A / output
Outputs (digital)	2 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 block	IP40 / IP20

Wiring/Principle diagram





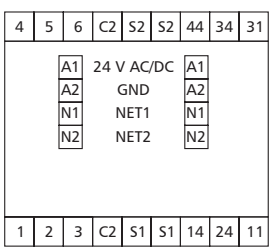
P/N	Color	Feature 1	Feature 2	EAN
1108561326	green			4250184135784

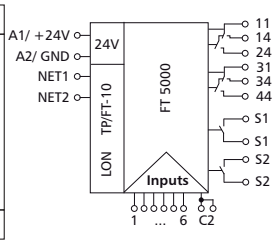
LF-TP

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. With strong inductive loads, we recommend protecting the relay contacts additionally with an RC element. 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. 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	FT/TP-10, free topology
Neuron	FT5000
Transmission rate	78 KBit/s
Operating voltage range	20 V to 28 V AC/DC (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	5 A / output
Outputs (digital)	2 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 70 x 75 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 block	IP40 / IP20

Wiring/Principle diagram





P/N	Color	Feature 1	Feature 2	EAN
11085913	green			4250184135814

Matching accessories for LF-AM2/4

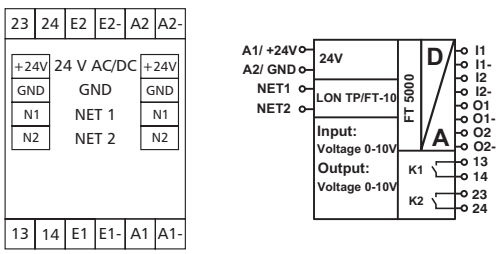
	Page
Terminal block Type 259	132
Power supply NG4 green	131
Jumper 135	132

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 in serial sub-distributor.

Protocol	FT/TP-10, free topology
Neuron	FT5000
Transmission rate	78 KBit/s
Operating voltage range	20 V to 28 V AC/DC (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 SPST-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 70 x 65 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 block	IP40 / IP20

Wiring/Principle diagram



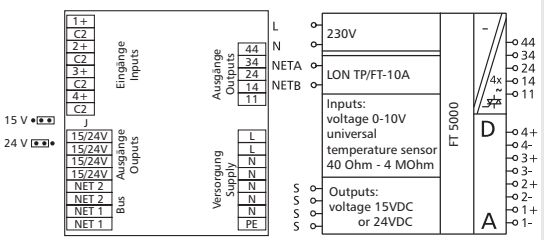
P/N	Color	Feature 1	Feature 2	EAN
11085713	green			4250184135791

LF-TI-IP

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	FT/TP-10, free topology
Neuron	FT5000
Transmission rate	78 KBit/s
Operating voltage range	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 block	IP65 / IP20

Wiring/Principle diagram



P/N	Color	Feature 1	Feature 2	EAN
11086105IP	green			4250184135838

Matching accessories for LF-FAM

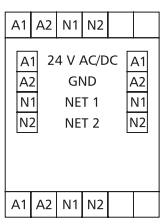
	Page
Jumper plug	132

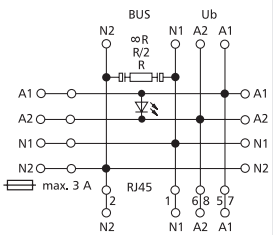
LF-FAM

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 in serial sub-distributor.

Operating voltage range	20 V to 28 V AC/DC (SELV)
Current consumption	less than 5 mA
Switch-on duration	relative 100 %
Display	Green LED
Dimensions (W x H x D)	35 x 70 x 78 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 block	IP40 / IP20

Wiring/Principle diagram





P/N	Color	Feature 1	Feature 2	EAN
11087913	green			4250184135906

Matching accessories for LM1

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19 inch Frame 3RU 80HP	134
10 inch Frame 3RU 40HP	134
Labeling sheet for door installation modules	136
Terminal block ASP02	133

Matching accessories for LM2

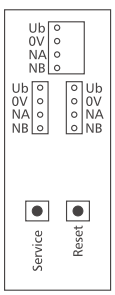
	Page
19 inch Frame 3RU 80HP	134
10 inch Frame 3RU 40HP	134
Labeling sheet for door installation modules	136
Terminal block ASP02	133

LM1

Button and display module for 19" assembly frames.
It is suitable for manual control in switch cabinet doors or remote control panels. When delivered, the module is used as collective fault alarm module. The LEDs and buttons are activated and analyzed by SNVT network variables. Functions of the collective fault alarm module:

LED 1 Operating mode indicator	Illuminated
LED 2 Collective warning	Yellow
LED 3 Collective fault message	Red, flashing
LED 4 Switch in manual position	Illuminated
Button 1	Acknowledgement
Button 2	Unblocking
Button 3	Lamp test
Protocol	FTT10A, free topology
Neuron	3120, 3k EEPROM
Transmission rate	78 KBit/s
Operating voltage range	24 V DC +/- 15 %
Current consumption	43 mA
Relative duty cycle	100 %
Display	3 LEDs
Buttons	4 x
Dimensions (W x H x D)	40 x 128.7 x 35 mm
Dimensions for 19" design	3RU x 8HP
Connection / terminal block	pluggable, 1.5 mm²
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection	IP20

Wiring



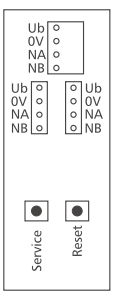
P/N	Color	Feature 1	Feature 2	EAN
11039125	gray			4250184121602

LM2

Display module with 10 LEDs for 19" assembly frames.
It is suitable as alarm module in switch cabinet doors or remote control panels. The individual LEDs are actuated by SNVT network variables.

Protocol	FTT10A, free topology
Neuron	3120, 3k EEPROM
Transmission rate	78 KBit/s
Operating voltage range	24 V DC +/- 15 %
Current consumption	53 mA
Relative duty cycle	100 %
Display	10 LEDs
Display / adjustable colors	Red, green, yellow
Dimensions (W x H x D)	40 x 128.7 x 35 mm
Dimensions for 19" design	3RU x 8HP
Connection / terminal block	pluggable, 1.5 mm²
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection	IP20

Wiring



P/N	Color	Feature 1	Feature 2	EAN
11039225	gray			4250184121619

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RIA CONNECT BTR NETCOM MCQ TECH

Matching accessories for LS1

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10 inch Frame 3RU 40HP	134
Labeling sheet for door installation modules	136
Terminal block ASP02	133

Matching accessories for LT1

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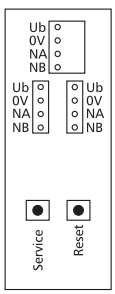
19 inch Frame 3RU 80HP	134
10 inch Frame 3RU 40HP	134
Labeling sheet for door installation modules	136
Terminal block ASP02	133

LS1

Switch and display module for 19" assembly frames.
It is suitable for manual control in switch cabinet doors or remote control panels. The individual LEDs and switches are activated and analyzed by SNVT network variables.

Protocol	FTT10A, free topology
Neuron	3120, 3k EEPROM
Transmission rate	78 KBit/s
Operating voltage range	24 V DC +/- 15 %
Current consumption	46 mA
Relative duty cycle	100 %
Display	6 LEDs
Display / adjustable colors	Red, green, yellow
Switch	2 x
Dimensions (W x H x D)	40 x 128.7 x 35 mm
Dimensions for 19" design	3RU x 8HP
Connection / terminal block	pluggable, 1.5 mm²
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection	IP20

Wiring



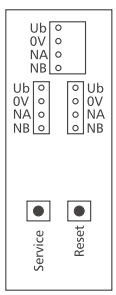
P/N	Color	Feature 1	Feature 2	EAN
11039425	gray			4250184121626

LT1

Button and display module for 19" assembly frames.
It is suitable for manual control in switch cabinet doors or remote control panels. The individual LEDs and buttons are activated and analyzed by SNVT network variables.

Protocol	FTT10A, free topology
Neuron	3120, 3k EEPROM
Transmission rate	78 KBit/s
Operating voltage range	24 V DC +/- 15 %
Current consumption	47 mA
Relative duty cycle	100 %
Display	6 LEDs
Display / adjustable colors	Red, green, yellow
Buttons	2 x
Dimensions (W x H x D)	40 x 128.7 x 35 mm
Dimensions for 19" design	3RU x 8HP
Connection / terminal block	pluggable, 1.5 mm²
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection	IP20

Wiring



P/N	Color	Feature 1	Feature 2	EAN
11039525	gray			4250184121633

Matching accessories for LT2

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19 inch Frame 3RU 80HP	134
10 inch Frame 3RU 40HP	134
Labeling sheet for door installation modules	136
Terminal block ASP02	133

Matching accessories for LT3

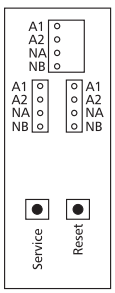
	Page
19 inch Frame 3RU 80HP	134
10 inch Frame 3RU 40HP	134
Labeling sheet for door installation modules	136
Terminal block ASP02	133

LT2

Button and display module for 19" assembly frames.
It is suitable for manual control in switch cabinet doors or remote control panels or for operating motorized fire dampers. The module allows to conduct test runs or to move to the opposite position of the fire dampers. The individual LEDs and buttons are activated and analyzed by SNVT network variables.

Protocol	FTT10A, free topology
Neuron	3120, 3k EEPROM
Transmission rate	78 KBit/s
Operating voltage range	20 to 28 V AC/DC
Current consumption	90 mA (AC) / 38 mA (DC)
Relative duty cycle	100 %
Display	4 LEDs
Display / adjustable colors	Red, green, yellow
Buttons	4 x
Dimensions (W x H x D)	40 x 128.7 x 35 mm
Dimensions for 19" design	3RU x 8HP
Connection / terminal block	pluggable, 1.5 mm²
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection	IP20

Wiring



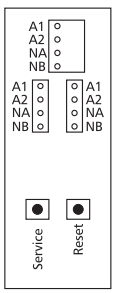
P/N	Color	Feature 1	Feature 2	EAN
11039613	gray			4250184121640

LT3

Button and display module for 19" assembly frames.
It is suitable for manual control in switch cabinet doors or remote control panels. The individual LEDs and buttons are activated and analyzed by SNVT network variables.

Protocol	FTT10A, free topology
Neuron	3120, 4k EEPROM
Transmission rate	78 KBit/s
Operating voltage range	20 to 28 V AC/DC
Current consumption	90 mA (AC) / 38 mA (DC)
Relative duty cycle	100 %
Display	8 LEDs
Display / adjustable colors	Red, green, yellow
Buttons	2 x
Dimensions (W x H x D)	40 x 128.7 x 35 mm
Dimensions for 19" design	3RU x 8HP
Connection / terminal block	pluggable, 1.5 mm²
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection	IP20

Wiring



P/N	Color	Feature 1	Feature 2	EAN
11039713	gray			4250184121657

Matching accessories for LA1

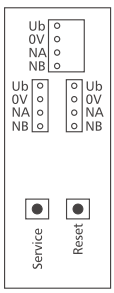
	Page
19 inch Frame 3RU 80HP	134
10 inch Frame 3RU 40HP	134
Labeling sheet for door installation modules	136
Terminal block ASP02	133

LA1

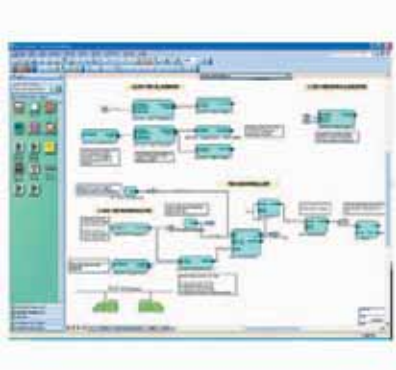
Display and setpoint device for 19" assembly frames.
It is suitable for displaying and manually controlling analog signals in switch cabinet doors or remote control panels.
The bar graphs and potentiometers are activated and analyzed by SNVT network variables.

Protocol	FTT10A, free topology
Neuron	3120, 4k EEPROM
Transmission rate	78 KBit/s
Operating voltage range	24 V DC +/- 15 %
Current consumption	50 mA
Relative duty cycle	100 %
Display	2 bar graphs
Switch	2 x
Potentiometer	2 x
Dimensions (W x H x D)	40 x 128.7 x 35 mm
Dimensions for 19" design	3RU x 8HP
Connection / terminal block	pluggable, 1.5 mm²
Operating temperature range	-5 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Ingress protection	IP20

Wiring



P/N	Color	Feature 1	Feature 2	EAN
11039025	gray			4250184121596

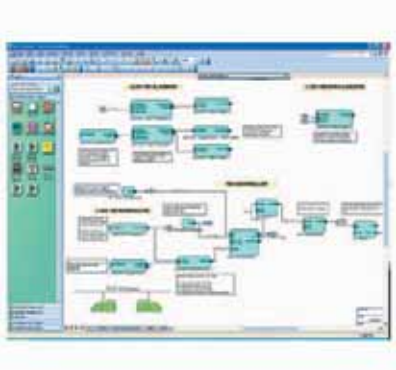


Echelon LonMaker SR4 Standard

The LonMaker® integration tool SR4 Turbo Standard is a software package for designing, installing, operating and maintaining open and interoperable LONWORKS® control networks of several manufacturers. Based on the LNS network operating system of Echelon, the LonMaker® tool combines a powerful client-server architecture with the user-friendly graphical interface of Microsoft VISIO® 2010 Standard.

- Ideal maintenance tool for system operators
- Suitable for many LonMaker OEM applications
- Includes Microsoft Visio 2010 Standard with easy drawing function
- With five LonMaker credits (you can purchase further credits after having put into operation 5 devices; credits are not required for devices with FT5000 Smart transceiver or Neuron 5000 processor.)
- For devices that have already been put into operation with the Professional Edition, no further credits have to be purchased.
- Drawings created by means of LonMaker Professional Edition can be read and modified.

P/N	Color	Feature 1	Feature 2	EAN
11021003E		Standard Edition	Complete version	4250184151647
11021019E		Standard Edition	Upgrade	4250184126263



Echelon LonMaker SR4 Professional

The LonMaker® integration tool SR4 Turbo Professional is a software package for designing, installing, operating and maintaining open and interoperable LONWORKS® control networks of several manufacturers. Based on the LNS network operating system of Echelon, the LonMaker® tool combines a powerful client-server architecture with the user-friendly graphical interface of Microsoft VISIO® 2010 Professional.

- The leading integration tool for network integrators
- Includes Microsoft Visio 2010 Professional with all functions of Visio 2010 and extended support for machine drawings, building, room and floor plans, logical network diagrams and other technical drawings
- With 64 LonMaker credits (you can purchase further credits after having put into operation 64 devices; credits are not required for devices with FT5000 Smart transceiver or Neuron 5000 processor.)
- Supports several users

P/N	Color	Feature 1	Feature 2	EAN
11021603E		Prof. Edition	Complete version	4250184151654
11021619E		Prof. Edition	Upgrade	4250184123828

Echelon i.LON 600

The i.LON 600 LONWORKS®/IP server is a LonTalk-to-IP router compliant with EIA 852. It provides reliable and secure internet access to devices, such as pumps, motors, valves, sensors, regulators and lighting systems.
Documentation:
The i.LON 600 LONWORKS®/IP server manual is provided in PDF format on the product CD or can be downloaded from www.echelon.com/ilon
A printed version of the i.LON 600 LONWORKS®/IP server Quick Start Guide is delivered with each device.
Variants:
110213: TP/FT-10 (90 V to 240 V AC or DC)
11021302: TP/XF-1250 (90 V to 240 V AC or DC)
11021303: TP/FT-10 (24 V AC/DC)

- converts the internet (or any other IP-based LAN or WAN) into a transfer medium of LONWORKS® control information
- allows top performance for layer 3 routing of LONWORKS® control information
- supports LONWORKS®/IP channels with up to 256 devices
- supports use after a NAT firewall
- compliant with EIA-852 and ANSI/EIA 709.1
- MD5 authentication for secure access
- 8T DIN packaging
- CE marking, U.L. and cU.L. listed, TÜV certification

Operating voltage (AC or DC)	90 V to 240 V AC or DC
Operating voltage (AC/DC)	24 V AC/DC
Dimensions (W x H x D)	89 x 138 x 66 mm
Operating temperature range	0 °C to +50 °C
Storage temperature range	-40° to +85 °C

P/N	Color	Feature 1	Feature 2	EAN
110213	gray	TP/FT-10 channel	90 - 240 V	4250184120698
11021302	gray	TP/XF-1250 Channel	90 - 240 V	4250184120704
11021303	gray	TP/FT-10 channel	24 V AC/DC	4250184120711

Echelon i.LON Smart Server

The i.LON SmartServer connects LONWORKS networks – the standardized automatic platform for a large number of control applications in buildings, industry, transport, homes, services - as well as other systems with IP networks or the internet. It provides access to and control and monitoring of electronic devices. It also allows an intelligent use of data to save electricity, improve operating procedures and reduce maintenance costs. By embedding a large number of existing software applications that use web services for remote monitoring and control of automatic systems and machines, iLON SmartServer can provide data promptly to the building management system.
Documentation:
The original i.LON SmartServer data sheet is available in PDF format on the product CD or can be downloaded from www.echelon.com
Variants:
11021220: TP/FT10, without modem
11021221: TP/FT10, with modem
11021223: TP/FT10, IP-852, programmable, without modem
11021243:PL, IP-852, programmable, without modem

Operating voltage:	100 to 240 VAC, 50/60 Hz
Current consumption	less than 15 W
Ethernet connection	10/100 BaseT
Dimensions (W x H x D)	89 x 138 x 66 mm
Operating temperature range	0 °C to +50 °C
Storage temperature range	-40 °C to +85 °C

P/N	Color	Feature 1	Feature 2	EAN
11021220	gray	TP/FT-10	w/o modem	4250184133797
11021221	gray	TP/FT-10	with modem	4250184133803
11021223	gray	TP/FT-10	programmable	4250184151661
11021243	gray	PL Channel	programmable	4250184151678

Echelon USB Network Interface

The USB network interface is a low-cost, high-performance LONWORKS interface for USB-capable personal computers and controllers.
Variants:
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.
The U20 USB network interface is connected to a PL-20 C band power line (ANSI/CEA-709.2) LONWORKS channel by means of a plug-in coupling circuit/power supply.

- 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

P/N	Color	Feature 1	Feature 2	EAN
110214		TP/FT-10 channel		4250184120728
110215		PL-20 Channel		4250184120735

Echelon PCI Network Adapter

The PCLTA-21 PC network adapter is a powerful LONWORKS interface for PC. It was developed for use in LONWORKS control networks that need a PC for network monitoring, administration and diagnostics. The PCLTA-21 adapter is ideal for applications in industrial control units, building automation and process control. The PCLTA-21 adapter has an integrated twisted-pair transceiver, a downloadable memory, an interface for network administration and plug-and-play capability with Microsoft Windows 98/2000 and Windows XP.

- Universal 32-bit PCI adapter card for LONWORKS® networks for PC with 3.3 V or 5 V PCI
- Plug-and-play capability with Microsoft® Windows® 98/2000 and Windows XP
- Firmware can be downloaded from the manufacturer's website
- FT 3150® free topology smart transceiver, RS-485, TPT/XF-78 or TPT/XF-1250 transceiver
- The LNS® network service interface (NSI) supports LNS applications
- CE marking, UL and cUL listed

Dimensions (W x D)	98 x 132 mm
Operating temperature range	0 °C to +70 °C
Storage temperature range	-45 °C to +85 °C

P/N	Color	Feature 1	Feature 2	EAN
110054		FT-10	PCI Interface	4250184120148

Echelon PC Card LonTalk Adapter

The PCC-10 network adapter is a powerful LONWORKS interface for personal computers equipped with a type II PC card (previously PCMCIA) and a compatible operating system. It was developed for use in LONWORKS control networks that need a PC for network monitoring, administration and diagnostics. The PCC-10 adapter is ideal for applications in industrial control units, building automation and process control. The PCC-10 adapter has an integrated FTT-10A twisted-pair transceiver, a downloadable memory, an interface for network administration and plug-and-play capability with Microsoft Windows 95/98/2000 and Windows NT.

- Type II PC card for LONWORKS® networks
- Plug-and-play capability with Microsoft® Windows® 95/98/2000 and Windows NT®
- Downloadable firmware allows updating without accessing or modifying the hardware
- Integrated FTT-10A transceiver, external transceiver pods for TPT/XF-78 and TPT/XF-1250 transceiver
- The LNS network service interface (NSI) supports LNS applications
- CE marking, UL and cUL listed
- Network driver for Windows 95/98/2000 and Windows NT available

Dimensions (W x H x D)	54 x 5 x 85.6 mm
Operating temperature range	0 °C to +55 °C
Storage temperature range	-20 °C to +65 °C

P/N	Color	Feature 1	Feature 2	EAN
110050		PC Card		4250184120100
110051		cable set		4250184120117

Matching accessories for FDE 4

	Page
Terminal block Type 259	132
Power supply NG4 green	131
Jumper 135	132

Matching accessories for FRAS 4/21

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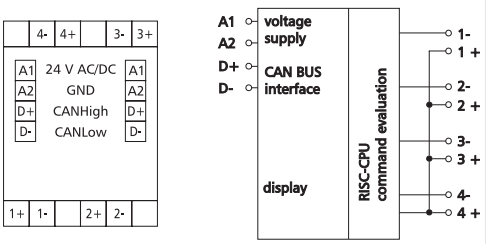
Terminal block Type 259	132
Power supply NG4 green	131
Jumper 135	132

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 range	20 V to 28 V AC/DC (SELV)
Current consumption	63 mA (AC) / 21 mA (DC)
Relative duty cycle	100 %
Recovery time	550 ms
Inputs	4 x digital
Input / voltage	0 V 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)	35 x 70 x 65 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



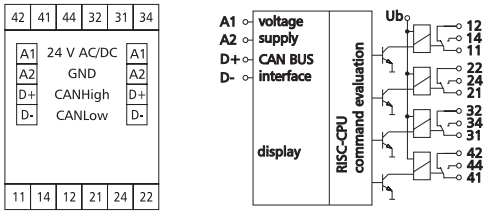
P/N	Color	Feature 1	Feature 2	EAN
1105751319	green			4250184122548

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 range	20 V to 28 V AC/DC (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 70 x 75 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	EAN
1105701321	green			4250184122517

Matching accessories for FAE 4

	Page
Terminal block Type 259	132
Power supply NG4 green	131
Jumper 135	132

Matching accessories for FAA 4

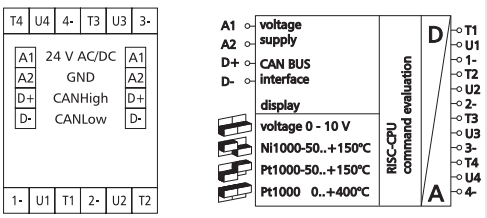
	Page
Terminal block Type 259	132
Power supply NG4 green	131
Jumper 135	132

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 range	20 V to 28 V AC/DC (SELV)
Current consumption	67 mA (AC) / 24 mA (DC)
Relative duty cycle	100 %
Recovery time	550 ms
Inputs	4 x analog
Input / voltage	0 V 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 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 block	IP40 / IP20

Wiring/Principle diagram



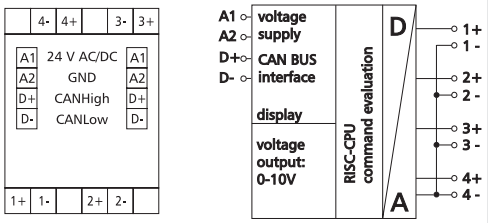
P/N	Color	Feature 1	Feature 2	EAN
1105741306	green			4250184122531

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 range	20 V to 28 V AC/DC (SELV)
Current consumption	90 mA (AC) / 32 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 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 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 block	IP40 / IP20

Wiring/Principle diagram



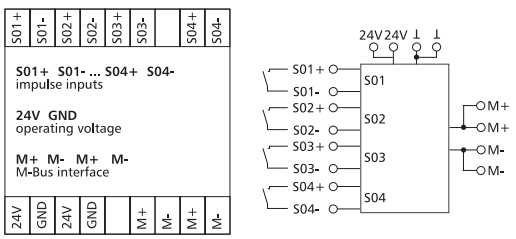
P/N	Color	Feature 1	Feature 2	EAN
1105731302	green			4250184122524

S0/M Converter

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 in serial sub-distributor.

Protocol	M-Bus
Bus interface	Two-wire bus
Transmission rate	300 Bd to 9600 Bd
Operating voltage	24 V DC (SELV)
Current consumption	50 mA DC
Inputs	4 x S0 to DIN EN 62053-31 Class A
Display	LED
Dimensions (W x H x D)	50 x 68 x 65 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



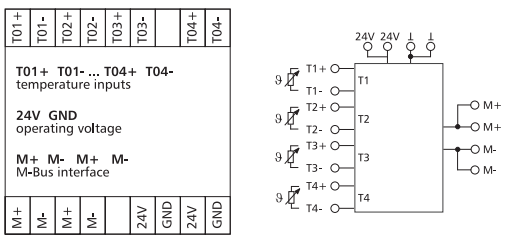
P/N	Color	Feature 1	Feature 2	EAN
110556	gray			4250184122432

T/M Converter

Temperature converter for connecting up to four 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. For instance, up to four different resistance temperature sensors can be connected. The temperature is directly converted in the device. The temperature converter occupies four clear M-Bus addresses specified by the manufacturer. Per channel, one of nine preset temperature characteristics can be selected or alternatively the direct resistance value is transmitted.
Selectable characteristics: -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]. The factory setting is PT1000 (- 30 ° C to + 130 ° C). The cable length adjustment is done via the key assigned to the temperature input. Suitable for decentralized mounting in serial sub-distributor.

Protocol	M-Bus
Bus interface	Two-wire bus
Transmission rate	300 Bd to 9600 Bd
Operating voltage	24 V DC (SELV)
Current consumption	50 mA DC
Inputs	4 x S0 to DIN EN 62053-31 Class A
Display	LED
Dimensions (W x H x D)	50 x 68 x 65 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	EAN
110562	gray			4250184122487

Notes

METZ CONNECT – your partner for building automation

As 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.

Routers/switches

1	Packing Details	60
2	Router	61
3	Industry switch	62

Router | LON

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
61	110058	1 pcs	265 x 160 x 90 mm	555 g

Industry switch | Ethernet

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
62	110195	1 pcs	135 x 178 x 37 mm	267 g
62	110196	1 pcs	210 x 150 x 75 mm	373 g
62	11019601	1 pcs	210 x 150 x 75 mm	370 g

Echelon Multi Port Router

The MPR-50 multi-port router provides routing compliant with ANSI/CEA-709.1 over 5 channels; 4 of them TP/FT-10 free-topology twisted-pair (ANSI/CEA-709.3) and 1 LONMARK standard TP/XF-1250 channel. Each TP/FT-10 channel connection is compatible with link-powered channels.
With MPR-50, two, three or four TP/FT-10 channels can be connected to each other or a high-speed TP/XF-1250 backbone channel.
Documentation:
The MPR-50 multi-port router User's Guide and MPR-50 multi-port router Quick Start Guide are delivered in PDF format on the CD-ROM. These manuals are also available on the website www.echelon.com.

- All five channels can be connected individually by means of their 3.5 mm mono-phone connector on the front
- Intelligent monitor certified to LONMARK® saves time and costs during installation

Channels	4 x TP/FT-10 1 x TP/XF-1250
Operating voltage AC	9 to 28 V AC, 40-70 Hz
Operating voltage DC	9 to 35 V DC
Mounting	DIN rail or wall mounting
Dimensions (W x H x D)	157.5 x 80 x 80 mm
Operating temperature range	0 °C to +70 °C
Storage temperature range	-20° to +85 °C

P/N	Color	Feature 1	Feature 2	EAN
110058	gray			4250184120193

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 dismounted 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	EAN
110195	gray	5 Port RJ45		4250184120537

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 dismounted 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 port100BaseFX multi-mode SC connector
- Supports IEEE 802.3/802.3u/802.3x
- Powerful network switch technology
- Protected against broadcast storm
- Supports IEEE 802.3/802.3u/802.3x
- Store and forward switching mode

Operating voltage DC	12 to 48 V
Operating voltage AC	18 to 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	EAN
110196	gray	8 Port RJ45		4250184120544
11019601	gray	7 Port RJ45	1 Port SC MM	4250184151685

Control cabinet components

1	Packing Details	66
2	Measuring and monitoring relays	68
3	Interface modules	80
4	Electronic timer relays	114

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 physicals 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.

Interface modules

We offer interface modules and/or **sensor/actuator-interface modules** with change-over contacts, make contacts, with break contacts and make contacts, with switches and optocoupler; potential distribution blocks; diode modules; lamp test modules; threshold switches; voltage value transformers; analogous-to-digital-converters; signalling modules and potential separators.

Interface engineering stands for the separation, conversion, processing, transformation and adaptation of signals from all areas of control and automation engineering.
By its housing shapes for DIN-rails METZ CONNECT offers solutions to almost every application.
In many applications the signals must be separated by additional features (e. g. measuring transducers, speed monitors and others).
A common system, however, will also accumulate a share of (analogous) signals, for which the operator wants to have “only” a floating separation before the signals will be used by an SPS.

The range of products from METZ CONNECT comprises compact pluggable 14-pin industrial relays of a supply voltage of 24 V DC, 24 V AC and 230 V AC with 2 and 4 change-over contacts.
The cadmium-free contact material is optionally made of a silver or of a gold alloy. The mounting tabs are shaped as soldering tags so that they can also be wired in classical fashion. The position will either be indicated mechanically or visually via LED.
A manual test key allows for floating circuit tests.
The internationally standardized 11-pin undecal socket from METZ CONNECT is a rugged power relay for industrial applications. These relays are available for the following supply voltages: 24 V DC, 24 V AC and 230 V AC with 3 change-over contacts.
The isolating parts are made of self-extinguishing plastics.
The relays are equipped with manual switch, mechanical position indication device and with LED display.
This product line is completed by plug-in sockets with screwed connection for common 11-pin and 14-pin industrial relays.
All metal parts are largely protected against contact.

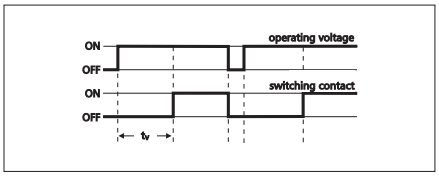
Switching, controlling, visualizing – Electronic time relays

This range of products includes time relays with multiple functions and adjustable time ranges as well as relays with specific functions such as switch-on delay, switch-off delay, delayed on pulse, flashing, clocking and star-delta-relays.

Switch-on delay

Once the operating voltage is applied, the set time constant tv will start and as soon as this has completed the output relay will energize. It will only fall back once the operating voltage is no longer applied. When the voltage is interrupted during the processing of such a time, the time constant will restart once the device is switched on again and will take the recovery time tw into account.

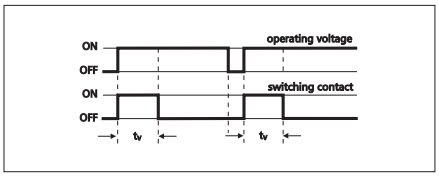
Functional diagram



Delayed on pulse

Once the operating voltage is applied, the output relay will energize without delay and will fall back once the interval time tv has elapsed. The operating voltage must as a minimum exceed the length of the interval time. In case that this is interrupted prior to the end of the interval time, the relay will immediately fall back. This function will only be repeated as soon as the operating voltage will be applied again and in doing so the recovery time tw must be taken into account.

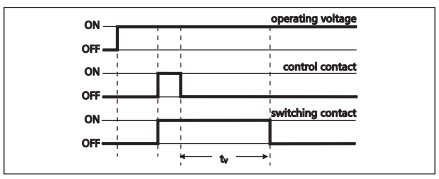
Functional diagram



Switch-off delay

The operating voltage will have to be applied continuously. Only once the floating control contact has been closed, the output relay will energize without delay. Once the control contact has been opened, the set time constant tv will start to run and the relay will fall back as soon as this time constant has elapsed.

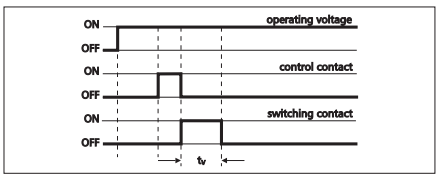
Functional diagram



Delayed off pulse

The operating voltage will have to be applied continuously. Once the floating control contact is closed, the output relay will stay in rest position. Only once the control contact has been opened, the set interval time will start to run and the relay will fall back as soon as this interval time has elapsed. This interval function can only be repeated once the control contact has been closed and opened again (the recovery time must be taken into account).

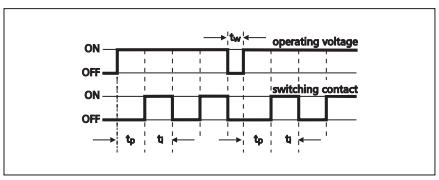
Functional diagram



Flashing starting pause

Once the operating voltage is applied, the output relay will stay in its rest position for the length of the set pause time tp and will then excite for the length of the pulse on time ti. This process will be repeated until the operating voltage will no longer be applied.

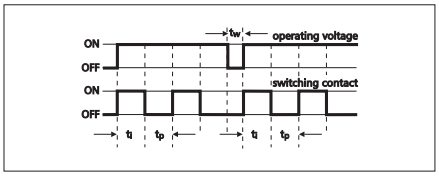
Functional diagram



Flashing pulse starting

Once the operating voltage is applied, the output relay will excite for the duration of the set pulse on time ti and will then fall back for the duration of the pause time tp. This process will be repeated until the operating voltage will no longer be applied.

Functional diagram



Measuring and monitoring relays | Fan timer relay

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
68	11028313	2 pcs	76 x 46 x 118 mm	236 g
68	1102830530	2 pcs	76 x 46 x 118 mm	256 g

Measuring and monitoring relays | Speed Monitoring

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
69	1101500522	1 pcs	65 x 24 x 74 mm	174 g
69	1101501322	1 pcs	65 x 24 x 74 mm	91 g
70	110149	1 pcs	plastic bag	106 g
70	110146	1 pcs	plastic bag	291 g
71	110151	1 pcs	plastic bag	129 g
71	895604	1 pcs	plastic bag	87 g

Measuring and monitoring relays | Motor protection - v-belt monitoring

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
72	1102810520	2 pcs	76 x 46 x 118 mm	323 g
72	110281052013	2 pcs	76 x 46 x 118 mm	325 g
72	11031505	2 pcs	76 x 46 x 118 mm	350 g
72	1103150522	2 pcs	76 x 46 x 118 mm	350 g
72	1103151322	2 pcs	76 x 46 x 118 mm	251 g
73	11031605	2 pcs	76 x 46 x 118 mm	309 g
73	1103160522	2 pcs	76 x 46 x 118 mm	344 g
73	1103161322	2 pcs	76 x 46 x 118 mm	231 g

Measuring and monitoring relays | Level monitoring

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
74	11030805	2 pcs	76 x 46 x 118 mm	351 g
74	11030810	2 pcs	76 x 46 x 118 mm	357 g
74	110324	1 pcs	plastic bag	1208 g
75	110329	0 pcs	0 x 0 x 0 mm	0 g
75	11032901	0 pcs	0 x 0 x 0 mm	0 g

Measuring and monitoring relays | Phase monitoring

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
76	110292032215	2 pcs	76 x 46 x 118 mm	241 g
76	110270	1 pcs	74 x 51 x 80 mm	150 g
77	110271	1 pcs	75 x 40 x 80 mm	112 g

Measuring and monitoring relays | Selective protection

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
78	11015605	2 pcs	76 x 46 x 118 mm	193 g

Measuring and monitoring relays | Current/Voltage Monitoring

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
79	11027205	1 pcs	74 x 51 x 80 mm	214 g
79	11027210	1 pcs	74 x 51 x 80 mm	213 g
79	11027405	1 pcs	74 x 51 x 80 mm	211 g

Interface modules | Electromechanic Coupling Modules

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
80	11070013	10 pcs	117 x 90 x 75 mm	71 g
80	11070613	10 pcs	117 x 90 x 75 mm	72 g
81	11070813	10 pcs	117 x 90 x 75 mm	74 g
81	11071013	10 pcs	117 x 90 x 75 mm	74 g
82	11070213	10 pcs	117 x 90 x 75 mm	68 g
82	11070713	10 pcs	117 x 90 x 75 mm	69 g
83	11065013	10 pcs	125 x 66 x 42 mm	261 g
83	11061313	10 pcs	117 x 62 x 71 mm	326 g
84	11061325	10 pcs	117 x 62 x 71 mm	324 g
84	11061305	10 pcs	117 x 62 x 71 mm	343 g
85	11061613	10 pcs	117 x 62 x 71 mm	349 g
85	11061605	10 pcs	117 x 62 x 71 mm	363 g
86	11061713	10 pcs	117 x 62 x 71 mm	352 g
86	11061705	10 pcs	117 x 62 x 71 mm	364 g
87	11061513	10 pcs	117 x 62 x 71 mm	383 g
87	11061550	10 pcs	117 x 62 x 71 mm	378 g
87	11061525	10 pcs	117 x 62 x 71 mm	373 g
88	11061505	10 pcs	117 x 62 x 71 mm	389 g
88	11061213	10 pcs	117 x 62 x 71 mm	415 g
89	11064513	10 pcs	117 x 62 x 71 mm	435 g
89	11061913	10 pcs	117 x 62 x 71 mm	393 g
89	11061950	10 pcs	117 x 62 x 71 mm	393 g

Interface modules | Electromechanic Coupling Modules

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
90	11061925	10 pcs	117 x 62 x 71 mm	391 g
90	11061905	10 pcs	117 x 62 x 71 mm	406 g
91	11060913	2 pcs	76 x 46 x 118 mm	119 g
91	11050625	10 pcs	170 x 85 x 75 mm	557 g
92	11050605	10 pcs	170 x 85 x 75 mm	555 g
92	11050610	10 pcs	170 x 85 x 75 mm	553 g
92	11050725	20 pcs	170 x 85 x 75 mm	1115 g
93	11050705	10 pcs	145 x 80 x 70 mm	559 g
93	11050710	10 pcs	170 x 85 x 75 mm	554 g
93	11051025	10 pcs	170 x 85 x 75 mm	591 g
94	11051005	10 pcs	170 x 85 x 75 mm	588 g
94	11051010	10 pcs	170 x 85 x 75 mm	594 g

Interface modules | Semi-Conductor Coupling Modules

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
95	1106302517	10 pcs	117 x 62 x 71 mm	287 g
95	1106312518	10 pcs	117 x 62 x 71 mm	302 g

Interface modules | Analog data encoder

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
96	110730	1 pcs	117 x 90 x 75 mm	62 g
96	110731	1 pcs	117 x 90 x 75 mm	63 g
97	110660	5 pcs	117 x 62 x 71 mm	215 g
97	110659	5 pcs	117 x 62 x 71 mm	225 g

Interface modules | Potential distributor

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
98	110720	1 pcs	117 x 90 x 75 mm	63 g

Interface modules | Motor control (two-stage + three-stage)

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
99	110668132722	5 pcs	117 x 62 x 71 mm	359 g
99	110676132722	5 pcs	117 x 62 x 71 mm	381 g

Interface modules | Annunciator modules

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
100	11051813	2 pcs	65 x 24 x 74 mm	147 g
100	110518	2 pcs	65 x 24 x 74 mm	152 g
100	110520	1 pcs	75 x 40 x 80 mm	115 g
101	110280	10 pcs	117 x 62 x 71 mm	582 g

Interface modules | Threshold control

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
102	110661	5 pcs	117 x 62 x 71 mm	245 g
102	110655	5 pcs	117 x 62 x 71 mm	236 g
103	110667	5 pcs	117 x 62 x 71 mm	286 g
103	110666	5 pcs	117 x 62 x 71 mm	302 g
104	110673	5 pcs	117 x 62 x 71 mm	329 g
104	110672	5 pcs	117 x 62 x 71 mm	353 g
105	110665	5 pcs	117 x 62 x 71 mm	354 g
105	11043413	1 pcs	75 x 40 x 80 mm	112 g

Interface modules | Potential separator

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
106	110501	1 pcs	75 x 40 x 80 mm	89 g
106	11050108	1 pcs	75 x 40 x 80 mm	89 g
106	110502	1 pcs	75 x 40 x 80 mm	166 g
106	11050208	1 pcs	75 x 40 x 80 mm	165 g

Interface modules | Analog to digital converter

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
107	110656	1 pcs	75 x 40 x 80 mm	77 g
107	11043513	1 pcs	75 x 40 x 80 mm	95 g

Interface modules | Diode modules

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
108	110639	10 pcs	117 x 62 x 71 mm	331 g
108	110641	10 pcs	117 x 62 x 71 mm	362 g
109	110640	10 pcs	117 x 62 x 71 mm	363 g
109	110629	2 pcs	76 x 46 x 118 mm	199 g
110	110628	2 pcs	76 x 46 x 118 mm	199 g

Interface modules | Pulse shaper

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
111	11027613	1 pcs	75 x 40 x 80 mm	104 g
111	11027605	1 pcs	75 x 40 x 80 mm	189 g

Interface modules | Industrial relays

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
112	110016051307	20 pcs	295 x 240 x 40 mm	1668 g
112	110016101307	20 pcs	295 x 240 x 40 mm	1668 g
112	110016251307	20 pcs	295 x 240 x 40 mm	1668 g
112	110015051206	20 pcs	160 x 120 x 50 mm	684 g
112	110015101206	20 pcs	160 x 120 x 50 mm	654 g
112	110015251206	20 pcs	160 x 120 x 50 mm	686 g
113	110015051406	20 pcs	160 x 120 x 50 mm	706 g
113	110015101406	20 pcs	160 x 120 x 50 mm	670 g
113	110015251406	20 pcs	160 x 120 x 50 mm	724 g
113	110015271406	20 pcs	160 x 120 x 50 mm	686 g
113	110015051408	20 pcs	160 x 120 x 50 mm	706 g
113	110015101408	20 pcs	160 x 120 x 50 mm	663 g
113	110015251408	20 pcs	160 x 120 x 50 mm	698 g
114	110117	10 pcs	145 x 130 x 50 mm	554 g
114	110175	10 pcs	160 x 150 x 70 mm	632 g
115	110178	10 pcs	155 x 155 x 50 mm	555 g

Electronic timer relays | Multi-time

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
116	110657	2 pcs	65 x 24 x 74 mm	137 g
116	1106574133	2 pcs	65 x 24 x 74 mm	140 g
117	110658	2 pcs	65 x 24 x 74 mm	139 g
117	110658412014	2 pcs	65 x 24 x 74 mm	155 g
117	110310412230	1 pcs	76 x 46 x 118 mm	138 g
117	110310412231	2 pcs	76 x 46 x 118 mm	254 g
118	110295412030	2 pcs	76 x 46 x 118 mm	203 g
118	110352412003	2 pcs	76 x 46 x 118 mm	198 g
118	110352412004	2 pcs	76 x 46 x 118 mm	200 g
118	110352412005	2 pcs	76 x 46 x 118 mm	200 g
118	110352412006	2 pcs	76 x 46 x 118 mm	199 g
118	110352412008	2 pcs	76 x 46 x 118 mm	198 g
119	110304412003	2 pcs	76 x 46 x 118 mm	201 g
119	110304412004	2 pcs	76 x 46 x 118 mm	201 g
119	110304412005	2 pcs	76 x 46 x 118 mm	201 g
119	110304412008	2 pcs	76 x 46 x 118 mm	201 g
119	110304412011	2 pcs	76 x 46 x 118 mm	201 g
119	110296412002	2 pcs	76 x 46 x 118 mm	200 g
119	110296412003	2 pcs	76 x 46 x 118 mm	200 g
119	110296412004	2 pcs	76 x 46 x 118 mm	200 g
119	110296412009	2 pcs	76 x 46 x 118 mm	200 g
120	11067441203030	1 pcs	65 x 24 x 74 mm	69 g
120	11067441203031	1 pcs	65 x 24 x 74 mm	69 g
120	11067441203130	1 pcs	65 x 24 x 74 mm	69 g
120	11067441203131	1 pcs	65 x 24 x 74 mm	70 g

Electronic timer relays | Fixed time

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
121	110354412016	2 pcs	76 x 46 x 118 mm	195 g
121	110355412016	2 pcs	76 x 46 x 118 mm	202 g

Electronic timer relays | Star-delta

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
122	11016141280417	2 pcs	76 x 46 x 118 mm	226 g
122	11016141280517	2 pcs	76 x 46 x 118 mm	226 g
122	11016005270317	2 pcs	76 x 46 x 118 mm	218 g
122	11016005270417	2 pcs	76 x 46 x 118 mm	218 g
122	11016005270517	2 pcs	76 x 46 x 118 mm	224 g
122	11016013270317	2 pcs	76 x 46 x 118 mm	218 g

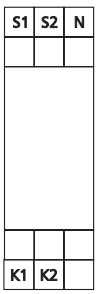
LTRk-E12

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:

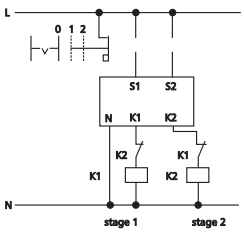
- 1. If you directly select level 2, level 1 is first activated for the adjusted start-up time so that the fan can accelerate to nominal speed. Then level 2 is activated.
- 2. When switching from level 2 back to level 1 or switching off, a switch-off delay is activated allowing the fan to run down before 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 100 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



S1
switching stage 1
230 V AC
S2
switching stage 2
230 V AC
K1
contactor stage 1
230 V AC
K2
contactor stage 2
230 V AC
N
neutral contactor



P/N	Color	Feature 1	Feature 2	EAN
11028313	green	24 V AC/DC		4250184121060
1102830530	green	230 V AC		4250184121053

Matching accessory for DRIW-E16 230 V

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Mounting bracket HWR	70
Two-wire Sensor (5 ... 60 V DC)	70
Mounting bracket HWF	71

Matching accessory for DRIW-E16 24 V AC/DC

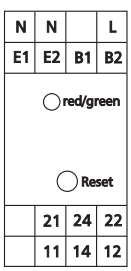
	Page
Mounting bracket HWR	70
Two-wire Sensor (5 ... 60 V DC)	70
Mounting bracket HWF	71

DRIW-E16 230 V

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 or by switching off the operating voltage.

Operating voltage	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 (2 DPST)
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 60 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



N - L
operating voltage
230 V AC
E1 - E2
potential free
control contact
B1 - B2
sensor input
11 - 12 - 14
switching output
1 changeover
21 - 22 - 24
control output
1 changeover

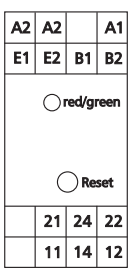
P/N	Color	Feature 1	Feature 2	EAN
1101500522	green	230 V AC		4250184120292

DRIW-E16 24 V AC/DC

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 or by switching off the operating voltage.

Operating voltage	24 V AC/DC
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 (2 DPST)
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 60 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



A1 - A2
operating voltage
24 V AC/DC
E1 - E2
potential free
control contact
B1 - B2
sensor input
21 - 22 - 24
control output
1 changeover
11 - 12 - 14
switching output
1 changeover

P/N	Color	Feature 1	Feature 2	EAN
1101501322	green	24 V AC/DC		4250184120308

Control cabinet components

C | Logline

Two-wire sensor is matching accessory for

	Page
DRIW-E16	69
DRIW-E16	69

Matching accessory for Mounting bracket HWR

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Auxiliary cam for shafts up to 80 mm	71

Mounting bracket HWR is matching accessory for

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DRIW-E16	69
DRIW-E16	69

Two-wire sensor

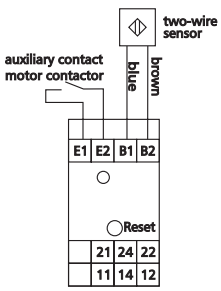
The sensor consists of a cylindrical nickel-plated metal body with M18 thread and 2 thin nuts. The cable output is located at the rear. Laterally, there is a yellow LED lighted in an attenuated state.
The oscillator creates a high-frequency electro-magnetic field emerging at the front of the sensor. 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

Mounting bracket HWR

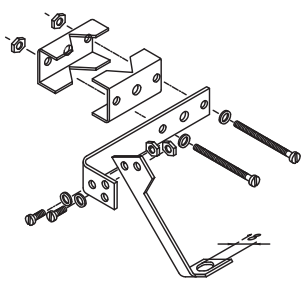
To fasten sensors with max. diameters of 18 mm. For universal mounting. An auxiliary cam for shafts with diameters of up to 45 mm is included in the delivery.

Wiring



P/N	Color	Feature 1	Feature 2	EAN
110149				4250184120285

3D print



P/N	Color	Feature 1	Feature 2	EAN
110146	silver			4250184120278

Matching accessory for Mounting bracket HWF

	Page
Auxiliary cam for shafts up to 80 mm	71

Mounting bracket HWF is matching accessory for

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DRIW-E16	69
DRIW-E16	69

Auxiliary cam for shafts up to 80 mm is matching accessory for

	Page
Mounting bracket HWR	70
Mounting bracket HWF	71

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.

P/N	Color	Feature 1	Feature 2	EAN
110151	silver			4250184120315

Auxiliary cam for shafts up to 80 mm

Auxiliary cam for shafts with diameters up to 80 mm.

P/N	Color	Feature 1	Feature 2	EAN
895604	silver			4250184119272

Matching accessory for CPW-E12

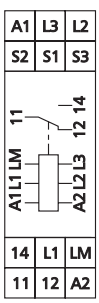
	Page
Current Converter TAmini 50/5 A	137
Current Converter TAmini 100/5 A	137

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 (1 DPST)
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 100 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



A1 - A2
operating voltage
L1 - L2 - L3
phase connections
LM
motor connection
S1 - S2 - S3
bridge connections
11 - 12 - 14
output contact
1 changeover

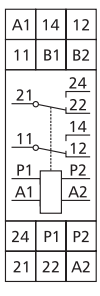
P/N	Color	Feature 1	Feature 2	EAN
1102810520	green	measuring range	1 - 10 A	4250184121039
110281052013	green	measuring range	0.2 - 2.5 A	4250184121046

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 or 2 changeover contacts (1 or 2 DPST)
Output / switching voltage	250 V
Output / continuous current	4 A
Mechanical endurance	$3x10^7$ switching cycles
Electrical endurance	$1x10^5$ switching cycles
Switching frequency	1200 cycles/h
Display	Green and red LED
Dimensions (W x H x D)	22.5 x 75 x 100 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
21 - 22 - 24
output contacts
2 changeover contacts
B1 - B2
external reset
(error memory)
model without
error memory has
no terminals B1/B2

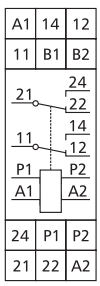
P/N	Color	Feature 1	Feature 2	EAN
11031505	green	230 V AC, 1 DPST	w/o error memory	4250184118688
1103150522	green	230 V AC, 2 DPST	w/o error memory	4250184121282
1103151322	green	24 V AC/DC, 2 DPST	w/o error memory	4250184118664

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 or 2 changeover contacts (1 or 2 DPST)
Output / switching voltage	250 V
Output / continuous current	4 A
Mechanical endurance	$3x10^7$ switching cycles
Electrical endurance	$1x10^5$ switching cycles
Switching frequency	1200 cycles/h
Display	Green and red LED
Dimensions (W x H x D)	22.5 x 75 x 100 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
21 - 22 - 24
output contacts
2 changeover contacts
B1 - B2
external reset
(error memory)
model without
error memory has
no terminals B1/B2

P/N	Color	Feature 1	Feature 2	EAN
11031605	green	230 V AC, 1 DPST	with error memory	4250184118671
1103160522	green	230 V AC, 2 DPST	with error memory	4250184121299
1103161322	green	24 V AC/DC, 2 DPST	with error memory	4250184118695

Matching accessory for ENW-E12

	Page
Submersible Electrode TE1	74
Leakage sensor LKS1	75
Leakage sensor LKS1 brown	75

Submersible Electrode TE1 is matching accessory for

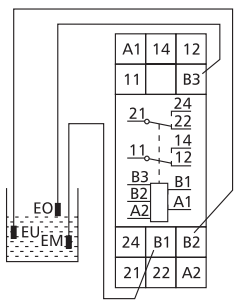
	Page
ENW-E12	74
ENW-E12	74

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.
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 (2 DPST)
Output / switching voltage	250 V
Output / continuous current	6 A
Output / total current	8 A / across all contacts
Mechanical endurance	3 x 10^7 switching cycles
Electrical endurance	2 x 10^5 switching cycles
Switching frequency	600 cycles/h
Display	Green and red LED
Dimensions (W x H x D)	22.5 x 75 x 100 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	EAN
11030805	green	230 V AC		4250184121244
11030810	green	24 V AC		4250184121251

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 mm²
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	EAN
110324	silver			4250184121329

Leakage sensor LKS1 is matching accessory for

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ENW-E12	74
ENW-E12	74

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 or brown

Connecting cable	2 x 0.75 mm²
Cable length	2 m
Electrode	Stainless steel
Dimensions (W x H x D)	44 x 16 x 29 mm
Mounting	Mounting with 1 screw

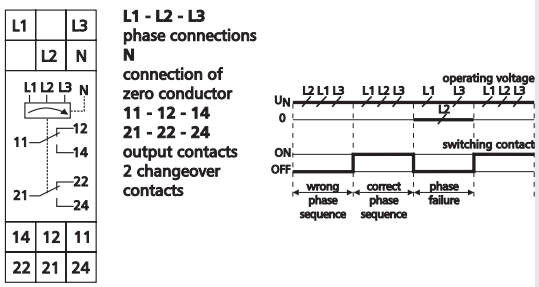
P/N	Color	Feature 1	Feature 2	EAN
110329	gray			4250184121367
11032901	brown			4250184118855

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 before 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 be monitored are connected to N over an electric circuit (e.g. temperature monitoring or similar).

Operating voltage	400 V AC
Current consumption	20 mA
Response delay	5 s
Output / contact	2 changeover contacts (2 DPST)
Output / switching voltage	max. 250 V
Output / continuous current	max. 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 75 x 100 mm
Weight	120 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	EAN
110292032215	green			4250184118176

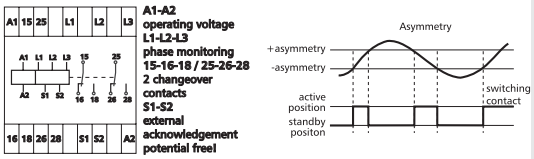
ASD-C18

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 (2 DPST)
Max. switching voltage	250 V AC/DC
Max. continuous current	8 A
Mechanical endurance	3 x 10^7 switching cycles
Electrical endurance	1.5 x 10^5 switching cycles
Dimensions (W x H x D)	22.5 x 75 x 100 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



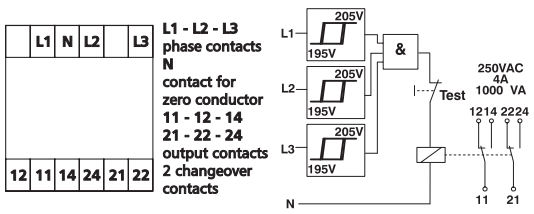
P/N	Color	Feature 1	Feature 2	EAN
110270	green			4250184120940

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	2 changeover contacts (2 DPST), potential-free
Output / switching voltage	max. 250 V AC/DC
Mechanical endurance	2 x 10^7 switching cycles
Electrical endurance	2 x 10^5 switching cycles
Display	Green and red LED
Dimensions (W x H x D)	35 x 70 x 65 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/Wiring diagram



P/N	Color	Feature 1	Feature 2	EAN
110271	green			4250184120964

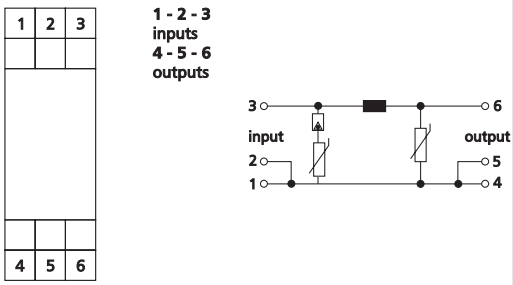
FSB-E12

Medium protection module for protecting leads and cables in telecommunication, regulating and control systems. Disturbances caused by interference due to atmospheric conditions and discharges (thunderstorms) or interference from power supply lines and switching processes in the system itself can be limited to a value below 300 V using a fine protection module FSB-E12.
To meet highest requirements, a staggered protection consisting of gas-filled discharger and varistor connected indirectly in parallel has been selected. The discharger is used for coarse protection, the varistor for medium protection.

- Coarse protection
- Medium protection

Operating voltage	230 V AC
Operating current	3 A
Leakage current max. 8/20 µs	5 kA
Response time	100 ns
Transmission frequency	20 kHz, 50 Ohm
Back-up fuse	3 A
Dimensions (W x H x D)	22.5 x 75 x 100 mm
Weight	45 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	EAN
11015605	green			4250184120322

Matching accessory for EIW-C18

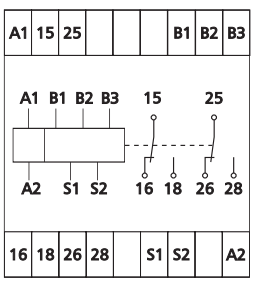
	Page
Current Converter TAmini 50/5 A	137
Current Converter TAmini 100/5 A	137

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
Operating voltage	24 V AC
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 (2 DPST)
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 68 x 65 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



A1-A2
operating voltage
B1-B3
measuring input 1 A
B2-B3
measuring input 15 A
15-16-18 / 25-26-28
2 changeover contacts
S1-S2
external acknowledgement
NOT potential free!

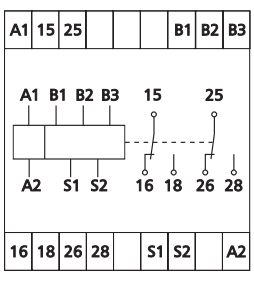
P/N	Color	Feature 1	Feature 2	EAN
11027205	green	230 V AC		4250184120971
11027210	green	24 V AC		4250184120988

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 (2 DPST)
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 68 x 65 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



A1-A2
operating voltage
B1-B3
measuring input 300 V
B2-B3
measuring input 100 V
15-16-18 / 25-26-28
2 changeover contacts
S1-S2
external acknowledgement
NOT potential free!

P/N	Color	Feature 1	Feature 2	EAN
11027405	green			4250184120995

Matching accessory for KRA-F8/21

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Connecting bridge, 10 pole	138
Labeling plate	138

Matching accessory for KRA-S-F8/21

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Connecting bridge, 10 pole	138
Labeling plate	138

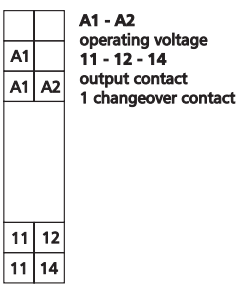
KRA-F8/21

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	approx. 13 mA
Output / contact	1 changeover contact (1 DPST)
Output / contact material	AgSnO2
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	2 x 10^7 switching cycles
Electrical endurance	1 x 10^5 switching cycles
Solid wire cross-section	0.08 mm² - 2.5 mm²
Stranded wire without end sleeve	0.08 mm² - 2.5 mm²
Stranded wire with end sleeve	0.08 mm² - 1.5 mm²
Display	Green LED
Dimensions (W x H x D)	11.2 x 88 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	EAN
11070013	green	24 V AC/DC	1 DPST	4250184123071

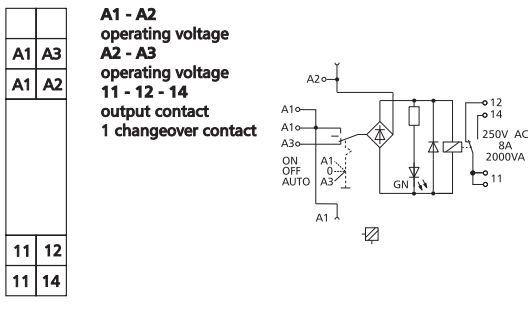
KRA-S-F8/21

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

Operating voltage (AC/DC)	24 V AC/DC
Power consumption: 24 V AC/DC	approx. 13 mA
Output / contacts	1 changeover contact (1 DPST)
Output / contact material	AgSnO2
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	2 x 10^7 switching cycles
Electrical endurance	1 x 10^5 switching cycles
Solid wire cross-section	0.08 mm² - 2.5 mm²
Stranded wire without end sleeve	0.08 mm² - 2.5 mm²
Stranded wire with end sleeve	0.08 mm² - 1.5 mm²
Display	Green LED
Dimensions (W x H x D)	11.2 x 88 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	EAN
11070613	green	24 V AC/DC	1 DPST	4250184123095

Matching accessory for KRA-SR-F10/21

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Connecting bridge, 10 pole	138
Labeling plate	138

Matching accessory for KRA-SRA-F10/21

	Page
Connecting bridge, 10 pole	138
Labeling plate	138

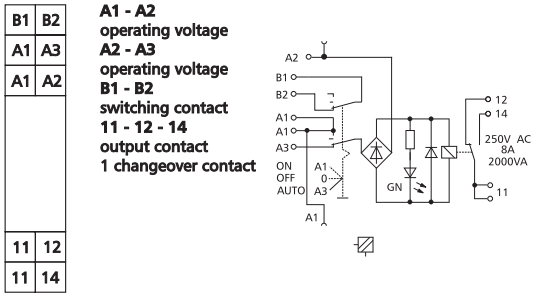
KRA-SR-F10/21

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

Operating voltage (AC/DC)	24 V AC/DC
Power consumption: 24 V AC/DC	approx. 13 mA
Output / contacts	1 changeover contact (1 DPST)
Output / contact material	AgSnO2
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	2 x 10^7 switching cycles
Electrical endurance	1 x 10^5 switching cycles
Solid wire cross-section	0.08 mm² - 2.5 mm²
Stranded wire without end sleeve	0.08 mm² - 2.5 mm²
Stranded wire with end sleeve	0.08 mm² - 1.5 mm²
Display	Green LED
Dimensions (W x H x D)	11.2 x 88 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	EAN
11070813	green	24 V AC/DC	1 DPST	4250184123118

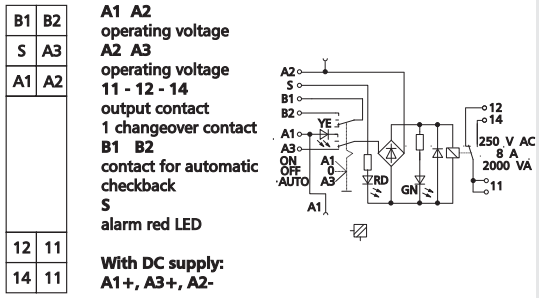
KRA-SRA-F10/21

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

Operating voltage	24 V AC/DC
Current consumption	approx. 13 mA
Outputs / contact	1 changeover contact (1 DPST)
Output / contact material	AgSnO2
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 mm² - 2.5 mm²
Stranded wire without end sleeve	0.08 mm² - 2.5 mm²
Stranded wire with end sleeve	0.08 mm² - 1.5 mm²
Display	Green, red and yellow LED
Dimensions (W x H x D)	11.2 x 88 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	EAN
11071013	green	24 V AC/DC	1 DPST	4250184123132

Matching accessory for KRA-F10/21-21

	Page
Connecting bridge, 10 pole	138
Labeling plate	138

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

	Page
Connecting bridge, 10 pole	138
Labeling plate	138

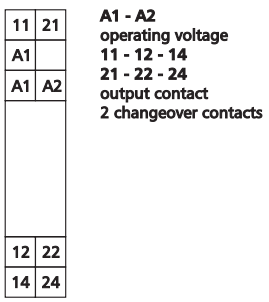
KRA-F10/21-21

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

Operating voltage	24 V AC/DC
Current consumption	approx. 13 mA
Outputs / contact	2 changeover contacts (2 DPST)
Output / contact material	AgSnO2
Output / switching voltage	250 V AC/DC
Output / continuous current	2 A
Output / switching frequency	300 cycles/h
Response time	approx. 10 ms
Release time	approx. 5 ms
Mechanical endurance	2 x 10^7 switching cycles
Electrical endurance	1 x 10^5 switching cycles
Solid wire cross-section	0.08 mm² - 2.5 mm²
Stranded wire without end sleeve	0.08 mm² - 2.5 mm²
Stranded wire with end sleeve	0.08 mm² - 1.5 mm²
Display	Green LED
Dimensions (W x H x D)	11.2 x 88 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	EAN
11070213	green	24 V AC/DC	2 DPST	4250184123088

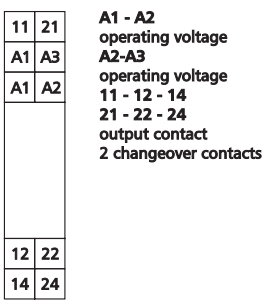
KRA-S-F10/21-21

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

Operating voltage (AC/DC)	24 V AC/DC
Power consumption: 24 V AC/DC	approx. 13 mA
Output / contacts	2 changeover contacts (2 DPST)
Output / contact material	AgPdAu
Output / switching voltage	250 V AC/DC
Output / continuous current	2 A
Output / switching frequency	300 cycles/h
Response time	approx. 10 ms
Release time	approx. 5 ms
Mechanical endurance	2 x 10^7 switching cycles
Electrical endurance	1 x 10^5 switching cycles
Solid wire cross-section	0.08 mm² - 2.5 mm²
Stranded wire without end sleeve	0.08 mm² - 2.5 mm²
Stranded wire with end sleeve	0.08 mm² - 1.5 mm²
Display	Green LED
Dimensions (W x H x D)	11.2 x 88 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	EAN
11070713	green	24 V AC/DC	2 DPST	4250184123101

Matching accessory for KRA-M4/1 LC

	Page
Labeling plate white	140
Connecting bridge, 10 pole	139

Matching accessory for KRA-M4/1 24 V AC/DC

	Page
Labeling plate white	140
Connecting bridge, 10 pole	139

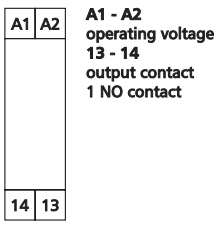
KRA-M4/1 LC

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

- Connection with screw-type terminals
- Safe separation

Operating voltage (AC/DC)	24 V AC/DC
Power consumption: 24 V AC/DC	13 mA
Output / contact	1 SPST-NO
Output / contact material	AgNi
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	2 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)	12.2 x 61.4 x 26.2 mm
Weight	40 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	EAN
11065013	green	24 V AC/DC	1 SPST-NO	4250184122845

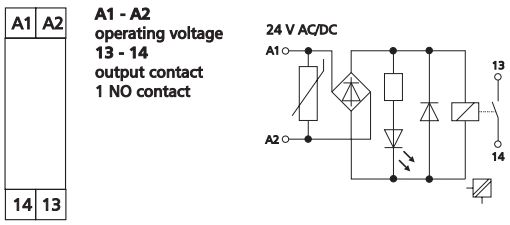
KRA-M4/1 24 V AC/DC

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 SPST-NO
Output / contact material	AgNi
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	2 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 60 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	EAN
11061313	green	24 V AC/DC	1 SPST-NO	4250184122593

Matching accessory for KRA-M4/1 24 V DC

	Page
Labeling plate white	140
Connecting bridge, 10 pole	139

Matching accessory for KRA-M4/1 230 V AC

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Labeling plate white	140
Connecting bridge, 10 pole	139

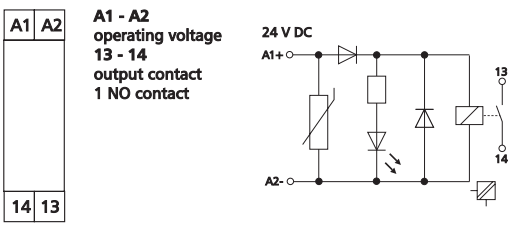
KRA-M4/1 24 V DC

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 SPST-NO
Output / contact material	AgNi
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	2 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 60 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	EAN
11061325	green	24 V DC	1 SPST-NO	4250184122609

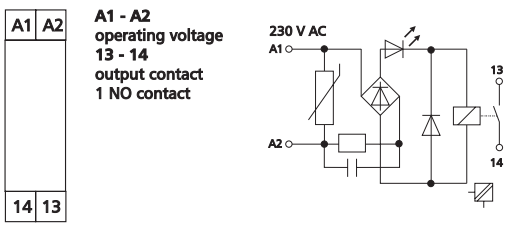
KRA-M4/1 230 V AC

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 SPST-NO
Output / contact material	AgNi
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	2 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 60 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	EAN
11061305	green	230 V AC	1 SPST-NO	4250184122586

Matching accessory for KRA-M6/1-1 24 V AC/DC

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Labeling plate white	140
Connecting bridge, 10 pole	139

Matching accessory for KRA-M6/1-1 230 V AC

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Labeling plate white	140
Connecting bridge, 10 pole	139

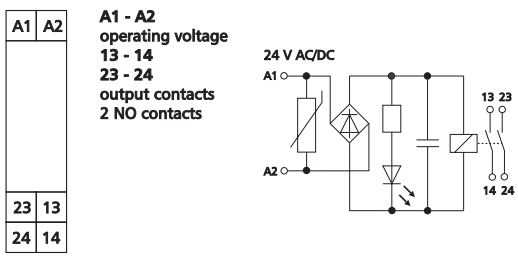
KRA-M6/1-1 24 V AC/DC

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

- Connection with screw-type terminals
- Closed compact series
- Integrated protective circuit

Operating voltage	24 V AC/DC
Current consumption	20 mA
Output / contacts	2 SPST-NO
Output / contact material	AgPd + 5 μ Au
Output / switching voltage	250 V AC/DC
Output / continuous current	1.5 A
Output / switch-on current	2 A
Output / switching frequency	360 cycles/h
Response time	10 ms
Release time	15 ms
Mechanical endurance	2 x 10^7 switching cycles
Electrical endurance	2 x 10^5 switching cycles
Cross-section	2.5 mm^2
Display	Red LED
Dimensions (W x H x D)	11.2 x 60 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	EAN
11061613	green	24 V AC/DC	2 SPST-NO	4250184122678

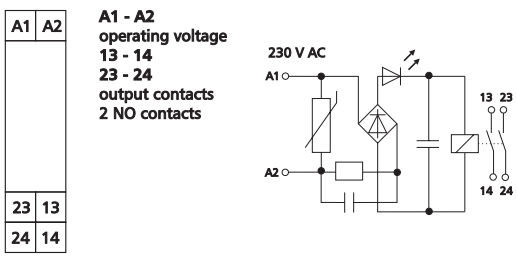
KRA-M6/1-1 230 V AC

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

- Connection with screw-type terminals
- Closed compact series
- Integrated protective circuit

Operating voltage	230 V AC
Current consumption	5 mA
Output / contacts	2 SPST-NO
Output / contact material	AgPd + 5 μ Au
Output / switching voltage	250 V AC/DC
Output / continuous current	1.5 A
Output / switch-on current	2 A
Output / switching frequency	360 cycles/h
Response time	10 ms
Release time	15 ms
Mechanical endurance	2 x 10^7 switching cycles
Electrical endurance	2 x 10^5 switching cycles
Cross-section	2.5 mm^2
Display	Red LED
Dimensions (W x H x D)	11.2 x 60 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	EAN
11061605	green	230 V AC	2 SPST-NO	4250184122661

Matching accessory for KRA-M6/1-2 24 V AC/DC

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Labeling plate white	140
Connecting bridge, 10 pole	139

Matching accessory for KRA-M6/1-2 230 V AC

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Labeling plate white	140
Connecting bridge, 10 pole	139

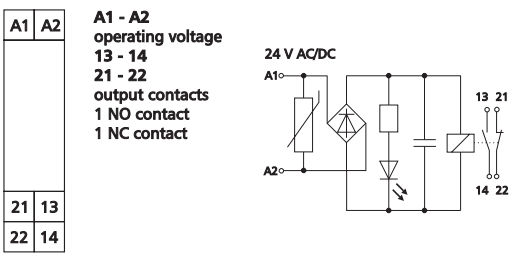
KRA-M6/1-2 24 V AC/DC

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

- Connection with screw-type terminals
- Closed compact series
- Integrated protective circuit

Operating voltage	24 V AC/DC
Current consumption	20 mA
Output / contacts	1 SPST-NO
Output / contacts	1 SPST-NC
Output / contact material	AgPd + 5 μ Au
Output / switching voltage	250 V AC/DC
Output / continuous current	1.5 A
Output / switch-on current	2 A
Output / switching frequency	360 cycles/h
Response time	10 ms
Release time AC	15 ms
Release time DC	5 ms
Mechanical endurance	2 x 10^7 switching cycles
Electrical endurance	2 x 10^5 switching cycles
Cross-section	2.5 mm^2
Display	Red LED
Dimensions (W x H x D)	11.2 x 60 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	EAN
11061713	green	24 V AC/DC	1 SPST-NO, 1 SPST-NC	4250184122692

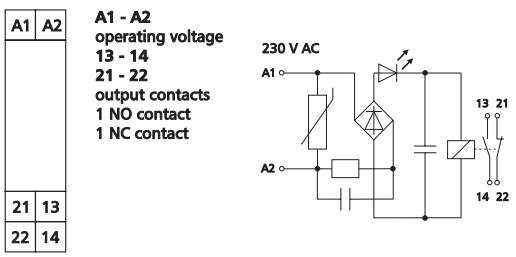
KRA-M6/1-2 230 V AC

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

- Connection with screw-type terminals
- Closed compact series
- Integrated protective circuit

Operating voltage	230 V AC
Current consumption	5 mA
Output / contacts	1 SPST-NO
Output / contacts	1 SPST-NC
Output / contact material	AgPd + 5 μ Au
Output / switching voltage	250 V AC/DC
Output / continuous current	1.5 A
Output / switch-on current	2 A
Output / switching frequency	360 cycles/h
Response time	10 ms
Release time AC	15 ms
Release time DC	5 ms
Mechanical endurance	2 x 10^7 switching cycles
Electrical endurance	2 x 10^5 switching cycles
Cross-section	2.5 mm^2
Display	Red LED
Dimensions (W x H x D)	11.2 x 60 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	EAN
11061705	green	230 V AC	1 SPST-NO, 1 SPST-NC	4250184122685

Matching accessory for KRA-M6/21 AC/DC

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Labeling plate white	140
Connecting bridge, 10 pole	139

Matching accessory for KRA-M6/21 24 V DC

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Labeling plate white	140
Connecting bridge, 10 pole	139

KRA-M6/21 AC/DC

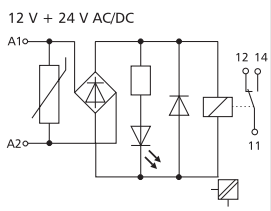
Coupling devices are used to secure electrical isolation between logic and load.

- Connection with screw-type terminals
- Closed compact series
- Integrated protective circuit
- Safe separation

Operating voltage	12 V or 24 V AC/DC
Power consumption: 12 V AC/DC	20 mA
Power consumption: 24 V AC/DC	13 mA
Output / contacts	1 changeover contact (1 DPST)
Output / contact material	AgNi
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	2 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 60 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

A1 - A2
operating voltage
11 - 12 - 14
output contact
1 changeover



P/N	Color	Feature 1	Feature 2	EAN
11061513	green	24 V AC/DC	1 DPST	4250184122630
11061550	green	12 V AC/DC	1 DPST	4250184122654

KRA-M6/21 24 V DC

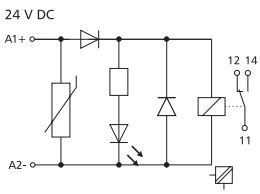
Coupling devices are used to secure electrical isolation between logic and load.

- 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 (1 DPST)
Output / contact material	AgNi
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	2 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 60 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

A1 - A2
operating voltage
11 - 12 - 14
output contact
1 changeover



P/N	Color	Feature 1	Feature 2	EAN
11061525	green	24 V DC	1 DPST	4250184122647

Matching accessory for KRA-M6/21 230 V AC

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Connecting bridge, 10 pole	139

Matching accessory for KRA-S-M6/21

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Labeling plate white	140
Connecting bridge, 10 pole	139

KRA-M6/21 230 V AC

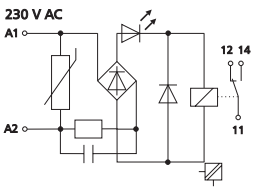
Coupling devices are used to secure electrical isolation between logic and load.

- 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 DPST)
Output / contact material	AgNi
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	2 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 60 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

A1 - A2
operating voltage
11 - 12 - 14
output contact
1 changeover



P/N	Color	Feature 1	Feature 2	EAN
11061505	green	230 V AC	1 DPST	4250184122623

KRA-S-M6/21

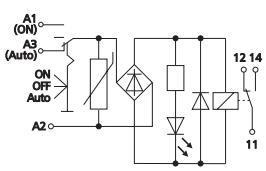
Coupling devices are used to secure electrical isolation between logic and load.

- Connection with screw-type terminals
- Closed compact series
- Integrated protective circuit

Operating voltage (AC/DC)	24 V AC/DC
Power consumption: 24 V AC/DC	13 mA
Output / contacts	1 changeover contact (1 DPST)
Output / contact material	AgNi
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	2 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 60 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

A1 - A2
operating voltage
A2 - A3
operating voltage
11 - 12 - 14
output contact
1 changeover



P/N	Color	Feature 1	Feature 2	EAN
11061213	green	24 V AC/DC	1 DPST	4250184122579

Matching accessory for KRA-SR-M8/21

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Connecting bridge, 10 pole	139

Matching accessory for KRA-M8/21-21 AC/DC

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Labeling plate white	140
Connecting bridge, 10 pole	139

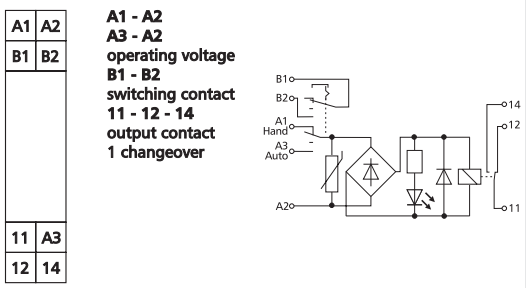
KRA-SR-M8/21

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

- Connection with screw-type terminals
- Closed compact series
- Integrated protective circuit

Operating voltage (AC/DC)	24 V AC/DC
Power consumption: 24 V AC/DC	13 mA
Output / contacts	1 changeover contact (1 DPST)
Output / contact material	AgNi
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	2 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 60 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	EAN
11064513	green	24 V AC/DC	1 DPST	4250184122838

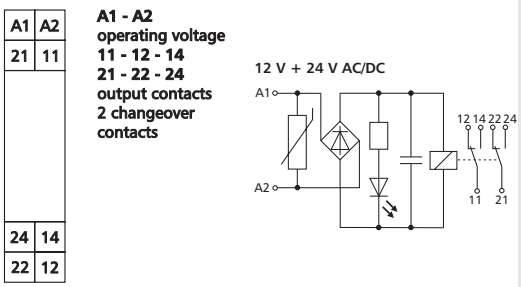
KRA-M8/21-21 AC/DC

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

- Connection with screw-type terminals
- Closed compact series
- Integrated protective circuit

Operating voltage	12 V or 24 V AC/DC
Current consumption	20 mA
Output / contacts	2 changeover contacts (2 DPST)
Output / contact material	AgPd + 5 μ Au
Output / switching voltage	250 V AC/DC
Output / continuous current	1.5 A
Output / switch-on current	2 A
Output / switching frequency	360 cycles/h
Response time	10 ms
Release time AC	15 ms
Release time DC	5 ms
Mechanical endurance	2 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 60 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	EAN
11061913	green	24 V AC/DC	2 DPST	4250184122715
11061950	green	12 V AC/DC	2 DPST	4250184122739

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Matching accessory for KRA-M8/21-21 24 V DC

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Connecting bridge, 10 pole	139

Matching accessory for KRA-M8/21-21 230 V AC

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Labeling plate white	140
Connecting bridge, 10 pole	139

KRA-M8/21-21 24 V DC

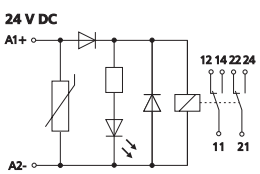
Coupling devices are used to secure electrical isolation between logic and load.

- Connection with screw-type terminals
- Closed compact series
- Integrated protective circuit

Operating voltage	24 V DC
Current consumption	17 mA
Output / contacts	2 changeover contacts (2 DPST)
Output / contact material	AgPd + 5 µ Au
Output / switching voltage	250 V AC/DC
Output / continuous current	1.5 A
Output / switch-on current	2 A
Output / switching frequency	360 cycles/h
Response time	10 ms
Release time AC	15 ms
Release time DC	5 ms
Mechanical endurance	2 x 10^7 switching cycles
Electrical endurance	1 x 10^5 switching cycles
Cross-section	2.5 mm²
Display	Red LED
Dimensions (W x H x D)	11.2 x 60 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

A1 - A2
operating voltage
11 - 12 - 14
21 - 22 - 24
output contacts
2 changeover contacts



P/N	Color	Feature 1	Feature 2	EAN
11061925	green	24 V DC	2 DPST	4250184122722

KRA-M8/21-21 230 V AC

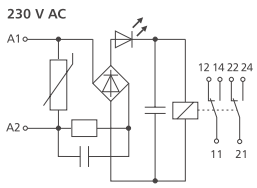
Coupling devices are used to secure electrical isolation between logic and load.

- Connection with screw-type terminals
- Closed compact series
- Integrated protective circuit

Operating voltage	230 V AC
Current consumption	5 mA
Output / contacts	2 changeover contacts (2 DPST)
Output / contact material	AgPd + 5 µ Au
Output / switching voltage	250 V AC/DC
Output / continuous current	1.5 A
Output / switch-on current	2 A
Output / switching frequency	360 cycles/h
Response time	10 ms
Release time AC	15 ms
Release time DC	5 ms
Mechanical endurance	2 x 10^7 switching cycles
Electrical endurance	1 x 10^5 switching cycles
Cross-section	2.5 mm²
Display	Red LED
Dimensions (W x H x D)	11.2 x 60 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

A1 - A2
operating voltage
11 - 12 - 14
21 - 22 - 24
output contacts
2 changeover contacts



P/N	Color	Feature 1	Feature 2	EAN
11061905	green	230 V AC	2 DPST	4250184122708

Matching accessory for RM21 24 V DC

	Page
RC Module 230 V AC	141
RC Module 24 V AC	141

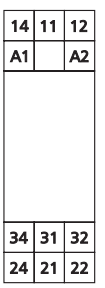
KRA-S12/21-21-21

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

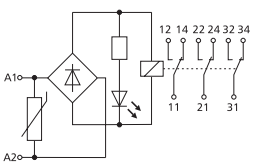
- Connection with screw-type terminals

Operating voltage (AC/DC)	24 V AC/DC
Power consumption: 24 V AC/DC	50 mA
Output / contacts	3 changeover contacts (3 DPST)
Output / contact material	AgNi
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	2 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 100 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



A1 - A2
operating voltage
11 - 12 - 14
21 - 22 - 24
31 - 32 - 34
output contacts
3 changeover contacts



P/N	Color	Feature 1	Feature 2	EAN
11060913	green	24 V AC/DC	3 DPST	4250184122555

RM21 24 V DC

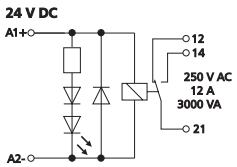
Relay modules are used to secure electrical isolation between logic and load.

- Connection with screw-type terminals
- Pluggable relay
- With labeling field

Operating voltage	24 V DC
Current consumption	17 mA
Output / contacts	1 changeover contact (1 DPST)
Output / contact material	AgNi 90/10
Output / switching voltage	250 V AC
Output / continuous current	12 A
Output / switching frequency	360 cycles/h
Mechanical endurance	1 x 10^7 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

A1 - A2
operating voltage
12 - 14 - 21
output contact
1 changeover



P/N	Color	Feature 1	Feature 2	EAN
11050625	black	24 V DC	1 DPST	4250184122241

Matching accessory for RM21 AC

	Page
RC Module 230 V AC	141
RC Module 24 V AC	141

Matching accessory for RM21-21 24 V DC

	Page
RC Module 230 V AC	141
RC Module 24 V AC	141

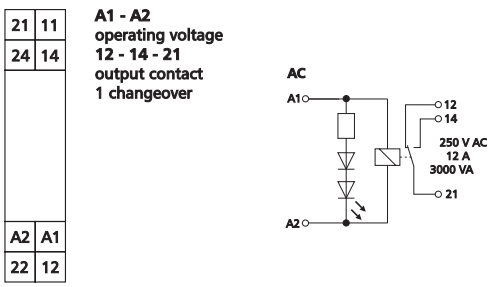
RM21 AC

Relay modules are used to secure electrical isolation between logic and load.

- Connection with screw-type terminals
- Pluggable relay
- With labeling field

Operating voltage AC	24 V or 230 V AC
Current consumption 24 V AC	32 mA
Current consumption 230 V AC	3.3 mA
Output / contacts	1 changeover contact (1 DPST)
Output / contact material	AgNi 90/10
Output / switching voltage	250 V AC
Output / continuous current	12 A
Output / switching frequency	360 cycles/h
Mechanical endurance	1 x 10^7 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	EAN
11050605	black	230 V AC	1 DPST	4250184122227
11050610	black	24 V AC	1 DPST	4250184122234

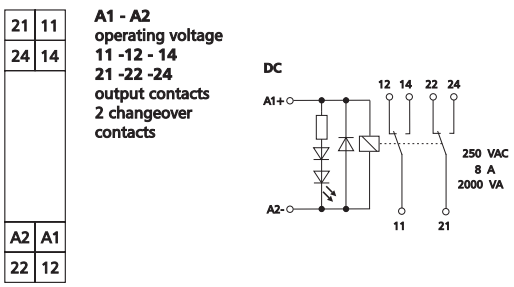
RM21-21 24 V DC

Relay modules are used to secure 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 (2 DPST)
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	EAN
11050725	black	24 V DC	2 DPST	4250184122272

Matching accessory for RM21-21 AC

	Page
RC Module 230 V AC	141
RC Module 24 V AC	141

Matching accessory for RM3-2W 24 V DC

	Page
RC Module 230 V AC	141
RC Module 24 V AC	141

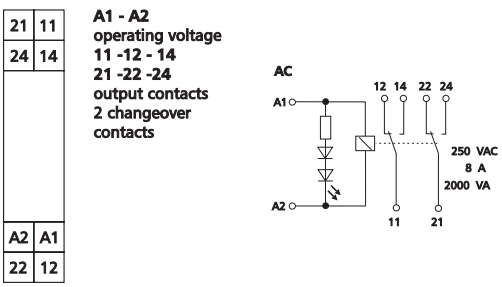
RM21-21 AC

Relay modules are used to secure electrical isolation between logic and load.

- Connection with screw-type terminals
- Pluggable relay
- With labeling field

Operating voltage AC	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 (2 DPST)
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	EAN
11050705	black	230 V AC	2 DPST	4250184122258
11050710	black	24 V AC	2 DPST	4250184122265

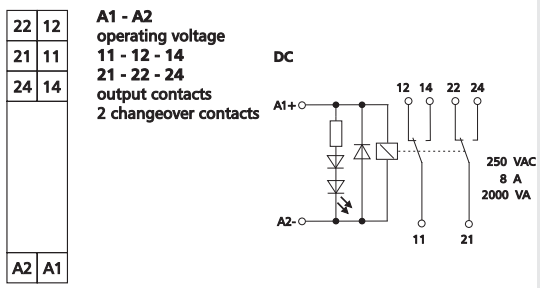
RM3-2W 24 V DC

Relay modules are used to secure 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 (2 DPST)
Output / contact material	AgNi
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	EAN
11051025	black	24 V DC	2 DPST	4250184122333

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Matching accessory for RM3-2W AC

	Page
RC Module 230 V AC	141
RC Module 24 V AC	141

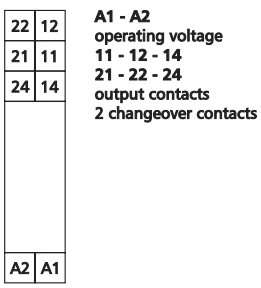
RM3-2W AC

Relay modules are used to secure electrical isolation between logic and load.

- Connection with screw-type terminals
- Pluggable relay
- With labeling field

Operating voltage AC	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 (2 DPST)
Output / contact material	AgNi
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	EAN
11051005	black	230 V AC	2 DPST	4250184122319
11051010	black	24 V AC	2 DPST	4250184122326

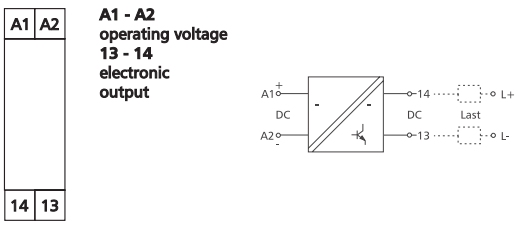
KRE-M4/1 DC

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 60 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	EAN
1106302517	green			4250184122777

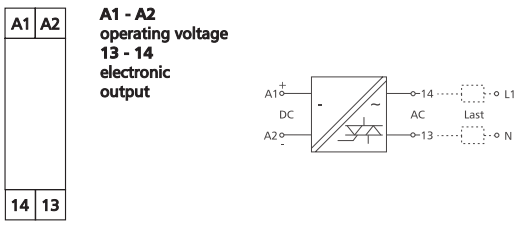
KRE-M4/1 AC

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 mm²
Display	Green LED
Dimensions (W x H x D)	11.2 x 60 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	EAN
1106312518	green			4250184122784

Matching accessory for KMA-F8

	Page
Labeling plate for KMA-F8 series	139
Connecting bridge, 10 pole	138

Matching accessory for KMAi-F8

	Page
Labeling plate for KMA-F8 series	139
Connecting bridge, 10 pole	138

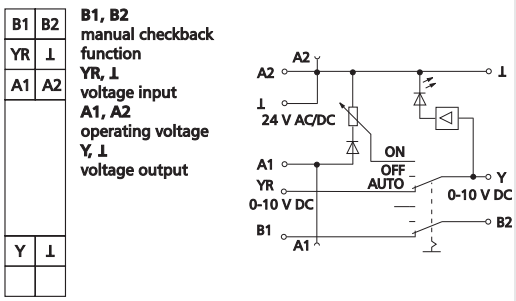
KMA-F8

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 signalized 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.

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

Input / operating voltage	24 V AC/DC
Input / power consumption AC	30 mA
Input / power consumption DC	19 mA
Input / voltage	0 V to 10 V DC
Output / voltage	0 V to 10 V DC
Display	Red LED
Dimensions (W x H x D)	11.2 x 88 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	EAN
110730	green	24 V AC/DC	0 - 10 V	4250184123224

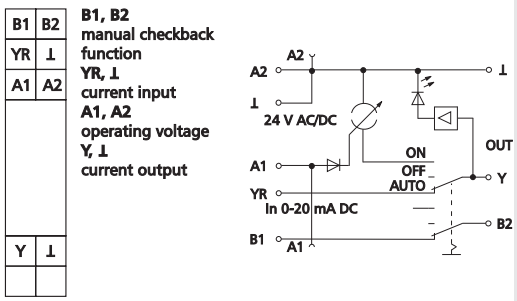
KMAi-F8

The analog encoder KMAi-F8 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 signalized 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 20mA 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 / power consumption AC	30 mA
Input / power consumption DC	19 mA
Input / voltage	0 V to 20 mA DC
Output / voltage	0 V to 20 mA DC
Display	Red LED
Dimensions (W x H x D)	11.2 x 88 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	EAN
110731	green	24 V AC/DC	0 - 20 mA	4250184123231

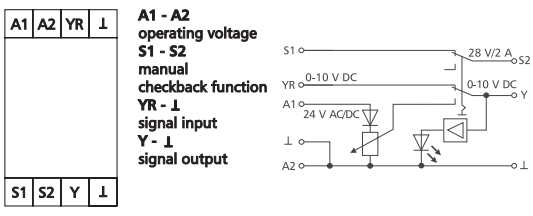
KMA-E08

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 / power consumption AC	24 mA
Input / power consumption DC	19 mA
Input / voltage	0 V to 10 V DC
Output / voltage	0 V to 10 V DC
Display	Red LED
Dimensions (W x H x D)	22.5 x 60 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	EAN
110660	green	24 V AC/DC	0 - 10 V	4250184122937

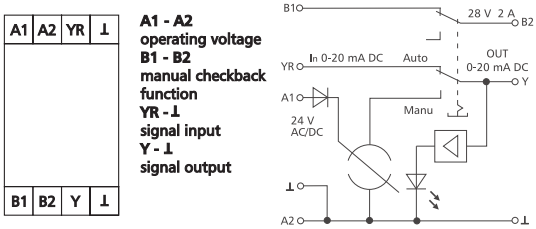
KMAi-E08

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 20 mA is available on the Y terminal. 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 / power consumption AC	50 mA
Input / power consumption DC	30 mA
Input / current	0 V to 20 mA DC
Output / current	0 V to 20 mA DC
Display	Red LED
Dimensions (W x H x D)	22.5 x 60 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	EAN
110659	green	24 V AC/DC	0 - 20 mA	4250184122920

Matching accessory for PV10 F10

	Page
Labeling plate	138

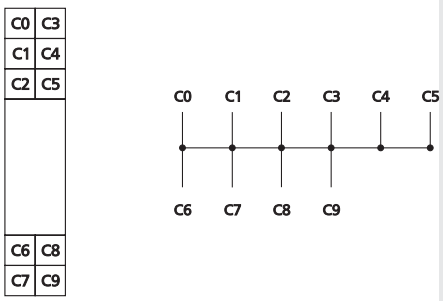
PV10 F10

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

- Potential distributor
- Connection with spring-clamp terminal
- Test contacts for each terminal

Operating voltage	250 V AC/DC
Total current	16 A AC/DC
Solid wire cross-section	0.08 mm² - 2.5 mm²
Stranded wire without end sleeve	0.08 mm² - 2.5 mm²
Stranded wire with end sleeve	0.08 mm² - 1.5 mm²
Dimensions (W x H x D)	11.2 x 88 x 60 mm
Weight	30 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	EAN
110720	green	250 V AC/DC		4250184123187

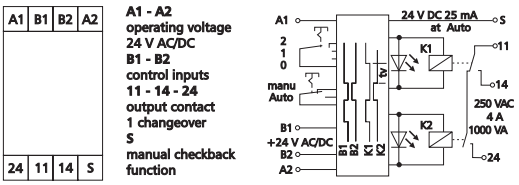
KRZ-E08 HR

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 (1 DPST)
Output / contact material	AgNi
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 60 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	EAN
110668132722	green	switchover	0-1-2	4250184122982

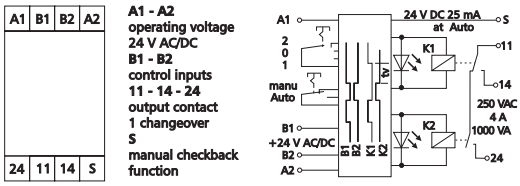
KRZ-E08/HR2

The coupling module is designed for three-point 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 (1 DPST)
Output / contact material	AgNi
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 60 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	EAN
110676132722	green	switchover	1-0-2	4250184123057

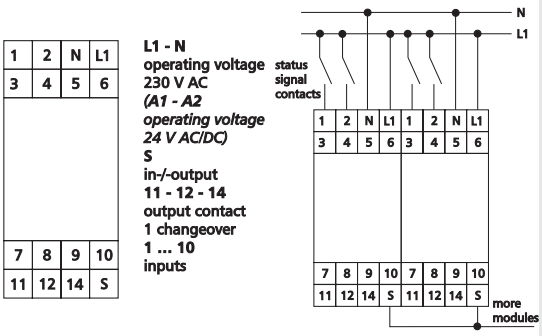
SMM-E16

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 (1 DPST)
Output / contact material	AgNi
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 mm²
Dimensions (W x H x D)	22.5 x 60 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	EAN
11051813	green	24 V AC/DC	1 SPDT	4250184122388
110518	green	230 V AC	1 SPDT	4250184122371

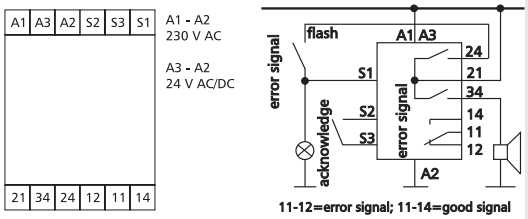
STM-C12

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	AgNi
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	1 x 10^5 switching cycles
Cross-section	2.5 mm²
Display	Yellow LED
Dimensions (W x H x D)	35 x 68 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	EAN
110520	green			4250184122395

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)

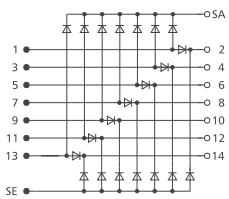
- For 7 lamps
- Output for collective message
- Input for lamp test
- Connection with screw-type terminals

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	greater than or equal to 3.5 A
Dimensions (W x H x D)	22.5 x 60 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

1	2	SE	SA
3	4	5	6
7	8	9	10
11	12	13	14

SE
collective input
SA
collective output
1 ... 14
inputs/outputs
odd numbered = inputs
even numbered = outputs



P/N	Color	Feature 1	Feature 2	EAN
110280	green			4250184121022

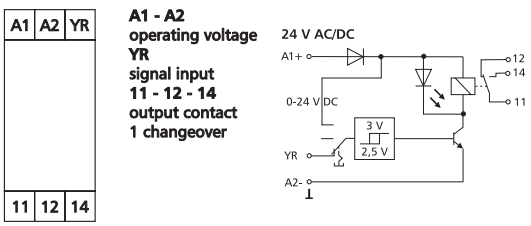
KRS-E06 - manual control

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 (1 DPST)
Output / contact material	AgNi
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 60 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	EAN
110661	green	2.5 V off 3 V on	with manual control	4250184122944

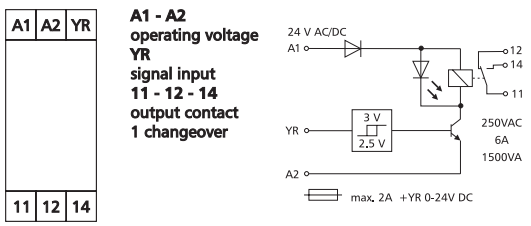
KRS-E06

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 (1 DPST)
Output / contact material	AgNi
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 60 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	EAN
110655	green	2.5 V off 3 V on	w/o manual control	4250184122852

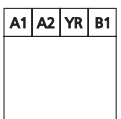
KRS-E08 HR

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.

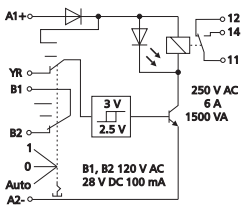
- With manual control level
- Connection with screw-type terminals

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 (1 DPST)
Output / contact material	AgNi
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 60 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



A1 - A2
operating voltage
24 V AC/DC
B1 - B2
manual checkback function
YR
signal input
11 - 12 - 14
output contact
1 changeover



P/N	Color	Feature 1	Feature 2	EAN
110667	green	2.5 V off 3 V on	1 DPST	4250184122975

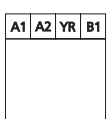
KRS-E08 HRP

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.

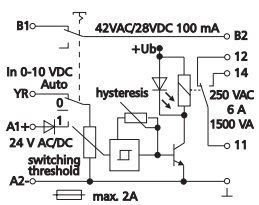
- With manual control level
- Adjustable switch-on voltage and hysteresis
- Connection with screw-type terminals

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 (1 DPST)
Output / contact material	AgNi
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 60 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



A1 - A2
operating voltage
24 V AC/DC
B1 - B2
manual checkback function
YR
signal input
11 - 12 - 14
output contact
1 changeover contact



P/N	Color	Feature 1	Feature 2	EAN
110666	green	selectable	1 DPST	4250184122968

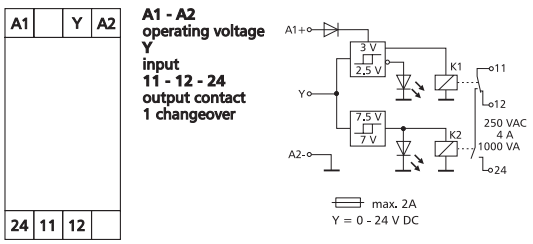
KRS-E08 3

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 (1 DPST)
Output / contact material	AgNi
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 60 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	EAN
110673	green	2.5 V, 7 V off	3 V, 7.5 V on	4250184123002

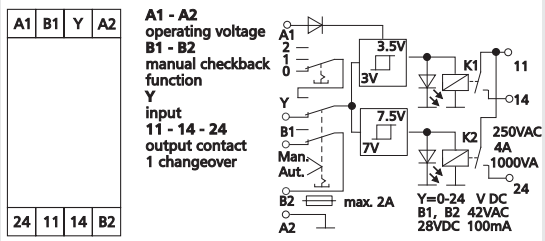
KRS1-E08 HR3

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 = 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	2 levels with 0 position
Output / contact material	AgNi
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 60 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	EAN
110672	green	2.5 V, 7 V off	3 V, 7.5 V on	4250184122999

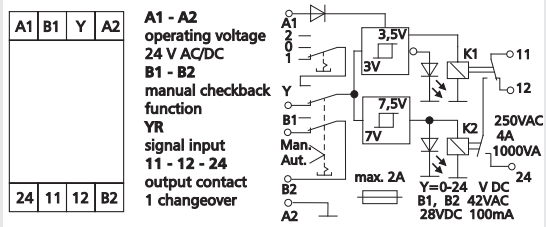
KRS-E08 HR3

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 (1 DPST)
Output / contact material	AgNi
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 60 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	EAN
110665	green	2.5 V, 7 V off	3 V, 7.5 V on	4250184122951

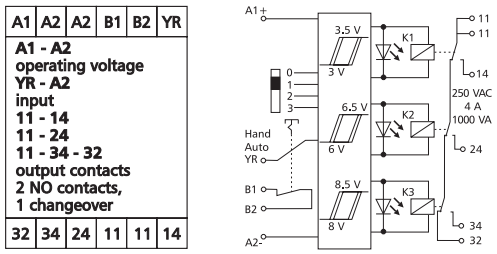
KRS-C12 3VHR

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 (3PST) 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 (3 DPST)
Output / contact material	AgNi
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



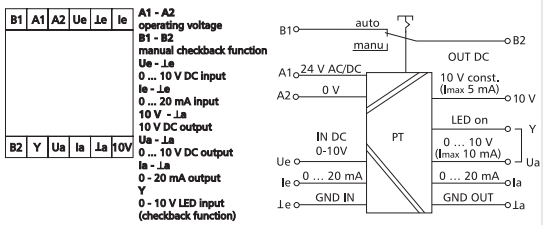
P/N	Color	Feature 1	Feature 2	EAN
11043413	green			4250184121978

PT-C12 / PTi-C12

The potential divider is used for dividing analog signals in a range from 0 to 10 V DC or 0 to 20 mA. The input and output signals and the supply are mutually isolated. An input signal (0 to 10 V DC or 0 to 20 mA) can be applied optionally to the potential divider. Independently of the type of signal on the input, a voltage of 0 to 10 V DC or a current of 0 to 20 mA can be measured on the output proportionally to the input signal. In addition, a manual emergency operation level with checkback is integrated. A fix 10 V DC signal can be scanned for anti-frost or similar equipment. An external signal (0 to 10 V DC) can be applied to the LED control input Y. Without external signal, the proportional output signal can be indicated by means of the integrated LED by connecting a bridge between Ua and Y. If a voltage signal is used on input and output, use PT-C12. If a current signal is used on input and output, use PTi-C12.

Operating voltage	24 V AC/DC
Test voltage / separation	1000 V DC
Input / voltage	0 V to 10 V DC
Input / current	0 V 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 68 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



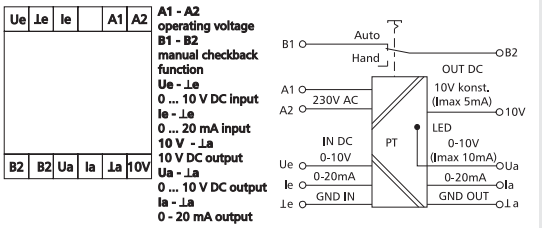
P/N	Color	Feature 1	Feature 2	EAN
110501	green	24 V AC/DC	voltage balanced	4250184122173
11050108	green	24 V AC/DC	current balanced	4250184122180

PT-C12 230 / PTi-C12 230

The potential divider is used for dividing analog signals in a range from 0 to 10 V DC or 0 to 20 mA. The input and output signals and the supply are mutually isolated. An input signal (0 to 10 V DC or 0 to 20 mA) can be applied optionally to the potential divider. Independently of the type of signal on the input, a voltage of 0 to 10 V DC or a current of 0 to 20 mA can be measured on the output proportionally to the input signal. In addition, a manual emergency operation level with checkback is integrated. A fix 10 V DC signal can be scanned for anti-frost or similar equipment. If a voltage signal is used on input and output, use PT-C12,230. If a current signal is used on input and output, use PTi-C12,230.

Operating voltage	230 V AC
Test voltage / separation	1000 V DC
Input / voltage	0 V to 10 V DC
Input / current	0 V 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 68 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	EAN
110502	green	230 V AC	voltage balanced	4250184122197
11050208	green	230 V AC	current balanced	4250184122203

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 signalized 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 / voltage	0 to 10 V
Input / scanning	0.5 V steps
Output / voltage	0 V to 7.5 V DC
Display	Yellow LED
Dimensions (W x H x D)	35 x 68 x 65 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

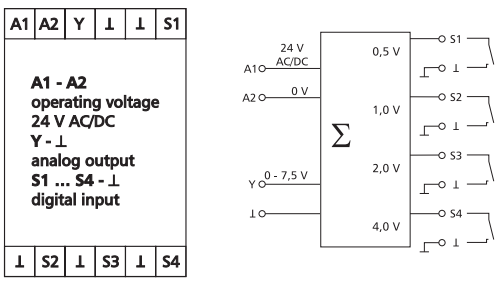
ADU-C12

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 signalized by means of an LED.

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

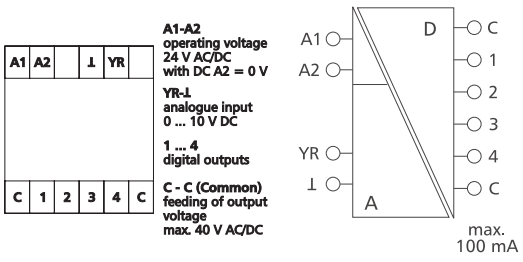
Operating voltage	24 V AC/DC
Current consumption 24 V AC	35 mA
Current consumption 24 V DC	16 mA
Input / voltage	0 to 10 V
Input / scanning	0.5 V steps
Output / voltage	up to 40 V AC/DC
Output / power consumption	max. 100 mA / channel
Display	Green and yellow LED
Dimensions (W x H x D)	35 x 68 x 65 mm
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	EAN
110656	green	4 x D/A converter	0 - 7.5 V output	4250184122869

Wiring/Circuit diagram



P/N	Color	Feature 1	Feature 2	EAN
11043513	green	4 x A/D converter	0 - 10 V input	4250184121985

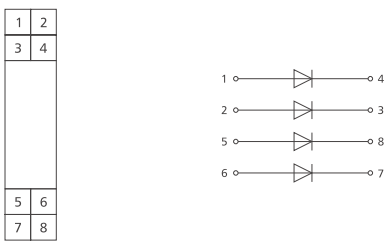
KD-M8/4E

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	greater than or equal to 1.8 A
Cut-off current	30 µA at 75 °C
Dimensions (W x H x D)	11.2 x 60 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	EAN
110639	green	individual	4 diodes	4250184122807

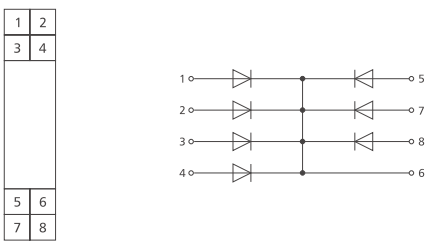
KD-M8/7K

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	greater than or equal to 1.8 A
Cut-off current	30 µA at 75 °C
Dimensions (W x H x D)	11.2 x 60 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	EAN
110641	green	common cathode	7 diodes	4250184122821

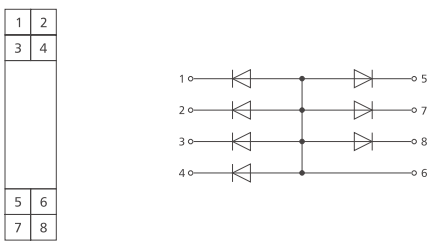
KD-M8/7A

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	greater than or equal to 1.8 A
Cut-off current	30 µA at 75 °C
Dimensions (W x H x D)	11.2 x 60 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	EAN
110640	green	common anode	7 diodes	4250184122814

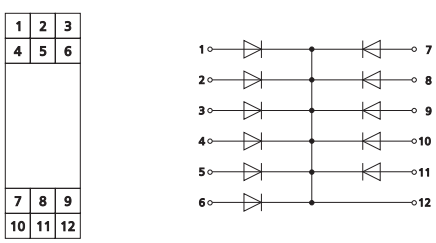
KD-S12/11K

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 (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	greater than or equal to 3.2 A
Cut-off current	30 µA at 75 °C
Dimensions (W x H x D)	22.5 x 75 x 100 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	EAN
110629	green	common cathode	11 diodes	4250184122760

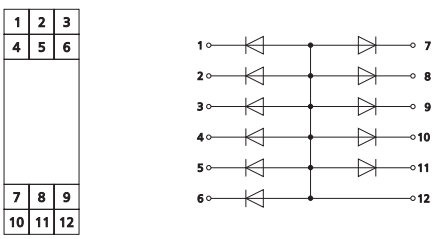
KD-S12/11A

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	greater than or equal to 3.2 A
Cut-off current	30 µA at 75 °C
Dimensions (W x H x D)	22.5 x 75 x 100 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	EAN
110628	green	common anode	11 diodes	4250184122753

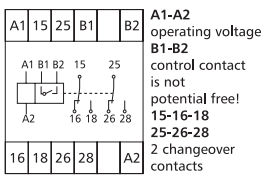
RTM-C12

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	less than or equal to 15 mA
Continuous current	8 A
Output / contact	2 changeover contacts (2 DPST)
Output / contact material	AgNi
Response time	20 ms
Release time	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
Dimensions (W x H x D)	35 x 68 x 65 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	EAN
11027613	green	24 V AC/DC	2 DPST	4250184121015

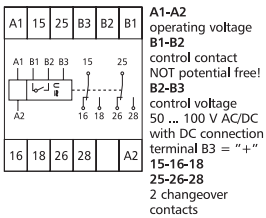
RTM-C12 230 V

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	less than or equal to 15 mA
Continuous current	8 A
Output / contact	2 changeover contacts (2 DPST)
Output / contact material	AgNi
Response time	20 ms
Release time	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
Dimensions (W x H x D)	35 x 68 x 65 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	EAN
11027605	green	230 V AC	2 DPST	4250184121008

Control cabinet components

C | Logline

Matching accessory for HF10FH

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Matching accessory for R274 - 2 changeover contacts (2 DPST)

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Socket 14 poles for electronic modules	115

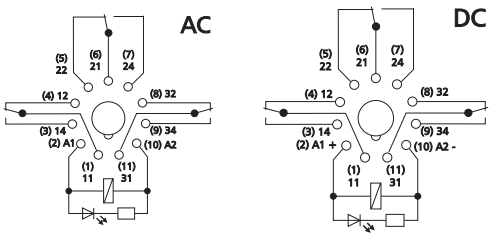
HF10FH

Sturdy power relay for industrial use.

- Internationally standardized 11-pole plug-in socket
- Insulated parts made from self-extinguishing plastics
- With manual test button

Operating voltage	24 V AC, 24 V DC, 230 V AC
Current consumption 24 V AC	145 mA
Current consumption 24 V DC	65 mA
Current consumption 230 V AC	12 mA
Continuous current	10 A
Output / contact	3 changeover contacts (3 DPST)
Output / contact material	AgSnO2
Output / switching capacity	2500 VA / 300 W
Mechanical endurance	1 x 10^7 switching cycles
Electrical endurance	1 x 10^5 switching cycles
Display	Red LED and mechanical
Dimensions (W x H x D)	35.5 x 56 x 35.7 mm
Weight	85 g
Operating temperature range	-40 °C to +55 °C
Storage temperature range	-40 °C to +70 °C

Wiring



P/N	Color	Feature 1	Feature 2	EAN
110016051307		230 V AC	3 DPST	4250184118138
110016101307		24 V AC	3 DPST	4250184118145
110016251307		24 V DC	3 DPST	4250184118152

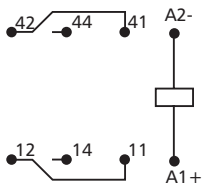
R274 - 2 changeover contacts (2 DPST)

Compact, pluggable relay for industrial use.

- Socket pins as soldering lugs
- Mechanical switch position display
- With manual test button
- Cadmium-free contacts

Operating voltage	24 V AC, 24 V DC, 230 V AC
Current consumption 24 V AC	50 mA
Current consumption 24 V DC	36.9 mA
Current consumption 230 V AC	5.21 mA
Continuous current	7 A
Output / contact	2 changeover contacts (2 DPST)
Output / contact material	Silver alloy
Output / switching capacity	1540 VA / 210 W
Mechanical endurance	1 x 10^7 switching cycles
Electrical endurance	1 x 10^5 switching cycles
Display	LED and mechanical
Dimensions (W x H x D)	21.5 x 35 x 28 mm
Weight	37 g
Operating temperature range	0 °C to +55 °C
Storage temperature range	-20 °C to +70 °C

Wiring



P/N	Color	Feature 1	Feature 2	EAN
110015051206		230 V AC	2 DPST	4250184120001
110015101206		24 V AC	2 DPST	4250184120032
110015251206		24 V DC	2 DPST	4250184120063

Matching accessory for R274 - 4 changeover contact (4 DPST)

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Matching accessory for R274 - 4 changeover contacts (4 DPST) gold plated contacts

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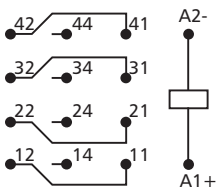
R274 - 4 changeover contact (4 DPST)

Compact, pluggable relay for industrial use.

- Socket pins as soldering lugs
- Mechanical switch position display
- With manual test button
- Cadmium-free contacts

Operating voltage AC	24 V AC, 230 V AC
Operating voltage DC	12 V DC, 24 V DC
Current consumption 12 V AC	75 mA
Current consumption 24 V AC	50 mA
Current consumption 24 V DC	36.9 mA
Current consumption 230 V AC	5.21 mA
Continuous current	5 A
Output / contact	4 changeover contacts (4 DPST)
Output / contact material	Silver alloy
Output / switching capacity	1100 VA / 150 W
Mechanical endurance	1 x 10^7 switching cycles
Electrical endurance	1 x 10^5 switching cycles
Display	LED and mechanical
Dimensions (W x H x D)	21.5 x 35 x 28 mm
Weight	37 g
Operating temperature range	0 °C to +55 °C
Storage temperature range	-20 °C to +70 °C

Wiring



P/N	Color	Feature 1	Feature 2	EAN
110015051406		230 V AC	4 DPST	4250184120025
110015101406		24 V AC	4 DPST	4250184120049
110015251406		24 V DC	4 DPST	4250184120070
110015271406		12 V DC	4 DPST	4250184120087

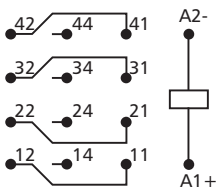
R274 - 4 changeover contacts (4 DPST) gold plated contacts

Compact, pluggable relay for industrial use.

- Socket pins as soldering lugs
- Mechanical switch position display
- With manual test button
- Cadmium-free contacts

Operating voltage	24 V AC, 24 V DC, 230 V AC
Current consumption 24 V AC	50 mA
Current consumption 24 V DC	36.9 mA
Current consumption 230 V AC	5.21 mA
Continuous current	5 A
Output / contact	4 changeover contacts (4 DPST)
Output / contact material	Au
Output / switching capacity	1100 VA / 150 W
Mechanical endurance	1 x 10^7 switching cycles
Electrical endurance	1 x 10^5 switching cycles
Display	LED and mechanical
Dimensions (W x H x D)	21.5 x 35 x 28 mm
Weight	37 g
Operating temperature range	0 °C to +55 °C
Storage temperature range	-20 °C to +70 °C

Wiring



P/N	Color	Feature 1	Feature 2	EAN
110015051408		230 V AC	4 DPST, gold plated	4250184118206
110015101408		24 V AC	4 DPST, gold plated	4250184120056
110015251408		24 V DC	4 DPST, gold plated	4250184118190

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Socket 11 poles is matching accessory for

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JQX-10FH AC	112

Matching accessory for Socket 14 poles

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Socket 14 poles is matching accessory for

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R274 - 4 changeover contacts (4 DPST)	113
R274 - 4 changeover contacts (4 DPST) gold plated contacts	113

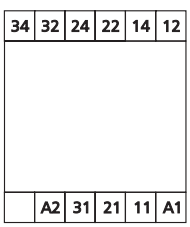
Socket 11 poles

11-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 HF10FH(JQX-10FH).

- Undecal plug-in socket
- Integrated quick fastening for DIN rail
- Cadmium-free contacts

Application class	HMF to DIN 40040 -25 °C / +100 °C / ≤75 %
Ambient temperature	+80 °C
Protection against contact	VBG 4
Cross-section	2 x 2.5 mm²
Ampacity	10 A
Operating voltage	300 V AC
Isolation group	C 250 to VDE 0110
Test voltage	3.5 kV eff. / 60 s
Leakage resistance	>1010 Ω
Creepage distance	4 mm to VDE 0110
Air gap	2.5 mm to VDE 0110
Creep resistance	CTI 300
Housing dimensions (W x H x D)	38.2 x 61.6 x 26 mm
Weight	55 g
Operating temperature range	0 °C to +55 °C
Storage temperature range	-20 °C to +70 °C

Wiring



P/N	Color	Feature 1	Feature 2	EAN
110117	black			4250184120254

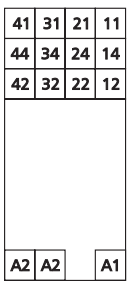
Socket 14 poles

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 R274.

- 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	4000 V / 50 Hz / 1min
Isolation group	VDE 0110b C250
Ambient temperature	+70° C
Protection against contact	VBG 4
Solid wire cross-section	2 x 2.5 mm²
Stranded wire with end sleeve	2 x 1.5 mm²
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	EAN
110175	black			4250184120414

Matching accessory for Socket 14 poles for electronic modules

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RC Module 230 V AC	141
RC Module 24 V AC	141
Holding bracket plastic for R274	143
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Connecting bridge, 5 pole	141

Socket 14 poles for electronic modules is matching accessory for

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R274 - 4 changeover contacts (4 DPST)	113
R274 - 4 changeover contacts (4 DPST) gold plated contacts	113

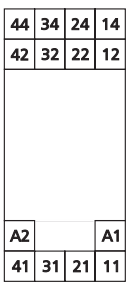
Socket 14 poles for electronic modules

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	4000 V / 50 Hz / 1min
Isolation group	VDE 0110b C250
Ambient temperature	+70° C
Protection against contact	VBG 4
Solid wire cross-section	2 x 2.5 mm²
Stranded wire with end sleeve	2 x 1.5 mm²
Screw torque	max. 0.8 Nm
Housing dimensions (W x H x D)	27.2 x 75 x 61.2 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	EAN
110178	black			4250184118183

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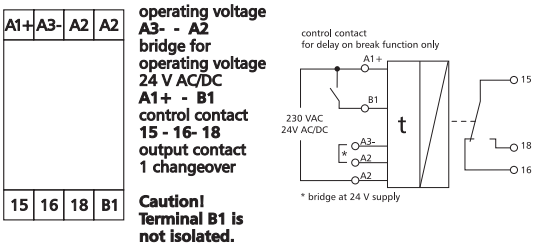
MARk-E08

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	230 V AC / 24 V AC/DC
Output / contact	1 changeover contact (1 DPST)
Output / contact material	AgNi
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)	11.2 x 88 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	EAN
110657	green	5 functions		4250184122876

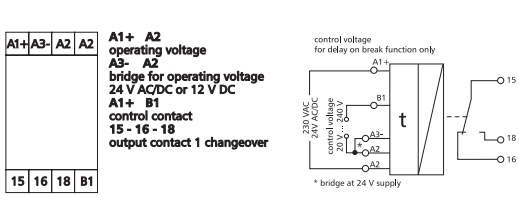
MARk-E08 U

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 (1 DPST)
Output / contact material	AgNi
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)	11.2 x 88 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	EAN
1106574133	green	2 functions	with voltage input	4250184122890

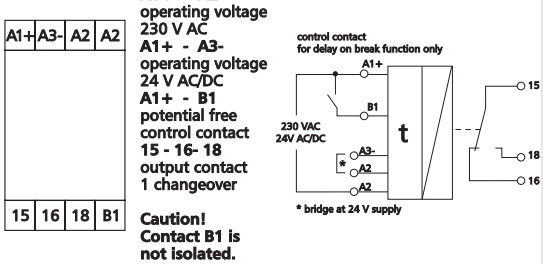
MFRk-E08 / MFRk-E08 F

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 0.15 s 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	1 changeover contact (1 DPST)
Output / contact material	AgNi
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 VDC	50 ms / 10 to 30 ms
at 230 V AC	100 ms / 10 to 30 ms
Cross-section	2.5 mm²
Display	Green and red LED
Dimensions (W x H x D)	11.2 x 88 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	EAN
110658	green	recovery time tw	50 - 100 ms	4250184122906
110658412014	green	recovery time tw	10 - 30 ms	4250184122913

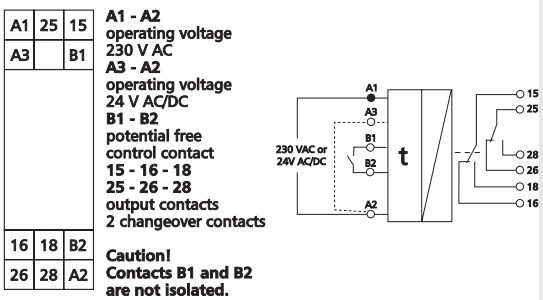
MFRk-E12

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 2 (DPST)
Output / contact material	AgNi
Output / switching voltage	250 V
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
Recovery time	greater than or equal to 250 ms
Cross-section	2.5 mm²
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/Circuit diagram



P/N	Color	Feature 1	Feature 2	EAN
110310412230	green	Time Ranges	0.15 s - 800 s	4250184121268
110310412231	green	Time Ranges	0.1 min - 10 h	4250184121275

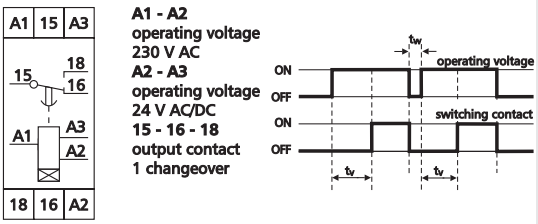
MZAk-E10

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	2 changeover contacts (2 DPST)
Output / contact material	AgNi
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	EAN
110295412030	green			4250184121138

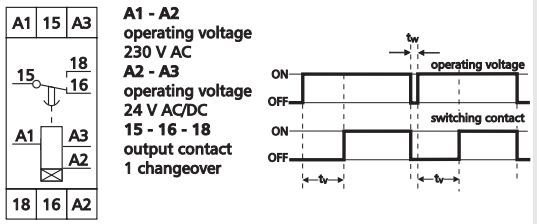
RTLk-E10

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 (1 DPST)
Output / contact material	AgNi
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	EAN
110352412003	green	Time Ranges	0.5 - 10 s	4250184121398
110352412004	green	Time Ranges	1.5 - 30 s	4250184121404
110352412005	green	Time Ranges	3 - 60 s	4250184121411
110352412006	green	Time Ranges	5 - 100 s	4250184121428
110352412008	green	Time Ranges	15 - 300 s	4250184121435

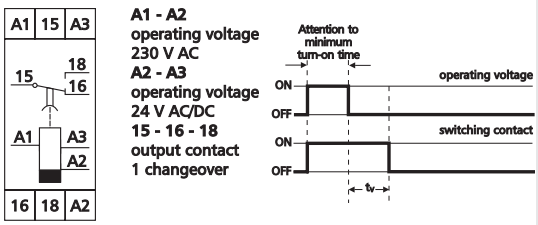
RKAk-E10

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 (1 DPST)
Output / contact material	AgCdO
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 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	EAN
110304412003	green	Time Ranges	0.5 - 10 s	4250184121190
110304412004	green	Time Ranges	1.5 - 30 s	4250184121206
110304412005	green	Time Ranges	3 - 60 s	4250184121213
110304412008	green	Time Ranges	15 - 300 s	4250184121220
110304412011	green	Time Ranges	3 - 60 min	4250184121237

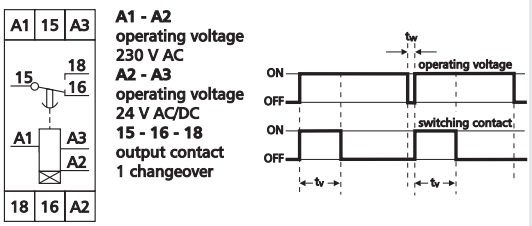
EWEk-E10

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 (1 DPST)
Output / contact material	AgNi
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	EAN
110296412002	green	Time Ranges	0.15 - 3 s	4250184121145
110296412003	green	Time Ranges	0.5 - 10 s	4250184121152
110296412004	green	Time Ranges	1.5 - 30 s	4250184121169
110296412009	green	Time Ranges	0.5 - 10 min	4250184121176

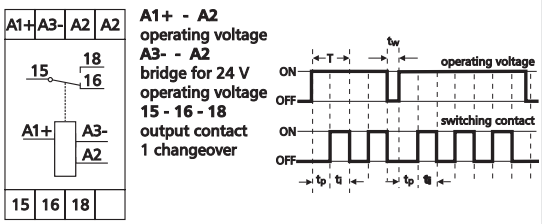
TERk-E08

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 (1 DPST)
Output / contact material	AgNi
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 60 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



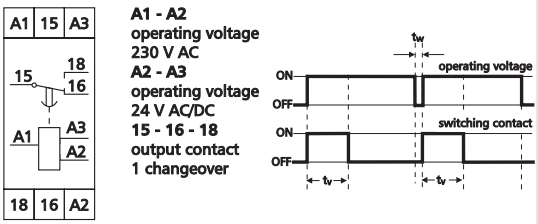
P/N	Color	Feature 1	Feature 2	EAN
11067441203030	green	tp 0.15 - 800 s	ti 0.15 - 800 s	4250184123019
11067441203031	green	tp 0.15 - 800 s	ti 0.1 min - 10h	4250184123026
11067441203130	green	tp 0.1 min - 10 h	ti 0.15 - 800 s	4250184123033
11067441203131	green	tp 0.1 min - 10 h	ti 0.1 min - 10h	4250184123040

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 (1 DPST)
Output / contact material	AgNi
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



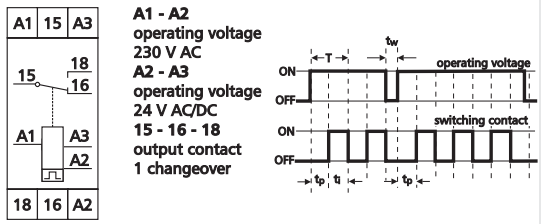
P/N	Color	Feature 1	Feature 2	EAN
110354412016	green			4250184121459

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 (1 DPST)
Output / contact material	AgNi
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	EAN
110355412016	green			4250184121466

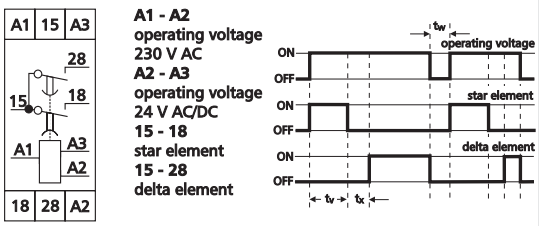
RSDw-E10

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 (1 DPST)
Output / contact material	AgNi
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	Red LED
Dimensions (W x H x D)	22.5 x 70 x 95 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	EAN
11016141280417	green	230 V AC	1.5 - 30 s	4250184120384
11016141280517	green	230 V AC	3 - 60 s	4250184120391

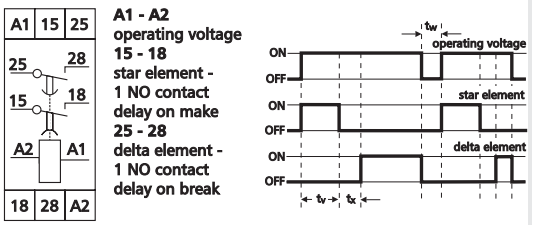
RSD-E10

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	DPST-NO
Output / contact material	AgNi
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	Red LED
Dimensions (W x H x D)	22.5 x 70 x 95 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	EAN
11016005270317	green	230 V AC	0.5 - 10 s	4250184120339
11016005270417	green	230 V AC	1.5 - 30 s	4250184120346
11016005270517	green	230 V AC	3 - 60 s	4250184120360
11016013270317	green	24 V AC/DC	0.5 - 10 s	4250184120377

Well-tried and functional

Today's analogous telecommunication cablings must again and again be able to integrate additional devices such as telephones or more signalling devices.

METZ CONNECT offers well-tried and functional solutions to these issues.

Power switching relay
to control additional signalling devices such as buzzers and flashing beacons with separate voltage supply in production and warehousing areas that are equipped with only one single central phone. They are controlled by the call signal of the phone line.

Multiple Changeover Switches
to connect 2 to 4 analogous phones to a teleconmunication connection. All connected phones will have equal access to the teleconmunication connection.

Secondary call signaller
to additionally signal acoustically and visually an incoming call at the telecommunication line.

Telecommunication products

1	Packing Details	124
2	Power switching relay	125
3	Multiple Changeover Switches	126
4	Additional Equipment	127

Power switching relay | DIN rail / surface mount

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
125	130283-I	10 pcs	228 x 170 x 80 mm	876 g
125	130284-I	10 pcs	228 x 170 x 80 mm	845 g
125	130280-I	10 pcs	195 x 170 x 68 mm	759 g

Mutliple Changeover Switches | Automatic Changeover Switches

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
126	130383-E	1 pcs	145 x 83 x 31 mm	178 g

Additional Equipment | Secondary call signaler

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
127	130592-I	5 pcs	180 x 90 x 70 mm	327 g
127	130593-I	5 pcs	315 x 120 x 90 mm	375 g

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).

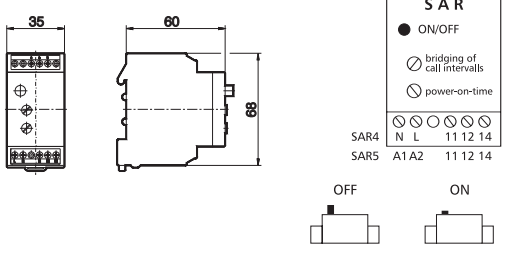
Operating voltage SAR4	230 V AC / 50 Hz
Operating voltage SAR5 DC	24 V DC / 10 mA
Operating voltage SAR5 AC	24 V AC / 10 mA
Input / a/b telecommunications access line	
Input / call voltage	32 to 80 V AC
Input / frequency range	23 to 54 Hz
Input / impedance	10 kOhm at 75 V, 25 Hz
Input / insertion loss	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) 240 W (less than 30 V DC) 50 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)	65 x 80 x 27 mm
Operating temperature range	-5 °C to + 55 °C
Storage temperature range	-20 °C to + 70 °C

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 (IWV). 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.

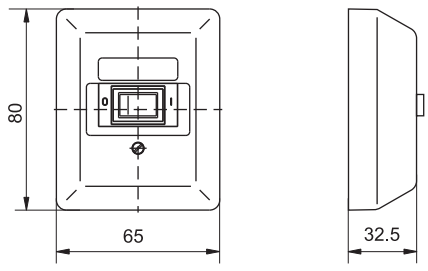
Input / call voltage	32 to 80 V AC
Input / frequency range	23 to 54 Hz
Input / impedance	10 kOhm at 75 V, 25 Hz
Input / insertion loss	less than 0.5 dB
Input / leakage resistance	more than 5 MOhm at 100 V
Output / switching current	max. 8 A
Output / continuous current	max. 6 A
Output / switching voltage	max. 250 V AC
Output / switching capacity	2000 VA (AC) 240 W (less than 30 V DC) 50 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/Circuit diagram



P/N	Color	Feature 1	Feature 2	EAN
130283-I	light gray	SAR 4		4250184101703
130284-I	light gray	SAR 5		4250184116660

Dimensional drawing



P/N	Color	Feature 1	Feature 2	EAN
130280-I	pearl white	surface mount		4250184101673

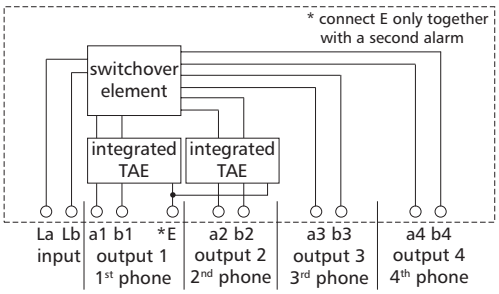
AMS 1/4 F AP

Up to four terminals can be connected to the AMS 1/4 AP. All terminals have equal access to the access line when the AMS is in non-operative mode. When the access line is used by a terminal, all other terminals are automatically deactivated to prevent unwanted overhearing. Additional devices, such as answering machines, can be connected upstream to the connected terminals.

- Protection against overvoltage and electromagnetic interference in the access line
- Incoming calls are signaled at each phone
- Suitable for main terminals and telephone systems
- No additional mains connection required
- Also for telephones with electronic hookswitch
- Additional alarm clock can be connected to the first communication terminal via W-base on the terminal

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 / front	2 x TAE-F jacks
Output / internal	2 x terminals
Dimensions (W x H x D)	142 x 80 x 27 mm
Operating temperature range	-5 °C to + 55 °C
Storage temperature range	-20 °C to + 70 °C

Wiring



P/N	Color	Feature 1	Feature 2	EAN
130383-E	pure white	AP 1/4 F		4250184101956

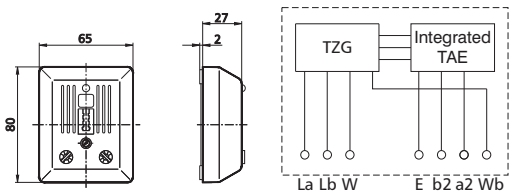
TZG WK 955 AP

The secondary call signaler allows additionally signalizing incoming calls by means of acoustic and optical signals. An incoming call is signalized 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	EAN
130592-I	pearl white	surface mount		4250184102250

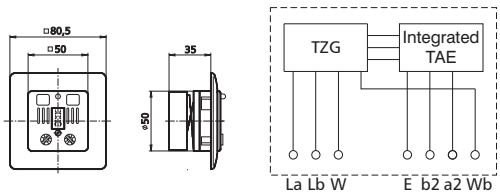
TZG WK 955 UP

The secondary call signaler allows additionally signalizing incoming calls by means of acoustic and optical signals.
An incoming call is signalized 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)	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	EAN
130593-I	pearl white	flush mount		4250184102267

Notes

Accessories and additional equipment for devices of the following ranges of products:

Components/building automation
- Power supply and switch-on devices
- Jumper plug and terminal blocks
- Module frames 3RU and label sheets

Measuring and monitoring relays
- Current converter

Interface modules/industrial relays
- Connecting bridges
- Labeling plates

Accessories

1	Packing Details	130
2	I/O components	131
3	Cabinet Doors/Panels 3RU	134
4	Current Converter	137
5	Interface modules	138

I/O components | Power supplies

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
131	110561	1 pcs	74 x 51 x 80 mm	129 g
131	110561-01	1 pcs	74 x 51 x 80 mm	120 g

I/O components | Connection aids

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
132	31135104	300 pcs	plastic bag	690 g
132	110369	10 pcs	plastic bag	217 g
133	ASP0250404	250 pcs	plastic bag	1173 g

Cabinet Doors / Panels 3RU | Subassembly frame

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
134	110361	1 pcs	455 x 235 x 55 mm	850 g
134	110362	1 pcs	310 x 235 x 90 mm	576 g
135	110365	10 pcs	plastic bag	958 g

Cabinet Doors / Panels 3RU | Blind module / Labeling

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
136	110367	1 pcs	46 x 43 x 142 mm	46 g
136	891680	1 pcs	plastic bag	63 g

Current Converter | DIN rail

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
137	1101810507	60 pcs	240 x 225 x 120 mm	9288 g
137	1101810508	30 pcs	240 x 225 x 120 mm	4518 g

Interface modules | Coupling modules

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
138	110728	10 pcs	plastic bag	36 g
138	110729	10 pcs	plastic bag	29 g
139	110727	10 pcs	plastic bag	36 g
139	850349-02	250 pcs	plastic bag	1150 g
140	820234-01-9	10 pcs	plastic bag	12 g
140	820165-2	10 pcs	plastic bag	11 g

Interface modules | Industrial sockets

Page	P/N	PU	PU measures (W*H*L)	PU gross weight
141	11017905	10 pcs	plastic bag	29 g
141	11017910	10 pcs	plastic bag	33 g
141	850349-03	200 pcs	plastic bag	790 g
142	820165-2	10 pcs	plastic bag	11 g
142	817133	10 pcs	plastic bag	14 g
143	110189	10 pcs	plastic bag	47 g

NG4 green is matching accessory for

	Page
LON I/Os	36
CAN-Bus I/Os	55

NG4 gray is matching accessory for

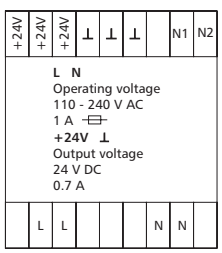
	Page
Ethernet I/Os	20
BACnet I/Os	26
MOD-bus I/Os	31

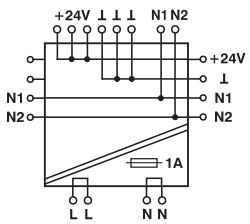
NG4 green

The NG4 power supply supplies regulated direct voltages for supplying power to the respective devices of the Intelligent Components product family. The device supplies regulated direct voltage 24 V DC at a power of 16 watts. A parallel operation of various power supply units is not allowed. The secondary voltage can only be tapped at the right side of the plug connector and at the screw-type terminals on the top of the module. The bus communication is looped through on both sides of the plug connectors.

Field of application	Intelligent components
Operating voltage	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
Output / current	700 mA
Load and control accuracy	+/-3 %
Mains failure backup	greater than 40 ms
Display	Green LED
Dimensions (W x H x D)	50 x 70 x 65 mm
Weight	108 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





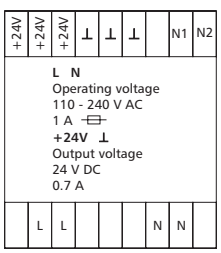
P/N	Color	Feature 1	Feature 2	EAN
110561	green	+24 V (green)	with jumper plug	4250184122470

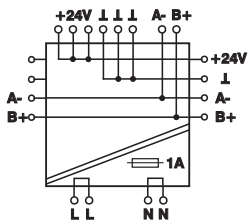
NG4 gray

The NG4 power supply supplies regulated direct voltages for supplying power to the respective devices of the Intelligent Components product family. The device supplies regulated direct voltage 24 V DC at a power of 16 watts. A parallel operation of various power supply units is not allowed. The secondary voltage can only be tapped at the right side of the plug connector and at the screw-type terminals on the top of the module. The bus communication is looped through on both sides of the plug connectors.

Field of application	Intelligent components
Operating voltage	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
Output / current	700 mA
Load and control accuracy	+/-3 %
Mains failure backup	greater than 40 ms
Display	Green LED
Dimensions (W x H x D)	50 x 70 x 65 mm
Weight	108 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	EAN
110561-01	gray	+24 V (gray)	with jumper plug	4250184131571

Jumper plug for I/O components is matching accessory for

	Page
Ethernet I/Os	20
BACnet I/Os	26
Modbus I/Os	31
LON I/Os	36
CAN-Bus I/Os	55

Terminal block for I/O components is matching accessory for

	Page
Ethernet I/Os	20
BACnet I/Os	26
Modbus I/Os	31
LON I/Os	36
CAN-Bus I/Os	55

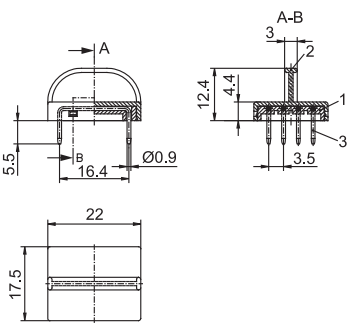
Jumper plug for I/O components

Jumper for quickly connecting various I/O components without tools. The jumper 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
Wire diameter	0.9 mm
Wire material	CuZn
Upper temperature limit	125 °C
Lower temperature limit	-30 °C

Dimensional drawing



P/N	Color	Feature 1	Feature 2	EAN
31135104	black			4250184151692

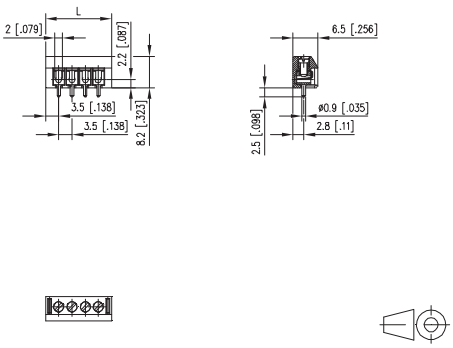
Terminal block for I/O Components

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 mm²
Cross-section (finely stranded wire)	0.75 mm²
Insulation coordination to	EN 60664-1
Minimum air gap and creepage	min. 2.1 mm
Overvoltage 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	EAN
110369	black			4250184121558

Terminal block for door installation modules is matching accessory for

	Page
LA1	50
LM1	47
LM2	47
LS1	48
LT1	48
LT2	49
LT3	49

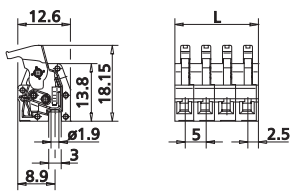
Terminal block for door installation modules

Terminal block to feed bus and power supply of door installation modules.

- Spring-clamp terminal block, pluggable, 4-pole
- Grid dimension 5.0 mm, connection direction 90°
- Sequencing possible without pole loss
- Gray

Rated voltage UL/CSA	300 V
Rated current UL/CSA	8 A
Conductor connection UL/CSA	AWG 28 to AWG 16
Rated voltage SEV	250 V
Rated current SEV	10 A
Wire diameter SEV	0.32 mm to 1.38 mm
Cross-section (solid wire)	1.5 mm²
Cross-section (finely stranded wire)	0.75 mm²
Insulation coordination to	EN 60664-1
Minimum air gap and creepage	min. 3.7 mm
Overvoltage category	III / III / II
Degree of pollution	3 / 2 / 2
Rated voltage V	250 / 500 / 500
Rated surge voltage	2.5 / 4 / 2.5
Ingress protection to IEC 60529	IP20
Stripping length	min. 4 mm

Dimensional drawing



P/N	Color	Feature 1	Feature 2	EAN
ASP0250404	gray			4250184151715

Accessories

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Matching accessory for Subassembly frame 3RU 19"

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Mounting Set for 19" Frames	135

Subassembly frame 3RU 19" is matching accessory for

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LA1	50
LM1	47
LM2	47
LS1	48
LT1	48
LT2	49
LT3	49

Matching accessory for Subassembly frame 3RU 10"

	Page
Mounting Set for 19" Frames	135

Subassembly frame 3RU 10" is matching accessory for

	Page
LA1	50
LM1	47
LM2	47
LS1	48
LT1	48
LT2	49
LT3	49

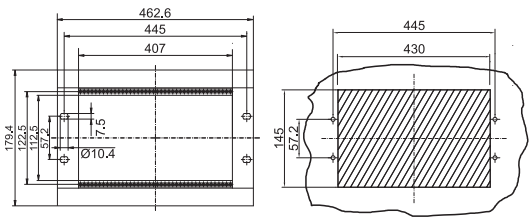
Subassembly frame 3RU 19"

19" assembly frame for 10 BTR door installation modules.

Subassembly frame 3RU 10"

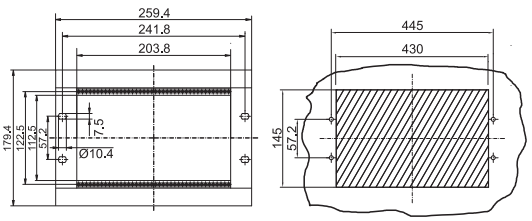
10" assembly frame for 5 BTR door installation modules.

Dimensional drawing/Cut-out



P/N	Color	Feature 1	Feature 2	EAN
110361	silver			4250184121480

Dimensional drawing/Cut-out



P/N	Color	Feature 1	Feature 2	EAN
110362	silver			4250184121497

Fastening kit for assembly frames is matching accessory for

	Page
19" Frame 3RU 80HP	134
10" Frame 3RU 40HP	134

Fastening kit for assembly frames

Fastening kit for 19" assembly frames.

- 4 oval-head screws M6x16, cross recess
- 4 black plastic disks

P/N	Color	Feature 1	Feature 2	EAN
110365				4250184121527

Labeling Sheet for door installation modules is matching accessory for

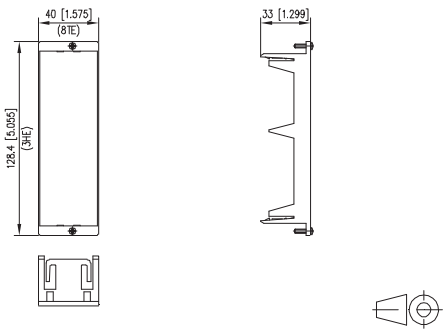
	Page
LA1	50
LM1	47
LM2	47
LS1	48
LT1	48
LT2	49
LT3	49

Blind module

Blind module for filling for 19" assembly frames. Suitable as labeling plate.

Dimensions (W x H x D)	40 x 128.7 x 35 mm
Dimensions RU/TP	3RU, 8TP
Weight	23 g
Installation position	any
Mounting in assembly frame	in 19" to IEC 297-3
Housing material	ABS

Dimensional drawing



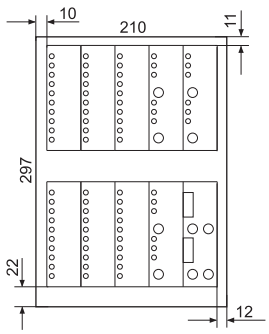
P/N	Color	Feature 1	Feature 2	EAN
110367	gray			4250184121534

Labeling Sheet for door installation modules

Pre-cut DIN A4 paper sheets for individually labeling door installation modules. Suitable for LM1, LM2, LS1, LT1, LT2, LT3 and LA1.

- Suitable for all printers
- Gray
- The print template is available for download in various formats (Visio, PDF, Word, Corel Draw)

Dimensional drawing



P/N	Color	Feature 1	Feature 2	EAN
891680	gray			4250184119289

Members of METZ CONNECT
RIA CONNECT BTR NETCOM MCQ TECH

TAmini 50 A / 5 A is matching accessory for

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EIW-C18	79
CPW-E12	72

TAmini 100 A / 5 A is matching accessory for

	Page
EIW-C18	79
CPW-E12	72

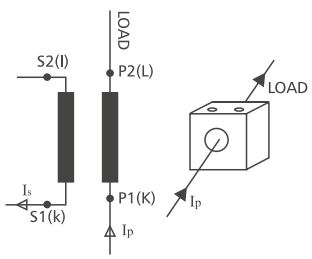
TAmini 50 A / 5 A

The current converter TAmini 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	EAN
1101810507	brown	transformer ratio	50 A/5 A	4250184120469

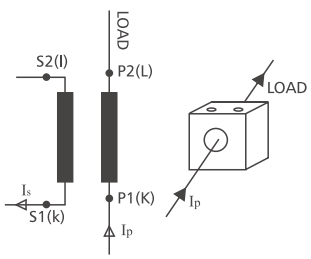
TAmini 100 A / 5 A

The current converter TAmini 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	EAN
1101810508	brown	transformer ratio	100 A/5 A	4250184120476

Connecting bridge Series KRA-F8/F10 is matching accessory for

	Page
KRA-F8/21	80
KRA-F10/21-21	82
KRA-S-F8/21	80
KRA-S-F10/21-21	82
KRA-SR-F10/21	81
KRA-SRA-F10/21	81
PV10 F10	98
KMA-F8	96
KMAi-F8	96

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

	Page
KRA-F8/21	80
KRA-F10/21-21	82
KRA-S-F8/21	80
KRA-S-F10/21-21	82
KRA-SR-F10/21	81
KRA-SRA-F10/21	81
PV10 F10	98

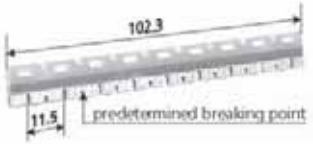
Connecting bridge Series KRA-F8/F10

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 11.25 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	11.25 mm
Upper temperature limit	100 °C
Lower temperature limit	-20 °C
Material / printed circuit board	Fr4

Dimensional drawing



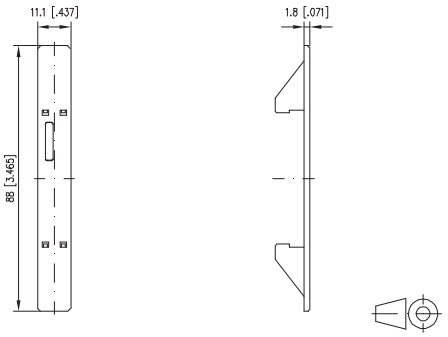
P/N	Color	Feature 1	Feature 2	EAN
110728	green			4250184123200

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	EAN
110729	trans-parent			4250184123217

Members of METZ CONNECT
RIA CONNECT BTR NETCOM MCQ TECH

Labeling plate Series KMA-F8 is matching accessory for

	Page
KMA-F8	96
KMAi-F8	96

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

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End Mount	142

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

	Page
KRA-S-M6/21	88
KRA-M4/1	84
KRA-M4/1	83
KRA-M4/1	84
KRA-M6/21	88
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KRA-M6/21	87
KRA-M6/21	87
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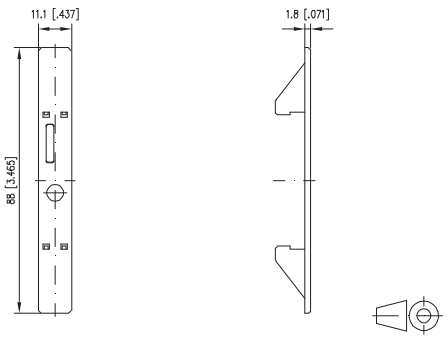
KRA-M6/1-1	85
KRA-M6/1-2	86
KRA-M6/1-2	86
KRA-M8/21-21	90
KRA-M8/21-21	89
KRA-M8/21-21	90
KRA-M8/21-21 12V AC/DC	89
KRA-SR-M8/21	89
KRA-M4/1 LC	83

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	EAN
110727	trans-parent			4250184123194

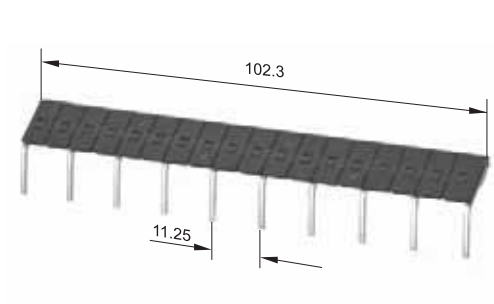
Connecting bridge Series KRA-M4/M6/M8

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	EAN
850349-02	black	10 poles		4250184119302

Accessories

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

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KRA-M4/1	84
KRA-M4/1	83
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KRA-M6/21	87
KRA-M6/21	87
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KRA-M6/1-1	85
KRA-M6/1-1	85
KRA-M6/1-2	86
KRA-M6/1-2	86
KRA-M8/21-21	90
KRA-M8/21-21	89
KRA-M8/21-21	90
KRA-M8/21-21 12V AC/DC	89
KRA-SR-M8/21	89
KRA-M4/1 LC	83

End Mount for connecting bridge is matching accessory for

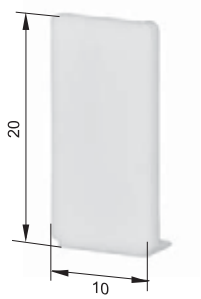
	Page
Connecting bridge, 10 pole	139
Connecting bridge, 5 pole	141

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



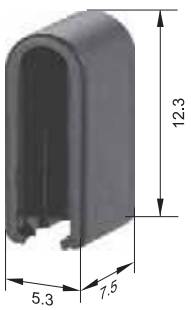
P/N	Color	Feature 1	Feature 2	EAN
820234-01-9	white			4250184119319

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	EAN
820165-2	black			4250184119326

RC module for Industrial sockets is matching accessory for

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RM 21	92
RM 21-21	93
RM3-2W	94

Matching accessory for connecting bridge for industrial sockets

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End Mount	142

Connecting bridge for industrial sockets is matching accessory for

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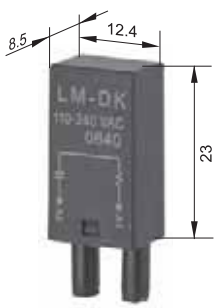
Socket 14 poles	114
Socket 14 poles for electronic modules	115

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	EAN
11017905	black	230 V AC		4250184120438
11017910	black	24 V AC		4250184120445

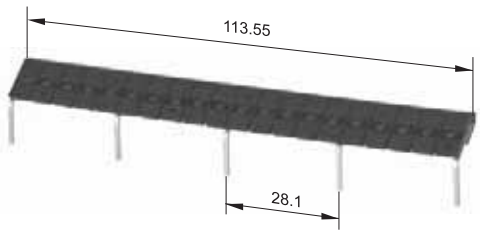
Connecting bridge for industrial sockets

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	EAN
850349-03	black	5 pole		4250184119296

Members of METZ CONNECT
RIA CONNECT BTR NETCOM MCQ TECH

End Mount for Connecting Bridge is matching accessory for

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Connecting bridge, 10 pole	139
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Holding Bracket Wire is matching accessory for

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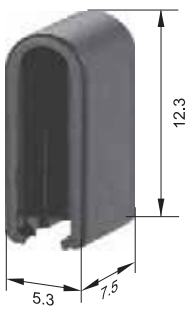
Socket 14 poles for electronic modules	115

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	EAN
820165-2	black			4250184119326

Holding Bracket Wire

Metal 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	EAN
817133		holder	wire	4250184119333

Holding bracket plastic is matching accessory for

	Page
Socket 14 poles	114
Socket 14 poles for electronic modules	115

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	EAN
110189	black	holder	plastics	4250184120513

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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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No liability accepted for printing errors.

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Terms and Conditions of Sale, Delivery and Payment

of **METZ CONNECT GmbH (HRB 611606)**

Im Tal 2 | 78176 Blumberg | Germany

I. Sphere of application, validity

1.1 The Terms and Conditions of Sale, Delivery and Payment set out below shall apply to all transactions and deliveries between ourselves and undertakings (Section 14 BGB [Civil Code]) and with legal entities under public law and public law special trust assets.

1.2 Our Terms and Conditions of Sale, Delivery and Payment shall not apply to transactions with consumers (Section 13 BGB).

1.3 ditions which are contrary or which vary from our own Terms and Conditions of Sale, Delivery and Payment, unless we have explicitly approved their validity in writing or in text format. Our Terms and Conditions of Sale, Delivery and Payment shall still apply, even if we execute delivery to the customer in the knowledge that the customer's terms and conditions are contrary to or vary from our own Terms and Conditions of Sale, Delivery and Payment.

1.4 In the case of orders and deliveries between ourselves and foreign customers, it is agreed that the law of the **Federal Republic of Germany** shall apply to all business relations, irrespective of their legal basis. The contractual language for our business relations with a foreign customer is either German or English, at our option. Our choice will be made based on the language we use when dealing with the customer.

1.5 If our products are exported, we are not liable for ensuring that they are capable of being exported, nor are we responsible for the procuring of official authorizations, nor for the compliance with any regulations concerning foreign trade in the designated land of exportation. The customer is responsible for verifying and ensuring that all national regulations of the specific land of exportation are complied with.

1.6 If one or several provisions of these terms and conditions should be void regardless of the legal basis the validity of the other provisions shall not be affected thereby.

II. Contract conclusion, scope of delivery

2.1 Our quotations shall be without commitment.

2.2 A contract shall be deemed to have been concluded exclusively on the basis of our order confirmation which shall be drawn up in writing or in text format. The order confirmation shall contain our delivery commitments and shall specify the condition of the products to be delivered. The condition and performance of our products are additionally in agreement with the specifications of the catalogue valid at the time of our order confirmation. Ancillary agreements and subsequent agreements must be set out in writing or in text format.

2.3 If we fail to provide the customer any confirmation of its order, then forwarding of the delivery with an invoice and/or delivery note shall equate to acceptance of the order.

2.4 The condition of the product to be delivered shall additionally be determined by means of the article number and article description to which reference is made in the order confirmation or in the delivery note or the invoice.

2.5 The customer must check all his dimensional and product requirements. We are not obliged to verify the dimensions, the product data and the specifications given by the customer.
The customer is responsible for verifying the compatibility of the components he uses together with our products when he uses our products together with other components (e.g. plugs for our socket,) and is likewise responsible for ensuring that these uses comply with national and EU standards and guidelines.

III. Delivery time, transfer of risk

3.1 The delivery time shall be deemed to have been agreed as approximate. It shall be deemed to be a fixed date only where it has been explicitly designated as such.

3.2 If we are prevented from or hindered in performance of our assignment through the occurrence of unforeseen events, which we were unable to avert despite applying the level of due care which could be expected of us in the circumstances, irrespective of whether such events occur at our own premises or at those of our subsidiary suppliers, e.g. breakdowns, delay in the delivery of key vendor parts, official measures, embargo, risk of war, force majeure or strike, then the delivery period shall be extended by the duration of such hindrance. If delivery or performance is impossible as a result of the circumstances listed, then we shall be exempted from our delivery commitment.

3.3 The risk for individual deliveries shall pass to the customer at the time of dispatch of the goods or their delivery to the carrier/freighter **ex works Blumberg** (EXW Incoterms 2000).

3.4 The customer must take delivery of and store shipped and delivered goods, even if these are defective. In doing so, the customer does not waive his rights to give notice of and claim for defects.

3.5 Part deliveries and part performances shall be admissible. These shall be deemed to be independent deliveries and may be charged immediately.

3.6 In the case of special production orders, we reserve the right to under-/over-deliver by up to 10 % of the delivery quantities ordered and/or for which the order has been confirmed.

IV. Prices, payments

4.1 Unless otherwise agreed, our prices shall be held to be ex works Blumberg in euro. VAT at the statutory rate shall be added to the prices.

4.2 Unless explicitly agreed otherwise, payments shall fall due within 14 days of the invoice date subject to 2 % discount, and net within 30 days. Discounts shall be applied only on the ex works price, excluding freight, shipment and other incidental costs, and only provided all the customer's debts arising out of the business relationship have been paid. The statutory provisions shall apply in the event of default.

4.3 The customer is not permitted to retain any payments because of notice of defects or other counterclaims which we have not recognized or which have not become res judicata, nor is he permitted to offset the payments against such counterclaims.

V. Reservation of ownership

5.1 The customer shall provide us with the following agreed collateral for all our claims against it arising out of the business relationship, irrespective of their legal basis. The customer shall have authority to demand the release of collateral inasmuch as it exceeds 20 % of the value of our claims. We shall be obliged to release individual items of collateral, and may select which items to release.

5.2 The goods delivered shall remain our property until payment in full of the purchase price and of all claims of any kind arising out of the entire business relationship. Ownership shall not transfer until all payments, including all incidental claims, have been paid. Only the date of encashment shall apply in the event of payments by cheque. The customer shall not be entitled to pledge the goods or to transfer their ownership by way of security.

5.3 In the event of behaviour by the customer in breach of contract, or of default on its part, we shall have authority to take back the goods and to oblige the customer to hand them over. If we assert our reservation of ownership and attach goods, this shall not signify withdrawal from the contract. Section 449 (2) BGB shall be excluded.

5.4 The customer shall only be authorised to resell within the ordinary course of its business. It hereby assigns to us the resulting receivable, in the amount of our final invoice including VAT, and undertakes to supply the name and address of the third party debtor and the amounts of the receivables in question, upon request. The receivable arising from resale of our goods **may not be assigned to third parties, including banks**.

5.5 The customer shall be obliged to insure all goods not paid for against losses, in particular against fire, water damage and breakage.
The customer undertakes to supply us with the name of the indemnity insurer concerned and shall assign to us its claim against the insurer concerned with respect to unpaid goods at the time of occurrence of the insured loss, by way of provisional performance.

5.6 If, in the case of a delivery for export, the above provision in relation to reservation of ownership is invalid in the country of export, or if it must be supplemented and/or requires registration in order to be valid, then the customer shall be obliged and we shall have authority to conclude a collateral agreement according to the law of the country of export, which comes as close as possible to the commercial purpose of our purchase price collateral, and to undertake the requisite registration. If the export customer is in default with payments, then we shall have authority to take possession of the goods and to store these separately or outside the customer's business premises, without this implying withdrawal from the contract or cancellation thereof.

VI. Obligation to serve notice of a defect, performance problems, material defects, liability

6.1 **The customer's duty to serve notice of a defect and duty of care**

6.1.1 It is the customer's responsibility to examine the products delivered by us for faults or defects and to verify the quantities delivered within four days of delivery and to inform us within 14 days of any faults, defects or deviations in quantity in such a way that we are able to identify faults, defects or deviations in quantity, so that we may comply with our obligation to carry out remedial work.

6.1.2 If the customer learns of breaches of duty and/or material defects with respect to the products supplied to him by us and by him to his customers, then he undertakes to inform us immediately in such a way that we shall be in a position to confirm the defaults indicated and/or defects at the place of use. If we are not notified immediately, then our customer shall be deemed to have approved the goods.

6.1.3 In the event of recourse by a customer against a supplier or based on the supply chain due to material defects experienced by the customer as a result of our product, our customer undertakes to only carry out subsequent performance towards its own customer or towards customers entitled under the supply chain after consultation with ourselves to determine the appropriate technical and commercial measures.

6.2 **Rights in relation to defects**

6.2.1 In the event of defaults, breaches of duty and/or material defects, we shall have the right vis-à-vis the customer to elect to remedy the defect by replacement or to remedy it in another manner within a reasonable period. The right of remedy shall be restricted to two attempted remedies. If the default, breach of duty and/or material defect occurs at the customer's place of delivery or at the place of delivery of one of his customers within a supply chain, then the customer must give us the opportunity of carrying out our rectification at the place of delivery of our product.

6.2.2 Our customer undertakes not to acknowledge any claims based on defects by his own customers or third parties within the supply chain without consulting with ourselves.

6.3 **Liability**

6.3.1 In the event of serious breaches of duty and default with respect to „cardinal" duties and duties of performance and/or material defects, we shall be absolutely liable in the event of
- gross culpability
- grossly negligent culpability on the part of our Managing Directors and/or senior executives
- culpable injury to the life, limb or health of individuals
- material defects which have been fraudulently concealed
- guarantees explicitly given in writing
- defects in products, insofar as there is liability for personal injury or material damage under the Product Liability Act.

6.3.2 In the event of negligent breach of duty, performance problems or materials defects caused, for which we are culpable, our liability shall be restricted to remedy or replacement delivery and/or to reimbursement of expenses.

6.3.3 We accept no liability towards our customers in the event of breaches of non-essential duties, defaults and other incidental duties, nor do we accept liability for non-essential deviations from specifications relating to the performance and condition of our products.

6.3.4 All claims for damages against us shall be restricted to such damages which are foreseeable for us at the time of conclusion of the contract through the use of the products delivered by us.

6.3.5 In the event that we are obliged to pay damages on the basis of negligent culpability, our duty to pay indemnity and/or for expenses shall be restricted to 5 times the product price per occurrence, and in the event of serial losses, to 3 times the product price per defective product, plus the replacement product concerned.

6.3.6 In the event that the customer exports our products, including using them for further processing or as components, we shall not be liable for ensuring that the products are capable of being exported, nor for ensuring that no official approval is required nor for the freedom to import them in our customer's countries of importation.

6.3.7 Claims of the customer based on claims for defects or breaches of duty contrary to contract shall become barred by limitation after a period of one year. The start of this period is determined by the date of the delivery note indicating the delivery of the product. The one-year period of limitation shall not apply if, according to a mandatory legal regulation, the limitation period is longer; this shall also apply in the event of injury to life, limb or health; of intentional or grossly negligent culpability on our part; and of fraudulent intent by ourselves or our staff; and of failure to disclose a defect; in which case the legal provisions shall apply.

VII. Product Liability

7.1 Should we, owing to omissions or defects in the performance of the object of delivery or owing to faulty advice, information or suggestions for use, be responsible for damages suffered by our customer, including on the basis of product liability provisions, during or after the term of the contract, the provisions governing liability for defects in the delivery as defined in VI between us and the customer shall apply to the exclusion of all other claims regardless of the basis of such claims. Should the exclusion of liability or limitation of liability for product liability as outlined above be invalid and on the merits of the situation should we be liable to our customer, **liability shall be limited to the respective amounts** of the insurance sum for personal damages and damages to property **provided by the insurance coverage** taken out by us with our insurance agent.

7.2 Should a case of product liability arise, the customer shall not assert any claims whatsoever for damages to property greater than the sum covered by our insurance agent.

7.3 We and our customer exclude any assertion of claims for product liability asserted by third parties as a result of assignments of the third party to the customer. The customer is not entitled to assert claims against us originating from the supply chain.

7.4 We and our customer undertake to aid one another in fending off any such claims which may be asserted by third parties.

VIII. Guarantee declarations

8.1 **Any guarantee declaration must be made separately in writing and shall not be included in the order confirmation.**

8.2 **A guarantee declaration shall only validly materialise provided it is signed by a managing director with sole signatory authority or by a managing director with joint representative authority together with another managing director or a prokurist [officer with statutory authority].**

8.3 **Provisions relating to condition and performance descriptions and/or product specifications shall not contain any guarantee declarations. The assumption of tacit guarantees shall be explicitly excluded.**

IX. Data Protection

9.1 We are entitled to store and process customer data we receive as a result of our business relations, insofar as the customer is entitled to dispose of this data, for use in our business relations.

X. Place of performance, Venue

10.1 Place of performance and venue for delivery and payment for the business relation with our customer is Blumberg.

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