INSTRUCTION MANUAL - English
Multi-probe for food industry with 3 electrode - series 700

Thank you for purchasing multi-probe series **700**.
Before using the device, please read carefully this manual, and keep it in a safe place, for future use.

1 - Description
The multi-probe series 700 allows ON/OFF monitoring of level for conductive liquid.
They are particularly useful for food industry.
The level switches to be used together with multi-probe series 700, are all of our products of the series **200, 203** and **201, 204** (delayed).
The casing is in plastic very resistant to impact and corrosion (POM) or stainless steel AISI 303 or AISI 316.
The 3 electrodes are in stainless steel, PTFE coated; they are already electrically connected to the connector for easy and immediate use.

2 - Technical characteristics

- Electric wiring: DIN 43650-A with cable inlet PG11
- thread: 1-1/2" gas
- protection grade: IP65
- maximum temperature at the electrode: 120 °C
- maximum pressure: 25 bar
- weight: 850 g

3 – Mechanical dimension

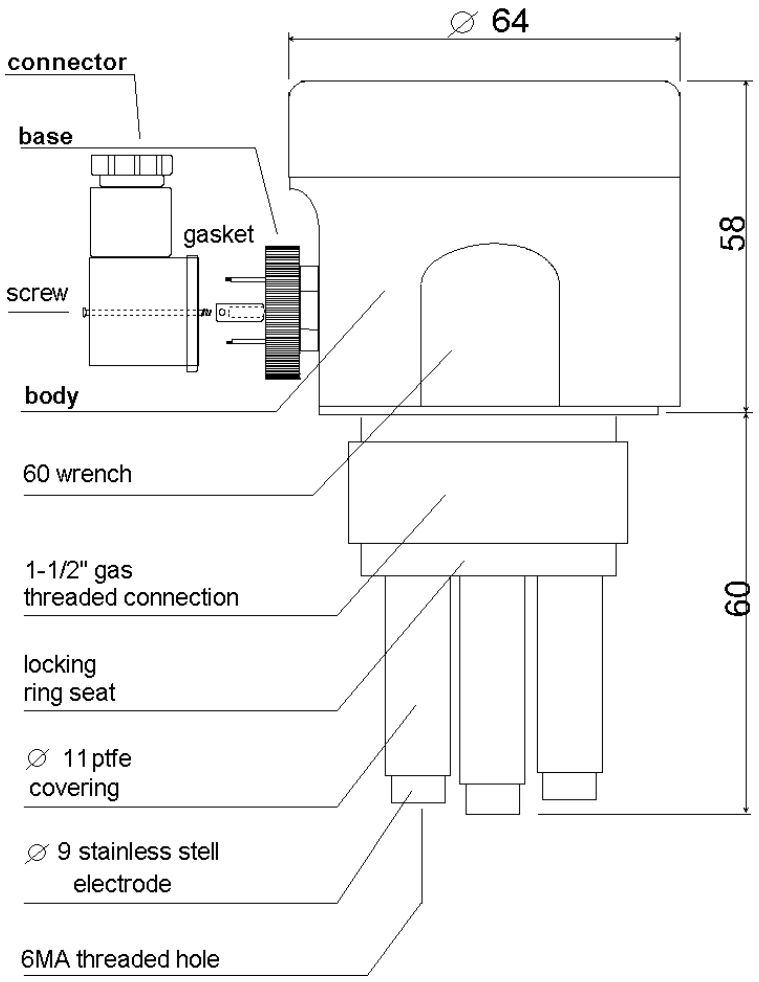
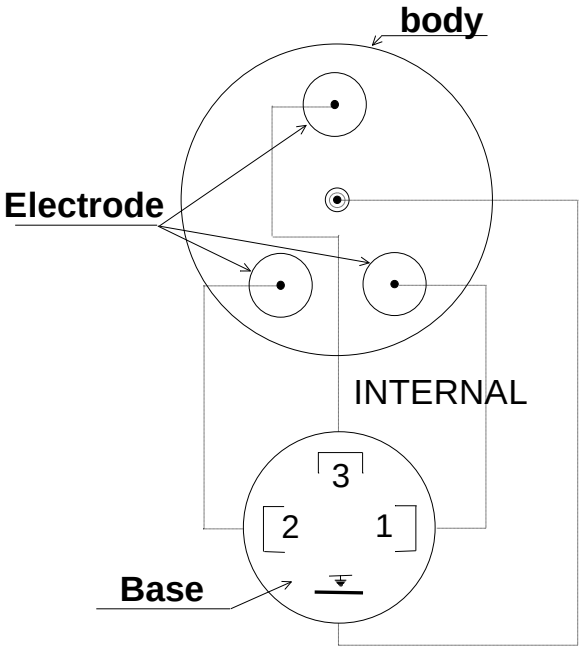


Fig.1

4 – Internal wiring diagram



The drawing above, indicates the overview of multi-probe with the cover unscrewed and the DIN connector male on the multi-probe side. The multi-probe in POM black or aluminium, don't have the ground connection.

5 - Installation and use

5.1 Electrodes mounting.

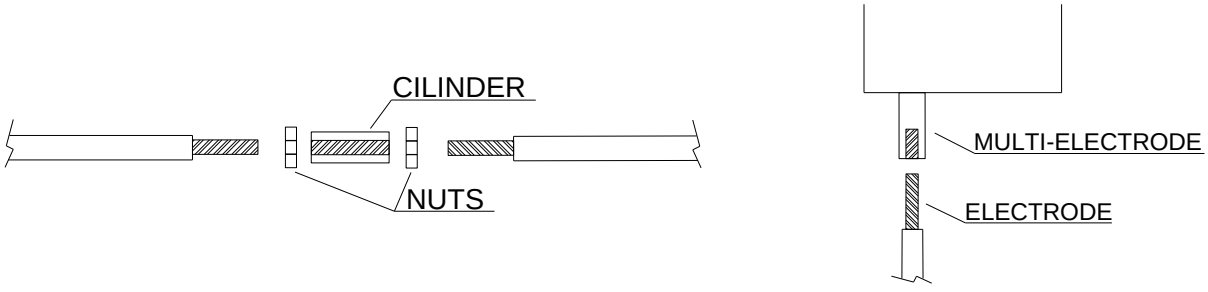
The multi-probe series 700 allows you to adjust 2 level: MAX and MIN; considering the need of reference (or common) level, there are needed 3 electrodes.

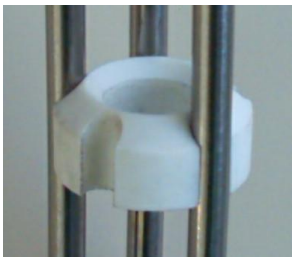
If the product selected have code 700-032-XY, (with 6MA thread) it is possible to use two different types of electrodes: code 999-003-00 with 5.2 mm diameter and thread 6MA in AISI 304 stainless steel, or code 999-005-00 with 6mm diameter and thread 6MA in stainless steel AISI 316; for both codes the thread is on both sides and the standard length is of 1m.

If the product selected have code 700-030-XY or 700-031-XY, the 473mm and 973mm long electrodes, are already mounted.

It is necessary to decide the lengths of the 3 electrodes according to the size of the tank where the electrodes will be mounted and according to the 3 levels at which the pump or the driven electro-valve must work.

The MAX electrode is the shortest; the MIN is intermediate; the common, or reference, is the longest and must be always immersed in the liquid. Once determined the lengths of 3 electrodes, these may be cut, if length is lower at 1m; or they must be connected together if length is more than 1m. To connect electrodes to multi-probe, use the cylinder with double thread and the nuts, as in drawing of the left. To connect electrodes to electrodes, operate as drawing on the right.





If the electrodes were very long, and there is the possibility of accidental contact between them, you can use a PFTE spacer, available as code 999-053-00, which is set to simple pressure, (only matched to electrodes code 999-005-00) as in left side picture. The spacer has a special construction, which favours the flush of the liquid, preventing the formations of conductive bridges, that might give false indications of level.

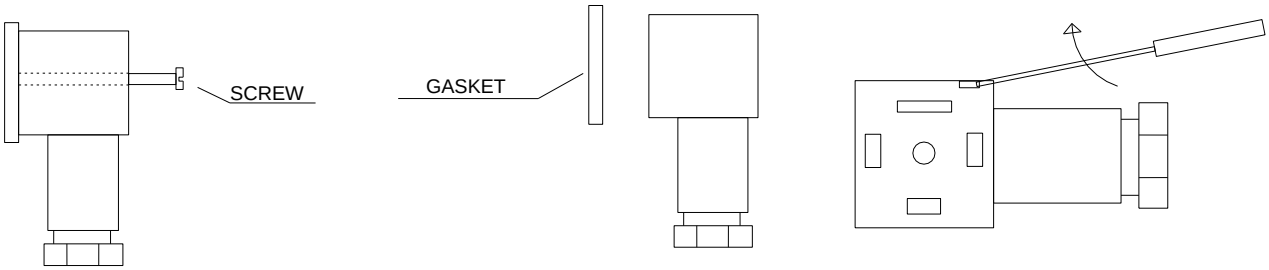
5.2 – Mounting of electrodes on tank

Once the multi-probe has the 3 electrodes mounted at the right length, it should be fixed on the tank of the process.

The installation requires a 1-1/2 "gas threaded hole. For easier assembly, is available a welding support, code 999-090-00, see left side picture.

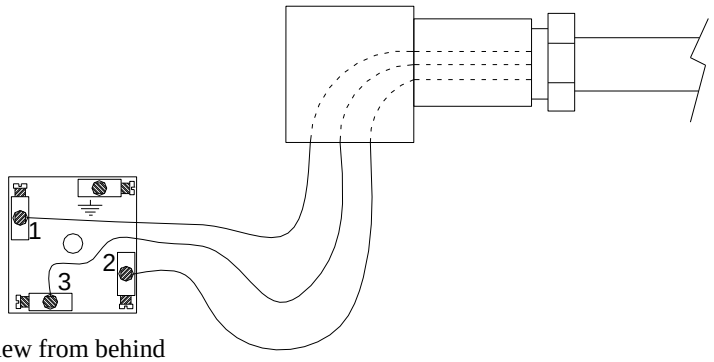
This support must be welded directly on the tank to which should be fixed the multi-probe.
Its internal thread is exactly what is necessary for the assembly of multi-probe.
Also, thanks to internal seal O-ring, to be inserted after welding, the mechanical and hydraulic tightness is assured and prevented the deposit of bacterial charges between thread, especially for food applications.

5.3- Wiring connection
Once the 3 electrodes are attached to multi-probe, they are already automatically electrically connected to the male DIN connector, without other operations. You need now, only connect cable to the female connector, supplied as accessory equipment. If the female connector is joint to male connector, unscrew the central screw, and store it.
Remove the square gasket and then retain it.
Leveraging gently with the tip of a small screwdriver in the suitable slot, remove the inner part of the female connector, as in the following drawing.



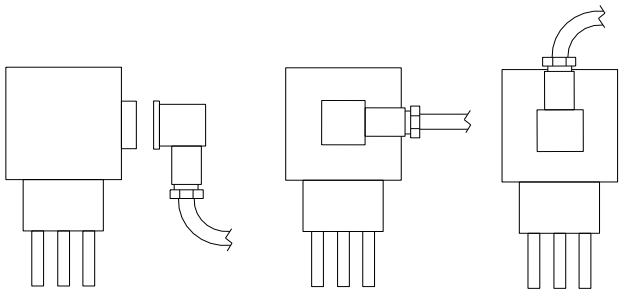
For the electrical connection use cables, not necessarily shielded, with section more than 1 mmq. The cables must be separate from those of power. The cable length depends on the type of regulator of level used.
Using our level switches, for a.c. regulators with standard and low sensitivity, and for those d.c. with any sensitivity, the cables can be long until 200m.
For the a.c. regulators with high sensitivity, the cables will be as short as possible; in particular for the range 1÷20 μS don't exceed 40 m; for the range 0.3÷2 μS, don't exceed 10 m.

Loosen the cable inlet PG11.
Connect the cables to the terminals of the connector marked with the numbers 1, 2, 3 and the ground symbol; connect the ground clamp only if necessary like drawing on the side



view from behind

Once the screws are well lockout, replace the cap on the inner part, and block it mechanically.
The inner part may be inserted in 4 different positions. AVOID to mount the PG11 is vertical upwards; see following drawing



OK **OK** **NO**

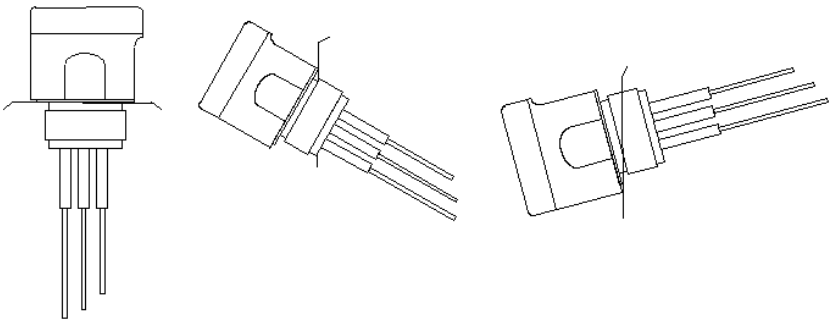
Tighten the cable inlet PG11 on the cable, to ensure the IP protection.
Put again the square gasket between the female connector wired and the male connector of the multi-probe.
Joint between them the 2 connectors, with a light pressure. Screw the central screw.

6 - Maintenance

If the mechanical mounting and the electrical wiring were made as described, the multi-probe 700 series needs no maintenance.
In case of problems, unscrew the cover and check that there isn't condensate water inside.
For the control of aggressive liquids, regularly check the electrodes, possibly (if not coated with PTFE) cleaning with a sandpaper.

7 - Warning

The electrodes must not touch each other. For this purpose use the our spacer code 999-053-00.
If necessary, it is possible to provide PTFE coated electrodes for the whole length, except the terminal part.
Contact our technical office.
The electrodes must not touch the tank walls, even if not metal.
Avoid to mount the electrodes in an oblique position as in following drawing:



OK **NO** **NO**

Verify that the liquid to control not to be aggressive for stainless steel of the electrodes, (or for the body, if in POM).