

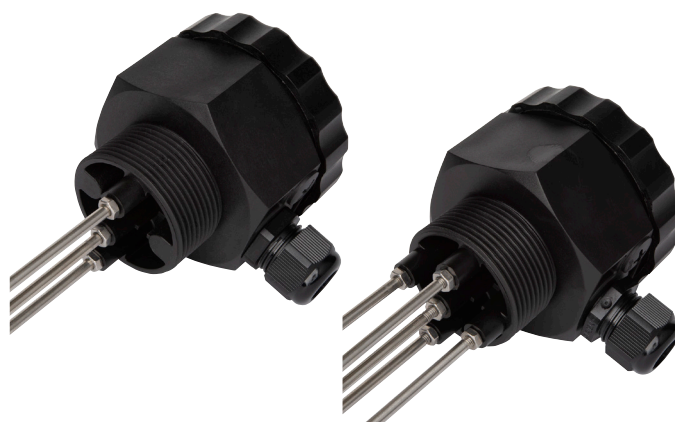
Conductive Sensors

Level probes

Types CLHx



- Flexible conductive level probe
- 1 to 5 electrodes
- User defined electrode length
- Isolated or unisolated electrodes
- 1 1/2" pipe thread according to ISO 228/1-G11/2A



Description

A compact and flexible level probe for measuring the level of conductive liquids, i.e. overflow, dry run protection or pump control.

A total measurements system consist of a multiple probehead, 1-5 electrodes and a control unit.

The electrode length can be freely defined by means of electrode extension units - with or without isolation.

Part selection key

CL	-	Conductive sensor
H	-	Head mounting
X	3	3 electrodes
	5	5 electrodes

Part selection - Probe

Numer of electrodes	Pipe thread	Housing material	Part number
3	1 1/2"	PP	CLH3
5	1 1/2"	PP	CLH5

Part selection - Electrode (must be ordered separately)

Type of electrodes	Part number 1000 mm basic Thread in one end	Part number 2000 mm extended	Part number Extension 1000 mm Thread in both ends
Electrode without isolation	CLE1 ¹⁾	CLE2 ²⁾	CLE1X ³⁾
Electrode with isolation, Kynar (PVDF)	CLE1K ¹⁾	CLE2K ²⁾	CLE1KX ³⁾
Electrode with isolation, Polyolefine (FR)	CLE1P ¹⁾	CLE2P ²⁾	CLE1PX ³⁾

1. 1000 mm Basic electrode for no further extension
2. 1000 mm Basic electrode for extension, 1000 mm extension electrode, 1 extension joint, 1 isolation tube (not CLE2)
3. 1000 mm extension electrode, 1 extension joint, 1 isolation tube (not CLE1X)

Features

Environmental data

Ambient temperatures	
Operating	-20°...+90°C (-4°...+194°F)*
Storage	-40°...+100°C (-40°...+212°F)*
Categorization	
Pollution degree	2 (IEC 60664/60664A, 60947-1)
Overvoltage category	III (IEC 60664)
Degree of protection	IP65 (Housing)
	IP68 (Electrode connection)
Pressure	5 bar at 60°C

Mode of Operation

Functionality - example

The diagram shows the level control system connected as max. and min control, i.e. registration of 2 levels + 2 alarm levels. The relays react to the low alternating current created when the electrodes is in contact with the liquid.

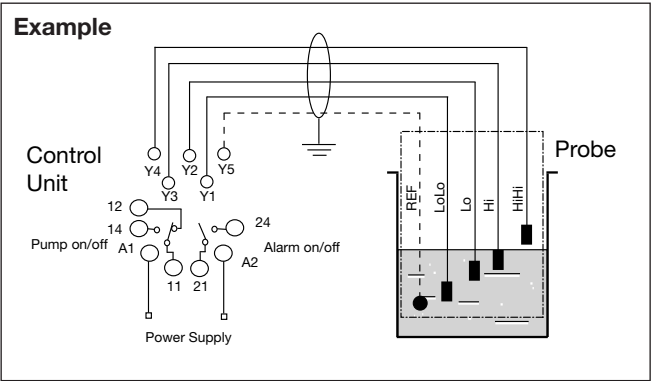
The reference (Ref) must be connected to the container or if the container are made of a nonconductive material, to an additional electrode. In the diagram this electrode is shown by the dotted line.

Electrodes

Cut or extend the electrodes to the desirable length. If using extended electrodes, place the enclosed isolation tube over the extension joint, and heat it with a heat gun.
Mount the electrodes in the probehead by means of the M4 screw inserts. Take care not to damage the isolation material of the isolated electrodes.

Connection cable

2, 3, 4 or 5 conductor PVC cable, normally screened. Cable length: max. 100 m. The resistance between the cores and the ground must be at last 200k. In normal cases it is recommended to use 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 Y5 (reference).



CLH5 connected to control unit CLD4/CLP4.
Filling or emptying with low and high alarms.

Structure

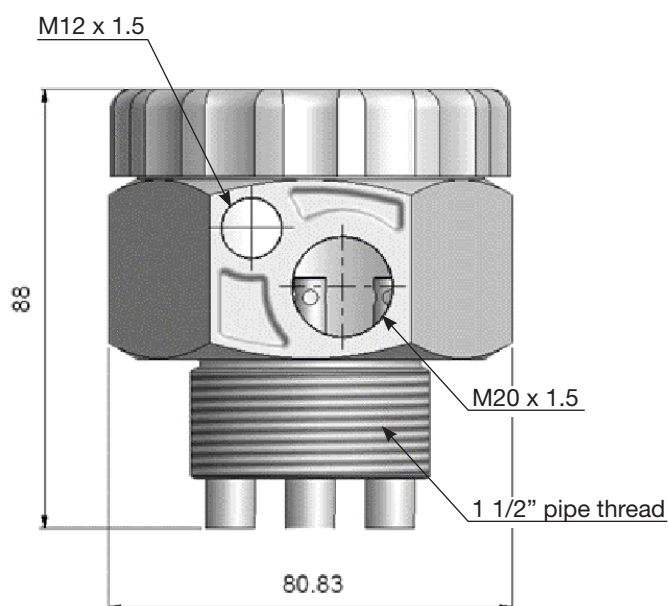
Probe head

Material	PP (Polypropylen)
No of electrodes	CLH3: 3 electrodes
	CLH5: 5 electrodes
Electrode connection	M4
Tightening torque	2.7 Nm by hand -K & -P
Cable connection	Screw terminals
Cable size	Ø8 - Ø13 mm
Weight	260 g

Electrodes

Material	Stainless steel, AISI316/DIN1.440
Length	CLE1: 1000 mm
	CLE2 : 2000 mm
Diameter	Ø4
Isolation	CLE.K.: Kynar (PVDF)
	CLE.P. : Polyolefine (FR)
Weight	107 g

Dimensions in mm



Compatibility and conformity

Approvals and markings

General reference	
CE-marking	

Delivery contents and accessories

Delivery contents

- Probe Head
- M20 Cable Gland
- M12 Blind flange
- Installation Instruction

Accessories

- Extension joint Ø4
- 60 mm Kynar for isolation
- 60 mm Polyolefine for isolation
- M12 Cable Gland
- M20 Cable Gland
- VM15 nut to the 1 1/2" pipe thread

Further information

Carlo Gavazzi website	www.gavazziautomation.com	
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