

# Product data sheet

Specifications



## single-phase network control relay RM4-U - range 160..220 V

RM4UB35

⚠ Discontinued on: Dec 31, 2016

⚠ Discontinued

### Main

Range Of Product	Zelio Control
Product Or Component Type	Industrial measurement and control relays
Relay Type	Voltage control relay
Relay Name	RM4U
Relay Monitored Parameters	Self-powered Overvoltage and undervoltage detection
Time Delay Range	0.1...10 s adjustable delay
Minimum Switching Current	10 mA at 12 V
Maximum Switching Current	8 A AC at 250 V
Electrical Connection	2 conductors cable 1.5 mm² flexible cable with cable end conforming to IEC 60947-1 2 conductors cable 2.5 mm² flexible cable without cable end conforming to IEC 60947-1
Contacts Type And Composition	2 C/O
Poles Description	1P

### Complementary

Maximum Switching Voltage	440 V AC
[Us] Rated Supply Voltage	160...300 V AC
Supply Voltage Limits	160...300 V AC
Control Threshold Undervoltage	160...220 V 50/60 Hz
Control Threshold Overvoltage	220...300 V
Output Contacts	2 C/O
Maximum Measuring Cycle	80 ms
Setting Accuracy Of The Switching Threshold	+/-3 %
Switching Threshold Drift	<= 0.06 % per degree centigrade depending permissible ambient air temperature <= 0.5 % within the measuring range
Setting Accuracy Of Time Delay	10 P
Time Delay Drift	<= 0.07 % per degree centigrade depending on the rated operational temperature <= 0.5 % within the measuring range
Hysteresis	5 % fixed of de-energisation threshold
[Ue] Rated Operational Voltage	>= 160 V
Maximum Permissible Voltage	<= 300 V L1 and L3

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

Marking	CE : LVD 73/23/EEC CE : EMC 89/336/EEC
Overvoltage Category	III conforming to IEC 60664-1
Insulation Resistance	> 500 MOhm conforming to IEC 60255-5 at 500 V DC
[Ui] Rated Insulation Voltage	500 V conforming to IEC
Control Circuit Voltage Limits	0.85...1.1 Uc
Supply Frequency	50/60 Hz +/- 5 %
Supply Disconnection Value	> 0.1 Uc
Operating Position	Any position without derating
Tightening Torque	0.6...1.1 N.m
Mechanical Durability	30000000 cycles
[Ith] Conventional Free Air Thermal Current	8 A
[Ie] Rated Operational Current	2 A at 70 °C 24 V DC-13 conforming to IEC 60947-5-1 2 A at 70 °C 24 V DC-13 conforming to VDE 0660 3 A at 70 °C 115 V AC-15 conforming to IEC 60947-5-1 3 A at 70 °C 115 V AC-15 conforming to VDE 0660 3 A at 70 °C 24 V AC-15 conforming to IEC 60947-5-1 3 A at 70 °C 24 V AC-15 conforming to VDE 0660 3 A at 70 °C 250 V AC-15 conforming to IEC 60947-5-1 3 A at 70 °C 250 V AC-15 conforming to VDE 0660 0.1 A at 70 °C 250 V DC-13 conforming to VDE 0660 0.3 A at 70 °C 115 V DC-13 conforming to IEC 60947-5-1 0.3 A at 70 °C 115 V DC-13 conforming to VDE 0660
Switching Voltage	250 V AC
Contacts Material	90/10 silver nickel contacts
Number Of Cables	2
Height	78 mm
Width	22.5 mm
Depth	80 mm
Terminals Description Iso N°1	(15-16-18)OC
Output Relay State	Tripped, fault present
9 Mm Pitches	2.5
Net Weight	0.11 kg

## Environment

Standards	EN/IEC 60255-6
Product Certifications	UL GL CSA
Ambient Air Temperature For Storage	-40...85 °C
Ambient Air Temperature For Operation	-20...65 °C
Relative Humidity	15...85 % 3K3 conforming to IEC 60721-3-3
Vibration Resistance	0.35 mm conforming to IEC 60068-2-6 (f = 10...55 Hz)
Shock Resistance	15 gn conforming to IEC 60068-2-27 for 11 ms
Ip Degree Of Protection	IP20 (terminals) conforming to IEC 60529 IP50 (casing) conforming to IEC 60529
Pollution Degree	3 conforming to IEC 60664-1

Dielectric Test Voltage	2.5 kV
Non-Dissipating Shock Wave	4.8 kV
Resistance To Electrostatic Discharge	6 kV contact conforming to IEC 61000-4-2 level 3 8 kV air conforming to IEC 61000-4-2 level 3
Resistance To Electromagnetic Fields	10 V/m conforming to IEC 61000-4-3 level 3
Resistance To Fast Transients	2 kV conforming to IEC 61000-4-4 level 3
Protection Against Electric Shocks	2 kV conforming to IEC 61000-4-5 level 3
Disturbance Radiated/Conducted	CISPR 22 - class A CISPR 11 group 1 - class A

## Packing Units

Unit Type Of Package 1	PCE
Number Of Units In Package 1	1

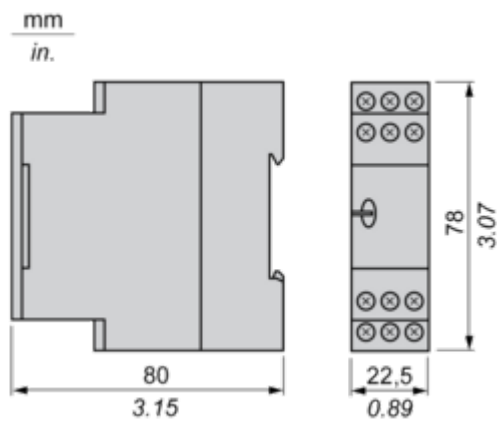
## Contractual warranty

Warranty	18 months
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Dimensions Drawings

Voltage Control Relays

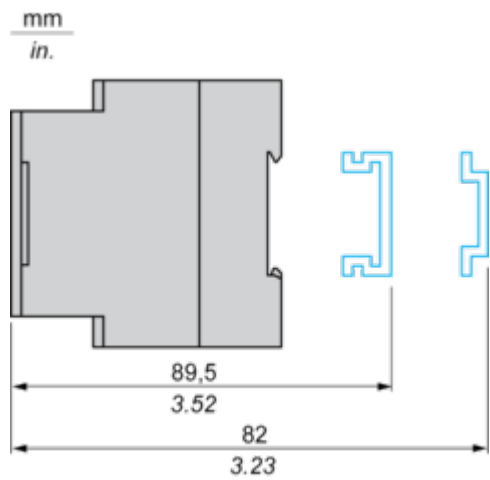
Dimensions



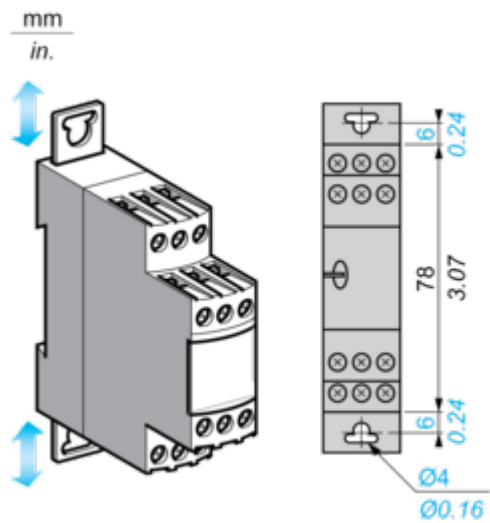
Mounting and Clearance

Voltage Control Relays

Rail mounting



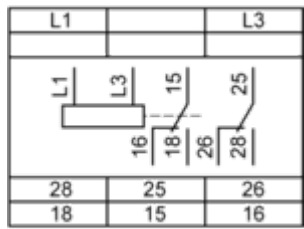
Screw fixing



Connections and Schema

Voltage Control Relays

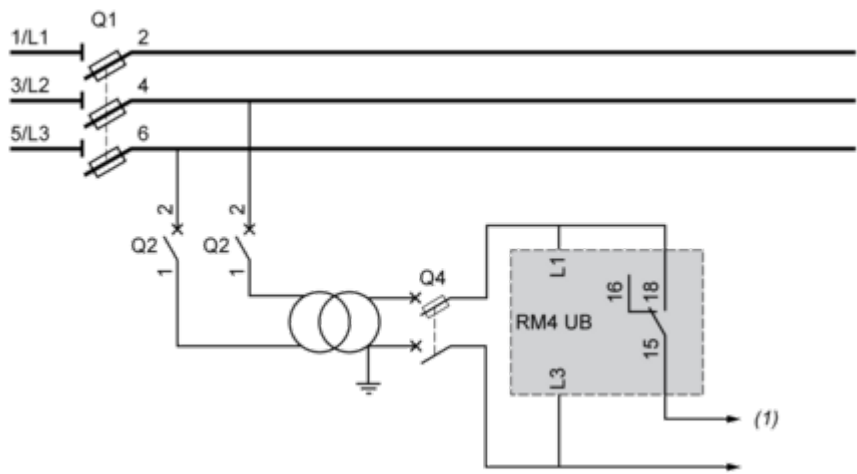
Wiring Diagram



L1, L3 Voltage to be monitored  
15-18, 15-16 1st C/O contact of the output relay  
25-28, 25-26 2nd C/O contact of the output relay

Application Scheme

Example



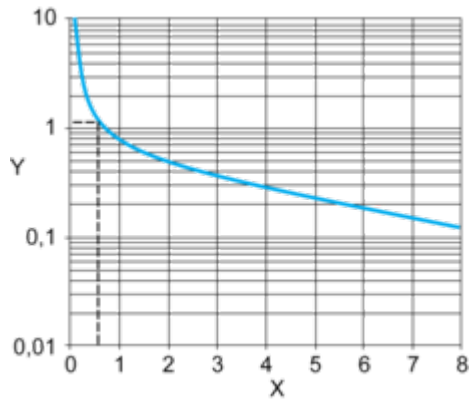
(1) To sensitive loads

Performance Curves

Electrical Durability and Load Limit Curves

AC Load

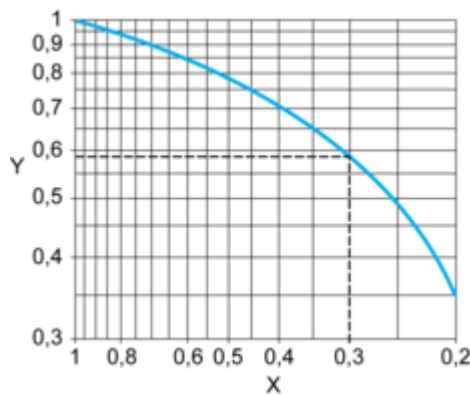
Curve 1: Electrical durability of contacts on resistive load in millions of operating cycles



X Current broken in A

Y Millions of operating cycles

Curve 2: Reduction factor k for inductive loads (applies to values taken from durability Curve 1)

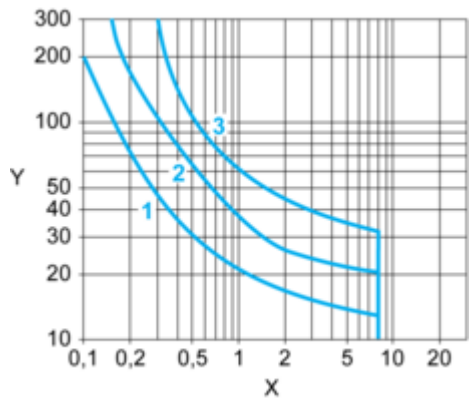


X Power factor on breaking (cos φ)

Y Reduction factor K

DC Load

Load limit curve

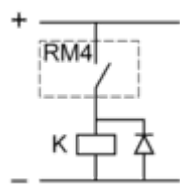


X Current in A

Y Voltage in V

1 L/R = 20 ms

- 2 L/R with load protection diode
- 3 Resistive load



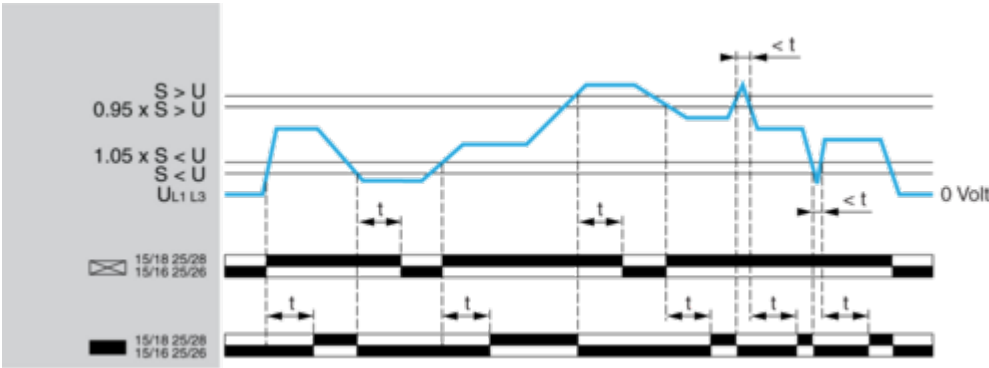


Technical Description

Function Diagram

Overvoltage or Undervoltage Detection

Functions "Fault detection delayed" and "Fault detection extended"



Legend

t Time delay

U Single-phase supply voltage monitored

S Overvoltage or undervoltage setting

15/18, 15/16; 25/28, 25/26 Output relays connections

Relay status: black color = energized.