

TR-EI2P-UNI

time relays



- **Multifunction time relays with independently controlled times T1 and T2 (7 time functions; 7 time ranges)**
- AC/DC input voltages
- Cover - modular, width 35 mm
- Direct mounting on 35 mm rail mount acc. to PN-EN 60715
- Applications: in low-voltage systems
- Recognitions, certifications, directives: **CE EAC**

Output circuit - contact data

Number and type of contacts	2 CO	
Contact material	AgNi	
Rated load	AC1	8 A / 250 V AC
Max. breaking capacity	AC1	2 000 VA (8 A / 250 V AC)
Max. operating frequency	3 600 cycles/hour	
• at resistive load 100 VA	360 cycles/hour	
• at resistive load 1 000 VA		
Input circuit		
Rated voltage	AC: 50/60 Hz AC/DC	12...240 V terminals (+)A1 – (-)A2
Must release voltage	AC: $\geq 0,3 U_n$	
Operating range of supply voltage	0,9...1,1 U_n	
Rated power consumption	AC	6,0 VA
	DC	2,0 W
Range of supply frequency	AC	48...63 Hz
Duty cycle	100%	
Residual ripple to DC	10%	
Control contact S ①		
• min. time of pulse duration ②	AC: ≥ 100 ms DC: ≥ 50 ms	
• loadable	yes	
• max. length of control line	10 m	
• trigger level (sensitivity)	automatic adaption to supply voltage	
Insulation according to PN-EN 60664-1		
Insulation rated voltage	250 V AC	
Rated surge voltage	4 000 V 1,2 / 50 μ s	
Overvoltage category	III	
Insulation pollution degree	2 if built-in: 3	
Dielectric strength • contact clearance	1 000 V AC type of clearance: micro-disconnection	
General data		
Electrical life • resistive AC1	$> 2 \times 10^5$ 1 000 VA	
Mechanical life (cycles)	$> 2 \times 10^7$	
Dimensions (L x W x H)	87 x 35 x 65 mm	
Weight	120 g	
Ambient temperature • storage	-25...+70 °C	
• operating	-25...+55 °C	
Cover protection category	IP 20 PN-EN 60529	
Relative humidity	15...85%	
Shock resistance	15 g 11 ms	
Vibration resistance	0,35 mm DA 10...55 Hz	
Time module data		
Functions ③	ER, EWs, EWu, Ip, li, WsWa, Wt	
Time ranges	1 s; 10 s; 1 min.; 10 min.; 1 h; 10 h; 100 h	
Timing adjustment	smooth - (0,05...1) x time range	
Base accuracy	$\pm 1\%$ (calculated from the final range values)	
Setting accuracy	$\pm 5\%$ (calculated from the final range values)	
Repeatability	$\pm 0,5\%$ or ± 5 ms	
Temperature influence	$\pm 0,01\%$ / °C	
Recovery time	100 ms	
LED indicator	green LED U ON - indication of supply voltage U green LED U slow flashing - measurement of T1 time green LED U fast flashing - measurement of T2 time yellow LED R ON/OFF - output relay status	

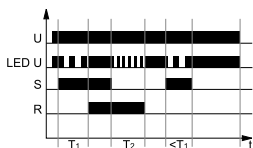
① The external control contact S connect terminal A1 with terminal B1 (applies to functions with control contact S).

② Where the control signal is recognizable.

③ The function has to be set before connecting the relay to the supply voltage.

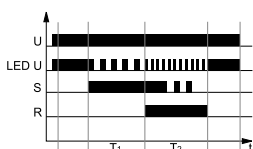
Time functions

ER - ON delay and OFF delay with control contact S. Independent settings of T1 and T2 intervals.



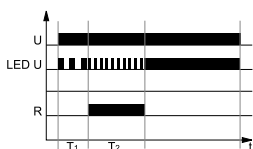
The supply voltage U must be constantly applied to the device (green LED illuminated). When the control contact S is closed, the set interval T1 begins (green LED flashes slowly). After the interval T1 has expired, the output relay R switches into on-position (yellow LED illuminated). If the control contact is opened, the set interval T2 begins (green LED flashes fast). After the interval T2 has expired, the output relay switches into off-position (yellow LED not illuminated). If the control contact is opened before the interval T1 has expired, the interval already expired is erased and is restarted with the next cycle.

EWs - ON delay and ON for the set time with closing of the control contact S. Independent settings of T1 and T2 intervals.



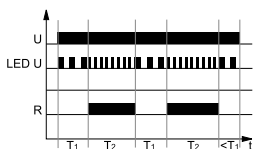
The supply voltage U must be constantly applied to the device (green LED illuminated). When the control contact S is closed, the set interval T1 begins (green LED flashes slowly). After the interval T1 has expired, the output relay R switches into on-position (yellow LED illuminated) and the set interval T2 begins (green LED flashes fast). After the interval T2 has expired, the output relay switches into off-position (yellow LED not illuminated). During the interval, the control contact can be operated any number of times. A further cycle can only be started when the cycle run has been completed.

EWu - ON delay and the set interval. Independent settings of T1 and T2 intervals.



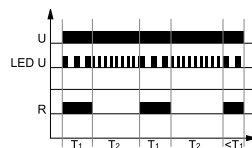
When the supply voltage U is applied, the set interval T1 begins (green LED/t flashes slowly). After the interval T1 has expired, the output relay R switches into on-position (yellow LED illuminated) and the set interval T2 begins (green LED flashes fast). After the interval T2 has expired, the output relay switches into off-position (yellow LED not illuminated). If the supply voltage is interrupted before the interval T1+T2 has expired, the interval already expired is erased and is restarted when the supply voltage is next applied.

lp - Cyclical operation pause first. Independent settings of T1 and T2 intervals.



When the supply voltage U is applied, the set interval T1 begins (green LED flashes slowly). After the interval T1 has expired, the output relay R switches into on-position (yellow LED illuminated) and the set interval T2 begins (green LED flashes fast). After the interval T2 has expired, the output relay switches into off-position (yellow LED not illuminated). The output relay is triggered at the ratio of T1:T2 until the supply voltage is interrupted.

li - Cyclical operation pulse first. Independent settings of T1 and T2 intervals.



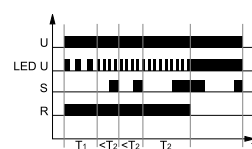
When the supply voltage U is applied, the output relay R switches into on-position (yellow LED illuminated) and the set interval T1 begins (green LED flashes slowly). After the interval T1 has expired, the output relay switches into off-position (yellow LED not illuminated) and the set interval T2 begins (green LED flashes fast). After the interval T2 has expired, the output relay switches into on-position (yellow LED illuminated). The output relay is triggered at the ratio of T1:T2 until the supply voltage is interrupted.

WsWa - ON for the set intervals T1 and T2 with the control contact S. Independent settings of T1 and T2 intervals.



The supply voltage U must be constantly applied to the device (green LED illuminated). When the control contact S is closed, the output relay R switches into on-position (yellow LED illuminated) and the set interval T1 begins (green LED flashes slowly). After the interval T1 has expired, the output relay R switches into off-position (yellow LED not illuminated). If the control contact is opened, the output relay again switches into on-position (yellow LED illuminated) and the set interval T2 begins (green LED flashes fast). After the interval T2 has expired the output relay switches into off-position (yellow LED not illuminated). During the interval, the control contact can be operated any number of times.

Wt - 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.



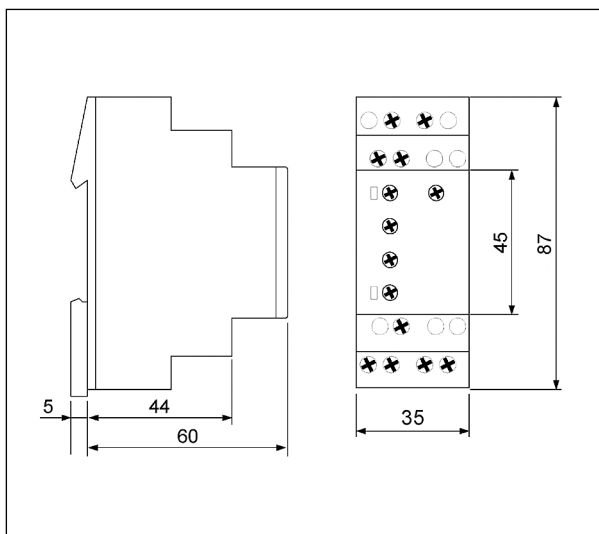
When the supply voltage U is applied, the set interval T1 begins (green LED flashes slowly) and the output relay R switches into on-position (yellow LED illuminated). After the interval T1 has expired, the set interval T2 begins (green LED flashes fast). So that the output relay R remains in on-position, the control contact S must be closed and opened again within the set interval T2. If this does not happen, the output relay R switches into off-position (yellow LED not illuminated) and all further pulses at the control contact are ignored. To restart the function the supply voltage must be interrupted and reapplied.

U - supply voltage; **R** - output state of the relay; **S** - control contact state; **T1, T2** - measured times; **t** - time axis

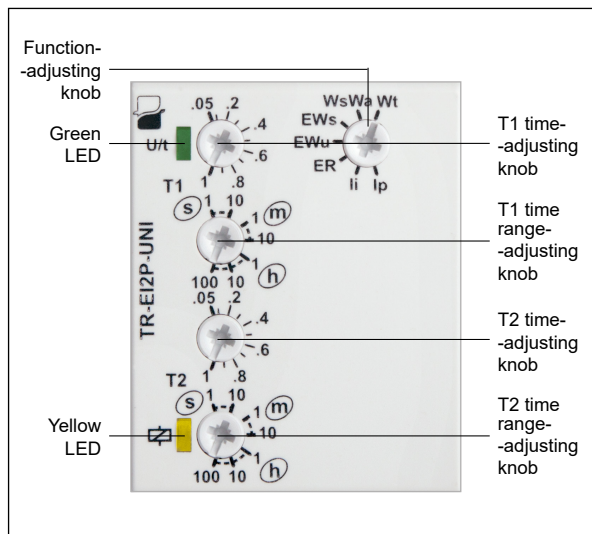
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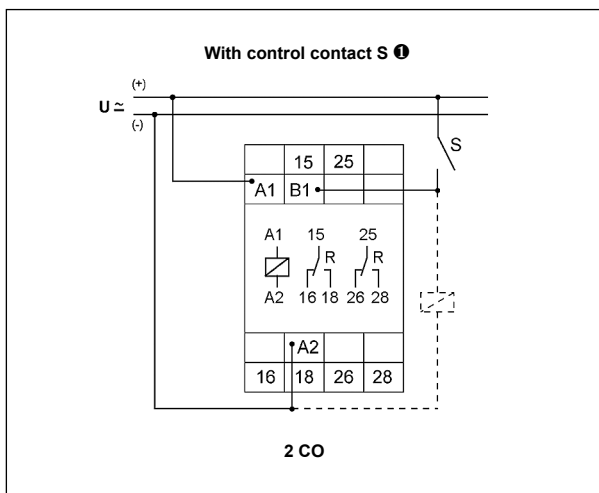
Dimensions



Front panel description



Connection diagram

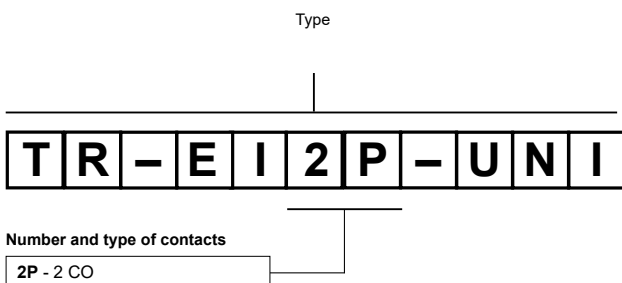


Mounting

Relays **TR-EI2P-UNI** 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 mm² / 2 x 1,5 mm² (1 x 14 / 2 x 16 AWG), length of the cable deinsulation: 6,5 mm, max. tightening moment for the terminal: 1,0 Nm. Shockproof terminal connection according to VBG 4 (PZ1 required).

❶ The external control contact S connect terminal A1 with terminal B1 (applies to functions with control contact S).

Ordering codes



Example of ordering codes:

TR-EI2P-UNI

time relay **TR-EI2P-UNI**, multifunction (relay perform 7 functions), cover - modular, width 35 mm, two changeover contacts, rated input voltage 12...240 V AC/DC AC: 50/60 Hz

PRECAUTIONS:

1. Ensure that the parameters of the product described in its specification provide a safety margin for the appropriate operation of the device or system and never use the product in circumstances which exceed the parameters of the product. 2. Never touch any live parts of the device. 3. Ensure that the product has been connected correctly. An incorrect connection may cause malfunction, excessive heating or risk of fire. 4. In case of any risk of any serious material loss or death or injuries of humans or animals, the devices or systems shall be designed so to equip them with double safety system to guarantee their reliable operation.