



**Zakład Mechaniki i Elektroniki  
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## DESCRIPTION

The multifunctional time relay PCM-04/24V has a time function in automation and control systems. It is equipped with 10 independent operating modes released by power supply voltage or external impulse command (coming from L or N line). It has a wide time adjustment range and constant switch on/off function. The mode change is possible without waiting for the current cycle to be finished.

## FEATURES

- 10 operating modes (external release or from power supply voltage),
- supply voltage control signal - LED green,
- power/relay supply indicator and time measure - LED red,
- time measure accuracy,
- wide time adjustment range,
- constant switch on, switch off function,
- voltage relay output - 1 change over contact (NO/NC) contact max 16 A capacity,
- monomodular casing,
- TH 35 DIN rail installation.



The device is designed for one-phase installation and must be installed in accordance with standards valid in a particular country. The device should be connected according to the details included in this operating manual. Installation, connection and control should be carried out by a qualified electrician staff, who act in accordance with the service manual and the device functions. Disassembling of the device is equal with a loss of guarantee and can cause electric shock. Before installation make sure the connection cables are not under voltage. The cruciform head screwdriver 3,5 mm should be used to instal the device. Improper transport, storage, and use of the device influence its wrong functioning. It is not advisable to instal the device in the following cases: if any device part is missing or the device is damaged or deformed. In case of improper functioning of the device contact the producer.

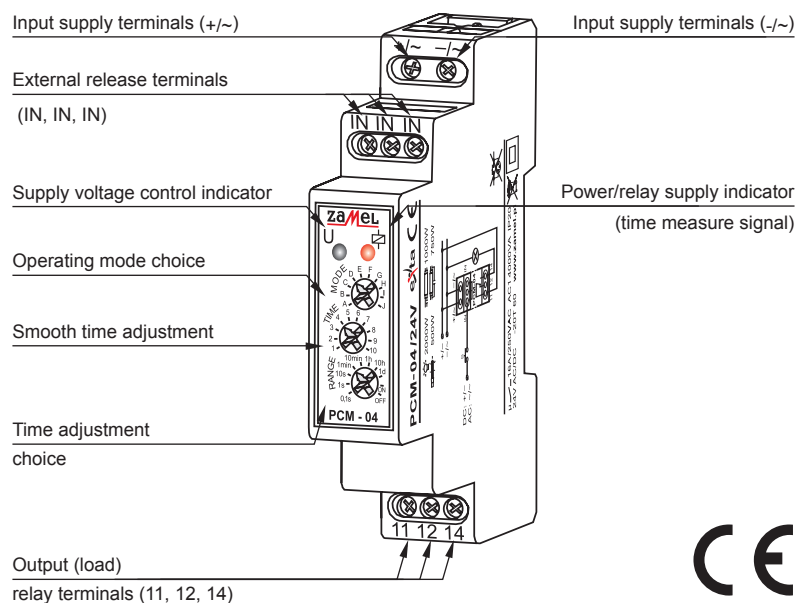


The symbol stands for selective collection of electrical and electronic devices. Placing used devices with other waste is not allowed

## TECHNICAL PARAMETERS

PCM-04/24V	
Input (supply) terminals:	-/~ , +/~
Input rated voltage:	24 V AC/DC
Input voltage tolerance:	from -15 to +10 %
Supply voltage control indicator:	LED green
Nominal frequency:	50 / 60 Hz
Rated power consumption:	25 mA
External release terminals:	IN, IN, IN (released from L or N)
Release current:	510 µA
Operating modes number:	10
Time adjustment range t:	from 0,1s to 10days (step+smooth)
Time measure accuracy:	0,2 %
Power/relay supply indicator and time measure:	LED red
Output relay parameters:	1NO/NC-16 A/250 V AC1 4000 VA
Number of terminal clamps:	8
Section of connecting cables:	from 0,2 to 2,50 mm <sup>2</sup>
Ambient temperature range:	from -20 to +60 °C
Operating position:	free
Mounting:	TH 35 rail (PN-EN 60715)
Protection degree:	IP20 (PN-EN 60529)
Protection class:	II
Overvoltage category:	II
Pollution degree:	2
Rated impulse withstand voltage:	2 kV (PN-EN 61000-4-5)
Dimensions (height / width / depth):	monomodular (17,5 mm) 90x17,5x66 mm
Weight:	0,08 kg
Reference standards:	PN-EN 60730-1 PN-EN 60730-2-7 PN-EN 61000-4-2,3,4,5,6,11

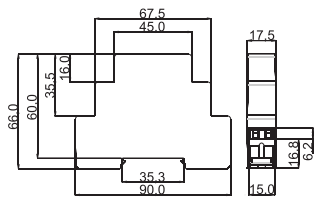
## APPEARANCE



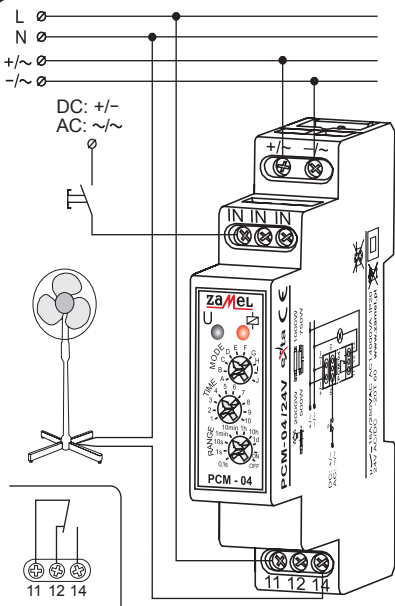
## MOUNTING

1. Disconnect the power supply from the mains by the phase fuse, the circuit-breaker or the switch-disconnector that are joined to the proper circuit,
2. Check if there is no voltage on connection cables by means of a special measure equipment,
3. Install PCM-04/24V device in the switchboard on TH 35 DIN rail,
4. Connect the cables with the terminals according to installing diagram,
5. Switch on the power supply from the mains,
6. Choose the required operating mode by **Mode** knob,
7. Adjust the time using the **TIME** knobs  $t = \text{TIME} \times \text{RANGE}$ .

## DIMENSIONS



## CONNECTING



**ATTENTION!** The release impulse can be a signal from L or N line. The operating mode change (in any moment) causes an immediate zeroing of the measured time and starting the new chosen operating mode. Time adjustment choices are made without delay.

## FUNCTIONING

### Power supply voltage release:

		SWITCH ON DELAY - after the supply voltage [U] has been applied the time measure t starts. After the time is over the relay switches on (pos. 11-14). The next switch on interval appears after power supply voltage reset.
		SWITCH OFF DELAY - after the supply voltage [U] has been applied, the output relay [R] switches on immediately (pos. 11-14), and the preset time [t] is measured. After the preset time [t] has been measured, the output relay [R] returns to the initial state (pos. 11-12).
		FLASHER STARTING WITH OFF - (Starting from the switch off position). After the supply voltage [U] has been applied, the preset time [t] measurement starts. After the time [t] is over, the relay switches on (pos. 11-14) and the preset time [t] is measured once more. After the preset time [t] is over, the output relay [R] returns to the initial state (pos. 11-12), and the next operating cycle of the relay starts. The relay operates until the supply voltage is removed.
		FLASHER STARTING WITH ON - (Starting from the switch off position). After the supply voltage [U] has been applied, the relay is switched on immediately (pos. 11-14) and the preset time [t] measurement starts. After the time [t] is over, the relay switches off (pos. 11-12) and the preset time [t] is measured once more. After the preset time [t] is over, the output relay [R] returns to the initial state, and the next operating cycle of the relay starts. The relay operates until the supply voltage is removed.
		DELAY IMPULSE GENERATION 0,5 s - after the supply voltage [U] has been applied the time measure t starts. After the time is over the relay switches on (pos. 11-14) for 0,5s, next the relay is switched off (pos. 11-12). The next switch on interval appears after power supply voltage reset T.

### External signal release:

		GROWING MODULATED VOLTAGE VALUE - after the impulse release has been applied to the powered system (growing value) it switches on the relay (pos. 11-14), and starts to measure the preset time. After the time t is over the relay switches off (pos. 11-12). Impulse time duration is not important here (pos. 11-12).
		FALLING MODULATED VOLTAGE VALUE - powered system switches on the relay after impulse release fades (pos. 11-14) and time measurement starts. The relay is switched off after time t is finished. The following time release fades during time measurement does not cause time measure from the beginning (no retriggerable).
		SWITCH ON/OFF DELAY - after the impulse release has been applied to the powered system (growing value) let the relay be switched off (pos. 11-12), the same, starts the preset time t measurement. After the time is over the relay is switched on (pos. 11-14). After the impulse release fade is detected (falling modulated voltage), the system starts preset time measurement again after it is finished the relay is switched off (pos. 11-12). In case impulse duration is longer than the preset time t the relay is switched on for the t time only.
		BISTABLE RELAY WITH TIME LIMIT - after the impulse release has been applied to the powered system (growing value) it switches on the relay (pos. 11-14), and starts to measure the preset time. The relay is switched off during the next impulse release (growing modulated voltage) or after time t is over if there was no such impulse occurrence. Impulse time duration is not important for system operating.
		GROWING MODULATED VOLTAGE VALUE WITH SWITCH OFF DELAY (RETRIGGERABLE) - after the impulse release has been applied to the powered system (growing value) it switches on the relay (pos. 11-14). After the impulse release fade is detected (falling modulated voltage), the system starts preset time measurement again and when it is finished the relay is switched off (pos. 11-12). In case impulse duration is longer than the preset time t the relay is switched on for the t time only.

U	Diodes' function description
	Relay turned off time not counted down
	Relay turned on time not counted down
	Relay turned off time counted down
	Relay turned on time counted down

### Time adjustment example t

		$t = \text{TIME} \times \text{RANGE}$ , $t = 8 \times 1 \text{ d} = 8 \text{ d}$
		$t = \text{TIME} \times \text{RANGE}$ , $t = 3 \times 1 \text{ h} = 3 \text{ h}$

## GUARANTEE CARD

There is 24 months guarantee on the product

1. ZMIE ZAMEL SP. J. assures 24 months guarantee for the product.
2. The manufacturer's guarantee does not cover any of the following actions:
  - a) mechanical damage during transport, loading / unloading or under other circumstances,
  - b) damage caused by incorrect product mounting or misuse,
  - c) damage caused by unauthorised modifications made by the PURCHASER or any third parties to the product or any other devices needed for the product functioning,
  - d) damage caused by Act of God or any other incidents independent of the manufacturer.
3. The PURCHASER shall lay any claims in writing to the dealer or ZMIE ZAMEL SP. J.
4. ZMIE ZAMEL SP. J. is liable for processing any claim according to current Polish legislation.
5. ZMIE ZAMEL SP. J. shall process the claim at its own discretion: product repair, replacement or money return.
6. The manufacturer's guarantee is valid in the Republic of Poland.
7. The PURCHASER's statutory rights in any applicable legislation whether against the retailer arising from the purchase contract or otherwise are not affected by this warranty.

Salesman stamp and signature, date of sale

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