

Datasheet: eSense FAI LEED CO2 Alarm

The eSense LEED alarm is a new simple, cost effective, state-of-the-art infrared and maintenance-free carbon dioxide alarm for installation in areas where the carbon dioxide levels needs to be monitored such as classrooms and offices.

This CO2 alarm measures the carbon dioxide concentration in the ambient air and alarms with sound and light when the levels are exceeding the defined levels.

Features

Three LEDs: Green, Yellow, Red

Alarm configuration:

- Green: 0 – 800 ppm
- Yellow: 800 – 1400 ppm
- Red: > 1400 ppm

Audible alarm & Mute button

Measurement range: 0 - 10,000 ppm CO2

Analog Output 0-10VDC

Internal automatic self-diagnostics

Maintenance-free in normal applications

130 x 85 x 30 mm - Fits US-Standard J box

Applications

The eSense FAI is designed to warn you when LEED 1,400 ppm is reached in:

- Offices, Classrooms
- Malls, Shopping Centers
- Churches, Restaurants

The LEED 2.2 EQ-Credit 1 Requirements encourage a permanent CO2 monitor that provides either automatic or manual feedback of CO2 levels in naturally ventilated spaces having “25 or more people per 1000 sq. ft.” The system should generate an alarm when CO2 levels vary by 10% or more from set-point (usually 800ppm) via either a building automation system alarm to the building operator or via a visual or audible alert to the building occupants.



General Performance

Compliance with	EMC directive 89/336/EEC. RoHS directive 2002/95/EG
Operating Temperature Range	0 - 50 °C
Storage Temperature Range	-40 to +70 °C (display model -D: -20 to +70 °C)
Operating Humidity Range	0 to 95% RH (non-condensing)
Operating Environment	residential, commercial and industrial spaces
Warm-up Time	≤ 1 min. (@ full specs ≤ 15 minutes)
Sensor Life Expectancy	> 15 years
Maintenance Interval	No maintenance required
Self Diagnostics	Complete function-check, LCD error indication (display model -D)
Display (model -D)	4 digits, 7 segments LCD with ppm indicator

CO2 Measurement

Sensing Method	Gold-plated infrared (NDIR) waveguide technology with passive gas diffusion (no moving parts)
Calibration	Automatic Background Calibration (ABC)
Response Time (T _{1/e})	< 10 sec. @ 30 cc/min. flow rate, < 3 min. diffusion time
Repeatability	± 20 ppm ± 1 % of reading
Accuracy	±30 ppm ±3% of reading
Annual Zero Drift	< ± 10 ppm
Pressure Dependence	1.6% of reading per kPa
Measurement range.....	0 - 6,000 ppm

Electrical

Power Input.....	24 VAC/VDC ±20%, 50 Hz (half-wave rectifier input)
Power Consumption	< 1 Watt average
Connection screw terminal A	4 x 1,5 mm2 for power input (G+, G0) and voltage output OUT1

Outputs

Analog Output.....	0 -10 VDC
Audible alarm.....	94 Db Buzzer w. Mute button
	D/A resolution 10 bits, 10 mV