

PT5N

Pressure transmitter

General information

PT5N 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, PT5N transmitters are the designers choice for all heat pump, refrigeration and air conditioning applications.

Features

- Hybrid film technology where the pressure measuring cell is fully welded with the pressure transducer without seals.
- With output signal 4...20 mA and 2-wire connection for the precise operation of superheat, compressor or fan control systems
- Fully hermetic
- Calibrated for specific temperature and pressure ranges
- Easy install M12 electrical connection with pre-assembled cable assemblies available in various lengths
- Vibration, shock and pulsation resistant
- Protection class IP67 with mounted Plug and Cable Assembly
- PT5N-xxM with 7/16"-20UNF pressure connection and Schrader valve opener
- PT5N-xxT with 6x40 mm stainless steel tube and integrated brazing neck for easy mounting in applications requiring a fully hermetic system solution
- PT5N-150D with pressure connection 1/4"-18 NPT male suitable for subcritical and transcritical CO₂ systems
- PT5N-xxP-FLR with 6x40 mm stainless steel tube and integrated brazing neck for easy mounting in applications requiring a fully hermetic system solution and can only be used in hazardous area defined by zone 2 (category 3).

A1 A2L A3



PT5N-xxM



PT5N-xxT / PT5N-xxP-FLR

PT5N-...-FLR :  II 3 G
Ex ec IIC T4 Gc

PT4-M60-FLR:  II 3 G
Ex nA IIA T4 Gc U

Type code

PT5N - X X - X		FLR  ATEX version	
Product Name			
Pressure Range (Signal output) 07 -0.8...7 bar 30 0...30 bar 10 -0.8...10 bar 50 0...50 bar 18 0...18 bar 150 0...150 bar		Pressure Connection M 7/16"-20 UNF T 6 mm tube, solder & 40 mm long D 1/4"-18 NPT (male) P 6 mm tube, solder & 40 mm long	

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					
PT5N-07M	805350	805350M	-0.8...7	4...20 mA	-40...+135 °C	27	7/16" – 20 UNF (with Schrader valve opener)
PT5N-18M	805351	805351M	0...18			48	
PT5N-30M	805352	805352M	0...30			60	
PT5N-50M	805353	805353M	0...50			75	
PT5N-07T	805380	805380M	-0.8...7			27	6 mm tube x 40 mm long
PT5N-18T	805381	805381M	0...18			48	
PT5N-30T	805382	805382M	0...30			60	
PT5N-50T	805383	805383M	0...50			75	
PT5N-150D	805379	805379M	0...150		-30...+120 °C	150	1/4"-18 NPT (male)
PT5N-07P-FLR	805390	805390M	-0.8...7			27	6 mm tube x 40 mm long
PT5N-10P-FLR	805391	805391M	-0.8...10			27	
PT5N-30P-FLR	805389	805389M	0...30			60	

NOTE 1: *) Sealed gauge pressure

NOTE 2: When selecting also observe the information in the operating instructions. Available on COPELAND website.
For assistance with selection or to place an order, please contact your local Copeland 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			
PT4-M60 FLR	804806	-	6.0 m	M12, Connector, loose wires angled  II 3 G Ex nA IIA T4 Gc U	-40...+70 °C	

NOTE 1: **) 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.

NOTE 2: The qualification /certification of PT5N-...P-FLR is valid only in conjunction with PT4-M60-FLR connector.

Technical Data

Supply voltage (polarity protected) PT5N-... PT5N-...FLR	Nominal: 24 VDC Range: 7...33 VDC Range: 10...30 VDC
Operating current*	Maximum ≤ 23 mA 4...20 mA output
⚠ A3:	$U_i \leq 30$ V, $I_i \leq 100$ mA, $P_i \leq 750$ mW internal inductance $L_i = 0$ nH, internal capacitance $C_i = 0$ nF Applicable Driver/controller must contain intrinsically safe resistive circuit and insured maximum supply voltage below 30 VDC and maximum current below 100 mA.
Load resistance	$R_L \leq \frac{U_b - 7.0V}{0.02A}$
Response time	≤ 2 ms
Temperatures Storage/ Transport Operation Medium	All types -50...+100 °C PT5N-...: -30...+85 °C PT5N-...P-FLR: -25...+85 °C PT5N-...: -40...+135 °C (UL: -40...+100 °C) PT5N-...P-FLR: -30...+120 °C
Medium compatibility Fluid group II Fluid group I Fluid group I	R134a, R410A, R407C, R404A, R507, R448A, R449A, R513A, R450A, R452A, R23, R124, R744 A1 R32 A2L R290 A3

Electrical connection PT5N-... PT5N-...P-FLR	M12 plug and cable assembly PT4-M... (IEC 61076-2-101:2012) PT4-M60-FLR (ATEX)
Mounting position	Non position sensitive; details see operating instructions
Weight (without plug and cable assembly)	PT5N-...T: ~ 103 g PT5N-...P-FLR: ~ 103 g PT5N-...M: ~ 87 g PT5N -150D: 73 g
Protection class (EN 60529)	IP67 with mounted plug and cable assembly
Vibration at 15...2000 Hz	20 g according to IEC 60068-2-6
Sensor Lifetime	30 Million Load Cycles with 1.3 Times of Nominal Pressure
Materials Housing pressure connection (PT5N-...T/PT5N-...P-FLR)	Stainless steel 1.4404 / AISI316L Stainless steel 1.4301 / AISI 304
Marking PT5N-...T/M/D PT5N-...P-FLR	CE acc. EMC Directive EN 61326-2-3 : 2013 UL LISTED (E499688), UL CE 2014/34/EU: EN 60079-0: 2012 + A11:2013 EN 60079-0: 2014 EN 60079-7: 2016 EN 60079-26: 15 2014/30/EU: EN 61326-2-3 : 2013 Ex II 3 G Ex ec IIC T4 Gc

Accuracy performance

Type	Total error ¹	Temperature range
PT5N-07 / -18	$\leq \pm 1$ % FS	-40...+20 °C
PT5N-07P-FLR	$\leq \pm 1$ % FS	-30...+20 °C
PT5N-10P-FLR	$\leq \pm 1$ % FS	-10...+60 °C
	$\leq \pm 1.4$ % FS	-30...+80 °C
PT5N-30 / -50	$\leq \pm 1$ % FS	+10...+50 °C
PT5N-30P-FLR	$\leq \pm 2$ % FS	-10...+80 °C
PT5N-150D	$\leq \pm 1$ % FS	+10...+50 °C
	$\leq \pm 2$ % FS	-10...+90 °C

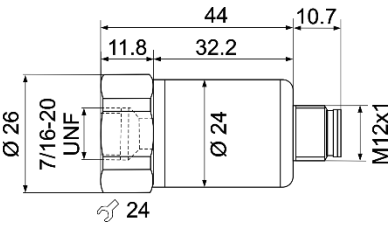
NOTE:

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

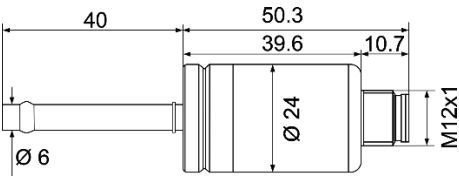
% FS is related to **P**ercentage of **F**ull sensor **S**cale.

Dimension (mm)

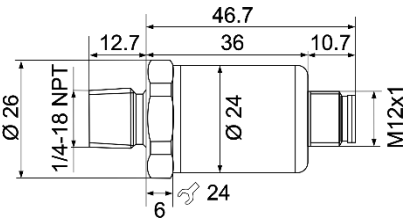
PT5N-...M



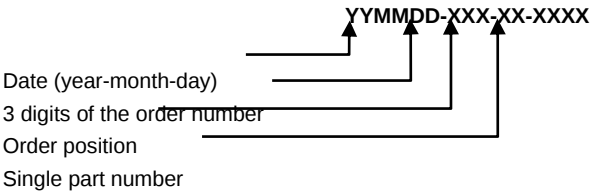
PT5N-...T /
PT5N-...P-FLR



PT5N-150D

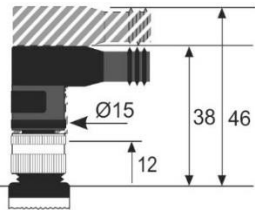


Date of manufacture visible on
PT5N-...P-FLR label



PT4-M... /
PT4-M60-FLR

M12 Plug



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