PRESSURE TRANSMITTER
Model TPSP 34

- Flush pressure transmitter
- Material: stainless steel AISI-316.L
- Pressure: gauge, absolute or vacuum
- Measuring ranges from 0…0,125 to 0…100 Bar
- Ceramic sensor
- Output signal: 4…20 mAdc, 0…10 Vdc….

CE

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DESCRIPTION

The **TPSP 34** flush pressure transmitter model, made of **AISI-316.L stainless steel**, has been developed to cover the majority of industrial applications. The more usual applications are those ones that are dedicated to the continuous measurement (gases or liquids) of viscous, paste-like, crystallising, particle-laden and contaminated media, which would clog the pressure channel of conventional process connections.

General applications:

- Level measurement (for viscous and particle-laden media)
- Pumps / Compressors
- Pressure measurement in fluid circuits
- Hydraulics / Pneumatics
- Ventilation
- Control and feedback control systems
- ….

This transmitter has a wide range of fixed measuring ranges from 0…0,125 Bar to 0…100 Bar (on request can be supplied with the appropriate pressure range for each installation, for gauge - relative, absolute or vacuum pressure).

GENERAL CHARACTERISTICS:

- Ceramic sensor (membrane) high accuracy, linearity and log-term stability
- Different output signals (4...20 mAdc, 0...10 Vdc,…)
- Process connection: G.1" - BSP

USED TECHNIQUE

The 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)	1Abs.	-1	-0,5	0,125	0,25	0,3	0,5	0,6	1	1,6
Level (m.H_2O)	-	-	-	1,3	2,5	3	5	6	10	16
Overpressure (Bar)	1	1	1	0,5	1	1	1	1	2	2
Burst pressure ≥ (Bar)	2	2	2	1	2	2	2	2	4	4

Input pressure range (gauge)										
Nominal pressure (Bar)	2	2,5	4	6	10	16	25	40	60	100
Level (m.H_2O)	20	25	40	60	100	160	250	-	-	-
Overpressure (Bar)	5	5	10	10	20	50	50	50	100	200
Burst pressure ≥ (Bar)	10	10	20	20	40	100	100	100	200	250

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.H_2O, PSI, Kg/cm^2, KPa, MPa, mmHg,...)

Materials – wetted parts	Process connection	Stainless steel AISI.316.L (WN 1.4404)
	Sensor - Diaphragm	Ceramic (AL_2O_3 96%)
	O-ring / Seals	Vitón® (FPM.FKM) Others: NBR (Buna N nitrile), EPDM…
Technical data	Pressure	Gauge / relative Absolute (between: 0…1 and 0…40 Bar Abs) Vacuum (differential max./min. of 0,25 Bar)
	Measuring ranges	Nominal pressure ranges between: 0…0,125 Bar and 0…100 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:	
	▪ 4…20 mAdc.	2 wire – Linear
		Power supply: 10…35 Vdc. Permissible load (Ω): R_{max} (Ω) ≤ [Ub(Vdc) - 10(Vdc)] / 0,02 Adc
	▪ 0÷10 Vdc.	3 wire – Linear
		Power supply: 15…35 Vdc. Permissible load (Ω): R_{min} (Ω) > 10 KΩ
	▪ Others	On request
	Electrical protection	Protected against reverse polarity, and short circuiting
	Long-Term stability	≤±0,2% of span / year at reference conditions
Miscellaneous	Sensor type	Ceramic
	Process connection – DIN 3852-E	G.1" – BSP Flush diaphragm
	Housing – Case	Stainless steel AISI.316.L (WN 1.4404)
	Zero / Span point adjustment	± 10 (internal potentiometers) 4…20 mAdc. (output connector DIN43650)
	Vacuum tightness	Yes
	Ingress protection	IP-65 (IEC 60529) – Others on request
	Electrical connection	
	▪ Model TPSP 34	Angular connector – 3 pins DIN 43650 / DIN175301-803A / PG-9
	▪ Model TPSP 34.C_	Cable outlet (3x0,25 mm^2) – 2 m. (integrated air nylon tube for atmospheric pressure reference)
	▪ Model TPSP 34.M12	Circular connector M12x1 (4 pin)
	Temperature	Medium: -5….90 ºC Storage: -10….80 ºC
	Relationship to the mounting position	Any
	Ø Pressure port	10,5 mm.
	Dimensions	See drawings
	Weight	≤ 0,40 Kg.
	Possibility of diaphragm seals	No
	RoHS - Conformity	Yes – 2011/65/EU
	CE – Conformity	CEM Directive 2004/108/EC - EN61326.G1/B Pressure equipment: 97/23/CE (module A)

- Depending on the selected sealing, restrictions in overpressure and temperature safety can result
- Option - Oil and grease free
  - Overvoltage protection
- Possibility of increasing overpressure limit

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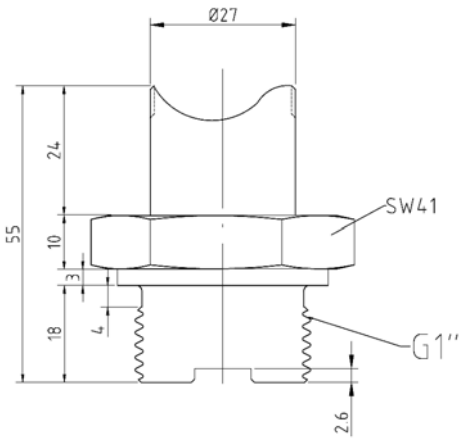
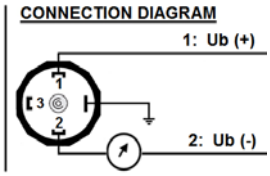
DIMENSIONS (mm.)

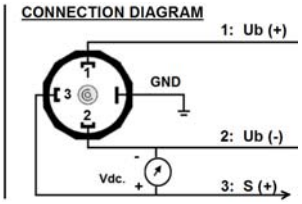


CONNECTION

ELECTRICAL CONNECTIONS

Diagram: **Output signal: 4…20 mAdc.** **Output signal: 0…10 Vdc., & others**





Connection diagrams:

- Ub (+) → Positive power supply
- Ub (-) → Negative power supply
- S (+) → Analogue output

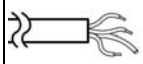
ANGULAR CONNECTOR – DIN 43650
DIN175301-803A / PG-9 **mod. TPSP 34**

	2 hilos	3 hilos
Ub (+)	1	1
Ub (-)	2	2
S (+)	-	3
Shield (GND)	⏚	⏚

ANGULAR CONNECTOR – DIN 43650 – Mini
DIN175301-803C / PG-9

	2 hilos	3 hilos
Ub (+)	1	1
Ub (-)	2	2
S (+)	-	3
Shield (GND)	⏚	⏚

CABLE OUTLET – CS-500
2 m. (length on request) **mod. TPSP 34.C2**



	2 hilos	3 hilos
Ub (+)	Rojo	Rojo
Ub (-)	Azul	Azul
S (+)	-	Amarillo
Shield (GND)	Amarillo	Malla

CIRCULAR CONNECTOR
M12X1 (4-pin) **mod. TPSP 34.M12**

	2 hilos	3 hilos
Ub (+)	1	1
Ub (-)	3	3
S (+)	-	4
Shield (GND)	2	2

ACCESORIES

- Process display – with panel meters
- Transient voltage protection for analogical signs (model PST-24.C)
- Module converter
- With switching power supply
- Amplifier relay

Nº V.ME0155.02.017

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