

PCM161



PCM161 pressure sensor allows a combined pressure and temperature measurements at a same location. Wetted parts being all stainless steel, it is compatible with all common and hostile pressure media used in aerospace and automotive. Miniature dimensions, low mass and ruggedized design make PCM161 pressure sensor well adapted to embedded applications on vehicules, aircrafts, missiles, satellites, etc.

The pressure transducer utilizes EFE thin film technology and a platinum RTD senses media temperature. The pressure and temperature devices are designed to operate independently.

Output for pressure is an unamplified (mV/V) while temperature signal is directly the one from PT100 or PT1000 sensor. Its small package and low mass make it very adapted to application where space is at a premium.

PCM161 is available with pressure ranges from -1 to 500bar and has high temperature capability, up to -55/+175°C.

Models with built-in electronics are also available in PCM160 series with both 5V regulated (PCM163) and unregulated power supply from 8 to 16Vdc (PCM167).

FEATURES

- All Stainless Steel Ruggedized Design
- Pressure & Temperature Measurements
- High Accuracy
- Available with -55 to +175°C option

APPLICATIONS

X	Aerospace
X	Energy / Nuclear
X	Automotive
X	Test Benches
	Others



TECHNICAL SPECIFICATIONS

- Pressure Specifications

Pressure ranges (FS)	-1/+2bar; -1/+3bar; -1/+4bar; 3bar; 5bar; 10bar; 20bar; 40bar; 100bar; 250bar; 400bar; 500bar -14.5/+30PSI ; -14.5/+40PSI ; -14.5/+60PSI; 40PSI; 70PSI; 150PSI; 300PSI; 500PSI; 1500PSI; 3000PSI; 5000PSI; 7000 PSI
Type	Absolute ; Gage
Type (for ranges > 40 bar)	Sealed Gage
Safe overload	150% FS
Burst pressure	300% FS or 1000bar whichever is less for M10x1 and 3/8-24 UNF male 300% FS or 400bar whichever is less for M8x1 male

- Electrical Specifications

Power Supply	5 to 15Vdc filtered and stabilized
Consumption	< 10mA
Insulation	> 1000 MOhms under 50Vdc at ambient temperature
Offset	< $\pm 3\%$ FS
Sensitivity	2 to 5mV/V
Signal convention	For compound ranges (-1 to +3bar for example), offset is at atmospheric pressure and sensor's signal @ -100%FS (-1bar) is proportionnal to signal @ +100%FS (+3bar). Sensitivity is the sensor's signal from -100% to +100%FS (4bar).



- Accuracy

Nonlinearity & hysteresis combined (Pressure)	$\pm 0.25\%$ FS typ. / $\pm 0.35\%$ FS max.
Non repeatability for Pressure	$\pm 0.02\%$ FS typ.
Thermal probe	PT1000 Class A : $\pm 0.1\%$ FS Option : PT100 Class A ($\pm 0.1\%$ FS)

- Environmental Specifications

Compensated temperature range	0 to 60°C <i>Option : any range between -55 and +175°C</i>
Operating temperature range	-40 to +125°C <i>Option : -55 to +175°C (if similar option of compensated temperature range is selected)</i>
Combined thermal zero & sensitivity shift	$\pm 0.02\%$ FS/°C
Vibrations	20-2000Hz, 50g max.
Mechanical shock	100g ½ sinus 1ms
EMC protection	Compliant to EN61000

- Technical Specifications

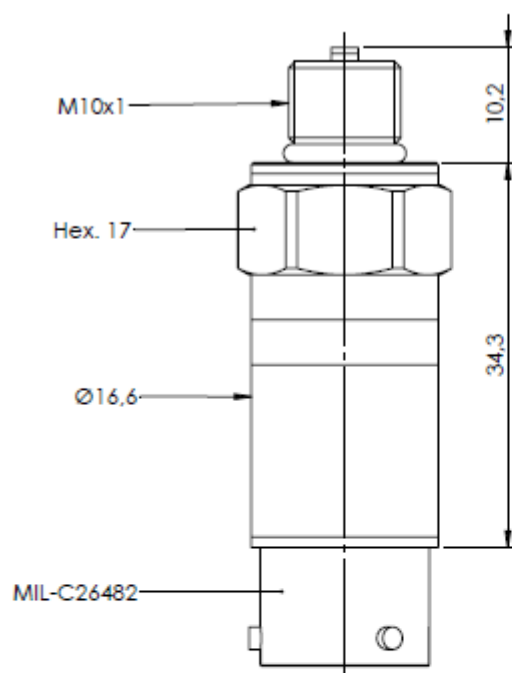
Electrical connection	6-pin MIL C-26482 receptacle
Mechanical connection	M10x1-4h male ; <i>Options : 3/8-24 UNF-3A male, M8x1-6g male (for pressure ≤ 250bar)</i>
Material(s) of wetted parts	Stainless Steel 316L, 17-4PH and 15-5PH
Weight	30g without cable
Enclosure protection	IP65 for absolute and sealed gage versions



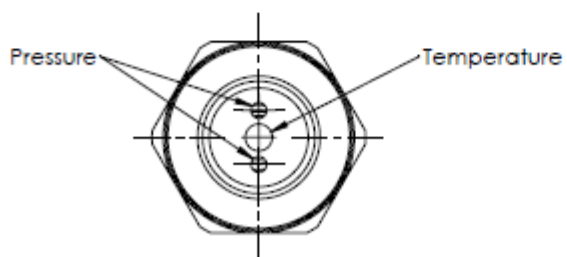
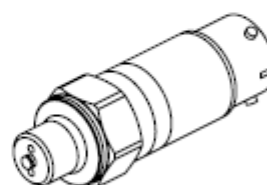
CODIFICATION

Presssure & Temperature Miniature Sensor	PCM16	1	S	20bar	A	29	03	A	1	1	-
Output Signal											
mV/V		1									
Material											
Stainless Steel			S								
Range											
Example : 20bar				20bar							
Type											
Absolute					A						
Gage					G						
Sealed Gage (ranges > 40bar)					SG						
Mechanical connection											
M8x1-6g male (ranges ≤ 250bar)						29					
M10x1-4h male						30					
3/8-24 UNF-3A male						33					
Electrical Connection											
6-pin MIL C-26482 Receptable							03				
Compensated temperature range											
0 to +60°C								A			
-40 to +125°C								D			
0 to +175°C								G			
Nonlinearity and hysteresis combined											
±0.25% FS typ. / ±0.35% FS max.									1		
Combined thermal zero & sensitivity shifts											
±0.02% EM/°C										1	
Options											
PT100 Thermal Probe											T

DIMENSIONS



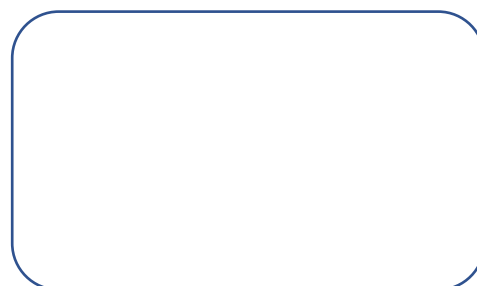
Scale 1:1



WIRING

	6-pin MIL C-26482 Receptacle	
	VOLTAGE & RTD OUTPUTS	PINS
	+ Excitation	PIN A
	+ Signal (Pressure)	PIN B
	- Signal (Pressure)	PIN C
	- Excitation	PIN D
	RTD	PIN E
	RTD	PIN F
	Sensor's Housing	Connector's body

AGENT



L'ESSOR FRANÇAIS ELECTRONIQUE EFE

16-18 rue Porte a Bateaux - 27540 Ivry-la-Bataille - France
Tel: + 33 2 32 22 35 05 - Fax : + 33 2 32 36 93 08

www.efc-sensor.com • infos@efc-sensor.com