# Product Data Sheet

**ELECTROCHEMICAL CO-4000CT SENSOR (3 SERIES) (PN: 051-3400-100)**

## • Description

This Carbon Monoxide (CO) gas sensor is designed as a replacement for a discontinued 3-series CO sensor produced by a major brand for monitoring and analysis of stack emissions or equivalent CO concentrations under harsh environmental conditions.

## • Performance Characteristics

| | |
|---|---|
| Nominal Range: | 0 ~ 4,000 ppm |
| Maximum Overload: | 20,000 ppm |
| Sensitivity (20°C): | 0.030 ± 0.006 μA/ppm |
| Response Time (T90): | ≤ 30 s |
| Zero Signal (20°C): | -3 ~ +10 ppm |
| Baseline Shift (-20°C ~ 50°C): | < 20 ppm |
| Resolution: | 1 ppm |
| Linearity: | Linear up to 4,000 ppm |
| Bias Voltage: | 0 mV |

## • Environmental

| | |
|---|---|
| Temperature Range: | -20°C ~ 50°C |
| Pressure Range: | 1 ± 0.1 atm |
| Humidity Range: | 15% ~ 90%RH non-condensing |

## • Life Time

| | |
|---|---|
| Long Time Output Drift: | < 2% signal/month |
| Recommended Storage Temp: | 10°C ~ 30°C |
| Expected Operating Life: | 3 years in clean air |
| Storage Life: | 6 months in original packaging |
| Warranty: | 12 months |

## • Intrinsic Safety Data

| | |
|---|---|
| Max. Current at 20,000ppm CO: | < 1 mA |
| Max. O/C Voltage: | 1.3 V |
| Max. S/C Current: | < 1.0 A |

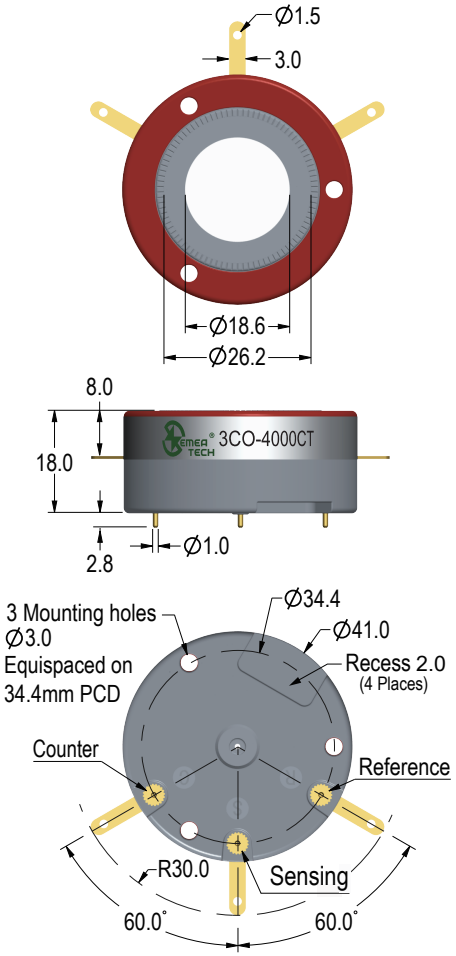
## • Physical Characteristics

| | |
|---|---|
| Housing Material: | ABS |
| Weight (Nominal): | 23 g |
| RoHS Compliance: | Yes |

## • Installation

Output signals from the sensor pins are different. Inappropriate use of the pins in product design will affect the sensor functionality. When plugging or unplugging the sensor, align it vertically with the socket to avoid tilting or applying excessive force. Exposure to high concentrations of solvent vapors should be avoided under any condition. Mechanical overstress may cause deformation or cracks of the plastic enclosure of the sensor. If the sensor is used in extreme environmental conditions, please contact us for more details.

## • Product Dimensions




All dimensions in mm
All tolerances ±0.20mm unless otherwise stated

## • Note

The performance data in this document are conducted by using SemeaTech recommended test circuitry and test environment at 20°C, 50%RH and 1 atm. Sensor performance varies under different environmental conditions. Please contact us if you need more details.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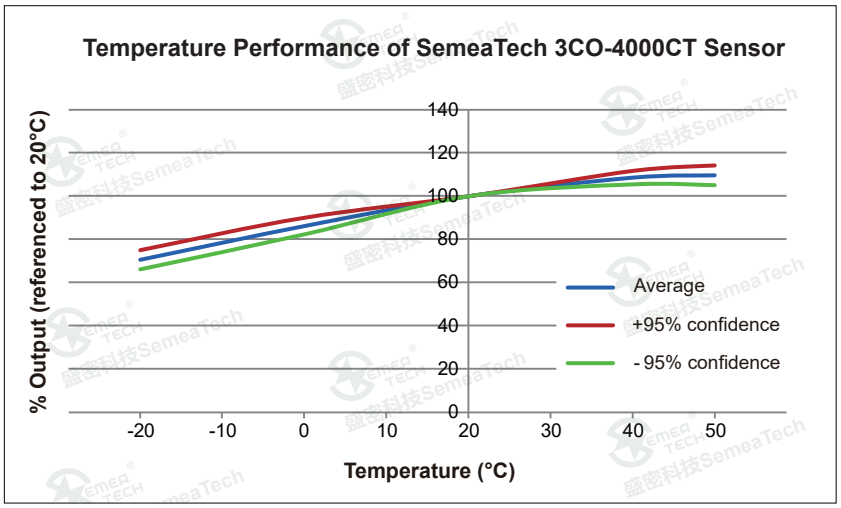
## • Cross-Sensitivity Data

| Gas | Concentration (ppm) | Output Signal (ppm CO equivalent) |
|---|---|---|
| Sulfur Dioxide | 100 | 3.4 |
| Nitrogen Dioxide | 90 | 2.8 |
| Nitric Oxide | 250 | 1.4 |
| Hydrogen | 200 | 121.4 |
| Hydrogen Chloride | 100 | 2.2 |
| Hydrogen Sulfide | 200 | 1.8 |
| Ethylene | 200 | 10.0 |

Note: The cross sensitivities include but not limited to the above gases. It may also respond to other gases. The data in the table above may vary from different batches of sensors and the changes of test environment. Calibration using the gases that have the cross sensitivities to this sensor is not recommended.

## • Temperature Data




## • Safety Note

This sensor is designed to be used in certain instruments for life critical applications. To ensure the sensor functions per its specifications inside the instrument, it is required to read the instrument user's guide carefully and comply with the calibration procedures by using certified target calibration gas before each use. Failure to do so may cause serious injury and fatality. Please do not open the sensor plastic enclosure because the electrolyte and other chemicals stored inside are harmful.

It is highly recommended for customers to validate the sensor performance using this document as a reference for their product designs or applications.

This product data sheet is used for reference only.

SemeaTech is committed to providing its customers the most accurate data based on its best knowledge. SemeaTech does not provide a product warranty for failures of using its products in accordance with product specifications that are described in the datasheet, or other misuses, abuse, negligence to the product.