



Hispec[®] HI2000

HIGH SPECIFICATION PRESSURE TRANSDUCER



- SILICON-ON-SAPPHIRE SENSOR TECHNOLOGY
- PRESSURE RANGES
0-500mbar TO 0-1500bar
- VOLTAGE OUTPUT
- ACCURACY 0.1% NLHR
- OPTIONAL ATEX APPROVED VERSION
- ALL TITANIUM ALLOY WETTED PARTS
- HIGH SPECIFICATION

DESCRIPTION

The HISPEC HI2000 series of pressure transducers with state-of-the-art Silicon-on-Sapphire sensor technology offer levels of accuracy and performance previously unobtainable or prohibitively expensive.

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 completed 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.

Applications include aerospace, laboratory and test, oil and gas monitoring equipment (down-hole) and subsea. Available in pressure ranges from 0-500mbar to 0-1500bar and with electrical outputs of 10mV/V, 0-5Vdc and 0-10Vdc.

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

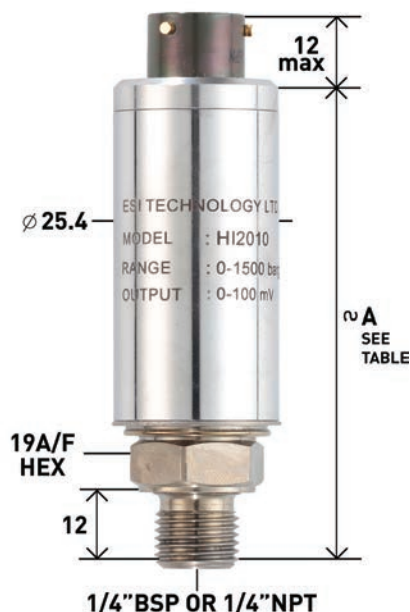


PRESSURE RANGES

0-1bar vac through to 1500 bar, see table below for list of all standard pressure ranges.

Range (bar)	Order Code	Range (bar)	Order Code
0-1 Vac	V001	0-40	0040
0-0.5	00.5	0-60	0060
0-1	0001	0-100	0100
0-1.6	01.6	0-160	0160
0-2.5	02.5	0-250	0250
0-4	0004	0-400	0400
0-6	0006	0-600	0600
0-10	0010	0-700	0700
0-16	0016	0-1000	1000
0-25	0025	0-1500	1500

DIMENSIONS (in mm)



ELECTRICAL CONNECTION MIL-C-26482

Pin	Designation
A	+supply
B	+output
C	-output
D	-supply
E	N/C
F	N/C

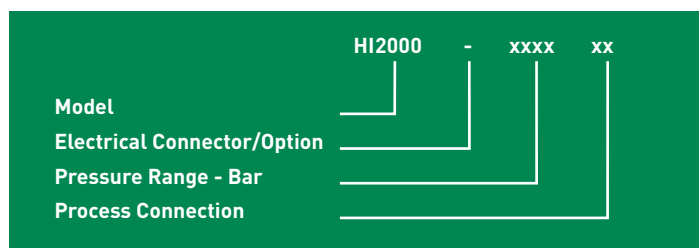
ELECTRICAL CONNECTION CABLE OUTLET

WIRE COLOUR	Designation
RED	+supply
GREEN	+output
YELLOW	-output
BLUE	-supply

Dim. A

HI2x00	80
HI2x01/2	95

ORDERING INFORMATION



OUTPUT

10mV/V
0-5Vdc
0-10Vdc

ELECTRICAL CONNECTION/OPTION

Cable Outlet 1m PTFE (models HI2000 HI2001 HI2002)
MIL-C-26482 6 pin bayonet (models HI2010 HI2011 HI2012)
ATEX certified

PROCESS CONNECTION

1/4" BSP male thread
1/4" NPT male thread

EXAMPLE

Output Signal 10mV/V
MIL-C-26482 6 pin bayonet connector
Pressure range 0-25bar
Pressure connection 1/4" BSP male

Correct Part Number

For options not listed contact sales team

Model No.

HI2000 / HI2010
HI2001 / HI2011
HI2002 / HI2012

Order Code

-

-

EX

Order Code

AB

AM

Order Code

HI2010

-

0025

AB

HI2010-0025AB

SPECIFICATION

PRESSURE REFERENCE

Gauge

OVERPRESSURE

Pressure can exceed rated range by the multiple shown below with no damage or change in calibration above $\pm 0.5\%$ FS.
2x for ranges -1bar to 600bar
1.5x for 1000bar
1.1x for 1500bar

OUTPUT SIGNAL

10mV/V (4 wire non-amplified) Zero offset: ± 1 mV, Span tolerance: $\pm 1\%$ FS
0-5Vdc, 0-10Vdc (4 wire amplified) Zero Offset and Span Tolerance $\pm 0.2\%$ FS

SUPPLY VOLTAGE

Measured across supply terminals on connector plug
5-15Vdc for 10mV/V version
13-30Vdc for 0-5Vdc and 0-10Vdc versions

PROTECTION OF SUPPLY VOLTAGE

Protected against supply voltage reversal up to 50Vdc (amplified versions)

ACCURACY (NON LINEARITY, HYSTERESIS & REPEATABILITY)

$\pm 0.1\%$ FS Typical Max, Best fit straight line.

PRESSURE MEDIA

All fluids compatible with titanium alloy.

OPERATING TEMPERATURE RANGE

Ambient: -40°C to $+125^{\circ}\text{C}$
Media: -50°C to $+125^{\circ}\text{C}$
Storage: $+5^{\circ}\text{C}$ to $+40^{\circ}\text{C}$

TEMPERATURE EFFECTS

$\pm 1.0\%$ FS TEb -20°C to $+70^{\circ}\text{C}$
Typical thermal zero and span coefficients $\pm 0.005\%$ FS/ $^{\circ}\text{C}$.

ATEX APPROVAL

Ex II 1 G Ex ia IIC T4 Ga (zone 0)
Ex II 1 D Ex ia IIIC T135°C Da (zone 20)
EX I M 1 Ex ia I Ma (group I M1)

ATEX SAFETY VALUES

Ui = 28V
Ii = 119mA
Pi = 0.65W
Li = 0.1
Ci = 0
Temperature range = -20°C to $+70^{\circ}\text{C}$
Max. cable length = 50m

INSULATION RESISTANCE

100Mohm @50Vdc all electrical connection to case

VIBRATION

30g peak, 10Hz -2KHz, 12mm double amplitude

MECHANICAL SHOCK

3x4ft drop on to concrete floor will not degrade performance

PRESSURE CONNECTION

1/4" BSP or 1/4" NPT male (others on request)

ELECTRICAL CONNECTION

HI200x: PTFE insulated flying lead, conductor size 7/0.1mm
HI201x: MIL-C-26482 (6 pin bayonet connector). Mating connector available (ESI part no. EC-MIL-10-6S)

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.

