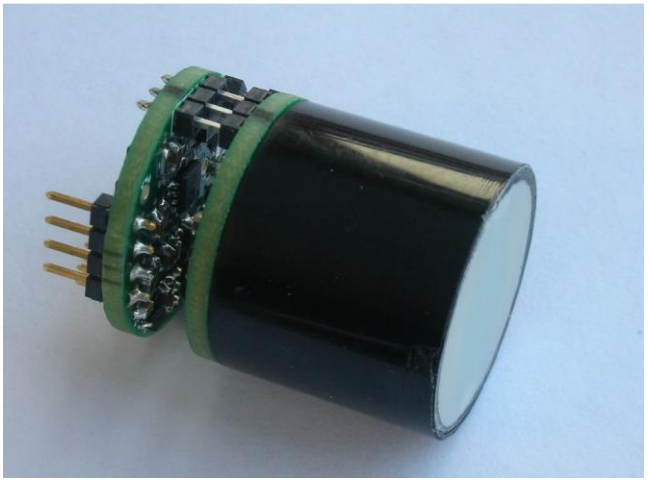
C20 Probe Data Sheet

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 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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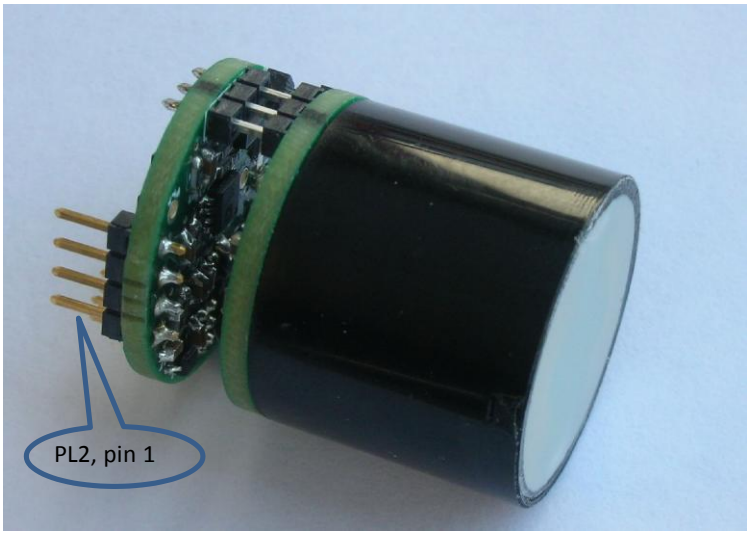
Connections & Dimensions

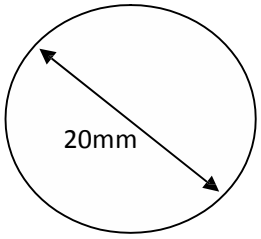
Connections – Digital

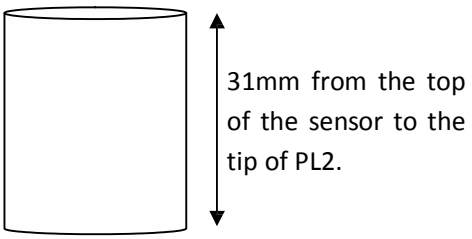
The C20 PROBE can be connected using the 4 way, 2.0 mm pitch pin header.



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

Dimensions





Features & Benefits

Features	Benefits
Real time sensing	Wide range of applications
Low power consumption – typically 100mW (Spec dependent)	Low cost High accuracy
High poison resistance & long term stability	Fully linearised temperature compensated output.
Available from 3.3v to 5.5v	Low power consumption, suitable for battery and portable applications
20mm package	

Applications

Modified Atmospheres	Combustion Control
Indoor Air Quality	In Vehicle Drowsiness
Stowaway Detection	Classroom Monitoring
Cellar & Gas Stores	Incubators (Poultry)
Boats (Engine and Galley)	Shipping Containers
Greenhouses	Aircraft Atmospheres
Land Fill Gas	Atmospheric Research
Confined Spaces	Diving Gas & Equipment
Refrigeration Plant	Cryogenics
Domestic Boilers	Industrial Plant Rooms
Automotive	Ventilation Management
Tunnels	Car Parks
Mining	

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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
- Solid state source and detector

Sample Method
- Diffusion

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

Accuracy
- ±50 ppm +/- 5% of reading [1]

Non Linearity
- < 1% of FS

Pressure Dependence
- 0.13% of reading per mm Hg

Operating Pressure Range
- 500mb to 40 bar[2]

Response Time
- 4 secs to 2 mins (user Configurable)[3]

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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 [4]

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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