ESENSE FAI

CO2 Room Sensor with LCD Display & Audible Alarm

ESENSE-FAI Room series monitors the carbon dioxide (CO2) levels in school and office type environments. The concentration of CO2 is a good indication of the overall indoor air quality. The ESENSE-FAI measures the carbon dioxide concentration in the ambient air and alarms with sound and light when the levels are exceeding the defined levels.

The ESENSE-FAI features a LCD display, analog output, an audible alarm, and three LEDs: Green (0-800 ppm), Yellow (800-1,400 ppm), and Red (1,400 ppm >). The 94 Db audible alarm also has a mute button prominently visible on the front of the enclosure.

The ESENSE-FAI 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 ESENSE-FAI 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 decrease energy consumption while creating a healthier indoor climate.

Applications: Schools, Office Buildings, Auditoriums, Gymnasiums, Shopping Malls, Theaters, Demand Control Ventilation & Economizers

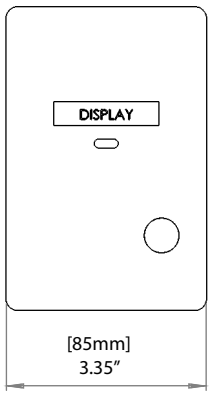
The ESENSE Room Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com**.**

PRODUCT SPECIFICATIONS

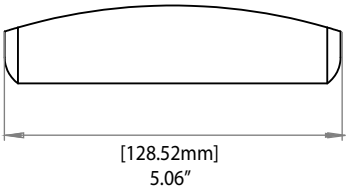
Supply Voltage:	24 VAC/VDC ±20%; 50/60Hz (Half-wave rectified)
Power Consumption:	<1W
Electrical Connections:	0.00232 in^2 (1.5 mm^2) screw terminals
Operating Temperature:	32ºF to 122ºF (0ºC to 50ºC)
Operating RH:	0 – 95% RH Non-condensing
Warm-Up Time:	1 minutes (@ full specs 15 minutes)
Accuracy[1]:	±30 ppm and ±3% of reading
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/min flow rate, < 3 minutes diffusion time
Operating Environment:	Residential, Commercial spaces
Sensing Range:	0 to 2000 ppm
Extended CO2 Ranges:	Up to 10,000 ppm (factory set or SADK Kit required)
Extended Range Accuracy >2,000 PPM:	+/- 30 ppm and +/- 5% of reading
Coverage Area:	7500 sq. ft. maximum
Mounting Height:	4-6' off the floor
Display:	4 digits, 7 segments LCD with ppm indicator
Audible Alarm:	@ 1400 ppm, Typ 94 Db w/ Mute button
Alarm Configuration:	**Green:** 0-800 ppm | **Yellow:** 800 - 1400 ppm | **Red:** >1400 ppm
Calibration[3]:	Senseair ABC algorithm (Automatic Baseline Correction)
Output:	Out 1: 0-10V for 0 to 2000 ppm
Storage:	-4 to 122ºF (-20 to 50ºC)
Enclosure:	ABS, Flammability Rating UL94V-0
Room Dimensions:	(H) 5.12" (130 mm) x (W) 3.35" (85.1 mm) x (D) 1.18" (30 mm)
Product Weight:	0.304 lbs (0.138 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 | Changes can be made using the SADK Calibration Kit and UIP5 software | **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

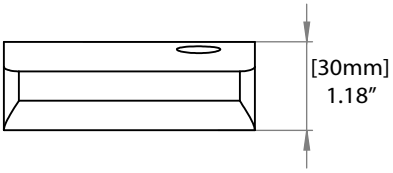
DIMENSIONAL DRAWING



Front View



Top View



Side View

STANDARD ORDERING

ACI Model #	Item #	Description
ESENSE II FAI DISP	131680	Carbon Dioxide Sensor, 0-2000 PPM, Room Mount, 0-10VDC, 3 LEDs, Audible Alarm, LCD

ACCESSORIES ORDERING

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

ACI Model #	Item #	Description
A/CUSTOM CAL GAS*	140970	Custom Calibration
SADK	130502	SADK Calibration Kit
UIP5	----	Free Software Download (Contact ACI)

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