



## Hipres HP1000 Series

High Pressure Transmitter



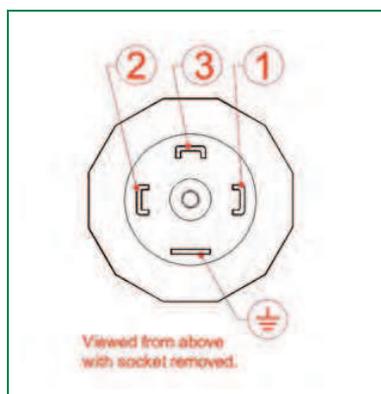
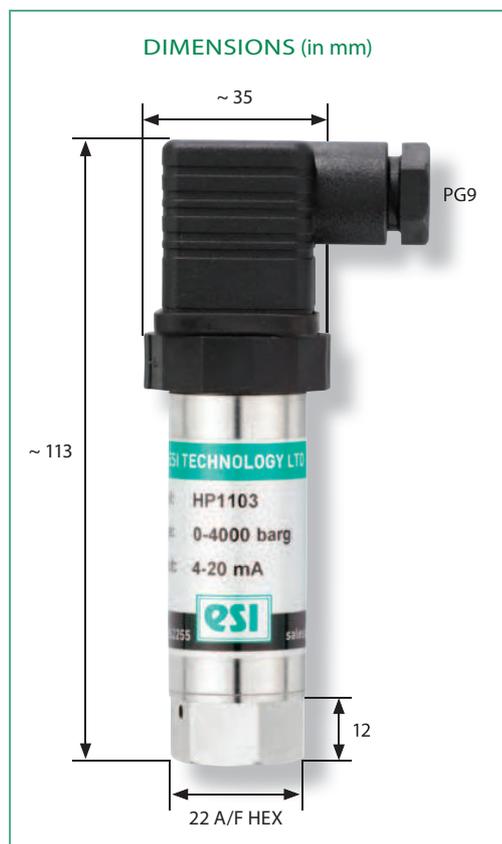
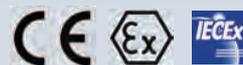
- Pressure ranges to 4,000bar
- High pressure integrity for safe use due to unique sensor design.
- Pressure diaphragm and process connection is machined from one piece of Titanium with no seals or welds.
- High resistance to overpressure and pressure transients
- Silicon-on-Sapphire (SoS) sensor technology for outstanding performance and reliability
- ATEX/IECEx option available (includes M1 for mining applications) for 4-20mA versions

## DESCRIPTION

The HP1000 series extends the Silicon-on-Sapphire pressure sensor technology into very high pressure applications, with operating ranges up to 4,000bar and still maintaining an extremely high performance level.

The unique Silicon-on-Sapphire sensor provides outstanding performance and gives excellent stability over a wide temperature range. The wetted parts and diaphragm are machined from a single piece of titanium alloy which means no weld joints and therefore high pressure integrity and overload capacity. Available in pressure ranges from 0-600bar to 0-4,000bar and with electrical outputs of 0-10mV/V, 0-5V, 0-10V and 4-20mA. Applications include aerospace, laboratory and test, oil and gas monitoring equipment and general industrial.

An optional ATEX and IECEx approved version of this product is available for explosion protection for flammable gases (zone 0), dusts (zone 20) and mining areas (group I M1).



### ELECTRICAL CONNECTION (mA)

| Pin. No. | 2 wire         |
|----------|----------------|
| 1        | + supply       |
| 2        | 4-20 mA signal |
| 3        | N/C            |
| ⊥        | to case        |

### ELECTRICAL CONNECTION (V)

| Pin. No. | 4 wire   | 3 wire   |
|----------|----------|----------|
| 1        | - supply | common   |
| 2        | + supply | + supply |
| 3        | + output | + output |
| ⊥        | - output | to case  |



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## TECHNICAL DATA

| Type:   | HP1000/HP1100  | HP1xx1              | HP1xx2               | HP1003/HP1103    |
|---|--|---------------------|----------------------|------------------|
| Output signal:                                    | 10 mV/V (4 wire)   | 0-5 V (3 or 4 wire) | 0-10 V (3 or 4 wire) | 4-20 mA (2 wire) |
| Supply Voltage:                                   | 10 VDC (5-15V)   | 13-30 VDC           | 13-30 VDC            | 10-36 VDC        |
| Pressure Reference:                               | Gauge  |                     |                      |                  |
| Protection of Supply Voltage:                     | Protected against supply voltage reversal up to 50 V (amplified versions)  |                     |                      |                  |
| Standard Pressure Ranges:                         | HP10xx: 0-600 bar; 0-700 bar; 0-1,000 bar; 0-1,500 bar<br>HP11xx: 0-2,000 bar; 0-2,500 bar; 0-3,000 bar; 0-4,000 bar<br>(other ranges available)   |                     |                      |                  |
| Overpressure Safety:                              | 1.5x for ranges 0-600 bar to 0-3,000 bar; 1.25x for 4,000 bar  |                     |                      |                  |
| Load Driving Capability:                          | 4-20 mA: $R_L < [U_B - 10 V] / 20 \text{ mA}$<br>(e.g. with supply voltage ( $U_B$ ) of 36 V, max. load ( $R_L$ ) is 1300 $\Omega$ )<br>10 mV/V: n/a<br>0-5 V: max. load $R_L > 5 \text{ K}\Omega$<br>0-10 V: max. load $R_L > 10 \text{ K}\Omega$ |                     |                      |                  |
| Accuracy NLHR:                                    | $\pm 0.25\%$ FS typical max. BFSL  |                     |                      |                  |
| Zero Offset and Span Tolerance:                   | $\pm 0.5\%$ FS at room temperature (HP1000/HP1100: $\pm 1 \text{ mV}$ )<br>$\pm 5\%$ FS (approx.) adjustment with easy access trimming potentiometers on amplified versions only   |                     |                      |                  |
| Operating Ambient Temperature:                    | -40°C to +85°C   |                     |                      |                  |
| Operating Media Temperature:                      | -50°C to +125°C  |                     |                      |                  |
| Storage Temperature:                              | +5°C to +40°C (recommended best practice)  |                     |                      |                  |
| Temperature Effects:                              | $\pm 1.5\%$ FS total error band for -20°C to +70°C. Typical thermal zero and span coefficients $\pm 0.015\%$ FS/°C   |                     |                      |                  |
| ATEX/IECEx Approval Option (4-20mA version only): | Ex II 1 G Ex ia IIC T4 Ga (zone 0)<br>Ex II 1 D Ex ia IIC T135°C Da (zone 20)<br>Ex I M 1 Ex ia I Ma (group 1 M1)<br>Emissions: EN61000-6-4<br>Immunity: EN61000-6-2<br>Certification: CE Marked   |                     |                      |                  |
| Insulation Resistance:                            | > 100 M $\Omega$ @ 50 VDC  |                     |                      |                  |
| Wetted Parts:                                     | Titanium alloy machined from a single piece  |                     |                      |                  |
| Pressure Media:                                   | All fluids compatible with Titanium alloy  |                     |                      |                  |
| Pressure Connection:                              | F250-C Autoclave fitting; thread type 9/16-18UNF-2B female   |                     |                      |                  |
| Electrical Connection:                            | Mating socket EN175301-803 Form A (ex DIN43650), a screw terminal connector rated IP65 with PG9 cable entry (other options available)  |                     |                      |                  |

DISCLAIMER: ESI Technology Ltd operates a policy of continuous product development. We reserve the right to change specification without prior notice. All products manufactured by ESI Technology Ltd are calibrated using precision calibration equipment with traceability to international standards.

### ORDER MATRIX

| Output  |                           | Wires | Type   | Electrical Connector | Pressure Range | Process Connection |   |  |  |
|---|---------------------------|-------|--------|----------------------|----------------|--------------------|---|--|--|
| 10 mV/V   | Model to 1,500 bar        | 4     | HP1000 |                      |                |                    |   |  |  |
|   | Model 2,000 bar and above | 4     | HP1100 |                      |                |                    |   |  |  |
| 0-5 V   | Model to 1,500 bar        | 4     | HP1001 |                      |                |                    |   |  |  |
|   | Model 2,000 bar and above | 4     | HP1101 |                      |                |                    |   |  |  |
|   | Model to 1,500 bar        | 3     | HP1011 |                      |                |                    |   |  |  |
|   | Model 2,000 bar and above | 3     | HP1111 |                      |                |                    |   |  |  |
| 0-10 V  | Model to 1,500 bar        | 4     | HP1002 |                      |                |                    |   |  |  |
|   | Model 2,000 bar and above | 4     | HP1102 |                      |                |                    |   |  |  |
|   | Model to 1,500 bar        | 3     | HP1012 |                      |                |                    |   |  |  |
|   | Model 2,000 bar and above | 3     | HP1112 |                      |                |                    |   |  |  |
| 4-20 mA   | Model to 1,500 bar        | 2     | HP1003 |                      |                |                    |   |  |  |
|   | Model 2,000 bar and above | 2     | HP1103 |                      |                |                    |   |  |  |
| <b>Electrical Connection / Option</b>                   |                           |       |        |                      |                |                    |   |  |  |
| DIN EN175301 plug and socket                            |                           |       |        |                      |                |                    | - |  |  |
| Cable outlet 1m screened                                |                           |       |        |                      |                |                    | A |  |  |
| M12 connector   |                           |       |        |                      |                |                    | B |  |  |
| Cable outlet 1m screened IP67 protection                |                           |       |        | C                    |                |                    |   |  |  |
| ATEX/ IECEx certified with DIN EN175301 plug and socket |                           |       |        | EX                   |                |                    |   |  |  |
| <b>Pressure Range in bar</b>                            |                           |       |        |                      |                |                    |   |  |  |
| 0-600 bar   |                           |       |        |                      | 600            |                    |   |  |  |
| 0-1,000 bar   |                           |       |        |                      | 1000           |                    |   |  |  |
| 0-1,500 bar   |                           |       |        |                      | 1500           |                    |   |  |  |
| 0-2,000 bar   |                           |       |        |                      | 2000           |                    |   |  |  |
| 0-3,000 bar   |                           |       |        |                      | 3000           |                    |   |  |  |
| 0-4,000 bar   |                           |       |        |                      | 4000           |                    |   |  |  |
| <b>Process Connection</b>                               |                           |       |        |                      |                |                    |   |  |  |
| Autoclave F-250-C female                                |                           |       |        |                      |                | DE                 |   |  |  |

#### Order Number Example

HP1000A1000DE

For options not listed please contact sales team.



HP1103