

Monitoring Relays

3-Phase Sequence and Phase Loss

Type DPA71

CARLO GAVAZZI



- 3-phase monitoring relay for phase sequence and phase loss
- Detects when all phases are present and have the correct sequence
- Measures its own power supply
- Power supply range: 208 to 480 VAC ($\pm 15\%$), by 2 models
- Output: 5 A DPDT relay normally energized
- For mounting on DIN-rail in accordance with DIN/EN 50 022
- 35.5 mm (DPA71) DIN-rail housing (DIN 43880)
- LED indication for relay and power supply ON

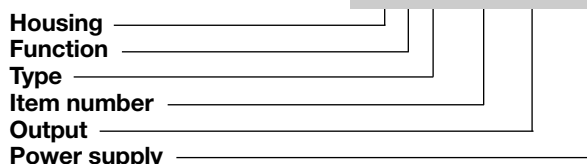
Product Description

3-Phase relay for detection of incorrect phase sequence, total and partial phase loss. Supply range from 208 to 480 VAC, covered by 2 models. For mounting on DIN-rail.

Housing 35.5 mm wide, DPDT relay output, suitable for back and front panel mounting. The device detects regenerated voltage up to 85% of the nominal voltage (phase-phase).

Ordering Key

DPA 71 D M48



Type Selection

Mounting	Output	Supply: 208 to 240 VAC	Supply: 380 to 480 VAC
DIN-rail	DPDT	DPA 71 D M23	DPA 71 D M48

Input Specifications

Input L1, L2, L3	Terminals L1, L2, L3 Measures its own supply
Measuring range 208 to 240 VAC (DM23) 380 to 480 VAC (DM48)	177 to 275 VAC 323 to 550 VAC
ON-level	> 85% of the phase- phase voltage

Supply Specifications

Power supply Rated operational voltage through terminals: L1, L2, L3 DM23 DM48	Overvoltage cat. III (IEC 60664, IEC 60038) 208 to 240 VAC $\pm 15\%$, 45 to 65 Hz 380 to 480 VAC $\pm 15\%$, 45 to 65 Hz
Rated operational power	10 VA @ 400 VAC, 50 Hz 6 VA @ 230 VAC, 50 Hz Supplied by L2 and L3

Output Specifications

Output	DPDT relay, N.E.
Rated insulation voltage	250 VAC
Contact ratings (AgSnO₂) Resistive loads AC 1 Small inductive loads AC 15 DC 13	μ 5 A @ 250 VAC 3 A @ 250 VAC 3 A @ 24 VDC
Mechanical life	$\geq 30 \times 10^6$ operations
Electrical life	$\geq 10^5$ operations (at 5 A, 250 V, $\cos \varphi = 1$)
Operating frequency	≤ 7200 operations/h
Dielectric strength Dielectric voltage Rated impulse withstand volt.	≥ 2 kVAC (rms) 4 kV (1.2/50 μ s)

General Specifications

Reaction time Alarm ON delay Alarm OFF delay	< 100 ms < 300 ms	Weight	Approx. 75 g
Accuracy Temperature drift Repeatability	(15 min warm-up time) ± 1000 ppm/°C ± 0.5%	Screw terminals Tightening torque	Max. 0.5 Nm acc. to IEC 60947
Indication for Power supply ON Relay ON	LED, green LED, yellow	Product standard	EN 60255-6
Environment Degree of protection Pollution degree Operating temperature Storage temperature	IP 20 3 -20 to +50°C, R.H. < 95% -30 to +80°C, R.H. < 95%	Approvals	UL, CSA
Housing Dimensions Material	35.5 x 81 x 67.2 mm PA66 or Noryl	CE Marking	L.V. Directive 2006/95/EC EMC Directive 2004/108/EC
		EMC Immunity	According to EN 60255-26 According to EN 61000-6-2
		Emissions	According to EN 60255-26 According to EN 61000-6-3

Mode of Operation

DPA71 monitors its own 3-phase power supply voltage. The relay operates when all the phases are present and the phase sequence is correct. The relay releases when one phase-phase voltage drops

below 85% of the other phase-phase voltages or when the phase sequence is wrong.

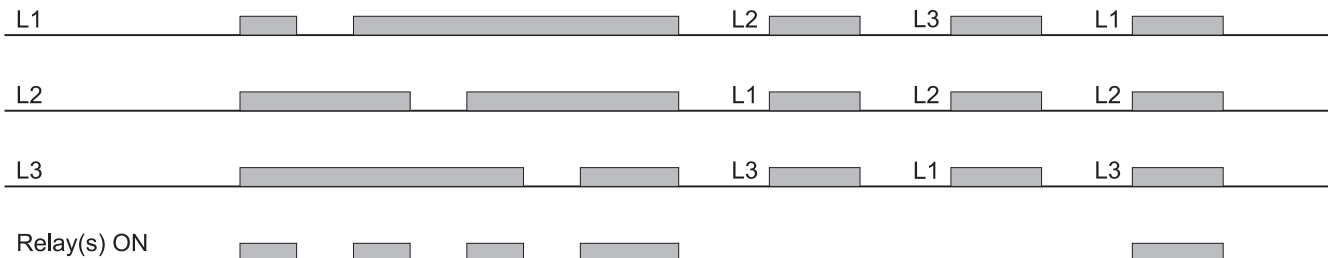
Example 1

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

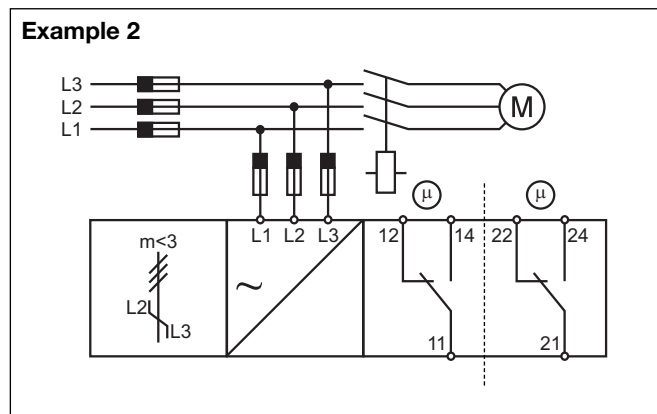
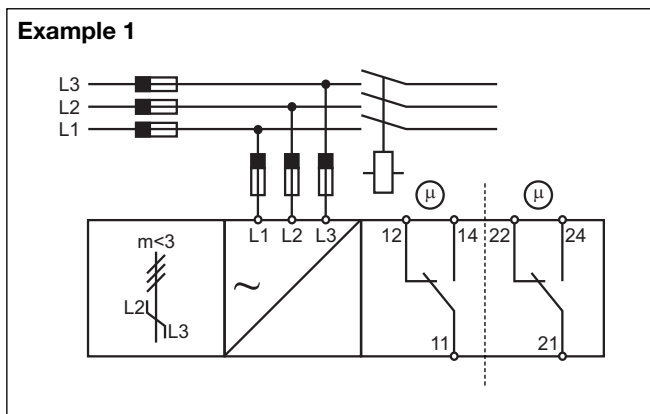
Example 2

The relay releases in case of interruption of one or more phases, provided that the regenerated voltage does not exceed 85% of the phase-phase voltage.

Operation Diagram



Wiring Diagrams



Dimensions

