CARLO GAVAZZI
Automation Components

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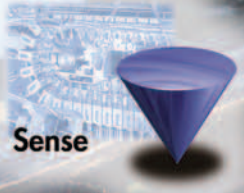
Conductive Level Program

- Agriculture
- Water Distribution/Treatment
- Food and Beverage
- Chemical



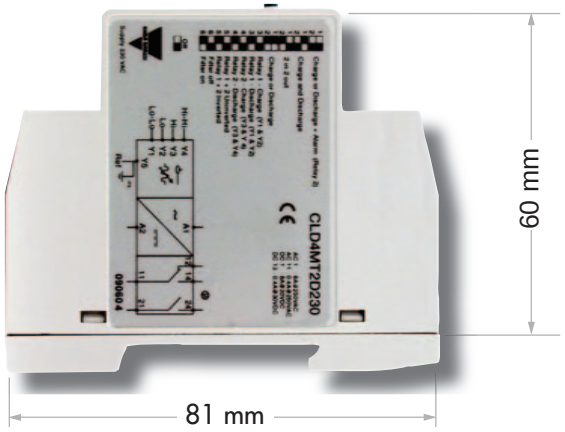
Introduction

The new CL-Series of intelligent conductive level controllers are used for level monitoring and pump control of conductive liquids. Typical applications are control in tanks, reservoirs, sewage plants, underground wells, mixing plants, etc.

The CL controller has been developed with special attention to solutions that meet all the typical demands of the panel designer: Usability, flexibility, affordability and size, minimizing space requirements and allowing for installation in small enclosures. Additionally the CL controllers provide all common level control functions.

A Complete Product Range to Fullfill All Your Level Monitoring Requirements

Features at a Glance



Electrode Probe

The CL-series is designed for use in combination with Carlo Gavazzi's CLH3 probes (3 electrodes) and CLH5 probes (5 electrodes).

Multiple Application Settings

The controllers provide all common level control functions. Various adjusting possibilities enable the controller to perform either filling operations, emptying operations or combinations of the two. This greatly increases the flexibility and adaptability of the controller for various applications.

Teach-in

Upon the touch of the push button, the controller measures the conductivity of the liquid present in the tank and calculates the optimal switching point.

Full Installation Details on Side of the Product

Ready-to-install: All installation details including DIP-switch settings, wiring diagram and part number description are written on the side label.

LED Status Indication

All devices are equipped with LEDs to indicate power status and activity of the output relays.

Space Saving Design

The CL models take up 50% less space than most similar models on the market. The controller is available in compact 35 mm wide DIN-rail or 11 pin plug-in housings, with a depth of 60 mm and a length of 81 mm.

Approvals and Markings

The controller range has been certified for UL/CSA approval and is CE marked.

Applications

Agriculture

- Level control in slurry tanks, water tanks, reservoirs, sewage plants, underground wells and mixing plants
- Flow detection in pipes, channels and irrigation systems

Chemical

- Level in chemical tanks
- Indication of liquid build-up due to filter blockages
- Alarm control warning of abnormal or dangerously high or low levels

Food & Beverage

- Level detection of liquids such as milk products, beer, wine, soft drinks and water, but also sticky or abrasive products such as chocolate or jam

Water Distribution/Treatment

- For level and pump control
- Fill level control of purified city water, industrial water or sewage

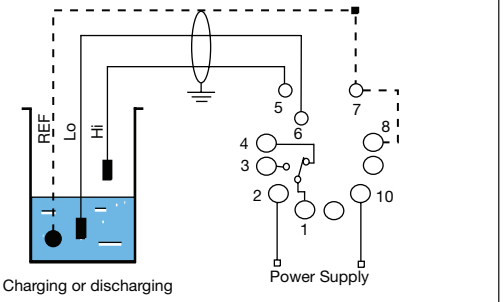
CLP2 Basic

Low-cost level limit controller for conductive liquids. Sensitivity settings for a wide range of applications such as water purification, drainage, production lines of food/beverage, waste water treatment, etc.

Features

- Max./min. control of charging or discharging (filling or emptying) of liquids
- Compact housing for simple in-line mounting in standard 11-pin plug-in socket
- Adjustable sensitivity by means of the teach-in function
- Cascade connection of up to seven controllers

Application



Technical Data

Sensitivity	3.5KΩ - 50KΩ
Operating Temperature	-20° to +70°C (-4° to +158°F)
Inputs	2 + reference
Relay Output	1 SPDT 8A/250 VAC
Approvals	UL508, CSA

Ordering Codes

Type Number	Input/Output	Connection	Supply
CLP2ES1BM24	2 / 1 SPDT	11pin Socket	24 VAC/DC
CLP2ES1B115	2 / 1 SPDT	11pin Socket	115 VAC
CLP2ES1B230	2 / 1 SPDT	11pin Socket	230 VAC

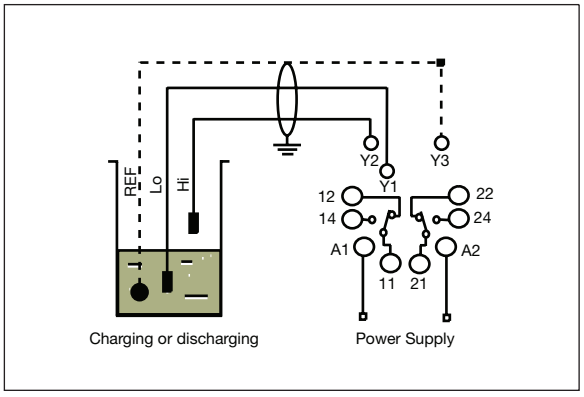
CLD2 & CLP2

Level limit controller with an extended sensitivity range that covers the conductivity of most liquids such as chemicals, sewage water, sea water, distilled water, etc.

Features

- Max./min. control of charging or discharging (filling or emptying) of liquids
- Compact housing for simple in-line mounting on standard DIN-rail or 11-pin plug-in socket
- Extended and adjustable sensitivity by means of the teach-in function
- DPDT relay

Application



Technical Data

Sensitivity	220Ω to 220KΩ
Operating temperature	-20° to +70°C (-4° to + 158°F)
Inputs	2 + reference
Relay Output	1 DPDT 5A/250 VAC
Approvals	UL508, CSA

Ordering Codes

Type number	Input/Output	Connection	Supply
CLD2ET1CM24	2 / 1 DPDT	DIN rail	24 VAC/DC
CLD2ET1C115	2 / 1 DPDT	DIN rail	115 VAC
CLD2ET1C230	2 / 1 DPDT	DIN rail	230 VAC
CLP2ET1CM24	2 / 1 DPDT	11pin socket	24 VAC/DC
CLP2ET1C115	2 / 1 DPDT	11pin socket	115 VAC
CLP2ET1C230	2 / 1 DPDT	11pin socket	230 VAC

CLD4 & CLP4

Level limit controller with all common application operations implemented. The controller can handle up to two filling operations, two emptying operations or more combinations of these operations. The controller has an extended sensitivity range that covers the conductivity of most liquids such as chemicals, sewage water, sea water, distilled water, etc.

Features

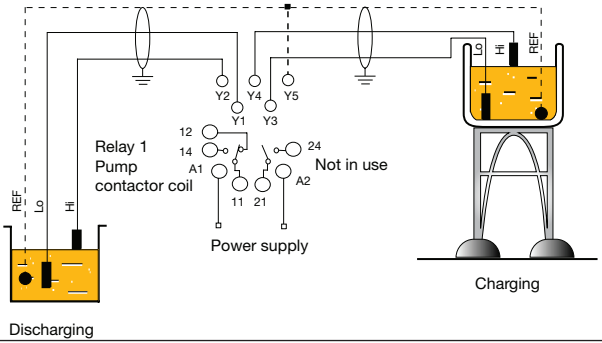
- Up to four different levels in one or two individual systems
- Multiple application operations by means of dip-switch settings
- Compact housing for simple in-line mounting on standard DIN-rail or 11-pin plug-in socket
- Extended and adjustable sensitivity by means of the teach-in function

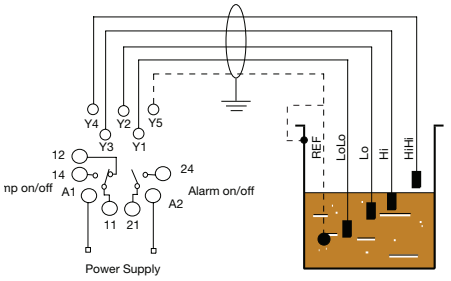
Technical Data

Sensitivity	220Ω to 220KΩ
Operating temperature	-20° to +70°C (-4° to +158°F)

Inputs	4 + reference
Relay Output	1 SPDT & 1 SPST 8A/250 VAC
Approvals	UL508, CSA

Application





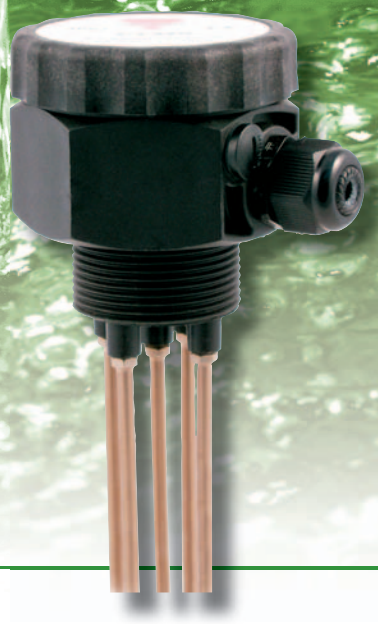
Wiring diagram for CLD DIN rail mount version

Ordering Codes

Type Number	Input/Output	Connection	Supply
CLD4MT2DM24	4 / 1 SPDT + 1 SPST	DIN rail	24 VAC/DC
CLD4MT2D115	4 / 1 SPDT + 1 SPST	DIN rail	115 VAC
CLD4MT2D230	4 / 1 SPDT + 1 SPST	DIN rail	230 VAC
CLP4MT2AM24	4 / 2 SPST	11pin socket	24 VAC/DC
CLP4MT2A115	4 / 2 SPST	11pin socket	115 VAC
CLP4MT2A230	4 / 2 SPST	11pin socket	230 VAC

CLH3 & CLH5 for Head Mounting

Flexible conductive level probe that can accomodate up to five rods for four different levels of control. The rods are available with coated isolation material for aggressive or sticky mediums prone to build up. Operating levels in the tank can be easily modified by extending or cutting the length of the electrodes shorter.



Features

- Mounting probe head for up to four different levels
- User-defined electrode length
- Isolated or unisolated electrodes

Technical Data Probe Head

Material	Polypropylene
Electrode connection	Screw terminals
Degree of protection	IP65 (Housing) IP68 (Electrical Connection)
Operating Temperature	-20° to +70°C (-4° to +158°F)

Technical Data Electrodes

Material	Stainless steel AISI316/DIN1.4401
Length	1000 mm (39.4")
Diameter	ø4mm
Isolation	Kynar or Polyolefine

Ordering Codes - Probe

Pipe Thread	3 Electrodes	5 Electrodes
1 1/2"	**CLH3**	**CLH5**

Ordering Codes - Electrode

Type	1000 mm Basic	2000 mm Extended	Extension 1000 mm
Electrode without isolation	**CLE1**	**CLE2**	**CLE1X**
Electrode with isolation, Kynar (PVDF)	**CLE1K**	**CLE2K**	**CLE1KX**
Electrode with isolation, Polyolefine (FR)	**CLE1P**	**CLE2P**	**CLE1PX**
Description	1000 mm basic electrode for no further extension	1000 mm basic electrode for extension 1000 mm extension electrode 1 extension joint 1 isolation tube	1000 mm extension electrode 1 extension joint 1 isolation tube