# Product data sheet
## Characteristics

# RM35UA12MW
## multifunction voltage control relay RM35-U - range 1..100 V


## Main

| | |
|---|---|
| Range of product | Zelio Control |
| Product or component type | Modular measurement and control relays |
| Relay type | Multifunction voltage control relay |
| Relay name | RM35UA |
| Relay monitored parameters | Overvoltage or undervoltage detection |
| Time delay | Adjustable 0.3...30 s, 0 + 10 % on crossing the threshold |
| Switching capacity in VA | 1250 VA |
| Minimum switching current | 10 mA at 5 V DC |
| Maximum switching current | 5 A AC/DC |
| Power consumption in VA | <= 3.5 VA AC |
| Measurement range | 1...100 V voltage |
| Utilisation category | DC-14 conforming to IEC 60947-5-1<br>DC-13 conforming to IEC 60947-5-1<br>DC-12 conforming to IEC 60947-5-1<br>AC-15 conforming to IEC 60947-5-1<br>AC-14 conforming to IEC 60947-5-1<br>AC-13 conforming to IEC 60947-5-1<br>AC-12 conforming to IEC 60947-5-1 |

## Complementary

| | |
|---|---|
| Reset time | 1500 ms for time delay |
| Maximum switching voltage | 250 V AC/DC |
| [Us] rated supply voltage | 24...240 V AC/DC |
| Supply voltage limits | 20.4...264 V AC/DC |
| Power consumption in W | <= 0.6 W DC |
| Control circuit frequency | 40...70 Hz +/- 10 % |
| Resistance across terminals | 220 mOhm E3-M terminals<br>22 mOhm E1-M terminals<br>110 mOhm E2-M terminals |
| Output contacts | 2 C/O |
| Nominal output current | 5 A |
| Measuring cycle | <= 30 ms measurement cycle as true rms value |
| Hysteresis | 5...50 % of threshold setting |
| Delay at power up | <= 600 ms |
| Measurement accuracy | +/- 10 % of the full scale value |
| Repeat accuracy | +/- 2 % for time delay<br>+/- 0.5 % for input and measurement circuit |
| Measurement error | < 1 % over the whole range with voltage variation<br>+/- 0.05 %/°C with temperature variation |
| Polarity | Non reversible polarity on DC supply |
| Sensitivity scale | 5...50 V E2-M terminals<br>10...100 V E3-M terminals<br>1...10 V E1-M terminals |
| Threshold setting | 10...100 % |
| Marking | CE : 73/23/EEC<br>CE : EMC 89/336/EEC |

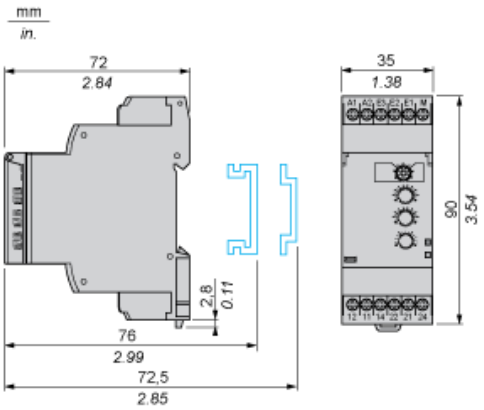
| | |
|---|---|
| Overvoltage category | III conforming to IEC 60664-1 |
| Insulation resistance | > 500 MOhm at 500 V DC conforming to IEC 60664-1<br>> 500 MOhm at 500 V DC conforming to IEC 60255-5 |
| [Ui] rated insulation voltage | 600 V conforming to IEC 60664-1<br>250 V conforming to IEC 60664-1 |
| Operating voltage tolerance | - 15 % + 10 % Un |
| Supply frequency | 50/60 Hz +/- 10 % |
| Insulation | Between supply and measurement |
| Operating position | Any position without derating |
| Connections - terminals | Screw terminals 2 x 0.2...2 x 1.5 mm² - AWG 24...AWG 16, flexible cable with cable end<br>Screw terminals 1 x 0.2...2 x 2.5 mm² - AWG 24...AWG 12, flexible cable with cable end<br>Screw terminals 2 x 0.5...2 x 2.5 mm² - AWG 20...AWG 14, solid cable without cable end<br>Screw terminals 1 x 0.5...1 x 4 mm² - 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 |
| Status LED | 1 LED yellow for relay ON<br>1 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 |
| Width | 35 mm |
| Product weight | 0.08 kg |

## Environment

| | |
|---|---|
| Immunity to microbreaks | 10 ms |
| Electromagnetic compatibility | Immunity for industrial environments conforming to NF EN/IEC 61000-6-2<br>Emission standard for residential, commercial and light-industrial environments conforming to EN/IEC 61000-6-3<br>Emission standard for industrial environments conforming to EN/IEC 61000-6-4 |
| Standards | EN/IEC 60255-6 |
| Product certifications | CSA<br>C-Tick<br>GL<br>GOST<br>UL |
| 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 60068-2-6/IEC 60255-21-1<br>0.35 mm (f = 5...57.6 Hz) conforming to IEC 60068-2-6/IEC 60255-21-1 |
| Shock resistance | 5 gn conforming to IEC 60068-2-27 |
| IP degree of protection | IP30 (casing) conforming to IEC 60529<br>IP20 (terminals) conforming to IEC 60529 |
| Pollution degree | 3 conforming to IEC 60664-1 |
| Dielectric test voltage | 2 kV AC 50 Hz, 1 min conforming to IEC 60664-1<br>2 kV AC 50 Hz, 1 min conforming to IEC 60255-5 |
| Non-dissipating shock wave | 4 kV conforming to IEC 61000-4-5<br>4 kV conforming to IEC 60664-1<br>4 kV conforming to IEC 60255-5 |

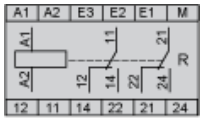
## Multifunction Voltage Control Relays

### Dimensions and Mounting



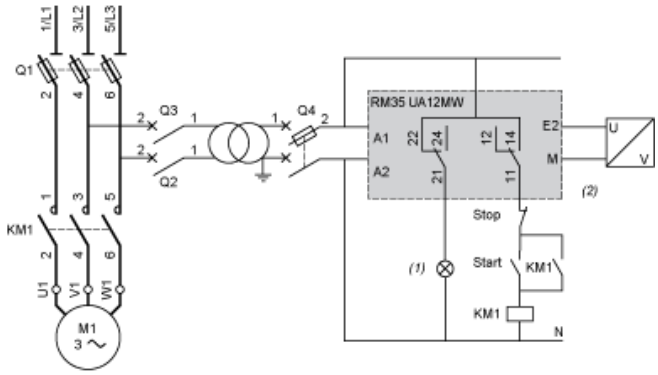
## Multifunction Voltage Control Relays

Wiring Diagram




## Application Scheme

Example: Overspeed Monitoring (Undervoltage Function)

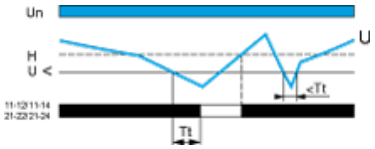



(1) Overspeed
(2) Tachogenerator

## Function Diagrams

### Undervoltage Control

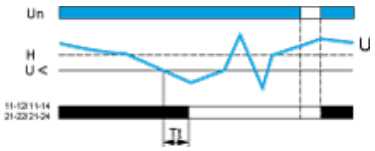
Without memory ("No Memory" mode)




Tt Time delay after crossing of threshold (adjustable on front panel from 0.3 s to 30 s)
Un Nominal supply voltage
U Monitored supply voltage
H Hysteresis adjusted by means of a potentiometer graduated from 5…50% of the threshold setting
U< Undervoltage threshold (set by means of a potentiometer graduated as a percentage of the scale value of Un)
11-12/11-14, 21-22/21-24 Output relays connections (refer to Connections and Schema)

Relay status: black color = energized.

With memory ("Memory" mode)

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### Overvoltage Control

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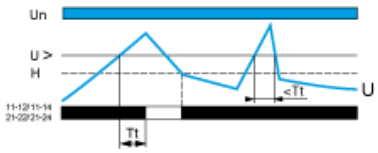


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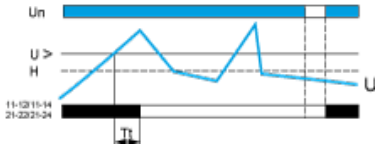


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