

# Types of Refrigerant Leak Detection Systems

Tools and systems that help teams prevent costly refrigerant losses

**25%**

refrigerant loss per year

**4%**

of leaks actually found

## EARLY DETECTION PROTECTS



Energy



Product



Equipment



Compliance

### Direct Leak Detection

Sensors detect refrigerant gas.  
Backbone of most leak detection programs.

### Handheld Leak Detectors

Portable tools used to identify leaks during routine maintenance and on-the-spot inspections.

- BEST FOR:**
- Checking low-charge systems
  - Verifying suspected leaks
  - Pinpointing leak locations quickly
  - Fast diagnostics during service visits

#### TYPES OF HANDHELD DETECTORS

##### Infrared (IR)

- Very accurate
- Long sensor life

##### Ultrasonic

- Detects sound of escaping gas
- Great in noisy areas

##### Heated Diode

- High sensitivity
- Works with many refrigerants

##### Corona Discharge

- Low-cost option
- More false alarms

### Fixed Leak Detection Systems

Continuous, automated monitoring in high-risk areas.

- BEST FOR:** **EARLY DETECTION**
- Catching leaks before they cause problems
  - Monitoring high-risk zones & mission-critical systems
  - Triggering automated alerts and maintaining compliance logs
  - Preventing downtime and product loss

#### NDIR INFRARED SENSORS

- Highly stable
- Low-PPM detection
- Ideal for compressor rooms + cold storage
- Low maintenance with long sensor lifespan

### Indirect Leak Detection

Detects signs of a leak, not refrigerant itself.

#### INDICATORS:

- **Temperature swings:** Low charge affects cooling performance
- **Longer runtimes:** System works harder to maintain setpoints
- **Pressure drops:** Refrigerant loss reduces system pressure
- **Odd defrost cycles:** Inconsistent refrigerant flow disrupts defrost patterns

- BEST FOR:**
- Large/complex systems
  - Hard-to-monitor areas
  - Pairing with direct detection

## Strengthen Your Leak Detection Strategy

Handheld tools help you pinpoint leaks, and indirect signals highlight early system issues, but continuous monitoring is what prevents costly failures.

Carbon Connector's **AKO NDIR Fixed Refrigerant Leak Detector** delivers low-PPM accuracy and 24/7 alerts in the areas that matter most. Contact our team to learn more!

Connect with a Leak Detection Expert →