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GENSPEC© GS4400/4500

Pressure Transmitter with RS-485 interface (Proprietary or Modbus RTU Protocol)

- Silicon-on-Sapphire pressure sensor technology
- Pressure ranges to 1500 bar
- Excellent corrosion resistance
- High strength Titanium pressure port
- RS-485 communication up to 1200 m
- Selectable baud rate
- Resistant to interference from noise







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 sensor exhibits virtually no hysteresis and excellent long-term stability over wide temperature ranges.







Specifications

The GENSPEC GS4400/GS4500 pressure transmitters are designed to meet the operational requirements of demanding pressure measurement applications providing fast and noise-free point to point communication in industrial applications in pressure ranges up to 0-1500 bar.

The GS4400 provides a half-duplex digital RS-485 output signal and 0-5V analogue output, while the GS4500 provides a Modbus RTU output signal and 0-5V analogue output. All versions utilise ESI's outstanding Silicon-on-Sapphire sensor featuring all titanium wetted parts for excellent media compatibility and rugged, reliable performance. They provide high stability and repeatability and can be configured to suit a multitude of applications. Each transmitter can be allocated a unique device address and connected in series to other transmitters and devices on the same communications link. The GS4400/GS4500 are also compatible with the ESI-USB software.

Digital accuracy is 0.15%, with an exceptional overpressure limit. All models are supplied with integral 1/4" BSP male with a range of other process connection options. The titanium alloy wetted parts offer unbeatable corrosion resistance and the M12 electrical connection is rated IP67 for high levels of environmental protection.

BINDER CONNECTOR,

Typical applications include:

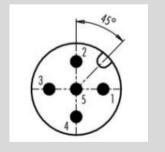
Process control
Industrial automation systems (IAS)
Test and measurement
Laboratory or process measurement
Leak testing and continuous monitoring

Dimensions (in mm)

SERIES 713 5 PIN RECEPTACLE M12x1 THREAD Ø 30 Ø 25 19mm HEX. OR 22mm HEX.

Electrical Connection

Pin No.	Designation			
1	RS485(B)			
2	RS485(A)			
3	Common Ground			
4	DC Power IN			
5	Analog Output			
Case	Case GND			
	450			





PROCESS CONNECTIONS: . REFER TO ORDER MATRIX



Technical Data

Output Signal (Digital): Proprietary RS-48S Protocol Modbus RTU Digital Signal (Rade: 9600, 14400, 19200, 28800, 57600 Output Signal (Analogue): 0 - 5V analogue output, 16bit Kanalogue): 5Hz (max - digital), 1 KHz (max - analogue) Zero Output: 0V Fell Scale Output: 5V Calibration Output: Combination of digital and analog signal Zero Adjustment Rate: User Programmable Span Adjustment Rate: User Programmable Supply Voltage: 6-36 VDC Protection of Supply Supply: up 36V, Analog Output: -0.3V to 5.3V, Digital Output:+15KV ESD Standard Pressure Gauge Protection of Supply: Supply: up 36V, Analog Output: -0.3V to 5.3V, Digital Output:+15KV ESD Standard Pressure O-1 bar Vac; 0 - 1 bar; 0 - 2.5 bar; 0 - 5 bar; 0 - 10 bar; 0 - 15 bar; 0 - 25 bar; 0 - 200		GS4400	GS4500			
Digital Signal Baud Hate: Output Signal (Analogue): Caro Output: Coro Output: Ov Coro Output: Coro Output: Ov Coro Output: Coro Output: Ov Output: Ou	Sensor Technology:	Silicon-on-Sapphire (SOS)				
Output Signal (Analogue): Sample Rate: SHz (max - digital), 1 KHz (max - analogue) OV Full Scale Output: OV Full Scale Output: SV Calibration Output: Cero Adjustment Rate: Supply Voltage: Supply Voltage: Supply Voltage: Supply Voltage: Standard Pressure Ranges (psi): Standard Pressure Ranges (psi): O-30 in Hg; 0-15 psi; 0-20 psi; 0-100 psi; 0-1500 psi; 0-2000 psi; 0-8700 psi; 0-8700 psi; 0-8700 psi; 0-8700 psi; 0-100 psi; 0-1500 psi; 0-2000 psi; 0-100 psi; 0-1500 psi; 0-100 psi; 0-1500 psi; 0-100 psi; 0-1500 psi; 0-100 psi; 0-1500 psi; 0-100 psi; 0-150 psi; 0-100 psi; 0-1500 psi; 0-1	Output Signal (Digital):	Proprietary RS-485 Protocol	ocol Modbus RTU			
Analogue	Digital Signal Baud Rate:	9600, 14400, 19200, 28800, 57600				
Protection Output: 5V Superior Output: 5V Superior Output: 5V Superior Output: 6 Su	Output Signal (Analogue):	0 - 5V analogue output, 16bit				
Event Scale Dutput: Calibration Output: Caro Adjustment Rate: User Programmable Span Adjustment Rate: User Programmable Supply Voltage: Case Protection of Supply Voltage: Standard Pressure Reference: Protection of Supply Voltage: Standard Pressure Ranges (bar): Standard Pressure Ranges (bar): O-30 in Hg; 0-15 psi; 0-30 psi; 0-100 psi; 0-150 psi; 0-200 psi; 0-300 psi; 0-400 psi; 0-8700 psi; 0-8800 ps	Sample Rate:	5Hz (max - digital), 1 KHz (max - analogue)				
Calibration Output: Combination of digital and analog signal Ver Adjustment Rate: User Programmable Span Adjustment Rate: User Programmable Supply Voltage: G-36 VDC Proscution of Supply Voltage: Standard Pressure Ranges (psi): O-1 bar Vac; O-1 bar; O-2.5 bar; O-6 bar; O-10 bar; O-150 bar; O-100 bar; O-250 bar; O-400 bar; O-600 bar; O-1500 bar; O-1500 bar; O-1500 bar; O-1500 bar; O-1500 bar; O-1500 bar; O-1000 bar; O-1500 bar; O-1500 bar; O-1000 bar; O-1500 bar; O-1500 bar; O-1000 bar; O-1500 bar; O-100 bar; O-1500 bar; O-1000 bar; O-1500 bar; O-1000 bar; O-1500 bar; O-1000 bar; O-1500 bar; O-1000 bar; O-1500 bar	Zero Output:	0V				
User Programmable User Programmable User Programmable	Full Scale Output:	5V				
Span Adjustment Rate: Supply Voltage: G-36 VDC Pressure Reference: Protection of Supply Voltage: Standard Pressure Ranges (bar): Standard Pressure S	Calibration Output:	Combination of dig	gital and analog signal			
Supply Voltage: Pressure Reference: Gauge Protection of Supply Voltage: \$0 - 1 bar Vac; 0 - 1 bar; 0 - 2.5 bar; 0 - 10 bar; 0 - 16 bar; 0 - 25 bar; 0 - 100 bar; 0 - 250 bar; 0 - 400 bar; 0 - 100 bar; 0 - 1500	Zero Adjustment Rate:	User Pro	grammable			
Pressure Reference: Protection of Supply Voltage: Standard Pressure Ranges (bar): Standard Pressure Ranges (bar): O-30 in Hg; 0-15 psi; 0-30 psi; 0-100 bar; 0-1500 bar; 0-1500 psi; 0-300 psi; 0-6000 psi; 0-6000 psi; 0-8700 psi; 0-1500 psi; 0-2000 psi; 0-300 psi; 0-1500 psi; 0-3000 psi; 0-6000 psi; 0-8700 psi; 0-8	Span Adjustment Rate:	User Programmable				
Protection of Supply Voltage: Standard Pressure Ranges (bar): O-1 bar Vac; 0-1 bar; 0-2.5 bar; 0-6 bar; 0-10 bar; 0-25 bar; 0-100 bar; 0-250 bar; 0-400 bar; 0-600 bar; 0-100 bar; 0-100 bar; 0-100 bar; 0-250 bar; 0-400 bar; 0-600 bar; 0-100 bar; 0-100 bar; 0-100 bar; 0-100 bar; 0-250 bar; 0-400 bar; 0-600 bar; 0-100 bar; 0-1000	Supply Voltage:	6-36 VDC				
Standard Pressure Ranges (bar): O-1 bar Vac; O-1 bar; 0-2.5 bar; 0-10 bar; 0-16 bar; 0-16 bar; 0-25 bar; 0-100 bar; 0-800 bar; 0-600 bar; 0-1000 bar;	Pressure Reference:	Gauge				
Ranges (bar): O-1000 bar; 0 – 1500 bar (other ranges available) Standard Pressure Ranges (psi): O-30 in Hg; 0-15 psi; 0-30 psi; 0-100 psi; 0-200 psi; 0-300 psi; 0-1500 psi; 0-3000 psi; 0-6000 psi; 0-8700 psi; 0-8700 psi; 0-1500 psi; 0-20000 psi (other ranges available) Overpressure Safety: 4x for 0.5 bar range; 2x for ranges -1 bar to 600 bar; 1.5x for 1000 bar range; 1.1x for 1500 bar range Accuracy NLHR: Zero Offset & Span Tolerance: Operating Ambient Temperature: Operating Media Temperature: 1-40°C to 85°C (-40°F to +185°F) Storage Temperature: 1-5°C to +40°C (+41°F to +104°F) Recommended Best Practice Temperature Effects: 11% Electromagnet Compatibility: Electromagnet Compatibility: Response Time 10-90%: Bus Addressing: Wetted Parts: Pressure Media: 1/4" BSP male (G1/4); 1/4" NPT male; 1/2" BSP male (G1/2); 1/2" NPT male and 1/4" BSP female (others options available) M12, 5 pin connector	Protection of Supply Voltage:	Supply: up 36V, Analog Output: -0.3V to 5.3V, Digital Output:+15KV ESD				
Ranges (psi): 15000 psi; 0-20000 psi (other ranges available) Overpressure Safety: 4x for 0.5 bar range; 2x for ranges -1 bar to 600 bar; 1.5x for 1000 bar range; 1.1x for 1500 bar range Accuracy NLHR: digital: ±0.15% of span BFSL, analog: ±0.25% of span BFS Zero Offset & Span Tolerance: 1±0.6% FS Operating Ambient Temperature: Operating Media -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% Electromagnet Compatibility: Emissions: BS EN61000-6-3; Immunity: BS EN61000-6-2; Certification: CE/UKCA Marked Response Time 10-90%: User Programmable Wetted Parts: Titanium Alloy Pressure Media: All fluids compatible with Titanium alloy 1/4" BSP male (G1/4); 1/4" NPT male; 1/2" BSP male (G1/2); 1/2" NPT male and 1/4" BSP female (others options available) M12, 5 pin connector	Standard Pressure Ranges (bar):					
Accuracy NLHR: digital: ±0.15% of span BFSL, analog: ±0.25% of span BFS Zero Offset & Span Tolerance: Departing Ambient Temperature: Operating Media Temperature: -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% Electromagnet Compatibility: Emissions: BS EN61000-6-3; Immunity: BS EN61000-6-2; Certification: CE/UKCA Marked Response Time 10-90%: (1000/update rate) + 1ms, <17ms Bus Addressing: User Programmable Wetted Parts: Titanium Alloy Pressure Media: All fluids compatible with Titanium alloy 1/4" BSP male (G1/4); 1/4" NPT male; 1/2" BSP male (G1/2); 1/2" NPT male and 1/4" BSP female (others options available) Electrical Connection: M12, 5 pin connector	Standard Pressure Ranges (psi):					
Tolerance: Operating Ambient Temperature: Operating Media Temperature: Operating Media Temperature: Operating Media Temperature: **O°C to 85°C (-40°F to +185°F) Storage Temperature: **15°C to +40°C (+41°F to +104°F) Recommended Best Practice **1% Electromagnet Compatibility: Emissions: BS EN61000-6-3; Immunity: BS EN61000-6-2; Certification: CE/UKCA Marked **Compatibility: **Oser Programmable** User Programmable Wetted Parts: Titanium Alloy Pressure Media: **All fluids compatible with Titanium alloy 1/4" BSP male (G1/4); 1/4" NPT male; 1/2" BSP male (G1/2); 1/2" NPT male and 1/4" BSP female (others options available) Electrical Connection: **M12, 5 pin connector**	Overpressure Safety:	4x for 0.5 bar range; 2x for ranges -1 bar to 600 bar; 1.5x for 1000 bar range; 1.1x for 1500 bar range				
Tolerance: Operating Ambient Temperature: Operating Media Temperature: Operating Media Temperature: -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% Electromagnet Compatibility: Emissions: BS EN61000-6-3; Immunity: BS EN61000-6-2; Certification: CE/UKCA Marked Compatibility: Response Time 10-90%: (1000/update rate) + 1ms, <17ms Bus Addressing: User Programmable Wetted Parts: Titanium Alloy Pressure Media: All fluids compatible with Titanium alloy Pressure Connection: 1/4" BSP male (G1/4); 1/4" NPT male; 1/2" BSP male (G1/2); 1/2" NPT male and 1/4" BSP female (others options available) Electrical Connection: M12, 5 pin connector	Accuracy NLHR:	digital: ±0.15% of span BFS	L, analog: ±0.25% of span BFS			
Temperature: Operating Media Temperature: -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 tink Electromagnet Compatibility: Emissions: BS EN61000-6-3; Immunity: BS EN61000-6-2; Certification: CE/UKCA Marked (1000/update rate) + 1ms, <17ms Bus Addressing: User Programmable Wetted Parts: Titanium Alloy Pressure Media: All fluids compatible with Titanium alloy 1/4" BSP male (G1/4); 1/4" NPT male; 1/2" BSP male (G1/2); 1/2" NPT male and 1/4" BSP female (others options available) Electrical Connection: M12, 5 pin connector	Zero Offset & Span Tolerance:	±0.6% FS				
Temperature: Storage Temperature: +5°C to +40°C (+41°F to +104°F) Recommended Best Practice timperature Effects: timperature Effects: Electromagnet Compatibility: Emissions: BS EN61000-6-3; Immunity: BS EN61000-6-2; Certification: CE/UKCA Marked (1000/update rate) + 1ms, <17ms Bus Addressing: User Programmable Wetted Parts: Titanium Alloy Pressure Media: All fluids compatible with Titanium alloy 1/4" BSP male (G1/4); 1/4" NPT male; 1/2" BSP male (G1/2); 1/2" NPT male and 1/4" BSP female (others options available) Electrical Connection: M12, 5 pin connector	Operating Ambient Temperature:	-40°C to 85°C (-40°F to +185°F)				
Electromagnet Compatibility: Emissions: BS EN61000-6-3; Immunity: BS EN61000-6-2; Certification: CE/UKCA Marked (1000/update rate) + 1ms, <17ms (1000/update rate)	Operating Media Temperature:	-40°C to 85°C (-40°F to +185°F)				
Electromagnet Compatibility: Response Time 10-90%: Response Time 10-90%: Bus Addressing: Wetted Parts: Titanium Alloy Pressure Media: All fluids compatible with Titanium alloy 1/4" BSP male (G1/4); 1/4" NPT male; 1/2" BSP male (G1/2); 1/2" NPT male and 1/4" BSP female (others options available) Electrical Connection: Emissions: BS EN61000-6-2; Certification: CE/UKCA Marked (1000/update rate) + 1ms, <17ms User Programmable Titanium Alloy All fluids compatible with Titanium alloy 1/4" BSP male (G1/4); 1/4" NPT male; 1/2" BSP male (G1/2); 1/2" NPT male and 1/4" BSP female (others options available)	Storage Temperature:	+5°C to +40°C (+41 °F to +104°F) Recommended Best Practice				
Compatibility: Response Time 10-90%: Bus Addressing: User Programmable Titanium Alloy Pressure Media: All fluids compatible with Titanium alloy 1/4" BSP male (G1/4); 1/4" NPT male; 1/2" BSP male (G1/2); 1/2" NPT male and 1/4" BSP female (others options available) Electrical Connection: M12, 5 pin connector	Temperature Effects:	±1%				
Bus Addressing: Wetted Parts: Titanium Alloy Pressure Media: All fluids compatible with Titanium alloy 1/4" BSP male (G1/4); 1/4" NPT male; 1/2" BSP male (G1/2); 1/2" NPT male and 1/4" BSP female (others options available) Electrical Connection: M12, 5 pin connector	Electromagnet Compatibility:	Emissions: BS EN61000-6-3; Immunity: BS EN61000-6-2; Certification: CE/UKCA Marked				
Wetted Parts: Pressure Media: All fluids compatible with Titanium alloy 1/4" BSP male (G1/4); 1/4" NPT male; 1/2" BSP male (G1/2); 1/2" NPT male and 1/4" BSP female (others options available) Electrical Connection: M12, 5 pin connector	Response Time 10-90%:	(1000/update rate) + 1ms, <17ms				
Pressure Media: All fluids compatible with Titanium alloy 1/4" BSP male (G1/4); 1/4" NPT male; 1/2" BSP male (G1/2); 1/2" NPT male and 1/4" BSP female (others options available) Electrical Connection: M12, 5 pin connector	Bus Addressing:	User Programmable				
Pressure Connection: 1/4" BSP male (G1/4); 1/4" NPT male; 1/2" BSP male (G1/2); 1/2" NPT male and 1/4" BSP female (others options available) Electrical Connection: M12, 5 pin connector	Wetted Parts:	Titani	um Alloy			
Electrical Connection: available) M12, 5 pin connector	Pressure Media:	All fluids compatible with Titanium alloy				
	Pressure Connection:					
Net Weight (Kg):	Electrical Connection:	M12, 5 pin connector				
vet. Weight (kg).	Net. Weight (Kg):	<0.2 kg				



Genspec© GS4400/4500 RS-485 Pressure Transmitter



Order Matrix

Output	Wires	Туре	Options	Pressure Range	Process Connection
RS485	5	GS4400			
Modbus	5	GS4500			
Electrical Connection					
M12 Connector			В		
Pressure Range in bar					
0-1 bar Vac				V001	
0-1 bar				0001	
0-2.5 bar				02.5	
0-6 bar				0006	
0-10 bar				0010	
0-16 bar				0016	
0-25 bar				0025	
0-100 bar				0100	
0-250 bar				0250	
0-400 bar				0400	
0-600 bar				0600	
0-1000 bar				1000	
0-1500 bar				1500	
Process Connection					
1/4" BSP Male (G1/4)					АВ
1/2" BSP Male (G1/2)					AC
1/4" NPT Male					AM
1/2" NPT Male					AN

For options not listed please contact the sales team

Order Number Example

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 equiptment, traceable to national measurement standards.

GS4400B00B0600AB

