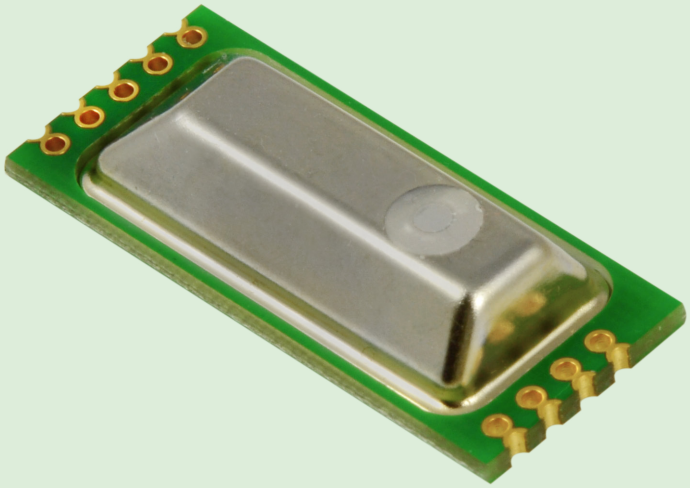
E+E

your partner
in sensor
technology.

Datasheet EE895

Miniature Sensor Module for CO_2, Temperature and Barometric Pressure



www.epluse.com

EE895

Miniature Sensor Module for CO_2, 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.

CO_2 Measurement Performance

The CO_2 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 CO_2 and temperature factory adjustment procedure leads to excellent CO_2 measurement accuracy over the entire temperature working range.

Versatile: 3 in 1

Besides CO_2, the EE895 also measures temperature (T) and barometric pressure (p). The temperature and pressure compensation with on-board sensors minimizes the impact of altitude and ambient conditions onto the CO_2 measured data.

Digital Interfaces

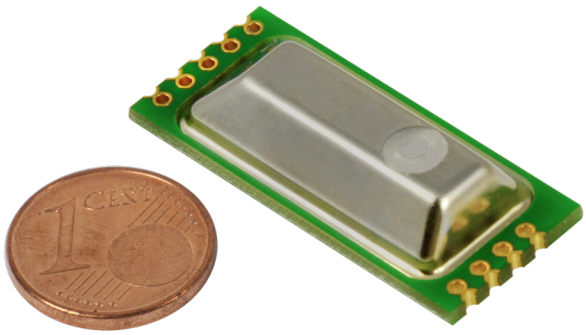
The CO_2, temperature and pressure measured data is available on the I^2C or the UART digital interface.

Configurable

The EE895 can be configured via digital interface. The CO_2 measurement interval can be set according to the application and the power requirements.

Key Features

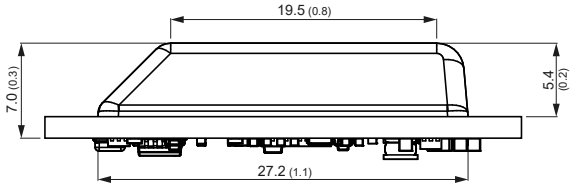
- Dual wavelength NDIR with autocalibration
- Temperature and pressure compensation of the CO_2 measurement
- Very low power consumption and peak current
- I^2C or UART interface



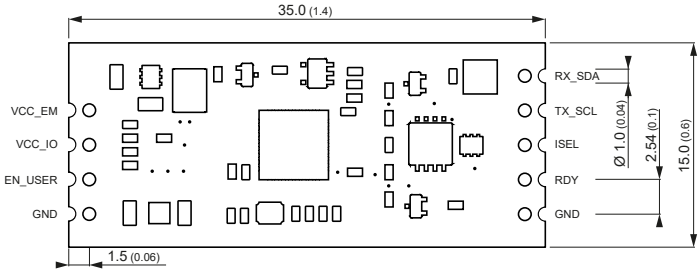
Dimensions

Values in mm (inch)

Side view

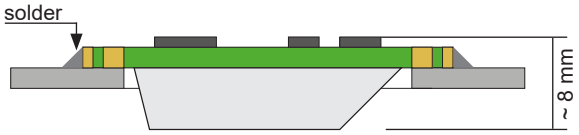


Bottom view

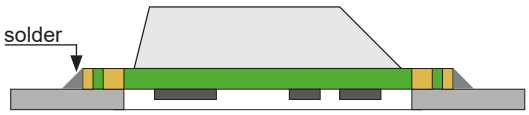


Mounting Examples

Via side plated contacts

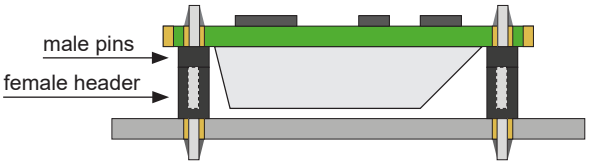


Soldered

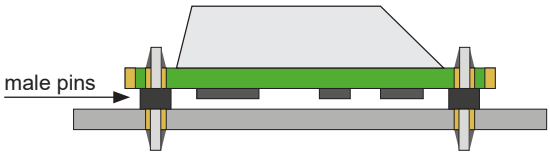


Soldered

Via solder pads



Pluggable



Soldered single pin header

Technical Data

Measurands

CO_2

Measurement principle	Dual wavelength non-dispersive infrared technology (NDIR)
Measuring range	0...2 000 / 5 000 / 10 000 ppm
Accuracy[1)] @ 25 °C (77 °F) and 1 013 mbar (14.7 psi) **0...2 000 ppm** **0...5 000 ppm** **0...10 000 ppm**	 < ±(50 ppm +2 % of measured value) < ±(50 ppm +3 % of measured value) < ±(100 ppm + 5 % of measured value)
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[2)], typ.	±0.014 % of the measured value / mbar (ref. to 1 013 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 intervall	User configurable from 10 s up to 1 h; factory setup = 15 s
Calibration interval[3)]	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) The pressure dependency of a device without pressure compensation: 0.14 % of measured value / mbar.
3) Recommended under normal operating conditions in building automation.

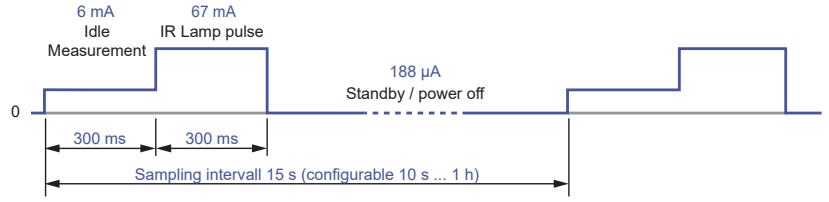
Pressure (p)

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 @ 24 V DC, 20 °C (68 °F)	±0.5 °C (±0.9 °F)

General

Digital interface (pin-selectable) **I²C** **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 ± 5 %
Average current consumption, typ. for supply voltage 5 V	1.6 mA at 15 s sampling interval 196 µA at 1 h sampling interval with standby between measurements 8 µA at 1h sampling interval with power down between measurements
Current profile CO_2 typical values for supply voltage 5 V	
Electrical connection	Side plated contacts and solder pads, Ø 1 mm (0.04")
Working and storage conditions	-40...60 °C (-40...140 °F) 0...95 %RH (non-condensing) 700...1100 mbar (10...16 psi)

Ordering Guide

Feature	Description	Code
		EE895-
Model	CO_2 + T + p	M16
CO_2 measuring range	0...2000 ppm	HV1
	0...5000 ppm	HV2
	0...10000 ppm	HV3

Order Example

EE895-M16HV1

Feature	Code	Description
Model	M16	CO_2 + T + p
CO_2 measuring range	HV1	0...2000 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

Company Headquarters &
Production Site

E+E Elektronik Ges.m.b.H.
Langwiesen 7
4209 Engerwitzdorf | Austria
T +43 7235 605-0
F +43 7235 605-8
info@epluse.com
www.epluse.com

Subsidiaries

E+E Sensor Technology (Shanghai) Co., Ltd.
T +86 21 6117 6129
info@epluse.cn

E+E Elektronik France SARL
T +33 4 74 72 35 82
info.fr@epluse.com

E+E Elektronik Deutschland GmbH
T +49 6171 69411-0
info.de@epluse.com

E+E Elektronik India Private Limited
T +91 990 440 5400
info.in@epluse.com

E+E Elektronik Italia S.r.l.
T +39 02 2707 86 36
info.it@epluse.com

E+E Elektronik Korea Ltd.
T +82 31 732 6050
info.kr@epluse.com

E+E Elektronik Corporation
T +1 847 490 0520
info.us@epluse.com

your partner
in sensor
technology.

datasheet_EE895 | Version v1.6 | 11-2024