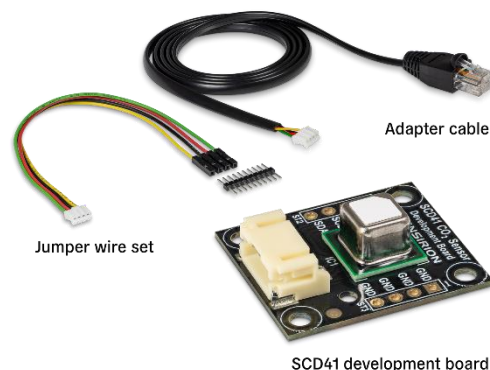


Technical Description SEK-SCD41-Sensor

Evaluation Kit for SCD4x Miniaturized CO₂ Sensor

- Development board with SCD41 CO₂ sensor
- Plug and play sensor evaluation
- Includes jumper cable for simple prototyping
- Compact design: 28 mm x 24 mm x 8 mm
- Mounting holes for easy integration
- Large supply voltage range: 2.4 V – 5.5 V



Product Summary

The evaluation kit for the SCD4x CO₂ enables easy sensor evaluation and facilitated prototyping.

Electrical interfacing can be realized either via the through-hole pads or alternatively via the included jumper cable that connects to the integrated JST connector. The compact design, the large supply voltage range and the mounting holes allow versatile prototyping.

This technical description is limited to the SEK-SCD41 evaluation kit. For more information on the SCD4x specifications and the interfacing consult the SCD4x datasheet: www.sensirion.com/file/datasheet_scd4x

The SCD4x is Sensirion's next generation miniature CO₂ sensor. This sensor builds on the photoacoustic sensing principle and Sensirion's patented PASens® and CMOSens® technology to offer high accuracy at an unmatched price and smallest form factor. SMD assembly allows cost- and space-effective integration of the sensor combined with maximal freedom of design.

Note that the white dust and water protection membrane on top of the sensor cap must not be removed at any time.

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1 Mechanical Specification

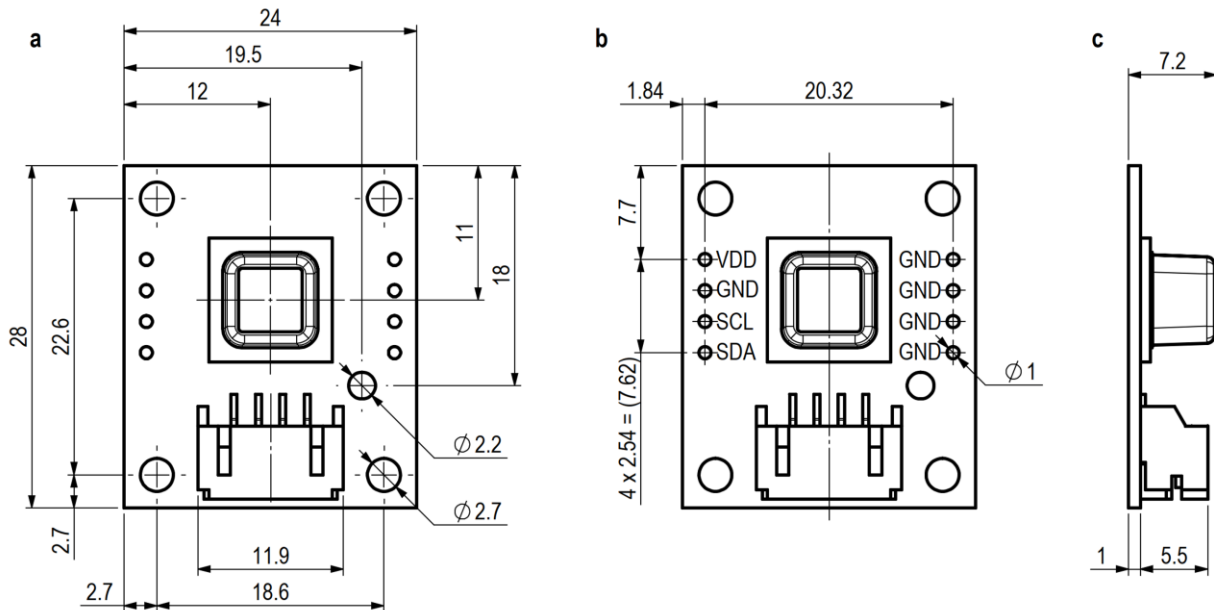
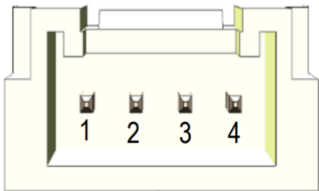
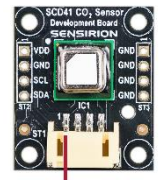


Figure 1: Mechanical dimension of the SCD40 development board. (a), (b): top view, (c) side view. All numbers are in mm.

2 Hardware Interface Specification

2.1 JST interface connector

Pin	Name	Comment
1	SCL	I2C serial clock input
2	GND	Ground (negative supply)
3	VDD	Power supply (positive supply)
4	SDA	I2C serial data input / output

JST PH, 2.0 mm pitch (S4B-PH-SM4-TB)

Table 1: Connector specification and pin assignment.

2.2 Typical Application Circuit

A typical I²C application circuit is shown in **Figure 2**. Both SCL and SDA lines are open drain I/Os. They must be connected to external pull-up resistors (e.g., $R_p = 10\text{ k}\Omega$). It should be noted that pull-up resistors may be included in I/O circuits of microcontrollers or embedded platforms.

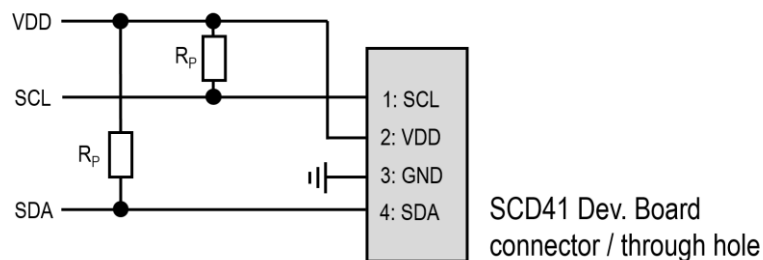


Figure 2: Typical application circuit to connect to the SCD41 Development Board via the connector or the through hole pads

2.3 Included cable sets

The SCD4x Evaluation Kit includes two cable sets. The 'Adapter cable for SEK-SCD41' allows to connect to a computer via the 'Sensirion Sensor Bridge' that must be bought separately. The *Jumper wire cable set for SEK-SCD41* allows for easy electrical interfacing without soldering. The included pin headers enable to change the gender of the jumper wire.

Pin	Color	Name	Comment
1	Yellow	SCL	I2C serial clock input
2	Black	GND	Ground (negative supply)
3	Red	VDD	Power supply (positive supply)
4	Green	SDA	I2C serial data input / output

Adapter cable for SEK-SCD41	Jumper wire cable set for SEK-SCD41
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Table 2: Pin assignment of the included cable sets.

3 Revision History

Date	Version	Page(s)	Changes
January 2021	1	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. 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 shall purchase or use 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 shall be 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 warrants solely to the original purchaser of this product for a period of 12 months (one year) from the date of delivery that this product shall be 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 repair and/or replace this product, in SENSIRION's discretion, free of charge to the Buyer, provided that:

- notice in writing describing the defects shall be given to SENSIRION within fourteen (14) days after their appearance;
- such defects shall be found, to SENSIRION's reasonable satisfaction, to have arisen from SENSIRION's faulty design, 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.

This warranty does not apply to any equipment which has not been installed and used within the specifications recommended by SENSIRION for the intended and proper use of the equipment. EXCEPT FOR THE WARRANTIES EXPRESSLY SET FORTH HEREIN, SENSIRION MAKES NO WARRANTIES, EITHER EXPRESS OR IMPLIED, WITH RESPECT TO THE PRODUCT. ANY AND ALL WARRANTIES, INCLUDING WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE EXPRESSLY EXCLUDED AND DECLINED. SENSIRION is only liable for defects of this product arising under the conditions of operation provided for in the data sheet and proper use of the goods. SENSIRION explicitly disclaims all warranties, express or implied, for any period during which the goods are operated or stored not in accordance with the technical specifications.

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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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