

HUMIDITY/TEMPERATURE

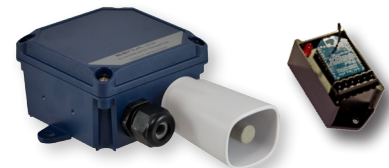


HUMIDITY/TEMP

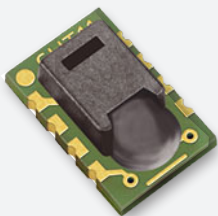
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The "Triple Threat Combo": CO₂, RH, and temp in a compact unit with optional BACnet in the **AQW Series**. This customizable sensor allows you to specify RH, CO₂ or both to meet project requirements!



Wireless units for rooftop applications reduces installation time and permits proper location. Solar Powered—save hundreds on your install.



Our microsensors are optimized for precision relative humidity and temperature measurement

When it comes to humidity, we're not perfect. Just better.

Conventional capacitive sensors have large elements that absorb or release water proportional to the relative environmental humidity. But they also absorb contaminants. And their bulky materials age haphazardly. Long term stability is the casualty. We set out to change that paradigm—and did.

How about the world's first solar power wireless outside air station?

Outside air is one of the most challenging installations going. First, you have to get to the roof top. Then you have conduit. Then someone figures out it's not really in the shade. Like moving that conduit again? We just had a notion that a solar-powered wireless humidity temp transmitter would be a better idea.

BACnet® is a registered trademark of ASHRAE.

Wall Humidity Sensors CO2/Humidity/Temp

Available with analog outputs or protocol for BACnet RS-485
Integrated set-point relay
Optional field replaceable NDIR CO2 and RH elements



DESCRIPTION

The AQW series design allows customization for a sensor that meets project requirements for monitoring temperature, CO2 and relative humidity. The sensor can be ordered as stand alone temperature, CO2/Temp, RH/Temp or all-in-one CO2/RH/Temp with a 0-5/10V analog or BACnet RS485 output. Lower material costs and installation time by combining multiple sensors into a single sensor housing with standard LCD and optional add-on features.

APPLICATIONS

- Controlling ventilation in response to occupancy
- Facilitating compliance with ASHRAE 62.1-2004 standard for air quality
- Offices, conference rooms, and public assembly areas

FEATURES

Customize to meet project requirements

- Standard LCD and temperature on each device
- Options to add CO2 and/or RH sensing elements
- Field replaceable elements for CO2 and RH
- Available with 0-5/10V Analog or BACnet protocol communication

Protocol Version

- BACnet RS-485 ready
- Auto-configuration wizard detects baud rate and MAC address
- Adjustable set-point using button menu or optional 10k slider

Analog Version

- LCD for easy setup of all parameters (concealment cover included)
- Programmable set-points for complete control
- Provision to offset CO2 reading
- Optional thermistors, sliders and override button

High performance field replaceable NDIR CO2 element

- Selectable auto-calibration mode returns sensor to baseline values

2% RH field replaceable sensor

- On-board temperature compensation for RH eliminates temp coefficient errors achieving excellent measurement accuracy, high repeatability and offset stability.
- State of the art testing facilities. 8-point NIST traceable certification available—consult factory

Quality

- Industry leading 7-year limited warranty/ 2-year RH element, 3-year CO2 element limited warranties

ORDERING INFORMATION

Output	CO2	RH	SLD	BTN	RTD/TH	Color
		B				

Output Type

A = Analog (0-5/10V)
B = BACnet RS-485

CO2 Sensor

A = None
B = CO2 Sensor

RH Sensor

A = None
B = 2% RH Sensor

Set-Point Slider

A = None
B = 1k (Not valid w/ BACnet)
C = 10k

Push Button

A = None
B = Override Button (Requires thermistor)
C = User Push Button

RTD/Thermistor*

A = None
C = 100Pt (385) RTD
D = 1000Pt (385) RTD
E = 10k type 2
F = 10k type 3
G = 10k w/11k
H = 3k
I = 2k2
J = 1k8
K = 20k

Color

1 = White
2 = Ivory
4 = Light Almond

*Add-on RTD/Thermistor not readable via BACnet; Temperature output is standard on AQW devices, Add-on RTD/Thermistor is option for Analog.

Example

Output	CO2	RH	SLD	BTN	RTD/TH	Color
	B	B	B	A	A	1

(AQW sensor with BACnet RS-485, Temp, CO2, 2% RH, no set-point slide, no user push button, no RTD/thermistor, white color)

SPECIFICATIONS

Power Supply		12-30VDC/24VAC ⁽¹⁾ , 100mA max.
Analog Outputs	Temperature	0–5/10V standard, Scaling 50°F to 95°F (10°C to 35°C); thermistor/RTD values optional
	CO2 and RH	0-5/10V
	Update Rate	Continuous
	Programmable Relay	Solid-state output, 1A @ 30VAC/DC, N.O.
Analog LCD Menu Parameters ⁽²⁾	SPt, Set point, Hi (On)	Sets relay turn-on threshold (800ppm default)
	SPh, Set point, hysteresis (Off)	Sets the relay turn-off hysteresis (100ppm default)
	SCl, Scaling	0-2000ppm or 0-5000ppm (2000ppm default)
	RdJ, Adjustment	CO2 Offset adjustment +/-250ppm (0 default)
	CL, Auto Calibration Period	Off, 7 days, 14 days, 30 days, 60 days (14 days default)
	°F, Displayed Temp Unit	°F degrees fahrenheit (default), °C degrees celsius
	LUL Analog Output Scale	5V 5.0V full scale, 10V 10.0V full scale (default)
Protocol Output	Run Mode	Displays temp and optional CO2 and RH
	Protocol	BACnet (Isolated)
	Connection	3-wire RS-485, with isolated ground
	Data Rate	Locally set baud rate up to 115200 (9600, 19200, 28800, 38400, 57600, 76800, 115200)
Protocol Relay Set-point	Address Range	0-127
	Programmable	Solid-state output, 1A @ 30VAC/DC, N.O. Source selectable: CO2, RH, Temperature
CO2	Type	Non-dispersive Infrared (NDIR)
	Accuracy	±40ppm, ±3% of reading (400-2000ppm)
	Range	0-2000/5000ppm; Programmable up to 10,000ppm
	Response time	60 seconds to 90% reading
	Sample rate	3 seconds
Relative Humidity	Type	Digital CMOS
	Accuracy	2% models, +/-2% over 10 to 90%RH range
	Resolution	0.05%RH
	Hysteresis	+/-1%RH
	Temperature coefficient	Compensated on-board
	Response time ⁽³⁾	30s
	Sample rate	3s
	Operating range/Output Scale	0 to 100%RH (non-condensing)
	Long term drift	<0.5%RH per year
	Operating conditions ⁽⁴⁾	-20° C to 60° C @ RH>90%; -20° C to 80° C @ RH=50%
Temperature (with RH option)	Type	Silicon Bandgap
	Nominal Accuracy	+/-0.3° C (operating range)
	Maximal Accuracy	+/-0.5° C (at 25° C), +/-1.0° C (operating range)
	Resolution	0.01° C
	Repeatability	+/-0.1° C
	Response time (3)	30s
	Sample rate	3s
Temperature (without RH option)	Type	NTC Thermistor
	Nominal Accuracy	+/-0.5° C (operating range)
	Maximal Accuracy	+/-1.0° C (at 25° C), +/-2.0° C (operating range)
	Resolution	0.05° C
	Repeatability	+/-0.2° C
	Sample Rate	100 milliseconds
	Temperature	32 to 122F (0 to 50C)
Operating Environment	Humidity	0-95% non-condensing
	Material	ABS Plastic
Enclosure	Dimensions	4.85"h x 3.25"w x 1.19"d

⁽¹⁾ One side of transformer, secondary is connected to signal common. Dedicated transformer is recommended.

⁽²⁾ Quick Start Menu parameters shown, for additional capabilities see installation manual.

⁽³⁾ Time for reaching 63% of reading at 25° C and 1 m/s airflow

⁽⁴⁾ Long term exposures to conditions outside normal range at high humidity may temporarily offset the RH reading (+3%RH after 60 hours.)

BACnet® is a registered trademark of ASHRAE.

Recessed Wall Humidity/Temperature

2% or 3% accuracy
0-5/10V RH/Temp (thermistors optional)
Field-calibration potentiometer
Durable and attractive low-profile design



DESCRIPTION

The HR series is designed for use in energy management systems in buildings. They combine excellent stability with reliable operation and the provision to offset the RH reading $\pm 5\%$ for in-field calibration. Thermistor options accommodate any installation. Housing is offered in multiple color choices to match any decor.

APPLICATIONS

- HVAC room humidity and temperature measurement and control
- Energy management/building control

FEATURES

Attractive recessed design is attractive and durable

- Match colors and existing interior decor
- Fits in most standard wall plates
- No exposed screws; unobtrusive tamper resistant design
- Ideal for schools

Field calibration potentiometer

- Field calibration scaled adjustment allows easy adjustment of calibrated RH value as needed to maintain certification.
- 0-5V/0-10V output—jumper selectable

Choose from a range of accuracy and options

- 2% and 3% RH accuracy options
- Thermistor outputs for temperature optional

Superior RH sensing

- On-board temperature compensation for RH. Eliminates temperature coefficient errors and achieves an excellent measurement accuracy as well as high repeatability and offset stability.



7 year limited warranty

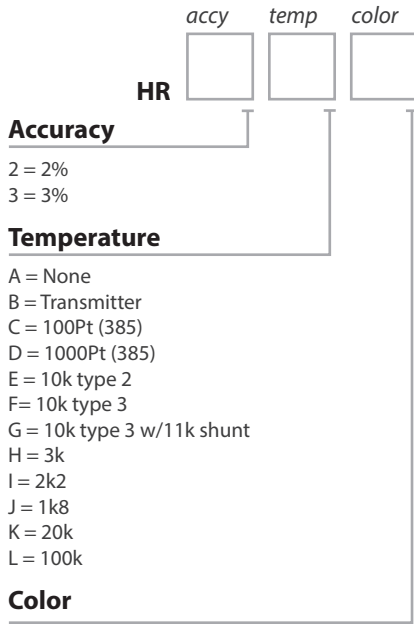
Slimline enclosure

- Tamper resistant design allows the sensor to mount flush with the wall for a clean, low-profile appearance



Optional Trim Ring
for surface mount
applications or mis-sized
j-boxes

ORDERING

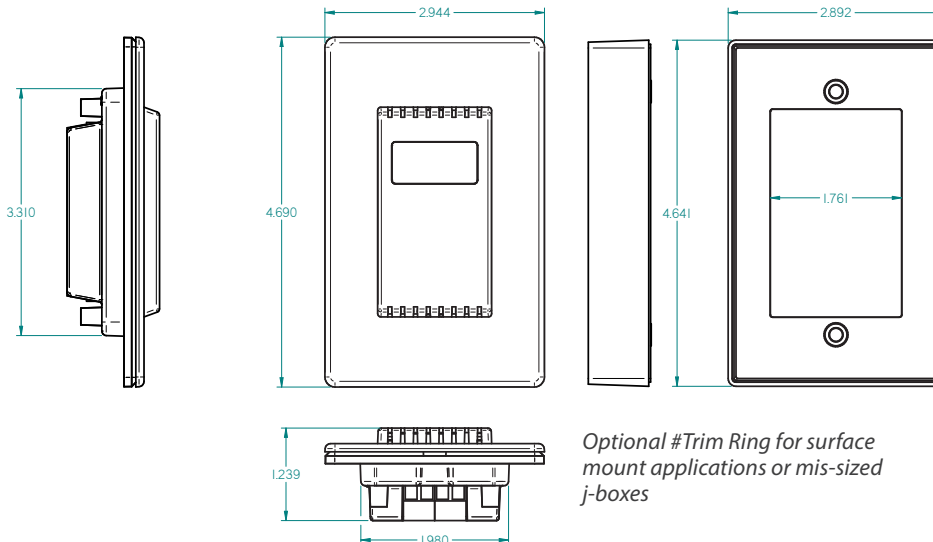


SPECIFICATIONS

Power Supply	12-30VDC/24VAC ⁽¹⁾ , 15mA max.	
Outputs	RH% and Temperature	3-wire 0-5/10V ⁽⁴⁾ (jumper selectable)
Output scaling	RH%	0-100% RH
	Temperature	50-95° F (10-35° C)
Thermistor Options	Yes, see ordering table below	
Media filter	PTFE membrane, IP54 protection	
Relative Humidity	Accuracy	2% models, +/-2% over 10 to 90%RH range
		3% models, +/-3% over 20 to 80%RH range
	Resolution	0.05%RH
	Hysteresis	+/-1%RH
	Non-Linearity	factory linearized <1%RH
	Temperature coefficient	fully compensated by on-board temp sensor
	Response time ⁽²⁾	30s
	Output update rate	2s
	Operating range	0 to 100%RH (non-condensing)
	Long term drift	<0.5%RH per year
Operating conditions ⁽³⁾	-20° C to 60° C @ RH>90%	
	-20° C to 80° C @ RH=50%	
Accuracy (-20° C to 70° C range)	2% models, <+/-1° C; 0.5° C typ @ 25° C	
	3% models, <+/-2° C; 0.5° C typ @ 25° C	
Temperature	Resolution	0.01° C
	Repeatability	+/-0.1° C
	Response time ⁽²⁾	30s
	Temperature Scaling	50-95° F (10-35° C)
	Output update rate	2s
	Operating range	-40° C to 120° C

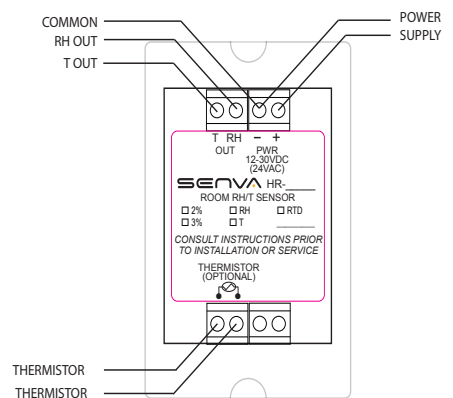
- (1) One side of transformer, secondary is connected to signal common. Dedicated transformer is recommended.
 (2) Time for reaching 63% of reading at 25° C and 1 m/s airflow.
 (3) Long term exposures to conditions outside normal range at high humidity may temporarily offset the RH reading (+3%RH after 60 hours).
 (4) 15-30VDC/24VAC power supply voltage required for 10 volt output.

DIMENSIONS



Optional #Trim Ring for surface mount applications or mis-sized j-boxes

TYPICAL WIRING



Duct Humidity/Temperature

2% or 3% accuracy (NIST certification options)
 0-5V/10V and 4-20mA RH/Temp (thermistors optional)
 LCD display with field calibration menu
 Field replaceable element



DESCRIPTION

The HD Series is designed with both the engineer and field technician in mind. The HD Series combines excellent stability with reliable operation in 2% or 3% RH accuracy options. Optional temperature transmitters, RTDs and thermistors add further flexibility when ordering. The standard LCD and field replaceable elements make the initial installation and future service a breeze.

APPLICATIONS

- HVAC room humidity and temperature measurement and control
- Replaceable element is ideal for difficult environments such as swimming pools

FEATURES

Versatile

- 2% or 3% RH versions with field replaceable sensor
- Switch selectable 5V/10V and 4-20mA RH/T transmitter outputs
- Thermistor outputs for temperature optional

Easy to maintain

- Field calibration. LCD and push-button menu allows easy adjustment of calibrated RH value as needed to maintain certification.
- Field replaceable sensor—without disturbing conduit

Superior RH sensing

- On-board temperature compensation for RH. Eliminates temperature coefficient errors and achieves an excellent measurement accuracy as well as high repeatability and offset stability.
- State of the art testing facilities. 8-point calibration certificate available (NIST traceability—consult factory)

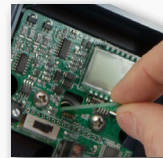
Quality

- Industry leading 7-year warranty/ 2-year replaceable element warranty



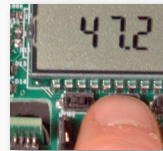
7 year limited warranty

Field replaceable element



- Ideal for harsh environments
- Accurate dual RH/Temp IC sensing

LCD with menu



- Easier commissioning
- Re-scale to field metrics if required
- LCD cover provided

NIST traceable



- 8-point calibration certification options. Consult factory.

ORDERING

HD - accy temp

Accuracy

2 = 2%
3 = 3%

Temperature

A = None
B = Transmitter
C = 100Pt (385)
D = 1000Pt (385)
E = 10k type 2
F = 10k type 3
G = 10k type 3 w/11k shunt
H = 3k
I = 2k2
J = 1k8
K = 20k
L = 100k

Replacement Sensor Elements

HSD-2 = 2% accuracy
HSD-3 = 3% accuracy

Consult factory for certification and point calibration options

(Write your selected Accuracy, Temperature, and Replacement Sensor Elements numbers/ letters in the boxes above)



SPECIFICATIONS

Power Supply	3-wire voltage mode (0-5/10V)	12-30VDC/24VAC ⁽¹⁾ , 15mA max.
	2-wire current mode (4-20mA)	12-30VDC, 30mA max.
Outputs	RH and Temperature (option)	3-wire 0-5/10V ⁽⁴⁾ or 2-wire 4-20mA
Output scaling	RH	0-100% RH
	Temperature (jumper)	32-122° F (0-50°C) or -40-140° F (-40-60°C)
Thermistor/RTD	Optional	See ordering table
Media filter		PBT with water-vapor permeable membrane
Relative Humidity	Accuracy	2% models, +/-2% over 10 to 90%RH range 3% models, +/-3% over 20 to 80%RH range
	Resolution	0.05%RH
	Hysteresis	+/-1%RH
	Non-Linearity	factory linearized <1%RH
	Temperature coefficient	fully compensated by on-board sensor
	Response time ⁽²⁾	30s
	Output update rate	2s
	Operating range	0 to 100%RH (non-condensing)
	Long term drift	<0.5%RH per year
	Operating conditions ⁽³⁾	-20° C to 60° C @ RH>90% -20° C to 80° C @ RH=50%
Temperature	Accuracy (-20° C to 70° C range)	2% models, <+/-1° C; 0.5° C typ @ 25° C 3% models, <+/-2° C; 0.5° C typ @ 25° C
	Resolution	0.01° C
	Repeatability	+/-0.1° C
	Response time (2)	30s
	Output update rate	2s
	Operating range	-40° C to 120° C
Enclosure	Materials	ABS/Polycarbonate
	Dimensions	4.0"h x 4.4"w x 2.1"d (+6.8" probe)

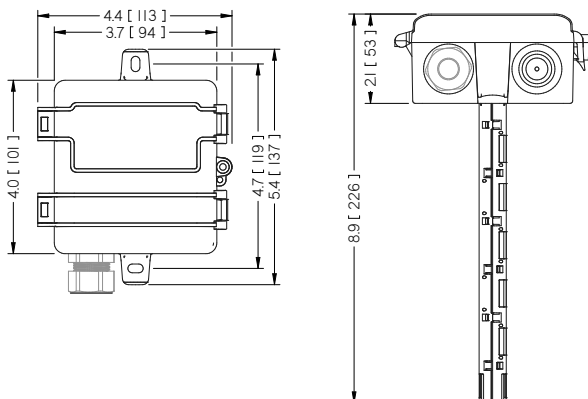
(1) One side of transformer, secondary is connected to signal common. Dedicated transformer is recommended.

(2) Time for reaching 63% of reading at 25° C and 1 m/s airflow.

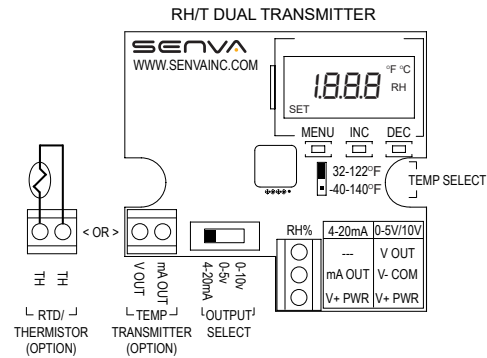
(3) Long term exposures to conditions outside normal range at high humidity may temporarily offset the RH reading (+3%RH after 60 hours.)

(4) 15-30VDC/24VAC power supply voltage required for 10 volt output.

DIMENSIONS



TYPICAL WIRING



4-20mA wiring:

mA OUT = 4-20mA output return

V+ PWR = Loop supply voltage

0-5V/0-10V wiring:

V OUT = Voltage output, 0-5 or 10VDC

V- COM = Ground/Common

V+ PWR = Power supply voltage

Outside Air Humidity/Temperature

2% or 3% accuracy (NIST certification options)
0-5V/10V and 4-20mA RH/Temp (thermistors optional)
LCD display with field calibration menu
Field replaceable element



DESCRIPTION

The HO Series is designed to be mounted on the building exterior to provide outside air RH measurement. The HO Series combines excellent stability with reliable operation in 2% or 3% RH accuracy options. Optional temperature transmitters, RTDs and thermistors add further flexibility when ordering. The standard LCD, gasketed lid and field replaceable elements make the initial installation and future service a breeze.

APPLICATIONS

- Outdoor humidity and temperature measurement for building control

FEATURES

Versatile

- 2% or 3% Rh versions with field replaceable sensor
- Switch selectable 5V/10V and 4-20mA RH/T transmitter outputs
- Thermistor/RTD output for temperature optional

Easy to maintain

- Field calibration. LCD and push-button menu allows easy adjustment of calibrated RH value as needed to maintain certification
- Replace a sensor without disturbing conduit

Superior RH sensing

- On-board temperature compensation for RH. Eliminates temperature coefficient errors and achieves an excellent measurement accuracy as well as high repeatability and offset stability
- State of the art testing facilities. 8-point calibration certificate available (NIST traceability—consult factory)

Quality

- Industry leading 7-year warranty/ 2-year replaceable element warranty

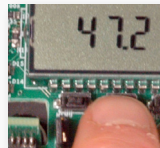


7 year limited warranty



Field replaceable element

- Ideal for harsh environments
- Accurate dual RH/Temp IC sensing



LCD with menu

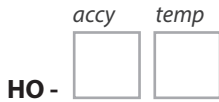
- Easier commissioning
- Re-scale to field metrics if required



NIST traceable

- 8-point calibration certification options. Consult factory.

ORDERING



Accuracy

2 = 2%
3 = 3%

Temperature

A = None
B = Transmitter
C = 100Pt (385)
D = 1000Pt (385)
E = 10k type 2
F = 10k type 3
G = 10k type 3 w/11k shunt
H = 3k
I = 2k2
J = 1k8
K = 20k
L = 100k

Replacement Sensor Elements

HSO-2 = 2% accuracy
HSO-3 = 3% accuracy



SPECIFICATIONS

Power Supply	3-wire voltage mode (0-5/10V)	12-30VDC/24VAC ⁽¹⁾ , 15mA max
	2-wire current mode (4-20mA)	12-30VDC, 30mA max.
Outputs	RH and Temperature (option)	3-wire 0-5/10V ⁽⁴⁾ or 2-wire 4-20mA
Output scaling	RH	0-100% RH
	Temperature (jumper)	32-122°F (0-50°C) or -40-140°F (-50-60°C)
Thermistor/RTD	Optional	See ordering table
Media filter		Sintered stainless steel
Relative Humidity	Accuracy	2% models, +/-2% over 10 to 90%RH range 3% models, +/-3% over 20 to 80%RH range
	Resolution	0.05%RH
	Hysteresis	+/-1%RH
	Non-Linearity	Factory linearized <1%RH
	Temperature coefficient	Fully compensated by on-board sensor
	Response time ⁽²⁾	30s
	Output update rate	2s
	Operating range	0 to 100%RH (non-condensing)
	Long term drift	<0.5%RH per year
	Operating conditions ⁽³⁾	-20° C to 60° C @ RH>90% -20° C to 80° C @ RH=50%
Temperature	Accuracy (-20° to 70°C range)	2% models, <+/-1° C; 0.5° C typ @ 25° C 3% models, <+/-2° C; 0.5° C typ @ 25° C
	Resolution	0.01° C
	Repeatability	+/-0.1° C
	Response time ⁽²⁾	30s
	Output update rate	2s
	Operating range	-40° to 70° C
Enclosure	Materials	ABS/Polycarbonate
	Dimensions	4.0"h x 4.4"w x 2.1"d (+2.8" solar shield)

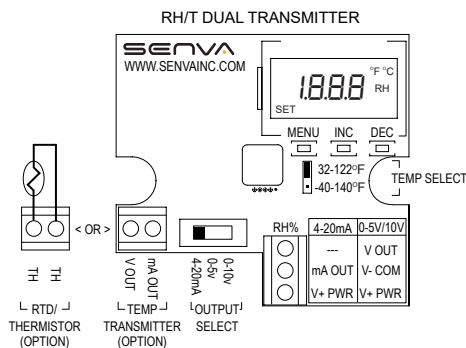
(1) One side of transformer, secondary is connected to signal common. Dedicated transformer is recommended.

(2) Time for reaching 63% of reading at 25° C and 1 m/s airflow.

(3) Long term exposures to conditions outside normal range at high humidity may temporarily offset the RH reading (+3%RH after 60 hours.)

(4) 15-30VDC/24VAC power supply voltage required for 10 volt output.

TYPICAL WIRING



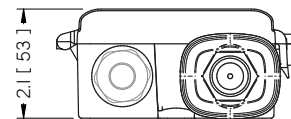
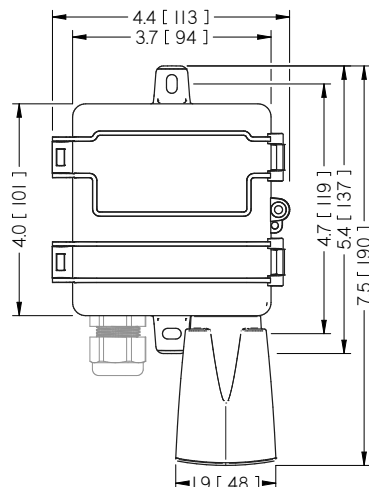
4-20mA wiring:

mA OUT = 4-20mA output return
V+ PWR = Loop supply voltage

0-5V/0-10V wiring:

V OUT = Voltage output, 0-5 or 10VDC
V- COM = Ground/Common
V+ PWR = Power supply voltage

DIMENSIONS



Wireless Outside Air Humidity/Temperature

2.4 GHz ZigBee™ wireless for easy installation
2% or 3% accuracy
LCD display with field calibration
Field replaceable element



DESCRIPTION

The WO outside air series consists of a labor saving solar powered wireless temp/humidity transmitter with a remote receiver. This eliminates costly conduit, roof penetrations, and allows for easy repositioning should conditions warrant. Excellent stability with reliable operation.

APPLICATIONS

- Outdoor humidity and temperature measurement for building control
- Eliminate costly conduit runs and relocation

FEATURES

Breakthrough wireless labor savings

- 2.4 GHz ZigBee™ wireless for super fast installation—save hours on conduit and allows for flexible repositioning.
- Solar-powered for long, reliable transmission; works even in cloudy areas

Versatile

- 2% or 3% RH versions with field replaceable sensor
- 3-wire 0-10V output

Easy to maintain

- Field replaceable sensor—without disturbing installation

Superior RH sensing

- On-board temperature compensation for RH. Eliminates temperature coefficient errors and achieves an excellent measurement accuracy as well as high repeatability and offset stability.

Quality

- Industry leading 7-year warranty/ 2-year replaceable element warranty

Solar powered with integral battery

- Trouble-free operation without changing batteries or pulling conduit



Field replaceable element

- Ideal for harsh environments
- Accurate dual RH/Temp IC sensing



7 year limited warranty

ORDERING

WO -
Accuracy

2 = 2%
3 = 3%

Replacement Sensor Elements

HSO-2 = 2% accuracy
HSO-3 = 3% accuracy



(Write your selected Accuracy and Replacement Sensor Element numbers/ letters in the boxes above)

SPECIFICATIONS

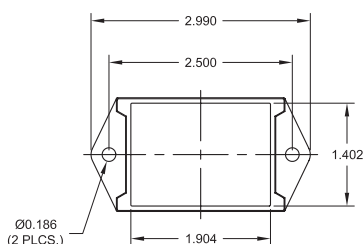
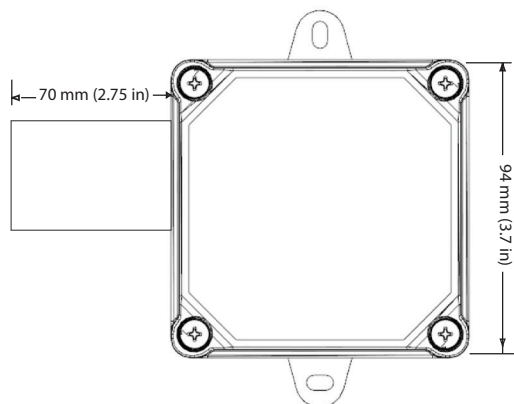
Power Supply	Transmitter	Long life battery with integral solar charger
	Receiver	12-30VDC/12VAC ⁽¹⁾ , 45mA max
Radio	Frequency/Power	2.4GHz unlicensed ISM band, ZigBee™, 60mW
	Range	300' line-of-sight
	FCC id	OUR24XBEE
	Broadcast interval	Daylight, 5-min; Dark, 30-min
Outputs	RH% and Temperature	3-wire 0-10VDC
Output scaling	RH%	0-100% RH
	Temperature	-40 to 140° F
Media filter		Sintered Stainless Steel
Relative Humidity	Accuracy	2% models, +/-2% over 10 to 90%RH range 3% models, +/-3% over 20 to 80%RH range
	Resolution	0.05%RH
	Hysteresis	+/-1%RH
	Non-Linearity	factory linearized <1%RH
	Temperature coefficient	fully compensated by on-board temp sensor
	Response time ⁽²⁾	30s
	Output update rate	2s
	Operating range	0 to 100%RH (non-condensing)
	Long term drift	<0.5%RH per year
	Operating conditions ⁽³⁾	-20° C to 60° C @ RH>90% -20° C to 80° C @ RH=50%
	Accuracy (-20° C to 70° C range)	2% models, <+/-1° C; 0.5° C typ @ 25° C 3% models, <+/-2° C; 0.5° C typ @ 25° C
Temperature	Resolution	0.01° C
	Repeatability	+/-0.1° C
	Response time (2)	30s
	Output update rate	2s
	Operating range	-40° C to 120° C

(1) One side of transformer, secondary is connected to signal common. Dedicated transformer is recommended.

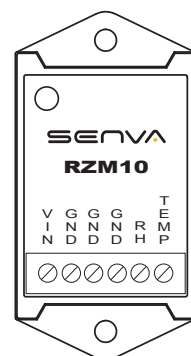
(2) Time for reaching 63% of reading at 25° C and 1 m/s airflow

(3) Long term exposures to conditions outside normal range at high humidity may temporarily offset the RH reading (+3%RH after 60 hours.)

DIMENSIONS



TYPICAL WIRING



VIN = Power supply excitation voltage
GND = Ground/Common
RH = RH Voltage output, 0-10vdc
TEMP = Temperature output, 0-10vdc

Wall Temperature Sensors CO2/Humidity/Temp

Available with analog outputs or protocol for BACnet RS-485
Integrated set-point relay
Optional field replaceable NDIR CO2 and RH elements



DESCRIPTION

The AQW series design allows customization for a sensor that meets project requirements for monitoring temperature, CO2 and relative humidity. The sensor can be ordered as stand alone temperature, CO2/Temp, RH/Temp or all-in-one CO2/RH/Temp with a 0-5/10V analog or BACnet RS485 output. Lower material costs and installation time by combining multiple sensors into a single sensor housing with standard LCD and optional add-on features.

APPLICATIONS

- Controlling ventilation in response to occupancy
- Facilitating compliance with ASHRAE 62.1-2004 standard for air quality
- Offices, conference rooms, and public assembly areas

FEATURES

Customize to meet project requirements

- Standard LCD and temperature on each device
- Options to add CO2 and/or RH sensing elements
- Field replaceable elements for CO2 and RH
- Available with 0-5/10V Analog or BACnet protocol communication

Protocol Version

- BACnet RS-485 ready
- Auto-configuration wizard detects baud rate and MAC address
- Adjustable set-point using button menu or optional 10k slider

Analog Version

- LCD for easy setup of all parameters (concealment cover included)
- Programmable set-points for complete control
- Provision to offset CO2 reading
- Optional thermistors, sliders and override button

High performance field replaceable NDIR CO2 element

- Selectable auto-calibration mode returns sensor to baseline values

2% RH field replaceable sensor

- On-board temperature compensation for RH eliminates temp coefficient errors achieving excellent measurement accuracy, high repeatability and offset stability.
- State of the art testing facilities. 8-point NIST traceable certification available—consult factory

Quality

- Industry leading 7-year limited warranty/ 2-year RH element, 3-year CO2 element limited warranties

ORDERING INFORMATION

Output	CO2	RH	SLD	BTN	RTD/TH	Color
AQW -						
Output Type A = Analog (0-5/10V) B = BACnet RS-485						
CO2 Sensor A = None B = CO2 Sensor						
RH Sensor A = None B = 2% RH Sensor						
Set-Point Slider A = None B = 1k (Not valid w/ BACnet) C = 10k						
Push Button A = None B = Override Button (Requires thermistor) C = User Push Button						
RTD/Thermistor* A = None C = 100Pt (385) RTD D = 1000Pt (385) RTD E = 10k type 2 F = 10k type 3 G = 10k w/11k H = 3k I = 2k2 J = 1k8 K = 20k						
Color 1 = White 2 = Ivory 4 = Light Almond						

*Add-on RTD/Thermistor not readable via BACnet; Temperature output is standard on AQW devices, Add-on RTD/Thermistor is option for Analog.

Example

Output	CO2	RH	SLD	BTN	RTD/TH	Color
AQW -	B	B	B	A	A	1

(AQW sensor with BACnet RS-485, Temp, CO2, 2% RH, no set-point slide, no user push button, no RTD/thermistor, white color)

SPECIFICATIONS

Power Supply		12-30VDC/24VAC ⁽¹⁾ , 100mA max.
Analog Outputs	Temperature	0–5/10V standard, Scaling 50°F to 95°F (10°C to 35°C); thermistor/RTD values optional
	CO2 and RH	0-5/10V
	Update Rate	Continuous
	Programmable Relay	Solid-state output, 1A @ 30VAC/DC, N.O.
Analog LCD Menu Parameters ⁽²⁾	SPt, Set point, Hi (On)	Sets relay turn-on threshold (800ppm default)
	SPh, Set point, hysteresis (Off)	Sets the relay turn-off hysteresis (100ppm default)
	SCl, Scaling	0-2000ppm or 0-5000ppm (2000ppm default)
	RdJ, Adjustment	CO2 Offset adjustment +/-250ppm (0 default)
	CL, Auto Calibration Period	Off, 7 days, 14 days, 30 days, 60 days (14 days default)
	°F, Displayed Temp Unit	°F degrees fahrenheit (default), °C degrees celsius
	LUL Analog Output Scale	5V 5.0V full scale, 10V 10.0V full scale (default)
Protocol Output	Run Mode	Displays temp and optional CO2 and RH
	Protocol	BACnet (Isolated)
	Connection	3-wire RS-485, with isolated ground
	Data Rate	Locally set baud rate up to 115200 (9600, 19200, 28800, 38400, 57600, 76800, 115200)
Protocol Relay Set-point	Address Range	0-127
	Programmable	Solid-state output, 1A @ 30VAC/DC, N.O. Source selectable: CO2, RH, Temperature
CO2	Type	Non-dispersive Infrared (NDIR)
	Accuracy	±40ppm, ±3% of reading (400-2000ppm)
	Range	0-2000/5000ppm; Programmable up to 10,000ppm
	Response time	60 seconds to 90% reading
	Sample rate	3 seconds
Relative Humidity	Type	Digital CMOS
	Accuracy	2% models, +/-2% over 10 to 90%RH range
	Resolution	0.05%RH
	Hysteresis	+/-1%RH
	Temperature coefficient	Compensated on-board
	Response time ⁽³⁾	30s
	Sample rate	3s
	Operating range/Output Scale	0 to 100%RH (non-condensing)
	Long term drift	<0.5%RH per year
	Operating conditions ⁽⁴⁾	-20° C to 60° C @ RH>90%; -20° C to 80° C @ RH=50%
Temperature (with RH option)	Type	Silicon Bandgap
	Nominal Accuracy	+/-0.3° C (operating range)
	Maximal Accuracy	+/-0.5° C (at 25° C), +/-1.0° C (operating range)
	Resolution	0.01° C
	Repeatability	+/-0.1° C
	Response time (3)	30s
	Sample rate	3s
Temperature (without RH option)	Type	NTC Thermistor
	Nominal Accuracy	+/-0.5° C (operating range)
	Maximal Accuracy	+/-1.0° C (at 25° C), +/-2.0° C (operating range)
	Resolution	0.05° C
	Repeatability	+/-0.2° C
	Sample Rate	100 milliseconds
	Temperature	32 to 122F (0 to 50C)
Operating Environment	Humidity	0-95% non-condensing
	Material	ABS Plastic
Enclosure	Dimensions	4.85"h x 3.25"w x 1.19"d

⁽¹⁾ One side of transformer, secondary is connected to signal common. Dedicated transformer is recommended.

⁽²⁾ Quick Start Menu parameters shown, for additional capabilities see installation manual.

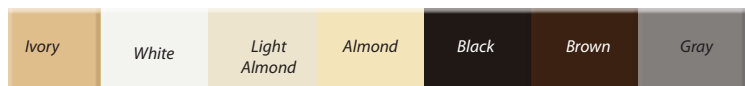
⁽³⁾ Time for reaching 63% of reading at 25° C and 1 m/s airflow

⁽⁴⁾ Long term exposures to conditions outside normal range at high humidity may temporarily offset the RH reading (+3%RH after 60 hours.)

BACnet® is a registered trademark of ASHRAE.

Recessed Wall Temperature Sensor

Wide range of thermistor options
Set-point & override options
Low-profile design
Decor color options



DESCRIPTION

The TR series is designed for use in energy management systems in buildings. The flush mount sensor housing accommodates a wide range of thermistor options for sensing room temperature. Optional setpoint slider and override button can be added for additional control.

APPLICATIONS

- Room temperature measurement for building automation control

FEATURES

The industry's best looking temp sensor

- Fits in any standard j-box or low voltage bracket.
- No exposed screws; unobtrusive tamper resistant design
- Popular colors to match any decor
- Complements CO2 sensor installations

User Friendly

- Wide range of thermistor options
- Set-point options
- Override options



Alerton TR-ES002 shown



Optional Trim Ring for surface mount applications or mis-sized j-boxes

SPECIFICATIONS

Enclosure	Material	ABS Plastic
	Dimensions	4.7" h x 2.9" w x 1.24" d (0.48" wall profile) (fits low-voltage bracket)



7 year limited warranty

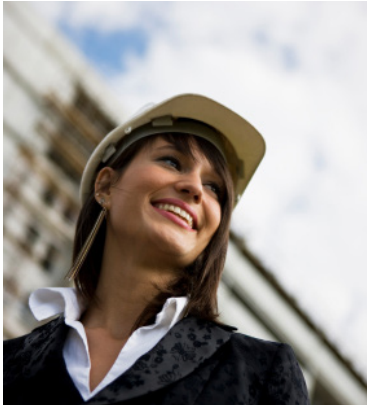


ORDERING

	therm	color	ovrd	s-p
TR -	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Temperature				
C = 100Pt (385)				
D = 1000Pt (385)				
E = 10k type 2				
F = 10k type 3				
G = 10k type 3 w/11k shunt				
H = 3k				
I = 2k2				
J = 1k8				
K = 20k				
L = 100k				
Color				
1 = White				
2 = Ivory				
3 = Brown				
4 = Light Almond				
5 = Almond				
6 = Black				
7 = Gray				
Override				
A = None				
B = N.O.				
Set-point				
A = None				
B = 1000 ohm setpoint slider				
C = 10k ohm setpoint slider				

(Write your selected Temperature, Color, Override and Set-Point letters/numbers in the boxes above)

SENA THERMISTOR RESISTANCE-TEMPERATURE TABLES										
	C	D	E	F	G	H	I	J	K	L
	100Pt 385	1000Pt 385	10K T2 B=3892	10K T3 B=3694	10K T3 11K Shunt	3K B=3892	2K2 B=3976	1K8 (100 C) B0/100=4300	20K B=4262	100K B=4461
Temp F	Resistance [Ω]									
0	93.0	930	85.41K	70.40K	9513	25.62K	19.21K	327.5K	193.0K	1015K
5	94.1	941	72.96K	61.02K	9320	21.89K	16.41K	276.6K	163.5K	858.0K
10	95.2	952	62.50K	53.28K	9118	18.75K	14.06K	234.3K	139.7K	732.0K
15	96.3	963	53.69K	46.39K	8892	16.11K	12.08K	199.1K	118.8K	620.7K
20	97.4	974	46.24K	40.49K	8650	13.87K	10.41K	169.6K	101.3K	527.6K
25	98.5	985	39.93K	35.41K	8393	11.98K	8989	145.0K	86.73K	450.6K
30	99.6	996	34.57K	31.19K	8132	10.37K	7783	124.2K	74.87K	388.1K
32	100.0	1000	32.66K	29.49K	8012	9799	7352	116.8K	70.14K	362.9K
35	100.7	1007	30.01K	27.39K	7848	9004	6756	106.7K	64.43K	332.8K
40	101.7	1017	26.11K	24.11K	7554	7834	5878	91.87K	55.55K	285.1K
45	102.8	1028	22.77K	21.26K	7249	6832	5127	79.32K	48.07K	245.7K
50	103.9	1039	19.91K	18.79K	6938	5972	4482	68.66K	41.56K	212.3K
55	105.0	1050	17.44K	16.70K	6632	5233	3927	59.57K	36.31K	184.7K
60	106.1	1061	15.31K	14.81K	6312	4595	3448	51.80K	31.56K	160.0K
65	107.1	1071	13.48K	13.16K	5992	4043	3035	45.15K	27.50K	138.8K
70	108.2	1082	11.88K	11.72K	5675	3565	2676	39.44K	24.04K	120.9K
75	109.3	1093	10.50K	10.50K	5371	3150	2365	34.53K	21.17K	106.1K
77	109.7	1097	10.00K	10.00K	5238	3000	2252	32.76K	20.00K	100.0K
80	110.4	1104	9298	9375	5061	2789	2094	30.30K	18.58K	92.72K
85	111.5	1115	8249	8389	4760	2475	1858	26.64K	16.31K	80.95K
90	112.5	1125	7333	7520	4467	2200	1651	23.47K	14.38K	71.05K
95	113.6	1136	6530	6752	4184	1959	1471	20.71K	12.70K	62.47K
100	114.7	1147	5826	6094	3922	1748	1312	18.32K	11.29K	55.29K
105	115.8	1158	5207	5489	3662	1562	1173	16.24K	9993	48.71K
110	116.8	1168	4663	4951	3414	1399	1050	14.41K	8865	42.98K
115	117.9	1179	4182	4473	3180	1254	942	12.82K	7888	38.05K
120	119.0	1190	3757	4062	2966	1127	846	11.42K	7058	33.90K
125	120.0	1200	3381	3680	2758	1014	761	10.20K	6301	30.11K
130	121.1	1211	3047	3338	2561	914	686	9116	5623	26.71K
135	122.2	1222	2751	3033	2378	825	620	8164	5036	23.80K
140	123.2	1232	2487	2760	2206	746	560	7324	4518	21.24K
145	124.3	1243	2252	2522	2052	676	507	6581	4076	19.06K
150	125.4	1254	2043	2301	1903	613	460	5922	3664	17.04K



The "Triple Threat Combo": CO₂, RH, and temp in a compact unit with optional BACnet in the **AQW Series**.

BACnet® is a registered trademark of ASHRAE.

The new IAQ standard

CO₂, Humidity, and Temperature in a single compact unit

Senva has packed a high accuracy NDIR, integrated humidity IC, and a full complement of temperature sensing into a stylish housing. Now you can offer a total indoor air quality solution in one easy to install unit.



Introducing the worlds only slimline CO₂

This flush mount design fits in any single-gang box and sets the new standard for attractive and functional CO₂ sensing. It's recessed to complement the most demanding architectural standards; it also deters tampering. Available in most popular wall plate colors, the CO₂RL is proof that beauty is more than skin deep.

Intuitive installation

Thanks to an Integrated display with push-button menu, it's easy to select your scale to 2000 or 5000 ppm. You can select automatic daily calibration or manual calibration to a known source. There's even a provision to offset the reading. For compatibility, 4-20mA and jumper selectable 0-5V or 0-10V outputs are provided.

Recessed wall mount for great looks and tamper resistance in schools

INDOOR AND OUTDOOR AIR QUALITY



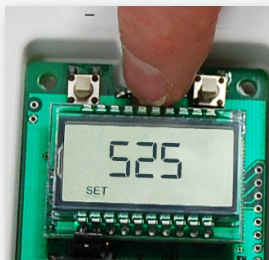
AIR QUALITY

CO2, Humidity, Temp (AQW) Series	60
Duct CO2, RH, Temp (CHTDL) Series	62
Recessed Wall CO2 (CO2RL) Series	64
Recessed Wall Value CO2 (CO2-VAL)	66
Duct Mount CO2 (CO2D) Series	68
Duct Mount Value CO2 (CO2D-VAL)	70
Outside Air CO2 (CO2O) Series	72
CO & NO2 Toxic Gas (TG) Series	74



CO2, Humidity, and Temperature all-in-one duct mounted unit!

Our duct mounted **CHTDL** monitors CO2, RH and temperature in one combination unit. Mount all three sensing points in one enclosure accompanied with a standard LCD and field replaceable CO2 element.



LCD with menu for easy set-up and parameter sections



Field replaceable CO2 NDIR element

High reliability CO2

Our non-dispersive infrared sensing element (NDIR) offers high performance—accurate to $\pm 40\text{ppm}$, $\pm 3\%$ of reading to be exact. And while you'll probably never have to change it out, it is field replaceable in case you are in a caustic environment or if the IR source should falter. And thanks to our auto calibration mode, the sensor will adapt to the environment, ensuring effects of long term drift are negligible. Our sensing element has a life expectancy of 15+ years.

Wall Combo Sensors

CO2/Humidity/Temp

Available with analog outputs or protocol for BACnet RS-485
Integrated set-point relay
Optional field replaceable NDIR CO2 and RH elements



DESCRIPTION

The AQW series design allows customization for a sensor that meets project requirements for monitoring temperature, CO2 and relative humidity. The sensor can be ordered as stand alone temperature, CO2/Temp, RH/Temp or all-in-one CO2/RH/Temp with a 0-5/10V analog or BACnet RS485 output. Lower material costs and installation time by combining multiple sensors into a single sensor housing with standard LCD and optional add-on features.

APPLICATIONS

- Controlling ventilation in response to occupancy
- Facilitating compliance with ASHRAE 62.1-2004 standard for air quality
- Offices, conference rooms, and public assembly areas

FEATURES

Customize to meet project requirements

- Standard LCD and temperature on each device
- Options to add CO2 and/or RH sensing elements
- Field replaceable elements for CO2 and RH
- Available with 0-5/10V Analog or BACnet protocol communication

Protocol Version

- BACnet RS-485 ready
- Auto-configuration wizard detects baud rate and MAC address
- Adjustable set-point using button menu or optional 10k slider

Analog Version

- LCD for easy setup of all parameters (concealment cover included)
- Programmable set-points for complete control
- Provision to offset CO2 reading
- Optional thermistors, sliders and override button

High performance field replaceable NDIR CO2 element

- Selectable auto-calibration mode returns sensor to baseline values

2% RH field replaceable sensor

- On-board temperature compensation for RH eliminates temp coefficient errors achieving excellent measurement accuracy, high repeatability and offset stability.
- State of the art testing facilities. 8-point NIST traceable certification available—consult factory

Quality

- Industry leading 7-year limited warranty/ 2-year RH element, 3-year CO2 element limited warranties

ORDERING INFORMATION

Output	CO2	RH	SLD	BTN	RTD/TH	Color
AQW -						
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Output Type						
A = Analog (0-5/10V) B = BACnet RS-485						
CO2 Sensor						
A = None B = CO2 Sensor						
RH Sensor						
A = None B = 2% RH Sensor						
Set-Point Slider						
A = None B = 1k (Not valid w/ BACnet) C = 10k						
Push Button						
A = None B = Override Button (Requires thermistor) C = User Push Button						
RTD/Thermistor*						
A = None C = 100Pt (385) RTD D = 1000Pt (385) RTD E = 10k type 2 F = 10k type 3 G = 10k w/11k H = 3k I = 2k2 J = 1k8 K = 20k						
Color						
1 = White 2 = Ivory 4 = Light Almond						

*Add-on RTD/Thermistor not readable via BACnet; Temperature output is standard on AQW devices, Add-on RTD/Thermistor is option for Analog.

Example

Output	CO2	RH	SLD	BTN	RTD/TH	Color
AQW -	B	B	B	A	A	1

(AQW sensor with BACnet RS-485, Temp, CO2, 2% RH, no set-point slide, no user push button, no RTD/thermistor, white color)

SPECIFICATIONS

Power Supply		12-30VDC/24VAC ⁽¹⁾ , 100mA max.
Analog Outputs	Temperature	0–5/10V standard, Scaling 50°F to 95°F (10°C to 35°C); thermistor/RTD values optional
	CO2 and RH	0-5/10V
	Update Rate	Continuous
	Programmable Relay	Solid-state output, 1A @ 30VAC/DC, N.O.
Analog LCD Menu Parameters ⁽²⁾	SPt, Set point, Hi (On)	Sets relay turn-on threshold (800ppm default)
	SPh, Set point, hysteresis (Off)	Sets the relay turn-off hysteresis (100ppm default)
	SCl, Scaling	0-2000ppm or 0-5000ppm (2000ppm default)
	RdJ, Adjustment	CO2 Offset adjustment +/-250ppm (0 default)
	CLL, Auto Calibration Period	Off, 7 days, 14 days, 30 days, 60 days (14 days default)
	°F, Displayed Temp Unit	°F degrees fahrenheit (default), °C degrees celsius
	LoL Analog Output Scale	5V 5.0V full scale, 10V 10.0V full scale (default)
Protocol Output	Run Mode	Displays temp and optional CO2 and RH
	Protocol	BACnet (Isolated)
	Connection	3-wire RS-485, with isolated ground
	Data Rate	Locally set baud rate up to 115200 (9600, 19200, 28800, 38400, 57600, 76800, 115200)
Protocol Relay Set-point	Address Range	0-127
	Programmable	Solid-state output, 1A @ 30VAC/DC, N.O. Source selectable: CO2, RH, Temperature
CO2	Type	Non-dispersive Infrared (NDIR)
	Accuracy	±40ppm, ±3% of reading (400-2000ppm)
	Range	0-2000/5000ppm; Programmable up to 10,000ppm
	Response time	60 seconds to 90% reading
	Sample rate	3 seconds
Relative Humidity	Type	Digital CMOS
	Accuracy	2% models, +/-2% over 10 to 90%RH range
	Resolution	0.05%RH
	Hysteresis	+/-1%RH
	Temperature coefficient	Compensated on-board
	Response time ⁽³⁾	30s
	Sample rate	3s
	Operating range/Output Scale	0 to 100%RH (non-condensing)
	Long term drift	<0.5%RH per year
	Operating conditions ⁽⁴⁾	-20° C to 60° C @ RH>90%; -20° C to 80° C @ RH=50%
Temperature (with RH option)	Type	Silicon Bandgap
	Nominal Accuracy	+/-0.3° C (operating range)
	Maximal Accuracy	+/-0.5° C (at 25° C), +/-1.0° C (operating range)
	Resolution	0.01° C
	Repeatability	+/-0.1° C
	Response time ⁽³⁾	30s
	Sample rate	3s
Temperature (without RH option)	Type	NTC Thermistor
	Nominal Accuracy	+/-0.5° C (operating range)
	Maximal Accuracy	+/-1.0° C (at 25° C), +/-2.0° C (operating range)
	Resolution	0.05° C
	Repeatability	+/-0.2° C
	Sample Rate	100 milliseconds
Operating Environment	Temperature	32 to 122F (0 to 50C)
	Humidity	0-95% non-condensing
Enclosure	Material	ABS Plastic
	Dimensions	4.85"h x 3.25"w x 1.19"d

⁽¹⁾ One side of transformer, secondary is connected to signal common. Dedicated transformer is recommended.

⁽²⁾ Quick Start Menu parameters shown, for additional capabilities see installation manual.

⁽³⁾ Time for reaching 63% of reading at 25° C and 1 m/s airflow

⁽⁴⁾ Long term exposures to conditions outside normal range at high humidity may temporarily offset the RH reading (+3%RH after 60 hours.)

BACnet® is a registered trademark of ASHRAE.

Duct CO₂/Humidity/Temp

LCD display with field calibration menu
2000/5000 ppm CO₂; 2% RH
Integrated set-point relay
Field replaceable NDIR CO₂ element



DESCRIPTION

Senva CO₂ sensors maximize energy savings by ensuring optimal ventilation. Measuring exhaled CO₂ levels ensures air is conditioned only when needed. This unit combines CO₂, humidity, and temperature sensing all in one compact device, reducing sensors required, installation labor and provides a cleaner IAQ solution.

APPLICATIONS

- Controlling ventilation in response to occupancy
- Facilitating compliance with ASHRAE 62.1-2004 standard for air quality
- Offices, conference rooms, and public assembly areas

FEATURES

CO₂, humidity, and temperature all in one device...fewer units to buy and install

- LCD display for easy set up of all parameters
- Options for complete control including set-point
- 0-10V outputs standard. Thermistors optional

High performance NDIR CO₂ with set-point relay

- Non-dispersive infrared sensing element (NDIR)
- Selectable auto-calibration mode returns sensor to baseline values
- Field replaceable CO₂ sensor
- 2000 or 5000 ppm scale

2% RH sensor

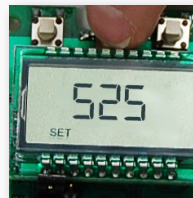
- On-board temperature compensation for RH eliminates temp coefficient errors achieving excellent measurement accuracy, high repeatability and offset stability.

Quality

- Industry leading 7-year limited warranty/ 2-year RH element, 3-year CO₂ element limited warranties

Display and menu

- Easy set point and calibration adjustments. Set offsets for CO₂



Field replaceable element

- Display and menu
- Easy set point and calibration



7 year limited warranty

ORDERING

CHTDL -

CO₂/Temp/RH (2%)

Thermistor Addition*

A = None
C = 100Pt (385)
D = 1000Pt (385)
E = 10k type 2
F = 10k type 3
G = 10k w/11k shunt
H = 3k
I = 2k2
J = 1k8
K = 20k'
L = 100K

*Addition of Thermistor requires the removal of the setpoint relay on the circuit board of the CHTDL.

To order replacement sensor elements, please consult factory

SPECIFICATIONS

Power Supply	12-30VDC/24VAC ⁽¹⁾ , 100mA max.	
Outputs	CO2, RH, and Temperature Transmitters	3 wire 0-5/0-10V ⁽²⁾ (jumper selectable)
CO2	Type	Non-dispersive Infrared (NDIR)
	Accuracy	±40ppm ±3% of reading
	Response time	60 seconds to 90% reading
	Output update rate	3 seconds
	Output scaling	0-2000 ppm (default), 0-5000 ppm (option)
	Programmable set point	Solid-state output, 1A @ 30VAC/DC, N.O.
	Relative Humidity	Type
Accuracy		+/-2% over 10 to 90%RH range
Resolution		0.05%RH
Hysteresis		+/-1%RH
Non-Linearity		factory linearized <1%RH
Temperature coefficient		fully compensated on-board
Response time ⁽³⁾		30s
Output update rate		2s
Operating range		0 to 100%RH (non-condensing)
Long term drift		<0.5%RH per year
Operating conditions ⁽⁴⁾		-20° C to 60° C @ RH>90% -20° C to 80° C @ RH=50%
Temperature (transmitter specifications; thermistors optional)		Scaling
	Accuracy (-20 to 70° C range)	<+/-1° C; 0.5° C typ @ 25° C 3% models, <+/-2° C; 0.5° C typ @ 25° C
	Resolution	0.01° C
	Repeatability	+/-0.1° C
	Response time (3)	30s
	Output update rate	2s
	Operating range	-40° C to 120° C (sensor only)
	LCD Menu Setup Parameters	SPH, Setpoint, Hi (On) point
SPL_ Setpoint, Lo (Off) point		400ppm to full-scale-50 (600ppm default)
SEL, Scaling		0-2000ppm or 0-5000ppm (2000ppm default)
Adj, Adjustment		Offset adjustment +/-250ppm (0 default)
CAL, Calibration mode		Automatic mode ON or OFF (default=ON)
Run mode		Displays CO2 in ppm
Operating Environment	Temperature	32 to 122F (0 to 50C)
	Humidity	0-95% non-condensing
Enclosure	Material	ABS/Polycarbonate
	Dimensions	4.0' h x 4.4"w x 2.1"d (+6.8" probe)

(1) One side of transformer, secondary is connected to signal common.
Dedicated transformer is recommended.

(2) 15-30 VDC/24VAC power supply voltage required for 10V output

(3) Time for reaching 63% of reading at 25° C and 1 m/s airflow

(4) Long term exposures to conditions outside normal range at high humidity may temporarily offset the RH reading (+3%RH after 60 hours.)