

# LabVIEW Framework for EK-H4

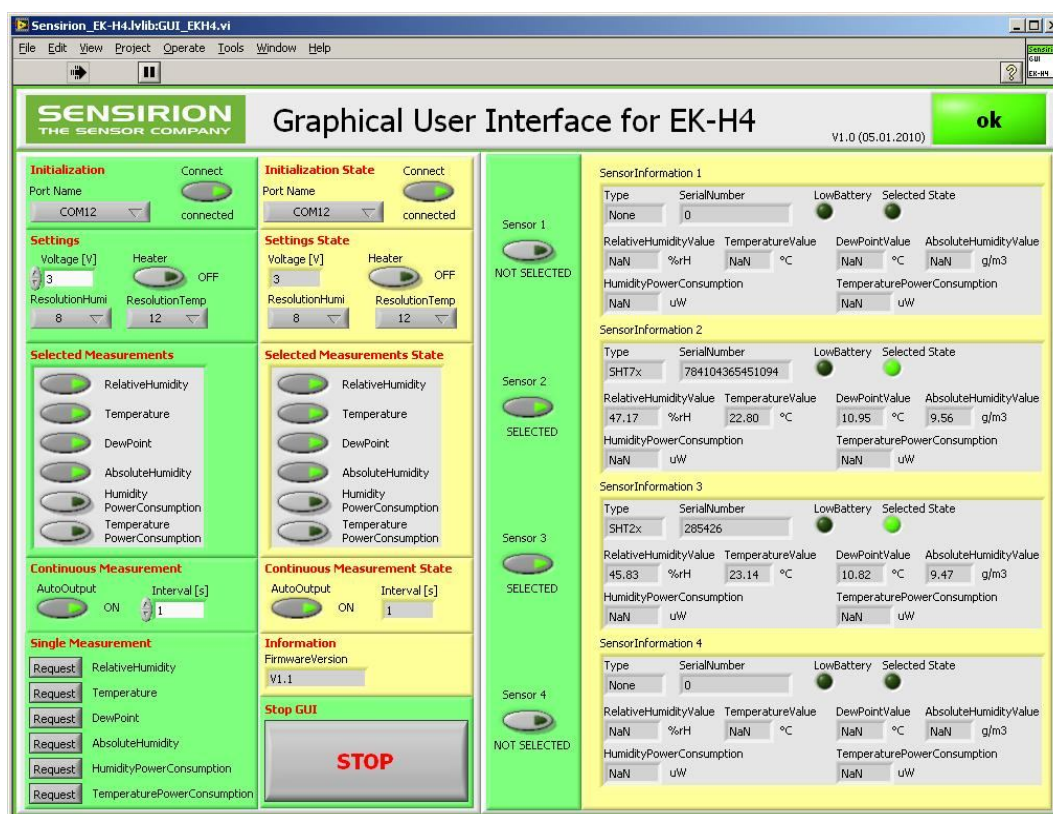
## For Integrating Humidity Measurements into Experimental Control

### Preface

EK-H4 is an Evaluation Kit for SHT21 and SHT71 humidity and temperature sensors. Standard viewer software is based on .NET script. For integrating EK-H4 into superior LabVIEW experimental control framework a series of VI's and a GUI is provided.

### Description of the Graphical User Interface (GUI)

The LabVIEW GUI is not the standard viewer software for EK-H4, its main purpose is to inspire on how to integrate EK-H4 into superior LabVIEW control units. The GUI is displayed below:



### Initialization and Settings

Green areas contain input terminals while yellow areas display status and values. Beginning from the top left side at *Initialization*, the USB port is selected and connected. With the same button the GUI may be disconnected from the EK-H4 such that it may be addressed by other software while the VI keeps running. The *Stop* button at the lower end, however, serves for stopping the entire VI.

In the field *Settings* supply voltage, resolutions for relative humidity and temperature as well as the use of the heater may be determined or activated.

### Continuous Mode

In case the evaluation kit is used in continuous measurement mode, the values to be displayed are selected in the *Selected Measurements* area. Please note that only relative humidity and temperature are measured, all other values are calculated. The sensors connected to the multiplexer box must be activated by the switches in the middle green

column. After selecting the measurement interval in the *Continuous Measurement* area the measurement series may be started by pressing the *AutoOutput* button.

### Single Measurements

For a single measurement the switches in the middle green area must be activated and upon pressing a *Request* button in the *Single Measurement* area, respective measurement is made and displayed.

### Prerequisites

The use of the EK-H4 LabVIEW Framework requires the following prerequisites:

- LabVIEW 8.2.1 or higher
- Installation of driver (CP2102 USB to UART Bridge Controller)
- Connection of EK-H4 multiplexer box to USB port

### Installation

For the installation of the LabVIEW Framework, the following steps must be taken:

- Copy this (unzipped) folder to the LabVIEW user.lib folder: [program folder]\National Instruments\[LabVIEW version]\user.lib
- Open LabVIEW and search VI under "Functions" → "User Libraries" → "Sensirion\_EK-H4"

If necessary, add EK-H4 VI's to palettes:

- Tools → Advanced → Edit Palette Set
- Select "User Libraries" → right click "Insert" → "Subpalette..."
- Select "Link to an existing palette file (.mnu)"
- Select [program folder]\National Instruments\[LabVIEW version]\user.lib\Sensirion\_EKH4\dir.mnu
- Save changes

### Integration in Experimental Control Software

For independent measurements or evaluations by this LabVIEW Viewer, the GUI VI shall be started. For understanding the architecture of the LabVIEW VI's for this GUI and inspiration on how to integrate the software into superior control software, the VI-tree shall be consulted.