

## GP-2610 Digital Pressure Sensor

### Features

- ✓ Digital compensation and diagnostics function
- ✓ High performance,  $TEB \leq \pm 0.25\%FS$  @  $-25^{\circ}C \sim 85^{\circ}C$
- ✓ Pressure calibrated, analog and digital dual output
- ✓ Compact design, hexagon down to 19 A/F
- ✓ High pressure overload
- ✓ EMC protection.



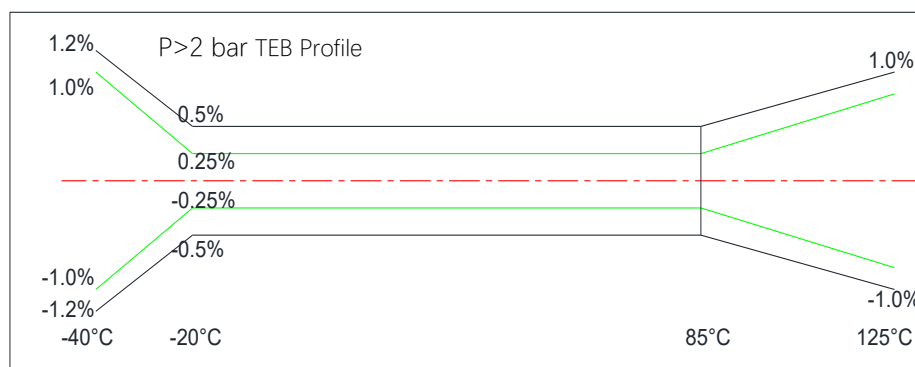
### Introduction

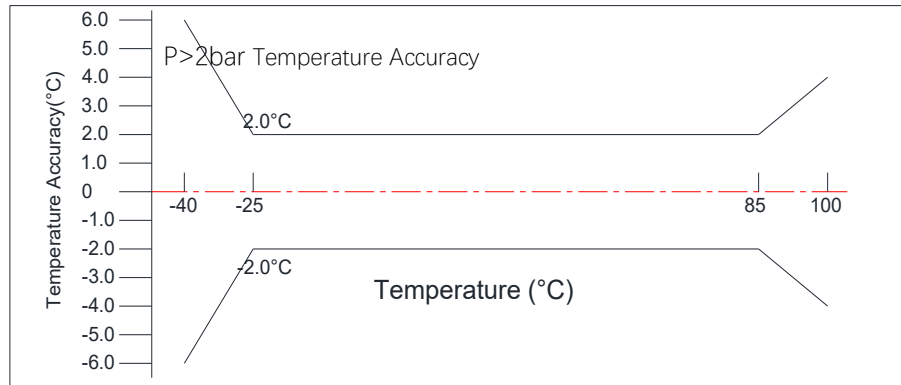
The GP-2610 is a high-performance industrial pressure sensor with digital compensation. This product incorporates an advanced MEMS pressure sensing chip, is filled with silicone oil, and undergoes diaphragm isolation and digital calibration. It features electromagnetic compatibility protection and fault diagnosis functions. The newly designed non-traditional sensor structure significantly improves the sensor's stability and repeatability, and the compensated sensor offers superior overall accuracy characteristics.

### Specification

TEB (Total Error Band) <sup>1</sup>	Pressure Range $P \geq 1$ bar $-20^{\circ}C \sim 85^{\circ}C$	Pressure Range $P < 1$ bar $-10^{\circ}C \sim 70^{\circ}C$
TEB, Typical	$\leq \pm 0.25\% FS$	$\leq \pm 0.5\% FS$
TEB, Max.	$\leq \pm 0.50\% FS$	$\leq \pm 1.0\% FS$
TEB, Others Temp. Range	Refer to TEB Profile	N/A
Temperature Output accuracy	See Temp. Profile	N/A
Response Time(Voltage Outputs) <sup>2</sup>	< 2 ms	
Durability, 10%FS~90%FS	>10 x 10 <sup>6</sup> cycles	
Long term stability	$\pm 0.1\% FS/Year$	$\pm 0.2\% FS/Year$

1 TEB includes accuracy, Linearity, Hysteresis. Repeat and Thermal effects.  
2 Response time <1ms version is available upon request.





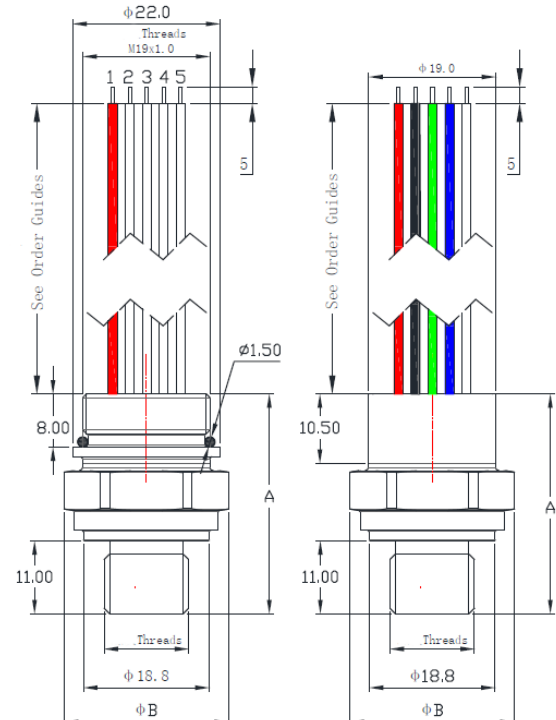
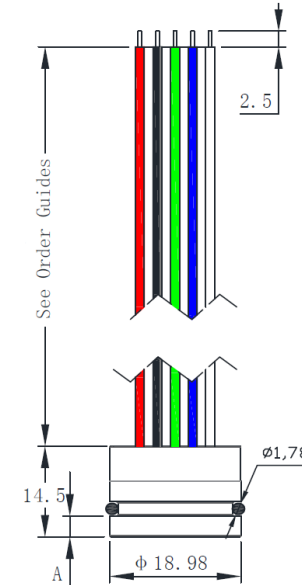
Output Type	Ratio Voltage	Voltage	I2C/SPI
Output Signal	0.5-4.5V	0.5-2.5V	5-95%/10-90%
Power Supply(SV)	5.0±5% VDC	3.3-5 VDC	3.3/5.0V
Current Consumption	2.9 mA	2.9 mA	2.9 mA
Max. Load Resistor(RL)	≥ 2 KΩ	≥ 2 KΩ	≥ 2 KΩ

Item	Option	Parameter
Material	Diaphragm	SS 316L
	Housing	SS 316L
	Glue	Epoxy resin
Temperature-	Medium	-40 – 125°C
	Ambient	-40 – 125°C
	Compensated	-20 – 85°C
	Storage	-40 – 125°C
EMC	Emission	EN55032 Class B
	ESD	Contact Discharge: 8KV, Air Discharge 15KV
	EM Filed	IEC 61000-4-3, 80-2000MHz-10V/m
Over Voltage	V-out	Protected to 6.5V
Miswiring	V+ and GND	Protected
Shock	IEC 60068-2-27	Peak: 100G
Vibration	IEC 60068-2-6 (Sinus)	20G, 10-2000Hz
	IEC 60068-2-64 (Random)	7.5G rms, 5-1000Hz
Protection	IP67, IP68	

## Pressure Range

Pressure (bar)	0.35	1	2	5	10	20	30	40	60	100	160	250	350	400
Overload (x)	6x	3x	5x	5x	4x	3x	4x	4x	3x	3x	3x	3x	2x	2x
Burst Pressure(x)	20x	20x	20x	20x	10x	5x	5x	5x	5x	4x	4x	4x	3x	2.6x

**Connections**

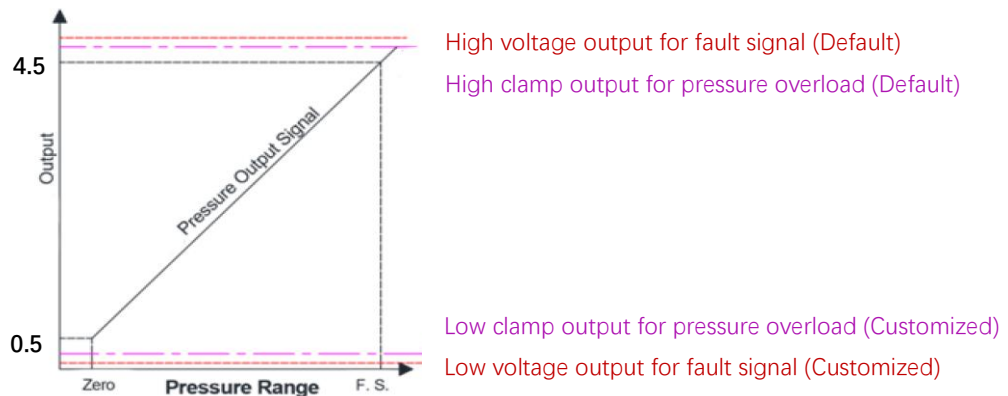
Connections	Cell welding with thread					Cell						
Figure												
Dimensions	Pressure	≤1 bar	<160 bar	≥160 bar	≤1 Bar	≤ 40 bar	≥ 40 bar					
	A	29.3mm	31.5mm	33.2mm	3.1mm	2.85mm	3.35mm					
	B	24.5mm	20.9mm	24.5mm	-	-	-					
	Hex	22A/F	19A/F	22A/F	-	-	-					
Material	Housing	SS 316L										
	Wires <sup>1</sup>	PVC26AWG flat cable / Teflon26AWG wires					Teflon 26AWG wires					
	Connector	Plastic										
	Tin	Plated Ends										
O-ring	-					NBR						
Wire Definition	Output	1	2	3	4	5	Red	Black	Green	Blue	White	
	Voltage <sup>1</sup>	V+	GND	N/C	N/C	Vout	V+	GND	N/C	N/C	Vout	
	I2C&V dual	V+	GND	SDA	SCL	Vout	V+	GND	SDA	SCL	Vout	
	I2C	V+	GND	SDA	SCL		V+	GND	SDA	SCL		
	SPI	V+	GND	SDI	SCLK	CSB	V+	GND	SDI	SCLK	CSB	

1 PVC 26AWG, -20°C-85°C, Teflon 26AWG, -40°C-125°C

**Tips:**

- 1: The pressure sensor is suitable for the customer to use by assembling the shell, when installing, please avoid pressing the front and back faces of the sensor to ensure the sensor to be stable.
- 2: When welding the sensor to a shell or housing, improper methods might lead to irreparable damage. At this time, please contact us to offer the welding of components directly.

## Output & Fault Diagnostics



Take output 0.5~4.5 VDC for instance

Item	Parameter				
Zero Offset <sup>1</sup>	Zero offset can be adjustable				
Output Clamp Levels	If pressure overloaded, limits output signal to a setting value;				
Fault Singal Output	Once Pressure Sensor is broken, output a fault signal. Fault signale can be set to high or low, default setting is high				
Output Signal	Ratio Metrics	0.5-2.5V	0.5-4.5V	I2C/SP 5%-95%	I2C/SP 10%-90%
Zero	10%	0.5V	1V	5%	10%
FS	90%	2.5V	5V	95%	90%
Span	80%	2V	4V	90%	80%
Output Clamp Level-Hi	97%	2.7V	4.85V	N/A <sup>2</sup>	N/A <sup>2</sup>
Fault Singal-Hi	98%	≈ VDD	≈ VDD	N/A <sup>2</sup>	N/A <sup>2</sup>
1 Zero offset function needs to order the Zero Programing Tool separately.					
2 Fault diagnostics for I2C/SPI digital outputs, please refer to EEPROM description on manual.					

**Order Guide**

GP-2610		Digital Pressure Sensor								
<input type="checkbox"/>	<input type="checkbox"/>	Pressure Range								
Code	Range	Type	Code	Range	Type					
K3	0~350 mbar	G	40	0~40 bar	S					
01	0~1 bar	G/A	60	0~60 bar	S					
02	0~2 bar	G/A	A0	0~100 bar	S					
05	0~5 bar	G/A	A6	0~160 bar	S					
10	0~10 bar	G/A	B5	0~250 bar	S					
20	0~20 bar	G/A	C5	0~350 bar	S					
30	0~30 bar	G/A/S	D0	0~400 bar	S					
<input type="checkbox"/>	<input type="checkbox"/>	Pressure Type								
G	Gauge									
A	Absolute									
S	Sealed Gauge									
<input type="checkbox"/>	<input type="checkbox"/>	Power Supply								
3	3.3VDC									
5	5.0VDC									
<input type="checkbox"/>	<input type="checkbox"/>	Power Supply								
V1	0.5-2.5VDC									
V2	0.5-4.5VDC									
IV	I2C & Voltage Dual									
IC	I2C interface									
SP	SPI interface									
<input type="checkbox"/>	<input type="checkbox"/>	Output Ratio								
A	10%-90%									
B	5%-95%									
C	5%-65%									
N	Non digital output									
<input type="checkbox"/>	<input type="checkbox"/>	Electrical Connection								
R	PVC flat cable									
T	Teflon wires									
X	Customized									
<input type="checkbox"/>	<input type="checkbox"/>	Pressure Connector								
G1	G1/4 M, with ED gasket									
N1	1/4-18 NPT									
N2	1/8-27 NPT (pressure<60bar)									
19	19mm Cell									
X1	Customized									
<input type="checkbox"/>	<input type="checkbox"/>	Gasket								
0	None									
1	NBR, -40-85°C									
2	FKM, -20-125°C									
<input type="checkbox"/>	<input type="checkbox"/>	Pressure Buffer								
W	With									
N	No									
GP-2610	10	G	5	V2	N	R	G1	1	N	

Completed Sample: **GP-2610-10-G-5-V2-N-R-G1-1-N**