

INSTALLATION INSTRUCTIONS

AQW Series Analog Version Room CO2/RH/T combo sensor



IMPORTANT WARNINGS

- Only qualified trade installers should install this product
- This product is not intended for life-safety applications
- Do not install in hazardous or classified locations
- The installer is responsible for all applicable codes
- De-energize power supply prior to installation or service

PRODUCT APPLICATION LIMITATION:

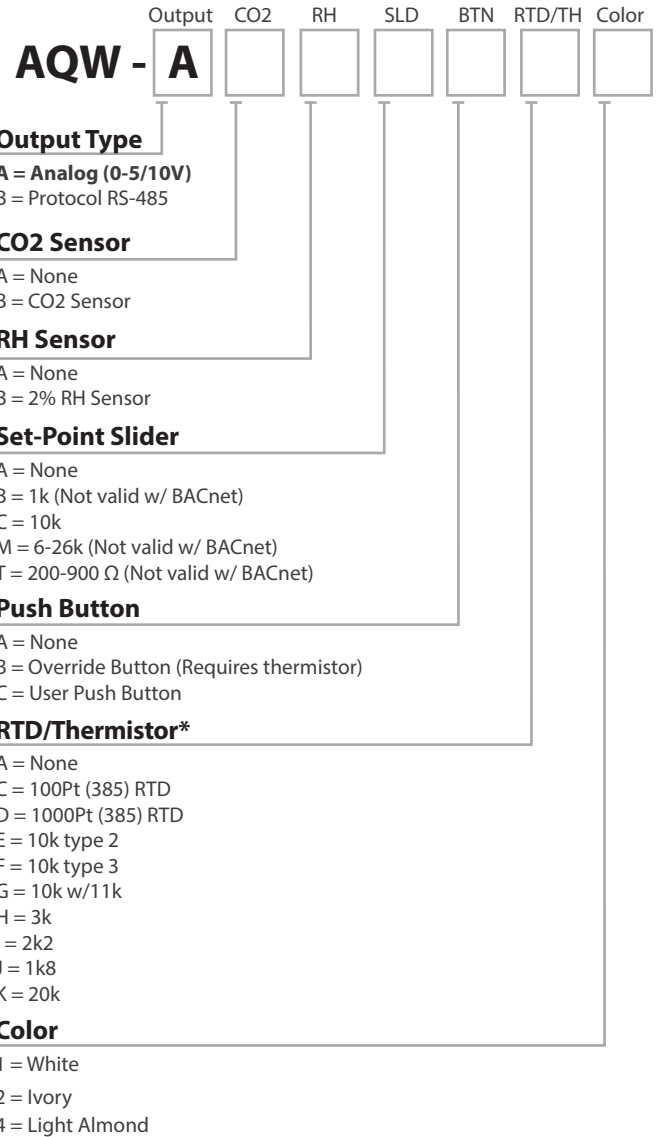
Senva products are not designed for life or safety applications. Senva products are not intended for use in critical applications such as nuclear facilities, human implantable device or life support. Senva is not liable, in whole or in part, for any claims or damages arising from such uses.

OPERATION

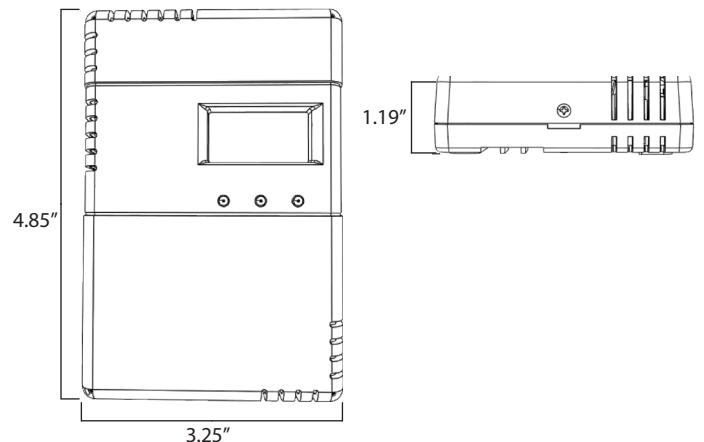
The AQW series design allows customization for a sensor that meets project requirements for monitoring temperature, CO2 and relative humidity. The product can be ordered as stand alone temperature, CO2/Temperature, RH/Temperature or all-in-one CO2/RH/Temperature with a 0-5/10V analog or BACnet RS485 output. This installation manual applies to the Analog Version AQW sensor with 0-5/10V output.

To verify the features see the 'Product Identification' section of the installation manual. All versions come with temperature as a standard output. For CO2 and RH sensing, the option must be added at the factory.

PRODUCT IDENTIFICATION



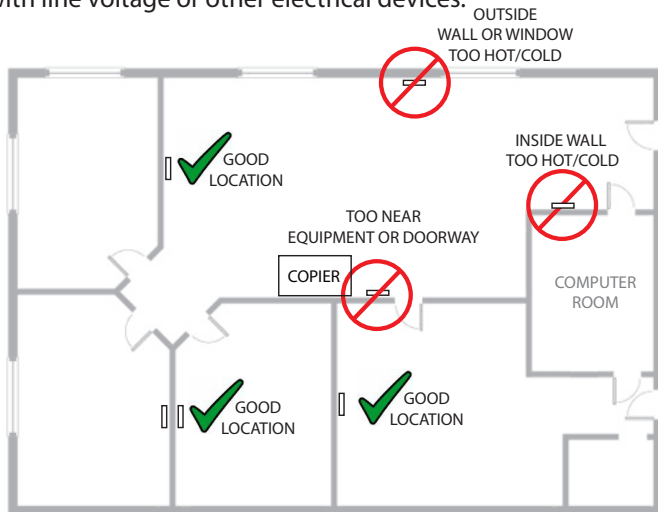
DIMENSIONS



INSTALLATION

1. IMPORTANT! Locate the device in an area away from ventilation sources and heat generating equipment and appliances. The device should be mounted at light switch height in a vertical orientation. Use insulating material behind the device to ensure reading accuracy.

NOTE: Do not install the device in multi-gang electrical boxes with line voltage or other electrical devices.



2. Install backplate to wall or j-box using screws provided.

3. Wire according to installation requirements.

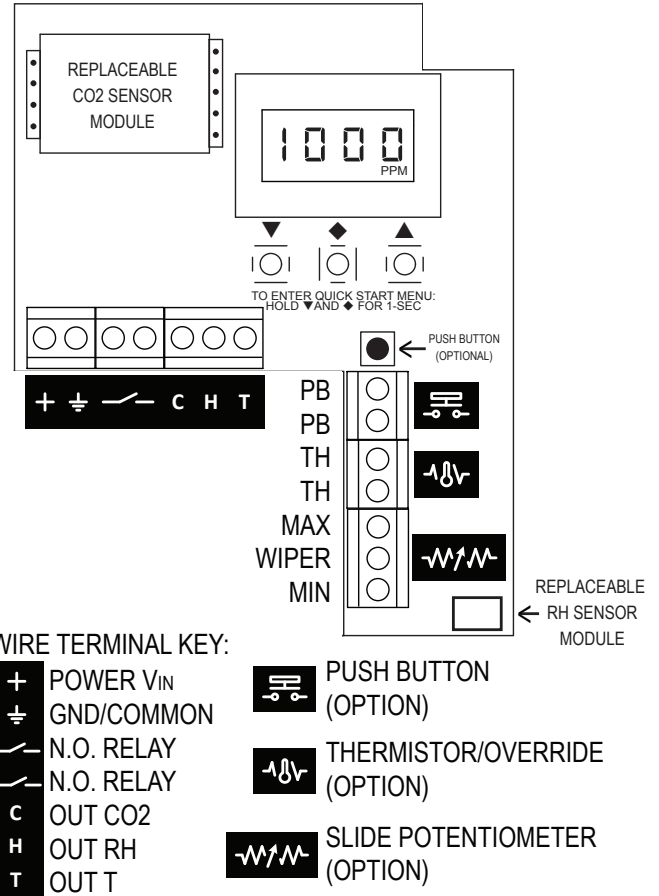
4. Apply power.

5a. Configure the device with 'Quick Start Menu' below.

-or-

5b. Configure the device using the extended setup menu (See 'Menu Options' on page 3 for instructions to access 'AQ Series User's Guide' online).

WIRING



QUICK START MENU

1. Press and hold ▼ and ◆ (the left and center buttons) for 1 second to enter the Quick Start Menu that is adjustable using the LCD. Screen will display *SPt* when the menu has been activated.

2. Navigation and parameters:

- Pressing ◆ advances to the next menu item.
- If a menu item is visible, pressing either ▼ or ▲ displays the current value.
- If a value is visible, pressing either ▼ or ▲ changes the value. Holding ▼ or ▲ for a time accelerates the value change.
- If a value is visible, pressing ▼ and ▲ together sets the value to the default.
- If a value is visible, pressing ◆ returns to the menu item list.

<i>SPt</i>	Sets the relay turn-on threshold (Closed above this level); Default: <i>800</i>
<i>SPh</i>	Sets the relay turn-off hysteresis (Open below this level); Default: <i>100</i>
<i>ScL</i>	Sets the CO2 concentration scaling (<i>2</i> = 2000ppm (default); <i>5</i> = 5000ppm)
<i>AdJ</i>	Sets the CO2 concentration calibration offset up to +/-250ppm; Default: <i>0</i> ppm
<i>CRl</i>	Sets the CO2 auto calibration period <i>OFF</i> Auto calibration disabled, <i>7d</i> 7 days, <i>14d</i> 14 days (default), <i>30d</i> 30 days, <i>60d</i> 60 days
<i>oFC</i>	Selects the unit system for displayed temperature measurements <i>USF</i> User defined (default), <i>oF</i> Degrees Fahrenheit, <i>oC</i> Degrees Celsius
<i>LvL</i>	Output Scaling: <i>5v</i> 5.0V full scale, <i>10v</i> 10.0V full scale (default)
<i>RUW</i>	Close this menu with changes saved and display parameters.

3. When setup is complete, select RUN or wait for setup mode to time out.

MENU OPTIONS

To access the full menu options use the 'AQ Series User's Guide' manual online at www.senvainc.com/download_center.asp

The 'AQ Series User's Guide' includes:

- User's Menu
- Setup Menu
- Quick Start Menu

HOME SCREEN

By default, the device displays one measurement at a time, rotating between measurements every 10 seconds if multiple sensor options are installed.

If the installer wants to change which values are displayed on the LCD, access the *User's Menu* (See 'AQ Series User's Guide').

VISUAL INDICATORS

Each measurement should display in turn.

If a measurement does not appear, the respective sensor damaged, has been removed from the device, or has been selected not to appear through the *User's Menu* (See 'AQ Series User's Guide').

TROUBLESHOOTING

Symptom	Solution
No output	Check wiring. Ensure power supply meets requirements.
Reading error	Verify unit is located away from hot/cold sources.
	Verify control panel software is configured correctly.
	Verify accuracy of test instrument.
	Install insulation behind sensor to prevent air flow from inside wall.

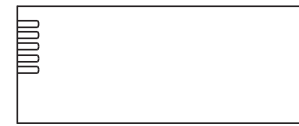
SENA TECHNICAL SUPPORT

Need further assistance? Call our toll-free number for live technical support: (866) 660-8864 or feel free to email us at support@senvainc.com

INSTALLING MENU BUTTON COVER

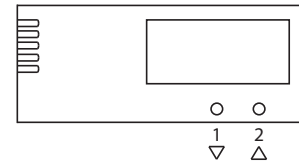
The AQW installation kit offers two cover options:

Anti-tamper LCD cover

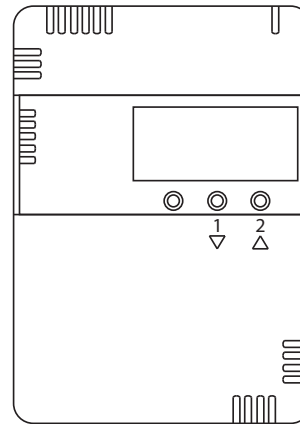


If the anti-tamper cover is used, discard the buttons.

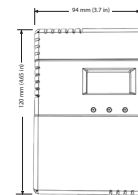
LCD bezel with user controls



When using the LCD bezel, place the two buttons provided in locations 1 and 2 with the rounded end up/outward.



Menu Button:



Snap on the LCD bezel once the buttons have been placed in positions 1 and 2.

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)
	SEL, Scaling	0-2000ppm or 0-5000ppm (2000ppm default)
	Adj, Adjustment	CO2 Offset adjustment +/-250ppm (0 default)
	CAL, Auto Calibration Period	Off, 7 days, 14 days, 30 days, 60 days (14 days default)
	DFC, 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)
CO2	Run Mode	Displays temp and optional CO2 and RH
	Type	Non-dispersive Infrared (NDIR)
	Accuracy	±40ppm, ±3% of reading (400-2000ppm)
	Range	0-2000/5000ppm (2000ppm default); Programmable up to 10,000ppm
	Response time	60 seconds to 90% reading
Relative Humidity	Sample rate	3 seconds
	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
Temperature (with RH element)	Operating conditions ⁽⁴⁾	-20° C to 60° C @ RH>90% -20° C to 80° C @ RH=50%
	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
Temperature (without RH element)	Sample rate	3s
	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
Operating Environment	Repeatability	+/-0.2° C
	Sample Rate	100 milliseconds
	Temperature	32 to 122F (0 to 50C)
Enclosure	Humidity	0-95% non-condensing
	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 'AQ Series User's Guide'.

(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.)