

# Phase control

## → Single function phase control relay - 17.5 mm



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



### Part numbers

	MWS
Function	Phase sequence and failure
Nominal voltage (V)	3 x 208 → 3 x 480 V ~
Output	1 single pole changeover relay
<b>Part numbers</b>	<b>84 873 029</b>
<b>Supply</b>	
Supply voltage Un	3 x 208 → 3 x 480 V ~ *
Operating range	183 → 528 V ~
<b>Inputs and measuring circuit</b>	
Measurement ranges	183 → 528 V ~
<b>General characteristics</b>	
Weight	80 g
<b>Comments</b>	
* 3-phase mains with earth	

## General characteristics

### Supply

Voltage supply tolerance	-12 % / +10 %
~ supply voltage frequency	50 / 60 Hz ± 10 %
Galvanic isolation of power supply/measurement	No
Power consumption at Un	22 VA in 400 V~, 50 Hz
Immunity from micro power cuts	60 ms

### Inputs and measuring circuit

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

### Timing

Delay on pick-up	≤ 650 ms
Alarm on delay time max.	130 ms

### Output

Type of contacts	No cadmium
Maximum breaking voltage	250 V ~ / ---
Max. breaking current	8 A ~
Min. breaking current	10 mA / 5 V ---
Electrical life (number of operations)	1 x 10 <sup>5</sup> MWS
Breaking capacity (resistive)	2000 VA ~ / 80 W
Mechanical life (operations)	10 x 10 <sup>6</sup>

### Insulation

Nominal insulation voltage IEC/EN 60664-1	400 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)
Dielectric strength (IEC/EN 60664-1)	2 kV AC 50 Hz 1 min.
Insulation resistance (IEC/EN 60664-1)	> 500 MΩ / 500 V ---

### 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 type VO to UL94 standard	Incandescent wire test according to IEC/EN 60695-2-11
Protection (IEC/EN 60529)	Terminal block : IP20 Casing : IP30
Connecting capacity IEC/EN 60947-1	Rigid : 1 x 4 <sup>2</sup> - 2 x 2.5 <sup>2</sup> mm <sup>2</sup> 1 x 11 AWG - 2 x 14 AWG Flexible with ferrules : 1 x 2.5 <sup>2</sup> - 2 x 1.5 <sup>2</sup> mm <sup>2</sup> 1 x 14 AWG - 2 x 16 AWG
Max. tightening torques IEC/EN 60947-1	0.6 → 1 Nm / 5.3 → 8.8 Lbf.In
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/EN60068-2-6	10 → 150 Hz, A = 0.035 mm
Shocks IEC/EN 60068-2-6	5 g

### Standards

Standards	IEC/EN 50178, IEC/EN 61000-6-2, IEC/EN 61000-6-3
Certifications	CE, UL, CSA, GL
Conformity with environmental directives	RoHS, WEEE

## Product adaptations



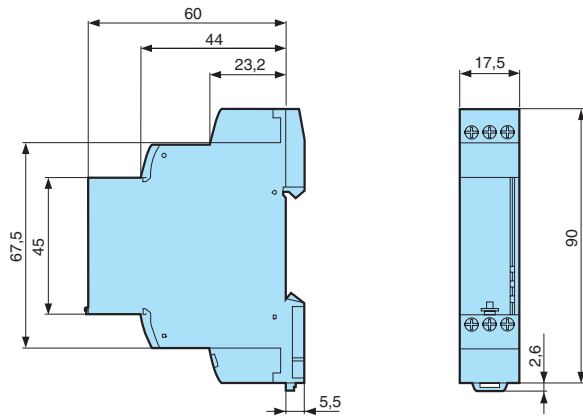
### ■ Customisable colours and labels

## Accessories

Description	Code
Removable sealable cover for 17.5 mm casing	8480000

## Dimensions (mm)

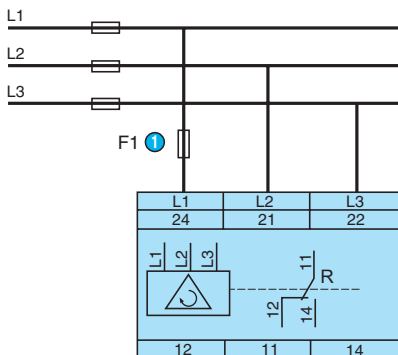
MWS



mm

## Connections

MWS

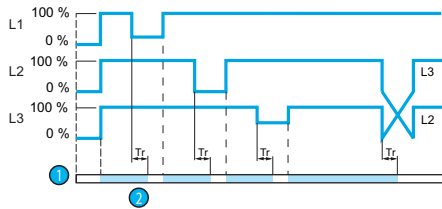


① 100 mA fast-blow fuse

## Overview

3-phase network control relays monitor the sequence of phases L1, L2, L3 and failure of one or more phases.  
LEDs are used for signalling.

## MWS Phase failure and sequence



## Operating principle

### MWS: 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 ( $> 183 \text{ V} \sim$ ), the output relay (s) are 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.

- 1 MWS : Relay R
- 2 Response time on appearance of a fault (Tr)