



- 2 time 1 function modern timers
- Up to 7 functions, 7 time ranges
- Wide input voltage range 12-240V AC/DC
- Low power consumption - <2.5 VA or < 1.5 W - high energy efficiency
- Installation design DIN 35mm
- Width 17.5mm
- For building and industrial applications
- In accordance with PN - EN 61812-1



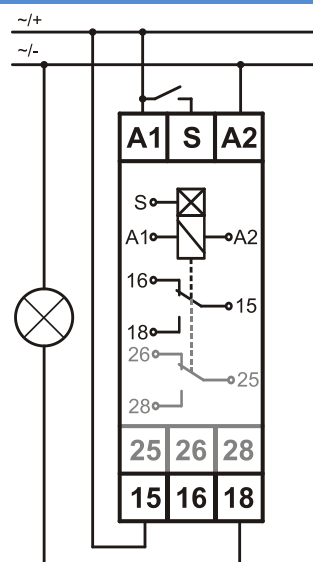
**Technical data**

Output circuit		MTR17-...-116	MTR17-...-208
Contact arrangement		1 form C	2 form C
Rated voltage	V AC	250/400	
Switching current range AC1	A/V AC	16/250	8/250
DC1	A/V DC	16/24	8/24
Switching load range AC1	VA	4 000	2 000
Contact resistance	mΩ	≤ 100 max.(at 1A 6 VDC)	
Max. rated current ③	A	12	
Input circuit			
Supply voltage U <sub>n</sub> AC/DC (AC:50-60Hz)	V	12...240	
Tolerance		0,8...1,1U <sub>n</sub> (9,6...264V)	
Rated consumption	AC VA	≤ 2,5	
	DC W	≤ 1.5	
Rated frequency	Hz	47...63	
Control input S		0,7U <sub>n</sub>	
▪ Min. trigger level S-A2 ( sensitivity) ①		AC: ≥ 90 DC: ≥ 45	
▪ Min. control pulse length	ms	yes	
▪ Loadable		yes	
Rated surge voltage	V	2 500	
Max. line length	m	10	
Insulation			
Insulation rated voltage	V AC	250	
Rated surge voltage	V	2 500 1,2/50μs	
Overvoltage category		III	
Dielectric strength			
▪ Input - output	V AC	4 000	
▪ Open contact		1 000	
General data			
Electrical life AC1 at 1000 VA resistive load		≥ 1,5 x 10 <sup>5</sup> operations	
Mechanical life		≥ 3 x 10 <sup>7</sup> operations	
Dimensions (L x W x H) / Weight	mm / g	90 x 17,5 x 66 / 53g	90 x 17,5 x 66 / 57g
Ambient temperature / storage temperature	°C	-40...+55 / -20...+70	
IP rating		IP20	
Relative humidity	%	to 85	
Shock resistance	g	15	
Vibration resistance	mm	0,35 10...55Hz	
Time module data			
Functions		TM, TE, TH, TN,TO,TL,BA	
Time ranges		1s, 10s, 1m, 10m, 1h, 10h, 100h	
Timing adjustment		smooth 0,1...1,0 x time range	
Setting accuracy	%	5 ②	
Repeatability	%	0,5 ②	
Recovery time	ms	≤ 100	

**Description**

Time relays with independently controlled times T1 and T2 (7 versions of relays with 1 time function, 7 time ranges are particularly accurate in reaching the time limit even over long periods of time. With the universal supply of 12V AC/DC to 240V AC/DC and different functions it is possible to find solutions even to the most challenging problems. The brain chip of your application-specific miniature controller is the ideal solution for realizing custom control applications within minimum space at low-cost.

**Connections**



**Mounting**

Relays are designed for direct mounting on 35 mm rail mount acc. to PN-EN 60715. Operational position - any. Connections: max. cross section of the cables: 1 x 2,5 mm<sup>2</sup> / 2 x 1,5 mm<sup>2</sup> (1 x 14 / 2 x 16 AWG), length of the cable deinsulation: 6,5 mm, max. tightening moment for the terminal: 0,6 Nm.



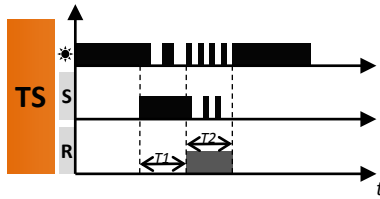
- ① The control input S is activated by connection to A1 terminal via the external control contact S.
- ② For first range setpoint (1 s) setting accuracy and repeatability are smaller than the given ones in technical parameters (significant influence of the operational relay operating time, processor start-time, and the moment of supply switching as referred to the AC). Calculated from the final range values, for the setting direction from minimum to maximum.
- ③ Maximum rated current together of all the relay contacts.

**Uwaga**



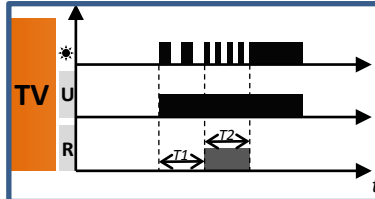
Indicators:  
 Green LED ON: indication of supply voltage  
 Green LED flashes: indication of time period  
 Yellow LED: indication of relay output

**Time functions**



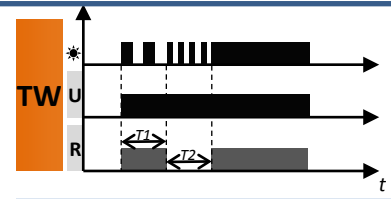
**ON delay and ON for the set time with closing of the control contact S; independent settings of T1 and T2 intervals. (TS)** - The input of the time relay is supplied with voltage U continuously. Closing of the control contact S starts the interval T1, and after the interval has lapsed, the output relay R switches on for the interval T2. Following the interval T2, the output relay switches off, and the circuit awaits for the control contact S to be closed again. In the course of the intervals T1 and T2 the position of the control contact S is of no importance.

**Relay code: MTR17-TTS-U240-...**



**ON delay for the set interval or switching ON for the set interval - switching OFF for the set interval - continuous ON with the control contact S; independent settings of T1 and T2 intervals. (TV+TW)**

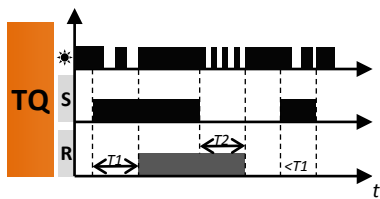
When the control contact S is open, application of the supply voltage U starts operation in the TV function - the interval T1, and after the interval T1 has lapsed, the output relay switches on for the interval T2.



When the control contact S is closed, application of the supply voltage U starts operation in the TW function - from switching on the output relay R for the interval T1, and after the interval T1 has lapsed, the output relay switches off for the interval T2, and following the interval T2, the output relay R switches on for continuous time.

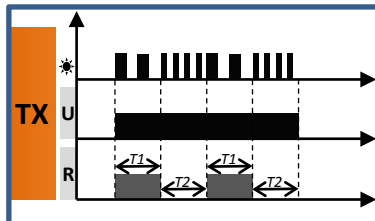
In the course of the relay operation, closing of the control contact S at any time will cause reset and the operation in the TW function will start whereas opening of the control contact S at any time will cause reset and the operation in the TV function will start.

**Relay code: MTR17-TVW-U240-...**



**ON delay and OFF delay with control contact S. Independent T1 and T2 settings. (TQ)** - The input of the time relay is supplied with voltage U continuously. Closing of the control contact S starts the interval T1, and after it has lapsed, the output relay R switches on. Opening of the control contact S starts the interval T2, and after it has lapsed, the output relay R switches off. In case the control contact S is closed in the course of the interval T2, the measured time is reset and the output relay R remains switched on. In case the control contact S is closed for time shorter than T1, the unit will not switch the output relay R on.

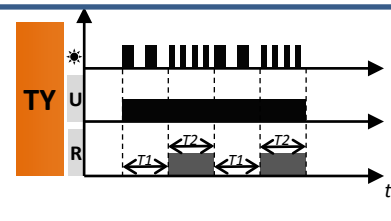
**Relay code: MTR17-TTQ-U240-...**



**Cyclical operation in two independent intervals T1 and T2; operation in the function TX or TY depending on the position of the control contact S. (TX+TY)**

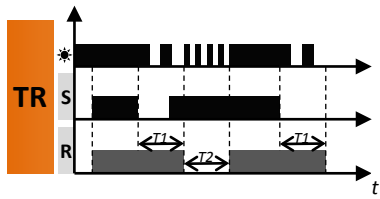
**Function TX** - When the control contact S is closed, application of the supply voltage U starts operation in the li function - from switching on the output relay R for the interval T1, and after the interval T1 has lapsed, the output relay switches off for the interval T2. The cyclical operation continues until the supply voltage U is interrupted.

In the course of the relay operation, closing of the control contact S at any time will cause reset and the operation in the TX function will start whereas opening of the control contact S at any time will cause reset and the operation in the TY function will start.



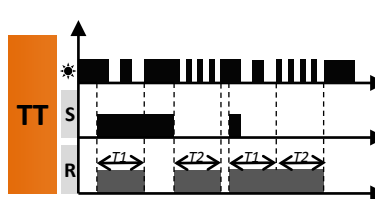
**Function TY** - Application of the supply voltage U when the control contact S is open start the cyclical operation in the TY function - from the interval T1 (time of switching off the output relay R), following which the output relay R is switched on for the interval T2. The cyclical operation continues until the supply voltage U is interrupted.

**Relay code: MTR17-TXY-U240-...**



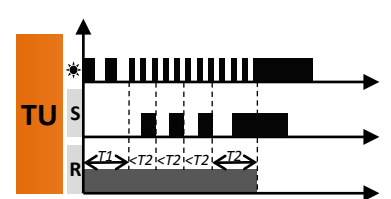
**OFF delay and breaking time delay with opening of the control contact S; independent settings of T1 and T2 intervals. (TR)** - The input of the time relay is supplied with voltage U continuously. Closing of the control contact S switches on the output relay R. Opening of the control contact S starts the interval T1, and after the interval has lapsed, the output relay R switches off for the interval T2. Following the interval T2, the output relay R will be switched on again when the control contact S is closed on the lapse of the interval. In the course of the intervals T1 and T2 the position of the control contact S is of no importance.

**Relay code: MTR17-TTR-U240-...**



**ON for the set intervals T1 and T2 with the control contact S; independent settings of T1 and T2 intervals. (TT)** - The input of the time relay is supplied with voltage U continuously. Closing of the control contact S switches the output relay R for the interval T1, and after the interval has lapsed, the relay R is switched off. Opening of the control contact S switches on the output relay R for the interval T2. If the control contact S is open when the interval T1 lapses, the output relay R will remain on for the interval T2. If the control contact S is closed when the interval T2 lapses, the output relay R will remain on for the interval T1.

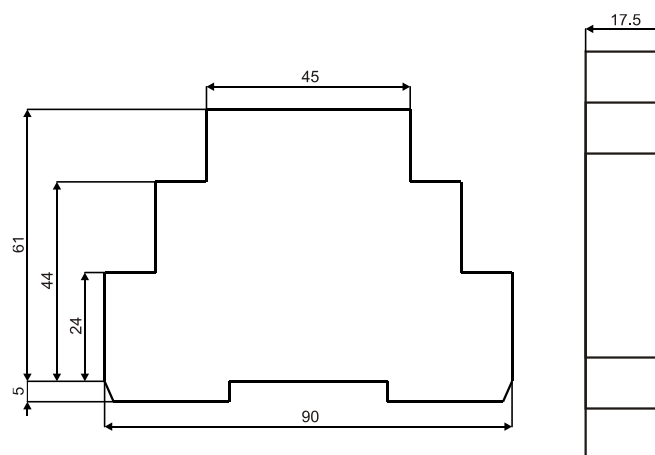
**Relay code: MTR17-TTT-U240-...**



**Monitoring of the sequence of pulses. Switching on is extended with consecutive pulses / closings of the contact S; independent settings of T1 and T2 intervals. (TU)** - On applying the supply voltage U the output relay R is switched on for the set interval T1. After the interval T1 has lapsed, the interval T2 start with the output relay R still switched on. For the output relay to switch on, the control contact S must be closed and then opened (single pulse) during the interval T2, which cancels the time already measured and starts the interval T2 again. In case of absence of a single pulse prior to lapse of the interval T2, the output relay R will switch off, and it may be switched on after the supply voltage has been interrupted and applied again.

**Relay code: MTR17-TTU-U240-...**

## Dimensions



## Additional functions

**Supply diode:** it is lit permanently when the time is not being measured. In course of the T1 time measurement, it flashes at 500 ms period where it is lit for 80% of the time, and off for 20% of the time. For the T2 time, the period is 250 ms.

**Adjustment of the set values:** the values of time and range are read in the course of the relay's operation. The set values may be modified at any moment.

**Release:**

- for the versions TVW, TXY - the relay is released with the supply voltage,
- for other versions: the relay is released by connection of the S contact to the A1 line. For DC supply, the positive pole must be connected to the A1 line. The level of the S contact activation is adjusted automatically depending on the supply voltage.

**Supply:** the relay may be supplied with DC voltage or AC voltage 48...63 Hz of 9,6...264 V. A programmed control of the supply voltage has been applied so the processor shall not start operation if the voltage is lower than approximately 9 V. The supply voltage is permanently monitored in course of the operation of the relay. When the voltage drops below 9 V for more than 50 ms, the relay shall be reset. Owing to this, the regeneration time is programmed to 50 ms, and it does not depend on the tolerance of the elements.



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