



Gas Detection Solutions

For Life

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FAQ Series

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WHEN CHOOSING A CONFINED SPACE MONITOR, HOW IMPORTANT IS A SAMPLE DRAWING PUMP?

By definition a confined space is any space that is large enough and so configured that an employee can bodily enter and perform assigned work, has limited or restricted means for entry or exit, and is not designed for continuous employee occupancy. These spaces may include, but are not limited to, underground vaults, tanks, storage bins, pits and diked areas, vessels, sewers, and silos. In addition, this space may not have adequate ventilation or air movement, allowing gases to form pockets or stratify within the confined space adding to the potential for harm to entrants.

When testing confined spaces prior to entry it is necessary to test for dangerous gases at all elevations within the confined space. Potential hazards can include gases that are lighter than air and may collect at the top of a confined space, such as methane, heavier than air gas that may settle at the bottom of a confined space such as hydrogen sulfide or carbon monoxide, which has about the same density as air. Oxygen content must also be checked as well as other toxic gases if appropriate. Using a sample drawing portable gas monitor for this application makes this task extremely easy to perform. Confined space monitors can be provided with an internal motorized sample pump or an attachable sample pump. An attached pump, either motorized or hand aspirated, can turn a personal portable diffusion monitor into a sample drawing instrument, allowing for greater versatility.

For example, if a worker is required to enter a confined space such as a manhole, this individual would need to test the atmosphere around the top of the manhole cover before removing the lid. A confined space safety gas monitor with a sample pump will allow the user to easily "sniff" around the lid for gas. If the manhole lid has pick hole openings, the sample probe can be used to test under the lid for explosive, toxic gas, and oxygen content.



Once the lid is removed, the sample probe can then be lowered into the confined space starting at the top and sampling all levels until the probe reaches the bottom.

With a non-sample drawing instrument the sensor block or the monitor itself is lowered into the confined space. One problem with using a monitor in this fashion is that it can be dropped into liquids, destroying the sensors or the instrument. Also, if the monitor is lowered into the confined space, the user would be unable to see the actual gas readings at the various levels. Monitors provided with sample pumps include hoses that can be purchased in various lengths to accommodate a variety of confined spaces. In addition, monitors may include a probe with a water-blocking filter to prevent damage to the instrument in the event that the probe is dropped into liquid.

In summary, choosing a monitor with either internal motorized pump or a diffusion monitor with attachable pump will allow the instrument to be used in a variety of different applications including confined space entry where accurate sampling of the atmosphere is essential to worker safety.