

SUBMERSIBLE PRESSURE TRANSMITTER Model TPSM 76

- Hydrostatic level measurement
- For waste water flush diaphragm
- Diameter: 23 mm.
- Diaphragm: ceramic sensor
- Plastic probe (polypropylene) for aggressive media
- Shielded cable with integrated air tube for atmospheric pressure reference

CE



The **TPSM 76** submersible pressure transmitter **flush diaphragm** with ceramic sensor, **polypropylene** probe and diameter from 23 mm. has been especially designed for continuous level measurement.

Permissible media are sewage (waste water treatment, water recycling, dumpsite...), salt water and different aggressive media included for high viscosity liquids.

Submersible level probe, has a wide range of fixed measuring ranges from 0...0,25 Bar to 0...10 Bar (on request can be supplied with the appropriate pressure range for each installation).

GENERAL CHARACTERISTICS:

- Ceramic sensor (membrane) high accuracy, linearity and log-term stability
- Resistance to climatic changes by its encapsulated electronic
- Output signal: 4...20 mAdc. 2 wire
- Standard: 10 mt. PVC cable (CS-700 model) with ventilation tube (it is supplied with the appropriate additional length for each installation)
- Overvoltage protection included
- Includes filter element prevents dirt and moisture from entering the venting tube
- Level probes repairable

USED TECHNIQUE

The submersible pressure transmitter sensor is made of ceramic and it's made by using the piezoresistive technology. This technology relates to the diaphragm deformation where there are printed four electrical resistances that all together form a Wheatstone's bridge. As a result whatever deformation that can be caused by the effect of a pressure on it will unbalance the electronic circuit that will make up an output signal proportional and linear to the pressure that supports the ceramic cell. Ceramic sensors used are internally compensated in temperature by PTC resistors.

The use of ceramic sensors in pressure transmitters field, provides an excellent reliability for:

- Perform pressure directly on the ceramic sensor diaphragm
- There is no fluid chamber inside the sensor (synthetic oil, glycerin...) that can produce variations by expansion effects or mounting position, providing a high resistance to temperature effects
- Excellent mechanical memory and repeatability against pressure variations
- Compatibility against aggressive products

MEASURING RANGES

Input pressure range (gauge)								
Nominal pressure (Bar)	0,25	0,3	0,5	0,6	0,75	1	1,6	2
Level (m.H ₂ O)	2,5	3	5	6	7,5	10	16	20
Overpressure (Bar)	1	1	1	1	1	2	2	5
Burst pressure ≥ (Bar)	2	2	2	2	2	4	4	10

Input pressure range (gauge)								
Nominal pressure (Bar)	2,5	3	4	5	6	7	8	10
Level (m.H ₂ O)	25	30	40	50	60	70	80	100
Overpressure (Bar)	5	5	5	10	10	10	10	20
Burst pressure ≥ (Bar)	10	10	10	20	20	20	20	40

Measuring ranges listed in the table are standard; on-demand and without added cost can be supplied with a specific range for your application, depending on the different physical-chemical parameters of a process.

Other pressure ranges and units are available (m.H₂O, PSI, Kg/cm², KPa, MPa, mmHg,...)

Materials – wetted parts	Housing – body	Polypropylene (PP)			
	Sensor - Diaphragm	Ceramic (AL ₂ O ₃ 96%)			
	O-ring / Seals	Vitón [®] (FPM.FKM) Others: NBR, EPDM			
	Union for protection	Polyolefin			
	Cable – 2 models	Model CS-700 : PVC acrylic TM5 (standard) Model CS-800 : Polyethylene			
Technical data	Pressure	Gauge / relative			
	Measuring ranges	Nominal pressure ranges between: 00,25 Bar and 010 Bar (and others)			
	Resolution of sensor	0,01 - 0,014% of Span			
	Accuracy – Combined error	Typical ≤ 0,3 % of Span (Hysteresis – Linearity – Reproducibility)			
	Response time	< 1 ms.			
	Output signal	420 mAdc. – 2 wire – Linear			
	Power supply:	1035 Vdc.			
	Permissible load (Ω):	$R_{max}(\Omega) \leq [Ub(Vdc) - 10(Vdc)] / 0.02 Adc$			
	Electrical protection	Protected against reverse polarity, overvoltage and short circuiting			
	Long-Term stability	≤±0,2% of span / year at reference conditions			
Miscellaneous	Sensor type	Ceramic (flush diaphragm - Ø 11 mm.)			
	Ingress protection	IP-68 (IEC 60529) - Permanent seal			
	Electrical connection	3 pole cable (3x0,34 mm ²)			
	Temperature	Medium: -570 ⁰C Storage: -1080 ⁰C			
	Probe diameter Ø	23 mm.			
	Flush diaphragm	Yes			
	Dimensions	See drawings			
	Weight	≤ 0,85 Kg. - transmitter + 10 mt. cable model CS-700 -			
	Cable weight x 10 mt.	≈ 0,75 Kg.			
	Cable diameter Ø	≈ 8,5…9 mm.			
	Filter element (venting tube)	Included – pore size 0,45µm			
	RoHS - Conformity	Yes - 2011/65/EU			
	CE – Conformity	CEM Directive 2004/108/EC - EN61326.G1/B			

TECHNICAL DATA – Cable CS-700 / CS-800

Cable CS-700 or CS-800 prepared for immersion fluid is a fundamental element for the proper functioning and durability of the submersible pressure transmitter.

Different cables to achieve maximum media compatibility:

- Model CS-700: PVC acrylic TM5
- Model CS-800: Polyethylene

The CS-700 or CS-800 cable has:

- Three wire conductors
- Shielded cable with integrated air nylon tube for atmospheric pressure reference
- Kevlar[®] cable flexible anti-stretch construction (supports a breaking weight load of 110 Kg.)

All of them wired up and shielded with aluminium polyester tape and tinned copper drain wire.

This transmitter includes 10 meters cable **CS-700** normalized form (it is supplied with cable CS-800 and the appropriate additional length for each installation).

DIMENSIONS (mm.)

ELECTRICAL CONNECTIONS



ACCESORIES

- Process display with panel meters
- Transient voltage protection for analogical signs
- Filter element prevents dirt and moisture from entering the venting tube
- Cable strain relief clamp
- Module converter
- With switching power supply
- Amplifier relay

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DISIBEINT ELECTRONIC, S.L. C/ Segle XX, 91 08032 BARCELONA – SPAIN Tel. (+34) 934 560 995 – Fax. (+34) 934 354 532 www.disibeint.com – disibeint@disibeint.com