

DATA SHEET

CO₂ Sensors

Fast Response Range—SprintIR-R



DESIGN • MANUFACTURE • CUSTOMISE • CONFIGURE

FEATURES

- High speed sensing - 50 Hz
- Sample volume - 2ml
- Low power/energy consumption - 100mW
- Measures up to 100% CO₂ concentration
- Solid-state - no moving parts, no heated filaments
- Vibration and shock resistant
- Digital (UART) output



Supply Voltage



Power Consumption



Operating Temp



Output Digital



Response Time



BENEFITS

- Rapid measurements - 50 measurements/second
- Very fast response (see graph page 2)
- Idea for low power & battery applications
- Suitable for wireless, portable, wearable & self-powered applications

CO₂ MEASUREMENT SPECIFICATIONS

Sensing method	Non-dispersive infrared (NDIR) absorption
Sample method	Flow through adaptor
Measurement range	0—5%, 0—20%, 0—100%
Accuracy ^b	± (70ppm+5% of reading) (100% range ± (300ppm +5% of reading))
Measurement noise	<10% of reading (no digital filtering)
Pressure dependence ^c	0.15% of reading per mbar in normal atmospheric conditions
Operating pressure range ^d	500mbar to 2 bar with flow through adaptor
Response time (a step to change in gas level) ^e	Flow rate dependant
Update rate	50Hz

TECHNICAL SPECIFICATIONS

Supply voltage	3.25—5.5V _{DC} (3.3V recommended)
Current	Peak Current 100mA Average Current <15mA
Power consumption ^a	100mW
Output type	3.3V TTL level UART
Temperature	
Operating:	0°C to +50°C (standard) -25°C to +55°C (extended)
Storage:	-30°C to +70°C
Humidity	0—95% Rh, non-condensing
Start-up time	< 30 seconds
Connector	4 x 0.5mm sq pins

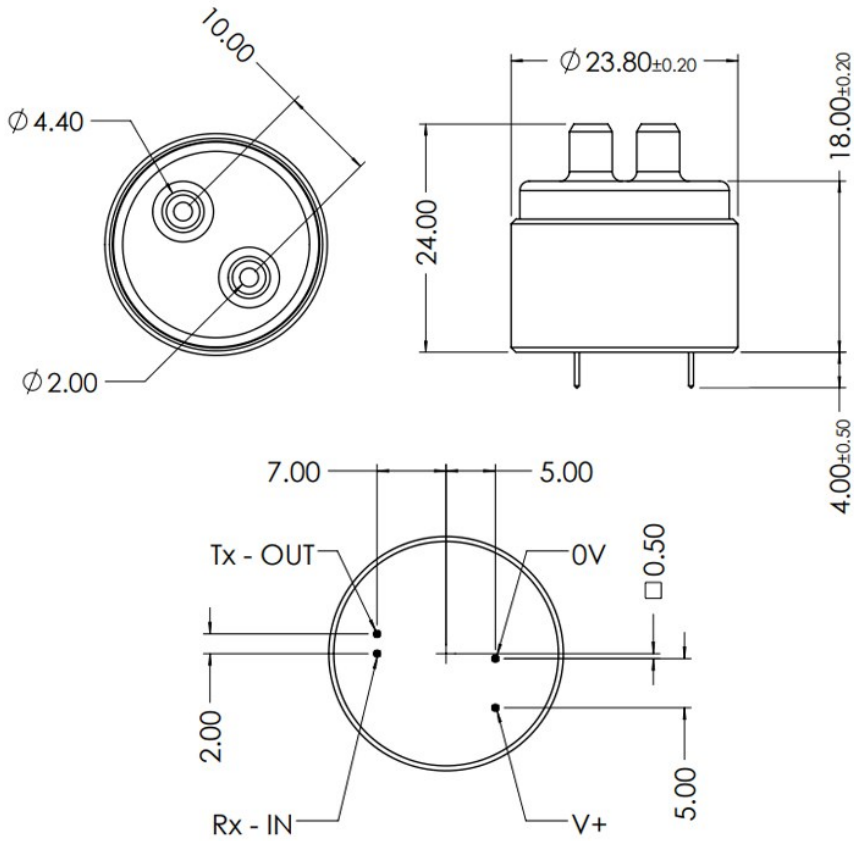
Need help? Ask the expert
Tel: + 44 (0)1236 459 020
and ask for "Technical"



NOTES

- Power measurements for standard CO₂ sensor with 50 readings per second.
- All measurements are at NTP unless otherwise stated.
- Calibrated for 1013mbar. External pressure calibration required.
- SST can supply advanced pressure correction advice when operating outside normal atmospheric conditions.
- Response time to a step change in gas level is dependent on application/filter/flow rate/diffusion.

OUTLINE DRAWING & ELECTRICAL CONNECTIONS



Pin	Designation
0V	GND Connection
V+	Positive Power Supply
Tx OUT	UART Tx from sensor
Rx IN	UART Rx to sensor used for configuration

ORDER INFORMATION

Generate your specific part number using the convention shown below. Use only the numbers that correspond to the sensor option you require — omit those you do not.

S P R I N T I R - R - X X X - F - X X X

Measurement Range	Evaluation Kit
5 0-5%	KIT*
20 0-20%	
60 0-60%	
100 0-100%	

NOTE: *Kit includes USB & Evaluation Software

 **CAUTION**

Do not exceed maximum ratings and ensure sensor(s) are operated in accordance with their requirements.
Carefully follow all wiring instructions. Incorrect wiring can cause permanent damage to the device.
Do NOT use chemical cleaning agents.

Failure to comply with these instructions may result in product damage.

 **INFORMATION**

As customer applications are outside of SST Sensing Ltd.'s control, the information provided is given without legal responsibility. Customers should test under their own conditions to ensure that the equipment is suitable for their intended application.

For technical assistance or advice, please email:
technical@sstsensing.com

General Note: SST Sensing Ltd. reserves the right to make changes to product specifications without notice or liability.
All information is subject to SST Sensing Ltd.'s own data and considered accurate at time of going to print.