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**Macurco Inc.**  
1504 W. 51<sup>st</sup> St  
Sioux Falls, SD 57105  
Attn: Jeffrey Christiansen

RESEARCH REPORT NO.: 930571  
Approval Date: September 23, 2022  
Approval Expires: September 23, 2023

**GENERAL APPROVAL** - Renewal – Stand-Alone Carbon Monoxide (CO) Detection Systems -  
Manufactured by Macurco Inc. (CO) Sensor Model “CM-6” - Rated 24VAC, 60HZ, 5VA energized by a UL  
listed, Class 2 Rated, Power Supply (Altronix – AL600ULPD4CB or – AL1024ULXPD4CB) - (CO) Sensor  
Model “CM12” – Rated 120VAC, 1ph, 60HZ, 1A Max

**DETAILS**

This approval is for fire, shock, and electrical hazards only and does not address those aspects of  
detection of gases the device is designed or calibrated to detect.

**CONDITIONS OF APPROVAL**

The installation and use of the CO detection system is approved when the following provisions are met:

1. The stand-alone Carbon Monoxide Sensors, CM 6 and/or CM 12 shall be plainly and permanently marked in letter heights not smaller than 1/8 inch on a contrasting background where readily visible with the following:
  - a. Manufacturer's name, *(Macurco Inc.)*
  - b. Model designation, *(CM- XX)*
  - c. Serial Number,
  - d. Electrical rating, in Volts, Amperes and Frequency, *(\_\_\_V, \_\_\_Amp, \_\_\_HZ)*
  - e. “NOT SUITABLE FOR HAZARDOUS LOCATIONS”,
  - f. “For Carbon Monoxide Detection Only.”,
  - g. “For use with Altronix Class 2 Rated Outputs”,  
*(CM6 sensors Only, See models on general approval section above)*
  - h. “For Indoor / Dry Installations ONLY.”,
  - i. “This CO Sensor must be replaced within 10 years of the manufactured date.”
  - j. “The installation of this CO detection system shall be based on the conditions of approval listed in Research Report number 930571. Not valid if RR is not current. For a copy of the RR visit [www.LADBS.org](http://www.LADBS.org) or call 213-482-6721.”

2. The final installation of this Carbon Monoxide detection system shall comply with requirements of "Class 1" wiring methods and in approved raceways or conduits per the National Electrical Code.
3. This CO detection system shall be installed, calibrated, and maintained by qualified personnel in accordance with the manufacturer's instructions and shall comply with the applicable provisions of the Los Angeles City Codes (Building, Electrical, Mechanical and Fire).
4. Plans for the installation of the CO detection system shall be submitted to and approved by the *Mechanical Plan Check* and the *Electrical Plan Check* prior to each installation.
5. The performance and sensitivity of the carbon monoxide detection system must be evaluated, tested by an approved recognized (NRTL) testing agency.
6. An electrical permit shall be obtained prior to installation or relocation of this equipment in the City of Los Angeles.
7. Primary and Secondary conductors shall be rated for the highest voltage present and conductors shall be approved and listed by a City of Los Angeles approved electrical testing laboratory.
8. The installation and performance of this CO detection system shall comply with the applicable provisions of the Los Angeles City Codes (Building, Electrical, Mechanical & Fire) and California Title-24 Part 6.
9. The maximum allowable concentration level of the Carbon Monoxide shall be in compliance with the requirements of California Title-24 Part 6 and OSHA-recommended limits.
10. The audible device shall have a different tone from life safety devices.
11. This CO detection system shall be serviced by qualified personnel at least once a year and it shall always be in optimum operating condition. The owner shall maintain all service records and make them available to the Department of Building and Safety for inspection when requested.
12. A part, when replaced, shall be of the identical original approved manufactured part and rating, unless otherwise approved by the Los Angeles City Electrical Testing Laboratory.
13. This approval shall be void if the product is modified without prior authorization from the Los Angeles City Electrical Testing Laboratory.
14. A copy of this conditional approval letter and the electrical permit shall be made available at each installation site.
15. The final installation of this system shall comply with all the local and national codes.

## DISCUSSION

The product covered in this Research Report is a *Carbon Monoxide (CO) Detection System* for use in non-hazardous locations such as commercial buildings. This equipment monitors the concentration level of carbon monoxide in the surrounding air.

When the CO level exceeds allowable values, set by California Title-24 Part 6 and OSHA, the CO detection system, activates the building's ventilation system. If the concentration of CO rises above the recommended upper limits set by California Title-24 Part 6 and OSHA, an audible and visual alarm will be activated.

An on-board microcomputer supervises and verifies the operation of the system and displays the status to the indicator lights. If a malfunction occurs, the ventilation system is activated and a fault warning signal is activated.

When this system is installed in accordance with the provisions of this General Approval, it should meet the minimum safety standards of the Los Angeles City Electrical Code.

For this General Approval to be valid on any installation in the City of Los Angeles, an engineer or inspector of the Department of Building and Safety may make a determination that all conditions of the General Approval required to provide equivalency have been met.

This General Approval is in accordance with Section 93.0303 of the Electrical Code pertaining to "New Materials and Methods of Construction", and does not waive the requirements of the City of Los Angeles Building Code.

This General Approval is neither a product endorsement nor a certification of function or accuracy of the approved item.

## PICTURES:

APPROVED BY:



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CO Sensor, Model CM-6



CO Sensor, Model CM-12