Model GP1200
Fiber Optic Gage Pressure Transducer

DavidsonSensors™ provide the safest, most reliable and cost-effective instrumentation for harsh industrial environments.

This product data sheet describes Model GP1200 gage pressure transducer. The transducer may be configured for measurement of temperature in addition to pressure for applications that require high accuracy measurements.

100 psig Transducer with NPT Connection

Operating Pressure Ranges

100 psig
250 psig
500 psig
1000 psig
2000 psig
3000 psig
5000 psig
10,000 psig
20,000 psig

Operating Temperature Ranges (°F)

550° F
750° F
1000° F

Overpressure Limits
110% of rated pressure

Proof Pressure Limits
150% of rated pressure

Physical Specifications

Process Connections
Male NPT
Female NPT
Flanged

Wetted Materials
Inconel-718

Performance Specifications

Accuracy (with temperature correction)

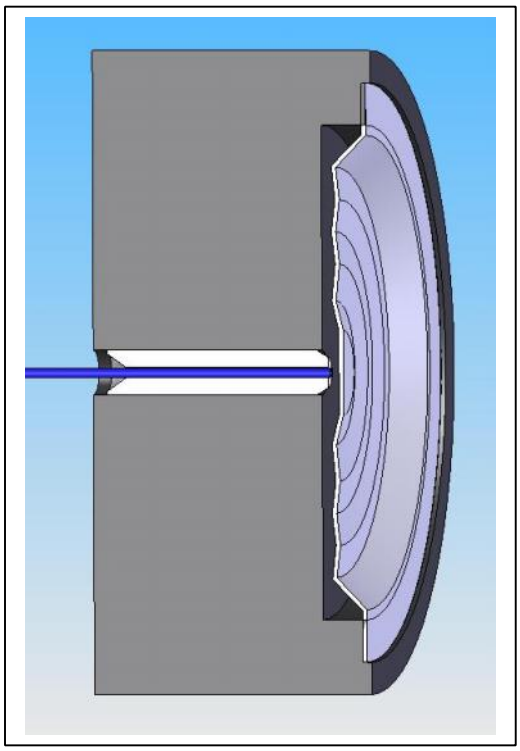
±0.1% of Full Scale at 50°F to 150°F

±0.25% of Full Scale over the Rated Temperature Range

Theory of Operation

Process pressure deflects the pressure sensing diaphragm approximately 0.0005 inch at full scale operating pressure. The diaphragm is integrated with a fiber optic sensor. The deflection of the diaphragm is measured remotely by the fiber optic signal conditioner where the optical signal is converted into an electronic output signal in the appropriate engineering units.

A temperature sensor may be integrated with the pressure transducer and used for thermal correction of the pressure output to improve the accuracy when making measurements at elevated temperatures.



Fiber Optic Pressure Sensing Diaphragm

Fiber Optic Sensing Advantages

Fiber optic sensing offers a number of advantages for measurement in harsh industrial environments. DavidsonSensors™ are intrinsically-safe, immune to electromagnetic interference, and suitable for continuous use at temperatures up to 1000°F.

Although fiber optic sensing systems can be used effectively even in benign environments, Davidson fiber optic sensing systems offer significant technical advantages when used in the following environments:

- **Hot, Corrosive Environments**
- **Explosion Hazardous Areas**
- **High EMI Areas**

Fiber optic sensing systems eliminate or mitigate many of the following common problems:

- **Failure and Drift due to Hydrogen Permeation**
- **Drift due to Fill-Fluid Leaks**
- **Failure due to Lightning**
- **Problems due to Ground Potential**
- **Noise due to EMI/RFI**
- **Costs of Nitrogen Purge Systems**

Testing and Calibration

Standard test and calibration includes the following:

Hydrostatic test is performed at 110% of rated pressure with de-ionized water at ambient room temperature.

Calibration is performed over the full range of operating pressure and temperature.

Documentation

Calibration data sheets will be provided for each transducer upon request.

Tagging

Stainless steel tags will be permanently attached to each transducer upon request.

Safety (Transducer with Cable)

Intrinsically-safe and suitable for use in:
Class I, Division 1, Groups B, C, and D
Class II, Division 1, Groups E, F, and G
Class III, Division 1

Other Applications

For information about other Davidson products, see
www.davidson-instruments.com

Guide to Configuring a Fiber Optic Sensing System

For information to assist you in planning a fiber optic sensing system, see
www.davidson-instruments.com

Ordering Data

Model Number	GP1200	
Pressure Range	F	100 psig
	G	250 psig
	H	500 psig
	I	1,000 psig
	J	2,000 psig
	K	3,000 psig
	L	5,000 psig
	M	10,000 psig
	N	20,000 psig
Temperature Range	5	550° F
	7	750° F
	10	1000° F
Temperature Sensor	N	No
	Y	Yes
Cable Jacket/Length (X is the length in feet)	N – 0 / 0	None
	A – X / 0	SS Armor
	B – X / 0	SS Braid
	C – X / 0	DX
	D – X_1 / X_2	SS Armor / DX
	E – X_1 / X_2	SS Braid / DX
Cable Temperature Rating	1	125° F
	6	550° F
	X	Other (Specify)
Cable Termination	P	None (pigtail)
	S	ST Connector
	R	Rugged
	X	Other Connector
Process Connection	M	Male NPT
	F	Female NPT
	A	ANSI Flange

Overall Length	____	Dimension A
See page 4 for Illustration	Z	Not Applicable
Transducer Diameter	____	Dimension B
See page 4 for Illustration	Z	Not Applicable
Extended Length	____	Dimension C
See page 4 for Illustration	Z	Not Applicable
Flange Diameter	____	Dimension D
See page 4 for Illustration	Z	Not Applicable
NPT Thread Size	A	1/4 -18
	B	3/8 -18
	C	1/2 -14
	Z	Not Applicable
Flange Class	150	ANSI 150
	300	ANSI 300
	600	ANSI 600
	Z	Not Applicable
Other Specifications*	0	No
	1	Yes

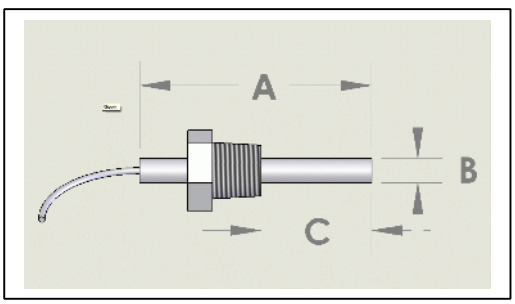
* Tagging, documentation, other instructions etc.

Ordering Data Worksheet

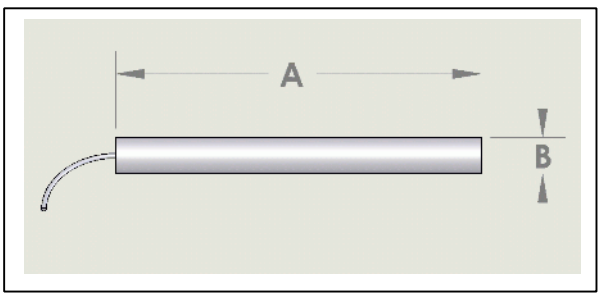
Unit Number	Model Number	Pressure Range	Temperature Range	Temperature Sensor	Cable Jacket / Length	Cable Temperature Rating	Cable Termination	Process Connection	Overall Length Dimension A	Transducer Diameter Dimension B	Extended Length Dimension C	Flange Diameter Dimension D	NPT Thread Size	Flange Class	Other Specifications
1	GP1200														
2	GP1200														
3	GP1200														
4	GP1200														
5	GP1200														
6	GP1200														

Process Connection Dimensions

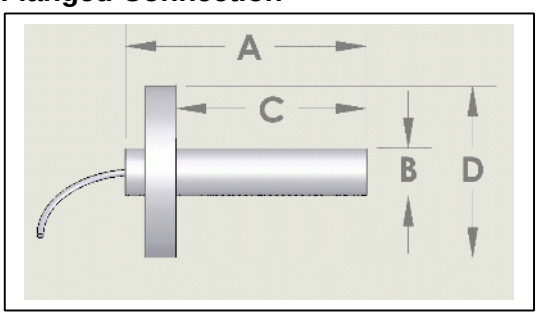
Male NPT Connection



Female NPT Connection



Flanged Connection



U.S. Patent Pending

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