

Current and Voltage Controls

3-Phase Sequence and Phase Loss

Type EUA

CARLO GAVAZZI



- 3-phase monitoring relay for phase sequence/phase loss (closed circuit)
- Measures when all 3 phases are present and have the correct phase sequence
- Measures on own power supply
- Knob-adjustable level setting
- Output: Up to 3 x 5 A SPDT relay
- For mounting on DIN-rail in accordance with DIN/EN 50 022
- 45 mm Euronorm housing
- LED-indication for relay and power supply ON

Product Description

3-phase line voltage monitoring and phase sequence/phase loss relay. Adjustment on built-in potentiometer of monitored voltage within $\pm 15\%$ of rated operational

voltage. For mounting on DIN-rail. Frequently used to secure the right phase sequence when applying a load to a 3-phase electrical network.

Ordering Key

EUA C 400

Housing _____
 Function _____
 Type _____
 Output _____
 Power supply _____

Type Selection

Mounting	Output	Supply: 220 VAC	Supply: 400 VAC	Supply: 480 VAC	Supply: 600 VAC
For DIN-rail	1 SPDT 2 SPDT 3 SPDT	EUA C 220 EUA D 220 EUA T 220	EUA C 400 EUA D 400 EUA T 400	EUA C 480 EUA D 480 EUA T 480	EUA C 600 EUA D 600

Input Specifications

Input U, V, W	L1 - L2 - L3 measures on own supply	
Measuring ranges	220	187-253 VAC
	400	340-460 VAC
	480	408-552 VAC
	600	510-690 VAC
ON-level Voltage setting	70% of voltage setting $\pm 15\%$ (of rated operational voltage)	

Output Specifications

Output	1, 2 or 3 x SPDT relay	
Rated insulation voltage	250 VAC (contact/elect.)	
Contact ratings (AgCdO)	μ (micro gap)	
	Resistive loads AC 1	5 A, 250 VAC
	DC 1	5 A, 24 VDC
	Small inductive loads AC 15	2 A, 250 VAC
DC 13	3 A, 24 VDC	
Mechanical life	$\geq 40 \times 10^6$ operations	
Electrical life	$\geq 10^5$ operations (at max. load)	
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. III (IEC 60664) (IEC 60038)	
Rated operational voltage	220 VAC, $\pm 15\%$	
Through term. U, V, W	220	50/60 Hz, -5/+5 Hz
	400	400 VAC, $\pm 15\%$
	480	50/60 Hz, -5/+5 Hz
	480	480 VAC, $\pm 15\%$
600	50/60 Hz, -5/+5 Hz	600 VAC, $\pm 15\%$
	50/60 Hz, -5/+5 Hz	≤ 40 ms
Voltage interruption	None	
Dielectric voltage	None	
Rated impulse withstand voltage	up to 480 VAC	4 kV (1.2/50 μ s)
	up to 600 VAC	6 kV (1.2/50 μ s)

Rated operational power 2.5 VA
 Supplied from L1 & L3

General Specifications

Reaction time	
OFF-delay	< 30 ms
ON-delay	< 500 ms
Accuracy	±10%
Temperature drift	≤ 0.2%/°C (≤ 0.11%/°F)
Hysteresis	< 10%
Indication for	
Power supply ON	LED, green
Output ON	LED, yellow
Environment	
Degree of protection	IP 20
Pollution degree	3
Operating temperature	-20° to +50°C (-4° to +122°F)
Storage temperature	-50° to +85°C (-58° to +185°F)
Weight	280 g
Screw terminals	
Tightening torque	Max. 0.5 Nm acc. to IEC 60947
Approvals	UL, CSA

Mode of Operation

EUA measures on its own 3-phased power supply, and the relay operates when all phases are present and the phase sequence is correct.

Example 1

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

The level of the monitored voltage is adjustable on the front of the module within ±15%. The relay releases when one or more of the phases drops below 70% of the set level. (Ex. if the voltage regenerated by electric motors exceeds the 70% level, the set level can be adjusted until the relay releases).

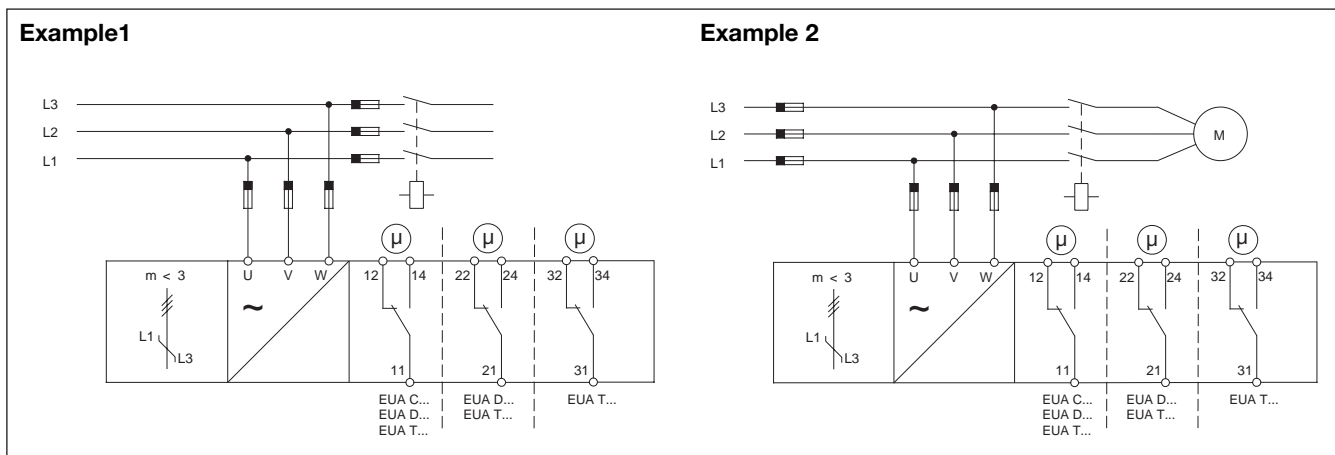
Example 2

The relay releases in case of interruption of one of the phases, provided that the re-generated voltage does not exceed the 70% level (see above).

Range Setting

Potentiometer for setting of measuring range (line voltage).

Wiring Diagrams



Operation Diagram

