Product data sheet
Characteristics

RM4LA32M
liquid level control relay RM4-L - 220..240 V AC

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	2.6 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 : 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 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
[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 (25-26-28)OC (B1-B2-B3)CO (15-16-18)OC
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	CSA[RETURN]UL[RETURN]GL
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 22 - class A CISPR 11 group 1 - class A

Packing Units

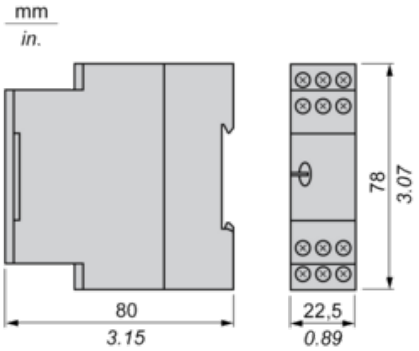
Unit Type of Package 1	PCE
Number of Units in Package 1	1

Contractual warranty

Warranty	18 months

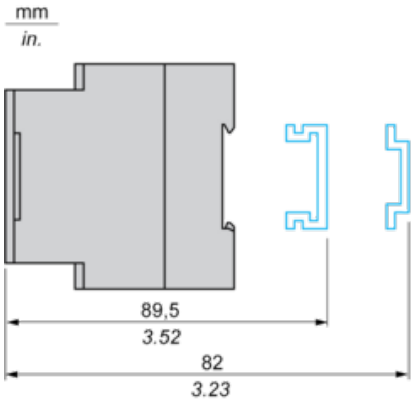
Liquid Level Control Relays

Dimensions

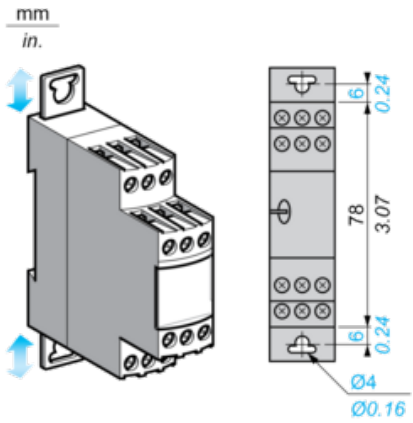


Liquid Level Control Relays

Rail mounting

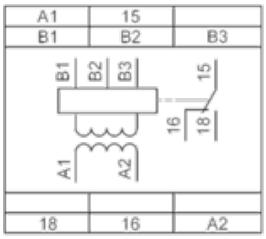


Screw fixing



Liquid Level Control Relays

RM4LG01 Wiring Diagram

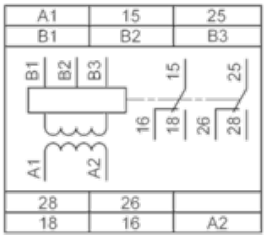


A1-A2, B1, B2, B3 Supply voltage Electrodes (see table below)

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)

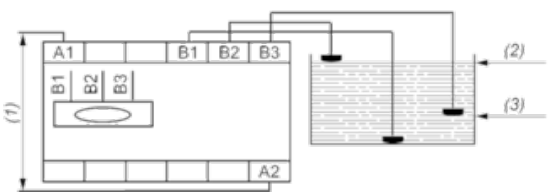
15-18,15-16 1st C/O contact of the output relay

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

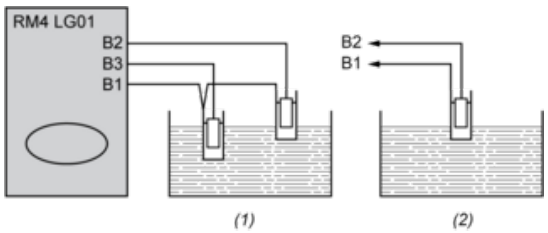


(1) Supply voltage

(2) High level

(3) Low level

Control by Probes



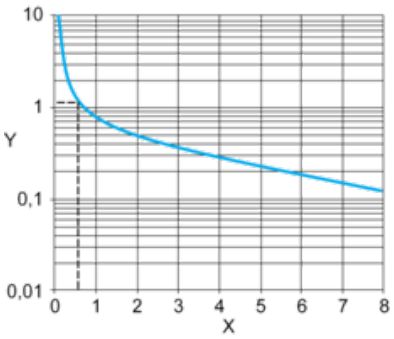
(1) 2 levels

(2) 1 level

Electrical Durability and Load Limit Curves

AC Load

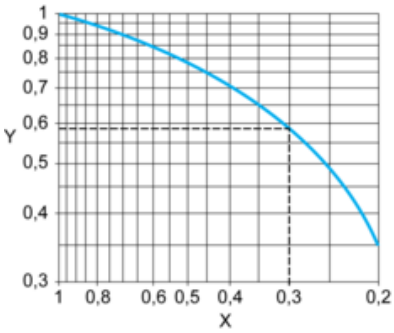
Curve 1: Electrical durability of contacts on resistive load in millions of operating cycles



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)

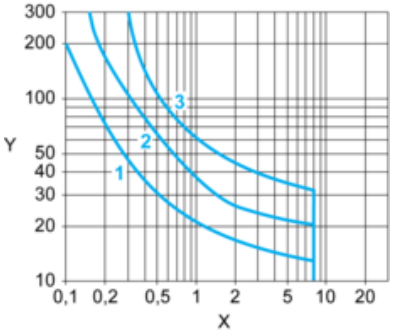


X Power factor on breaking (cos φ)

Y Reduction factor K

DC Load

Load limit curve



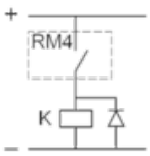
X Current in A

Y Voltage in V

1 L/R = 20 ms

2 L/R with load protection diode

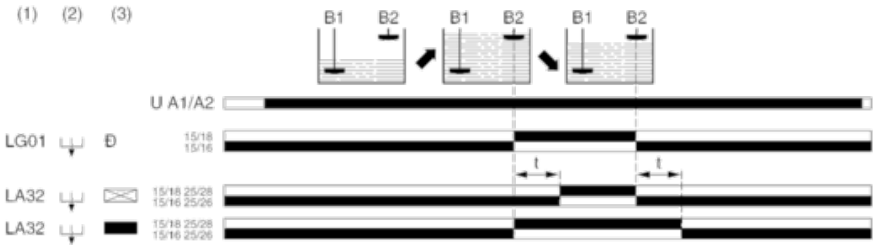
3 Resistive load


+
RM4
K
–

Function Diagrams

Empty Function

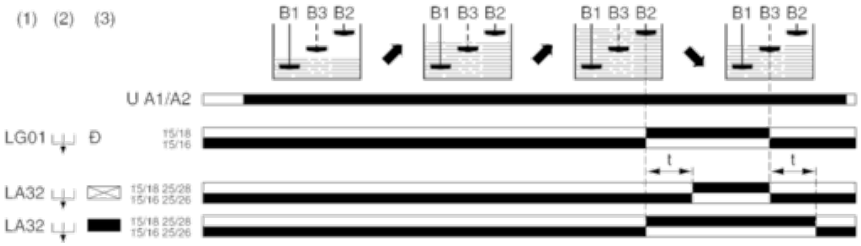
Maximum level detection (2 electrodes or 1 probe LA9RM201)



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)

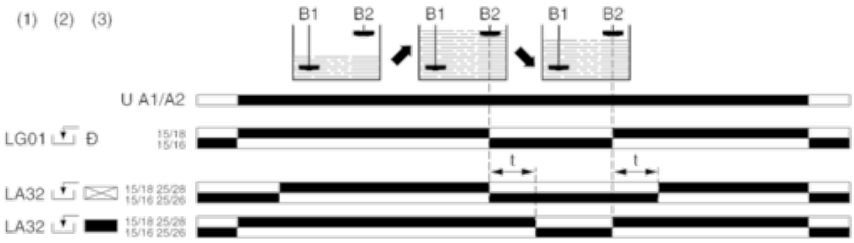


Legend

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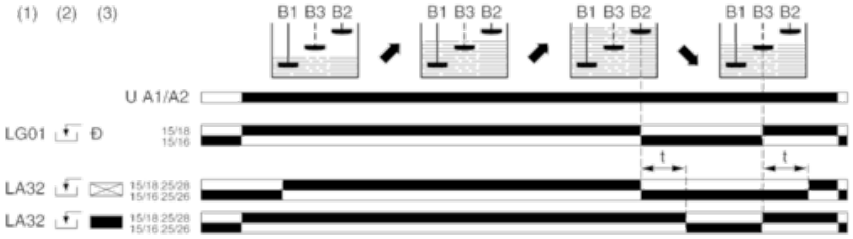
(1) Type RM4
(2) Function switch
(3) Time delay switch
15/16, 15/18; 25/26, 25/28 Output relays connections
Relay status: black color = energized.

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.