

TIME RELAYS MCR



MCR-MA-001-UNI MCR-MB-001-UNI

Multiple-function time relays

- For switching of electric circuits up to 8 A depending on the set time, function and connection.
- Time range: 0.1 s ÷ 100 hr.
- Large number of functions with various control options: delayed operation, impulse after switching on, interval relay starting with pause/impulse, triggered on leading/trailing edge, reaction to connection/disconnection of supply voltage, reaction only to control impulse edge,...
- Universal supply voltage:
AC 12 ÷ 230 V / DC 12 ÷ 220 V (MCR-...-001-UNI),
AC 24 ÷ 230 V / DC 24 ÷ 220 V (MCR-...-003-UNI).
- Time and function setting by knobs and change-over switches on the front panel of the device.
- The TEST function making possible permanent change-over of output contacts (check of electric circuit functionality).
- Light indication at contacts closing (yellow LED).
- Light indication of presence of supply voltage (green LED).
- Each impulse led on input TL causes restart of timing depending on the set function.
- In DC circuits the (+) conductor must be connected to terminal A1, and (-) to terminal A2.

Number of functions	Arrangement of contacts ¹⁾	Type	Order code	Number of modules	Weight [kg]	Package [pcs]
9	001	MCR-MA-001-UNI	OEZ:43239	1	0.105	1
	003	MCR-MA-003-UNI	OEZ:43240	1	0.105	1
18	001	MCR-MB-001-UNI	OEZ:43241	1	0.105	1
	003	MCR-MB-003-UNI	OEZ:43242	1	0.105	1

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



MCR-TK-001-UNI

Timing relays

- For periodical switching of electrical circuits up to 8 A according to two mutually independent set times.
- Time range: 0.1 s ÷ 10 days.
- Universal supply voltage:
AC 12 ÷ 230 V / DC 12 ÷ 220 V.
- Possibility of selection of start of timing - delayed operation / impulse for switching on.
- Light indication at contacts closing (yellow LED).
- Light indication of presence of supply voltage (green LED).
- In DC circuits the (+) conductor must be connected to terminal A1, and (-) to terminal A2.

Arrangement of contacts ¹⁾	Type	Order code	Number of modules	Weight [kg]	Package [pcs]
001	MCR-TK-001-UNI	OEZ:43243	1	0.105	1

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

TIME RELAYS MCR

Description of MCR-MA, MCR-MB

Knobs for function selection F1-F9

- By means of the knobs it is possible to set the requested function of the time relay F1 ÷ F8 and TEST (F9).
- In selection of functions F10 ÷ F18 it is necessary to put the knob to position OFF.

Indication of presence of supply voltage

- Supply voltage presence is indicated by continuously lighting green LED.

Indication of output relay contact closing

- Yellow continuously lighting LED indicates closing of the contact 15-18.

Knobs for function selection F10-F18

- By means of the knobs it is possible to set the requested function of the time relay F10 ÷ F18.
- In selection of functions F1 ÷ F9 it is necessary to put the knob to position OFF.
- The MCR-MA design does not contain this knob.

Terminals A1-A2 for connection of supply voltage

- Rated voltage U_n : AC/DC 12 ÷ 230 V or AC/DC 24 ÷ 220 V.
- In AC circuits L and N conductors can be arbitrarily connected to terminals A1, A2.
- In DC circuits the (+) conductor must be connected to terminal A1, and (-) to terminal A2.

Terminal TL for control of relay

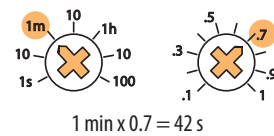
- Control impulse can be excited by connection of A1-TL.
- Min./max. excitation time: 15 ms / unlimited.

Control knobs

- For switching time setting
- upper knob defines time range: 1 s, 10 s, 1 min, 10 min, 1 hr, 10 hr, 100 hr
- lower knob for setting of a multiple of the time range (0.1 ÷ 1).

minimum set time: 0.1 s
maximum set time: 100 hr

Example of time setting:



Description of MCR-TK

Control knobs t1, t2

- Minimum set time t_1 or t_2 : 0.1 s.
- Maximum set time t_1 or t_2 : 10 days.
- Stability of t_1 and t_2 set value at permanent power supply - max. 2% t_1 or t_2 .

Indication of presence of supply voltage

- Supply voltage presence is indicated by continuously lighting green LED.

Indication of output relay contact closing

- Yellow continuously lighting LED indicates closing of the contact 15-18.

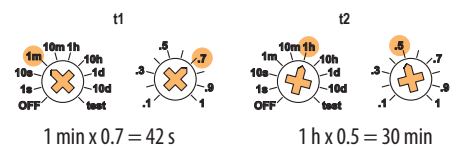
Terminals A1-A2 for connection of supply voltage

- Rated voltage U_n : AC/DC 12 ÷ 230 V.
- In AC circuits L and N conductors can be arbitrarily connected to terminals A1, A2.
- In DC circuits the (+) conductor must be connected to terminal A1, and (-) to terminal A2.

Terminal ZP

- For setting of relay start.
- If the terminal is not interconnected, the relay starts in the mode of impulse after switching.
- If the terminal is interconnected with terminal A1, the relay starts in delayed operation mode.

Example of time setting:



TIME RELAYS MCR

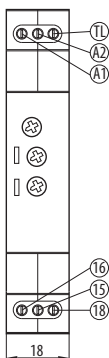
Specifications

Type		MCR-MA	MCR-MB	MCR-TK
Standards		EN 60669-1	EN 60669-1	EN 60669-1
Approval marks				
Main circuit (contact)				
Arrangement of contacts ¹⁾		001; 003	001; 003	001
Rated operating voltage/current	U _v /I _c	AC-1	250 V / 8 A	250 V / 8 A
		DC-1	24 V / 8 A	24 V / 8 A
Max. switched power		AC-1	2 000 VA	2 000 VA
		DC-1	192 W	192 W
		AC-3	200 W	200 W
		AC-5b	200 W	200 W
Max. switched voltage		AC 400 V (5 A)	AC 400 V (5 A)	AC 400 V (5 A)
		DC 150 V (0,3 A)	DC 150 V (0,3 A)	DC 150 V (0,3 A)
Max. switched voltage		DC 5 V / 100 mA	DC 5 V / 100 mA	DC 5 V / 100 mA
Indication of closed contact		yellow LED	yellow LED	yellow LED
Mechanical endurance		5 000 000 operating cycles	5 000 000 operating cycles	5 000 000 operating cycles
Electrical endurance		100 000 operating cycles	100 000 operating cycles	100 000 operating cycles
Connection – 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
Control circuit (coil)				
Rated voltage	U _c	type MCR-...-1-...	AC 12 ÷ 230 V / DC 12 ÷ 220 V	AC 12 ÷ 230 V / DC 12 ÷ 220 V
		type MCR-...-3-...	AC 24 ÷ 230 V / DC 24 ÷ 220 V	AC 24 ÷ 230 V / DC 24 ÷ 220 V
Dwell between applied U _c		0.1 s	0.1 s	3 s
Consumption		at AC 12/230 V	0.7 VA / 2.1 VA	0.7 VA / 2.1 VA
		at DC 12/220 V	0.9 W / 1.2 W	0.9 W / 1.2 W
Supply voltage indication		green LED	green LED	green LED
Rated frequency	f _n	50 Hz	50 Hz	50 Hz
Connection – 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
Control impulse				
Excitation		through interconnection of A1-TL	through interconnection of A1-TL	-
Min. excitation time		15 ms	15 ms	-
Max. excitation time		unlimited	unlimited	-
Consumption		at AC 12/230 V	0.5 VA / 0.5 VA	0.5 VA / 0.5 VA
		at DC 12/220 V	1 W / 1W	1 W / 1W
Time circuit				
Range		0.1 s ÷ 100 hr	0.1 s ÷ 100 hr	0.1 s ÷ 10 days
Method of setting t		control knobs on the front panel	control knobs on the front panel	control knobs on the front panel
Stability of set value at permanent power supply		max. 2 % t	max. 2 % t	max. 2 % t
Other data				
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

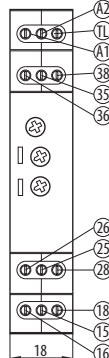
¹⁾ Each digit indicates successively the number of make, break and break-make contacts.

Dimensions

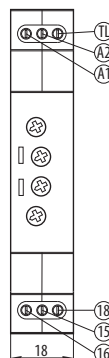
MCR-MA-001-UNI



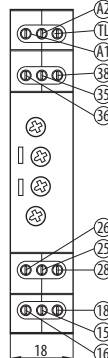
MCR-MA-003-UNI



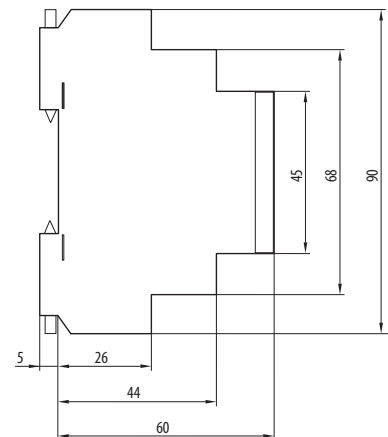
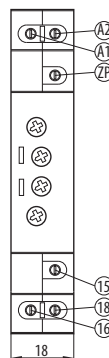
MCR-MB-001-UNI



MCR-MB-003-UNI

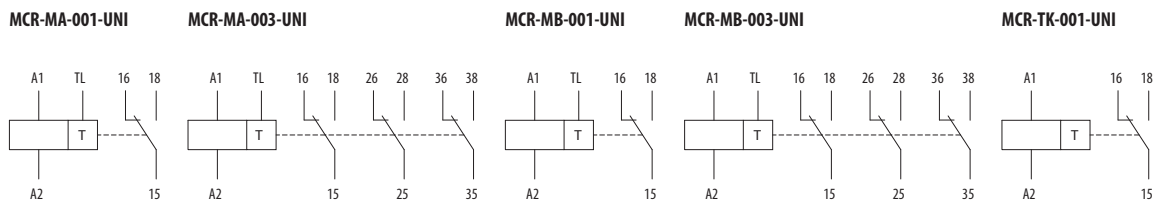


MCR-TK-001-UNI



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Diagram



Graphs of functions

MCR-MA-...

F1		F4		F7	
F2		F5		F8	
F3		F6		F9	TEST = ON

MCR-MB-...

F1		F7		F13	
F2		F8		F14	
F3		F9	TEST = ON	F15	
F4		F10		F16	
F5		F11		F17	
F6		F12		F18	

MCR-TK-...

				TEST = ON
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Note: Letter „R“ in the graphs indicates making of contacts 15-18, or 25-28 and 35-38.