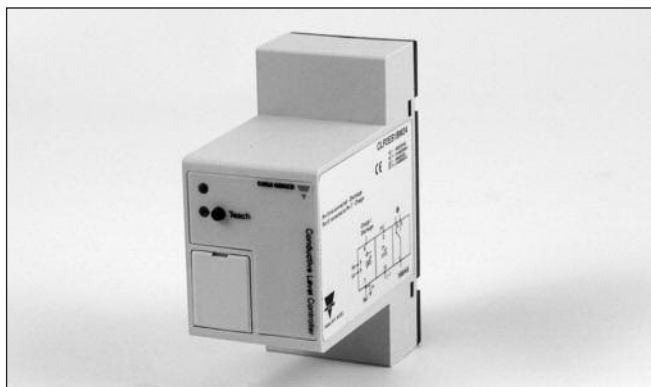


Conductive Sensors 2-point Basic Level Controller Type CL with Teach-in

CARLO GAVAZZI



- Conductive level controller
- Teach-in of sensitivity – operating resistance from 3.5K Ω to 50 K Ω
- For filling or emptying applications
- Low-voltage AC electrodes
- Easy installation with 11 pin circular plug
- Rated operational voltage:
24 VAC/DC, 115 VAC or 230 VAC
- Output 8A/250 VAC SPDT relay
- LED indication for: Calibration, faulty operation and relay status
- Possibility of serial connection

Product Description

μ -Processor based level sensitivity is adjustable by controller. means of the teach-in function. Max./min. control of charging/ discharging of liquids. The

Ordering Key

CLP2ES1BM24

Type _____
DIN rail mounting _____
Inputs _____
Function _____
Adjustment _____
Outputs _____
Relay versions _____
Power supply _____

Type Selection

Mounting	Ordering no. Supply: 24 VAC/DC	Ordering no. Supply: 115 VAC	Ordering no. Supply: 230 VAC
11-p circular plug	CLP2ES1BM24	CLP2ES1B115	CLP2ES1B230

Specifications

Rated operational voltage (U_B)		195 to 265 VAC, 45 to 65 Hz 98 to 132 VAC, 45 to 65 Hz 19.2 to 28.8 VAC/DC <2.0 kVAC (rms) 4 kV (1.2/50 μs) (line/neutral)	Dielectric voltage	>2.0 KVAC (rms) (contacts / electronics)
Pin 2 & 10	230		Rated impulse withstand volt.	4 kV (1.2/50 μS) (contacts / electronics) (IEC 664)
	115			
	24			
Rated insulation voltage			Operating frequency (f)	Relay output 2 HZ
Rated impulse withstand voltage				
Rated operational power		5 VA 5 VA / 5 W	Response time	OFF-ON (t _{on}) OFF-ON (t _{off}) 1,5 s 1,5 s
AC supply				
AC/DC supply				
Delay on operate (t_v)		< 300 mS	Environment	Overvoltage category Degree of protection Pollution degree III (IEC 60664) IP 20 /IEC 60529, 60947-1) 2 (IEC 60664/60664A, 60947-1)
Outputs				
Rated insulation voltage				
Rated insulation voltage		250 VAC (rms) (cont./elec.)	Temperature	Operating Storage -20° to +50°C (-4° to + 122°) -50° to +85°C (-58° to +185°F)
Relay Rating (AgCdO)				
Resistive loads				
	AC1	μ (micro gap)	Weight	AC supply AC/DC supply 200 g 125 g
	DC1	8 A / 250 VAC (2500 VA)		
	DC1	8 A / 30 VDC (24 W)		
	or	8 A 25 VDC (250 W)	Approvals	UL508, cULus
Small induc. Loads	AC11	0,4 A 200 VAC		
	DC13	0,4 A / 30 VDC		
Mechanical life (typical)		≥ 30 x 106 operations	CE marking	Yes
		@ 18'000 imp/h		
Electrical life (typical)	AC1	> 250'000 operations		
Level probe supply		Max. 5 VAC		
Level probe current		Max. 1.5 mA		
Sensitivity		3,5KΩ to 50KΩ		
Factory preset		47KΩ		



Mode of Operation

Connection cable
2 or 3 conductor PVC cable, normally screened. Cable length: max. 100 m. The resistance between the cores and the ground must be at least 50k. 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 pin 7 (reference).

Teach-in:
Make sure that the reference electrode and one of the other electrodes are in contact with the liquid – approximately 1 cm. Press the “teach” pushbutton at the front of the controller for approximately 2 seconds, until the green LED turns OFF. The controller will now auto-adjust itself according to the resistance of the

measuring liquid. If the resistance of the liquid is outside the maximum range handled by the controller, the green LED will flash quickly for a period of 2 seconds, indicating a wrong teach-in.

Function setting
The controller works per default as discharge. Connect pin 7 to pin 8 for charge.

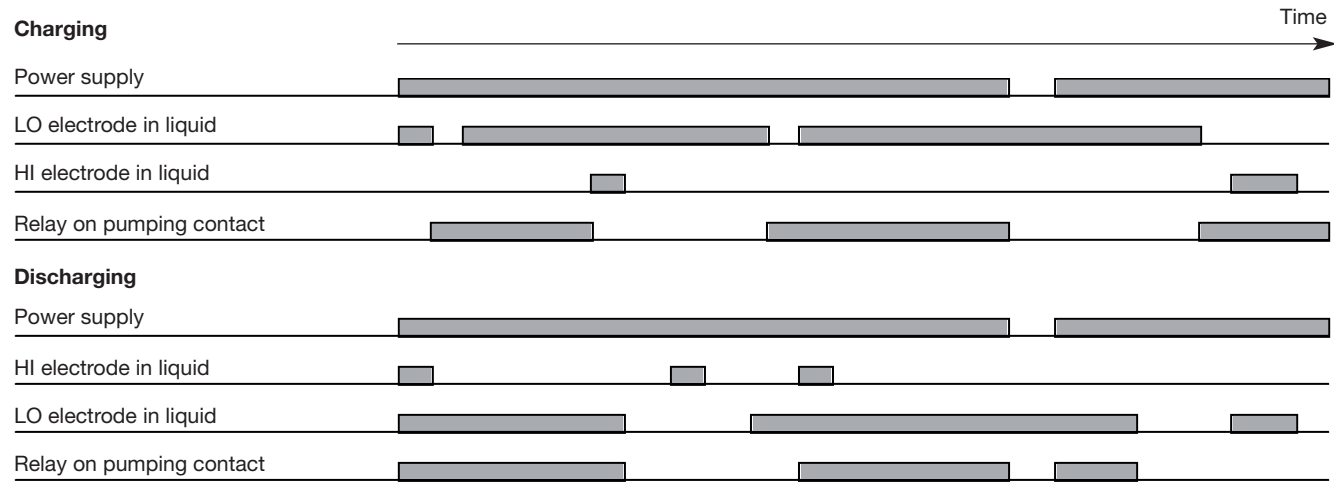
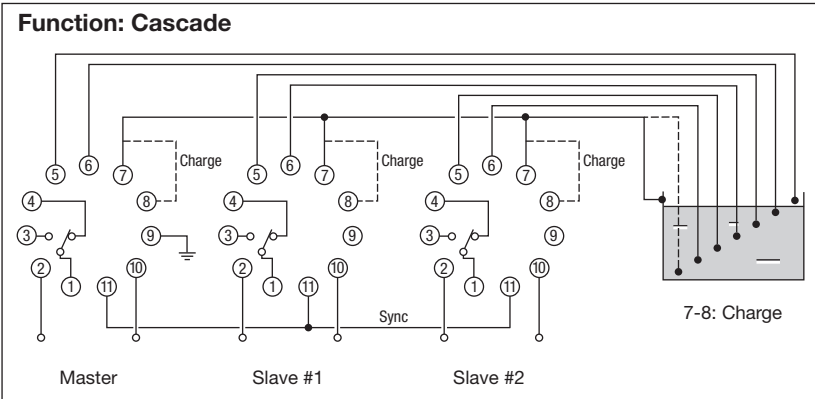
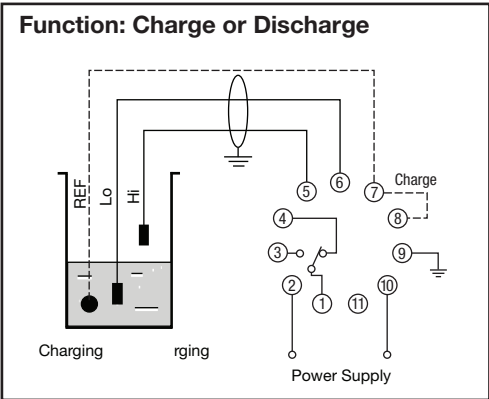
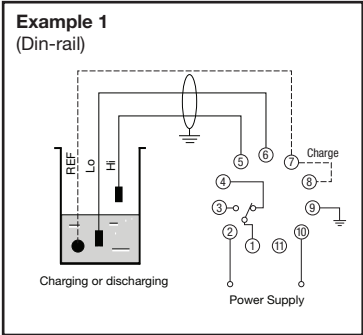
Cascade
If more than 2 levels are required, up to 7 amplifiers can be cascaded, as shown in the example below. Connect pin 9 of the master controller to ground and pin 11 of the master controller to pin 11 of the next controllers, the slave controllers (see drawing). Pin 9 of the slave controllers must be left open! The connections must be

made by screened cable to achieve optimal operation, e.g. in cable pits or trays where the cable is close to power cables. Connect the screen to pin 7, and be sure that the distance between two systems is max 3m. Fill the tank with the liquid to be measured and teach in the master controller. If the teach in is performed correctly, the green power LED of the slave controller(s) will switch off and indicate: ready for teach in. Teach in the slave controllers one by one, until all the green power LED's are on again. The system is now in run-mode.

Example 1
The diagram shows the level control connected as max. and min. control. The relay react to the low alternating cur-



rent 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 7). (In the diagram this electrode is shown by the dotted line)..

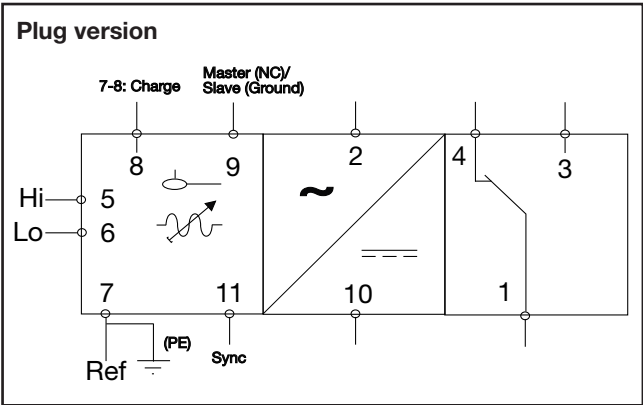


Operating Schedule

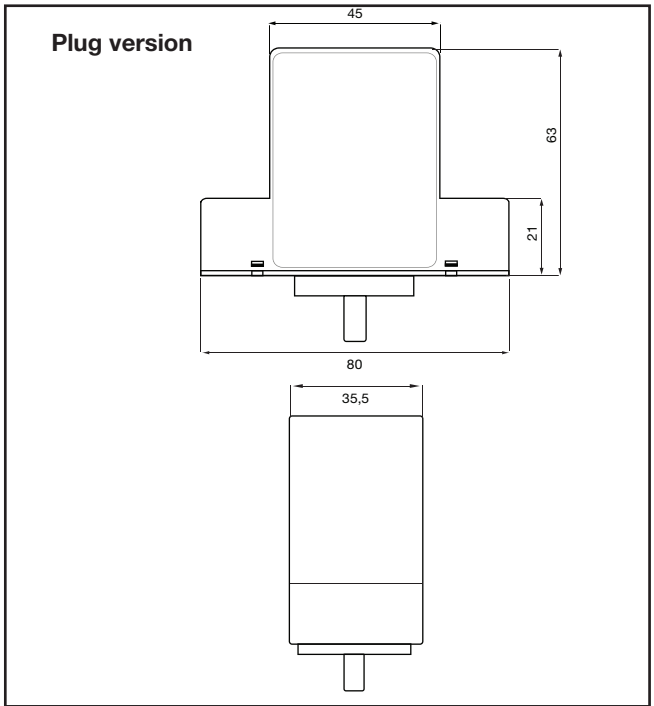
The following schedule provides an overview of the setup and failure situations

Situation	Condition	Action	Green Control lamp
Teach-in	Fill the tank with the liquid to be measured until the second longest electrode is immersed approx. 1 cm	Press the Teach button in front of the controller for approx. 2 seconds until the green control lamp turn off continuously. Release the teach button	
Failure indication	The Green lamp is flashing fast for approx. 2 seconds after a teach-in operation	Control the electrode for short-cut connections. Control that the resistance of the measured liquid is within the specified range	

Wiring Diagram



Dimension Drawings



Accessories

- 11 pole corcular socket ZVD11
- Mounting rack SM13

Delivery Contents

- Amplifier
- Packaging: Carton box
- Manual

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

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