Datasheet

GSS
Gas Sensing Solutions

CozIR®-Blink

Advanced CO2 Sensor

- Measurement range: 0-2000ppm; 0-5000ppm; 0-1%
- Battery applications
- Ultra low power - User Defineable
- Miniature
- Long lifetime

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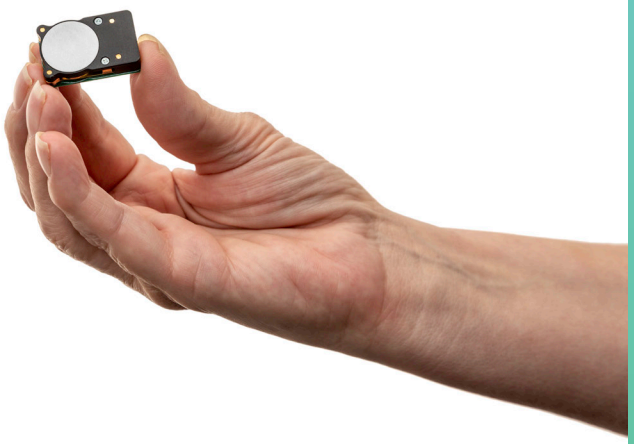


Overview

CozIR®-Blink is an ultra low power CO2 sensor - the lowest power and longest life NDIR CO2 sensor available today.

It's world-leading user configurable ultra low power consumption makes it ideal for battery powered systems, including portable, wearable and self-powered applications.

Designed for measuring low levels of CO2, this miniature, lightweight sensor offers easy integration into gas monitoring and detection systems.

CozIR®-Blink is built on our unique patented LED technology platform and optical designs. It's this solid-state technology that enables best-in-class power consumption, lifetime and durability.

Applications

CozIR®-Blink is designed for low concentration CO2 environments, with measurement ranges from 0-2000ppm, 0-5000ppm and 0-1%.

The sensor is highly suitable for battery applications, where low average power consumption is required which can be managed by the user. This includes IoT applications, such as 'smart homes' and 'smart cities'.

Examples of markets where CozIR®-Blink CO2 sensors are being successfully used:

- **Indoor air quality (IAQ)**
- **Building control**
- **Food packaging**
- **Automotive**
- **Safety**
- **HVAC**
- **Horticulture & agriculture**
- **Instrumentation**
- **Aerospace**

Benefits

- Zero current consumption between measurements
- Ideal for very low power and battery applications
- Ultra low power - can be configured by the user
- Low maintenance
- Fits neatly inside compact instruments
- Suitable for wireless, portable, wearable and self-powered systems
- Ideal for integration into IAQ units which are battery-powered and wirelessly enabled
- Supports energy-efficient 'smart homes'

Features

- Very low power/energy consumption - <31mJ
- Measures up to 1% CO2 concentration
- >15 years lifetime
- Miniature format
- Solid-state - no moving parts, no heated filaments
- Vibration and shock resistant
- Non-heating
- Self-calibrating[1]
- Digital (UART) and I^2C Output
- RoHS compliant
- Manufactured in the UK
- Meets performance requirements for Title 24 compliance

MANUFACTURED IN THE UK

CERTIFIED ISO 9001:2015 COMPANY

RoHS

General performance

Time to valid measurement	<3.5s to measurement based on standard settings
Operating conditions-Temperature	0°C to 50°C (standard)
Operating conditions-Humidity[3]	0 to 95% RH, non-condensing
Recommended storage	-30°C to +70°C

CO2 measurement

Sensing method	Patented Solid-state Non-Dispersive InfraRed (NDIR) absorption Solid-state LED and detector Gold-plated optics
Sample method	Diffusion
Measurement range	0-2000ppm 0-5000ppm 0-1%
Accuracy[4]	± (45ppm+3% of reading)
Calibration	Autocalibration[5]
Pressure dependence[6]	0.15% of reading per mbar in normal atmospheric conditions
Operating pressure range[7]	500mbar – 10 bar
Response time (to a step change in gas level)[8]	30 secs - 3 mins

Electrical

Power input[9]	3.25 to 5.5V. (3.3V recommended) At standard setting, 32mJ per measurement
Power consumption[9]	User driven dependent on samples per measurement and time between measurements. Sensor in power cycled mode consumes no power between measurements
Connector	2 x 6-way 1.27mm header

Dimensions/weight

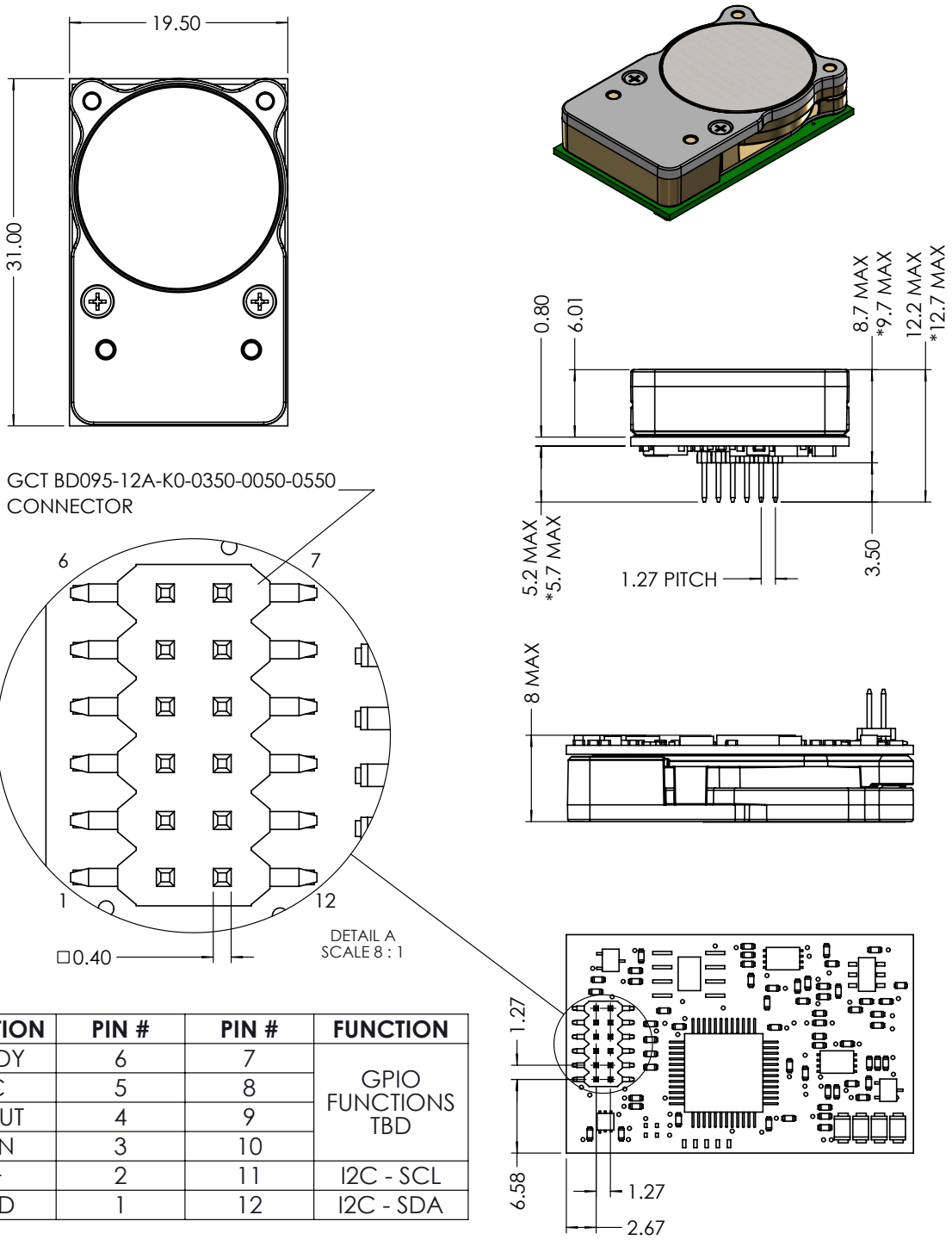
Length	31mm
Width	19.5mm
Height[10]	8mm
Weight	5g

Warranty

Sensor warranty[11]	1 year

1 Autocalibration can be enabled on BLINK and can be configured to a number of sensor operation cycles. . For further details, please request our User manual for BLINK or contact the team
2 Time to a valid reading is determined by the number of readings taken by the sensor. This can be varied from 1 to 32 by the user. The factory default is 16. Details of this can be found in the User Manual.
3 For extended operation in high temperature and humidity environments, contact GSS
4 All measurements are at NTP unless stated otherwise.
5 For correct operation, the sensor must experience CO2 concentrations close to fresh air during an 8 day period. For further details, please contact us to request our application note on Autocalibration. Or the user manual
6 Calibrated for 1013mbar. External pressure calibration required but our sensors have been tested up to 40 bar.
7 GSS can supply advanced pressure correction advice when operating outside normal atmospheric conditions.
8 Response time to a step change in gas level is dependent on application/filter/flow rate/diffusion.
9 Energy measurements for standard CO2 sensor with 16 readings per measurement
10 Excludes height of connector pins.
11 Gas Sensing Solutions Ltd (GSS Ltd) offers a limited one (1) year manufacturer's warranty on its products commencing from the date of original purchase. The warranty is limited to defects in materials and workmanship and does not cover damage or abnormal wear and tear resulting from abuse, misuse, or accidental damage. The warranty excludes operational damage due to exposure to blasts or other threats such as excessive abrasion or flames. Unauthorized repairs or alterations void the product warranty. GSS Ltd cannot and does not assume liability for defective products not manufactured or supplied by it even though such be used in conjunction with products manufactured by GSS Ltd.

Technical drawings



FUNCTION	PIN #	PIN #	FUNCTION
READY	6	7	GPIO FUNCTIONS TBD
NC	5	8	
Tx OUT	4	9	
Rx IN	3	10	
V+	2	11	I2C - SCL
GND	1	12	I2C - SDA

(* REPRESENTS PROTOTYPE SENOR ASSEMBLY DIMENSIONS.)

Technical support

The GSS team are specialists in CO2 sensor design, manufacture and customisation. We can advise how best to integrate our award-winning sensors into your product or process. Whether it's a fixed unit, portable instrument, wearable device, or energy harvester, our engineering team have the experience to help bring your project to life.

For more information about GSS and our technology, please visit our About page.

Custom sensors

If you need the sensor to be altered to your specific requirements, our engineering team can develop a custom solution for you. Please contact us to discuss your project requirements with our engineering department.

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