

# RM22TR31

three-Phase Voltage control relay 200...240Vac, 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	Overtoltage 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	200...240 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	200...240 V AC
Supply voltage limits	160...288 V AC
Control circuit voltage limits	- 20 % + 20 % Un
Power consumption in VA	10 VA at 240 V AC 60 Hz
Voltage detection threshold	< 100 V AC
Supply frequency	50...60 Hz +/- 10 %
Output contacts	2 C/O
Setting accuracy of the switching threshold	+/- 10 % of the full scale
Switching threshold drift	<= 0.05 % per degree centigrade depending permissible ambient air temperature <= 1 % within the supply voltage range
Setting accuracy of time delay	10 P
Time delay drift	<= 0.05 % per degree centigrade depending permissible ambient air temperature <= 1 % within the supply voltage range
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	200...240 V phase to phase
Repeat accuracy	+/- 0.5 % input and measurement circuit +/- 3 % time delay
Measurement error	< 0.05 %/°C with temperature variation < 1 % over the whole range with voltage variation
Response time	<= 300 ms
Overtoltage category	III conforming to IEC 60664-1 III conforming to UL 508
Insulation resistance	> 100 MOhm at 500 V DC conforming to IEC 60255-27
Mounting position	Any position
Connections - terminals	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 2 x 0.2...2 x 1.5 mm <sup>2</sup> - AWG 24...AWG 16, flexible cable with cable end

The information provided in this documentation contains general descriptions and/or technical characteristics of the performance of the products contained herein. This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications. It is the duty of any such user or integrator to perform the appropriate and complete risk analysis, evaluation and testing of the products with respect to the relevant specific application or use thereof. Neither Schneider Electric Industries SAS nor any of its affiliates or subsidiaries shall be responsible or liable for misuse of the information contained herein.

Screw terminals 1 x 0.5...1 x 3.3 mm<sup>2</sup> - AWG 20...AWG 12, solid cable without cable end  
 Screw terminals 1 x 0.2...1 x 2.5 mm<sup>2</sup> - AWG 24...AWG 14, flexible cable with cable end

Tightening torque	0.6...1 N.m conforming to IEC 60947-1
Housing material	Self-extinguishing plastic
Status LED	LED yellow for relay ON LED green for power ON
Mounting support	35 mm DIN rail conforming to EN/IEC 60715
Electrical durability	100000 cycles
Mechanical durability	10000000 cycles
Utilisation category	AC-15 conforming to IEC 60947-5-1 DC-13 conforming to IEC 60947-5-1 AC-1 conforming to IEC 60947-4-1 DC-1 conforming to IEC 60947-4-1
Safety reliability data	MTTFd = 388.1 years B10d = 350000
Contacts material	Cadmium free
Width	22.5 mm
Product weight	0.09 kg

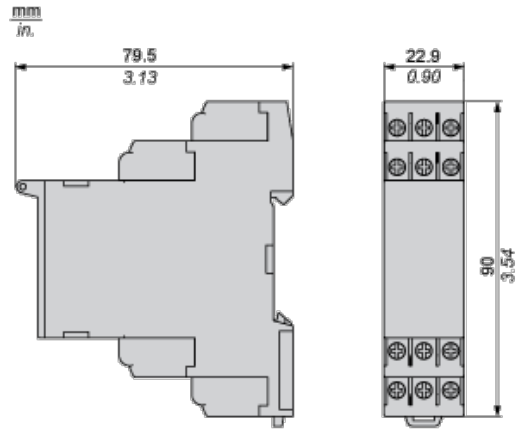
## Environment

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

## Offer Sustainability

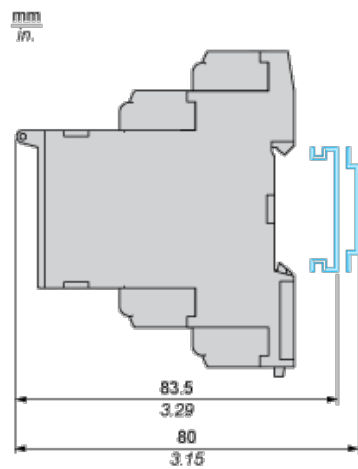
Sustainable offer status	Green Premium product
RoHS (date code: YYWW)	Compliant - since 0701 - Schneider Electric declaration of conformity
REACH	Reference not containing SVHC above the threshold
Product environmental profile	Available
Product end of life instructions	Available

## Dimensions



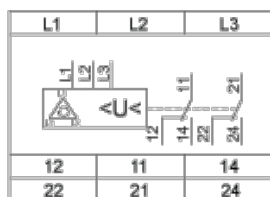
## Mounting and Clearance

### Rail Mounting



## 3-Phase Voltage Control Relay

### Wiring Diagram



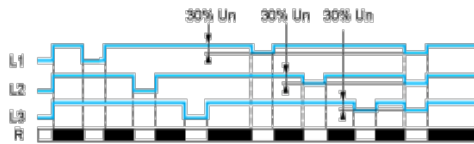
L1,L2,L3 : Supply to be monitored

11-14,12 : 1st C/O contact of output relay

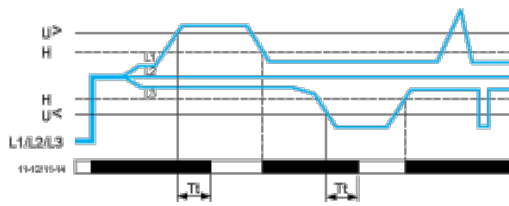
21-24,22 : 2nd C/O contact of output relay

## Function Diagrams

### Phase Failure Detection (U measured < 0.7 x nominal supply voltage)



### Control of Overvoltage and Undervoltage



### Legend

$U_n$  Nominal supply voltage

R Output relay

$T_t$  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.