

# Intelligent components for systems and switch cabinets





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## C | Logline

### Intelligent components for systems and switch cabinets

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Christian and Jochen Metz in the local Blumberg

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

Dear business partners,  
dear customers,

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

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

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

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

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

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

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

Best regards



**Jochen Metz**  
Managing Partner



**Christian Metz**  
Managing Partner

and the entire team from METZ CONNECT.

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

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



## P | Cabling

### Copper and Fiber Optics solutions for networks

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



Connectors



Wall outlets,  
distributors



patch cables,  
lines

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



## U | Contact

# Connection systems for printed circuit boards

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



Terminal blocks, pin headers



Connectors



Board-to-board



## C | Logline

# Intelligent components for systems and switch cabinets

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



Bus modules



Interface modules



Timer, process- and monitoring relays







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

# Housing types

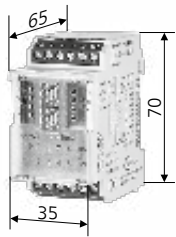


XX = Housing type

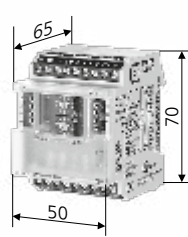
Name

Product specification

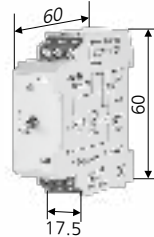
C12



C18



E06



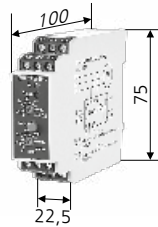
E08



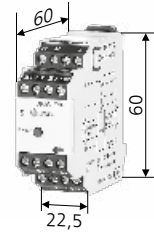
E10



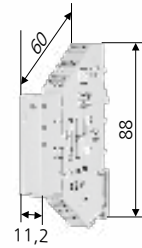
E12/S12



E16



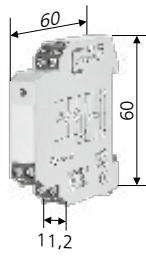
F8/F10



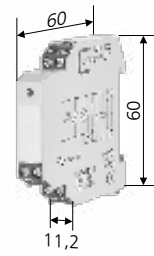
M4



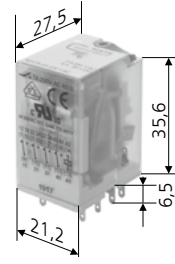
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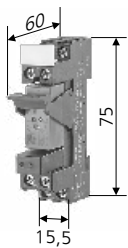
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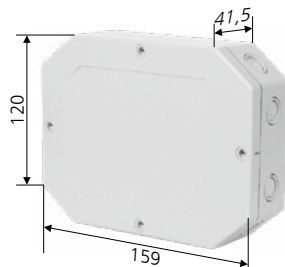
MC274



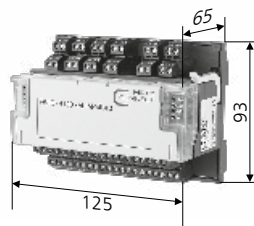
RM



IP65



D80



## Pictograms



with screw type terminal blocks



with spring clamp terminal blocks

# Energy controlling



## Simple energy consumption data acquisition

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

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

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**Only three steps are necessary to take advantage of tax savings:**

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

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

With the new EWIO<sub>2</sub>-M data logger and a large number of expansion modules, METZ CONNECT offers the optimum solution for a simple energy consumption data acquisition, and makes it easier for companies to introduce energy management.



## Data logger

Multi I/O controller



### EWIO<sub>2</sub>-M (M-Bus)

Data logger with integrated data base and web server for energy consumption monitoring on M-Bus, S0 and Modbus RTU.

- > Function: Data logger
- > Interfaces: M-Bus, Modbus RTU, S0 and I/Os
- > Protocol: LAN, TCP/IP

EWIO<sub>2</sub>-M  
P/N 110930  
EWIO-9180-M  
P/N 110910



### EWIO<sub>2</sub>-M-BM (M-Bus/BACnet/Modbus)

Modbus TCP or BACnet/IP data logger with integrated data base and web server for energy consumption monitoring on M-Bus, S0 and Modbus RTU.

- > Function: Data logger
- > Interfaces: M-Bus, Modbus RTU, S0 and I/Os
- > Protocol: LAN, BACnet/IP, Modbus TCP

EWIO<sub>2</sub>-M-BM  
P/N 110935  
EWIO-9180-M-BACnet  
P/N 110912  
EWIO-9180-M-Modbus  
P/N 110913



### EWIO<sub>2</sub>-MW (M-Bus/WLAN)

Data logger with integrated data base, web server and WLAN interface for energy consumption monitoring on M-Bus, S0 and Modbus RTU.

- > Function: Data logger
- > Interfaces: M-Bus, Modbus RTU, S0 and I/Os
- > Protocol: LAN, WLAN, TCP/IP

EWIO<sub>2</sub>-MW  
P/N 110931



### EWIO<sub>2</sub>-MW-BM (M-Bus/WLAN/BACnet/Modbus)

Modbus TCP or BACnet/IP data logger with integrated data base, web server and WLAN interface for energy consumption monitoring on M-Bus, S0 and Modbus RTU.

- > Function: Data logger
- > Interfaces: M-Bus, Modbus RTU, S0 and I/Os
- > Protocol: LAN, WLAN, BACnet/IP, Modbus TCP

EWIO<sub>2</sub>-MW-BM  
P/N 110934



## Data logger

Accessories



### WLAN antenna

Optional antenna with cable for the data logger (EWIO<sub>2</sub>-M) and Ethernet-I/O (EWIO<sub>2</sub>) with WLAN connection.

- > Antenna with magnetic base
- > SMA plug
- > Cable length: 1 m

WLAN antenna  
P/N 11094830



# M-Bus components

## Converter



### S0/M converter 4 fold S0/M-F converter 4 fold

4 channel S0-pulse to M-Bus converter for the detection of S0-pulses according to DIN EN 62053-31 class A in housing for DIN rail mounting TH35.

- > Function: S0/M converter
- > Inputs: 4 x S0 according to DIN EN 62053-31 Class A
- > Protocol: M-Bus

S0/M converter 4 fold  
P/N 110556

S0/M-F converter 4 fold  
P/N 11055670



### S0/M converter double-rate

2 channel S0 pulse to M-Bus converter for the detection of S0 pulses according to DIN EN 62053-31 class A with two counting registers T1 and T2 for double tariff meters in housing for DIN rail mounting TH35.

- > Function: S0/M converter double-rate
- > Inputs: 2 x S0 and 1 x S0 with two counting register
- > Protocol: M-Bus

S0/M converter double-rate  
P/N 11055601



### T/M converter T/M-F converter

4 channel temperature/resistance to M-Bus converter for the acquisition of passive temperature sensors, such as PT100, PT1000, NTC1k8, etc. in a housing for DIN rail mounting TH35.

- > Function: T/M converter
- > Inputs: 4 x temperature input
- > Protocol: M-Bus

T/M converter  
P/N 110562

T/M-F converter  
P/N 11056270

## M-Bus distributor



### MYD IP65

M-Bus distributor for structured M-Bus cabling, as well as maintenance and commissioning of M-Bus structures in IP65 housing for ceiling or wall mounting.

- > Function: distributor
- > Inputs: 1 x M-Bus, 1 x voltage
- > Outputs: 6 x M-Bus, 2 x voltage

MYD IP65  
P/N 11056301

# M-Bus components

## Software



### M-Bus CT software

M-Bus Configurations Tool for the setup and analysis of S0/M and T/M converters from METZ CONNECT.

- > Function: Configuration tool, Primary address change, Baud rate change

M-Bus CT software  
[www.metz-connect.com](http://www.metz-connect.com)

# I/O components



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

Automation of buildings, machines and systems

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

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



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**These bus systems offer different advantages:**

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

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



## Ethernet I/Os

Multi I/O controller



**EWIO<sub>2</sub>**  
(Ethernet-I/O)

Ethernet I/O controller with integrated web server for control tasks in building and industrial automation. It has digital and analog inputs and outputs.

- > Inputs: 40-4 Mohm, 0-10 V, 0-20 mA, contact
- > Outputs: 0-10 V, Relais, PNP, Triac
- > Interfaces: LAN, TCP/IP


 EWIO<sub>2</sub>  
P/N 110905



**EWIO<sub>2</sub>-BM**  
(Ethernet-I/O/BACnet/Modbus)

BACnet/IP or Modbus TCP-I/O controller with integrated web server for control tasks in building and industrial automation. It has digital and analog inputs and outputs.

- > Inputs: 40-4 Mohm, 0-10 V, 0-20 mA, contact
- > Outputs: 0-10 V, Relais, PNP, Triac
- > Interfaces: LAN, BACnet/IP, Modbus TCP

 EWIO<sub>2</sub>-BM  
P/N 110904  
EWIO-9180-BACnet  
P/N 110902  
EWIO-9180-Modbus  
P/N 110903



**EWIO<sub>2</sub>-W**  
(Ethernet-I/O/WLAN)

Ethernet I/O controller with integrated web server for control tasks in building and industrial automation. It has WLAN as well as digital and analog inputs and outputs.

- > Inputs: 40-4 Mohm, 0-10 V, 0-20 mA, contact
- > Outputs: 0-10 V, Relais, PNP, Triac
- > Interfaces: LAN, WLAN, TCP/IP

 EWIO<sub>2</sub>-W  
P/N 110906



**EWIO<sub>2</sub>-W-BM**  
(Ether-I/O/WLAN/BACnet/Modb.)

BACnet/IP or Modbus TCP-I/O controller with integrated web server for control tasks in building and industrial automation. It has WLAN as well as digital and analog inputs and outputs.

- > Inputs: 40-4 Mohm, 0-10 V, 0-20 mA, contact
- > Outputs: 0-10 V, Relais, PNP, Triac
- > Interfaces: LAN, WLAN, BACnet/IP, Modbus TCP

 EWIO<sub>2</sub>-W-BM  
P/N 110909

## Modbus RTU I/Os



Digital input



**MR-DI4**  
**MR-F-DI4**

I/O module for DIN rail mounting TH35 with 4 digital inputs for detection of potential-free switch states, e.g. electrical limit switches on ventilation flaps, etc.

- > Inputs: 4 x Digital inputs
- > Outputs: -
- > Protocol: Modbus RTU, RS485

 MR-DI4  
P/N 1108341319  
 MR-F-DI4  
P/N 110834131970



**MR-DI4-IP65**

I/O module in IP65 surface mount housing with 4 digital inputs for detection of potential-free switch states, e.g. electrical limit switches on ventilation flaps, etc.

- > Inputs: 4 x Digital inputs
- > Outputs: -
- > Protocol: Modbus RTU, RS485


 MR-DI4-IP65  
P/N 11083413191P



**MR-DI4-IP65**  
**with external display**

I/O module in IP65 surface mount housing with 4 digital inputs for detection of potential-free switch states, e.g. electrical limit switches on ventilation flaps with external display.

- > Inputs: 4 x Digital inputs
- > Outputs: -
- > Protocol: Modbus RTU, RS485



 MR-DI4-IP65  
with external display  
P/N 1108341319011P



**MR-DI10**  
**MR-F-DI10**

I/O module for DIN rail mounting with 10 digital inputs for detection of potential-free switch states, e.g. electrical limit switches on ventilation flaps, etc.

- > Inputs: 10 x Digital inputs
- > Outputs: -
- > Protocol: Modbus RTU, RS485

 MR-DI10  
P/N 1108311319  
 MR-F-DI10  
P/N 110831131970



## Modbus RTU I/Os

### Digital input



#### MR-SI4 MR-F-SI4

I/O module for DIN rail mounting TH35 with 4 S0 inputs according to DIN EN 62053-31 class A for counting S0 counter pulses, e.g. in energy controlling systems etc.

- > Inputs: 4 x Digital inputs
- > Outputs: -
- > Protocol: Modbus RTU, RS485

MR-SI4  
P/N 11083913  
 MR-F-SI4  
P/N 1108391370

### Analog input



#### MR-AI8 MR-F-AI8

I/O module for DIN rail mounting TH35 with 8 configurable resistance TH35 with 8 configurable resistance range or voltage inputs for the detection of e.g. passive and active temperature sensors, etc.

- > Inputs: 8 x Analog inputs
- > Outputs: -
- > Protocol: Modbus RTU, RS485

MR-AI8  
P/N 11083213  
 MR-F-AI8  
P/N 1108321370



#### MR-CI4 MR-F-CI4

I/O module for DIN rail mounting TH35 with 4 analog voltage or current inputs for the detection of e.g. electrical ventilation and mixing flaps, etc.

- > Inputs: 4 x Analog inputs
- > Outputs: -
- > Protocol: Modbus RTU, RS485

MR-CI4  
P/N 1108401332  
 MR-F-CI4  
P/N 110840133270



#### MR-SM3 MR-F-SM3

I/O module for DIN rail mounting TH35 with 3 analog inputs for monitoring three 230 Volt power circuits e.g. variables such as voltage, current, power, asymmetry, etc.

- > Inputs: 3 x Analog inputs
- > Outputs: -
- > Protocol: Modbus RTU, RS485

MR-SM3  
P/N 11084113  
 MR-F-SM3  
P/N 1108411370

## Modbus RTU I/Os

### Digital output



#### MR-DO4 MR-F-DO4

I/O module for DIN rail mounting with 4 relay outputs and manual operation for the control of e.g. lamps, blinds, contactors, motors, etc.

- > Inputs: -
- > Outputs: 4 x Digital outputs
- > Protocol: Modbus RTU, RS485

MR-DO4  
P/N 1108361321  
 MR-F-DO4  
P/N 110836132170



#### MR-DOA4 MR-F-DOA4

I/O module for DIN rail mounting TH35 with 4 relay outputs for the control of e.g. lamps, blinds, contactors, motors, etc.

- > Inputs: -
- > Outputs: 4 x Digital outputs
- > Protocol: Modbus RTU, RS485

MR-DOA4  
P/N 110836132101  
 MR-F-DOA4  
P/N 11083613210170



#### MR-TO4 MR-F-TO4

I/O module for DIN rail mounting TH35 with 4 Triac outputs and manual operation for the control of e.g. PWM actuators, HVAC valves, contactors, etc.

- > Inputs: -
- > Outputs: 4 x Digital outputs
- > Protocol: Modbus RTU, RS485

MR-TO4  
P/N 11083013  
 MR-F-TO4  
P/N 1108301370

### Analog output



#### MR-AOP4 MR-F-AOP4

I/O module for DIN rail mounting TH35 with 4 voltage outputs and manual operation for the control of e.g. ventilation and mixing flaps, valve positions, etc.

- > Inputs: -
- > Outputs: 4 x Analog outputs
- > Protocol: Modbus RTU, RS485

MR-AOP4  
P/N 1108371302  
 MR-F-AOP4  
P/N 110837130270



## Modbus RTU I/Os

Analog output


Mixed modules




### MR-AO4 MR-F-AO4

I/O module for DIN rail mounting TH35 with 4 analog voltage outputs for the control of e.g. ventilation and mixing flaps, valve positions, etc.

- > Inputs: -
- > Outputs: 4 x Analog outputs
- > Protocol: Modbus RTU, RS485

 MR-AO4  
P/N 1108351302

 MR-F-AO4  
P/N 110835130270



### MR-Multi-I/O

Multi-I/O for DIN rail mounting TH35 with 29 digital and analog inputs/outputs for connecting sensors and actuators to a Modbus controller.

- > Inputs: 12 x digital, 7 x analog
- > Outputs: 8 x digital, 2 x analog
- > Protocol: Modbus RTU, RS485

 MR-Multi-I/O  
P/N 11084313



### MR-AIO4/2-IP65

I/O module in IP65 housing with 4 configurable resistance range or voltage inputs and 2 analog outputs e.g. for temperature detection and control of mixing flaps, etc.

- > Inputs: 4 x Analog inputs
- > Outputs: 2 x Analog outputs
- > Protocol: Modbus RTU, RS485


 MR-AIO4/2-IP65  
P/N 11084213IP





### MR-DIO4/2 MR-F-DIO4/2

I/O module for DIN rail mounting TH35 with 4 digital inputs and 2 relay outputs for e.g. detection of window contacts and control of blinds, etc.

- > Inputs: 4 x Digital inputs
- > Outputs: 2 x Digital outputs
- > Protocol: Modbus RTU, RS485

 MR-DIO4/2 (Relais CO)  
P/N 1108331326

 MR-DIO4/2 (Relais NO)  
P/N 110833132601

 MR-F-DIO4/2 (Relais CO)  
P/N 110833132670

## Modbus RTU I/Os

Mixed modules



### MR-DIO4/2-IP65

I/O module in IP65 surface mount housing with 4 digital inputs and 2 relay outputs for e.g. detection of window contacts and control of blinds etc. Operating voltage 24 V AC/DC

- > Inputs: 4 x Digital inputs
- > Outputs: Digital outputs
- > Protocol: Modbus RTU, RS485


 MR-DIO4/2-IP65  
P/N 1108331326IP



### MR-DIO4/2-IP65 230 V

I/O module in IP65 surface mount housing with 4 digital inputs and 2 relay outputs for e.g. detection of window contacts and control of blinds etc. Operating voltage 230 V AC

- > Inputs: 4 x Digital inputs
- > Outputs: 2 x Digital outputs
- > Protocol: Modbus RTU, RS485


 MR-DIO4/2-IP65 230 V  
P/N 1108330526IP




### MR-TP MR-F-TP

I/O three-point module for DIN rail mounting TH35 with 6 digital inputs and 2 two-stage relays and 2 digital outputs with manual operation for e.g. blind controls, etc.

- > Inputs: 6 x Digital inputs
- > Outputs: 4 x Digital outputs
- > Protocol: Modbus RTU, RS485

 MR-TP  
P/N 11083813


 MR-F-TP  
P/N 1108381370




### MR-LD6 MR-F-LD6

I/O module for DIN rail mounting TH35 with 6 analog inputs and 2 relay outputs for monitoring leaks and/or fill levels, as well as control of e.g. valves or signal transmitters etc.

- > Inputs: 6 x Analog inputs
- > Outputs: 2 x Digital outputs
- > Protocol: Modbus RTU, RS485

 MR-LD6  
P/N 11084413

 MR-F-LD6  
P/N 1108441370



# Modbus RTU I/Os

Modbus Gateway

Accessories



## Modbus TCP Gateway

Modbus RTU/TCP Gateway with integrated web server for bi-directional data exchange between Modbus RTU field devices and a Modbus Master. For DIN rail mounting TH35.

- > Galvanic separation: 1.5 kV
- > Network connection: 1 x Ethernet-Port (RJ45)
- > Protocol: Modbus RTU, Modbus TCP



## Submersible Electrode TE2

Single-pole dipped electrode made of stainless steel for the detection of electrically conductive liquids, e.g. in water supply and pumping stations. For connection to the level-monitors ENW-E12 and MR-LD6.

- > Electrode material: Stainless steel
- > Housing: Polypropylene
- > Length: 115 mm



## Leakage sensor LKS-ZD

LKS-ZD for leak monitors MR-LD6 and ENW-E12. In case of leakages such as pipe breaks, electrically conductive liquids are detected by the electrodes.

- > Material: Stainless steel
- > Housing: Polycarbonate with mounting opening
- > Application: ENW-E12, MR-LD6 (with wire break monitoring)



## USB/RS485 converter

The USB/RS485 Converter is an adapter cable for connecting serial UART interfaces with USB. In combination with the MR-CT configuration software, the Modbus RTU devices can be configured with a PC.

- > Cable end 1: USB connector
- > Cable end 2: Free wires, tin-plated
- > Cable length: 1.8 m

Modbus TCP Gateway  
P/N 11083001

Submersible Electrode TE2  
P/N 11032401

Leakage sensor LKS-ZD  
P/N 11032902

USB/RS485 converter  
P/N 11080101

# Modbus RTU I/Os

Software



## Modbus configuration tool

Configuration and test program for the MC Modbus RTU MR-I I/Os. The function includes the search for all devices, selected address areas, setting the transmission rate and parity, as well as reading and controlling the I/Os.

- > Function: configuration tool, Change transfer rate and Parity, control and reading of the I/Os



## BACnet MS/TP I/Os

### Digital input



#### BMT-DI4 BMT-F-DI4

I/O module for DIN rail mounting TH35 with 4 digital inputs for detection of potential-free switch states, e.g. electrical limit switches on ventilation flaps, etc.

- > Inputs: 4 x Digital inputs
- > Outputs: -
- > Protocol: BACnet MS/TP, RS485



#### BMT-DI4-IP65

I/O module in IP65 surface mount housing with 4 digital inputs for detection of potential-free switch states, e.g. electrical limit switches on ventilation flaps, etc.

- > Inputs: 4 x Digital inputs
- > Outputs: -
- > Protocol: BACnet MS/TP, RS485



#### BMT-DI10 BMT-F-DI10

I/O module for DIN rail mounting with 10 digital inputs for detection of potential-free switch states, e.g. electrical limit switches on ventilation flaps, etc.



- > Inputs: 10 x Digital inputs
- > Outputs: -
- > Protocol: BACnet MS/TP, RS485





#### BMT-SI4 BMT-F-SI4



I/O module for DIN rail mounting TH35 with 4 S0 inputs according to DIN EN 62053-31 class A for counting S0 counter pulses, e.g. in energy controlling systems etc.

- > Inputs: 4 x Digital inputs
- > Outputs: -
- > Protocol: BACnet MS/TP, RS485

 BMT-DI4  
P/N 1108841319  
 BMT-F-DI4  
P/N 110884131970

 BMT-DI4-IP65  
P/N 1108841319P

 BMT-DI10  
P/N 1108811319  
 BMT-F-DI10  
P/N 110881131970

 BMT-SI4  
P/N 11088913  
 BMT-F-SI4  
P/N 1108891370

## BACnet MS/TP I/Os

### Analog input



#### BMT-AI8 BMT-F-AI8

I/O module for DIN rail mounting TH35 with 8 configurable resistance range or voltage inputs for the detection of e.g. passive and active temperature sensors, etc.

- > Inputs: 8 x Analog inputs
- > Outputs: -
- > Protocol: BACnet MS/TP, RS485



#### BMT-CI4 BMT-F-CI4

I/O module for DIN rail mounting TH35 with 4 analog voltage or current inputs for the detection of e.g. electrical ventilation and mixing flaps, etc.

- > Inputs: 4 x Analog inputs
- > Outputs: -
- > Protocol: BACnet MS/TP, RS485



#### BMT-DO4 BMT-F-DO4

I/O module for DIN rail mounting with 4 relay outputs and manual operation for the control of e.g. lamps, blinds, contactors, motors, etc.



- > Inputs: -
- > Outputs: 4 x Digital outputs
- > Protocol: BACnet MS/TP, RS485







#### BMT-TO4 BMT-F-TO4



I/O module for DIN rail mounting TH35 with 4 Triac outputs and manual operation for the control of e.g. PWM actuators, HVAC valves, contactors, etc.

- > Inputs: -
- > Outputs: 4 x Digital outputs
- > Protocol: BACnet MS/TP, RS485

 BMT-AI8  
P/N 11088213  
 BMT-F-AI8  
P/N 1108821370

 BMT-CI4  
P/N 1108901332  
 BMT-F-CI4  
P/N 110890133270

 BMT-DO4  
P/N 1108861321  
 BMT-F-DO4  
P/N 110886132170

 BMT-TO4  
P/N 11088013  
 BMT-F-TO4  
P/N 1108801370



## BACnet MS/TP I/Os

### Analog output



#### BMT-AOP4 BMT-F-AOP4

I/O module for DIN rail mounting TH35 with 4 voltage outputs and manual operation for the control of e.g. ventilation and mixing flaps, valve positions, etc.

- > Inputs: -
- > Outputs: 4 x Analog outputs
- > Protocol: BACnet MS/TP, RS485



#### BMT-AO4 BMT-F-AO4

I/O module for DIN rail mounting TH35 with 4 analog voltage outputs for the control of e.g. ventilation and mixing flaps, valve positions, etc.

- > Inputs: -
- > Outputs: 4 x Analog outputs
- > Protocol: BACnet MS/TP, RS485

### Mixed modules



#### BMT-Multi-I/O

Multi-I/O for DIN rail mounting TH35 with 29 digital and analog inputs/ outputs for connecting sensors and actuators to a BACnet controller.

- > Inputs: 12 x digital, 7 x analog
- > Outputs: 8 x digital, 2 x analog
- > Protocol: BACnet MS/TP, RS485



#### BMT-DIO4/2 BMT-F-DIO4/2

I/O module for DIN rail mounting TH35 with 4 digital inputs and 2 relay outputs with manual operation for e.g. detection of window contacts and control of blinds, fire safety flaps, etc.

- > Inputs: 4 x Digital inputs
- > Outputs: 2 x Digital outputs
- > Protocol: BACnet MS/TP, RS485

BMT-AOP4  
P/N 1108871302  
 BMT-F-AOP4  
P/N 110887130270

BMT-AO4  
P/N 1108851302  
 BMT-F-AO4  
P/N 110885130270

BMT-Multi-I/O  
P/N 11089313

BMT-DIO4/2  
P/N 1108831326  
 BMT-F-DIO4/2  
P/N 110883132670

## BACnet MS/TP I/Os

### Mixed modules



#### BMT-DIO4/2-IP65

I/O module in IP65 surface mount housing with 4 digital inputs and 2 relay outputs for e.g. detection of window contacts and control of blinds, etc. Operating voltage 24 V AC/DC

- > Inputs: 4 x Digital inputs
- > Outputs: 2 x Digital outputs
- > Protocol: BACnet MS/TP, RS485



#### BMT-DIO4/2-IP 230 V

I/O three-point module for DIN rail mounting TH35 with 6 digital inputs and 2 two-stage relays and 2 digital outputs with manual operation for e.g. blind controls, etc. Operating voltage 230 V AC

- > Inputs: 4 x Digital inputs
- > Outputs: 2 x Digital outputs
- > Protocol: BACnet MS/TP, RS485



#### BMT-TP BMT-F-TP

I/O three-point module for DIN rail mounting TH35 with 6 digital inputs and 2 two-stage relays and 2 digital outputs with manual operation for e.g. blind controls, etc.

- > Inputs: 6 x Digital inputs
- > Outputs: 4 x Digital outputs
- > Protocol: BACnet MS/TP, RS485



### BACnet router

#### BACnet IP / BACnet MS/TP router

Router with integrated web server for independent routing between BACnet/IP and BACnet MS/TP networks. Allows the integrator, e.g. METZ CONNECT, to integrate BMT-I/O modules into an IP network.

- > Ethernet interface: RJ45, 10/100 Mbps
- > MS/TP communication: RS485
- > Protocol: BACnet MS/TP, BACnet/IP

BMT-DIO4/2-IP65  
P/N 110883132616

BMT-DIO4/2-IP 230 V  
P/N 110883052616

BMT-TP  
P/N 11088813  
 BMT-F-TP  
P/N 1108881370

BACnet IP / BACnet MS/TP Router  
P/N 11080001



## LON FT I/Os

### Digital input



#### LF-DI4 LF-F-DI4

I/O module for DIN rail mounting TH35 with 4 digital inputs for detection of potential-free switch states, e.g. electrical limit switches on ventilation flaps, etc.

- > Inputs: 4 x Digital inputs
- > Outputs: -
- > Protocol: LON FT/TP-10

LF-DI4  
P/N 1108501319  
 LF-F-DI4  
P/N 110850131970



#### LF-DI10 LF-D-DI10

I/O module for DIN rail mounting TH35 with 10 digital inputs for detection of potential-free switch states, e.g. electrical limit switches on ventilation flaps, etc.

- > Inputs: 10 x Digital inputs
- > Outputs: -
- > Protocol: LON FT/TP-10

LF-DI10  
P/N 1108511319  
 LF-D-DI10  
P/N 110851131970



#### LF-DI10-IP65

I/O module in IP65 surface mount housing with 10 digital inputs for detection of potential-free switch states, e.g. electrical limit switches on ventilation flaps, etc.

- > Inputs: 10 x Digital inputs
- > Outputs: -
- > Protocol: LON FT/TP-10

LF-DI10-IP65  
P/N 1108511319IP



#### LF-DI230 LF-F-DI230

I/O module for DIN rail mounting TH35 with 4 digital voltage inputs for detection of 230 V AC switch states, e.g. switches or buttons for light control, etc.

- > Inputs: 4 x Digital inputs
- > Outputs: -
- > Protocol: LON FT/TP-10

LF-DI230  
P/N 11086313  
 LF-F-DI230  
P/N 1108631370

## LON FT I/Os

### Digital input



#### LF-SI4 LF-F-SI4

I/O module for DIN rail mounting TH35 with 4 S0 inputs according to DIN EN 62053-31 class A for counting S0 counter pulses, e.g. in energy controlling systems etc.

- > Inputs: 4 x Digital inputs
- > Outputs: -
- > Protocol: LON FT/TP-10

LF-SI4  
P/N 11085813  
 LF-F-SI4  
P/N 1108581370

### Analog input



#### LF-AI8 LF-F-AI8

I/O module for DIN rail mounting TH35 with 8 configurable resistance range or voltage inputs for the detection of e.g. passive and active temperature sensors, etc.

- > Inputs: 8 x Analog inputs
- > Outputs: -
- > Protocol: LON FT/TP-10

LF-AI8  
P/N 11085313  
 LF-F-AI8  
P/N 1108531370



#### LF-CI4 LF-F-CI4

I/O module for DIN rail mounting TH35 with 4 analog voltage or current inputs for the detection of e.g. electrical ventilation and mixing flaps, etc.

- > Inputs: 4 x Analog inputs
- > Outputs: -
- > Protocol: LON FT/TP-10

LF-CI4  
P/N 1108601332  
 LF-F-CI4  
P/N 110860133270

### Digital output



#### LF-DO4 LF-F-DO4

I/O module for DIN rail mounting with 4 relay outputs and manual operation for the control of e.g. lamps, blinds, contactors, motors, etc.

- > Inputs: -
- > Outputs: 4 x Digital outputs
- > Protocol: LON FT/TP-10

LF-DO4  
P/N 1108521321  
 LF-F-DO4  
P/N 110852132170





## LON FT I/Os

### Digital output



**LF-DO4-IP65**

I/O module in IP65 surface mount housing with 4 relay outputs and manual operation for the control of e.g. lamps, blinds, contactors, motors, etc.

- > Inputs: -
- > Outputs: 4 x Digital outputs
- > Protocol: LON FT/TP-10



**LF-TO4**

I/O module for DIN rail mounting TH35 with 4 Triac outputs and manual operation for the control of e.g. PWM actuators, HVAC valves, contactors, etc.

- > Inputs: -
- > Outputs: 4 x Digital outputs
- > Protocol: LON FT/TP-10

### Analog output



**LF-AOP4  
LF-F-AOP4**

I/O module for DIN rail mounting TH35 with 4 voltage outputs and manual operation for the control of e.g. ventilation and mixing flaps, valve positions, etc.

- > Inputs: -
- > Outputs: 4 x Analog outputs
- > Protocol: LON FT/TP-10



**LF-AO4-IP65**

I/O module for IP65 surface mount housing with 4 analog voltage outputs for the control of e.g. ventilation and mixing flaps, valve positions, etc.

- > Inputs: -
- > Outputs: 4 x Analog outputs
- > Protocol: LON FT/TP-10

LF-DO4-IP65  
P/N 1108521321IP

LF-TO4  
P/N 11086213

LF-AOP4  
P/N 11085413  
 LF-F-AOP4  
P/N 1108541370

LF-AO4-IP65  
P/N 11085413IP

## LON FT I/Os

### Mixed modules



**LF-AM2/4**

I/O module for DIN rail mounting TH35 with voltage inputs, 2 voltage and 2 PhotoMos outputs e.g. for the control of ventilation flaps and alarming at set threshold value, etc.

- > Inputs: 2 x Analog inputs
- > Outputs: 2 x Digital and 2 x analog outputs
- > Protocol: LON FT/TP-10



**LF-TI-IP65**

I/O module in IP65 surface mount housing with 4 resistance/voltage inputs and 4 Triac outputs, e.g. for detection of temperatures or voltages and for switching thermal valve drives, etc.

- > Inputs: 4 x Analog inputs
- > Outputs: 4 x Digital outputs
- > Protocol: LON FT/TP-10



**LF-DM4/4**

I/O module for DIN rail mounting TH35 with 4 digital inputs, 2 relay and 2 PhotoMOS outputs e.g. for the detection of switch states and switching of ventilation and mixing flaps, etc.

- > Inputs: 4 x Digital inputs
- > Outputs: 4 x Digital outputs
- > Protocol: LON FT/TP-10



**LF-TP  
LF-F-TP**

I/O three-point module for DIN rail mounting TH35 with 6 digital inputs and 2 two-stage relays and 2 PhotoMos outputs with manual operation for e.g. blind controls, etc.

- > Inputs: 6 x Digital inputs
- > Outputs: 4 x Digital outputs
- > Protocol: LON FT/TP-10

LF-AM2/4  
P/N 11085713

LF-TI-IP65  
P/N 11086105IP

LF-DM4/4  
P/N 1108561326

LF-TP  
P/N 11085913  
 LF-F-TP  
P/N 1108591370



## LON FT I/Os


Mixed modules




### LF-DIO4/2 LF-F-DIO4/2

I/O module for DIN rail mounting TH35 with 4 digital inputs and 2 relay outputs with manual operation for e.g. detection of window contacts and control of blinds, fire safety flaps, etc.

- > Inputs: 4 x Digital inputs
- > Outputs: 2 x Digital outputs
- > Protocol: LON FT/TP-10

 LF-DIO4/2  
P/N 1108551326

 LF-F-DIO4/2  
P/N 110855132670



### LF-DIO4/2-IP65

I/O module in IP65 surface mount housing with 4 digital inputs and 2 relay outputs with manual operation for e.g. detection of window contacts and control of blinds, fire safety flaps, etc.

- > Inputs: 4 x Digital inputs
- > Outputs: 2 x Digital outputs
- > Protocol: LON FT/TP-10

 LF-DIO4/2-IP65  
P/N 1108551326IP

Interface module



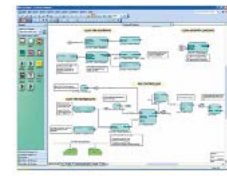
### LF-FAM

Connection module for DIN rail mounting TH35 for bus connection, supply voltage and bus termination. Wiring aid for power supply and bus connection.

- > Bus termination network topology: 52.3 Ohm (R/2)
- > Bus termination line topology: 105 Ohm R
- > Connection type: RJ45 and connection terminal block

 LF-FAM  
P/N 11087913

Software



### Echelon IzoT® CT 4.1 Standard

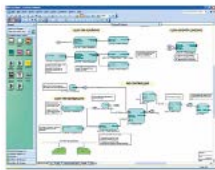
IzoT CT (Commissioning Tool) standard, max. number of networks limited to 5. (Echelon/Adesto Model-No.: 38100-401)

- > Function: Open LNS Server, Visio 2016 Standard, DVD

Echelon IzoT® CT 4.1 Standard  
P/N 110208

## LON FT I/Os

Software



### Echelon IzoT® CT 4.1 Professional

IzoT CT (Commissioning Tool) Professional (Echelon/Adesto Model-No.: 38000-401)

- > Function: Open LNS Server, Visio 2016 Professional, DVD

Echelon IzoT® CT 4.1 Professional  
P/N 110209

Interface/Adapter



### Echelon U10 USB Network Interface

High-performance LONWORKS interface for USB-enabled PCs and controllers. Connects directly with a TP/FT10 Free Topology Twisted Pair (ANSI/CEA-709.3) LONWORKS Channel. (Echelon/Adesto Model-No.: 75010R)

- > Function: USB to TP/FT10 adapter, Open LNS compatible, LonScanner TMP Protocol Analyzer compatible

Echelon U10 USB Network Interface  
P/N 110214



## CAN I/Os

Digital input | Analog input



**FDE 4**

I/O module for DIN rail mounting TH35 with 4 digital inputs e.g. for detection of switch states of limit switches, etc. FDE 4 and FRAS 4/21 with the same address react autonomously in a network.

- > Inputs: 4 x Digital inputs
- > Outputs: -
- > Protocol: CAN, 2.0B passiv



**FAE 4**

I/O module for DIN rail mounting TH35 with 4 resistance range or voltage inputs e.g. for detection of temperatures and valve positions, etc. FAE 4 and FAA 4 with the same address react autonomously in a network.

- > Inputs: 4 x Analog inputs
- > Outputs: -
- > Protocol: CAN, 2.0B passiv

Digital output | Analog output



**FRAS 4/21**

I/O module for DIN rail mounting TH35 with 4 relay inputs e.g. for switching lamps, contactors, blinds, etc. FRAS 4/21 and FDE 4 with the same address react autonomously in a network.

- > Inputs: -
- > Outputs: 4 x Digital outputs
- > Protocol: CAN, 2.0B passiv



**FAA 4**

I/O module for DIN rail mounting TH35 with 4 voltage outputs for e.g. control of ventilation and mixing flaps, valve positions, etc. FAA 4 and FAE 4 with the same address react autonomously in a network.

- > Inputs: -
- > Outputs: 4 x Analog outputs

 **FDE 4**  
P/N 1105751319

 **FAE 4**  
P/N 1105741306

 **FRAS 4/21**  
P/N 1105701321

 **FAA 4**  
P/N 1105731302

## Accessories

Connection aids



**Jumper plug for I/O components**

Jumper for time-saving and tool-free connection of various I/O components. Connects BUS and supply voltage when I/O modules are mounted side by side.

- > pluggable, 4-pole
- > Centerline: 3.5 mm
- > Material: Contacts: CuZn, housing: PA



**Terminal block for I/O components**

Pluggable screw type terminal block for feeding the BUS and power supply of I/O components for connection cross sections of 1.5 mm<sup>2</sup> (single-wire) or 0.75 mm<sup>2</sup> (fine-wire).

- > pluggable screw type terminal block, 4-pole
- > Centerline: 3.5 mm
- > Material: Terminal body: CuZn, housing: PA

Jumper plug for I/O components  
P/N 31135104

Terminal block for I/O components  
P/N 110369

Power supplies



**NG4**

Power supply unit for DIN rail mounting TH35 with 24 V DC secondary voltage and 16 Watt power for the power supply of the METZ CONNECT I/O components for stacking via jumper plug.

- > Voltage input range: 110 - 240 V AC
- > Voltage output: 24 V DC (SELV)
- > Power: 16 Watt

 **NG4**  
P/N 110561



# Switches



## **METZ CONNECT – your partner for building automation**

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

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

Contents | Switches

1	Industry Switches   Ethernet.....	30
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# Industry Switches

## Ethernet



### MOXA EtherDevice Switch EDS 205

Industrial unmanaged 5 Port 10/100M auto-sensing Ethernet Switch for DIN rail mounting TH35.

- > 5 Ports 10/100 Base T(X) RJ45
- > Store and Forward Switching Mode
- > Voltage supply: DC 12 bis 48 V

MOXA EtherDevice Switch EDS 205  
P/N [110195](#)



### MOXA EtherDevice Switch EDS 208

Industrial unmanaged 8 Port 10/100M auto-sensing Ethernet Switch for DIN rail mounting TH35.

- > 8 Ports 10/100 Base T(X) RJ45
- > Store and Forward Switching Mode
- > Voltage supply: DC 12 bis 48 V

MOXA EtherDevice Switch EDS 208  
P/N [110196](#)



### MOXA EtherDevice Switch EDS 208-M-SC

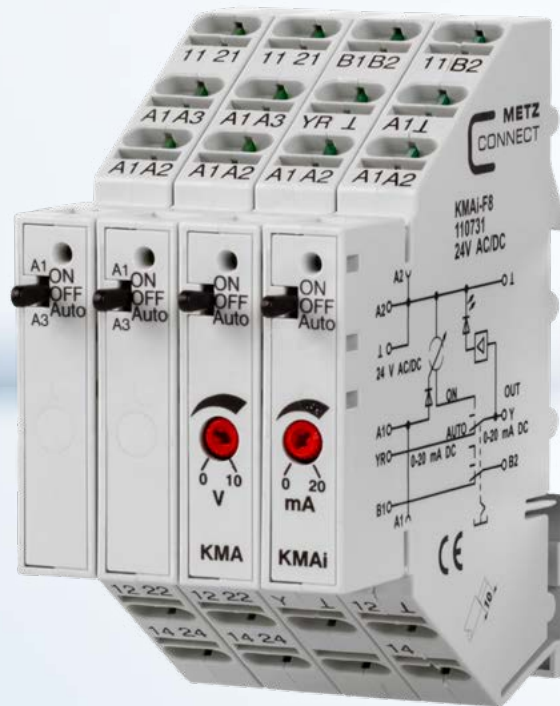
Industrial unmanaged 8 port with 7x 10/100M auto-sensing and 1 x 100BaseFX Multi-mode SC-connector Ethernet Switch for DIN rail mounting TH35.

- > 7 Ports 10/100 Base T(X) RJ45
- > 1 Port 100 Base F(X) SC
- > Voltage supply: DC 12 bis 48 V

MOXA EtherDevice Switch EDS 208-M-SC  
P/N [11019601](#)

# Notes

# Control cabinet components



## Interface modules

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

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



## Contents | Control cabinet components

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### Relays for measuring and monitoring purposes

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

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

### Switching, controlling, visualizing – Electronic time relays

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

## Notes

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## Interface modules

### Electromechanical coupling modules



#### KRA-F8/21

Coupling module for safe potential separation. Compact design with 11.2 mm construction width.

- > Operating voltage: 24 V AC/DC
- > Continuous current: 8 A
- > Contacts: 1 changeover contact (SPDT)

 KRA-F8/21  
P/N 11070013



#### KRA-S-F8/21

Coupling module for safe potential separation. Compact design with 11.2 mm construction width. With manual operation level.

- > Operating voltage: 24 V AC/DC
- > Continuous current: 8 A
- > Contacts: 1 changeover contact (SPDT)

 KRA-S-F8/21  
P/N 11070613



#### KRA-SR-F10/21

Coupling module for safe potential separation. Compact design with 11.2 mm construction width. With manual operation level and auto feedback.

- > Operating voltage: 24 V AC/DC
- > Continuous current: 8 A
- > Contacts: 1 changeover contact (SPDT)

 KRA-SR-F10/21  
P/N 11070813



#### KRA-SRA-F10/21

Coupling module for safe potential separation. Compact design with 11.2 mm construction width. With manual operation level, auto feedback and status display.

- > Operating voltage: 24 V AC/DC
- > Continuous current: 8 A
- > Contacts: 1 changeover contact (SPDT)

 KRA-SRA-F10/21  
P/N 11071013

## Interface modules

### Electromechanical coupling modules



#### KRA-F10/21-21

Coupling module for safe potential separation. Compact design with 11.2 mm construction width.

- > Operating voltage: 24 V AC/DC
- > Continuous current: 3 A
- > Contacts: 2 changeover contacts (DPDT)

 KRA-F10/21-21  
P/N 11070213



#### KRA-S-F10/21-21

Coupling module for safe potential separation. Compact design with 11.2 mm construction width. With manual operation level.

- > Operating voltage: 24 V AC/DC
- > Continuous current: 3 A
- > Contacts: 2 changeover contacts (DPDT)


 KRA-S-F10/21-21  
P/N 11070713



#### KRA-M4/1

Coupling module for safe potential separation. Compact design with 11.2 mm construction width.

- > Operating voltage: see variants
- > Continuous current: 6 A
- > Contacts: 1 normally open contact (SPST-NO)


 KRA-M4/1  
24 V AC/DC P/N 11061313  
24 V DC P/N 11061325  
230 V AC P/N 11061305



#### KRA-M6/21

Coupling module for safe potential separation. Compact design with 11.2 mm construction width.

- > Operating voltage: see variants
- > Continuous current: 6 A
- > Contacts: 1 changeover contact (SPDT)

 KRA-M6/21  
12 V AC/DC P/N 11061550  
24 V AC/DC P/N 11061513  
24 V DC P/N 11061525  
230 V AC P/N 11061505



## Interface modules

Electromechanical coupling modules



**KRA-S-M6/21**

Coupling module for safe potential separation. Compact design with 11.2 mm construction width. With manual operation level.

- > Operating voltage: 24 V AC/DC
- > Continuous current: 6 A
- > Contacts: 1 changeover contact (SPDT)

 **KRA-S-M6/21**  
P/N 11061213



**KRA-SR-M8/21**

Coupling module for safe potential separation. Compact design with 11.2 mm construction width. With manual operation level and auto feedback.

- > Operating voltage: 24 V AC/DC
- > Continuous current: 6 A
- > Contacts: 1 changeover contact (SPDT)


 **KRA-SR-M8/21**  
P/N 11064513



**KRA-M8/21-21**

Coupling module for safe potential separation. Compact design with 11.2 mm construction width.

- > Operating voltage: see variants
- > Continuous current: 4 A
- > Contacts: 2 changeover contacts (DPDT)

 **KRA-M8/21-21**  
12 V AC/DC P/N 11061950  
24 V AC/DC P/N 11061913  
24 V DC P/N 11061925  
230 V AC P/N 11061905



**KRA-S12/21-21-21**

Coupling module for safe potential separation.

- > Operating voltage: 24 V AC/DC
- > Continuous current: 6 A
- > Contacts: 3 changeover contacts (3PDT)

 **KRA-S12/21-21-21**  
P/N 11060913

## Interface modules


Relay modules



**RM21**

Relay module for heavy loads with pluggable relay, 2-level relay socket, labeling field, retaining bracket and LED module.

- > Operating voltage: see variants
- > Continuous current: 16 A
- > Contacts: 1 changeover contact (SPDT)


 **RM21**  
24 V DC P/N 11051125  
24 V AC P/N 11051110  
230 V AC P/N 11051105



**RM3-1W**

Relay module for heavy loads with pluggable relay, 3-level relay socket, labeling field, retaining bracket and LED module.

- > Operating voltage: see variants
- > Continuous current: 16 A
- > Contacts: 1 changeover contact (SPDT)

 **RM3-1W**  
24 V DC P/N 11051325  
24 V AC P/N 11051310  
230 V AC P/N 11051305



**RM1-I 24 V DC**

Inrush relay for heavy loads and high switch-on currents with pluggable relay, 2-level relay socket, labeling field, retaining bracket and LED module.

- > Operating voltage: 24 V DC
- > Continuous current: 16 A / 165 A
- > Contacts: 1 normally open contact (SPST-NO)


 **RM1-I 24 V DC**  
P/N 11051225



**RM21-21**

Relay module with pluggable relay, 2-level relay socket, labeling field, retaining bracket and LED module.

- > Operating voltage: see variants
- > Continuous current: 8 A
- > Contacts: 2 changeover contact (DPDT)

 **RM21-21**  
24 V DC P/N 11050725  
24 V AC P/N 11050710  
230 V AC P/N 11050705



## Interface modules

### Relay modules



#### RM3-2W

Relay module with pluggable relay, 3-level relay socket, labeling field, retaining bracket and LED module.

- > Operating voltage: see variants
- > Continuous current: 8 A
- > Contacts: 2 changeover contacts (DPDT)

RM3-2W

24 V DC P/N 11051025

24 V AC P/N 11051010

230 V AC P/N 11051005



### Coupling modules semi-conductor



#### KRE-M4/1 DC

Transistor coupler for switching DC loads.

- > Operating voltage: 24 V DC
- > Switching voltage: 4 - 48 V DC
- > Continuous current: 0,8 A

KRE-M4/1 DC

P/N 1106302517



#### KRE-M4/1 AC

Triac coupler for switching AC loads.

- > Operating voltage: 24 V DC
- > Switching voltage: 26 - 250 V DC
- > Continuous current: 0,8 A

KRE-M4/1 AC

P/N 1106312518



### Analog data encoder



#### KMA-F8 KMA-R-F8

Analog value transmitter for manual variable adjustment with manual operation level, front side potentiometer, LED display and auto feedback.

- > Operating voltage: 24 V AC/DC
- > Input / output signal: 0 - 10 V DC
- > Function: Protected against external voltage (KMA-R-F8)

KMA-F8

P/N 110730

KMA-R-F8

P/N 11073001



## Interface modules

### Analog data encoder



#### KMAi-F8

Analog value transmitter for manual variable adjustment with manual operation level, front side potentiometer, LED display and auto feedback.

- > Operating voltage: 24 V AC/DC
- > Input / output signal: 0 - 20 mA DC

KMAi-F8

P/N 110731



#### KMA-E08 KMA-R-E08

Analog value transmitter for manual variable adjustment with manual operation level, front side potentiometer, LED display and auto feedback.

- > Operating voltage: 24 V AC/DC
- > Input / output signal: 0 - 10 V DC
- > Function: Protected against external voltage (KMA-R-E08)

KMA-E08

P/N 110660

KMA-R-E08

P/N 11066001



#### KMAi-E08

Analog value transmitter for manual variable adjustment with manual operation level, front side potentiometer, LED display and auto feedback.

- > Operating voltage: 24 V AC/DC
- > Input / output signal: 0 - 20 mA DC

KMAi-E08

P/N 110659



### Potential distributor



#### PV10 F10

Potential distributor for potential distribution of up to 10 lines on the DIN rail. With testing contact for each terminal block.

- > Operating voltage: 250 V AC/DC
- > Total current: 16 A AC/DC
- > Dimensions: 11.2 x 87.5 x 60 mm

PV10 F10

P/N 110720





## Interface modules

### Threshold control



#### KRS-E06

Threshold value switch with permanently set switch-on threshold.

- > Operating voltage: 24 V AC/DC
- > Threshold voltage: 3,0 V DC
- > Contacts: 1 changeover contact (SPST)



 KRS-E06  
P/N 110655



#### KRS-E06 H KRS-F-E06

Threshold value switch with permanently set switch-on threshold. With manual operation level.

- > Operating voltage: 24 V AC/DC
- > Threshold voltage: 3,0 V DC
- > Contacts: 1 changeover contact (SPST)



 KRS-E06 H  
P/N 110661  
 KRS-F-E06  
P/N 11066170



#### KRS-E08 HR KRS-F-E08

Threshold value switch with permanently set switch-on threshold. With manual operation level and auto feedback.

- > Operating voltage: 24 V AC/DC
- > Threshold voltage: 3,0 V DC
- > Contacts: 1 changeover contact (SPST)



 KRS-E08 HR  
P/N 110667  
 KRS-F-E08  
P/N 11066770



#### KRS-E08 HRP KRS-F-E08 HRP

Threshold value switch with adjustable switch-on threshold and hysteresis. With manual operation level and auto feedback.

- > Operating voltage: 24 V AC/DC
- > Threshold voltage: selectable 1-10 V DC
- > Contacts: 1 changeover contact (SPST)

 KRS-E08 HRP  
P/N 110666  
 KRS-F-E08 HRP  
P/N 11066670

## Interface modules



### Threshold control



#### KRS-E08 3 KRS-F-E08 3

Two-stage threshold value switch with permanently set switch-on threshold.

- > Operating voltage: 24 V AC/DC
- > Threshold voltage: 0-10 V DC
- > Contacts: 1 changeover contact (SPST) with 0 position

 KRS-E08 3  
P/N 110673  
 KRS-F-E08 3  
P/N 11067370



#### KRS1-E08 HR3

Two-stage threshold value switch with permanently set switch-on threshold. With manual operation level and auto feedback.

- > Operating voltage: 24 V AC/DC
- > Threshold voltage: 0-10 V DC
- > Contacts: 2 changeover contact (DPST) with 0 position



 KRS1-E08 HR3  
P/N 110672



#### KRS-E08 HR3 KRS-F-E08 HR

Two-stage threshold value switch with permanently set switch-on threshold. With manual operation level and auto feedback.

- > Operating voltage: 24 V AC/DC
- > Threshold voltage: 0-10 V DC
- > Contacts: 1 changeover contact (SPST) with 0 position



 KRS-E08 HR3  
P/N 110665  
 KRS-F-E08 HR  
P/N 11066570



#### KRS-C12 3VHR KRS-F-C12 3VHR

Three-stage threshold value switch with permanently set switch-on threshold. With integrated time relay, manual operation level and auto feedback.

- > Operating voltage: 24 V AC/DC
- > Threshold voltage: 0-10 V DC
- > Contacts: 3 changeover contact (3PDT), automatic locking

 KRS-C12 3VHR  
P/N 11043413  
 KRS-F-C12 3VHR  
P/N 1104341370



## Interface modules

### Motor control



#### KRZ-E08 HR KRZ-E08 HR2

Coupling module for the two-stage and time-delayed switch-off of motor drives. With manual operation level and auto feedback.

- Operating voltage: 24 V AC/DC
- Contacts: 1 changeover contact (SPST)

KRZ-E08 HR (0-1-2)  
P/N 110668132722  
KRZ-E08 HR2 (1-0-2)  
P/N 110676132722



### Potential separator Signal separator



#### PT-C12 / PTi-C12 PT-F-C12

Potential separator / signal converter for separation of analog signals. With manual operation level and auto feedback.

- Operating voltage: 24 V AC/DC
- Input / output voltage: 0-10 V DC
- Input / output current: 0-20 mA DC

PT-C12 (Voltage adjustment)  
P/N 110501



PTi-C12 (Current adjustment)  
P/N 11050108



PT-F-C12 (Voltage adjustment)  
P/N 11050170



#### PT-C12 230 / PTi-C12 230 PT-F-C12 230

Potential separator / signal converter for separation of analog signals. With manual operation level and auto feedback.

- Operating voltage: 230 V AC
- Input / output voltage: 0-10 V DC
- Input / output current: 0-20 mA DC

PT-C12 230 (Voltage adjustment)  
P/N 110502



PTi-C12 230 (Current adjustment)  
P/N 11050208



PT-F-C12 230 (Voltage adjustment)  
P/N 11050270

### AD/DA converter



#### KAD-C12

Digital-analog converter for the conversion of contacts into an analog signal. With status display via LEDs.

- Operating voltage: 24 V AC/DC
- Sampling inputs: 0.5 V steps
- Output voltage: 0 - 7.5 V DC



KAD-C12  
P/N 110656

## Interface modules

### AD/DA converter



#### ADU-C12

Analog-to-digital converter for processing an analog input voltage into digital outputs. With status display via LEDs.

- Operating voltage: 24 V AC/DC
- Input voltage: 0 - 10 V DC
- Output voltage: up to 40 V AC/DC



ADU-C12  
P/N 11043513

### Pulse shaper Signal extender



#### RTM-C12

Time relay for extension of pulses. With adjustable pulse length of 0.15 - 3 s.

- Operating voltage: 24 V AC/DC
- Continuous current: 8 A
- Contacts: 2 changeover contacts (DPDT)



RTM-C12  
P/N 11027613



#### RTM-C12 230 V

Time relay for extension of pulses. With adjustable pulse length of 0.15 - 3 s.

- Operating voltage: 230 V AC
- Continuous current: 8 A
- Contacts: 2 changeover contacts (DPDT)



RTM-C12 230 V  
P/N 11027605

### Annunciator modules



#### SMM-E16

Group alarm module with 10 signal inputs and relay output for quick and easy display of fault messages.

- Operating voltage: see variants
- Continuous current: 4 A
- Contacts: 1 changeover contact (SPST)



SMM-E16 230 V AC  
P/N 110518  
SMM-E16 24 V AC/DC  
P/N 11051813





## Interface modules

### Annunciator modules



**LTM-E16**

Lamp test module for detection of single and collective messages as well as connection for lamp test for 7 lamps.

- > Voltage input: 250 V AC/DC
- > Cut-off current: 1000 V
- > Forward current: 1 A



**STM-C12**

Fault message module for switching on a fault signal, flashing signal and horn relay. Acknowledgeable horn output via built-in key or external signal.

- > Operating voltage: 24 V AC/DC, 230 V AC/DC
- > Continuous current: 4 A
- > Contacts: 3 relay outputs

### Diode modules



**KD-M8/4E**

Diode module as reverse polarity protection, decoupling and arc quenching with 4 single diodes, individually switchable.

- > Input voltage: 250 V AC/DC
- > Forward current: 1 A
- > Forward voltage: 1.1 V at 1 A



**KD-M8/7K**

Diode module for lamp testing with 7 diodes and common cathode.

- > Input voltage: 250 V AC/DC
- > Forward current: 1 A
- > Forward voltage: 1.1 V at 1 A

LTM-E16  
P/N 110280

STM-C12  
P/N 110520

KD-M8/4E  
P/N 110639

KD-M8/7K  
P/N 110641

## Interface modules

### Diode modules



**KD-M8/7A**

Diode module for lamp testing with 7 diodes and common anode.

- > Input voltage: 250 V AC/DC
- > Forward current: 1 A
- > Forward voltage: 1.1 V at 1 A



**KD-S12/11K**

Diode module for lamp testing with 11 diodes and common cathode.

- > Input voltage: 250 V AC/DC
- > Forward current: 1 A
- > Forward voltage: 1.1 V at 1 A



**KD-S12/11A**

Diode module for lamp testing with 11 diodes and common anode.

- > Input voltage: 250 V AC/DC
- > Forward current: 1 A
- > Forward voltage: 1.1 V at 1 A



**MC274-4W**

Compact, pluggable relay for industrial use with mechanical switch position indicator, manual test button and LED display.

- > Operating voltage: see variants
- > Continuous current: 7 A
- > Contacts: 4 changeover contacts (4DPST)

KD-M8/7A  
P/N 110640

KD-S12/11K  
P/N 110629

KD-S12/11A  
P/N 110628

MC274-4W  
230 V AC P/N 110017051407  
24 V AC P/N 110017101407  
24 V DC P/N 110017251407



## Interface modules

Industrial relays

Accessories



### Socket 14 poles

14-pole relay socket for industrial relays MC274 with integrated quick-release fastener for DIN rail and terminal designation EN 50022.

- > Relay socket: 3 floors
- > Nominal current: 10 A
- > Nominal voltage: 300 V AC



### Socket 14 poles for electronic modules

14-pole relay socket for industrial relays MC274 with integrated quick-release fastener for DIN rail and terminal designation EN 50022. With connection possibility for LED or RC modules.

- > Relay socket: 2 floors
- > Nominal current: 10 A
- > Nominal voltage: 300 V AC



### Socket with spring-clamp terminals

14-pole relay socket with spring terminals for industrial relays MC274 with integrated quick-release fastener for DIN rail and terminal designation EN 50022.

- > Relay socket: 3 floors
- > Nominal current: 10 A
- > Nominal voltage: 300 V AC



### Connecting bridge, 10 pole


Jumper for quick and easy connection of the terminals A1 and / or A2 of the coupling modules of the F8 and F10 series.

- > Rated voltage: 24 V AC/DC
- > Rated current: 2 A
- > Pole size: 10

 Socket 14 poles  
P/N 110175

 Socket 14 poles  
for electronic modules  
P/N 110178

 Socket with  
spring-clamp terminals  
P/N 110185

 Connecting bridge,  
10 pole  
P/N 110728

## Interface modules

Accessories



### Labeling plate Series KRA F8/F10

Label for equipment identification and plain text labeling of the coupling modules of the F8 and F10 series.



### Labeling plate Series KMA F8

Label plate for equipment identification and plain text labeling for the analog values KMA-F8.



### Connecting bridge Series KRA M4/M6/M8

10-pole jumper for quick and easy connection of the coupling modules of the M4/M6/M8 series.

- > Rated voltage: 250 V
- > Rated current: 10 A
- > Pole size: 10



### Labeling plate Series KRA M4/M6/M8

Label plate for the coupling modules KRA M4/M6/M8 series with switch.

 Labeling plate  
Series KRA F8/F10  
P/N 110729

 Labeling plate  
Series KMA F8  
P/N 110727

 Connecting bridge  
Series KRA M4/M6/M8  
P/N 850349-02

 Labeling plate  
Series KRA M4/M6/M8  
P/N 820234-01-9



## Interface modules

Accessories



### End mount for connecting bridge

Closure piece for placing on the ends of the jumper.

End mount for connecting bridge  
P/N [820165-2](#)



### RC module for industrial sockets

RC module for 230 V AC or 24 V AC for interference suppression for relay modules and 14-pole industrial socket.

RC module for industrial sockets  
24 V AC P/N [11017910](#)  
230 V AC P/N [11017905](#)



### Connecting bridge for industrial sockets

5-pole jumper for quick and easy connection of the terminals of the 14-pole industrial sockets.

- > Rated voltage: 250 V
- > Rated current: 10 A
- > Pole size: 5

Connecting bridge for industrial sockets  
P/N [850349-03](#)



### Holding bracket wire

Metal retaining bracket to secure the MC274 industrial relays in the relay socket.

Holding bracket wire  
P/N [817133](#)

## Interface modules

Accessories



### Holding bracket plastic

Plastic retaining bracket to secure the MC274 industrial relays in the relay socket.

Holding bracket plastic  
P/N [110189](#)

## Notes

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## Measuring and monitoring relays

Fan timer

Speed monitoring



LTRk-E12

Fan timer relay for control of 2-stage motors. Pick-up and switch-off delay are separately and continuously adjustable.

- > Continuous Current: 6A AC1 / 1.5 A AC3
- > Start-up delay: adjustable time of up to 30 s
- > Switch-off delay: adjustable time of up to 60 s

LTRk-E12  
24 V AC P/N 11028313  
230 V AC P/N 1102830530



DRIW-E16

Speed and V-belt monitor for monitoring rotational movements (under-speeds) on motor- or belt-driven shafts.

- > Max. monitoring range: 4200 pulses/min
- > Switch-off range: 120 pulses/min
- > Start-up bridging: 60 s

DRIW-E16  
24 V AC/DC P/N 1101501322  
230 V AC P/N 1101500522



Two-wire sensor

Two-wire sensor for speed and V-belt monitors with cylindrical, nickel-plated metal body with M18 thread and 2 flat nuts.

Two-wire sensor  
P/N 110149



Mounting bracket HWR

Retaining bracket for fixation of sensors with max. 18 mm diameter incl. auxiliary cam for shafts up to 45 mm diameter.

Mounting bracket HWR  
P/N 110146

## Measuring and monitoring relays

Speed monitoring

cosPhi monitoring

Motor protection monitoring



Mounting bracket HWF

Retaining bracket for fixation of sensors with max. 18 mm diameter on flat bars.

Mounting bracket HWF  
P/N 110151



CPW-E12

CosPhi monitor for detecting an underload with adjustable response value (cosPhi 0-0.97) and adjustable response time (1-100 s).

- > Operating voltage: 230 V AC
- > Frequency range: 2- 200 Hz
- > Input current: min. 0.2 A / max. 10 A

CPW-E12 1-10 A  
P/N 1102810520  
CPW-E12 0.2 - 2.5 A  
P/N 110281052013



TMR-E12  
without error memory

Thermistor relays as protection against thermal overload for motors. With thermistor connection (PTC).

- > Operating voltage: 230 V AC or 24 V AC/DC
- > On / Off resistance: 1.8/3.0 kOhm
- > Contacts: 1 (SPDT) or 2 (DPST) changeover contacts

TMR-E12 without error memory  
230 V AC, 1W P/N 11031505  
230 V AC, 2W P/N 1103150522  
24 V AC/DC, 2W P/N 1103151322



TMR-E12  
with error memory

Thermistor relays as protection against thermal overload for motors. With thermistor connection (PTC) and integrated fault memory (FS).

- > Operating voltage: 230 V AC or 24 V AC/DC
- > On / Off resistance: 1.8/3.0 kOhm
- > Contacts: 1 (SPDT) or 2 (DPST) changeover contacts

TMR-E12 with error memory  
230 V AC, 1W P/N 11031605  
230 V AC, 2W P/N 1103160522  
24 V AC/DC, 2W P/N 1103161322

Control cabinet components



## Measuring and monitoring relays

### Level monitoring



#### ENW-E12

Level controller for level and leakage monitoring of conductive and non-flammable media. Adjustable response point via potentiometer.

- > Operating voltage: 230 V AC or 24 V AC/DC
- > Response sensitivity: 5 - 50 kOhm, adjustable
- > Contacts: 2 changeover contacts (DPDT)

**ENW-E12**  
 230 V AC P/N 11030805  
 24 V AC P/N 11030810



#### Submersible Electrode TE2

Single-pole dipped electrode made of stainless steel for the detection of electrically conductive liquids, e.g. in water supply and pumping stations. For connection to the level-monitors ENW-E12 and MR-LD6.

- > Material electrode: Stainless steel
- > Housing: Polypropylene
- > Length: 115 mm

**Submersible Electrode TE2**  
 P/N 11032401



#### Leakage sensor LKS-ZD

LKS-ZD for leak monitors MR-LD6 and ENW-E12. In case of leakages such as pipe breaks, electrically conductive liquids are detected by the electrodes.

- > Material: Stainless steel
- > Housing: Polycarbonate with mounting opening
- > Application: ENW-E12, MR-LD6 (with wire break monitoring)

**Leakage sensor LKS-ZD**  
 P/N 11032902

### Phase monitoring



#### ASD-C18 ASD-F-C18

Monitoring relays for monitoring of a three-phase connection to asymmetry, phase failure, phase sequence error, over- and undervoltage.

- > Operating voltage: 230 V AC
- > Monitoring voltage: 3 x 230/400 V AC, 50 Hz
- > Contacts: 2 changeover contacts (DPDT)

**ASD-C18**  
 P/N 110270  
**ASD-F-C18**  
 P/N 11027070

## Measuring and monitoring relays

### Phase monitoring



#### PFD2-E12

Monitoring relay for monitoring the correct phase sequence L1-L2-L3 (clockwise rotation) and total failure.

- > Supply and measuring voltage: L1-L2-L3 | 400 V
- > Continuous Current: 6 A
- > Contacts: 2 changeover contacts (DPDT)

**PFD2-E12**  
 P/N 110292032215



#### PFD3-E12

Monitoring relay for monitoring the correct phase sequence L1-L2-L3 (clockwise rotation) and total failure with neutral wire connection.

- > Supply and measuring voltage: L1-L2-L3-N | 400 V
- > Continuous Current: 6 A
- > Contacts: 2 changeover contacts (DPDT)

**PFD3-E12**  
 P/N 110292032230

### Undervoltage monitoring



#### DUW-C12 DUW-F-C12

Undervoltage monitoring relay in three-phase networks for emergency light systems according to DIN VDE 0108 with fixed threshold value and integrated test button.

- > Operating voltage: 3N 400/230 V, 50 Hz
- > Threshold value: 195 V AC, fixed
- > Contacts: 2 changeover contacts (DPDT)

**DUW-C12**  
 P/N 110271  
**DUW-F-C12**  
 P/N 11027170

### Current/Voltage monitoring



#### EIW-C18 EIW-F-C18

Current monitoring relay of direct or alternating currents with indication of over- or undercurrent. With 7-segment display and error memory.

- > Operating voltage: 230 V AC
- > Measuring inputs: 0.01 A - 1 A / 0.1 A - 15 A
- > Contacts: 2 changeover contacts (DPDT)

**EIW-C18**  
 P/N 11027205  
**EIW-F-C18**  
 P/N 1102720570



## Measuring and monitoring relays



Current/Voltage monitoring    Current converter



### EUW-C18 EUW-F-C18

Voltage monitoring relay of DC or AC voltages with indication of over- or undervoltage. With 7-segment display and error memory.

- > Operating voltage: 230 V AC
- > Measuring inputs:  
1 V - 100 V / 10 V - 300 V
- > Contacts: 2 changeover contacts (DPDT)

 EUW-C18  
P/N [11027405](#)  
 EUW-F-C18  
P/N [1102740570](#)



### TAmmini 50 A / 5 A

Current transformer TAmmini for mounting on a 35 mm DIN rail, 21 mm hole diameter for cable and rail 20 x 5 mm.

- > Transformer ratio: 50 A / 5 A
- > Nominal frequency: 50 Hz
- > Operating frequency: 47 - 63 Hz

TAmmini 50 A / 5 A  
P/N [1101810507](#)



### TAmmini 100 A / 5 A

Current transformer TAmmini for mounting on a 35 mm DIN rail, 21 mm hole diameter for cable and rail 20 x 5 mm.

- > Transformer ratio: 100 A / 5 A
- > Nominal frequency: 50 Hz
- > Operating frequency: 47 - 63 Hz

TAmmini 100 A / 5 A  
P/N [1101810508](#)



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## Timer relays

Multi-function



### MARK-E08 MARK-F-E08

Multifunction time relay with 8 adjustable time ranges 0.15 s - 10 h and 5 functions: Switch-on/switch-back delayed, wiping on, flashing pause / pulse starting)

- > Operating voltage: see variants
- > Continuous current: 6 A
- > Contacts: 1 changeover contact (SPST)

MARK-E08  
P/N 110657  
P/N 11065727  
MARK-F-E08  
P/N 11065770  
P/N 1106572770



### MARK-E08 U

Multifunction time relay with 8 adjustable time ranges 0.15 s - 10 h and 2 functions: Switch-on/switch-back delayed, with additional control input.

- > Operating voltage: 230 V AC / 24 V AC/DC
- > Continuous current: 6 A
- > Contacts: 1 changeover contact (SPST)

MARK-E08 U  
P/N 1106574133



### MFRk-E08 / MFRk-E08 F MFRk-F-E08

Multifunction time relay with 10 adjustable time ranges 0.05 s - 30 h and 6 functions: Switch-on/switch-back delayed, wiping on/off, flashing pause / pulse starting.

- > Operating voltage: 230 V AC / 24 V AC/DC
- > Continuous current: 6 A
- > Contacts: 1 changeover contact (SPST)

MFRk-E08 / MFRk-E08 F  
P/N 110658  
P/N 110658412014  
MFRk-F-E08  
P/N 11065870



### MFRk-E12

Multifunction time relay with 4 adjustable time ranges 0.15 s - 800 s / 0.1 min - 10 h and 6 functions: Switch-on/switch-back delayed, wiping on/off, flashing pause / pulse starting.

- > Operating voltage: 230 V AC / 24 V AC/DC
- > Continuous current: 4 A
- > Contacts: 2 changeover contact (DPST)

MFRk-E12  
P/N 110310412230  
P/N 110310412231

## Timer relays

Delay on make

Switch-off delay

Circuit closing, wiping



### RTLk-E10

Switch-on delayed time relay with time adjustment via a linear potentiometer.

- > Operating voltage: 230 V AC / 24 V AC/DC
- > Continuous current: 6 A
- > Contacts: 1 changeover contact (SPST)

RTLk-E10  
P/N 110352412003  
P/N 110352412004  
P/N 110352412005  
P/N 110352412006  
P/N 110352412008



### RKAk-E10

Switch-off delayed time relay with time adjustment via a linear potentiometer.

- > Operating voltage: 230 V AC / 24 V AC/DC
- > Continuous current: 6 A
- > Contacts: 1 changeover contact (SPST)

RKAk-E10  
P/N 110304412003  
P/N 110304412004  
P/N 110304412005  
P/N 110304412008



### EWk-E10

Wiping on time relay with time adjustment via a linear potentiometer. With adjustable wiping time.

- > Operating voltage: 230 V AC / 24 V AC/DC
- > Continuous current: 6 A
- > Contacts: 1 changeover contact (SPST)

EWk-E10 0.5 - 10 s  
P/N 110296412003  
EWk-E10 1.5 - 30 s  
P/N 110296412004



### REWk-E10

Switch-on wiping time relay with factory-set wiping time of 0.5 s.

- > Operating voltage: 230 V AC / 24 V AC/DC
- > Continuous current: 6 A
- > Contacts: 1 changeover contact (SPST)

REWk-E10  
P/N 110354412016



# Timer relays

## Clock generator



### TERk-E08

Clock generator with separately adjustable delay time (tp) and pulse time (ti).

- > Operating voltage: 230 V AC / 24 V AC/DC
- > Continuous current: 6 A
- > Contacts: 1 changeover contact (SPST)

**TERk-E08**

P/N [11067441203030](#)  
 P/N [11067441203031](#)  
 P/N [11067441203130](#)  
 P/N [11067441203131](#)



## Star-delta



### RSDw-E10

Star-delta relay with adjustable switching time for switching three-phase motors.

- > Operating voltage: 230 V AC / 24 V AC/DC
- > Continuous current: 6 A
- > Contacts: 1 changeover contact (SPST)

**RSDw-E10**

P/N [11016141280417](#)  
 P/N [11016141280517](#)



### RSD-E10

Star-delta relay with adjustable switching time for switching three-phase motors.

- > Operating voltage: 230 V AC / 24 V AC/DC
- > Continuous current: 6 A
- > Contacts: 2 normally open contacts (DPST-NO)

**RSD-E10**

P/N [11016005270317](#)  
 P/N [11016005270417](#)  
 P/N [11016005270517](#)  
 P/N [11016013270317](#)





## Overview timer relays

DESIGNATION	P/N	CONNECTION TECHNOLOGY		U <sub>B</sub>	FUNCTION	TIME RANGES	tw = RECOVERY TIME tp = DELAY TIME ti = PULSE TIME
		Screw type terminal block technology	Spring clamp terminal block technology				
MARK-E08	110657	x		x	x x x x x	0.15 s – 10 h	tw = > 50 ms
	11065727	x		x	x x x x x		
MARK-F-E08	11065770		x	x	x x x x x	0.15 s – 10 h	tw = > 50 ms
	1106572770		x	x	x x x x x		
MARK-E08 U	1106574133	x		x	x x	0.15 s – 10 h	tw = > 50 ms
MFRk-E08	110658	x		x	x x x x x x x	0.05 s – 30 h	tw = 50-100 ms
MFRk-E08 F	110658412014	x		x	x x x x x x x	0.05 s – 30 h	tw = 10-30 ms
MFRk-F-E08	11065870		x	x	x x x x x x x	0.05 s – 30 h	tw = 50-100 ms
MFRk-E12	110310412230	x		x	x x x x x x x	0.15 s – 800 s	tw = > 250 ms
	110310412231	x		x	x x x x x x x	0.1 min – 10 h	
RTLk-E10	110352412003	x		x	x	0.5 s – 10 s	tw = > 100 ms
	110352412004	x		x	x	1.5 s – 30 s	
	110352412005	x		x	x	3 s – 60 s	
	110352412006	x		x	x	5 s – 100 s	
	110352412008	x		x	x	15 s – 300 s	
RKAk-E10	110304412003	x		x	x	0.5 s – 10 s	
	110304412004	x		x	x	1.5 s – 30 s	
	110304412005	x		x	x	3 s – 60 s	
	110304412008	x		x	x	15 s – 300 s	
EWEk-E10	110296412003	x		x	x	0.5 s – 10 s	
	110296412004	x		x	x	1.5 s – 30 s	
REWk-E10	110354412016	x		x	x		tw = > 100 ms
TERk-E08	11067441203030	x		x			tp = 0.15 s - 800 s, ti = 0.05 s - 800 s tp = 0.15 s - 800 s, ti = 0.1 min - 10 h tp = 0.1 min - 10 h, ti = 0.15 s - 800 s tp = 0.1 min - 10 h, ti = 0.1 min - 10 h
	11067441203031	x		x			
	11067441203130	x		x			
	11067441203131	x		x			
RSDw-E10	11016141280417	x		x		1.5 s – 30 s	
	11016141280517	x		x		3 s – 60 s	
RSD-E10	11016005270317	x		x		0.5 s – 10 s	tw = > 250 ms
	11016005270417	x		x		1.5 s – 30 s	tw = > 250 ms
	11016005270517	x		x		3 s – 60 s	tw = > 250 ms
	11016013270317	x		x		0.5 s – 10 s	tw = > 250 ms

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## Telecommunication products

### Power switching relay



SAR 4 / SAR 5

High voltage current connection relay for connection to an a/b TC connection cable or to a separate control voltage source for an external signal generator.

- > Continuous voltage: 24 V AC/DC or 230 V AC
- > Call voltage: a/b telecommunications access line 32-80 V AC
- > Continuous current relay output: 6 A

SAR 4 230 V AC

P/N 130283-I

SAR 5 24 V AC/DC

P/N 130284-I



SAR 1

Power connection relay in surface mount housing for connection to an a/b TC connection cable for an external a signal generator with built-in switch.

- > Call voltage: a/b telecommunications access line 32-80 V AC
- > Continuous current relay output: 6 A

SAR 1

P/N 130280-I



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