

RM22TR33

three-Phase Voltage control relay 380... 480Vac, 2 C/O



Main

Range of product	Zelio Control
Product or component type	Modular measurement and control relays
Relay type	Control relay
Network number of phases	3 phases
Relay name	RM22TR
Relay monitored parameters	Overvoltage and undervoltage detection Phase failure detection Phase sequence
Time delay type	Adjustable 0.1...30 s, +/- 10 % of the full scale value on crossing the threshold Tt
Switching capacity in VA	2000 VA
Measurement range	380...480 V voltage AC

Complementary

Reset time	<= 1500 ms at maximum voltage
Maximum switching voltage	250 V AC
Minimum switching current	10 mA at 5 V DC
Maximum switching current	8 A AC
[Us] rated supply voltage	380...480 V AC
Supply voltage limits	304...576 V AC
Operating limits	- 20 % + 20 % Un
Power consumption in VA	15 VA at 480 V AC 60 Hz
Voltage detection threshold	< 100 V AC
Supply voltage frequency	50...60 Hz +/- 10 %
Output contacts	2 C/O
Setting accuracy of the switching threshold	+/- 10 % of the full scale
Switching threshold drift	<= 1 % within the supply voltage range <= 0.05 % per degree centigrade depending permissible ambient air temperature
Setting accuracy of time delay	10 P
Time delay drift	<= 1 % within the supply voltage range <= 0.05 % per degree centigrade depending permissible ambient air temperature
Hysteresis	2 % fixed of selectable
Run-up delay at power-up	<= 650 ms
Measuring cycle	150 ms measurement cycle as true rms value
Threshold adjustment voltage	2...20 % of Un selected
Voltage range	380...480 V phase to phase
Repeat accuracy	+/- 3 % time delay +/- 0.5 % input and measurement circuit
Measurement error	< 0.05 %/°C with temperature variation < 1 % over the whole range with voltage variation
Response time	<= 300 ms
Overvoltage category	III conforming to UL 508 III conforming to IEC 60664-1
Insulation resistance	> 100 MOhm at 500 V DC conforming to IEC 60255-27
Mounting position	Any position

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Connections - terminals	Screw terminals 1 x 0.2...1 x 2.5 mm ² - AWG 24...AWG 14, flexible cable with cable end Screw terminals 1 x 0.5...1 x 3.3 mm ² - AWG 20...AWG 12, solid cable without cable end Screw terminals 2 x 0.2...2 x 1.5 mm ² - AWG 24...AWG 16, flexible cable with cable end Screw terminals 2 x 0.5...2 x 2.5 mm ² - AWG 20...AWG 14, solid cable without cable end
Tightening torque	0.6...1 N.m conforming to IEC 60947-1
Housing material	Self-extinguishing plastic
Status LED	LED green for power ON LED yellow for relay ON
Mounting support	35 mm DIN rail conforming to EN/IEC 60715
Electrical durability	100000 cycles
Mechanical durability	10000000 cycles
Utilisation category	DC-1 conforming to IEC 60947-4-1 AC-1 conforming to IEC 60947-4-1 DC-13 conforming to IEC 60947-5-1 AC-15 conforming to IEC 60947-5-1
Contacts material	Cadmium free
Width	22.5 mm
Product weight	0.09 kg

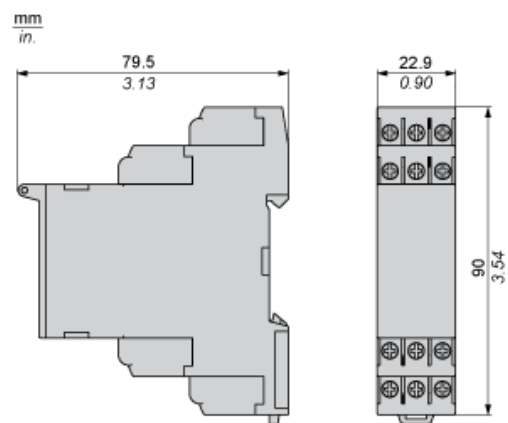
Environment

Immunity to microbreaks	<= 10 ms
Electromagnetic compatibility	Conducted and radiated emissions class B conforming to CISPR 22 Conducted and radiated emissions class B group 1 conforming to CISPR 11 Surge immunity test 2 kV level 4 differential mode conforming to IEC 61000-4-5 Surge immunity test 4 kV level 4 common mode conforming to IEC 61000-4-5 Electrical fast transient/burst immunity test 2 kV level 4 capacitive coupling conforming to IEC 61000-4-4 Electrical fast transient/burst immunity test 4 kV level 4 direct conforming to IEC 61000-4-4 Radiated radio-frequency electromagnetic field immunity test 10 V/m level 3 conforming to IEC 61000-4-3 Electrostatic discharge 8 kV level 3 air discharge conforming to IEC 61000-4-2 Electrostatic discharge 6 kV level 3 contact discharge conforming to IEC 61000-4-2 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 Immunity for residential, commercial and light-industrial environments conforming to EN/IEC 61000-6-1
Standards	EN/IEC 60255-1
Product certifications	CCC CE CSA GL UL RCM EAC China RoHS
Ambient air temperature for storage	-40...70 °C
Ambient air temperature for operation	-20...60 °C at 50 Hz AC/DC -20...50 °C at 60 Hz
Relative humidity	93...97 % at 25...55 °C conforming to IEC 60068-2-30
Vibration resistance	0.5 gn (f = 58.1...150 Hz) (in operation) conforming to IEC 60068-2-6 0.035 mm (f = 58.1...150 Hz) (in operation) conforming to IEC 60068-2-6 1 gn (f = 10...58.1 Hz) (not in operation) conforming to IEC 60068-2-6 0.075 mm (f = 10...58.1 Hz) (not in operation) conforming to IEC 60068-2-6
Shock resistance	5 gn for 11 ms (in operation) conforming to IEC 60068-2-27 15 gn for 11 ms (not in operation) conforming to IEC 60068-2-27
IP degree of protection	IP50 on front panel conforming to IEC 60529 IP40 on housing conforming to IEC 60529 IP20 on terminals conforming to IEC 60529
Pollution degree	3 conforming to UL 508 3 conforming to IEC 60664-1
Dielectric test voltage	2.5 kV for 1 min AC 50 Hz conforming to IEC 60255-27

Offer Sustainability

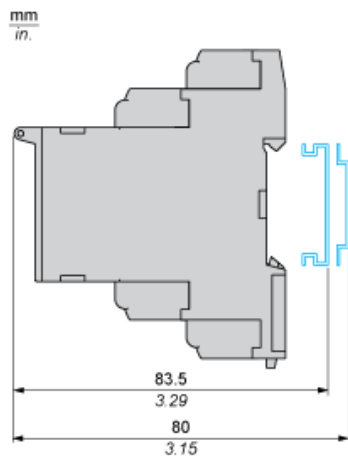
Sustainable offer status	Not Green Premium product
RoHS (date code: YYWW)	Compliant - since 2015 - Schneider Electric declaration of conformity

Dimensions



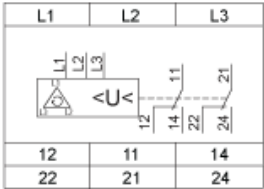
Mounting and Clearance

Rail Mounting



3-Phase Voltage Control Relay

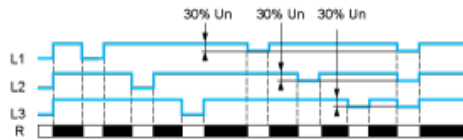
Wiring Diagram



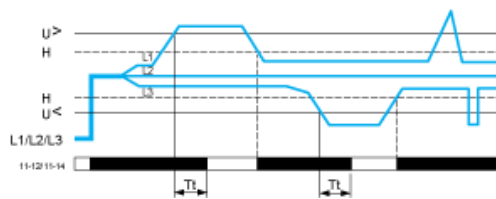
L1,L2,L3 : Supply to be monitored
11-14,12 : 1st C/O contact of output relay
21-24,22 : 2nd C/O contact of output relay

Function Diagrams

Phase Failure Detection ($U_{\text{measured}} < 0.7 \times \text{nominal supply voltage}$)



Control of Overvoltage and Undervoltage



Legend

Un Nominal supply voltage

R Output relay

Tt Overvoltage and undervoltage threshold delay (adjustable on front panel from 0.3 to 30 s)

H Hysteresis

U> Overvoltage threshold

U< Undervoltage threshold

L1, L2, L3 Phases of the supply voltage monitored

11-12, 11-14 R1 output relay connections

Relay status: black color = energized.