

## Compact High Temperature Pressure Sensor



### Features

- ➔ All Stainless steel
- ➔ High temperature pressure sensor
- ➔ Thin film technology
- ➔ Optional remote electronic

### Applications

- ➔ Oil & gas
- ➔ Aerospace
- ➔ Military
- ➔ Test benches

Operating from  $-40$  up to  $+175^{\circ}\text{C}$ , the PHT220 serie is dedicated to high temperature pressure measurements. With all stainless steel wetted parts, it is compatible with most media, including corrosive fluids used in automotive, aerospace and energy industries. Equipped with the premium thin film technology developed by EFE, its performances and stability over wide temperature range are excellent. The PHT220 is available with unamplified output (mV/V), compensated in temperature, up to  $\pm 0.005\% \text{EM}/^{\circ}\text{C}$ , to deliver the best accuracy. Amplified output (Vdc) is also standard, thanks to a high performance and ruggedized electronic module, remote in the cable in a stainless steel package.

## Technical specifications

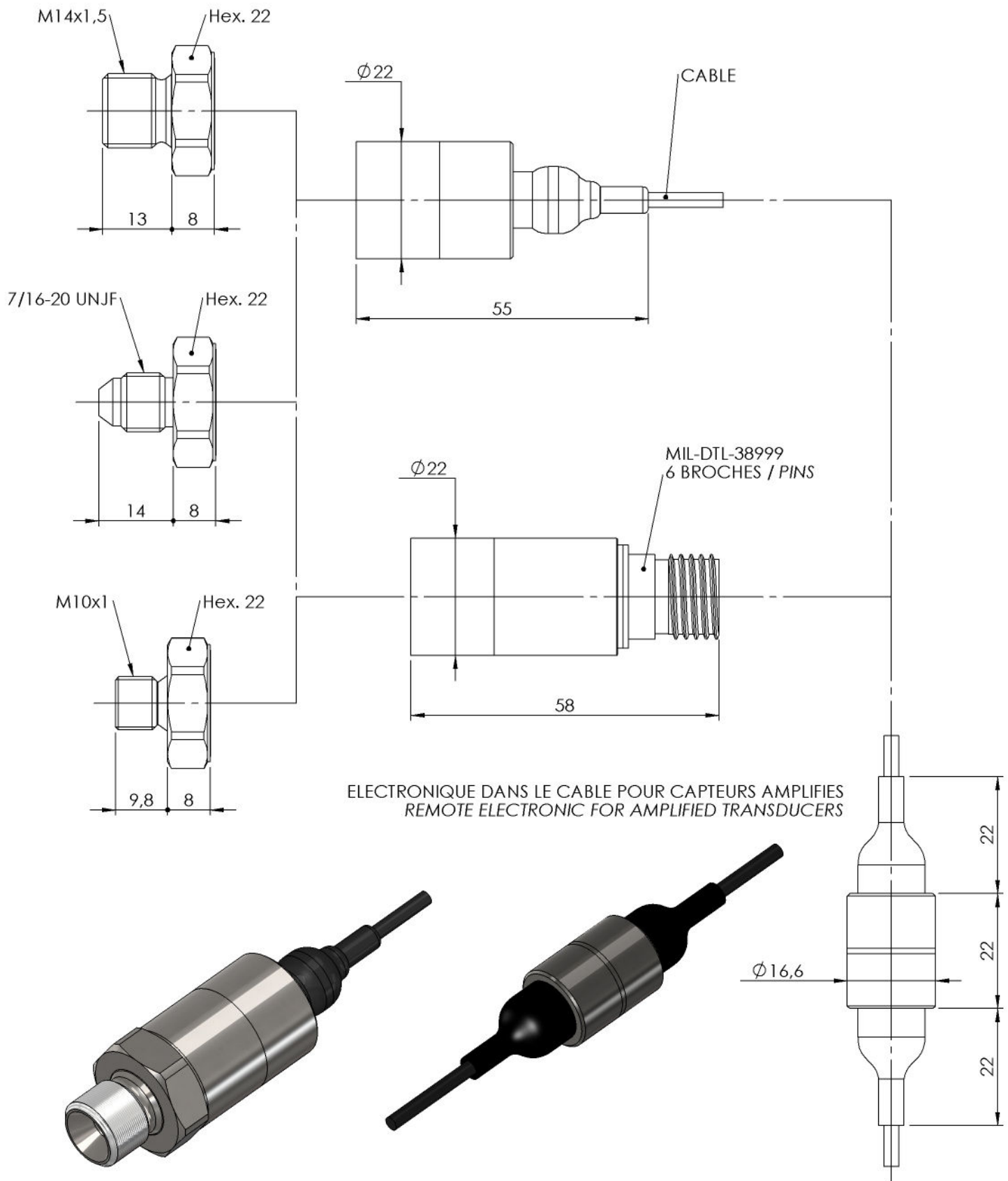
|                                          |                                                                                                                                                                                                                                                   |
|------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Pressure ranges (FS)                     | -1/+2bar ; -1/+3bar ; -1/+5bar ;<br>3bar ; 5bar ; 10bar ; 20bar ; 40bar ; 100bar ; 250bar ; 400bar ; 600bar ;<br>-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 16Vdc                                                                                                                                                                                                                                        |
| Consumption                              | < 10mA                                                                                                                                                                                                                                            |
| Insulation                               | > 1000 MOhms under 50Vdc at ambient temperature                                                                                                                                                                                                   |
| Output at -100%FS (only for $\pm$ range) | 0.5Vdc                                                                                                                                                                                                                                            |
| Output at 0%FS (except ranges $\pm$ )    | 0.5Vdc                                                                                                                                                                                                                                            |
| Output at 100%FS                         | 4.5Vdc                                                                                                                                                                                                                                            |
| Zero and sensitivity settings tolerances | $\pm 50\text{mV}$                                                                                                                                                                                                                                 |

## Technical Specifications

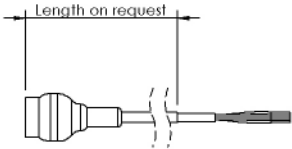
|                                            |                                                                                                     |
|--------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Amplifier type                             | Remote electronic, operating from -40 to +125°C, with 1m of cable at each side (standard)           |
| 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 3000Hz @ -3dB                                    |
| Compensated temperature range              | -30 to +150°C<br>Option : 0 to +175°C                                                               |
| Operating temperature range                | -40 to +150°C (-40 to +175°C if optional compensation up to 175°C)                                  |
| Combined thermal zero & sensitivity shifts | ±0.02% 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 up to 150°C          | AWG26 Shielded Teflon Cable Ø3.4mm ±0.2, 5 wires<br>Option : MIL-DTL-38999 - 6 pins Receptacle      |
| Electrical connection above 150°C          | AWG26, Viton Jacketed Shielded Cable Ø3mm, 4 wires<br>Option : MIL-DTL-38999 - 6 pins Receptacle    |
| Mechanical connection                      | M14x1.5-4h male<br>Option : 7/16-20 UNJF-3A male - MS33656-4 ; M10x1-4h male with 80° internal 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                                                             |

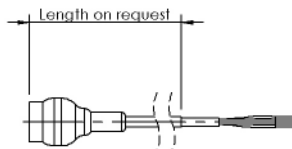
## Codification

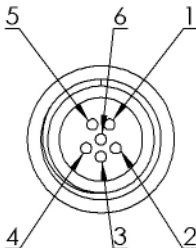
|                                                    |       |   |   |       |    |    |       |   |   |   |   |
|----------------------------------------------------|-------|---|---|-------|----|----|-------|---|---|---|---|
| Compact High Temperature Pressure Sensor           | PHT22 | 7 | S | 10bar | A  | 01 | 08/1m | F | 1 | 1 | B |
| Output Signal                                      |       |   |   |       |    |    |       |   |   |   |   |
| 0.5-4.5Vdc unregulated power supply                |       | 7 |   |       |    |    |       |   |   |   |   |
| Material                                           |       |   |   |       |    |    |       |   |   |   |   |
| Stainless Steels                                   |       |   | S |       |    |    |       |   |   |   |   |
| Range                                              |       |   |   |       |    |    |       |   |   |   |   |
| Example                                            |       |   |   | 10bar |    |    |       |   |   |   |   |
| Type                                               |       |   |   |       |    |    |       |   |   |   |   |
| Absolute                                           |       |   |   |       | A  |    |       |   |   |   |   |
| Gage                                               |       |   |   |       | G  |    |       |   |   |   |   |
| Sealed Gage                                        |       |   |   |       | SG |    |       |   |   |   |   |
| Mechanical connection                              |       |   |   |       |    |    |       |   |   |   |   |
| M14x1.5-4h male                                    |       |   |   |       |    | 01 |       |   |   |   |   |
| 7/16-20 UNJF-3A male - MS33656-4                   |       |   |   |       |    | 10 |       |   |   |   |   |
| M10x1-4h male with 80° internal cone               |       |   |   |       |    | 19 |       |   |   |   |   |
| Electrical connection                              |       |   |   |       |    |    |       |   |   |   |   |
| AWG26, Viton Jacketed Shielded Cable Ø3mm, 4 wires |       |   |   |       |    |    | 08/1m |   |   |   |   |
| AWG26 Shielded Teflon Cable Ø3.4mm ±0.2, 5 wires   |       |   |   |       |    |    | 09/1m |   |   |   |   |
| MIL-DTL-38999 - 6 pins Receptacle                  |       |   |   |       |    |    | 20    |   |   |   |   |
| Compensated temperature range                      |       |   |   |       |    |    |       |   |   |   |   |
| -30 to +150°C                                      |       |   |   |       |    |    |       | F |   |   |   |
| 0 to +175°C                                        |       |   |   |       |    |    |       | G |   |   |   |
| Non linearity and hysteresis combined              |       |   |   |       |    |    |       |   |   |   |   |
| ±0.25% FS                                          |       |   |   |       |    |    |       |   | 1 |   |   |
| ±0.1% FS                                           |       |   |   |       |    |    |       |   | 2 |   |   |
| Combined thermal zero & sensitivity shifts         |       |   |   |       |    |    |       |   |   |   |   |
| ±0.02% FS/°C                                       |       |   |   |       |    |    |       |   |   | 1 |   |
| Options                                            |       |   |   |       |    |    |       |   |   |   |   |
| Special Adjustment up to 3000Hz @ -3dB             |       |   |   |       |    |    |       |   |   |   | B |



Dimensions : mm

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

|  | 5 CONDUCTOR TEFLON CABLE |           |  |
|----------------------------------------------------------------------------------|--------------------------|-----------|-------------------------------------------------------------------------------------|
|                                                                                  | VOLTAGE OUTPUT           | CONDUCTOR |                                                                                     |
|                                                                                  | + EXCITATION             | RED       |                                                                                     |
|                                                                                  | + SIGNAL                 | GREEN     |                                                                                     |
|                                                                                  | 0 VOLT                   | BLACK     |                                                                                     |
|                                                                                  | NC                       | WHITE     |                                                                                     |
|                                                                                  | NC                       | BLUE      |                                                                                     |
|                                                                                  | SENSOR HOUSING           | SHIELD    |                                                                                     |

|  | MIL-DTL-38999 - 6 PINS |                   |  |
|-------------------------------------------------------------------------------------|------------------------|-------------------|---------------------------------------------------------------------------------------|
|                                                                                     | VOLTAGE OUTPUT         | PIN               |                                                                                       |
|                                                                                     | + EXCITATION           | PIN 1             |                                                                                       |
|                                                                                     | + SIGNAL               | PIN 3             |                                                                                       |
|                                                                                     | - SIGNAL (0 Vdc)       | PIN 4             |                                                                                       |
|                                                                                     | - EXCITATION (0 Vdc)   | PIN 2             |                                                                                       |
|                                                                                     | NC                     | PIN 5             |                                                                                       |
|                                                                                     | NC                     | PIN 6             |                                                                                       |
|                                                                                     | SENSOR HOUSING         | CONNECTOR HOUSING |                                                                                       |

Agent :



E.F.E.

L'ESSOR FRANCAIS ELECTRONIQUE

16 Rue Porte a Bateaux - 27540 Ivry-la-Bataille - FRANCE

Tel : 33 (0)2 32 22 35 05 - Fax : 33 (0)2 32 36 93 08

[www.efe-sensor.com](http://www.efe-sensor.com) - [infos@efe-sensor.com](mailto:infos@efe-sensor.com)