

- \* Pressure ranges to 5,000bar
- \* High pressure integrity for safe use due to unique sensor design.
- \* Pressure diaphragm and process connection is machined from one piece of Titanium with no seals or welds.
- \* High resistance to overpressure and pressure transients
- \* Silicon-on-Sapphire (SoS) sensor technology for outstanding performance and reliability
- \* ATEX/IECEx option available (includes M1 for mining applications) for 4-20mA versions
- \* DNV GL Certification available



### DESCRIPTION

**The HT408-1 series extends the Silicon-on-Sapphire pressure sensor technology into very high pressure applications, with operating ranges up to 5,000 bar and still maintaining an extremely high performance level.**

The unique Silicon-on-Sapphire sensor provides outstanding performance and gives excellent stability over a wide temperature range. The wetted parts and diaphragm are machined from a single piece of titanium alloy which means no weld joints and therefore high pressure integrity and overload capacity. Available in pressure ranges from 0-600 bar to 0-5000 bar and with electrical outputs of 0-10 mV/V, 0-5 V, 0-10 V and 4-20 mA.

Applications include aerospace, laboratory and test, oil and gas monitoring equipment and general industrial.

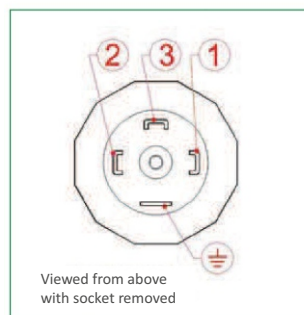
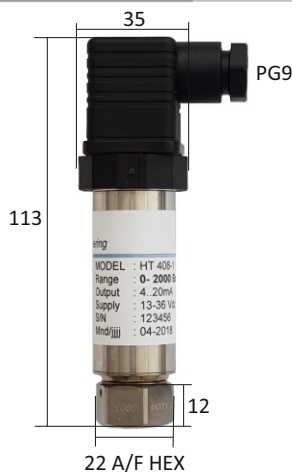
An optional ATEX and IECEx approved version of this product is available for explosion protection for flammable gases (zone 0), dusts (zone 20) and mining areas (group I M1).

DNV GL rules for classification of ships, high speed & light craft and DNV GL offshore standards.



# TECHNICAL DATA

Type:	HT408.xxxx.xxx61		HT408.xxxx.xxx31	HT408.xxxx.xxx41	HT408.xxxx.xxxA1
Sensor Technology:	Silicon-on-Sapphire (SoS)				
Output signal:	10 mV/V (4 wire)	0-5 V (3 or 4 wire)	0-10 V (3 or 4 wire)	4-20 mA (2 wire)	
Supply Voltage:	10 VDC (5-15V)	13-30 VDC	13-30 VDC	10-36 VDC	
Pressure Reference:	Gauge				
Protection of Supply Voltage:	Protected against supply voltage reversal up to 50 V (amplified versions)				
Standard Pressure Ranges (bar):	0 - 600 bar; 0 - 700 bar; 0 - 1,000 bar; 0 - 1,500 bar; 0-2,000 bar.			0 - 2,500 bar; 0 - 4,000 bar; 0 - 5,000 bar (other ranges available)	
Standard Pressure Ranges (psi):	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 - 600 bar to 0 - 3,000 bar; 1.25x for 4,000 bar; 1.2x for 5,000 bar				
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				
Accuracy NLHR:	≤ ±0.25 % of span BFSL (Optional higher accuracy version of ≤ ±0.1 % of span BFSL available)				
Zero Offset and Span Tolerance:	±0.5 %FS at room temperature ( mV/V: ±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 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 (4-20mA 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 I M 1 Ex ia I Ma (group 1 M1)	
ATEX/IECEx Safety Values:	n/a	n/a	n/a	Ui = 28 V; Ii = 119 mA; Pi = 0.65 W; Li = 0.1 μH; Ci = 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 Capability:	Emissions: EN61000-6-4; 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 (≥1,000 bar); Titanium alloy and SAE 316 stainless steel (<1,000 bar)				
Pressure Media:	All fluids compatible with Titanium alloy (≥1,000 bar); All fluids compatible with Titanium alloy and SAE 316 stainless steel (<1,000 bar)				
Pressure Connection:	F250-C Autoclave fitting; thread type 9/16-18UNF-2B female or M16 x 1.5 female cone seal				
Electrical Connection:	Mating socket EN175301-803 Form A (ex DIN43650) rated IP65 with PG9 cable entry (other options available)				



## ELECTRICAL CONNECTION (mA)

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

## ELECTRICAL CONNECTION (V)

Pin. No.	4 wire	3 wire
1	- supply	common
2	+ supply	+ supply
3	+ output	+ output
⊥	- output	to case