CARLO GAVAZZI
Automation Components

Conductive Level Program

Agriculture
Water Distribution/Treatment
Food and Beverage
Chemical

CARLO GAVAZZI

Sensors

Sensors

A Complete Product Range to Fullfill All Your Level Monitoring Requirements

This 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.

Inventory Reduction

Space Optimization

Cost Saving

Simplified Setup

Electrode Probe
The CL-series are designed for use in combination with all the Carlo Gavazzi's level probes including the latest CLH3 probes (3 electrodes) and CLH5 probes (5 electrodes).

Multiple Application Settings
The controllers provide all common level control functions. Various adjusting possibilites 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.

Adjustments
The new CL-series offers all settings by means of Rotary Switches for function, selection and potentiometer for conductive settings.

Full Installation Details on Side of the Product
Ready-to-install: All installation details including function 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 state and activity of the output relays.

Space-Saving Design
The CL models take up 75% less space than most similar models in the market.
The controller is available in compact 17.5 and 35 mm wide DIN-rail or 11 pin plug housing, with a depth of 60 mm and a length of 81 mm.

Approvals and Markings
The controller range has been UL certified and is CE marked.

CE cULus

Conductive Level Program

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

- Hot water supply heated by solar energy

- Filling application of tank level

Sensors

CLD1EA, 1-point Basic Level Controller

Level limit controller with an limited sensitivity range that covers the conductivity of most liquids like water porification, drainage, production lines of food / beverage, waste water treatment, etc.

Features

- Max./min. control of filling or emptying of liquids by means of one level and a time delay function.
- Compact housing for simple series mounting on standard rails in cabinet.
- Adjustable sensitivity by means of the potentiometer settings.
- SPDT relay.
- Time settings from 1 to 30 seconds for filling or emptying.

Operation Diagram

Filling or emptying
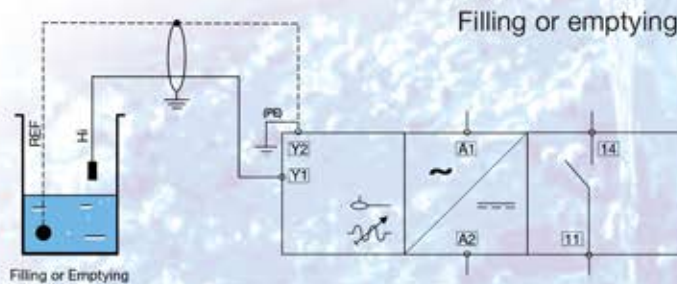
Technical data

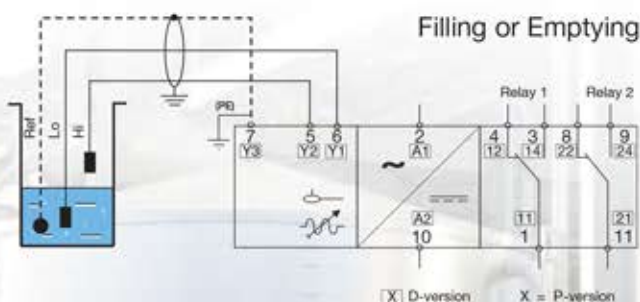|	
Sensitivity	5kΩ to 150KΩ
Operating temperature	-20° to +50ºC (-4° to + 122ºF)
Input probe	1 + reference
Outputs	1 x DPDT relay
AC1	8A/250 VAC
Approvals	UL508

CLD2EA & CLP2EA, 2-point Level Controller

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 filling or emptying (charging or discharging) of liquids between two levels.
- Compact housing for simple in-line mounting on standard DIN-rail or 11-pin plug-in socket.
- Extended and adjustable sensitivity by means of potentiometer and 3 sensitivity ranges.
- DPDT relay.

Operation Diagram

Filling or Emptying

Technical data

Low sensitivity	250Ω to 5KΩ
Medium sensitivity	5kΩ to 100KΩ
High sensitivity	50kΩ to 500KΩ
Operating temperature	-20° to +50ºC (-4° to + 122ºF)
Input probes	2 + reference
Outputs	1 x DPDT relay
AC1	8A/250 VAC
Approvals	UL508

Conductive Level Program

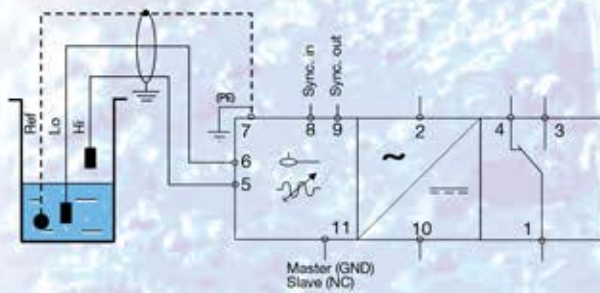## CLP2FA, 2-point Level Controller, Cascade Coupling

Level limit controller with an extended sensitivity range that covers the conductivity of most liquids such as water purification, drainage, production lines of food / beverage, waste water treatment, distilled water, etc.

Features

- Max./min. control of filling or emptying of liquids between two levels.
- Compact housing for simple in-line mounting with 11-pin plug-in socket.
- Extended and adjustable sensitivity by means of potentiometer and 3 sensitivity ranges.
- SPDT relay.
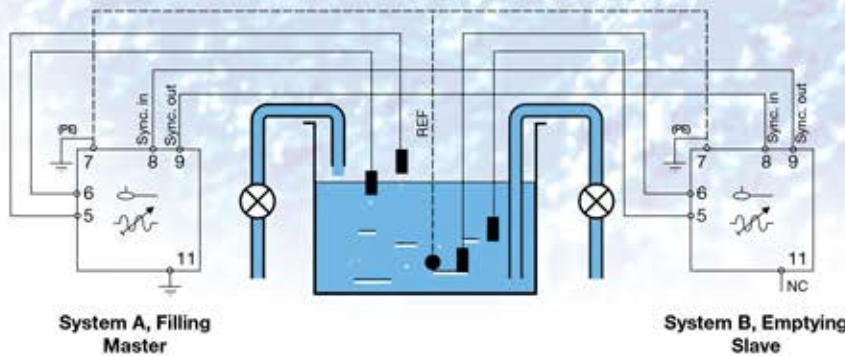- Master/slave system for cascade connecting of up to seven systems.
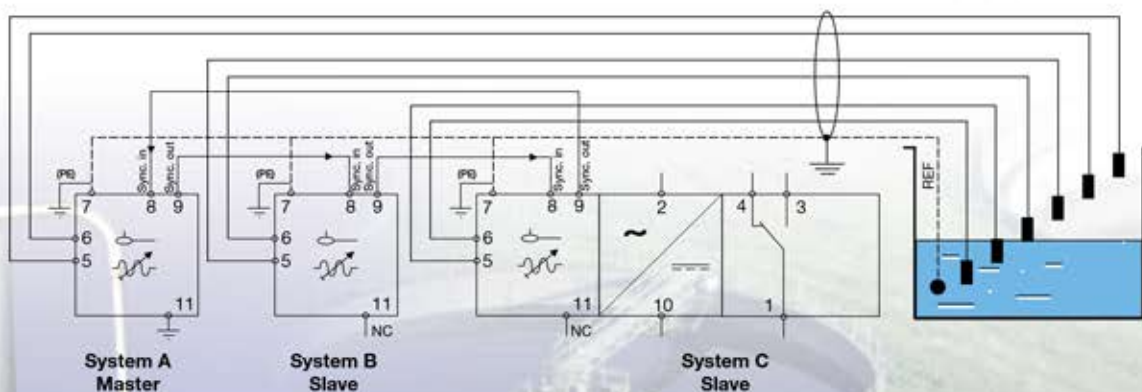
Operation Diagram

Technical data

Low sensitivity	250Ω to 5KΩ
Medium sensitivity	5kΩ to 100KΩ
High sensitivity	50kΩ to 500KΩ
Operating temperature	-20° to +50°C (-4° to + 122°F)
Input probes	2 + reference
Outputs	1 x DPDT relay
AC1	8A/250 VAC
Approvals	UL508

System A, Filling Master

System B, Emptying Slave

Filling and emptying with more systems in one common tank

Multilevel application in one tank

System A Master

**System B Slave**

System C Slave

CLD4MA & CLP4MA, 2 to 4-point Level Controller

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. 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 rotary switch settings such as, Tank - Well application, direct Input - Output, Filling or Emptying with or without HiHi or LoLo alarm output.
- Compact housing for simple in-line mounted on standard DIN-rails or 11-pin plug-in socket.
- Extended and adjustable sensitivity by means of potentiometer and 3 sensitivity ranges.
- HiHi or LoLo alarm functions.

Operation Diagram

Direct input - output
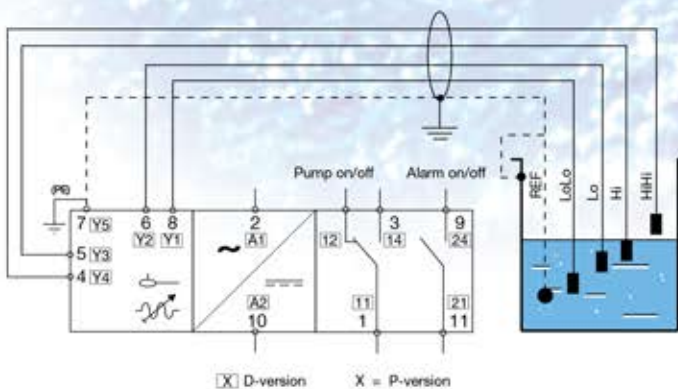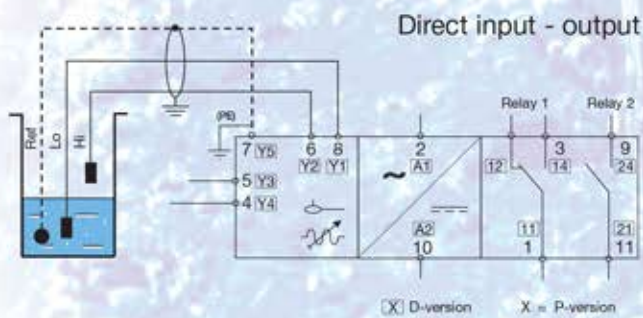
Filling or emptying with HiHi and LoLo alarms
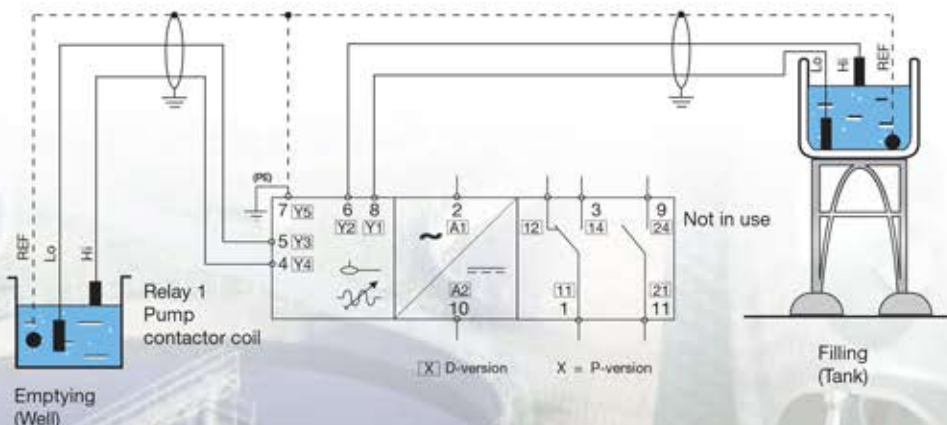
Tank - Well

Emptying (Well)

Filling (Tank)

Technical data

Low sensitivity	250Ω to 5KΩ
Medium sensitivity	5kΩ to 100KΩ
High sensitivity	50kΩ to 500KΩ
Operating temperature	-20° to +50°C (-4° to + 122°F)
Input probes	4 + reference
Outputs	1 DPDT & 1 SPST
AC1	8A/250 VAC
Approvals	UL508
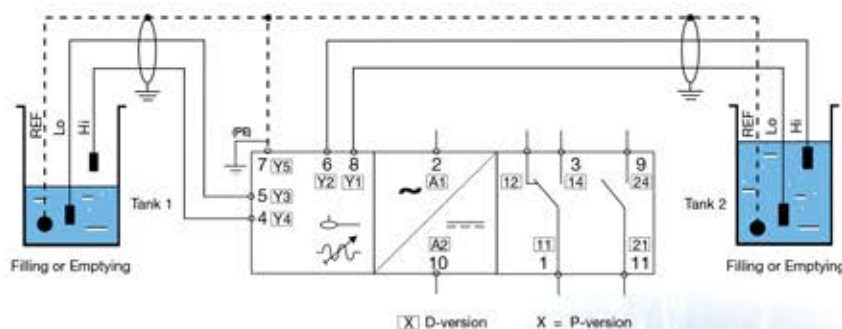
Filling or Emptying -
Fill - Fill,
Fill - Emptying or
Emptying - Emptying

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 (Elec. Conn.)
Operating Temperature	-20° to +70°C (-4° to +158°F)

Technical Data Electrodes

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

Level Controller

Mounting	Relay	Supply 24 VAC/DC	Supply 115 VAC	Supply 230 VAC
CLD1, 1-point Basic Level Controller				
DIN-rail	SPST	CLD1EA1CM24		
CLD2 & CLP2, 2-point Level Controller				
DIN-rail	DPDT	CLD2EA1CM24	CLD2EA1C115	CLD2EA1C230
11-p circular plug	DPDT	CLP2EA1CM24	CLP2EA1C115	CLP2EA1C230
CLP2, 2-point Level Controller, Cascade Coupling				
11-p circular plug	SPDT	CLP2FA1BM24	CLP2FA1B115	CLP2FA1B230
CLD4 & CLP4, 2 to 4 point Level Controller				
DIN-rail	SPDT + SPST	CLD4MA2DM24	CLD4MA2D115	CLD4MA2D230
11-p circular plug	2 SPST	CLP4MA2AM24	CLP4MA2A115	CLP4MA2A230

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Specifications are subject to change without notice. Pictures are just an example.

CARLO GAVAZZI
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Further information on
www.gavazziautomation.com - www.carlogavazzi.com

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