Installation Manual

eSENSE^{TM} FAI

CO_2 transmitter with acoustic alarm

Figure 1 eSENSE FAI with the three LED indicating CO_2 levels

General

The IAQ-sensor product eSENSE FAI (sensor for wall mounting) is designed to measure carbon dioxide (CO_2) in rooms. The acoustic alarm sounds when the carbon dioxide concentration is above 1400 ppm CO_2. A push button silences the alarm for 30 minutes. Green, yellow and red LEDs give a rough estimate of the CO_2 concentration Option Disp displays the measured CO_2 value in ppm (parts-per-million) on the LCD.

The units are designed for connecting to Direct Digital Control (DDC) with 0-10 V signal inputs. The signal output OUT1 (0-10 V) gives linear signal voltage corresponding to the measuring range.

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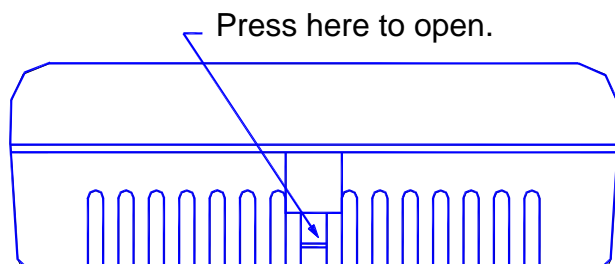## To open the wall mounted housing

Press here to open.

Figure 2 Closed housing seen from above. Pressing a screwdriver on the locking hook opens the housing. The locking hook is then released.

Electrical connections

The power supply has to be connected to **+~** and ⏚. ⏚ is considered as system ground. The same ground reference has to be used for the eSENSE FAI unit and for the DDC/signal receiver.

NOTE:
An external fuse shall be used with this sensor. A separate fuse must be used for each sensor.

NOTE:
The same ground reference has to be used for the eSENSE FAI unit and for the control system!

Terminal	Function	Electrical data	Remarks Standard settings	Remarks Settings of this sensor
+~ ⏚	Power (+) Power ground (-)	24 VAC/DC+ (+-20%), 2W 24 VAC/DC-	System voltage reference	
Out(1) Out(2)	Analogue output 1 (+)	0-10 VDC	0-2000 ppm CO_2	Buzzer connected
Green LED				Lit when the CO_2 concentration is below 800 ppm
Yellow LED				Lit when the CO_2 concentration is 800 to 1400 ppm
Red LED				Lit when the CO_2 concentration is above 1400 ppm The buzzer sounds
Push button				Silences the buzzer 30 minutes when pushed. After 30 minutes the buzzer sounds if the CO_2 concentration is above 1400 ppm

Table I. Connections of the main terminal and other functions of eSENSE FAI
Important

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1. All low voltage connections to this device must be 24 V AC/DC Class 2 (or equivalent to your local regulations).
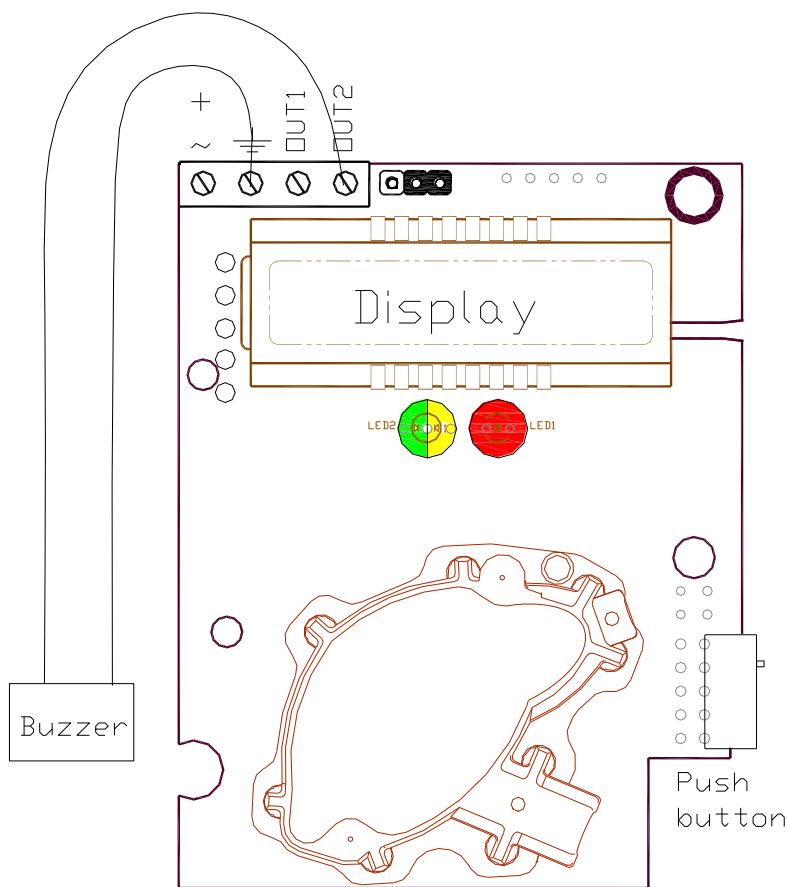2. All wiring must comply with applicable local codes, ordinances and regulations.

Figure 2 PCB with buzzer connected to OUT2. The push button can be used to silence the buzzer for 30 minutes

Self-diagnostics

The system contains a complete self-diagnostic procedure that is executed automatically when the sensor is in operation. The yellow LED is lit if an error is found. Sensors with display show a *wrench* if an error is found. The wrench is shown and the yellow LED is lit during the first seconds after power up and if the measuring range exceeded. They are automatically turned off when the sensor returns to normal operation.

Maintenance

The eSENSE FAI is basically maintenance free in normal environments thanks to the built-in self-correcting *ABC* algorithm. Discuss your application with SenseAir in order to get advice for a proper calibration strategy.

NOTE:
The sensor accuracy is defined at continuous operation (at least 3 weeks after installation).

Electronic products should be disposed of via a suitable recycling centre.
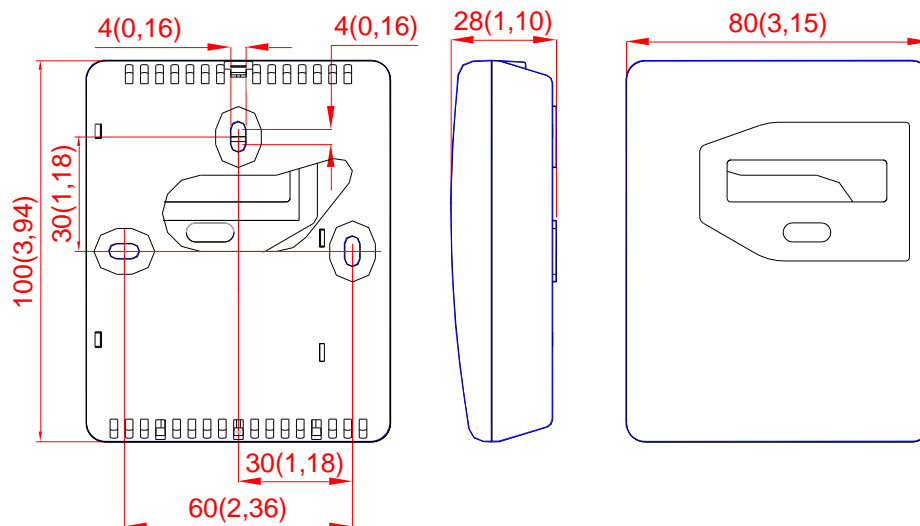
Dimensions

Figure 3 The dimensions of the sensor in mm and (inches)

Mounting of the sensor onto the wall

NOTE:
Please use screws with screw head diameter less than 7.5 mm (0.295 inches) and screw head height less than 2.4 mm (0.094 inches).

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