### Main

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range of product</td>
<td>Zelio Control</td>
</tr>
<tr>
<td>Product or component type</td>
<td>Modular measurement and control relays</td>
</tr>
<tr>
<td>Relay type</td>
<td>Voltage control relay</td>
</tr>
<tr>
<td>Network number of phases</td>
<td>1 phase</td>
</tr>
<tr>
<td>Supply circuit type</td>
<td>DC</td>
</tr>
<tr>
<td>Relay name</td>
<td>RM22UA</td>
</tr>
<tr>
<td>Relay monitored parameters</td>
<td>Undervoltage and overvoltage in window mode</td>
</tr>
<tr>
<td>Time delay type</td>
<td>Adjustable 0.1...30 s, +/- 10 % of the full scale value on crossing the threshold Tt</td>
</tr>
<tr>
<td>Switching capacity in VA</td>
<td>2000 VA</td>
</tr>
<tr>
<td>Measurement range</td>
<td>15...500 V voltage AC/DC 50/60 Hz</td>
</tr>
</tbody>
</table>

### Complementary

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reset time</td>
<td>1500 ms at maximum voltage</td>
</tr>
<tr>
<td>Maximum switching voltage</td>
<td>250 V AC</td>
</tr>
<tr>
<td>Minimum switching current</td>
<td>10 mA at 5 V DC</td>
</tr>
<tr>
<td>Maximum switching current</td>
<td>8 A AC</td>
</tr>
<tr>
<td>[Us] rated supply voltage</td>
<td>24...240 V AC/DC 50/60 Hz</td>
</tr>
<tr>
<td>Supply voltage limits</td>
<td>20.4...264 V AC/DC</td>
</tr>
<tr>
<td>Power consumption in VA</td>
<td>3.5 VA AC</td>
</tr>
<tr>
<td>Maximum power consumption in W</td>
<td>1.5 W DC</td>
</tr>
<tr>
<td>Supply voltage frequency</td>
<td>40...70 Hz +/- 10 %</td>
</tr>
<tr>
<td>Resistance across terminals</td>
<td>150 kOhm at E2-M terminals</td>
</tr>
<tr>
<td></td>
<td>300 kOhm at E1-M terminals</td>
</tr>
<tr>
<td></td>
<td>500 kOhm at E3-M terminals</td>
</tr>
<tr>
<td>Output contacts</td>
<td>2 C/O</td>
</tr>
<tr>
<td>Nominal output current</td>
<td>8 A</td>
</tr>
<tr>
<td>Hysteresis</td>
<td>3 % fixed of full scale for window mode</td>
</tr>
</tbody>
</table>

Disclaimer: 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.
### Limitations

#### Run-up delay at power-up

600 ms

#### Maximum measuring cycle

100 ms measurement cycle as true rms value

#### Repeat accuracy

+/- 0.5 % for input and measurement circuit  
+/- 2 % for time delay

#### Measurement error

< 1 % over the whole range with voltage variation  
0.05 %/°C with temperature variation

#### Response time

<= 500 ms

#### Overvoltage category

III conforming to IEC 60664-1

#### Insulation resistance

> 100 MOhm at 500 V DC conforming to IEC 60255-27

### Measurement

- **Repeat accuracy**: +/- 0.5 % for input and measurement circuit, +/- 2 % for time delay
- **Measurement error**: < 1 % over the whole range with voltage variation, 0.05 %/°C with temperature variation
- **Response time**: <= 500 ms
- **Overvoltage category**: III conforming to IEC 60664-1
- **Insulation resistance**: > 100 MOhm at 500 V DC conforming to IEC 60255-27
- **Insulation**: Between supply and measurement
- **Mounting position**: Any position
- **Connections - terminals**:
  - Screw terminals, 2 x 0.5...2 x 2.5 mm² (AWG 20...AWG 14) solid without cable end
  - Screw terminals, 2 x 0.2...2 x 1.5 mm² (AWG 24...AWG 16) flexible with cable end
  - Screw terminals, 1 x 0.5...1 x 3.3 mm² (AWG 20...AWG 12) solid without cable end
  - Screw terminals, 1 x 0.2...1 x 2.5 mm² (AWG 24...AWG 14) flexible with cable end
- **Tightening torque**: 0.6…1 N.m conforming to IEC 60947-1
- **Housing material**: Self-extinguishing plastic
- **Status LED**:
  - LED (yellow): relay ON
  - LED (green): power ON
- **Mounting support**: 35 mm DIN rail conforming to EN/IEC 60715
- **Electrical durability**: 100000 cycles
- **Mechanical durability**: 1000000 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 = 308.2 years
  - B10d = 290000
- **Contacts material**: Cadmium free
- **Width**: 22.5 mm
- **Net weight**: 0.11 kg

#### Environment

**Immunity to microbreaks**: 10 ms

**Electromagnetic compatibility**:

- Immunity for residential, commercial and light-industrial environments conforming to EN/IEC 61000-6-1
- 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
- Electrostatic discharge - test level: 6 kV level 3 (contact discharge) conforming to IEC 61000-4-2
- Electrostatic discharge - test level: 8 kV level 3 (air discharge) conforming to IEC 61000-4-2
- Radiated radio-frequency electromagnetic field immunity test - test level: 10 V/m level 3 conforming to IEC 61000-4-3
- Electrical fast transient/burst immunity test - test level: 4 kV level 4 (direct) conforming to IEC 61000-4-4
- Electrical fast transient/burst immunity test - test level: 2 kV level 4 (capacitive coupling) conforming to IEC 61000-4-4
- Surge immunity test - test level: 4 kV level 4 (common mode) conforming to IEC 61000-4-5
- Surge immunity test - test level: 2 kV level 4 (differential mode) conforming to IEC 61000-4-5
- Conducted and radiated emissions class B group 1 conforming to CISPR 11
- Conducted and radiated emissions class B conforming to CISPR 22

#### Standards

- EN/IEC 60255-1
- RCM
- UL
- China RoHS
- EAC
- CSA
- CE
- GL
- CCC

#### Ambient air temperature for storage

-40...70 °C
<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambient air temperature for operation</td>
<td>-20…50 °C at 60 Hz</td>
</tr>
<tr>
<td></td>
<td>-20…80 °C at 50 Hz AC/DC</td>
</tr>
<tr>
<td>Relative humidity</td>
<td>93…97 % at 25…55 °C conforming to IEC 60068-2-30</td>
</tr>
<tr>
<td>Vibration resistance</td>
<td>0.075 mm (f= 10…58.1 Hz) not in operation conforming to IEC 60068-2-6</td>
</tr>
<tr>
<td></td>
<td>1 gn (f= 10…58.1 Hz) not in operation conforming to IEC 60068-2-6</td>
</tr>
<tr>
<td></td>
<td>0.035 mm (f= 58.1…150 Hz) in operation conforming to IEC 60068-2-6</td>
</tr>
<tr>
<td></td>
<td>0.5 gn (f= 58.1…150 Hz) in operation conforming to IEC 60068-2-6</td>
</tr>
<tr>
<td>Shock resistance</td>
<td>15 gn (duration = 11 ms) for not in operation conforming to IEC 60068-2-27</td>
</tr>
<tr>
<td></td>
<td>5 gn (duration = 11 ms) for in operation conforming to IEC 60068-2-27</td>
</tr>
<tr>
<td>Vibration resistance</td>
<td>0.075 mm (f= 10…58.1 Hz) not in operation conforming to IEC 60068-2-6</td>
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</tr>
<tr>
<td>IP degree of protection</td>
<td>IP20 (terminals) conforming to IEC 60529</td>
</tr>
<tr>
<td></td>
<td>IP40 (housing) conforming to IEC 60529</td>
</tr>
<tr>
<td></td>
<td>IP50 (front panel) conforming to IEC 60529</td>
</tr>
<tr>
<td>Pollution degree</td>
<td>3 conforming to IEC 60664-1</td>
</tr>
<tr>
<td>Dielectric test voltage</td>
<td>2.5 kV, 1 min AC 50 Hz conforming to IEC 60255-27</td>
</tr>
</tbody>
</table>

**Offer Sustainability**

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

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RM22UA33MR

Dimensions Drawings
Mounting and Clearance

Rail Mounting

![Diagram showing rail mounting dimensions in mm and inches]
Voltage Measurement Relay

Wiring Diagram

<table>
<thead>
<tr>
<th>A1</th>
<th>A2</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>E1</td>
<td>E2</td>
<td>E3</td>
</tr>
</tbody>
</table>

A1, A2 : Supply voltage
E1, E2, E3, M : Voltages to be measured
11-14, 12 : 1st C/O contact of output relay
21-24, 22 : 2nd C/O contact of output relay
Function Diagrams

Undervoltage Control

Without memory ("No Memory" mode)

With memory ("Memory" mode)

Overvoltage Control

Without memory ("No Memory" mode)

With memory ("Memory" mode)

Legend

T_t Time delay after crossing of threshold
Un Nominal supply voltage
U Monitored supply voltage
H Hysteresis
U> Overvoltage threshold
U< Undervoltage threshold
11-12/11-14, 21-22/21-24 Output relay connections
Relay status: black color = energized.

NOTE: In "Memory" mode, the relay opens when crossing of the threshold is detected and then stays in that position. The power supply voltage must be switched off to reset the product.