## CT1O Series
# *CT1O CO2 Temp Outdoor*

Adjustable for ranges of 2000, 5000, or 10,000 ppm CO2
Field replaceable dual-channel NDIR element
Dual 3-wire 4-20mA and 0-5/0-10V (selectable)
Rugged gasketed enclosure

### DESCRIPTION

Featuring a gold plated dual-channel NDIR sensor for the best accuracy and the highest reliability for your outdoor or greenhouse sensing needs. An optional built-in LCD display makes set up a snap, and a standard solid-state setpoint relay makes demand ventilation simple. Dual 4-20mA and 0-10/5 vdc outputs.

### APPLICATIONS

- Controlling ventilation in response to occupancy
- Facilitates compliance with ASHRAE 62.1 standard for air quality
- Outdoor or greenhouse applications



*Rugged enclusure*



*Field replaceable CO2 element for lower total lifetime cost*



*Designed and manufactured in America*
*World-class quality backed by seven year limited warranty*

*Made in the USA - Industry best 7-year warranty!*

### FEATURES

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

- Field replaceable dual-channel CO2 sensor
- 15+ year life expectancy on CO2 sensing element
- Industry leading 7-year limited warranty on electronics; NDIR module 3 years
- ±30ppm, ±3% of reading

## ORDERING

**CT1** | **O** | - | [ ] | **3** | [ ]

**Enclosure**
O= Outdoor

**Temperature**
A= None
B= Transmitter*
C= 100PtRTD
D= 1000PtRTD
E= 10K Type 2
F= 10K Type 3
G= 10K W/ 11K
H= 3K
I = 2K2
J = 1K8
K = 20K
L= 100K

**Output**
3= 4-20mA,
0-5V, 0-10V
3-Wire
Connection

**Display**
X= None
D=Display

\* Order B=transmitter to display temperature reading; thermistor and RTD options will not display temperature on LCD
To order replacement sensor elements, please consult factory.
\* All outdoor CT1O models use dual channel elements for high reliability!
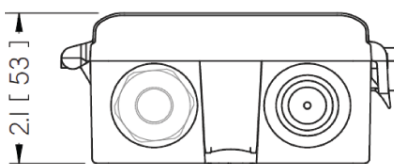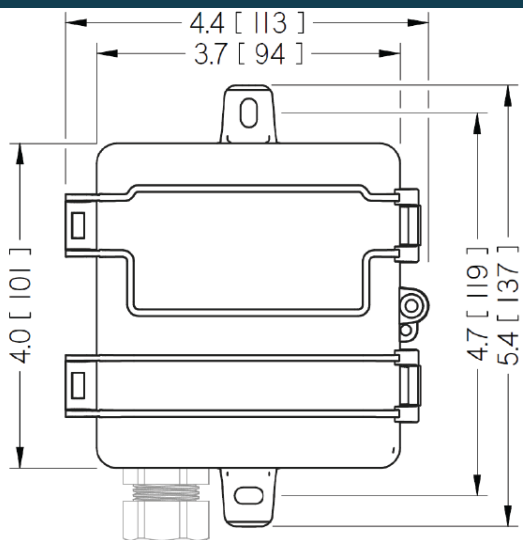
**Replacement Sensors:**

**AQS** - **D** **CO2**    Replacement Dual CO2 Sensor

## DIMENSIONS



Units: in [mm]
Not to scale

⚠️ **Warning:** The datasheet is designed for reference only. Refer to installation instructions that accompany the product and heed all safety instructions. Product improvement is a continuing process at Senva. Changes may occur to products without prior notice.

## SPECIFICATIONS

| | | |
|---|---|---|
| Power Supply | | 12-30VDC/24VAC(1), 100mA max. |
| Analog Outputs | Dual Analog | 3-wire 4-20mA and 0-5V/0-10V (2) (jumper) |
| | Output scaling | 0 - 2000 or 0 - 5000 ppm (selectable) |
| Set-point Relay | Programmable | Solid-state, 1A @ 30VAC/DC, N.O. |
| Sensor Performance | Type | Non-dispersive Infrared (NDIR) |
| | Accuracy (Standard) | ±30ppm, ±3% of reading (400-2000ppm), @-10-50°C, 0-85%RH |
| | | ±50ppm, ±5% of reading (2000-5000ppm), @-10-50°C, 0-85%RH |
| | | ±100ppm, ±10% of reading (5000-10000ppm), @ 0-50°C, 0-85%RH |
| | Accuracy (Dual Channel) | ±30ppm, ±3% of reading (400-2000ppm), @ 0-50°C, 0-85%RH |
| | | ±50ppm, ±3% of reading (2000-5000ppm), @-10-50°C, 0-85%RH |
| | | ±100ppm, ±10% of reading (5000-10000ppm), @ 0-50°C, 0-85%RH |
| | Drift with ABC disabled (Standard) | 35 ppm/month |
| | Drift with ABC disabled (Dual Channel) | 5 ppm/month |
| | Pressure Dependency | +1% reading per kPa (0.143PSI) deviation from nominal (101kPa, 14.7PSI) |
| | Response time | 60 seconds to 90% reading |
| | Output update rate | 1 second |
| | Element Operating Environment | 4 to 122°F (-20 to 50°C), 0 to 95% RH |
| LCD Menu Setup Parameters | SPH, Setpoint, Hi (On point) | 500ppm to full-scale (800ppm default) |
| | SPL, Setpoint, Lo (Off point) | 400ppm to full-scale-50 (700ppm default) |
| | SCL, Scaling | 0-2000ppm or 0-5000ppm (2000ppm default) |
| | ADJ, Adjustment | Offset adjustment +/-250ppm (0 default) |
| | CAL, Calibration mode | Automatic mode ON or OFF (default=ON) |
| | RUN, Run mode | Displays CO2 in ppm |
| Operating Environment | Temperature | -4 to 122F (-20 to 50C) |
| | Humidity | 0-95% non-condensing |
| Enclosure | Material | Polycarbonate; aluminum tube |
| | Dimensions | 4.0"h x 4.4"w x 2.1"d |

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.
3. Operating outside of element operating environment may result in reduced accuracy.
4. Time for reaching 63% of reading at 25oC and 1 m/s airflow.
5. It is not recommended to de-activate ABC (auto-calibration) except for continously occupied spaces or greenhouses. Drift ratings may vary based on environment.

*\* Product improvement is a continual process at Senva and product features and specification may change without prior notice. Refer to instructions that accompany the product for installation and wiring.*