# **221**

0-5000 69

-20 mg

P10004

## Hipres<sup>®</sup>HP1000H

Hydrogen Compatible High Pressure Transmitter





- Compatible for use within Hydrogen based environments
- Pressure ranges to 5,000 bar •
- Tested to ISO 11114-2:2017 according to • EC79/2009 and EU406/2010
- Silicon-on-Sapphire sensor technology for • outstanding performance
- Pressure diaphragm and process connection • is machined from one piece of special high strength Titanium alloy with no seals or welds
- High resistance to overpressure and pressure transients
- ATEX/IECEx option available (includes M1 for mining applications) for 4-20 mA versions
- **DNV-GL** certification available

Vers. 28/9/Eng







### Description

The HP1000 pressure transmitter is designed using a single piece of special high strength titanium alloy with no seals or welds, allowing for use with very high pressure applications. With operating ranges up to 5,000 bar the suitability of the material for use with hydrogen is confirmed following compatibility testing based on ISO 11114-2:2017 according to the European Regulations EC 79/2009 and EU 406/2010.

The unique Silicon-on-Sapphire sensor technology provides outstanding performance and gives excellent stability over a wide temperature range. The wetted parts and pressure diaphragm are machined from a single piece of titanium alloy meaning no weld joints and therefore high pressure integrity and overload capability. All titanium pressure port offers unbeatable corrosion resistance. With a design to meet demanding environments, this transmitter 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

0-400 bar to 0-5,000 bar and with electrical outputs of 0-100 mV, 0-5V dc, 0-10Vdc and

4-20 mA. Applications include aerospace, laboratory and test, oil and gas monitoring equipment and general industrial.

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

Available options include ATEX and IECEx approved version for explosion protection for flammable gases (zone 0), dusts (zone 20) and mining areas (group I MI) and/or Marine version complying with DNV GL rules for classification of ships, high speed & light craft and DNV GL offshore standards.

## Dimensions

ELECTRICAL CONNECTION (mA)		-35	PG9
Pin No.       2 wire         1       +supply         2       4-20mA signal         3       N/C $\frac{1}{2}$ to case	~113	STECHNOLOGY LT HP1000H	
ELECTRICAL CONNECTION (Vdc) Pin No. 4 wire 3 wire	<b>ا</b>	0-5000 barg 4-20 mA	
1 -supply common 2 +supply +supply 3 +output +output ≟ -output to case			
·			Viewed from above with socket removed.



## **Technical Data**

Load Driving Capability:       Ioad RL > 5 KQ; 0 – 10 V: max. load RL > 10 KQ         Accuracy NLHR: $\leq \pm 0.25$ % of span BFSL (Optional higher accuracy version of $\leq \pm 0.1$ % of span BFSL available)         Zero Offset and Span Tolerance: $\pm 0.5$ %FS at room temperature (HP1000/HP1100: $\pm 1$ mV); $\pm 5$ %FS (approx.) adjustment with easy access trimming potentiometers on amplified versions only         Operating Ambient Temperature: $\pm 0.5$ %FS at room temperature (HP1000/HP1100: $\pm 1$ mV); $\pm 5$ %FS (approx.) adjustment with easy access trimming potentiometers on amplified versions only         Operating Media Temperature: $\pm 0.5$ %FS total error band for -20 °C to +85 °C (-40 °F to +185 °F)         Storage Temperature: $\pm 1.5$ %FS total error band for -20 °C to +70 °C. Typical thermal zero and span coefficients $\pm 0.015$ %FS °C         ATEX/IECEx Approval Option (4-20 mA version Only): $n/a$ $n/a$ $n/a$ $ui = 28$ V is $= 100$ MV is $= 100$ MV	Туре	HP1000/HP110	HP1xx1	HP1xx2	HP1003/HP1103					
Supply Voltage:         10 VDC (5 – 15V)         13 – 30 VDC         13 – 30 VDC         10 – 36 VDC           Pressure Reference:         Gauge         Cauge         Cauce	Sensor Technology:	Silicon-on-Sapphire (SoS)								
Pressure Reference:         Gauge           Cauge         Gauge           Protection of Supply Voltage:         Protected against supply voltage reversal up to 50 V (amplified versions)           Standard Pressure Ranges (bar):         HP10xc: 0 = 600 bar; 0 = 700 bar; 0 = 1,000 bar; 0 = 1,000 bar; 0 = 2,500 bar; 0 =	Output Signal:	10 mV/V (4 wire)	0 – 5 V (4 or 3 wire)	0 – 10 V (4 or 3 wire)	4 – 20 mA (2 wire)					
Construction         Construction           Protection of Supply Voltage:         Protected against supply voltage reversal up to 50V (amplified versions)           Standard Pressure Ranget (bar):         HP10x: 0 = 600 bar; 0 = 700 bar; 0 = 1,000 bar; 0 = 2,000 b	Supply Voltage:	10 VDC (5 – 15V)	13 – 30 VDC	13 – 30 VDC	10 – 36 VDC					
Voltage:         Producted against spippy voltage idensising to 00 or (infinited versions)           Standard Pressure Ranges (bar):         IP10xx: 0 = 600 bar; 0 = 7.00 bar; 0 = 1.000 bar; 0 = 2.000 bar; 0 =	Pressure Reference:		Gau	uge						
(bar):         (other ranges available)           Standard Pressure Ranges (pi)):         0-10.000 psi; 0-15.000 psi; 0-20.000 psi; 0-30.000 psi; 0-40.000 psi; 0-60.000 psi; 0-72.000 psi (other ranges available)           Overpressure Safety:         1.5x for ranges 0-1000 bar to 0 - 3.000 bar; 1.2x for 4.000 bar; 1.2x for 5.000 bar           Load Driving Capability:         4-20 mA: RL < [UB-10 V] / 20 mA (eg, with supply voltage (UB) of 36 V, max, load (RL) is 1300 O); 10 mVV: n/a; 0 - 5 V; m load RL > 5 KD; 0-10 V; max, load RL > 10 KQ           Accuracy NLHR:         5 ±0.25 % of span BFSL (Optional higher accuracy version of ± ±0.1% of span BFSL available)           Zero Offset and Span Tolerance:         ±0.5 %F5 at room temperature (HP1000/HP1100; ±1 mV); ±5 %F5 (approx).adjustment with easy access trimming potentioneters on amplified versions only           Operating Media Temperature:         ±0.5 %F5 total error band for -20 °C to +125 °C (-58 °F to +257 °F)           Storage Temperature:         ±1.5 %F5 total error band for -20 °C to +10 °C. Typical thermal zero and span coefficients ±0.015 %F5 °C to be 100 °C T46 for 20 °C to +10 °C. Typical thermal zero and span coefficients ±0.015 %F5 °C to be 100 °C T46 for 20 °C to +10 °C. Typical thermal zero and span coefficients ±0.015 %F5 °C to be 100 °C T46 for 20 °C to +10 °C. Typical thermal zero and span coefficients ±0.015 %F5 °C to be 100 °C T46 for 20 °C to +10 °C. Typical thermal zero and span coefficients ±0.015 %F5 °C to be 100 °C T46 for 20 °C to +10 °C. Typical thermal zero and span coefficients ±0.015 %F5 °C to be 100 °C T46 for 20 °C to +10 °C (-41 °F to +10 %C); to 20 °C T13 °C to 20 °C °C T3 °C °C T3 °C		Prot	ected against supply voltage rev	versal up to 50 V (amplified ver	rsions)					
(p-1):       0-10,000 pst; 0-10,000 pst; 0-20,000 pst; 0-40,000 pst; 0-40,000 pst; 0-20,000 pst; 0-20,		HP10xx: 0 – 600 bar; 0 – 700 l			bar; 0 – 4,000 bar; 0 – 5,000 bar					
Load Driving Capability: $4 - 20 \text{ mA: RL < [UB - 10V]} / 20 \text{ mA (eg. with supply voltage (UB) of 36V, max. load RL > 10 KΩAccuracy NLHR:s \pm 0.25 \text{ % of span BFSL (Optional higher accuracy version of s \pm 0.1 \text{ % of span BFSL available})Zero Offset and SpanTolerance:\pm 0.5 \text{ %FS at room temperature (HP1000/HP1100 \pm 1 \text{ mV}); \pm 5 \text{ %FS (approx)} adjustment with easy access trimmingpotentiometers on amplified versions onlyOperating AmbientTemperature:\pm 0.5 \text{ %FS at room temperature (HP1000/HP1100 \pm 1 \text{ mV}); \pm 5 \text{ %FS (approx)} adjustment with easy access trimmingpotentiometers on amplified versions onlyOperating MediaTemperature:-40^{\circ}\text{C} to +85^{\circ}\text{C} (40^{\circ}\text{F} to \pm 257^{\circ}\text{F})Storage Temperature:\pm 5^{\circ}\text{C} to \pm 40^{\circ}\text{C} to \pm 125^{\circ}\text{C} (58^{\circ}\text{F} to \pm 257^{\circ}\text{F})Targe Temperature:\pm 1.5 \text{ %FS} total error band for -20^{\circ}\text{C} to \pm 125^{\circ}\text{C} (58^{\circ}\text{F} to \pm 257^{\circ}\text{F})ATEX/IECEX ApprovalOption (4 - 20 \text{ mA} versiononly):n/an/an/aN/an/an/an/an/aImperature:\pm 1.5 \text{ %FS} total error band for -20^{\circ}\text{C} to \pm 125^{\circ}\text{C} (58^{\circ}\text{ %} to \pm 250^{\circ}\text{ %} for 250^{\circ}\text{ C})ATEX/IECEX ApprovalOption (4 - 20 \text{ mA} versiononly):n/an/an/aImperature:1 = 1.5 \text{ %FS} total error band for -20^{\circ}\text{C} to \pm 125^{\circ}\text{C} (26^{\circ}\text{ C})Imperature:1 = 1.5 \text{ %FS} total error band for -20^{\circ}\text{C} to \pm 125^{\circ}\text{C}Imperature:1 = 1.5 \text{ %FS}1 = 1.5 \text{ %FS}Imperature:1 = 1.5 \text{ %FS}1 = 1.5 \text{ %FS}$		0-10,000 psi; 0-15,000 psi	; 0-20,000 psi; 0-30,000 psi; 0-40,	000 psi; 0-60,000 psi; 0-72,000	psi (other ranges available)					
Load Driving Lapability:       Ioad RL > 5 KQ; 0 – 10 V; max, load RL > 10 KΩ         Accuracy NLHR:       ≤ ±0.25 % of span BFSL (Optional higher accuracy version of ≤ ±0.1 % of span BFSL available)         Zero Offset and Span       ±0.5 %FS at room temperature (HP1000/HP1100: ±1 mV); ±5 %FS (approx) adjustment with easy access trimming potentiometers on amplified versions only         Operating Ambient       -40 °C to +85 °C (-40 °F to +185 °F)         Temperature:       -50 °C to +125 °C (-58 °F to +257 °F)         Storage Temperature:       ±1.5 %FS total error band for -20 °C to +70 °C. Typical thermal zero and span coefficients ±0.015 %FS /°C         Temperature Effects:       ±1.5 %FS total error band for -20 °C to +70 °C. Typical thermal zero and span coefficients ±0.015 %FS /°C         ATEX/IECEX Approval Option (4-20 mA version on/a       n/a       n/a       n/a       Ui = 28 V         N/a       n/a       n/a       n/a       Ui = 28 V       Ui = 28 V         It is to to compare the perature Definition of the periater Definition of the perature Definition of the period Definition of the perature	Overpressure Safety:	1.5x for	ranges 0 – 1000 bar to 0 – 3,000	bar; 1.25x for 4,000 bar; 1.2x fo	r 5,000 bar					
Zero Offset and Span Tolerance:       ±0.5 %FS at room temperature (HP1000/HP1100:±1 mV);±5 %FS (approx) adjustment with easy access trimming potentiometers on amplified versions only         Operating Ambient Temperature:       -40 °C to +85 °C (-40 °F to +185 °F)         Operating Media Temperature:       -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:       ±1.5 %FS total error band for -20 °C to +70 °C. Typical thermal zero and span coefficients ±0.015 %F5/ °C         Temperature:       ±1.5 %FS total error band for -20 °C to +70 °C. Typical thermal zero and span coefficients ±0.015 %F5/ °C         Temperature:       ±1.5 %FS total error band for -20 °C to +70 °C. Typical thermal zero and span coefficients ±0.015 %F5/ °C         Temperature:       ±1.5 %FS total error band for -20 °C to +70 °C. Typical thermal zero and span coefficients ±0.015 %F5/ °C         Temperature:       ±1.1 © Ex in II.C         T4 Ga (zon A version only):       n/a       n/a         N/a       n/a       n/a       Iii = 28 V         I = 10 PM       i = 28 V       i = 10 PM       i = 28 V         I = 10 PM       i = 28 V       i = 0.65 W       i = 0.65 W         U = 28 V       i = 10 PM       i = 28 V       i = 0.10 H         I = 0.1 PH       C = 74 n F       Temperature Range       = -0.07 V/C	Load Driving Capability:	4 – 20 mA: RL < [UB - 10 V] / 20 mA (e.g. with supply voltage (UB) of 36 V, max. load (RL) is 1300 Ω); 10 mV/V: n/a; 0 – 5 V: max load RL > 5 KΩ; 0 – 10 V: max. load RL > 10 KΩ								
Tolerance:       potentiometers on amplified versions only       intermediation of the second of the secon	Accuracy NLHR:	$\leq\pm0.25$ % of span BFSL (Optional higher accuracy version of $\leq\pm0.1$ % of span BFSL available)								
Temperature:       -40°C t0 + 85°C (-40°F t0 + 185°F)         Operating Media Temperature:       -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:       ±1.5 %FS total error band for -20°C to +70°C. Typical thermal zero and span coefficients ±0.015 %FS/°C         ATEX/IECEx Approval Option (4-20 mA version only):       n/a       n/a       n/a       IE x111 G Ex ia IIC         ATEX/IECEx Safety Values:       n/a       n/a       n/a       III a Ex ia IIC T135°C Da (cone 20)       Ex III 1 G Ex ia IIC T135°C Da (cone 20)         DNV GL Approval Class:       n/a       n/a       n/a       III a Ex ia IIC T135°C Da (cone 20)         Electromagnetic Compatibility:       Temperature: D; Humidity: B; Vibration: B; EMC: B; Enclosure: C (contact sales for more information)         Electromagnetic Compatibility:       Emissions: EN61000-6-3; Immunity: EN61000-6-2; Certification: CE Marked         Nueted Parts:       Ttanium alloy machined from a single piece; other options available         Pressure Media:       Hydrogen and all fluids compatible with Titanium alloy; other options available         Pressure Connection:       F250-C Autoclave fitting; thread type 9/16-18UNF-28 female on M16 x 1.5 female cone seal										
Temperature:       -50°C to +125°C (-38°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         ATEX/IECEx Approval Option (4-20 mA version only):       n/a       n/a       n/a       Ex II 1 G Ex ia IIC T4 Ga (zone 0) Ex II 1 D Ex ia IIC T135°C Da (zone 20) Ex II 1 D Ex ia IIC T135°C Da (zone 20)         ATEX/IECEx Safety Values:       n/a       n/a       n/a       Ui = 28 V Ii = 119 mA Pi = 0.65 W         DNV GL Approval Class:       n/a       n/a       n/a       Ui = 0.1 µH Ci = 74 nF Temperature: D; Humidity: B; Vibration: B; EMC: B; Enclosure: C (contact sales for more information)         Electromagnetic Compatibility:       Emissions: EN61000-6-2; Certification: CE Marked         Insulation Resistance:       > 100 MQ @ 50 VDC         Response time 10-90 %:       1 mS         Wetted Parts:       Titanium alloy machined from a single piece; other options available         Pressure Media:       Hydrogen and all fluids compatible with Titanium alloy; other options available         Pressure Connection:       F250-C Autoclave fitting; thread type 9/16-18UNF-28 female or M16 x 1.5 female cone seal		-40 °C to +85 °C (-40 °F to +185 °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         ATEX/IECEx Approval Option (4-20 mA version only):       n/a       n/a       n/a       EX II 1 G Ex ia IIC T 4 Ga (zone 0) EX II 1 D Ex ia IIIC T 14 Ga (zone 0) EX II 1 D Ex ia IIIC T 13 5 °C to zero 2 0) EX II 1 D Ex ia IIIC         ATEX/IECEx Safety Values:       n/a       n/a       n/a       Ui = 28 V Ii = 119 mA Pi = 0.65 W Ii = 119 mA Pi = 0.65 W Ii = 0.65 W Ii = 0.1 µH C = 74 n F Temperature D, Humidity: B; Vibration: B; EMC: B; Enclosure: C (contact sales for more information)         Electromagnetic Compatibility:       Emissions: EN61000-6-2; Certification: CE Marked       Max. cable length = 45 m Tomperature: D + 100 MQ @ 50 VDC         Response time 10-90 %:       1 mS       1 mS       Yetted Parts:       Titanium alloy machined from a single piece; other options available         Pressure Media:       Hydrogen and all fluids compatible with Titanium alloy; other options available       Pressure Connection:			-50 °C to +125 °C	(-58 °F to +257 °F)						
ATEX/IECEx Approval Option (4-20 mA version only):       n/a       n/a       n/a       Ex II 1 G Ex ia IIC T4 Ga (zone 0) Ex II 1 D Ex ia IIIC T3 °C Da (zone 20) Ex II 1 D Ex ia IIIC T3 °C Da (zone 20) Ex II 1 D Ex ia IIIC T3 °C Da (zone 20) Ex II 1 D Ex ia IIIC T3 °C Da (zone 20) Ex II 1 D Ex ia IIIC T3 °C Da (zone 20) Ex II 1 D Ex ia IIIC T3 °C Da (zone 20) Ex II 1 D Ex ia IIIC T3 °C Da (zone 20) Ex II 1 D Ex ia IIIC T3 °C Da (zone 20) Ex II 1 D Ex ia IIIC T3 °C Ca (zone 20) Ex II 1 D Ex ia IIIC T3 °C Ca (zone 20) Ex II 1 D Ex ia IIIC T3 °C Ca (zone 20) Ex II 1 D Ex ia IIIC T3 °C Ca (zone 20) Ex II 1 D Ex ia IIIC T3 °C Ca (zone 20) Ex II 1 D Ex ia IIIC T3 °C Ca (zone 20) Ex II 1 D Ex ia IIIC T3 °C Ca (zone 20) Ex II 1 D Ex ia IIIC T3 °C Ca (zone 20) Ex II 1 D Ex ia IIIC T3 °C Ca (zone 20) Ex II 1 D Ex ia IIIC T3 °C Ca (zone 20) Ex II 1 D Ex ia IIIC T3 °C Ca (zone 20) Ex II 1 D Ex ia IIIC T3 °C Ca (zone 20) Ex II 1 G Ex ia IIC T4 Ga (zone 20) Ex II 1 D Ex ia IIC T3 °C Ca (zone 20) Ex II 1 G Ex ia IIC T4 Ga (zone 20) Ex II 1 D Ex ia IIC T3 °C Ca (zone 20) Ex II 1 G Ex ia IIC T4 Ga (zone 20) Ex II 1 D Ex ia IIC T3 °C Ca (zone 20) Ex II 1 G Ex ia IIC T3 °C Ca (zone 20) Ex II 1 G Ex ia IIC T4 Ga (zone 20) Ex II 1 G Ex ia IIC T4 Ga (zone 20) Ex II 1 G Ex ia IIC T4 Ga (zone 20) Ex II 1 G Ex ia IIC T4 Ga (zone 20) Ex II 1 G Ex ia IIC T4 Ga (zone 20) Ex II 1 G Ex ia IIC T4 Ga (zone 20) Ex II 1 G Ex ia IIC T4 Ga (zone 20) Ex II 1 G Ex ia IIC T4 Ga (zone 20) Ex II 1 G Ex ia IIC T4 Ga (zone 20) Ex II 1 G Ex ia IIC T4 Ga (zone 20) Ex II 1 G Ex ia IIC T4 Ga (zone 20) Ex II 1 G Ex ia IIC T4 Ga (zone 20) Ex II 1 G Ex ia IIC T4 Ga (zone 20) Ex II 1 G Ex ia IIC T4 Ga (zone 20) Ex II 1 G Ex ia IIC T4 Ga (zone 20) Ex II 1 G Ex ia IIC T4 Ga (zone 20) Ex II 1 G Ex ia IIC T4 Ga (zone 20) Ex II 1 G Ex ia IIC T4 Ga (zone 20) Ex II 1 G Ex ia IIC T4 Ga (zone 20) Ex II 1 G Ex ia IIC T4 Ga (zone 20) Ex II 1 G Ex ia IIC T4 Ga (zone 20) Ex II 1 G Ex ia IIC T4 Ga (zone 20)			+5 °C to +40 °C (+41 °F to +104°	°F) Recommended Best Practic	e					
ATEX/IECEx Approval Option (4-20 mA version only):n/aT4 Ga (zon 0) Ex II 1 D Ex ia IIIC T1 35 °C Da (zon 20) Ex II 1 D Ex ia IIIC T1 35 °C Da (zon 20) EX II 1 D Ex ia IIIC T1 35 °C Da (zon 20) EX II 1 D Ex ia IIIC T1 35 °C Da (zon 20) EX II 1 D Ex ia IIIC T1 35 °C Da (zon 20) EX II 1 D Ex ia IIIC T1 35 °C Da (zon 20) EX II 1 D Ex ia IIIC T1 35 °C Da (zon 20) EX II 1 D Ex ia IIIC T1 35 °C Da (zon 20) EX II 1 D Ex ia IIIC T1 35 °C Da (zon 20) EX II 1 D Ex ia IIIC T1 35 °C Da (zon 20) EX II 1 D Ex ia IIIC T1 35 °C Da (zon 20) EX II 1 D Ex ia IIIC T1 35 °C Da (zon 20) EX II 1 D Ex ia IIIC T1 35 °C Da (zon 20) EX II 1 D Ex ia IIIC T1 35 °C Da (zon 20) EX II 1 D Ex ia IIIC T1 35 °C Da (zon 20) EX II 1 D Ex ia IIIC T1 35 °C Da (zon 20) EX II 1 D Ex ia IIIC T1 35 °C Da (zon 20) EX II 1 D Ex ia IIIC T1 35 °C Da (zon 20) EX II 1 D Ex ia IIIC T1 35 °C Da (zon 20) EX II 1 D Ex ia IIIC T1 35 °C Da (zon 20) EX II 1 D Ex ia IIIC T1 35 °C Da (zon 20) EX II 1 D Ex ia IIIC T1 35 °C Da (zon 20) EX II 1 D Ex ia IIIC T1 35 °C Da (zon 20) EX II 1 D Ex ia IIIC T1 35 °C Da (zon 20) EX II 1 D Ex ia IIIC T1 35 °C Da (zon 20) EX II 1 D Ex ia IIIC T1 35 °C Da (zon 20) EX II 1 D Ex ia IIIC T1 35 °C Da (zon 20) EX II 1 D Ex ia IIIC T1 35 °C Da (zon 20) EX II 1 D Ex ia IIIC T1 35 °C Da (zon 20) EX II 1 D Ex ia IIIC T1 35 °C Da (zon 20) EX II 1 D Ex ia IIIC T1 35 °C Da (zon 20) EX II 1 D Ex ia IIIC T1 35 °C Da (zon 20) EX II 1 D Ex ia IIIC T1 35 °C Da (zon 20) EX II 1 D Ex ia IIIC T1 35 °C Da (zon 20) EX II 1 D Ex ia IIIC T1 35 °C Da (zon 20) °C (zo	Temperature Effects:	±1.5 %FS total error	band for -20 °C to +70 °C. Typica	al thermal zero and span coeffi	cients ±0.015 %FS/ °C					
ATEX/IECEx Safety Values:       n/a       n/a       n/a       li = 119 mA Pi = 0.65 W Li = 0.1 µH C = 74 nF Temperature Range = -20 °C to +70 °C Max. cable length = 45 m         DNV GL Approval Class:       Temperature: D; Humidity: B; Vibration: B; EMC: B; Enclosure: C (contact sales for more information)         Electromagnetic Compatibility:       Emissions: EN61000-6-3; Immunity: EN61000-6-2; Certification: CE Marked         Insulation Resistance:       > 100 MΩ @ 50 VDC         Response time 10-90 %:       1 mS         Wetted Parts:       Titanium alloy machined from a single piece; other options available         Pressure Media:       Hydrogen and all fluids compatible with Titanium alloy; other options available         Pressure Connection:       F250-C Autoclave Fitting; thread type 9/16-18UNF-28 female or M16 x 1.5 female cone seal	Option (4-20 mA version	n/a	n/a	n/a	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					
Electromagnetic Compatibility:       Emissions: EN61000-6-3; Immunity: EN61000-6-2; Certification: CE Marked         Insulation Resistance:       > 100 MΩ @ 50 VDC         Response time 10-90 %:       1 mS         Wetted Parts:       Titanium alloy machined from a single piece; other options available         Pressure Media:       Hydrogen and all fluids compatible with Titanium alloy; other options available         Pressure Connection:       F250-C Autoclave fitting; thread type 9/16-18UNF-28 female or M16 x 1.5 female cone seal	ATEX/IECEx Safety Values:	n/a	n/a	n/a	li = 119 mA Pi = 0.65 W Li = 0.1 $\mu$ H Ci = 74 nF Temperature Range					
Compatibility:       Emissions: EN6 1000-6-3; Immunity: EN6 1000-6-2; Certification: CE Marked         Insulation Resistance:       > 100 MΩ @ 50 VDC         Response time 10-90 %:       1 mS         Wetted Parts:       Titanium alloy machined from a single piece; other options available         Pressure Media:       Hydrogen and all fluids compatible with Titanium alloy; other options available         Pressure Connection:       F250-C Autoclave fitting; thread type 9/16-18UNF-28 female or M16 x 1.5 female cone seal	DNV GL Approval Class:									
Response time 10-90 %:       1 mS         Wetted Parts:       Titanium alloy machined from a single piece; other options available         Pressure Media:       Hydrogen and all fluids compatible with Titanium alloy; other options available         Pressure Connection:       F250-C Autoclave fitting; thread type 9/16-18UNF-2B female or M16 x 1.5 female cone seal		Emis	sions: EN61000-6-3; Immunity: E	N61000-6-2; Certification: CE N	Marked					
Wetted Parts:       Titanium alloy machined from a single piece; other options available         Pressure Media:       Hydrogen and all fluids compatible with Titanium alloy; other options available         Pressure Connection:       F250-C Autoclave fitting; thread type 9/16-18UNF-2B female or M16 x 1.5 female cone seal	Insulation Resistance:		> 100 MΩ	@ 50 VDC						
Pressure Media:       Hydrogen and all fluids compatible with Titanium alloy; other options available         Pressure Connection:       F250-C Autoclave fitting; thread type 9/16-18UNF-28 female or M16 x 1.5 female cone seal	Response time 10-90 %:	1 mS								
Pressure Connection:         F250-C Autoclave fitting; thread type 9/16-18UNF-2B female or M16 x 1.5 female cone seal	Wetted Parts:									
Electrical Connection: Mating socket EN1/5301-803 Form A (ex DIN43650) rated IP65 with PG9 cable entry (other options available)										
Net. Weight (Kg): 0.2 Kg										



## **Order Matrix**

Output	Sensor Range	Wires	Туре	Electrical Connection/ Options	Pressure Range	Process Connection
10 mV/V	Model to 2,000 bar (incl. 30,000 psi)	4	HP1000H			
	Model above 2,000 bar	4	HP1100H			
	Model to 2,000 bar (incl. 30,000 psi)	4	HP1001H			
0.51/	Model above 2,000 bar	4	HP1101H			
0-5 V	Model to 2,000 bar (incl. 30,000 psi)	3	HP1011H			
	Model above 2,000 bar	3	HP1111H			
	Model to 2,000 bar (incl. 30,000 psi)	4	HP1002H			
0.101/	Model above 2,000 bar	4	HP1102H			
0-10 V	Model to 2,000 bar (incl. 30,000 psi)	3	HP1012H			
	Model above 2,000 bar	3	HP1112H			
4-20 mA	Model to 2,000 bar (incl. 30,000 psi)	2	HP1003H			
4-20 MA	Model above 2,000 bar	2	HP1103H			
				HA		
	nnection/Options 1 plug and socket			-		
M12 connector HB Cable outlet 1m screened IP67 protection HC				НС		
	•			EXH		
				MH	_	
	oval plus ATEX/IECEx certified			EXG	_	
				EAG		
Pressure Ran	ge in bar					
0-1000 bar					1000	
0-1,500 bar					1500	
0-2,000 bar				2000		
0-3,000 bar					3000	
0-4,000 bar				4000		
0-5,000 bar					5000	
Process Conn	ection					
Autoclave F-2						DE
M16 x 1.5 female cone seal						FK

#### Order Number Example

HP1000H1000DE

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.



