HS4100-EVK

Evaluation Kit for the HS4101 Humidity and Temperature Sensor

The HS4100-EVK Evaluation Kit is used to assess the HS4101 High-Performance Analog Relative Humidity and Temperature Sensor. The hardware allows users to communicate with the evaluation board through a standard USB interface, and to view digitized measurements from the sensor using the Demo Software. The analog output voltage of the sensor can also be measured with a multimeter using easily accessible testpoints on the evaluation board.

The evaluation board can be powered directly from the USB port of the user's computer.

Features

- Relative Humidity Sensor Module with HS4101 sensor:
  - RH accuracy: ±1.5%RH
- Demo Software:
  - Data plotter
- Sensor module extension cable allows extending the HS4101 Sensor Module to different measurement areas

Board Contents

- HS4100-EVK evaluation board
- Three HS4101 sensor modules
- Sensor module extension cable
- USB cable

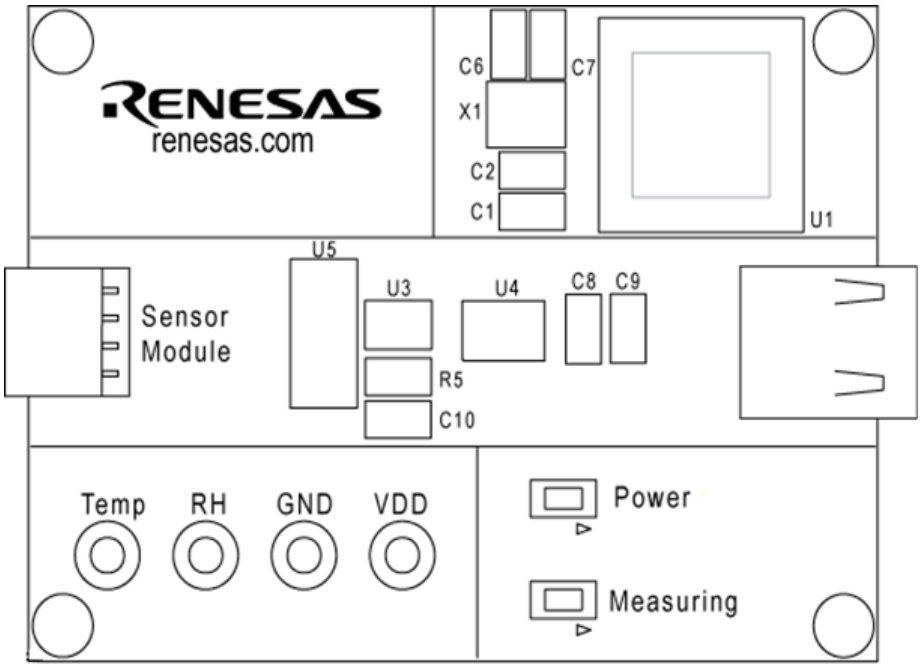


Figure 1. HS4100-EVK Evaluation Kit

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1. Functional Description

1.1 Setup and Configuration

1.1.1. Computer Requirements

A Windows®-based computer is required for interfacing with the evaluation kit. The user must have administrative rights on the computer to install the Renesas Demo Software for the kit.

The computer must meet the following minimum systems requirements:

- CPU – Intel or compatible
- RAM – 512MB
- Operating system – Windows® XP / Vista / 7 / 8 / 10
- Ports – One available USB port

1.1.2. Software Installation and Setup

Complete the following procedure to install the Demo Software:

1. Plug in the USB flash drive to start the setup.
2. If the setup process does not start automatically, double-click on the *Setup.exe* file.

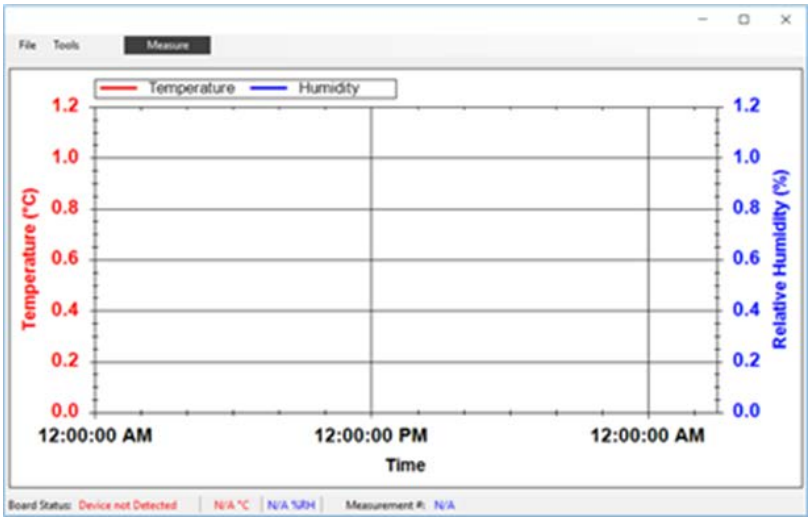


Figure 2. Initial Display after Installation of the Demo Software

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1.2 Kit Hardware Connections

Complete the following procedure to set up the kit as shown in Figure 3:

1. Install the software from the USB flash drive or download from renesas.com as described in Software Installation and Setup.
2. Connect one of the HS4101 sensor modules facing up, with or without the extension cable attached, into the sensor module connector ①.
3. Connect the USB port ② of the board to the user's computer using the supplied USB cable. The power LED ③ will light up. The sensor will now be active and the analog RH and Temperature voltages can be measured using the on-board test point ④.
4. Run the Demo Software package from the Start menu, and click on the "Measure" button ⑤. The captured data will be displayed on the graph ⑥.

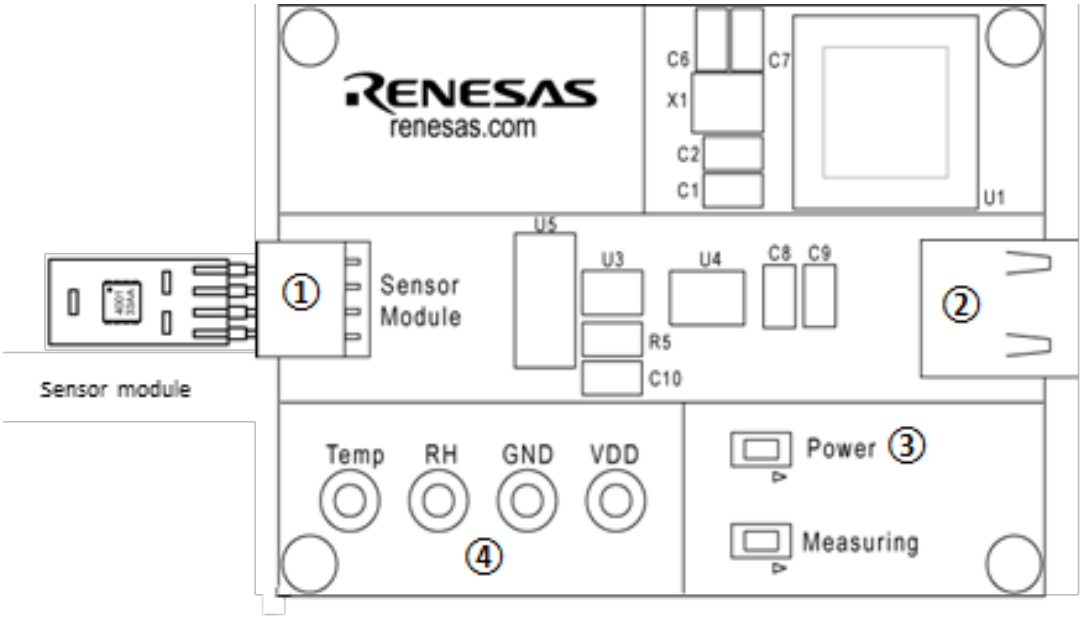


Figure 3. Evaluation Kit Connections

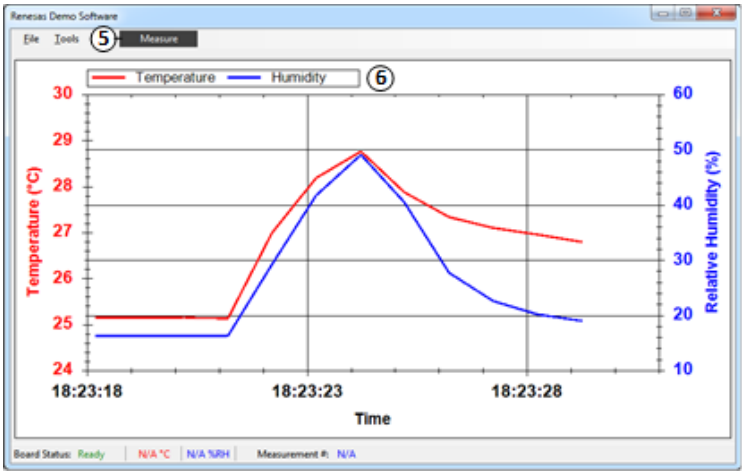


Figure 4. Start Measurements

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2. Using the EVK

2.1 Measurement Settings

To change the interval and number of measurements to be made, select *Measurement Settings* from the *Tools* menu, enter the desired values, and then click OK, as shown in Figure 5. For the range of valid settings for these two entry fields, see Valid Settings Ranges.

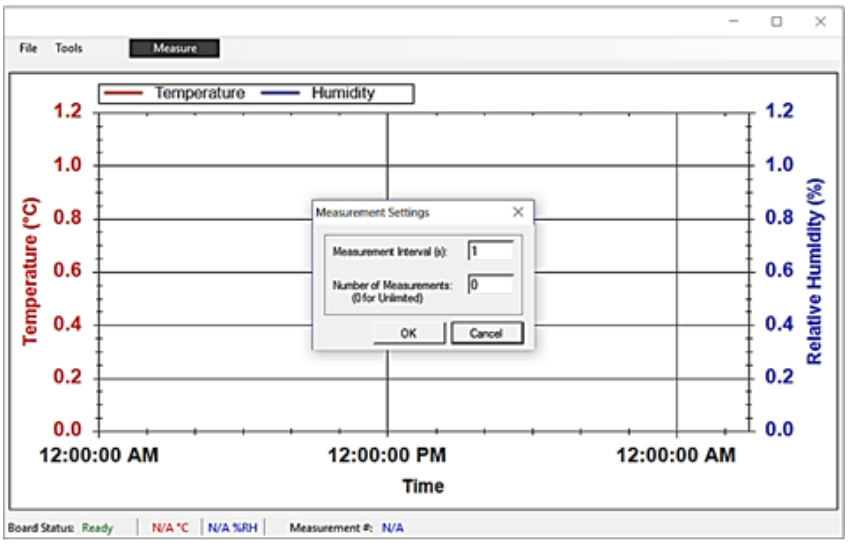


Figure 5. Measurement Settings

2.2 Exporting Data

The data displayed in the plotter area can be exported in two different formats.

- To export the measured data points in a Microsoft Excel® compatible comma-separated text file, select *Save Data* from the *File* menu. Create a filename for the data, and select the location where the file will be saved.
- To export the plots themselves as a picture file, right-click on the plot area and select *Save Image As*. Create a file name, select the location, and select the file type for the image.

2.3 Using the Plotter

The plotter (6) displays the measured relative humidity and temperature data simultaneously versus time (see Figure 3).

- Hold the left-mouse button, and drag it around an area to zoom onto that area.
- Hold the middle mouse or scroll button, and drag to pan across the plot area.
- To undo a zoom or pan operation, right click on the plot area, and select *Un-Zoom (Un-Pan).*
- The plot area can always be reset to the default view by right clicking on the plot area and selecting *Undo All Zoom/Pan.*
- To display the measurement points on the plotted curves, right click on the plot area and select *Show Data Points.* While moving the application window, measurements points will not be plotted.

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3. Ordering Information

Part Number	Description
HS4100-EVK	HS4100-EVK Evaluation Kit, including HS4100-EVK evaluation board, HS4101 sensor modules, sensor module extension cable, USB key with Demo Software, USB cable

4. Revision History

Revision	Date	Description
1.00	June 16, 2022	Initial release.

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