

3M™ Multi-Gas Detector 950 Series - Photo-Ionization Detector (PID) Sensor

The PID sensor is suited for detection of low levels of volatile organic compounds (VOCs). The PID must be equipped with a sampling pump to ensure that there is a uniform flow of gas to the sensor.

The sensor can be installed in any of the 5 sensor slots.

Power-up Sequence

On start up, the unit will detect the PID sensor and one location of the display will show “Pd:” followed by the name of the gas. The unit will perform the standard power-on and warm-up sequence. For optimal PID performance the following warm-up period guidelines should be adhered to:

- a) 15 minutes if the PID is used at least once per week.
- b) 30 minutes if the PID has been used in the previous 4 weeks.
- c) 2 hours if the PID has not been used in more than 4 weeks.

The text portion of the display will indicate “Pd” followed by the default gas or gas selected from the menu. The default gas on a new sensor is iso-butylene.

If the calculated concentration is less than 0 ppm in a clean environment, the zeroing procedure should be performed or the value noted and accounted for in any measurements taken.

A calculated concentration of lower than -20 ppm will cause the unit to display “Pd ZERO.” In this situation the zeroing procedure must be performed.

Bump Testing and Calibration

The procedure for bump test and calibration is the same as previously shown except iso-butylene 100ppm is used.

Although the detector is calibrated prior to shipment from the factory, it is recommended that a bump test or calibration be performed prior to initial use.

Because contamination on the PID lamp may cause output to decline, it is ideal to calibrate the unit prior to each use to ensure the highest level of accuracy. If this is not possible the sensor should be recalibrated as frequently as possible.

The gas selection will be displayed in the text portion of the screen. To select a different gas type, press the “CAL/NO” button. Scroll down the displayed list using the “up/down” function of the peak/cal buttons. When the desired gas is highlighted, press the select button. The unit will return to the normal display with the new gas identified on the screen.

The default calibration gas is 100 ppm isobutylene (3M Part Number 933-000-031) at a flow rate of 0.2 liters per minute. The tests are the same as the SINGLE SPAN PROCESS.

It is possible to use the iso-butylene based readings to estimate the concentration of other gases using a “correction factor.” The correction factors are published in the user instructions.

The factory default settings for the gases detected by the PID sensor are:

Warning – 250 ppm

Alarm – 500 ppm.

Alarm and warning levels may be changed or disabled by the 3M Know Your Air software. See the Know Your Air Software Video Document or the user instructions for more information.

CAUTION: Set alarm levels according to local applicable regulations for the chemical selected for the PID gas response curve.