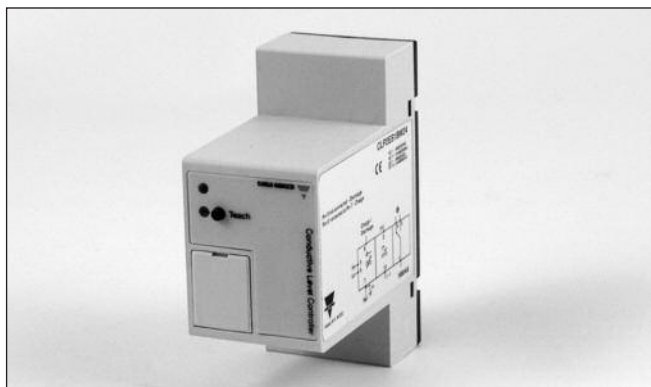


Conductive Sensors 2-point Basic Level Controller Type CL with Teach-in

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



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.

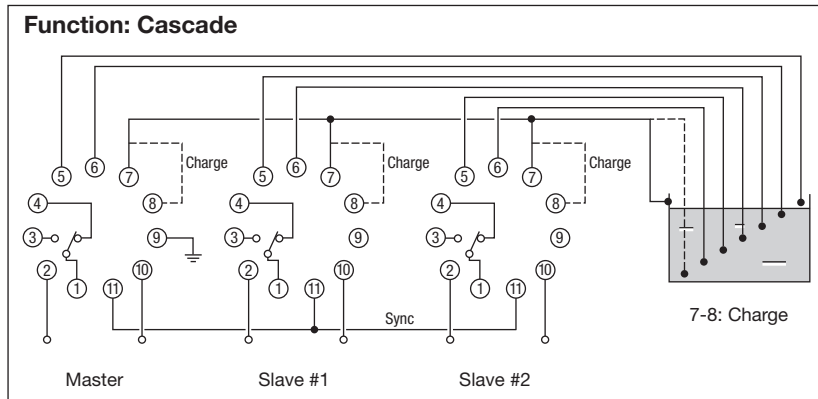
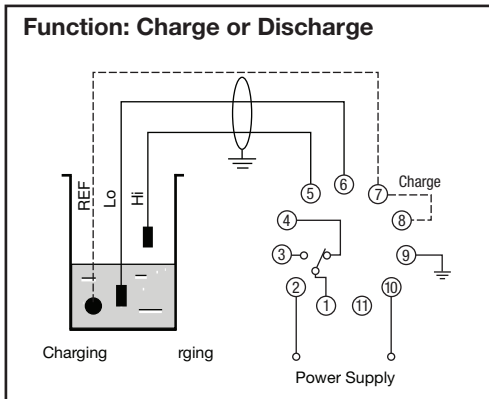
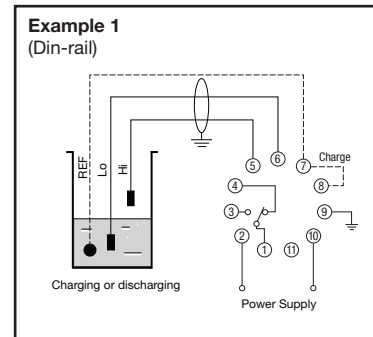
Teach in the slave controllers one by one, until all the green power LED's are on again. The system is now in run-mode.

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)..



Charging



Discharging

