

SUBMERSIBLE PRESSURE TRANSMITTER

Ø: 23 mm.

Type. MA-403



1. DESCRIPTION

This series of **submersible pressure transmitters** made of stainless steel AISI 316L of **23 mm. diameter** are suitable for the continuous measure of level and are projected to support the immersion in fluids.

The transmitter is made with the most novel techniques and it has inside of it a converter circuit of high quality it can be supplied with a non-stabilized direct voltage of 8 (15)... 35 Vdc. And provide standard industrial output signals (see maximum load R).

The **CS-700** cable is a part of the sensor it's a special cable inside of it there are 3 conductors of power supply, a nylon tube (to balance the atmospheric pressure from outside) and an iron cable.

The transmitter is given in its standard form with 10 mts. of cable. It's possible to send it with more meters if we are asked for.

2. USED TECHNIQUE

The sensor of the pressure transmitter is made of ceramic, and the technique used to make it is called "piezoresistive". This technology is related to the deformation of the diaphragm, in it there are recorded 4 electric resistences making a Wheastone bridge. Because of that any deformation that the diaphragm can suffer caused by the effect of any pressure will unbalance the electric circuit that will conform an exit sign proportional and linearity to the pressure that supports the ceramic sensor.

The ceramic sensors used are internally compensated in temperature through resistences PTC.

The use of the ceramic technology in the field of the pressure transmitters contributes an excellent fiability because it makes the pressure directly in the ceramic sensor. On not having existed no chamber of fluids in its interior (synthetic oil, glycerine, etc... that could produce variations for dilatation effects) contributed a high stability opposed to the effects of the temperature.

3. PRESSURE RANGES (Bar)

Ranges	0,25	0,30	0,50	0,75	1,00	1,25	1,50	1,75
Burst pressure	2,10	2,10	2,10	2,10	3,20	3,20	3,20	5,00

Ranges	2,00	2,50	4,00	6,00	10,0	16,0	25,0	40,0
Burst pressure	5,00	12,0	12,0	20,0	32,0	50,0	120	120

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

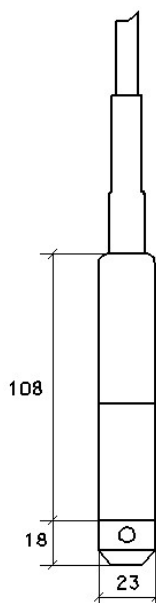
4. DATOS TÉCNICOS

4.1 Sensor characteristics

Pressure	Relative
Pressure ranges	0-0,250 Bar to 0-40 Bar
Sensor	Ceramic piezoresistor
Accuracy – Combined error hysteresis-linearity- reproducibility	Typical $\leq 0,4$ % of span
Resolution of sensor	0,01 to 0,014 % of span
Response time	< 1 mseg.
Materials wetted parts	Stainless steel AISI-316L, ceramic and o-ring
Material of the o-ring	Acrilnitrilo butadieno (NBR) (Other materials: VITON, EPDM, PTFE...)
Material case	Stainless steel AISI-316L
Degree of protection	IP-68
Signal output	Linearity
Power supply	8÷35 Vdc.
Wiring protection	Protected against reverse polarity, overvoltage and short circuiting
Signal output	4÷20 mAdc., 2 wire
Maximum load R - Ω	$R_{a\leq} [U_b(Vdc)-8(Vdc)] / 0,02 Adc$
Electrical connection	Through three poles cable
Temperature	-5 a +70 °C
Dimensions	See drawings
Ø diameter	23 mm.
Weight with cable	<1,3 Kg. With 10 mts. cable
CE - Conformity	89/336/CE-EN61000-6-2-97/23

5. DIMENSIONS (mm.)

Dimension case



4.2 Cable CS-700 characteristics

The **CS-700** cable is made of 3 conductors of power supply, a nylon tube and an iron cable. The outside cover of the cable is made of PVC prepared to its immersion in water, even salt water and free of dangerous products, according to annex 3, of RD.208/2005.

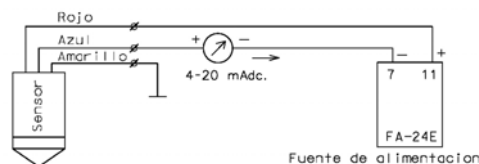
NOTE: The transmitter is given in its standard form with 10 mts of cable. It's possible to send it with more meters if we are asked for.

Ø diameter external	9 mm.
External colour	Blue – Ral: 5015
Degree of protection: IP68	With capillary (poliopheline)
Material external	Acrylic PVC - TM5 according UNE 21031/13
Compensation capillary (to balance the atmospheric pressure from outside)	Nylon 1×2
Material Conductor	3×0,34 mm ² (UNE 21064)
Steel cable (traction)	1 mm.
Breaking load	110 Kg.
Weight – approximate	100 gr./mt.
Conductive electrical resistance to 20 °C	59 Ω /Km.
Colour code	Red, blue and yellow
Temperature	-5 a +70 °C

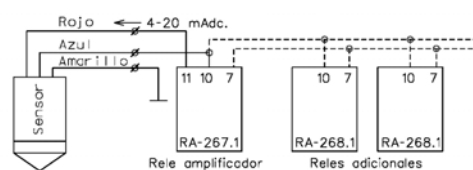
6. ELECTRICAL CONNECTION

Red: (+)	Blue: (-)	Yellow: (⊥)
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6.1 With switching power supply



6.2 With amplifier relay for the transmitter



6.3 With panel meters – process display

