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CO and NO_2 Gas Sensor Locations for Diesel Exhaust Applications

For vehicle exhaust applications that include diesel exhaust, CO and NO_2 sensor combination gas detectors should be used to monitor the hazardous gas levels in the enclosed space.

CO is about the same density as air and will readily disperse throughout an area where there may be some air movement and activity, remaining in the breathing zone (4-6 ft from the floor). NO_2 gas is heavier than air, but when hot, as in exhaust form, it will rise. As the exhaust cools, the gas will dissipate and settle throughout the breathing zone.

In enclosed spaces that have diesel vehicles with bumper height exhaust, the hot exhaust is not likely to reach the ceiling before cooling and descending. As a result, the CO and NO_2 will be present quite quickly in the breathing zone.

In enclosed spaces where all vehicles have top-exiting exhausts, the hot exhaust will be higher up and may reach the ceiling. For more rapid detection, NO_2 gas detectors can be mounted at a higher level. However, this should be in addition to mounting NO_2 sensors in the breathing zone because the NO_2 gas will cool and settle into the breathing zone, the space that people are occupying.

Environments that have vehicle repair pits should have an NO_2 gas detector mounted in the pit as NO_2 gas may pool into the area.

Analyzing the factors in an environment that needs to be monitored to ensure the safest air quality is paramount in understanding where to mount gas sensors. For diesel exhaust applications, you need to understand how the gas acts when it comes in contact with air and consider the type of vehicles occupying the space, where people will be working and how the air movement will affect where the gas may pool or create areas of dead air.

CO and NO_2 sensors should always be mounted in the breathing zone. Additional NO_2 sensors can always be mounted near the ceiling, should the application require more rapid detection.

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