



# ASENSE-GH-LCD

## CO2 Sensor for Greenhouses / Indoor Agriculture

The ASENSE-GH is a device that is designed for monitoring carbon dioxide (CO<sub>2</sub>) and temperature in areas that have higher Carbon Dioxide levels such as greenhouses and breweries. It has a conformally coated PCB and filter equipped housing to protect against dust and high humidity. The ASENSE-GH-LCD uses State-of-the-art non-dispersive infrared (NDIR) technology and has a membrane covered sample chamber that gives a stable and reliable CO<sub>2</sub> reading. There are three

(3) outputs on the ASENSE-GH: Output 1 for CO<sub>2</sub>: 0/2-10V or 0/4-20 mA 0-2000 ppm, Output 2 temperature: 0/2-10V or 0/4-20 mA 0-50°C, and Output 3 is a relay for fan control. An optional RS485 interface for Modbus communication is available.

**Applications:** Greenhouses, Grow Houses, Breweries, Indoor Agriculture, Mushroom Farms & Horticultural

**The ASENSE-GH-LCD 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](http://www.workaci.com).**

### PRODUCT SPECIFICATIONS

<b>Supply Voltage:</b>	24 VAC/VDC ±20%; 50/60 Hz, 10.5 to 40 VDC maximum (Half-wave rectified)
<b>Power Consumption:</b>	<3W Average
<b>Electrical Connections:</b>	0.00232 in <sup>2</sup> (1.5 mm <sup>2</sup> ) screw terminals
<b>Operating Temperature:</b>	32°F to 122°F (0°C to 50°C)
<b>Operating RH:</b>	0 to 85% RH Non-condensing
<b>Warm-Up Time:</b>	< 1 minute (@ full specs 15 minutes)
<b>Sensing Range; CO<sub>2</sub>   Temperature:</b>	0 to 2000 ppm   -4° to 140°F (-20° to 50°C)
<b>Extended CO<sub>2</sub> Ranges:</b>	2000 to 10,000 ppm (factory set or programming cable required)
<b>Accuracy; CO<sub>2</sub>   Temperature:</b>	±30 ppm ±3% of reading   ±1.8°F (1°C)
<b>Extended Range Accuracy:</b>	+/- 30 ppm and +/- 5% of reading
<b>Annual Zero Drift:</b>	< +/-10 ppm
<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>Sensing Method:</b>	Non-dispersive infrared (NDIR) with EQC (Eternal Quality Coating)
<b>Sensor Life <sup>1</sup>:</b>	> 15 years
<b>Diffusion Time (T1/e):</b>	< 3 minutes
<b>Coverage Area:</b>	7500 sq. ft maximum
<b>Mounting Height:</b>	4-6' off the floor
<b>Display:</b>	4 digits, 7 segments LCD with ppm / °F
<b>Status LED Indicators:</b>	Yellow = Maintenance Support   Red = Closed Relay
<b>Calibration:</b>	Recommended annually
<b>Outputs <sup>2</sup>:</b>	<b>Out 1 (CO<sub>2</sub>):</b> 0/2-10V, 0/4-20 mA, 0-2000 ppm <b>Out 2 (Temp):</b> 0/2-10V, 0/4-20 mA, 32° to 122°F / 0° to 50°C <b>Out 3 Relay:</b> N.O.; 1A @ 50 VAC / 24 VDC
<b>Protection:</b>	PTC fuse (auto reset) on signal return M, short-circuit safe
<b>Output Limits:</b>	MIN & MAX limits may be individually set to all outputs Linear
<b>OUT1 &amp; OUT2:</b>	0/2-10 VDC, ROUT < 100Ω, RLOAD > 5kΩ (0/1-5 VDC optional) 0/4-20 mA, RLOAD < 500Ω
<b>D/A Resolution:</b>	10 bits, 10 mV / 0.016 mA
<b>D/A Conversion Accuracy:</b>	Voltage mode: ± 2% of reading ± 50 mV current loop : ± 2% of reading ± 0.3 mA
<b>Relay Trip Point <sup>3</sup>:</b>	1000 ppm (factory set)
<b>Relay Deadband / Hysteresis:</b>	100 ppm (factory set)
<b>Agency Approvals:</b>	RoHS directive 2011/65/EU, EMC 2004/108/EC, 92/31/EEG including amendments by the CE-marking Directive 93/68/EEC
<b>Storage:</b>	-40° to 158°F (-40° to 70°C) Non-display, -4° to 122°F (-20 to 50°C) Display 0 to 85% RH Non-condensing
<b>Enclosure:</b>	Box; PC & ABS blend IP65 Rating, Flammability UL94V-0 Cover; Makrolon® 6555 plastic, Flammability rating UL94V-0
<b>Product Dimensions:</b>	(H) 5.95" (151.9 mm) x (W) 3.33" (84.6 mm) x (D) 1.85" (47 mm)

**Note <sup>1</sup>:** In normal Indoor Air Quality (IAQ) applications | Corrosive environments are excluded

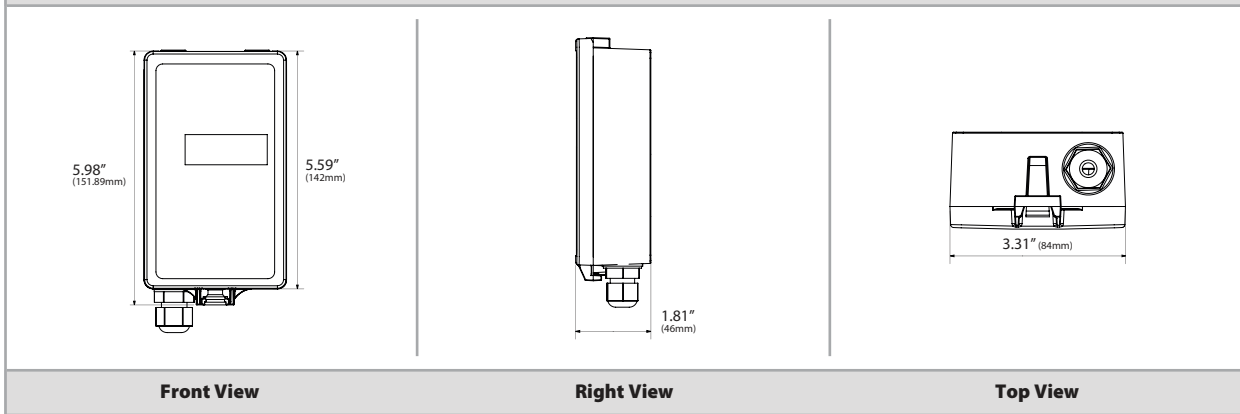
**Note <sup>2</sup>:** Optional Modbus RS485 communication board available

**Note <sup>3</sup>:** Changes can be made using TTL-232R-3V3 cable and UIP5 software downloaded from Senseair





**DIMENSIONAL DRAWING**



**STANDARD ORDERING**

Model # Example: **A**SENSE-GH-LCD -OR- 144119

Model #	Item #	Description
<b>A</b> SENSE-GH-LCD	144119	ASENSE Greenhouse, CO2, Temperature, Relay, With Display

**ACCESSORIES ORDERING**

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

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

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