CW2 PROTOCOL SERIES

Individual or 4-in-1 CO_2, VOC, RH & Temperature

CW2Txxxx

CW2Lxxxx

CW2Xxxxx

The CW2 Protocol Series of air quality sensors for living space is a flexible multi-sensor platform for use with BAS controllers designed to accept BACnet or Modbus outputs. CW2 Protocol Series sensors are available with three user interface options: touchscreen, LCD with three buttons and blank. CO_2 and temperature sensors are included with all CW2 Protocol Series air quality sensors. Models with VOC sensors and relative humidity sensors are also available.

SPECIFICATIONS

OPERATING ENVIRONMENT	
Input Power	Class 2; 20 to 30 Vdc, 24 Vac, 50 to 60 Hz
Protocol Output	BACnet or Modbus via RS-485, selectable
Operating Temp. Range	0 to 50 °C (32 to 122 °F)
Operating Humidity Range	0 to 95% RH non-condensing
Housing Material	High-impact ABS plastic
Terminal Block Torque	0.5 to 0.6 N-m (0.37 to 0.44 in-lbf)
IP Rating	IP 30
Mounting Location	For indoor use only. Not suitable for wet locations.
Surface Mount	The device can be surface mounted on Single Gang J-Box, British Standard and CE60 wall boxes

CO_2 TRANSMITTER	
Sensor Type	Non-dispersive infrared (NDIR), diffusion sampling
Output Range	0 to 10,000 ppm
Accuracy	±30 ppm ±3% of measured value
Repeatability	±20 ppm ±1% of measured value
Response Time	<60 seconds for 90% step change

VOC TRANSMITTER OPTION			
Sensor Type	Solid state		
Output Range	0 to 100% AQI for VOC		
Accuracy	±15% of measured value		
Output Scale	0 to 1,000 ppb of total VOC (TVOC)		
	LEVEL	**VENTILATION RECOMMENDATION**	**TVOC (ppb)**
AQI Table*	>61%	Greatly increased	>610
	20 to 61%	Significantly increased	200 to 610
	10 to 20%	Slightly increased	100 to 200
	5 to 10%	Average	50 to 100
	0 to 5%	Target value	0 to 50

Communicating

Embedded BACnet and Modbus communication protocols…easy systems integration

Configurable baud rates

Configurable to multiple baud rates…transfer data at the right speed for the system

Self-calibrating

Innovative self-calibration algorithm…easy to maintain

Easy to install

Large wiring terminals on baseplate and snap-on covers with security screw simplify installation and service

Dual-beam NDIR CO_2 sensor

Dual-beam, non-dispersive infrared technology (NDIR) repeatable to ±20 ppm ±1% of measured value…high accuracy measurement

Visual CO_2 indication

Stoplight feature for visual indication at user-configurable CO_2 threshold levels (touchscreen models only)

APPLICATIONS

- Controlling ventilation in response to accuracy
- ASHRAE 62.1 compliant
- Office buildings, conference rooms, schools, retail stores, etc.

RH TRANSMITTER OPTION	
HS Sensor	Solid state capacitive, replaceable
Accuracy (Includes Hysteresis)**	±3.8% RH from 10 to 60% RH @ 25°C (77 °F) ±4.8% RH from 60 to 80% RH @ 25°C (77 °F) ±5.8% RH from 80 to 100% RH @ 25°C (77 °F)
Stability	±1% @ 20°C (68 °F) annually for 2 years
Output Range	0 to 100% RH
Temperature Coefficient	±0.1% RH/°C above or below 25 °C (77 °F) typical

TEMPERATURE TRANSMITTER	
Sensor Type	Solid state, integrated circuit
Accuracy	±0.2 °C (±0.4 °F) typical
Resolution	0.1 °C (0.1 °F)
Range	0 to 50 °C (32 to 122 °F)

DISPLAY MODELS	
Touchscreen	61 mm (2.4 in), color, backlit, capacitive, 240x300 px Setpoint: Temperature, humidity or fan speed selectable Timeout override: Display timeout Lockout override: Touchscreen/button lockout
LCD	52mm (2.05 in), segmented with 3 buttons Setpoint: Temperature, humidity or fan speed selectable Timeout override: Display timeout Lockout override: Touchscreen/button lockout

SETPOINTS	
Temperature Setpoint	Scale: 10 to 35 °C (50 to 95 °F) / 0 to 50 °C (32 to 122 °F)
Humidity Setpoint	Scale: 0 to 100% RH
Fan Speed Setpoint	Off, Low, Medium, High, Auto

SPECIFICATIONS (CONT.)

OVERRIDE	
Override Button	Display models feature momentary override button
WIRING TERMINALS	
Terminal Blocks	Screw terminals, 18-24 AWG
Screw Terminal Torque	0.2 N-m (2.0 in-lbF) max.
WARRANTY	
Limited Warranty	5 years
COMPLIANCE INFORMATION	
Agency Approvals	UL 916 European Conformance CE: EN 60730-1, EN 60730-2-9, EN 60730-2-13, EN 61000-6-2, EN 61000-6-3, EN 61000 Series - Industrial Immunity, EN 61326-1 FCC Part 15 Class B, REACH, RoHS, RCM (Australia), ICES-003 (Canada), UKCA (UK)

c UL us LISTED CE

* Air Quality Index for VOC aligns with TVOC levels for IAQ as specified by the WHO (World Health Organization)
** Humidity sensor overall accuracy should include: accuracy, temperature coefficient and stability. Humidity accuracy is shown as an absolute value, so if testing accuracy with a hand-held device, you must check for deviation in its readings instead of calculating the percentual deviation. Additionally, you must consider the overall accuracy of the hand-held device in the comparison.

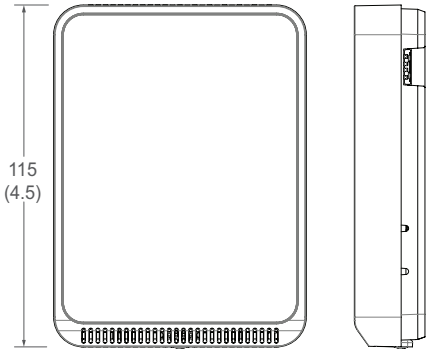
USER INTERFACE TYPES


Touchscreen

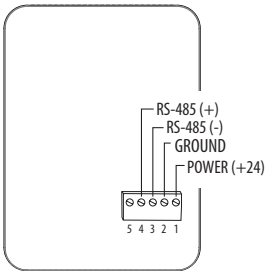

LCD with Buttons


Blank

DIMENSIONAL DRAWING



WIRING DIAGRAM



ORDERING INFORMATION

CW2 [User Interface] [Output] [RH Accuracy*] A [VOC Sensor]

User Interface:
T = Color touchscreen
L = 3-button LCD display
X = None***

Output:
P = BACnet/Modbus

RH Accuracy*:
2 = 2%
X = None

VOC Sensor:
V = NDIR CO2 / VOC
= None

Example: CW2 T P 2 A V

* Replaceable 1% with NIST certificate, 2% with NIST certificate and 2% elements available.

REPLACEABLE RH ELEMENTS

MODEL	DESCRIPTION	TEMP. CALIBRATION	RH CALIBRATION
HS1N	Replaceable RH sensor, 1% with NIST certificate	N/A	2-point calibration
HS2N	Replaceable RH sensor, 2% with NIST certificate	N/A	2-point calibration
HS2X	Replaceable RH sensor, 2%	N/A	2-point calibration


Replaceable RH Element

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