

Making Personal Gas Detection Work for You

Personal Gas Detection is used in a huge amount of applications from construction to petro-chemical, from pharmaceutical to agriculture and everywhere in between.

It is very useful warning system that prevents us from being harmed by unsafe gas levels in the atmosphere, but unless we are using it properly it may not actually be looking after us at all.

A Gas Monitor is like many electrical instruments, extremely useful when used correctly, and almost useless if not. Imagine sitting next to a phone and waiting for it to dial a number for you – absolutely no use at all, but then consider how useful that same instrument becomes with some simple training and a basic understanding of what it does. A Gas Monitor is no different requiring proper usage to be of use to you in your daily work.

In this short article we look at the key considerations when using a gas detector to ensure that it is being useful and protecting you in the way that it is designed to.

Before you even start the task you are doing it's important to make sure your Gas Detector is set up correctly:

1. **Right Monitor for the Right Job** – make certain that you have a monitor set up to detect the hazard you want warning of. Toxic sensors are usually set up to detect only 1 gas, flammable sensors need correcting to detect a specific target gas and Photo Ionisation Detectors and Infra-Red Sensors need setting up in a similar way for the substance you want them to monitor. If you are unsure which gases your monitor is set up to detect check the supplied calibration certificate or speak to the company that last calibrated it for you.
2. **Within Suitable Calibration Date** – leading straight on from the point above, ensure that your monitor is within calibration date. Usually monitors require calibrating every 6 months, and the calibration date along with the expiry date should be stated on the calibration certificate. Consider also requesting your monitors to be set to lock on 'calibration due', most monitors support this function, and it ensures that the temptation to use an out of date monitor is removed.
3. **Fresh Air Calibration on Start Up** – most monitors do this automatically, but it is worth checking that your monitor performs a fresh air calibration when you turn it on. The composition of fresh air is constant so you can check that your monitor is measuring this correctly on start up. This is a good sense check and will often highlight if there are any serious issues with your sensors. However for many sensors that will show zero in fresh air, the only way of being 100% sure your monitor is functioning as it should is to bump test – see below.
4. **Bump Test** – whilst not a legal requirement it is a good idea to bump test your monitor periodically, somewhere between daily and monthly dependant on the exact circumstances of your work. This is simply passing a known concentration of the target gas for each sensor over it and checking that the monitor responds. This can be done simply by observing the readings whilst you do this manually with gas, or you can buy fully automated bump test stations which will let you know if it falls outside of acceptable response levels.
5. **Protect your Monitor** – your monitor is a potentially lifesaving piece of equipment that is costly and sensitive, so it is worth spending a bit more money on some basic protection accessories such as a

good quality carry case, a protective wearable case and a sensor guard or pre-filter if available. These will all ensure that your monitor does not get so easily damaged, and extend its useable life span.

6. **Fully Charged** – make sure your monitor is fully charged – the last thing you want is your monitor going flat in the middle of your task, wasting your time exiting to swap it over.

Then once you are confident you are ready to go, you should consider the following whilst on the job:

1. **Pre-Entry Test** – use your gas detector to check the space or area you are going to enter before going in. Most Gas Detectors have a 'Peak' reading mode which means you can place the detector in the area and after 10-15 minutes remove it and see the maximum or minimum reading of each gas in the space, alerting you to any potential danger before you enter.
2. **Correct Positioning** – once you are ready to enter clip your detector on to you and remember to fix in your breathing zone – ideally to an area on the chest. Also remember that these are *Personal* Monitors – so it is 1 for each person entering.
3. **Wind Direction** – keep an eye on the wind direction if applicable, if your monitor alarms and you are working in an open space then make sure to exit across the wind direction if possible. Also keep a look out for potential airborne hazards upwind so as to be prepared in advance.
4. **Low Areas** – keep in mind that heavier gases can collect in lower areas, such as cellars, basins and sumps, so make sure you take care when moving into these areas as there may be a hazard present.
5. **Respect Alarms and Your Instinct** – if your monitor alarms, you feel unwell or you feel unsure about anything then GET OUT. It is better to be overcautious than to risk your life. Your supervisor or someone better qualified in relation to Gas Detection will be able to check the work area, and make sure you are safe in the work you are doing.
6. **Do Not Turn Your Monitor Off** – make sure your monitor is kept on through your whole shift – your monitor calculates exposure to toxic substances throughout the entire shift. Turning your monitor off resets this and means you could potentially over expose yourself. Keep your monitor turned on during breaks as well if you will be re-entering a hazardous area again in the same shift.
7. **Its not Bomb Proof** – remember your monitor does not like being dropped, filled with dust, sludge or dirt, left in water or generally mistreated. Look after your monitor and it will look after you.

Once the job is done **Clean and Store your Monitor** – make sure your monitor is clean and tidy and stored ready for its next use.

These simple steps will help keep you safe whilst using Personal Gas Detection to keep you properly protected.

If you need any support on a Gas Monitoring Solution, advice on selecting the right system or just a general chat about gas detection then please contact us on 09-526 0096 or sales@instrumatics.co.nz

