

# REFRIGERANT LEAK DETECTION

## THE OPPORTUNITY

Refrigerant gas leak detection is a high priority due to the increasing price of refrigerant gas, emergency service call-out costs to find, detect, and repair leaks of hydrofluorocarbons (HFC), chlorofluorocarbons (CFC), Ammonia, or CO<sub>2</sub>, and the potential for loss of inventory if a major leak renders a system inoperable.

In Europe, the last revision of the F-Gas directive actually mandates the installation of leak detector in industrial or commercial facilities running medium to refrigeration units, based upon the global warming potential (GWP) and the nameplate capacity for the used refrigerant. This includes:

- Food and beverage industry
- Dairy product processing and storage
- Large refrigerated warehouses (or grocery outlets)

Other sources of fugitive emissions of refrigerant gas are from refrigerant manufacturing plants and refrigerant storage or transfer stations. Area monitoring of these facilities can alert the proper authorities to initiate corrective action.

## OUR SOLUTIONS

Advanced Energy provides quality solutions for area leak monitoring or leak detection with its infrared (IR) spectroscopy portfolio.

### For System Integrators

The Andros 6552 can address many of the needs of the integrator. It leverages our superior non-dispersive infrared (NDIR) platform design with a specific configuration for refrigerant monitoring.

Up to three sample points and a dedicated zero channel can be supported directly with the onboard 12 VDC



**Advanced Energy's Andros 6552**

solenoid valve drivers. Additionally, a 12 VDC pump can be directly operated by the 6552 or can operate a relay to operate AC pumps when higher flow rates are needed.

### For End Users

The Innova 1314i can perform area monitoring and features ppb detection levels thanks to photoacoustic technology. The trace gas detector Innova 1314i can be bundled with multi-zone sampling systems with up to 24 channels.



Advanced Energy's Innova 1314i

## YOUR BENEFITS

Our solutions, based on IR spectroscopy have definite operational advantages over leak detection system relying on arrays of electrochemical (EC) sensors. The IR technique essentially overcomes the practical limitations of EC gas detection such as limited lifetimes and damage caused by exposure to high levels.

Cost-wise, an IR leak detection system can be optimized by using a central sampling station which sequentially pulls samples from multiple zones (corresponding to expected sources of fugitive emissions) into a unique analyzer or detector. For the system operator, besides an inherent longer lifetime of the sensing component, the routine maintenance (some calibration is required) is also simplified with a lower number of actual analyzers.

Overall, a well-designed IR leak detection system provides a cost effective asset to monitor for refrigeration gas leaks in medium to large refrigeration systems.



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