Conductive Sensors
2-point level controller
Type CL with potentiometer

CARLO GAVAZZI



- **Conductive level controller**
- **Sensitivity adjustment from 250 Ω to 500 KΩ**
- **For filling or emptying applications**
- **Low-voltage AC electrodes**
- **Easy installation on DIN rails or with 11 pin circular plug**
- **Rated operational voltage: 24 VAC/DC, 115 VAC or 230 VAC**
- **Output 2 x 8A/250 VAC DPDT relay**
- **LED indication for: Output ON and Power ON**

Product Description

µ-Processor based level controller for liquids with a wide sensitivity range (like sewage water, chemicals, salt water etc.).

Max./min. control of charging/ discharging. The sensitivity is adjustable by means of the potentiometer and the rotary switch.
2 x 8A DPDT relay output.

Ordering Key

CLD2EA1CM24

- **Conductive level**
- **DIN rail or plug mounting**
- **No of inputs**
- **Charge/discharge**
- **Adjustment potentiometer**
- **O utput**
- **Relay DPDT**
- **Power supply**

Type Selection

Mounting	Relay	Ordering no. Supply: 24 VAC/DC	Ordering no. Supply: 115 VAC	Ordering no. Supply: 230 VAC
DIN-rail	DPDT	**CLD2EA1CM24**	**CLD2EA1C115**	**CLD2EA1C230**
11-p circular plug		**CLP2EA1CM24**	**CLP2EA1C115**	**CLP2EA1C230**

Specifications

Rated operational voltage (U_B)		
Pin 2 & 10	230	195 to 265 VAC, 45 to 65 Hz
	115	98 to 132 VAC, 45 to 65 Hz
Supply class 2	24	19.2 to 28.8 VAC/DC
Rated insulation voltage		<2.0 kVAC (rms)
Rated impulse withstand voltage		4 kV (1.2/50 µs) (line/neutral)
Rated operational power		
AC supply		5 VA
AC/DC supply		5 VA / 5 W
Delay on operate (t_V)		< 300 mS
Outputs		
Rated insulation voltage		250 VAC (rms) (cont./elec.)
Relay Rating (AgCdO)		µ (micro gap)
Resistive loads	AC1	8 A / 250 VAC (2500 VA)
	DC1	1 A / 250 VDC (250 W) or 10 A / 25 VDC (250 W)
Small induc. Loads	AC15	0,4 A / 250 VAC
	DC13	0,4 A / 30 VDC
Mechanical life (typical)		≥ 30 x 10^6 operations @ 18'000 imp/h
Electrical life (typical)	AC1	> 250'000 operations
Level probe supply		Max. 5 VAC
Level probe current		Max. 2 mA
Sensitivity		250Ω to 500KΩ Factory settings standard range "S" 100KΩ
Ranges L (Low sensitivity)		250 Ω to 5 KΩ, C_F* = 4.7 nF
Ranges S (Standard sensitivity)		5 KΩ to 100 KΩ, C_F* = 2.2 nF
Ranges H (High sensitivity)		50 KΩ to 500 KΩ, C_F* = 1.0 nF
Dielectric voltage		>2.0 KVAC (rms) (contacts / electronics)
Rated impulse withstand volt.		4 kV (1.2/50 µS) (contacts / electronics) (IEC 664)
Operating frequency (f)		
Relay output		0.5 HZ
Response time		
OFF-ON (t_{on})		1 s
ON-OFF (t_{off})		1 s
Environment		
Overvoltage category		III (IEC 60664)
Degree of protection		IP 20 (IEC 60529, 60947-1)
Pollution degree		2 (IEC 60664/60664A, 60947-1)
Temperature		
Operating		-20° to +50°C (-4° to + 122°F)
Storage		-50° to +85°C (-58° to +185°F)
Housing material	CLP	NORYL PPO, light grey
	CLD	ABS VO, light grey
Weight		
AC supply		200 g
AC/DC supply		125 g
UL Approvals	cURus	UL508, UL325, CSA-C22.2 No.247
CE marking		Yes

*C_F = maximum Cable Capacitance

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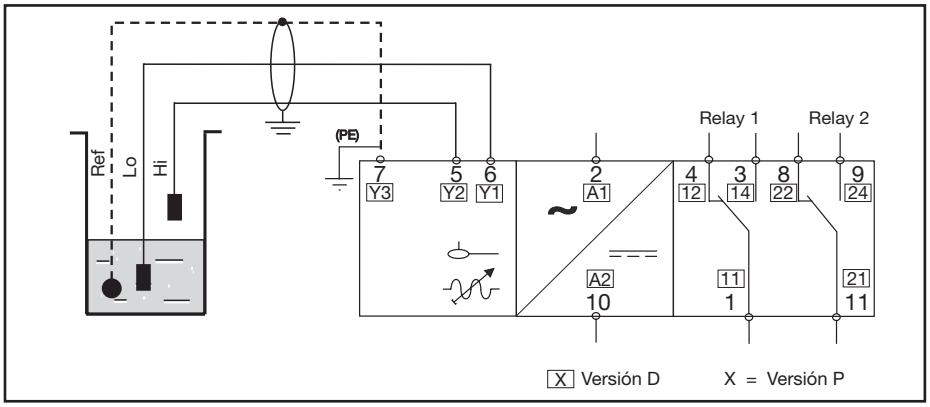
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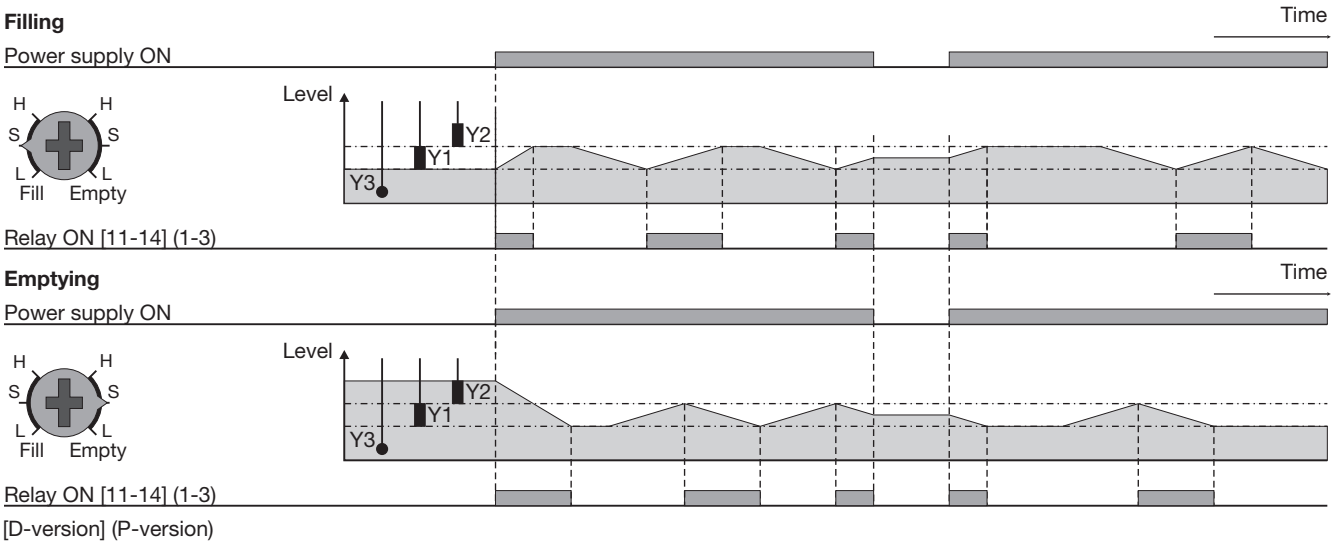
Mode of Operation

Connection cable
2, 3, or 4 conductor PVC cable, normally screened. Cable length: max. 100 m. The resistance between the cores and the ground must be at least 500k. Normally, it is recommended to use a screened cable between probe and controller, e.g. where the cable is placed in parallel to the load cables (mains). The screen has to be connected to Y3 (reference).

Example 1
The diagram shows the level control connected as max. and min. control. The relays react to the low alternating current created when the electrodes are in contact with the liquid.
The reference (Ref) must be connected to the container or if the container consists of a non-conductive material, to an additional electrode. (To be connected to pin Y3). (In the diagram this electrode is shown by the dotted line).

NB!
If only one level detection is required - interconnect the two inputs Y1 and Y2.

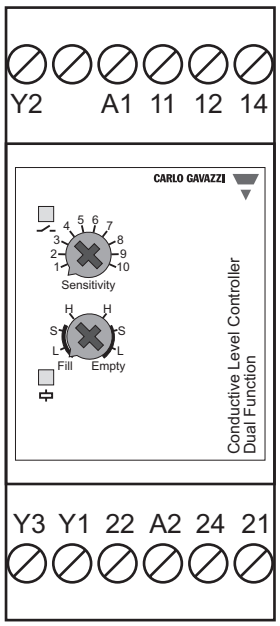




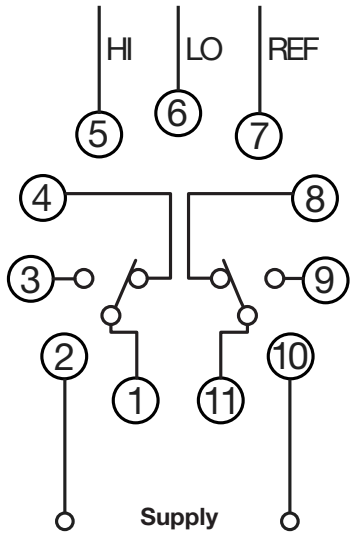
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Wiring Diagram

Din-rail version



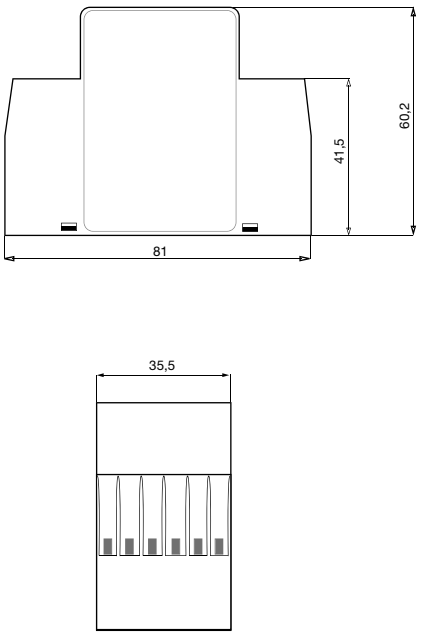
Plug version



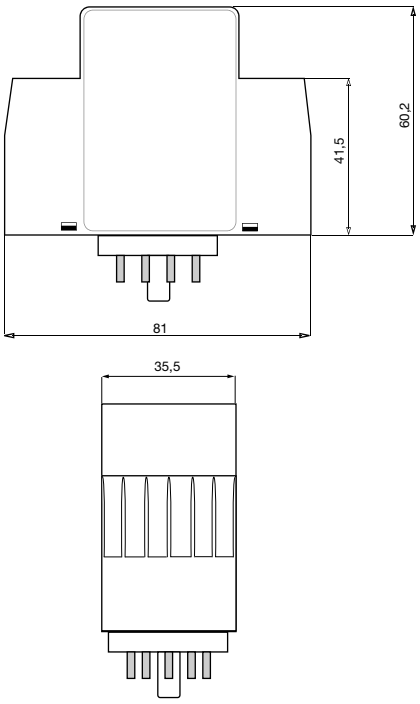
Bottom view

Dimension Drawings

Din-rail version



Plug version



Accessories

• 11 pole circular socket	ZPD11
• Retaining spring	HF

Delivery Contents

- Amplifier
- Packaging: Carton box
- Manual

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