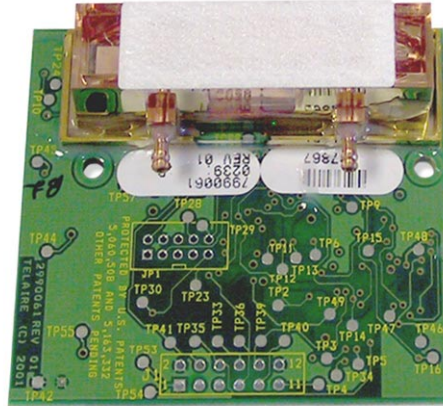


CO₂ OEM Module - 6004

Small, Compact CO₂ Module Designed to Integrate Into Existing Controls and Equipment.



The 6004 CO₂ Module is intended to be an add-on or integrated gas sensing component to compliment other microprocessor-based controls and equipment. The Module includes a gold-plated optical sensing element and necessary electronics to provide a calibrated digital or analog signal output. Its compact size (2" x 2.25" x 0.75") and low power consumption (<30mA) makes this an ideal add-on component to existing stationary or portable equipment. All units are shipped factory calibrated and ready for installation. Sampling method is flow through or diffusion and can be configured to measure ppm levels up to 5%.

Features/Benefits

- An economical gas sensing solution for OEMs who wish to integrate gas sensing into their product without investing in their own gas sensor development.
- Low cost CO₂ sensor engine is easily integrated into other microprocessor devices
- Includes Telaire's patented ABCLoGic™ software to eliminate the need for calibration in most applications.
- A reliable design based on 10 years of manufacturing compact, low cost infrared gas sensors.

This product is intended to be an OEM component targeted at users who are familiar with the design, integration and handling of electronic components. The minimum order quantity for this product is 25 units. Evaluation samples can be purchased in smaller quantities.

Specifications

Method

Non Dispersive Infrared (NDIR), gold plated optics, diffusion or flow through sampling (with Telaire's Patented ABC Logic™ Self Calibration Algorithm)

Measurement Range:

0-2000 ppm

Dimensions:

2.00" x 2.25" x .75"

Accuracy: *

@ 22°C (72°F) when compared against a certified factory reference ±40 ppm +3% of reading

Temperature Dependence:

0.2% FS per °C

Stability:

< 2% of FS over life of sensor (15 yr typical)

Non Linearity:

< 1% of FS

Pressure Dependence:

0.13% of reading per mm Hg

Calibration Interval:

Not required

Response Time:

< 2 minutes for 90% step change typical

Signal Update:

Every 2 seconds

Warm up time:

< 2 minutes (operational)
10 minutes (maximum accuracy)

Operating Conditions:

0 - 50°C (32 - 122°F)
0 - 95% RH, non condensing

Storage Conditions:

-40 - 70°C (-40 - 158°F)

Output:

Digital:

SPI/Microwire or UART @ 9600 Baud
(Please call for detailed protocol specifications)

Analog:

0 - 4 VDC

Power Supply Requirements:

5 VDC regulated (+/- 5%)

Power Consumption:

150 mA peak
30 mA average

Interface Connections:

Designed for 12 pin male header with 0.1" spacing. Header not included.

Flow Rates (via flow ports):

Diffusion version 80 - 120 cc/min
Flow through version 40 - 50 cc/min

Warranty Term:

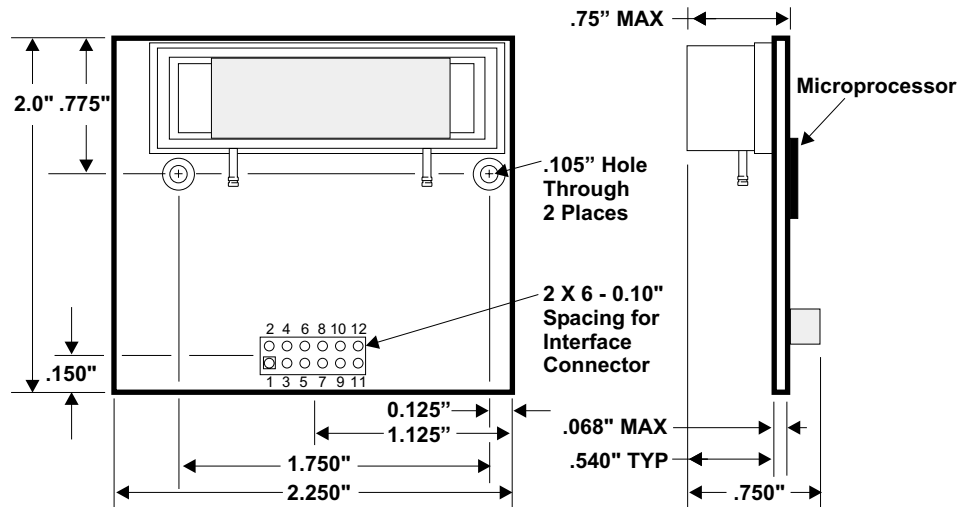
18 months

* Handling and OEM assembly may affect factory calibration. For best accuracy, modules should be zero calibrated once integrated into a product, prior to shipment. Specified accuracy is after re-zeroing process or 14 days of continuous operation with ABC Logic.

Automatic Background Logic, or ABC Logic, is a patented self-calibration technique that is designed to be used in applications where concentrations will drop to outside ambient conditions (approximately 400 ppm) at least 3 times in a 14 day period, typically during unoccupied periods.

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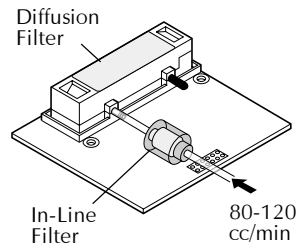
Board Layout and Component Specifications



Models and Calibration Configurations

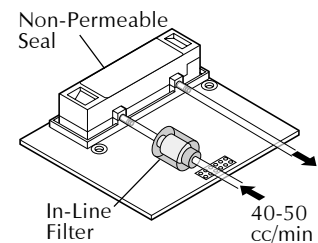
Module 6004 (Diffusion)

Air can be introduced to the sensor via the flow port and exit through the diffusion membrane (typical configuration for calibration). Flow rate of 80 to 120 cc/min required.



Module 6004-F (Flow Through)

The diffusion membrane is replaced with a non permeable seal. The two flow ports can be used for flow through sampling. Flow rate of 40 to 50 cc/min required.



Pin Designations

Pin	Function
1	+5VDC (input power)
2	GND
3	+5VDC test point NC (internal use only)
4	AVOUT (6004 only)
5	UB_ACK
6	SER_OUT
7	SER_CLK
8	SER_IN
9	UB_REQ
10	TDX (UART)
11	RDX (UART) / ACK (SPI)
12	GND

For applications that do not see periodic ambient conditions, ABCLogic™ can be turned off but a regular single point calibration of the sensor may be necessary. Contact Telaire for more detailed information on operating the Modules without ABCLogic™.

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It is our intention to keep the product information current and accurate. We can not cover specific applications or anticipate all requirements. All specifications are subject to change without notice. For more information or questions relative to this Specification Sheet, contact Telaire.

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