



### Main

|                            |  |
|----------------------------|--|
| Range of product           | Zelio Control  |
| Product or component type  | Modular measurement and control relays   |
| Relay type                 | Voltage control relay  |
| Phase                      | 1 phase  |
| Supply circuit type        | DC   |
| Relay name                 | RM22UA   |
| Relay monitored parameters | Overvoltage or undervoltage detection<br>Undervoltage and overvoltage in window mode |
| 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          | 1...100 V voltage AC/DC 50/60 Hz   |

### 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   | 24...240 V AC/DC, 50/60 Hz   |
| Supply voltage limits       | 20.4...264 V AC/DC   |
| Power consumption in VA     | 3.5 VA AC  |
| Power consumption in W      | 1.5 W DC   |
| Supply frequency            | 40...70 Hz +/- 10 %  |
| Resistance across terminals | 110 kOhm at E2-M terminals<br>22 kOhm at E1-M terminals<br>220 kOhm at E3-M terminals  |
| Output contacts             | 2 C/O  |
| Nominal output current      | 8 A  |
| Hysteresis                  | 3 % fixed of full scale for window mode<br>5...50 % adjustable of threshold setting for overvoltage or undervoltage detection  |
| Run-up delay at power-up    | <= 600 ms  |
| Measuring cycle             | 100 ms measurement cycle as true rms value   |
| Repeat accuracy             | +/- 0.5 % input and measurement circuit<br>+/- 2 % time delay  |
| Measurement error           | < 1 % over the whole range with voltage variation<br>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 mm <sup>2</sup> - AWG 20...AWG 14, solid cable without cable end<br>Screw terminals 2 x 0.2...2 x 1.5 mm <sup>2</sup> - AWG 24...AWG 16, flexible cable with cable end<br>Screw terminals 1 x 0.5...1 x 3.3 mm <sup>2</sup> - AWG 20...AWG 12, solid cable without cable end<br>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           | 5.31...8.85 lbf.in (0.6...1 N.m) conforming to IEC 60947-1   |
| Housing material            | Self-extinguishing plastic   |

The information provided in this documentation contains general descriptions and/or technical characteristics 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.

|                         |  |
|-------------------------|--|
| Status LED              | LED yellow relay ON<br>LED green 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<br>DC-13 conforming to IEC 60947-5-1<br>AC-1 conforming to IEC 60947-4-1<br>DC-1 conforming to IEC 60947-4-1 |
| Safety reliability data | MTTFd = 308.2 years<br>B10d = 290000   |
| Contacts material       | Cadmium free   |
| Width                   | 0.89 in (22.5 mm)  |
| Product weight          | 0.24 lb(US) (0.11 kg)  |

## Environment

|                                       |  |
|---------------------------------------|--|
| immunity to microbreaks               | 10 ms  |
| electromagnetic compatibility         | Emission standard for industrial environments conforming to EN/IEC 61000-6-4<br>Emission standard for residential, commercial and light-industrial environments conforming to EN/IEC 61000-6-3<br>Immunity for industrial environments conforming to EN/IEC 61000-6-2<br>Conducted and radiated emissions class B conforming to CISPR 22<br>Immunity for residential, commercial and light-industrial environments conforming to EN/IEC 61000-6-1<br>Electrostatic discharge 6 kV level 3 contact discharge conforming to IEC 61000-4-2<br>Electrostatic discharge 8 kV level 3 air discharge conforming to IEC 61000-4-2<br>Radiated radio-frequency electromagnetic field immunity test 10 V/m level 3 conforming to IEC 61000-4-3<br>Electrical fast transient/burst immunity test 4 kV level 4 direct conforming to IEC 61000-4-4<br>Electrical fast transient/burst immunity test 2 kV level 4 capacitive coupling conforming to IEC 61000-4-4<br>Surge immunity test 4 kV level 4 common mode conforming to IEC 61000-4-5<br>Surge immunity test 2 kV level 4 differential mode conforming to IEC 61000-4-5<br>Conducted and radiated emissions class B group 1 conforming to CISPR 11 |
| standards                             | EN/IEC 60255-1   |
| product certifications                | CCC<br>CE<br>CSA<br>GL<br>UL<br>RCM<br>EAC<br>China RoHS   |
| ambient air temperature for storage   | -40...158 °F (-40...70 °C)   |
| ambient air temperature for operation | -20...50 °C at 60 Hz<br>-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<br>1 gn (f = 10...58.1 Hz) (not in operation) conforming to IEC 60068-2-6<br>0.035 mm (f = 58.1...150 Hz) (in operation) conforming to IEC 60068-2-6<br>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<br>5 gn for 11 ms (in operation) conforming to IEC 60068-2-27  |
| IP degree of protection               | IP20 on terminals conforming to IEC 60529<br>IP40 on housing conforming to IEC 60529<br>IP50 on front panel conforming to IEC 60529  |
| pollution degree                      | 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

|   |   |
|---|---|
| Green Premium product   | Green Premium product   |
| Compliant - since 0701 - Schneider Electric declaration of conformity | Compliant - since 0701 - Schneider Electric declaration of conformity |
| Reference not containing SVHC above the threshold                     | Reference not containing SVHC above the threshold                     |

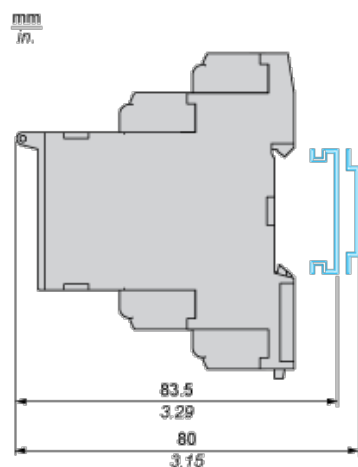
|  |  |
|--|--|
| Available  | Available  |
| Available  | Available  |
| WARNING: This product can expose you to chemicals including:   | WARNING: This product can expose you to chemicals including:   |
| Lead and lead compounds, which is known to the State of California to cause cancer and birth defects or other reproductive harm. | Lead and lead compounds, which is known to the State of California to cause cancer and birth defects or other reproductive harm. |
| For more information go to <a href="http://www.p65warnings.ca.gov">www.p65warnings.ca.gov</a>                                    | For more information go to <a href="http://www.p65warnings.ca.gov">www.p65warnings.ca.gov</a>                                    |

## Dimensions



## Mounting and Clearance

### Rail Mounting



## Voltage Measurement Relay

### Wiring Diagram



A1,A2 : Supply voltage

E1,E2,E3,M : Voltages to be measured

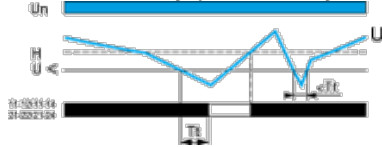
11-14,12 : 1st C/O contact of output relay

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

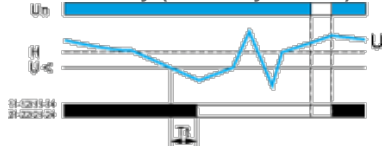
## Function Diagrams

### Undervoltage Control

Without memory ("No Memory" mode)

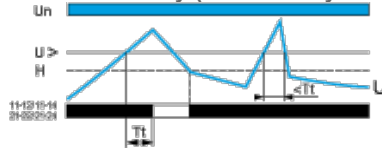


With memory ("Memory" mode)

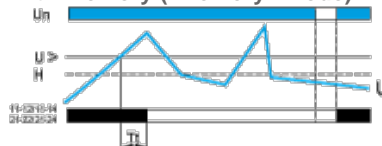


### Overvoltage Control

Without memory ("No Memory" mode)



With memory ("Memory" mode)



### Legend

$T_t$  Time delay after crossing of threshold

$U_n$  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.