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[Crouzet](#)
[84903020](#)

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Din Rail Mount 17.5 mm Phase Sequence & Phase Failure EMWS Part number 84903020



- Control of 3-phase networks : phase sequence, total phase failure
- Multi-voltage from 3 x 208 to 3 x 480 V AC
- Controls its own supply voltage
- True RMS measurement
- LED status indication

Part numbers

	Type	Function	Nominal voltage (V)	Output
84903020	EMWS	Phase sequence, phase failure	3 x 208 → 3 x 480 V AC	1 single pole changeover relay

Specifications

Supply

AC supply voltage frequency	50 / 60 Hz ± 10 %
Galvanic isolation of power supply/measurement	No
Immunity from micro power cuts	60 ms

Inputs and measuring circuit

Frequency of measured signal	50 → 60 Hz ± 10 %
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Output

Type of contacts	No cadmium
Max. breaking current	EMWS - MWS2 : 5 A AC/DC MWS : 8 A AC 250 V AC - 8 A DC 30 V DC
Maximum rate	360 operations/hour at full load
Operating categories acc. to IEC/EN 60947-5-1	AC12, AC13, AC14, AC15, DC12, DC13

Insulation

Insulation coordination (IEC/EN 60664-1)	Overvoltage category III : degree of pollution 3
Rated impulse withstand voltage (IEC/EN 60664-1)	4 kV (1,2 / 50 µs)
Dielectric strength (IEC/EN 60664-1)	2 kV AC 50 Hz 1 min.

General characteristics

Display relay	Yellow LED
Casing	17,5 mm
Mounting	On 35 mm symmetrical DIN rail, IEC/EN 60715
Mounting position	All positions
Material : enclosure plastic type VO to UL94 standard	Incandescent wire test according to IEC/EN 60695-2-11
Protection (IEC/EN 60529)	Terminal block : IP20 Casing : IP30
Operating temperature IEC/EN 60068-2	-20 → +50 °C
Storage temperature IEC/EN 60068-2	-40 → +70 °C
Humidity IEC/EN 60068-2-30	2 x 24 hr cycle 95 % RH max. without condensation 55 °C
Vibrations according to IEC/EN 60068-2-6	10 → 150 Hz, A = 0.035 mm
Shocks IEC/EN 60068-2-6	5 g

Standards

Product standard	IEC/EN 50178
Electromagnetic compatibility (EMC)	IEC/EN 61000-6-1, IEC/EN 61000-6-2, IEC/EN 61000-6-3, IEC/EN 61000-6-4
Certifications	MWS, MWS2 : CE, UL, CSA EMWS : CE, UL (cULus)
Conformity with environmental directives	RoHS

Supply

Supply voltage Un	3 x 208 → 3 x 480 VAC *
Voltage supply tolerance	-13 % / +10 %
Operating range	183 → 528 VAC
Maximum power consumption	20 VA

Inputs and measuring circuit

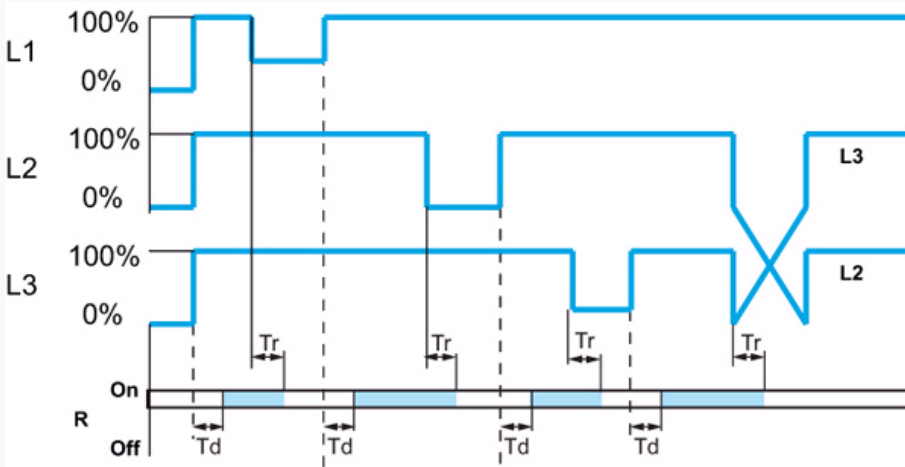
Measurement ranges	183 → 528 VAC
Guaranteed phase failure detection threshold	< 100 VAC
Voltage threshold hysteresis	> 80 VAC (voltage must be > 180 VAC)

02/11/2015

Display precision	± 10 V
Maximum regeneration (phase failure)	< 100 VAC
Timing	
Alarm on delay time max.	100 ms
Delay on pick-up	100 ms
Output	
Type of output	1 single pole changeover relay
Maximum breaking voltage	250 VAC/DC
Max. breaking current	NO : 5A 250 VAC / 5 A 30 VDC NC : 3A 250 VAC / 3 A 30 VDC
Min. breaking current	10 mA / 12 VDC
Breaking capacity (V resistive)	NO : 1,250 VA / 150 W NC : 750 VA / 90 W
Mechanical life (operations)	10 ⁵ cycles NO 7.10 ⁴ cycles NC
Insulation	
Nominal insulation voltage	300 V (correspond à un réseau 277/480 avec neutre ou 480 sans neutre)
Insulation resistance (IEC/EN 60664-1)	> 500 MΩ / 250 VDC / 1min
General characteristics	
"Fault" indication	Yellow LED turns off
Weight	63 g 72 g with unitary packing & manual operation
Connecting capacity IEC/EN 60947-1	Rigid : 1 x 0,5 → 4 mm ² (AWG 20 → AWG 11) 2 x 0,5 → 2,5 mm ² (AWG 20 → AWG 14) Flexible with ferrules : 1 x 0,5 → 2,5 mm ² (AWG 20 → AWG 14) 2 x 0,5 → 1,5 mm ² (AWG 20 → AWG 16)
Max. tightening torques IEC/EN 60947-1	0,6 → 0,8 N.m / 5,3 → 7,08 Lbf.in
Vibrations according to IEC/EN60068-2-6	10 → 150 Hz, A = 0.35 mm peak to peak 20 x cycles, 1octave / min

Comments

Principles



Operating principle

EMWS : Phase controller

The relay monitors its own supply voltage.

The relay controls :

- correct sequencing of the three phases,
- total failure of one of the three phases.

When the phase sequence and voltages are correct (> 183 VAC), the output relay is closed and the yellow LED is lit.

In the event of a phase sequence or total phase failure fault (detected when one of the voltages drops below 100 V), the relay opens instantly and its LED is extinguished.

When the unit is powered up with a measured fault, the relay stays open.

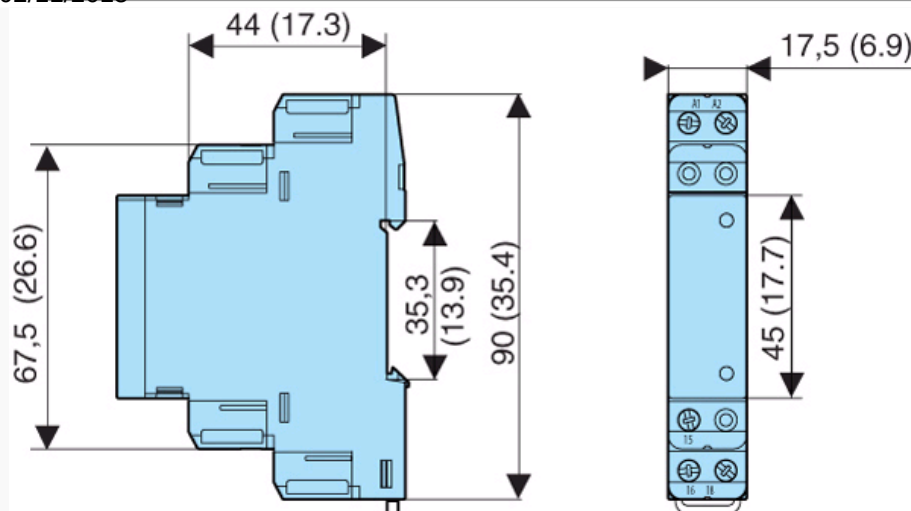
Td : Power on delay

Tr : Response time after a fault has occurred

R : output relay

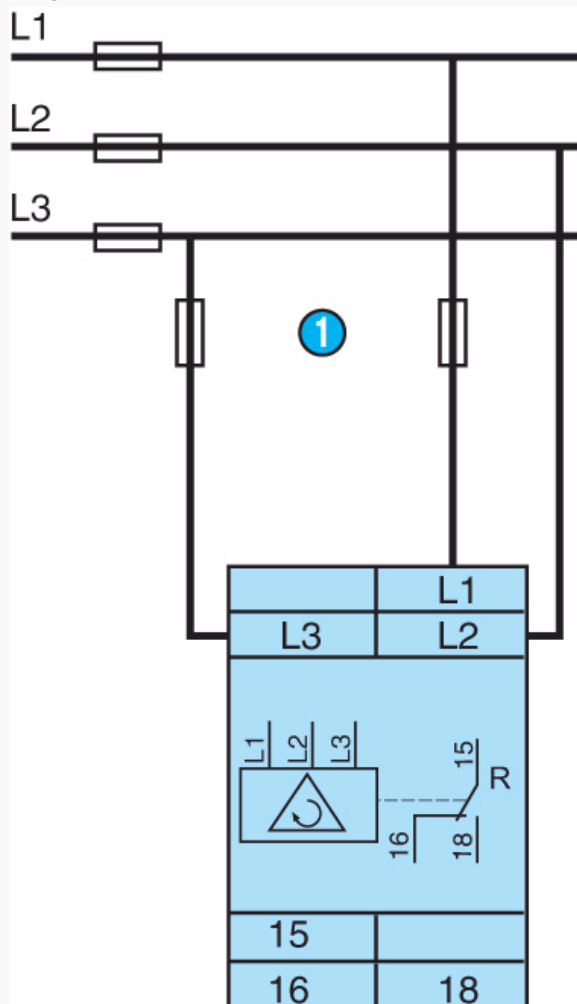
Dimensions (mm)

EMWS



Connections

EMWS



N°	Legend
1	2 x F1 100 mA fast-blow fuse

Connections

CA 84903020

 CA 84903020

Product adaptations



- Customisable colours and labels