



ASENSE DUCT

CO2 Duct Sensor with IP65 Rated Enclosure

The ASENSE Duct series monitors the carbon dioxide (CO₂) levels in industrial, commercial, school, and office type environments. The concentration of CO₂ is a strong indication of the overall indoor air quality. The ASENSE Series is based on a single beam non-dispersive infrared technology and is a cost-optimized solution for the climate control of buildings and other processes. In addition, ABC software eliminates the need for manual calibration. The ASENSE Series measures the CO₂ concentration in the ambient air up to 2,000 ppm and converts the data into an analog output. This data can be used in conjunction with a Building Automation or Demand Control Ventilation System to create a healthier indoor climate. This series features

an analog temperature output (32 to 122°F) and come with combined output options of 0-10 VDC and 0 to 20 mA (4 to 20 mA and 2-10 VDC are field selectable via an onboard jumper) The relay output can directly control dampers and speed regulated fans. The UIP5 software and programming cable offer a configuration/test utility and provide access to the main features of the ASENSE series.

Applications: Commercial Office Buildings, Hospitals & Schools

The ASENSE Duct Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, workaci.com.

PRODUCT SPECIFICATIONS

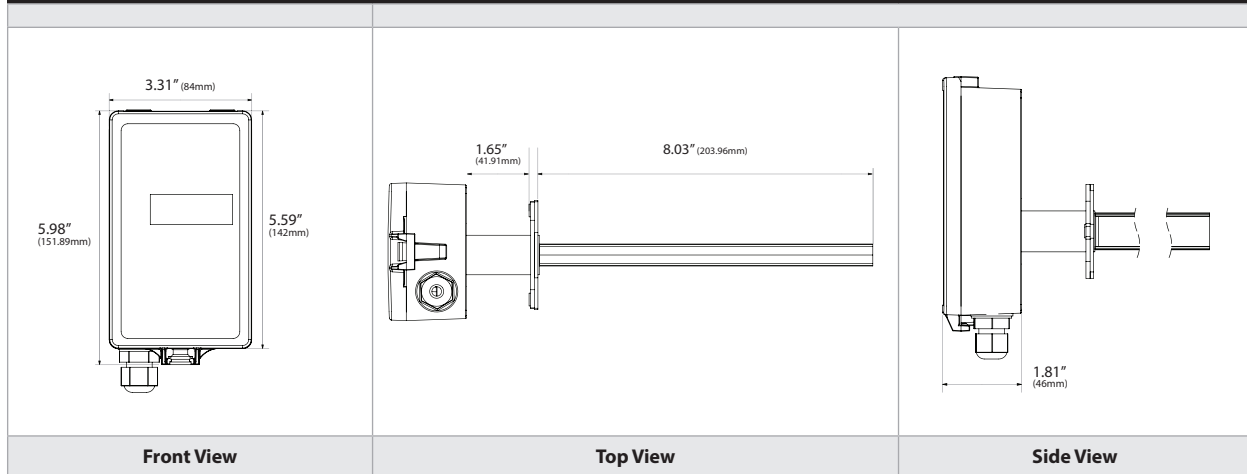
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|---|---|
| Supply Voltage: | 24 VAC/VDC ±20%; 50/60 Hz, 10.5 to 40 VDC maximum (Half-wave rectified) |
| Power Consumption: | <1W |
| Wiring Connections: | 0.00232 in ² (1.5 mm ²) screw terminals |
| Operating Environment: | Residential, commercial, and industrial spaces |
| Operating Temperature: | 32°F to 122°F (0°C to 50°C) |
| Operating RH: | 0 to 85% RH Non-condensing |
| Warm-Up Time: | <5 minutes (@ full specs 15 minutes) |
| Accuracy: | CO₂¹: ±30 ppm and ±3% of reading Temperature: ±1.8°F (1°C) |
| Repeatability: | ±20 ppm ±1% of measured value |
| Annual Zero Drift: | <± 0.3% of measurement range |
| Operating Pressure: | +1.6% per 0.145 psi (1 kPa) deviation from normal pressure (1 Atmosphere = 14.7 psi (1.013 KPa)) |
| Sensing Method: | Single beam Non-dispersive Infrared (NDIR) |
| Sensor Life²: | >15 years |
| Response Time (T1/e): | <10 seconds @ 30 cc / minimum flow rate, <3 minutes diffusion time |
| Sensing Range: | CO₂: 0 to 2000 ppm Temperature: -4 to 140°F (-20 to 60°C) |
| Extended CO₂ Ranges: | 2000 to 10,000 ppm (factory set or programming cable required) |
| Extended Range Accuracy >2,000 PPM: | +/- 30 ppm and +/- 5% of reading |
| Coverage Area: | 7500 sq. ft. maximum |
| Self-Diagnostics: | Complete function check, yellow LED; LCD error indication (display model only) |
| Display: | 4 digits, 7 segments LCD with ppm indicator |
| Calibration³: | Senseair ABC algorithm (Automatic Baseline Correction) |
| Outputs: | Out 1 (CO₂): 0/2 to 10V, 0/4 to 20 mA, 0 to 2000 ppm Out 2 (Temperature): 0/2 to 10V, 0/4 to 20 mA, 32 to 122°F (0 to 50°C) |
| Relay: | Out 3: N.O. or N.C. rated 0.5A @ 125 VAC; 1A @ 24 VDC |
| Relay Trip Point⁴: | 1000 ppm (factory set) |
| Relay Deadband/Hysteresis: | 100 ppm (factory set) |
| Relay Durability: | Mechanical: 5,000,000 operations minimum (at 36,000 operations/hr) Electrical: 100,000 operations minimum (under rated load, at 1,800 operations/hr) |
| Storage: | ASENSE-D-LCD: -4 to 122°F (-20 to 50°C) 0 to 85% RH Non-condensing |
| Enclosure: | Duct Box: PC & ABS blend, Flammability Rating UL94V-0 Cover: Makrolon® 6555 plastic, Flammability Rating UL94V-0 Pipe: PC & ABS blend, Flammability Rating UL94V-0 |
| Product Dimensions: | (H) 5.95" (151.9 mm) x (W) 3.33" (84.6 mm) x (D) 1.85" (47 mm) |
| Product Weight: | 0.812 lbs (0.368 kg) |
| Agency Approvals: | CE, UKCA, RoHS |

Note ¹: Accuracy is defined after minimum three (3) ABC periods (1 period = 8 days) of continuous operations | **Note ²:** In normal Indoor Air Quality (IAQ) applications | Corrosive environments are excluded | **Note 3:** Building CO₂ levels must drop to 400 ppm some time during the week for ABC to work properly | If the building is occupied 24 hrs/day, ABC must be turned off | **Note4:** Changes can be made using TTL-232R-3V3 cable and UIP5 software





DIMENSIONAL DRAWING



STANDARD ORDERING

Model # Example: ASENSE-D-LCD -OR- 133507

| Model # | Item # | Description |
|------------------|--------|---|
| ASENSE-D-REL | 131190 | CO2, Duct Mount, Relay, 0-10 VDC or 0-20 mA Output, 4-20 mA or 2-10 VDC Field Selectable |
| ASENSE-D-LCD-REL | 130532 | CO2, Duct Mount with Display, Relay, 0-10 VDC or 0-20 mA Output, 4-20 mA or 2-10 VDC Field Selectable |

ACCESSORIES ORDERING

Model # Example: A/CUSTOM CAL GAS -OR- 140970

| Model # | Item # | Description |
|-------------------|--------|--------------------------------------|
| A/CUSTOM CAL GAS* | 140970 | Custom Calibration |
| TTL-232R-3V3 | 134207 | Programming Cable |
| UIP5 | ---- | Free Software Download (Contact ACI) |

Note*: Contact ACI's Technical Support for custom calibration ranges