

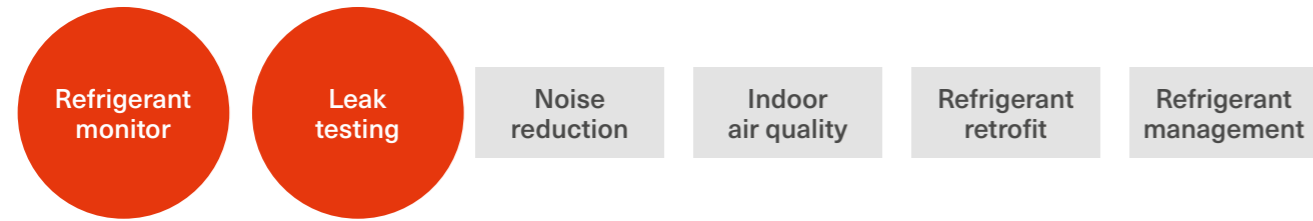
Trane Building Advantage

# Refrigerant Management

Maximizing compliance and efficiency

TRANE  
TECHNOLOGIES

Trane Building Advantage customized service solutions for building owners address operating performance, energy efficiency, and environment concerns. Refrigerant management is key in preventing refrigerants used in air conditioning or refrigeration equipment from leaking into the atmosphere.



### Refrigerant Monitor

Installing an automatic refrigerant monitoring system protects the environment and generates savings.

Fluorinated refrigerants are controlled under the Kyoto or Montreal Protocol. Therefore, refrigerants must be contained and any leakage detected in an early stage to prevent the venting of refrigerants into the atmosphere and maximize energy efficiency. Automatic refrigerant monitors are designed to do so. In the European Union, monitors are legally mandatory. In the European Union monitors are legally mandatory as per table on the following page.

### Monitoring benefits:

- Early awareness ensures earlier corrective actions
- Proactive measurement 24 hours a day, 365 days a year
- Reduction of your building and system impact on the environment and human health
- Improvement of your equipment operation: leakages impact reliability and energy efficiency
- Risk reduction of costly breakdowns
- Extension of your equipment lifetime: optimal refrigerant charge reduces component stress
- Compliance with (EU) F-Gas regulation and other national regulations



Standard monitor



Premium monitor

### Trane offering – The right monitor for the right application

#### Standard monitor

- Technology: semi-conductor
- Integrated visible and sound alarm
- Multi-refrigerant control
- Sensitivity: 10 ppm
- Analog connectivity: free relays
- Remote alarm capability

#### Premium monitor

- Technology: photoacoustic infrared
- LCD display
- Multi-refrigerant control
- Sensitivity: 1 ppm Digital connectivity: free relays, 4-20 mA analog output or serial communication (RS 232)
- Remote alarm capability

Both monitors can be connected to a Trane Building Management System.



## Don't let an undetected leak disrupt your equipment and your business

### Leak Testing

Trane Building Advantage customized service solutions offer a tailored leak testing procedure to identify where a refrigerant leak occurs.

This procedure is an integral part of any Trane maintenance contract but can also be ordered as a separate service solution.

Our certified technicians are trained to find the leak, properly repair it and refill the equipment with the appropriate refrigerant charge.

### Leak testing benefits:

- Environmental responsibility. Quick location of the leak prevents more refrigerant loss
- Compliance with local laws and regulations
- Risk reduction of costly breakdowns
- Downtime minimization
- Inspections performed by certified personnel

Periodical leak testing is necessary for all systems operating with refrigerants. The environmental benefits, operational improvements, and compliance with national and local regulations makes it worth to invest in regular leak testing.

### Trane offering:

- Highly skilled and certified technicians using portable leak detection tools
- Recovery of the refrigerant charge
- Immediate reporting with recommended action plan
- Extended Service network for quick leak repair and equipment restart.



### EU Compliance

In the European Union, all air conditioning or refrigeration equipment containing fluorinated refrigerants must conform with the F-gas regulation or ozone regulations and have regular leak tests carried out by certified personnel. When a permanent leakage detection system is in place, the frequency of required leak testing is reduced by 50%. The leak detection system must be checked at least once a year. Above 500 tonnes of equivalent CO<sub>2</sub>, the permanent leak detection system must have remote alarm capability.

Tonnes of CO <sub>2</sub> Equivalent	R134a refrigerant charge (kg) (*)	R410A refrigerant charge (kg) (*)	R407C refrigerant charge (kg) (*)	R404A refrigerant charge (kg) (*)	Mandatory inspection visit	Permanent leak detection system
5 – 50	3.5 – 35	2.4 - 24	2.8 – 28	1.3 – 13	every 12 months	
50 – 500	35 – 350	24 - 240	28 – 280	13 – 130	every 6 months	
500 and above	above 350	above 240	280	above 130	every 3 months	mandatory

(\*) Per refrigerant circuit



# Trane Services

The real expertise of a manufacturer



- Systems approach
- Dependable installations
- Energy saving solutions
- Operating cost optimization
- Chiller plant management solutions
- Chilled water production solutions.

At Trane, we are committed to providing a comprehensive portfolio of HVAC solutions throughout your system lifecycle.



## Breakdown resolution

No one plans for breakdowns, but when they happen you need the right partner. Our expert Service Engineers use the latest diagnostic tools to guide you through your options to Repair, Renew, Replace or ReThink.



## Secure operations

At every point during the lifetime of your equipment - installation, commissioning, maintenance or breakdown - Trane can offer an effective solution with commissioning, first-aid kits and service agreements.



## System upgrade

Trane Building Advantage

Trane is committed to bringing the latest technological advantages to our customers through a wide portfolio of solutions which increase the Efficiency, Reliability and Sustainability of their HVAC plants. Our Service Engineers use their expertise together with the latest diagnostic tools to future-proof your system and make it "better than before".



## Equipment rental

For special events, exceptional needs or when you want to ReThink HVAC management, Trane Rental Services have the right solution. With our extensive fleet of equipment, we can perfectly match your temporary heating and cooling requirements.



## Contact us

With over 1000 of the best trained sales engineers and service technicians in the industry, Trane is in the best position to serve your needs. Just call us and we will help you configure the Trane Free Cooling solution for your HVAC system.



Trane – by Trane Technologies (NYSE: TT), a global climate innovator – creates comfortable, energy efficient indoor environments through a broad portfolio of heating, ventilating and air conditioning systems and controls, services, parts and supply. For more information, please visit [trane.eu](http://trane.eu) or [tranetechnologies.com](http://tranetechnologies.com).