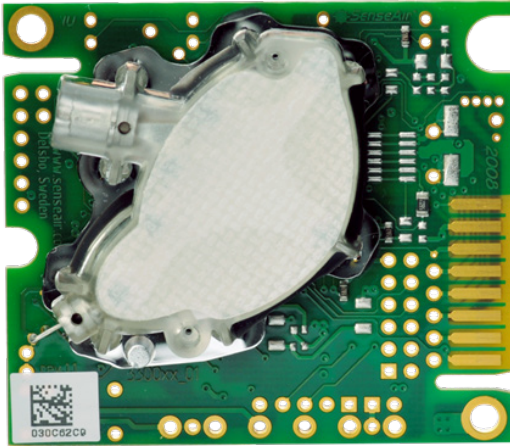


# Senseair K33 LP T

Low power sensor core for CO<sub>2</sub> and temperature measurement.



Senseair K33 LP T is a low power module. The adjustable measurement interval, results in average power consumption that can be reduced to less than 52µA (measurement 1/60 min).

Senseair K33 LP T is designed for low power application. The module is as all other sensors from Senseair designed for high volume production with full traceability by sensor serial number on all manufacturing processes and key components. Every sensor is individually calibrated and is provided with UART digital interface. Optional feature is RH.

This platform is designed to be a low power OEM module for integration into host apparatus, such as battery operated products and sensors with radio transmitters - any application where power consumption is important to keep at a minimum without sacrificing the performance.

## Standard specification

Measured gas	Carbon dioxide (CO <sub>2</sub> )
Operating principle	Non-dispersive infrared (NDIR)
Measurement range	0–5000ppm (extended range 5000–10000ppm)
Accuracy	±30ppm ±3% of measured value Frac filter enabled <sup>1, 2, 3</sup>
Accuracy ext. range	±30ppm ±20% of measured value
Dimensions	57 x 80 x 12.5mm (L x W x H)
Life expectancy	>15 years
Operation temp. range	0–50°C
Operation humidity range	0–80%RH (non-condensing)
Power supply	4.75–12VDC max rating, via Vbat+
Power consumption	<1.5mA average with 30s measurement period <300mA peak
Communication	I <sup>2</sup> C, UART (Modbus protocol)

## Key benefits

- Low-power consumption
- Individually calibrated
- Maintenance free
- High quality
- Long term stability



Note 1: Frac filter (digital filter) is enabled in sensors default configuration.

Note 2: Accuracy is specified over operating temperature range at normal pressure 101.3 kPa. Specification is referenced to certified calibration mixtures. Uncertainty of calibration gas mixtures (±2% currently) is to be added to the specified accuracy for absolute measurements.

Note 3: Accuracy is defined after minimum three (3) ABC periods of continuous operation with ABC enabled (default configuration)

# Senseair K33 LP T Technical Specification

## General Performance:

Storage Temperature Range	-30–70°C
Storage Environment	Non-condensing, non-corrosive
Sensor Life Expectancy	>15years
Maintenance Interval	Maintenance-free <sup>1</sup>
Self-Diagnostics	Complete function-check of the sensor module
Operating Temperature Range	0–50°C
Operating Humidity Range	0–80%RH (non-condensing) <sup>2</sup>
Operating Environment	Residential, commercial, industrial spaces used in HVAC (Heating Ventilation and Air-Conditioning) systems

## Electrical / Mechanical:

Power Input	4.75–12.0 VDC maximum rating, powered via Vbat+ 5.50–12.0 VDC maximum rating, powered via G+
Average Current Consumption	<1.5mA average with 30s measurement period
Peak Current Consumption	<300 mA
Electrical Connections <sup>3</sup>	Vbat+, G+ and G0
Dimensions	51 x 57 x 12.5mm (Length x Width x Height)

## CO<sub>2</sub> Measurement:

Operating principle	Non-dispersive infrared (NDIR) waveguide technology with ABC (Automatic Baseline Correction)
Sampling Method	Diffusion
Response Time (T1/e)	<1 min, 30s measurement period, unfiltered <3 min, 30s measurement period, frac filter enabled
Measurement Period	30s <sup>4</sup>
Measurement Range	0–5000ppm extended range 5000–10000ppm
Accuracy <sup>5</sup>	±30ppm (CO <sub>2</sub> ) ±3% of measured value extended range ±30 ppm ±20% of measured value
Pressure Dependence	+1.6% reading per kPa deviation from normal pressure, 101.3kPa

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Note 1: When using Senseair's ABC (Automatic Baseline Correction) algorithm. ABC is enabled in default configuration.

Note 2: For applications operating continuously in high humidity, contact Senseair for further information.

Note 3: Different options exist and can be customised depending on the application. Please contact Senseair for further information.

Note 4: Configurable, contact Senseair for information about possible configurations.

Note 5: 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.

