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Standard Shipping within 3 to 5 days Products ordered through the Rapid Response™ program can ship same day. Expect longer lead times for large quantities and unique parts. See inside back cover for details on Rapid Response™ shipping.

Sensor Compatibility Matrix

Signal Type	AET	Alerton	Anderson Cornelius	Andover	Automated Logic	Auto-Matrix	Carrier	Circon	Delta Controls	Distech Energie	Honeywell	Invensys	JCI	KMC	Reliable Controls	Schneider General	Solidyne	TAC/CSI	Teletrol	Trane	Triangle Microsystems	Walker	York	T&A
0 to 10 Vdc								•																
1K Platinum RTD (375 element)													•							•				
1K Platinum RTD (385 element)											•	•	•							•				
4 to 20 / 0 to 20 mA								•																
Ni1000 RTD (JCI)													•										•	
Ni1000 RTD (L&S)																								
NTC 10K (Type II)		•			•		•		•				•	•			•	•		•	•			
NTC 10K (Type III)	•			•		•	•		•			•		•	•				•				•	

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Sensors

Simple to specify, install, and use

Siemens' sensors meet ISO-9001 standards for signal strength, accuracy and reliability, to deliver peak performance for years. That's why they're chosen by contractors and engineers who design and construct the world's most sophisticated building control systems.



100K NTC Room Temperature Sensors

4 to 20 mA and 100K Ohm



Energy &
Atmosphere



Indoor
Environmental
Quality



Siemens 4 to 20 mA and 100K Ohm
Room Temperature Sensor.

Description

The miscellaneous Room Temperature Sensors provide accurate 100K NTC, reliable sensing of room temperature. The sensor's resistance varies proportionally to the actual room temperature being measured.

100K NTC Room Temperature Sensors Specifications

Temperature Range		Calibration Point Factory Setting 77°F (25°)
Setpoint	55 to 95°F (13 to 35°C)	Accuracy..... ±0.5°F (±0.3°C)
Operating	55 to 95°F (13 to 35°C)	Resistance Value..... 10K Ohm
Output Signal	Changing Resistance	Calibration Adjustments
		None Required
		Cover Dimensions
		3-11/32"H x 2-1/2"W x 1-1/2"D (85 mm H x 64 mm W x 38 mm D)

100K NTC Room Temperature Sensors Product Ordering

Application	Temperature Range	Desert Beige Part No.	White Part No.
Room 100K Ohm	20°F to 120°F (-7°C to 49°C)	536-983A	536-983B

Ordering Notes:

The controller to which the sensor is connected determines application-sensing range.

Flush Mount Room Temperature Sensors



Energy &
Atmosphere



Indoor
Environmental
Quality



Plastic Flush Mount Room Temperature Sensor.



Metal Flush Mount Room Temperature Sensor.

Description

The Flush Mount Room Temperature Sensor provides sensing of room temperature to the Siemens room controller products. The sensor's resistance varies with the actual room temperature being measured.

The sensor connects to the controller via a 2-wire pigtail connection. It incorporates a temperature-sensing element (10K Ohm Type II thermistor, 100K Ohm thermistor, or 1000 Ohm RTD) behind a blank, stainless steel or plastic switch cover plate.

Features

- Tamper-proof screws
- Can be painted after installation
- Designed for mounting to a 2 x 4 electrical box
- Option of brushed stainless steel finish or beige or white plastic

Applications

The Flush Mount Room Temperature Sensor is designed for those applications in which a protruding room temperature sensor is not acceptable.

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Sensors

Flush Mount Room Temperature Sensors Specifications

Output Signal Changing Resistance

Operating Temperature Range* -40 to +257°F (-40 to +120°C)

10K Ohm Thermistor

Calibration Point Factory Setting 77°F (25°)

Accuracy..... ±0.5°F (±0.3°C)

Resistance Value @ Cal. Temp..... 10k

100K Ohm Thermistor

Calibration Point 77°F (25°)

Accuracy..... ±0.5°F (±0.3°C)

Resistance Value @ Cal. Temp..... 100k Ohm

1000 Ohm RTD

Calibration Point 32°F (0°)

Accuracy..... ±0.54°F (±0.3°C)

Resistance Value @ Cal. Temp..... 1K Ohm

Dimensions

4-1/2" H x 2-3/4" W x 1-1/36" D
(114 mm H x 70 mm W x 27 mm D)

*Functional range is controller dependent.

Flush Mount Room Temperature Sensors Product Ordering

Description	Part No.
10K Ohm (APOGEE TEC) NTC Thermistor, Metal Plate	540-995
10K Ohm (Type II) NTC Thermistor, Metal Plate	540-984
10K Ohm (Type II) NTC Thermistor, Beige Plastic Plate	536-994A
10K Ohm (Type II) NTC Thermistor, White Plastic Plate	536-994B
100K Ohm NTC Thermistor, Metal Plate	536-984
1000 Ohm (375 ALPHA) Platinum RTD, Metal Plate	544-973
1000 Ohm (375 ALPHA) Platinum RTD, Beige Plastic Plate	544-374A
1000 Ohm (375 ALPHA) Platinum RTD, White Plastic Plate	544-374B

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Sensors

Button Room Temperature Sensors



Energy &
Atmosphere



Indoor
Environmental
Quality



Button Room Temperature Sensor
(with or without Wall Plate).

Description

The Button Room Temperature Sensor provides a resistance signal to the Siemens controller that varies proportionally with temperature.

The sensor connects to the controller via a two-wire field cable or pre-terminated cable with RJ-11 plugs. The Button Room Temperature Sensor has a temperature-sensing element (10K ohm Thermistor [TEC compatible only], or 1000 ohm RTD, 375 alpha) installed on the button sensor.

Features

- 10K NTC for TEC or 1K platinum (375) RTD Sensors
- Tamper-proof screws
- Can be painted after installation
- Designed for mounting to a 2 x 4 electrical box
- Brushed stainless steel finish
- Available with or without matching wall plate

Applications

This room sensor is designed for applications in which a normal or flush-mount room temperature sensor is not acceptable. It is available with or without a brushed, stainless steel wall plate.

The wall plate version is designed to mount to a 2-inch x 4-inch electrical box. The tamper-proof screws, used to install the sensor to the utility box, protect the sensor from removal by unauthorized personnel.

B-7

Sensors

Button Room Temperature Sensors Specifications

Output Signal Changing Resistance
10K Ohm Thermistor
 Operating Temperature Range* 55 to 95°F (13 to 35°C)
 Calibration Point 77°F (25°C)
 Accuracy ±0.5°F (±0.3°C)
 Resistance Value 10K Ohm

1000 Ohm RTD
 Operating Temperature Range* -40 to 257°F (-40 to 125°C)
 Calibration Point 32°F (0°C)
 Accuracy ±0.54°F (±0.3°C)
 Resistance Value 1K Ohm
Dimensions 4-1/2" H x 2-3/4" W x 1-1/36" D
 (114 mm x 70 mm x 27 mm)

*Functional range is controller dependent.

Button Room Temperature Sensors Product Ordering

Description	Part No.
1K Platinum (375) RTD	QAA1011.AASU
1K Platinum (375) RTD, with Wall Plate	QAA1011.AATU

Room Temperature Sensors



Energy &
Atmosphere



Indoor
Environmental
Quality



QAA20xx.FWNU

Room Temperature Sensor
with Analog Display,
Setpoint and Override.



QAA20xx.WNU

Room Temperature Sensor.

Description

The QAA20 Series Room Temperature Sensors monitor and transmit changes in temperature to the building control systems. QAA20 Series sensors utilize the standard Series 1000 housing, but with a totally new internal circuit design.

Features

- Resistive output signals
- High degree of accuracy
- Analog temperature display
- Liquid Crystal Display (LCD)
- Analog setpoint adjustment
- Occupancy override button

Applications

The QAA20 Series Room Temperature Sensors are especially suited for applications where precise, stable temperature sensing is required. An assortment of models is available – versions with sensing only or setpoint adjustment, occupancy override and display.

The QAA20 Series temperature sensors are also available in a variety of signal types. Choose from powered 4 to 20 mA or 0 to 10 Volt signal versions. Choose also from numerous resistive signal outputs. Select the correct product based on the compatibility needs of your building automation system. See the **Sensor Compatibility Matrix** on page B-2 for more details.

QAA Series Specifications

General

Installation..... 18 AWG cable length shared in conduit with other sensor wiring 750 ft. (229 m) max.

Connections Screw Terminals

Voltage Requirement..... 13.5 to 35 Vdc and 24 Vac (for sensors with 0-10 Vdc outputs)

Housing

Material Type..... Polycarbonate Plastic

Color White

Dimensions..... 3-11/32" H x 2-1/2" W x 1-1/2" D (85 mm H x 63 mm W x 38 mm D)

Temperature Element

Measurement Range Controller Dependent

Operating Temperature -40 to 240°F (-40 to 116°C)

Operating Range, Active Signal Types 40 to 90°F

Temperature Effect Less than 0.1% per degree C

Sensing Element..... Various, see Naming Key

Output Signals

Resistive Types Various

Active Types 4 to 20 mA and 0 to 10 Vdc, 0-100% Linear, Proportional

Polarity Protection..... Yes

Accuracy at Calibration Temperature..... +/- 1 K

QAA Series Product Ordering

Application	Description	Part No.
Room Temperature Sensor	Platinum RTD, 1000 Ohms @ 32°F (385 Alpha) with Setpoint, Night Override, Display	QAA2012.FWNU
Room Temperature Sensor	Platinum RTD, 1000 Ohms @ 32°F (385 Alpha)	QAA2012.WNU
Room Temperature Sensor	Nickel RTD, 1000 Ohms @ 32°F, with Setpoint, Night Override, Display	QAA2020.FWNU
Room Temperature Sensor	Nickel RTD, 1000 Ohms @ 32°F	QAA2020.WNU
Room Temperature Sensor	Nickel RTD, 1000 Ohms @ 77°F, with Setpoint, Night Override, Display	QAA2021.FWNU
Room Temperature Sensor	Nickel RTD, 1000 Ohms @ 77°F	QAA2021.WNU
Room Temperature Sensor	NTC Thermistor 10K Ohm Type 2, with Setpoint, Night Override, Display	QAA2030.FWNU
Room Temperature Sensor	NTC Thermistor 10K Ohm Type 2	QAA2030.WNU
Room Temperature Sensor	NTC Thermistor 10K Ohm Type 3, with Setpoint, Night Override, Display	QAA2032.FWNU
Room Temperature Sensor	NTC Thermistor 10K Ohm Type 3	QAA2032.WNU
Room Temperature Sensor	4 to 20 mA, 40 to 90°F, with Setpoint, Night Override, Display	QAA2072.FWNU
Room Temperature Sensor	4 to 20 mA, 40 to 90°F, with Setpoint, Night Override, Display, Siemens Logo	QAA2072.FWU
Room Temperature Sensor	4 to 20 mA, 40 to 90°F	QAA2072.WNU
Room Temperature Sensor	4 to 20 mA, 40 to 90°F, Siemens Logo	QAA2072.WU
Room Temperature Sensor	0 to 10 Volt, 40 to 90°F, with Setpoint, Night Override, Display	QAA2062.FWNU
Room Temperature Sensor	0 to 10 Volt, 40 to 90°F, with Setpoint, Night Override, Display, Siemens Logo	QAA2062.FWU
Room Temperature Sensor	0 to 10 Volt, 40 to 90°F	QAA2062.WNU
Room Temperature Sensor	0 to 10 Volt, 40 to 90°F, Siemens Logo	QAA2062.WU

Ordering Note:

No Siemens logo unless specified.

Accessories & Service Kits

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Duct, Pipe, Outdoor Air Temperature Sensors



QAD20xxU
Surface Mounted Pipe Sensor.



QAM20xx.xxx
Averaging Flexible Thermistor Sensor.



QAE20xx.xxx
Liquid Immersion Thermistor Sensor.



QAM20xx.xxx
Duct (Single Point) Thermistor Sensor.



QAM20xx.xxx
8-inch Duct Point Temperature Sensor.



QAC20xxU
Outside Air Sensor.



Energy &
Atmosphere



Indoor
Environmental
Quality

Description

The QAx20 Series Duct, Pipe and Outdoor Air Temperature Sensors monitor and transmit changes in temperature to the building control systems.

Features

- Resistive output signals
- High degree of accuracy
- 2 x 4 or metal box enclosure

Applications

The QAx20 Series Duct, Pipe and Outdoor Air Temperature Sensors are especially suited for applications where precise, stable temperature sensing is required. These sensors are available in a variety of signal types. Choose from numerous resistive signal outputs, and select the correct product, based on the compatibility needs of your building automation system. See the **Sensor Compatibility Matrix** on page B-2 for more details.

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Sensors

QAx20 Series Specifications

General

Installation..... 18 AWG cable length shared in conduit with other sensor wiring 750 ft. (229 m) max

Connections Screw Terminals

Temperature Element

Measurement Range Controller Dependent

Operating Temperature -40 to 240°F (-40 to 116°C)

Sensing Element..... Various Resistive Types, see Naming Key

Polarity Protection..... Yes

Accuracy at Calibration Point +/- 1 K

QAx20 Series Product Ordering

Application	Description	Part No.
Outdoor Air Sensor	PT 1000 Ohm (385)	QAC2012U
Outdoor Air Sensor	NI 1K Ohm @ 32°F	QAC2020U
Outdoor Air Sensor	NI 1K Ohm @ 77°F	QAC2021U
Outdoor Air Sensor	NTC 10K Ohm Type 2	QAC2030U
Outdoor Air Sensor	NTC 10K Ohm Type 3	QAC2032U
Duct Point Sensor	PT 1K Ohm, (385), 4 Inch	QAM2012.010
Duct Point Sensor	PT 1K Ohm, (385), 8 Inch	QAM2012.020
Duct Point Sensor	PT 1K Ohm, (385), 18 Inch	QAM2012.045
Duct Point Sensor	PT 1K Ohm, (385), 8 Foot	QAM2012.250
Duct Point Sensor	PT 1K Ohm, (385), 16 Foot	QAM2012.500
Duct Point Sensor	PT 1K Ohm, (385), 24 Foot	QAM2012.750
Duct Point Sensor	NI 1K Ohm @ 32°F, 4 Inch	QAM2020.010
Duct Point Sensor	NI 1K Ohm @ 32°F, 8 Inch	QAM2020.020
Duct Point Sensor	NI 1K Ohm @ 32°F, 18 Inch	QAM2020.045
Duct Averaging Sensor	NI 1K Ohm @ 32°F, 8 Foot	QAM2020.250
Duct Averaging Sensor	NI 1K Ohm @ 32°F, 16 Foot	QAM2020.500
Duct Averaging Sensor	NI 1K Ohm @ 32°F, 24 Foot	QAM2020.750
Duct Point Sensor	NI 1K Ohm @ 77°F, 4 Inch	QAM2021.010
Duct Point Sensor	NI 1K Ohm @ 77°F, 8 Inch	QAM2021.020
Duct Point Sensor	NI 1K Ohm @ 77°F, 18 Inch	QAM2021.045
Duct Averaging Sensor	NI 1K Ohm @ 77°F, 8 Foot	QAM2021.250
Duct Averaging Sensor	NI 1K Ohm @ 77°F, 16 Foot	QAM2021.500
Duct Averaging Sensor	NI 1K Ohm @ 77°F, 24 Foot	QAM2021.750
Duct Point Sensor	NTC 10K Ohm Type 2, 4 Inch	QAM2030.010
Duct Point Sensor	NTC 10K Ohm Type 2, 8 Inch	QAM2030.020
Duct Point Sensor	NTC 10K Ohm Type 2, 18 Inch	QAM2030.045
Duct Averaging Sensor	NTC 10K Ohm Type 2, 8 Foot	QAM2030.250
Duct Averaging Sensor	NTC 10K Ohm Type 2, 16 Foot	QAM2030.500
Duct Averaging Sensor	NTC 10K Ohm Type 2, 24 Foot	QAM2030.750
Duct Point Sensor	NTC 10K Ohm Type 3, 4 Inch	QAM2032.010
Duct Point Sensor	NTC 10K Ohm Type 3, 8 Inch	QAM2032.020
Duct Point Sensor	NTC 10K Ohm Type 3, 18 Inch	QAM2032.045
Duct Averaging Sensor	NTC 10K Ohm Type 3, 8 Foot	QAM2032.250
Duct Averaging Sensor	NTC 10K Ohm Type 3, 16 Foot	QAM2032.500
Duct Averaging Sensor	NTC 10K Ohm Type 3, 24 Foot	QAM2032.750

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Sensors

Accessories & Service Kits

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Sensor Compatibility Chart

B-2

4 to 20 mA Analog Sensors



Energy &
Atmosphere



Indoor
Environmental
Quality



Surface Mounted
Pipe Sensor.



Outside Air
Temperature Sensor.



Duct (Single Point)
Temperature Sensor.



Duct (Averaging)
Flexible Temperature Sensor.



Duct (Averaging)
Rigid Temperature Sensor.



Duct Liquid Immersion
Temperature Sensor.

Description

Available in a variety of models for specific mounting requirements and sensing applications, Analog Sensors provide input for accurate loop-powered temperature sensing (detecting) for controllers via a 20 AWG twisted, shielded cable pair. The loop current varies according to the temperature being measured.

Features

- Output Signal 4 to 20 mA
- High degree of accuracy
- Rugged construction

Applications

Analog Sensors are designed for a variety of temperature sensing applications including room, surface-mount, outside air, duct point or averaging, and liquid immersion where high accuracy and/or long wiring runs are required.

Important: Sensors are not suitable for use with Siemens RWD Controller.

B-13

Sensors

4 to 20 mA Analog Sensors Specifications

Output Signal 4 to 20 mA
 Reference Resistance at 32°F (0°C) 100 Ohms
 Element Material Platinum

4 to 20 mA Analog Sensors Product Ordering

Application	Probe Length	Temperature Range/Mid-range Accuracy (Transmitter and Sensor Combined)	Part No.
Surface Mount	NA	30 to 250°F/±1.1°F (-1 to +121°C/±0.65°C)	536-780
Outdoor Air	NA	-58 to +122°F/±0.6°F (-50 to +50°C/±0.3°C)	536-768
Duct – Single Point	4"	20 to 120°F/±0.7°F (-7 to +49°C/±0.4°C)	533-376-4
	8"		533-376-8
	18"		533-376-18
	4"	70 to 220°F/±1.1°F (21 to 104°C/±0.6°C)	533-377-4
	8"		533-377-8
	18"		533-377-18
	4"	4 to 122°F/±0.7°F (-20 to +50°C/±0.4°C)	544-560-4
	8"		544-560-8
	18"		544-560-18
Flexible Duct – Averaging	8 ft	20 to 120°F/±0.7°F (-6 to +49°C/±0.4°C)	533-380-8
	16 ft		533-380-16
	24 ft		533-380-24
Rigid Duct – Averaging	18"	20 to 120°F/±0.7°F (-6 to +49°C/±0.4°C)	535-490-18
	24"		535-490-24
	36"		535-490-36
	48"		535-490-48
Liquid Immersion	2.5"	30 to 250°F/±1.1°F (-1 to +121°C/±0.6°C)	536-767-25
	4.0"		536-767-40
	6.0"		536-767-60
	2.5"	20 to 70°F/±0.6°F (-7 to +21°C/±0.3°C)	536-774-25
	4.0"		536-774-40
	6.0"		536-774-60
	2.5"	32 to 212°F/±1.0°F (0 to 100°C/±0.6°C)	544-562-25
	4.0"		544-562-40
	6.0"		544-562-60

B-14

Sensors

Room Relative Humidity and Relative Humidity/Temperature Sensors



Energy &
Atmosphere



Indoor
Environmental
Quality



QFA Series Room Relative Humidity and Relative Humidity/Temperature Sensor.



QFA Series Room Relative Humidity and Relative Humidity/Temperature Sensor.

Description

The QFA Series Room Relative Humidity and Relative Humidity/Temperature Sensors monitor and transmit changes in humidity and temperature to the building control systems.

Several models are available for humidity only (in 5% and 2%) or for humidity and temperature sensing (also in 5% and 2% versions). The humidity only units are available in either 4 to 20 mA or 0 to 10 Volt signal versions. Combination humidity and temperature units are available in either dual current or voltage versions, transmitting proportional signals back to the controller.

Features

Standard Features

- 4 to 20 mA and 0 to 10 Vdc output signals
- High degree of accuracy

Full-featured Models

- Liquid Crystal Display (LCD in degrees F or C)
- Digital Temperature Setpoint Adjustment in 0.5 degree increments
- Override Button
- Removable, replaceable humidity element (2% versions only)

Applications

These units are especially suited for applications where precise, stable humidity sensing is required.

B-15

Sensors

QFA Series Specifications

General

Installation..... 18 AWG Cable Length Shared in Conduit with Other Sensor Wiring 750 ft. (229 m) Max

Connections Screw Terminals

Voltage Requirement..... 13.5 to 35 Vdc and 24 Vac (for sensors with 0-10 Vdc outputs)

CE and UL listed UL 873 Standard for Temperature Indicating and Regulating Equipment

Housing

Material Type..... Polycarbonate Plastic

Color Desert Beige or White

Dimensions..... 3-11/32" H x 2-1/2" W x 1-1/2" D (85 mm H x 63 mm W x 38 mm D)

Operating Range..... 0 to 100% RH

Measurement Range 0 to 100% RH

Accuracy at room temperature (73°F, 20°C)..... ±5% RH for 0% ≤ RH < 30% or 70% ≤ RH < 95% ±3% RH for 30% ≤ RH < 70%

Operating Temperature -31 to +140°F (-35 to +60°C)

Temperature Effect..... Less than 0.1% per Degree C

Sensing Element..... Capacitive Humidity Sensing Element

Output Signal 4 to 20 mA or 0 to 10 Vdc, 0 to 100% Linear, Proportional

Polarity Protection..... Yes

Humidity Element

Temperature Element (for combination RH/T units only)

Operating Temperature 32 to 122°F (0 to 50°C)

Time Constant at 0 to 50°C and 10-80%RH Approx. 20 Seconds in Moving Air

Accuracy at 32 to 122°F (0 to 50°C): ±1 K at -31 to +95°F (-35 to +35°C): ±0.8 K at -31 to +140°F (-35 to +60°C): ±1 K

Output Signal 4 to 20 mA or 0 to 10 Vdc, 0 to 100% Linear, Proportional, (Terminal U2)

Calibration Adjustments None

QFA Series Product Ordering

Application	Description	Part No.
Room Relative Humidity 5%	0 to 10 Vdc, No LCD, Beige	QFA2000.BU
Room Relative Humidity 5%	0 to 10 Vdc, No LCD, White	QFA2000.WU
Room Relative Humidity 5%	4 to 20 mA, No LCD, Beige	QFA2001.BU
Room Relative Humidity 5%	4 to 20 mA, No LCD, White	QFA2001.WU
Room Relative Humidity 5% & Temperature	0 to 10 Vdc, No LCD, Beige	QFA2060.BU
Room Relative Humidity 5% & Temperature	0 to 10 Vdc, No LCD, White	QFA2060.WU
Room Relative Humidity 5% & Temperature	0 to 10 Vdc, LCD, Temp Setpoint, Occupant Override, Beige	QFA2060.FBU
Room Relative Humidity 5% & Temperature	0 to 10 Vdc, LCD, Temp Setpoint, Occupant Override, White	QFA2060.FWU
Room Relative Humidity 5% & Temperature	4 to 20 mA, No LCD, Beige	QFA2071.BU
Room Relative Humidity 5% & Temperature	4 to 20 mA, No LCD, White	QFA2071.WU
Room Relative Humidity 5% & Temperature	4 to 20 mA, LCD, Temp Setpoint, Occupant Override, Beige	QFA2071.FBU
Room Relative Humidity 5% & Temperature	4 to 20 mA, LCD, Temp Setpoint, Occupant Override, White	QFA2071.FWU
Room Relative Humidity 2%	0 to 10 Vdc, No LCD, Beige	QFA3000.BU
Room Relative Humidity 2%	0 to 10 Vdc, No LCD, White	QFA3000.WU
Room Relative Humidity 2%	4 to 20 mA, No LCD, Beige	QFA3001.BU
Room Relative Humidity 2%	4 to 20 mA, No LCD, White	QFA3001.WU
Room Relative Humidity 2% & Temperature	0 to 10 Vdc, No LCD, Beige	QFA3060.BU
Room Relative Humidity 2% & Temperature	0 to 10 Vdc, No LCD, White	QFA3060.WU
Room Relative Humidity 2% & Temperature	0 to 10 Vdc, LCD, Temp Setpoint, Occupant Override, Beige	QFA3060.FBU
Room Relative Humidity 2% & Temperature	0 to 10 Vdc, LCD, Temp Setpoint, Occupant Override, White	QFA3060.FWU
Room Relative Humidity 2% & Temperature	4 to 20 mA, No LCD, Beige	QFA3071.BU
Room Relative Humidity 2% & Temperature	4 to 20 mA, No LCD, White	QFA3071.WU
Room Relative Humidity 2% & Temperature	4 to 20 mA, LCD, Temp Setpoint, Occupant Override, Beige	QFA3071.FBU
Room Relative Humidity 2% & Temperature	4 to 20 mA, LCD, Temp Setpoint, Occupant Override, White	QFA3071.FWU

B-16

Sensors

Duct Relative Humidity and Relative Humidity/Temperature Sensors



Energy &
Atmosphere



Indoor
Environmental
Quality



QFM Series Duct Relative Humidity Sensor.



QFM Series Duct Relative Humidity and Relative Humidity/Temperature Sensor.

Description

The QFM Series Duct Relative Humidity and Relative Humidity/Temperature Sensors monitor and transmit changes in humidity and temperature to the building control systems. Several models are available for humidity only (in 5%, 2% and 2% certified) or for humidity and temperature sensing (also in 5%, 2% and 2% certified versions). The humidity only units are available in either 4 to 20 mA or 0 to 10 Volt signal versions. Combination humidity and temperature units are also available in either dual current or voltage versions, transmitting proportional signals back to the controller. Nickel 1000 Ohm (Siemens type) or Platinum 1000 Ohm RTD (385 ALPHA type) temperature outputs on combination versions are also offered.

Features

- 4 to 20 mA or 0 to 10 Vdc output signals
- High degree of accuracy
- Removable, replaceable sensing tip (2% and 2% certified models)
- Versions with LCD display also available

Applications

The QFM Series Duct Relative Humidity and Relative Humidity/Temperature Sensors are especially suited for applications where precise, stable humidity sensing is required.

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Sensors

QFM Series Specifications

General

Installation..... 18 AWG cable length shared in conduit with other sensor wiring 750 ft. (229 m) max

Connections Screw Terminals

Dimensions
 Probe..... 0.6" O.D. x 7.2"L (15 mm O.D. x 183 mm L)
 Housing ..3.1" L x 2.3" W x 1.5" O.D. (80 mm L x 60 mm W x 40 mm D)

Voltage Requirement..... 13.5 to 35 Vdc and 24 Vac (for sensors with 0-10 Vdc outputs)

Input Impedance (4 to 20 mA versions only) Less than 500 Ohms

Housing Material TypePolycarbonate plastic, UL 94-5VB rated, suitable for plenum installations

Housing Protection Class..... IP 65 (QFM3xxx, QFM4xxx types), IP54 (QFM2xxx types), NEMA 1 (all types)

Filter Material and Specification Teflon, 10 micron filter

Agency Certification..... UL listed to UL 873 for Temperature Indicating and Regulating Equipment

CE Conformance EC Directive on electromagnetic compatibility: 89/336/EEC

Humidity Element

Operating Range..... 0 to 100% RH

Measurement Range 0 to 95% RH

Accuracy at Room Temperature ≈ 73°F (20°C):
 QFM2xxx, QFM3xxx types:.....
 and QFM4xxx..... ±5% RH, 0-95% RH (±3% RH, 30-70% RH)
 ±2% RH, 0-95% RH

Operating Temperature Jumper Selectable..... 32 to 122°F (0 to 50°C)
 or -31 to 95°F (-35 to 35°C)
 or -31 to 140°F (-35 to 60°C)

Temperature Effect.....Less than 0.1% per degree C

Sensing Element..... Capacitive humidity sensing element

Output Signal
 RH only units4 to 20 mA and 0 to 10 Vdc, 0-100% Linear, Proportional
 RH/T units0 to 10 Vdc, 0-100% Linear, Proportional

Polarity Protection.....Yes

Temperature Element Specifications (for Combination RH/T Units Only)

	QFM2110 (Platinum) QFM2120 (Nickel)	QFM2160 QFM2171	QFM31xx QFM41xx
Operating Temperature	-31 to +140°F (-35 to +60°C)	-31 to +122°F (-35 to +50°C)	-31 to +158°F (-35 to +70°C)
Time Constant	Approximately 20 seconds in moving air		
Accuracy			
+/-0.6K	—	—	59 to 95° F (15 to 35°C)
+0.8K	59 to 95°F (15 to 35°C)	59 to 95°F (15 to 35°C)	31 to 158°F (-35 to +70°C)
+/-1.0K	31 to 140°F (-35 to +60°C)	-31 to +122°F (-35 to +50°C)	—
Output Signal	Platinum 1K Ohm RTD (385) Nickel 1K Ohm RTD (Siemens)	0 to 10 Vdc (QFMx160) 4 to 20 mA (QFMx171)	
Calibration	None		

QFM Series Product Ordering

Application	Description	Part No.
Duct Humidity 5%	0 to 10 Vdc	QFM2100
Duct Humidity 5%	4 to 20 mA	QFM2101
Duct Humidity 5% & Temperature	0 to 10 Vdc / Temp 1K Ohm Platinum RTD (385 Alpha)	QFM2110
Duct Humidity 5% & Temperature	0 to 10 Vdc / Temp 1K Ohm Nickel RTD (L&S Type)	QFM2120
Duct Humidity 5% & Temperature	0 to 10 Vdc / Temp 0 to 10 Vdc	QFM2160
Duct Humidity 5% & Temperature	4 to 20 mA / Temp 4 to 20 mA	QFM2171
Duct Humidity 2%	0 to 10 Vdc	QFM3100
Duct Humidity 2%	4 to 20 mA	QFM3101
Duct Humidity 2% & Temperature	0 to 10 Vdc, Temp 0 to 10 Vdc	QFM3160
Duct Humidity 2% & Temperature	0 to 10 Vdc, Temp 0 to 10 Vdc, w/Display	QFM3160D
Duct Humidity 2% & Temperature	4 to 20 mA / Temp 4 to 20 mA	QFM3171
Duct Humidity 2% & Temperature	4 to 20 mA / Temp 4 to 20 mA, w/Display	QFM3171D
Duct Humidity	4 to 20 mA (Certified)	QFM4101
Duct Humidity & Temperature	0 to 10 Vdc, Temp 0 to 10 Vdc (Certified)	QFM4160
Duct Humidity & Temperature	4 to 20 mA / Temp 4 to 20 mA (Certified)	QFM4171

Outdoor Air Relative Humidity and Relative Humidity/Temperature Sensors



Energy & Atmosphere



Indoor Environmental Quality



AQY2010
Remote Sensing Cable
Shown with QFA3100.



QFA3100 Q Series
Outdoor Air Relative Humidity and
Relative Humidity/Temperature Sensor.



AQF3100
Sunshield for Sensor.
Sold Separately.

Description

The QFA Series Outdoor Air Relative Humidity and Relative Humidity/Temperature Sensors monitor and transmit changes in humidity and temperature to the building control systems. Standard models available are 2% and 2% certified, for both humidity only and combination humidity with temperature sensing. Sensors are offered with either 4 to 20 mA or 0 to 10 Volt output signals.

Features

- 4 to 20 mA or 0 to 10 Vdc output signals
- High degree of accuracy
- Removable, replaceable sensing tip sold separately on B-39
- Display model is available on QFA series version

Applications

The QFA Series Outdoor Air Relative Humidity and Relative Humidity/Temperature Sensors are especially suited for applications where precise, stable humidity sensing is required.

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Sensors

QFAx1 Specifications

General

Installation..... 18 AWG cable length shared in conduit with other sensor wiring 750 ft. (229 m) max

Connections Screw Terminals

Dimensions

Outdoor Air Probe..... 6" O.D. x 3.3" L (15 mm O.D. x 84 mm L)

Outdoor Air Housing..... 3.1" L x 2.3" W x 1.5" D
(80 mm L x 60 mm W x 40 mm D)

Shield (mounted)..... 3.43" H x 3.5" W x 4.1" D
(87 mm L x 89 mm W x 104 mm D)

Voltage Requirement..... 13.5 to 35 Vdc and 24 Vac (for sensors with 0-10 Vdc outputs)

Material Type..... Polycarbonate plastic

CE and UL listed..... UL 873 standard for Temperature Indicating and Regulating Equipment

Humidity Element

Operating Range..... 0 to 100% RH

Measurement Range 0 to 95% RH

Accuracy at Room Temperature (73°F, 20°C)..... ±2% RH, 0-95% RH

Operating Temperature -31 to +140°F (-35 to +60°C)

Temperature Effect..... Less than 0.1% per degree C

Sensing Element..... Capacitive humidity sensing element

Output Signal

RH only units... 4 to 20 mA or 0 to 10 Vdc, 0 -100% Linear, Proportional
RH & T units... 4 to 20 mA or 0 to 10 Vdc, 0 -100% Linear, Proportional

Polarity Protection..... Yes

Temperature Element (for Combination RH/T Units Only)

Application	Temperature
Operating Temperature Jumper Selectable	32 to 122°F (0 to 50°C) or -31 to +95°F (-35 to +35°C) 32 to 122°F (0 to 50°C) or -31 to +140°F (-35 to +60°C)
Time Constant at 0 to 50°C and 10 to 80% RH	Approx. 20 seconds in moving air
Accuracy	at 59 to 95°F (15 to 35°C): ±0.8 K at 31 to 122°F (-35 to +50°C): ±1 K at 31 to 140°F (-35 to +60°C): ±1 K
Output Signal	4 to 20 mA or 0 to 10 Vdc, 0 -100% linear, proportional, (terminal U2)
Calibration Adjustments	None

QFAx1 Series Product Ordering

Application	Description	Part No.
Outdoor Air Humidity 2%	0 to 10 Vdc	QFA3100
Outdoor Air Humidity 2%	4 to 20 mA	QFA3101
Outdoor Air Humidity 2% & Temperature	0 to 10 Vdc / Temp 0 to 10 Vdc	QFA3160
Outdoor Air Humidity 2% & Temperature	0 to 10 Vdc / Temp 0 to 10 Vdc with Display	QFA3160D
Outdoor Air Humidity 2% & Temperature	4 to 20 mA / Temp 4 to 20 mA	QFA3171
Outdoor Air Humidity 2% & Temperature	4 to 20 mA / Temp 4 to 20 mA with Display	QFA3171D
Outdoor Air Humidity 2% & Temperature	4 to 20 mA / Temp 4 to 20 mA (Certified)	QFA4171
Outdoor Air Humidity 2% & Temperature	4 to 20 mA / Temp 4 to 20 mA (Certified) with Display	QFA4171D
Outdoor Air Humidity 2% & Temperature	0 to 10 Vdc, Temp 0 to 10 Vdc (Certified)	QFA4160
Outdoor Air Humidity 2% & Temperature	0 to 10 Vdc, Temp 0 to 10 Vdc (Certified) with Display	QFA4160D

QFAx1 Series Accessories

Description	Part No.
Outdoor Air Sunshield	AQF3100
Remote Sensing Cable, 10 Foot	AQY2010
Remote Sensing Cable, 30 Foot	AQY2030

Very Low Differential Pressure Transducers



Very Low Differential Pressure Transducers.

Description

The Very Low Differential Pressure Transducers sense differential or gauge (static) pressures and convert pressure difference to a proportional electrical output. The 590 Series is offered with a 0 to 10 Vdc output.

Used in Building Energy Management Systems, these transducers are capable of measuring pressures with the accuracy necessary for proper building pressurization and air-flow control.

The 590 Series Transducers are available in five different air pressure ranges. Static accuracy is $\pm 1\%$ full scale in normal ambient temperature environments. The units are temperature compensated to less than $\pm 0.033\%$ FS/ $^{\circ}$ F of thermal error over the temperature range of 0° F to $+150^{\circ}$ F.

Features

- 10 psi proof pressure on all ranges
- 24 Vac
- 0 to 10 Vdc analog output is compatible with all energy management systems
- Fully protected against reverse wiring
- Internal regulation permits use with unregulated DC power supplies
- 1% accuracy, or better, improves variable air volume system performance
- Meet CE conformance standards
- No field calibration or adjustment necessary

Applications

The Very Low Differential Pressure Transducers are used for the following applications:

- Heating, Ventilation and Air Conditioning (HVAC)
- Energy Management Systems
- Variable Air Volume (VAV) and Fan Control
- Environmental pollution control
- Static duct and clean room pressures

590 Series Specifications

Temperature

Operating* 0 to +150°F (-18 to +65°C)
 Storage..... -40 to +185°F (-40 to +85°C)

* Operating Temperature limits of the electronics only.
 Pressure media temperatures may be considerably higher or lower.

Physical Description

Case Fire Retardant Glass Filled Polyester

Electrical Connection.....Screw Terminal Strip
 Pressure Fitting 1/4" Fitting
 Weight3 ounces

Electrical Data (Voltage)

Circuit3-wire (Com, Out, Exc)

Excitation/Output**..... 12 to 30 Vac/0 to 10 Vdc
 **Zero output factory-set to within ±50 mV (±25 mV for optional accuracies).

Bi-directional Output at Zero Pressure2.5 Vdc (±50 mV)

Output Impedance***..... 100 Ohms
 ***Calibrated into a 50K ohm load, operable into a 5000-ohm load or greater.

Pressure Media.....Typically air or similar non-conducting gases

590 Series Product Ordering

Description	Accuracy	Part No.
Differential Pressure Sensor, 5" WC, 10 Vdc Signal	1%	590-501
Differential Pressure Sensor, 2" WC, 24 Vac, 10 Vdc Signal	1%	590-502
Differential Pressure Sensor, 1" WC, 24 Vac, 10 Vdc Signal	1%	590-503
Differential Pressure Sensor, ±0.25" WC, 24 Vac, 10 Vdc Signal	1%	590-505
Differential Pressure Sensor In Conduit Box, 5" WC, 24 Vac, 10 Vdc Signal	1%	590-506
Differential Pressure Sensor In Conduit Box, 2" WC, 24 Vac, 10 Vdc Signal	1%	590-507
Differential Pressure Sensor In Conduit Box, 1" WC, 24 Vac, 10 Vdc Signal	1%	590-508
Differential Pressure Sensor In Conduit Box, ±0.25" WC, 24 Vac, 10 Vdc Signal	1%	590-510
Differential Pressure Transmitter, 1.0", 0.4%, 4 to 20 mA, Conduit Cover, 24 Vac	0.4%	590-780
Differential Pressure Transmitter, .65", 0.4%, 4 to 20 mA, Conduit Cover, 24 Vac	0.4%	590-781
Differential Pressure Transmitter, 0.5", 0.4%, 4 to 20 mA, Conduit Cover, 24 Vac	0.4%	590-782

B-22

Sensors

Pressure Sensors for Liquid and Gas



Sustainable Sites



Indoor Environmental Quality



Energy & Atmosphere



Pressure Sensor.

Description

The 7MF Series Pressure Sensors are suitable for the measurement of static and dynamic positive pressure in HVAC facilities, particularly in hydraulic and pneumatic systems using liquid or gaseous media (steam applications).

The 7MF Series Pressure Sensors are available in several different air pressure ranges, from 1 to 40 atmospheres of pressure (1 to 580 psi).

Features

- Piezo-resistive measuring system
- 0 to 10 Vdc and 4 to 20 mA output signals
- Measurement unaffected by changes in temperature
- High temperature stability
- No mechanical aging or creepage
- Excellent EMC characteristics

Applications

The 7MF Series Pressure Sensors are used for the following applications:

- Heating, Ventilation and Air Conditioning (HVAC)
- Energy Management Systems
- Chiller, Boiler and Steam Applications

7MF Specifications

Power Supply

Supply Voltage DC 16...33 V
 Max. Voltage Tolerance ±15 % at AC 24 V
 Current Consumption <4 mA

Output Signal

..... 4 to 20 mA two-wire connection; power supply DC 10 to 36V
 0 to 10 mA three-wire connection; power supply DC 15 to 36V

Application Range 0 to 40 bar, refer to table below.

Accuracy (FS = Full Scale)

Total of linearity, hysteresis and reproducibility <±0.3 % FS
 Zero point offset voltage <30 Mv

Temperature Drift

TC zero point <±0.015 % FS/K (typically)
 TC sensitivity <±0.015 % FS/K (typically)

Response Time <2 ms

Nominal Pressure Relative pressure as in "Ordering Information" (measurement of difference from ambient pressure)

Max. Admissible Pressure and Rupture Pressure

..... 3 x scale end value of measuring range (FS) <4 bar
 2.5 x scale end value of measuring range (FS) >4 bar

Media Neutral and slightly corrosive liquids and gases

Admissible temperature of medium -40 to +239°F (-40 to +125°C)

Maintenance Maintenance-free

Mounting Position Optional

Connecting Cable PVC, length 5 ft., 3 x 0.25 mm² stranded wires

Screwed Fitting External thread G1/2"

Operation to Climatic Conditions

Temperature -40 to +85°C
 Humidity <95% RH

Storage/transport Climatic Conditions

Temperature -40 to +85°C
 Humidity <95% RH

CE conformity to EMC Directive 89/336/EEC

N474 Conformity to

Australian EMC Framework Radio Communication Act 1992
 Radio Interference Emission Standard AS/NZS 3548

Base Stainless Steel (1.4305)

Measuring Element Ceramics diaphragm

Cover Stainless Steel (1.4305)

Sealant FPM (Viton) spec.

Shipping Weight 0.53 lb. (0.24 kg)

B-24

Sensors

7MF Series Product Ordering

Pressure Range (psi)	Output Signal	Part No.
0 to 15 psi	4 to 20 mA	7MF15644BB003EA1
0 to 30 psi	4 to 20 mA	7MF15644BE003EA1
0 to 60 psi	4 to 20 mA	7MF15644BF003EA1
0 to 100 psi	4 to 20 mA	7MF15644BG003EA1
0 to 150 psi	4 to 20 mA	7MF15644CA003EA1
0 to 200 psi	4 to 20 mA	7MF15644CB003EA1
0 to 300 psi	4 to 20 mA	7MF15644CD003EA1
0 to 15 psi	0 to 10 V	7MF15644BB103EA1
0 to 30 psi	0 to 10 V	7MF15644BE103EA1
0 to 60 psi	0 to 10 V	7MF15644BF103EA1
0 to 100 psi	0 to 10 V	7MF15644BG103EA1
0 to 150 psi	0 to 10 V	7MF15644CA103EA1
0 to 200 psi	0 to 10 V	7MF15644CB103EA1
0 to 300 psi	0 to 10 V	7MF15644CD103EA1

Accessories & Service Kits

B-35

Room Carbon Dioxide Sensors



Energy &
Atmosphere



Indoor
Environmental
Quality



QPA2060D Q Series
Room Carbon Dioxide & Temperature Sensor.

Description

The QPA Series Room Carbon Dioxide Sensors monitor and transmit changes in CO₂ to the building control systems. No calibration of the CO₂ sensor is necessary — these microprocessor-based units consist of a non-dispersive infrared CO₂ sensor that experiences less than 1% drift per year for the first two years of operation and negligible drift thereafter. All variants for CO₂ and combination versions with Temperature or VOC deliver 0 to 10 Volt proportional signals to the controller.

Features

- LCD display option
- Various models:
 - CO₂
 - CO₂/VOC
 - CO₂/Temp
 - CO₂/Temp/RH
- Built-in test function for troubleshooting
- Jumper selectable °C/°F units for temp models w/display
- **No Logo** versions available

Applications

These units are especially suited for applications where precise, stable CO₂ sensing is required.

B-25

Sensors

QPA Series Specifications

General

Installation..... 18 AWG cable length shared in conduit with other sensor wiring 750 ft. (229 m) max

Connections Screw terminals

Dimensions 3.94" H x 3.54" W x 1.65" D (100 mm x 90 mm x 42 mm)

Voltage Requirement..... 13.5 to 35 Vdc

Housing Protection Class..... NEMA 1 (all types)

CO₂ Element

Operating Range..... 0 - 2000 ppm

Accuracy at Room Temperature ≈ 73°F (20°C) +2% mV

Operating Temperature -23 to +113°F (-5 to +45°C)

Temperature Effect..... Less than 0.1% per degree C

Sensing Element..... NDIR CO₂ sensing module

Output Signal 0 to 10 Vdc, 0-100% Linear, Proportional

Polarity Protection..... Yes

Permissible Air Velocity in the Room <26.2 ft./s

Temperature Element (for Combination CO₂/T unit only)

Operating Temperature 23 to 113°F (-5 to 45°C)

Time Constant <1 minute

Accuracy ±0.8K

Output Signal 0-10 volts

Calibration None Required

Humidity Element

Measuring Range..... 0 to 100% RH

Accuracy ±5% RH

QPA Series Product Ordering

B-26

Sensors

Application	Description	Part No.
Room Sensor, CO2	0 to 10 V	QPA2000
Room Sensor, CO2	0 to 10 V, No Logo	QPA2000N
Room Sensor, CO2 and VOC	0 to 10 V	QPA2002
Room Sensor, CO2 and VOC	0 to 10 V, with Display	QPA2002D
Room Sensor, CO2 and VOC	0 to 10 V, No Logo	QPA2002N
Room Sensor, CO2 and Temp	0 to 10 V	QPA2060
Room Sensor, CO2 and Temp	0 to 10 V, with Display	QPA2060D
Room Sensor, CO2 and Temp	0 to 10 V, No Logo	QPA2060N
Room Sensor, CO2, Temp and RH	0 to 10 V	QPA2062
Room Sensor, CO2, Temp and RH	0 to 10 V, with Display	QPA2062D

Accessories & Service Kits

B-35

Duct CO₂ and CO₂/Temperature Sensor



Energy &
Atmosphere



Indoor
Environmental
Quality



QPM 2100
CO₂ only Sensor.

Description

The QPM Series Duct CO₂ Sensors monitor and transmit changes in CO₂ to the building control systems. Several models are available for CO₂ only, CO₂/Temp, CO₂/Temp/RH and CO₂/VOC. All variants for CO₂ and combination versions with Temperature or VOC deliver 0 to 10 Volt proportional signals to the controller.

No calibration of the CO₂ sensor is necessary — these microprocessor-based units consist of an NDIR sensor that experiences less than 1% drift per year for the first two years of operation and negligible drift thereafter.

Features

- LCD display option
- Various models:
 - CO₂
 - CO₂/VOC
 - CO₂/Temp
 - CO₂/Temp/RH
- Jumper selectable °C/°F units for temp models w/display
- **No Logo** versions available

Applications

These units are especially suited for applications where precise, stable CO₂ sensing is required.

B-27

Sensors

QPM Series Specifications

General

Installation..... 18 AWG cable length shared in conduit with other sensor wiring 750 ft. (229 m) max.

Connections Screw terminals

Voltage Requirement..... 13.5 to 35 Vdc
Q Series sensors with 0-10 Vdc outputs can also operate on 24 Vac

Input Impedance (4 to 20 mA versions only) Less than 500 Ohms

CO₂ Element

Operating Range..... 0 - 2000 ppm

Accuracy at Room Temperature ≈ 73°F (20°C)+2% mean value

Operating Temperature -31 to +113°F (-35 to +45°C)

Temperature Effect Less than 0.1% per degree C

Sensing Element..... NDIR CO₂ sensing module

Output Signal 0 to 10 Vdc, 0-100% linear, proportional

Polarity Protection..... Yes

Permissible Air Velocity in the Duct <26.2 ft./s

Temperature Element (for Combination CO₂/T unit only)

Operating Temperature -31 to +113°F (-35 to +45°C)

Time Constant <1 min

Accuracy ±1K

Output Signal 0 to 10 Volt

Calibration None Required

QPM Series Product Ordering

Application	Description	Part No.
Duct Sensor, CO ₂	0 to 10 Vdc	QPM2100
Duct Sensor, CO ₂	0 to 10 Vdc, No Logo	QPM2100N
Duct Sensor, CO ₂ and VOC	0 to 10 Vdc	QPM2102
Duct Sensor, CO ₂ and VOC	0 to 10 Vdc with Display	QPM2102D
Duct Sensor, CO ₂ and Temp.	0 to 10 Vdc	QPM2160
Duct Sensor, CO ₂ and Temp.	0 to 10 Vdc with Display	QPM2160D
Duct Sensor, CO ₂ , RH and Temp.	0 to 10 Vdc	QPM2162
Duct Sensor, CO ₂ , RH and Temp.	0 to 10 Vdc with Display	QPM2162D

Accessories & Service Kits

B-35

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Sensors

Pitot Tube Sensor Kits



536 Pitot Tube Sensor Kit.

Description

The Pitot Tube Sensor Kit is used with either static or differential air pressure sensing devices, to measure average static or differential pressure across a duct.

Features

- Thin steel construction
- Mounting flange is easily bent to conform to round or oval ducts

Applications

This kit is used in situations where a terminal box manufacturer-supplied sensor (flow pick-up) is not available, or where the existing flow pick-up has been damaged.

Pitot Tube Sensor Kits Specifications

Material

Probe.....6061 aluminum
 Gasket.....1/4-in (6 mm) closed-cell neoprene
 TubingFR polyethylene
 Mounting Flange.....26 GA galvanized sheet steel

Mounting

Screws.....#8 self-tapping
 1/4-in (6 mm) hex washer head
 Flange hub#10 pan head, slotted

Dimensions 1.50" x 3.75"
 (38 mm x 95 mm)

Pitot Tube Sensor Kits Product Ordering

Duct Size	Maximum Probe Length	Part No.
6" (152 mm)	5.75" (146 mm)	536-376
8" (203 mm)	7.75" (197 mm)	536-378
10" (254 mm)	9.75" (248 mm)	536-380
12" (305 mm)	11.75" (298 mm)	536-382
14" (356 mm)	13.75" (349 mm)	536-384

B-30

Sensors

Air Velocity Sensor



Energy &
Atmosphere



Indoor
Environmental
Quality



QVM62.1 Air Velocity Sensor.

Description

This sensor is used to control the air velocity to a constant value, balance out pressure fluctuations (supply or exhaust air control), or to monitor the flow in air ducts. It is designed with a thin film sensing element and its unique, sleek housing guarantees product recognition. This unit is compatible with all Siemens systems and controllers.

Features

- Mounting flange allows the installer to vary the probe insertion length into the duct space for best control
- Mounting flange dampening gasket minimizes vibration
- Graduated probe ensures maximum flow accuracy
- Flow directional arrow provides for the most accurate reading
- Connection cable provides mounting flexibility
- Three jumper selectable flow measuring ranges accommodate any application or environment

Applications

This sensor is primarily used to set the basic volumetric flow rate for modulating fan control.

B-31

Sensors

QVM62.1 Sensor Specifications

Power Supply

Operating Voltage.....	24 Vac +/- 20%
Frequency	50/60 Hz
Power Consumption.....	≤ 5 VA (maximum 200 mA)
Output Impedance.....	<20 ohm

Measuring Data

Measuring Ranges, Adjustable.....	0 to 16 ft/s (0 to 5 m/s) 0 to 33 ft/s (0 to 10 m/s) (factory setting) 0 to 49 ft/s (0 to 15 m/s)
Measuring Accuracy at 68°F (20°C), 45% rh,	± 0.7 ft/s 1013 hPa (0.2 m/s + 3% of measured value)
Permissible Air Velocity	66 ft/s (20 m/s)
Direction Dependence.....	< 0.3% of measured value at ≤ + 10°
Time Constant t_{90} at 10 m/s.....	4 seconds

Signal Output U1

Voltage	0 to 10 Vdc
Current	± 1 mA

Line Length

Permissible Length to Controller at:

20 AWG Copper Cable.....	164 ft (50 m)
18 AWG Copper Cable.....	492 ft (150 m)
16 AWG Copper Cable.....	984 ft (300 m)
Line Length to the Sensor Head	3 ft (1 m) (prewired)

Connections

Mechanical	Screw Connection
Electric.....	Screw Terminal, Maximum 2 x 18 AWG

Degree of Protection

Degree of Protection Provided by Enclosures as per EN 60 529

Transducer	IP 42
Sensor head	IP 20
Degree of protection as per EN 60 730.....	III

Climatic Conditions

Temperature	23°F to 113°F (-5°C to 45°C)
Humidity (non-condensing)	<95% rh
Mechanical Conditions	Class 3M2
Chemical Conditions	Class 3C2

Storage (Transducer and Immersion Stem)

Temperature	23°F to 113°F (-5°C to 45°C)
Humidity (Non-condensing).....	<95% rh
Mechanical Conditions	Class 1M2

Weight with Packaging12 oz (0.352 kg)

B-32

Sensors

QVM62.1 Sensor Product Ordering

Application	Description	Part No.
Air Velocity Sensor	0 to 3000 FPM	QVM62.1

Accessories & Service Kits

B-35

Room and Duct Hygrostats



Energy & Atmosphere



Indoor Environmental Quality



186 Room Hygrostat.



186 Duct Hygrostat.

Description

The 186 Room and Duct Hygrostats are pneumatic instruments sensitive to slight changes in relative humidity.

Features

- Adjustable sensitivity
- Sensitive hygroscopic membrane
- Includes temperature compensation
- Galvanized steel housing standard on duct model
- Models available for normal comfort range and high limit range
- Room type comes complete with standard cover and wall plate
- Duct type comes mounted inside a duct mounting box

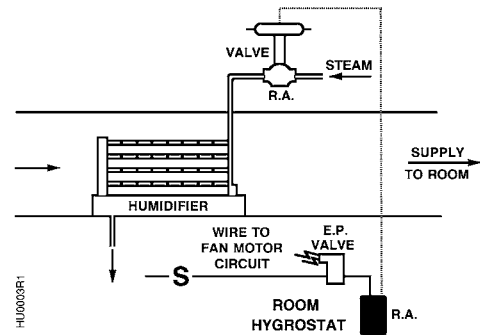
Applications

The 186 Room and Duct Hygrostats provide control of relative humidity for comfort control in hospitals, schools and office buildings.

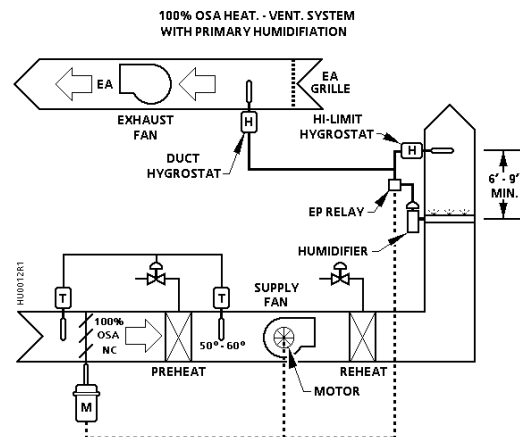
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Sensors

Application Drawings



Room Application.



Duct Application.

