

Scope:

This document contains extended instructions on how to check, reset and enter the calibration values on some of the PPM hand-held instruments. It should be read only after you have consulted the manual for your particular instrument, as that should be the main source of information for your particular model. This *How To* covers the following instruments in detail:

Formaldemeter htV

Formaldemeter 400-S

Formaldemeter 400

Formaldemeter 3

Glutaraldemeter 3

History:

Apr 2006	First release	ROJ
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General Advice:

When checking or calibrating any of the PPM instruments it's very important to remember that the calibration is temperature dependant. As such it's equally important that all of the equipment used is allowed ample time to equilibrate at the same temperature.

This means that the instrument, thermometer and calibration standard should be left, next to each other, in a stable environment for at least two hours or more before use. The ideal solution would be to use an incubator of some sort to regulate the temperature.

The temperature should also be as close as possible to the temperature at which the instrument will be used – as long as this is within the range shown on the calibration standard. This is because the best accuracy is achieved about the calibration point.

Also, when handling the calibration standard, avoid touching the tube directly – use the yellow plastic parts, as these will insulate the standard from your body-heat.

A second important reason for leaving the instrument for two hours is to ensure that the sensor settles as much as possible. Avoid turning the instrument on for these two hours as a special mechanism is engaged when the instrument is turned off which helps the sensor settle quicker.

If you have problems with the sensor not clearing then perform a reset, as the most common cause of over-active sensors is incorrectly calibrated instruments.

Instrument Orientation:

Take a few minutes to compare you instrument to the diagram shown below.

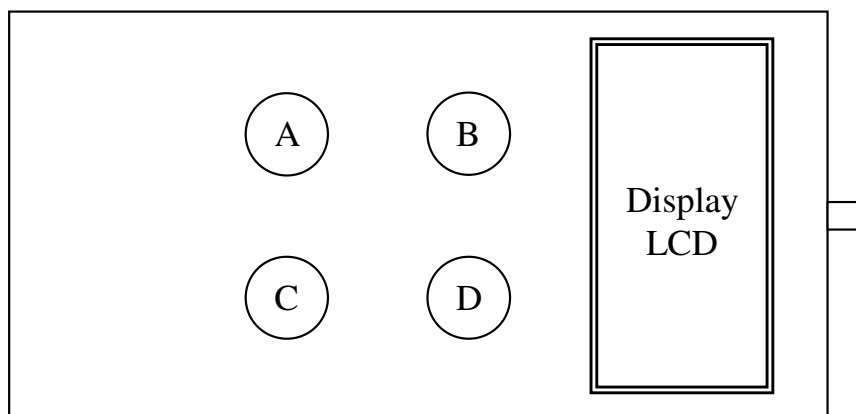


Fig 1

All recent PPM hand-held instruments have the same basic layout. To avoid confusion the following instructions and procedures will be explained in terms of this diagram.

All instrument functions are accessed via key press combinations and feedback is given via the LCD Display – these are indicated in this documents as follows:

[A]	Press button A
{B}	Press and hold button B
{A, C}[D]	Press and hold buttons A and C whilst pressing D
«1.234»	'1.234' is shown on the display
«SEt»:«CAL»	The text 'Set' and 'Cal' is alternated or flashed on the display

Resetting:

In order to erase a bad calibration or return some settings to a known state it may be necessary to reset the instrument.

The sequence to do this is as follows:

1. Make sure that the instrument is turned off.
2. Begin by performing this combination: {A, C}[D].
3. «rSEt» will show on the screen – release all the buttons.
4. Afer «SEt»:«CAL» is shown you should get to the normal display of «- - -» or «0.00». Use [D] to turn off.

The instrument has now been reset and will need to be calibrated before being used.

Calibration:

NOTE: Read the 'General Advice' before going any further!

In addition to the important advice about handling of the calibration standard and achieving thermal equilibrium it's also important to make sure that the Expiry Date on your calibration standard has not passed. If it has then don't use the standard –it will not work.

Once the instrument, standard and thermometer have been left for a while proceed as follows:

1. Begin by turning the instrument on as usual.
2. Remove the small plugs from both ends of the calibration standard.
3. Place the indicated end of the calibration standard (marked with arrows and with a black rubber seal) onto the instrument nozzle.

4. You may need to press the instrument and the calibration standard together to maintain a tight seal between the two. Use {A, C} to start the calibration process.
5. Once the instrument pump has stopped you may remove the calibration standard and replace both of the plugs.
6. After a while the instrument will show «SEt»:«1.750».
7. Checking the temperature against the table on the calibration standard. This will give you the target concentration for the calibration – use [A] and [C] to change the displayed value to the target value.
8. Once you are happy with what's shown on the display use [B] to confirm the calibration.
9. If the calibration process completed correctly the «CAL»:«EnD» will show before the instrument turns off.

The calibration process is now complete but to improve the sensor lifetime it's recommended that the instrument not be used and left turned off for ten minutes after calibrating.

Checking the Calibration:

You may find it useful to be able to check your calibration settings on your instrument. The best way to do this is to take a sample from a valid calibration standard and compare the result on the instrument to the target concentration on the table.

It's recommended that the instrument should be within 10% of the target. Use the same precautions as you would when calibrating the instrument – ensure that the instrument, calibration standard and thermometer have equilibrated; only handle the calibration standard by the yellow plastic parts; make sure that the sensor has cleared before starting.