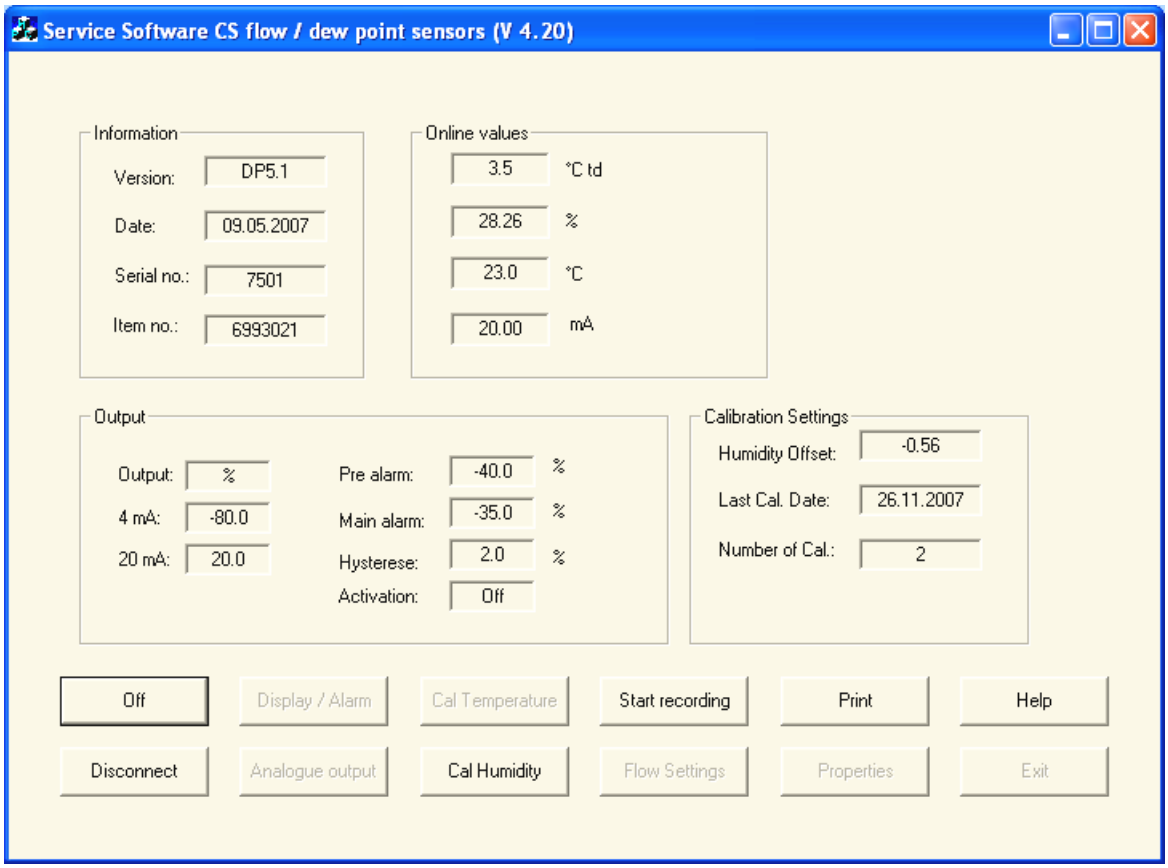
CS INSTRUMENTS GmbH

Operating Manual

Service Software

for CS
flow / dew point sensors

FA300/ VA300/ DP300/ FA4XX / VA4XX



V-3-03-2008

Service Software for flow / dew point sensors

Introduction

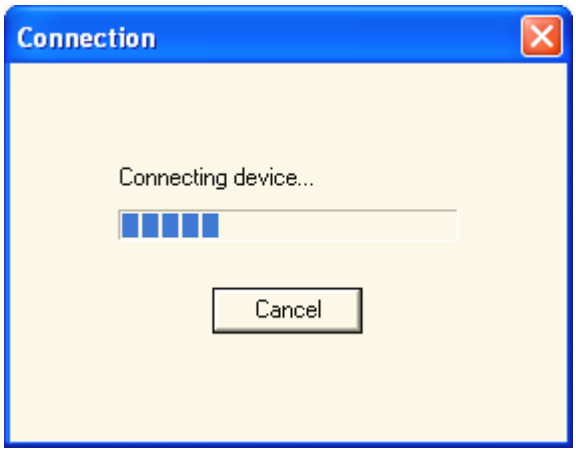
This service software can be used to check and change sensor settings on all CS flow and dew point sensors. For this purpose the sensors have to be connected to a PC via the service kit. The service kit consists of following components:

- Interface converter SDI / USB
- Power supply
- Appropriate cable set for sensor
- CD with service software and CS-Soft

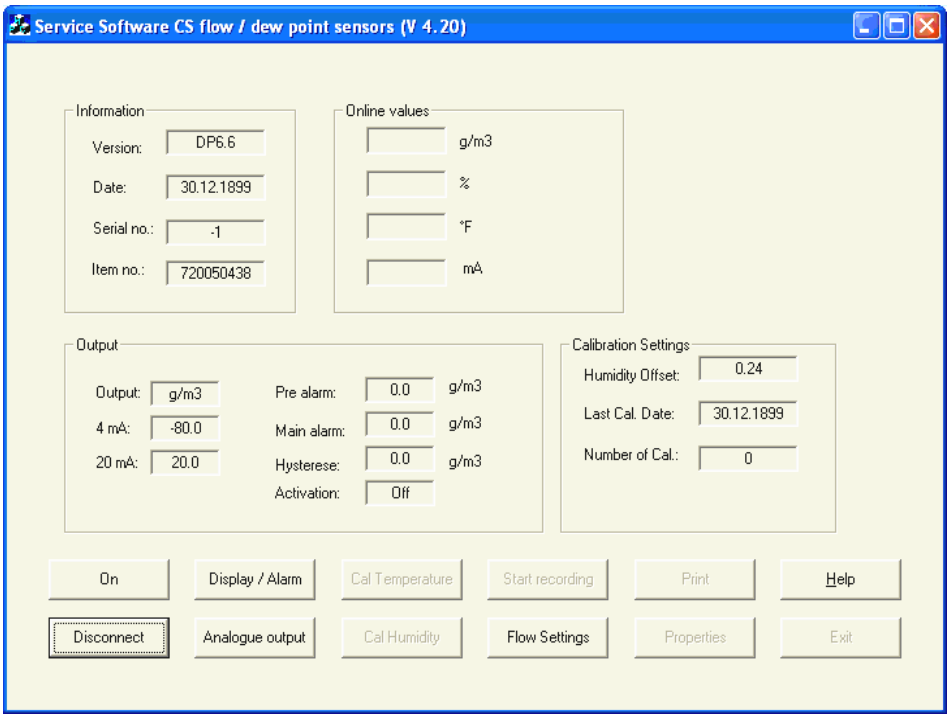
Beside sensor settings the software also features online measurement with recording. For dew point sensors a recalibration function is available including a print out of calibration certificate.

Connect function

After starting the software, in order to communicate with the sensor device a connection has to be establishes in a first step. Please ensure that you have selected the correct COM-Port on your PC (see function “Properties”).



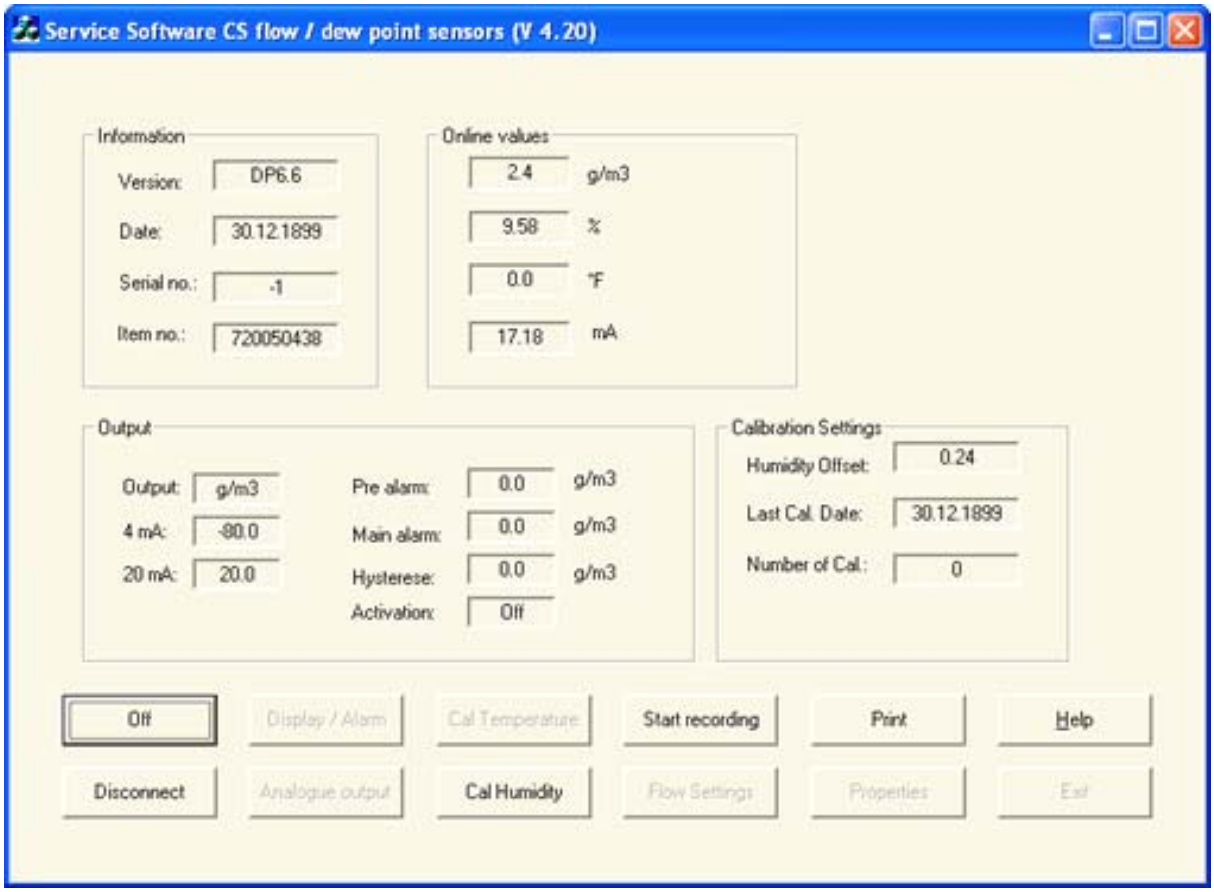
By pressing the connect button at the main menu, a connection is created to the device. Upon successful connection, the main screen will carry sensor settings and information.



Attention: Whenever a connection is established please use the disconnect function before removing the sensor from the service kit. Otherwise some important settings can be lost. In case the sensor has been disconnected without having used the “disconnect” function, please connect the sensor again and go to “Display / Alarm” and enable “auto transmit enable”.

”On” functions

The “On” function is used to retrieve on line measurement data from the sensor. During on line measurement also the calibration functions and the measurement recording function are available.



The online values are depending on the connected sensor type. There are always 4 values shown. The current value, is the calculated current at the 4-20 mA output of the sensor. By using a current meter this value can be measured on compared with the value shown on the online screen.

Cal Temperature, Cal Humidity

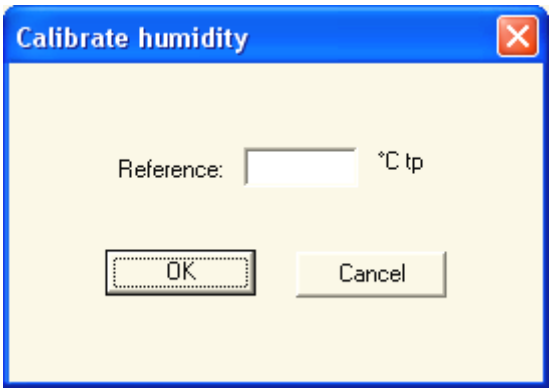
The software provides a dew point or humidity recalibration. (Temperature calibration is disabled in software version 4.20 and above).

The function is protected via a password. When using the calibration for the first time any password can be entered. Please remember this password for all future calibrations.

Attention:

Performing a dew point or humidity calibration is critical and following considerations showed be taken:

- Perform dew point calibrations at the working point. For example if you measure at around -40 °C_{td} do the calibration at that point.
- Do not perform calibration at too high dew points, as it will cause big errors at low dew points!
- We recommend calibration between -40 and -55 °C_{td}.
- Use highly precise reference measuring instruments.
- Maintain conditioning time of about 1 hour minimum.

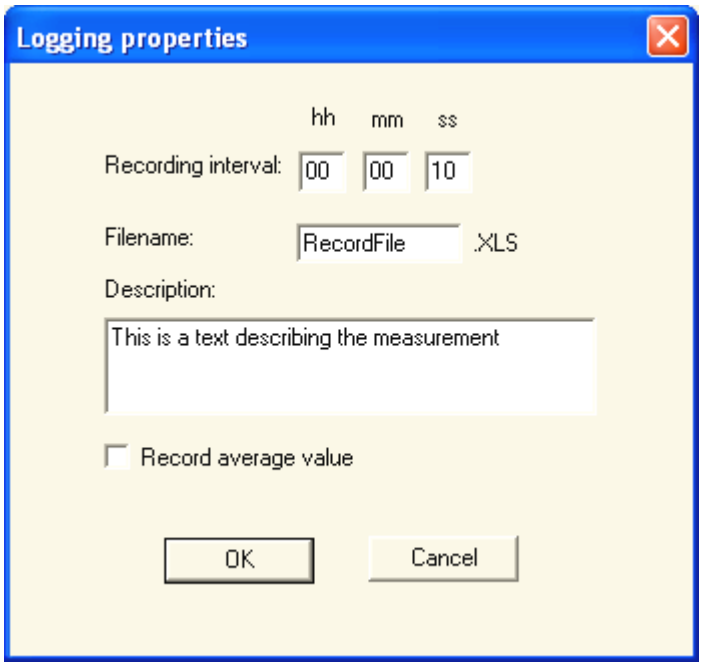


Start recording, recording data

During online measurement the recording function can be activated. This function will record measuring data into an Excel file.

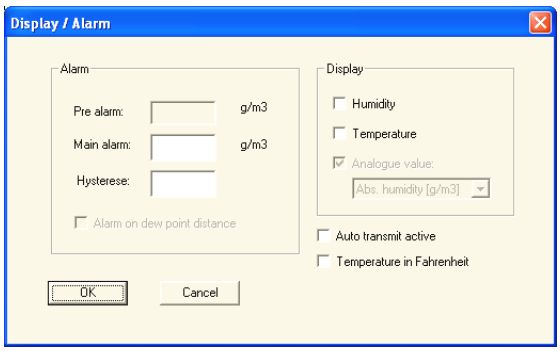
Following settings are available:

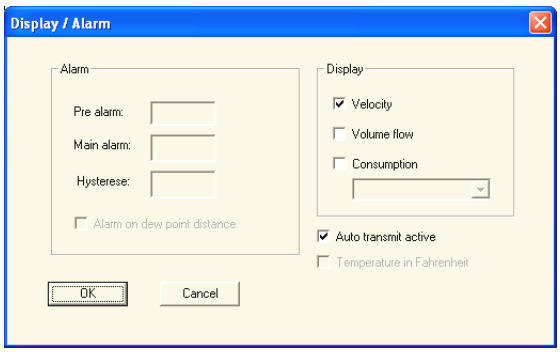
- Recording interval between 1 second and several hours
- Filename: please don't enter any extension, it will be added automatically.
- A description is a free text.
- When selecting „Record average value" only the average values of the measuring interval is recorded. In other words an average value of the entire interval is stored in stead of the current value at a certain point of time.



Display/Alarm

Dew point sensors can monitor up to 2 alarms. The alarm threshold and hystersis are set in the alarm section of the window. Alarms are triggered whenever the measurement value is higher then the threshold value. Pre alarm is available for FA 300 series only.





A special alarm monitoring is implemented in the FA 4XX series, the so called “Alarm on dew point distance”. It can be set on dew point only, and if enabled, the sensors will trigger an alarm, whenever the ambient temperature minus dew point temperature is smaller than the threshold setting. For example: if the dew point should be always 5 degrees below the ambient temperature a threshold value of 5 degrees has to be programmed.

These alarm monitoring can trigger a relay on connected accessories such as DS 301 or trigger an optical indication on DS 50 display.

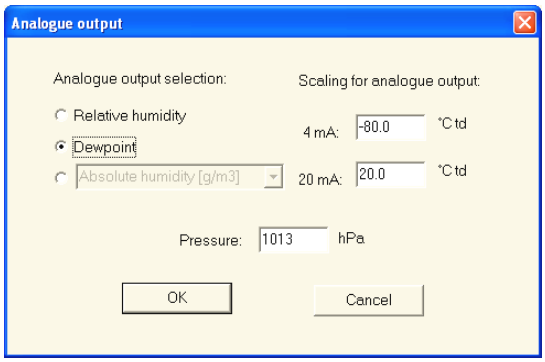
The section display is important in case the sensor is connected to following instruments: DP 300, CS 2390, DS 50, DS 301. Following settings are recommended:

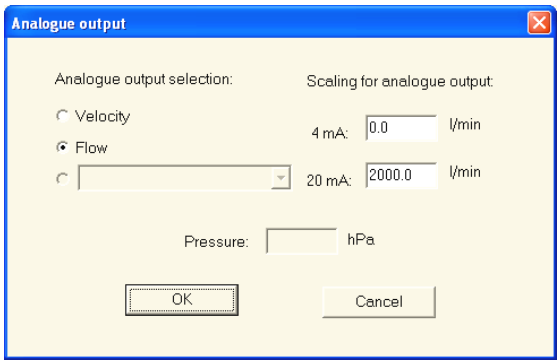
DP 300:	Humidity, Temperature, analogue value, auto transmit active
CS 2390:	Flow sensor: velocity, auto transmit active Dew point sensor: Humidity, Temperature, analogue value, auto transmit active
DS 50:	Only one of the 3 possible values should be activated!
DS 301:	Only one of the 3 possible values should be activated!

In case the temperature values should be shown in Fahrenheit, please activate the corresponding tick box.

Analogue output

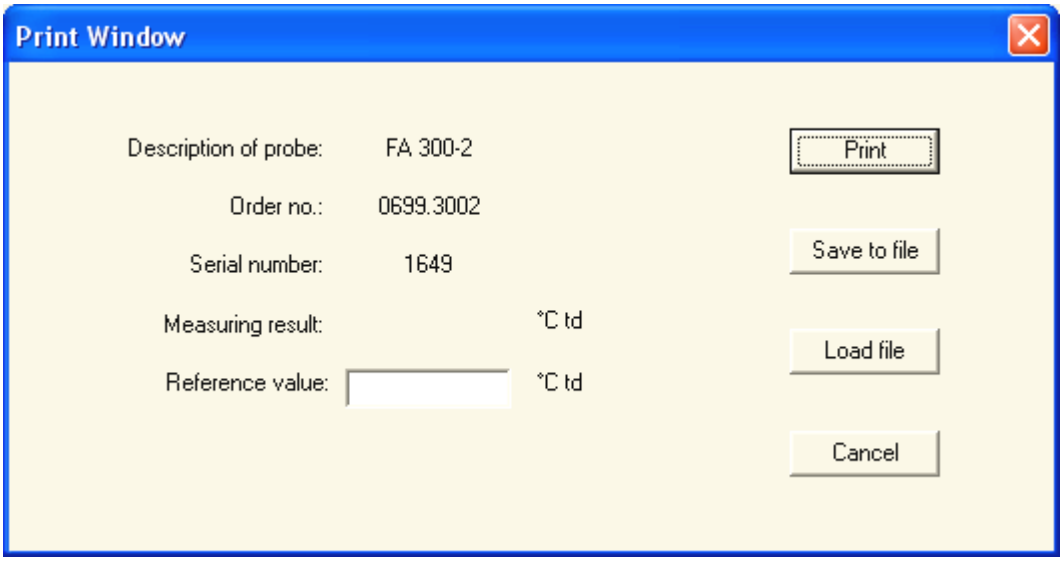
Please select the measurement value to be send out by the analogue output and the related scaling. Please enter line pressure for the physical parameter such as ppm[V] and the atmospheric dew point.





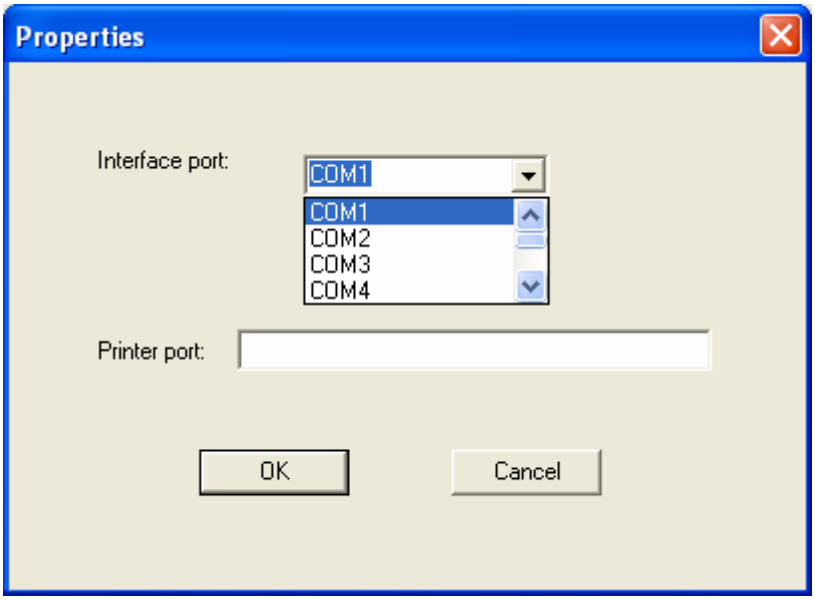
Print

With this function calibration protocols can be printed and saved.

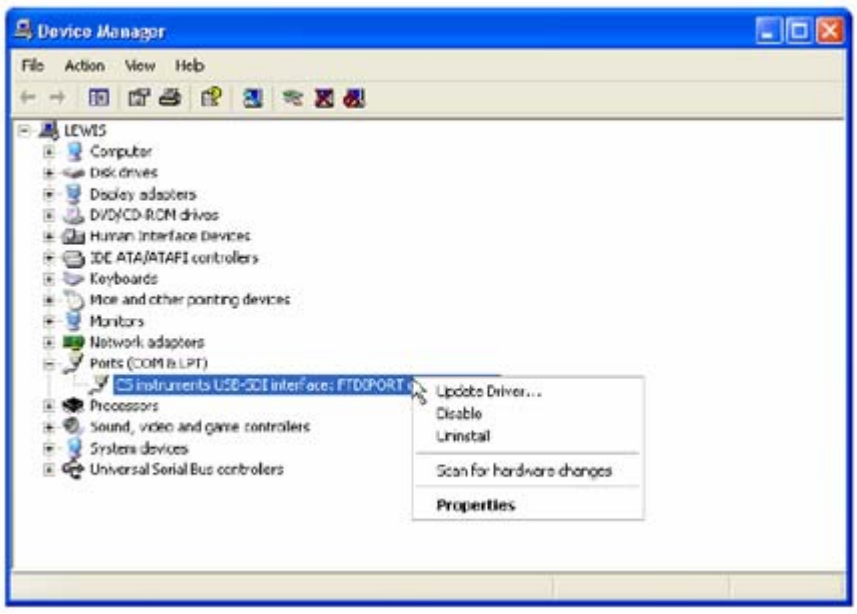


Properties

Please select interface (COM port) where the CS device is connected to and the printer port. The printer port is used to print calibration certificates.



If you are not sure which COM port is the right one, please check the ports in the Device Manager of your PC. If the USB driver is installed correctly and the service kit is connected, you will find an entry “CS Instruments USB-SDI Interface” showing the assigned COM port.



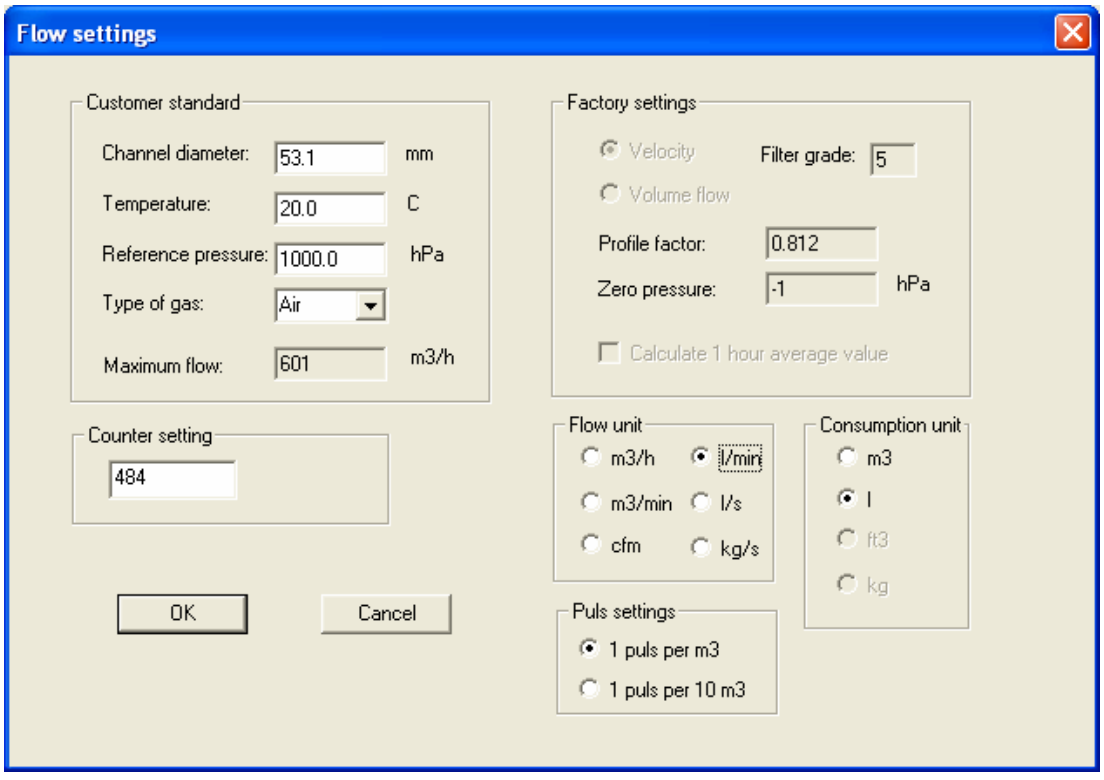
If you can not find this entry please repeat the driver installation. The detailed instruction is in the instruction manual delivered together with the service kit or can be downloaded from our server.

Flow settings

All settings of CS flow sensors can be changed in this dialog.

Customer standard:

Channel diameter: Please enter the correct channel diameter
Temperature:
Reference pressure: CS flow sensors are calculating standard volumetric flow. This requires a reference pressure and temperature. For compressed air according to ISO 1217 the refernces are: 20 degree C temperature, 1000 hPa pressure.
Type of gas: Select the corresponding gas type from the selection list. Please consider that some gases require a special calibration. We recommend to use air, O2 and N2 only.



Maximum flow: Is read only and can not be changed. Depends on the flow sensor
Counter setting: CS flow sensors count the total consumption. The counter can be set to any starting value.
Flow unit: Please select the desired flow unit
Consumption unit: Please select the desired unit for consumption
Pulse setting: CS flow sensors feature a pulse output. This output can send either one pulse per consumption unit or 1 pulse per 10 consumption units.

Other parameters are for service information and not accessible by users.

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