

PNA161



PNA161 has been designed to operate in applications involving high gamma radiations. Manufactured with the ruggedized EFE proprietary sensing technology, it has been tested with gamma doses above 1000kGy.

Its Wheatstone bridge which is sputtered on a metal diaphragm delivers an unamplified output which can be conditioned by standard amplifiers. We can set up PNA161 with our AMP320, a signal conditioning device, fully analogue and without any software or firmware, to deliver a 0-10V or 4-20mA output. We can also supply the adapted cable assembly adapted to environments with radiations.

Being all stainless steel, PNA161 is compatible with most of the fluids. Its small package and low mass make it very adapted to application where space is at a premium and generate less waste to be processed.

Its manufacturing process, including traceable controls and special burn-in, gives the best insurance of high performance and stability in the most challenging applications.

FEATURES

- Qualified in High Gamma Radiations
- Tested with Gamma Dose > 1000 kGy
- All Stainless Steel Design
- Miniature Pressure Sensor
- Operating from -40 to +125°C
- Available with full scales from 3bar to 250bar

APPLICATIONS

	Aerospace
X	Energy / Nuclear
	Embedded Applications
	Test Benches
	Others



TECHNICAL SPECIFICATIONS

- Pressure Specifications

Pressure ranges (FS)	-1/+3bar; -1/+4bar; 3bar; 5bar; 10bar; 20bar; 40bar; 100bar; 250bar -14.5/+40PSI ; -14.5/+60PSI; 50PSI; 70PSI; 150PSI; 300PSI; 500PSI; 1500PSI; 3500PSI;
Type	Absolute ; Gage
Type (only for ranges > 40 bar)	Sealed Gage
Safe overload	150% FS
Burst pressure	300% FS or 1000bar whichever is less (380bar for 1/4 VCR option)

- Electrical Specifications

Power Supply	5 to 15Vdc, stabilized and filtered
Consumption	< 3mA typ.
Insulation	> 1000 MOhms under 50Vdc at ambient temperature
Input / Output Impedance	3 to 6 kOhms
Offset	±3% FS
Sensitivity	2 to 5mV/V
Signal's convention	For compound ranges (FS = -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).
Signal Bandwidth	DC to 1000Hz @-3dB



- Accuracy

Nonlinearity and hysteresis combined	$\pm 0.25\%$ FS typ. / $\pm 0.35\%$ FS max.
Non repeatability	$\pm 0.02\%$ FS typ.

- Environmental Specifications

Compensated temperature range	0 to +60°C
Operating temperature range	-40 to +125°C
Combined thermal zero & sensitivity shift	$\pm 0.02\%$ FS/°C Option: $\pm 0.01\%$ FS/°C
Electrical protection	Protected against polarity inversion
EMC protection	Compliant to EN61000
Gamma Radiations	Tested in Gamma Radiations (Cobalt 60 source) with following conditions: - Total dose up to 1122 kGy - Flow rate up to 21 kGy/h - Flow rate variations up to 9.8 Gy/s ²

- Technical Specifications

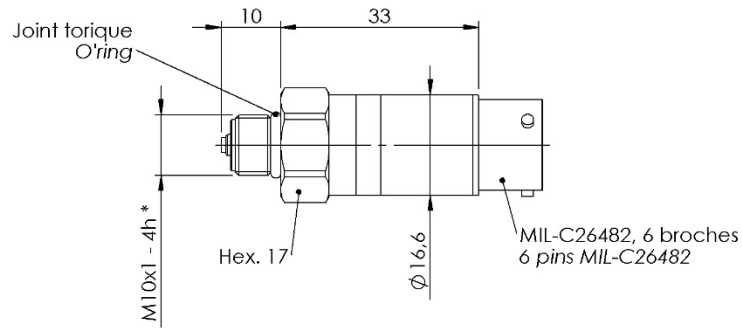
Electrical connection	Hermetic MIL C-26482 - 6 pins Receptacle, EN3646-Y1-10-06-MN
Mechanical connection	M10x1-4h male ; Options : 3/8-24 UNF-3A male, 1/4 VCR male (short version)
Sealing	EPDM O-ring 7.65 x 1.63 for M10x1 male and 3/8-24 UNF male
Material(s) of wetted parts	Stainless Steel : 316L, 17-4PH and 15-5PH
Weight	< 50g
Enclosure protection	IP65 for absolute and sealed gage versions
Cleaning	Oxygen cleaning service



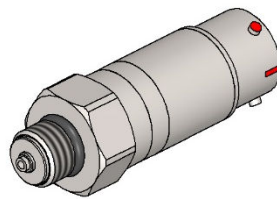
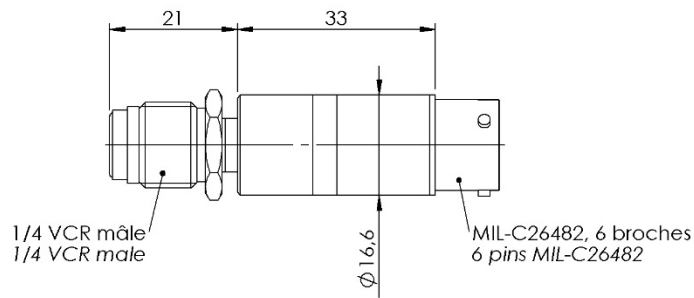
CODIFICATION

High Radiation Resistant Miniature Pressure Sensor	PNA16	1	S	20bar	A	02	03	A	1	1	-
Output Signal											
2 to 5mV/V		1									
Material											
Stainless Steel			S								
Range											
Example : 20bar				20bar							
Type											
Absolute					A						
Gage					G						
Sealed Gage					SG						
Mechanical connection											
M10x1-4h male						02					
3/8-24 UNF-3A male						11					
1/4 VCR male (short version)						22					
Electrical Connection											
Hermetic MIL C-26482 - 6 pins Receptacle							03				
Compensated temperature range											
0 to +60°C								A			
Nonlinearity and hysteresis combined											
±0.25% FS typ. / ±0.35%FS max.									1		
Combined thermal zero & sensitivity shifts											
±0.02% FS/°C										1	
±0.01%FS/°C										2	
Options											
Special marking											G

DIMENSIONS




* Autre filetage disponible :
Other thread available :
3/8-24 UNF-3A



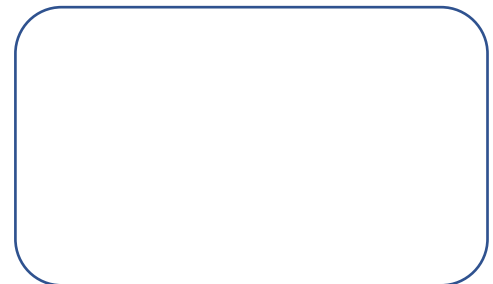
ECHELLE 1 : 1
SCALE 1 : 1

Dimensions : mm

WIRING

	MIL C-26482 - 6 PINS	
	mV/V OUTPUT	PIN
	+ Excitation	PIN A
	- Excitation	PIN D
	+ Signal	PIN B
	- Signal	PIN C
	Sensor's Housing	PINS E & F

AGENT



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