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Fixed Gas Detection Systems vs. Portable Gas Monitors

Fixed gas detection systems and portable gas monitors are both essential to protecting workers and equipment and meeting OSHA/EPA requirements. Both products are equally capable of doing the job they are meant to do, in the type of area they are meant to do it in. When deciding which system to use you must take into consideration the physical area to be monitored, the type of gas(es) to be monitored, whether the hazard is permanent or transitory, the level of risk to workers and the practicality and cost effectiveness of using either or both systems.

Fixed Gas Detection Systems	Portable Gas Monitors
Permanently installed, stationary systems that are practically invisible to the general worker population until the alarm sounds and evacuation procedures need to be followed.	Assigned to workers who keep them on their person as they move around. Each worker requires their own unit and training on how to use it.
Ideal for large areas populated by many workers and/or areas where worker movement is unrestricted. Somewhat impractical for detection in confined spaces such as sewers, storage tanks, pits, fermenters, etc.	Ideal for small areas such as confined spaces and/or areas where security clearance to enter is required. Very costly if used as the only gas detection system for large areas such as a manufacturing plant with lots of equipment and workers.
Monitoring is continuous and the power source is (generally) constantly available and devices do not need to warm up prior to each use.	Monitoring is only when the unit is on, warmed up and the battery is charged.
Does not need to warm up prior to each use.	Warm up period required each time the device is turned on.
Bump testing suggested every 30 days.	Bump testing recommended before each use.
Wide range of sensor type combinations available.	Combinations of sensor types are limited.
Ideal for monitoring any type of toxic, combustible or refrigerant gas because devices are strategically placed in key locations where the hazardous gas is likely to accumulate.	Where the worker goes, the monitor goes and heavier gases that concentrate inches off the floor or lighter gases that rise overhead may not be detected until concentration levels are serious.
Sensors can have longer life expectancies because in some cases they are larger.	Compact, handheld devices tend to accommodate small sensors, which don't have the same lifespan as larger sensors.
Devices are fixed in one place reducing the rate of wear and tear and they can be shielded from damage with a splash guard and/or metal protective guard.	Devices more likely to sustain wear and tear and/or damage due to human negligence and the fact it is physically moved around in different environments.
Typically have analog and/or digital output(s) so remote alarms can be turned on and/or safety processes can be triggered (ie. fans turn on, systems shut off, etc.)	When hazardous gas is present above an acceptable limit, an audible alarm sounds, LEDs flash and a vibrating alarm is activated if the unit is so equipped.

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Working together:

- The portable gas monitor is advantageous for locating the exact point of a leak that has first been detected by the fixed system when using an attached probe.
- The portable gas monitor is convenient for detecting a single gas that may be likely to leak in a small area where workers occasionally go, while the fixed system concurrently and constantly monitors the general areas for other hazardous gases.

References

Portable Versus Fixed Gas Detectors: Which One Do You Need?

By: Alan K. Austin

<http://www.rimbach.com/cgi-bin/Article/IHN/Number.idc?Number=49>

When to Use Fixed Rather Than Portable Gas Detectors

By: Lars Boettern Jan 1, 2000

[http://www.brandtinst.com/biosystems/appnotes/Downloads/9.%20When to Use Fixed Rather Than Portable Gas Detectors.pdf](http://www.brandtinst.com/biosystems/appnotes/Downloads/9.%20When%20to%20Use%20Fixed%20Rather%20Than%20Portable%20Gas%20Detectors.pdf)

For suggestions on gas detection systems, indoor air quality monitors and calibration, please contact EnviroMed Detection Services.

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