

# eSENSE™ FAI Light (Fresh Air Indicator)

## CO<sub>2</sub> Alarm Transmitter



eSENSE™ FAI Light is a new simple, low-cost, state-of-the-art infrared and maintenance-free carbon dioxide alarm for installation in areas where the carbon dioxide levels need to be monitored, such as class-rooms and offices.

eSENSE™ FAI Light measures the carbon dioxide concentration in the ambient air. The CO<sub>2</sub>- levels will be shown with different LED-colours.

eSENSE™ FAI Light carries the five (5) years warranty.

## APPLICATIONS

eSENSE™ FAI Light is a cost-optimised sensor solution for climate control. Measuring the CO<sub>2</sub> concentration indoors, gives a good indicator of the air quality. The CO<sub>2</sub>-level will control the ventilation. Gives healthier indoor climate and reduced energy consumption.

## STANDARD SPECIFICATION\*

Measured gas	Carbon dioxide (CO <sub>2</sub> )
Operating Principle	Non-dispersive infrared (NDIR)
Measurement range	0 - 2000ppm*
OUT1 linear output	0 - 10VDC, 0 - 2000ppm
OUT2 linear output	2 - 10V (or 4 - 20mA), 0 - 2000ppm
Accuracy	±30ppm ±3%x of reading
Dimensions	100 x 80 x 28mm
Life Expectancy	> 15 years
Operation temperature range	0 - +50°C
Operation humidity range	0 - 85%RH (non-condensing)
Power supply	24VAC/DC

## KEY BENEFITS

- Two analogue outputs
- Internal automatic self-diagnostics.
- Maintenance-free
- Three LEDs: Red, yellow, green  
Alarm configurations:  
Green: 0 - 800ppm  
Yellow: 800 - 1200ppm  
Red: >1200ppm
- Configurable with SADK-interface and UIP5

# Technical Specification

## General Performance:

Conformance with standards.....	EMC 2004/108/EC directive EN 61326-1: 2006, Class B equipment, Table 1 – Basic immunity test requirements RoHS directive 2011/65/EU
Operating Temperature Range .....	0 - +50°C
Storage Temperature Range .....	-40 - +70°C (display model -20 - +70°C)
Operating Humidity Range .....	0 - 95%RH (non-condensing)
Operating Environment .....	residential, commercial and industrial spaces <sup>1</sup>
Warm-up Time .....	1 min. (@ full specs 15 minutes)
Sensor Life Expectancy .....	> 15 years
Maintenance Interval .....	no maintenance required <sup>2</sup>
Self Diagnostics .....	complete function-check, LCD error indication (display model)
Display.....	4 Digits, 7 segments LCD with ppm indicator

## Electrical / Mechanical:

Power Input .....	.24VAC/VDC ±20%, 50Hz (half-wave rectifier input)
Power Consumption .....	< 1W average
Connection screw terminal A .....	1,5mm <sup>2</sup>

## CO<sub>2</sub> Measurement:

Sensing method .....	EQC-plated infrared (NDIR) waveguide technology with Automatic Baseline Calibration (ABC) and passive gas diffusion (no moving parts)
Response Time (T <sub>1/2</sub> ) .....	< 10s. @ 30 cc/min. flow rate, < 3 min. diffusion time
Repeatability.....	±20ppm ±1% of reading
Accuracy <sup>2</sup> .....	±30ppm ±3% of reading
Annual Zero Drift <sup>2</sup> .....	< ±10ppm
Pressure Dependence .....	+1.6 % reading per kPa
Measurement range.....	0 - 2000ppm

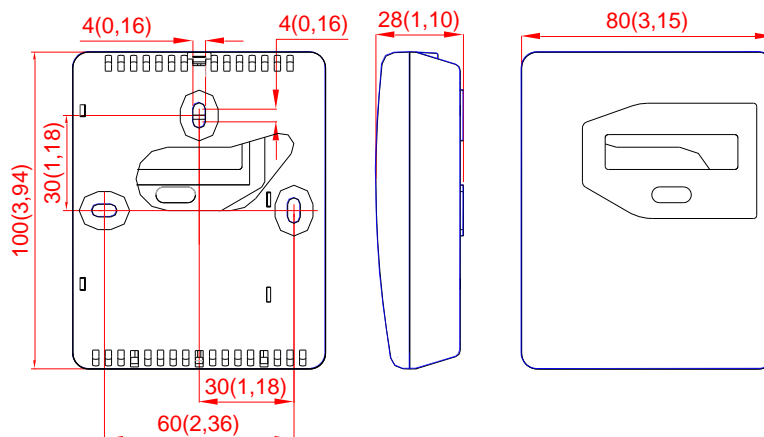
## Output Signal Terminal CO<sub>2</sub>:

OUT1 linear conversion range .....	0 - 10VDC for 0 - 2000ppm
D/A conversion accuracy .....	±2% of reading ±50mV
Electrical characteristics.....	R <sub>OUT</sub> < 100Ω, R <sub>LOAD</sub> > 5kΩ

## eSENSE™ FAI Light

Art.no	Product	Additional features
050-8-0077	eSENSE™ FAI Light	Fits European standard J-boxes

Note 1: The SO<sub>2</sub> enriched environments are excluded.  
 Note 2: In normal IAQ applications (@ NTP), accuracy is defined after minimum three (3) weeks of continuous operation.  
 The tolerance of the span calibration gas (2% unless otherwise requested) and test gas adds to the total uncertainty.



Dimensions of sensor in mm and (inches)