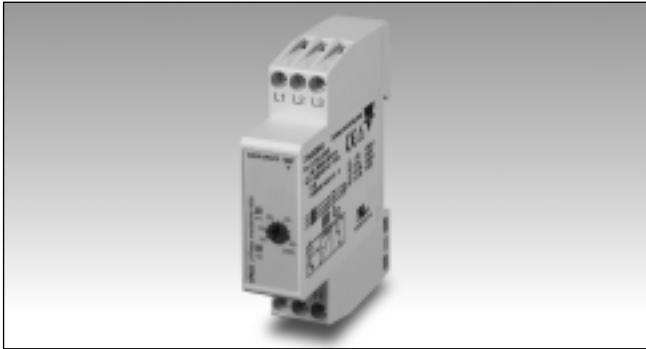


Monitoring Relays

3-Phase Sequence and Phase Loss

Type DPA53



- 3-phase monitoring relay for phase sequence and phase loss
- Detects when all phases are present and have the correct sequence
- Knob-adjustable undervoltage detection
- Measures own power supply
- Power supply range: 208 to 240 and 380 to 480 VAC ($\pm 15\%$)
- Output: 5 A SPDT relay normally energized
- For mounting on DIN-rail in accordance with DIN/EN 50 022
- 17.5 mm DIN-rail housing (DIN 43880)
- LED indication for relay and power supply ON

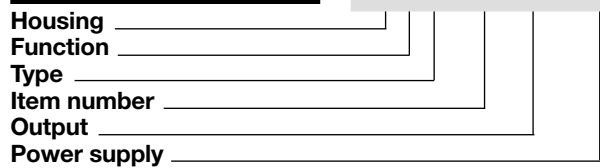
Product Description

3-Phase relay for detection of incorrect phase sequence and phase loss. Using the front knob it can be decided the undervoltage setpoint of the unit.

Supply range from 208 to 240 VAC and 380 to 480 VAC covered by two multivoltage relays. For mounting on DIN-rail. Housing 17.5 mm wide suitable both for back and front panel mounting.

Ordering Key

DPA 53 C M23



Type Selection

| Mounting | Output | Supply: 208 to 240 VAC | Supply: 380 to 480 VAC |
|----------|--------|------------------------|------------------------|
| DIN-rail | SPDT | DPA 53 C M23 | DPA 53 C M48 |

Input Specifications

| | |
|----------------------------|--|
| Input L1, L2, L3 | Terminals L1, L2, L3 Measures on own supply |
| Measuring range | |
| M23 | 160 to 240 VAC |
| M48 | 320 to 480 VAC |

Supply Specifications

| | |
|---|--|
| Power supply Rated operational voltage through terminals: | Overvoltage cat. II (IEC 60664, IEC 60038) L1, L2, L3 208 to 240 VAC $\pm 15\%$, 45 to 65 Hz |
| M23 | 208 to 240 VAC $\pm 15\%$, 45 to 65 Hz |
| M48 | 380 to 480 VAC $\pm 15\%$, 45 to 65 Hz |
| Rated operational power | |
| M23 | 7 VA @ 230 VAC, 50 Hz |
| M48 | 13 VA @ 400 VAC, 50 Hz Supplied by L1 and L3 |

Output Specifications

| | |
|--|--|
| Output | SPDT relay, N.E. |
| Rated insulation voltage | 250 VAC |
| Contact ratings (AgSnO₂) | μ |
| Resistive loads | AC 1 5 A @ 250 VAC DC 12 5 A @ 24 VDC |
| Small inductive loads | AC 15 2.5 A @ 250 VAC DC 13 2.5 A @ 24 VDC |
| Mechanical life | $\geq 30 \times 10^6$ operations |
| Electrical life | $\geq 10^5$ operations (at 8 A, 250 V, $\cos \varphi = 1$) |
| Operating frequency | ≤ 7200 operations/h |
| Dielectric strength | |
| Dielectric voltage | ≥ 2 kVAC (rms) |
| Rated impulse withstand volt. | 4 kV (1.2/50 μ s) |

General Specifications

| | |
|---|--|
| Reaction time Alarm ON delay Alarm OFF delay | < 100 ms < 300 ms |
| Accuracy Temperature drift Repeatability | (15 min warm-up time) ± 1000 ppm/ $^{\circ}$ C $\pm 0.5\%$ on full scale |
| Indication for Power supply ON Relay ON | LED, green LED, yellow |

General Specifications (cont.)

| | |
|---------------------------|----------------------------------|
| Environment | |
| Degree of protection | IP 20 |
| Pollution degree | 2 |
| Operating temperature | |
| @ Max. voltage, 50 Hz | -20 to +60°C, R.H. < 95% |
| @ Max. voltage, 60 Hz | -20 to +50°C, R.H. < 95% |
| Storage temperature | -30 to +80°C, R.H. < 95% |
| Housing dimensions | 17.5 x 81 x 67.2 mm |
| Weight | Approx. 75 g |
| Screw terminals | |
| Tightening torque | Max. 0.5 Nm acc. to IEC 60947 |
| Approvals | UL, CSA |
| CE Marking | Yes |
| EMC | |
| Immunity | According to EN 61000-6-2 |
| Emission | According to EN 61000-6-3 |

Level setting

Select the proper undervoltage level using the knob according to the phase-phase voltage and the needed sensitivity.

Centre knob:
Setting of under level on absolute scale.

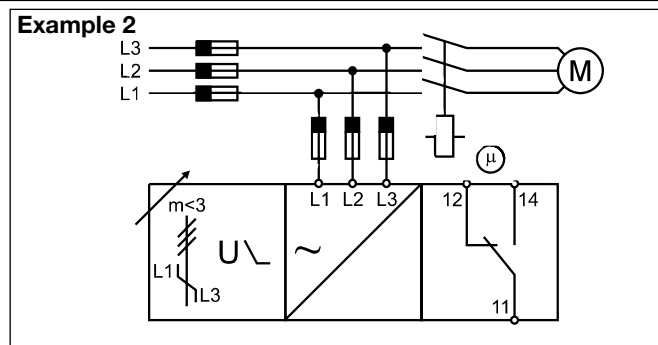
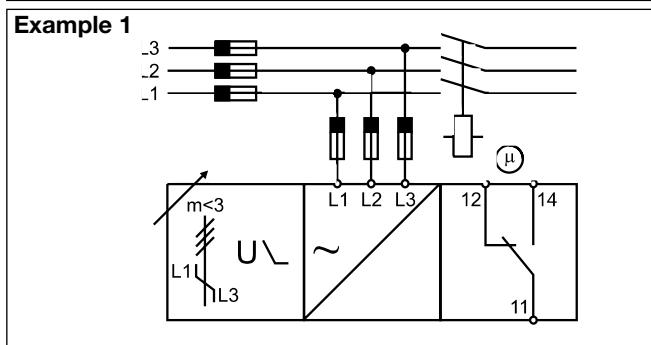
Mode of Operation

DPA53 monitors its own 3-phase power supply. The relay operates when all the phases are present, the phase sequence is correct and each phase-phase voltage is above the adjusted setpoint. The relay releases when one phase-phase voltage drops below the setpoint or when the phase sequence is incorrect.

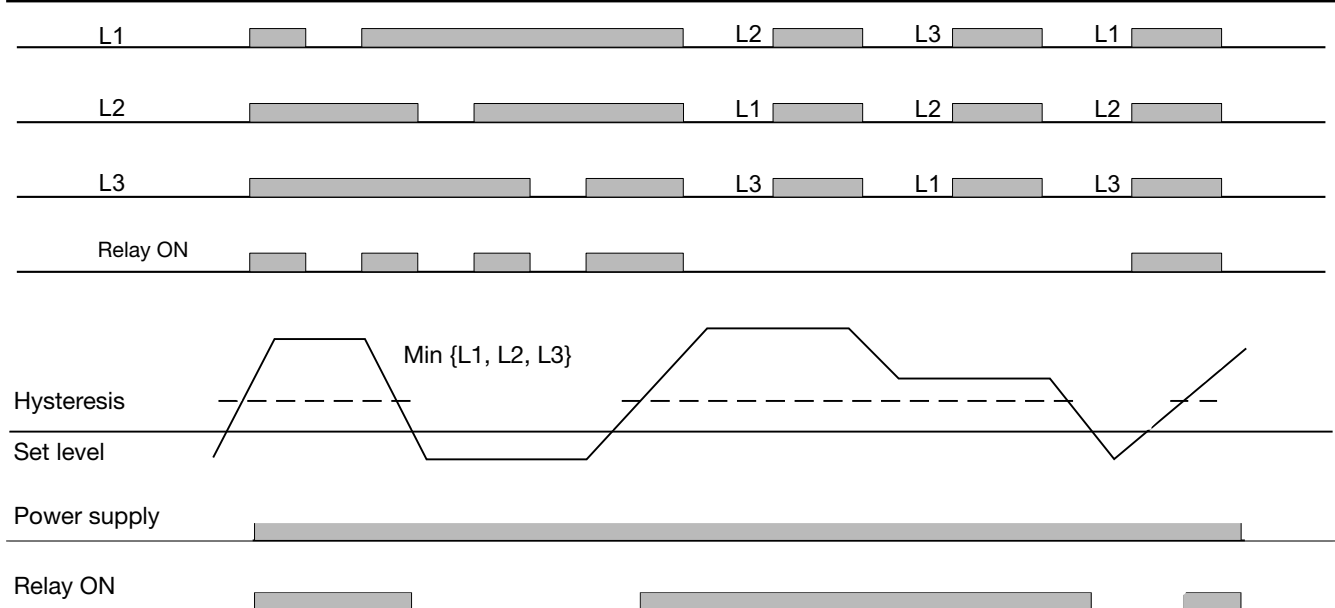
Example 1
The relay monitors that the power supply has the correct phase sequence and that all phases are present.

Example 2
The relay releases in case of interruption of one or more phases, provided that the regenerated voltage does not exceed the set voltage.

Wiring Diagrams



Operation Diagrams



Dimensions

