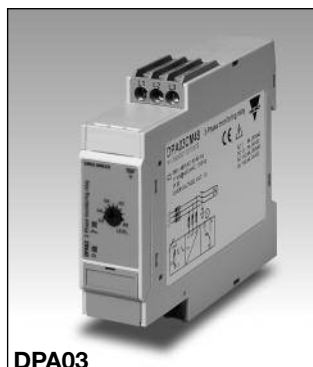


Monitoring Relays

3-Phase Sequence and Phase Loss

Types DPA03, PPA03

CARLO GAVAZZI



DPA03



PPA03

- 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, 380 to 480 and 600 to 690 VAC ($\pm 15\%$)
- Output: 8 A SPDT relay normally energized
- For mounting on DIN-rail in accordance with DIN/EN 50 022 (DPA03) or plug-in module (PPA03)
- 22.5 mm Euronorm housing (DPA03) or 36 mm plug-in module (PPA03)
- 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, 380 to 480 and 600 to 690 VAC covered by three multivoltage relays. For mounting on DIN-rail or plug-in module.

Ordering Key

DPA 03 C M23

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

Type Selection

Mounting	Output	Supply: 208 to 240 VAC	Supply: 380 to 415 VAC	Supply: 380 to 480 VAC	Supply: 600 to 690 VAC
DIN-rail	SPDT	DPA 03 C M23		DPA 03 C M48	DPA 03 C M69
Plug-in	SPDT	PPA 03 C M23	PPA 03 C M48		

Input Specifications

Input L1, L2, L3	Terminals L1, L2, L3 Measures on own supply
Measuring range	
M23	160 to 240 VAC
DPA03C M48	320 to 480 VAC
PPA03C M48	320 to 415 VAC
M69	510 to 690 VAC

Output Specifications

Output	SPDT relay, N.E.
Rated insulation voltage	250 VAC
Contact ratings (AgSnO₂)	μ
Resistive loads	AC 1 8 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)

Supply Specifications

Power supply	Overvoltage cat. II (IEC 60664, IEC 60038) L1, L2, L3	Rated operational power	
Rated operational voltage through terminals:		M23	7 VA @ 230 VAC, 50 Hz
M23	208 to 240 VAC $\pm 15\%$, 45 to 65 Hz	M48	11 VA @ 400 VAC, 50 Hz
DPA03C M48	380 to 480 VAC $\pm 15\%$, 45 to 65 Hz	M69	17 VA @ 600 VAC, 60 Hz
PPA03C M48	380 to 415 VAC $\pm 15\%$, 45 to 65 Hz		Supplied by L1 and L3
M69	600 to 690 VAC $\pm 15\%$, 45 to 65 Hz		



General Specifications

Reaction time		
Alarm ON delay		< 100 ms
Alarm OFF delay		< 300 ms
Accuracy		(15 min warm-up time)
Temperature drift		± 1000 ppm/°C
Repeatability		± 0.5% on full scale
Indication for		
Power supply ON		LED, green
Relay ON		LED, yellow
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	DPA03	22.5 x 80 x 99.5 mm
	PPA03	36 x 80 x 94 mm
Weight		Approx. 100 g
Screw terminals		
Tightening torque		Max. 0.5 Nm acc. to IEC 60947
Approvals		UL, CSA
CE Marking		Yes
EMC		Electromagnetic Compatibility
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

DPA03 and PPA03 monitor their 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.

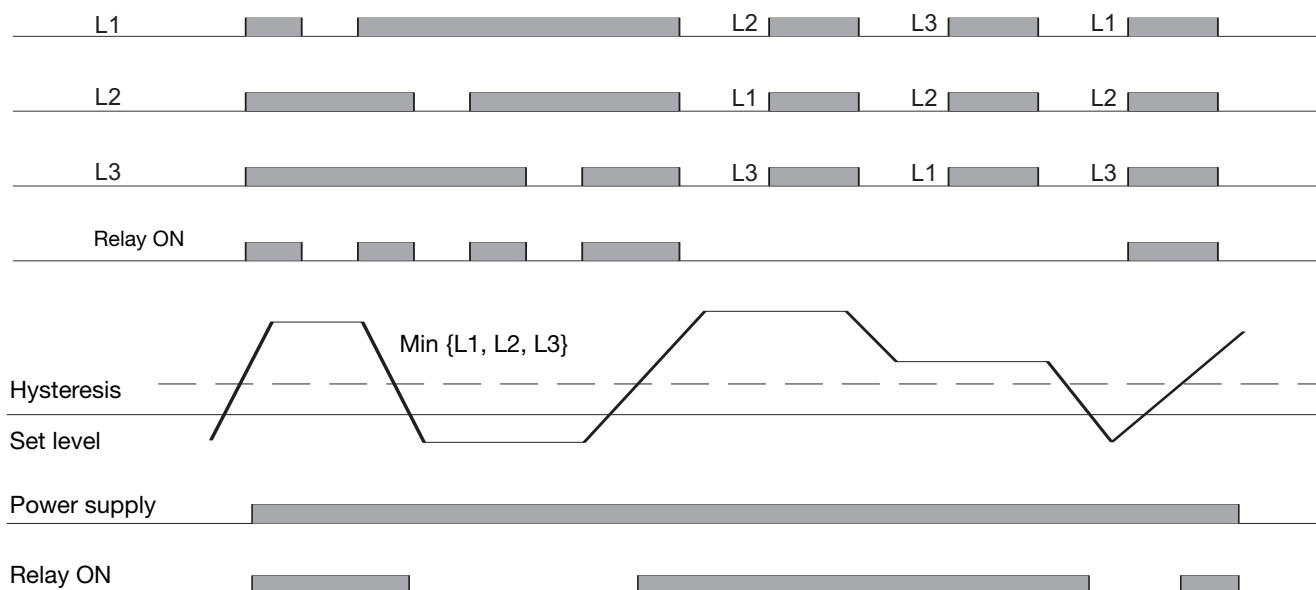
Example 1

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

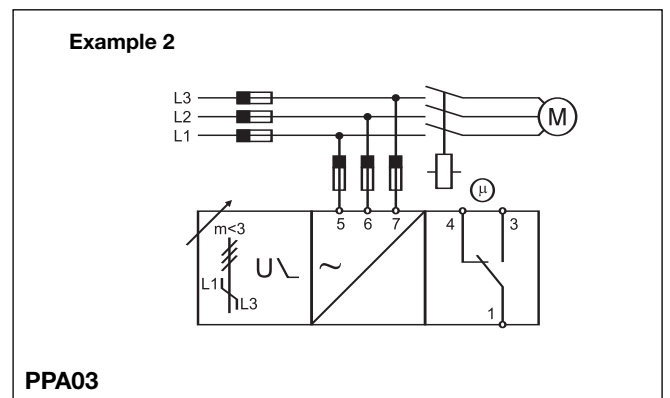
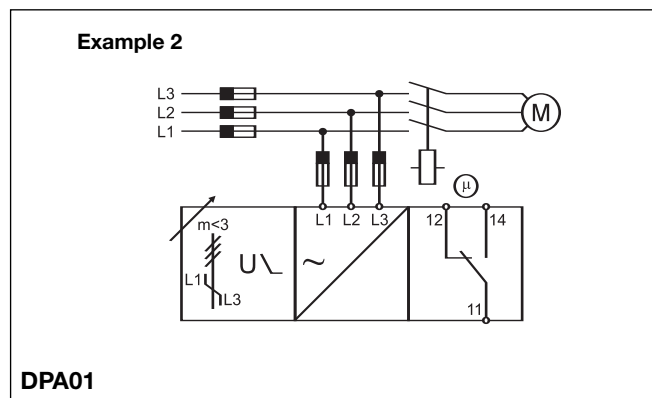
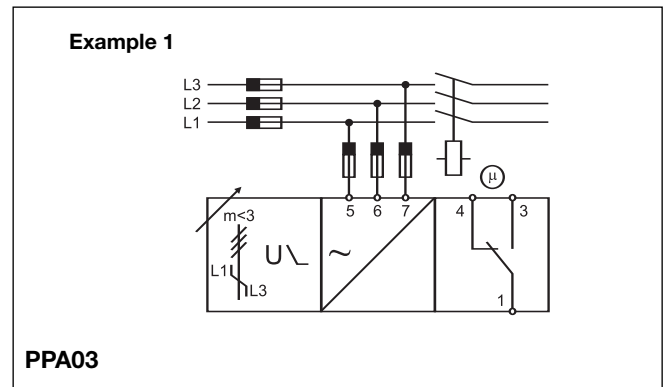
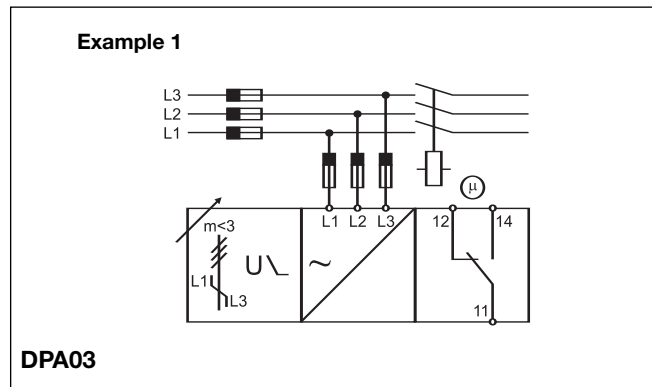
Example 2

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

Operation Diagrams



Wiring Diagrams



Dimensions

