Getting started

System requirements
- Windows PC
- Mass Flow Meter SFM3000
- STM32-Discovery board from STMicroelectronics (STM32VLDISCOVERY)[1]
- USB type A to mini-B cable

1. Download and install the Microcontroller Development Kit for ARM (MDK-ARM).
   Version: 4.60
   https://www.keil.com/demo/eval/arm.htm

2. Download the sample code for the SFM3000.
   http://www.sensirion.com/en/products/gas-flow-sensor-solutions/download-center/

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

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

   SF05_SampleCode.uvproj

5. Check whether the file "startup_stm32f10x_md_vl.s" was found.

   STM32-Discovery
     StartUp
       startup_stm32f10x_md_vl.s
     Source Files
       i2c_hal.c
       main.c
       sf05.c
       system.c
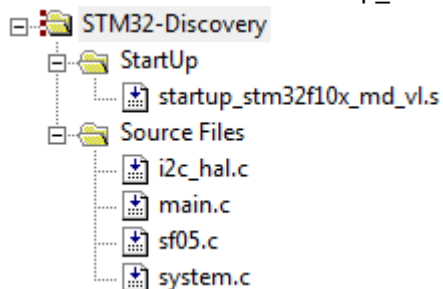
   A blank icon ☐ indicates that the file was not found.
   - In this case you need to remove the reference to this file by right clicking → Remove File 'startup_stm32f10x_md_vl.s'.
   - To add the correct file right-click on StartUp → Add Files to Group 'StartUp'.
     Make sure that the file type "Asm Source files" or "All files" is selected.
     You find the file in the following directory:
   [Keil install directory]\ARM\Startup\ST\STM32F10x\

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[1] available from: www.digikey.com   Part Nr.: 497-10633-ND
www.mouser.com   Part Nr.: 511-STM32VLDISCOVERY
www.farnell.com   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

8. Connect the SFM3000 to the evaluation board.
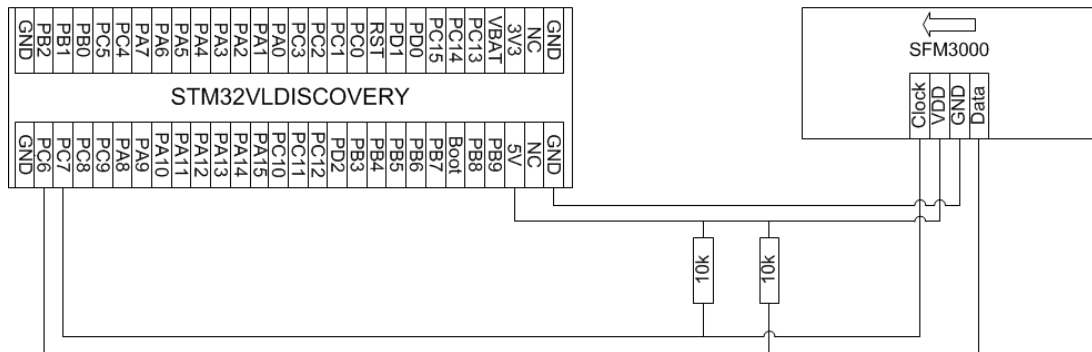
   Note: For both I2C bus lines, data and clock, a pull-up resistor is required.

9. Start the debugger in µVision4 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 flow is detected.

11. Add the variables error, serialNumber and flow to the watcher or set a breakpoint to check
    the values.