

PGA161



PGA161 has been designed for use in aerospace applications, to operate in the harshest environments, including wide operating temperature, mechanical shocks and vibrations. Being miniature, it is well adapted to embedded measurements, on aircrafts, launchers, satellites or missiles.

With pressure ranges available from -1 up to 1000bar, absolute, gage or sealed gage, its all stainless steel construction makes it usable with most fluids used in aerospace, even corrosive ones like Skydrol. PGA161 is manufactured with the ruggedized EFE sensing technology. Its manufacturing process, including traceable controls and special burn-in, gives the best insurance of high performance and stability in the most challenging applications.

Its small package and low mass make it very adapted to applications where space is at a premium.

PGA161 does not include any electronics which makes it very adapted to long term programs. It delivers an unamplified output (mV/V) with a stabilized power supply that can range from 5 to 15Vdc. Amplified outputs are also available in the PGA160 series with PGA167 (0.5-4.5V) and PGA165 (4-20mA).

FEATURES

- All Stainless Steel Design
- Miniature
- Operating from -55 to +150°C
- Ruggedized Design
- Compatible with Harsh Environments
- High pressure capability
- mV/V unamplified output

APPLICATIONS

| | |
|---|--------------|
| X | Aerospace |
| X | Defence |
| X | Flight tests |
| X | Programs |
| | Others |



TECHNICAL SPECIFICATIONS

- Pressure Specifications

| | |
|----------------------------|--|
| Pressure ranges (FS) | -1/+2bar; -1/+4bar; -1/+5bar 3bar; 5bar; 10bar; 20bar; 40bar; 100bar; 250bar; 400bar; 600bar; 800bar -14.5/+30PSI ; -14.5/+60PSI;-14.5/+70PSI; 40PSI; 70PSI; 150PSI; 300PSI; 500PSI; 1500PSI; 3000PSI; 5000PSI; 8000PSI; 10000 PSI |
| Type | Absolute; Gage |
| Type (for ranges > 40 bar) | Sealed Gage |
| Overload | 300% up to 1000b |
| Safe overload | 150% FS or 1000bar whichever is less |

- Electrical Specifications

| | |
|---------------------|--|
| Power Supply | 5 to 15Vdc, stabilized and filtered |
| Consumption | < 3mA typ. |
| Insulation | > 1000 MOhms under 50Vdc at ambient temperature |
| 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 for positive pressure ranges $\pm 0.25\%$ FS typ./ $\pm 0.35\%$ FS max. for compound pressure ranges |
| Non repeatability | $\pm 0.02\%$ FS typ. |

- Environmental Specifications

| | |
|--|--|
| Compensated temperature range | -55 to +125°C Option : any range between -55 and +150°C |
| Operating temperature range | -55 to +150°C |
| Combined thermal zero & sensitivity shifts | $\pm 0.02\%$ FS/°C |
| Constant acceleration in linear vibrations | 20-2000Hz, 50g max. |
| Mechanical shock | 100g ½ sinus 1ms |
| Electrical protection | Protected against polarity inversion |
| EMC protection | Compliant to EN61000 |

- Technical Specifications

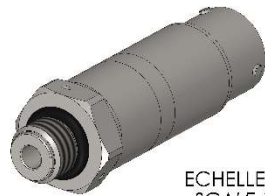
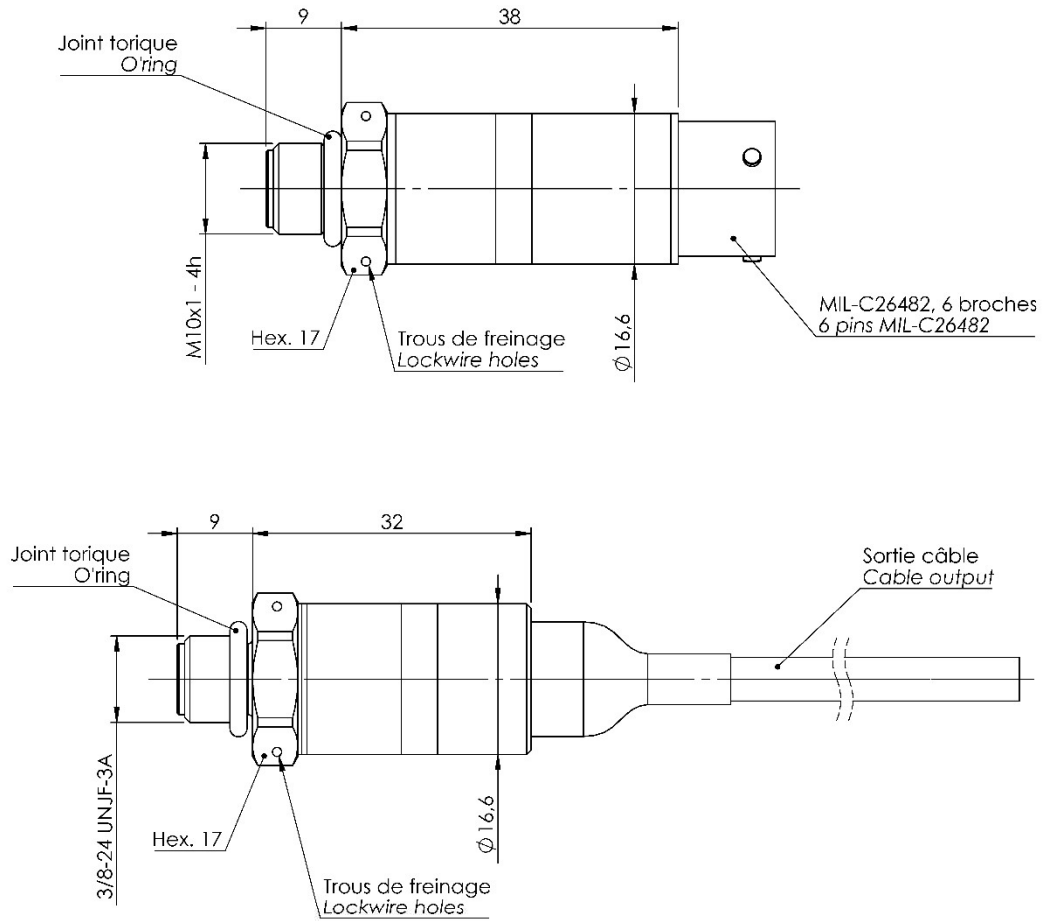
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|-----------------------------|--|
| Electrical connection | AWG26, Viton Jacketed Shielded Cable Ø3mm, 4 wires Hermetic MIL-C-26482 - 6 pins Receptacle |
| Mechanical connection | M10x1-4h male ; 3/8-24 UNJF-3A male with lockwire holes |
| Sealing | Fluorosilicone (FVMQ) O-ring delivered with the sensor |
| Material(s) of wetted parts | Stainless Steel : 316L, 17-4PH and 15-5PH |
| Weight | 40g without cable |
| Enclosure protection | IP65 for absolute and sealed gage versions |



CODIFICATION


| | | | | | | | | | | |
|---|-------|---|---|-------|----|-----|-------|---|---|---|
| High Performance Miniature Pressure Sensor | PGA16 | 1 | S | 20bar | A | 02 | 03 | E | 1 | 1 |
| Output Signal | | | | | | | | | | |
| 2 to 5mV/V | | 1 | | | | | | | | |
| Material | | | | | | | | | | |
| Stainless Steel | | | S | | | | | | | |
| Range | | | | | | | | | | |
| Example | | | | 20bar | | | | | | |
| Type | | | | | | | | | | |
| Absolute | | | | | A | | | | | |
| Gage | | | | | G | | | | | |
| Sealed Gage | | | | | SG | | | | | |
| Mechanical connection | | | | | | | | | | |
| M10x1-4h male with lockwire holes | | | | | | 02A | | | | |
| 3/8-24 UNJF-3A male with lockwire holes | | | | | | 12A | | | | |
| Electrical Connection | | | | | | | | | | |
| AWG26, Viton Jacketed Shielded Cable, 4 wires (1m) | | | | | | | 08/1m | | | |
| Hermetic MIL-C-26482 - 6 pins Receptacle | | | | | | | 03 | | | |
| Compensated temperature range | | | | | | | | | | |
| -55 to +125°C | | | | | | | | E | | |
| Nonlinearity and hysteresis combined | | | | | | | | | | |
| ±0.25% FS (positive ranges) or ±0.35%FS (compound ranges) | | | | | | | | | 1 | |
| Combined thermal zero & sensitivity shifts | | | | | | | | | | |
| ±0.02% FS/°C | | | | | | | | | | 1 |


DIMENSIONS



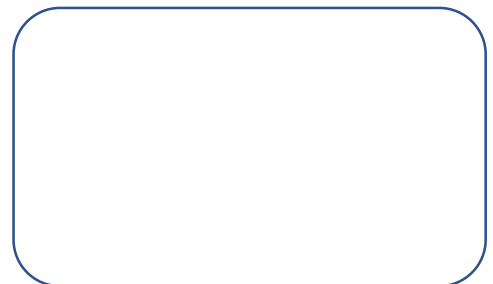
ECHELLE 1:1
SCALE 1:1

Dimensions : mm

|  | VITON CABLE- 4 CONDUCTORS | |
|---|---------------------------|----------------|
| | mV/V OUTPUT | CONDUCTOR |
| | + Excitation | Red |
| | - Excitation | Blue / Black |
| | + Signal | Green / Yellow |
| | - Signal | White |
| | Sensor's Housing | Shield |

|  | 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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