

Measuring relay
SMU - Phase measuring relay / under voltage with 1 Changeover
 11.25mm housing



Application

Measures three-phase systems for under voltage and phase failure.

Description

The **SMU / under voltage** measures three-phase current systems for under voltage and phase failure. The relay is powered by the connection to the phase L1 (L1 – N > 170V AC). Additionally, the star point (neutral) of the measuring phases must be connected. The green LED indicates the connection of the power supply.

Function

If all three phases exceed the selected response value plus hysteresis (normal situation), the relay immediately switches into its operating position (relay energizes). This is indicated by the red LED. If at least one of the three phases falls below the drop-out value then the relay returns to its rest position. The response time of the relay can be set between 0 and 10 seconds and the hysteresis tolerance between 5 and 30%. The SMU senses the phase angle and will also switch off if the user generates a back feed.

Options

Other time settings, hysteresis tolerance and measuring ranges available upon request.

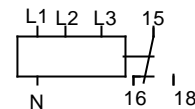
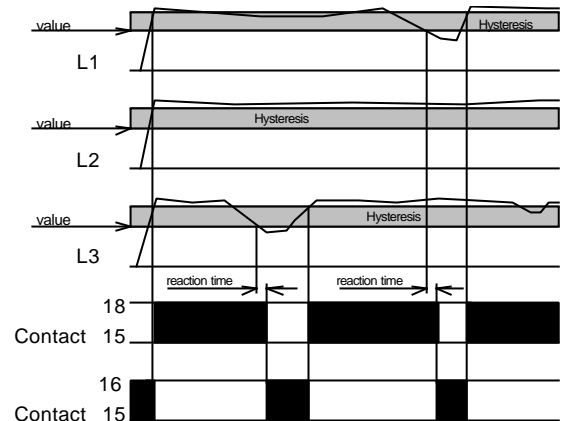
Part number

012001 SMU three-phase measuring relay
 Under voltage / 1 Changeover
 Range: L – N 170 – 230V AC

Approvals



Function diagram



Mounting

Snap-on mounting using a standard DIN rail EN 50022. The unit is designed to allow side-by-side mounting, with an ambient temperature of < 60°C.

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Technical data

Supply

Supply voltage: 3 x 400V AC / N
 Frequency range: 50 ... 60Hz
 Power consumption: 8 VA
 Operating mode: continuous

Adjustment range

U < : 170...230V AC
 ΔU : 5...30%
 t_v : 0...10s
 Measuring accuracy: 2% over the entire temperature and voltage range
 Repetitive accuracy: ± 2%

Operation indicators

Supply voltage: LED, green
 Relay in work position: LED, red

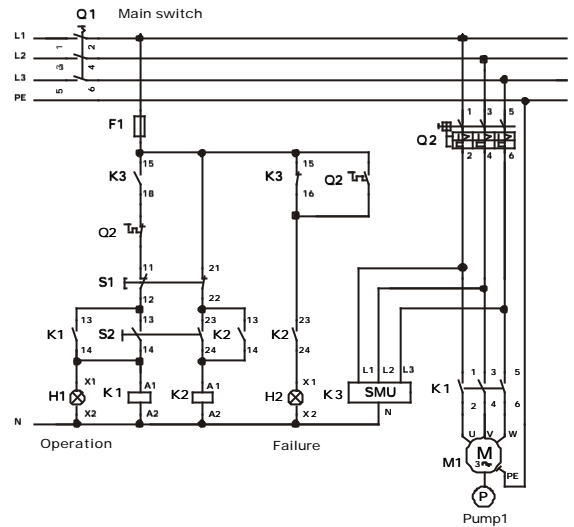
Contact

Number of changeovers: 1
 Contact material: AgSnO₂
 Maximum switching voltage: 250V AC
 Maximum switching current: 4A
 Drop-off time of switching element: approx. 20ms
 Mechanical life: 30 Mio.
 Electrical life (with rated load): 0.8 Mio.

General data

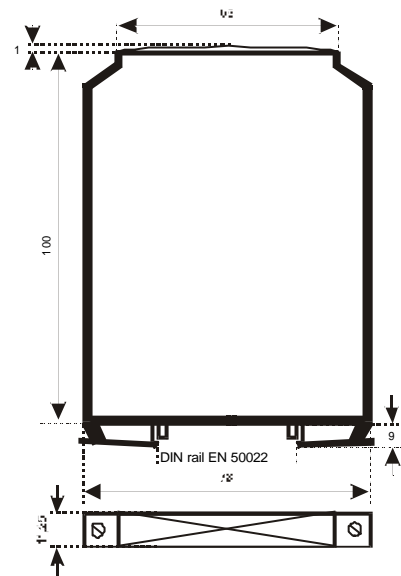
Ambient temperature: - 25 ... + 60°C
 Climate resistance: VDE 0435T.2021
 Mounting position: any
 Vibration resistance: VDE 0435T.2021
 Test voltage: 2.5kV
 Isolation group: VDE 0110 Group C 250
 Protection class: Terminals IP 20
 Housing IP 40
 Connection terminals: Crosshead screws;
 M3.5 self opening
 Connection cross section: Multi-strand wire with wire sleeves 2 x 2.5mm²
 single wire 2 x 2.5mm²
 Finger touch protection: VDE 0106T.100 and VBG4
 Mounting: Symmetrical DIN rail EN 50022
 Dimensions l x w x h: 78mm x 11.25mm x 110mm
 Weight: 77g

Example



The SMU measures a pump motor for under voltage and phase failure.

Dimensions



Connections

The terminal assignment for the connections is located on the front panel of the relay. **Reading the front panel from top to bottom**, the connections are in the following order:

LED side: L1 - L2 - L3 - 15
 Potentiometer side: nc - N - 16 - 18

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