

## SHORT GUIDE FOR GAS-RANGER DETECTORS™

This card is not a substitute for the Operating Manual. Personnel who use this instrument must first read and understand the manual in its entirety.

### OPERATIONAL CHECKS

**Pump Test:** Select a scale and after the display shows a number, block the probe tip to display “*bloc*” (see Troubleshooting).

**WARNING:** *Do not use the detector if “bloc” fails to appear.*

**Zero Test:** If the detector does not read zero for gas and CO and 21% for oxygen in clean air, use AUTO ZERO and wait for “END” before using it (see Troubleshooting).

**WARNING:** *On a gas call, AUTO ZERO outdoors, never indoors.*

**Bump Gas Test:** Sample “2 in 1” bump gas on the GAS scale for about 10 seconds. The display should show more than zero. Repeat with the CO scale.

**WARNING:** *If the detector does not respond, check operation and recalibrate.*

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### OPERATION

To **Locate a Gas Leak:** Select TRACK GAS and listen to the beeper or read display to track gas to its source. To zero TRACK GAS, press RESET. To silence the beeper, press RESET while switching from %GAS to TRACK GAS.

To **Measure Gas in a Bar Hole:** Select %GAS and, if necessary, AUTO ZERO. Press RESET to display “*go*”. Put the probe in the bar hole and press RESET again to sample gas for a fixed period. At the end of this time, the detector will beep and the peak and sustained readings will be displayed. Press RESET to return to %GAS readings.

To **Detect CO in Air:** Select PPM CO and, if necessary AUTO ZERO. Sample a location for at least 30 seconds. If the air has “chemical” odors, use the flue gas probe and filter to get a better reading.

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### MAINTENANCE

**Batteries:** When “Lo” flashes between readings, change the batteries soon.

**WARNING:** *Always change batteries in a non-hazardous location.*

**Filter Check:** Inspect the dust and water-block filter and shake out loose dirt. If the filter is substantially discolored or has a hole in it, replace it.

**WARNING:** *Do not use a detector without a proper filter.*

**Automatic Calibration:** First AUTO ZERO in clean air. After “END”, block the probe to display “*bloc*”. Unblock to display “*go*” and sample calibration gas (2.5% methane, 100 ppm CO) until “CAL” appears on the display.

**WARNING:** *Do not use a detector which fails calibration.*

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## ALARMS

All gases detected by a particular instrument are monitored continuously for any choice of display. If any gas exceeds a preset concentration, an alarm sounds and the symbol for the gas flashes on the display in-between readings. Visual alarm symbols are "GAS" for natural gas, "CO" for carbon monoxide and "LoO2" or "HiO2" for low or high oxygen.

**WARNING:** *A detector responds to gases for which it was designed. Other toxic or dangerous gases may not be detected.*

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### TROUBLESHOOTING THE GAS-RANGER DETECTOR

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Problem	Probable Cause	Action
Display is blank or "Lo" is displayed.	Batteries are low, one is bad or, wrongly inserted.	Re-insert batteries with flat end first or replace them.
Display shows "bloc".	The intake of the instrument is blocked.	Drain the probe and, if necessary, replace the water-block filter.
The display does not show "bloc" when the probe tip is blocked.	A leak between the probe tip and the pump, or the pump is dirty.	Disconnect the hose and block intake. If "bloc" still does not appear, repair instrument.
Display shows "nogo" on AUTO ZERO.	Gas or CO is present.	Repeat in clean air after detector purge.
	The zero of a sensor has drifted.	Coarse zero in clean air (hold down RESET and switch out of and back into AUTO ZERO).
The display shows "FAIL".	A sensor (methane or oxygen) has failed.	Replace sensor(s).

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#### %LEL EQUIVALENT TO % METHANE

%LEL	equivalent to	%GAS
10%		0.5%
20%		1.0%
50%		2.5%
100%		5.0%

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#### POSSIBLE EFFECTS OF CARBON MONOXIDE

Time-weighted (8 hr.) limit in the workplace is 50 ppm and short term (15 min.) is 200 ppm. At 400 ppm, headache in 1-2 hrs., life-threatening after 3 hrs. Life-threatening time decreases as CO concentration increases (approximately 1 hr. at 1600 ppm, 30 min. at 3,200 ppm, less than 10 min. at 6,400 ppm.)