

A2L refrigerant leak detection for HVAC

Reliable A2L refrigerant detection for modern HVAC solutions from the market leader

The SGD43S-M3-S5 is a robust refrigerant detection system for HVACR applications. Using Sensirion’s thermal conductivity sensing, it ensures accurate detection of A2L refrigerants (R-32, R-454B). Fully lifetime calibrated, it offers seamless integration, high repeatability, and stability in harsh conditions, meeting UL 60335-2-40 and UL 60335-2-89 standards for HVAC safety and >15 yrs design life.

Target customers:

- HVAC engineers designing HVAC systems particularly those transitioning to A2L refrigerants



SGD43S-M3-S5

Application challenges

- 1 A2L refrigerant leaks need reliable detection
- 2 Harsh conditions affect sensor accuracy and lifetime
- 3 Complex integration raises costs
- 4 Unreliable sensors risk system failure, downtime



Sensirion’s solutions

- 1 15-year lifespan, maintenance-free, meets UL safety standards
- 2 Calibrated for -40°C–85°C, 0–100% RH, robust sensing tech
- 3 Plug-and-play, dual relay output, RS-485
- 4 Proven Sensirion tech, OEM-trusted, proven market standard

Sensirion sensor solution:



SGD43S-M3-S5:
Flexible and complete refrigerant leakage
detection system for modern HVAC systems

Size (LxWxH): 90 x 55 x 24 mm³

Additional sensor features

- **24V AC/DC input:** Flexible power options for diverse HVAC setups.
- **Self-monitoring:** Detects faults and end-of-life per UL 60335-2-40 ed. 4.1.
- **Dual relay output:** Enables versatile alarm and control integration.
- **RS-485 interface:** Supports digital communication and multi-sensor daisy-chaining.
- **Status indication LED:** Green for normal, red for alarm/fault.
- **Multi-refrigerant calibration:** Detects R-32 and R-454B with single calibration.
- **Trusted thermal conductivity technology:** Leverages Sensirion's CMOSens platform, widely adopted by HVAC OEMs, providing a reliable, market-defining solution.

FAQs

- **How does it handle extreme environmental conditions?**
Calibrated for -40°C to 85°C, 0-100% RH, 80-110 kPa.
- **What is the sensor's lifespan?**
Maintenance-free, exceeding 15 years.
- **How does it integrate into HVAC systems?**
Dual relays, RS-485, and mounting bracket ease setup.
- **Can CO₂ trigger false alarms?**
Calibrated threshold avoids false alarms from typical CO₂ levels.
- **What certifications ensure compliance?**
UL 60335-2-40, UL 60335-2-89, RoHS compliant.
- **What are benefits provided by the self-monitoring SGD43?**
Detects faults, signals via relay/LED, ensuring fail safe reliability.

Getting started



SGD43S-M3-S5
Flexible and complete refrigerant
leakage detection system for
modern HVAC systems

Related sensors

[SGD43S-M3-S7](#)

Useful document



Datasheet