ESRF-ESF Evaluation Software Manual

Title	ESRF-ESF Evaluation Software Manual
Doc Ref	ESS-239/131119/EXC-REV.02

DOCUMENT TRACKING TABLE

| Version	Date	Reason for change	
1	13/11/2019	Initial version	L. Voudouris
2	22/01/2021	Added support for different flow versions of the device	L. Voudouris
3	20/9/2022	Updated instructions for installer	C. Papazachariou

1. Programming GUI

1.1 Software Installation

To install the ESRF-ESF Evaluation Software:
- Navigate to the "Volume" folder.
- Run ESRF-ESF_Evaluation_Software_Setup.exe (as administrator if possible) and follow the installation wizard.
- Once the installation is complete run ESRF-ESF_Evaluation_Software.exe

1.2 Application Description
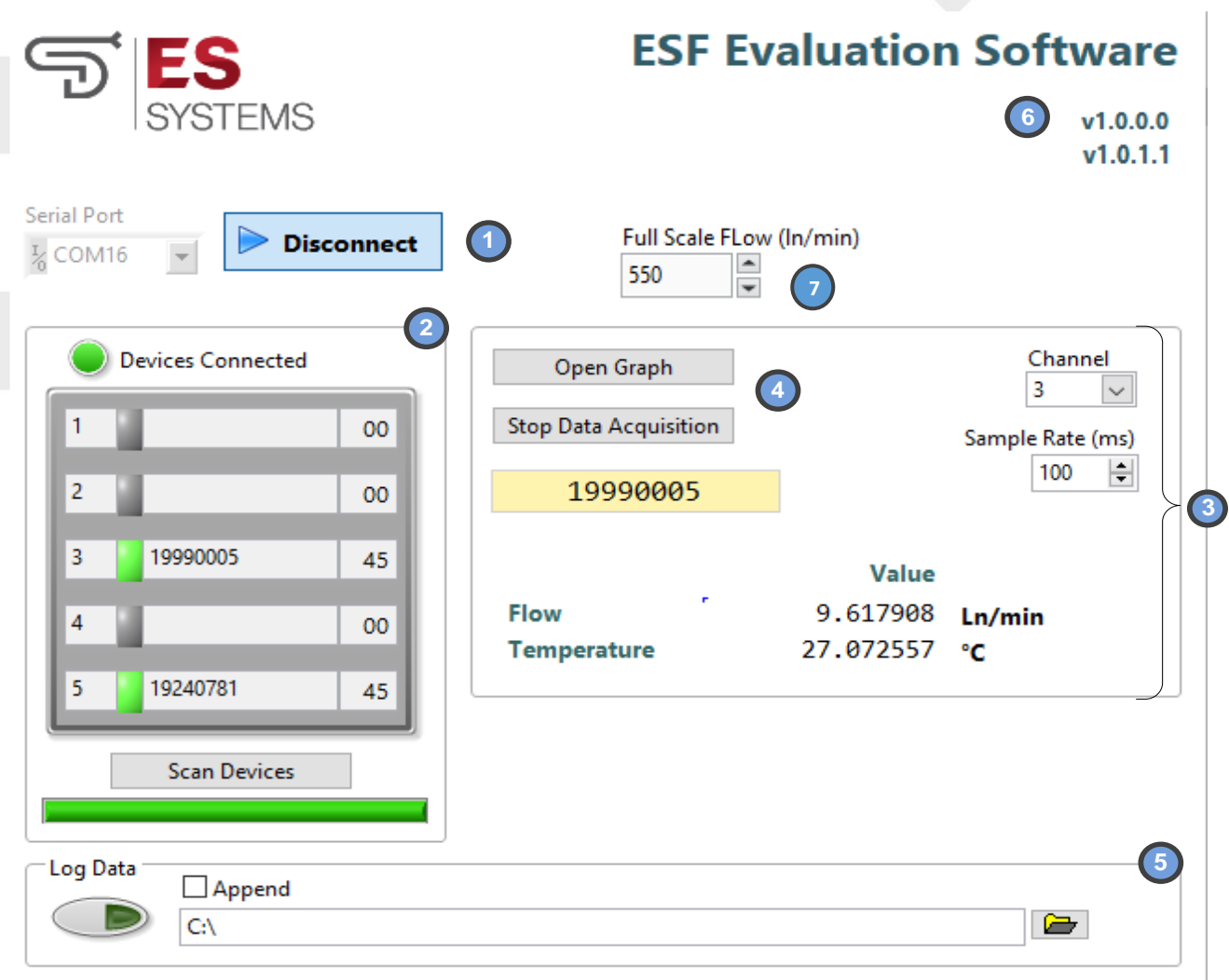
#	Description
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1. Connection Row

Use the *Serial Port* dropdown box to select the COM port that corresponds to the Evaluation Kit and press the *Connect* button, which upon successful connection will change color and its text will now display *Disconnect*. Pressing *Disconnect* will stop communication with the Evaluation Kit. After connection with the kit is established the software will automatically scan for connected devices (see Device Scan below).

2. Device Scan

The software scans for connected devices and displays the results in a table. The table columns indicate the channel number, an LED that goes green when a device is connected to the channel, the device's serial number and the device's I2C slave address (in hex). Device scan is performed automatically after successfully establishing a connection with the Evaluation Kit or can be manually started by pressing the *Scan Devices* button. The scan progress is indicated by a progress bar below the button. If a device is found on any channel the *Devices Connected* LED lights green.

3. Data display

The received data values are displayed in this table, Flow (in ln/min) and Temperature (in ℃). The user can choose which device's data is displayed by selecting the appropriate channel. The user can also choose the sample rate of the data. The minimum sample rate is 100ms. The same sample rate applies to the graphs and the *Log File*. The user can pause data acquisition at any time by pressing the *Stop Data Acquisition* button.

4. Open data graph window

Pressing the button will open the *Graph Window*
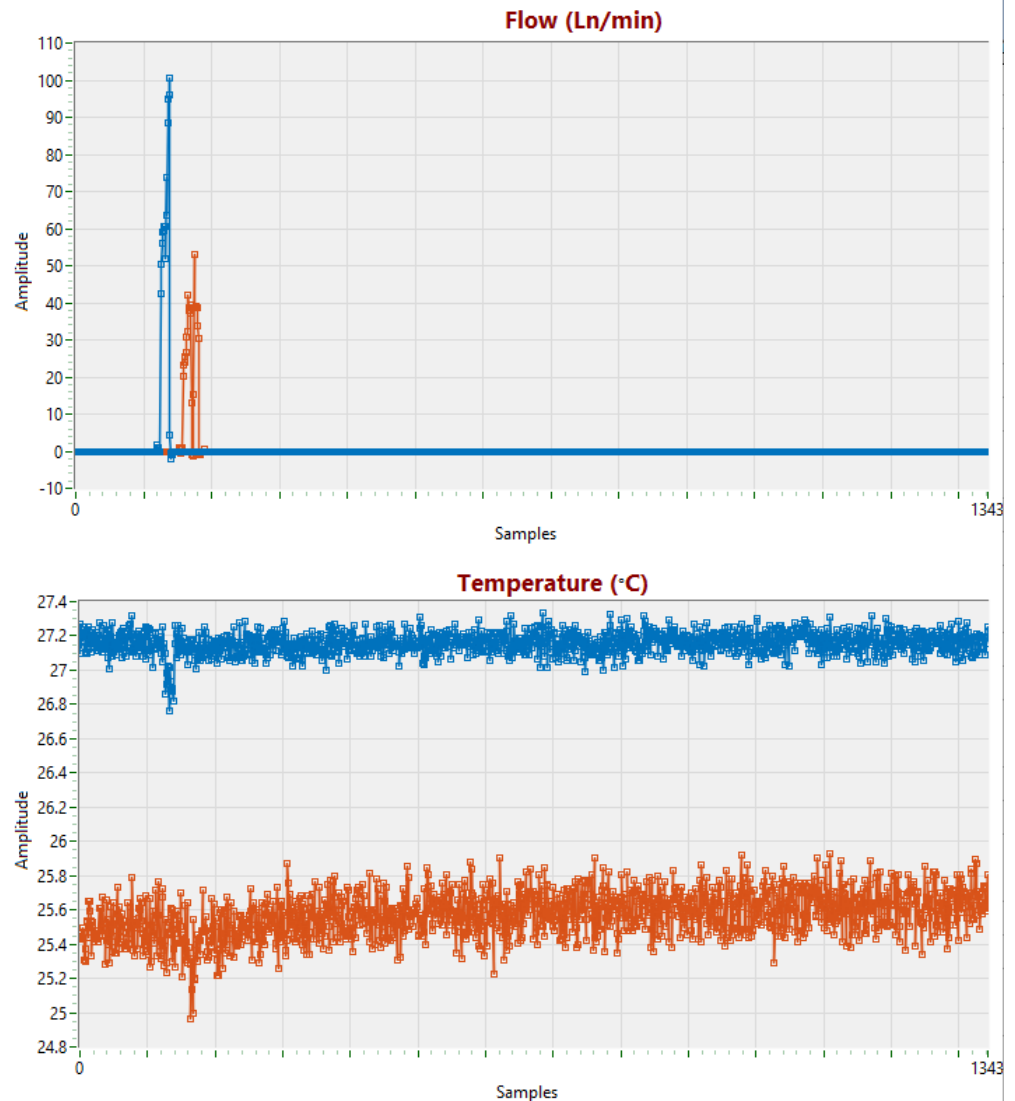
There's a separate graph for each quantity. By default, data for all connected sensors is displayed but the user can select/deselect any of them (1). The user can also zoom/pan the graph area using the respective buttons (2) and clear the graph area by pressing the *Clear History* button (3).

5. Log File Configuration

Optionally the user can log the received data to a file. Use the *Browse* button (folder icon) to select a directory for the log files and press the button to start logging. A log file for each sensor is created with the sensor's serial number as the filename. Pressing the button again will stop logging. By default, existing files are overwritten unless the *Append* option is checked. Data is logged to the file at the rate

specified in the Sample Rate textbox as tab delimited values. Measured quantities are written in the following order

Flow   Temperature

For each measured quantity we log its floating-point value with 6 digits of precision. An example is shown below:

```
4.1602318→  16.0755441
4.1455169→  16.0760584
4.1282437→  16.0796154
4.2275162→  16.0760584
4.1750314→  16.0738132
4.1751571→  16.0561216
4.1355214→  16.0700877
4.1434939→  16.0535278
```

6. Evaluation Software Version

Displays the current version of the application

7. Full Scale Flow

For the software to correctly interpret the readout data from each device correctly the user must enter the fill scale value of the device multiplied by 1.1. This is because the devices' output clips at values 10% above the true full scale value.
For example for a 200lpm device the value to be entered in the software is 220 ln/min