

# esi

## HISPEC® HI6200H

### Hydrogen Compatible Pressure Transmitter

- Compatible for use within Hydrogen based environment
- Compact design with Metri-Pack 150 connection (other options available)
- Silicon-on-Sapphire sensor technology for outstanding performance
- Tested to ISO 11114-4:2017 according to EC79/2009 and EU406/2010
- Pressure ranges to 5000 bar
- Specialist High Strength titanium alloy sensor
- Excellent Corrosion resistance and high resistance to overpressure



Materials used in the manufacture of the Hydrogen range have been tested based on ISO 11114-4:2017 in accordance to the European Regulations EC 79/2009 and EU 406/2010 to determine an "embrittlement index" of the material when placed in a saturated environment over an extended period of time.

Results have provided a Pass rating to the compatibility of the specialist Titanium Alloy of the range against Hydrogen.

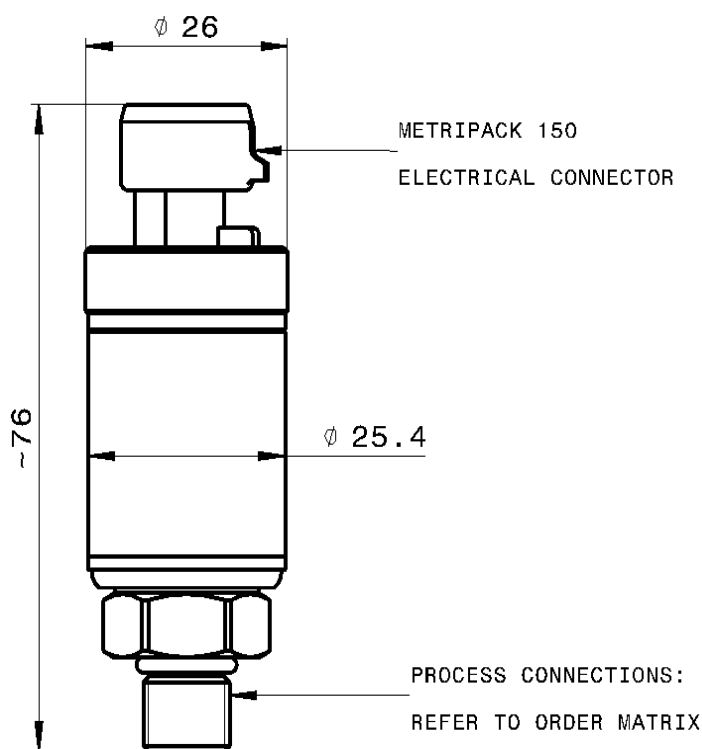
## Specifications

The **HISPEC HI6200H series** of Hydrogen compatible pressure transducers with state-of-the-art SOS sensor technology offers a highly accurate and durable sensor capable of withstanding over pressure levels of up to twice the stated pressure range. The compact design allows for installation in the most space conscious environments.

**Typical applications include:**

- Continuous monitoring of Hydrogen systems
- Hydraulic systems
- Oil, gas, water and other process liquid monitoring.

## Dimensions (in mm)



Hex Size	Range/Thread
19mm	10 bar and above
22mm	Below 10 bar
	F250-C
	M16 HP

## Electrical Connections

	METRI-PACK 150
Pin No.	0.5-4.5 VDC ratiometric
A	GND
B	+supply
C	+output

Other options available:
0-5V
0-10V
4-20mA

## Hydrogen Compatibility

The ESI hydrogen pressure transmitters are manufactured from a special titanium alloy for the measuring cell and a titanium block for the wetted parts. High pressure cells ranging from 1,000 bar are manufactured without seams, which aids in the avoidance of any weak points. This is especially important for the use with hydrogen due to the embrittling qualities of the media.

The combination of titanium sensing elements with SOS sensors has a long tradition at ESI, this material choice allows the construction of a long term stable sensor that has a high accuracy. The measurement ranges for this product are up to 1,500 bar, which makes this transmitter the preferred choice for use on hydrogen storage tanks and pipelines, but we also offer the same technology for low pressures and also in vacuum measurement applications.

Each Hydrogen approved unit also includes a certificate of conformity verifying Hydrogen compatibility.



The unique Silicon-on-Sapphire sensor technology provides outstanding performance and gives excellent stability over a wide temperature range.

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. With outstanding insulation properties, the sapphire substrate allows the sensor to operate over a very wide temperature range without loss of performance.

## Technical Data

Type	HI6200H	HI6201H/HI6211H	HI6202H/HI6212H	HI6203H
Sensor Technology:	Silicon-on-Sapphire (SOS)			
Output Signal:	0.5-4.5 V ratiometric (3 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; 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; 0-5,000 bar (other ranges available)			
Standard Pressure Ranges (psi):	0-15 psi; 0-30 psi; 0-100 psi; 0-150 psi; 0-200 psi; 0-300 psi; 0-1500 psi; 0-3000 psi; 0-6000 psi; 0-8700 psi; 0-15000 psi; 0-20000 psi; 0-72000 psi (other ranges available)			
Overpressure Safety:	4x for 0.5 bar range; 2x for ranges -1 bar to 600 bar; 1.5x for 1000 bar range; 1.1x for 1500 bar range			
Load Driving Capacity:	≥ 4.5KΩ	≥ 5KΩ	≥ 10KΩ	RL < [UB - 10 V] / 20 mA (e.g. with supply voltage (UB) of 36 V, max. load
Accuracy NLHR:	≤ ±0.25 % of span BFUL			
Zero Offset and Span Tolerance:	±0.5% FS at room temperature			
Operating Temperatures:	<b>Ambient:</b> -40 °C to +85 °C (-40 °F to +185 °F) <b>Media:</b> -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:	±1.5 %FS total error band for -20 °C to +70 °C. Typical thermal zero and span coefficients ±0.015 %FS /°C			
Electromagnetic Compatibility:	Emissions: BS EN 61000-6-3: Immunity: BS EN 61000-6-2: Certification: CE/UKCA Marked			
Insulation Resistance:	> 100 MΩ @ 50 VDC			
Response Time 10-90%:	1 mS			
Wetted Parts:	All fluids compatible with titanium alloy			
Pressure Media:	Hydrogen and all fluids compatible with Titanium alloy			
Pressure Connection:	7/16-20UNF-2A SAE J1926-2 (others options available)			
Electrical Connection:	Metri-Pack 150 (other options available)			
Net Weight:	0.1 Kg			

## Order Matrix

Output	Wires	Type	Options	Pressure Range	Process Connection
0.5-4.5 V ratiometric	3	HI6200			
0-5 V	4	HI6201			
	3	HI6211			
0-10 V	4	HI6202			
	3	HI6212			
4-20 mA	2	HI6203			
Options					
Metri-Pack 150 (IP67)			H		
Cable outlet 1m screened (IP65)			HA		
M12 connector (IP67 when mated with equivalent connector)			HB		
Cable outlet 1m screened IP67 protection			HC		
Pressure Range in barg					
0-1 bar				0001	
0-2.5 bar				02.5	
0-6 bar				0006	
0-10 bar				0010	
0-16 bar				0016	
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	
0-5000 bar				5000	
Process Connection					
1/4" BSP male (G1/4)					AB
1/4" NPT male					AM
F250-C					DE
7/16-20 UNF male					FM
3/8-24 UNF male					DF

**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.