



**Eval Kit Manual**

# ENS210

**Standard Board**

**ENS210-QF\_EK\_ST**



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## 1 Introduction

The document provides an overview of the ENS210 sensor board and covers the following topics: board general description, sensor board interface and ENS210 connection.

## 2 ENS210 Sensor Board General Description

The ENS210 sensor board, as shown in Figure 1, is an evaluation platform for the ENS210 device. It contains an ENS210 and has I<sup>2</sup>C/power interface which is compatible with the USB-I2C dongle. Therefore, the sensor board is also called a dongle shield.

**Figure 1 ENS210 Sensor Board**



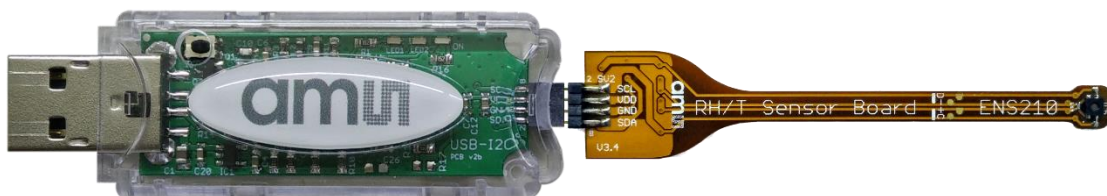
The sensor board has the following key features:

- Flex foil as carrier with small dimension (61 mm length × 12.5 mm width).
- Board interface with power (VDD, GND) and I<sup>2</sup>C Signal (SCL, SDA).
- Sensor chip supports Standard I<sup>2</sup>C mode (100 kHz), Fast I<sup>2</sup>C mode (400 kHz) and clock stretching.
- Sensor board supports 1.71 V to 3.6 V power supply range.
- Test points on board (D, -, +, C) for power and I<sup>2</sup>C Signal.

Also note:

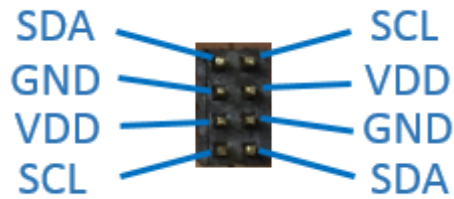
- By plugging the board interface into the USB-I2C dongle as shown in Figure 2, I<sup>2</sup>C commands can be given via the serial port. Most notably, sensor measurement values can be read.

**Figure 2 ENS210 Sensor Board with USB-I2C Dongle**

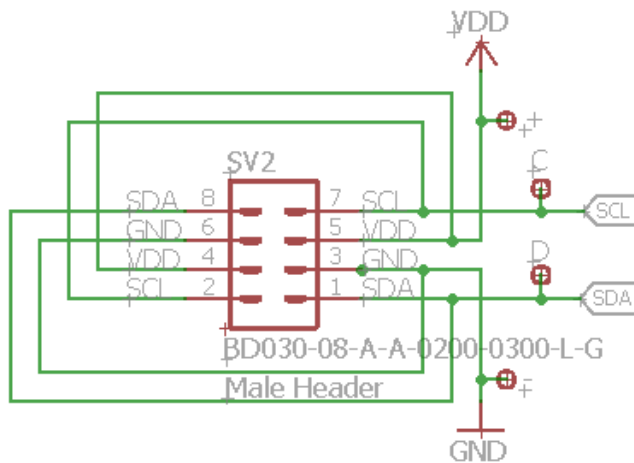


## 3 Sensor Board Interface

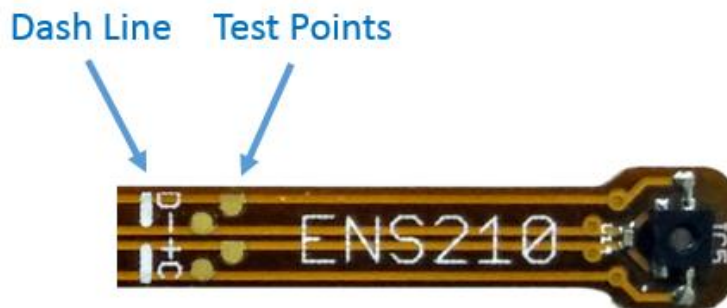
The signal labels and pin designators for the board interface are illustrated in Figure 3.

**Figure 3 Interface Pinout – Sensor Board View**

The sensor board interface, SV2 in the silk print, carries four lines: VDD/GND (power) and SCL/SDA (I<sup>2</sup>C). For mechanical stability, the interface has a double amount of pins: 8 instead of 4. Each line is connected to two pins. The wiring has rotational symmetry. This has the advantage that the sensor board can be inserted top up or bottom up, both are electrically equivalent. The schematic of the connector is shown in Figure 4.

**Figure 4 Interface Connection**

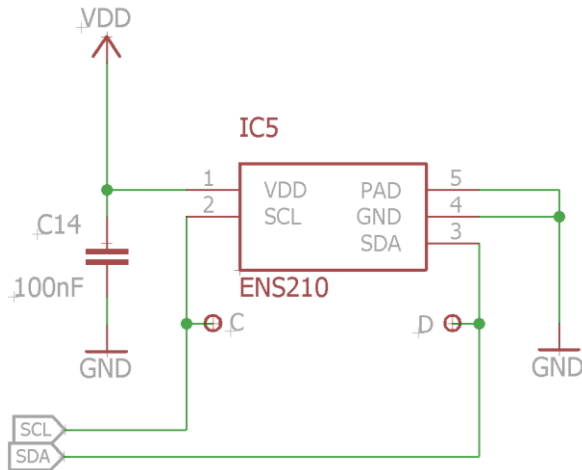
There are four test points which are physically located in the middle of the sensor board as shown in Figure 5. “D” for SDA; “-” for GND; “+” for VDD; “C” for SCL. For a quick integration, cut the board from the dash line, and solder wires from test points to the target device.

**Figure 5 Sensor Board Test Points**

## 4 ENS210 Connection

Figure 6 shows how the ENS210 is connected. The decoupling capacitor C14 (100 nF) is placed as close as possible to ENS210 (IC5). The middle pad (pin 5 of ENS210) is connected to GND.

**Figure 6 ENS210 Connection**



## 5 Sensor Board Layout

ENS210 sensor board layout is as shown in Figure 7 and Figure 8.

**Figure 7 Layout Top Layer**



**Figure 8 Layout Bottom Layer**



## 6 Summary

This document describes the ENS210 sensor board about what it is and how to use it from the user point of view.

## 7 Ordering & Contact Information

Ordering Code	Description
ENS210-QF_EK_ST	ENS210 Eval Kit Standard Board

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### Headquarters

ams AG  
Tobelbaderstrasse 30  
8141 Premstaetten  
Austria, Europe

Tel: +43 (0) 3136 500 0

Website: [www.ams.com](http://www.ams.com)

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## 9 Revision Information

Changes from previous version to current revision 1-00 (2016-Oct-13)	Page
Initial version 1-00	

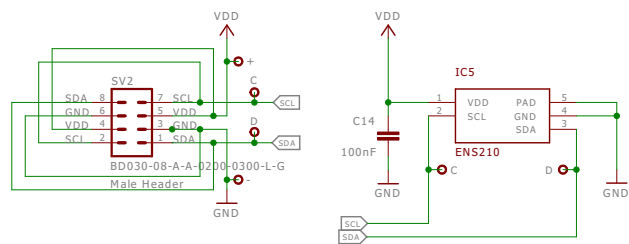
**Note:** Page numbers for the previous version may differ from page numbers in the current revision.  
Correction of typographical errors is not explicitly mentioned.



## ENS210 Sensor Board

The left diagram illustrates the connection of the ENS210 sensor board to a male header. The header pins are labeled: SDA (8), GND (6), VDD (4), SCL (2), and SV2 (1). The sensor board pins are labeled: SDA (8), GND (6), VDD (4), SCL (2), and SV2 (1). The sensor board is identified as BD030-08-A-A-0200-0300-L-G.

The right diagram shows the connection of the ENS210 sensor board to a microcontroller (IC5). The microcontroller pins are labeled: VDD (1), SCL (2), GND (3), and SDA (4). The sensor board pins are labeled: VDD (1), SCL (2), GND (3), and SDA (4). A 100nF capacitor (C14) is connected between VDD and GND. The sensor board is identified as IC5.



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