



# ASENSE MIII

## CO & CO2 Combination Sensor Ventilation Controller

The ASENSE MIII Series is designed for monitoring carbon dioxide (CO<sub>2</sub>) and carbon monoxide (CO) in the same wall or duct mounted enclosure. The sensor outputs are based on state-of-the-art non-dispersive infrared (NDIR) technology for carbon dioxide and a temperature compensated electrochemical sensor for carbon monoxide. The device shows alternating gas levels of CO<sub>2</sub> and CO on the LCD and features three LEDs of green, yellow, and red. The UIP5 software and programming cable offer a configuration/test utility and provide access to the main features of these series, including access to sampled data. Factory settings for sensor output ranges are 0 to 2,000 ppm for CO<sub>2</sub> and 0 to 100 ppm for CO. The Relay (Out 3) is tripped at 1,500 ppm and 35 ppm respectively. aSENSE MIII is designed for stand-alone operation, as well as being connected to larger building automation systems. It offers the possibility to combine CO and CO<sub>2</sub> measurements which not just guarantees public safety, but also saves energy when applied to Demand Controlled Ventilation.

**Applications:** Mechanical Rooms, Warehouses, Refrigeration Plants, Industrial Plants, Process Monitoring, Parking Garages, Auto/Truck Maintenance Facilities

**The ASENSE MIII Series Gas Transmitters are covered by ACI's Two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, [workaci.com](http://workaci.com).**

### PRODUCT SPECIFICATIONS

<b>Supply Voltage:</b>		24 VAC/VDC $\pm 20\%$ ; 50/60Hz (Half-wave rectified)
<b>Power Consumption:</b>		3W
<b>Measured Gas:</b>		Carbon dioxide (CO <sub>2</sub> ) & Carbon monoxide (CO)
<b>Outputs:</b>	<b>Output 1 (CO):</b>	0/2 to 10V, 0/4 to 20 mA, 0 to 100 ppm
	<b>Output 2 (CO<sub>2</sub>):</b>	0/2 to 10V, 0/4 to 20 mA, 0 to 2000 ppm
	<b>Output 3(Relay):</b>	Closed: (CO < 30ppm) AND (CO <sub>2</sub> < 1400ppm); Open: (CO > 35ppm) OR (CO <sub>2</sub> > 1500ppm)
	<b>Output 4(Open Collector):</b>	Error detection
<b>CO<sub>2</sub></b>	<b>Sensing Range:</b>	0 to 2000 ppm
	<b>Extended Range:</b>	Up to 10,000 ppm (factory set or programming cable required)
	<b>Sensing Method:</b>	Single beam Non-dispersive Infrared (NDIR)
	<b>Accuracy<sup>1</sup>:</b>	$\pm 30\text{ppm} \pm 3\%$ of reading
	<b>Operating Pressure:</b>	$+1.6\%$ per 0.145 psi (1 kPa) deviation from normal pressure (1 Atmosphere = 14.7 psi (1.013 KPa))
<b>CO</b>	<b>Sensing Range:</b>	<b>Standard Range:</b> 0–100 ppm   <b>Extended Range:</b> 101–500ppm
	<b>Sensing Method:</b>	Electrochemical gas sensor with compensation for temperature variations
	<b>Accuracy:</b>	<b>Standard Range:</b> $\pm 10\text{ppm}$   <b>Extended Range:</b> $\pm 20\%$ of reading
<b>Life Expectancy<sup>2</sup>:</b>		>5 years
<b>Relay (Out3):</b>		SPST – NC   1mA/5V to 1A/50VAC/24VDC
<b>Open Collector (Out4):</b>		In ON/OFF mode: max 0.5A/55VDC (half-wave rectifier for AC), closed to ground
<b>Output Load Resistance:</b>		<b>0/4-20 mA:</b> 500 Ohms maximum   <b>0/2-10 VDC:</b> 5K Ohms Minimum
<b>Self-Diagnostics:</b>		Complete function check, yellow LED; LCD error indication
<b>Status LED Indicators:</b>		<b>Yellow</b> = Maintenance Support   <b>Green</b> = Relay Closed   <b>Red</b> = Active Open Collector Output
<b>Step Response (T1/e):</b>		8 Minutes
<b>Warm-Up Time:</b>		$\leq 15\text{min}$ (more when un-powered for a long time)
<b>Display:</b>		4 digits, 7 segments LCD with ppm indicator
<b>Push Button:</b>		Offers a selection of set point adjusts and calibration operation functions.
<b>Data Logger:</b>		Internal data logger of CO- and CO <sub>2</sub> readings, 2 X 960 samples, corresponding to just under two weeks data sampling of CO- and CO <sub>2</sub> values in 20 minutes intervals
<b>Electrical Connections:</b>		Maximum 0.00232 in <sup>2</sup> (1.5 mm <sup>2</sup> ) screw terminals
<b>Operating Temperature   Humidity:</b>		32 to 122°F (0 to 50°C)   5 to 95% RH, non-condensing
<b>Recommended Storage Temperature   Humidity Range:</b>		32 to 122°F (0 to 50°C)   5 to 95% RH, non-condensing
<b>Enclosure:</b>	<b>Box:</b>	IP65 rated, PC & ABS blend, Flammability Rating UL94V-0
	<b>Cover:</b>	Makrolon® 6555 plastic, Flammability Rating UL94V-0
	<b>Pipe (Duct Only):</b>	PC & ABS blend, Flammability Rating UL94V-0
<b>Product Dimensions (L x W x H):</b>		(H) 5.59" (142 mm) x (W) 3.31" (84 mm) x (D) 1.81" (46 mm)   <b>Duct Probe:</b> (L) 9.65" (245 mm) x (D) 1.57" (40mm)
<b>Product Weight:</b>		0.812 lbs. (0.368 kg)
<b>Approvals:</b>		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 operation | **Note 2:** Is limited by CO sensor.





## DIMENSIONAL DRAWING

Room		
Duct		
Front View	Top View	Side View

## STANDARD ORDERING

Configuration	Item #	Description
ASENSE MIII DUCT	148779	CO/CO2 Combination Sensor, CO: 0-100 ppm, CO2: 0-2000 ppm, 0-10V, 4-20mA, SPST-NC Relay, Duct Mount
ASENSE MIII ROOM	137435	CO/CO2 Combination Sensor, CO: 0-100 ppm, CO2: 0-2000 ppm, 0-10V, 4-20mA, SPST-NC Relay, Wall Mount

## ACCESSORIES ORDERING

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

ACI Model #	Item #	Description
A/CUSTOM CAL GAS*	140970	Custom Calibration
SADK	130502	SADK Calibration Kit
UIP	----	Free Software Download (Contact ACI)

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