



## HISPEC<sup>®</sup> HI6000

High Temperature Pressure Transducer

- High ambient temperatures up to 300° F (150° C)
- Silicon-on-Sapphire sensor technology for outstanding performance
- Pressure ranges up to 1,500 bar (21,000 psi)
- Titanium wetted parts for excellent chemical compatibility
- High thermal stability over wide temperature range
- High accuracy version available
- Compact design



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

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## Specifications

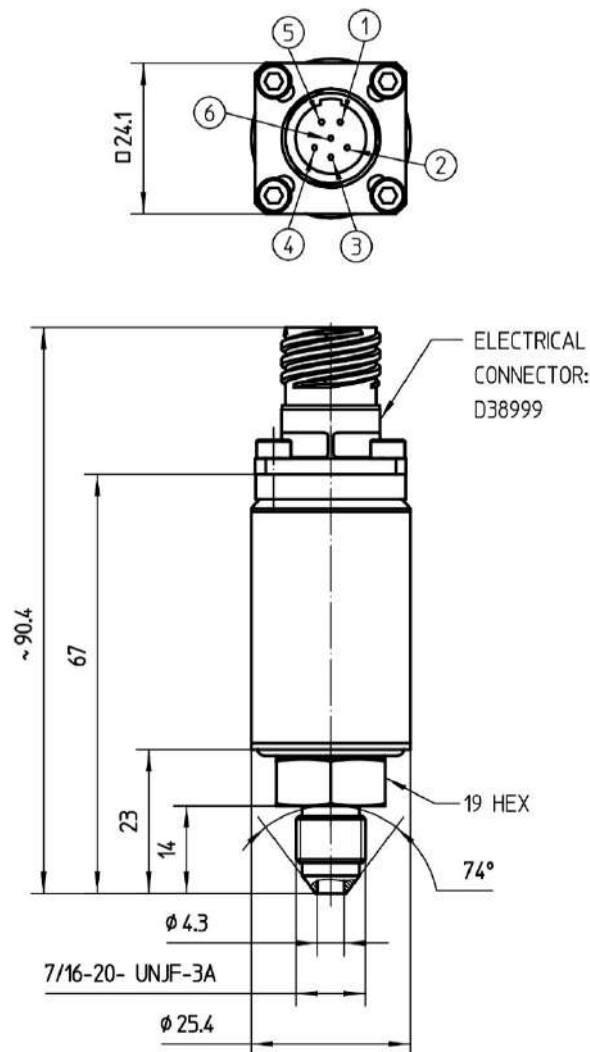
The **HISPEC® HI6000** High Temperature Pressure Transducer performs at constant media and ambient temperatures of up to 135°C and for limited periods up to 150°C. Constructed from Titanium Alloy the unit offers a pressure range of up to 1,500 bar, as well as excellent chemical compatibility and a proven reliability within high temperature environments.

The unique Silicon-on-Sapphire sensor technology provides outstanding performance and gives excellent stability over a wide temperature range. With a compensated temperature range from -25°C to +135°C, a range of outputs and pressure ranges are available as well as a high accuracy option, it is our most flexible high temperature product.

### Typical applications include:

- Automotive
- Industrial
- Aviation

## Dimensions (in mm)



## Electrical Connection

| Pin No. | 4-20 mA       | VDC 4 wire | VDC 3 wire |
|---------|---------------|------------|------------|
| 1       | +supply       | +Supply    | +Supply    |
| 2       | 4-20mA signal | +Output    | +Output    |
| 3       | N/C           | -Output    | N/C        |
| 4       | N/C           | -Supply    | -Supply    |

## Technical Data

| Type                            | HI6**0                                                                                                                                                                                                                                            | HI6**1              | HI6**2               | HI6**3                                                        |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|----------------------|---------------------------------------------------------------|
| Sensor Technology:              | Silicon-on-Sapphire (SOS)                                                                                                                                                                                                                         |                     |                      |                                                               |
| Output Signal:                  | 0.5-4.5 V ratiometric (4 wire)                                                                                                                                                                                                                    | 0-5 V (4 or 3 wire) | 0-10 V (4 or 3 wire) | 4-20 mA (2 wire)                                              |
| Supply Voltage:                 | 4.8 - 5.5 VDC                                                                                                                                                                                                                                     | 10-32 VDC           | 12-32 VDC            | 10-36 VDC                                                     |
| Pressure Reference:             | Gauge                                                                                                                                                                                                                                             |                     |                      |                                                               |
| Protection of Supply Voltage:   | Reverse polarity, overvoltage up to 36VDC                                                                                                                                                                                                         |                     |                      |                                                               |
| Standard Pressure Ranges (bar): | 0 -1 bar Vac; 0-0.5 bar; 0-1 bar; 0-2.5 bar; 0-6 bar; 0-10 bar; 0-16 bar; 0-25 bar; 0-100 bar; 0-250 bar; 0-400 bar; 0-600 bar; 0-1,000 bar; 0-1,500 bar (other ranges available)                                                                 |                     |                      |                                                               |
| Standard Pressure Ranges (psi): | 0-30 in Hg; 0-7.5 psi; 0-15 psi; 0-30 psi; 0-100 psi; 0-150 psi; 0-200 psi; 0-300 psi; 0-1,500 psi; 0-3,000 psi; 0-6,000 psi; 0-8,700 psi; 0-15,000 psi; 0-20,000 psi (other ranges available)                                                    |                     |                      |                                                               |
| Overpressure Safety:            | 4x for 0.5 bar range; 2x for ranges -1 bar to 600 bar; 1.5x for 1,000 bar range; 1.1x for 1,500 bar range                                                                                                                                         |                     |                      |                                                               |
| Load Driving Capacity:          | ≥ 4.5k                                                                                                                                                                                                                                            | ≥ 5k                | ≥ 10k                | RL < [UB - 10 V] / 20 mA<br>(e.g. with supply voltage (UB) of |
| Accuracy NLHR:                  | ≤ ±0.25 % of span BFSL (Optional higher accuracy version of ≤ ±0.1 % of span BFSL available*)                                                                                                                                                     |                     |                      |                                                               |
| Zero Offset and Span Tolerance: | ±0.02 V at room temperature                                                                                                                                                                                                                       |                     |                      |                                                               |
| Operating Temperatures:         | <b>Operating Ambient Temperature:</b> -40°C to +135°C, up to +150°C for 10 minutes on rare occasions. Compensated temperature range -25 to 135°C<br><b>Operating Media Temperature:</b> -40 °C to 135 °C (-40 °F to +275 °F)                      |                     |                      |                                                               |
| Storage Temperature:            | +5 °C to +40 °C (+41 °F to +104 °F) Recommended Best Practice                                                                                                                                                                                     |                     |                      |                                                               |
| Temperature Effects:            | Cumulative error < ±0.5%FS (TEB)                                                                                                                                                                                                                  |                     |                      |                                                               |
| Electromagnetic Compatibility:  | EN61000-6-2; EN61000-4-2: Electrostatic discharge: contact ±4kV, air ± 8kV; EN61000-4-4: Fast Transients ± 4kV signal port; EN61000-4-5: Surges ±0.5kV Line to Line; EN 61000-4-6: Disturbances 10V eff 0.15MHz - 80MHz. Certification: CE marked |                     |                      |                                                               |
| Insulation Resistance:          | > 100 MΩ @ 50 VDC                                                                                                                                                                                                                                 |                     |                      |                                                               |
| Response Time 10-90%:           | 1 mS                                                                                                                                                                                                                                              |                     |                      |                                                               |
| Wetted Parts:                   | Titanium alloy measurement cell and wetted parts                                                                                                                                                                                                  |                     |                      |                                                               |
| Pressure Media:                 | All fluids compatible with Titanium alloy                                                                                                                                                                                                         |                     |                      |                                                               |
| Pressure Connection:            | AS4395B-E04 (7/16-20 UNJF- 3A) other options available                                                                                                                                                                                            |                     |                      |                                                               |
| Electrical Connection:          | MIL-DTL-D38999 SERIES III; shell size 9, 6 pin, pattern 35 or PTFE insulated flying lead, conductor size 7/0.1 mm (other options available)                                                                                                       |                     |                      |                                                               |
| Net Weight:                     | 0.1 Kg                                                                                                                                                                                                                                            |                     |                      |                                                               |

### Order Matrix

| Output                         | Electrical Connection                   | Wires | Type   | Pressure Range | Process Connection |
|--------------------------------|-----------------------------------------|-------|--------|----------------|--------------------|
| 0.5-4.5 V ratiometric          | Cable outlet 1m screened IP67protection | 3     | HI6000 |                |                    |
|                                | D38999 6 pin connector                  | 3     | HI6010 |                |                    |
| 0-5 V                          | Cable outlet 1m screened IP67protection | 4     | HI6001 |                |                    |
|                                | D38999 6 pin connector                  | 4     | HI6011 |                |                    |
|                                | Cable outlet 1m screened IP67protection | 3     | HI6301 |                |                    |
|                                | D38999 6 pin connector                  | 3     | HI6311 |                |                    |
| 0-10 V                         | Cable outlet 1m screened IP67protection | 4     | HI6002 |                |                    |
|                                | D38999 6 pin connector                  | 4     | HI6012 |                |                    |
|                                | Cable outlet 1m screened IP67protection | 3     | HI6302 |                |                    |
|                                | D38999 6 pin connector                  | 3     | HI6312 |                |                    |
| 4-20 mA                        | Cable outlet 1m screened IP67protection | 2     | HI6003 |                |                    |
|                                | D38999 6 pin connector                  | 2     | HI6013 |                |                    |
| Pressure Range in barg         |                                         |       |        |                |                    |
| 0-1 bar Vac    (0-30 in Hg)    |                                         |       |        | V001           |                    |
| 0-0.5 bar    (0-7.5 psi)       |                                         |       |        | 00.5           |                    |
| 0-1 bar    (0-15 psi)          |                                         |       |        | 0001           |                    |
| 0-2.5 bar    (0-30 psi)        |                                         |       |        | 02.5           |                    |
| 0-6 bar    (0-100 psi)         |                                         |       |        | 0006           |                    |
| 0-10 bar    (0-150 psi)        |                                         |       |        | 0010           |                    |
| 0-16 bar    (0-200 psi)        |                                         |       |        | 0016           |                    |
| 0-25 bar    (0-300 psi)        |                                         |       |        | 0025           |                    |
| 0-100 bar    (0-1,500 psi)     |                                         |       |        | 0100           |                    |
| 0-250 bar    (0-3,000 psi)     |                                         |       |        | 0250           |                    |
| 0-400 bar    (0-6,000 psi)     |                                         |       |        | 0400           |                    |
| 0-600 bar    (0-8,700 psi)     |                                         |       |        | 0600           |                    |
| 0-1000 bar    (0-15,000 psi)   |                                         |       |        | 1000           |                    |
| 0-1500 bar    (0-20,000 psi)   |                                         |       |        | 1500           |                    |
|                                |                                         |       |        |                |                    |
| Process Connection             |                                         |       |        |                |                    |
| AS4395B-E04 (7/16-20 UNJF- 3A) |                                         |       |        |                |                    |
| FN                             |                                         |       |        |                |                    |

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.