

# Handling instructions

For SGD43S-M3-Sx Refrigerant Detection System

## Contents

- 1 Storage.....2
- 2 Handling & Installation .....2
  - 2.1 ESD .....2
  - 2.2 Installation.....2
  - 2.3 Inlet Protection.....3
  - 2.4 Status Light Indicator.....3
  - 2.5 Electrical Considerations .....4
- 3 Exposure to Chemicals .....4
  - 3.1 Cleaning Agents.....4
  - 3.2 PVC Cement Adhesive and Other Solvent Emitting Materials .....4
- 4 Revision History.....5



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# 1 Storage

To ensure optimal performance of SGD43S-M3-Sx, we recommend storing them in the original tray and sealed ESD bag prior to installation. The recommended storing conditions can be found in the sensor datasheet.

SGD43S-M3-Sx contains a Sensirion humidity sensor (SHT). The recommended storing conditions therefore apply, as described in the Handling Instructions SHT document<sup>1</sup>. Particular attention should be taken not to store SGD43S-M3-Sx in antistatic polyethylene bags (light blue, pink or rose color), bubble foils, or foams, as they may contaminate the humidity sensor. A contaminated humidity sensor may lead to faulty refrigerant concentration readings.

# 2 Handling & Installation

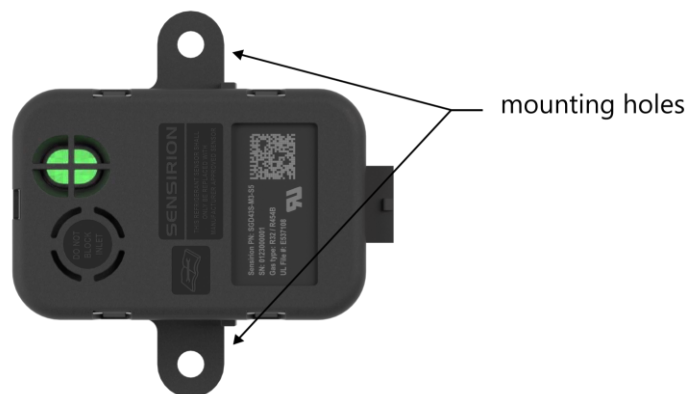
SGD43S-M3-Sx shall be handled with care. Avoid mechanical stress on the sensor as it contains electro-mechanical components. The gasket sealing the sensor shall not be damaged or altered.

## 2.1 ESD

The inherent design of this component causes it to be sensitive to electrostatic discharge (ESD). To prevent ESD-induced damage and/or degradation, take customary and statutory ESD precautions when handling this product. ESD rankings are 6kV contact and 8kV air discharge according to IEC 61000-4-2 standard.

## 2.2 Installation

The sensor shall be handled, installed, and replaced by qualified personnel only. The appliance manufacturer shall indicate in the appliance manual that sensor repair must be avoided. The sensor contains no repairable or serviceable parts and cannot be repaired. A damaged, non-working or malfunctioning sensor must be replaced by a qualified and trained person.



The sensor shall be mounted on a flat surface using the provided mounting bracket, or an equivalent UL-recognized mounting bracket according to the relevant norms.

A suitable method should be chosen to secure the mechanical fixations and avoid loose mechanical coupling. If mounted by screws, a #10-32 screw shall be used and the torque applied shall not exceed 0.7 Nm.

<sup>1</sup> [https://sensirion.com/resource/user\\_guide/sht/handling\\_instructions](https://sensirion.com/resource/user_guide/sht/handling_instructions)

## 2.3 Inlet Protection

The sensor is equipped with two inlets, a gas inlet exposing the sensing cavity, and a see-through inlet for the status light, as shown in the figure below.



At the gas inlet, the sensing components are protected by a water, oil and dust protection membrane, situated below the "DO NOT BLOCK INLET" marking on the mounting bracket. Do not spray material on the gas inlet, as it may block the permeability of the membrane. A blocked membrane may inhibit the sensor from detecting a refrigerant leak. Do not mechanically or chemically damage the membrane, as it may result in failure of the sensing components.

At the see-through status light inlet, a soft rubber is situated below the cross of the mounting bracket. It protects the LED components from the environment. Do not poke, pierce or mechanically damage the rubber, as it may result in failure of the electronic components in the main cavity.

## 2.4 Status Light Indicator

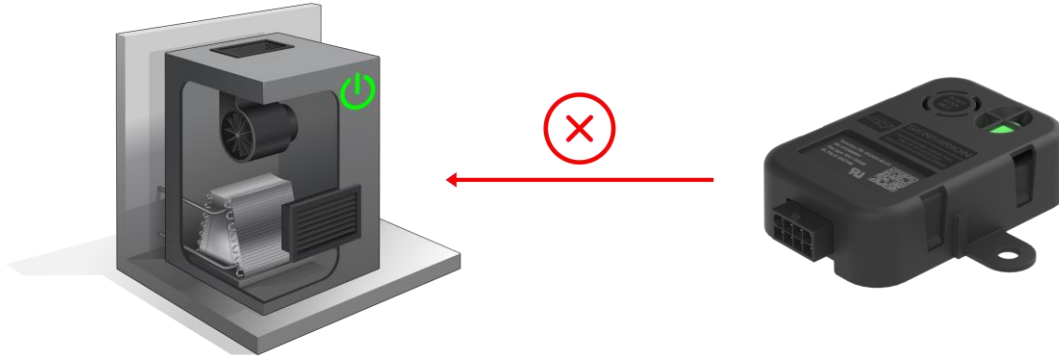
The sensor is equipped with an LED status light, indicating the Refrigerant Detection System's status, as shown below:



The status light indicator can be switched off completely through the Modbus interface, as described in the sensor datasheet.

## 2.5 Electrical Considerations

Hot-plugging the sensor may exceed the listed voltage slew rate or inrush current and permanently damage the sensor. The appliance system must be shut down before installing a sensor.

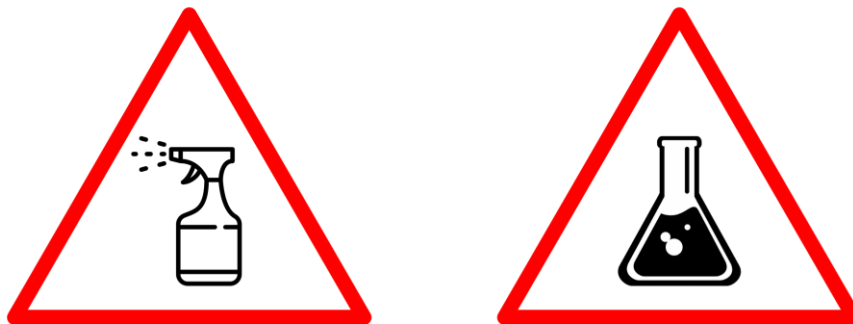


The sensor is equipped with a double pole double throw (DPDT) electromechanical relay. The COM contact of one of the poles is connected to the sensor supply power pin. As a result, the relay pins can be under tension. Connecting without a suitable load may lead to excess current on the relay and permanently damage the relay.

## 3 Exposure to Chemicals

The gas inlet exposes the sensing element of the sensor to surrounding gases.

The opening in the SGD4x housing exposes the humidity and temperature sensors inside the sensor to the environment and makes them susceptible to pollutants such as volatile chemicals, acids, bases, cleaning and foaming agents. Exposure to those pollutants should be avoided.



### 3.1 Cleaning Agents

Cleaning products might damage the sensor or temporarily block its gas inlet, inhibiting or delaying the response to the refrigerant. It is the responsibility of the appliance manufacturer to determine the appropriate way to allow for cleaning of the appliance without damaging or blocking the sensor, and to instruct the maintenance personnel and end user on how this operation should be performed.

### 3.2 PVC Cement Adhesive and Other Solvent Emitting Materials

The use of solvent emitting materials near the sensor, such as PVC cement glues, may lead to nuisance trips. Solvent emitting materials can lead to high concentrations of volatile gas in the nearby environment. The gas sensor may sense these concentrations, and trigger a system mitigate response. Such exposure do not harm the sensor, nor do they permanently damage the sensor.

## 4 Revision History

| Date       | Version | Pages | Changes         |
|------------|---------|-------|-----------------|
| April 2025 | 1.0     | all   | Initial version |

## Important Notices

### Warning, Personal Injury

Do not use this product as safety or emergency stop devices or in any other application where failure of the product could result in personal injury (including death). Do not use this product for applications other than its intended and authorized use. Before installing, handling, using or servicing this product, please consult the data sheet and application notes. Failure to comply with these instructions could result in death or serious injury.

If the Buyer purchases or uses SENSIRION products for any unintended or unauthorized application, Buyer shall defend, indemnify and hold harmless SENSIRION and its officers, employees, subsidiaries, affiliates and distributors against all claims, costs, damages and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if SENSIRION is allegedly negligent with respect to the design or the manufacture of the product.

### ESD Precautions

The inherent design of this component causes it to be sensitive to electrostatic discharge (ESD). To prevent ESD-induced damage and/or degradation, take customary and statutory ESD precautions when handling this product. See application note "ESD, Latchup and EMC" for more information.

### Warranty

SENSIRION solely warrants to the original purchaser of this product for a period of 12 months (one year) from the date of delivery that this product is of the quality, material and workmanship defined in SENSIRION's published specifications of the product. Within such period, if proven to be defective, SENSIRION shall as sole and exclusive remedy, in SENSIRION's discretion, repair this product or send a replacement product, free of charge to the Buyer, provided that:

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- such defects shall be found, to SENSIRION's reasonable satisfaction, to have arisen from SENSIRION's faulty material or workmanship;
- the defective product shall be returned to SENSIRION's factory at the Buyer's expense; and
- the warranty period for any repaired or replaced product shall be limited to the unexpired portion of the original period.

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SENSIRION reserves the right, without further notice, (i) to change the product specifications and/or the information in this document and (ii) to improve reliability, functions and design of this product.

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