

# Getting started

## System requirements

- Windows PC
- Digital Differential Pressure Sensor SDP800
- STM32-Discovery board from STMicroelectronics (STM32VLDISCOVERY)<sup>1</sup>
- USB type A to mini-B cable



1. Download and install the Microcontroller Development Kit for ARM (MDK-ARM).  
Version: 4.xx

<https://www.keil.com/demo/eval/armv4.htm>


**Alternatively**, you can also use version 5.xx with the Legacy support packet:

<http://www2.keil.com/mdk5/legacy>

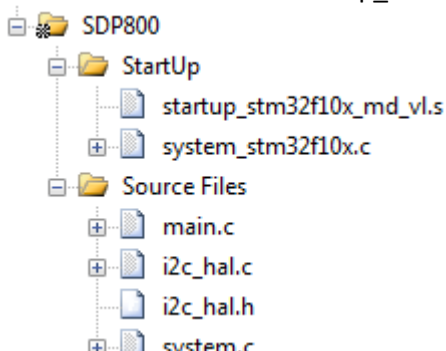
2. Download the sample code for the SDP800.  
<http://www.sensirion.com/en/products/differential-pressure-sensors/download-center/>


3. Install ST-Link USB Driver: [Keil install directory]\ARM\STLink\USBDriver\

4. Unzip the sample code and open the µVision4 Project.

 SDP800\_SampleCode.uvproj

5. Check whether the file "startup\_stm32f10x\_md\_vl.s" and "system\_stm32f10x.c" was found.




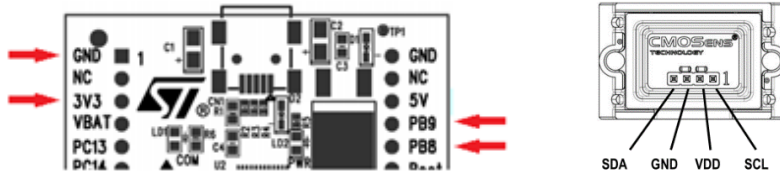
A blank icon  indicates that the file was not found.

- In this case you need to remove the reference to this file by right clicking → Remove File 'startup\_stm32f10x\_md\_vl.s' and "system\_stm32f10x.c"
- To add the correct files right-click on StartUp → Add Files to Group 'StartUp'. Make sure that the file type "Asm Source files" or "All files" is selected. You find the files in the following directory:  
[Keil install directory]\ARM\Startup\ST\STM32F10x\

<sup>1</sup> available from: [www.digikey.com](http://www.digikey.com)  
[www.mouser.com](http://www.mouser.com)  
[www.farnell.com](http://www.farnell.com)


Part Nr.: 497-10633-ND  
Part Nr.: 511-STM32VLDISCOVERY  
Part Nr.: 1824325

6. Press F7 or click  to build the target files.
7. Connect the STM32-Discovery board to the PC with a USB cable.  
For further information on the evaluation board, please visit the manufacturers website:  
[www.st.com/stm32-discovery](http://www.st.com/stm32-discovery)
8. Connect the SDP800 to the evaluation board.



STM32VLDISCOVERY	SDP800
PB8	SCL
3V3	VDD
GND	GND
PB9	SDA

Note: For both I2C bus lines, **SCL** and **SDA**, a **pull-up resistor** is required ( $\approx 10k\Omega$ ).

9. Start the debugger in  $\mu$ Vision by pressing Ctrl+F5 or click Debug in the menu → Start/Stop Debug Session.
10. Press F5 or click  to run the program.  
The green LED lights if no error occurs, in this case the communication with the sensor works. The blue LED lights if a weak pressure difference is detected.
11. Add the variables **error**, **diffPressure** and **temperature** to the watcher or set a breakpoint to check the values.