Handling Instructions

For SDP800 Series Differential Pressure Sensors

Preface

This document gives guidelines on how to handle the sensor during storage, assembly and use. Qualification of the assembly process and correct implementation and usage of the sensor is the responsibility of the user.

It is important to note that the SDP800 Series sensor is not a standard electronic component, but an advanced and thus inherently sensitive sensor, which needs - in contrast to standard electronics - interaction with the environment. The sensor is pre-calibrated and it is assumed that its physical characteristics don't change during assembly and use. If the physical characteristics of the sensor change due to mechanical or thermal stress, the calibration might not be valid anymore or in extreme cases the sensor might even be destroyed. The same applies to contamination of the sensor.

The most critical step during assembly is soldering of the sensor. Extra care needs to be taken during this process. Also any process inducing dust should generally be avoided.

Applicability

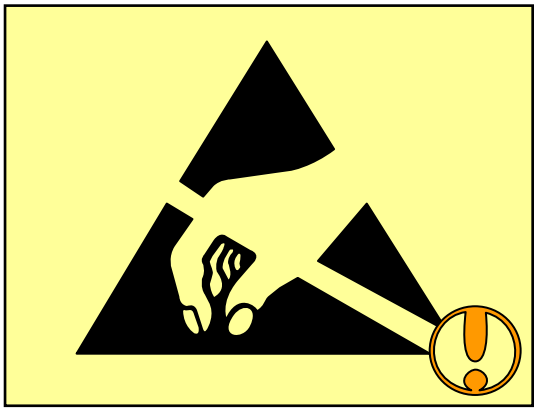
This document is applicable to all Sensirion SDP800 Series differential pressure sensors.

General Requirements

Any dust, spraying or coating contamination on the sensor must be prevented, especially on the connection ports.

ESD Protection

The sensor shall be protected from ESD (Electrostatic Discharge) and only be handled in ESD protected areas under protected and controlled conditions (ground all personnel with wrist-straps, ground all non-insulating and conductive objects, exclude insulating materials from the EPA, operate only in grounded conductive floor, etc.). Protect sensor outside the EPA using ESD protective packaging.



Protection against ESD is mandatory.

Packing and Storage

Long term storage must be at a temperature between 10°C and 40°C. Short term storage between -40°C and 85°C is acceptable.

Assembly

Before developing the assembly process please read the soldering instructions of the datasheet carefully. In the following, crucial items are underlined plus additional recommendations are given:

Soldering method

Standard wave soldering systems may be used.

Reflow and vapor phase soldering must not be used.

Moisture Sensitivity Level

Since the SDP800 Series sensor cannot be reflow soldered the sensor does not have an MSL rating.

However, for storage and handling the sensor can be considered to be compatible with MSL1.

Protection Against Contaminants

Assure that the ports of the sensor are well protected during assembly and soldering so that no dust, solder flux, conformal coating, or other liquids can enter the flow channel of the sensor.

Mechanical stress

No mechanical stress shall be applied to any part of the sensor during assembly or usage. Especially, no force shall be applied to the sensor pins.

Depaneling & Mounting

Any depanel or separation process of the PCB after soldering of the sensor must be done with special care. Handle the PCB with the ports facing downwards or ensure that the ports are covered if any dust is created by the depaneling process. During mounting and once integrated into a device, mechanical stress on the sensor should be avoided. Sensirion recommends sealing radially on the connection ports with a soft material.

Application in Extreme Environment

Avoid any kind of liquid, fatty and oil emulsive vapors inside the flow channel. If exposed to such conditions, it cannot be guaranteed that the sensors have no drift.

Protect the sensor from dust, which could enter into the flow channel.

Avoid condensation inside the sensor. After condensed water has completely evaporated, the sensor will be fully functional again.

The sensor is specified for operation in air, N_2 or O_2. Avoid aggressive or etching substances such as H_2O_2 or NH_3.

Application of Sensirion differential pressure sensors to harsh environment must be carefully tested and qualified. The user is responsible for qualification of the sensor for use in a harsh environment.

Disclaimer

The above given restrictions, recommendations, materials, etc. do not cover all possible cases and items.

Revision history

Date	Version	Author	Changes
Jan 2017	V0.1	ANB	Initial Draft

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