TruSense SD™ Refrigerant Monitor

TRANE TECHNOLOGIES

Unequalled flexibility

Introduction

Trane TruSense SD refrigerant sensors and monitors provide reliable refrigerant detection as low as 20 ppm for interfacing with building automation systems. The Trane TruSense SD refrigerant sensors and monitors are intended for indoor use in mechanical equipment rooms or in areas where bulk refrigerants are stored.

The Trane TruSense SD refrigerant sensor module provides reliable refrigerant detection for equipment room protection and for early warning of refrigerant leaks. It uses infrared photoacoustic sensing, a technology proven to provide stable operation and minimize false alarms. Trane TruSense SD refrigerant sensor modules conform to the requirements and recommendations of ASHRAE Standard 15, 2007.

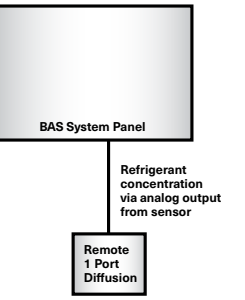
The TruSense SD refrigerant monitor

has a standard 4-20 mA analog output for interfacing with Tracer Summit™ and other building automation systems. It is packaged in a self-contained enclosure and requires no external connections other than for power and for BAS analog input. Finally, every TruSense SD sensor has Trane's unequalled worldwide parts, technical, and service support.

Self-contained or split configurations

A TruSense SD refrigerant monitor can be configured for either self-contained or split operation. And whether the system was originally split or self-contained, additional split sensing points can be added at any time. This allows a system to grow whenever new ports or new refrigerants are required.

A self-contained TruSense SD is available only with a pumped refrigerant-sensing port. For split TruSense SD systems, the remote sensors can be ordered either as pumped or diffusion type. Up to eight ports can be connected to any TruSense SD system.



TruSense SD BAS refrigerant remote diffusion 1-port sensor without control module

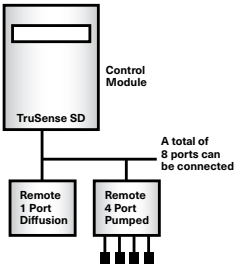
Diffusion sensing capability

The TruSense SD is the first refrigerant monitor to have diffusion-based, infrared, photo-acoustic refrigerant sensing ports. Having no moving parts or serviceable filters, these patented diffusion sensors are preferred over pumped sensors whenever high reliability and low maintenance are prized.

Multiple refrigerant sensing

TruSense SD control module allows the selection of a different refrigerant for each remote sensing module. This allows equipment having different refrigerants to be served by the same TruSense SD system. Also, it is easy to add new refrigerants to any existing TruSense SD refrigerant monitor.

Unique features



TruSense SD, 0-port control module control with remote sensor(s)

Building automation interface

As standard, each TruSense SD includes two built-in analog outputs that indicate the sensed port and refrigerant concentration. In addition, the remote diffusion refrigerant sensor has a built-in analog output that allows it to be a stand-alone refrigerant-concentration sensor for a building automation system.

Infrared photoacoustic sensing

The TruSense SD sensor uses advanced infrared photo-acoustic sensing for accurate and false-alarm-resistant operation. This eliminates the “Auto Zero” functions required by other infrared refrigerant monitors. It is also the most trouble-free, reliable, and accurate infrared technology available.

Diffusion operation

The TruSense SD refrigerant sensor uses gas diffusion to sample its surrounding equipment-room air. This eliminates the need for moving parts, including pumps, flow sensors, flow solenoids, and flow transducers used in other infrared sensors. Eliminating these parts greatly increases monitor reliability. The sensor is mounted in a compact enclosure, suitable for mounting at the desired sensing locations.

Moisture resistant design

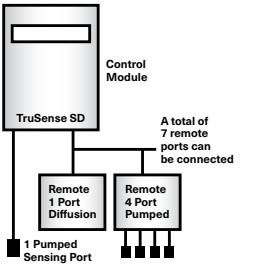
Moisture is the enemy of electronics, which is why every TruSense SD comes with a moisture-resistant, sealed, and gasketed enclosure. Was this easy? No— most other monitors are only designed to Nema 1. In fact, some even have ventilation louvers! That's pretty worrisome, because dripping pipes or other leaks can ruin a refrigerant monitor. This is exactly why the TruSense SD refrigerant monitor is designed to the NEMA 4x standard for moisture resistance.

True specifications

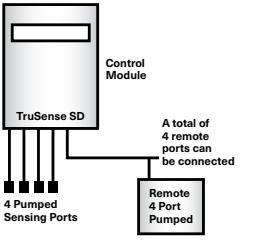
Today, there is no standard rule for specifying refrigerant monitor performance. To avoid mistakes, Trane publishes complete and understandable performance specifications. This assures designers that TruSense SD sensor modules will have the sensitivity required by the life safety specifications of their state and local building codes.

100% performance verification

It's hard to tell if a refrigerant monitor is working. Every TruSense SD sensor module is factory tested with NIST (National Institute of Standards and Testing) refrigerant calibration gas prior to shipment. Trane believes proving that a refrigerant monitor can sense refrigerant at its acceptable exposure limit (AEL) gives the ultimate peace of mind.



TruSense SD, 1-port control module with or without remote sensor(s)



TruSense SD, 4-port control module with or without remote sensor(s)

Performance

- Infrared photo-acoustic
- Minimum sensed-gas Concentration: 20 ppm
- Precision: 0-100 ppm +/- 5 ppm 100-1000 ppm +/- 5% of reading
- Response time: 90% of concentration, < 90 seconds
- 24 VDC (sensor module only)
- 24 VAC (sensor module only)

Electrical

- 110 Vac, 60 Hz, 1 Phase
- 240 Vac, 60 Hz, 1 Phase

Remote and sensor module enclosures

- Polystyrene enclosure
- Permanent wall mounting
- NEMA 4X gasketed enclosure
- Status LEDs indicating power, fault, and alarm level
- UL 3111 (pending), fire, and shock detection
- Strobe option

Sample system

- Selectable as diffusion gas transfer or pumped sample system

Calibration

- Standard units can be calibrated for HCFC-123, CFC-11, HFC-134a, HCFC 22, or CFC-12, plus special calibrations for most other refrigerants, 400 Series and 500 Series blends are available

Analog outputs

- Control module: Refrigerant concentration - 4-20 mA output, Refrigerant port number 0 - 10 v
- Remote module: Refrigerant concentration - 4 - 20 mA

Binary outputs

- Control module: Alarm level 1, 2, 3, and system fault relays
- Remote module: Audible alarm relay

Serial communications

- RS-485 serial communications between Control and Remote modules

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