



Monitoring relays - KAPPA series

Monitoring of phase sequence and phase failure

Monitoring of asymmetry

Optional connection of neutral wire

Supply voltage = measuring voltage

2 change over contacts

Plug-in housing

Width 38mm



Technical data

1. Functions

Voltage monitoring in 3-phase mains, monitoring of phase sequence, phase failure and asymmetry with adjustable asymmetry and optional connection of neutral wire.

2. Time ranges

Tripping delay: Adjustment range fixed, approx. 100ms

3. Indicators

Green LED ON: indication of supply voltage
Yellow LED ON/OFF: indication of relay output

4. Mechanical design

Self-extinguishing plastic housing, IP rating IP40
Mounted on screw terminal socket 11-pols in accordance with IEC 60067-1-18a
Mounting position: any
Sockproof terminal connection according to VBG 4 (PZ1 required), IP rating IP20
Tightening torque: max. 1Nm
Terminal capacity:
1 x 0.5 to 2.5mm² with/without multicore cable end
1 x 4mm² without multicore cable end
2 x 0.5 to 1.5mm² with/without multicore cable end
2 x 2.5mm² flexible without multicore cable end

5. Input circuit

Supply voltage: (= measuring voltage)
Pins: (S10)-S5-S6-S7 / (N)-L1-L2-L3
Rated voltage UN: see table ordering information or printing on the unit
Tolerance: -30% to +30% of UN
Rated consumption: 9VA (2W)
Rated frequency: AC 48 to 63Hz
Duty cycle: 100%
Reset time: 500ms
Hold-up time: -
Drop out voltage: >20% of the supply voltage
Overvoltage category: III (in accordance with IEC 60664-1)
Rated surge voltage: 4kV

6. Output circuit

2 potential free change over contacts
Rated voltage: 250V AC
Switching capacity: 1250VA (5A / 250V AC)
Fusing: 5A fast acting
Mechanical life: 20 x 10⁶ operations
Electrical life: 2 x 10⁵ operations at 1000VA resistive load
Switching frequency: max. 6/min at 1000VA resistive load (in accordance with IEC 60947-5-1)
Overvoltage category: III (in accordance with IEC 60664-1)
Rated surge voltage: 4kV

7. Measuring circuit

Measuring variable: 3(N)-, Sinus, 48 to 63Hz
Measuring input: (= supply voltage)
Pins: (S10)-S5-S6-S7 / (N)-L1-L2-L3
Overload capacity: determined by tolerance specified for supply voltage
Input resistance: -
Asymmetry: 5% ... 30%
Overvoltage category: III (in accordance with IEC 60664-1)
Rated surge voltage: 4kV

8. Accuracy

Base accuracy: ±5%
Adjustment accuracy: ≤5%
Repetition accuracy: ±2%
Voltage influence: -
Temperature influence: ≤0.05% / °C

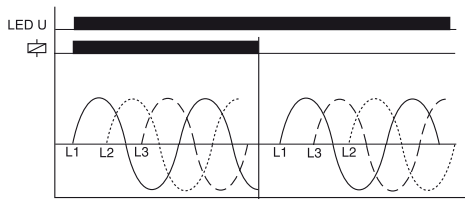
9. Ambient conditions

Ambient temperature: -25 to +55°C
Storage temperature: -25 to +70°C
Transport temperature: -25 to +70°C
Relative humidity: 15% to 85% (in accordance with IEC 60721-3-3 class 3K3)
Pollution degree: 2, if built in 3 (in accordance with IEC 60664-1)

Functions

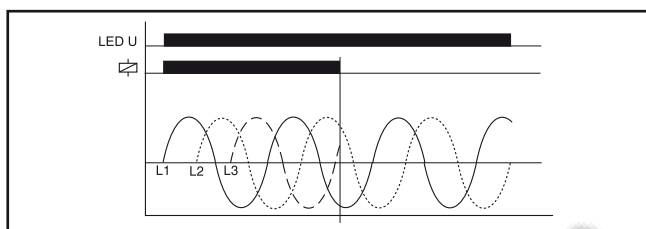
Phase sequence monitoring

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



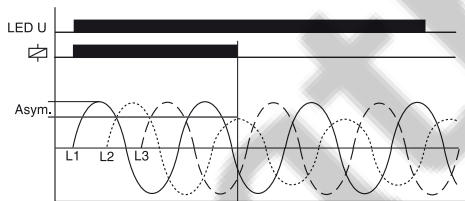
Phase failure monitoring

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

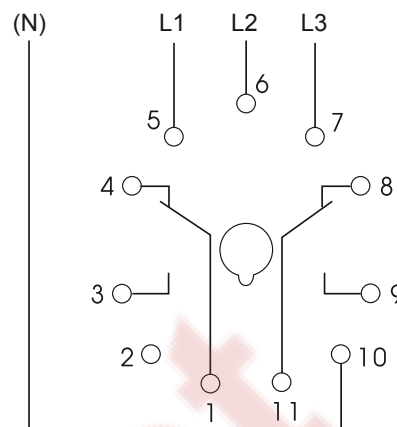


Asymmetry monitoring

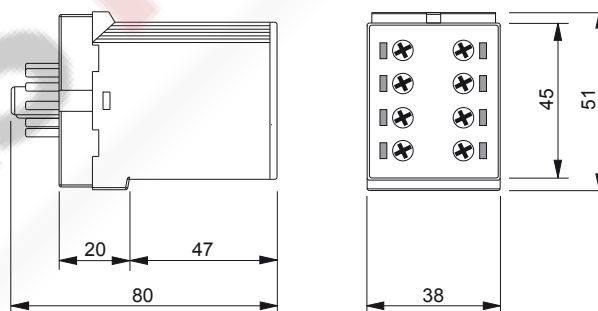
The output relay R switches into off-position (yellow LED not illuminated) when the asymmetry exceeds the value set at the ASYM-regulator. Reverse voltages of a consumer (e.g. a motor which continues to run on two phases only) do not effect the disconnection.



Connections



Dimensions



Ordering Informations

Types	Rated voltage U_N	Switching thresholds I_s	Part. No.
K3PF400VSY02	3(N)-400/230V	Asymmetrie: 5% ... 30%	1380301