

Wet Differential Pressure Sensor with Optional Manifold Assembly

Description

The Siemens QBE Series Wet Differential Pressure Sensors utilize a well-proven ceramic technology making them an ideal choice across a broad spectrum of applications. These sensors can be ordered individually or pre-assembled with an optional three-valve manifold.

Features

- Supply voltage 7.5 to 33 Vdc
- Loop powered 4 to 20 mA output signal
- 1/4-inch NPT process connections
- 1/2-inch conduit connection with adapters for installations not using conduit
- Compatible with water and water/glycol mixtures

Applications

The QBE Sensor is particularly suitable for use in HVAC systems where continuous monitoring of flow rate or differential pressure across a control valve is required.

Compatibility

The QBE Series Differential Pressure Sensors are compatible with most devices or systems capable of powering and processing a DC 4 to 20 mA output signal.



Technology

The pressure to be monitored acts on a ceramic sensor element. The ceramic element has the following significant advantages

- Very low susceptibility to temperature
- Resistance to high temperature
- No mechanical aging or creepage

The sensor signal is linearized, temperature-compensated and amplified by the sensor electronics.

Product Number	Description	Operating Differential Pressure Rating (psi)	Max. Differential pressure between high and low ports (psi)	Burst Pressure (psi)
QBE3190UD25	Wet Differential Pressure Sensor, with Manifold	0 to 25	72	250 (Limited by manifold rating)
QBE3190UD50		0 to 50	116	
QBE3190UD100		0 to 100	290	
QBE3100UD25	Wet Differential Pressure Sensor	0 to 25	72	540
QBE3100UD50		0 to 50	116	
QBE3100UD100		0 to 100	290	


CAUTION:

- The maximum manifold pressure rating is 250 psi.
- Exceeding the maximum differential pressure will damage the sensor.

Specifications

Electrical Data	Input power	7.5V to 33 Vdc
	Output signal	4 to 20 mA Short-circuit and polarity reversal protected
Performance Characteristics	Long-term stability (Per DIN EN 60770)	±0.5% Full Scale
	Resolution	0.1% Full Scale
	Sum of linearity, hysteresis and repeatability	<±0.5% Full Scale
	Zero point	<±0.4% Full Scale
	TC zero point	<±0.4% Full Scale/K
	TC sensitivity	<±0.015% Full Scale/K
	Response time	<5 ms
	Load alternation	<50 Hz
Environmental Conditions	Suitable process media	Air, water, water and glycol mixtures
	Process temperature	
	Sensor only	5°F to 185°F (-15°C to 85°C)
	Sensor with manifold	40°F to 185°F (5°C to 85°C)
	Ambient operating temperature	5°F to 185°F (-15°C to 85°C)
	Ambient storage temperature	-40°F to 185°F (-40°C to 85°C)
Installation Considerations	Ambient humidity	0 to 90% rh (non-condensing)
	Enclosure	IP65/NEMA 4
	Electrical connections	1/2" FNPT conduit (kit included for non-conduit installations)
	Process connections	1/4" FNPT
	Mounting orientation	Any orientation is allowable (avoid orientations that may be susceptible to air pockets)

Specifications, Continued

Materials of Construction, Sensor	Enclosure	Aluminum (AlMgSi1)
	Wetted parts	Stainless steel (303)
	Sealant	FPM (fluorelastomer)
	Mounting bracket	Stainless steel (303)
	Measuring element	Ceramic
Materials of Construction, Manifold	Manifold	Aluminum (6061-T6511)
	Tubing	Copper (UNS C12200)
	Fitting	Brass (C36000)
	Valve stem	Polyphenylene Sulfide (PPS) High-performance thermoplastic polymer
	O-rings	Ethylene Propylene Rubber (EPS, EPDM)
Directives and Standards	Electromagnetic compatibility for electric measuring, control and laboratory devices	EN 61326-2-3
	Electromagnetic immunity	EN 61 000-6-2, EN 61326-1
	Electromagnetic emissions	EN 61 000-6-3, EN 61326-1
	CE conformity to EMC directive	2004/108/EC
Environmental compatibility	Environmental product declaration CE1E1922en provides information on environmentally compatible product design and assessment (RoHS compliance, composition of substances, packaging, environmental benefit, and disposal).	ISO 14001 (environment) ISO 9001 (quality) SN 36350 (environ. compatible products) RL 2002/95/EG (RoHS)

Ordering Information

Part Number	Description
QBE3190UD25	Wet Differential Pressure Sensor with 3-valve manifold, 0 to 25 psi differential pressure rating, 72 psi differential pmax.
QBE3190UD50	Wet Differential Pressure Sensor with 3-valve manifold, 0 to 50 psi differential pressure rating, 116 psi differential pmax.
QBE3190UD100	Wet Differential Pressure Sensor with 3-valve manifold, 0 to 100 psi differential pressure rating, 290 psi differential pmax.
QBE3100UD25	Wet Differential Pressure Sensor, 0 to 25 psi differential pressure rating, 72 psi differential pmax.
QBE3100UD50	Wet Differential Pressure Sensor, 0 to 50 psi differential pressure rating, 116 psi differential pmax.
QBE3100UD100	Wet Differential Pressure Sensor, 0 to 100 psi differential pressure rating, 290 psi differential pmax.

Wiring

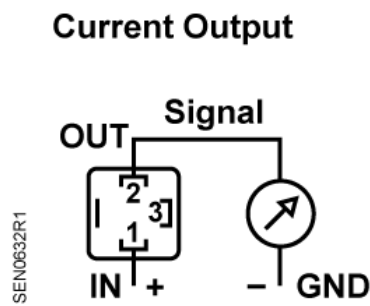


Figure 1. Wiring Schematic.

Dimensions

Dimensions in Inches (Millimeters)

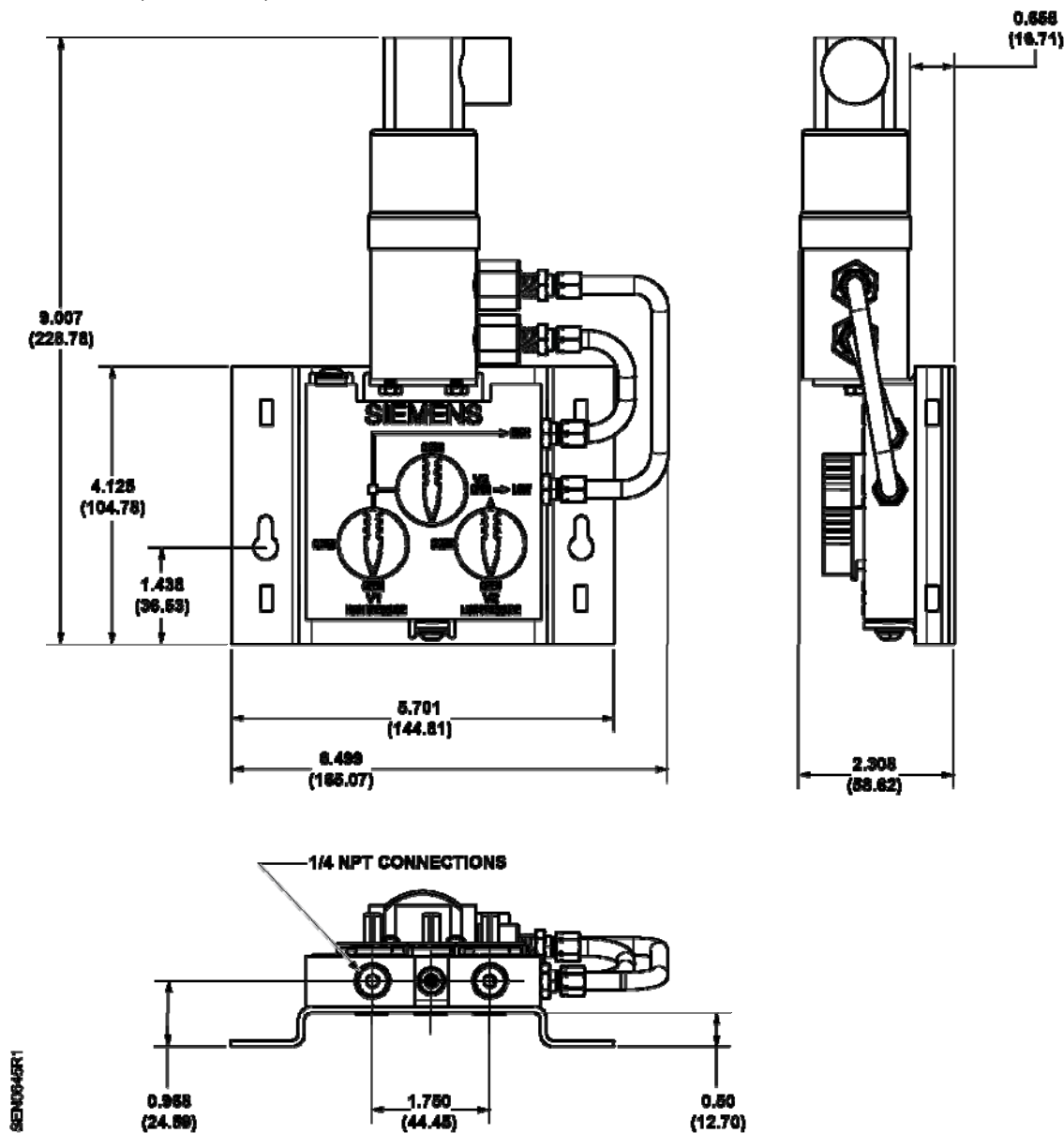


Figure 2. Differential Pressure Sensor with Manifold Dimensions.

Dimension, Continued

Dimensions in Inches (Millimeters)

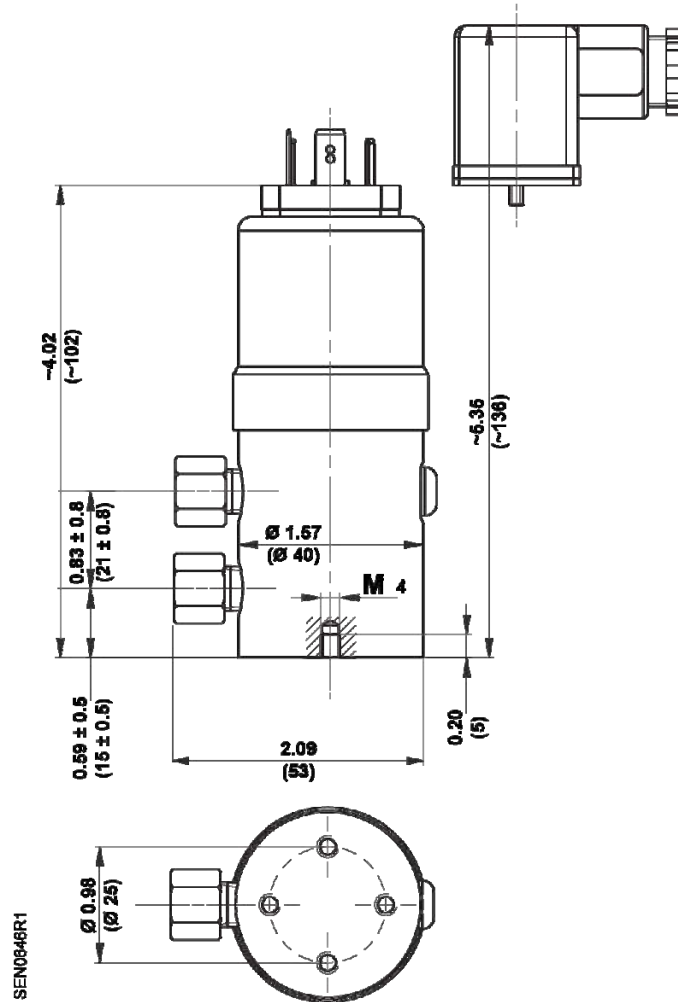


Figure 3. Differential Pressure Sensor Dimensions.

Information in this document is based on specifications believed correct at the time of publication. The right is reserved to make changes as design improvements are introduced. Products or company names mentioned herein may be the trademarks of their respective owners. © 2012 Siemens Industry, Inc.