



DUCT CO2 SENSOR

CEDT Series

The CEDT series uses a highly accurate and reliable nondispersive infrared (NDIR) sensor in an attractive, duct mount enclosure to monitor return air CO2 levels for indoor applications. The compact dual wavelength CO2 sensor achieves excellent performance characteristics, including high accuracy and low power consumption to ensure stable long term operation. The CEDT features both 4-20 mA and voltage outputs (0-5 / 0-10 Vdc) for simple integration into any building automation system for the improvement of energy savings and to assure good indoor air quality. The device is also available with an optional resistive temperature sensor.

The duct CO2 sensor principal of operation is based on the venturi effect of the probe that extends into the HVAC duct. Air flowing through the duct is forced into the vent hole on one side of the probe, into a sealed chamber within the enclosure, over the CO2 sensor and then air is drawn back out of the enclosure via the vent holes on the opposite side of the probe.

PRODUCT HIGHLIGHTS

* Dual channel Nondispersive Infrared sensor
* Selectable outputs
* Optional temperature sensor

ENGINEERING SPEC’S

* Shall be IP65 (NEMA 4X) with a UL94-V0 rated enclosure
* External mounting tabs must be slotted & tapered away from enclosure to ease field installation
* Enclosure shall be complete with neoprene gasket for duct to enclosure seal
* Enclosure shall be complete with threaded (1/2 NPT and/or M16) conduit connection
* Cover must be hinged and securely attached in the open position
* Cover must contain security screw as extra protection from opening
* Product shall be CE approved





SPECIFICATIONS

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| DESCRIPTION | ENGINEERING SPEC |
| CO2 Sensor | Dual wavelength nondispersive infrared (NDIR) |
| SENSOR RANGE | 0-2000 ppm |
| SENSOR ACCURACY | ± (30 ppm + 3% of measured value) |
| TEMPERATURE DEPENDENCY | ± 2.5ppm/°C |
| RESPONSE TIME | 20 seconds (T63) |
| WARM-UP TIME | 1 minute |
| SENSOR COVERAGE AREA | 100 m2 (1000 ft2) typical |
| SENSOR LIFE SPAN | > 15 years |
| POWER SUPPLY | 24 Vdc ± 20% or 24 Vac ± 10% (non-isolated half-wave rectified) |
| CURRENT CONSUMPTION (4-20 mA OUTPUT) | 80 mA max @ 24 Vdc, 160 mA max @ 24 Vac |
| PROTECTION CIRCUITRY | Reverse voltage and transient protected |
| OUTPUT SIGNAL TYPE | 4-20 mA, 0-5 or 0-10 Vdc (field selectable) |
| CURRENT DRIVE CAPABILITY | 600Ω max @ 24 Vdc |
| VOLTAGE DRIVE CAPABILITY | 10KΩ min |
| OPERATING CONDITIONS | 0 - 50°C (32 - 122°F), 0-95 %RH non-condensing |
| STORAGE CONDITIONS | -40 - 70°C (-40 - 158°F), 0-95 %RH non-condensing |
| OPTIONAL TEMPERATURE SENSOR | See below |
| ENCLOSURE MATERIAL | Polycarbonate, UL94-V0 |
| ENCLOSURE DIMENSION | 112mm W x 117mm H x 53mm D (4.4” x 4.6” x 2.1”) |
| SAMPLING PROBE | 152mm L x 21.6mm Diameter (6” x 0.85”) |
| ENCLOSURE PROTECTION | IP65 (NEMA 4X) |
| WIRING | Screw terminal block (14 - 22 AWG) |
| APPROVALS | CE, RoHS |
| COUNTRY OF ORIGIN | Canada |

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| **Sensor Code** | **Temperature Sensor Description** | **Accuracy** |
| 02 | 100Ω Platinum, IEC 751, 385 alpha, 2 wire, Class B | ± 0.3 °C (± 0.54 °F) @ 0 °C (32 °F) |
| 05 | 1,801 Ω NTC thermistor | ± 0.5 °C (± 0.9 °F) @ -20 - 50 °C (-4 - 122 °F) |
| 06 | 3,000 Ω NTC thermistor | ± 0.2 °C (± 0.36 °F) @ 0 - 70 °C (32 - 158 °F) |
| 07 | 10,000 Ω (type 3) NTC thermistor | ± 0.2 °C (± 0.36 °F) @ 0 - 70 °C (32 - 158 °F) |
| 08 | 2.252 KΩ NTC thermistor | ± 0.2 °C (± 0.36 °F) @ 0 - 70 °C (32 - 158 °F) |
| 12 | 1000Ω Platinum, IEC 751, 385 alpha, 2-wire, Class B | ± 0.3 °C (± 0.54 °F) @ 0 °C (32 °F) |
| 13 | 1000Ω Nickel, DIN 43760, 2-wire, Class B | ± 0.4 °C (± 0.72 °F) @ 0 °C (32 °F) |
| 14 | 10,000 Ω (Type 3) NTC thermistor c/w 11 KΩ shunt | ± 0.2 °C (± 0.36 °F) @ 0 - 70 °C (32 - 158 °F) |
| 20 | 20,000 Ω NTC thermistor | ± 0.2 °C (± 0.36 °F) @ 0 - 70 °C (32 - 158 °F) |
| 24 | 10,000 Ω (Type 2) NTC thermistor | ± 0.2 °C (± 0.36 °F) @ 0 - 70 °C (32 - 158 °F) |
| 59 | 10,000 Ω NTC thermistor | ± 1% @ 25°C (77°F), β25/85 = 3435 ± 1% |