

Air Differential Pressure Sensors

Description

The Siemens QBM3100 Series Air Differential Pressure Sensors use ceramic sensing technology to provide years of maintenance-free measuring accuracy. They deliver temperature-compensated sensor signals for registering airflow in HVAC systems and for measuring differential pressures in environmental, laboratory, and cleanroom applications.

Features

- Supply voltage 8 to 33 Vdc
- Loop-powered, two-wire, 4 to 20 mA output signal
- Durable high-strength polymer 3/16-inch process connections for standard push-on tubing
- 1/2-inch conduit connection
- Compact construction
- Integral mounting bracket enables the sensor to be mounted on ductwork or inside a control panel.
- Resettable zero point to compensate for different mounting positions.

Applications

Individually ranged sensors ensure optimum accuracy and long-term stability of measurement. The variety of options means great flexibility not only in climate control, but also in industrial and medical fine-pressure measurement.

Compatibility

The QBM 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 monitored pressure 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.

Available Ranges

- -0.25 to 0.25 inches
- 0 to 1 inch
- 0 to 2.5 inches
- 0 to 5 inches
- 0 to 10 inches

Specifications

Electrical Data	Input power	8 to 33 Vdc			
	Output signal	4 to 20 mA Short-circuit and polarity reversal protected			
Performance Characteristics	Long-term stability (Per DIN EN 60770)	1% Full Scale			
	Response time	10 ms			
	Load cycle	≤ 10 Hz			
	Resolution % Full Scale	0.25"	1"	2.5"	5" – 10"
		0.2	0.1	0.1	0.1
	Sum of linearity, hysteresis and repeatability +/- % Full Scale	3.0%	1.0%	1.0%	0.6%
	TC zero point typical +/- % FS/10K	0.2%	0.25	0.1%	0.1%
	TC zero point max. +/- % FS/10K	1.0%	0.5%	0.4%	0.4%
TC sensitivity typical +/- % FS/10K	0.3%	0.2%	0.1%	0.1%	
TC sensitivity max. +/- % FS/10K	0.6%	0.5%	0.5%	0.2%	
Environmental Conditions	Suitable process media	Air and neutral gases			
	Process/ambient temperature	32°F to 160°F (0°C to 71°C)			
	Ambient storage temperature	14°F to 158°F (-10°C to 70°C)			
	Ambient humidity	Non-condensing			
Installation Considerations	Enclosure	NEMA 1			
	Electrical connections	1/2" FNPT conduit			
	Process connections	3/16" FNPT			
	Mounting orientation	Vertical or horizontal (condensation must drain away from sensor)			
	Maintenance requirements	None			
Materials	Enclosure	Polycarbonate			
	Diaphragm	Silicone			
	Measuring element	Ceramic			
Directives and Standards	FCC	Part 15 Subpart B Emissions			
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) 2011/65/EU (RoHS)			

Ordering Information

Part Number	Description
QBM3100U025U	Air Differential Pressure Sensor, - 0.25" to 0.25" WC pressure range.
QBM3100U1	Air Differential Pressure Sensor, 1" WC pressure range.
QBM3100U2.5	Air Differential Pressure Sensor, 2.5" WC pressure range.
QBM3100U5	Air Differential Pressure Sensor, 5" WC pressure range.
QBM3100U10	Air Differential Pressure Sensor, 10" WC pressure range.

Wiring

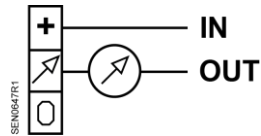


Figure 1. Wiring Schematic.

Dimensions

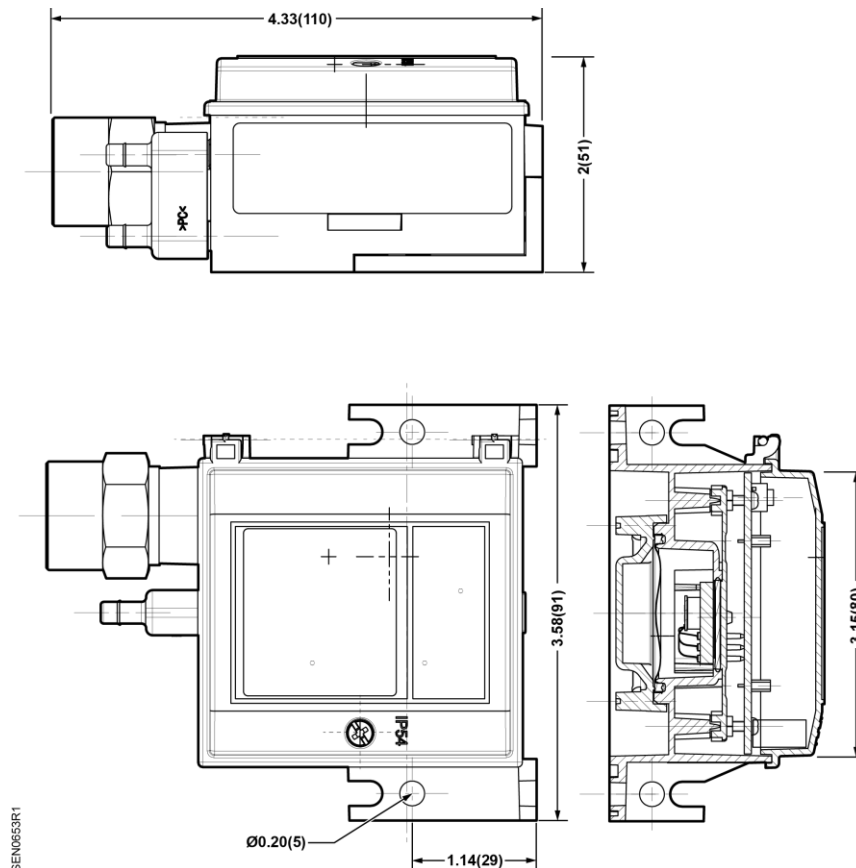


Figure 2. Dimensions in Inches (Millimeters).

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