

# esi

## 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.

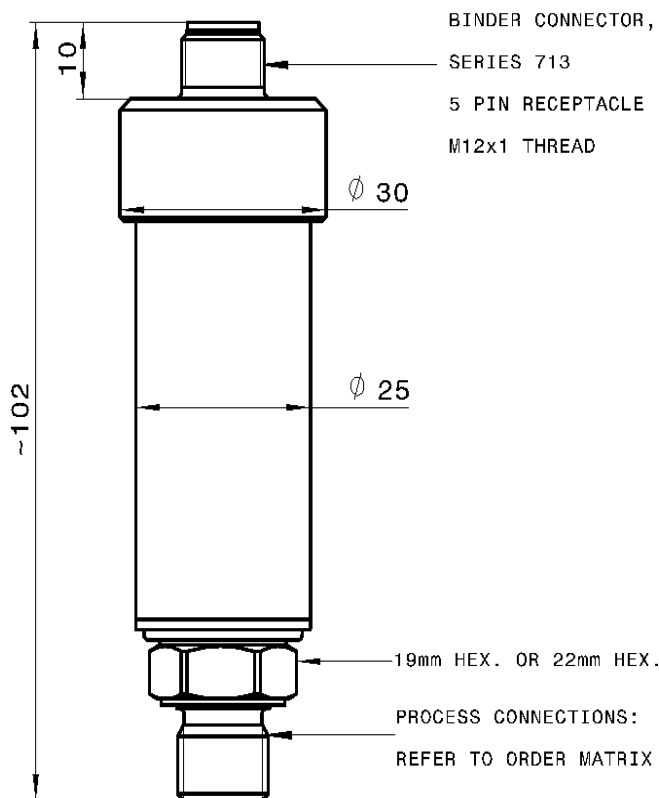
The GS4400 provides a half-duplex digital RS-485 output signal and 0-5V analogue output, while the GS4500 provides a Modbus RTU output signal and 0-5V analogue output. All versions utilise ESI's outstanding Silicon-on-Sapphire sensor featuring all titanium wetted parts for excellent media compatibility 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.

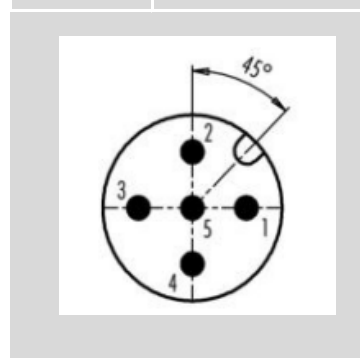
**Typical applications include:**

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

## Dimensions (in mm)



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



Hex Size	Range/Thread
19mm	10 bar and above
22mm	Below 10 bar
	1/2" BSP Male
25.4mm	1/2" NPT Male

For non-standard threads contact Sales

## Technical Data

	GS4400	GS4500
Sensor Technology:	Silicon-on-Sapphire (SOS)	
Output Signal (Digital):	Proprietary RS-485 Protocol	Modbus RTU
Digital Signal Baud Rate:	9600, 14400, 19200, 28800, 57600	
Output Signal (Analogue):	0 - 5V analogue output, 16bit	
Sample Rate:	5Hz (max - digital), 1 KHz (max - analogue)	
Zero Output:	0V	
Full 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	
Pressure Reference:	Gauge	
Protection of Supply Voltage:	Supply: up 36V, Analog Output: -0.3V to 5.3V, Digital Output:+15KV ESD	
Standard Pressure Ranges (bar):	0-0.5bar; 0-1 bar; 0-1 bar Vac; 0-1.6 bar; 0-2.5 bar; 0-6 bar; 0-10 bar; 0-16 bar; 0-25 bar; 0-100 bar; 0-250 bar; 0-400 bar; 0-600 bar; 0-1000 bar; 0-1500 bar (other ranges available)	
Standard Pressure Ranges (psi):	0-30 in Hg; 0-15 psi; 0-30 psi; 0-100 psi; 0-150 psi; 0-200 psi; 0-300 psi; 0-1500 psi; 0-3000 psi; 0-6000 psi; 0-8700 psi; 0-15000 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: $\pm 0.15\%$ of span BFSL, analog: $\pm 0.25\%$ of span BFS	
Zero Offset & Span Tolerance:	$\pm 0.6\%$ FS	
Operating Ambient Temperature:	-40°C to 85°C (-40°F to +185°F)	
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:	$\pm 1\%$	
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	
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	
Net. Weight (Kg):	<0.2 kg	

## Order Matrix

Output	Wires	Type	Options	Pressure Range	Process Connection
RS485	5	GS4400			
Modbus	5	GS4500			
<b>Electrical Connection</b>			B		
M12 Connector (IP67 when mated with equivalent connector)					
<b>Pressure Range in bar</b>					
0-0.5 bar				00.5	
0-1 bar				0001	
0-1 bar Vac				V001	
0-1.6 bar				01.6	
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	
<b>Process Connection</b>					
1/4" BSP Male (G1/4)					AB
1/2" BSP Male (G1/2)					AC
1/4" NPT Male					AM
1/2" NPT Male					AN

**Order Number Example** GS4400B0600AB

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.