# Product data sheet
## Characteristics

# RM4LG01M
## liquid level control relay RM4-L - 220..240 V AC

Discontinued

## Commercial status

Discontinued on: 31 December 2016

End-of-service on: 31 December 2016

### 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 Uc |
| Output contacts | 1 C/O |
| Maximum electrode voltage | 24 V AC |
| Maximum electrode current | 1 mA |
| Maximum cable capacity | 0 mF |
| Maximum cable distance between devices | 100 m |
| Sensitivity scale | 5...100 kOhm |
| Marking | CE : EMC 89/336/EEC<br>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 Uc |
| Operating position | Any position without derating |
| Connections - terminals | Screw terminals, 2 x 1.5 mm²flexible with cable end<br>Screw terminals, 2 x 2.5 mm²flexible without cable end |
| 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 60947-5-1/1991<br>2 A at 70 °C 24 V DC-13 conforming to VDE 0660<br>3 A at 70 °C 115 V AC-15 conforming to IEC 60947-5-1/1991<br>3 A at 70 °C 115 V AC-15 conforming to VDE 0660<br>3 A at 70 °C 24 V AC-15 conforming to IEC 60947-5-1/1991<br>3 A at 70 °C 24 V AC-15 conforming to VDE 0660<br>3 A at 70 °C 250 V AC-15 conforming to IEC 60947-5-1/1991<br>3 A at 70 °C 250 V AC-15 conforming to VDE 0660<br>0.1 A at 70 °C 250 V DC-13 conforming to IEC 60947-5-1/1991<br>0.1 A at 70 °C 250 V DC-13 conforming to VDE 0660<br>0.3 A at 70 °C 115 V DC-13 conforming to IEC 60947-5-1/1991<br>0.3 A at 70 °C 115 V DC-13 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 | (B1-B2-B3)CO<br>(15-16-18)OC<br>(A1-A2)CO |
| Output relay state | According to chosen function |
| 9 mm pitches | 2.5 |
| Net weight | 0.165 kg |

## Environment

| | |
|---|---|
| Electromagnetic compatibility | Electrostatic discharge - test level: 6 kV level 3 (contact discharge) conforming to IEC 61000-4-2<br>Electrostatic discharge - test level: 8 kV level 3 (air discharge) conforming to IEC 61000-4-2 |
| Standards | EN/IEC 60255-6 |
| Product certifications | GL<br>CSA<br>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 |
| IP degree of protection | IP20 (terminals) conforming to IEC 60529<br>IP50 (casing) conforming to IEC 60529 |
| 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<br>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 22 - class A<br>CISPR 11 group 1 - class A |

## Packing Units

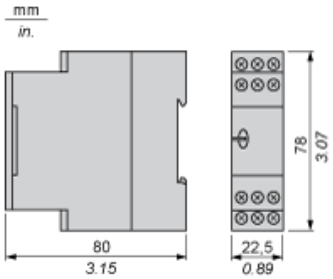
| | |
|---|---|
| Package 1 Weight | 0.168 kg |
| Package 1 Height | 0.270 dm |
| Package 1 width | 0.820 dm |
| Package 1 Length | 0.870 dm |

## Contractual warranty

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

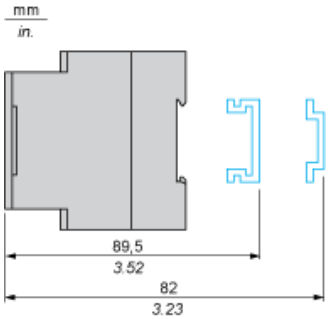
## Liquid Level Control Relays

### Dimensions

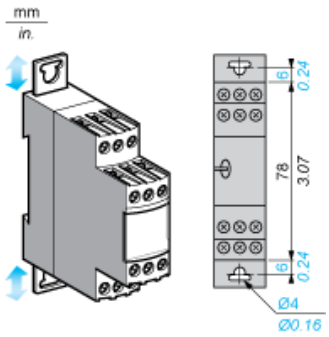


## Liquid Level Control Relays

### Rail mounting

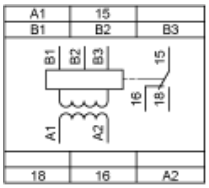



### Screw fixing



## Liquid Level Control Relays

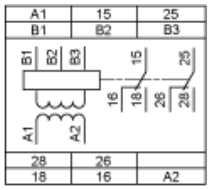
### RM4LG01 Wiring Diagram




A1-A2, B1, B2, B3 Supply voltage Electrodes (see table below)
15-18,15-16 1st 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

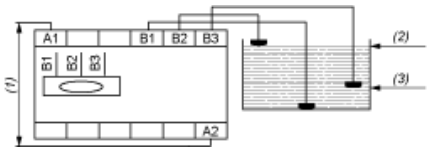



A1-A2, B1, B2, B3 Supply voltage Electrodes (see table below)
15-18,15-16 1st C/O contact of the output relay
25-28, 25-26 2nd C/O contact of the output relay

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

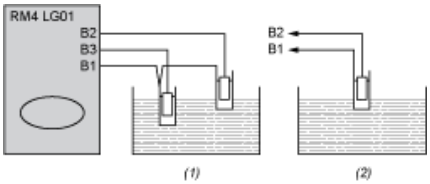
## Connection Examples

### Control by Electrodes




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

### Control by Probes

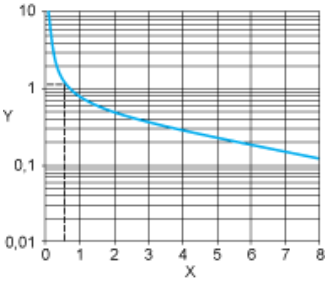



(1) 2 levels
(2) 1 level

## Electrical Durability and Load Limit Curves

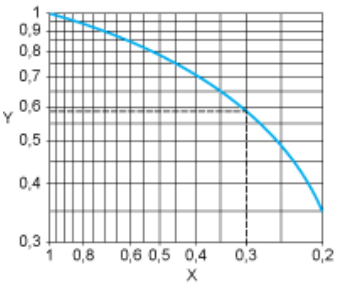
### AC Load

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




X Current broken in A
Y Millions of operating cycles

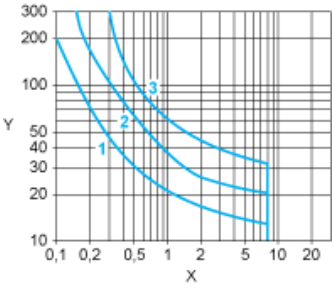
Curve 2: Reduction factor k for inductive loads (applies to values taken from durability Curve 1)



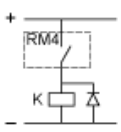

X Power factor on breaking (cos φ)
Y Reduction factor K

### DC Load

Load limit curve



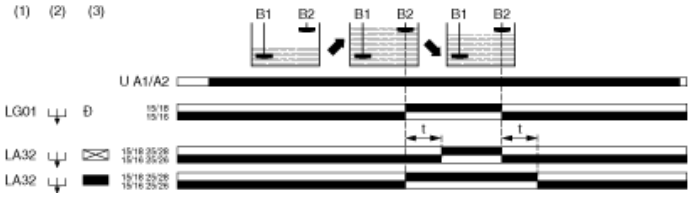

X Current in A
Y Voltage in V
1 L/R = 20 ms
2 L/R with load protection diode
3 Resistive load



## Function Diagrams

### Empty Function

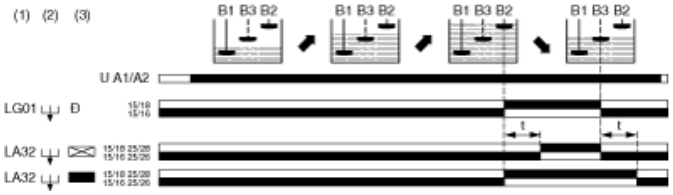
Maximum level detection (2 electrodes or 1 probe LA9RM201)




### 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)

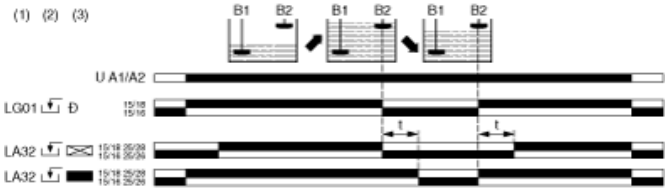



### Legend

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
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(1) Type RM4
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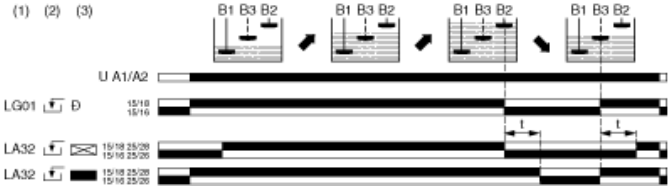
15/16, 15/18; 25/26, 25/28 Output relays connections
Relay status: black color = energized.

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 the following product range:

### Zelio Control Relays

Near Field Communication (NFC) and conventional Control Relays

These control relays monitor and detect abnormal operating conditions (phases, current, voltage, frequency, speed, or temperature). They also control liquid levels and process operating rate. Available in conventional dials or NFC.