

# 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	<b>EUA C 220</b> <b>EUA D 220</b> <b>EUA T 220</b>	<b>EUA C 400</b> <b>EUA D 400</b> <b>EUA T 400</b>	<b>EUA C 480</b> <b>EUA D 480</b> <b>EUA T 480</b>	<b>EUA C 600</b> <b>EUA D 600</b>

### Input Specifications

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

### Output Specifications

<b>Output</b>	1, 2 or 3 x SPDT relay
<b>Rated insulation voltage</b>	250 VAC (contact/elect.)
<b>Contact ratings (AgCdO)</b>	$\mu$ (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
<b>Mechanical life</b>	$\geq 40 \times 10^6$ operations
<b>Electrical life</b>	$\geq 10^5$ operations (at max. load)
<b>Operating frequency</b>	$\leq 7200$ operations/h
<b>Dielectric strength</b>	
Dielectric voltage	2 kVAC (rms)
Rated impulse withstand volt.	4 kV (1.2/50 $\mu$ s)

### Supply Specifications

<b>Power supply</b>	Overvoltage cat. III (IEC 60664) (IEC 60038)
Rated operational voltage	220 VAC, $\pm 15\%$
Through term. U, V, W	50/60 Hz, -5/+5 Hz
	400 VAC, $\pm 15\%$
	50/60 Hz, -5/+5 Hz
	480 VAC, $\pm 15\%$
	50/60 Hz, -5/+5 Hz
	600 VAC, $\pm 15\%$
	50/60 Hz, -5/+5 Hz
Voltage interruption	$\leq 40$ ms
Dielectric voltage	None
Rated impulse withstand voltage	up to 480 VAC 4 kV (1.2/50 $\mu$ s) up to 600 VAC 6 kV (1.2/50 $\mu$ s)

<b>Rated operational power</b>	2.5 VA
Supplied from	L1 & L3

## General Specifications

<b>Reaction time</b>	
OFF-delay	< 30 ms
ON-delay	< 500 ms
<b>Accuracy</b>	±10%
Temperature drift	≤ 0.2%/°C (≤ 0.11%/°F)
<b>Hysteresis</b>	< 10%
<b>Indication for</b>	
Power supply ON	LED, green
Output ON	LED, yellow
<b>Environment</b>	
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)
<b>Weight</b>	280 g
<b>Screw terminals</b>	
Tightening torque	Max. 0.5 Nm acc. to IEC 60947
<b>Approvals</b>	UL, CSA
<b>CE-marking</b>	Yes

## 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).

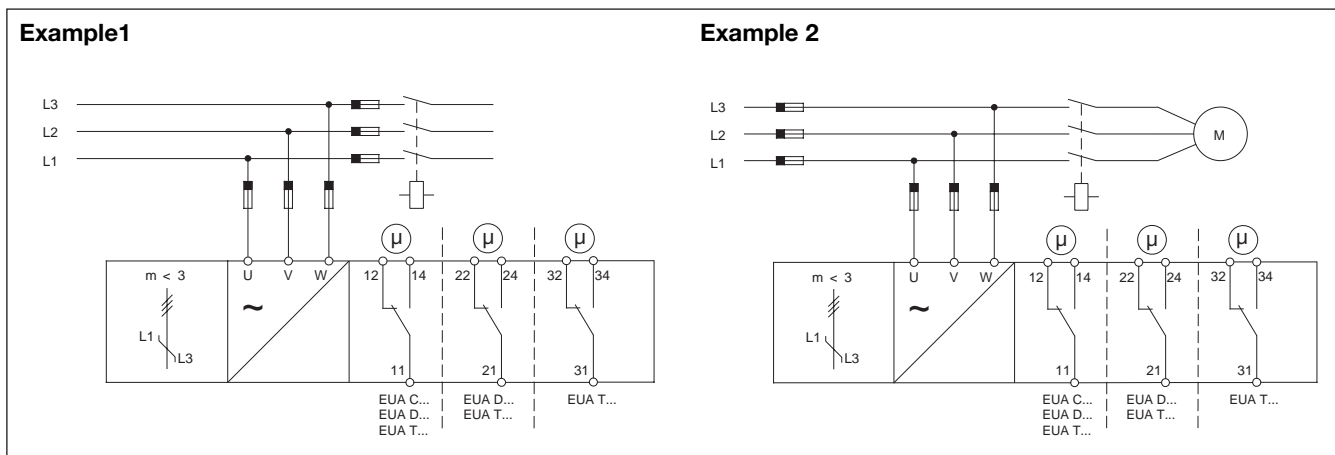
### Example 2

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

