

Modular devices



SUMMARY OF MODELS

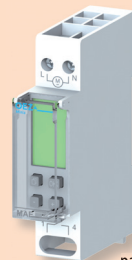
Timers
switch according to internal program in real time



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Type	MAE-A	MAN-A	MAE-D	MAN-D	MAA-D
Design	analog	analog	digital	digital	digital
Arrangement of contacts	001, 100	001, 100	001, 002, 100	001, 002	001, 002
Permanent ON/OFF	yes	yes	yes	yes	yes
Run reserve	-	100 hours	3 years	5 years	5 years
Menu language	-	-	EN	CS, EN, DE, PL, RU, IT, FR, ES, PT, NL, DA, FI, NO, SV, TR	
Number of programs	-	-	28	56	56
Program test	-	-	yes	yes	yes
Holiday mode	-	-	-	yes	yes
Random switching mode	-	-	-	yes	yes
PIN code protection	-	-	-	yes	yes
Astro function	-	-	-	-	yes

Monitoring relays
switch depending on monitored physical quantity



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Type	MMR-U3 MMR-X3	MMR-P	5SV8	MMR-HL	MMR-T1	MMR-T2, MMR-TD
Rated voltage U_c	AC 230 V	AC 230 V	AC 230 V	AC 230 V	AC 230 V	AC 230 V
Arrangement of contacts	001	001	001, 002, 40	001	001	200
Operating voltage of contact	AC 250 V	AC 250 V	AC 230 V	AC 250 V	AC 250 V	AC 250 V
Operating current of contact	8 A	16 A	6 A	16 A	8 A	16 A
Monitored quantity	Voltage	Current	Residual current	Level	Temperature	Temperature
Function	- overvoltage - undervoltage - phase failure - phase sequence ^{*)} - asymmetry ^{*)}	- indication at reach of: 0.1 ÷ 1 A 0.5 ÷ 5 A 2.5 ÷ 25 A (adjustable)	- indication at reach of: 0.03 ÷ 30 A (adjustable)	- liquid drawing off - liquid filling	- motor protection - local reset - remote reset - auto reset	- from -25 °C - up to +95 °C - 2 channels

^{*)} It is only available for version X3.

CURRENT MONITORING RELAYS MMR-P



MMR-P1-001-A230

Current monitoring relay

- For monitoring the value of current passing through the measured circuit.
- For short-time load disconnection at increase of monitored current above the set value.
- Suitable for disconnection of the heating spiral of electric boiler at start of appliance with higher power to avoid switching off the main breaker in the house.
- Range of the monitored current depending on version: 0.1 ÷ 1 A; 0.5 ÷ 5 A; 2.5 ÷ 25 A
- Adjustable delay of disconnection 0 ÷ 15 min.
- The relay is equipped with an output make-and-break contact 16 A.
- Light indication of presence of supply voltage (green LED).
- Light indication at closing of contacts 15-18 (yellow LED).

Monitored current	Type	Order code	Number of modules	Weight [kg]	Package [pcs]
0.1 ÷ 1 A	MMR-P1-001-A230	OEZ:45597	1	0.088	10
0.5 ÷ 5 A	MMR-P5-001-A230	OEZ:45598	1	0.088	10
2.5 ÷ 25 A	MMR-P25-001-A230	OEZ:45599	1	0.098	10

Specifications

Type		MMR-P1-001-A230	MMR-P5-001-A230	MMR-P25-001-A230
Standards		EN 60255-1 IEC 60255-1	EN 60255-1 IEC 60255-1	EN 60255-1 IEC 60255-1
Approval marks		CE	CE	CE
Main circuit (contact)				
Arrangement of contacts ¹⁾		001	001	001
Rated operating voltage/current U_c/I_c	AC - 1	250 V / 16 A	250 V / 16 A	250 V / 16 A
	DC-1	24 V / 16 A	24 V / 16 A	24 V / 16 A
Max. switched power	AC	4 000 VA	4 000 VA	4 000 VA
	DC	384 W	384 W	384 W
Min. voltage/current		DC 5V/100 mA	DC 5V/100 mA	DC 5V/100 mA
Power loss at I_c		1.4 W	1.4 W	1.4 W
Switched power of relay	AC - 3	1 kW	1 kW	1 kW
Connection – Cu conductor rigid and flexible		0.2 ÷ 2.5 mm ²	0.2 ÷ 2.5 mm ²	0.2 ÷ 2.5 mm ²
Torque		0.5 Nm	0.5 Nm	0.5 Nm
Mechanical endurance		30 000 000 operating cycles	30 000 000 operating cycles	30 000 000 operating cycles
Electrical endurance		100 000 operating cycles	100 000 operating cycles	100 000 operating cycles
Supply circuit				
Rated voltage	U_c	AC 230 V	AC 230 V	AC 230 V
Input power		1.5 VA	1.5 VA	1.5 VA
Supply voltage indication		green LED	green LED	green LED
Rated frequency	f_n	50 Hz	50 Hz	50 Hz
Connection – Cu conductor rigid and flexible		0.2 ÷ 2.5 mm ²	0.2 ÷ 2.5 mm ²	0.2 ÷ 2.5 mm ²
Torque		0.5 Nm	0.5 Nm	0.5 Nm
Measuring circuit				
Monitored current		AC/DC 0.1 ÷ 1 A	AC/DC 0.5 ÷ 5 A	AC 2.5 ÷ 25 A ²⁾
Maximum permissible load of monitoring terminal		1.3 A	7 A	32 A
Output indication in exceeding the set current		yellow LED	yellow LED	yellow LED
Adjustable delay		0 ÷ 15 min	0 ÷ 15 min	0 ÷ 15 min
Method of setting ³⁾		control knobs on the front panel	control knobs on the front panel	control knobs on the front panel
Connection – Cu conductor rigid and flexible, terminal k (+), l (-)		0.2 ÷ 2.5 mm ²	0.2 ÷ 2.5 mm ²	0.2 ÷ 4 mm ²
Torque		0.5 Nm	0.5 Nm	0.5 Nm
Other data				
Galvanic isolation	input/output	4 kV	4 kV	4 kV
Mounting on "U" rail according to EN 60715 – type		TH35	TH35	TH35
Degree of protection		IP20	IP20	IP20
Ambient temperature		-20 ÷ +55 °C	-20 ÷ +55 °C	-20 ÷ +55 °C
Working position		arbitrary	arbitrary	arbitrary

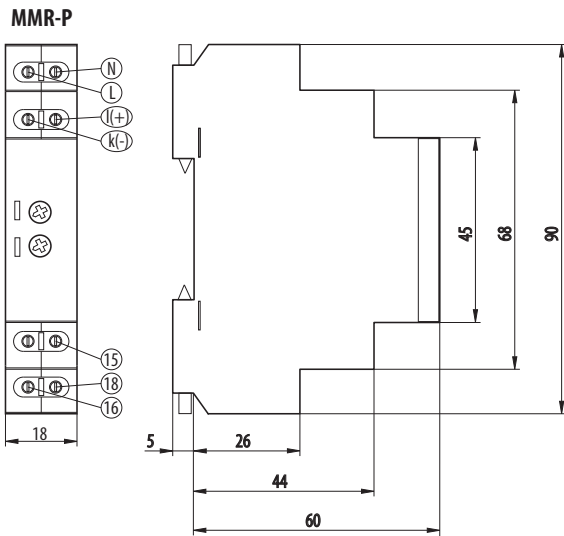
¹⁾ Each digit indicates successively the number of make and break contacts.

²⁾ The relay enables measurement of only alternating currents.

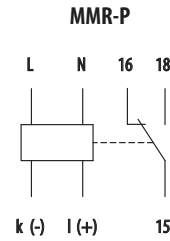
³⁾ Setting the values by trimmers may cause impression of wrong setting. Regulation elements have certain tolerance. Trimmer path is notionally divided into several sections so the deducted value of trimmer resistance defines the given section, the set value. In spite of accurate setting of regulation element to desired value the different time setting may occur. This may happen especially when setting values at the beginning of time range. In such cases it is necessary to find the required value by turning the regulation element to the left or right.

CURRENT MONITORING RELAYS MMR-P

Dimensions

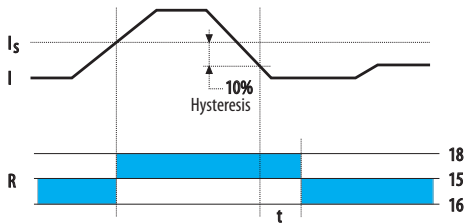


Diagram



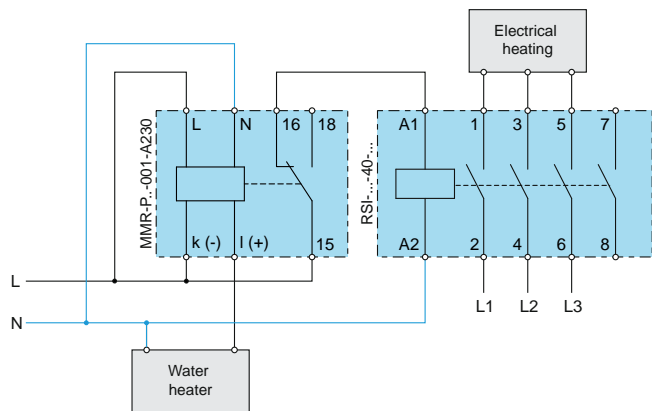
Graph

Current monitoring MMR-P



Connection examples

- Example of blocking of current taking by electrical heating: Switching on the instantaneous water heater (priority appliance) will cause momentary exceeding of the guaranteed switched current of the priority current relay and opens contact. Coil of RSI contactor loses voltage and opens power contacts so that it disconnects electrical heating and reduces total current consumption.



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