GE
Sensing

Features

- Low cost
- Reliable (15 years of low-cost infrared sensor manufacturing)
- Pre-calibrated
- Maintenance free (calibration maintained with patented ABC Logic)
- Low power consumption
- Low profile
- Three available outputs: UART, PWM or On/Off
- RoHS and WEEE compliant
- Flexible three-and five-pin configurations

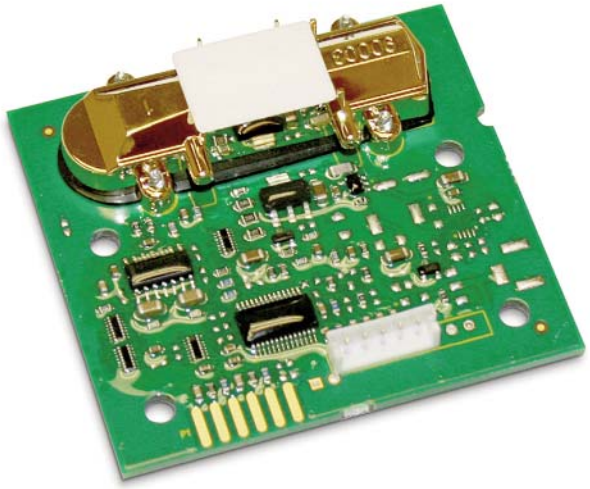
T6603-3/T6603-5 Safeaire Plus

The Telaire 6603 Series Safeaire Plus module is a low-cost CO_2 module designed to meet the volume, cost, and delivery expectations of Original Equipment Manufacturers (OEMs). The module is ideal for customers who are familiar with the design, integration, and handling of electronic components but do not wish to invest resources in their own development effort.

GE Sensing offers high-volume manufacturing capabilities for its Telaire products, a global sales force, and additional engineering resources to support your sensing application needs.

T6603-3/T6603-5 Safeaire® Plus

Telaire® Low-Cost NDIR Module for CO_2



T6603 Series is a Telaire product. Telaire has joined other GE high-technology sensing businesses under a new name–GE Sensing.

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T6603 Series Specifications

General Performance

Operating Temperature Range
41°F to 86°F (5°C to 30°C)

Storage Temperature Range
-4°F to 122°F (-20°C to 50°C)

Operating Humidity Range
0% – 100% non-condensing

Sensor Life
10 Years

General Performance

Power Input
5.0 ± 0.5 VDC

Average Current
<60 mA average

Peak Current
<150 mA

T6603-3 Connector (3-Pin)
JST B3B-EH-A(LF)

T6603-5 Connector (5-Pin)
JST B5B-EH-A(LF)

Reverse Polarity Protection
None

UART Levels
- Sensor UART RX
  - 0V to 3.3 V logic input
- Sensor UART TX
  - 0V to 3.3 V logic output
- Default UART Protocol
  - RS-232: 19.2 kbaud, no parity, 1 stop bit, no flow control

Open Collector Output

Open Collector to Sensor Ground
5 mA maximum

The Open Collector Output can be configured at the factory to be in either a PWM mode or a Threshold Detector mode.

Threshold Detector Output Mode (Default Values Given, Factory-Customizable)
- Threshold Set Point
  - 750 PPM CO_2 in air ±150 PPM CO_2 by volume
- Nominal Threshold Hysteresis
  - 100 PPM CO_2 by volume
- Polarity
  - High when greater than threshold

PWM Output Mode

Cycle Period
1004 ms ±5%

Cycle Start High Level
2 ms (nominal)

Mid-Cycle
1000 ms ±5%

Mid-Cycle High Level Duration
Measurement/full measurement range in seconds (continuous from high level at cycle start)

Cycle End Low Level
2 ms (nominal)

Measurement Parameters

Measurement Range
400-2000 ppm CO_2 by volume*

Resolution
20 ppm CO_2

Accuracy
±75 ppm CO_2 @ 68°F (20°C) when compared to a certified factory reference or 10% of reading, whichever is greater*

Temperature Dependence
±0.5 %FS per °C or ±0.275% FS per °F

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T6603 Series Specifications

Non-Linearity
<2% FS

Pressure Dependence
0.13% of reading per mm Hg

Response Time
<3 minutes for a 90% step change**

Warm Up Time
- <3 minutes operational
- <15 minutes full stability

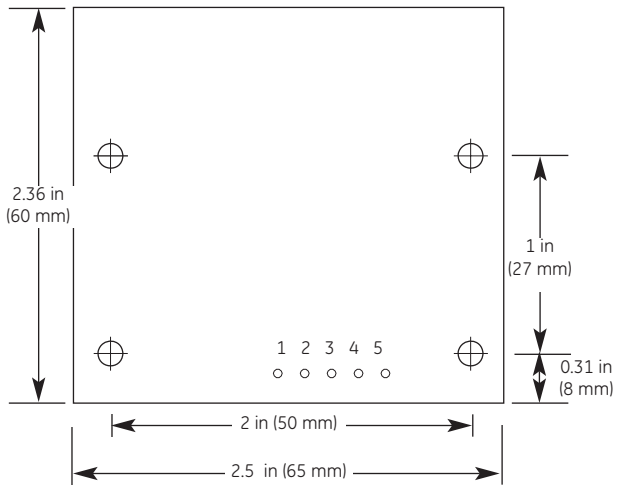
*Full accuracy to be achieved utilizing ABC Logic. With ABC Logic enabled, the sensor will typically reach its operational accuracy after 25 hours of continuous operation at a condition that it was exposed to ambient reference levels of air for at least 30 minutes. Sensor will maintain accuracy specifications with ABC Logic enabled, given that it is at least four times in 14 days exposed to 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 GE Sensing if other gases or corrosive agents are part of the application environment.

** The sensor will react slower to sudden CO_2 concentration changes with the rate higher than 3000 ppm/minute.

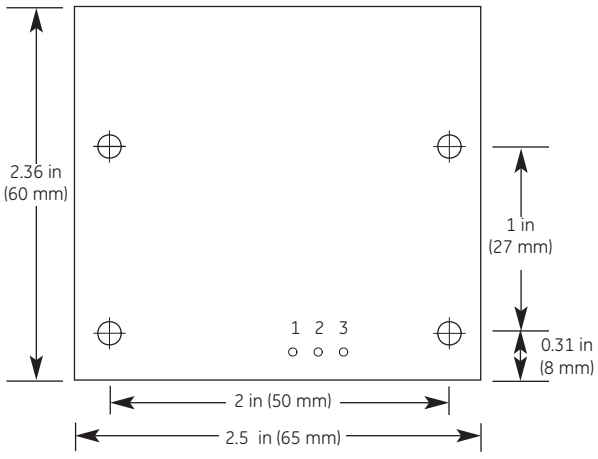
Printed Circuit Board Dimensions (T6603-5/T6603-3)

Hole diameter = 0.15 in (4 mm) (+0.2, -0.0 mm). Clearance diameter for stand-off = .20 in (5.2 mm)

T6603-5 (5-pin Connector)
Pin 1 → Sensor UART RX
Pin 2 → Sensor UART TX
Pin 3 → V+
Pin 4 → V-
Pin 5 → PWM or On/Off Output (software selectable)



T6603-3 (3-pin Connector)
Pin 1 → V+
Pin 2 → V-
Pin 3 → PWM or On/Off Output (software selectable)



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