

# RM35TF30

multifunction phase control relay RM35-T -  
range 194..528 V AC



## 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 % of the full scale value
Switching capacity in VA	1250 VA
Measurement range	194...528 V AC

## Complementary

Reset time	$\leq 1500$ 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
Supply voltage limits	194...528 V AC, 3 phases
Control circuit voltage limits	- 12 % + 10 % $U_n$
Power consumption in VA	$\leq 22$ 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
Hysteresis	2 %
Delay at power up	$\leq 650$ ms
Measuring cycle	$\leq 140$ 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 $U_n$ selected -20...-2 % in the range 380...480 V AC
Voltage range	220...480 V phase to phase
Adjustment of asymmetry threshold	5...15 % of $U_n$ selected
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
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

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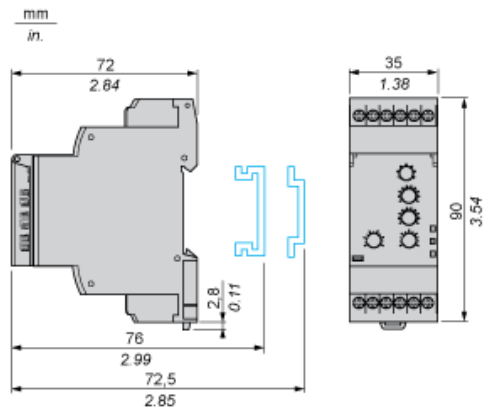
Connections - terminals	Screw terminals 2 x 0.2...2 x 1.5 mm <sup>2</sup> - AWG 24...AWG 16, flexible cable with cable end Screw terminals 1 x 0.2...1 x 2.5 mm <sup>2</sup> - AWG 24...AWG 12, flexible cable with cable end Screw terminals 2 x 0.5...2 x 2.5 mm <sup>2</sup> - AWG 20...AWG 14, solid cable without cable end Screw terminals 1 x 0.5...1 x 4 mm <sup>2</sup> - AWG 20...AWG 11, solid cable without cable end
Tightening torque	0.6...1 N.m conforming to IEC 60947-1
Housing material	Self-extinguishing plastic
Local signalling	LED yellow for fault LED yellow for relay ON 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
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	1 gn (f = 57.6...150 Hz) conforming to IEC 60255-21-1 0.35 mm (f = 5...57.6 Hz) conforming to IEC 60068-2-6
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

Multifunction 3-Phase Supply Control Relays

Dimensions and Mounting

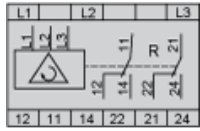


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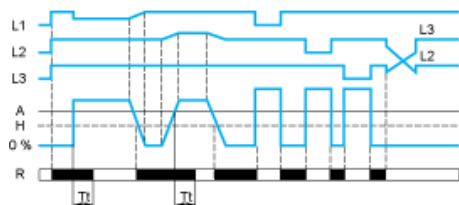
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Wiring Diagram

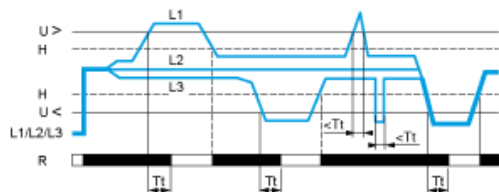


Function Diagrams

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.