



- SILICON-ON-SAPPHIRE SENSOR TECHNOLOGY
- PRESSURE RANGES 0-400bar TO 0-4000bar
- 0-100mV, 0-5V or 0-10V or 4-20mA OUTPUT
- EXCELLENT ACCURACY
- HIGH OPERATING TEMPERATURE
- ALL TITANIUM ALLOY WETTED PARTS
- INDUSTRY STANDARD HIGH PRESSURE FITTING

DESCRIPTION

HP1000 series now extends the Silicon-on-Sapphire pressure sensor technology into very high-pressure applications, with operating ranges up to 4000bar and still maintaining an extremely high performance level. The advanced sensor design provides almost zero hysteresis and excellent long-term stability normally not achievable when measuring very high pressure.

The all titanium alloy wetted parts and a stainless steel housing gives the HP1000 unbeatable corrosion resistance. With a design to meet demanding environments, this transducer will consistently maintain accurate performance while sustaining high durability.

Using the industry standard autoclave process connection enables safe and reliable sealing to such high pressures. Available in pressure ranges from 0-400bar to 0-4,000bar and with electrical outputs of 0-100mV, 0-5Vdc, 0-10Vdc and 4-20mA.

Applications include aerospace, laboratory and test, oil and gas monitoring equipment (down-hole) and sub-sea.

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SPECIFICATION

PRESSURE RANGES:

0 to 400barG through to 4000 barG, see table below for list of all standard pressure ranges.

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 400bar to 600bar

1.5x for 1000bar to 2500bar

1.1x for 3000bar to 4000bar

OUTPUT SIGNAL (OPTIONS):

0-10mV/V [nominal] (4 wire non-amplified)

Zero offset: $\pm 1\text{mV/V}$,

Span tolerance: $\pm 30\%$ FSO

0-5 Vdc, 0-10 Vdc (4 wire amplified)

Zero Offset and Span Setting

$\pm 0.5\%$ FSO

4-20mA (2 wire amplified)

Zero Offset and Span Setting

$\pm 0.08\text{mA}$

ZERO AND SPAN ADJUSTMENT:

$\pm 5\%$ FS adjustment with easy access trimming

Potentiometers on amplified version only

INSTALLATION TORQUE:

50Nm maximum. This will cause a zero shift less than 1% FS

SUPPLY VOLTAGE:

Measured across supply connector plug

5-15Vdc for 0-10mV/V version

13-30Vdc for 0-5V and 0-10V versions

13-36Vdc for 4-20mA version

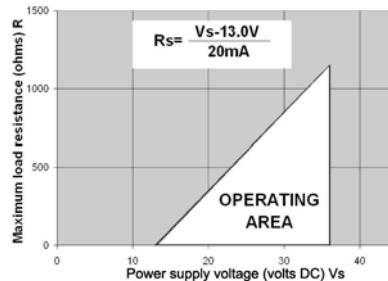
REVERSAL OF SUPPLY VOLTAGE:

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

LOAD DRIVING CAPABILITY

(4-20mA version only):

Calculate maximum load see chart below.



e.g. with supply voltage load of 36vdc, maximum load is 1150ohms.

COMBINED NON-LINEARITY AND HYSTERESIS:

$\pm 0.25\%$ FS best fit straight line definition.

REPEATABILITY:

$\pm 0.1\%$ FS defined as maximum error between 3 consecutive pressure cycles.

LONG TERM STABILITY:

$\pm 0.2\%$ FS/year non-cumulative

PRESSURE MEDIA:

All fluids compatible with titanium alloy.

OPERATING TEMPERATURE RANGE:

Ambient: -40° to $+85^\circ$

Media: -50° to $+125^\circ\text{C}$

Storage: 5° to $+40^\circ\text{C}$

TEMPERATURE EFFECTS:

$\pm 1.5\%$ FS total error band for -20° to 70°C

Typical thermal zero and span coefficients

$\pm 0.02\%$ FS/ $^\circ\text{C}$

INSULATION RESISTANCE:

100Mohm @50Vdc all electrical connection to case

ELECTROMAGNETIC-COMPATIBILITY:

Emissions EN61000-6-4

Immunity EN61000-6-2

Certification CE marked

PRESSURE CONNECTION:

F250-C Autoclave fitting, Thread: 9/16-18UNF-2B (female)

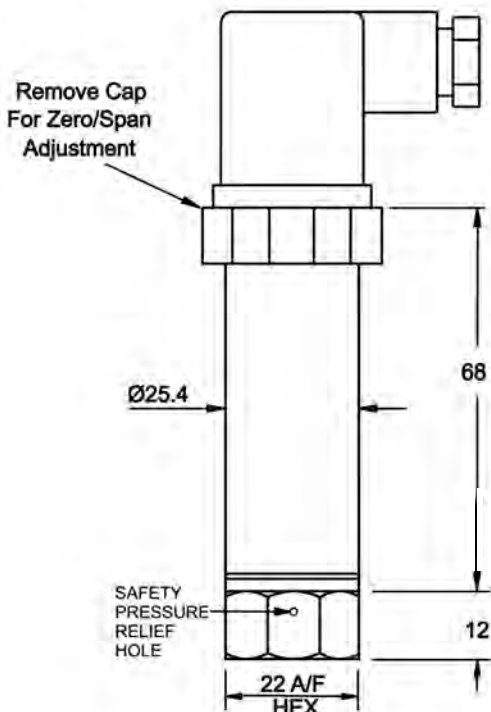
ELECTRICAL CONNECTION:

Mating socket with screw terminal connections to DIN 43650, rated IP65.

WEIGHT:

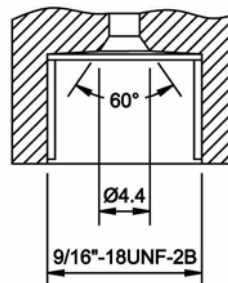
100 grams excluding mating connector.

DIMENSIONS (in mm)



FITTING DETAILS

REF: AE F250-C (AUTOCLAVE)



ELECTRICAL CONNECTION

Pin No.	2 wire	4 wire
1	+supply	+supply
2	4-20mA signal	-supply
3	not fitted	+output
⊥	to case	-output

ORDER DETAILS

State model number and pressure range required:-
e.g. HP1000 0-2000bar

Model No.	DESCRIPTION
HP1000	0-10mV/V, 4 WIRE
HP1001	0-5V, 4 WIRE
HP1002	0-10V, 4 WIRE
HP1003	4-20mA, 2 WIRE

PRESSURE RANGES

0 - 400 barg	0 - 2000 barg
0 - 600 barg	0 - 2500 barg
0 - 700 barg	0 - 3000 barg
0 - 1500 barg	0 - 4000 barg

CALIBRATION

All products manufactured by Ellison Sensors are calibrated using precision calibration equipment with traceability to international standards.

Ellison Sensors operates a policy of continuous product development. We reserve the right to change specification without prior notice.

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