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) or 0-5 VDC for "-5" versions. A relay option is available for this series as well. 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, www.workaci.com.
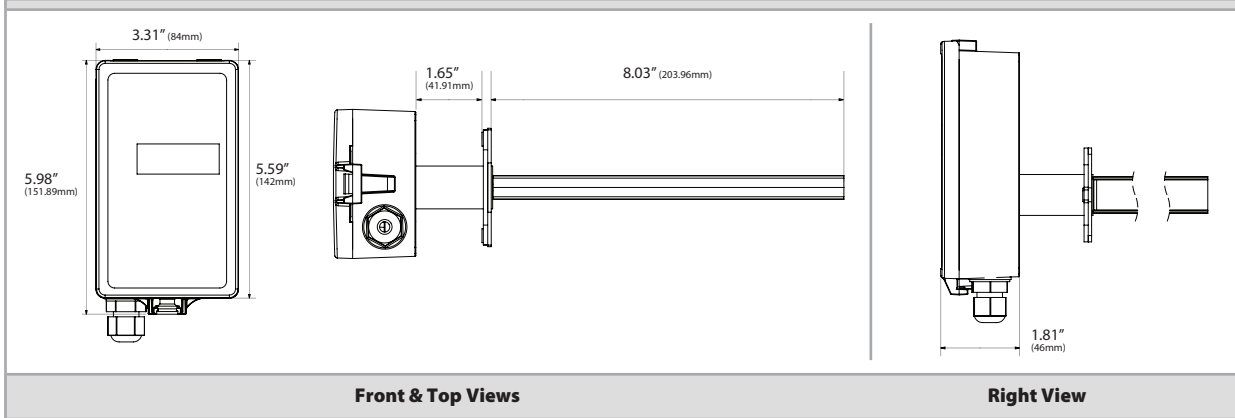
PRODUCT SPECIFICATIONS

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:	**CO2[1]:** ±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 Life[2]:	>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 (Optional):	4 digits, 7 segments LCD with ppm indicator
Calibration[3]:	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 (Optional):	**Out 3:** N.O. or N.C. rated 0.5A @ 125 VAC; 1A @ 24 VDC
Relay Trip Point[4]:	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:** -40 to 158°F (-40 to 70°C) | **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:	EMC Directive 2014/30/EC, RoHS Directive 2011/65/EU & RoHS 3 Directive 2015/863/EU

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 | **Note[4]:** Changes can be made using TTL-232R-3V3 cable and UIP5 software

DIMENSIONAL DRAWING

| Front & Top Views | Right View |

STANDARD ORDERING

Model # Example: **ASENSE-D-5** -OR- **133507**

Model #	Item #	Description
ASENSE-D-LCD	135205	CO2, Duct Mount with Display, 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
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

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

Call: 1-888-967-5224 | Web: www.workaci.com

RoHS COMPLIANT 2002/95/EC