

Q-Series Room Relative Humidity and Relative Humidity & Temperature Sensors



Figure 1. Q-Series Room Relative Humidity and Relative Humidity & Temperature Sensor.



Figure 2. Q-Series Room Relative Humidity and Relative Humidity & Temperature Sensor.



Figure 3. Q-Series Relative Humidity Removable Sensing Element (Replacement Part AQF3050).

Description

The Q-Series Room Relative Humidity and Relative Humidity & Temperature Sensors monitor and transmit changes in humidity and temperature to the building control systems. These units are especially suited for applications where precise, stable humidity sensing is required.

The new Q-Series sensors utilize the same housing as their Series 1000 predecessors, but with a totally new internal circuit design and sensing element.

Several models are available: humidity only versions (with $\pm 5\%$ or $\pm 2\%$ accuracy) and humidity and temperature sensing versions (also with $\pm 5\%$ or $\pm 2\%$ accuracy).

The humidity only units have either a 4 to 20 mA or 0 to 10 Vdc output signal.

The combination humidity and temperature units have a current or voltage humidity output, with the temperature output being a matching current or voltage signal, or a passive nickel, platinum, or NTC Sensing Element.

Sensing models (with display or full-featured) are also available. The full-featured models offer a wide range of features and functionality that can be used with a variety of building control systems:

Liquid Crystal Display (LCD): A 2-line alpha numeric LCD allows simultaneous display of room temperature and relative humidity in degrees Fahrenheit or Celsius.

Digital Temperature Setpoint Adjustment: The sensor's keypad allows error-free digital temperature setpoint adjustments in 0.5°F (0.2°C) increments. Setpoint values momentarily display as adjustments are made.

Override Button: Allows an occupant to change to an unoccupied control schedule during the unoccupied cycle for a predetermined time period.

All 2% versions allow the sensing element to be removed and replaced if needed. Siemens sensors with replaceable elements are ideal for applications where measurement accuracy is critical and sensor replacement is not an option. Replaceable sensing elements eliminate the need for accuracy adjustment.

Specifications – Humidity Output

Measurement range	0 to 100% rh
Accuracy of 5% rated sensors at room temperature (73°F, 20°C)	±5% rh for 0% ≤ rh <30% or 70% ≤ rh <95% ±3% rh for 30% ≤ rh <70%
Accuracy of 2% rated sensors at room temperature (73°F, 20°C)	±2% 0% to 100% rh
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

Specifications–Temperature Output (for combination RH/T units only)

Temperature setpoint output range	63°F to 83°F (17°C to 28°C)
Setpoint output signal:	0 to 10 Vdc, 0 to 100% linear, proportional
Time constant at 0 to 50°C and 10 to 80% rh	Approx. 20 seconds in moving air
Accuracy	±1°C
Output signal	Active: 4 to 20 mA or 0 to 10 Vdc or Passive: Platinum 1000 Ohm RTD
Calibration adjustments	None

General Specifications

Operating conditions	
Relative humidity	0 to 100%
Temperature	32°F to 122°F (0°C to 50°C)
Installation	18 AWG cable length shared in conduit with other sensor wiring 750 ft (229 m) maximum
Connections	Screw terminals
Housing Dimensions	3-11/32" H × 2-1/2" W × 1-1/2" D (85 mm × 63 mm × 38 mm)
Voltage requirement	
0 to 10 Vdc output types	13.5 to 35 Vdc or 24 Vac
4 to 20 mA output types	13.5 to 35 Vdc
Material Type	Polycarbonate plastic
Color	Desert beige or white
CE and UL–listed	UL 873 standard for temperature indicating and regulating equipment

Ordering Information

			Q	F	A	x	0	x	x	.	x	x	x	U
TYPE	SENSOR	Q												
MEASURING UNIT	HUMIDITY	F												
APPLICATION/LOCATION	ROOM	A												
SENSOR ACCURACY	STANDARD 5%	2												
	HIGH ACCURACY 2%	3												
HOUSING TYPE	SERIES 1000 HOUSING	0												
TEMPERATURE OUTPUT SIGNAL	NONE	0												
	PLATINUM 1000 OHM (385 ALPHA)	1												
	ACTIVE VOLTAGE (0 TO 10 VOLT)	6												
	ACTIVE CURRENT (4 TO 20 MA)	7												
HUMIDITY SIGNAL	0 TO 10 VOLT	0												
	4 TO 20 MA	1												
SEPARATOR		.												
FEATURE DESCRIPTION - FOR ROOM	SENSING ONLY	-												
	DISPLAY ONLY	D												
	FULL-FEATURED (DISPLAY, SETPT AND OVERRIDE)	F												
COLOR	WHITE	W												
	BEIGE	B												
LOGO	SIEMENS LOGO	-												
	NO LOGO	N												
US VERSION	UNIVERSAL	U												

NOTE: For combination RH&T versions, mixed 4 to 20 mA and 0 to 10V signals are not offered.

Part Number	Description
Example: QFA2060.WNU	Sensor, RH Room, 5%, 0 to 10V Temp, 0 to 10V RH, Sensing Only, White, No Logo
Accessory Part Numbers	Description
544-782B	Single Adapter Base Kit (White)
544-782A	Single Adapter Base Kit (Beige)
544-783B	Double Adapter Base Kit (White)
544-783A	Double Adapter Base Kit (Beige)
544-785B	Extender Ring Kit (White)
544-785A	Extender Ring Kit (Beige)
544-784	Non-Conduit Rough-In Kit
AQF3050	Replaceable Sensing Element (2% versions only)

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