Pressure transmitter PTE 06

Electronic process transmitter for pressure, absolute pressure and level measurement

PTE06FA has many advantages:

- PTE06FA is a low price high performance transmitter. PTE06FA have analogue electronics.
- Fixed ranges. Zero and span adjustment of span is made with internal trim potentiometers.
- Directly connected process connections without pressure intermedia, eliminates temperatur influence and provides a robust design.
- Well tested and approved for, 3A and CE (EMC och PED).
- Withstand media temperatures up to 150 °C continuousley (200 °C short term).
- A selection of 13 different process connections gives freedom to adapt to every application.
- Stainless steel IP67-housing protects the electronics from dust and moisture. Hygienic design, no dirt collecting gaps or pockets . Easy to clean and minimal corrosion risk.
- Diaphragm resistent to media with particles.

EUROTHERM AB
Lundavägen 143,
SE-212 24 MALMÖ.
Tfn +46 (0)40 38 45 00
Fax +46 (0)40 38 45 45.

Box 664,
SE-645 59 STRÄNGNÄS.
Nordfeldts väg 9,
Tfn +46 (0)152 241 30
Fax +46 (0)152 241 38.

EUROTHERM FINLAND
Kristiinankatu 9,
FIN-20100 TURKU.
Tfn +358 22 50 60 30
Fax +358 22 50 32 01.

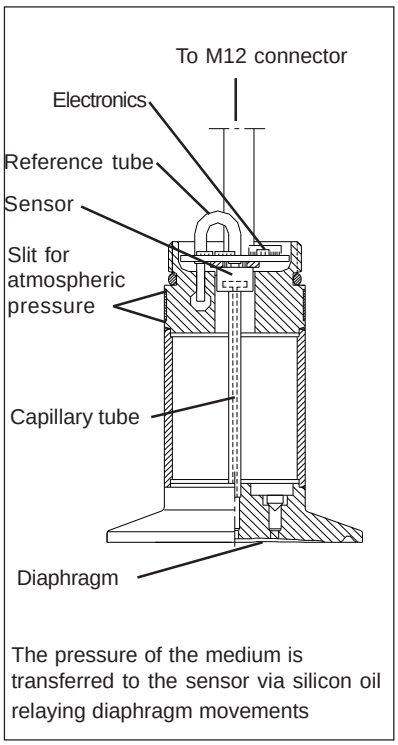
www.eurotherm.se
www.eurotherm.nu

Description:

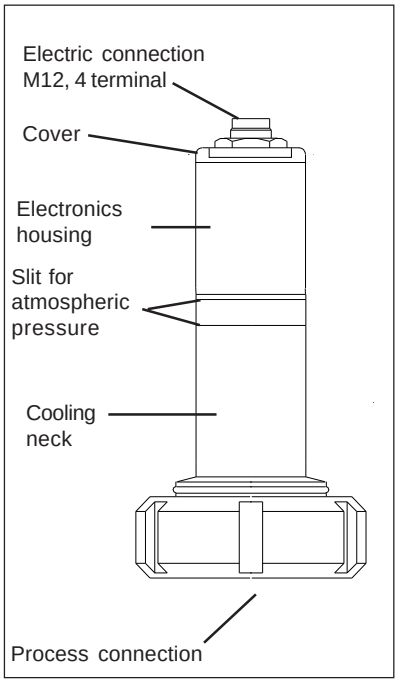
PTE06FA is part of a transmitter series (PTE200A/H/PA/FF) with a great number of direct connected process connections to suit every application. PTE06FA can measure liquids and gases.
PTE06FA is resistant to overload pressure. The transmitter resists an overload of more than 3 times the pressure range and even more for short time pressure surges.
PTE06FA is direct connected to process without pressure intermedia and have very little oil filling volume. This eliminates problems like high temperature dependance normaly seen on transmitters with pressure intermedia. Since PTE06FA is designed without pressure intermedia the influence from shifting media temperatures is very small. This is an advantage when performing a CIP procedure for example.
PTE06FA is temperature and long time stabel.
PTE06FA communicates with 4–20 mA current loop.

Function:

The PTE06FA uses a piezo-resistive pressure sensor connected to the pressure of the medium via a capillary tube and a diaphragm. Media pressure applied to the diaphragm is transferred via silicon oil to the pressure sensor. The oil completely fills the cavities in the sensor, the capillary tube and above the diaphragm. This means that the diaphragm movement is very small at pressure changes. The capillary tube protects the pressure sensor from transient pressure surges.
To ensure the sensor´s correct pressure, rear side is connected to ambient atmospheric pressure via a tube designed in order to let air pass closest to the pressure connection “cold surfaces” of the transmitter. Humidity in the air will condense on these surfaces. The condensate flows out and the remaining air in the tube stays dry. The reference pressure connection is designed to prevent flushing water ingress.
PTE06FA have analogue electronics and communicates with a 4-20 mA current loop.
Signal/supply is connected with a 4 terminal M12 contact as standard.
PTE06FA is delivered with fixed ranges, see next page.
Zero and span can be adjusted by removing the cover and adjusting the trim potentiometers with a small screwdriver.



The pressure of the medium is transferred to the sensor via silicon oil relaying diaphragm movements



Approvals:

PTE06FA with connections 7, 8, 9, A, D, E and V is approved by 3A.
PTE06FA is CE marked (according to EMC and PED directives for Pressure Equipment Directive). The filling oil is a FDA approved silicon oil.

Accessories:

A specially designed connection box can be delivered as an accessoriy. The box is equipped with cable glands and terminals for connection of the transmitter and the signal/supply cable.
The box can also be equiped with a local display.
Connectors and cables with connectors in different lenght with casted M12 connectors can be supplied.

Ordering codes for pressure and level transmitters

(See table on next page for possible combinations)

PTE06FA-XXXX

Code 1 **Code 2** **Code 3** **Code 4**

Ordering example:
Threaded transmitter R1/2” external, with pressure range 0-200 kPa gage, will have the code **PTE06FA-4140**

Process connection*1	Electronics	Code 1	Code 3	Code 4	R 1/2" External	NPT 1/2" External	Flange 80/3"	Flange 50/2"	Hygienic DIN11851/40	Hygienic SMS Rd 60-6	Clamp 38	Clamp 51	Hygienic RJT nut	DRD flange	Hygienic DIN11851/50	Varivent flange	R 1/4" External
Code 2					**1**	**2**	**4**	**5**	**7**	**8**	**9**	**A**	**C**	**D**	**E**	**V**	**R**
Electronics type																	
Analogue fixed range	**FA**				X	X	X	X	X	X	X	X	X	X	X	X	X
Analogue fixed range with lightning protection	**FAL**				X	X	X	X	X	X	X	X	X	X	X	X	X
Diaphragm																	
Stainless steel 1.4462/1.4435		**3**			X	X	X	X									X
Hastelloy C 276		**4**			X	X	X	X	X	X	X	X	X	X	X	X	X
Range*2																	
0 - 7 kPa			**1**		X	X	X	X	X	X	X	X	X	X	X	X	
0 - 35 kPa			**2**		X	X	X	X	X	X	X	X	X	X	X	X	X
0 - 200 kPa			**4**		X	X	X	X	X	X	X	X	X	X	X	X	X
0 - 2 MPa			**6**		X	X	X	X	X	X	X	X	X	X	X	X	X
0 - 4 MPa			**7**				X	X			X	X					
0 - 8 MPa			**7**							X							
0 - 15 MPa			**8**		X	X											X
Design																	
Gage				**0**	X	X	X	X	X	X	X	X	X	X	X	X	X
Absolute pressure				**2**	X	X	X	X	X	X	X	X	X	X	X	X	X

*1 Other process connections, according to PTE200 data sheet, can be delivered on request.
*2 Special pressure ranges can be delivered on request.

Technical data PTE06FA

Type:	Electronic process transmitter with analogue electronics	**Series resistance dependance:**	Better than +/- 0,1%
Function:	Directly connected without pressure intermedia. Piezoresistive sensor with capillary tube.	**Supply voltage dependance**	Better than +/-0,1 %
Operation range:	From 0% to100% of max range.	**Temperature dependance:**	For the range -20 to 80 degrees C
Range:	Delivered with fixed range. Adjustable between -10% and +10% of this range.	Zero:	Max +/-0,01% per degree C
Zero:	Delivered with fixed zero point. Adjustable between -5% and +5% of this point.	Span:	Max +/-0,01% per degree C
Overload:[*1]		**Long time stability:**	Better than 0,1 % per år.
7 kPa:	Max 100 kPa	**Vibration dependance:**	
35 kPa:	Max 250 kPa	Perpendicular to the diaphragm:	Max +0,3 kPa/G
200 kPa:	Max 600 kPa	Parallell to the diaphragm:	Max +0,02 kPa/G
2 MPa:	Max 6 MPa	**Vibration test:**	Test according to IEC770
4/8/15 MPa:	Max 30 MPa (depends on process connection).	**Repeatability:**	Better than +/- 0,1 % of range.
Material: Diaphragm[*4]:	Stainless steel 316L or Hastelloy C276 (some types of coating on request).	**Accuracy:**	Better than +/- 0,35 % of range (including nonlinearity, hysteresis and repeatability). [*3]
Other media touched parts:	RF SS2343/SS2353	**Mounting:**	Direct on process connection.
Housing:	RF SS2333	**Electrical connection:**	External contact 4 terminal M12
Ambient temperature:	-20 to +80 degrees C	**Encapsulation:**	IP67
Damping:	Fixed 1 s.	**Electrical safety:**	According to EN60204-1
Media temperature:	150 degrees C [*2]	**Electrical interference:**	According to IEC61326-1-2-3
Output:	4-20 mA, two wire connection, signal proportional to the pressure. Max current at overload 32 mA.	**PED**:	According to 97/23/EG
Supply:	8-36 V DC	**Filling oil:**	AK100, food-approved silicon oil. (FDA approval)
Series resistance:	R kohm = (Supply-8/20)	**Weight:**	300-700 g depends on process connection.

*1 Applies for the sensor. For different types of processconnections there are mechanical limits.
*2 Short time 200 °C. Some types upon request 275 °C.
*3 Base accuracy 0,2 % on request.
*4 Diaphragm surface smoothness (Ra): Standard 0,75 um, on request 0,15 um.

invensys EUROTHERM