TELAIRE®

T3022 Series

IP65 CO_2 Sensor for OEM Installation



Designed to meet the needs of OEM manufacturers for low cost Carbon Dioxide (CO_2) sensor installations, the Telaire T3022 Series provides reliable and convenient CO_2 measurement in an IP65-rated enclosure. Compatible with other sensors in the Amphenol Advanced Sensors product portfolio, the T3022 easily integrates into environmental monitoring and control systems via I^2C serial communication protocols.

Applications

- Air-air heat exchanger volume control
- Residential demand-based ventilation
- Self-contained ventilation system control
- Accurate Carbon Dioxide (CO_2) Transmitter for HVAC control applications

Features

- An affordable gas sensing solution for OEMs
- A reliable sensor design based on 25 years of engineering and manufacturing expertise
- Flexible CO_2 sensor platform designed to interact with other microprocessor devices
- Eliminates the need for calibration in most applications with Telaire's patented ABC Logic™ software. Lifetime calibration warranty.
- Easy mounting with external tab
- Different calibrations available, subject to commercial consideration
- Extended operating temperature range
- Digital output
- Non-Dispersive Infrared (NDIR) measuring technology
- Sensors are shipped factory-calibrated
- IP65 ingress protection ensures reliable operation in harsh environments

Amphenol

Advanced Sensors

Telaire T3022 Series Specifications

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

Measurement Range
0 to 5000 ppm**

Overall Dimensions
60mm X 35mm X 15 mm (approx)

Accuracy
400-5000 ppm ± 75 ppm or 10% of reading, whichever is greater*

Temperature Dependence
0.2% FS per °C

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

Pressure Dependence
0.13% of reading per mm Hg

Calibration Interval
Not required

Response Time
7 minutes (approximate)

Signal Update
Every 4 seconds

Warm Up Time
- < 2 minutes (operational)
- 10 minutes (maximum accuracy)

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

Storage Conditions
-40°F to 158°F (-40°C to 70°C)

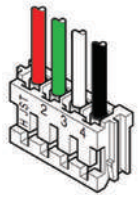
Output
I^2C Digital, see T6700 Series Application Guide for detail

Protection
IP65

Power Supply Requirements
4.5-5.5 VDC
Peak 200mA (155mA typical)
Average 25mA (20mA typical)

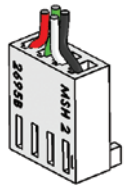
Pin Designations
JST EHR-4 connector
Mating PCB Connector JST B4B-EH-A or S4B-EH

1. V+
2. Ground
3. SDA
4. SCL



Molex 22-01-3047
PCB Connector Molex 171856-0004

1. SCL
2. SDA
3. Ground
4. V+



Warranty Terms
12 months

Compliance
REACH, ROSH and Prop65 compliance
Flammability rating of enclosure UL94 5VA

* Tolerance based on span gas of ±2%

** Subjecting sensors to environments less than 400 ppm for more than 15 minutes may affect accuracy due to ABC Logic™ algorithm.

Calibration 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 (400 ppm) at least three times in a 14 day period, typically during unoccupied periods.

*Full accuracy to be achieved utilizing ABC Logic. With ABC Logic enabled, the sensor will typically reach its operational accuracy after 25 hours of continuous operation at a condition that it was exposed to ambient reference levels of air at 400 ppm ±10 ppm CO_2. Sensor will maintain accuracy specifications with ABC Logic enabled, given that it is at least four times in 21 days exposed to the reference value and this reference value is the lowest concentration to which the sensor is exposed.

ABC Logic requires continuous operation of the sensor for periods of at least 24 hours.

Note: Applies when used in typical residential ambient air. Consult Amphenol Advanced Sensors if other gases or corrosive agents are part of the application environment.

Handling and Installation

The T3022 CO_2 OEM modules are infrared gas sensors on a printed circuit board and should be treated carefully.

Precautions should be taken to observe specified limits and prevent damage from electrostatic discharge or rough handling. Please refer to ANSI/ESD S20. 20-1999 for more information on preventing ESD damage and IPC 610 Rev D for more information on proper electronic assembly practices.

Calibration

Amphenol Advanced Sensors does not recommend the customer recalibrate the sensor after installation. The sensor ABC Logic algorithm will begin after 24 hours, adjusting the sensor measurement resulting in sensor-to-sensor consistency.

If immediate consistency is desired, the sensors may be single point calibrated using pre-mixed reference gas or ambient air measured by a reference sensor.

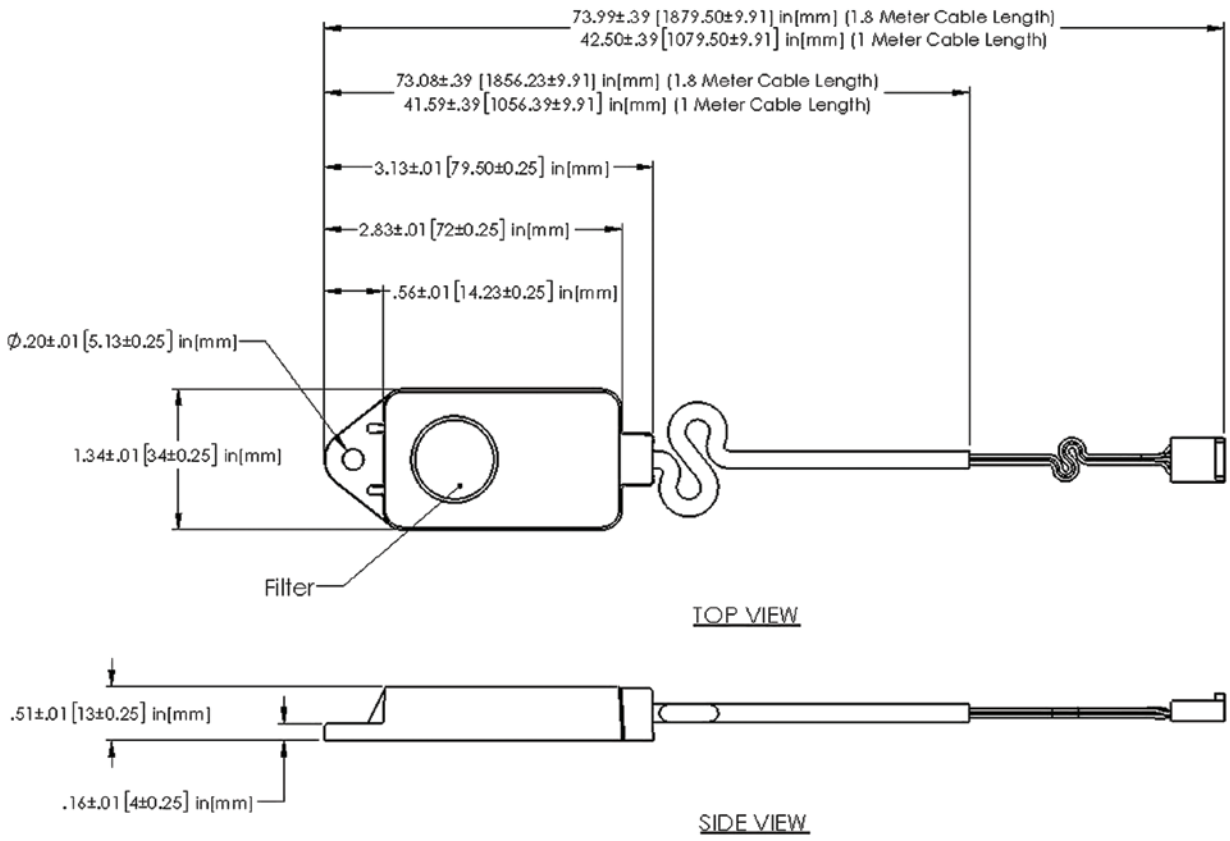
Ordering Information

Please discuss your specific needs with the Amphenol Advanced Sensors account management team as other configurations are possible; some combinations are already in production.

Derivatives include different outputs and different calibration levels.

Part Number	Output	Operating Voltage	
T3022-1-5K-5-1	I^2C Digital	5V	1.0m cable length, JST Connector
T3022-1-5K-5	I^2C Digital	5V	1.8m cable length, JST Connector
T3022-1-5K-1-MX	I^2C Digital	5V	1.0m cable length, Molex Connector

Telaire T3022 Series Dimensions



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