

Single function Essential phase control relay - 17.5 mm 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 and failure	3 x 208 → 3 x 480 V AC	1 single pole changeover relay

Specifications

Supply

Voltage supply tolerance	-12 % / +10 %
AC supply voltage frequency	50 / 60 Hz ± 10 %
Galvanic isolation of power supply/measurement	No
Power consumption at Un	20 VA max.
Immunity from micro power cuts	60 ms

Inputs and measuring circuit

Guaranteed phase failure detection threshold	< 100 VAC
Frequency of measured signal	50 → 60 Hz ± 10 %

Timing

Delay on pick-up	100 ms
Alarm on delay time max.	100 ms

Output

Type of contacts	1 CO without cadmium
Maximum breaking voltage	250 VAC / 30 VDC
Max. breaking current	NO : 5 A 250 VAC / 5 A 30 VDC NC : 3 A 250 VAC / 3 A 30 VDC
Min. breaking current	10 mA / 12 VDC
Electrical life (number of operations)	10 ⁵ NO cycles 7 x 10 ⁴ NC cycles
Breaking capacity (resistive)	NO : 1250 VA / 150 W NC : 750 VA / 90 W
Maximum rate	360 operations/hour at full load
Mechanical life (operations)	5 x 10 ⁶ cycles

Insulation

Nominal insulation voltage IEC/EN 60664-1	500 V
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)
Breakdown voltage acc. to IEC/EN 60664-1, IEC/EN 60255-5	2 kV AC 50 HZ 1 min.
Insulation resistance according to IEC/EN 60664-1, NFC 93 050	> 500 MΩ / 500 VDC

General characteristics

Output relay status indication	Yellow LED
Casing	17,5 mm
Mounting	On 35 mm symmetrical DIN rail, IEC/EN 60715
Mounting position	All positions
Material : enclosure plastic	UL94 V0
Protection (IEC/EN 60529)	Terminal block : IP20 Casing : IP40
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
Operating temperature IEC/EN 60068-2-1/2	-20 →+50 °C
Storage temperature IEC/EN 60068-2-1/2	-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/EN60068-2-6	10 →150 Hz, A = 0,035 mm
Schocks according to IEC/EN 60068-2-27	15 g peak, 11 ms

Standards

Standards	IEC/EN 60255-6 (measuring and environmental) IEC/EN 60664-1 (BT) IEC/EN 61000-6-2 (CEM) IEC/EN 61000-6-3 (CEM) IEC/EN 61000-6-4 (CEM)
Certifications	CE, cULus listed Industrial Control Equipment (Max rated operational Voltage : 300 VAC)
Conformity with environmental directives	RoHS

Supply

Supply voltage Un	3 x 208 →3 x 480 VAC *
Operating range	183 →528 VAC

Inputs and measuring circuit

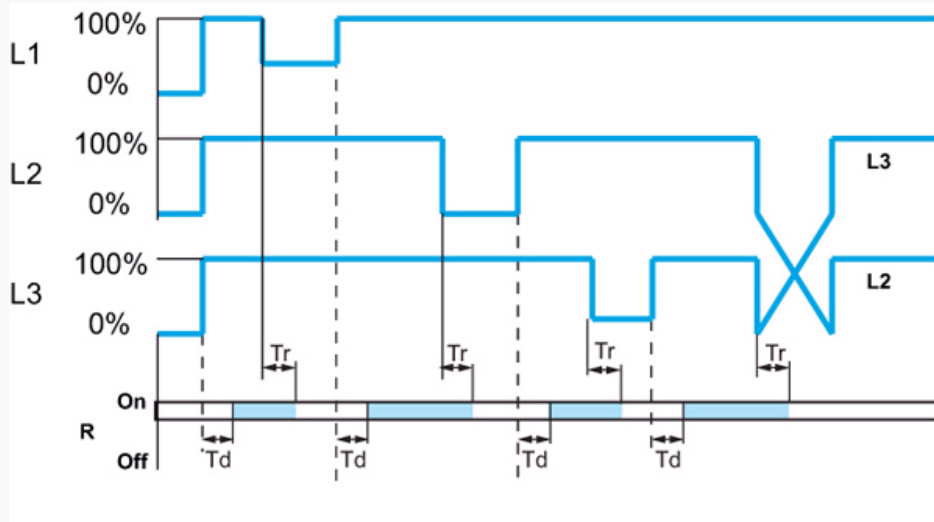
Measurement ranges	183 →528 VAC
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General characteristics

Weight	63 g 72 g with unitary packing & manual operation
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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.

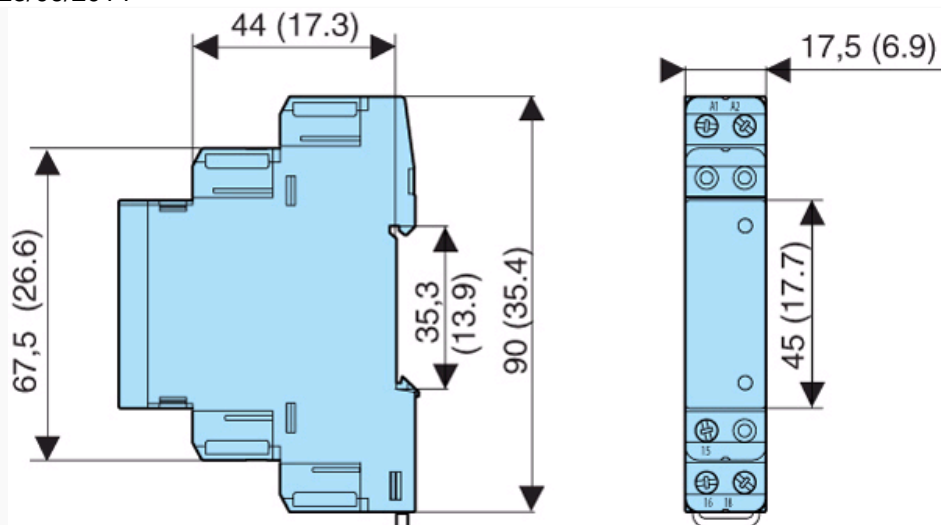
Td : Power on delay

Tr : Response time after a fault has occurred

R : output relay

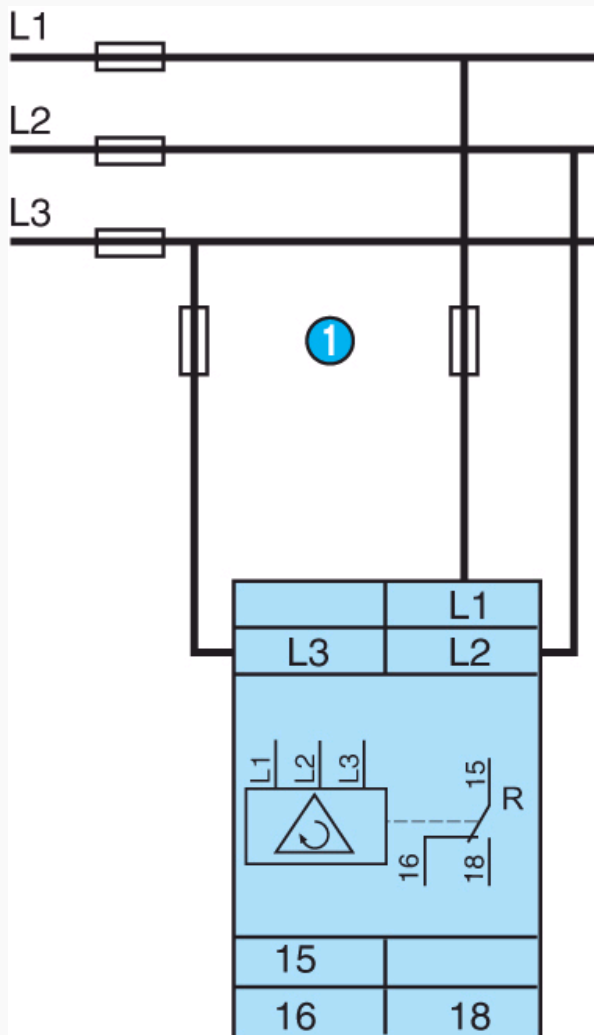
Dimensions (mm)

EMWS



Connections

EMWS



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

Product adaptations



- Customisable colours and labels