Start Up

WARNING

Perform these procedures in a fresh air environment (known to be free of combustible and toxic gases and consisting of normal oxygen content).

1. Press and release the ON/OFF button. Once **WARMUP COMPLETE** is shown, hold down ADJUST/ENTER to adjust the GT to “fresh air” readings (“**demand zero**”). Once **DONE. THANK YOU** is shown, release the button.

2. If applicable, verify that the display reads **000** in the %LEL/PPM, PPM H2S, and PPM CO fields, and **20.9** in the %OXY field. Any unused channel is blank (if applicable).

3. Confirm normal operation of the O_2 section. Breathe out over the probe until the display reaches 19.5, triggering the alarm.

4. Place the probe into the area to be monitored.

WARNING

Never “demand zero” in a non-fresh air environment.

Operation

In normal operation, your GT monitors the environment and displays current gas or oxygen concentrations. You can use the BACK LITE/- button in dimly-lit or dark monitoring areas.

Operator Indications and Suggested Actions

When conditions cause the GT to reach a preset warn or alarm level, the condition is sensed, and your GT alerts you. Descriptions of common indications, probable (or possible) cause(s), and recommended actions are covered in this section.

CAUTION

Always follow established procedures for an alarm condition. If procedures do not exist, please establish an appropriate plan of action.

Warn Indication

A warn indication occurs when a preset warn level is reached.

Visual/audible indications: The reading of the applicable channel blinks, and the word WARN is shown. The red LED blinks. The buzzer sounds in an even, slow pulsing pattern.

Action: Follow established procedures. Your GT resets its alarms when normal gas levels return (if at the default **AutoReset** setting), or press RESET if at the optional **latch** setting.

ALWAYS determine the cause of any warn indication.

Alarm Indication

An alarm indication occurs if the gas concentration continues to increase (or decrease) to a preset alarm level.

Visual/audible indications: The reading of the channel in alarm blinks, and the word ALRM is shown. The red LED blinks. The buzzer sounds at a rapid rate.

Action: Follow established procedures. Your GT resets its alarms when normal gas levels return (if at the default **AutoReset** setting), or press RESET if at the optional **latch** setting.

ALWAYS determine the cause of any alarm indication.

Fail Indication

A fail indication occurs when a sensor or other circuitry no longer functions normally.

Visual/audible indications: The word FAIL is shown. The red LED is steady. The buzzer sounds continuously.

Possible causes: A sensor may be bad, or missing. A sensor connection may be loose. A downscale (-10% of full-scale or more) or upscale reading of 23.5 0_2 may be occurring. An internal circuit fault may have occurred.

Action: Remove the GT from the monitoring area. Investigate and determine the cause, then refer to the troubleshooting information in your Operator's Manual for specific instructions.

Low Flow Indication

A low flow indication occurs when normal flow is interrupted. The GT's pump automatically shuts off.

Visual/audible indications: The words PUMP OFF PRESS RESET are shown, and alternates with the main screen. The red LED is steady. The buzzer sounds in a long, pulsing pattern.

Possible causes: Liquid has been drawn into the probe, or an obstruction is present. An internal circuit fault may have occurred. A sensor may not be properly installed. The hydrophobic filter in the probe may be dirty.

Action: Clear away visible obstructions, then press RESET to restart the pump. If the problem remains, troubleshoot the probe, hose, or internal flow system for obstructions.

Low Battery Indication

A low battery indication occurs when the battery voltage drops below the battery alarm threshold.

Visual/audible indications: The words LOW BATTERY are shown. The red LED is steady. The buzzer sounds continuously. You cannot clear this display.

Probable cause: The batteries have reached the end of useful life.

Action: You must replace alkaline or recharge or replace Ni-Cd batteries before continuing. Refer to the procedures on this card.

Maintenance

Battery and sensor maintenance are explained below.

WARNING

Replace (or recharge) batteries or perform maintenance in a non-hazardous “FRESH AIR” environment only.

Replacing Alkaline or Ni-Cd Batteries

1. Loosen the battery compartment screw on the bottom of the GT. The screw remains captive in the cover.

2. Remove all batteries. Check that the slide switch between the batteries is set properly (ALK or NI-CAD).

3. Install 4 **new** D-size batteries, then reposition the cover and tighten the screw.

Recharging Ni-Cd Batteries

1. Verify that the voltage listed on the charger is the same as that of the AC outlet (115 or 220 V). Plug in the charger.

2. Plug the other end into the CHGR jack on the GT.

3. Verify that the charger’s amber light goes on. Allow the batteries to charge for at least 8 hours. Once the batteries are fully charged, the green light goes on. Please read the following note.

NOTE

The charger drops to a sustaining rate after 8 hours, when the batteries should be fully charged. If the charging cycle is interrupted and restarted, the fast rate runs for another 8 hours. Do not allow the charging period to last more than 40 hours.

Replacing Sensors

1. Locate the defective sensor on the flow block. Refer to the Operator's Manual for illustrations of sensor assignments.

2. Unplug the cable or disconnect the wires that run from the defective sensor to the interconnect PC board. Remember how the cable or wires were connected. **This is especially important for the LEL/ppm sensor.**

3. Using your fingers, tilt the sensor from side to side to loosen it, then pull it straight out of its assigned cavity.

4. Insert the new sensor into the cavity. Apply downward pressure on the sensor until it is firmly seated. Reconnect the cable or wires as before.

5. Close your GT, then recalibrate before using it again.

Specifications

Gases Detected	Combustibles (LEL)/hydrocarbons (ppm), oxygen (O_2), hydrogen sulfide (H_2S), carbon monoxide (CO), chlorine (Cl_2), ammonia (NH_3), or sulfer dioxide (SO_2)
Detection Ranges	0-100% LEL, 0-10,000 ppm, 0-30.0% O_2, 0-200 ppm H_2S, 0-300 ppm CO, 0-10.0 ppm Cl_2, 0-100 ppm NH_3, 0-10.0 ppm SO_2
Alarm Points (field-adjustable)	**LEL/ppm**: Warn 10% LEL or 1000 ppm, Alarm 50% LEL or 5000 ppm **O_2**: Warn 23.5% O_2 (increasing), Alarm 19.5% O_2 (decreasing) **H_2S**: Warn 10 ppm, Alarm 15 ppm **CO**: Warn 25 ppm, Alarm 200 ppm **Cl_2**: Warn 0.5 ppm, Alarm 1.0 ppm **NH_3**: Warn 25 ppm, Alarm 35 ppm **SO_2**: Warn 2.0 ppm, Alarm 5.0 ppm
Power Source	4 D-size batteries (alkaline or Ni-Cd)
Battery Life	Alkaline or Ni-Cd: 10 hours minimum @ 68º F (20°C)
Temperature Range	-4º F (-20°C) to 113º F (45°C)
Humidity Range	0 to 95% relative humidity (RH)
Intrinsically Safe	Class I, Division 1, Groups A, B, C, D

CAUTION

This quick reference card does not adequately replace your operator's manual. Refer to the manual for detailed information, or for other indications not covered on this card, such as TWA, PEAK, and STEL, and all other functions.

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