

# **MACURCO GAS DETECTORS**

## **CS102A**

### **INSTALLATION AND OPERATING INSTRUCTIONS**

#### **GENERAL INFORMATION**

The CS102A is a low voltage (12 to 24 VAC or VDC,) real time Carbon Monoxide-to-voltage transducer. The unit has a linear output. See the Carbon Monoxide Transducers data sheet for more technical information.

#### **LOCATION**

The unit, on average, can cover about 5000 square feet (465 square meters,) but depends on the air movement in the room or facility. Extra detectors may be needed near any areas where people work or where the air is stagnant. Normally, the unit mounts about 5 feet (1.5 meters) above the floor, in a central area where air movement is generally good.

#### **INSTALLATION**

The CS102A sensors mount on and become the covers of type 4S electrical boxes. The front cover of the unit snaps off to allow access to the multi-hole mounting plate. Orient the unit so the information on the front reads normally.

The unit has a terminal strip labeled (A), (B), (C), and (D). Connect power to the (C) and (D) terminals. If you are using a Macurco control panel the power connections would correlate to the (C) and (D) input terminals of the panel.

For the CS102A output, connect to the (A) and (B) terminals ("A" is positive). If you are using a Macurco control panel the output connections would correlate to the (A) and (B) terminals of the panel. See the Carbon Monoxide Transducers data sheet for more information on wiring and technical information.

**NOTE: DO NOT LOAD THE CS102A OUTPUT WITH MORE THAN 10 mA.**

#### **OPERATION**

When power is first applied to the unit it goes through a warm up cycle that lasts one minute. The LED status light will flash from red to green, and the output will slowly step from 1.0 to 2.88 Vdc. After the warm-up cycle, the status LED will turn-on steady green indicating proper operation, and the output should be at 1.0 Vdc in clean air. The status LED should be green continuously, unless a power supply failure occurs. An internal push button switch (SW1) may be used to reset the detector, which will execute the one-minute warm up cycle.

If the unit is to be connected to a Macurco control panel, the output of the unit has already been configured to function with the panel. No adjustments are needed. If the unit is to be connected to a third party's panel or system, the scale factor used to convert the detector output to parts-per-million of CO must be set. Refer to the CS102A chart of output voltage versus ppm of CO on the Carbon Monoxide Transducers data sheet.

The CS102A trouble mode supervises the carbon monoxide sensor and other operating parameters. If a failure should occur, the status LED will turn amber and will flash on and off. The output voltage will go to about 3.5 Vdc.

#### **SENSOR POISONS**

The electro-chemical gas sensor is extremely sensitive to the ambient environment. As a result, sensor may deteriorate if it is exposed to a direct spray from aerosols such as paints, silicone vapors, etc., or to a high density of corrosive gases (such as hydrogen sulfide, sulfur dioxide) for an extended period of time.

#### **SERVICING OF UNIT**

The CS102A does not require regular maintenance, except for normal cleaning. The unit uses a self-purging electrochemical sensor that has a 2 to 5 year life expectancy. All maintenance and repair of products manufactured by Macurco are to be performed at the Macurco manufacturing facility. Macurco does not sanction any third-party repair facilities.

An optional calibration kit is available that includes canisters of 50 and 200 ppm of carbon monoxide. This kit can be used to test the CS102A after installation. Macurco recommends that the CS102A be recalibrated and cleaned yearly. Use the soft bristle attachment of a vacuum cleaner to remove accumulated dust from the unit.

#### **LIMITED WARRANTY**

The CS102A CO transducers are warranted to be free from defective material and workmanship for a period of two (2) years from the date of manufacture. If any component becomes defective during the warranty period, it will be replaced or repaired free of charge, if the unit is returned in accordance with the instructions below. This warranty does not apply to units that have been altered or had repair attempted, or that have been subjected to abuse, accidental or otherwise. The above warranty is in lieu of all other express warranties, obligations or liabilities. THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE ARE LIMITED TO A PERIOD OF TWO (2) YEARS FROM THE DATE OF MANUFACTURE. Macurco shall not be liable for any incidental or consequential damages for breach of this or any other warranty express or implied arising out of or related to the use of said gas detector. Manufacturer or its agents liability shall be limited to replacement or repair as set forth above. Buyer's sole and exclusive remedies are return of the goods and repayment of the price, or repair and replacement of non-conforming goods or parts. (The Uniform Commercial Code applicable in the State of Colorado shall govern.)

#### **RETURN INSTRUCTIONS**

Call (303) 781-4062 for a Return Authorization number. Then carefully pack the gas detector with a written description of the nature of the return. Send the unit to the following address:

**Macurco**  
**6555 South Kenton Street Suite 304**  
**Centennial, Colorado 80111**  
**WWW.MACURCO.COM**