Page 19-2

LEVEL CONTROL RELAYS
- For conductive liquids
- Single, dual or multivoltage
- Emptying or filling functions
- Multifunction
- Automatic resetting
- Modular and plug-in versions.

Page 19-5

ELECTRODES
- Single pole
- Three pole.

Page 19-6

START-UP PRIORITY CHANGE RELAY
- 2 outputs
- Single or multivoltage
- Modular and plug-in versions.

Description	LEVEL CONTROL RELAYS						PRIORITY CHANGE RELAYS FOR 2 MOTORS		
	LVM20	LVM25	LVM30	LVM40	LV1E	LV2E	LVMP05	LVMP10	CSP2E
Modular version	●(2U)	●(1U)	●(3U)	●(3U)			●(1U)	●(3U)	
Plug-in version					● (8 pin)	● (11 pin)			● (11 pin)
3 detecting electrodes (MIN, MAX and COM)	●	●	●		●	●			
5 detecting electrodes (MIN1, MAX1, MIN2, MAX2 and COM)				●					
Sensitivity adjustment 2.5...50kΩ	●		●						
Sensitivity adjustment 2.5...100kΩ		●							
Sensitivity adjustment 2.5...200kΩ				●					
Fixed sensitivity: 7...8kΩ					●	●			
Adjustable sensitivity full-scale value 25-50-100-200 kΩ				●					
Separate sensitivity adjustment of MAX probe (foam detection)				●					
Emptying function and alarms	●	●	●	●	●	●			
Filling function and alarms		●	●	●					
Emptying function with Extra-MIN and/or Extra-MAX alarm relays				●					
Filling function with Extra-MIN and Extra-MAX alarm relays				●					
Emptying function with pump start change control				●					
Filling function with pump start change control				●					
Tank filling, well drawing functions and alarm				●					
Filling-emptying adjustment selector		●	●						
5 function adjustment selector				●					
Motor start-up priority change							●		
Motor start-up priority change with stand-by motor function								●	●
Page	19-2			19-3	19-4		19-6		

Level control relays

- Level monitoring for electrically conductive liquids
- Modular and plug-in versions
- Adjustable 2.5-200kΩ sensitivity
- Single and three-pole electrodes
- Startup priority change relays.

Single-voltage relay

LVM20…

Order code	Supply voltage	Type of output contacts	Qty per pkg	Weight
	[V] 50/60Hz	⅂'	n°	[kg]
Automatic resetting.				
LVM20 A024	24VAC	1 C/O (SPDT)	1	0.215
LVM20 A127	110-127VAC	1 C/O (SPDT)	1	0.215
LVM20 A240	220-240VAC	1 C/O (SPDT)	1	0.215
LVM20 A415	380-415VAC	1 C/O (SPDT)	1	0.215

Operational characteristics
- Use with 3 sensing electrodes, MIN, MAX and COM
- 2.5-50kOhm adjustable sensitivity
- Double insulation between supply, electrodes and output relay circuit
- Fixed probe signal delay: <1s
- Green LED indicator for power on
- Red LED indicator for output relay state
- Modular DIN 43880 housing, 2 module
- IEC degree of protection: IP40 on front (only when mounted in housing or electric board with IP40); IP20 on terminals.

Certifications and compliance
Certifications obtained: EAC, UL Listed, for USA and Canada (cULus-File E93601), as Auxiliary Devices - Level control relays.
Compliant with standards: IEC/EN 60255-5, IEC/EN 61000-6-2, IEC/EN 61000-6-3, UL508, CSA C22.2 n° 14.

Electrodes and electrode holders
Use electrodes or electrode holders type: SN1/PS31/PS3S/SCM/CGL or similar. See page 19-5.

Multi-voltage relay

LVM25 240

Order code	Supply voltage	Type of output contacts	Qty per pkg	Weight
	[V]	⅂'	n°	[kg]
Emptying or filling function. Automatic resetting.				
LVM25 240	24-240VAC/DC	1 C/O (SPDT)	1	0.095

Operational characteristics
- Use with 3 sensing electrodes, MIN, MAX and COM
- 2.5-100kOhm adjustable sensitivity
- Insensivity to stray electrode-cable capacitance
- Programming selector for emptying or filling function with fail-safe operation
- Double insulation between supply, electrodes and output relay circuit
- Fixed probe signal delay: <1s
- Green LED indicator for power on
- Red LED indicator for output relay state
- Modular DIN 43880 housing, 1 module
- IEC degree of protection: IP40 on front (only when mounted in housing or electric board with IP40); IP20 on terminals.

Certifications and compliance
Certifications obtained: EAC, UL Listed, for USA and Canada (cULus-File E93601), as Auxiliary Devices - Level control relays.
Compliant with standards: IEC/EN 60255-5, IEC/EN 61000-6-2, IEC/EN 61000-6-4, UL508, CSA C22.2 n° 14.

Electrodes and electrode holders
Use electrodes or electrode holders type: SN1/PS31/PS3S/SCM/CGL or similar. See page 19-5.

Dual-voltage relay

LVM30…

Order code	Supply voltage	Type of output contacts	Qty per pkg	Weight
	[V] 50/60Hz	⅂'	n°	[kg]
Emptying or filling function. Automatic resetting.				
LVM30 A240	24/220-240VAC	2 C/O (SPDT)	1	0.315
LVM30 A415	110-127VAC 380-415VAC	2 C/O (SPDT)	1	0.315

Operational characteristics
- Use with 3 sensing electrodes, MIN, MAX and COM
- 2.5-50kOhm adjustable sensitivity
- Programming selector for emptying or filling function with fail-safe operation
- Double insulation between each supply, electrode and output relay circuit
- Adjustable probe signal delay: 1-10s
- Adjustable pump start delay: 0-300s
- Green LED indicator for power on
- Red LED indicator for output relay state
- Modular DIN 43880 housing, 3 module
- IEC degree of protection: IP40 on front (only when mounted in housing or electric board with IP40); IP20 on terminals.

Certifications and compliance
Certifications obtained: EAC, UL Listed, for USA and Canada (cULus-File E93601), as Auxiliary Devices - Level control relays.
Compliant with standards: IEC/EN 60255-5, IEC/EN 61000-6-2, IEC/EN 61000-6-3, UL508, CSA C22.2 n° 14.

Electrodes and electrode holders
Use electrodes or electrode holders type: SN1/PS31/PS3S/SCM/CGL or similar. See page 19-5.

Single-voltage multifunction relay

LVM40...

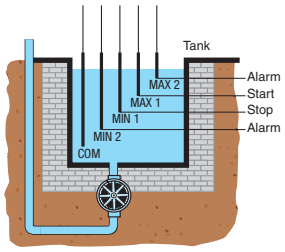
Order code	Auxiliary supply voltage	Type of output contacts	Qty per pkg	Weight
	[V] 50/60Hz	❶	n°	[kg]
Multifunctions. Automatic resetting.				
LVM40 A024	24VAC	1 C/O +1 N/O	1	0.278
LVM40 A127	110-127VAC	1 C/O +1 N/O	1	0.278
LVM40 A240	220-240VAC	1 C/O +1 N/O	1	0.278
LVM40 A415	380-415VAC	1 C/O +1 N/O	1	0.278

❶ Two relay outputs; one with c/o (SPDT) and the other with N/O (SPST).

FUNCTIONS

A- Emptying with MIN and/or MAX alarms.

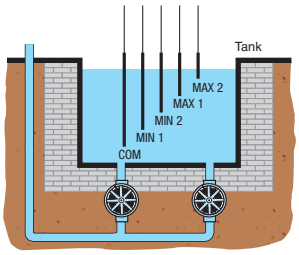
B- Filling with MIN and/or MAX alarms.



EXAMPLE OF EMPTYNG OPERATION
To achieve this type of operation, two electrodes are used to control the liquid between the fixed limits using MIN1 and MAX1 and two alarm levels using MIN2 and MAX2. When one of the alarm electrodes is wet, the alarm relay is de-energised.
The alarm can be caused by pump malfunction, insufficient pump delivery capacity, MAX control level failure or MIN level electrode shorted.
With a proper connection, only the MIN alarm or MAX alarm can be activated or neither of the two can be activated so the relative output contacts can be used for pump control.

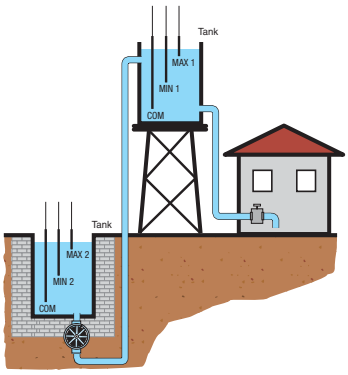
C- Emptying with pump priority change.

D- Filling with pump priority change.



EXAMPLE OF EMPTYNG OPERATION
This operation is obtained by using four electrodes positioned at four different levels and two relay outputs to control two pumps.
For example, one can place the four electrodes, MIN1, MIN2, MAX1 and MAX2, in increasing order from the lowest to the highest levels and must control the tank emptying. Usually. The level is controlled between the MIN1 and MAX1 levels by starting one of the two pumps but this case is different so the pumps can be mainteined at the best efficiency and optimise thei wear.
When the liquid wets the MAX2 level and because the first pump is faulty or else a higher delivery capacity is needed, the second stand-by pump is activiated to back up the first pump. When the liquid lowers and no longer wets the MIN2 level, the second pump is stopped and then when the MIN1 level is no longer wet, the first pump is stopped too.

E- Tank filling and well drawing with alarm.



EXAMPLE OF OPERATION
Two electrodes are used in this operation to control the tank level and another two for the well. One relay is used to activate the pump while the other for dry running / no water alarm.
When the well liquid wets the MAX2 level and the liquid wets the MIN1 tank level, the tank-filling pump is activated. When the tank MAX1 level is wet, the pump is stopped.
During the tank filling, the pump could stop before the MAX1 level is wet because the well MIN2 level is no longer wet.
Should the tank MIN1 level no longer be wet at which the pump should restart but the well MIN2 level is also no longer wet, then the alarm relay is de-energised.

Operational characteristics
- Use with 5 sensing electrodes, MIN1, MAX1, MIN2, MAX2 and COM
- 2.5-200kOhm adjustable sensitivity
- Sensitivity adjustment: 25-50-100-200kOhm
- Separate sensitivity adjustment of MAX electrodes for foam detection
- Insensitivity to stray electrode-cable capacitance
- Programming selector for 5 different functions:
  - Standard emptying and alarms
  - Standard filling and alarms
  - Emptying and filling with priority start-up change control
  - Filling with priority start-up change pump
  - Well draining and tank filling and alarms
- Double insulation between each supply, electrodes and output relay circuits
- Adjustable probe signal delay: 1-10s
- Adjustable pump start delay: 0-30min
- Green LED indicator for power on
- Red LED indicators for output relay and electrode state
- Modular DIN 43880 housing, 3 module
- IEC degree of protection: IP40 on front (only when mounted in housing or electric board with IP40); IP20 on terminals.

Certifications and compliance
Certifications obtained: EAC, UL Listed, for USA and Canada (cULus-File E93601), as Auxiliary Devices - Level control relays.
Compliant with standards: IEC/EN 60255-5, IEC/EN 61000-6-2, IEC/EN 61000-6-3, UL508, CSA C22.2 n° 14.

Electrodes and electrode holders
Use electrodes or electrode holders type: SN1/PS31/PS3S/SCM/CGL or similar. See page 19-5.

Starter kit

Order code	Description	Qty per pkg	Wt
	[mm]	n°	[kg]
LVMKIT25	Level control starter kit complete with LVM25 240 relay and two SN1 electrodes	1	0.192

General characteristics
LVM25 240
- Use with 2 sensing electrodes, MIN and COM
- 2.5-50kOhm adjustable sensitivity
- Double insulation between supply, electrodes and output relay circuit
- Fixed probe signal delay: <1s
- Green LED indicator for power on
- Red LED indicator for output relay state
- Modular DIN 43880 housing, 2 module
- IEC degree of protection: IP40 on front (only when mounted in housing or electric board with IP40); IP20 on terminals.

SN1 SINGLE POLE ELECTRODE
A single pole electrode used for level control in wells or storage tanks. It comprises an AISI 303 stainless steel probe, a plastic (PPOX) holder and a cable gland.
A seal ring and the tightening of the cable gland prevent water from entering the cable terminal connector and causing its oxidation.
The external cable diameter must be 2.5 to 6mm/Ø0.1 to 0.24" to warrant perfect sealing of the PG7 gland.
Maximum cable section: 2.5mm²/14AWG.
Maximum operating temperature: +60°C.
Application: tanks and deep wells.

Certifications and compliance
Level control relay only:
Certifications obtained: EAC, UL Listed, for USA and Canada (cULus-File E93601), as Auxiliary Devices - Level control relays.
Compliant with standards: IEC/EN 60255-5, IEC/EN 61000-6-2, IEC/EN 61000-6-4, UL508, CSA C22.2 n° 14.

Plug-in single-voltage relay

31 LV1E...

Order code	Auxiliary supply voltage	Type of output contact	Qty per pkg	Wt
	[V] 50/60Hz	4'	n°	[kg]
Automatic reset.				
31 LV1E 24	24VAC	1 C/O (SPDT)	1	0.263
31 LV1E 110	110-120VAC	1 C/O (SPDT)	1	0.263
31 LV1E 230	220-240VAC	1 C/O (SPDT)	1	0.263
31 LV1E 400	380-415VAC	1 C/O (SPDT)	1	0.263

Operational characteristics
- Used with 3 sensing electrodes, MIN, MAX and COM
- 7-8kOhm fixed sensitivity
- Red LED indicator for output relay state
- Maximum relay-electrode cable length: 500m/547yd using single-core double insulated cables
- 8-pin plug-in housing
- Mounting on 35mm (IEC/EN 60715) DIN rail using 31 S8 socket; see page 19-7
- Flush mounting with mount frame 31 G216 and loose 31 L48 P8 socket; see page 19-7
- IEC degree of protection: IP30.

Reference standards
Compliant with standards: IEC/EN 60255-5.

Electrodes and electrode holders
Use electrodes or electrode holders type:
SN1/PS31/PS3S/SCM/CGL or similar. See page 19-5.

Plug-in dual-voltage relay

31 LV2E...

Order code	Auxiliary supply voltage	Type of output contact	Qty per pkg	Wt
	[V] 50/60Hz	4'	n°	[kg]
Automatic reset.				
31 LV2E 48	24-48VAC	1 C/O (SPDT)	1	0.266
31 LV2E 220	110-120VAC/ 220-240VAC	1 C/O (SPDT)	1	0.266
31 LV2E 400	220-240/ 380-415VAC	1 C/O (SPDT)	1	0.266

Operational characteristics
- Used with 3 sensing electrodes, MIN, MAX and COM
- 7-8kOhm fixed sensitivity
- Red LED indicator for output relay state
- Maximum relay-electrode cable length: 500m/547yd using single-core double insulated cables
- 11-pin plug-in housing
- Mounting on 35mm (IEC/EN 60715) DIN rail using 31 S11 socket; see page 19-7
- Flush mounting using mount frame 31 G216 and loose 31 L48 P11 socket; see page 19-7
- IEC degree of protection: IP30.

Reference standards
Compliant with standards: IEC/EN 60255-5.

Electrodes and electrode holders
Use electrodes or electrode holders type:
SN1/PS31/PS3S/SCM/CGL or similar. See page 19-7.

Electrodes and electrode holder


11 SN1


31 SCM…


31 CGL125…


31 PS31


31 PS3S

Order code	Rod probe included	Rod probe length	Qty per pkg	Wt
		[mm/in]	n°	[kg]
Single pole electrodes.				
11 SN1	Yes	100❶/3.9	10	0.050
31 SCM 04	Yes	43/1.7	1	0.060
31 SCM 50	Yes	500/19.7	1	0.115
31 SCM 100	Yes	1000/39.4	1	0.162
31 CGL125 3	Yes	327/12.9	1	0.126
31 CGL125 5	Yes	500/19.7	1	0.158
31 CGL125 7	Yes	700/27.6	1	0.208
31 CGL125 10	Yes	1000/39.4	1	0.281
Three pole electrode.				
31 PS31	Yes	300/11.8	1	0.120
Electrode holder (for 3 rod probes).				
31 PS3S	No	—	1	0.184

❶ Total electrode length.

General characteristics
SN1 SINGLE POLE ELECTRODE
A single pole electrode used for level control in wells or storage tanks. It comprises an AISI 303 stainless steel probe, a plastic (PPOX) holder and a cable gland.
A seal ring and the tightening of the cable gland PG7 prevent water from entering the cable terminal connector and causing its oxidation.
Cable connection: screw.
The external cable diameter must be 2.5 to 6mm/Ø0.1 to 0.24" to warrant perfect sealing.
Maximum connection cable section: 2.5mm²/14 AWG.
Maximum operating temperature: +60°C.
Application: Tanks and deep wells.

SCM ELECTRODE
A single pole electrode used for level control on boilers, autoclaves and in general where pressure (10 bar maximum) and high temperature (+100°C maximum) are present.
It comprises an AISI 303 stainless steel probe embedded in an alumina oxide body and a 3/8" GAS threaded metal support holder.
Cable connection: Threaded rod with nut.
Application: Tanks, pressurised tanks and boilers.

CGL 125… ELECTRODE
A single pole electrode with AISI 302 probe, used for level control on boilers and autoclaves and in general wherever pressure is up to 10 bar maximum.
Maximum operating temperature: +180°C.
3/8" GAS threaded terminal.
Cable connection threaded rod with nut.
Application: Tanks, pressurised tanks and boilers.

PS31 ELECTRODE
A small electrode holder, complete with three AISI 304 stainless steel probes.
Particularly suited to small containers whenever pressure is maximum up to 2 bar.
Maximum operating temperature: +70°C.
1/2" GAS threaded coupling
Faston termination; relative lugs standard supplied
Application: Tanks and automatic dispensers.

PS3S ELECTRODE HOLDER
A thermoset resin electrode holder to be used with three probes (rods probes to be ordered separately) and complete with terminal cover.
Maximum operating temperature is +100°C.
2" GAS threaded coupling.
Cable connection: screw.
Application: tanks.

Reference standards
Compliant with standards: IEC/EN 60255-5.

Rod probes

Order code	Rod probe length	Qty per pkg	Wt
	[mm/in]	n°	[kg]
For SCM electrodes.			
31 ASTA 460 MM4	460/18.11	1	0.053
31 ASTA 960 MM4	960/37.8	1	0.103
For PS3S electrode holder.			
31 ASTA 460 MM6	460/18.11	1	0.100
31 ASTA 960 MM6	960/37.8	1	0.210

General characteristics
Stainless steel AISI 304 probes with 4M or 6M threaded extremity suitable as extensions for SCM electrode or as rod probe for PS3S a holder.
See page 19-7 for SCM electrode extension coupler unit.

Modular version

LVMP05

Order code	Auxiliary supply voltage	Type of output contacts	Qty per pkg	Wt
	[V]	⍳	n°	[kg]
2 outputs. AC/DC supply voltage.				
LVMP05	24/48VDC 24-240VAC	2 N/O (SPST)	1	0.090

General characteristics
The relays are designed to balance the operating time, and hence the wear of pumps, compressors, generators, when two units – primary and stand-by – are installed.

Operational characteristics
- Operating limit: 0.85-1.1 Ue
- Connection: permanent
- Green LED indicator for power on
- Red LED indicators for output relay state
- Modular DIN 43880 housing, 1 module
- IEC degree of protection: IP40 on front (only when mounted in housing or electric board with IP40); IP20 on terminals.

Certifications and compliance
Certifications obtained: EAC, UL Listed, for USA and Canada (cULus-File E93601), as Auxiliary Devices - Automatic starting control.
Compliant with standards: IEC/EN 60255-5, IEC/EN 61000-6-2, IEC/EN 61000-6-3, UL508, CSA C22.2 n° 14.

LVMP10...

Order code	Auxiliary supply voltage	Type of output contacts	Qty per pkg	Wt
	[V] 50/60Hz	⍳	n°	[kg]
2 outputs. AC supply voltage.				
LVMP10 A024	24VAC	2 N/O (SPST)	1	0.250
LVMP10 A127	110-127VAC	2 N/O (SPST)	1	0.250
LVMP10 A240	220-240VAC	2 N/O (SPST)	1	0.250
LVMP10 A415	380-415VAC	2 N/O (SPST)	1	0.250

General characteristics
The relays are designed to balance the operating time, and hence the wear of pumps, compressors, generators, when two units – primary and stand-by – are installed.

Operational characteristics
- Operating limit: 0.85-1.1 Ue
- Connection: permanent
- Green LED indicator for power on
- Red LED indicators for output relay state
- Modular DIN 43880 housing, 3 module
- IEC degree of protection: IP40 on front (only when mounted in housing or electric board with IP40); IP20 on terminals.

Certifications and compliance
Certifications obtained: EAC, UL Listed, for USA and Canada (cULus-File E93601), as Auxiliary Devices - Automatic starting control.
Compliant with standards: IEC/EN 60255-5, IEC/EN 61000-6-2, IEC/EN 61000-6-3, UL508, CSA C22.2 n° 14.

Plug-in version

31 CSP2E...

Order code	Auxiliary supply voltage	Type of output contacts	Qty per pkg	Wt
	[V] 50/60Hz	⍳	n°	[kg]
2 outputs. AC supply voltage.				
31 CSP2E 24	24VAC	2 N/O (SPST)	1	0.150
31 CSP2E 110	110VAC	2 N/O (SPST)	1	0.150
31 CSP2E 220	220VAC	2 N/O (SPST)	1	0.150
31 CSP2E 230	230/240VAC	2 N/O (SPST)	1	0.150

General characteristics
The relays are designed to balance the operating time, and hence the wear of pumps, compressors, generators, when two units – primary and stand-by – are installed.

Operational characteristics
- Operating limit: 0.85-1.1 Us
- Connection: permanent
- Voltage applied across input contacts: 15VDC not isolated with respect to supply.
- Current consumption, input contacts: about 1mA.
- Plug-in housing for use with 31 S11 socket; suitable for screw fixing or fixing on 35mm DIN rail.
- IEC degree of protection: IP30.

Reference standards
Compliant with standards: IEC/EN 60255-5.

Accessories


31 S8

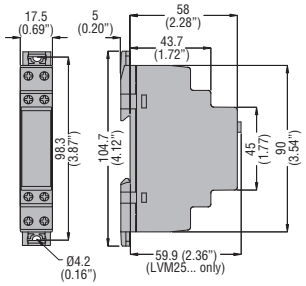

31 S11

Order code	Description	Qty per pkg	Wt
		n°	[kg]
31 RE213	Coupler unit for extension rod probe ASTA...MM4	1	0.008
31 S8	8-pin socket for screw fixing or mounting on 35mm DIN rail (IEC/EN 60715), used with LV1E... relay. Screw terminals.	10	0.061
31 S11	11-pin socket for screw fixing or mounting on 35mm DIN rail (IEC/EN 60715), used with LV2E... and CSP2E... relays. Screw terminals.	10	0.064
31 RE014	Relay-socket retention bracket; S8 or S11 types only.	10	0.001
31 L48 P8	8-pin loose socket. Screw terminals.	10	0.040
31 L48 P11	11-pin loose socket. Screw terminals.	10	0.048
31 G216	Flush-mount frame complete with fixing accessories for plug-in relays.	1	0.080

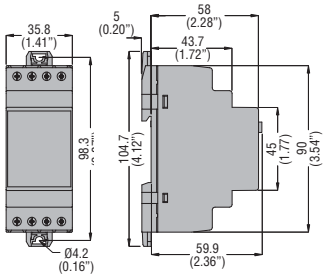
Operational characteristics
SOCKETS
- Tightening torque: 0.8Nm/7.1lbin
- Conductor cross-section max (2 wires): 2.5 mm²/ 14 AWG.

LEVEL CONTROL AND PRIORITY CHANGE RELAYS

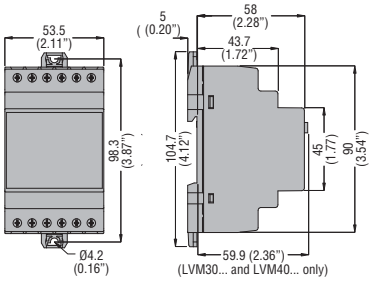
LVM25... - LVMP05



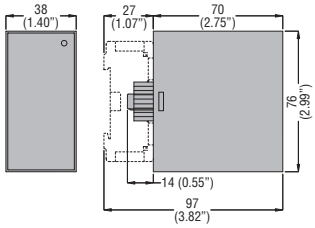
LVM20...



LVM30... - LVM40... - LVMP10

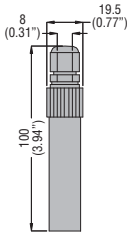


LV1E... - LV2E... - CSP2E...

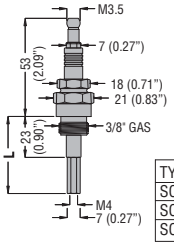


Electrodes and electrode holders for conductive liquids

SN1

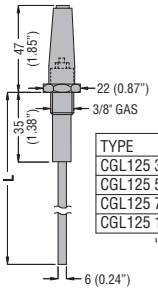


SCM...



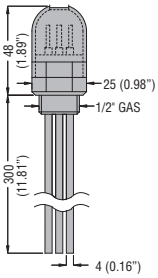
TYPE	L
SCM04	43 (1.69")
SCM50	500 (19.68")
SCM100	1000 (39.37")

CGL125...

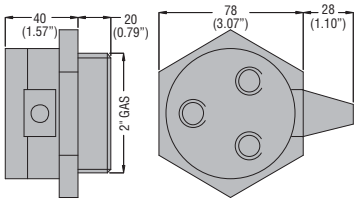


TYPE	L
CGL125 3	327 (12.87")
CGL125 5	500 (19.68")
CGL125 7	700 (27.56")
CGL125 10	1000 (39.37")

PS31

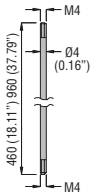


PS3S

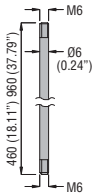


Rod probes

ASTA 460 MM4
ASTA 960 MM4

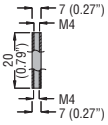


ASTA 460 MM6
ASTA 960 MM6



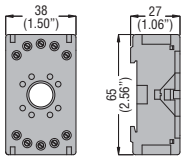
Coupler unit

RE213

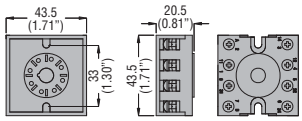


Accessories

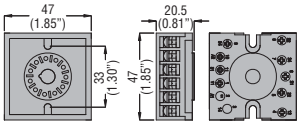
S8 - S11



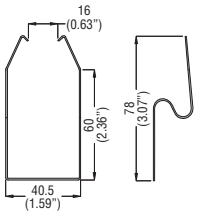
L48 P8



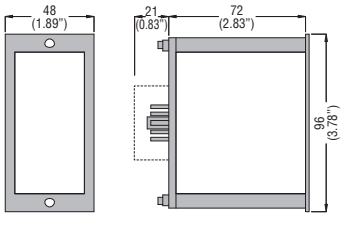
L48 P11



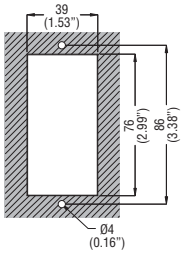
RE014



G216

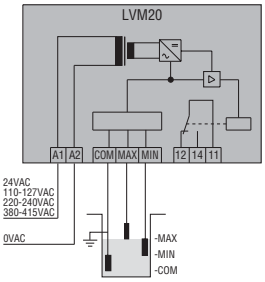


Cutout

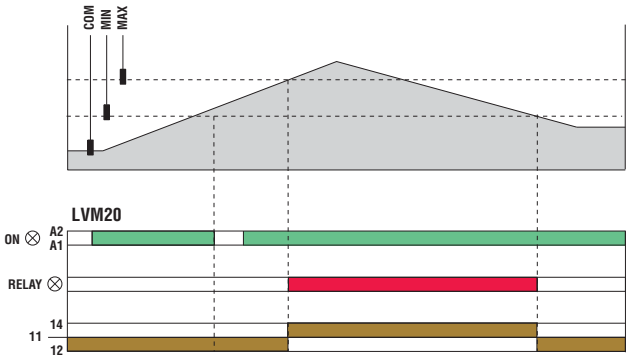


Emptying function

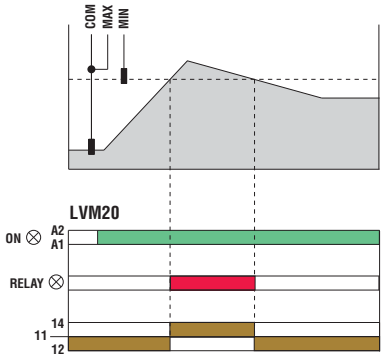
LVM20



Emptying function with 3 electrodes

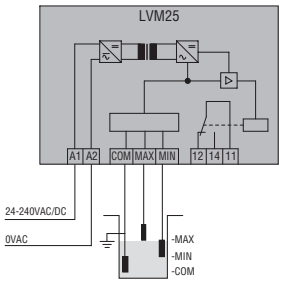


Emptying function with 2 electrodes

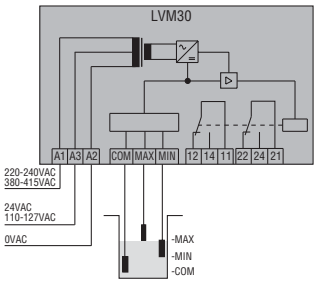


Emptying or filling functions

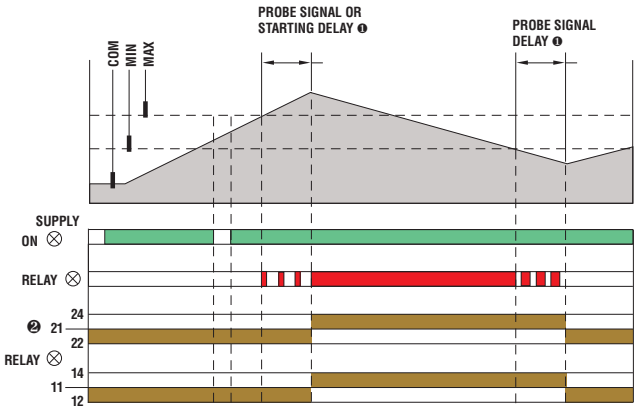
LVM25



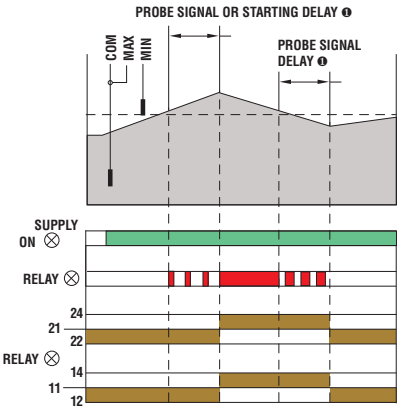
LVM30



Emptying function (DOWN)
Connection with 3 electrodes

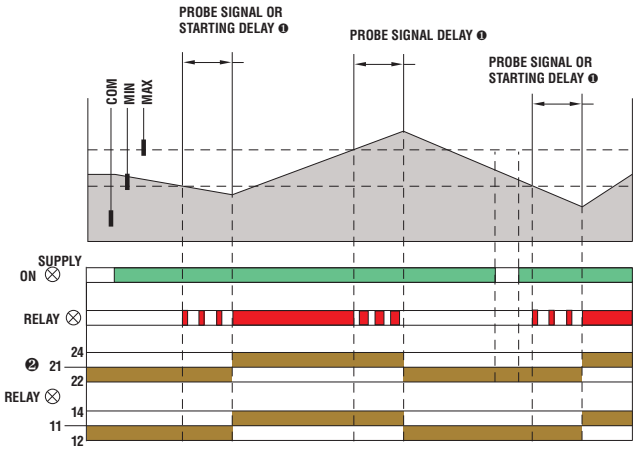


Connection with 2 electrodes

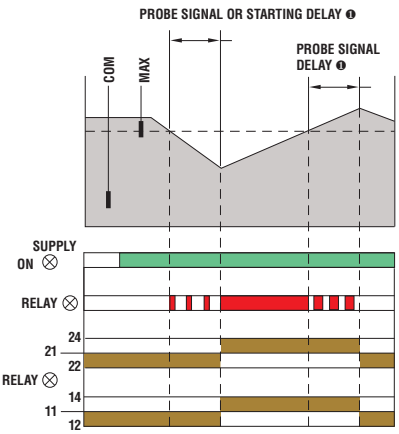


❶ Delay for LVM30 only.
❷ Changeover contact (SPDT) for LVM30 only.

Filling function (UP)
Connection with 3 electrodes



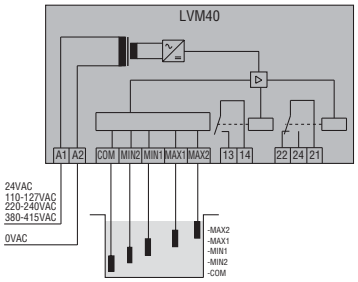
Connection with 2 electrodes



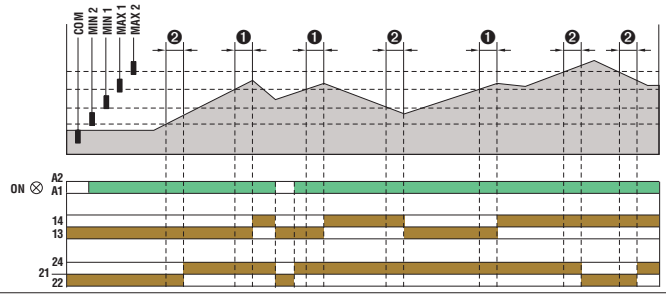
❶ Delay for LVM30 only.
❷ Changeover contact (SPDT) for LVM30 only.

Multiple functions

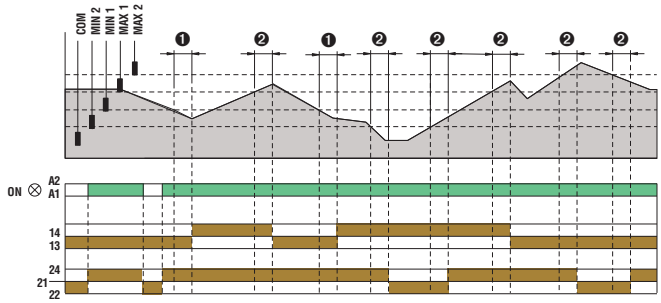
LVM40



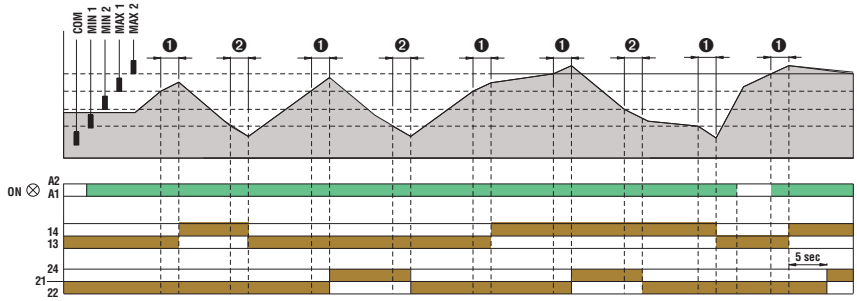
Emptying function + alarms



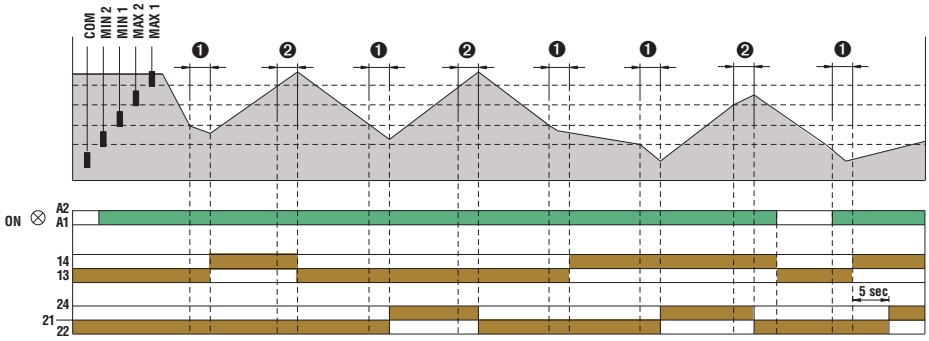
Filling function + alarms



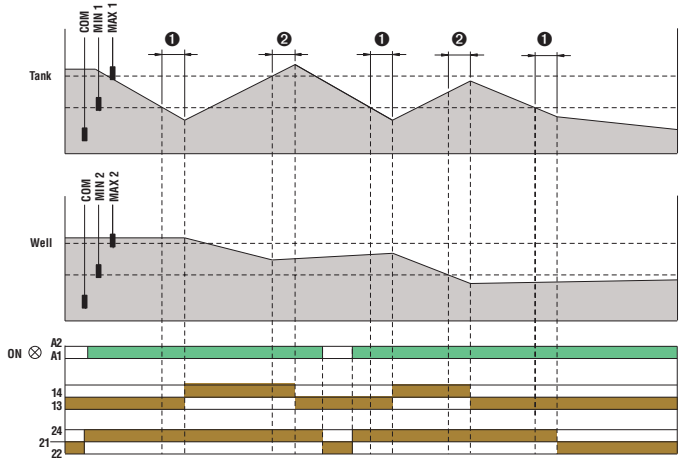
Filling function + pump start change



Filling function + pump start change



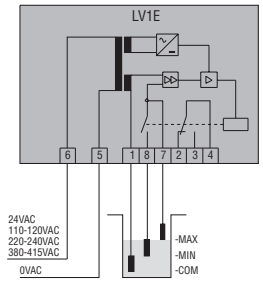
Filling tank and draining well function + alarm



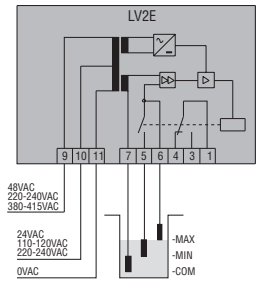
❶ Probe signal and starting delay
❷ Probe signal delay

Emptying function

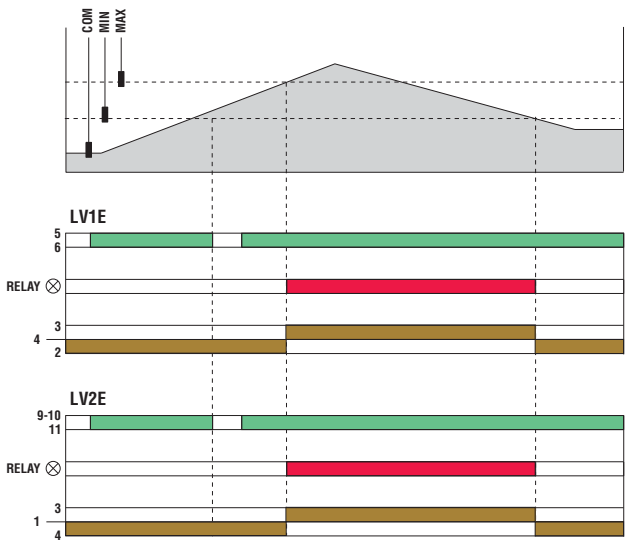
LV1E



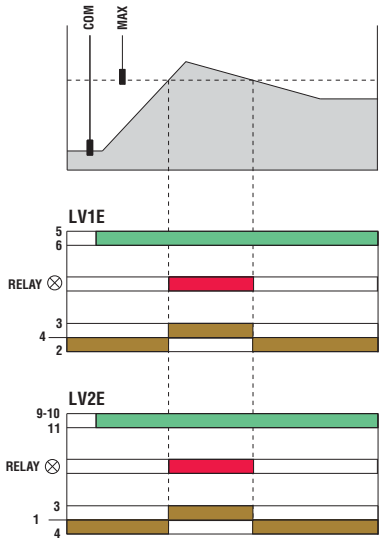
LV2E



Emptying function with 3 electrodes

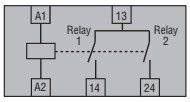


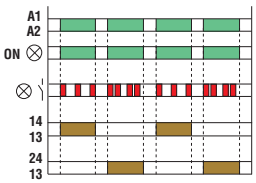
Emptying function with 2 electrodes



Start-up priority change monitoring

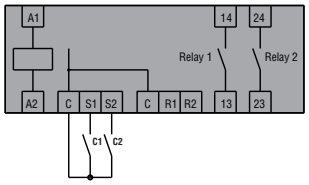
LVMP05



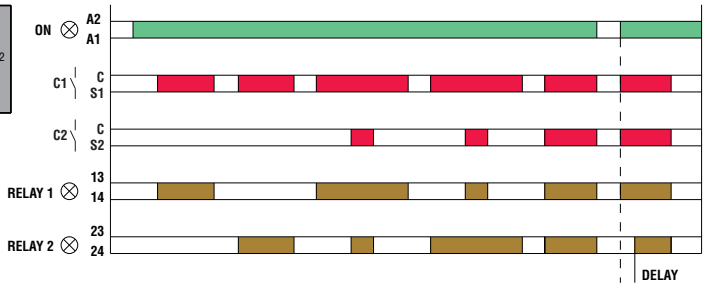


LVMP10

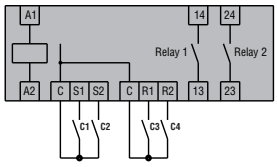
2-wire connection



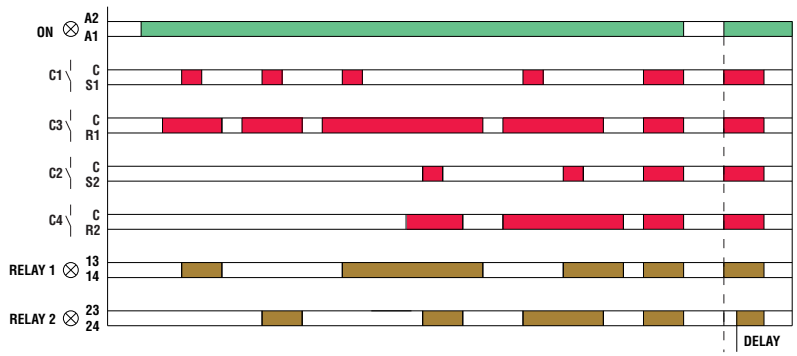
C1 = Primary
C2 = Secondary / Standby



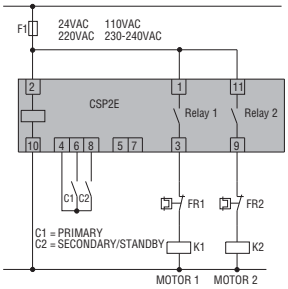
3-wire connection



C1 = Start Primary
C2 = Start Standby
C3 = Stop Primary
C4 = Stop Standby



CSP2E



TYPE	LVM20…	LVM25…	LVM30…	LVM40…
DESCRIPTION				
	Modular			
	Automatic resetting			
	Single voltage	Multi voltage	Dual voltage	Single voltage
Application (examples)	Empting function	Emptying or filling functions	Emptying or filling functions	Multiple functions
Operating principle	Electrical conductivity of liquids			
AUXILIARY SUPPLY				
Supply voltage Us	24VAC 110-127VAC 220-240VAC 380-415VAC	24-240VAC/DC	24/220-240VAC 110-127/380-415VAC	24VAC 110-127VAC 220-240VAC 380-415VAC
Operating voltage range	0.85-1.1 Ue 50/60Hz ±5%			
Power consumption (maximum)	3.5VA	3VA	5.5VA	4.5VA
Power dissipation (maximum)	1.8W	1.2W	2.8W	2.8W
OUTPUTS				
Number of connectable electrodes	3	3	3	5
Type of electrode	Electrodes and electrode holders: SN1 / SCM / CGL / PS31 / PS3S or similar			
Electrode voltage	7.5VAC	5VPP	7.5VAC	5VPP
Sensitivity	2.5-50kohm	2.5-100kohm	2.5-50kohm	2.5-200kohm
TIME DELAYS				
Tripping time (minimum)	≤600ms	≤ 1s	1s	1s
Resetting time (minimum)	≤750ms	≤ 1s	1s	1s
Probe tripping delay	—	—	OFF-10s	1-10s
Relay energising delay	—	—	OFF-300s	0-30min
RELAY OUTPUTS				
Number of relays	1	1	1	2
Relay state	Normally de-energised, energises at tripping			
Contact arrangement	1 changeover / SPDT	1 changeover / SPDT	2 changeover / SPDT each	1 changeover / SPDT and 1 with 1 N/O - SPST
Rated utilisation voltage	250VAC			
Maximum switching voltage	400VAC			
IEC conventional free air thermal current Ith	8A			
UL/CSA and IEC/EN 60947-5-1 designation	B300			
Electrical life (with rated load)	10^5 cycles			
Mechanical life	$30x10^6$ cycles			
Indications	1 green LED for power on 1 red LED for relay state	1 green LED for power on 1 red LED for relay state	1 green LED for power on 1 red LED for relay state	1 green LED for power on 2 red LEDs for relay state 2 red LEDs for probe state
CONNECTIONS				
Tightening torque maximum	0.8Nm (7lbin; 7-9lbin er UL/CSA)			
Conductor section min-max	0.2-4mm² (24-12AWG; 18-12 AWG per UL/CSA)			
INSULATION				
IEC rated insulation voltage Ui	415VAC	240VAC	415VAC	415VAC
IEC rated impulse wihstand voltage Uimp	6kV	4kV	6kV	6kV
IEC power frequency withstand voltage	4kV	2kV	4kV	4kV
Double insulation Supply/relay/electrode	≤250VAC	≤250VAC❶	≤250VAC	≤250VAC
AMBIENT CONDITIONS				
Operating temperature	–20...+60°C			
Storage temperature	–30...+80°C			
HOUSING				
Material	Self-extinguishing polyamide			
Typical configuration (examples)	LVM20 + n° 3 SN1 electrodes LVM25 + n° 3 SN1 electrodes LVM30 + n° 3 SN1 electrodes LVM40 + n° 5 SN1 electrodes			
Maximum cable length	❸			

❶ Double insulaton between supply, electrodes and output relay circuit.
❷ Voltage applied to input contacts, not insulated at power supply.
❸ Consult Customer Service; see contact details on inside front cover.

	LV1E...	LV2E...	LVMP 05	LVMP 10	CSP2E
	Plug-in		Modular		Plug-in
	Automatic resetting	Automatic resetting	—	—	—
	Single voltage	Dual voltage	Multivoltage	Multivoltage	Single voltage
	– Minimum-maximum level threshold – Maintains level between minimum and maximum – Protection against dry pump running		Priority change relay for motors		
	Electrical conductivity of liquids		—		
	24VAC	24-48VAC	24-48VDC	24VAC	24VAC❷
	110-120VAC	110-120VAC/220-240VAC	24-240VAC	110-127VAC	48VAC❷
	220-240VAC	220-240VAC/380-415VAC		220-240VAC	110VAC❷
	380-415VAC			380-415VAC	220VAC❷
	0.8-1.1 Ue 50/60Hz				
	5.5VA		1.6VA	4.8VA	5VA
	2.8W		0.9W	3W	3W
	3		—	—	—
	Electrodes and electrode holders: SN1 / SCM / CGL / PS31 / PS3S / or similar		—	—	—
	9VAC (voltage between probes)		—	—	—
	7 - 8kohm adjustable		—	—	—
	≤50ms		—	—	—
	≤100ms		—	—	—
	—		—	—	—
	—		—	—	—
	1		2	2	2
	Normally de-energised, energises at tripping				
	1 changeover contact / SPDT		1 N/O - SPST	1 N/O - SPST	1 N/O - SPST
	220VAC		250VAC	250VAC	250VAC
	380VAC		—	—	—
	5A		8A	8A	5A
	B300		B300	B300	B300
	2,5x10^5 cycles		10^5 cycles	10^5 cycles	10^5 cycles
	50x10^6 cycles		30x10^6 cycles	30x10^6 cycles	30x10^6 cycles
	1 red LED for relay tripping		1 green LED for power on 1 red LED for relay state	1 green LED for power on 1 red LED for relay state	1 green LED for power on 1 red LED for relay state
	—		0.8Nm (7lbin; 7-9lbin er UL/CSA)		—
	—		0.2-4.0mm^2 (24-12AWG; 18-12 AWG per UL/CSA)		—
	415VAC		250VAC	415VAC	250VAC
	5kV		4kV	4kV	4kV
	2kV		2kV	2.5kV	2.5kV
	—				
	–20...+60°C				
	-30...+80°C				
	Self-extinguishing polycarbonate		Self-extinguishing polyamide	Self-extinguishing polyamide	Self-extinguishing polycarbonate
	LV1E + n° 3 SN1 electrode LV2E + n° 2 SN1 electrodes + reset button		—	—	—
	500m/547yd single-core, double insulated cables		—	—	—