PCM163

PCM163 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 PCM163 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 amplified 0.5-4.5Vdc 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.

PCM163 is available with pressure ranges from -1 to 500bar and has high temperature capability, being rated -55/+175°C.
A mV/V (PCM161) and built-in electronics with unregulated power supply from 8 to 16Vdc (PCM167) models are also available in PCM160 series.

FEATURES

- Pressure & Temperature Measurements
- All Stainless Steel Ruggedized Design
- Built-in electronics
- High temperature capability : -55 to +175°C
- Available up to 500bar

APPLICATIONS

X	Aerospace
X	Defence
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; 7000PSI
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	5Vdc filtered and stabilized
Consumption	< 10mA
Insulation	> 1000 MOhms under 50Vdc at ambient temperature
Offset	0,5Vdc
Sensitivity	4Vdc
Rated Output	4.5Vdc
Signal convention	For bidirectional ranges (e.g. ±1bar), the offset corresponds to the sensor signal for the minimum of the range (-1bar) and the sensitivity to the sensor signal for the full range (2 bar).
Zero and sensitivity settings tolerances	±50mV

Accuracy

Nonlinearity and hysteresis combined for Pressure	±0.25% FS Option : ±0.1% FS
Non repeatability for Pressure	±0.02% FS typ.
Thermal probe	PT1000 Class A : ±0.1% FS Option : PT100 Class A (±0.1% FS)

Environmental Specifications

Compensated temperature range	0 to 60°C *Option : any range between -55 and +175°C*
Operating temperature range	-40 to +125°C *Option : -55 to +175°C*
Combined thermal zero & sensitivity shift	±0.02%FS/°C
Vibrations	20-2000Hz, 50g max.
Mechanical shock	100g ½ sinus 1ms
EMC protection	Compliant to EN61000

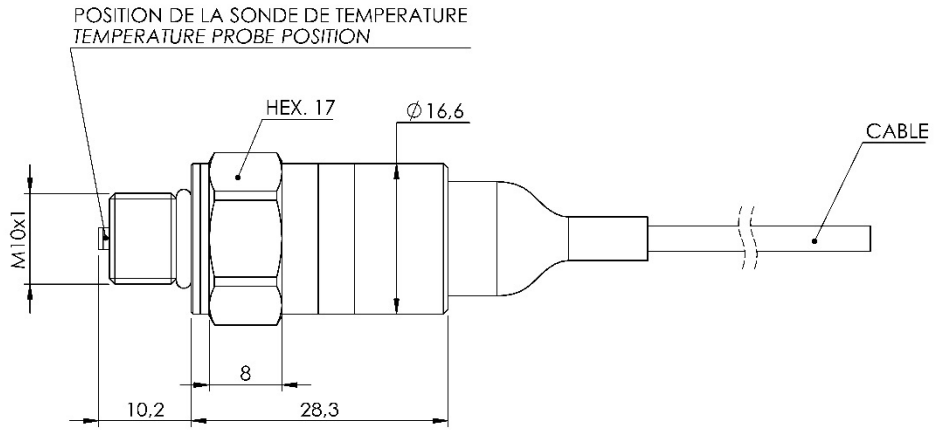
Technical Specifications

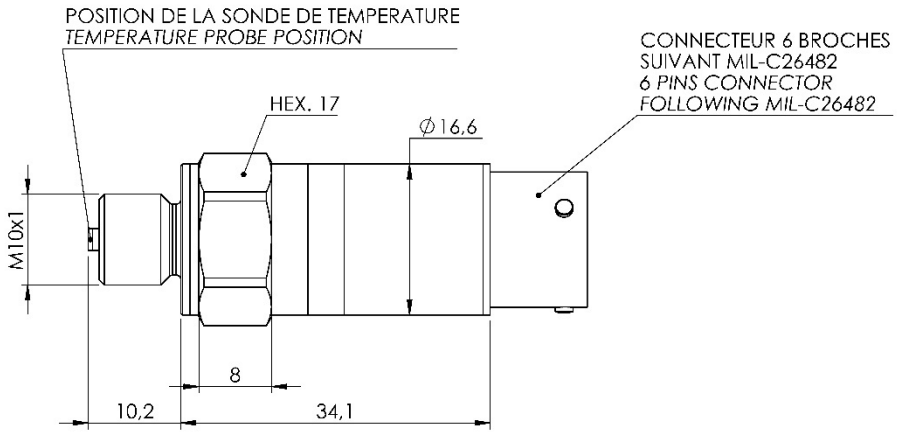
Electrical connection	AWG26, Teflon Jacketed Shielded Cable Ø3,4mm, 5 wires with additional Viton sleeve Option : Hermetic MIL-C-26482 - 6 pins Receptacle
Mechanical connection	M10x1-4h male ; *Options : 3/8-24 UNF-3A male, M8x1-6g male (for pressure ≤ 250bar)*
Material(s) of wetted parts	Stainless Steel 316L, 17-4PH and 15-5PH
Weight	30g without cable
Enclosure protection	IP65 for absolute and sealed gage versions

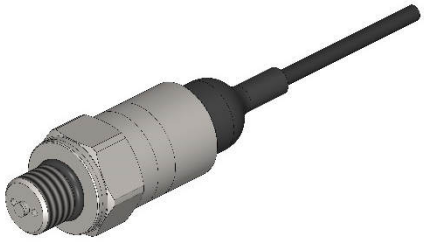
CODIFICATION

Presssure & Temperature Miniature Sensor	PCM16	3	S	20bar	A	29	09S/1m	A	1	1	-
Output Signal											
0.5-4.5V ratiometric with 5V power supply		3									
Material											
Stainless Steel			S								
Range											
Example : 20bar				20bar							
Type											
Absolute Gage Sealed Gage (ranges > 40bar)					A G SG						
Mechanical connection											
M8x1-6g male (ranges ≤ 250bar) M10x1-4h male 3/8-24 UNF-3A male						29 30 33					
Electrical Connection											
AWG26, Teflon Jacketed Shielded Cable, 5 wires with additional Viton Sleeve Lengths : 1,2 or 3 meters							09S/1m				
Compensated temperature range											
0 to +60°C -40 to +125°C 0 to +175°C								A D G			
Nonlinearity and hysteresis combined											
±0.25% FS ±0.1% FS									1 2		
Combined thermal zero & sensitivity shifts											
±0.02% EM/°C										1	
Options											
PT100 Thermal Probe											T

DIMENSIONS







Dimensions : mm

WIRING

TEFLON CABLE- 5 CONDUCTORS	
VOLTAGE & RTD OUTPUTS	CONDUCTOR
+ Excitation	Red
+ Signal (Pressure)	Green
0 Volt	Black
RTD	White
RTD	Blue
Sensor's Housing	Shield

HERMETIC MIL-C-26482 - 6 PINS RECEPTACLE	
VOLTAGE & RTD OUTPUTS	PIN
+ Excitation	PIN A
+ Signal (Pressure)	PIN B
0 Volt	PINS C & D
RTD	PIN E
RTD	PIN F
Sensor's Housing	Connector's housing

AGENT