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.

PRODUCT IDENTIFICATION

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

Output Type
A = Analog (0-5/10V)
B = Protocol 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

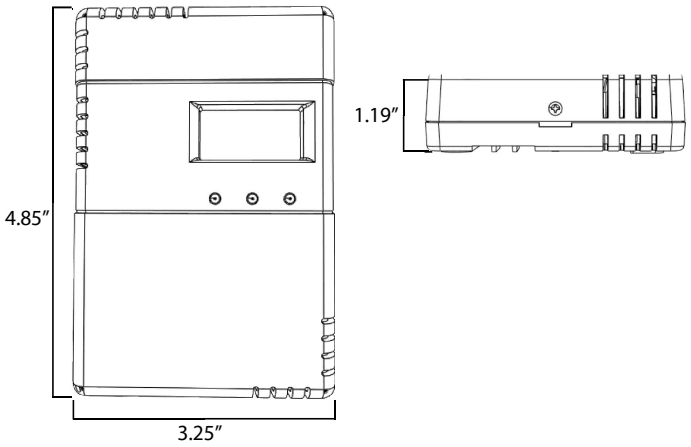
*Add-on RTD/Thermistor not readable via BACnet.; Temperature output is standard on AQW devices, Add-on RTD/Thermistor is option for Analog.

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.

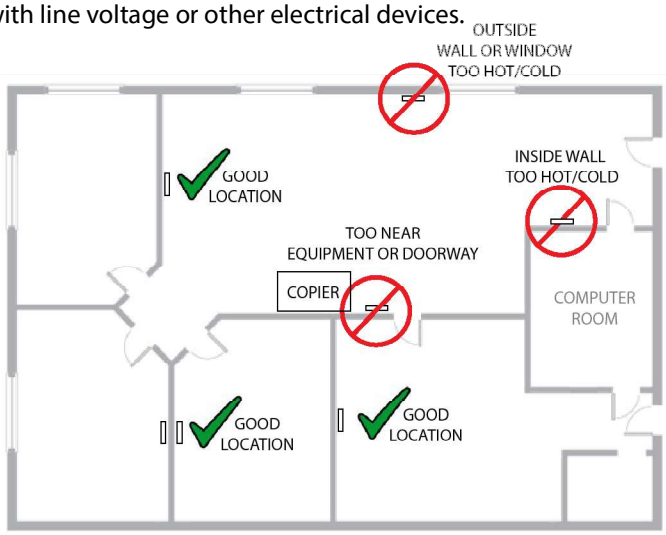
DIMENSIONS



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.



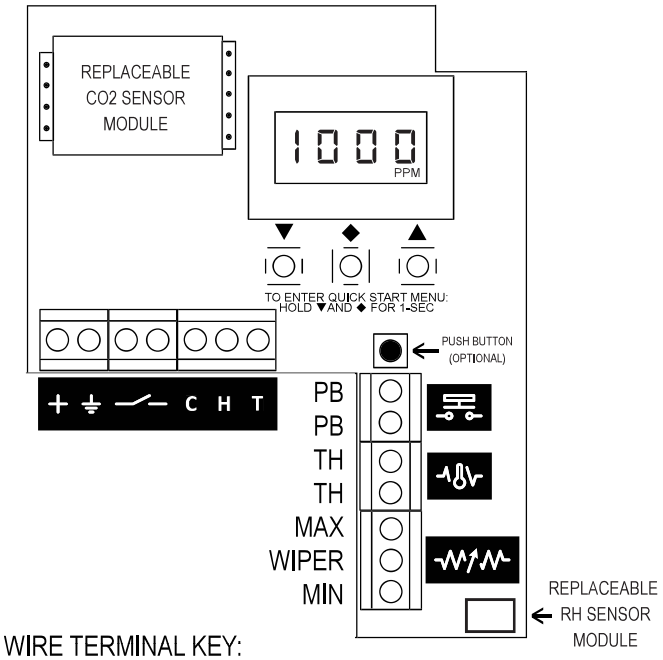
2. Install backplate to wall or j-box using screws provided.

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



WIRE TERMINAL KEY:

+	POWER VIN
⏚	GND/COMMON
	N.O. RELAY
	N.O. RELAY
C	OUT CO2
H	OUT RH
T	OUT T

PUSH BUTTON (OPTION)

THERMISTOR/OVERRIDE (OPTION)

SLIDE POTENTIOMETER (OPTION)

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.

SPt	Sets the relay turn-on threshold (Closed above this level); Default: 800
SPh	Sets the relay turn-off hysteresis (Open below this level); Default: 100
SCL	Sets the CO2 concentration scaling (2 = 2000ppm (default); 5 = 5000ppm, 10 = 10000ppm)
AdJ	Sets the CO2 concentration calibration offset up to +/-250ppm; Default: 0ppm
CAL	Sets the CO2 auto calibration period OFF Auto calibration disabled, 7d 7 days, 14d 14 days (default), 30d 30 days, 60d 60 days
°FC	Selects the unit system for displayed temperature measurements USr User defined (default), °F Degrees Fahrenheit, °C Degrees Celsius
LUL	Output Scaling: 5U 5.0V full scale, 10U 10.0V full scale (default)
rUn	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

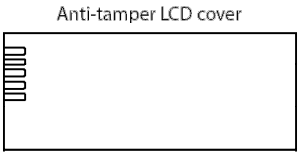
Symptom	Solution
No output	Check wiring. Ensure power supply meets requirements.
Reading error	Verify unit is located away from hot/cold sources.
	Verify control panel software is configured correctly.
	Verify accuracy of test instrument.
	Install insulation behind sensor to prevent air flow from inside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

SENVA TECHNICAL SUPPORT

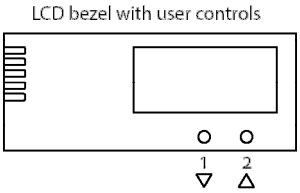
Need futher assistance? Call our toll-free number for live technical support: (866) 660-8864 or feel free to email us at support@senvainc.com

INSTALLING MENU BUTTON COVER

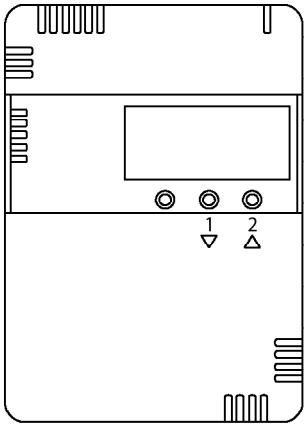
The AQW installation kit offers two cover options:



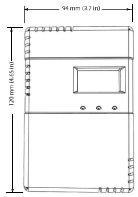
If the anti-tamper cover is used, discard the buttons.



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)
	SCL, Scaling	0-2000ppm, 0-5000ppm or 0-10000ppm (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)
	°FC, Displayed Temp Unit	°F degrees fahrenheit (default), °C degrees celsius
	LUL Analog Output Scale	5U 5.0V full scale, 10U 10.0V full scale (default)
	run, Run Mode	Displays temp and optional CO2 and RH
CO2	Type	Non-dispersive Infrared (NDIR)
	Accuracy	±30ppm, ±3% of reading (400-2000ppm), 0-50°C, 0-85%RH ±50ppm, +5% of reading (2000-5000ppm), 0-50°C, 0-85%RH Consult factory for 5000-10000ppm accuracy
	Pressure Dependence	+1% reading per 1kPa (0.146PSI) deviation from nominal pressure (101kPa, 14.7PSI)
	Range	0-2000/5000/10000ppm (2000ppm default); Programmable up to 10,000ppm
	Response time	60 seconds to 90% reading
	Sample rate	1 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 element)	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 element)	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