

MACURCO GAS DETECTORS
AQC-12 AND AQC-21
INSTALLATION AND OPERATING INSTRUCTIONS
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NOTE: Although they do detect carbon monoxide (CO), the AQC-12 & 21 do **NOT** meet Underwriters Laboratories standards for residential CO detectors or OSHA standards for worker exposure to CO. Macurco manufactures other detectors that meet those requirements.

GENERAL INFORMATION

The AQC-12 & 21 are an all electronic field adjustable *air quality controller* (AQC). The units have status lights and a SPDT relay output (dry contact) that may be used to switch a variety of devices. Both units provide a cost-effective way to maintain a comfortable environment. Please see the AQC-12 & 21 data sheet for more technical information.

LOCATION

The AQC-12 & 21 normally mount at about five (5) feet above the floor or at normal breathing height. If there is a particular gas of concern that is lighter or heavier than air, the detector should be mounted higher or lower. If the room is large, space the detectors the same as smoke detectors: 30 foot centers, 900 square feet per detector. Extra detectors may be needed near any areas where people work or the air is stagnant (ex. corners of rooms).

INSTALLATION

The AQC-12 & 21 mount in and become the cover of a 4S electrical box, which is supplied by the installer. The AQC-12 has six, 6-inch long pigtail leads, to which wire nuts connect to the cables from the control panel or other devices. One **White** and the **Black** wire are for power: 120 Vac. The **Green** wire is a ground wire, which may not be needed, as the unit is double insulated. The relay connections are made through the blue, brown, and orange wires. **Blue** being common. **Brown** is the N.O. (normally open) contact and **Orange** the N.C. (normally closed) contact. The AQC-21 has two **Red** power wires, which connect to 12-24 Vac or Vdc. The relay connections are made through the blue, brown, and orange wires. **Blue** being common. **Brown** is the N.O. (normally open) contact and **Orange** the N.C. (normally closed) contact. The AQC-12 & 21 relays are dry contact. See the AQC-12 & 21 data sheet for detailed schematics on wiring and other technical information.

OPERATION

When power is first applied to the detector, it will go through a warm-up period of about two minutes. The unit has an internal delay that prevents fan actuation or alarms during the warm-up period. The green light will flash on and off during the two-minute delay period, and will glow brightly, continuously afterwards. This green light is also part of a supervisory circuit that monitors all critical functions of the detector. Should a problem occur, both lights will flash on and off and the relay will close to indicate a malfunction. You will need a small bladed type screwdriver to access the Sensitivity & Timer controls on the front & near the middle of the plastic case. The (S) control (Sensitivity) will need to be fine-tuned for each application. It also may need to be seasonally adjusted, as changes in the normal humidity will affect the AQC. Turn the (S) adjustment counter-clockwise until the red light starts to flash or the adjustment is at maximum. If the red light is flashing then turn it slightly clockwise until the flashing stops and the red light is on steady. This will put the unit at maximum sensitivity and give you a starting point. In the next several days turn the (S) control slightly up or down to maintain maximum sensitivity, adjust for the operating history (ex. fan run time), or adjust for maximum comfort. Set the (T) control (Timer) according to your requirements on how long you want the units relay to be actuated. The actuation requirement times will vary depending on the device connect to the AQC. The range of the timer is one minute when fully counter-clockwise, to ten minutes when fully clockwise.

TESTING

Once the unit is fully operational (the green light on steady) the unit can be tested. Test the unit by directing gas from an unlit butane cigarette lighter or smoke from a cigarette into the AQC near the red light. The red light will flash on and off, then turn on steady. All the time the red light is on, whether flashing or steady, the relay will be actuated. During the time that the red light is flashing on and off, the AQC is showing that the gases in the air exceed the threshold set by the (S) control. During the time the red light is on steady, the relay on-time is controlled by the timer (T) control. Once the air clears and the timer circuit times-out, the unit will automatically reset, the relay will de-activate and the red light will turn off.

STABILIZATION TIME

Although it will be fully operational within a few minutes of being first powered, the gas sensor in the AQC requires 4 to 7 days to reach its final operating point. The AQC is intended to be continuously powered.

ALARMS DUE TO NORMAL ACTIVITIES

Various common household or industrial cleaning agents, personal hygiene or toiletries contain fumes or vapors that can cause the AQC-12 or AQC-21 to produce an alarm or a fan actuation. Most aerosol spray cans contain propellants that are combustible gases that will be sensed by the AQC.

SENSOR POISONS

The gas-sensing tip in the detector is designed with extreme sensitivity to the environment. As a result, the sensing function of the tip may be deteriorated 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 AQC does not require regular maintenance. The unit uses a self-purging semi-conductor sensor that has a 7-10 year life expectancy. All maintenance and repair of products manufactured by Macurco, Inc. are to be performed at the Macurco manufacturing facility. Macurco does not sanction any third-party repair facilities. Any attempted repair of a Macurco product will void the products limited warranty.

LIMITED WARRANTY

The AQC-12 & AQC-21 gas detectors are warranted to be free from defective material and workmanship for a period of one (1) year from the date of installation. 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 ONE (1) YEAR FROM THE PURCHASE DATE.** 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 Inc.
3946 South Mariposa Street
Englewood, Colorado 80110
WWW.MACURCO.COM