

# SUBMERSIBLE LEVEL TRANSMITTER

“Hydrostatic Liquid Level Measurement”

PTL 110



- Piezoresistive measurement principle
- Long-term stable operation
- EMC and Reverse Polarity protection
- 4-20 mA or 0-10 V analog output
- RS-485 Modbus output
- Different level measuring between 1 meter and 100 meters
- IP68 protection class
- High quality
- Reasonable price and economical solution

PTL 110 level pressure sensors with piezoresistive working principle; are used for level measurement in applications like streams, reservoirs, water tanks, fuels and oils etc.

With its stainless steel housing with IP68 protection class, it can work in harsh environments.

Thanks to the surge voltage and reverse polarity protection, the PTL 110 series are unaffected by electrical fluctuations and reverse connections.

Optionally configurable pressure ranges, analog output and mechanical connection options offer solutions suitable for various applications.

## SAMPLE APPLICATION FIELDS

- Wells
- Water Tanks
- Lake Level
- River Level
- Reservoirs
- Oil and Fuel



## TECHNICAL SPECIFICATIONS

Measuring Range	Different models between 100 mbar and 25 bar can be selected		Electrical Connection	For Analog Output	3 x 0,22 mm² PE cable or 3 x 0,35 mm² PTFE cable Cable outer diameter: 7,5 ±0,2 mm
Measuring Principle	Piezoresistive			For RS-485 Output	4 x 0,14 mm² PUR cable Cable outer diameter: 5,9 ±0,3 mm
Membrane	1.4404 (AISI 316L)			Drain pipe diameter: 2 mm (Cable length according to level value)	
O-Ring	NBR or Viton (FKM)				
Maximum Pressure	%200 FS		Operating Temperature	For model with PE cable: -20°C ... +70°C For model with PTFE cable: -40°C ... +85°C For model with PUR cable: -40°C ... +80°C	
Accuracy	%0,3				
Electrical Interface	Output Signal	Supply Voltage	Storage Temperature	For model with PE cable: -20°C ... +70°C For model with PTFE cable: -40°C ... +85°C For model with PUR cable: -40°C ... +80°C	
	0...10 VDC (3 wire)	12...30 VDC			
	4...20 mA (2 wire)	8...32 VDC	Protection Class	IP68	
	RS-485 Modbus	10...30 VDC		Body: 1.4404 (AISI 316L stainless steel) Cable: PE, PTFE or PUR	
EMC Protection	Emission: EN/IEC 61000-6-3		Material		
	Immunity: EN/IEC 61000-6-2			Weight	~350 gr

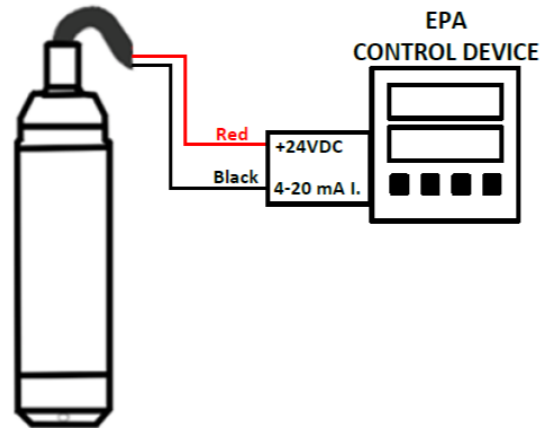
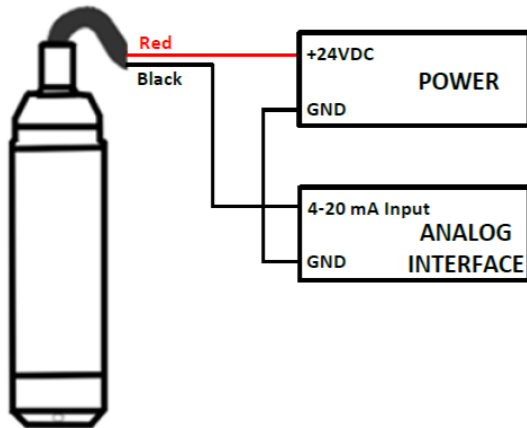
## RS-485 MODBUS SPECIFICATIONS

Communication Protocols	Modbus RTU, Default: Modbus RTU
Baud Rate	600, 1200, 2400, 4800, 9600, 14400, 19200, 38400, 57600, 115200 Default: 9600
Parity	None, Odd, Even Default: None
Address	Between 1 and 247 Default: 1

## ELECTRICAL CONNECTION

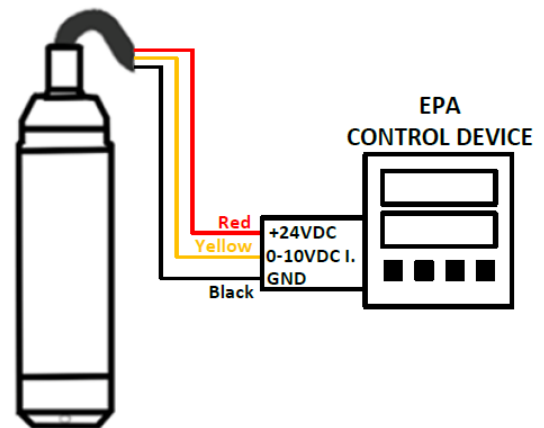
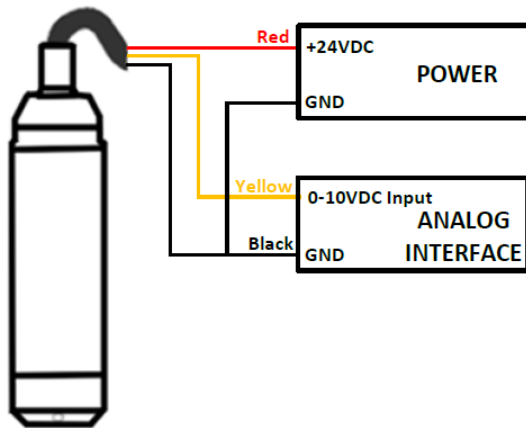
### 4-20 mA Connection

Signal	Cable
+8...32 VDC (+ supply)	Red
4-20 mA	Black

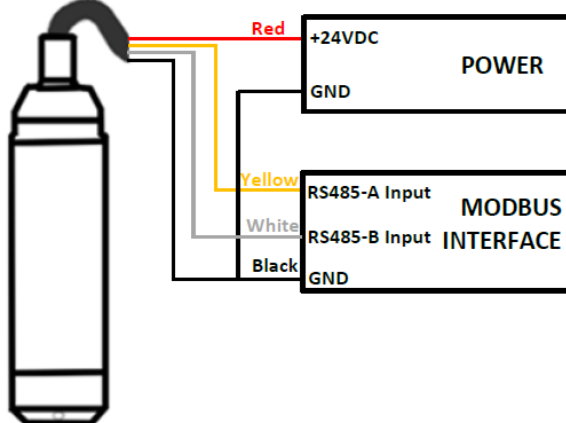


### 0-10 VDC Connection

Signal	Cable
+12...30 VDC (+ supply)	Red
GND	Black
0-10 VDC	Yellow



### RS-485 MODBUS Connection



Signal	Cable
+10...30 VDC (+ supply)	Red
GND	Black
RS485 - A	Yellow
RS485 - B	White



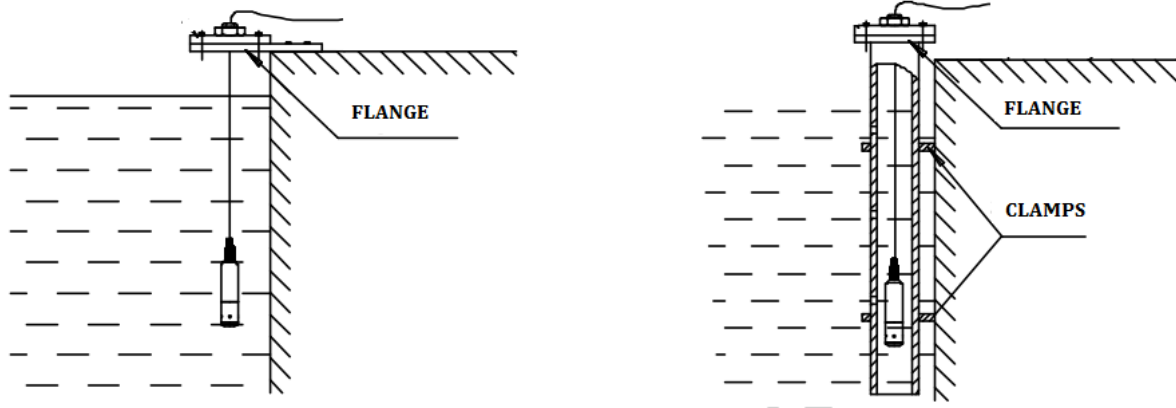
#### WARNING!

If the wick in the drain pipe is removed, the product will be out of warranty.

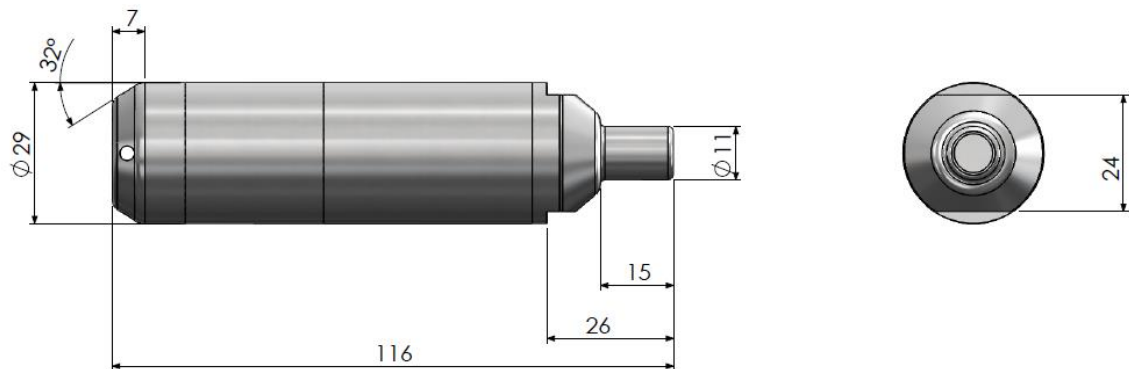


## SAMPLE APPLICATION

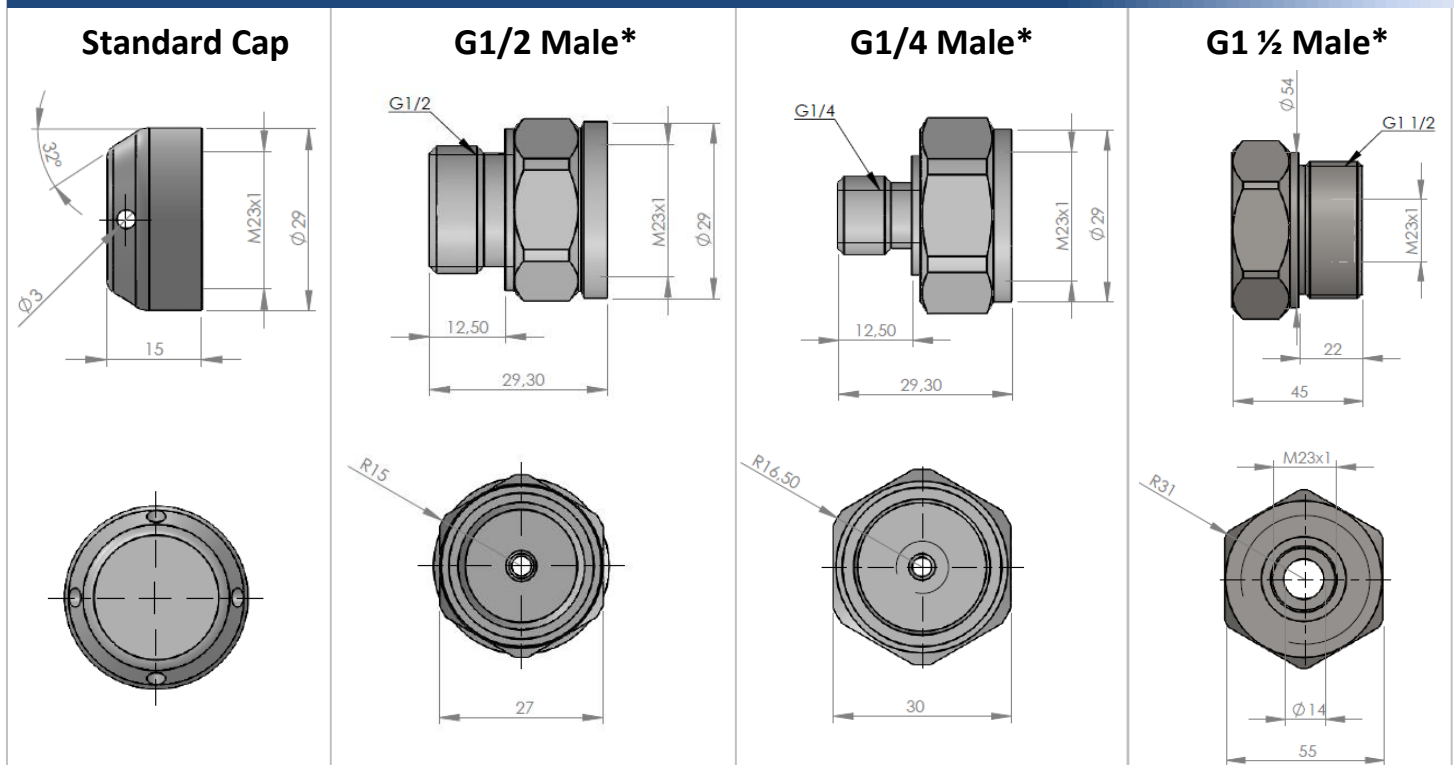
During the application, the product free submerge. Dams, rivers and streams of the product against a surge in applications should be suspended through the pipes.



## MECHANICAL DIMENSIONS (with standard cap) (in mm)



## MECHANICAL CONNECTION OPTIONS



Fittings marked with (\*) are optional.

## ORDER CODE

### Cable Length

**5M** : 5 meters

**8M** : 8 meters

**10M**: 10 meters

\* Must be selected 1 meter above the value to be measured in liquid level measurement

### Output Signal

**V** : 0-10 VDC

**A** : 4-20 mA

**S2**: RS-485

### Model

**PTL 110**

**X**

**XX**

**XX**

**XX**

**XXX**

### Pressure

Different models between 100 mbar and 25 bar can be selected

\*( For water, 1 meter level = 100 milibar)

### Mechanical Connection

**No Code** : Standard Cap

**G1/4** : G1/4 Connection

**G1/2** : G1/2 Connection

**G1.1/2** : G1 1/2 Connection

### Cable and O-ring Type

**No code** : PE cable, NBR O-ring

**PTFE** : PTFE cable, FKM O-ring

**PUR1**: PUR cable, NBR O-ring

**PUR2**: PUR cable, FKM O-ring

\* When selecting the cable and O-ring, the application area should be taken into consideration, and the table below should be used as a reference.

\*\*For products with RS-485 output, the cable type can only be selected as PUR.

Product	Housing	Cable Material	O-Ring	Applications
PTL 110	1.4404 (AISI 316L)	PE (Polyethylene), PUR (Polyurethane)	NBR	Wells, water tanks, lake level, river level, reservoirs, grey waters, waste waters
		PTFE (polytetrafluorethylene), PUR (Polyurethane)	Viton (FKM)	Oils and fuels

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