

Monitoring Relays

3-Phase Sequence and Phase Loss

Type DPA51

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 ($\pm 15\%$)
- 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, total and partial phase loss. Supply range from 208 to 480 VAC. For mounting on DIN-rail.

Housing 17.5 mm wide, SPDT 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 51 C M44

Housing _____
 Function _____
 Type _____
 Item number _____
 Output _____
 Power supply _____

Type Selection

Mounting

DIN-rail

Output

SPDT

Supply: 208 to 480 VAC

DPA 51 C M44

Input Specifications

Input L1, L2, L3	Terminals L1, L2, L3 Measures its own supply
Measuring range 208 to 480 VAC	177 to 550 VAC
ON-level	> 85% of the phase- phase voltage

Supply Specifications

Power supply Rated operational voltage through terminals: L1, L2, L3	Overvoltage cat. III (IEC 60664, IEC 60038) 208 to 480 VAC $\pm 15\%$, 45 to 65 Hz
Rated operational power	13 VA @ 400 VAC, 50 Hz Supplied by L2 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 5 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	Housing Dimensions Material	17.5 x 81 x 67.2 mm PA66 or Noryl
Accuracy Temperature drift Repeatability	(15 min warm-up time) ± 1000 ppm/°C ± 0.5%	Weight	Approx. 75 g
Indication for Power supply ON Relay ON	LED, green LED, yellow	Screw terminals Tightening torque	Max. 0.5 Nm acc. to IEC 60947
Environment Degree of protection Pollution degree Operating temperature @ Max. voltage, 50 Hz @ Max. voltage, 60 Hz Storage temperature	IP 20 3 -20 to +60°C, R.H. < 95% -20 to +50°C, R.H. < 95% -30 to +80°C, R.H. < 95%	Product standard Approvals CE Marking	EN 60947-5-1 UL, CSA CCC (GB14048.5) L.V. Directive 2006/95/EC EMC Directive 2004/108/EC
		EMC Immunity Emissions	According to EN 61000-6-2 According to EN 61000-6-3

Mode of Operation

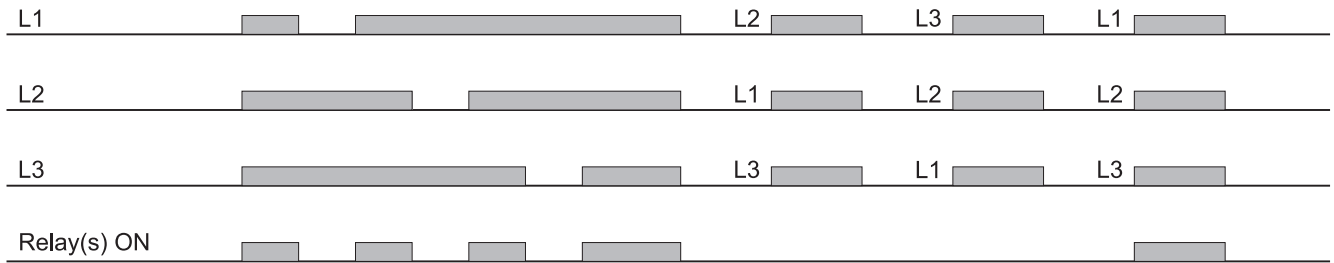
DPA51 monitors its own 3-phase power supply voltage. The relay operates when all the phases are present and the phase sequence is correct. The relay releases when one phase-phase voltage drops

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

Example 1

Example 2

Dimensions

