

# PTU05

IP68 compact ultrasonic level transmitter

865B041A

## PTU05

This single-chip operated transmitter has been designed for use in tanks, basins and canals and is characterized by absence of calibration procedures, because the SWING unit elaborates all **PTU05** internal data.

The complete configuration is achieved simply connecting the transmitter to a PC through the RS485 port.

The ultrasonic transducer and electronics are enclosed into a IP68 PP housing.

**PTU05** is intended to operate with temperatures up to 80°C and is appropriate for applications involving aggressive chemical acids or liquids and even stirring devices (mixer).



- Level/Distance transmitter up to 5m**
- 1" thread or flanged mechanical connection**
- IP68 version**
- Power supply 24Vdc**
- Absence of calibrations**

### **Measurement principle**

The **PTU05** level transmitter measuring technology is based on the emission of a short ultrasonic pulse. The ultrasonic wave runs towards the surface of product to be measured and bounces on the surface, then backrunning towards the sensor. The time elapsed between wave emission and reception is defined as flight time and is proportional to the measured distance and ultimately to the level.

### **Implementation**

The **PTU05** incorporates a powerful single-chip allowing the completely digitized acquisition and processing of the acoustic signal immediately after ultrasonic (physical) transducer, a significant feature which has been implemented using an extremely high-speed processor. The signal processing technique is therefore of the DSP type (digital signal processor) allowing to achieve special stability, disturbance immunity and accuracy which are unique, even within this class of products.

While normally operating, a built-in self-diagnostic control system monitors essential functions, detecting any echo absence (lost echo), reading instability or electronic fault occurrence. The reliability during operation is ensured by the manufacturing techniques and materials used, involving forced ageing cycles (i.e. temperature range) and by the use of silicon components of demonstrated quality and reliability.

### **Device version**

All the **PTU05** versions are IP68 protection class with 3m output cable and RS485 for SWING communications. 4-20mA analog output is a viable option.



**GESINT.**

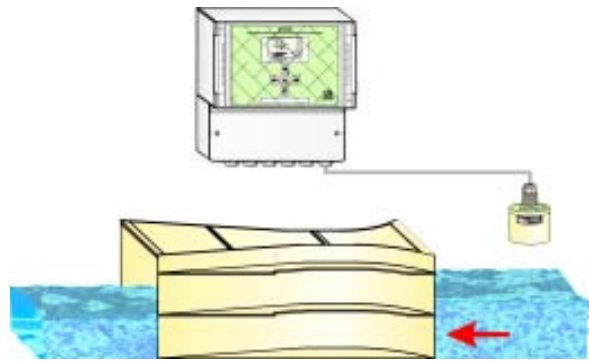
# PTU05 transmitter

## TECHNICAL DATA

Housing:	PP
Mechanical installation:	1" G.M.
Protection class:	IP68
Electrical connection:	3m output cable
Working temperature:	- 30 a + 80°C
Pressure:	da 0,5 a 1,5bar (absolute)
Power supply:	24Vdc
Power consumption:	1 W
Max meas. distance range:	5m
Blocking distance:	0,3m
Communication port:	RS485
Temperature compensation:	PT100 da -30 a +80°C
Accuracy:	+/- 0.5% (of the measured) in any case not better than +/- 1 mm
Resolution:	0.2 mm
LED display:	red LED indicating Power supply ON yellow LED indicating echo reception

## Applications

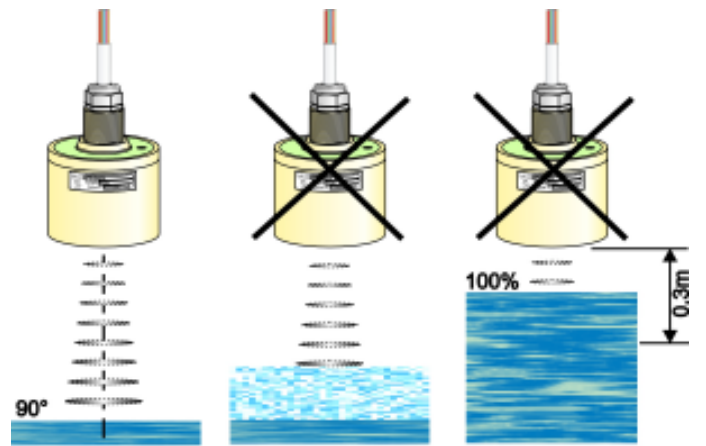
PTU05 transmitter is indicated for open channel flow measurement with SWING unit.



## Installation

Important close to the sensor there is a "blind zone" of 0,3m where the equipment can't measure.

To reach a good and safe measurement, avoiding spurious echo (not reflected from the surface to measure) need to take care about the sensor sensibility volume in the sound path, no obstacles or objects must be present into the sensibility volume (lobe).



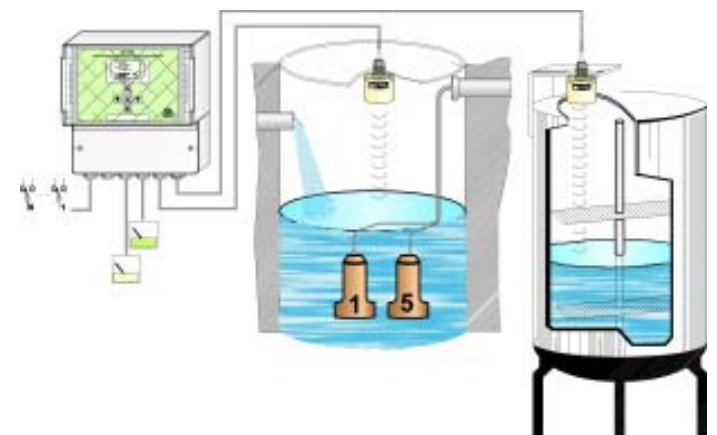
Install perpendicularly to the surface to be measured

Do not use with foaming products

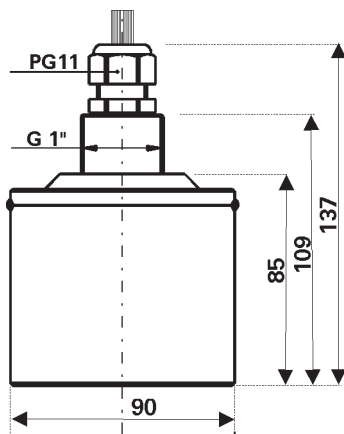
Avoid installation if the level of the product to be measured approximates 0,3m

## Calibration

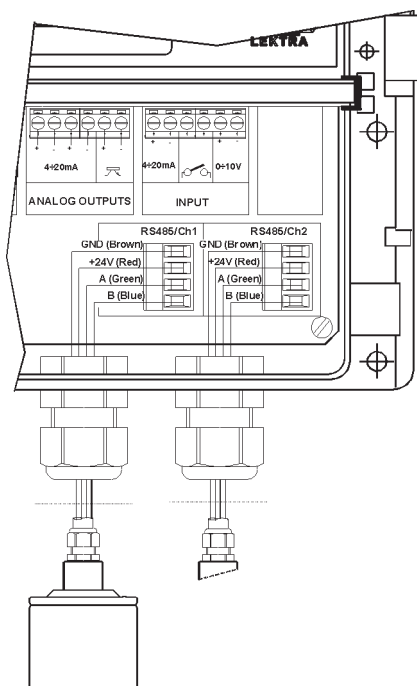
PTU05 internal data are elaborated by SWING unit



## Overall dimensions (in mm)



## Electrical connections



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