

OMNI-4000 Training

I. General

- A. **Display** (16 character, two line LCD)
 - 1. Concentration always displayed, unit and gas alternate (10 CO then 10 ppm, 20.9 O2 then 20.9 %, etc...)
 - 2. Alternates between gases
 - 3. Alternates in menus
- B. **Visual Alarm** (front of enclosure)
 - 1. General LEDs on either side of display
 - 2. Individual LEDs for each gas
- C. **Audio Alarm** (top of enclosure)
- D. **Operation Buttons**
 - 1. **ON/OFF** (Turns instrument on/off)
 - 2. **ENTER/Horn off** (Acknowledges an operation or silences audio alarm)
 - 3. **@/Backlight** (takes over → in a menu or turns backlight on)
 - 4. **-/Menu** (takes up ↑ in a menu)
- E. **Location of sensors** (top of enclosure)

II. Turn instrument on (press **ON/OFF** button, hold for a second, and release).

- A. LEDs come on and audio alarm beeps.
- B. Instrument performs a self-test for approximately 10-30 seconds.
- C. After test, display begins to alternate gas readings.
- D. Confidence chirp every 60 seconds.
- E. To turn instrument off, press and hold the **ON/OFF** button for 3 seconds, display counts down.

III. Combustible Gas Display

The instrument combustible has been pre-programmed for 25 different combustible gas and vapor responses. Start with the instrument off. Press the **@/Backlight** button, and then simultaneously, press the **ON/OFF** button, releasing them together. Quickly press the **-/Menu** button to sequence through the available gas and vapor responses. Press the **ENTER** button to choose the desired gas response.

REMEMBER: Do not infer from the ability to change the combustible gas display that the combustible sensor only detects the chosen gas. The sensor is not specific and therefore responds to many combustible gases without the ability to differentiate them. The correct use of the instrument depends upon the user's knowledge of the application to identify which combustible gas to display.

IV. Auto-Zero/Auto-Set

Auto-Zero/Auto-Set is a function that makes the toxic and combustible gas displays read zero and the oxygen display read 20.9%. The Auto-Zero/Auto-Set function allows the instrument to be compensated for minor "zero-drift" of the sensors. **It should only be done in a fresh air environment.** Some users may want to do this before each use. The factory does not have a recommended frequency for this function. **Warning: Auto-Zero/Auto-Set is NOT a substitute for calibration.** To perform an Auto-Zero/Auto-Set, start with the

instrument off. Press the **ENTER** button, and then simultaneously press the **ON/OFF** button, releasing them together. Wait for the display to stabilize. Sensor readings should not be trending up or down. Press the **ENTER** button to zero the instrument and press it again to confirm the selection.

V. Alarms

- A. Alarms are preset, but can be changed in the maintenance menu.
- B. When alarm concentration is reached audio and visual alarms activate. (simulate if possible)
- C. Visual alarms latch until condition clears.
- D. Audio alarm can be acknowledged (silenced) by pressing the **ENTER** button.
- E. Gas alarms beep, fault alarms are steady tone.

VI. Batteries/Charging

- A. 7.2Volt nicad pack is supplied standard. Runs for 8-14 hours (or longer) on a full charge.
- B. To charge the instrument batteries, plug the charger into the wall and plug the charger connector into the bottom of the battery pack. There are two chargers available for the OMNI. The standard charger is an overnight trickle charger. When the batteries are being charged a red LED on the charger activates. Never leave the instrument on this charger for over 72 hours, otherwise damage to the batteries may occur. There is an optional dual-rate charger that charges the instrument up in 3-5 hours. The dual-rate charger has a green light that activates when the charger is attached to the instrument. The LED remains on steady until the battery pack is fully charged. When charge is complete the green LED flashes. The instrument may be left indefinitely on this charger. It is however, a good idea run the batteries down at least once a month.

VII. Operation Menu

- A. Press **Menu** button to cycle through display screens.
- B. **Date/Time** shows the current time and date of the internal clock.
- C. **Battery X.YZv** is the current battery voltage. 7.50 volts is common after being charged, instrument goes into low battery around 6.8 Volts. The asterisks across the second line are a relative battery gas gauge.
- D. **Sensor : Min and Max** shows the minimum and maximum values the instrument has seen for that gas since it has been turned on. The sensor is listed on the second line.
- E. **STEL gas** shows the current STEL calculation for that toxic gas. There is a STEL reading for each toxic sensor installed and it appears after the instrument has been on for 15 minutes.
- F. **TWA gas** shows the current TWA calculation for that toxic gas. There is a TWA reading for each toxic sensor installed and it appears after the instrument has been on for several minutes.

VIII. Maintenance Menu

*** Turn the instrument off or pull the programming key if a menu has been entered that shouldn't have been ***

- A. Insert the programming key into the socket on the side of the instrument.
- B. **Program a Sensor** allows you to turn a sensor on or off and set the alarms. Press **ENTER** at the program a sensor screen. Press **Menu** until you find the desired gas. Press **ENTER** to select the gas. Menu changes the sensor from enabled to disabled. Press **ENTER**. The gas name is displayed. Press **ENTER**. The alarm point is displayed. If the alarm point needs to be changed, the up arrow **↑** increments the digit and the right arrow **→** moves the cursor to the right. Press **ENTER** to enter the changes. Press **ENTER** again to complete the procedure or the right arrow **→** to cancel it. Note: The combustible gas display can be changed by pressing the Menu button while the gas name is displayed and the oxygen sensor has two alarm points that can be set.
- C. **Calibrate a Sensor** allows the user to calibrate each sensor. Press the **ENTER** at the calibrate a sensor screen. . Press **Menu** until you find the desired gas. Press **ENTER** to select the gas. **Cal. Gas :** and a concentration are displayed. If the calibration gas concentration needs to be changed, the up arrow **↑** increments the digit and the right arrow **→** moves the cursor to the right. Press **ENTER** to enter the changes. **Zero value** and a concentration is displayed. The instrument should be in a fresh air environment. When the reading is stable, get the calibration gas ready and then press the **ENTER** button. **Span value** and a concentration are displayed. . Apply the span gas, when the signal reading is stable, press the **ENTER** button to finish. At this time, the signal reading may not read the same thing as the gas that is being applied. Press **ENTER** again to complete the procedure or the right arrow **→** to cancel it.
- D. **Change comb. sensor** is a procedure done when a new combustible sensor is installed in the instrument. It is very similar to the calibration procedure, but adjustments are made to two potentiometers on the main PC Board. It is best to follow the procedure outlined in the manual.
- F. **Set date and time** allows the user to set the instrument's internal clock to the proper date and time. Press **ENTER** to select the function. The up arrow **↑** increments the digit and the right arrow **→** moves the cursor to the right. Press **ENTER** to select enter the changes. Press **ENTER** again to Accept the changes or the right arrow **→** to cancel.

Sections I through VI are for basic users.

Sections I through VII are for advanced users.

Sections I through VIII are for advanced users and maintenance personnel.