

# CT1R Select Series Recessed Wall CO<sub>2</sub>/Temperature

LCD display with field calibration menu  
2000/5000/10,000 ppm CO<sub>2</sub>  
Integrated set-point relay



## DESCRIPTION

Senva CO<sub>2</sub> sensors maximize energy savings by ensuring optimal ventilation. Measuring exhaled CO<sub>2</sub> levels ensures air is conditioned only when needed. The CT1R is a flush mount design sensor with NDIR sensing element and features that include an optional LCD and setpoint relay, menu selectable auto-calibration and provision to offset the reading +/-250ppm. Now available with a dual-channel CO<sub>2</sub> (DT1R) element for more accurate sensing in continuously occupied spaces and greenhouses.

## APPLICATIONS

- Ventillation control in response to occupancy
- Facilitates compliance with ASHRAE 62.1 standard for air quality
- Offices, conference rooms, and public assembly areas
- Hospitals, continuous occupation (dual channel version)

## FEATURES

### The industry's best looking CO<sub>2</sub> sensor meets demanding architectural standards.

- Fits in most standard j-box or low voltage brackets.
- No exposed screws; unobtrusive tamper resistant design

### Easy to install and maintain

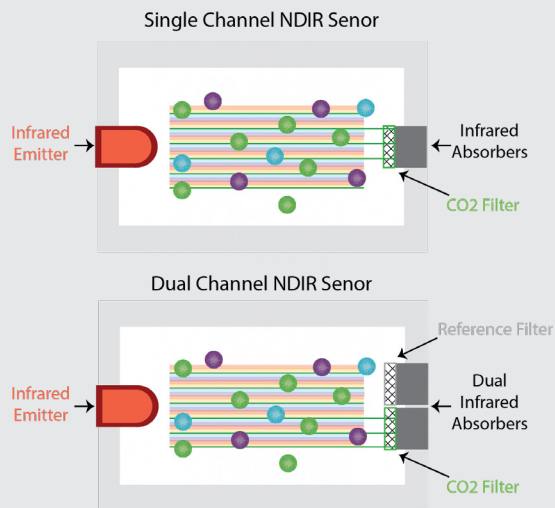
- Integrated display and push-button menus for field selectable scale, calibration, and operational modes
- Dual 4-20mA and 0-5V/0-10V output (switch selectable)
- Integrated high-reliability solid-state set-point relay is ideal for direct control applications; easy to set up thanks to LCD

### High reliability reduces call backs

- Non-dispersive infrared sensing element (NDIR)
- 15+ year life expectancy on CO<sub>2</sub> sensing element
- Industry leading 7-year limited warranty on electronics (NDIR module 2 years)

### High accuracy for improved system performance

- Selectable auto-calibration mode returns sensor to baseline values
- ±30ppm, ±3% of reading



### NEW! Dual Channel CO<sub>2</sub> Option

- Senva's dual channel CO<sub>2</sub> sensor allows for more accurate CO<sub>2</sub> sensing in continuously occupied spaces and greenhouses.
- Dual channel technology employs a calibrated reference chamber within the sensing element to minimize drift.



7 year limited warranty

## ORDERING

CT1R -  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

### Output Type

3 = 3-wire 4-20mA,  
0-5V, 0-10V

### Display (LCD)

D = Display + Setpoint Relay  
X = None

## DUAL CHANNEL OPTION

CT1R -  3  - D

- Same options apply

### Need surface-mount?

- Order the CT1W (same options) and we'll provide a fitted electrical box and hardware



## SPECIFICATIONS

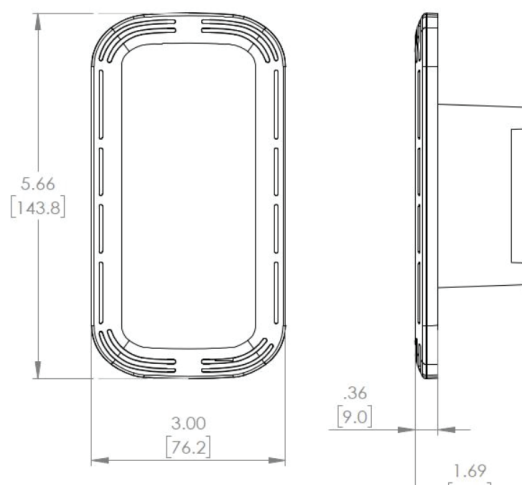
|                           |                                        |                                                                                                                                                            |                                                                                                                                                      |
|---------------------------|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Power Supply              |                                        | 12-30VDC/24VAC <sup>(1)</sup> , 100mA max.                                                                                                                 |                                                                                                                                                      |
| Analog Outputs            | Analog                                 | 3-wire 4-20mA and 0-5V/0-10V <sup>(2)</sup> (dip switch selectable)                                                                                        |                                                                                                                                                      |
|                           | Output scaling                         | 0 - 2000 (default) or 0 - 5000 ppm (selectable)                                                                                                            |                                                                                                                                                      |
| Digital Setpoint Output   | Programmable                           | Solid-state, 1A @ 30VAC/DC, N.O. on LCD version only.                                                                                                      |                                                                                                                                                      |
| Sensor Performance        | Type                                   | Non-dispersive Infrared (NDIR)                                                                                                                             |                                                                                                                                                      |
|                           | Accuracy (Standard)                    | ±(30ppm +3% of reading) (400-2000ppm), @-10-50°C<br>±(50ppm +5% of reading) (2000-5000ppm), @-10-50°C<br>±(100ppm+10% of reading) (5000-10000ppm), @ 0-50C |                                                                                                                                                      |
|                           |                                        | Accuracy (Dual Channel)                                                                                                                                    | ±(30ppm+3% of reading) (0-2000ppm), @ 0-50C<br>±(50ppm+3% of reading) (2000-5000ppm), @ -10-50C<br>±(100ppm+10% of reading) (5000-10000ppm), @ 0-50C |
|                           |                                        |                                                                                                                                                            | Drift with ABC disabled (Standard)                                                                                                                   |
|                           | Drift with ABC disabled (Dual Channel) | 5ppm/month <sup>(3)</sup>                                                                                                                                  |                                                                                                                                                      |
|                           | Range                                  | 0-2000/5000ppm; Programmable up to 10,000ppm                                                                                                               |                                                                                                                                                      |
|                           | Response time                          | 60s to 90% reading                                                                                                                                         |                                                                                                                                                      |
| Output update rate        |                                        | 1s                                                                                                                                                         |                                                                                                                                                      |
|                           | SPH, Setpoint, Hi (On point)           | 500ppm to full-scale (800ppm default)                                                                                                                      |                                                                                                                                                      |
|                           | SPL, Setpoint, Lo (Off point)          | 400ppm to full-scale (700ppm default)                                                                                                                      |                                                                                                                                                      |
|                           | SEL, Scaling                           | 0-2000ppm, 0-5000ppm, 0-10000ppm (2000ppm default)                                                                                                         |                                                                                                                                                      |
|                           | Adj. Adjustment                        | Offset adjustment +/-250ppm (0 default)                                                                                                                    |                                                                                                                                                      |
| LCD Menu Setup Parameters | CAL, Calibration mode                  | Automatic mode ON or OFF (default=ON)                                                                                                                      |                                                                                                                                                      |
|                           | Run, Run mode                          | Displays CO2 in ppm                                                                                                                                        |                                                                                                                                                      |
| Operating Environment     | Temperature                            | 14 to 122°F (-10 to 50°C)                                                                                                                                  |                                                                                                                                                      |
|                           | Humidity                               | 0-95% non-condensing                                                                                                                                       |                                                                                                                                                      |
| Enclosure                 | Material                               | ABS Plastic                                                                                                                                                |                                                                                                                                                      |
|                           | Dimensions (fits low-voltage bracket)  | 4.7”h x 2.9”w x 1.24”d (0.48” wall profile)                                                                                                                |                                                                                                                                                      |

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

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

## DIMENSIONS

CT1R



CT1W

