L'Essor Français Electronique

# PGP227

## High Performance Pressure Sensor

**Features**

- Available with Built in Electronic
- Large choice of connectors & threads
- High Performance
- Extreme accuracy : up to 0,05% FS

**Applications**

- Aerospace
- Energy / Nuclear
- Railway
- Navy and shipbuilding applications

The PGP220 series is designed for high accuracy pressure measurements, from -1 up to 600bar and above on request. The sensing element is an advanced piezo-resistive pressure module which together with the latest compensation techniques, provides high performance measurements. It is available with low (millivolt) or high level (Vdc, mA) outputs. In the case of transducers, the built-in electronic ensures a correction of the pressure element while delivering an analogue output. Specified at 1kHz @-3dB (higher on request), signal's bandwidth is not affected by these corrections. Wetted parts being all stainless steel, the sensor is compatible with most media used in Industry, even corrosive ones. High accuracy pressure measurements on test benches is one of the main application for the PGP220 series.

## Technical specifications

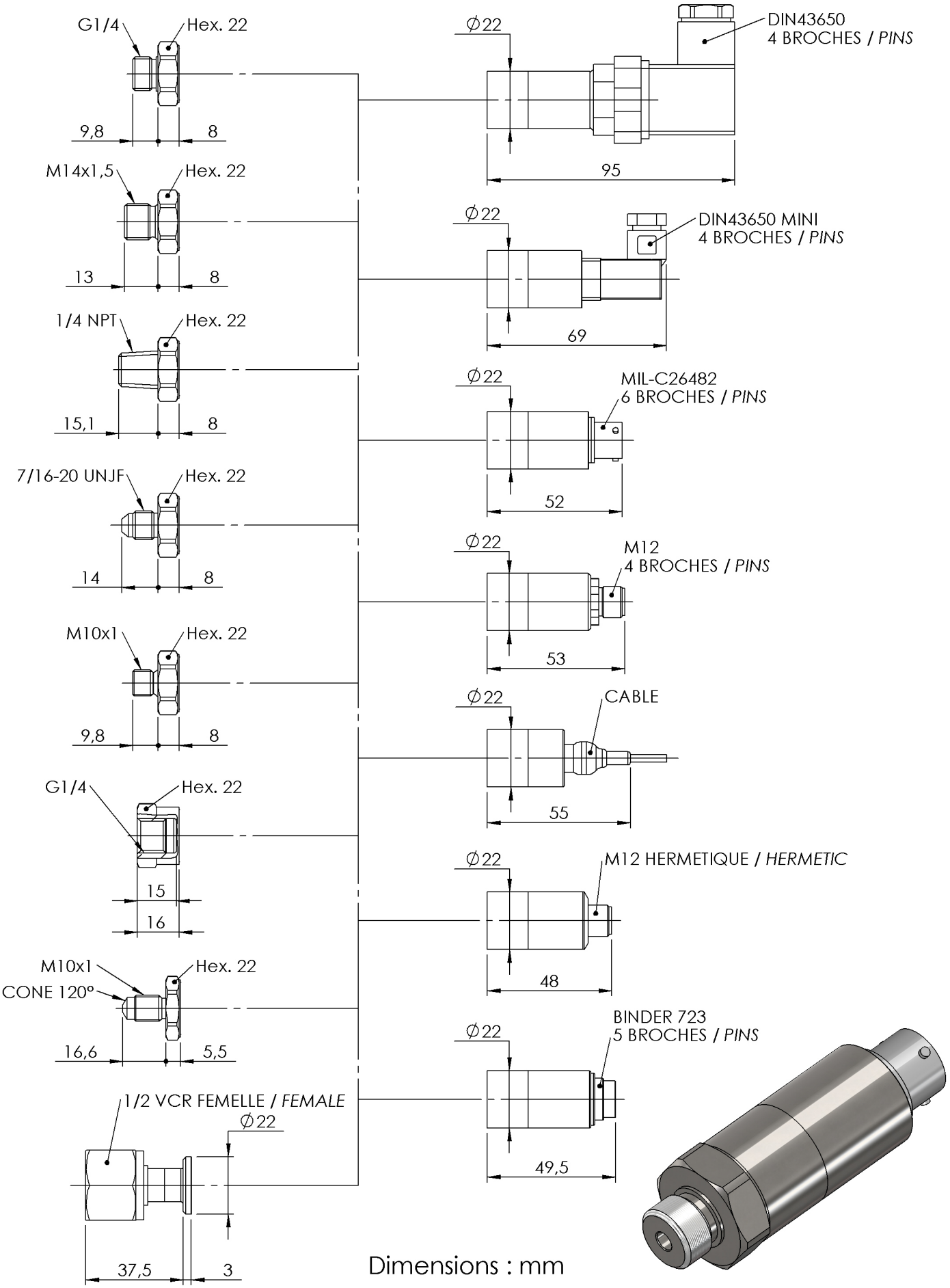
| | |
|---|---|
| Pressure ranges (FS) | ±1bar ; -1/+2bar ; -1/+3bar ; -1/+5bar ;<br>3bar ; 5bar ; 10bar ; 20bar ; 40bar ; 100bar ; 250bar ; 400bar ; 600bar ;<br>±14.5PSI ; -14.5/+30PSI ; -14.5/+40PSI ; -14.5/+70PSI ;<br>8000PSI ; 40PSI ; 70PSI ; 150PSI ; 300PSI ; 500PSI ; 1500PSI ; 3000PSI ; 5000PSI |
| Type | Absolute ; Gage |
| Type (for ranges > 40 bar) | Sealed Gage |
| Safe overload | 150% FS |
| Burst pressure | 300% FS |
| Power supply | 8 to 30Vdc |
| Consumption | < 10mA |
| Insulation | > 1000 MOhms under 50Vdc at ambient temperature |
| Output at -100%FS (only for ± range) | 0.5Vdc |
| Output at 0%FS (except ranges ±) | 0.5Vdc |
| Output at 100%FS | 4.5Vdc |
| Zero and sensitivity settings tolerances | ±50mV |

## Technical Specifications

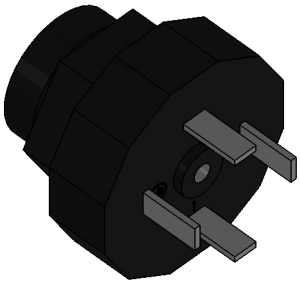
| | |
|---|---|
| Non linearity and hysteresis combined | ±0.1% FS<br>Option : ±0.05% FS |
| Non repeatability | ±0.02% FS typ. |
| Signal bandwidth | 1000Hz @ -3dB |
| Compensated temperature range | 0 to +60°C<br>Option : -25 to +85°C ; -25 to +125°C (Except M12, 723 Receptacles and PVC Cable) |
| Operating temperature range | -25 to +125°C (-25 to +90°C with M12, 723 Receptacles and PVC Cable) |
| Combined thermal zero & sensitivity shifts | ±0.01% FS/°C |
| Constant acceleration in linear vibrations | ± 0.02% FS/g (frequency 20-2000Hz, 50g max.) |
| Mechanical shock | 100g ½ sinus 1ms |
| Electrical protection | Protected against polarity inversion |
| EMC protection | Compliant to EN61000 |
| Electrical connection | DIN 43650 Receptacle - 4 pins<br>Option : Miniature DIN 43650 mPm Receptacle - 4 pins ; Receptacle M12 - 4 pins ; Hermetic MIL-C-26482 - 6 pins Receptacle ; AWG26, Viton Jacketed Shielded Cable Ø3mm, 4 wires ; AWG24 double Shield PVC Cable, 4 wires ; Hermetic M12 4 pins Receptacle ; Binder 723 Receptacle, 5 pins |
| Mechanical connection | 1/4 Gaz A male ; 1/4 NPT male ; M10x1-4h male with 80° internal cone ; M14x1.5-4h male<br>Option : 1/2 Gaz A male (Gauge) ; 1/4 Gaz female ; 7/16-20 UNJF-3A male - MS33656-4 ; M10x1-4h male 120° cone |
| Material(s) of wetted parts | Stainless Steel 316L ; Stainless Steel 17-4PH ; Stainless steel 15-5PH |
| Weight | < 120g without cable |
| Enclosure protection | IP65 for absolute & sealed gage version |

## Codification

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| High Performance Pressure Sensor | PGP22 | 7 | S | 20bar | A | 01 | 01 | A | 2 | 2 |
| Output Signal | | | | | | | | | | |
| 0.5-4.5Vdc unregulated power supply | | 7 | | | | | | | | |
| Material | | | | | | | | | | |
| Stainless Steels | | | S | | | | | | | |
| Range | | | | | | | | | | |
| Example | | | | 20bar | | | | | | |
| Type | | | | | | | | | | |
| Absolute | | | | | A | | | | | |
| Gage | | | | | G | | | | | |
| Sealed Gage | | | | | SG | | | | | |
| Mechanical connection | | | | | | | | | | |
| M14x1.5-4h male | | | | | | 01 | | | | |
| 1/2 Gaz A male (Gauge) | | | | | | 06 | | | | |
| 1/4 Gaz A male | | | | | | 07 | | | | |
| 1/4 Gaz female | | | | | | 08 | | | | |
| 7/16-20 UNJF-3A male - MS33656-4 | | | | | | 10 | | | | |
| 1/4 NPT male | | | | | | 13 | | | | |
| M10x1-4h male with 80° internal cone | | | | | | 19 | | | | |
| M10x1-4h male 120° cone | | | | | | 21 | | | | |
| Electrical connection | | | | | | | | | | |
| DIN 43650 Receptacle - 4 pins | | | | | | | 01 | | | |
| Miniature DIN 43650 mPm Receptacle - 4 pins | | | | | | | 02 | | | |
| Hermetic MIL-C-26482 - 6 pins Receptacle | | | | | | | 03 | | | |
| Receptacle M12 - 4 pins | | | | | | | 07 | | | |
| AWG26, Viton Jacketed Shielded Cable Ø3mm, 4 wires | | | | | | | 08/1m | | | |
| AWG24 double Shield PVC Cable, 4 wires | | | | | | | 10/1m | | | |
| Hermetic M12 4 pins Receptacle | | | | | | | 15 | | | |
| Binder 723 Receptacle, 5 pins | | | | | | | 23 | | | |
| Compensated temperature range | | | | | | | | | | |
| 0 to +60°C | | | | | | | | A | | |
| -25 to +85°C | | | | | | | | B | | |
| -25 to +125°C (Except M12, 723 Receptacles and PVC Cable) | | | | | | | | C | | |
| Non linearity and hysteresis combined | | | | | | | | | | |
| ±0.1% FS | | | | | | | | | 2 | |
| ±0.05% FS | | | | | | | | | 4 | |
| Combined thermal zero & sensitivity shifts | | | | | | | | | | |
| ±0.01% FS/°C | | | | | | | | | | 2 |

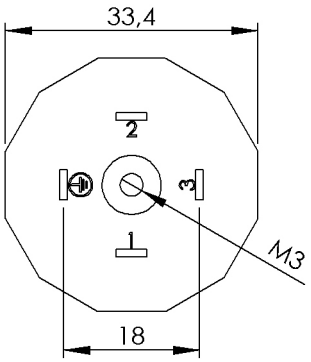



Dimensions : mm



## DIN 43650 - 4 PINS

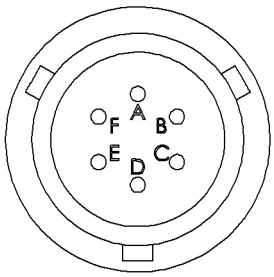
| VOLTAGE OUTPUT | PIN |
|---|---|
| + EXCITATION | PIN 1 |
| + SIGNAL | PIN 2 |
| 0 VOLT | PIN 3 |
| SENSOR HOUSING | PIN T |




Dimensions : mm

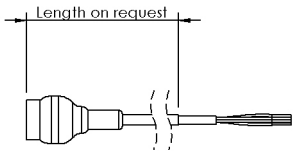
## MIL-C26482 - 6 PINS

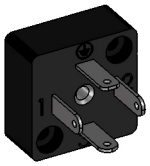
| VOLTAGE OUTPUT | PIN |
|---|---|
| + EXCITATION | PIN A |
| + SIGNAL | PIN B |
| 0 VOLT | PIN C |
| 0 VOLT | PIN D |
| SENSOR HOUSING | PINS E &F |



## #26 AWG, 4 CONDUCTOR SHIELDED VITON CABLE

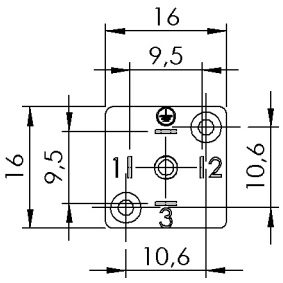
| VOLTAGE OUTPUT | CONDUCTOR |
|---|---|
| + EXCITATION | RED |
| + SIGNAL | GREEN / YELLOW |
| NC | WHITE |
| 0 VOLT | BLUE / BLACK |
| SENSOR HOUSING | SHIELD |



## DIN MINIATURE 43650 - 4 PINS

| VOLTAGE OUTPUT | PIN |
|---|---|
| + EXCITATION | PIN 1 |
| + SIGNAL | PIN 2 |
| 0 VOLT | PIN 3 |
| SENSOR HOUSING | PIN T |

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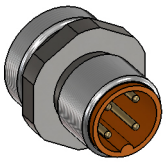
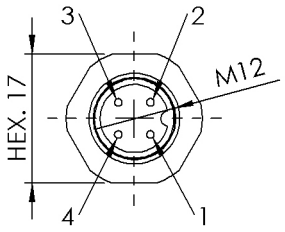


| M12 - 4 PINS | |
|---|---|
| **VOLTAGE OUTPUT** | **PIN** |
| + EXCITATION | PIN 1 |
| + SIGNAL | PIN 4 |
| NC | PIN 2 |
| 0 VOLT | PIN 3 |
| SENSOR HOUSING | CONNECTOR HOUSING |

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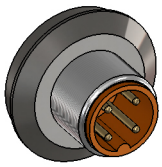
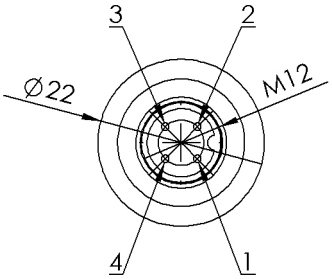


| HERMETIC M12 - 4 PINS | |
|---|---|
| **VOLTAGE OUTPUT** | **PIN** |
| + EXCITATION | PIN 1 |
| + SIGNAL | PIN 4 |
| NC | PIN 2 |
| 0 VOLT | PIN 3 |
| SENSOR HOUSING | CONNECTOR HOUSING |

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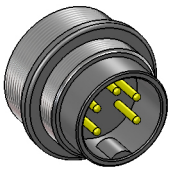
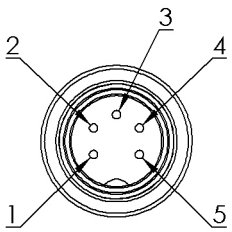
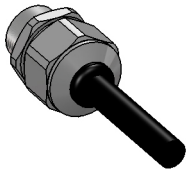
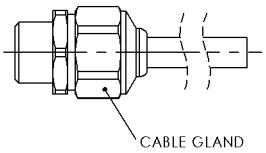


| BINDER 723 - 5 PINS | |
|---|---|
| **VOLTAGE OUTPUT** | **PIN** |
| + EXCITATION | PIN 3 |
| + SIGNAL | PIN 2 |
| NC | PIN 4 |
| 0 VOLT | PIN 1 |
| NC | PIN 5 |
| SENSOR HOUSING | CONNECTOR HOUSING |



| #24 AWG, 4 CONDUCTOR, DOUBLE SHIELD PVC CABLE | |
|---|---|
| **VOLTAGE OUTPUT** | **CONDUCTOR** |
| + EXCITATION | RED |
| + SIGNAL | GREEN |
| 0 VOLT | WHITE |
| NC | BLACK |
| SENSOR HOUSING | SHIELD |



Agent :

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