

MACURCO GAS DETECTORS

4S1 GVC

INSTALLATION AND OPERATING INSTRUCTIONS:

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GENERAL INFORMATION

The 4S1 GVC is a latching gas valve controller that sounds an alarm and turns off one or more gas valves when gas is detected. The gas valve is not supplied by MACURCO and must be purchased separately. The gas valve must be of the normally closed type, that is then opened by the 4S1 GVC to allow gas to flow. See the data sheet for more technical information.

LOCATION

The 4S1-GVC should be spaced the same as smoke detectors. There should be one detector for every 900 square feet of space. In large installations, space them on 30-foot centers. Locate the detector in the area where a gas leak and accumulation is most likely to occur. Choose a location for a 4S1 GVC near each appliance. If the gas used is propane, butane or LP—which are heavier than air—the unit should be mounted about 1 foot above the floor. If natural gas is used, which is lighter than air, mount the 4S1 GVC one foot down from the ceiling. **Do not mount the unit in a corner.** Consult your local building inspector for the location of the gas valve. Usually it is located outside the building.

INSTALLATION

NOTE: Use this 4S1 GVC with a separate gas valve, not a valve that is part of a furnace or other appliance. It is also suggested to use a separate transformer.

Determine the size of transformer (in VA) to supply the gas valve requirements. The 1.5 VA needed by the 4S1 GVC is probably negligible. The 4S1 GVC has a 4 amp fuse, so it can provide about 96 VA to the gas valve. The fuse may be replaced with up to a 6 amp, fast blow type 3AG or AGC, if the unit is to control two or more gas valves. At the desired location, start a #6 or #8 sheet metal screw of adequate length. Turn the screw into the wall or duct until only 1/4 inch of the screw protrudes. Note the keyhole shaped mounting slot on the back of the 4S1 GVC. Slip the larger part of this mounting slot over the mounting screw head and allow the unit to settle down over the screw. The two conductor brown cord connects to the gas valve while the two conductor white cord connects to the 24V transformer. **Connect the brown cord to the valve first, then the white cord to the transformer.** There is not a polarity preference for either pair.

OPERATION

The 4S1 GVC alarms at about 0.2% of propane by volume in air. This is about 10% of the lower explosive level (LEL) that a mixture of propane and air is explosive. The alarm point for methane (natural) gas will vary from unit to unit, but will be near 10% of LEL. When power is first applied to the 4S1 GVC, the green light will turn on and off and the buzzer can not sound for about two minutes, while the unit goes through a self-timed warm-up cycle. The power to the gas valve will be on at this time. After the two-minute cycle, the green light will be on steady to indicate the unit is operational. A visual check of the 4S1 GVC for the bright green light should be performed regularly. The presence of the steady green light and a lack of the trouble signal indicate the system is operating properly, with power to the gas valve. Any time the buzzer sounds continuously, the detector has dropped power to the gas valve and the valve should close stopping gas flow. To reset the unit, the black switch on the front of the unit must be pressed or power dropped.

TESTING THE SYSTEM

The system should be tested after installation. Use an un-lighted butane cigarette lighter and direct gas into the 4S1 GVC near the green light. The buzzer will emit a loud, continuous sound and the gas valve will shut off. Allow the air to clear for 15 to 20 seconds and then push the black reset button. This will shut off the buzzer and reactivate the gas valve.

TROUBLE SIGNAL

Should the buzzer sound intermittently, with a short beep about every second, and the green light is off, a trouble condition exists. One of two things can cause a trouble signal: a blown fuse (most likely) or a defect in the gas sensing circuits. There is a fuse inside the unit to protect the 4S1 GVC from shorts in the wiring to the gas valve. To get access to the fuse, remove the four screws in the cover of the 4S1 GVC. The fuse is a 4 Amp, automotive type (1/4 by 1 1/4 inch) fast blow fuse. Replace it with the same type, after checking the wiring to the gas valve for shorts. **WARNING:** Your warranty is void if any other fuse size or type is used. If the fuse is good, and the trouble signal continues, the 4S1 GVC should be replaced and returned for service.

ALARMS DUE TO NORMAL HOME ACTIVITIES

Various common household products, such as cleaning agents and aerosol spray cans, contain fumes or vapors that can cause the 4S1 GVC to alarm. A backed up furnace flue or fumes from an engine can cause alarms. The following can also cause alarms: Alcohol, Butane, Gasoline, Hydrogen (from batteries), Kerosene, LP Gas, Propane, Natural Gas (Methane). When an alarm occurs during the day, when normal activities can produce fumes, do not panic; rather try and locate the source. **HOWEVER, DURING THE NIGHT WHEN THERE IS NOT NORMAL ACTIVITY TO PRODUCE FUMES, ALL ALARMS MUST BE TREATED AS POTENTIAL EMERGENCIES.**

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 4S1-GVC 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.

LIMITED WARRANTY

The 4S1-GVC 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