# Tongdy

## G09-CO Series

Carbon Monoxide Detector and Controller

Provide Modbus interface, analog output & dry contact outputs

◆ **Real time detect and monitoring carbon monoxide level**
◆ **Two stage alarm points for carbon monoxide measurement**
◆ **optional LCD display with three color backlight**
◆ **Provide up to 2x relay dry contact outputs and 1x analog output**
◆ **Modbus RS485 Interface**
◆ **High performance with more accuracy and longer life time of sensors**

## Features

◆ Design for real time detection and monitoring carbon dioxide and temperature. Humidity detection is optional

◆ Particular LCD display with three color backlit (Green/Yellow/Red)

◆ CO measurement range: 0~500ppm/0~1000ppm

◆ Electrochemical CO sensor with up to 5 years lift time

◆ Two stages alarm preset
Two alarm ways: buzzer alarm and backlight colours changeover

◆ Provide up to 2 relay dry contact outputs to control a fan and an alarm

◆ Provide 1X analog linear output (0~10VDC/ 4~20mA selectable) for the measurement

◆ Modbus RS–485 communication interface, 15 KV antistatic protection, individual IP address

◆ Replace the CO sensor by the end user available

◆ Provide two easy methods for calibration and setup alarm points by end users: infrared remote controller or a software via RS485

◆ Humidity measurement and display optional

◆ 24VAC/VDC power supply, also 230VAC power supply with a power adaptor

◆ For more applications with wall-mounted type and portable type

◆ Great performance with higher quality and lower price

## Application

G09-CO series is used to detect and monitoring indoor carbon monoxide and temperature, as well as optional humidity. With one analog output, the carbon monoxide measurement can be transmitted to a DDC/PLC or other system. Two dry contact outputs can control a fan and an alarm according with the preset set-points.
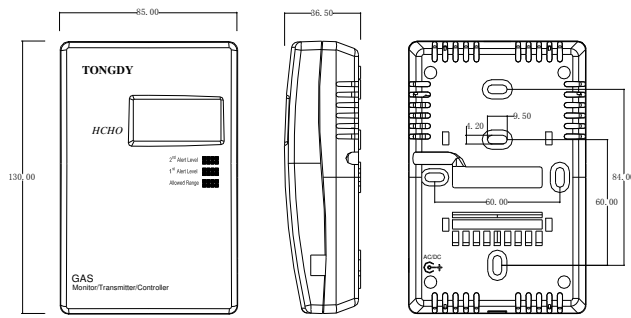
With the Modbus RS-485 communication interface, it can be connected with a DDC/PLC or other system.

◆ Residential and commercial carbon monoxide detection
◆ Ventilation control for indoor parking lots
◆ Vehicle carbon monoxide detection
◆ Kitchen rooms and restaurants
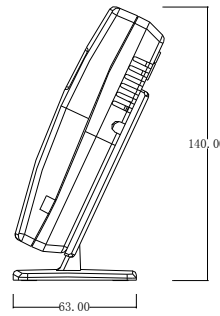◆ Freezing machine rooms and other places where air quality is easy to worsen

## Specifications

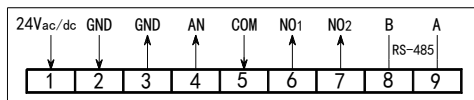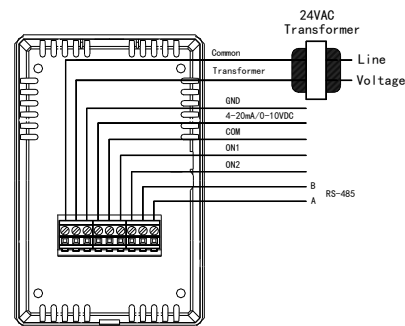| Sensors | |
| --- | --- |
| Gas Sensor | Electrochemical carbon monoxide sensor |
| Sensor lifetime | Up to 5 years, replaceable |
| Warm up time | 1hour (first time) |
| Response Time | Within 60 seconds |
| Signal Update | 1s |
| CO Measuring Range | 0~500ppm(default)/0~1000ppm    selectable |
| Accuracy | <1ppm (at 20±5℃/ 50±20%RH) |
| Stability | ±5% (over 900 days) |
| Temperature<br>Humidity Sensor | NTC5K<br>HS capacitive sensor |
| Temp./Humidity sensor accuracy | ±0.5℃ /±5%RH |
| Measurement range | -10℃~60℃ (14℉~140℉)/0~100%RH |
| **Electrical** | |
| Power Supply | 24VAC/VDC or 230VAC with the power adaptor selectable |
| Power Consumption | 2.8W |
| Wiring connections | 9 terminal blocks (max.) |
| Wiring Standard | Wire section area<1.5mm$^2$ |
| **Outputs** | |
| Analog Output | 0～10VDC or 4~20mA linear output selectable |
| Analog Output Resolution | 16Bit |
| Relay dry contact Output | Up to two dry-contact outputs<br>Max, switching current 3A (230VAC/30VDC), resistance Load |
| Modbus Interface | Modbus RS-485 with 19200bps(default), other rates selectable in the order. 15KV antistatic protection |
| **Conditions** | |
| Working Condition | -10℃~60℃ (14℉~140℉)/ 0~ 99% RH |
| Storage Conditions | -10℃～60℃ (14℉～140℉)/ 0~ 95% RH |
| LCD Display | Green-normally,<br>Yellow – first stage alarm,<br>Red- second stage alarm.<br>CO alarm points can be preset. |
| **Others** | |
| Net Weight | 190g |
| Dimensions | 130mm(H)×85mm(W)×36.5mm(D) |
| Installation Standard | 65mm×65mm or 85mmx85mm or 2"×4" wire box |
| Manufacturing Process | ISO 9001 Certified |
| Housing and IP class | PC/ABS fireproof plastic material, protection class: IP30 |
| Compliance | EMC Directive 89/336/EEC |

## Mounting and Wiring Diagrams



Wall mounting

Plane placement



Wiring diagram

## Modes Guide

### G09－CO－ABC1-Y

| | | |
|---|---|---|
| A－LCD | ( 2: with LCD, no humidity option, 3: with LCD and with humidity) | |
| B－analog output | (0: no analog output, 1: 0~10VDC output, 2: 4~20mA output) | |
| C－dry contact output | (0: no dry contact output, 1: 1Xdry contact output, 2: 2Xdry contact outputs) | |
| 1－Modbus RS485 | | |
| Y－CO range | (001: 0~100ppm, 002:0~200ppm, 005:0~500ppm, 010: 0~1000ppm) | |

Example: G09-CO-2021-005 indicates the CO detector with 2X on/off dry contact outputs and a Modbus RS485 interface,
and the CO range: 0-500ppm.

G09-CO-3101-010 indicates the CO detector with 1X 0~10VDC output and a Modbus RS485 interface, LCD
display. Humidity option.

CO range: 0-1000ppm.

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