



## Description

A new generation of intelligent Toxic Gas Detector, Model GQ-CE8900, which adopts the smart sensor technology and features a safety function automatically identifies and determines the remaining usage life of the sensor. This easy-to-use GQ-CE8900 also features the detection of different gas concentrations by simply replacing the sensor and re-calibrating accordingly. It also provides a real-time fault diagnosis to ensure safe and effective operations.

GQ-CE8900 can monitor toxic gases presence consistently and continuously in installation sites. This Toxic Gas Detector has a standard 4-20mA current output and three sets of Normally Open Contact relays for Warning/Alarm/Fault. These features make it easy for the detector to connect to various control units. In addition, there are dual redundant Modbus and HART communication interfaces for data transfer to PLC, DCS, PC, etc.

## Features

- Isolated safety barrier
- Event logging
- One person adjustment-free calibration
- 4-20 mA output
- Warning, Alarm and Fault Relays
- Sensor life indication
- Modbus and HART interface

## Applications

- Automotive Plating Processes, Engine Test Cells
- Agriculture – Fertilizer Production
- Chemical Plants, Refineries
- Food and Beverage
- Oil & Gas

## Intelligent Sensor For Toxic Gas Detection



## Benefits

- EC sensor employs hot-swapping technology for easy installation and cost saving
- Fault, gas check, calibration, and alarm event logging
- Magnetic-control method for easy calibration without opening the cover
- Industrial standard output for remote alarm and fault indications
- Provides the on-site alarm function
- Reduces maintenance time by providing remaining sensor life estimation
- Provides complete status and control functions to be realized in the control room

- Primary Metals Processing
- Pharmaceuticals
- Pulp and Paper
- Utilities
- Wastewater Treatment Plants

# MODEL GQ-CE8900

## System Specifications

**Sensor Type:** Electrochemical cell

**Measuring Ranges:**

Ammonia	0-50, 0-100,0-500 ppm
Carbon Monoxide	0-100, 0-500 ppm
Chlorine	0-10, 0-20 ppm
Ethylene oxide	0-20 ppm,0-30 ppm
Hydrogen Chloride	0-20,0-30 ppm
Hydrogen Cyanide	0-20,0-30 ppm
Hydrogen Sulfide	0-30, 0-50, 0-100 ppm
Oxygen	0-25% v/v
Ozone	0-1 ppm
Sulfur Dioxide	0-20 ppm

**Note:** Please consult Gasensor Technology Pte. Ltd. for other test gases and ranges.

**Accuracy:** ±2 ppm or ±5% of reading, whichever is greater for all gases, except +/- 5% of Full Scale for H2S (0-20 ppm) ±3% of FS for CO (0-500 ppm) , or ±5 ppm or ±5% of reading, whichever is greater for NH<sub>3</sub> or ±1% v/v for O<sub>2</sub>.

**Zero Drift:** < 5% per year

**Response Time:** (with 100% FS gas applied)

CO, HCN	T <sub>90</sub> < 30 s	H <sub>2</sub> S	T <sub>90</sub> < 25 s
O <sub>2</sub>	T <sub>90</sub> < 15 s	Cl <sub>2</sub> , NH <sub>3</sub>	T <sub>90</sub> < 30 s
SO <sub>2</sub>	T <sub>90</sub> < 20 s	C <sub>2</sub> H <sub>4</sub> O	T <sub>90</sub> < 30 s

**Electrical Classification:**

ATEX II 2G Ex db ib IIC T6 Gb IP66  
( Tamb = -40°C to +70°C )  
SIL2 Certified

**Warranty:** One year (cell), two years (electronics).

## Environmental Specifications

**Operating Temperature Range**

( for H<sub>2</sub>S ): -40°C to +50°C, -30°C to +70°C (optional)

( for O<sub>2</sub>, C<sub>2</sub>H<sub>4</sub>O, Cl<sub>2</sub> and SO<sub>2</sub> ): -20°C to + 50°C

( for CO ): -20°C to +50°C, -40°C to + 50°C (optional)

( for NH<sub>3</sub> ): -20°C to +40°C

**Note:** Please consult Gasensor Technology Pte. Ltd. for operating temperature of other sensors.

**Storage Temperature Range:**

**GQ-CE8900 ( Less EC Cell ):** -40°C to +85°C

**EC Cells:** 0°C to 20°C

**EC Cells (CO, H<sub>2</sub>, NH<sub>3</sub> & O<sub>2</sub>):** 16°C to 27°C

**Operating Humidity Range\*:**

15% to 90% RH, non-condensing

**Pressure Range:** Atmospheric ±10%

① Under HART, AO values can be either 3.5 mA or 1.25 mA, depending on user selection.

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Specifications subject to change without notice.

## Electrical Specifications

**Input Power:** 20-36 VDC , 3.5W max

**Analog Output:** 0-22 mA (500 Ω max. load)

0 mA ① Fault

1.5 mA ② Calibration

1.5 mA ② Setup mode

4-20 mA Detection range

21.5 mA Over-range

**Baud Rate:** 2400, 4800, 9600, or 19200 bps

**HART:** HART 7, HART Device Descriptor Language available. AMS Aware

**Relay Ratings:** 8 A @ 250 VAC / 8 A @30 VDC res.max

**(Optional)** (3x) SPDT - Warning, Alarm & Fault

**Status Indicators:** Three-digit LED display with gas concentration, FLT,RUN,Warn and Alarm LED's, calibration prompts, fault codes, and setup options

**EMC:** EN 50081-2, EN 50270

**Faults Monitored:** Calibration errors, data memory errors

## Mechanical Specifications

**Base Unit**

**Mounting Holes:**

3.86 in (98 mm) center to center

**Housing:** Aluminum alloy;

316 Stainless steel (optional)

**Weight:** 1.9 kg (Aluminum) / 4.8 kg (Stainless steel)

**Interface Module**

**Mounting:** 3/4" NPT

**Housing:** Anodized aluminum;

316 Stainless steel (optional)

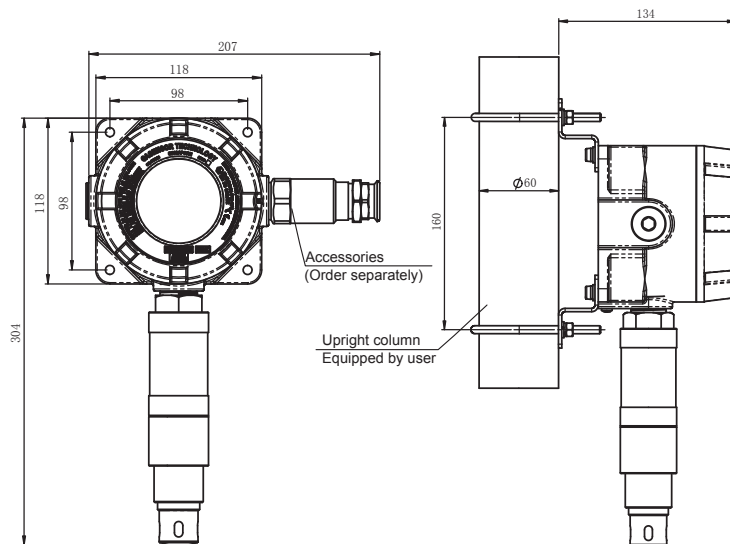


Figure 1: Outline and Mounting Dimensions

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