

EN - English

Installation and operating Instructions

Service Software

Dew Point Sensors

Table of contents

| | |
|---|----|
| 1 First steps | 3 |
| 1.1 Installation of the Service Software | 3 |
| 1.2 Connecting the device to the "Service Adapter" | 3 |
| 1.3 Connecting the dew point sensor to the computer | 3 |
| 1.4 Connecting with Modbus RTU | 4 |
| 2 Description of the software | 5 |
| 2.1 Device Info | 6 |
| 2.1.2 Firmware Update | 6 |
| 2.2 Sensor Settings | 7 |
| 2.2.1 System Pressure Settings | 8 |
| 2.2.2 One Point Calibration | 8 |
| 2.3 Interface Settings | 9 |
| 2.3.1 Modbus Settings | 9 |
| 2.3.2 Analog 4 - 20 mA Settings | 10 |
| 2.4 Actual Values | 10 |

1 First steps

1.1 Installation of the Service Software

Please Install now the "Service Software Dew Point Sensors".

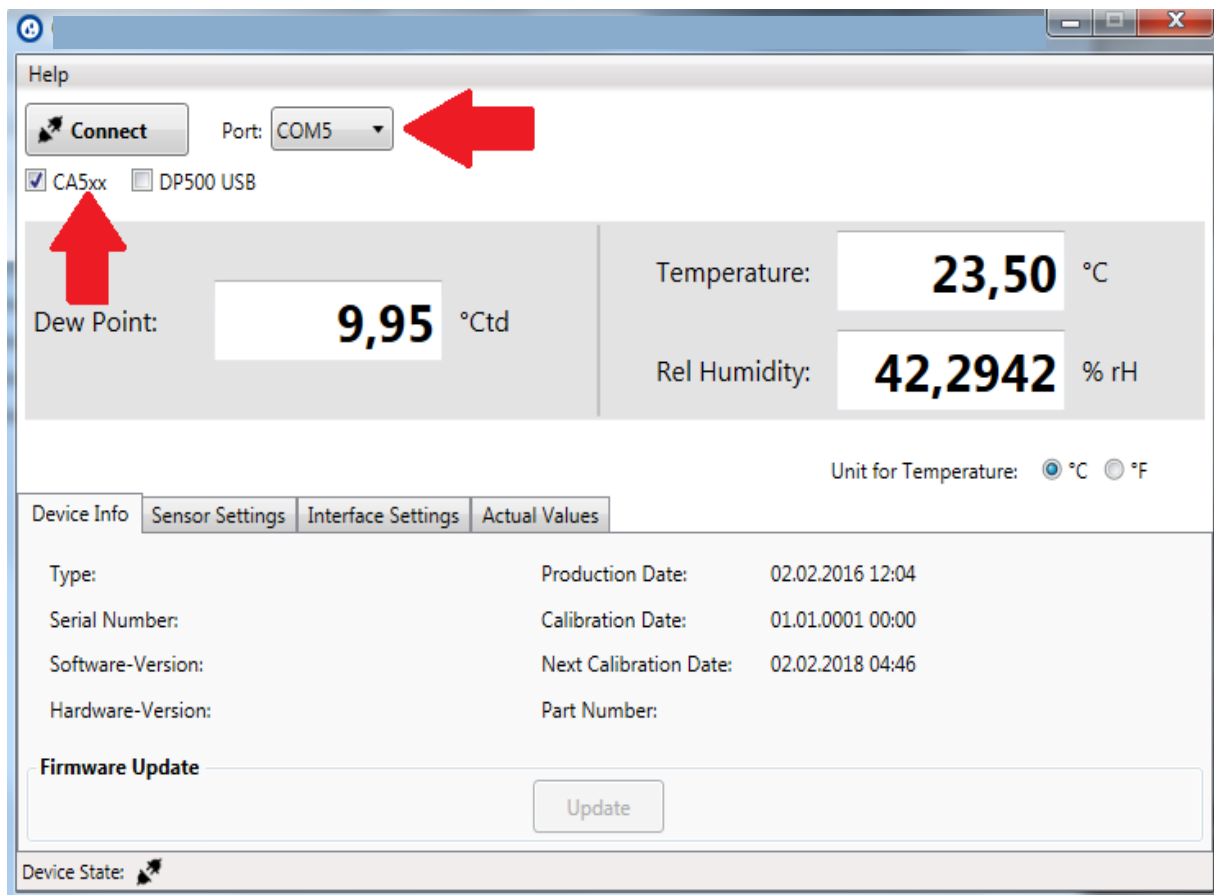
1.2 Connecting the device to the " Service Adapter"

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

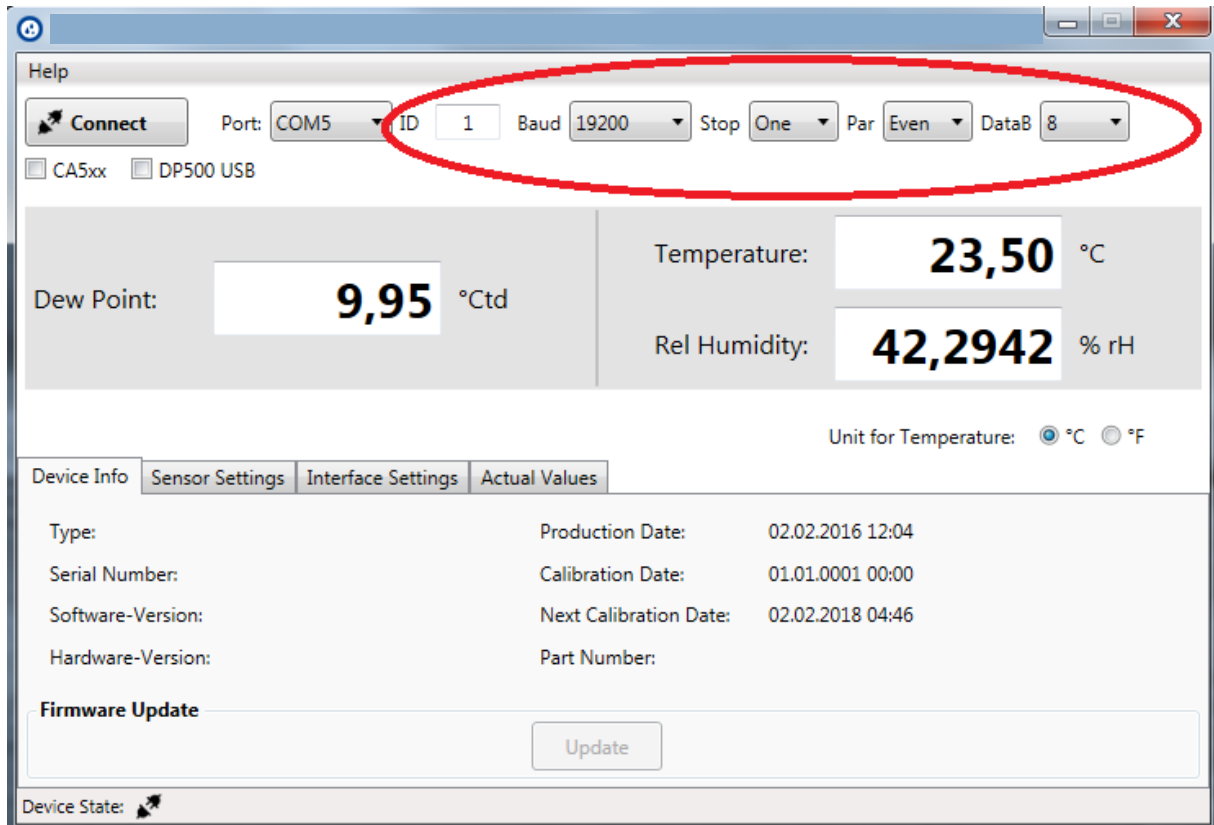
1.3 Connecting the dew point sensor to the computer

Please open the latest version of the " Service Software dew point". Please activate the control window "CA5xx", if you have a FA510/515. Choose the "COM-Port" and click "Connect".

Please use your USB-Interface to connect the device with your PC, if you have a mobile device like the DP500/510. Choose the control window "DP500 USB" and click "Connect".



1.4 Connecting with Modbus RTU



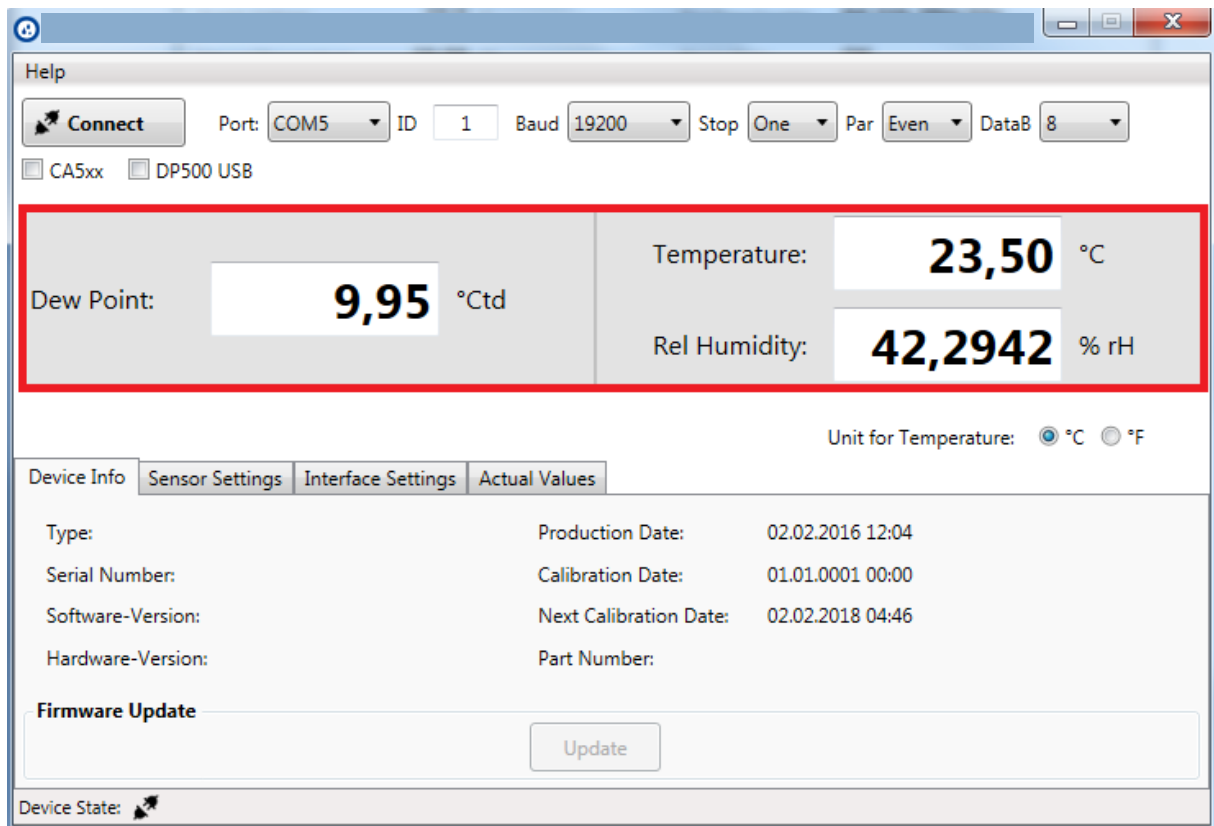
Please deactivate the control window "CA5xx", if you don't have the "CS Service Software Adapter", but your own Modbus converter.

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 - 2.3.1 Modbus Settings

2 Description of the software



The upper part of the window shows current measurements.

- Dew Point: The current pressure dew point. The units °C and °F are selectable under the red marked area.
- Temperature: Current Temperature
- Rel. Humidity: Relative humidity shown in %

2.1 Device Info

The screenshot shows a software window titled "Device Info" with a "Help" menu. At the top, there is a "Disconnect" button and a "Port" dropdown set to "COM5". Below this are checkboxes for "CA5xx" (checked) and "DP500 USB". The main display area shows "Dew Point: 16,99 °Ctd" and "Temperature: 25,55 °C". Below these, "Rel Humidity: 59,1627 % rH" is displayed. A "Unit for Temperature" section shows "°C" selected. A tabbed interface at the bottom includes "Device Info" (selected), "Sensor Settings", "Interface Settings", and "Actual Values". The "Device Info" tab contains a table of device details:

| | | | |
|-------------------|----------|------------------------|------------------|
| Type: | FA510 | Production Date: | 02.02.2016 12:04 |
| Serial Number: | 05160124 | Calibration Date: | 02.02.2016 04:46 |
| Software-Version: | 1.81 | Next Calibration Date: | 02.02.2018 04:46 |
| Hardware-Version: | 0.52 | Part Number: | 06990510 |

Below the table is a "Firmware Update" section with an "Update" button. At the bottom, the "Device State" is indicated as "OK" with a green checkmark.

The tab "Device Info" shows an overview about different specific information. For example: The serial number of the connected dew point sensor, Production date etc.

2.1.2 Firmware Update

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

The screenshot shows a "Sensor Update" window. It features an "Update File:" text box with a browse button (three dots) to its right, which is highlighted by a red arrow. Below this are two panels: "Sensor Info" and "Update File Info". The "Sensor Info" panel shows "Device: FA510" and "SW-Version: 1.81". The "Update File Info" panel shows "Device:" and "SW-Version:". At the bottom, there are fields for "Sector: 0x" and "DataByte: 0x", a progress bar, and a "Start" button.

Please click the red marked button above and choose the right link to the latest software version.

2.2 Sensor Settings

Help

Disconnect Port: COM5

☒ CA5xx ☐ DP500 USB

Dew Point: **13,63** °Ctd

Temperature: **25,83** °C

Rel Humidity: **46,9189** % rH

Unit for Temperature: ☒ °C ☐ °F

Device Info **Sensor Settings** Interface Settings Actual Values

Sensor Location: **Set**

Next Calibration Date: **Default** **Set**

System Pressure Settings

Enable ExtPres: ☐

Relative System Pressure: [mbar] resp. [hPa] **Set**

Absolute Reference Pressure: [mbar] resp. [hPa]

One Point Calibration

Calibration Value: [°Ctd] **Set**

Rel Hum Offset: [%rH] **Reset**

ChangeCounter:

Device State:

Sensor Location: Enter up to 15 symbols

For Example: Location of the sensor, Name of the Sensor.

Next Calibration Date: At this point you can change the next calibration date.

2.2.1 System Pressure Settings

It is possible to set an external measured pressure as calculating base for your pressure dew point if you activate the control window "Enable ExtPres". **For this you need the DP510 with an external pressure sensor.**

You can also set the system pressure manually at "**Relative System Pressure**"

Please set the reference pressure as **standard calculating base** for your dew point at "Absolute Referenz Pressure".

2.2.2 One Point Calibration

You can calibrate the dew point sensor at different values at "Calibration Value".

Attention:

You have to follow the next steps if you want to calibrate the sensor by yourself.

- If your working point is -40° Ctd., so please calibrate at this point.
- It could cause significant errors at low dew points if you calibrate at too high dew points.
- We recommend a calibration at -40 to -55 °Ctd.
- Please use high precision devices for calibration.
- A adapting time of at least one hour is necessary.

2.3 Interface Settings

The screenshot shows a software window with a title bar and standard Windows controls. The main area is divided into several sections. At the top, there's a 'Help' button and a 'Disconnect' button. Below these, a 'Port' dropdown is set to 'COM5'. There are two checkboxes: 'CA5xx' (checked) and 'DP500 USB' (unchecked). The central part of the window displays two large digital readouts: 'Dew Point: 12,92 °Ctd' and 'Temperature: 25,87 °C'. Below the temperature, it shows 'Rel Humidity: 44,6918 % rH'. To the right of these, there's a 'Unit for Temperature' section with radio buttons for '°C' (selected) and '°F'. Below this is a tabbed interface with four tabs: 'Device Info', 'Sensor Settings', 'Interface Settings' (which is active), and 'Actual Values'. The 'Interface Settings' tab contains two main sections. The first is 'Modbus Settings', which includes an 'Enable' checkbox (checked), an 'ID' field set to '1', a 'Baud' dropdown set to '19200', a 'Stop' dropdown set to '1', a 'Par' dropdown set to 'even', and a 'WordOrder' dropdown set to 'CDAB'. There is a 'Set' button to the right. The second section is 'Analog 4-20mA Settings', which includes a '4-20mA Value' dropdown set to 'Temp[°C]', a 'Scaling 4mA' field set to '-80', and a 'Scaling 20mA' field set to '20'. There is another 'Set' button to the right. Below these are three radio buttons for 'Error Behaviour': 'Stay at limits (Upper Limit = 22mA, Lower Limit = 3,8mA)' (selected), 'Error = 22mA', and 'Error <= 3.6mA'. At the bottom of the window, there's a 'Device State' indicator with a green checkmark.

2.3.1 Modbus Settings

Factory Settings:

- Modbus ID: 1
- Baud: 19200
- Stop: 1
- Par: even
- Data: 8

It is necessary to set the correct interface settings for your modbus master device. Sensor and master device settings have to be identically. You can find the interface settings in our **Modbus RTU installation guide "FA5xx_Modbus_RTU_Slave_Installation"**

2.3.2 Analog 4 - 20 mA Settings

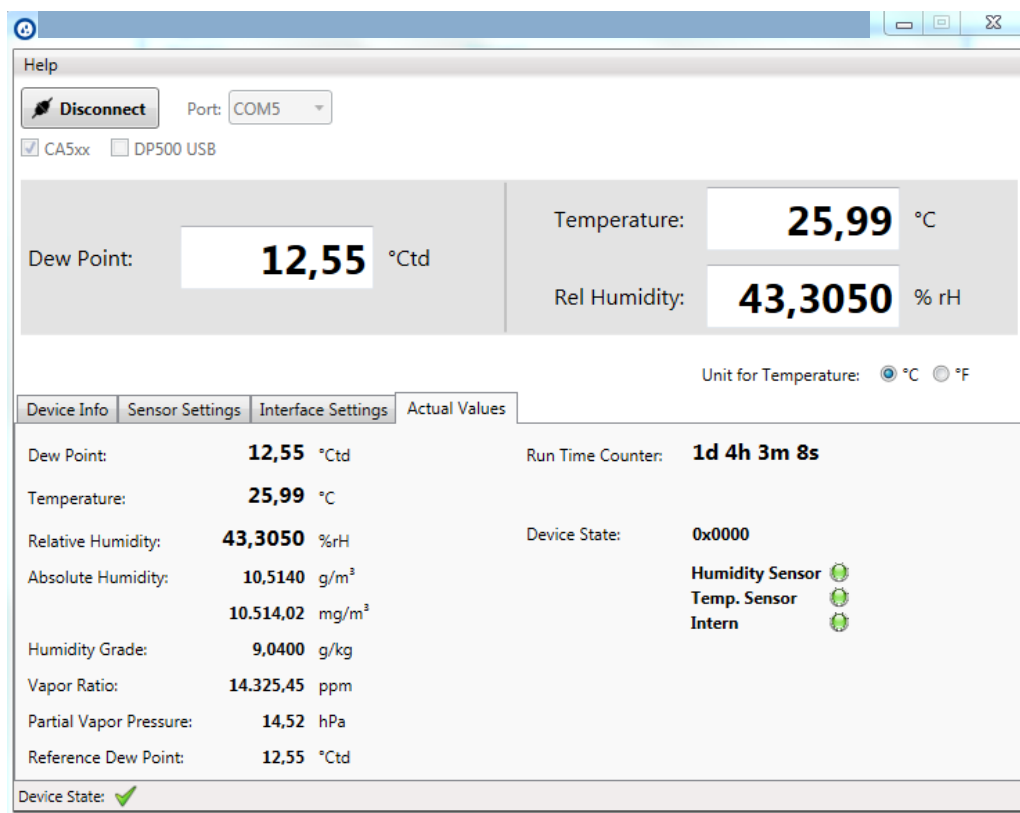
You can enter your desired measuring outputs at "4 - 20mA Value".

Please insert your specific limits at "Scale 4mA/Scale 20mA".

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

- Stay at NAMUR limits: Depending on the 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 = 3,6 mA: The output current will be set to 3,6 mA.

2.4 Actual Values



The section "Actual Values" shows:

- Dew Point: Current pressure dew point.
- Temperature: Current temperature.
- Relative Humidity: Relative humidity shown in %
- Absolute Humidity: The actual quantity of water per cubic meter in gram or milligram.
- Humidity Grade: The humidity grade shows how much gram water per kilogram air are available.
- Vapor Ratio: Water vapor in ppm (Parts per million)
- Partial Vapor Press: Partial pressure of water in the measured air
- Reference Dew Point: The reference dew point that was used for calibration
- Run Time Counter: Shows the whole time of operation
- Device Status: Availability of the devices.