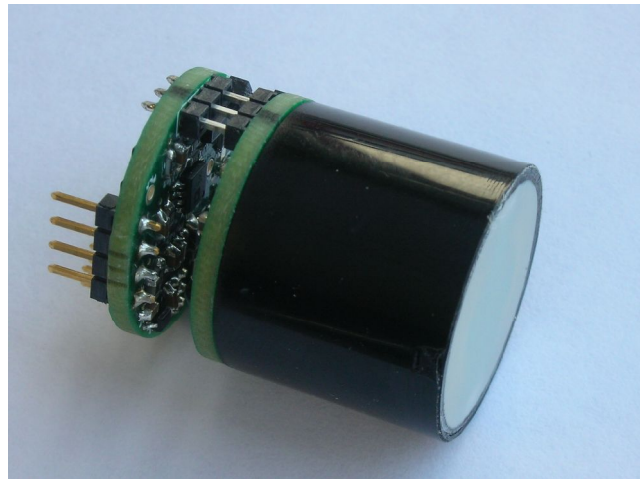


## **C20 Probe Data Sheet**

### Product Description

The C20 PROBE is a high performance, general purpose CO2 sensor. It has analogue and digital electronic interface options that provide a temperature compensated and linearised CO2 measurement over a wide sensing range from 200ppm to 100%, which can be customised to suit specific customer product requirements.

The C20 PROBE is used in a wide range of applications – processing industries, agriculture, re-breathers, laboratory and incubators, education, landfill monitoring, portable equipment, personal gas sensors and many more.



### Technology

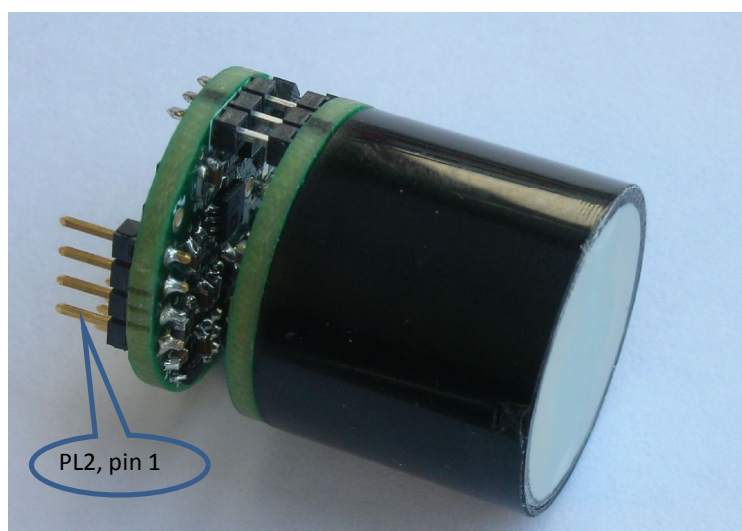
The GSS C20 PROBE sensor uses proven non-dispersive (NDIR) LED technology to detect and monitor the presence of carbon dioxide gas up to 100% volume. The patented technology utilises unique III-V solid state light emitting diodes and photodiodes, replacing high cost incandescent light sources and pyroelectric detectors used in standard NDIR sensors.

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### Connections & Dimensions

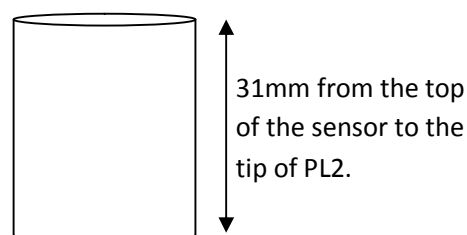
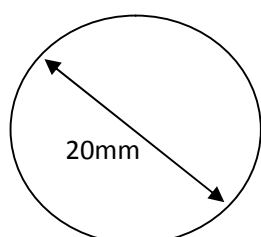
#### Connections – Digital

The C20 PROBE can be connected using the 4 way, 2.0 mm pitch pin header.



PL2 sensor connections	
Pin 1	+5V
Pin 2	Sensor Tx (o/p)
Pin 3	Sensor Rx (i/p)
Pin 4	0V

#### Dimensions



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## Features & Benefits

### Features

Real time sensing

Low power consumption – typically 100mW  
(Spec dependent)

High poison resistance & long term stability

Available from 3.3v to 5.5v

20mm package

### Benefits

Wide range of applications

Low cost High accuracy

Fully linearised temperature  
compensated output.

Low power consumption, suitable for  
battery and portable applications

## Applications

Modified Atmospheres

Indoor Air Quality

Stowaway Detection

Cellar & Gas Stores

Boats (Engine and Galley)

Greenhouses

Land Fill Gas

Confined Spaces

Refrigeration Plant

Domestic Boilers

Automotive

Tunnels

Mining

Combustion Control

In Vehicle Drowsiness

Classroom Monitoring

Incubators (Poultry)

Shipping Containers

Aircraft Atmospheres

Atmospheric Research

Diving Gas & Equipment

Cryogenics

Industrial Plant Rooms

Ventilation Management

Car Parks

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## Specifications

### *General Performance*

#### Warm-up Time

- < Two minutes (operational)
- 10 minutes (for maximum accuracy)

#### Operating Conditions

- -25°C to 55°C
- 0 to 95% RH, non-condensing

#### Recommended Storage

- -30°C to +70°C

### *CO2 Measurement*

#### Sensing Method

- Non-dispersive infrared (NDIR) absorption
- Gold-plated optics
- Patented Solid state source and detector

#### Sample Method

- Diffusion

#### Measurement Range

- 0%-5%, 0%-20%, 0%-65%, 0%-100%

#### Accuracy

- $\pm 50$  ppm  $\pm 5\%$  of reading<sup>1</sup>

#### Non Linearity

- < 1% of FS

#### Pressure Dependence

- 0.13% of reading per mm Hg

#### Operating Pressure Range

- 500mb to 40 bar<sup>2</sup>

#### Response Time

- 4 secs to 2 mins (user Configurable)<sup>3</sup>

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### *Electrical/Mechanical*

#### Power Input

- 3.3 to 3.6 Volt DC, <20mA average (220mA peak)
- 4.7 to 5.5 Volt DC, <20mA average (220mA peak)

#### Power Consumption

- < 100 mWatts average

#### Wiring Connections

- SAMTEC (TMM-104-02-G-S) 4 way pin header plug.  
The mating socket is a SAMTEC MMS-104-01-L-SV.

### *Temperature Measurement* <sup>4</sup>

#### Measurement Range

- -25 to +55 °C

#### Digital Resolution

- +/- 0.1 °C

#### Absolute accuracy

- +/- 2 °C

#### Relative accuracy

- +/- 0.2 °C

Note 1: Measure at STP.

Note 2: External Pressure calibration required.

Note 3: User Configurable Filter Response.

Note 4: Temp measurement is for indication only Non calibrated.

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