CW PROTOCOL SERIES

Individual or 3-in-1 with Modbus or BACnet Protocol

CW Protocol Series is a non-dispersive infrared (NDIR) sensor designed for measuring CO_2 concentration in ventilation systems and indoor living spaces. Its measurement range of 0 to 5000 ppm makes it the premier solution for meeting ASHRAE and other ventilation efficiency standards.

CW Protocol devices feature embedded BACnet and Modbus communication protocols, as well as optional temperature and humidity sensors. An adjustable setpoint relay is provided for direct control and alarm applications, and the optional setpoint slider and pushbutton override offer additional local input.

Communicating

Embedded BACnet and Modbus communication protocols…easy systems integration

Feature override

Local feature override capability from the building control system…added control and flexibility

Configurable baud rates

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

Self-calibrating

Innovative self-calibration algorithm…maximizes performance. Field calibratable…minimizes downtime.

CO_2, RH, temp

CO_2, humidity, and temperature sensors in one device at one address…provides more information and maximizes system capacity

NIST or standard

Available with 2% NIST or 2% standard RH

APPLICATIONS

- Controlling ventilation in response to occupancy
- Office buildings, conference rooms, schools, retail stores, etc.

SPECIFICATIONS

Input Power	Class 2; 12 to 30 Vdc, 24 Vac 50/60 Hz; 100 mA max.
Operating Temp Range	No humidity option: 0 to 50 °C (32 to 122 °F); With humidity option: 10 to 35 °C (50 to 95 °F)
Operating Humidity Range	0 to 95% RH non-condensing
Housing Material	High impact ABS plastic, UL 94 V0
Terminal Block Torque	0.22 N-m (2.0 in-lbf) max.
Terminal Block Wire Size	30 to 18 AWG (0.08-0.5mm^2)
Protocol	BACnet or Modbus (selectable)
Connection	2-wire RS-485
Data Rate	9600, 19200, 38400, 57600 (Modbus), bps (selectable); 9600, 19200, 38400, 76800 (BACnet), bps (selectable)
Parity	None/Odd/Even (selectable-Modbus); None (BACnet)
Address Range	1 to 127
Setpoint Slider Resolution Option	1% full scale
Override Button Option	Remotely readable and resettable

CO_2 TRANSMITTER	
Sensor Type	Non-dispersive infrared (NDIR) diffusion sampling
Measurement Range	0 to 5000 ppm
Accuracy*	±30 ppm ±2% of measured value
Repeatability	±20 ppm ±1% of measured value
RH TRANSMITTER OPTION	
HS Sensor	Replaceable digitally profiled thin-film capacitive ; (32-bit mathematics); U.S. Patent 5,844,138
Accuracy**	±1% from 12 to 60% RH; ±2% from 10 to 80% RH; NIST traceable multi-point calibration
Reset Rate***	24 hours
Stability	±1%@ 20 °C (68 °F) annually for two years
Hysteresis	1.5% typical
Temperature Coefficient	±0.1% RH/°C above/below 25 °C (typical)
TEMPERATURE TRANSMITTER OPTION	
Sensor Type	Solid-state, integrated circuit
Accuracy	±0.5 °C (±1 °F) typical

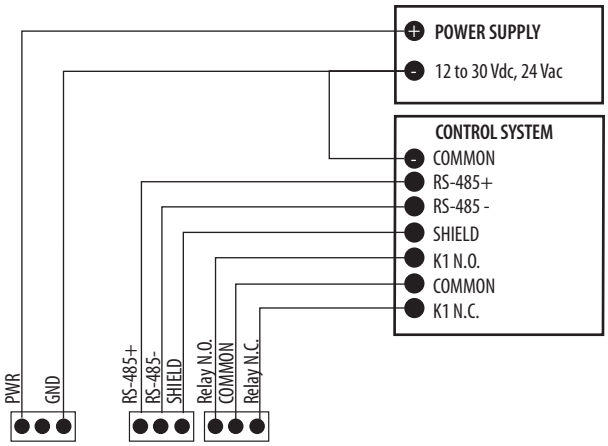
SPECIFICATIONS, CONT.

Resolution	0.1 °C (0.2 °F)
Range	10 to 35 °C (50 to 95 °F)
RELAY CONTACTS	
1 Form C (SPDT)	1 A@30 Vdc, resistive; 30 W max.
WARRANTY	
Limited Warranty	5 years
AGENCY APPROVALS	

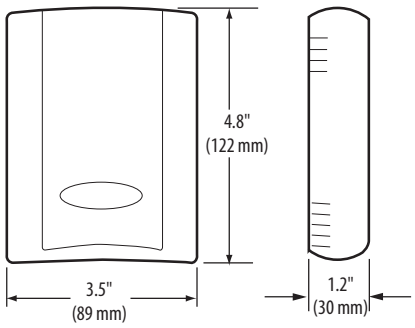
CE†

EMC Conformance: Low voltage directive 2014/35/EU and EMC directive 2014/30/EU.
EMC Special Note: Connect this product to a DC distribution network or an AC/DC power adaptor with proper surge protection (EN 61000-6-1:2007 specification requirements)
* Measured at NTP
** Specified accuracy with 24 Vdc supplied power with rising humidity.
*** Reset rate is the time required to recover to 50% RH after exposure to 90% RH for 24 hours.
† The CE mark indicates RoHS2 compliance. Please refer to the CE Declaration of Conformity for additional details.
Note: Rough handling and transportation may cause a temporary reduction of CO_2 sensor accuracy. With time, the ABC function will tune the readings back to the correct accuracy range. The default tuning speed is limited to 30 ppm per week.

WIRING DIAGRAM



DIMENSIONAL DRAWING



ORDERING INFORMATION

	Local Display	Protocol	RH Option	Temp. Option	Temp Cal. Cert.	Option	Housing
CW	☐	☐	☐	☐	☐	☐	☐
	L = LCD X = No Display	P= Protocol	X = No RH 2 = RH 2% NIST H = RH 2%	X = No Temp T = Temp Transmitter	X = None 1 = 1 pt. cal. cert.* 2 = 2 pt. cal. cert.*	Blank = None 1 = Pushbutton override 2 = Set point slider 3 = Pushbutton override + setpoint slider	Blank = Cloud white B = Black

Example:

CW	L	P	H	T	X	3

*Only available if temperature option is selected.