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Why is it Important for You to Understand Your Customer's Gas Detection Application Requirements?

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The short answer is, so you can offer the right gas detection solution to your customer! Each type of application comes with its own unique application environment and requirements. To get a better understanding of what gas detection system will best suit the application, you need to know the following information.

The very first question should be: 'what type of application is it'? Parking garage? Winery? Arena? Hospital? Chemical storage room? etc. This information provides the context for all the questions to follow.

What is the target gas or gases that need to be monitored? What is their unit of measure, PPM, LEL, % Vol? Some gases are heavier than air and sink to the floor and into low lying areas, others are lighter and float to the ceiling. And still others hang around floating in the breathing zone. Knowing the characteristics of the gas will help determine the height at which the detector should be mounted. Gases such as chlorine, hydrogen fluoride, ozone, hydrogen chloride, ammonia and nitrogen dioxide like to stick to surfaces; we call these sticky gases. Special care is required to calibrate these types of sensors. Some gases are more flammable than others and if the area is classified as a hazardous area, explosion proof detectors will be required.

How large is the facility? How many sensing locations are needed? Is zoning required? The size of the entire monitoring area and knowing where you are going to put the gas detectors helps to determine how many transmitters to order. Knowing the plan for fan and alarm control will help with configuring the zoning features.

Are there fans? What type are they, how are they controlled? If there are fans, are they two speed? Are they VFDs? If they are VFDs are they analog or Modbus input? Are they being controlled by relays or by a building automation system? This information will help determine what type of output is required.

What are the air flow patterns in the area being monitored? If there was a leak, where would you expect the gas to travel? Air flow is affected by things such as, fans, doorways, traffic, people walking, structures, barriers, depressions, vaulted ceilings and open areas and can affect the ability of the detector to take accurate readings. Also important are locating the dead spots, areas where there is no air flow. In such an area the gas wouldn't reach the sensor and the sensor wouldn't be able to provide proper readings of the gas levels in that area.

What type of wiring exists? For retrofit projects it is important to know if the wiring is analog or digital so the correct product is purchased. Rewiring is very expensive.

Is there lots of equipment traffic that could damage the detectors? Are they located in an area that may be susceptible to tampering or vandalism? Gas detectors can be damaged. For example, warehouses may have forklifts loading, unloading, moving product around and careless or inexperienced drivers that drive into, spear or otherwise damage the gas detectors. To protect the device, a metal guard can be added to the order.

Is there an existing control system such as a BAS or DDC? If so, what is the communication protocol? Modbus®? BACnet®? In order for digital devices to work together, they must be able to communicate in the same language.

Is it a wet environment? There are some applications, especially applications that monitor heavier gases such as refrigerants and propane where the detectors are mounted close to the floor and can be exposed to water from cleaning or splashing up. For applications that are or can be wet, it's recommended to order the transmitters with the factory installed splash guard to protect the sensor from water damage.

Is it a cold environment? Are there temperature fluctuations? If the application requires operation below -20 deg C / -4 deg F, a heater option may be considered.

Is the area being monitored classified as a Hazardous Area? As per regulations, such areas require an explosion proof gas detector.

What does the system need to do – run fans, trigger alarms, send a signal to the BAS or send a signal to an external monitoring station such as the Fire Department? Understanding what the system needs to do will determine how the system needs to be configured.

All of this type of information is important to help you customize a gas detection system that will perform properly and provide protection for the health and safety of the equipment, building and occupants in each specific application. Equipped with this knowledge, you will be able to determine which gas detection system will best suit the application.

For more information on gas detectors, gas detection systems, calibration, applications, etc. please visit www.critical-environment.com.