

New TGD Duct Mount Toxic Gas Sensors

UNDERSTANDING GAS DYNAMICS

All gases are made up of tiny particles which move continuously in random patterns. Because of this random movement, it is difficult to exactly predict the path a concentration of gas will take. Generally, a gas will diffuse outward from its source in all directions. If an airstream is present, gas will be likely to flow with the airstream as well as outward as illustrated by Figures 1 and 2.

In an ideal world, a concentration of gas will diffuse and mix with other gases over time and will eventually be evenly distributed in the space it occupies. Consequently, the ultimate concentration of a gas can be measured at any point in the space it occupies. However, the time to reach equilibrium will vary based on several variables including gas density, volume and airflow in the space in question, and temperature. When detecting toxic gas, it is important to distribute sensors according to their specified coverage area in order to detect the presence of gas in a reasonable and safe amount of time.

In the scenario shown in Figure 2, the gas concentration could reach the wall at approximately the same time it reaches the duct. Thus, the gas would be detectable by a wall sensor at approximately the same time as a duct sensor, making this a suitable location for toxic gas detection.

As no two installations are the same and gas flow is not especially predictable, a duct sensor should not be relied upon as a sole detection point for toxic gases. However, adding a duct sensor when possible can provide added protection and redundancy.

KEY POINTS

- Gas movement is difficult to predict
- Gas will tend to flow with an airstream, if one is present
- A duct-mounted sensor can provide redundancy

SOLUTION

Senva's new TGD is engineered for easy installation in any duct system. The TGD can be ordered as individual CO or NO₂ sensors or as a combination CO/NO₂ sensor in a shared enclosure. It comes standard with an integrated display, LED indicators, an audible alarm, and either analog outputs or RS485 connections for Modbus RTU or BACnet MS/TP.

ADDITIONAL FEATURES

- Temperature compensated elements for maximum accuracy
- UL/cUL Listed device
- 7 year life expectancy on CO and NO₂ elements
- Self-Test feature periodically checks health and alerts occupants of faulty sensors or end of lifespan
- 7-year limited warranty on electronics; 2-year on elements

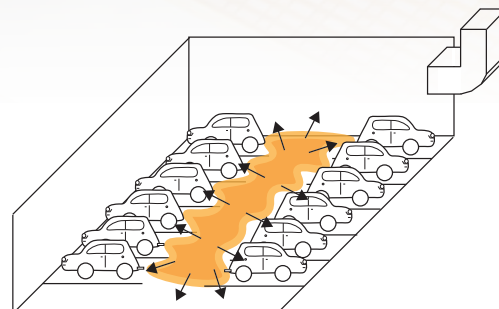


Figure 1: Gas moves randomly, tending to expand in all directions.

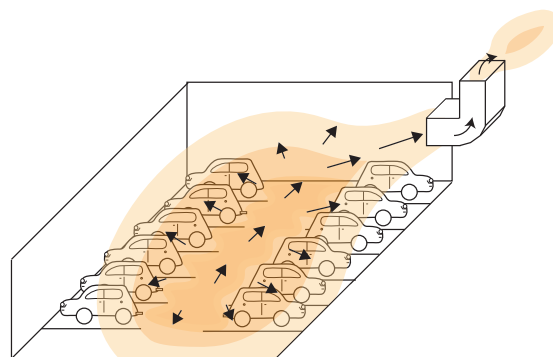


Figure 2: If an airstream is present, gas will tend to flow with the air stream.



NEW! TGD Toxic Gas sensor for Duct applications



7 year limited warranty

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