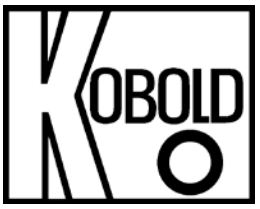


Installation and Operating Instructions

for

Service Software

Model: KEC-Soft

Table of contents

The instruction manuals on our website www.kobold.com are always for currently manufactured version of our products. Due to technical changes, the instruction manuals available online may not always correspond to the product version you have purchased. If you need an instruction manual that corresponds to the purchased product version, you can request it from us free of charge by email (info.de@kobold.com) in PDF format, specifying the relevant invoice number and serial number. If you wish, the operating instructions can also be sent to you by post in paper form against an applicable postage fee.

1 First steps

1.1 Installation of the PC Service Software Flow sensor

Please install the "PC - Service Software Flow Sensors" by starting (double click) the Setup File, “setup Service Soft Flow Sensor 1.0.0.xx”

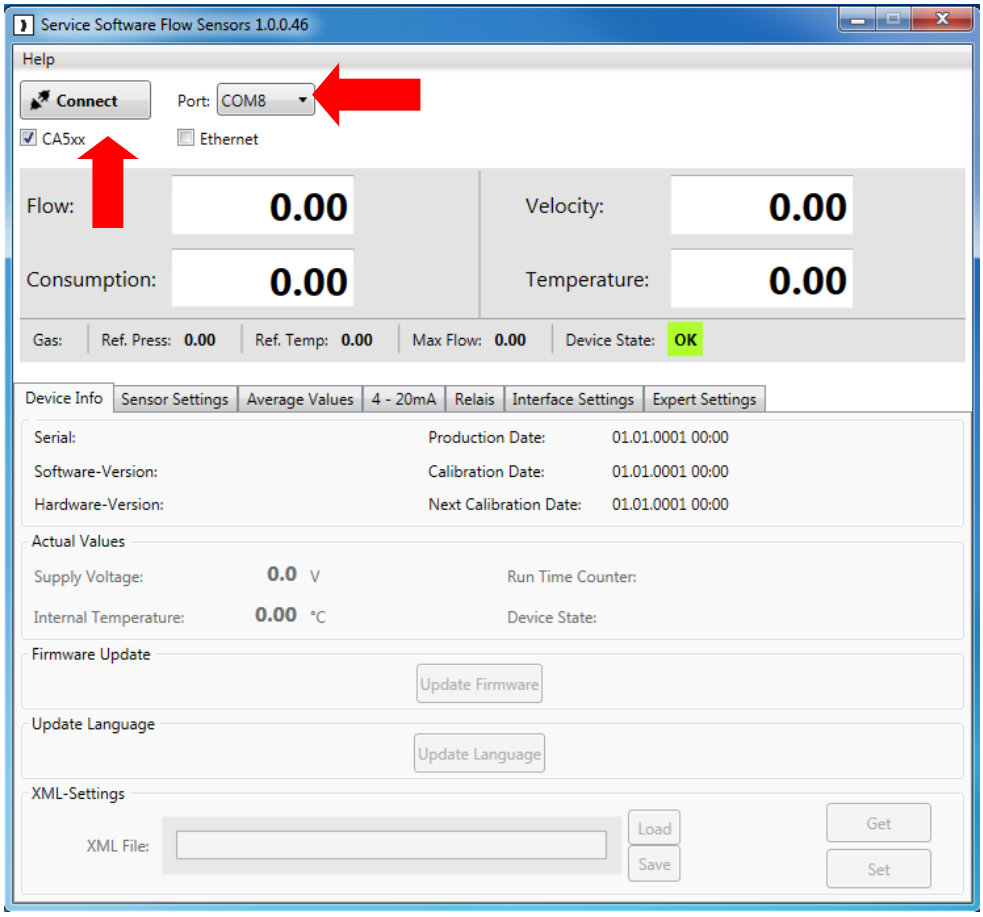
For latest version, please contact the sensor manufacturer.

1.2 Connecting the device to the "Service Software Adapter"

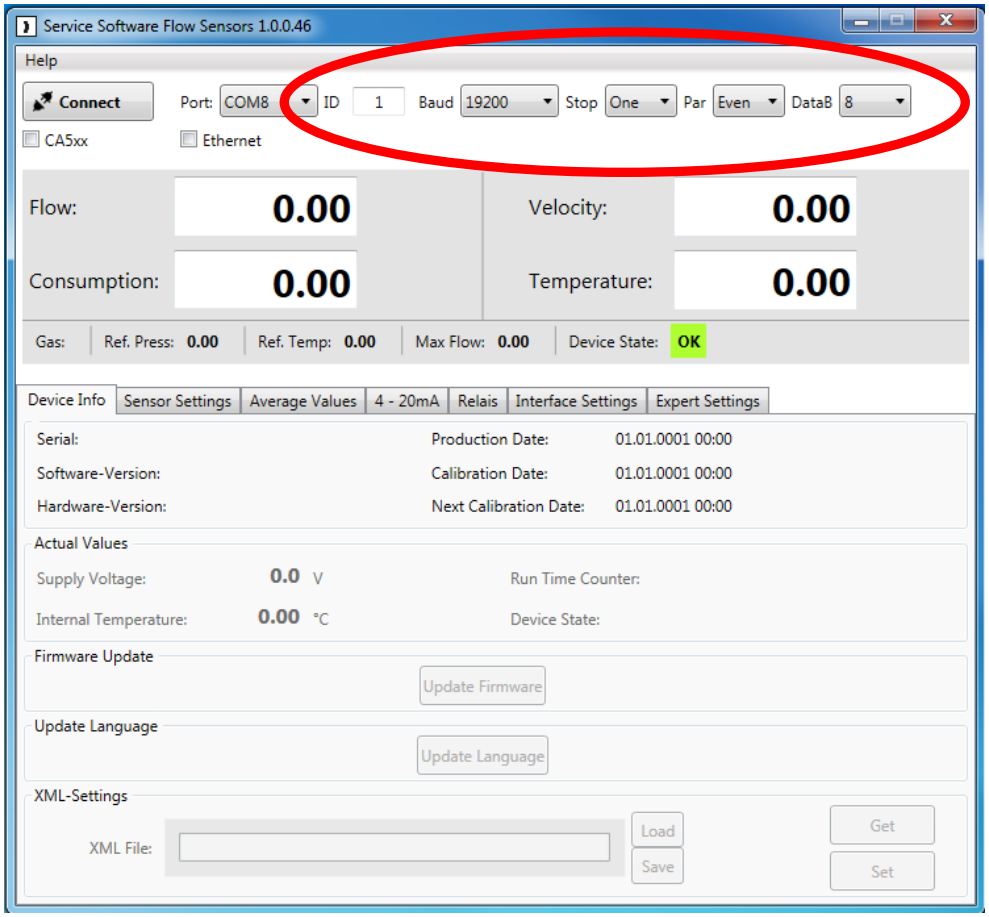
- Please connect the "Service Software Adapter" with the power grid.
- Now connect the "Service Software Adapter" with plug **A** of the flow meter.
- Connect the "Service Software Adapter" with the USB port of your computer.

1.3 Connecting the flow meter to the computer

Please open the latest version of the "PC Service Software Flow Sensors". Be sure, that the control window "CA5xx" is activated. Now choose the "COM-Port" and click "Connect".



1.4 Connecting with Modbus RTU



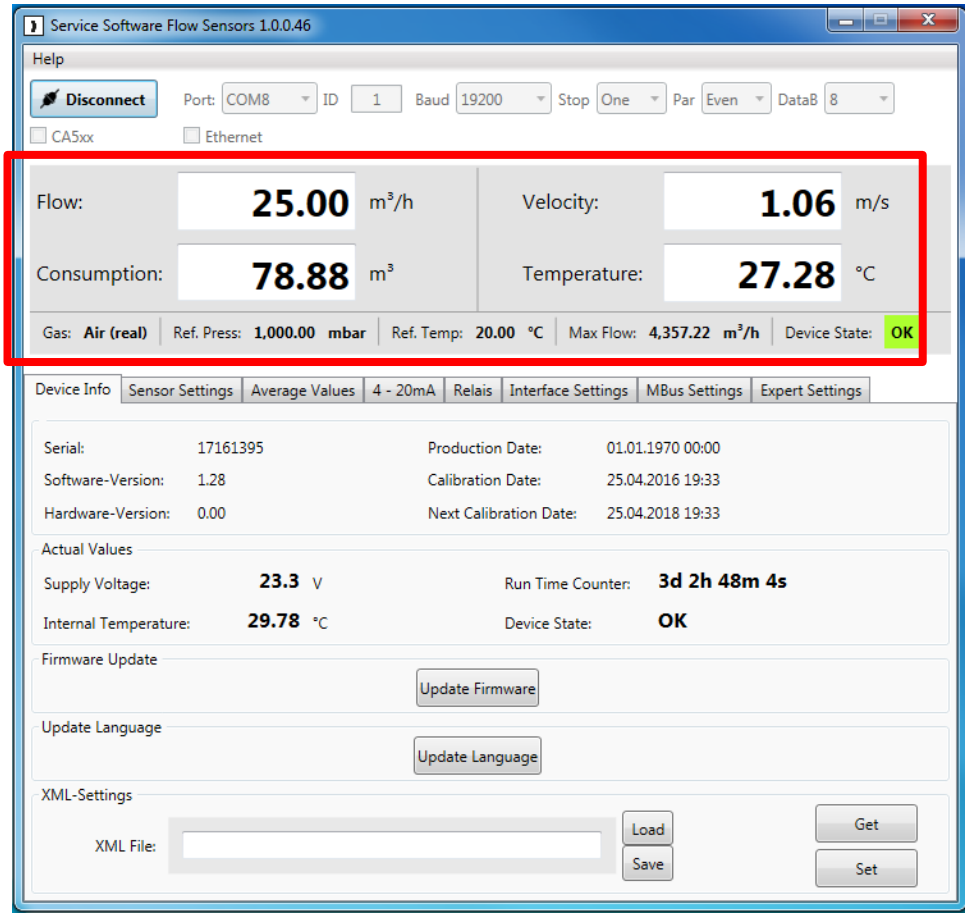
If you don't have the "PC-Service Software Adapter", but your own Modbus converter, please deactivate the control window **"CA5xx"**.

Enter the specific values of the flow meter in the red marked area above.

- ID: 1
- Baud: 19200
- Stop: 1
- Parity: even
- Databits: 8

Please have also a look at - 2.6 Interface Settings

2 Description of the software



The upper part of the window shows the current measurements. In this case the calculation of "Flow" and "Velocity" are based on the values "Reference pressure" and "Reference temperature".

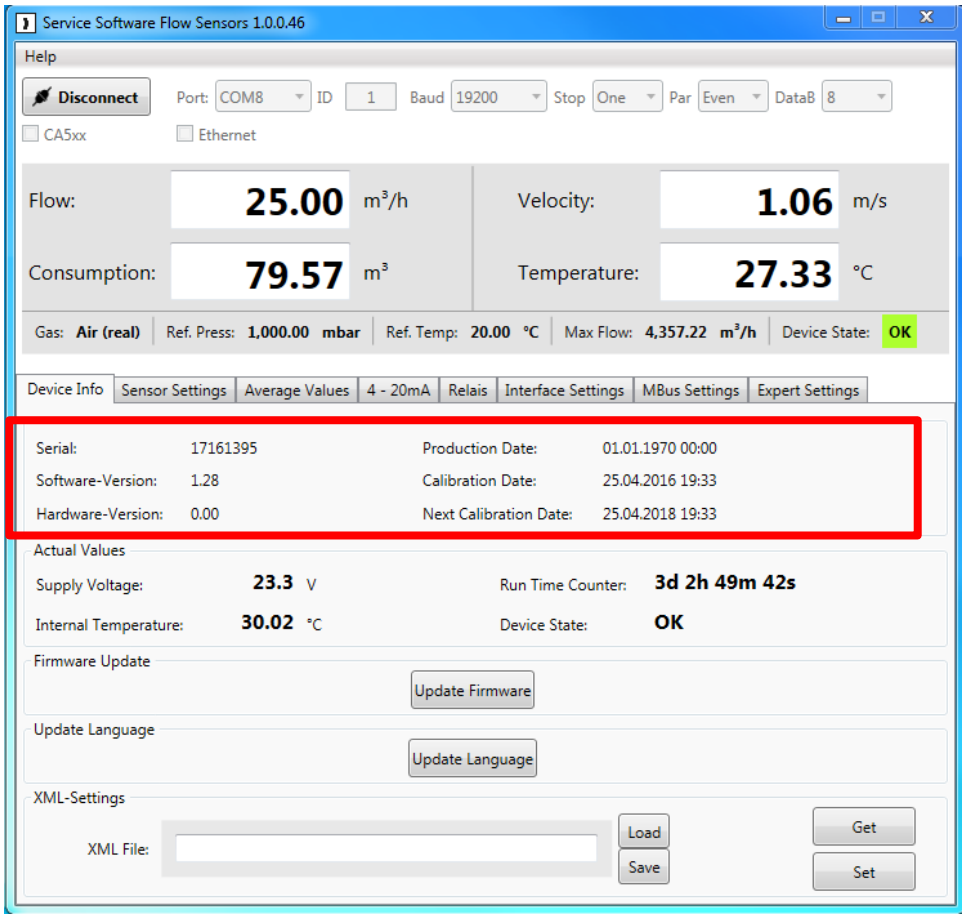
- Flow: Current rate of flow volume
- Consumption: The consumption meter adds the whole flow volume since the beginning of the measurement **(Please have also a look at 2.2 Sensor Settings - General - Consumption)**
- Velocity: Current flow velocity
- Temperature: Current gas temperature
- Gas: Current kind of gas (Sensor Settings --> Gas)
- Ref. Press.: Current set reference pressure (Sensor Settings --> Parameter)
- Ref. Temp.: Current set reference temperature (Sensor Settings --> Parameter)
- Max. Flow: The maximum flow rate which is possible with the actual settings of reference pressure, reference temperature and kind of gas.
- Device State: The "Device State" will be green, if the device is operable. The state will switch from green (OK) to red (ERROR), if the device is not proper connected.

2.1 Device Info

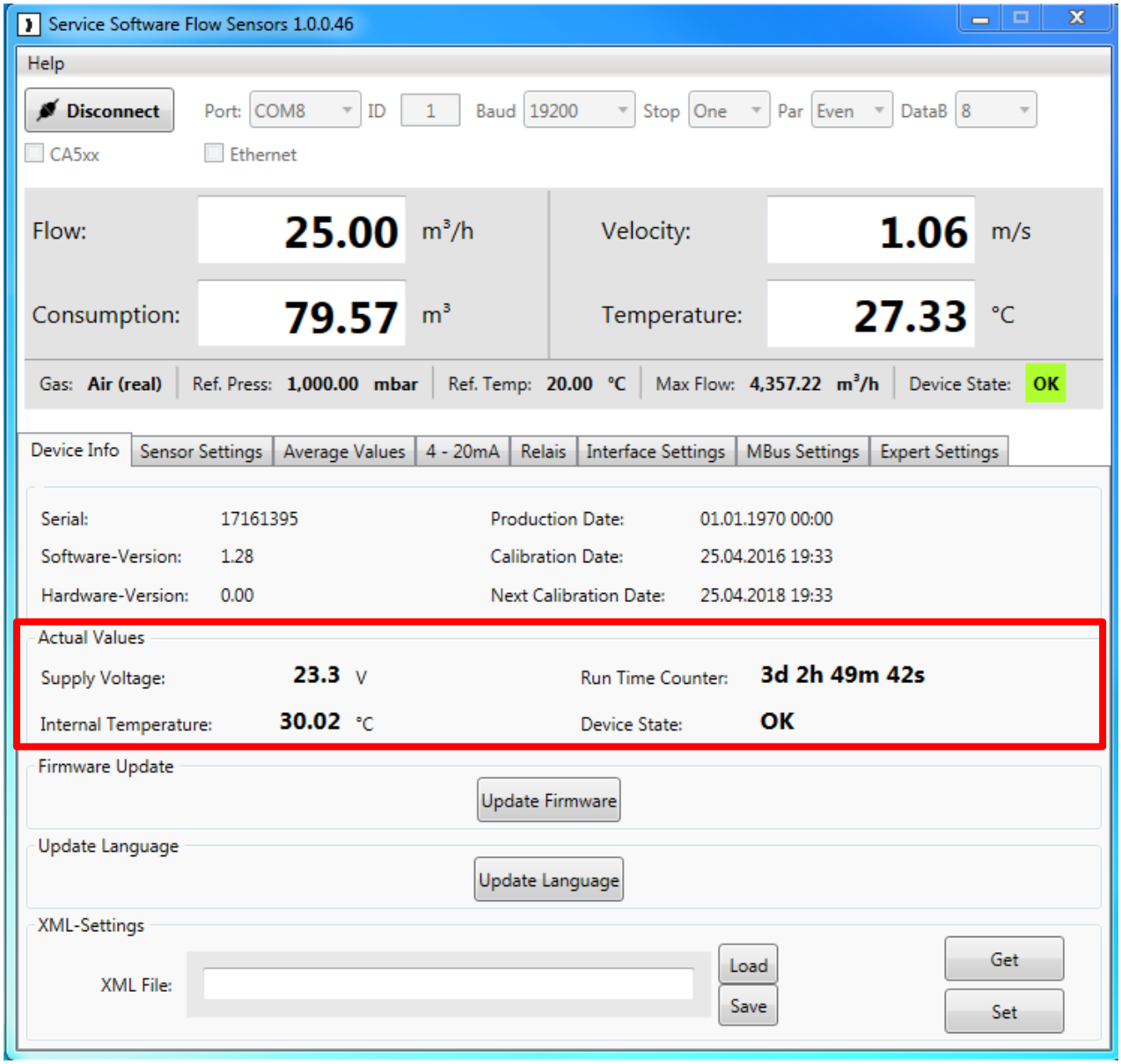
The tab "Device Info" shows different information's about the flow meter.

2.1.1 Device Info “General”

The menu item “Device Info” shows an overview about different specific information's. For example, the serial number, HW- & SW-Version, the production and calibration dates of the connected flow meter etc.



2.1.2 Device Info “Actual Values”



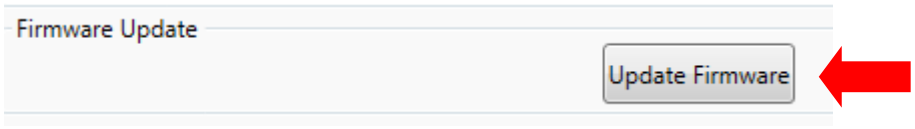
The section "Actual Values" shows:

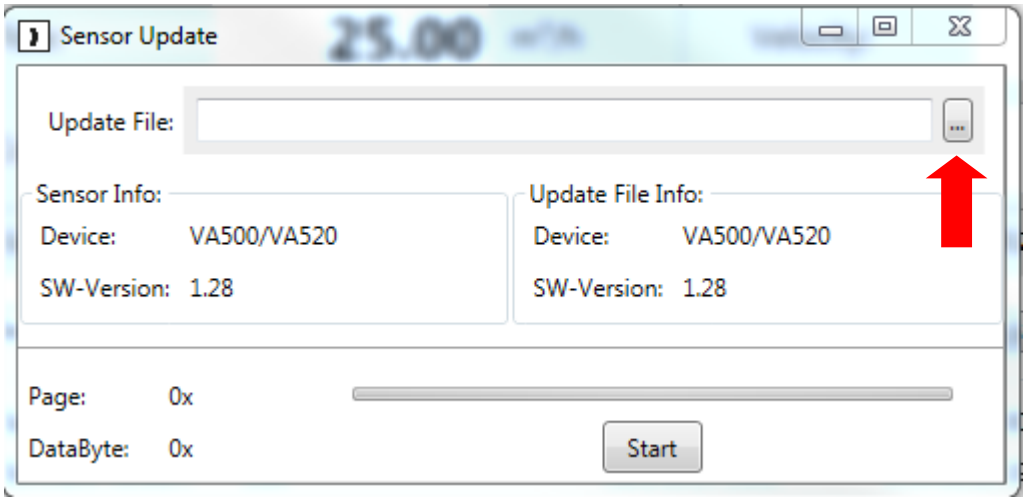
- Supply Voltage: The current supply voltage of the connected flow meter
- Internal Temperature: The current internal temperature of the connected flow meter
- Run Time Counter: Shows the total time of operation (Day:Hour:Minute:Second)
- Device State: please have a look at section **2 Description of the Software**

2.1.3 Device info “Firmware Update”

At this point you can update your device with the latest software version

First you have to request the “update procedure“ by pressing the button “Update Firmware”





In the upcoming popup, you have to select the new software (file), selection by pressing the path icon see red arrow. To start the update please press “Start” button.

For the latest software version, please contact your sensor manufacturer.

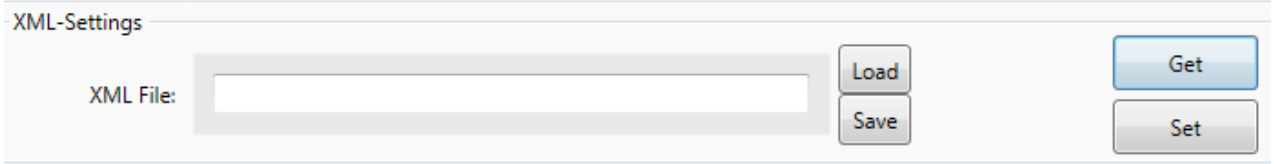
2.1.4 Update Language

You can update your sensor with different language files at "Update Language".

For more information, please ask your manufacturer.

2.1.5 XML - Settings

The sensor settings could be stored in a XML file on a Harddisk, USB etc. So you can restore the sensor settings on the sensor itself or more you can also transfer sensor settings to different sensors.



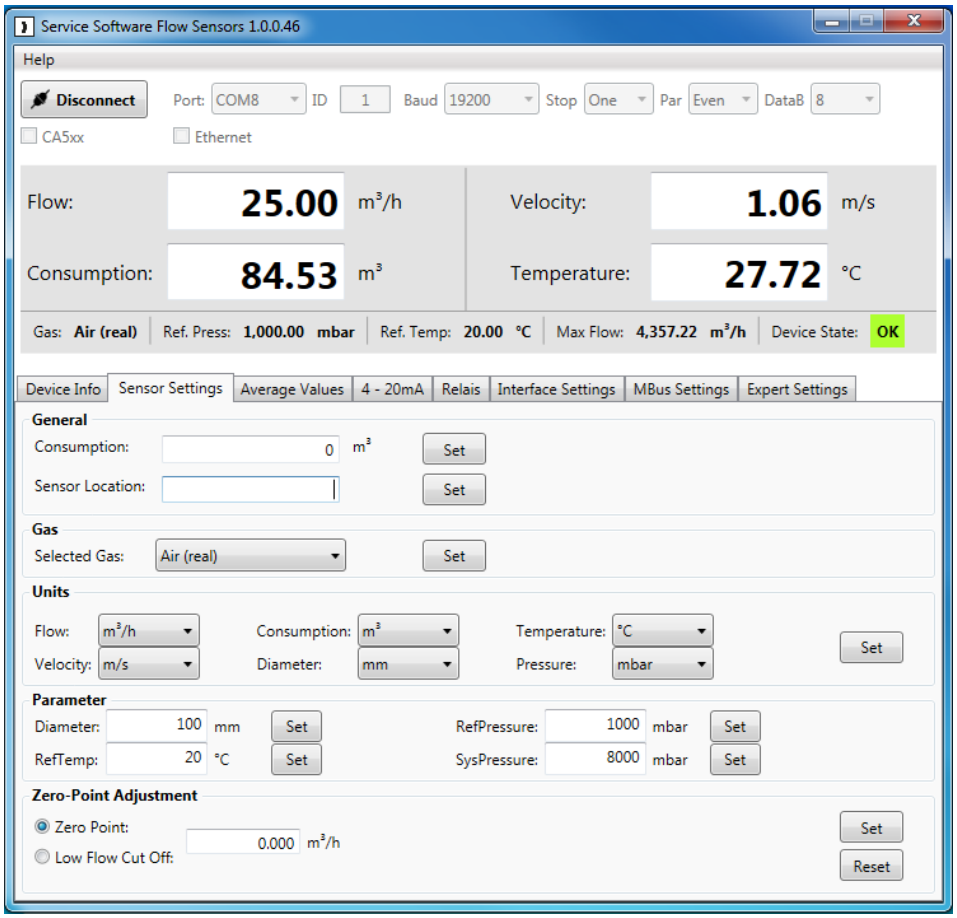
Load: Load XML-File l from Harddisc, USB etc.

Save: store XML-File to Harddisc, USB etc.

Get: Load Settings from sensor for storing as XML-File.

Set: Store Settings from XMl-File in Sensor.

2.2 Sensor Settings



2.2.1 General

- Consumption: Here you are able to preset the value, e.g. by replacing another sensor.
  Value to be entered into the field and transferred to sensor by pressing the “Set” button.
- Sensor Location: Enter up to 15 letters.
  Text to be entered into the field and transferred to sensor by pressing the “Set” button.

2.2.2 Gas

At "Selected Gas" you can choose between different preprogrammed gas types.

If it is a **real gas calibration**, there is the addition "(Real)" behind the name of the gas.

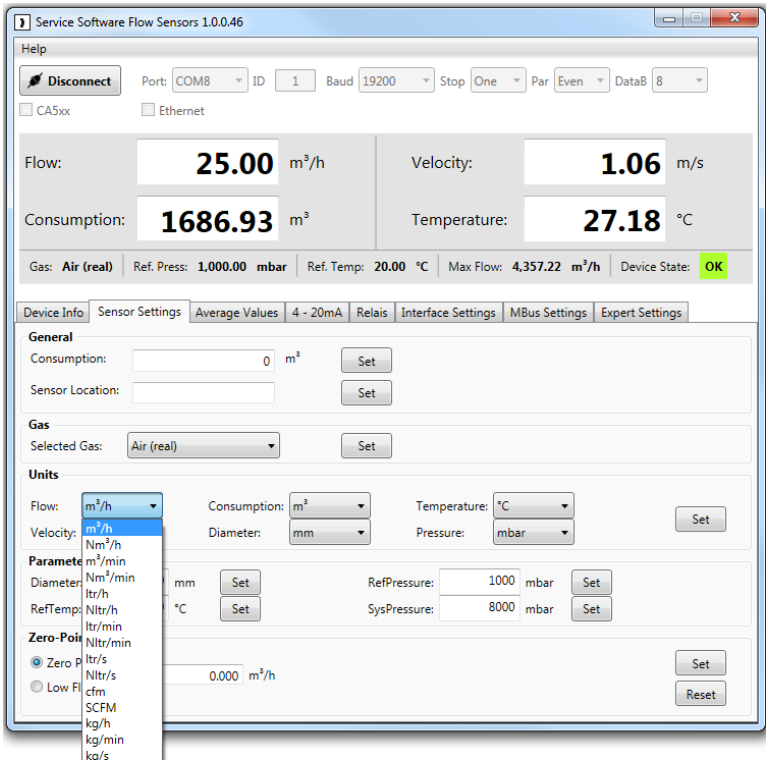
The measuring values will be calculated based on the values of air, if there is no addition.

2.2.3 Units

All units are predefined during production, here and as well at the sensor itself; you have the possibility to change it. Possible units are selectable in the popup menu.

For accessing, please press the “arrow done” symbol of the respective unit.

Example for unit of flow:



Save the new unit using the "Set" button.

2.2.4 Parameter

At the point "Parameter" you can change reference temperature, reference pressure and also enter your system pressure.

To get correct measurement results the correct pipe diameter is required.

In case you have an immersion sensor, it is possible to enter your pipe diameter at "Diameter". Procedure is the identical as above, insert value in corresponding field and transfer it to sensor by pressing the “Set” button.

Remark!

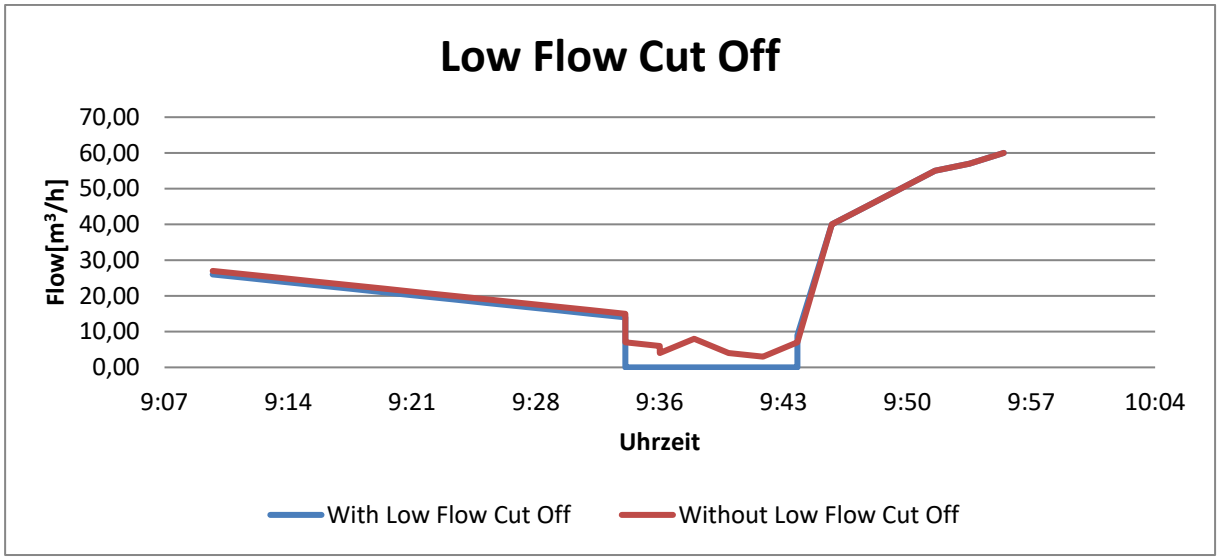
For sensors with integrated measurement sections, diameter is not changeable.

2.2.5 Zero Point Adjustment

It is possible to enter a value that will used either for **zero point calibration** or **low flow cut off**.

- Your entered value will be use as zero point, if you choose "Zero Point". The sensor will start counting at this point. This adjustment is helpful if there is no flow in the pipe, but the sensor shows some.
  For example: Although there is 0,00 m3/h flow in the pipe the flow meter shows 0,08 m3/h. Now you can raise up your zero point to 0,08 m3/h, the flow meter will show now 0,00 m3/h.

- Your entered value will be use as cut off value, if you choose "Low Flow Cut Off". All measuring values below this value won't be shown at the display of the KEC. The values below your entered value also won't be calculated to the consumption meter. Even the 4 - 20 mA output will set to zero (4 mA) and there won't be impulses.



For Example:

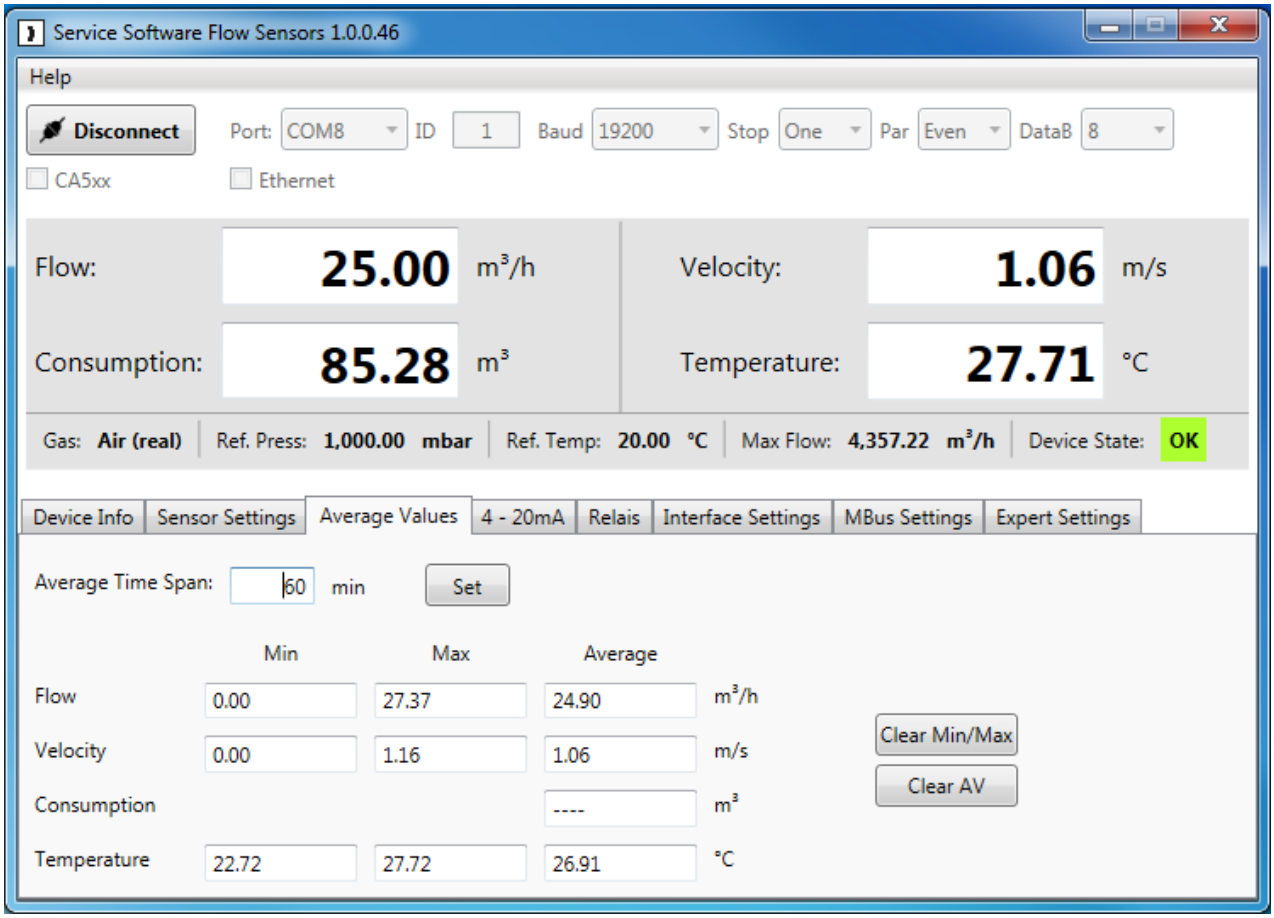
Despite the closed ball valve, 8 m³ / h is still measured in the supply line

The customer set the low flow cut off at 10 m3/h.

The display and the impulse outlet now show zero also the 4-20 mA outlet shows zero (4 mA).

2.3 Average Values

In the tab "Average Values" the minimum, maximum and average values are displayed, in addition the settings for the reference time could be adapted.



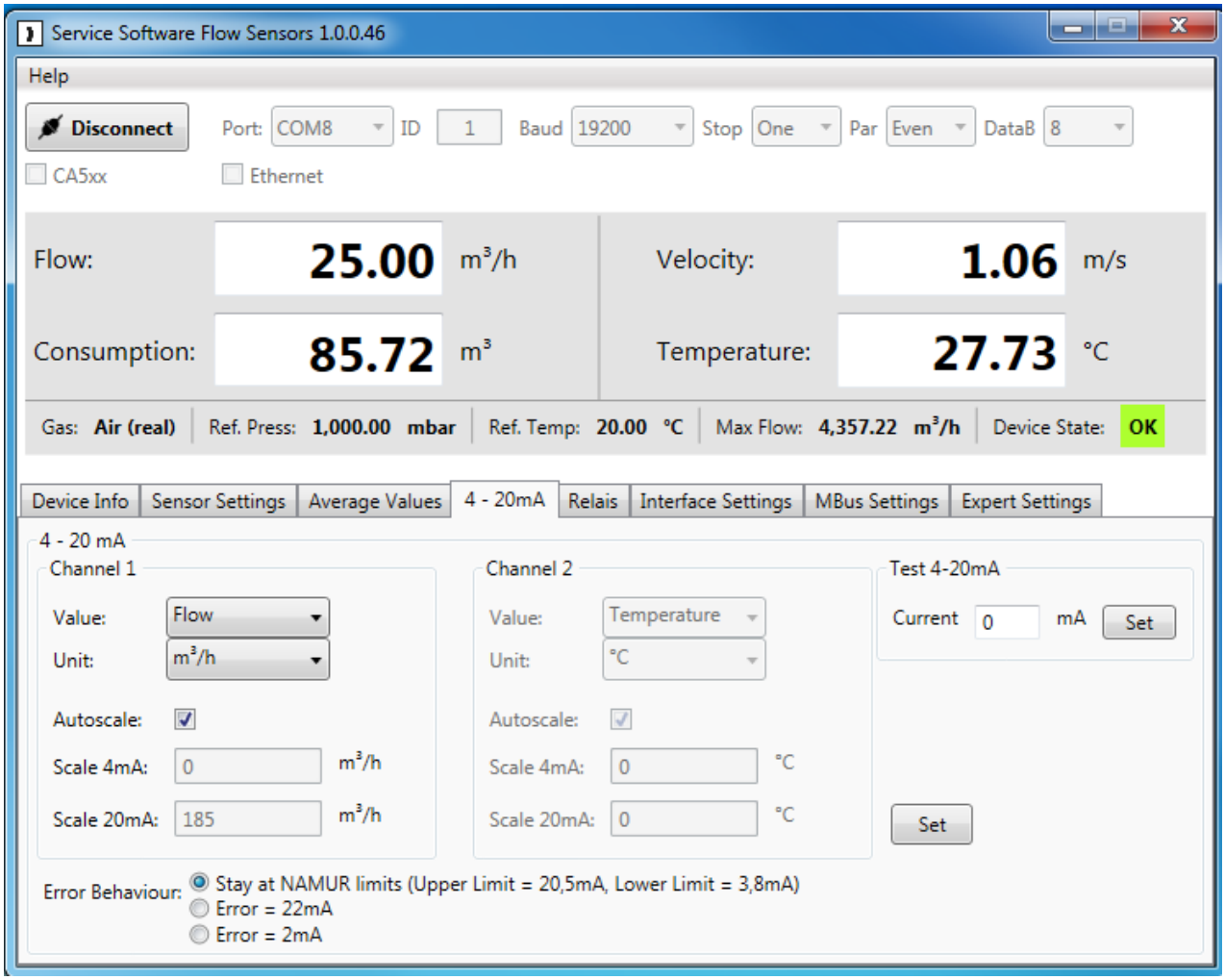
2.3.1 Average Time Span / Clear Min, Max

The average time span can be entered at this tab. (Minimal: 1 minute; Maximum: 1440 minutes)

With the buttons "Clear Min/Max" and "Clear AV" it is possible to reset the minimal/maximal values and the average values (Flow, Velocity, Consumption, Temperature).

2.4 Settings 4 - 20 mA

The Flow-sensor has one 4 - 20 mA analogue output(s), optional 2x 4…20mA analogue outputs. The outputs are individual adjustable.



2.4.1 4 - 20 mA (analogue output settings)

You can enter your desired measuring outputs at "Value". Please enter also the correct units for your needs at "Unit".

Your upper limit value will be the measuring limit of the value that was set at "Value", if you choose "Autoscale".

Please insert your specific limits at "Scale 4mA/Scale 20mA" if you want to scale manually.

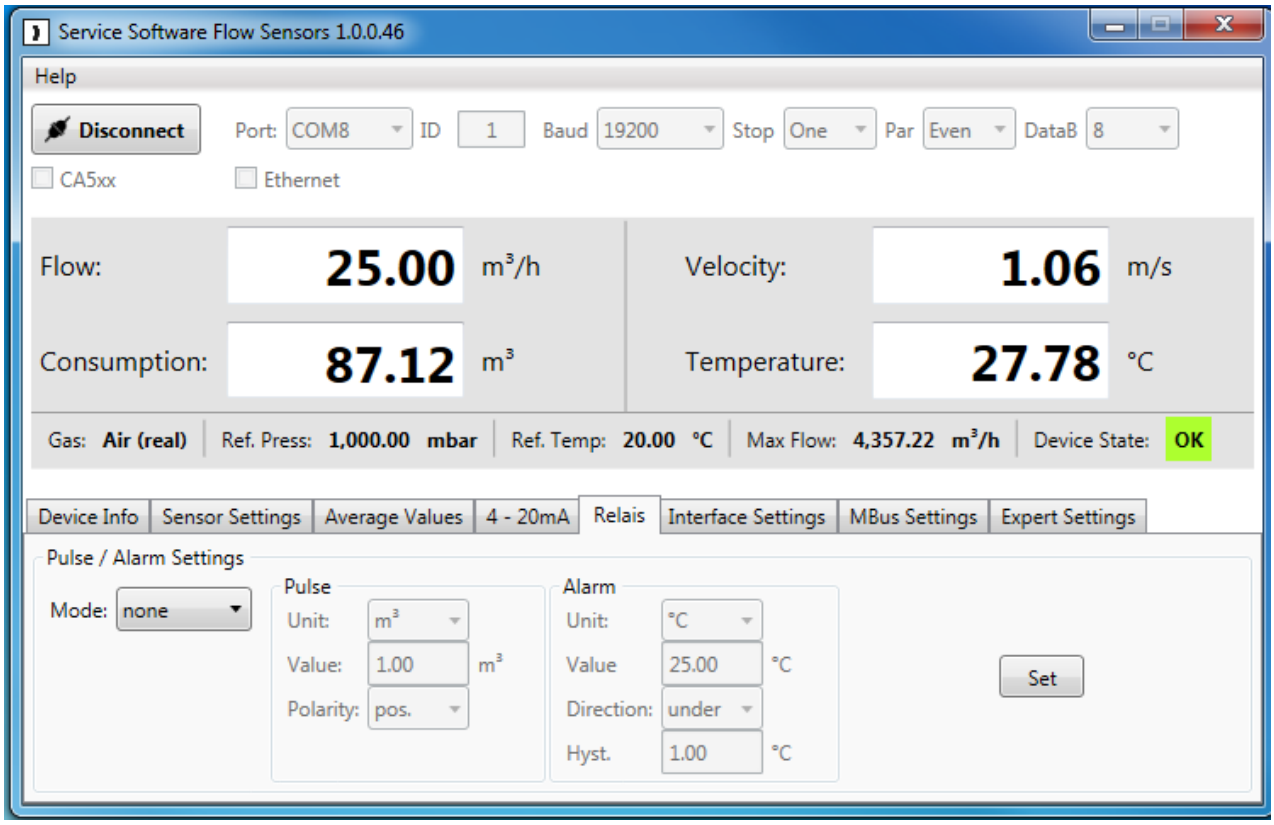
You can also enter adjustments for "Channel 2", if the sensor is equipped with 2 channels.

It is possible to set different scenarios in case of an error at "Error Behaviour".

- Stay at NAMUR limits: Depending on the measuring value the output will be set 3,8 mA or 20,5 mA.
- Error = 22 mA: The output current will be set to 22 mA.
- Error = 2 mA: The output current will be set to 2 mA.

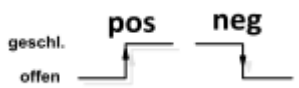
2.5 Relais

The galvanic isolated output can set as pulse- or alarm output.



2.5.1 Pulse settings

Please select "Pulse" with the button "Mode". You can now specify the desired settings for the pulse output. Choose a unit for your pulse output at "Unit". You can change the pulse-value at "Value" and the polarity at "Polarity" (pos. 0-->1; neg. 1-->0)

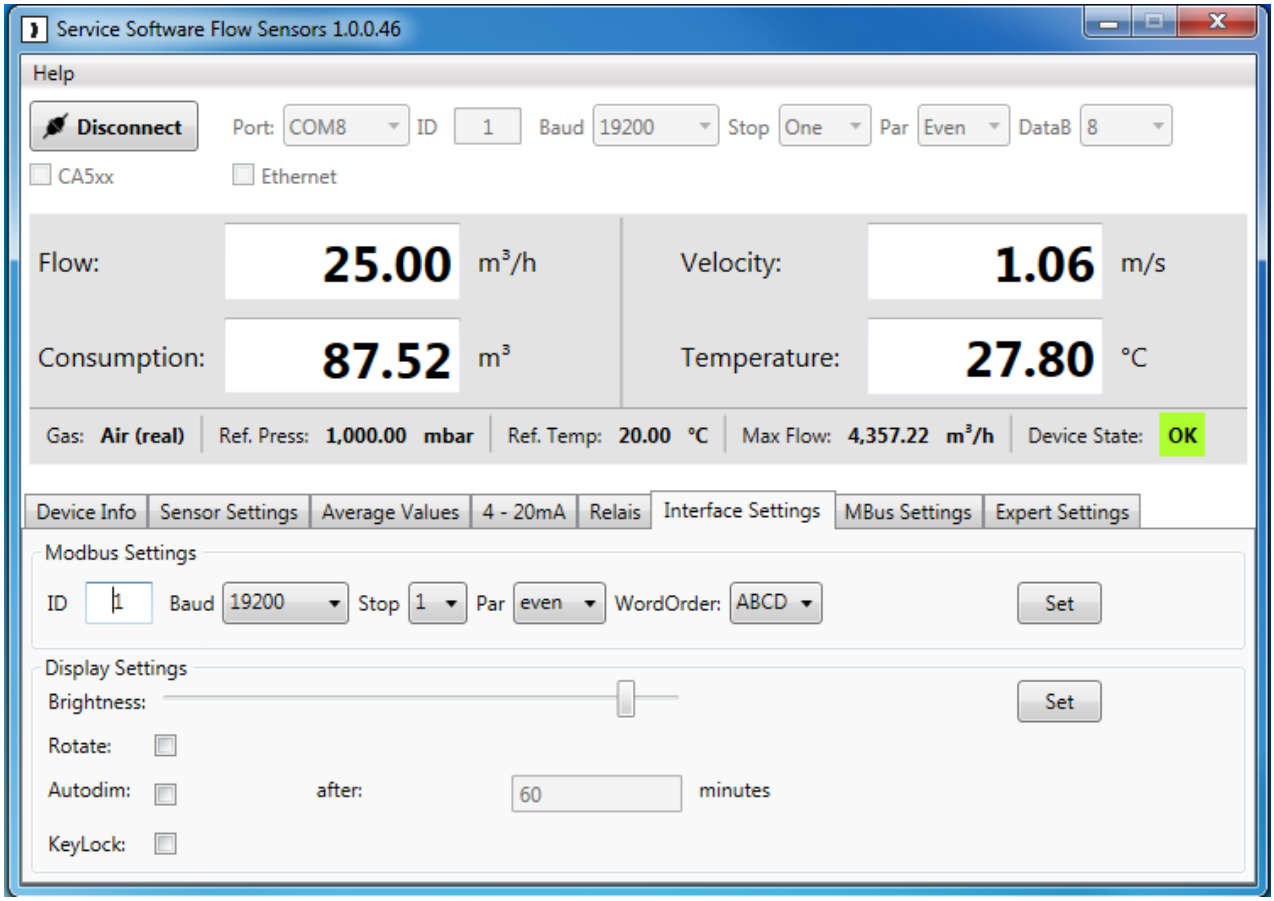


2.5.2 Alarm settings

Please select "Alarm" with the button "Mode". Select now your desired unit for the alarm. Specify the alarm value. With "Direction" you can choose if you want to trigger the alarm whether by passing the entered value or by falling below this value. You can also enter a value for the hysteresis at "Hyst.".

2.6 Interface Settings

The flow meter owns a RS485 (Modbus RTU) interface. You have to specify the different interface settings before a communication with your Modbus master device and the flow meter is possible.



2.6.1 Modbus Settings

Factory Settings:

- Modbus ID: 1
- Baud: 19200
- Stop: 1
- Par: even
- Data: 8
- WordOrder ABCD(Little Endian) or CDAB (Middle Endian)

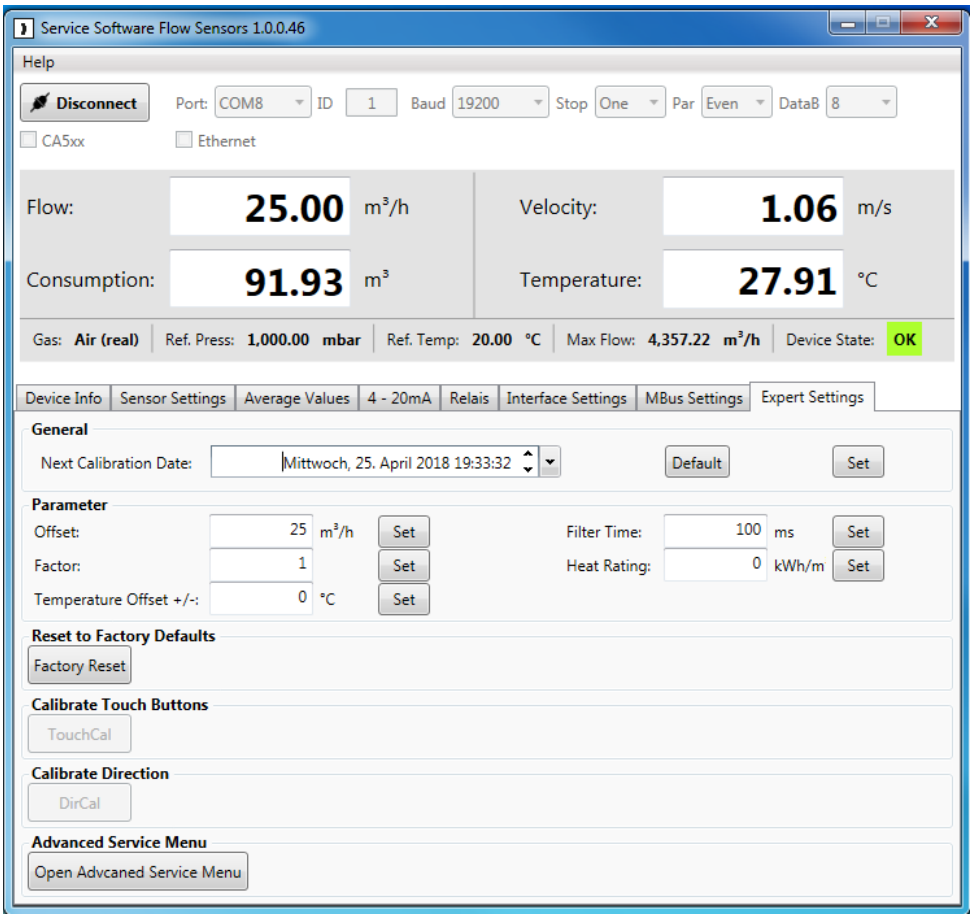
Sensor and master device settings have to correspond.

2.6.2 Display Settings

You can change the display brightness with moving the regulator. Confirm your adjustment with pressing the "Set"-button.

You can also rotate the display by 180 degrees, if you activate the control window "Rotate"

2.7 Expert Settings

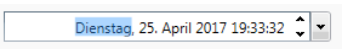


2.7.1 Calibration settings

The next calibration date can be set under "General".

A regular calibration of the sensor is recommended, based on the setting of “Next Calibration Date” a message will be displayed.

Next calibration date can be defined by the integrated calendar. Access by means of the symbol "arrow down arrow"



With “Default”, the recommended next calibration of 1 year would be set automatically.

2.7.2 Parameter

There are different parameters to influence / modify the measurement.

It is not recommended to change parameters without contacting the sensor manufacturer.

- Offset: The measuring value will be changed by the entered value
- Factor: The measuring value will be multiplied by the entered value
- Temp. Offset: Correction of temperature
- Filter Time: It is possible to enter a filter time to change the attenuation (0-10000 [ms])
- Heat Rating: Enter a calorific value for flammable gases (0°C; 1013,25 mbar)

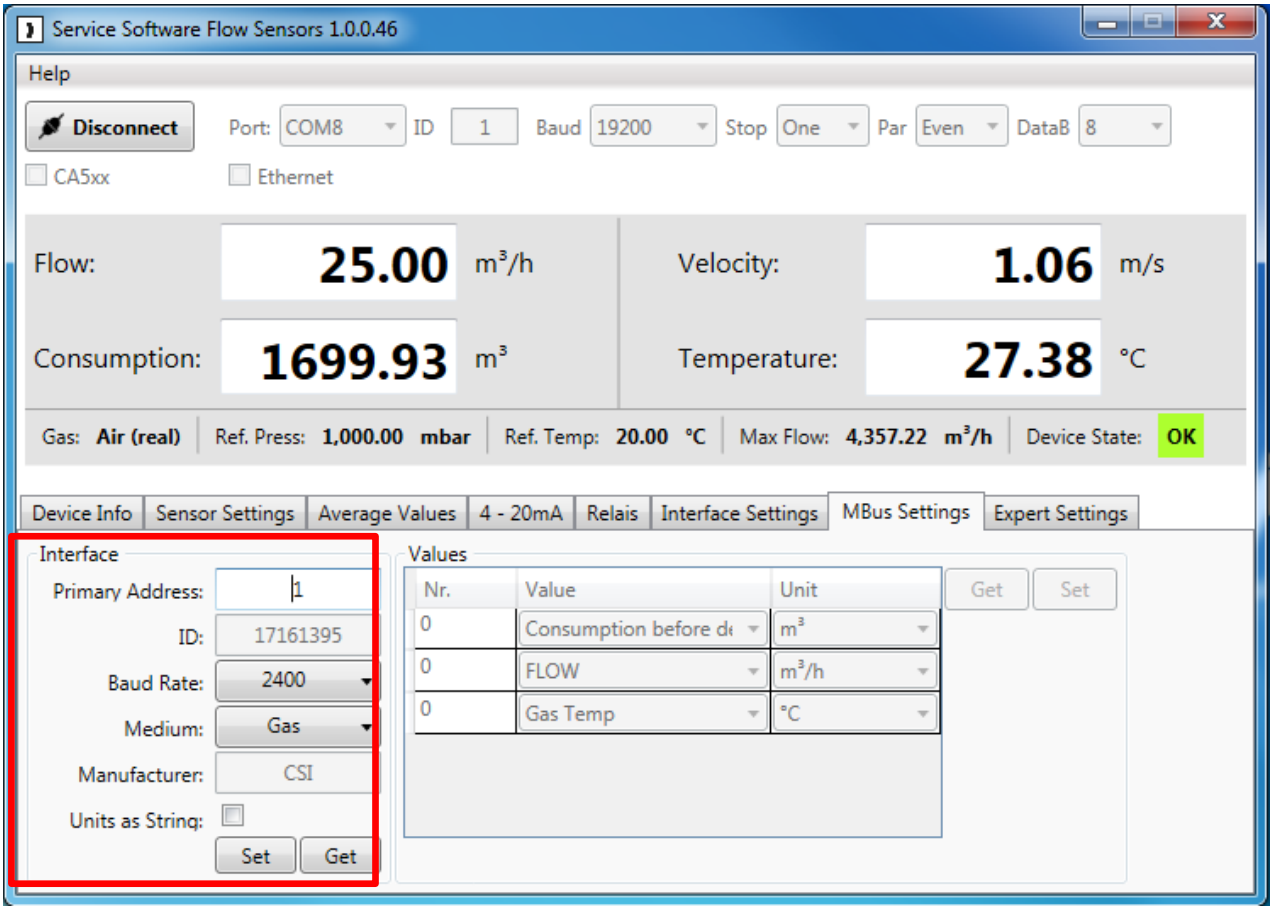
2.7.3 Factory reset

To reset the sensor to factory settings please press "Factory Reset".

2.8 MBus Settings (optional)

Remark!

This menu is displayed only in case the sensor is equipped with the option " MBUS"



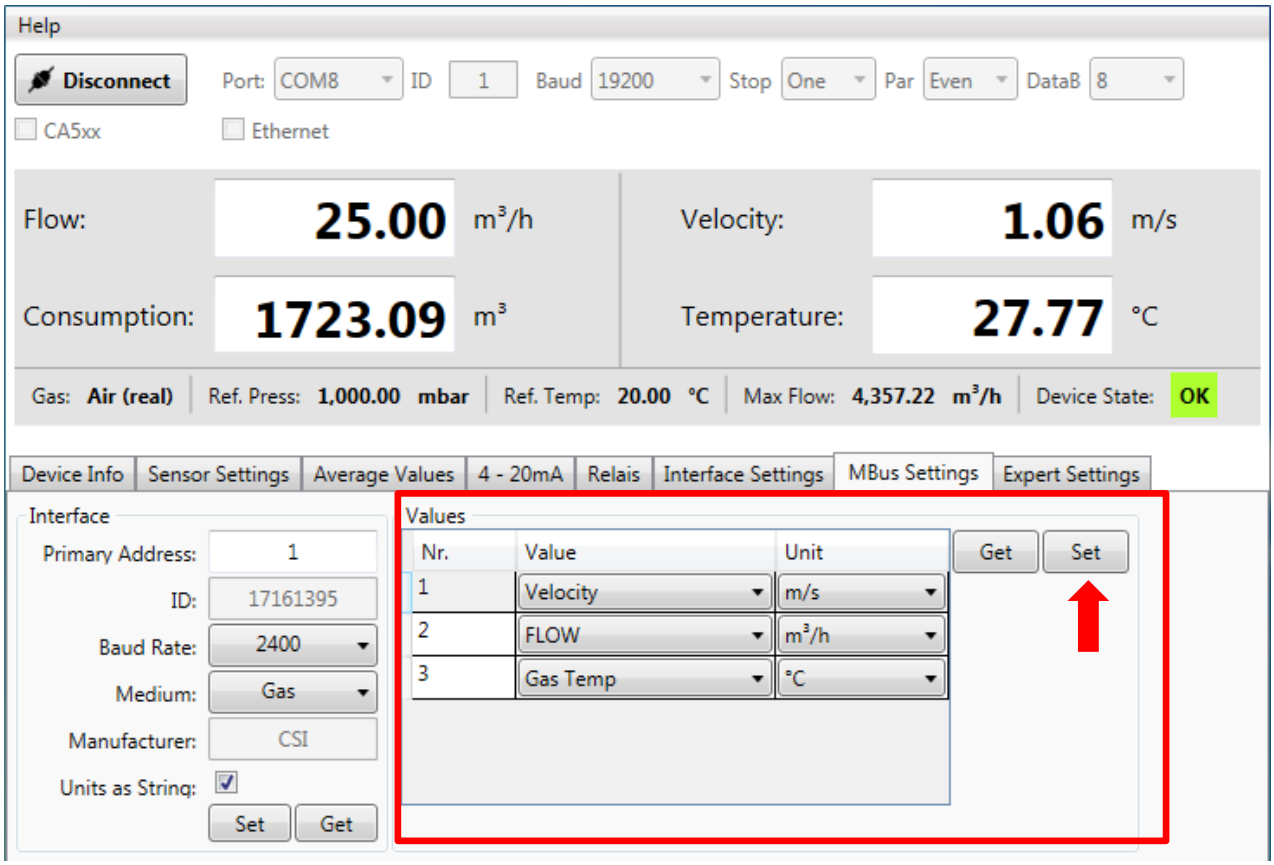
2.8.1 Interface settings

With "Get" you are receiving the interface parameter from the sensor.

With "Set" you are transferring / changing the parameters.

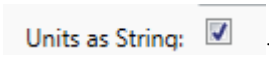
Primary Adress:	could be set individual, but must be unique in the system. Range from 1-250
ID (secondary Adress):	Not changeable, it is the serial number of the sensor
Baud rate:	2400, 4800, 9600
Medium:	selectable mediums according MBus specification

2.8.1 Values settings



Basically, production setting is the “Fixed Data Structure” transmission mode, means 3 values with defined units will be transferred.

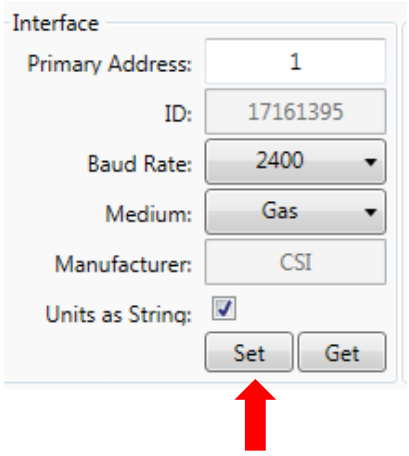
- (Flow in m³/h, consumption in m³, temperature in°C).

By activation of “Units as String” 

the transmission mode is switched to the “Variable Data Structure”. This allows you to select the values and there units individually. All values stored in the sensor with their units could be selected. Up to 20 values are possible. Settings are stored by pressing corresponding “Set”-button.

Remark:!

Change to mode “Units as String” by pressing ”Set” button of Interface settings.



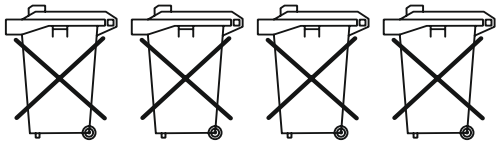
3 Disposal

Note!

- Avoid environmental damage caused by media-contaminated parts
- Dispose of the device and packaging in an environmentally friendly manner
- Comply with applicable national and international disposal regulations and environmental regulations.

Batteries

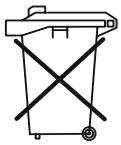
Batteries containing pollutants are marked with a sign consisting of a crossed-out garbage can and the chemical symbol (Cd, Hg, Li or Pb) of the heavy metal that is decisive for the classification as containing pollutants:



Cd[1] Hg[2] Pb[3] Li[4]

1. „Cd" stands for cadmium
2. „Hg" stands for mercury
3. „Pb" stands for lead
4. „Li" stands for lithium

Electrical and electronic equipment



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