

Product data sheet

Specifications



liquid level control relay RM4-L - 110..130 V AC

RM4LA32F

⚠ Discontinued on: Mar 31, 2022

⚠ End-of-service on: May 11, 2022

⚠ Discontinued

Main

Range Of Product	Harmony Relay
Relay Type	Liquid level control relay
Product Or Component Type	Industrial measurement and control relays
Relay Name	RM4-L
Relay Monitored Parameters	Detection by resistive probes
Time Delay	Adjustable 0.1...10 s
Power Consumption	2.7 VA AC
Contacts Type And Composition	2 C/O

Complementary

Maximum Switching Voltage	440 V AC
Operating Voltage Tolerance	0.85...1.1 Uc
Output Contacts	2 C/O
Maximum Electrode Voltage	24 V AC
Maximum Electrode Current	1 mA
Maximum Cable Capacity	0 mF
Sensitivity Scale	0.25...5 kOhm LS (Low Sensitivity) 2.5...50 kOhm St (Standard Sensitivity) 25...500 kOhm HS (High Sensitivity)
Marking	CE : LVD 73/23/EEC CE : EMC 89/336/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 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

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

[Ie] Rated Operational Current	2 A at 70 °C 24 V DC-13 conforming to IEC 60947-5-1/1991 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 60947-5-1/1991 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 60947-5-1/1991 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 60947-5-1/1991 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 IEC 60947-5-1/1991 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 60947-5-1/1991 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	(A1-A2)CO (15-16-18)OC (25-26-28)OC (B1-B2-B3)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 Electrostatic discharge - test level: 8 kV level 3 (air discharge) conforming to IEC 61000-4-2
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
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
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

Packing Units

Unit Type Of Package 1	PCE
------------------------	-----

Number Of Units In Package 1	1
------------------------------	---

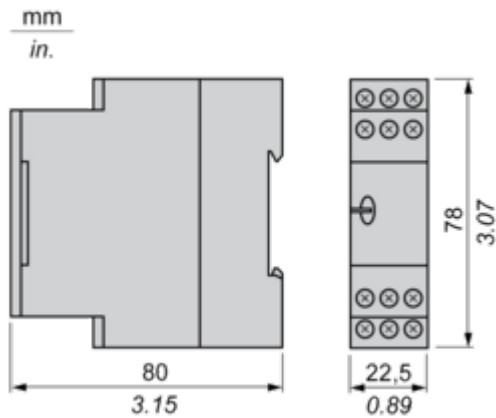
Contractual warranty

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

Dimensions Drawings

Liquid Level Control Relays

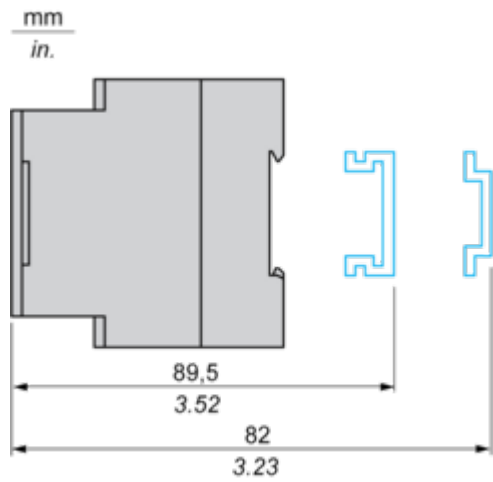
Dimensions



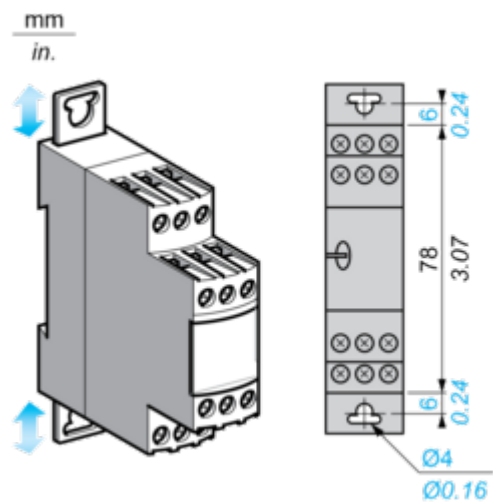
Mounting and Clearance

Liquid Level Control Relays

Rail mounting



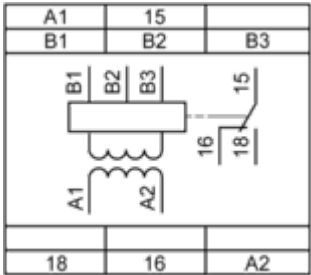
Screw fixing



Connections and Schema

Liquid Level Control Relays

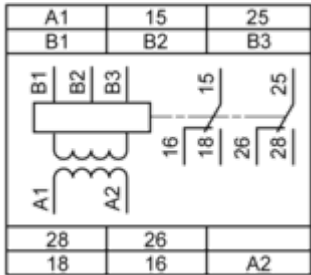
RM4LG01 Wiring Diagram



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

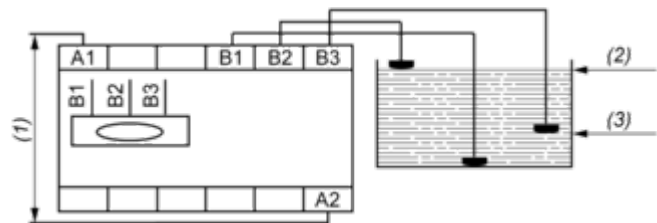


A1-A2, B1, B2, B3 Supply voltage Electrodes (see table below)
15-18,15-16 1st C/O contact of the output relay
25-28, 25-26 2nd C/O contact of the output relay

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

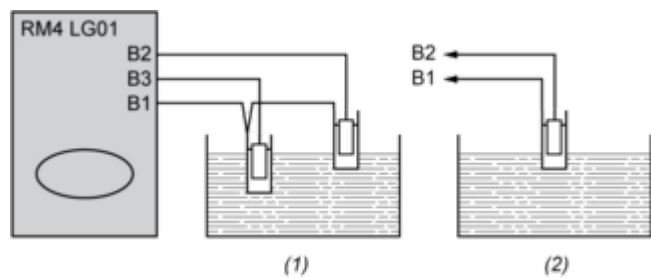
Connection Examples

Control by Electrodes



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

Control by Probes



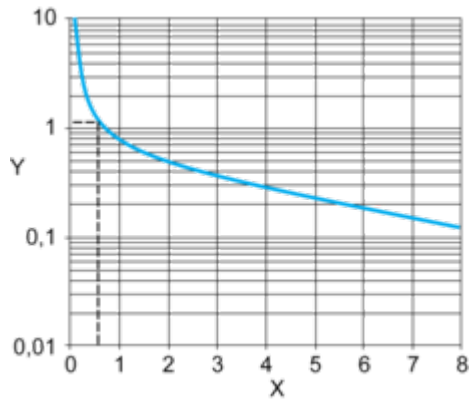
- (1) 2 levels
- (2) 1 level

Performance Curves

Electrical Durability and Load Limit Curves

AC Load

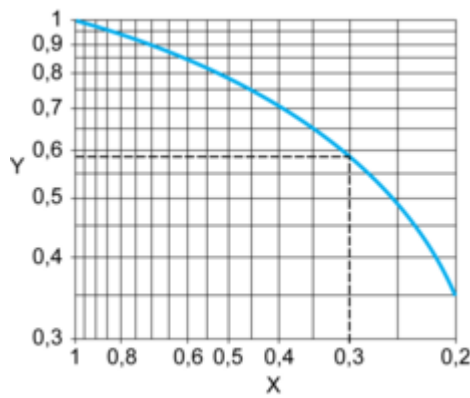
Curve 1: Electrical durability of contacts on resistive load in millions of operating cycles



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)

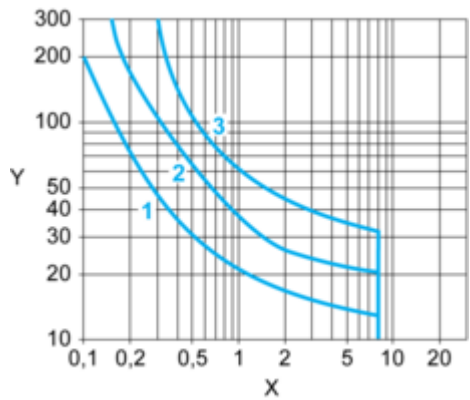


X Power factor on breaking ($\cos \varphi$)

Y Reduction factor K

DC Load

Load limit curve

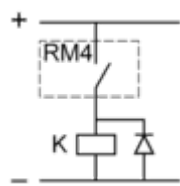


X Current in A

Y Voltage in V

1 L/R = 20 ms

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

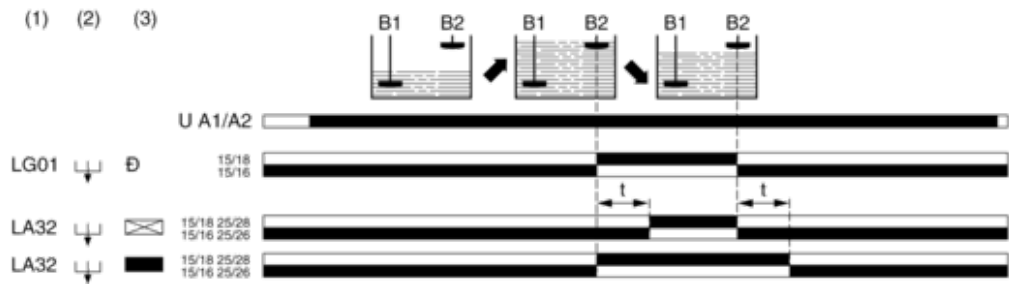


Technical Description

Function Diagrams

Empty Function

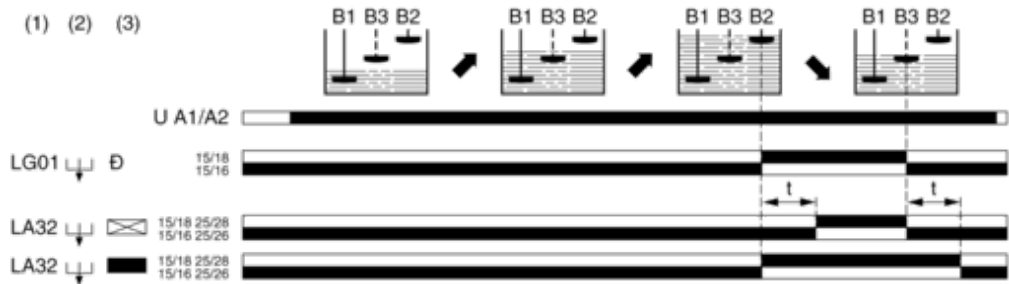
Maximum level detection (2 electrodes or 1 probe LA9RM201)



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)

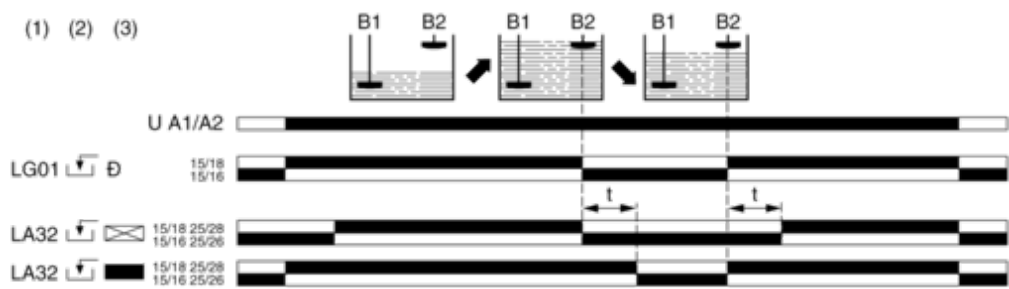


Legend

- 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

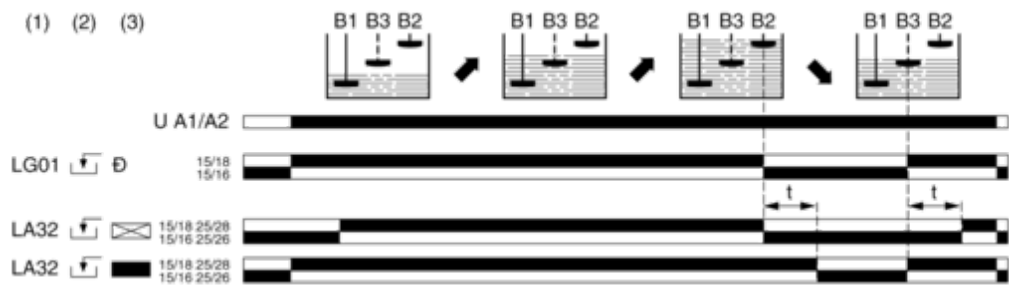
Maximum level detection (2 electrodes or 1 probe LA9RM201)



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.