



Main

| | |
|-------------------------------|---|
| Range of product | Zelio Control |
| Product or component type | Industrial measurement and control relays |
| Relay type | Liquid level control relay |
| Relay name | RM4-L |
| Relay monitored parameters | Detection by resistive probes |
| Time delay | Without |
| Power consumption | 2.4 VA AC |
| Contacts type and composition | 1 C/O |

Complementary

| | |
|--|---|
| Maximum switching voltage | 440 V AC |
| [Un] rated nominal voltage | 220...240 V AC 50/60 Hz +/- 5 % |
| Operating voltage tolerance | 0.85...1.1 U _c |
| Output contacts | 1 C/O |
| Maximum electrode voltage | 24 V AC |
| Maximum electrode current | 1 mA |
| Maximum cable capacity | 0 mF |
| Cable distance between devices | 100 m |
| Sensitivity scale | 5...100 kOhm |
| Marking | CE : EMC 89/336/EEC CE : LVD 73/23/EEC |
| Overvoltage category | III conforming to IEC 60664-1 |
| [Ui] rated insulation voltage | 500 V conforming to IEC |
| Supply disconnection value | > 0.1 U _c |
| Operating position | Any position without derating |
| Connections - terminals | Screw terminals 2 x 1.5 mm ² , flexible cable with cable end Screw terminals 2 x 2.5 mm ² , flexible cable without cable end |
| Tightening torque | 0.6...1.1 N.m |
| Mechanical durability | 30000000 cycles |
| [I _{th}] conventional free air thermal current | 8 A |
| [I _e] rated operational current | 2 A at 24 V DC-13 70 °C conforming to IEC 60947-5-1/1991 |

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

2 A at 24 V DC-13 70 °C conforming to VDE 0660
 3 A at 115 V AC-15 70 °C conforming to IEC 60947-5-1/1991
 3 A at 115 V AC-15 70 °C conforming to VDE 0660
 3 A at 24 V AC-15 70 °C conforming to IEC 60947-5-1/1991
 3 A at 24 V AC-15 70 °C conforming to VDE 0660
 3 A at 250 V AC-15 70 °C conforming to IEC 60947-5-1/1991
 3 A at 250 V AC-15 70 °C conforming to VDE 0660
 0.1 A at 250 V DC-13 70 °C conforming to IEC 60947-5-1/1991
 0.1 A at 250 V DC-13 70 °C conforming to VDE 0660
 0.3 A at 115 V DC-13 70 °C conforming to IEC 60947-5-1/1991
 0.3 A at 115 V DC-13 70 °C conforming to VDE 0660

| | |
|-------------------------------|---|
| Switching capacity in mA | 10 mA at 12 V |
| Switching voltage | 250 V AC |
| Contacts material | 90/10 silver nickel contacts |
| Number of cables | 2 |
| Width | 22.5 mm |
| Terminals description ISO n°1 | (15-16-18)OC (A1-A2)CO (B1-B2-B3)CO |
| Output relay state | According to chosen function |
| 9 mm pitches | 2.5 |
| Product weight | 0.165 kg |

Environment

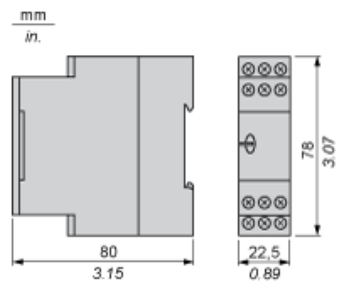
| | |
|---------------------------------------|--|
| Electromagnetic compatibility | Electrostatic discharge - test level 6 kV, level 3 - contact discharge conforming to IEC 61000-4-2 Electrostatic discharge - test level 8 kV, level 3 - air discharge conforming to IEC 61000-4-2 |
| Standards | EN/IEC 60255-6 |
| Product certifications | CSA GL UL |
| 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 ms (f = 10...55 Hz) conforming to IEC 60068-2-6 |
| Shock resistance | 15 gn for 11 ms conforming to IEC 60068-2-27 |
| Pollution degree | 3 conforming to IEC 60664-1 |
| Dielectric test voltage | 2.5 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 : level 3 conforming to IEC 61000-4-5 |
| Disturbance radiated/conducted | CISPR 11 group 1 - class A CISPR 22 - class A |

Contractual warranty

| | |
|-----------------|-----------|
| Warranty period | 18 months |
|-----------------|-----------|

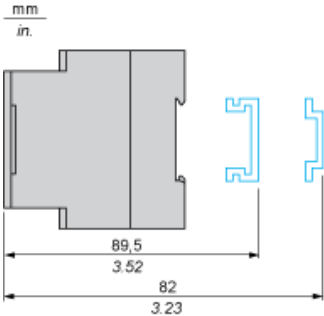
Liquid Level Control Relays

Dimensions

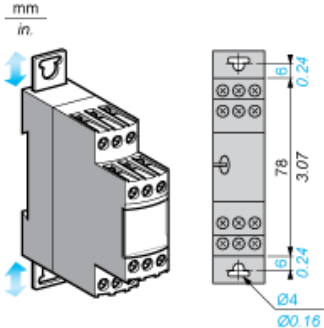


Liquid Level Control Relays

Rail mounting

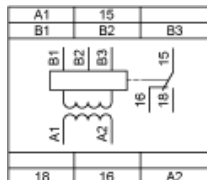


Screw fixing



Liquid Level Control Relays

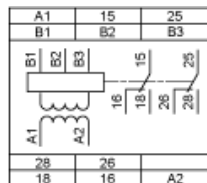
RM4LG01 Wiring Diagram



A1-A2, B1-B2, B3 Voltage Electrodes (see table below)
15-18, 15-16 C/O contact of the output relay

| Electrodes and level controlled | |
|---------------------------------|-----------------------------------|
| B1 | Reference or tank earth electrode |
| B2 | High level |
| B3 | Low level |

RM4LA32 Wiring Diagram

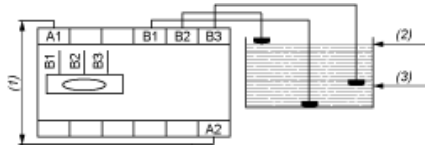


A1-A2, B1-B2, B3 Voltage Electrodes (see table below)
15-18, 15-16 C/O contact of the output relay
25-28, 25-26 C/O contact of the output relay

| Electrodes and level controlled | |
|---------------------------------|-----------------------------------|
| B1 | Reference or tank earth electrode |
| B2 | High level |
| B3 | Low level |

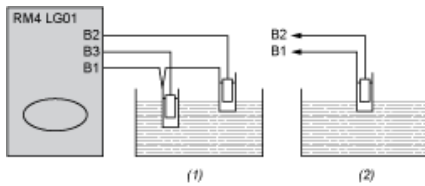
Connection Examples

Control by Electrodes



- (1) Supply voltage
- (2) High level
- (3) Low level

Control by Probes

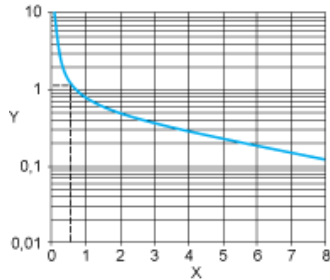


- (1) 2 levels
- (2) 1 level

Electrical Durability and Load Limit Curves

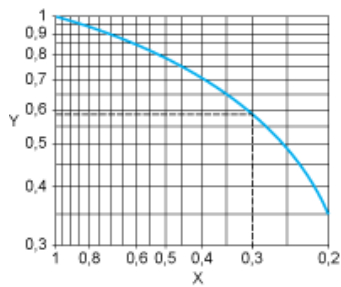
AC Load

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



X Current broken in A
Y Millions of operating cycles

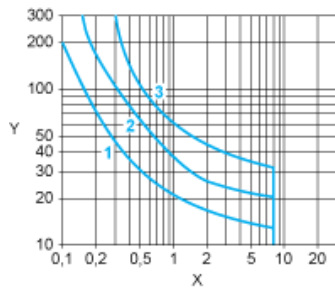
Curve 2: Reduction factor k for inductive loads (applies to values taken from durability Curve 1)



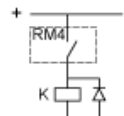
X Power factor on breaking ($\cos \varphi$)
Y Reduction factor K

DC Load

Load limit curve



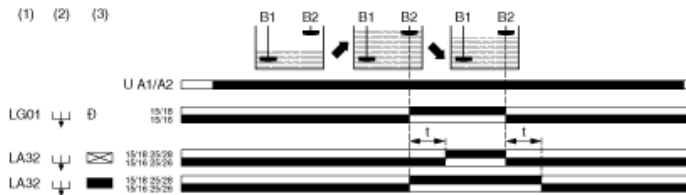
X Current in A
Y Voltage in V
1 L/R = 20 ms
2 L/R with load protection diode
3 Resistive load



Function Diagrams

Empty Function

Maximum level detection (2 electrodes or 1 probe LA9RM201)



Legend

U A1/A2 Supply voltage
 B1 Reference electrode
 B2 High/low level electrode

(1) Type RM4

(2) Function switch

(3) Time delay switch

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

Relay status: black color = energized.

Regulation between a maximum and a minimum level (3 electrodes or 2 probes LA9RM201)



Legend

U A1/A2 Supply voltage
 B1 Reference electrode
 B2 High level electrode
 B3 Low level electrode

(1) Type RM4

(2) Function switch

(3) Time delay switch

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

Relay status: black color = energized.

Fill Function

Maximum level detection (2 electrodes or 1 probe LA9RM201)



Legend

U A1/A2 Supply voltage

B1 Reference electrode

B2 High/low level electrode

(1) Type RM4

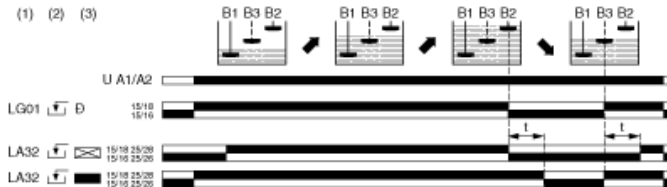
(2) Function switch

(3) Time delay switch

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

Relay status: black color = energized.

Regulation between a maximum and a minimum level (3 electrodes or 2 probes LA9RM201)



Legend

U A1/A2 Supply voltage

B1 Reference electrode

B2 High level electrode

B3 Low level electrode

(1) Type RM4

(2) Function switch

(3) Time delay switch

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

Relay status: black color = energized.

NOTE: On RM4LA32, a time delay can be set on energization or de-energization of the output relay.

RM4LG01M is replaced by:



Physical RM22LG11MR

Level control relay RM22-L - 24..240 V AC/DC - 1 C/O

Qty 1

Reason for Substitution: End of life | Substitution date: 05 July 2016