



## Hispec HI2200/2300 Series and Protran PR3860

High Temperature Transmitter



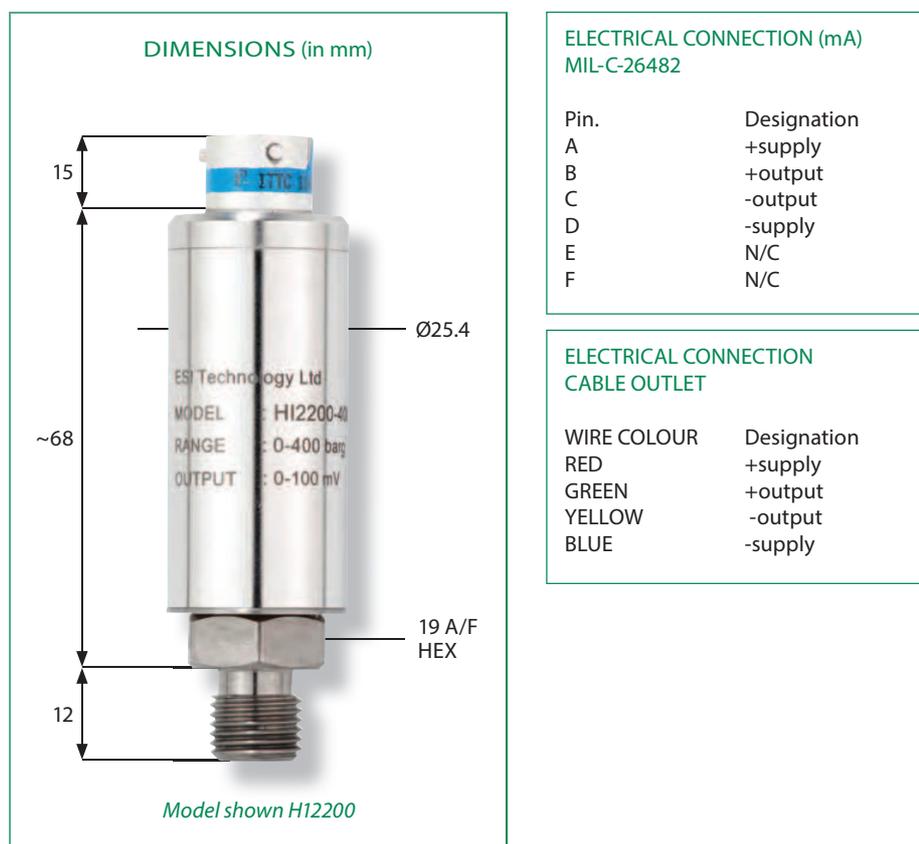
- High operating temperatures of up to 250°C
- High ambient temperatures of up to 200°C
- Pressure ranges to 1,500bar
- Temperature compensated option
- Good chemical compatibility for a range of applications
- ATEX/IECEX option available (includes M1 for mining applications)

## DESCRIPTION

Our high temperature pressure transducers and transmitters are designed to operate at constant media temperatures of up to 250°C and ambient temperatures of up to 200°C, at pressure ranges of up to 1,500bar.

The HI2200/HI2300 model takes advantage of the advanced Silicon-on-Sapphire sensors' outstanding insulation properties which allows the sensor to operate over a very wide temperature range without loss of performance. The HI2200/ HI2300 offers compensated and un-compensated output options and not only does it perform effectively at high media temperatures, but can also be used in environments where there are elevated ambient temperatures of up to 200°C, inside a furnace or thermal chamber for example.

The PR3860 high temperature pressure transmitter has been designed to meet the requirements of the majority of industrial pressure measurement applications where a hygienic flush diaphragm connection is required. Robustly constructed from stainless steel, the PR3860 pressure transmitter permits accurate pressure measurement at elevated temperatures up to 250°C. The flush membrane can be easily cleaned for long term reliability and performance. An optional weldable boss is available to ensure flush-face installation of transmitter to tanks and pipe-work. An optional ATEX and IECEx approved version is available.





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## TECHNICAL DATA

Type:	HI2200/HI2210	HI2300/HI2310
Output signal:	10-20 mV/V (Un-rationalised and un-compensated)	10 mV/V (Rationalised and compensated)
Supply Voltage:	10 VDC (5-15 V)	
Pressure Reference:	Gauge	
Standard Pressure Ranges	0-1 bar, 0-10 bar, 0-25 bar, 0-60 bar, 0-100 bar, 0-250 bar, 0-400 bar, 0-1,000 bar, 0-1,500 bar (Other options available)	
Overpressure Safety:	2x for ranges -1 bar to 600 bar; 1.5x for 1,000 bar range; 1.1x for 1,500 bar range	
Load Driving Capability:	n/a	
Accuracy NLHR:	±0.1% FS typical max. BFSL	
Zero Offset and Span Tolerance:	Zero offset: ±1 mV/V Span Tolerance: 10-20 mV/V	Zero offset: ±1 mV Span Tolerance: ±1% FS
Operating Ambient Temperature:	-40°C to +200°C	
Operating Media Temperature:	-50°C to +200°C	
Storage Temperature:	+5°C to +40°C (recommended best practice)	
Temperature Effects:	Typical thermal zero and span coefficients compensated ±0.05% FS/ °C	±2.0% FS Total error band -40°C to +150°C, typical thermal zero and span coefficients ±0.005% FS/ °C
Electromagnetic Capability:	Emissions: EN61000-6-4 Immunity: EN61000-6-2 Certification: CE Marked	
Insulation Resistance:	> 100 MΩ @ 50 VDC	
Wetted Parts:	Titanium alloy	
Pressure Media:	All fluids compatible with Titanium alloy	
Pressure Connection:	1/4" BSP or 1/4" NPT Male (others options available)	
Electrical Connection:	HI2x0x: PTFE insulated flying lead, conductor size 7/0.1 mm. HI2x1x: MIL-C-26482 6 pin bayonet connector (Accessory not included: mating connector type MS3116F10-6S).	

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.

## ORDER MATRIX

Output		Wires	Type	Electrical Connector	Pressure Range	Process Connection			
10-20 mV/V	1m PTFE insulated flying lead	4	HI2200						
	MIL-C-26482 6 pin bayonet	4	HI2210						
10 mV/V	1m PTFE insulated flying lead	4	HI2300						
	MIL-C-26482 6 pin bayonet	4	HI2310						
<b>Electrical Connection / Option</b>									
1m PTFE insulated flying lead (HI2200, HI2300)							-		
MIL-C-26482 6 pin bayonet (HI2210, HI2310)							-		
<b>Pressure Range in bar</b>									
0-1 bar					0001				
0-10 bar					0010				
0-25 bar					0025				
0-60 bar					0060				
0-100 bar					0100				
0-250 bar					0250				
0-400 bar					0400				
0-1,000 bar					1000				
0-1,500 bar					1500				
<b>Process Connection</b>									
1/4" BSP male						AB			
1/4" NPT male						AM			

### Order Number Example

HI2200-0400AB

For options not listed please contact sales team.



HI2200



# Hispec HI2200/2300 Series and Protran PR3860

High Temperature Transmitter

## TECHNICAL DATA

Type:	PR3860	PR3861	PR3862
Output signal:	4-20 mA (2 wire)	0-5 V (4 wire)	0-10 V (4 wire)
Supply Voltage:	10 - 36VDC	13 - 30 VDC	13-30 VDC
Pressure Reference:	Gauge		
Protection of Supply Voltage:	Protected against supply voltage reversal up to 50 V		
Standard Pressure Ranges:	0-10 bar; 0-25 bar; 0-60 bar; 0-100 bar; 0-250 bar; 0-400 bar (other options available)		
Overpressure Safety:	1.5x all ranges		
Load Driving Capability:	4-20 mA: $R_L < [(U_B - 13 V) / 20 \text{ mA}]$ (e.g. with supply voltage ( $U_B$ ) of 36V, max. load ( $R_L$ ) is 1150 $\Omega$ ) 0-5 V: max load $R_L > 5 \text{ K}\Omega$ 0-10 V: max load $R_L > 10 \text{ K}\Omega$		
Accuracy NLHR:	$\pm 0.30\%$ FS typical max. BFSL		
Zero Offset and Span Tolerance:	$\pm 1.0\%$ FS at room temperature $\pm 5\%$ FS (approx.) adjustment with easy access trimming potentiometers on amplified versions only		
Operating Ambient Temperature:	-20°C to +85°C		
Operating Media Temperature:	0°C to +250°C (sensor and electronics thermally insulated from media temperature)		
Storage Temperature:	+5°C to +40°C (recommended best practice)		
Temperature Effects:	$\pm 2.5\%$ FS total error band for -20°C to +70°C. Typical thermal zero and span coefficients $\pm 0.04\%$ FS/ °C		
ATEX/IECEx Approval Option (4-20mA version only):	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 1 M1)		
ATEX/IECEx Safety Values:	$U_i = 28 \text{ V}$ , $I_i = 119 \text{ mA}$ , $P_i = 0.65 \text{ W}$ , $L_i = 0.1 \mu\text{H}$ , $C_i = 62 \text{ nF}$ , Temperature Range = -20°C to +70°C, Max. cable length = 105 m		
Electromagnetic Capability:	Emissions: EN61000-6-4 Immunity: EN61000-6-2 Certification: CE Marked		
Insulation Resistance:	$> 100 \text{ M}\Omega @ 50 \text{ VDC}$		
Wetted Parts:	SAE 316L stainless steel		
Pressure Media:	All fluids compatible with SAE 316L stainless steel		
Pressure Connection:	1/2" BSP male with standard integral Viton (FKM) o-ring seal and flush SAE 316L stainless steel diaphragm. O-ring seal is for service temperature up to max. 205°C. An alternative o-ring material can be provided for service up to 250°C (charged accessory)		
Electrical Connection:	Mating socket EN175301-803 Form A (ex DIN43650), a screw terminal connector rated IP65 with PG9 cable entry (other options available)		

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## ORDER MATRIX

Output	Wires	Type	Electrical Connector	Pressure Range	Process Connection
4-20 mA	2	PR3860			
0-5 V	4	PR3861			
0-10 V	4	PR3862			
<b>Electrical Connection / Option</b>					
DIN EN175301 plug and socket			-		
ATEX/ IECEx certified DIN EN175301 plug and socket			EX		
<b>Pressure Range in bar</b>					
0-10 bar				0010	
0-25 bar				0025	
0-60 bar				0060	
0-100 bar				0100	
0-250 bar				0250	
0-400 bar				0400	
<b>Process Connection</b>					
1/2" BSP flush diaphragm male					BA

**Order Number Example** PR3860-0400BA

For options not listed please contact sales team.



PR3860