

## Compact Pressure Transducer for Harsh Environment



### Features

- All Stainless steel
- Robust and reliable sensor
- Low thermal shifts
- Large Bandwidth

### Applications

- Automotive - on vehicle
- Military
- Railway
- Test benches

The PHE220 series is designed to operate in the harshest environments, including wide operating temperature, mechanical shocks and vibrations. It is well adapted to embedded measurements, on vehicles, aircrafts or satellites. With pressure ranges available from -1 up to 600 bar, absolute or gage, its all stainless steel construction makes it usable with most fluids used in industry, even corrosive ones. The PHE220 is manufactured with the ruggedized and premium sensitive elements and components developed by EFE. Its manufacturing process, including traceable controls and special burn-in, gives the best insurance of high performance and stability in the most challenging applications. The choice of mechanical threads and electrical connections makes its installation easier.

## Technical specifications

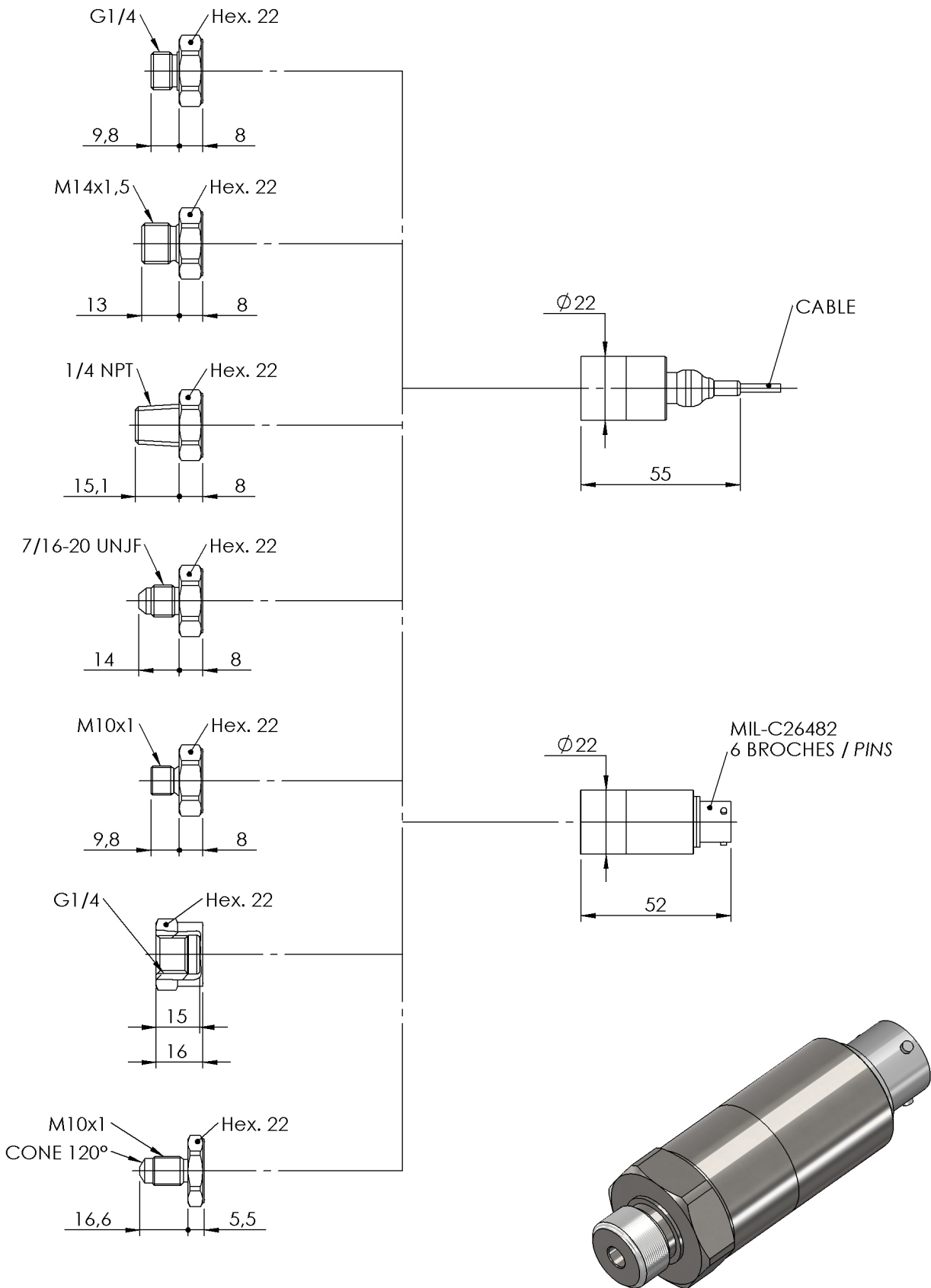
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|--------------------------------------|--|
| Pressure ranges (FS)                 | ±100mbar ; ±250mbar ; ±500mbar ;<br>±1bar ; -1/+2bar ; -1/+5bar ;<br>2bar ; 5bar ; 10bar ; 20bar ; 40bar ; 100bar ; 250bar ; 400bar ; 600bar ;<br>±1.5PSI ; ±3.5PSI ; ±7PSI ; ±14.5PSI ; -14.5/+30PSI ; -14.5/+70PSI ;<br>8000PSI ; 30PSI ; 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) | 1Vdc   |
| Output at 0%FS (except ranges ±)     | 1Vdc   |
| Output at 100%FS                     | 6Vdc   |

## Technical Specifications


|  |  |
|--|--|
| Zero and sensitivity settings tolerances   | ±50mV  |
| Non linearity and hysteresis combined      | ±0.25% FS<br>Option : ±0.1% FS   |
| Non repeatability                          | ±0.02% FS typ.   |
| Signal bandwidth                           | 1000Hz @ -3dB<br>Option : Special Adjustment up to 2000Hz @ -3dB   |
| Compensated temperature range              | -40 to +125°C  |
| Operating temperature range                | -40 to +125°C  |
| Combined thermal zero & sensitivity shifts | ±1.5% FS from -40 to +125°C ; ±3% FS from -40 to +125°C for ranges < 1bar  |
| 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                      | Hermetic MIL-C-26482 - 6 pins Receptacle<br>Option : AWG26, Viton Jacketed Shielded Cable Ø3mm, 4 wires  |
| Mechanical connection                      | 1/4 Gaz A male ; 1/4 NPT male ; M14x1.5-4h male<br>Option : 1/4 Gaz female ; 7/16-20 UNJF-3A male - MS33656-4 ; M10x1-4h male with 80° internal cone ; M10x1-4h male 120° cone |
| Material(s) of wetted parts                | Stainless Steel 316L ; Stainless Steel 17-4PH ; Stainless steel 15-5PH   |
| Weight                                     | < 100g without cable   |
| Enclosure protection                       | IP65 for absolute & sealed gage version  |

## Codification

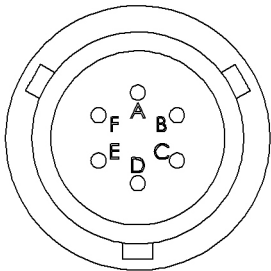
|  |       |   |   |         |    |    |       |   |   |   |   |
|--|-------|---|---|---------|----|----|-------|---|---|---|---|
| Compact Pressure Transducer for Harsh Environment  | PHE22 | 7 | S | 8000PSI | A  | 01 | 03    | D | 1 | 1 | B |
| Output Signal                                      |       |   |   |         |    |    |       |   |   |   |   |
| 0.5-4.5Vdc unregulated power supply                |       | 7 |   |         |    |    |       |   |   |   |   |
| Material   |       |   |   |         |    |    |       |   |   |   |   |
| Stainless Steels                                   |       |   | S |         |    |    |       |   |   |   |   |
| Range  |       |   |   |         |    |    |       |   |   |   |   |
| Example  |       |   |   | 8000PSI |    |    |       |   |   |   |   |
| Type   |       |   |   |         |    |    |       |   |   |   |   |
| Absolute   |       |   |   |         | A  |    |       |   |   |   |   |
| Gage   |       |   |   |         | G  |    |       |   |   |   |   |
| Sealed Gage  |       |   |   |         | SG |    |       |   |   |   |   |
| Mechanical connection                              |       |   |   |         |    |    |       |   |   |   |   |
| M14x1.5-4h male                                    |       |   |   |         |    | 01 |       |   |   |   |   |
| 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                              |       |   |   |         |    |    |       |   |   |   |   |
| Hermetic MIL-C-26482 - 6 pins Receptacle           |       |   |   |         |    |    | 03    |   |   |   |   |
| AWG26, Viton Jacketed Shielded Cable Ø3mm, 4 wires |       |   |   |         |    |    | 08/1m |   |   |   |   |
| Compensated temperature range                      |       |   |   |         |    |    |       |   |   |   |   |
| -40 to +125°C                                      |       |   |   |         |    |    |       | D |   |   |   |
| Non linearity and hysteresis combined              |       |   |   |         |    |    |       |   |   |   |   |
| ±0.25% FS  |       |   |   |         |    |    |       |   |   | 1 |   |
| ±0.1% FS   |       |   |   |         |    |    |       |   |   | 2 |   |
| Combined thermal zero & sensitivity shifts         |       |   |   |         |    |    |       |   |   |   |   |
| ±3% FS from -40 to +125°C for ranges < 1bar        |       |   |   |         |    |    |       |   |   |   | 1 |
| ±1.5% FS from -40 to +125°C                        |       |   |   |         |    |    |       |   |   |   | 2 |
| Options  |       |   |   |         |    |    |       |   |   |   |   |
| Special Adjustment up to 2000Hz @ -3dB             |       |   |   |         |    |    |       |   |   |   | B |




Dimensions : mm

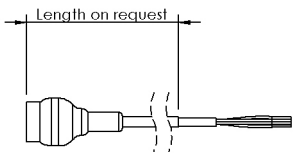


| <b>MIL-C26482 - 6 PINS</b> |            |
|----------------------------|------------|
| <b>VOLTAGE OUTPUT</b>      | <b>PIN</b> |
| + EXCITATION               | PIN A      |
| + SIGNAL                   | PIN B      |
| 0 VOLT                     | PIN C      |
| 0 VOLT                     | PIN D      |
| SENSOR HOUSING             | PINS E & F |





| <b>#26 AWG, 4 CONDUCTOR SHIELDED VITON CABLE</b> |                  |
|--|------------------|
| <b>VOLTAGE OUTPUT</b>                            | <b>CONDUCTOR</b> |
| + EXCITATION                                     | RED              |
| + SIGNAL   | GREEN / YELLOW   |
| NC   | WHITE            |
| 0 VOLT   | BLUE / BLACK     |
| SENSOR HOUSING                                   | SHIELD           |



Agent :



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