

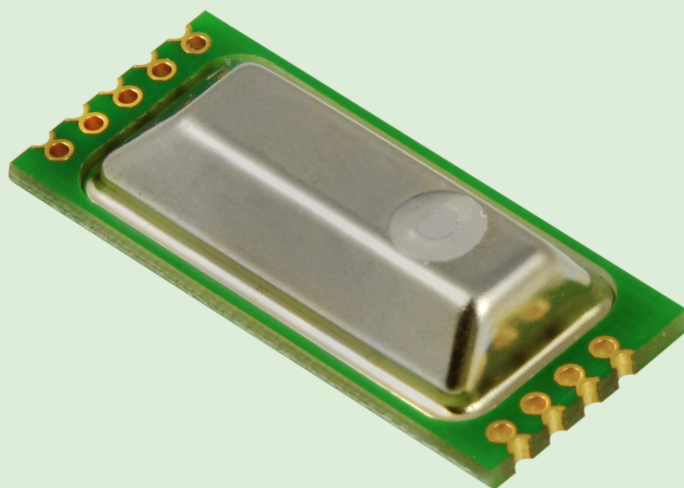


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Datasheet EE895

**Miniature Sensor Module for CO₂,
Temperature and Barometric Pressure**



EE895

Miniature Sensor Module for CO₂, Temperature and Barometric Pressure

The EE895 is the ideal measurement module for sensors and transmitters used in demand controlled ventilation, building automation and process control. Due to the low power consumption, the module is also suitable for battery operated devices such as handhelds, data loggers and wireless transmitters.

CO₂ Measurement Performance

The CO₂ measurement is based on the dual wavelength NDIR principle, which compensates for ageing effects, is highly insensitive to pollution and offers outstanding long term stability. A multiple point CO₂ and temperature factory adjustment procedure leads to excellent CO₂ measurement accuracy over the entire temperature working range.

Versatile: 3 in 1

Besides CO₂, the EE895 also measures temperature (T) and barometric pressure (p). The temperature and pressure compensation with on-board sensors minimises the impact of altitude and ambient conditions onto the CO₂ measured data.

Digital Interfaces

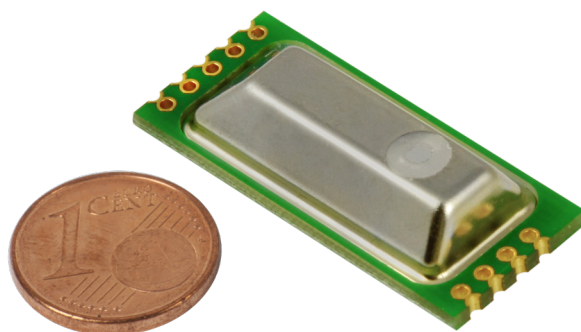
The CO₂, temperature and pressure measured data is available on the I²C or the UART digital interface.

Configurable

The EE895 can be configured via digital interface. The CO₂ measurement interval can be set according to the application and the power requirements.

Key Features

- Dual wavelength NDIR with autocalibration
- Temperature and pressure compensation of the CO₂ measurement
- Very low power consumption and peak current
- I²C or UART interface



Compliant with Addendum d to
ANSI/ASHRAE Standard 62.1-2022

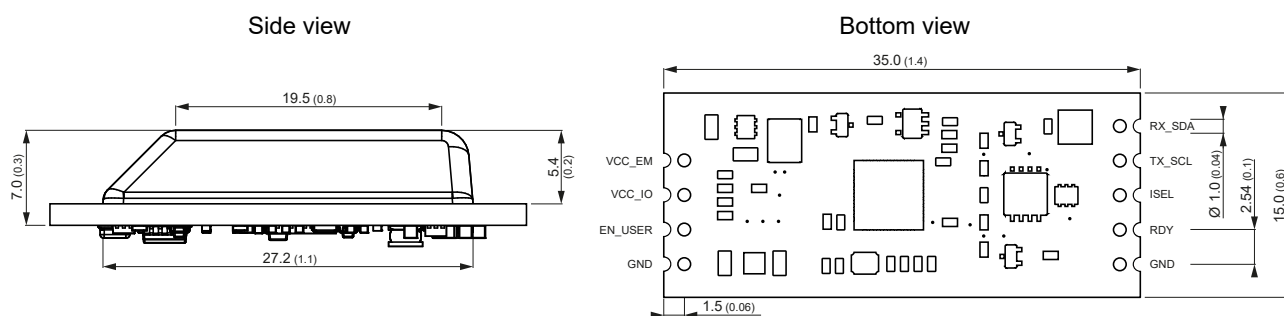
Features

ANSI/ASHRAE Standard 62.1-2022

The EE895 sensors with the CO₂ measuring ranges 0...2000 ppm and 0...5000 ppm, comply with Addendum d to ANSI/ASHRAE Standard 62.1-2022 released on 31 March 2025 by ASHRAE and the American National Standards Institute. The accuracy requirements of $\pm 30 \text{ ppm} \pm 3 \%$ of the measured value are met at CO₂ concentrations of 600, 1 000 and 2 500 ppm, for a measurement at sea level at 25 °C (77 °F) . In building automation environment, the sensor requires calibration not more frequently than once every five years.

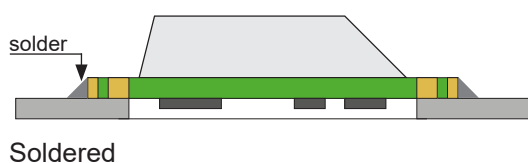
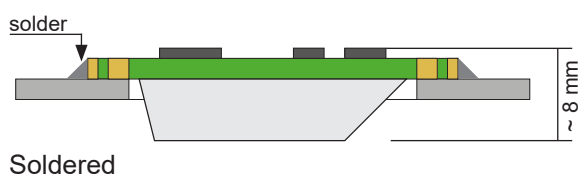
Dimensions

Values in mm (inch)

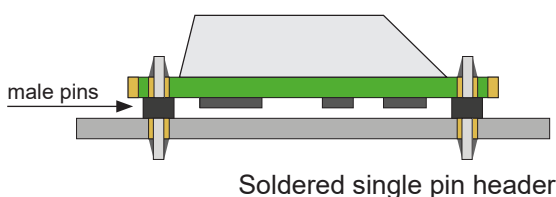
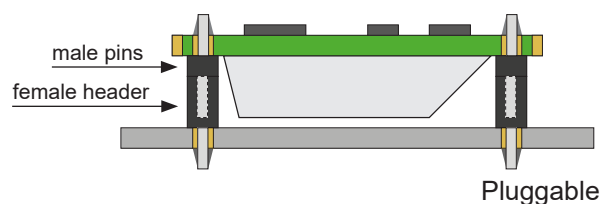


Mounting Examples

Via side plated contacts



Via solder pads



Technical Data

Measurands

CO₂

Measurement principle	Dual wavelength non-dispersive infrared technology (NDIR)
Measuring range	0...2 000 / 5 000 / 10 000 ppm
Accuracy ^{1),2)} @ 25 °C (77 °F) and 1013 mbar (14.7 psi) 0...2 000 ppm 0...5 000 ppm 0...10 000 ppm	±(32 ppm + 1.5 % of mv) ±(32 ppm + 1.8 % of mv) ±(50 ppm + 2 % of mv) mv = measured value
Factory calibration uncertainty ²⁾ @ 25 °C (77 °F)	±2.6 % of mv, min ±20 ppm
T and p compensation of the CO ₂ reading	With on-board sensors
Temperature dependency, typ.	±(1 + CO ₂ concentration [ppm] / 1 000) ppm/°C (-20...45 °C) (-4...113 °F)
Residual pressure dependency ³⁾ , typ.	±0.014 % of the measured value / mbar (ref. to 1013 mbar)
Initialisation time (power on)	<1 s
Response time t ₆₃	140 s with measured data averaging (smooth output) 75 s without measured data averaging
Sampling interval	User configurable from 10 s up to 1 h; factory setup = 15 s
Calibration interval ⁴⁾	≥5 years

1) With data averaging for smooth output signal. Operation without measured data averaging or in short-time mode might lead to additional measurement uncertainty.

2) Defined with an coverage factor k=2, corresponding to a confidence level of 95 %.

3) The pressure dependency of a device without pressure compensation: 0.14 % of measured value / mbar.

4) Recommended under normal operating conditions in building automation.

Pressure (p)

Working range	700...1 100 mbar (10.15...15.95 psi)
Accuracy, typ. @ 25 °C (77 °F)	±2 mbar (20...80 %RH)
Temperature dependency, typ.	±0.015 mbar/K

Temperature (T)

Measuring range	-40...60 °C (-40...140 °F)
Accuracy @ 25 °C (77 °F)	±0.5 °C (±0.9 °F)

General

Digital interface (pin-selectable)	I ² C UART	Up to 100 kbit/s 9600 Baud, 8 bits, no parity, 1 stop bit
Module control	Enable pin Data ready pin	Continuous operation / power down Indication of valid data
Supply voltage		3.3 - 5 V DC $\pm$ 5 %
Average current consumption, typ. for supply voltage 5 V		1.6 mA at 15 s sampling interval 196 μ A at 1 h sampling interval with standby between measurements 8 μ A at 1h sampling interval with power down between measurements
Current profile CO ₂ typical values for supply voltage 5 V		6 mA Idle Measurement 67 mA IR Lamp pulse 188 μA Standby / power off Sampling interval 15 s (configurable 10 s ... 1 h)
Electrical connection		Side plated contacts and solder pads, $\varnothing$ 1 mm (0.04")
Working and storage conditions		-40...+60 °C (-40...+140 °F) 0...95 %RH (non-condensing) 700...1 100 mbar (10...16 psi)

Ordering Guide

Feature	Description	Code
		EE895-
Model	CO ₂ + T + p	M16
CO ₂ measuring range	0...2 000 ppm	HV1
	0...5 000 ppm	HV2
	0...10 000 ppm	HV3

Order Example

EE895-M16HV1

Feature	Code	Description
Model	M16	CO ₂ + T + p
CO ₂ measuring range	HV1	0...2 000 ppm

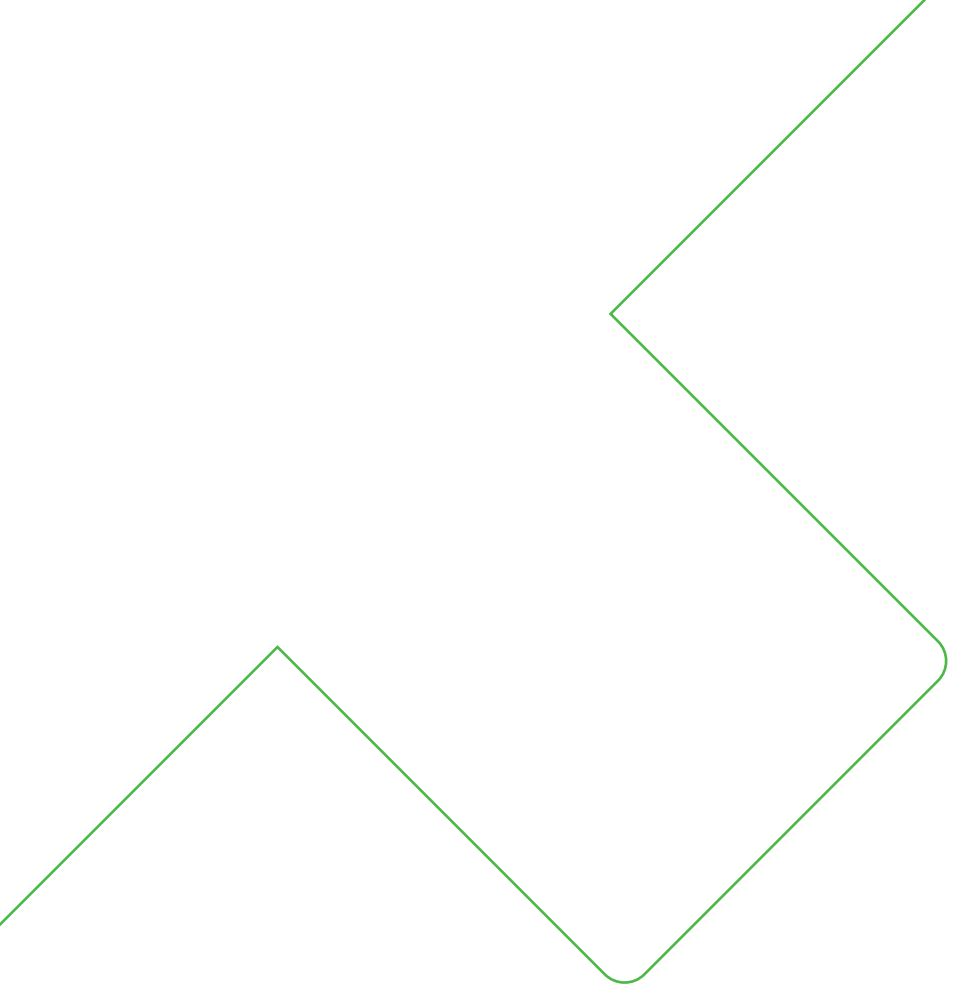
Accessories

Description	Code
EE895 Evaluation Board	HA011019

For further information see [datasheet Evaluation Board EE895](#) and [quick guide Evaluation Board EE895](#).

Support Literature

www.epluse.com/ee895



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