

DUCT EURO CARBON DIOXIDE SENSOR

Duct sensor for air quality (CO₂) with optional temperature and humidity



FEATURES

- CO₂ measurement or combination CO₂/RH/Temp options
- Analog 0-10V output signals for CO₂/T
- Optional addition of analog 2% RH signal
- Dual beam infrared CO₂ sensing technology (NDIR)
- Durable NEMA 4X/IP65 injection-molded watertight enclosure
- Quick Connect tool-free wire terminals
- Optional passive NTC/RTD temperature elements available
- AISI 316 SS probe
- CE & RoHS compliant
- 5 year limited warranty
- Made in the USA

GENERAL INFORMATION

High quality duct mounted CO₂ sensor with options for Relative Humidity (RH) and Temperature (T) outputs in the NEMA 4X Euro enclosure, equipped with hinged cover and tool-free Quick Connect wire terminals.

These sensors are designed as a CO₂ & temperature or as a combination sensor with available CO₂/RH/Temp measurements. Available with 0-10V standard output(s), with additional option for passive temperature NTC or RTD elements.

Dual channel technology and a solid-state infrared source ensures long lifetime, excellent accuracy and repeatability with low drift and quick start up.

SPECIFICATIONS

General:

| | |
|---------------------|---|
| Supply Voltage: | 24 VAC ±20%; 18-35 VDC Max |
| Power Consumption: | 3VA for 24VAC, 3W for 24VDC (peak); |
| Operating Range: | -5...+55°C / 23...+131°F ; 0...95%RH non-condensing |
| Enclosure Rating: | IP65; NEMA 4X |
| Enclosure Material: | PC/ABS UL 94 V-0, UV resistant injection-molded |
| Cover: | Removable Quick snap/hinged cover |
| Probe: | AISI 316L; 8in. Length (205mm), 12mm diameter |
| Mounting: | Duct, M16 cable inlet |
| Connection: | AWG 22-16 / 0.35—1.5mm ² spring-loaded, Quick Connect wire terminals |
| Output Signal: | Analog 0-10V |

*Other outputs available on request

SPECIFICATIONS CONT.

CO2 Sensor:

| | |
|-----------------------------|---|
| Output | 0-10V (0...2000ppm) |
| Measurement Range | 0...2000 ppm |
| Accuracy | ±30ppm +3% measured value (@25°C 400-2000ppm) |
| Temperature Operating Range | 0...50°C / 32...122°F |
| Response Time | t63% < 120 sec (@ 3 m/s) |
| Warm Up Time | < 1 minute (@ full specs < 15 minutes) |
| Sensing Technology | Dual beam infrared sensing technology (NDIR) |

Relative Humidity Specifications:

| | |
|------------------------|-------------------------------------|
| RH Output | 0-10V (0...100%RH) |
| RH Range | 10...90%RH (non-condensing) |
| RH Accuracy | ±3% 30...70%RH, otherwise ±5% |
| RH Response Time | t63 < 180 sec (@ 3 m/s) |
| RH Long Term Stability | Less than 0.25% per year |
| RH Repeatability | 0.8% RH @ average temp. 25°C / 77°F |
| RH Sensitivity | 0.1% RH |
| RH Sensor Type | Capacitive, non-condensing |

Temperature Sensor Active:

| | |
|-----------------|-----------------------|
| T Output | 0-10V (0...50°C) |
| T Range | 0...50°C / 32...122°F |
| T Accuracy | ±0.3°C / ±0.54°F |
| T Response Time | t63 < 120 sec (3 m/s) |

Temperature Sensor Passive:

| | |
|----------------------|--|
| Temperature Element: | Interchangeable NTC thermistor, 2-wire RTD Pt1000, 2 wire RTD Ni1000-891, 2 wire |
| Sensor Value: | NTC 10K Ohm type 2 @ 25°C / 77°F NTC 10K Ohm type 3 @ 25°C / 77°F NTC 20K Ohm @ 25°C / 77°F NTC 3K Ohm @ 25°C / 77°F RTD Pt100 100 Ohm @ 0°C / 32°F RTD Pt1000 1000 Ohm @ 0°C / 32°F RTD Ni1000-891 891 Ohm @ 0°C / 77°F |
| Accuracy: | NTC thermistor 0...70° ± 0.2°C / 32...158°F ± 0.36°F Pt1000 Class B IEC751, ± 0.3°C / ± 0.5°F @ 0°C / 32°F Ni1000 DIN 43760, ± 0.5°C / ± 0.9°F @ 0°C / 32°F |

Approval: CE & RoHS compliant

Warranty: 5 year limited warranty

Accessories: 1/2" NPT Conduit Adapter
M16 Cable Gland
Adjustable Depth Mounting Flange (not included)

MOUNTING AND DIMENSIONS

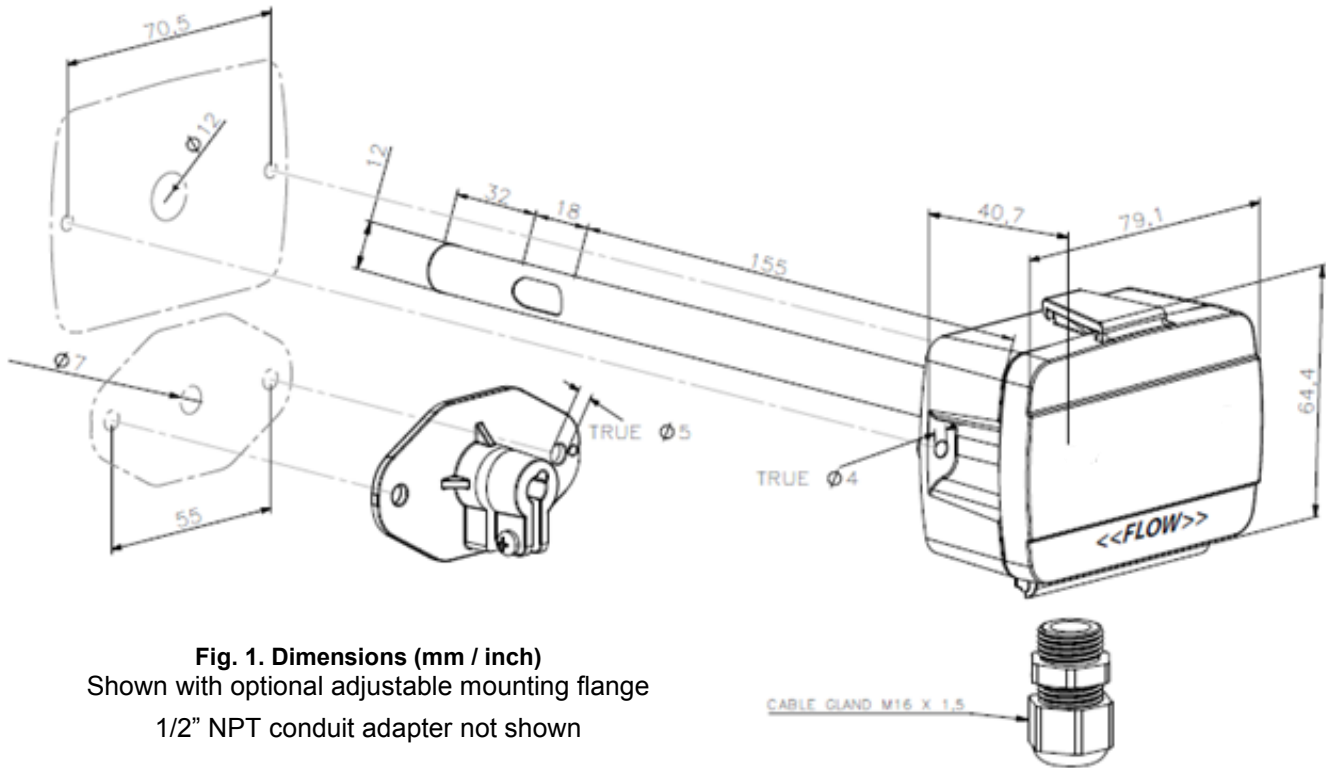


Fig. 1. Dimensions (mm / inch)
Shown with optional adjustable mounting flange
1/2" NPT conduit adapter not shown

TERMINAL ASSIGNMENT

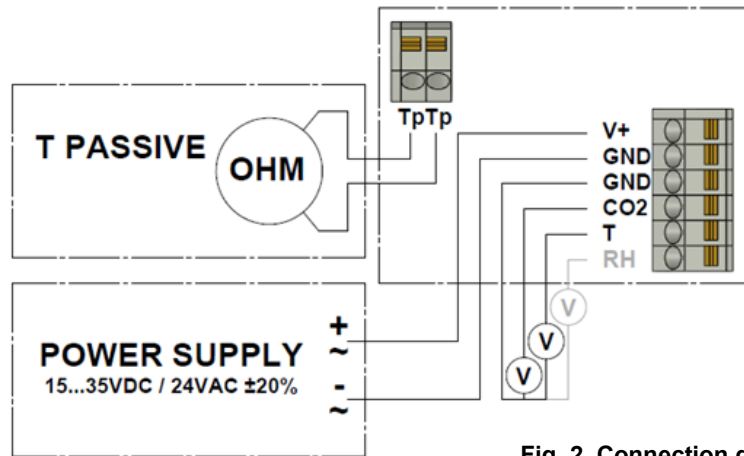


Fig. 2. Connection diagram

HOW TO BUILD A TASSERON DUCT CO₂ PART NUMBER:

Sample Part Number (THCDAW/2C) —Duct Euro CO₂ sensor 0-2000ppm (0-10v) with analog temperature (0-10V) and humidity 2% (0-10V)

| T | H | C | D | A | W | 2 | C |
|----------|------|-----------------------------|--------------------------|-------------------------|---|---------------------------|----------------|
| TASSERON | HVAC | SENSOR TYPE | APPLICATION | CO ₂ RANGE | TEMP | HUMIDITY | OUTPUT |
| | | C—Carbon Dioxide | D—Duct R—Room | A—0-2000 ppm | A—10K-2 B—10K-3 C—20K D—3K E—Pt1000 F—Ni1000-891 G—10K-4 H— Pt100 I—4.7K J—10K-3 (11K) K— Ni1000- TCS L—12K M—100K | 2—2%RH Z— NO RH | C—0-10V |
| | | | | | W— 0-10V (0...50°C) | | |
| | | | | | Y—DIGITAL | | |
| | | | | | Z—NO TEMP | | |

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