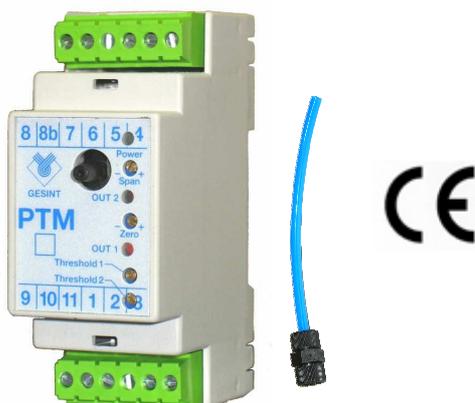




# PTM

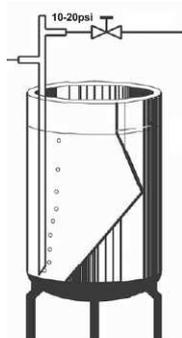
## Hydrostatic head level transmitter for liquids



### General

PTM device, combined with our APS probe, is a level transmitter for liquids in open tanks. The APS probe is made with a Ø16mm pipe, open at the bottom end, with 2 pneumatic connections at the top. One connection goes to the PTM transmitter and the other to an air flow regulator that keeps the input air pressure constant. The input pressure to the transmitter is converted in a 4-20mA or 0-10V signal representing the level of the liquid in the tank. The transmitter is supplied with 2 independent relay thresholds that can be adjusted using the multiturn trimmers on the front of the instrument.

### Installation



Immerse the APS probe into the liquid, until it reaches a level quote equal or lower to the minimum level to be measured. Connect, using a 4x6mm pipe for compressed air, the flow regulator on the top to a pressure reducer so that input air has a pressure between 10 and 20psi, based on the length of the probe and specific weight of the liquid. The input air speed up and optimize the level probing and become a physical barrier between the liquid and the transmitter, protecting it from high temperature or steams. It is

recommended to use a dedicated air supply pipe for every APS probe.

Then connect, with another 4x6mm pipe, the second pneumatic connection of the APS probe to the front input of the PTM transmitter. **This input is provided with a straight union, in order to avoid mechanical stress to the internal transducer.** It is recommended to install the transmitter higher than the maximum measured level and as near as possible to the probe. Set the level of the liquid to the maximum and adjust the screw on the flow regulator in order to obtain a continuous and regular air bubbling from the lower end of the APS probe. To avoid measure errors do not install the probe near the connection of suction pumps and, if a mixer is used, it is possible to reduce the turbulence protecting the lower end of the probe with an external pipe.

### Technical data

|                        |   |
|------------------------|---|
| Power supply:          | <b>24VAC/DC switching</b>   |
| Power consumption:     | 2VA / 1,8W max  |
| Pressure range:        | 0-1000 mmH <sub>2</sub> O (0-9,807KPa)<br>0-5000 mmH <sub>2</sub> O (0-49,033KPa) |
| Accuracy:              | 0,5% f.s.   |
| Analogue output:       | 4-20mA or 0-10V   |
| Output impedance:      | Max 750Ω (mA) or Min 1KΩ (V)  |
| Relay output:          | 2 SPDT relays   |
| Mechanical life:       | min. 10 <sup>7</sup> cycles   |
| Electrical life:       | N.O. @ 3A 250VAC : 5x10 <sup>4</sup><br>N.C. @ 2A 250VAC : 2x10 <sup>5</sup>      |
| Contact rating:        | 3A @ 30 VDC (resistive load)<br>3A @ 250 VAC (resistive load)                     |
| Visual signaling:      | Green LED → Power supply<br>Red LED → Threshold                                   |
| Protection:            | IP20  |
| Storage temperature:   | from -30 to +80°C   |
| Working temperature:   | from -20 to +60°C   |
| Relative humidity:     | from 0 to 85%, no condensate  |
| Installation:          | 35 mm DIN rail  |
| Dimensions:            | 90(H) x 35(L) x 60(P) mm  |
| Electrical connection: | Removable terminal board  |

**CE** mark according to *Directive 89/336/CEE*, complies with the following harmonised regulations: *EN50081-1, EN 50082-2, EN55022, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11* and *Low Voltage Directive 73/23/CEE* and subsequent modifications.

### 0-100% level calibration

The instrument has 2 multiturn trimmer for zero and span adjustment. You have to connect an high accuracy multimeter at the output pin, and follow one of the following procedures:

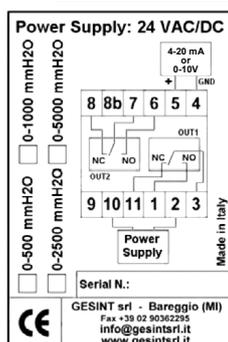
- 1) Set the liquid level to **MINIMUM** and rotate the **ZERO** trimmer until you read **4.0mA (or 0.0V)** on the multimeter
- 2) Set the liquid level to **MAXIMUM** and rotate the **SPAN** trimmer until you read **20.0mA (or 10V)** on the multimeter
- 3) In order to get a more accurate calibration, it is recommended to repeat step 1) and 2) correcting zero and span trimmers.

### Thresholds calibration

- 1) Rotating counter clockwise, move the trimmer to minimum.
- 2) Set the liquid to the desired level
- 3) Rotate clockwise the trimmer until the red LED lit.
- 4) Rotate counter clockwise the trimmer until the red LED unlit.
- 5) Move the trimmer in an intermediate position between the points that provoke the change of relay state.

Relays are normally energized, so the red LED is lit and contact opened when the input signal is higher than the set threshold.

### Electrical connections



The transmitter must be power supplied with 24Vac/dc. It is recommended to use a connection cable of at least 0,5mmq section and a maximum length of 100mt. Connection cables must have separate run from power cables. It is recommended to check the maximum load, if used with current input, or the minimum load, if used with voltage input.

