# HISPEC© HI2000

## High Precision Pressure Transmitter

- Silicon-on-Sapphire sensor technology for outstanding performance
- Pressure ranges to 1500 bar
- High accuracy performance
- Titanium wetted parts for excellent chemical compatibility
- High thermal stability over wide operating temperature
- ATEX/IECEx option available (includes M1 for mining applications)


RoHS 2011/65/EU

The advanced sensor design consists of a piezoresistive silicon strain gauge circuit, which is epitaxially grown onto the surface of a sapphire diaphragm to form a single crystalline structure. The sapphire sensor element is then molecularly bonded to a titanium alloy sub-diaphragm.

This enables the sensor to endure higher over-pressures and provides superb corrosion resistance. The sensor exhibits virtually no hysteresis and excellent long-term stability over wide temperature ranges.

# Hispec® HI2000 High Precision Pressure Transmitter

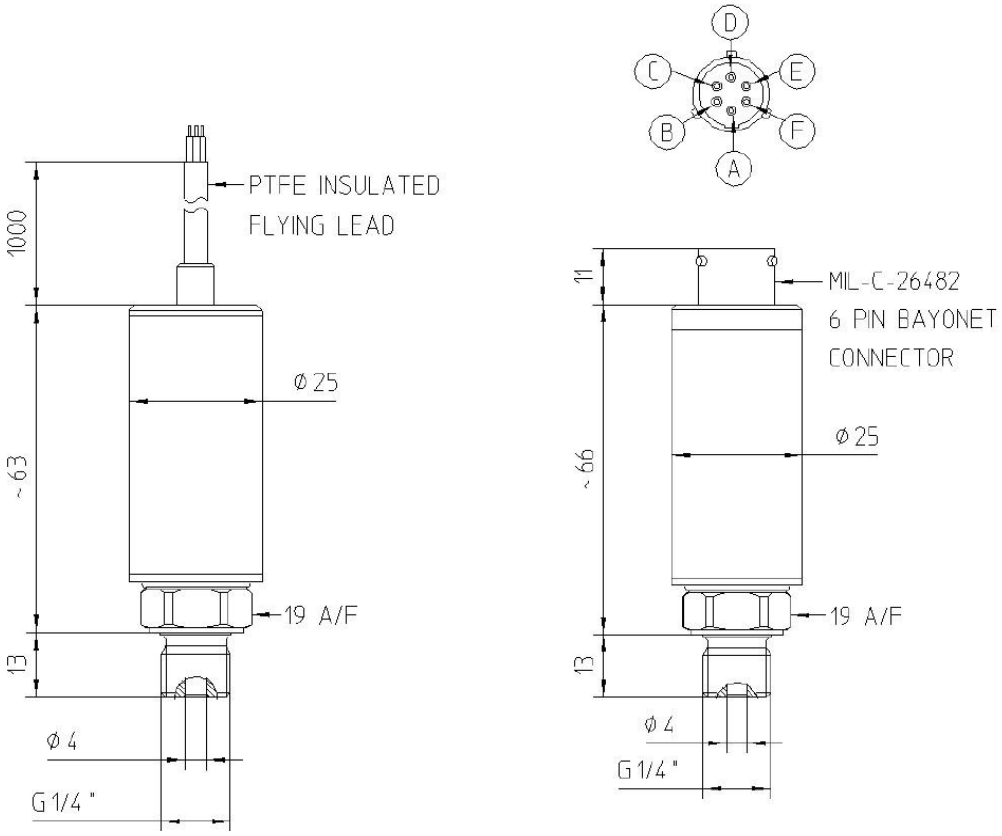
## Specifications

**The HISPEC HI2000** series of high precision pressure transmitters with state-of-the-art SOS sensor technology offers an operating range up to 1500 bar at an accuracy rate of < ±0.1% of span - a level that was previously unobtainable or prohibitively expensive. ATEX and IECEx approval and protection by intrinsic safety is optional and intended for installation and operation in zone 0, gas group IIC, temperature class T4 and zone 20 dust and M1 mining.

**Typical applications include:**

- Laboratory and Test
- Aerospace
- Oil and Gas monitoring (downhole)

## Dimensions (in mm)




## Electrical Connections

| Cable Outlet | |
|---|---|
| **Wire Colour** | **Designation** |
| Red | +supply |
| Green | +output |
| Yellow | -output |
| Blue | -supply |

| MIL-C-26482 Outlet | |
|---|---|
| **Pin** | **Designation** |
| A | +supply |
| B | +output |
| C | -output |
| D | -supply |
| E | N/C |
| F | N/C |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# Hispec® HI2000 High Precision Pressure Transmitter

## Technical Data

| Type | HI2000/HI2010 | HI2xx1/HI2xx4 | HI2xx2/HI2xx5 |
|---|---|---|---|
| **Sensor Technology:** | Silicon-on-Sapphire (SOS) | | |
| **Output Signal:** | 0-10 mV/V (4 wire) | 0-5 V (4 or 3 wire) | 0-10 V (4 or 3 wire) |
| **Supply Voltage:** | 0-10 VDC (5-15V) | 13-30 VDC | 13-30 VDC |
| **Pressure Reference:** | Gauge | | |
| **Protection of Supply Voltage:** | n/a | Protected against supply voltage reversal up to 50 V (amplified versions) | |
| **Standard Pressure Ranges (bar):** | 0-1 bar Vac; 0-1 bar; 0-10 bar; 0-25 bar; 0-100 bar; 0-250 bar; 0-400 bar; 0-600 bar; 0-1000 bar; 0-1500 bar (other ranges available) | | |
| **Standard Pressure Ranges (psi):** | 0-30 in Hg; 0-15 psi; 0-150 psi; 0-300 psi; 0-1500 psi; 0-3000 psi; 0-6000 psi; 0-10000 psi; 0-15000 psi; 0-20000 psi (other ranges available) | | |
| **Overpressure Safety:** | 4x 0.5 bar range; 2x for ranges 1 bar to 600 bar; 1.5 for 1000 bar; 1.1x for 1500 bar range | | |
| **Load Driving Capacity:** | 10 mV/V: n/a; 0 – 5 V: max. load RL > 5 K?0 – 10 V: max. load RL > 10 K? | | |
| **Accuracy NLHR:** | ?±0.1 % of span BFSL | | |
| **Zero Offset and Span Tolerance:** | ±0.5 %FS at room temperature (HI2000/HI2010: ±1 mV) | | |
| **Operating Temperatures:** | **Ambient:** -40 °C to +85 °C (-40 °F to +185 °F)<br>**Media:** -50 °C to +125 °C (-58 °F to +257 °F) | | |
| **Storage Temperature:** | +5 °C to +40 °C (+41 °F to +104°F) Recommended Best Practice | | |
| **Temperature Effects:** | ±1.0 %FS total error band for -20 °C to +70 °C. Typical thermal zero and span coe?cients ±0.005 %FS/ °C | | |
| **ATEX/IECEx Approval Option (4-20 mA version only):** | Ex II 1 G Ex ia IIC<br>T4 Ga (zone 0)<br>Ex II 1 D Ex ia IIIC T135 °C Da<br>(zone 20)<br>Ex I M 1 Ex ia I Ma (group 1 M1) | n/a | n/a |
| **ATEX/IECEx Safety Values:** | Ui = 28 V<br>Ii = 119 mA<br>Pi = 0.65 W<br>Li = 0.1 µH<br>Ci = 74 nF<br>Temperature Range<br>= -20 °C to +70 °C<br>Max. cable length = 45 m | n/a | n/a |
| **Electromagnetic Compatibility:** | Emissions: EN61000-6-4; Immunity: EN61000-6-2; Certi?cation: CE Marked | | |
| **Insulation Resistance:** | > 100 MΩ @ 50 VDC | | |
| **Response Time 10-90%:** | 1 mS | | |
| **Wetted Parts:** | Titanium alloy | | |
| **Pressure Media:** | All fluids compatible with Titanium alloy | | |
| **Pressure Connection:** | 1/4” BSP male (G1/4) or 1/4” NPT male (others options available) | | |
| **Electrical Connection:** | HI200x: PTFE insulated ?ying lead, conductor size 7/0.1 mm. HI201x: MIL-C-26482 6 pin bayonet connector (Accessory not included: mating connector type MS3116F10-6S) | | |
| **Net Weight:** | 0.2 Kg | | |

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## Order Matrix

| Output | Electrical Connection | Wires | Type | Options | Pressure Range | Process Connection |
|---|---|---|---|---|---|---|
| 10 mV/V | Cable outlet 1m PTFE | 4 | HI2000 | | | |
| | MIL-C-26482 6 pin bayonet | 4 | HI2010 | | | |
| 0-5 V | Cable outlet 1m PTFE | 4 | HI2001 | | | |
| | | 3 | HI2004 | | | |
| | MIL-C-26482 6 pin bayonet | 4 | HI2011 | | | |
| | | 3 | HI2014 | | | |
| 0-10 V | Cable outlet 1m PTFE | 4 | HI2002 | | | |
| | | 3 | HI2005 | | | |
| | MIL-C-26482 6 pin bayonet | 4 | HI2012 | | | |
| | | 3 | HI2015 | | | |

| Options | |
|---|---|
| No special options required | - |
| ATEX/IECEx certified (HI2000 & HI2010 only) | EX |

| Pressure Range | |
|---|---|
| 0-1 bar Vac | V001 |
| 0-1 bar | 0001 |
| 0-10 bar | 0010 |
| 0-25 bar | 0025 |
| 0-100 bar | 0100 |
| 0-250 bar | 0250 |
| 0-400 bar | 0400 |
| 0-600 bar | 0600 |
| 0-1000 bar | 1000 |
| 0-1500 bar | 1500 |

| Process Connection | |
|---|---|
| 1/4” BSP male (G1/4) | AB |
| 1/4” NPT male | AM |

| Order Number Example | HI2000EX0020AB |
|---|---|

**For options not listed please contact the sales team**

**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, traceable to national measurement standards.