

## MULTIPLE-FUNCTION TIME RELAYS



### Multiple-function time relays

- For switching of electric circuits up to 8 A depending on the set time, function and connection.
- Mainly for automation purposes.
- They can be used as a stair switch.
- Time range: 0.1 s ÷ 100 h.
- Big number of functions with various control options: delayed operation, impulse after switching on, interval relay beginning with a pause/impulse, reaction to leading/trailing edge, reaction to connection/disconnection of supply voltage, reaction only to a control impulse edge, ...
- Supply voltage: 230 V a.c. or universal (12 ÷ 230 V a.c./d.c.).
- Time and function setting by knobs and change-over switches on the front panel of the device.
- Light indication at contact closing 15-18.
- Light indication of presence of supply voltage.
- Each impulse led on input T causes restart of timing depending on the set function.

Rated voltage $U_n$	Type	Product code	Number of modules	Weight [kg]	Package [pcs]
230 V a.c.	<b>MCR-08-001-A230</b>	35568	1	0.115	1
universal <sup>1)</sup>	<b>MCR-08-001-UNI</b>	35569	1	0.115	1

<sup>1)</sup> Universal rated voltage = 12 ÷ 230 V a.c. / d.c.



### Accessories

#### Compensation block

- it enables control of the relay by 1 to 3 control push-buttons with glow discharge tube.
- Connection: parallel with MCR.
- Rated voltage: 230 V a.c.
- Max. voltage: 400 V a.c.
- Capacity: 3 x 1 µF.

Type	Product code	Number of modules	Weight [kg]	Package [pcs]
<b>OD-MIR-BK</b>	35676	1	0.05	1

## MULTIPLE-FUNCTION TIME RELAYS

### Description

#### Change-over switch $U_n$ and TL

- for setting of starting method:
  - Un – relay starts at connection of supply voltage or application of impulse on T terminal
  - TL – relay starts by impulse application on terminal T

#### Change-over switch $\lrcorner$ and $\llcorner$

- for setting of response to control impulse edge
  - $\lrcorner$  leading edge of the control impulse
  - $\llcorner$  trailing edge of the control impulse

#### Change-over switches IZ/ZP and MON/AST

- for function setting (for function table see page E16)
  - IZ – impulse after switching on
  - ZP – delayed operation
  - MON – monostable function
  - AST – astable function

#### Control knobs

- for switching time setting
  - upper dial – defines time range – 1 s, 10 s, 1 min, 10 min, 1 hour, 10 hours, 100 hours
  - lower dial – for setting of a multiple of the time range (0.05 ÷ 1)

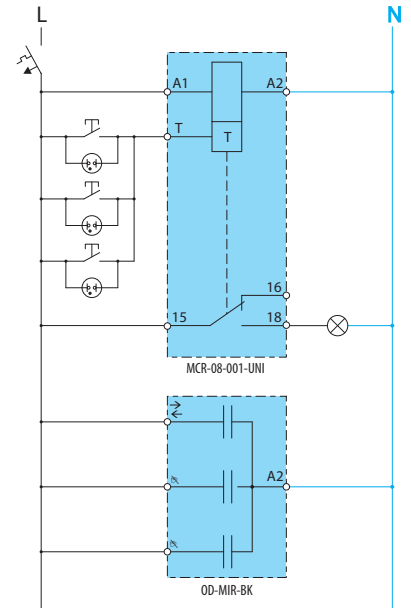
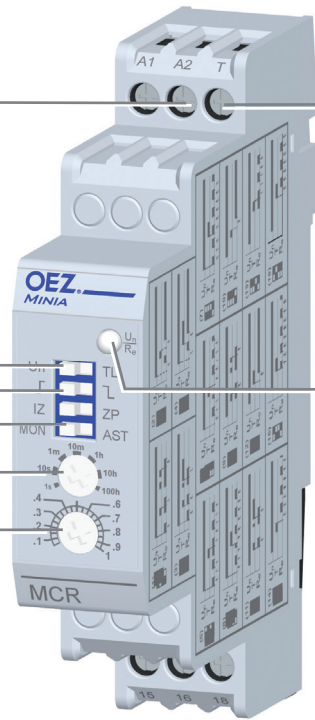
minimum set time: 0.1 s  
maximum set time: 100 h

#### Terminals A1-A2 for connection of supply voltage

- Rated voltage  $U_n = 12 \div 230V$  a.c. / d.c. or 230V a.c.
- 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 T for control of relay

- Control impulse can be excited by connection of A1-T.
- Min./max. excitation time: 15 ms/compensated.
- The relay can be controlled by 1 to 3 control push-buttons with a glow discharge tube provided a power-factor capacitor  $3 \mu F / 400 V$  is connected between terminals A2-T – see connection diagram. For compensation it is possible to use the compensation block OD-MIR-BK.




#### Indication

- indication of operational states is solved by two-colour LED
  - presence of supply voltage  $U_n$  is indicated by green colour
  - presence of supply voltage  $U_n$  and closed contact 15-18  $R_e$  is indicated by orange colour

## MULTIPLE-FUNCTION TIME RELAYS

### Specifications

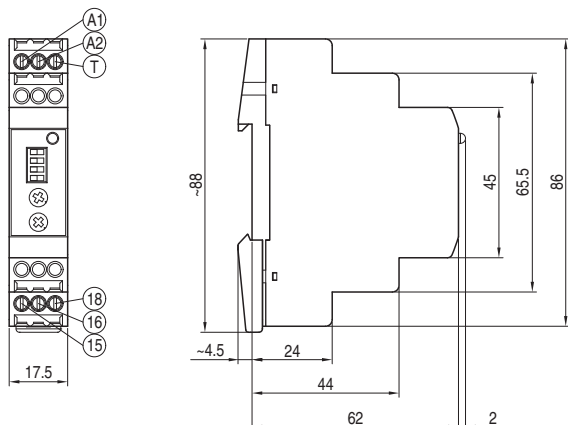
Type	<b>MCR-08-001-...</b>		
Standards	EN 61812-1		
Approval marks			
<b>Main circuit (contact)</b>			
Arrangement of contacts <sup>1)</sup>	001		
Rated operating voltage	$U_e$	250 V a.c., 24 V d.c.	
Rated current	$I_n$	8 A	
Max. switched power	2000 VA / 192 W		
Max. switched voltage	380 V a.c. / 150 d.c.		
Min. voltage / current	5 V d.c. / 10 mA		
Mechanical endurance	5 000 000 operating cycles		
Electrical endurance	100 000 operating cycles		
Connection	0.2 ÷ 2.5 mm <sup>2</sup>		
Torque	0.5 Nm		
<b>Control circuit</b>			
Rated voltage	$U_n$	type MCR-08-001-A230	230 V
		type MCR-08-001-UNI	12 ÷ 230 V a.c. / d.c.
Dwell between applied $U_n$	0.1 s		
Consumption at $U_n$	at 12 / 230 V a.c.		0.7 VA / 2.1 VA
	at 12 / 230 V d.c.		0.9 W / 1.2 W
Rated frequency	50 Hz		
Connection	0.2 ÷ 2.5 mm <sup>2</sup>		
Torque	0.5 Nm		
<b>Control impulse</b>			
Excitation <sup>2)</sup>	through interconnection of A1-T		
Min. excitation time	15 ms		
Max. excitation time	compensated		
Consumption at $U_n$	at 12 / 230 V a.c.		0.5 VA / 0.5 VA
	at 12 / 220 V d.c.		1 W / 1 W
<b>Time circuit</b>			
Range	0.1 s ÷ 100 hours		
t setting method	control knobs on the front panel		
Stability of set value at permanent power supply	max. 2 % t		
<b>Other data</b>			
Mounting on "U" rail according to EN 60715 - type	TH 35		
Degree of protection	IP20		
Ambient temperature	-20 ÷ + 50 °C		
Working position	Arbitrary		

<sup>1)</sup> Each digit indicates successively the number of make, break and break-make contacts

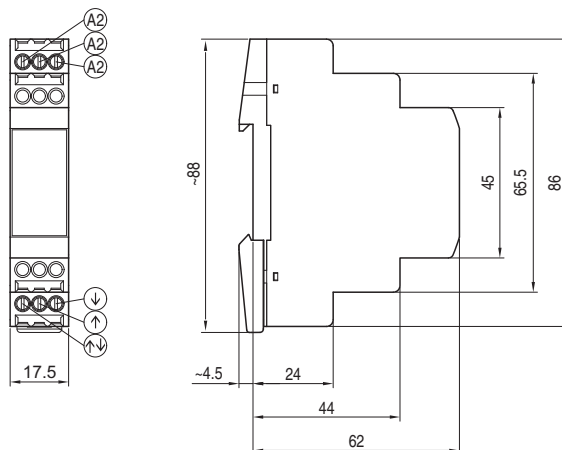
<sup>2)</sup> The relay can be controlled by 1 to 3 control push-buttons with a glow discharge tube provided a power-factor capacitor 3 µF / 400 V is connected between terminals A2-T. For compensation it is possible to use so called "Compensation block OD-MIR-BK" (1 module on DIN rail).

### Dimensions

MCR-08-001-..

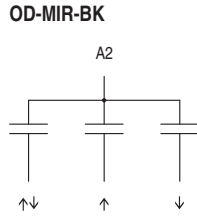
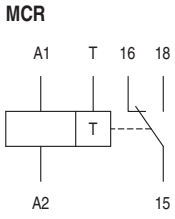


OD-MIR-BK



# MULTIPLE-FUNCTION TIME RELAYS

## Diagram



## Graph

