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### 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	Asymmetry Phase failure detection Phase sequence Undervoltage and overvoltage in window mode
Time delay	Adjustable 0.1...10 s, 10 %
Switching capacity in VA	1250 VA
Measurement range	194...528 V AC

### Complementary

Reset time	<= 1500 ms for at 480 V
Maximum switching voltage	250 V DC 250 V AC
Minimum switching current	10 mA at 5 V DC
Maximum switching current	5 A DC 5 A AC
[Us] rated supply voltage	220...480 V AC
Supply voltage limits	194...528 V AC 3 phases
Control circuit voltage limits	- 12 %, + 10 % Un
Power consumption in VA	<= 22 VA 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
Hysteresis	2 %
Delay at power up	<= 650 ms
Measuring cycle	<= 140 ms measurement cycle as true rms value
Threshold adjustment voltage	+2...+10 % in the range 480 V AC +2...+20 % in the range 220...440 V AC -12...-2 % in the range 220 V AC 2...20 % of Un selected -20...-2 % in the range 380...480 V AC
Voltage range	480 V phase to phase 440 V phase to phase 415 V phase to phase 400 V phase to phase 380 V phase to phase 220 V phase to phase
Adjustment of asymmetry threshold	5...15 % of Un selected
Measurement accuracy	+/- 10 % of the full scale value
Repeat accuracy	0.5 % for input and measurement circuit 0.3 % for time delay
Measurement error	0.05 %/°C with temperature variation < 1 % over the whole range with voltage variation
Response time	< 200 ms in the event of a fault

Marking	CE : 73/23/EEC CE : EMC 89/336/EEC
Overvoltage category	III conforming to IEC 60664-1
Insulation resistance	> 500 MOhm at 500 V DC conforming to IEC 60664-1 > 500 MOhm at 500 V DC conforming to IEC 60255-5
[Ui] rated insulation voltage	400 V conforming to IEC 60664-1
Supply frequency	50/60 Hz +/- 10 %
Operating position	Any position without
Electrical connection	2 conductors cable 0.5...2.5 mm <sup>2</sup> AWG20...AWG14 solid without cable end conforming to IEC 60947-1 2 conductors cable 0.2...1.5 mm <sup>2</sup> AWG24...AWG16 flexible with cable end conforming to IEC 60947-1 1 conductor cable 0.5...4 mm <sup>2</sup> AWG20...AWG11 solid without cable end conforming to IEC 60947-1 1 conductor cable 0.2...2.5 mm <sup>2</sup> AWG24...AWG12 flexible with cable end conforming to IEC 60947-1
Tightening torque	0.6...1 N.m conforming to IEC 60947-1
Housing material	Self-extinguishing plastic
Status LED	1 LED yellow for relay ON 1 LED yellow for fault 1 LED green for power ON
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 under full load
Utilisation category	DC-13 conforming to IEC 60947-5-1 DC-12 conforming to IEC 60947-5-1 AC-15 conforming to IEC 60947-5-1 AC-14 conforming to IEC 60947-5-1 AC-13 conforming to IEC 60947-5-1 AC-12 conforming to IEC 60947-5-1
Width	35 mm
Product weight	0.13 kg

## Environment

Electromagnetic compatibility	Immunity for industrial environments conforming to EN/IEC 61000-6-2 Emission standard for residential, commercial and light-industrial environments conforming to EN/IEC 61000-6-3 Emission standard for industrial environments conforming to EN/IEC 61000-6-4
Standards	EN/IEC 60255-1
Product certifications	CSA C-Tick GL GOST UL
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	1 gn (f = 57.6...150 Hz) conforming to IEC 60068-2-6/IEC 60255-21-1 0.35 mm (f = 5...57.6 Hz) conforming to IEC 60068-2-6/IEC 60255-21-1
Shock resistance	15 gn for 11 ms conforming to IEC 60255-21-1
IP degree of protection	IP30 (casing) conforming to IEC 60529 IP20 (terminals) 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

## Contractual warranty

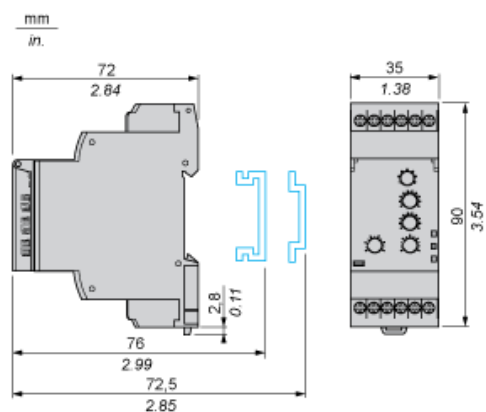
Period	18 months
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Multifunction 3-Phase Supply Control Relays

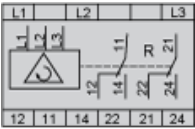
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Dimensions and Mounting



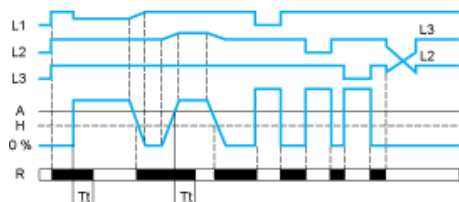
Multifunction 3-Phase Supply Control Relays

Wiring Diagram



## Function Diagrams

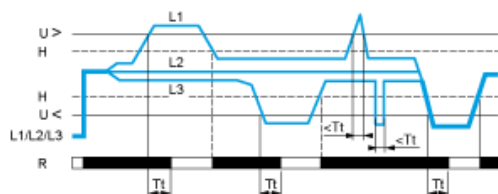
Phase Sequence Control, Phase Failure Detection ( $U_{\text{measured}} < 0.7 \times \text{nominal supply voltage}$ ) and Asymmetry Detection



- Tt Time delay after crossing of threshold (adjustable on front panel).  
 L1, Phases of the supply voltage monitored  
 L2,  
 L3  
 A Asymmetry threshold (adjustable from 5...15% of the nominal supply voltage)  
 H Hysteresis  
 R Output relay

Relay status: black color = energized.

Control of Overvoltage and Undervoltage in Window Mode



- Tt Time delay after crossing of threshold (adjustable on front panel).  
 H Hysteresis  
 U> Overvoltage threshold  
 U< Undervoltage threshold  
 L1, Phases of the supply voltage monitored  
 L2,  
 L3  
 R Output relay

Relay status: black color = energized.

The overvoltage and undervoltage thresholds in window mode are adjustable from 2...20% of  $U_n$  (nominal supply voltage):

$U_n$		220 V	380, 400, 415, 440 V	480 V
Voltage threshold (%)	<	- 12...- 2	- 20...- 2	- 20...- 2
	>	+ 2...+ 20	+ 2...+ 20	+ 2...+ 10



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