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Instructions for Use

021690a/12/15

Firmware- Update for Clima Sensor US 4.920x.00.xxx

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1 Short description

A firmware update is meant to extend the functions of the device.

Starting with version V4.0 of the Clima Sensor a firmware update of the mainboard and the top plate is available for the customer.
Due to the greater transmission safety full duplex operation is preferable to half duplex operation.

- Generally, the CLIMA SENSOR US is delivered in full duplex mode.

The following examples are based on the assumption that the Clima Sensor has the ID 00!

As a general rule: “Never change a running system”.

2 System requirement

1. CLIMA SENSOR US available with configured **full duplex mode**. 2. PC with Windows XP/Vista/7/8/10. 3. You need to download the “Flash Magic” tool to proceed with the firmware update. It is available free of charge at: http://www.flashmagictool.com . 4. Interface converter that supports the set transmission mode of the pre-configured CLIMA SENSOR US. We recommend the interface converter „USB-COMi-SI-M“ by “VS-COM“ (Thies order no. 9.1702.40.000), see figure. 5. DIP switch position of the interface converter for „full duplex“: **SW1+2 = ON, SW3+4 = OFF** 6. Connection acc. to chapter 8.1 or 8.2.	
When the CLIMA SENSOR was delivered in **half duplex mode**, please note the following: 1. CLIMA SENSOR US available with configured **half duplex modus**. 2. See above. 3. See above. 4. See above. 5. DIP switch position of the interface converter for „half-duplex“: **SW1+2+3 = OFF, SW4 = ON** 6. Connection acc. to chapter 8.3. **Note:** With a half-duplex configured CLIMA SENSOR US you require an echo mode to perform the firmware update of the mainboard with the “Flash Magic” Tool.	

3 Mainboard update description (short)

1. Install and start the “Flash Magic” tool.
2. Set the communication parameters (processor, interface, baud rate...).
3. Select the firmware file (e.g.: US_COMPACT_CLIMA_v4.0.hex).
4. Open the sensor terminal, set the correct baud rate and using the following commands switch:
   00KY4711<CR> into admin mode and using:
   00SU4711<CR> into software upload modus
5. Stop the terminal.
6. Press the start button in the “Flash Magic” tool and wait until the status line reads “finished”.
7. Re-open the sensor terminal, set the correct baud rate and re-start the sensor by shortly (>1s) interrupting the power supply. Upon re-start the boot message of the new firmware will be shown.

Note:
Power supply must not be interrupted during upload!

4 Description of how to upload the top plate (short):

1. Start the “Flash Magic” tool.
2. Set the communication parameters (processor, interface, baud rate...).
3. Select the firmware file (e.g.: US_RADAR_v4.0.hex).
4. Open the sensor terminal, set the correct baud rate and using the following commands switch:
   00KY4711<CR> into admin mode and using:
   00SUT4711<CR> into the software upload mode.
5. Stop the terminal.
6. Press the start button in the “Flash Magic” tool and wait until the status line reads “finished”.
7. Re-open the sensor terminal, set the correct baud rate and re-start the sensor by shortly (>1s) interrupting the power supply.
8. Wait for the boot message and query the software version of the top plate using: 00SV2.

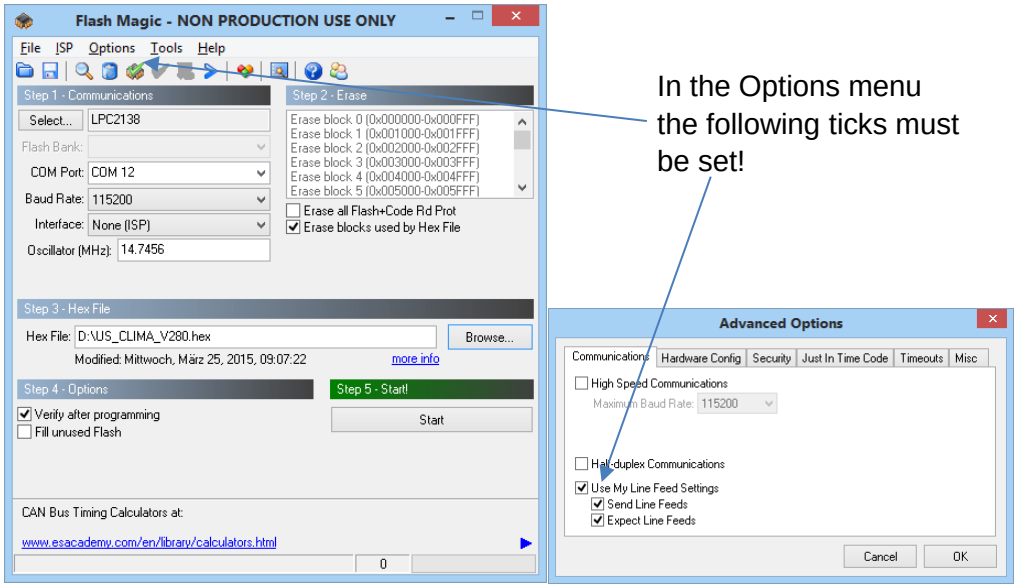
Note:
The upload baud rate must be within a range of 9600Bd ...115200Bd and correspond to the communication baud rate to the mainboard.

The power supply must not be interrupted during upload!

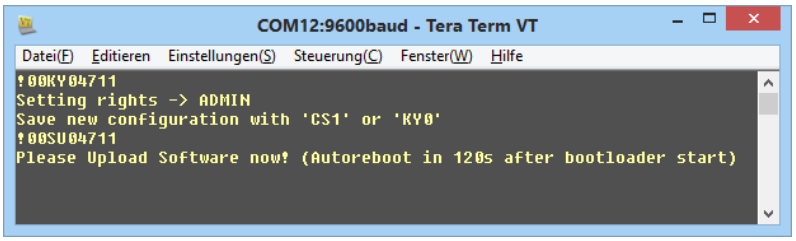
5 Detailed description of how to upload the mainboard

Note:
We recommend running the device in full duplex mode for a firmware update to ensure the best possible safety during transmission of the firmware.
Power supply must not be interrupted during the update!

1. Download the “Flash Magic” tool from: http://www.flashmagictool.com , install and execute.
2. Set the communication parameters.
   Select: ARM7 LPC2138, COM Port = interface to the device, Baud Rate: 115200Bd
   Interface: None (ISP), Oscillator(MHz): 14.7456.
   Set the tick (see image) to “Erase blocks used by Hex File” and “Verify after programming”.

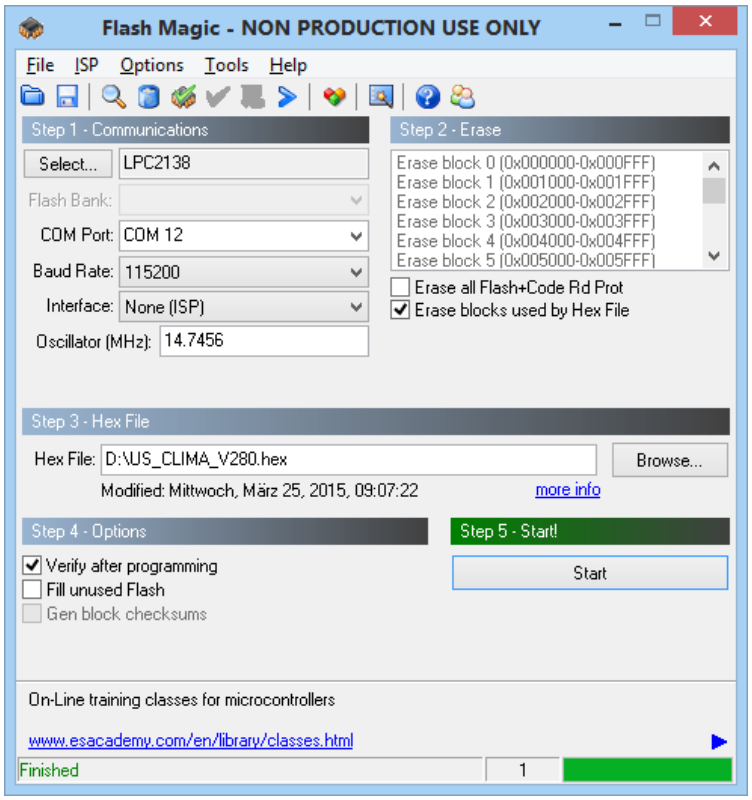


3. Select the firmware file (e.g.: US_CLIMA_v4.0.hex).
4. Open the sensor terminal, set the correct baud rate and using the following commands switch:
   00KY4711<CR> into admin mode and using:
   00SU4711<CR> into the software update mode

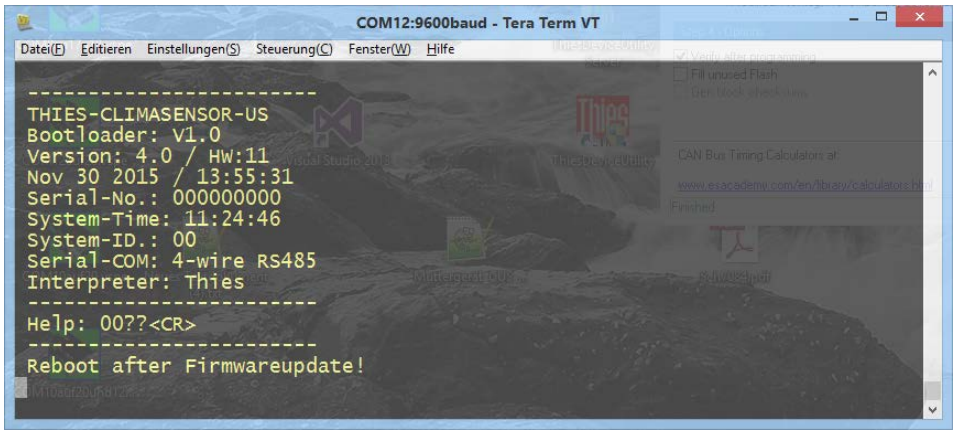


5. Stop the terminal.

6. Press the start button in the “Flash Magic” tool and wait until the status line reads “finished”.



7. Re-open the sensor terminal, set the correct baud rate and re-start the sensor by shortly (>1s) interrupting the power supply.



Upon re-start a boot message will be displayed by the new firmware together with a note that the firmware update has been made.
To switch this message off enter the command: 00CS1<CR>!

Done!

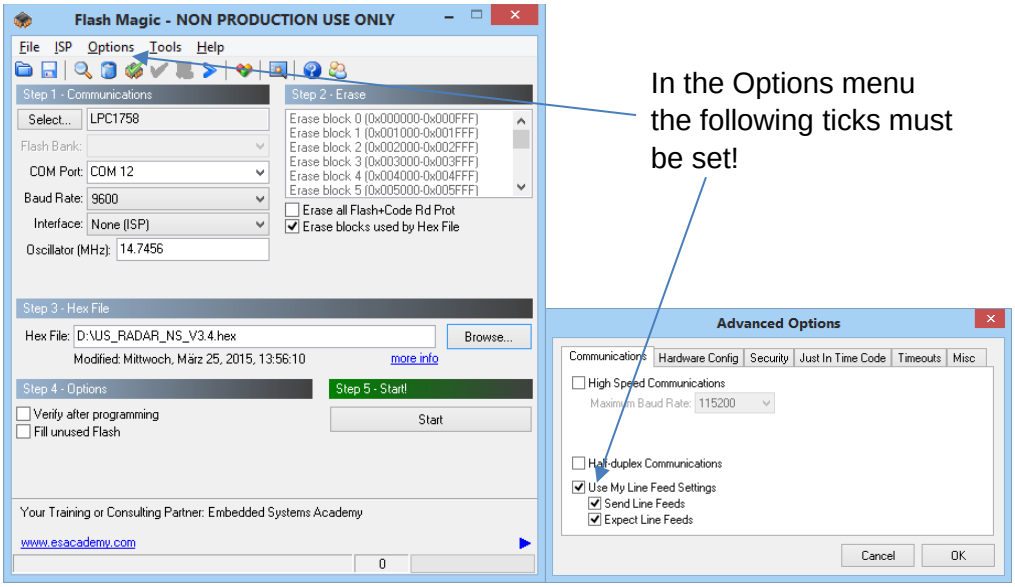
6 Detailed description of how to upload the top plate:

Note:
The update baud rate must be in a range of 9600Bd ...115200Bd and corresponds to the communication baud rate to the mainboard.

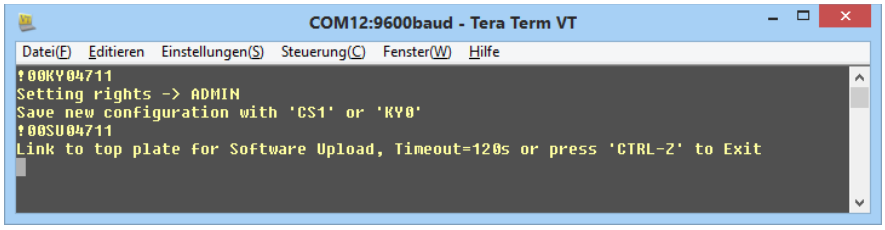
We recommend running the device in Full Duplex mode for a firmware update to ensure the best possible safety during transmission of the firmware.

Power supply must not be interrupted during the update!

1. (Install and) Start the “Flash Magic” tool.
2. Set the communication parameters.
   Select: ARM Cortex LPC1758, COM Port = interface to the device,
   Baud Rate = communication baud rate (default: 9600Bd).
   Interface: None (ISP), Oscillator(MHz): 14.7456.
   Set the tick (see image) to “Erase blocks used by Hex File” and “Verify after programming”.

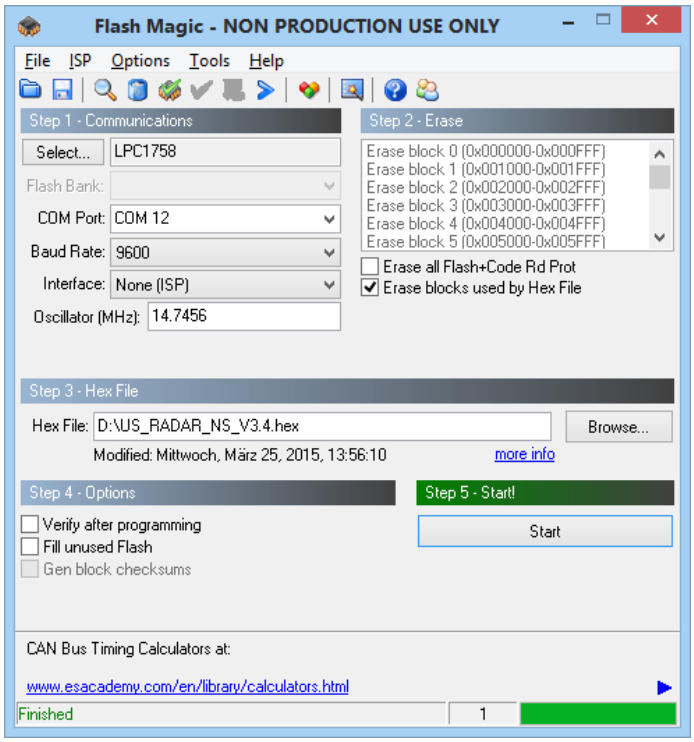


3. Select the firmware file (e.g.: US_RADAR_v4.0.hex).
4. Open the sensor terminal, set the correct baud rate and using the following commands switch:
   00KY4711<CR> into admin mode and using:
   00SUT4711<CR> into software update mode.

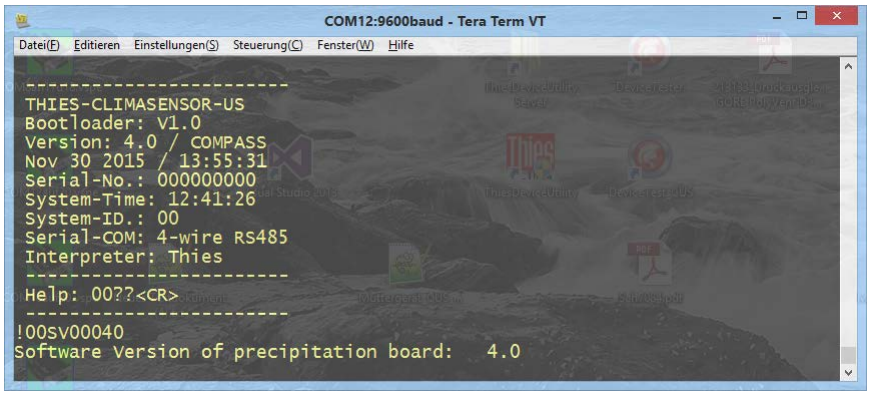


5. Stop the terminal.

6. Press the start button in the “Flash Magic” tool and wait until the status line reads “finished”



7. Re-open the sensor terminal, set the correct baud rate and re-start the sensor by shortly (>1s) interrupting the power supply.
8. Wait for the boot message and query the software version of the top plate using: 00SV2.

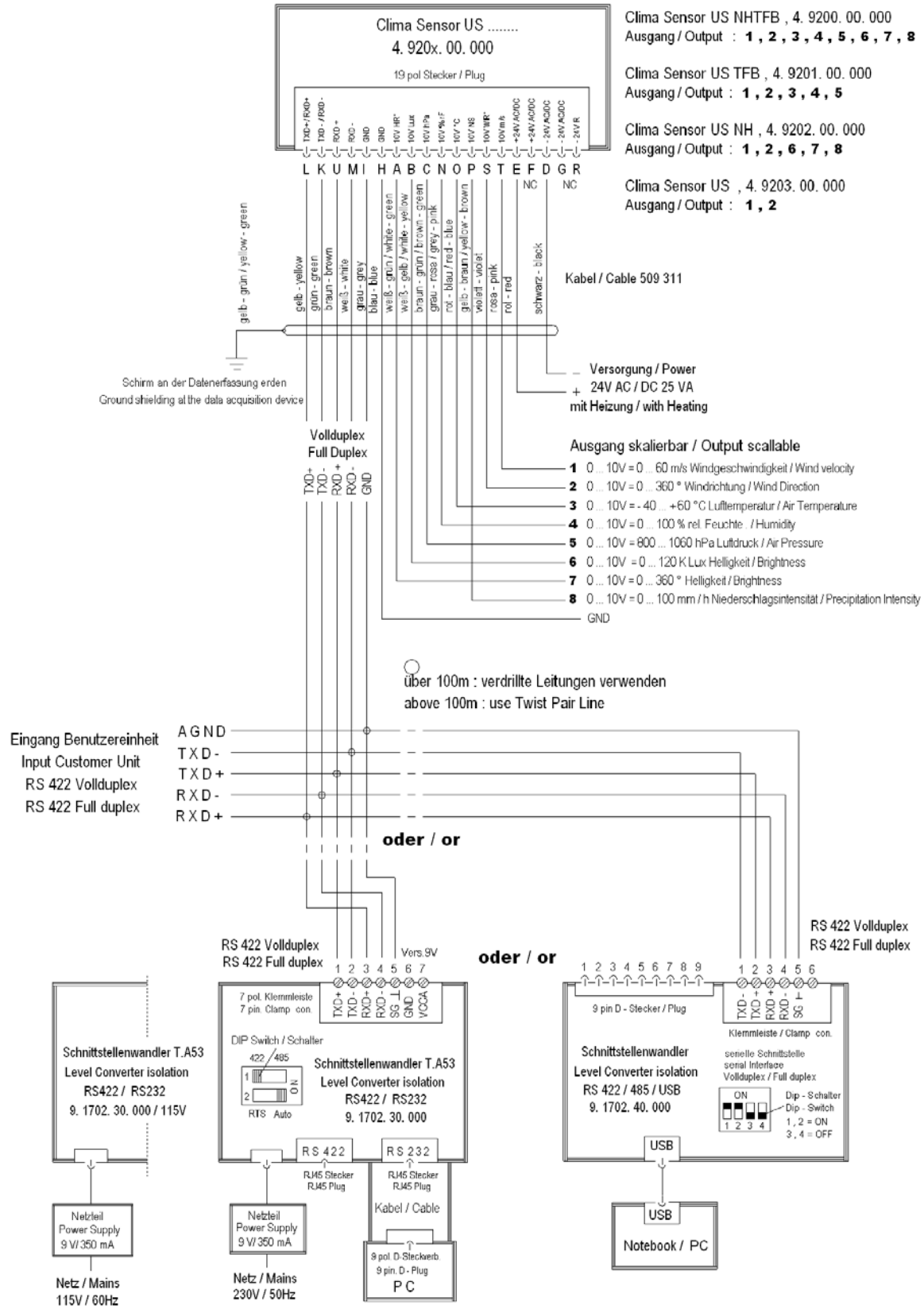


7 General Remarks

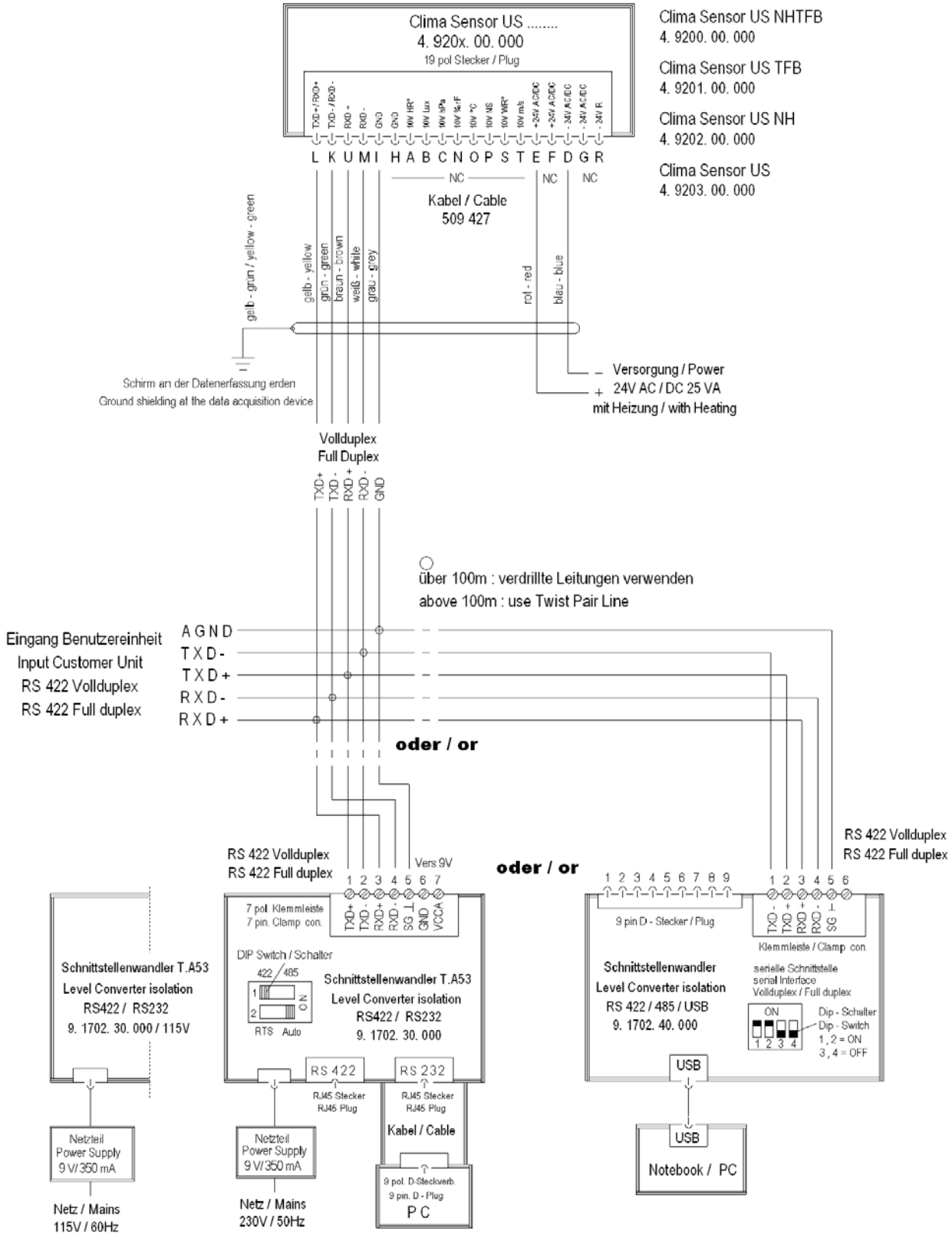
- If there are several devices in bus operation, it must be ensured that the other devices do not block the bus with their data lines. It must be ensured that other devices in the bus do not react to the firmware data. A disturbed update can entail the corruption of the firmware so that the CLIMA SENSOR US is no more functional, and will have to be sent in to the manufacturer.
- If the software has not been started for upload, the process will be interrupted by an internal time-out of 120s or can be reset to normal operation by switching off and on again the power supply.
- Interrupting the update in process will lead to damage of the firmware so that the CLIMA SENSOR US will not start correctly. In this case the sensor will have to be sent in to the manufacturer.

8 Connection Diagram

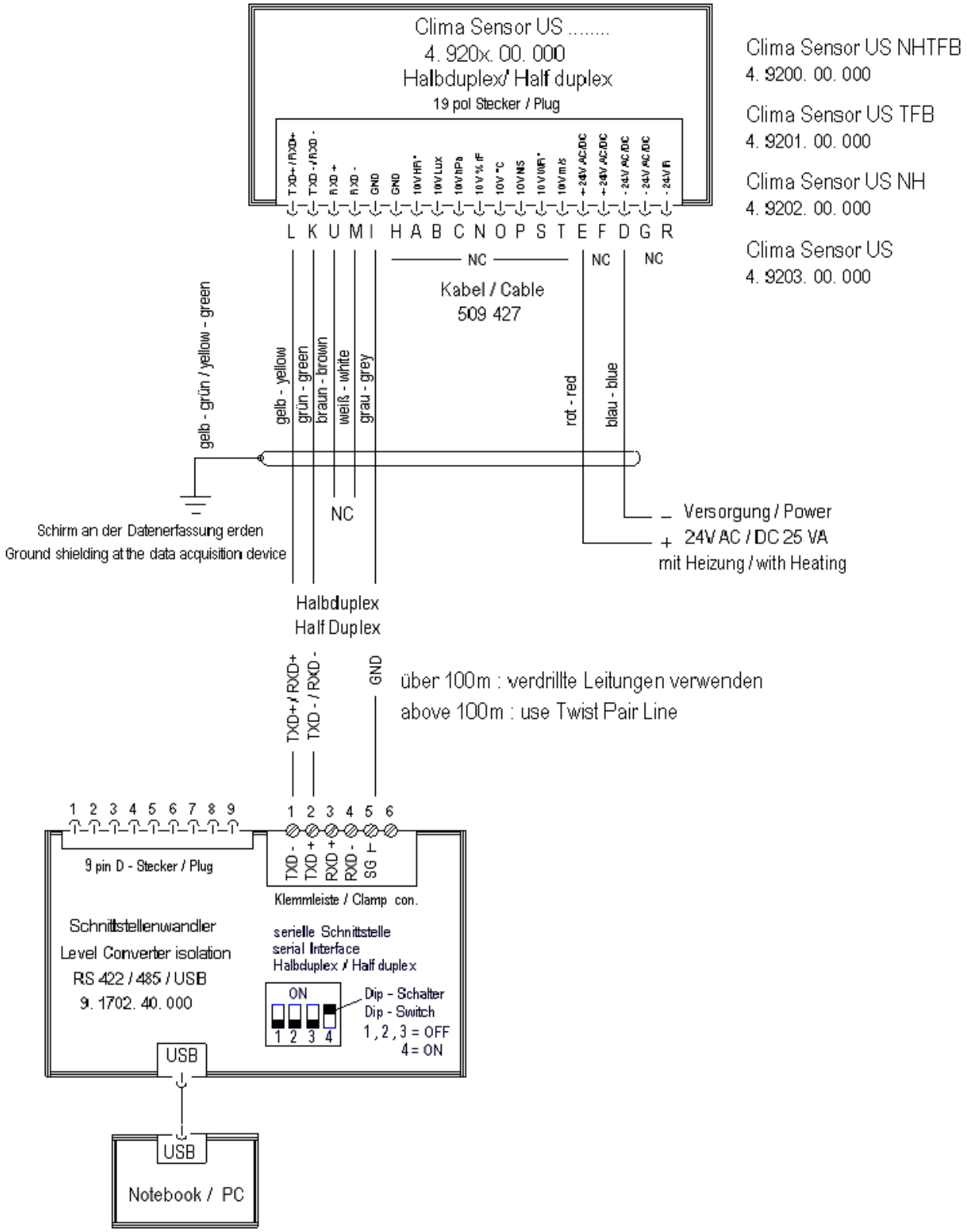
8.1 Connection diagram with 16 pole cable; full duplex mode



8.2 Connection diagram with 8 pole cable; full duplex mode



8.3 Connection diagram with half duplex mode



Clima Sensor US NHTFB
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Clima Sensor US TFB
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Clima Sensor US NH
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Clima Sensor US
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