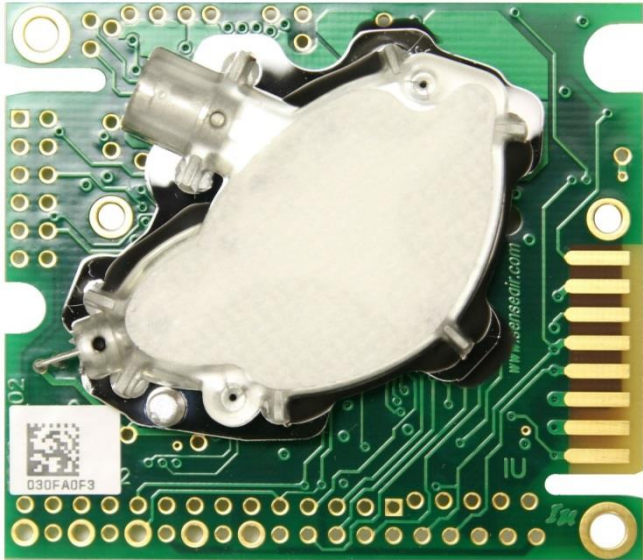


CO₂ Engine[®] K30

Sensor Module and OEM Platform



CO₂ Engine[®] K30 is a flexible product with two analog outputs and two digital outputs that can be configured with *SADK* hardware and *UIP* or other custom software to meet your requirement.

APPLICATIONS

The platform CO₂ Engine[®] K30 can be customised for a variety of sensing and control applications. This platform is designed to be an OEM module for built-in applications in a host apparatus.

STANDARD SPECIFICATION

Measured gas	Carbon dioxide (CO ₂)
Operating Principle	Non-dispersive infrared (NDIR)
Measurement range CO ₂	0–5000ppm, 0–3%
OUT1 Linear Output	0–4VDC = 0–2000ppm
OUT2 Linear Output	1–5VDC = 0–2000ppm
OUT3 Digital Output	On ≥800ppm, Off ≤700ppm
OUT4 Digital Output	On ≥1000ppm, Off ≤900ppm
Accuracy CO ₂	±30ppm ±3% of reading
Dimensions	51 x 57 x 14mm (L x W x H)
Life Expectancy	>15 years
Operation temperature range	0–50°C
Operation humidity range	0–95%RH (non-condensing)
Power supply	4.5–14VDC
Communication	I ² C, UART (Modbus protocol)

KEY BENEFITS

- Flexible
- Easy to configure
- Maintenance-free

CO₂ Engine[®] K30 Technical Specification

General Performance:

Storage Temperature Range.....	-30–70°C, (no condensation) ¹
Sensor Life Expectancy	>15 years
Maintenance Interval.....	Maintenance free ²
Self-Diagnostics.....	Complete function-check of the sensor module
Operating Temperature Range	0–50°C
Operating Humidity Range.....	0–95%RH, (non condensing) ³

Electrical / Mechanical:

Power Input	4.5–14 VDC max rating, (without reverse polarity protection) stabilized to +-5% over load and line changes. Ripple voltage less than 100mV.
Current Consumption.....	40mA average <150mA peak current (averaged during IR lamp ON, 120msec) <300mA peak power (during IR lamp start-up, the first 50msec)
Dimensions.....	51 x 57 x 14mm (Length x Width x Height)

CO₂ Measurement:

Operating principle.....	Non-dispersive infrared (NDIR) waveguide technology with ABC (Automatic Baseline Correction)
Sampling Method.....	Diffusion
Response Time (T _{1/e}).....	<20s, diffusion time
Measurement Range	0-5000ppm
Accuracy.....	±30ppm ±3% of reading ⁴

Outputs:

Linear

OUT1.....	0–4VDC = 0–2000ppm
OUT2.....	1–5VDC = 0–2000ppm
Electrical Characteristics.....	R _{OUT} <100Ω, R _{LOAD} >5kΩ, Power input >5,5V ⁵

Digital

OUT3.....	On ≥800ppm, Off ≤700ppm
OUT4.....	On ≥1000ppm, Off ≤900ppm

Note 1: SO₂ enriched environments excluded

Note 2: When using ABC (Automatic Baseline Correction) algorithm of Senseair[®]. ABC is enabled in default configuration

Note 3: Sensors are 100% tested in production at 45°C / 85%RH / 1000ppm CO₂ for one hour.

For applications operating continuously in high humidity, contact Senseair[®] for further information.

Note 4: Accuracy is specified over operating temperature range at normal pressure 101.3kPa. Specification is referenced to certified calibration mixtures.

Uncertainty of calibration gas mixtures (±1% currently) is to be added to the specified accuracy for absolute measurements.

Note 5: For the buffered output OUT2 the maximum output voltage range equals power voltage input minus 0.5V