



## Main

Range of product	Zelio Control
Product or component type	Modular measurement and control relays
Relay type	Multifunction control relay
Product specific application	For 3-phase supply
Relay name	RM35TF
Relay monitored parameters	Undervoltage and overvoltage in window mode Phase sequence Phase failure detection Asymmetry
Time delay	Adjustable 0.1...10 s, +/- 10 % of the full scale value
Switching capacity in VA	1250 VA
Measurement range	220...480 V voltage AC

## Complementary

Reset time	1500 ms at 480 V
Maximum switching voltage	250 V AC 250 V DC
Minimum switching current	10 mA at 5 V DC
Maximum switching current	5 A AC 5 A DC
Supply voltage limits	194...528 V AC, 3 phases
Control circuit voltage limits	- 12 % + 10 % Un
Power consumption in VA	0...22 VA at 400 V AC 50 Hz
Voltage detection threshold	< 194 V
Control circuit frequency	50...60 Hz +/- 10 %
Output contacts	2 C/O
Nominal output current	5 A
Measurement voltage limits	176...528 V AC

Hysteresis	2 %
Delay at power up	650 ms
Maximum measuring cycle	140 ms measurement cycle as true rms value
Threshold adjustment voltage	-20...-2 % in the range 380...480 V AC 2...20 % of Un selected -12...-2 % in the range 220 V AC +2...+20 % in the range 220...440 V AC +2...+10 % in the range 480 V AC
Voltage range	220...480 V phase to phase
Adjustment of asymmetry threshold	5...15 % of Un selected
Repeat accuracy	0.3 % for time delay 0.5 % for input and measurement circuit
Measurement error	< 1 % over the whole range with voltage variation 0.05 %/°C with temperature variation
Response time	< 200 ms (in the event of a fault)
Marking	CE
Overvoltage category	III conforming to IEC 60664-1
Insulation resistance	> 500 MOhm at 500 V DC conforming to IEC 60255-5 > 500 MOhm at 500 V DC conforming to IEC 60664-1
[Ui] rated insulation voltage	400 V conforming to IEC 60664-1
Supply frequency	50/60 Hz +/- 10 %
Operating position	Any position without derating
Connections - terminals	Screw terminals, 1 x 0.5...1 x 4 mm <sup>2</sup> (AWG 20...AWG 11) solid without cable end Screw terminals, 2 x 0.5...2 x 2.5 mm <sup>2</sup> (AWG 20...AWG 14) solid without cable end Screw terminals, 1 x 0.2...1 x 2.5 mm <sup>2</sup> (AWG 24...AWG 12) flexible with cable end Screw terminals, 2 x 0.2...2 x 1.5 mm <sup>2</sup> (AWG 24...AWG 16) flexible with cable end
Tightening torque	0.6...1 N.m conforming to IEC 60947-1
Housing material	Self-extinguishing plastic
Local signalling	LED (green) for power ON LED (yellow) for relay ON LED (yellow) for fault
Mounting support	35 mm symmetrical DIN rail conforming to EN/IEC 60715
Electrical durability	100000 cycles
Mechanical durability	30000000 cycles
Operating rate	<= 360 operations/hour full load
Utilisation category	AC-12 conforming to IEC 60947-5-1 AC-13 conforming to IEC 60947-5-1 AC-14 conforming to IEC 60947-5-1 AC-15 conforming to IEC 60947-5-1 DC-12 conforming to IEC 60947-5-1 DC-13 conforming to IEC 60947-5-1
Safety reliability data	MTTFd = 399.5 years B10d = 360000
Width	35 mm
Net weight	0.13 kg

## Environment

Electromagnetic compatibility	Emission standard for industrial environments conforming to EN/IEC 61000-6-4 Emission standard for residential, commercial and light-industrial environments conforming to EN/IEC 61000-6-3 Immunity for industrial environments conforming to EN/IEC 61000-6-2
Standards	EN/IEC 60255-1
Product certifications	GL UL CSA GOST C-Tick
Directives	89/336/EEC - electromagnetic compatibility 73/23/EEC - low voltage directive
Ambient air temperature for storage	-40...70 °C

Ambient air temperature for operation	-20...50 °C
Relative humidity	95 % at 55 °C conforming to IEC 60068-2-30
Vibration resistance	0.35 mm (f= 5...57.6 Hz) conforming to IEC 60068-2-6 1 gn (f= 57.6...150 Hz) conforming to IEC 60255-21-1
Shock resistance	15 gn for 11 ms conforming to IEC 60255-21-1
IP degree of protection	IP20 (terminals) conforming to IEC 60529 IP30 (casing) conforming to IEC 60529
Pollution degree	3 conforming to IEC 60664-1
Dielectric test voltage	2 kV, 1 min AC 50 Hz
Non-dissipating shock wave	4 kV

## Packing Units

Unit Type of Package 1	PCE
Number of Units in Package 1	1
Package 1 Weight	130 g
Package 1 Height	4.8 cm
Package 1 width	7.8 cm
Package 1 Length	9.7 cm
Unit Type of Package 2	S03
Number of Units in Package 2	48
Package 2 Weight	6.827 kg
Package 2 Height	30 cm
Package 2 width	30 cm
Package 2 Length	40 cm
Unit Type of Package 3	P06
Number of Units in Package 3	384
Package 3 Weight	64.124 kg
Package 3 Height	77 cm
Package 3 width	80 cm
Package 3 Length	60 cm

## Offer Sustainability

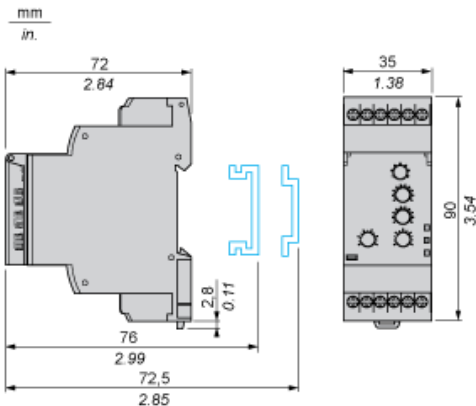
Sustainable offer status	Green Premium product
REACH Regulation	<a href="#">REACH Declaration</a>
EU RoHS Directive	Pro-active compliance (Product out of EU RoHS legal scope) <a href="#">EU RoHS Declaration</a>
Mercury free	Yes
RoHS exemption information	<a href="#">Yes</a>
China RoHS Regulation	<a href="#">China RoHS declaration</a>
Environmental Disclosure	<a href="#">Product Environmental Profile</a>
Circularity Profile	<a href="#">End of Life Information</a>
WEEE	The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins

## Contractual warranty

Warranty	18 months
----------	-----------

Multifunction 3-Phase Supply Control Relays

Dimensions and Mounting

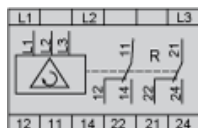


---

Multifunction 3-Phase Supply Control Relays

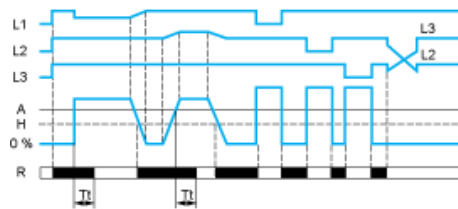
---

Wiring Diagram

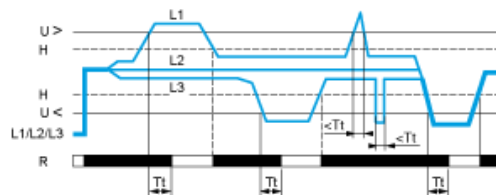


## Function Diagrams

Phase Sequence Control, Phase Failure Detection ( $U_{\text{measured}} < 0.7 \times \text{nominal supply voltage}$ ) and Asymmetry Detection



Control of Overvoltage and Undervoltage in Window Mode



## Legend

- A Asymmetry threshold
- Tt Time delay after crossing of threshold
- H Hysteresis
- U> Overvoltage threshold
- U< Undervoltage threshold
- L1, L2, L3 Phases of the supply voltage monitored
- R Output relay
- Relay status: black color = energized.