

RPC-1ER/EA/ES/EU/IP/SA/WT-...

time relays

300



RPC-1ER-UNI



RPC-1WT-UNI



- **Single-function time relays with independently controlled times T1 and T2 (7 versions of relays with 1 time function 0; 8 time ranges)** • Cadmium - free contacts 1 CO
- AC and AC/DC input voltages • Cover - modular, width 17,5 mm
- Direct mounting on 35 mm rail mount acc. to EN 60715
- Applications: in low-voltage systems
- Compliance with standard EN 61812-1
- Recognitions, certifications, directives: RoHS, **CE** **EAC**

Output circuit - contact data

Number and type of contacts		1 CO
Contact material		AgSnO ₂
Max. switching voltage	AC	300 V
Rated load	AC1	16 A / 250 V AC
	DC1	16 A / 24 V DC; 0,3 A / 250 V DC
Rated current		16 A / 250 V AC
Max. breaking capacity	AC1	4 000 VA
Min. breaking capacity		1 W 10 mA
Contact resistance		≤ 100 mΩ
Max. operating frequency		600 cycles/hour at rated load AC1

Input circuit

Rated voltage	50/60 Hz AC	230 V	terminals A1, A2
	AC: 50/60 Hz AC/DC	12...240 V	terminals (+)A1, (-)A2
Must release voltage		≥ 0,1 U _n	
Operating range of supply voltage		0,9...1,1 U _n	
Rated power consumption	AC	≤ 3,5 VA 230 V AC, 50 Hz	≤ 1,5 VA 12...240 V AC/DC, AC: 50 Hz
	DC	≤ 1,5 W 12...240 V AC/DC	
Range of supply frequency	AC	48...63 Hz	
Control contact S 1	• min. voltage 2	0,7 U _n	
	• min. time of pulse duration 2	AC: ≥ 50 ms	DC: ≥ 30 ms
	• max. length of control line	10 m	

Insulation according to EN 60664-1

Insulation rated voltage	250 V AC		
Rated surge voltage	4 000 V 1,2 / 50 μs		
Overvoltage category	III		
Insulation pollution degree	2		
Flammability class	cover: V-0 front panel: V-2 UL 94		
Dielectric strength	• input - output	4 000 V AC	type of insulation: basic
	• contact clearance	1 000 V AC	type of clearance: micro-disconnection

General data

Electrical life	• resistive AC1	> 0,5 x 10 ⁵	16 A, 250 V AC
Mechanical life (cycles)		> 3 x 10 ⁷	
Dimensions (L x W x H) / Weight		90 4 x 17,5 x 64,5 mm / 65...66 g	
Ambient temperature	• storage	-40...+70 °C	
	• operating	-20...+50 °C	
Cover protection category		IP 20	EN 60529
Relative humidity		up to 85%	
Shock / vibration resistance		15 g / 0,35 mm DA	10...55 Hz

Time module data

Functions 1		ER, EWa, EWs, EWu + NWu, li + lp, WsWa, Wt	
Time ranges		OFF - permanent switching off; ON - permanent switching on 1 s 2; 10 s; 1 min.; 10 min.; 1 h; 10 h; 1 d; 10 d	
Timing adjustment		smooth - (0,1...1) x time range (does not refer to range ON / OFF)	
Setting accuracy / Repeatability		± 5% 3 4 / ± 0,5% 5	
Values affecting the timing adjustment		temperature: ± 0,05% / °C supply voltage: ± 0,01% / V	
Recovery time	AC	≤ 150 ms 230 V AC, 50 Hz	≤ 400 ms 12...240 V AC/DC, AC: 50 Hz
	DC	≤ 150 ms 12...240 V AC/DC	
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 Codes of versions - see "Ordering codes", page 303 and descriptions of time functions, pages 301, 302. 2 The control terminal S is activated by connection to A1 terminal via the external control contact S. 3 Where the control signal is recognizable. 4 Length with 35 mm rail catches: 98,8 mm. 5 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 supply course). 6 Calculated from the final range values, for the setting direction from minimum to maximum.

Time functions

WsWa - ON for the set intervals T1 and T2 with the control contact S. Independent settings of T1 and T2 intervals.
Codes of versions: **RPC-1SA-...**



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.

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

Wt - Monitoring of the sequence of pulses. Switching on extended with consecutive pulses / closings of the contact S. Independent settings of T1 and T2 intervals.
Codes of versions: **RPC-1WT-...**



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 starts 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.

ON / OFF - Permanent switching on / off.

The functions ON and OFF are selected with T1, T2 time range adjusting knobs. In the ON function, the normally open contacts are closed all the time whereas in the OFF function they are open. The ON state is implemented only when both T1, T2 time range adjusting knobs are set to ON. The OFF state is implemented only when at least one of the T1, T2 time range adjusting knobs is set to OFF or when one of these knobs is set to time range 1 s, 10 s, etc., and the other is set to ON. The ON or OFF functions are used for the time relay operation control in electric systems.

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, in course of the T2 time measurement at 250 ms period, where it is lit for 50% of the time, and off for 50% of the time.

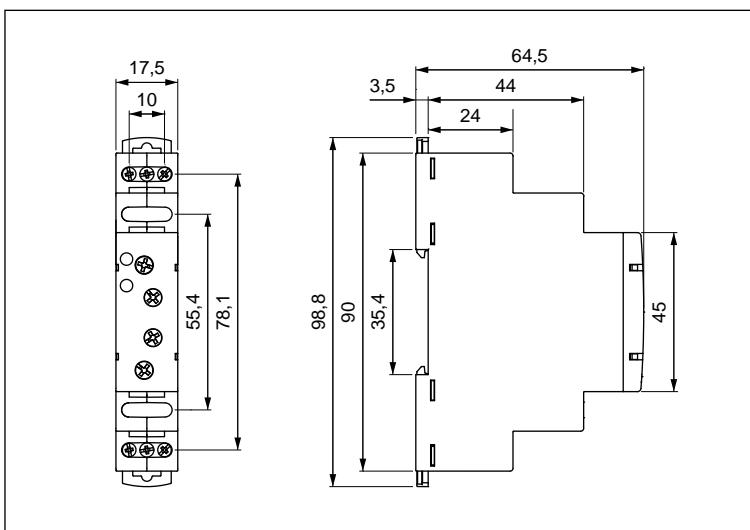
Adjustment of the set values: the values of time and range are read in the course of the relay's operation. The set values may be modified at any moment.

Release: depending on the function to be performed, the relay is released with the supply voltage or 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.

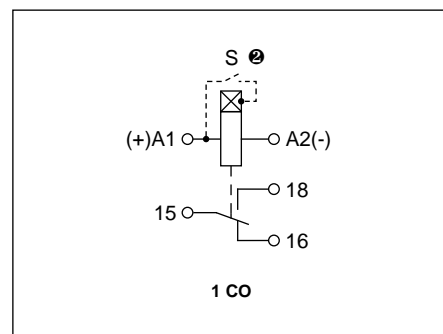
Supply:

- **RPC-...-A230:** the relay may be supplied with AC voltage 48...63 Hz of 207...253 V,
- **RPC-...-UNI:** the relay may be supplied with DC voltage or AC voltage 48...63 Hz of 10,8...264 V.

Dimensions

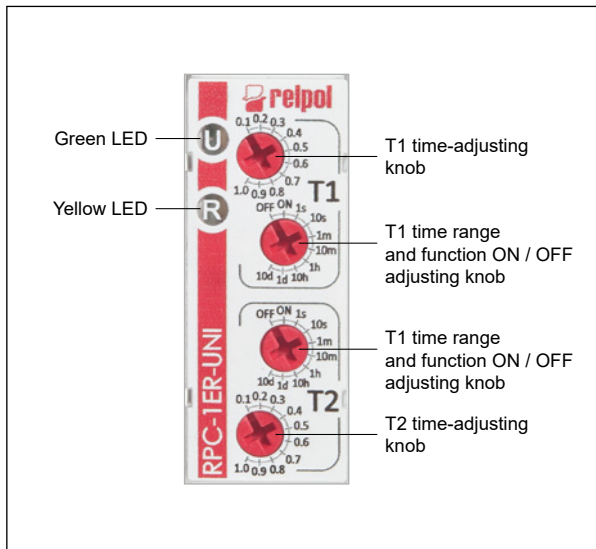


Connection diagram



Note: the indicated polarity of the supply refers only to the relays RPC-...-UNI. The control terminal S is activated by connection to A1 terminal via the external control contact S.

Front panel description



Mounting

Relays **RPC-1-...** are designed for direct mounting on 35 mm rail mount acc. to EN 60715. Operational position - any. **Connections:** max. cross section of the cables: 1 x 2,5 mm² (1 x 14 AWG), stripping length: 6,5 mm, max. tightening moment for the terminal: 0,5 Nm.

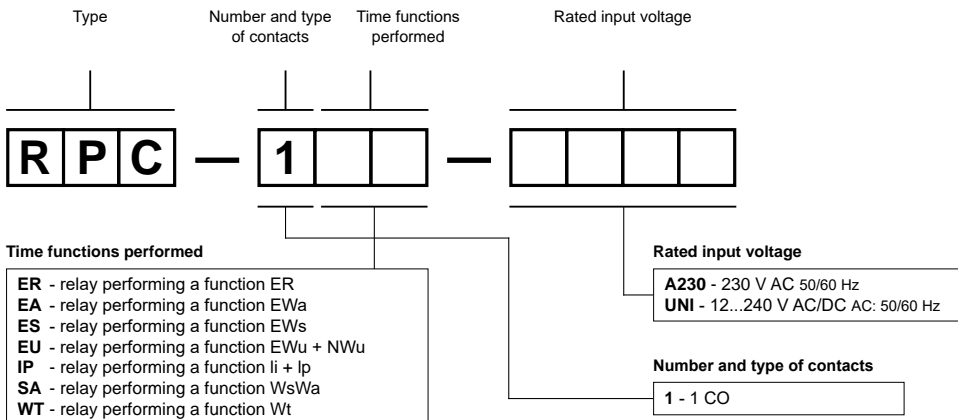


Two catches:
easy mounting on 35 mm rail, firm hold (top and bottom).



Mounting wires in clamps:
universal screw (cross-recessed or slotted head).

Ordering codes



Examples of ordering codes:

RPC-1ER-A230

time relay **RPC-1ER-...**, single-function (relay perform function ER), cover - modular, width 17,5 mm, one changeover contact, contact material AgSnO₂, rated input voltage 230 V AC 50/60 Hz

RPC-1WT-UNI

time relay **RPC-1WT-...**, single-function (relay perform function Wt), cover - modular, width 17,5 mm, one changeover contact, contact material AgSnO₂, rated input voltage 12...240 V AC/DC AC: 50/60 Hz