

MR-EU3M1P

monitoring relays



- **Multifunctions monitoring relays (AC voltage monitoring in 3-phase network - 3(N)~ 400/230 V)**
- Monitoring of phase sequence and phase failure • Asymmetry monitoring (adjustable) • Connection of neutral wire (optional)
- Supply voltage = monitoring voltage • Output: 1 CO (1 changeover contact)
- Cover - modular, width 17,5 mm
- Direct mounting on 35 mm rail mount acc. to EN 60715
- Recognitions, certifications, directives: RoHS, **CE**

Output circuit - contact data

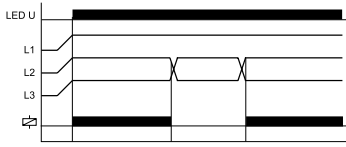
| | | |
|---|--|---|
| Number and type of contacts | | 1 CO |
| Rated voltage | | 250 V AC |
| Max. breaking capacity | AC1 | 1 250 VA (5 A / 250 V AC) |
| Max. operating frequency | | 3 600 cycles/hour |
| • at resistive load 100 VA | | 360 cycles/hour |
| • at resistive load 1 000 VA | | |
| Input circuit | | |
| Supply voltage | | = monitoring voltage |
| Rated voltage | AC | 3(N)~ 400/230 V |
| Must release voltage | | AC: $\geq 0,2 U_n$ |
| Operating range of supply voltage | | 0,7...1,3 U_n |
| Rated power consumption | AC | 8,0 VA / 0,8 W |
| Range of supply frequency | AC | 48...63 Hz |
| Duty cycle | | 100% |
| Measuring circuit | <ul style="list-style-type: none"> • measuring variable • measuring inputs • overload capacity • asymmetry | 3(N)~, sinus, 48...63 Hz = supply voltage AC: 3(N)~ 400/230 V terminals (N)-L1-L2-L3 determined by tolerance specified for supply voltage adjustable: 5...25% |
| Insulation according to EN 60664-1 | | |
| Rated surge voltage | | 4 000 V 1,2 / 50 μ s |
| Overvoltage category | | III |
| Insulation pollution degree | | 2 if built-in: 3 |
| 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 17,5 x 65 mm |
| Weight | | 63 g |
| Ambient temperature | <ul style="list-style-type: none"> • storage • operating | -25...+70 °C -25...+55 °C |
| (non-condensation and/or icing) | | |
| Cover protection category | | IP 20 EN 60529 |
| Relative humidity | | 15...85% |
| Shock resistance | | 15 g 11 ms |
| Vibration resistance | | 0,35 mm DA 10...55 Hz |
| Measuring circuit data | | |
| Functions | | SEQ - monitoring of phase sequence and phase failure ASYM - monitoring of asymmetry (adjustable) connection of neutral wire (optional) |
| Base accuracy | | $\pm 5\%$ (calculated from the final range values) |
| Setting accuracy | | $\pm 5\%$ (calculated from the final range values) |
| Repeatability | | $\pm 2\%$ |
| Temperature influence | | $\pm 0,05\%$ / °C |
| Recovery time | | 500 ms |
| LED indicator | | green LED U ON - indication of supply voltage U yellow LED R ON/OFF - output relay status |

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Functions

SEQ - Phase sequence monitoring.



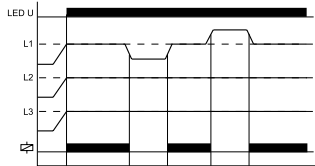
When all the phases are connected in the correct sequence and the measured asymmetry is less than the fixed value, the output relay R switches into on-position (yellow LED illuminated). When the phase sequence changes, the output relay R switches into off-position (yellow LED not illuminated).

SEQ - Phase failure monitoring.



The output relay R switches into off-position (yellow LED not illuminated), when one of the three phases fails.

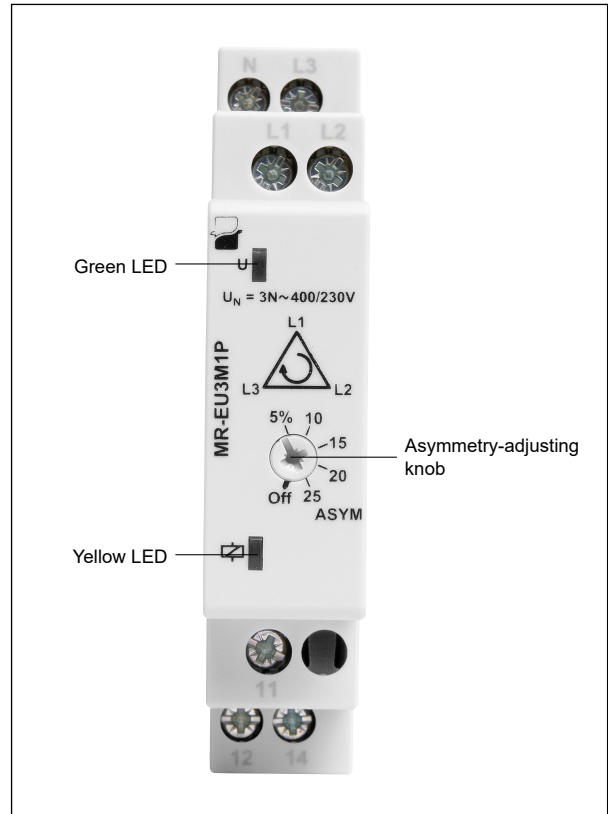
ASYM - Asymmetry monitoring.



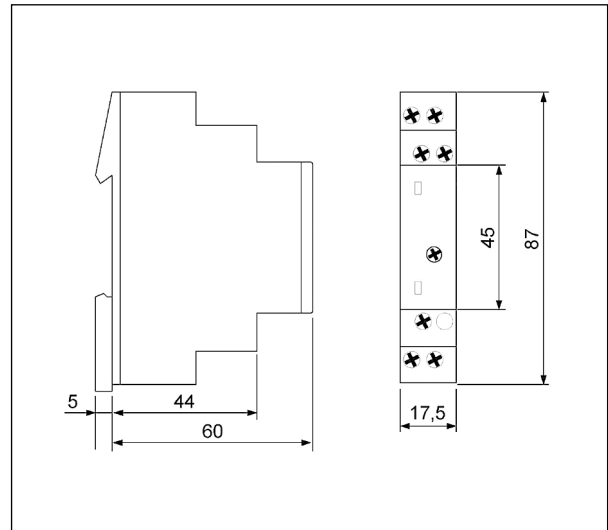
The output relay R switches into off-position (yellow LED not illuminated) when the asymmetry exceeds the value set at the ASYM-regulator. An asymmetry caused by the reverse voltage of a consumer (e.g. a motor which continues to run on two phases only) does not effect the disconnection.

U - supply voltage; **R** - output state of the relay

Front panel description



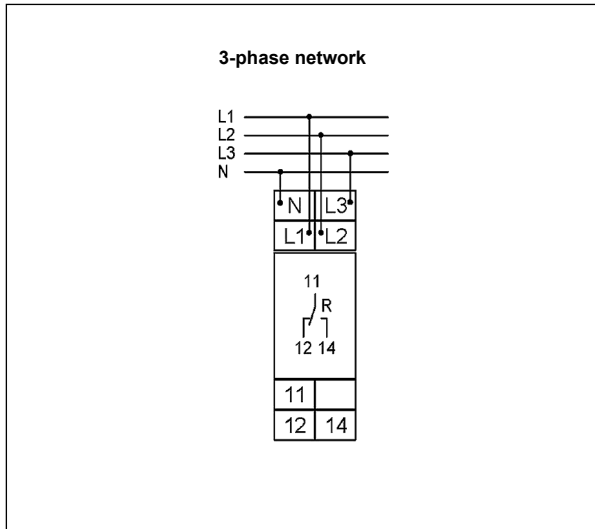
Dimensions



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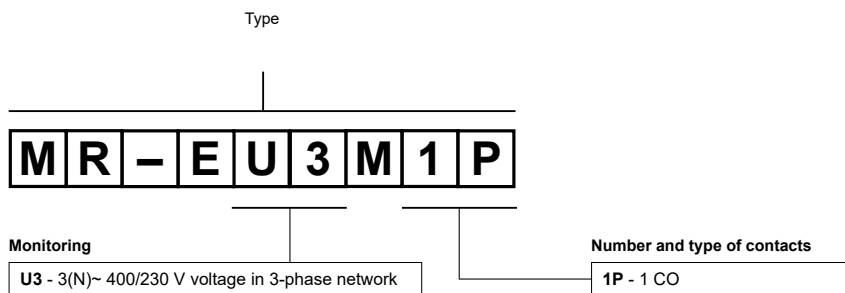
Connection diagram



Mounting

Relays **MR-EU3M1P** are designed for direct mounting on 35 mm rail mount acc. to EN 60715. Operational position - any. **Terminals - cross section of the connection cables:** 1 x 0,5 ... 2,5 mm² with/without multicore cable end, 1 x 4 mm² without multicore cable end, 2 x 0,5 ... 1,5 mm² with/without multicore cable end, 2 x 2,5 mm² flexible without multicore cable end.

Ordering codes



Example of ordering code:

MR-EU3M1P monitoring relay **MR-EU3M1P**, multifunction (relay perform 2 functions), cover - modular, width 17,5 mm, one changeover contact, rated monitoring voltages: AC - 3(N)~ 400/230 V

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.