

Last update: 05-2023

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Ref: TI\_PT5\_A1\_EN\_Rev04

Application Engineering Europe

## PRESSURE TRANSMITTER PT5

A1

### General information

PT5 Pressure Transmitters convert a pressure into a linear electrical 4...20 mA output signal suitable for controlling simple compressor and fan switching to the more sophisticated application of superheat modulation of Electronic Control Valves.

With competitive performance to price characteristics and an easy to install pre-fabricated M12 cable assembly, PT5 transmitters are the designers choice for all heat pump, refrigeration and air conditioning applications.

### Features

- Thin-film stainless steel sensor with output signal 4...20 mA and 2-wire connection for the precise operation of superheat, compressor or fan control systems
- With output signal 4...20 mA and 2-wire connection for the precise operation of superheat, compressor or fan control systems
- Fully hermetic
- Easy install M12 electrical connection with pre-assembled cable assemblies available in various lengths
- Vibration, shock and pulsation resistant
- Protection class IP67
- PT5-xxM with 7/16"-20UNF pressure connection and Schrader valve opener
- PT5-xxT with 6x40 mm stainless steel tube and integrated brazing neck for easy mounting in applications requiring a fully hermetic system solution
- PT5-150D with pressure connection 1/4"-18 NPT male suitable for subcritical and transcritical CO<sub>2</sub> systems



**PT5-xxM**



**PT5-150D**

**with PT4-Mxx Cable Assembly**



**PT5-xxT**

### Type code

		<b>PT5</b>	<b>-</b>	<b>X</b>	<b>X</b>
<b>Product Name</b>					
<b>Pressure Range (Signal output)</b>		<b>Pressure Connection</b>			
<b>07</b>	-0.8...7 bar	<b>M</b> 7/16"-20 UNF with Schrader valve opener (female)			
<b>18</b>	0...18 bar	<b>T</b> 6 mm x 40 mm long solder tube			
<b>30</b>	0...30 bar	<b>D</b> 1/4"-18 NPT (male)			
<b>50</b>	0...50 bar				
<b>150</b>	0...150 bar				


### Selection Table

Type	Part No.		Pressure Range for Signal Output (bar)*	Output Signal	Medium Temperature Range	Max. allowable Pressure PS (bar)*	Pressure Connection
	Single pack	Multipack 25 pcs					
PT5-07M	802350	802350M	-0.8...7	4...20 mA	-40...+135 °C	27	7/16" – 20 UNF (with Schrader valve opener)
PT5-18M	802351	802351M	0...18			48	
PT5-30M	802352	802352M	0...30			60	
PT5-50M	802353	802353M	0...50			75	
PT5-07T	802380	802380M	-0.8...7			27	6 mm tube x 40 mm long
PT5-18T	802381	802381M	0...18			48	
PT5-30T	802382	802382M	0...30			60	
PT5-50T	802383	802383M	0...50			75	
PT5-150D	802379	802379M	0...150			150	

NOTE 1: \*) Sealed gauge pressure


NOTE 2: When selecting also observe the information in the operating instructions. Available on EMERSON website. For assistance with selection please contact your local Emerson Sales offices.





### Selection Table Accessory

Type	Part No.		Cable Length **	Description	Temperature range	Illustration
	Single pack	Multipack 20 pcs				
PT4-M15	804803	804803M	1.5 m	M12, Connector, loose wires angled	-50...+80 °C static application -25...+80 °C mobile application	
PT4-M30	804804	804804M	3.0 m			
PT4-M60	804805	804805M	6.0 m			

NOTE: \*\*) Longer length of the electrical connection cable beyond 6.0 m must be verified by user in term of output signal as well as EMC within installed system.

### Technical Data

Supply voltage* (polarity protected)	Nominal: 24 VDC PT5-... Range: 7...30 VDC ??? PT5-150D Range: 7...26.4 VDC
Operating current	Maximum ≤ 24 mA 4...20 mA output
Load resistance	$R_L \leq \frac{U_b - 7.0V}{0.02A}$
Response time	≤ 5 ms
Temperatures	Storage/ Transport: All types -20...+80 °C Operation: PT5-...: -40...+80 °C PT5-...M/D: -40...+100 °C Medium: PT5-...T: -40...+135 °C (UL listed -40...+100 °C)
Vibration at 15...2000 Hz	20 g according to IEC 60068-2-6
Medium compatibility	R134a, R410A, R407C, R404A, R507, R448A, R449A, R513A, R450A, R452A, R23, R124, R744, R1234ze (A2L) 
Fluid group II	

Electrical connection	M12 plug and cable assembly PT4-M... (EN 61076-2-101 Part 2)
Weight (without plug and cable assembly)	PT5-...T: ~ 60 g PT5-...M: ~ 80 g PT5-150D: ~ 80 g
Mounting position	Non position sensitive; details see operating instructions
Protection class (EN 60529)	IP67 with plug
Materials	Housing, pressure connector & diaphragm with medium contact: Stainless steel 316L, 1.4534, 1.4301 (PT5-xxT) Electr. connector: Highly resistive, fiberglass-enforced plastic PBTGF30
Sensor Lifetime	30 Million Load Cycles with 1.3 times of nominal pressure
Marking	 acc. EMC Directive (EN 61326 - group1, class B)  (E258370),  

NOTE: \*) The power supply for the pressure transmitter must be made via an energy-limited electrical circuit in accordance with section 9.3 of UL/EN/IEC 61010-1, or an LPS to UL/EN/IEC 60950-1, or class 2 in accordance with UL1310/UL1585 (NEC or CEC). The power supply must be suitable for operation above 2,000 m should the pressure transmitter be used at this altitude.

### Accuracy performance

Type	Total error <sup>1</sup>	Temperature range
PT5-07 / -18...	≤ ±1% FS	-40...+20 °C
PT5-30 / -50...	≤ ±1% FS	+10...+50 °C
	≤ ±2% FS	-10...+80 °C
PT5-150D	≤ ±1% FS	+10...+50 °C
	≤ ±2% FS	-10...+100 °C

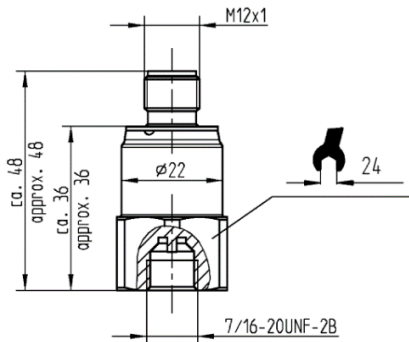
NOTE:

1) Total error includes non-linearity, hysteresis, repeatability as well as offset and span drift due to the temperature changes.

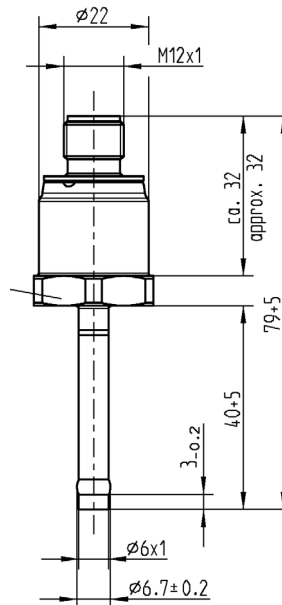
%FS is related to **P**ercentage of **F**ull sensor **S**cale.

### Dimension (mm)

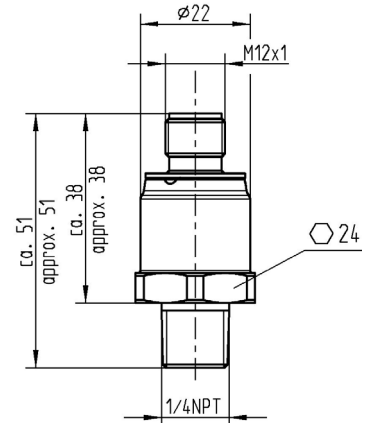
#### PT5-...M



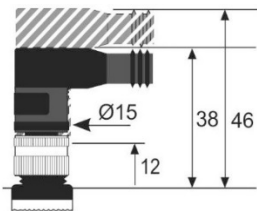
#### PT5-...T /



#### PT5-150D



#### PT4-M... / M12 Plug



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