



**Zakład Mechaniki i Elektroniki  
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**zAMEL**

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### DESCRIPTION

The device is used to signal the presence of voltage in a three-phase supply system. It is realized by means of three LEDs (L1, L2, L3). There are four colours of the LED diode available (red, green, yellow and mixed). LKM-02 power supply indicator can be used in the TN-C supply system (with point zero), IT (without zero point).

### FEATURES

- Optical voltage presence signalling,
- LED diodes with increased light emission,
- long durability of lighting elements,
- **operating mode without neutral cable,**
- easy adaptation for special use,
- monomodular casing,
- TH-35 DIN rail installation.

### TECHNICAL DATA

LKM-02	
Power terminals:	L1, L2, L3, N
Rated voltage:	230/400 V AC
Rated voltage tolerance:	-15 ÷ +10 %
Rated frequency:	50 / 60 Hz
Rated current (type 10, 20, 30, 40):	3,6 / 9 / 4,8 / 6 mA
Power supply indicator:	3x LED
Number of terminal clamps:	4
Section of connecting cables:	0,2 ÷ 2,5 mm <sup>2</sup>
Ambient temperature range:	-20 ÷ +45 °C
Operating position:	freely
Mounting:	rail TH 35 (PN-EN 60715)
Protection degree:	IP20 (PN-EN 60529)
Protection level:	II
Overvoltage category:	II
Pollution degree:	2
Rated impulse withstand voltage:	1 kV (PN-EN 61000-4-5)
Dimensions:	monomodular (17,5 mm) 90x17,5x66 mm
Weight:	0,050 kg
Reference standards:	PN-EN 62094-1 PN-EN 61000-4-2,3,4,5,6,11

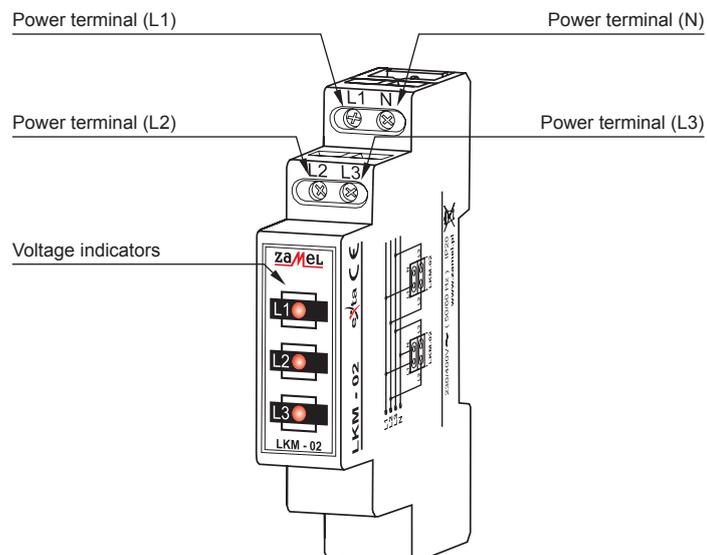


The device is designed for three-phase installation and must be installed in accordance with standards valid in a particular country. The device should be connected according to the details included in this operating manual. Installation, connection and control should be carried out by a qualified electrician 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 means selective collecting of electrical and electronic equipment. It is forbidden to put the used equipment together with other waste

### APPERANCE



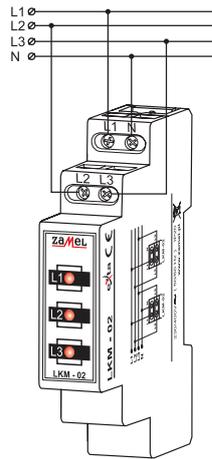
## MOUNTING, FUNCTIONING

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 LKM-02 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.

The appropriate LED diode is on if there is power supply on a particular phase wire. The LED diode is off if there is no power supply. For proper device functioning the presence of two different potentials is necessary (L1–L2, L3–N).

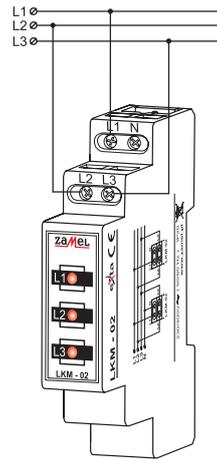
## CONNECTING

TN–C connection



Neutral connection (N)

IT connection

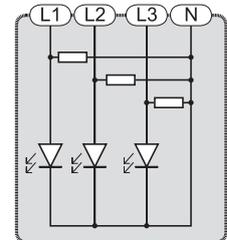


No neutral connection (N)

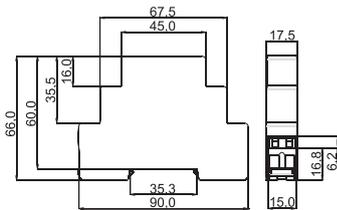
## WARNING!

If there is no neutral cable connected the system can show wrong indications in case of asymmetrical phase load.

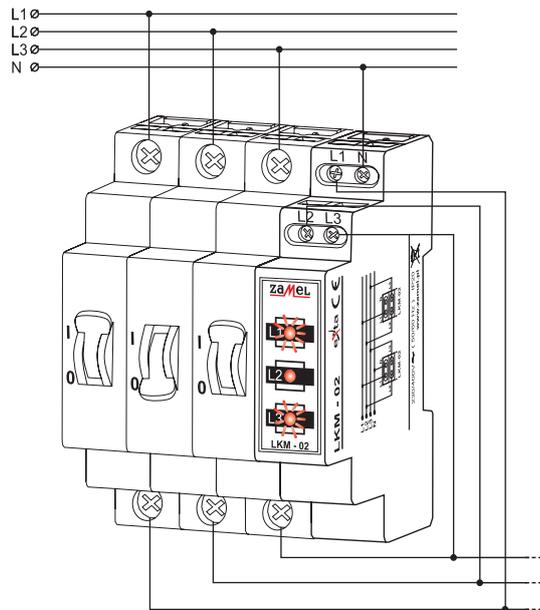
## INNER DIAGRAM



## DIMENSIONS



## EXAMPLE OF INSTALLATION



### Typical use:

LKM-02 power supply indicator signals the voltage presence or its absence on every phase of a three-phase supply system:

- L1, L3 diodes in ON position signal voltage presence,
- L2 diode in OFF position signals voltage absence on L2 phase (fuse is switched off).

## PRODUCT FAMILY

LKM-02 power supply indicator belongs to LKM voltage indicators family.

### LKM-xx-xx

#### Colour version:

- 10 - red LED (not applied to LKM-04, LKM-05)
- 20 - green LED (not applied to LKM-04, LKM-05)
- 30 - yellow LED (not applied to LKM-04, LKM-05)
- 40 - LED yellow, green, red (not applied to LKM-03)

#### Device version:

- 01 - three-phase power supply with neutral wire N
- 02 - three-phase power supply without neutral wire N
- 03 - single-phase power supply with neutral wire N, high brightness LED
- 04 - three-phase power supply with neutral wire N, high brightness LEDs
- 05 - three-phase power supply with neutral wire N, high brightness LEDs

#### Device symbol

## WARRANTY CARD

There is 24 months guarantee on the product

Salesman stamp and signature, date of sale

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.

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