3M ™ Multi-Gas Detector 950 Series – Bump Test

A bump test, performed before every use, is done by checking the sensors response to a known concentration of certified calibration gas. Although the sensors are calibrated prior to shipment from the factory, it is recommended that a bump test or calibration be performed prior to initial use.

The data logging option for the detector allows for storage and display of the calibration dates with a logging session, and makes a notation if a bump test has been carried out. See the Know Your Air Software Video Document or user instructions for more information on use of the software.

To perform the bump test:

a) Go to a non-contaminated environment to perform the bump test.
a) Choose the appropriate certified gas by matching the sensors with the gas mixtures noted in the user instructions.
   NOTE: A four-gas certified calibration mixture is available from 3M using methane as the combustible gas (**3M Part Number 933-000-023** in a 34 L cylinder).
c) Turn on the unit and allow it to warm up.
d) Press and hold the CAL/NO button for 3 seconds while observing the LCD, release the button when indicated by the LCD.
a) Press the PEAKS and then CAL/NO buttons when indicated by the LCD (this will stop the pump from operating if this option was active).
b) The LCD will then display the dates when the sensors were last calibrated and ask if you wish to "ZERO SENSORS?" It is recommended that you do so.
c) Press the CAL/NO button if you wish to by-pass a zero calibration, note that this will bypass the oxygen sensor calibration.
d) Press the POWER/SELECT/YES button to accept zero calibration. The oxygen sensor is calibrated during the zeroing operation so avoid breathing into the detector during this operation as you could affect the oxygen level being detected by the OX sensor.
e) The zero calibration timer will run for 25 seconds.
f) Either at the conclusion of the zero test or when choosing to bypass the test, the LCD will ask if you wish to do a "BUMP TEST?"
g) Press the POWER/SELECT/YES key to initiate the bump test.
h) Place the calibration hood over the sensors.
i) Secure it tightly with the retaining screws.
j) Attach a hose from the correct certified calibration gas bottle to the detector gas inlet and ensure that the valve is turned on.
k) A gas flow rate of 0.2 to 0.5 liter per minute is required.
l) The LCD message should read "Bump Test – TO EXIT – PRESS ANY KEY."
m) The displayed gas concentration values on the LCD are those actually being measured.

n) Apply the calibration gas for a period of at least 2-3 minutes to ensure sufficient response time.
o) Compare the displayed values with those on the gas cylinder to value .
p) At the conclusion of the test press any key to exit the bump test.
q) Close the valve on the gas cylinder and disconnect the tubing from the detector.

CAUTION (this caution applies to CSA Approved Products typically sold in North America)– CSA Standard C22.2 No. 152 states that before each day's usage sensitivity must be tested on a known concentration of the currently selected gas equivalent to 25-50% LEL of full scale concentration. Accuracy must be within 0% - 20% of the actual. Accuracy may be corrected by performing a calibration of the unit.