

EE894

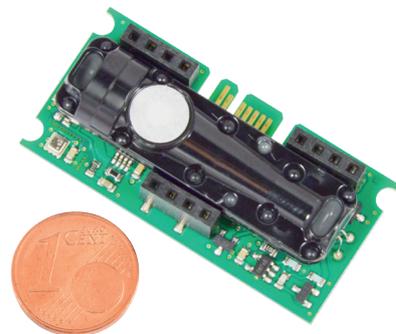
Digital Sensor Module for CO₂, Temperature, Humidity and Ambient Pressure

The EE894 module is ideal for demand controlled ventilation and building automation. It incorporates the E+E dual wavelength NDIR CO₂ sensor, which compensates for ageing effects, is highly insensitive to pollution and offers outstanding long term stability. Beside CO₂, the module measures also relative humidity (RH), temperature (T) and ambient pressure (p).

A multiple point CO₂ and T factory adjustment procedure leads to excellent CO₂ measurement accuracy over the entire T working range. The pressure compensation minimizes the impact of altitude and ambient pressure variations onto the CO₂ measured data.

The measured data, with a range of up to 1% CO₂, is available on the I²C or the E2 digital interface.

An optional kit for the E2 interface facilitates easy configuration of the module and the adjustment of the CO₂, RH, T and p measurement. The CO₂ measurement interval can be set according to the application requirements; by this the average current consumption can be reduced to 420 µA, ideal for battery-operated devices.



Typical Applications

Demand controlled ventilation
Building automation
Data loggers and hand helds
Wireless transmitters

Key features

Autocalibration
Outstanding long-term stability
Temperature and pressure compensated
Low power consumption
Small size

Technical Data

Measured values

CO₂

Measurement principle	Dual wavelength NDIR (non-dispersive infrared technology)
Working range	0...2000 / 5000 / 10000 ppm
Accuracy at 25 °C and 1013 mbar ¹⁾ (77 °F and 14.69 psi)	0...2000 ppm: < ± (50 ppm +2% of the measured value) 0...5000 ppm: < ± (50 ppm +3% of the measured value) 0...1% (0...10000 ppm): < ± (100 ppm +5% of the measured value)
Response time t ₉₀	105 s with measured data averaging (smooth output) 60 s without measured data averaging ²⁾
Temperature dependency, typ.	± (1 + CO ₂ concentration [ppm] / 1000) ppm/°C (-20...45 °C) (-4...113 °F)
Pressure dependency	0.014 % of the measured value / mbar (ref. to 1013 mbar)
Calibration interval ³⁾	>5 years
Sampling interval	from 15 s (factory setup) up to 1 h; user selectable

Relative humidity

Working range	0...95 % RH (non condensing)
Accuracy at 25 °C (77 °F) and 20...80% RH, incl. hysteresis, typ.	± 3 % RH

Pressure

Working range	700...1100 mbar (10.15...15.95 psi)
Accuracy at 25 °C (77 °F), typ.	± 2 mbar (20...80 % RH)
Temperature dependency	± 0.015 mbar/K

Temperature

Working range	-40...60 °C (-40...140 °F)
Accuracy at 25 °C (77 °F), typ.	± 0.5 °C (± 0.9 °F)

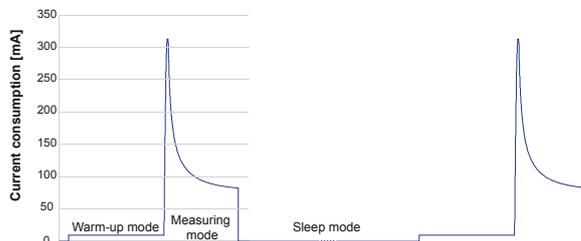
1) With data averaging (smooth output) for averaging output.

2) Available only for I²C.

3) Recommended under normal operating conditions in building automation.

General

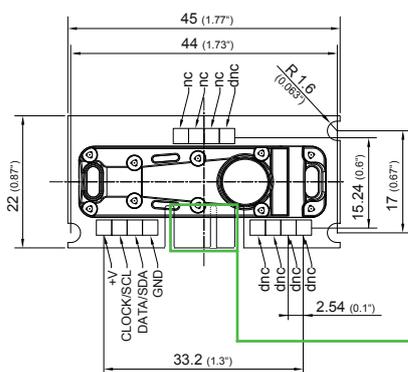
Digital interface	I ² C or E2
Supply voltage	4.75 - 7.5 V DC
Average current ⁴⁾ at 25 °C (77 °F) and 5 V supply	420 µA (at 1 h sampling interval) 3.2 mA (at 15 s sampling interval)
Peak Current	



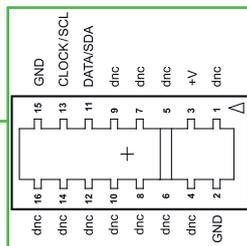
Electrical connection	contact pins and edge card socket
Working and storage conditions	-40...60 °C (-40...140 °F) 0...95 % RH (not condensating) 700...1100 mbar (10.15...15.95 psi)

4) The average current depends on the CO₂ sampling interval.

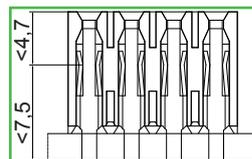
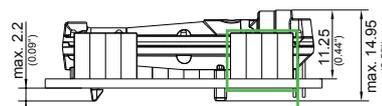
Connection Diagram / Dimensions in mm (inch)



nc..... not connected
dnc.... do not connect

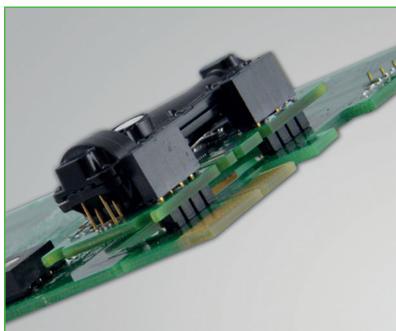


edge card socket
(e.g. MEC1-108-02, Samtec)



Female connector strip for 0.64 mm pins
contact spacing 2.54 mm (0.1")

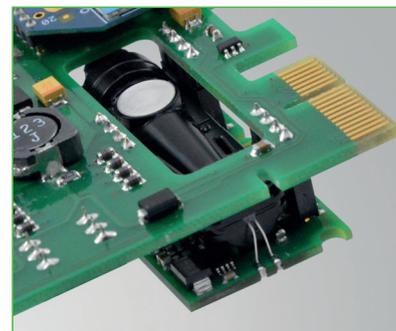
Mounting Examples



Top mount



Connection with edge card socket



Space saving assembly

Accessories (see also data sheet "Accessories")

E2 Test and Configuration Adapter HA011010
 E+E Product Configuration Software EE-PCS (Download: www.epluse.com/Configurator)

Ordering Guide

		EE894
CO ₂ measuring range	0...2000 ppm	HV1
	0...5000 ppm	HV2
	0...1% (0...10000 ppm)	HV3
Interface	I ² C	no code
	E2	J2

Order Example

EE894-HV1J2

CO₂ measuring range: 0...2000 ppm
 Interface: E2

Support Literature

www.epluse.com/EE894