Application Work AW CH1-1150-052014

Connecting Sartorius USB Balances to Metrohm software and devices

Branch

General analytical chemistry

Keywords

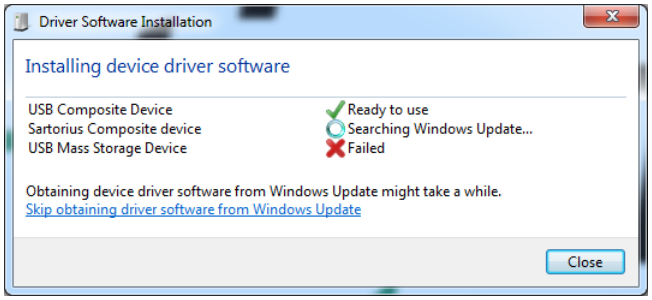
sample preparation; , balance ; Sartorius ; communication; Weighing

Summary

This Application Work provides information on how to connect Sartorius Balances (Cubis®, Secura®, Quintix®) via USB connection to Metrohm devices and software (***tiamo***™, TC/Ti-Touch and Titrino plus).

1. Connecting Sartorius Secura®/ Quintix® to *tiamo*™

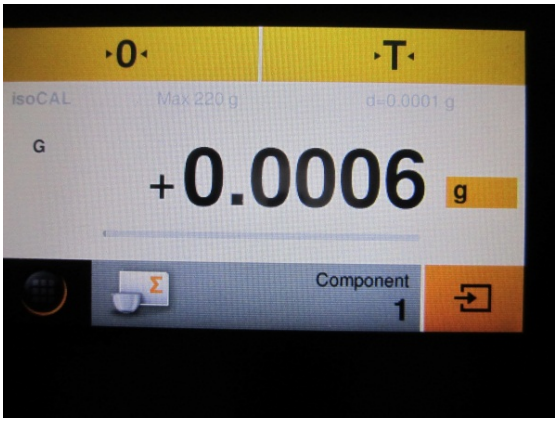
1. Connect the balance to the PC via cable 6.2151.110 (Cable USB (OTG) Mini B St-USB A) by connecting the mini B to the balance and the USB A to the ***tiamo***™ PC. Now automatically the following drivers should be installed.
   - USB Composite Device
   - Sartorius Composite device
   - USB Mass storage device



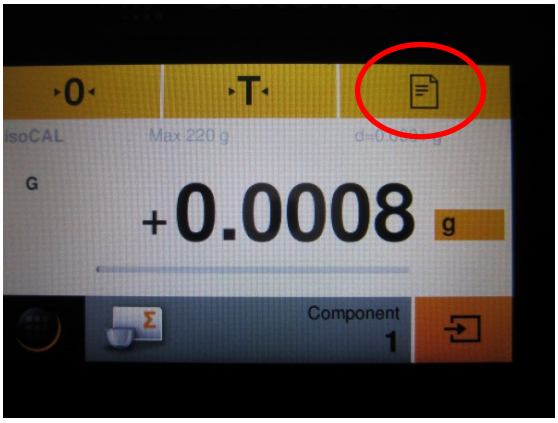
   To get all drivers the PC should be connected to the network for potential Windows updates.

   Important: USB CDC serial port emulation (COM) should be available in Windows.

2. At the Secura®, Quintix® balance the print button is only visible, if a USB cable is connected at the mini USB plug in:

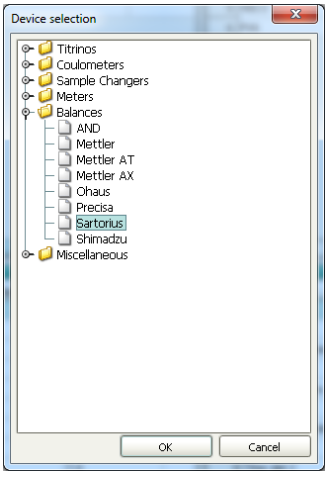


No USB cable connected.

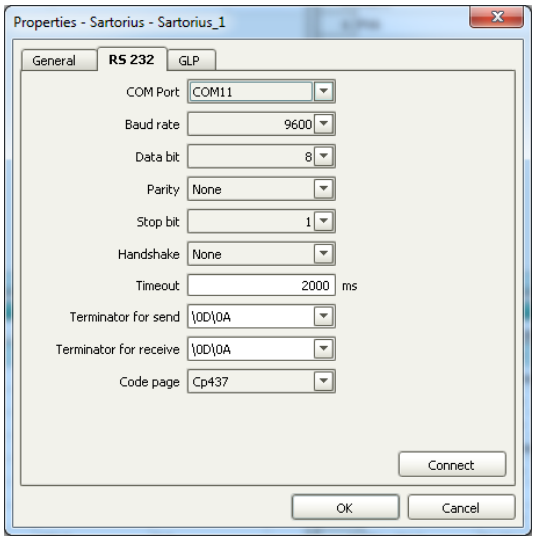


USB cable connected.

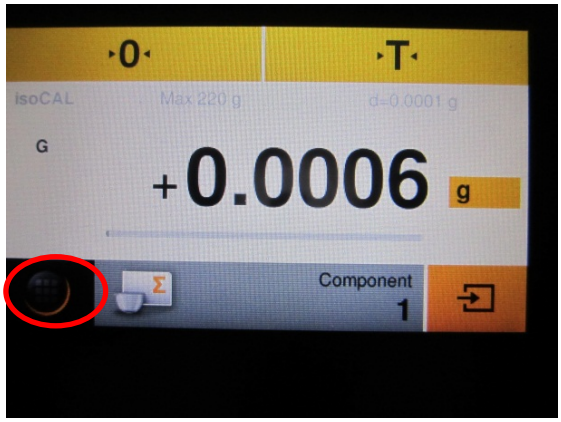
3. Start ***tiamo***™ at the PC and go to the Configuration view.
4. Define a new Device – Balances – Sartorius:



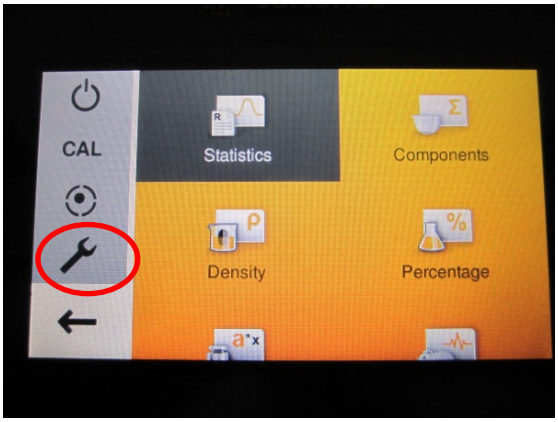
5. Open the Properties, tab ‘RS 232’ and choose the appropriate COM port and check the RS232 connection settings. If the correct COM port shouldn’t be available in ***tiamo™***, restart ***tiamo™.***



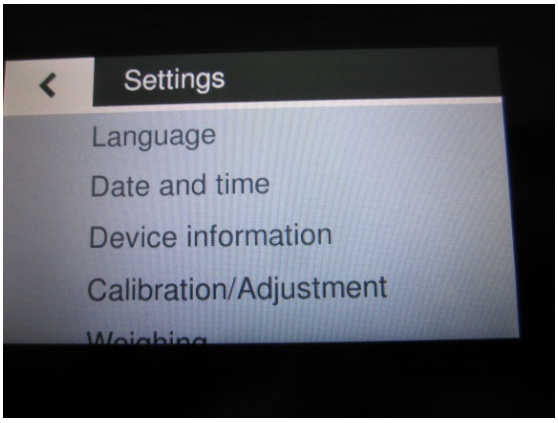
6. Compare the RS settings in ***tiamo™*** with the settings at the Sartorius Secura®/ Quintix® balance. For this push the button in the left corner at the balance touch panel:



The menu will open:

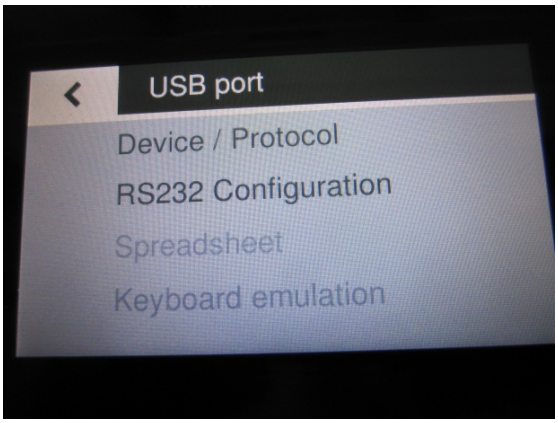


7. Push the wrench button on the left,



8. the ‘Settings’ view opens, scroll down to USB ports,

9. push ‘USB port’,



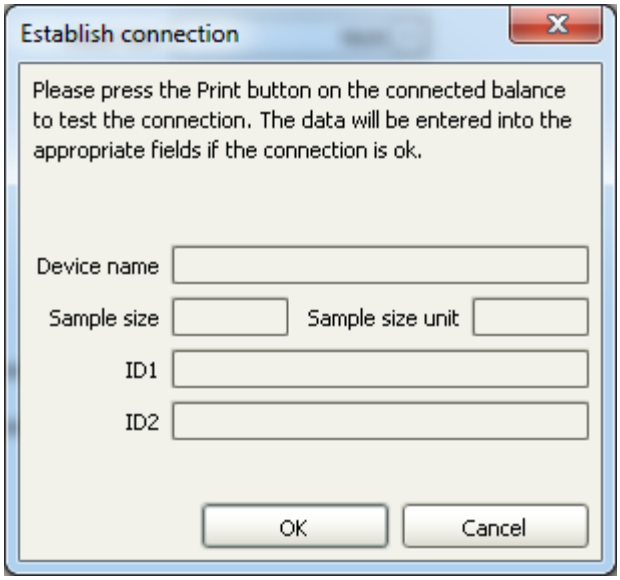
10. and then push RS232 Configuration.

11. Check all parameters as indicated in the table, by pushing the checkmark '✓':

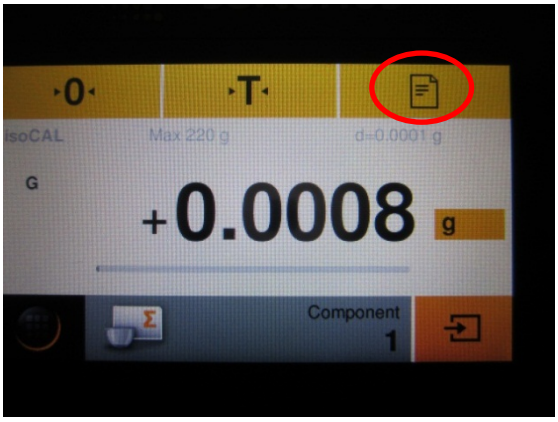
Baud rate	9600
Data bits	8
Parity	None
Stop bits	1
Handshake	Hardware (CTS, RTS)

Go back to the Main dialogue.

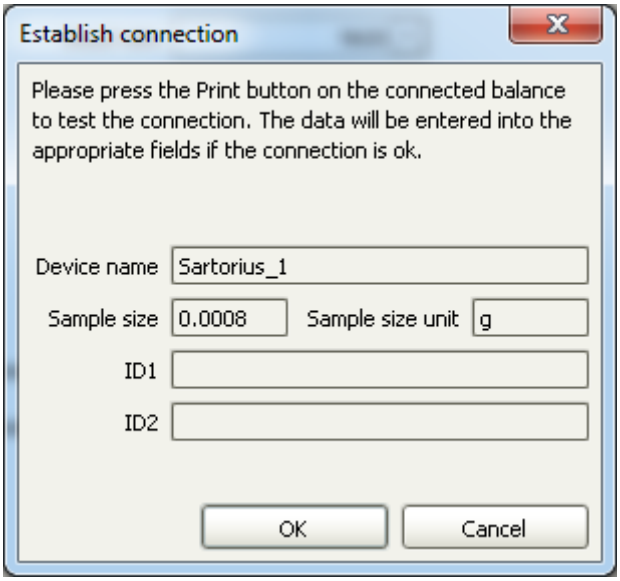
12. Push at the Properties in the ***tiamo™*** Configuration, tab RS 232 the button 'Connect' and the following window opens:



13. Now push the 'print' button on the top right at the balance to send the actual weight:



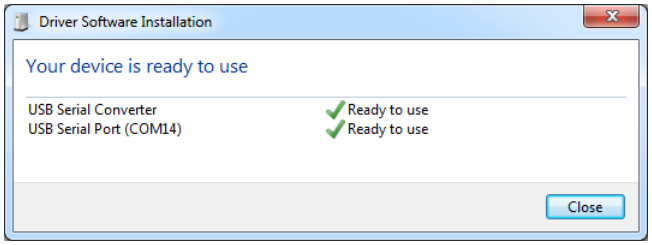
14. You now can read the correct value for the weight in the field sample size, the device name and the sample size unit.



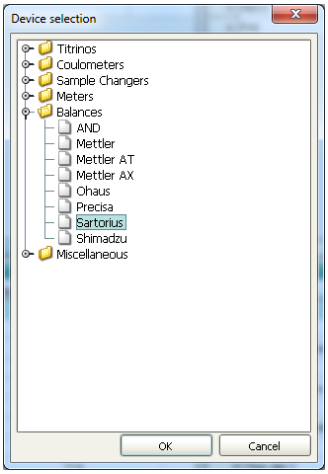
15. Push the <OK> button and close the Properties window for the balance. The balance is now in the Devices table indicated with status 'ok' (green). The balance is now ready for use.

2. Connecting Sartorius Cubis® to tiamo™

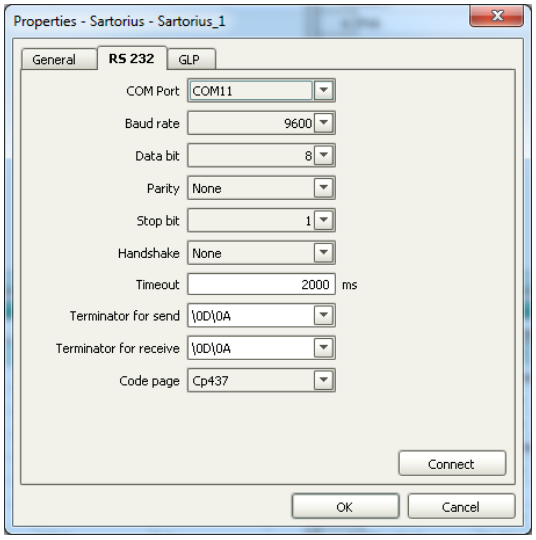
1. Connect the Sartorius Cubis® with Cable USB A St-USB B St (e. g. 6.2151.020) to the ***tiamo™*** PC. All necessary drivers should be installed automatically. (Message: Installing device driver software).
2. Possibly the following window may pop up:



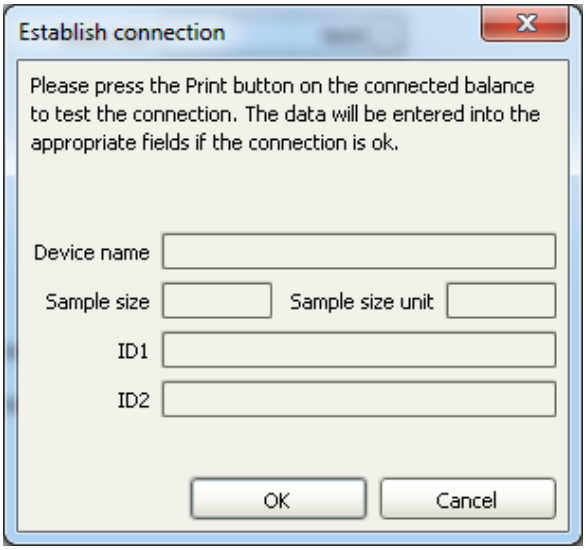
3. Start ***tiamo™*** at the PC and go into the ***tiamo™*** Configuration view.
4. Define a new Device – Balances – Sartorius:



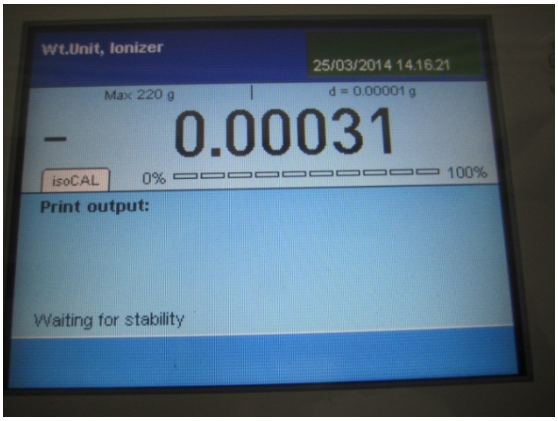
5. Open the Properties tab ‘RS 232’ and choose the appropriate COM port. If the correct COM port shouldn’t be available in ***tiamo™,*** restart ***tiamo™.***



6. Push at the Properties in the ***tiamo™*** Configuration, tab RS 232 the button ‘Connect’ and the following window opens:



7. Now push the ‘print’ button on the right at the balance to send the actual weight:



8. You now can read the value for the weight in the field sample size, the device name and the sample size unit.

9. Push the <OK> button and close the Properties window for the balance. The balance is now in the Devices table indicated with status ‘ok’ (green). The balance is now ready for use.

3. Connecting Sartorius Secura®/ Quintix® to Touch Control / Ti-Touch

1. Setup balance for USB-RS/232 connection

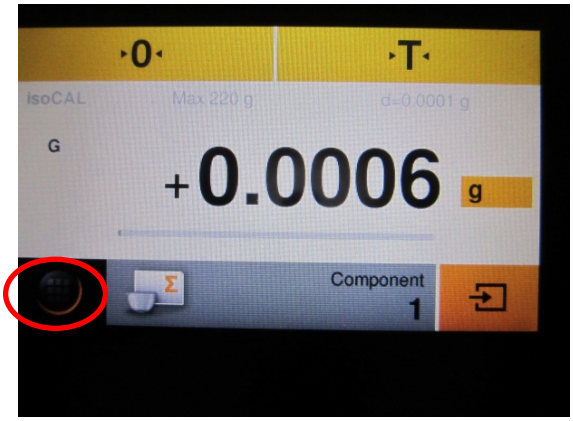
To connect the Sartorius Sartorius Secura®/ Quintix® you need from Sartorius the Data Cable Mini USB/ RS 232 9-pin, Sartorius order number YCC03-D09.

The cable is not included in the balance standard delivery

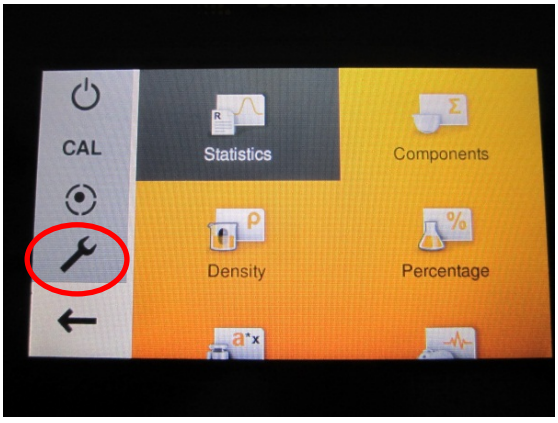
Plug USB plug into back of balance – it is OK if the balance is powered on. DO NOT CONNECT TO TITRATOR!

2. Configure RS/232 on balance

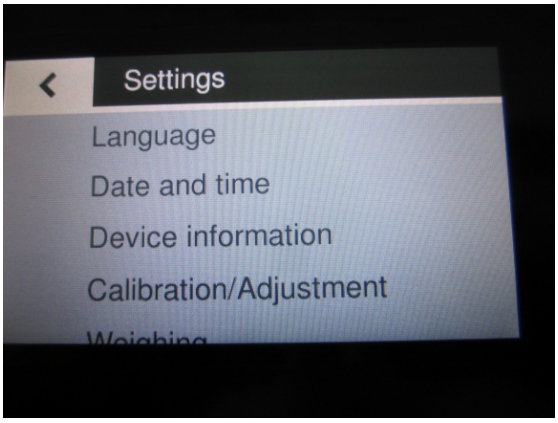
On the main screen, touch the menu button in the lower left



The Main Menu appears.

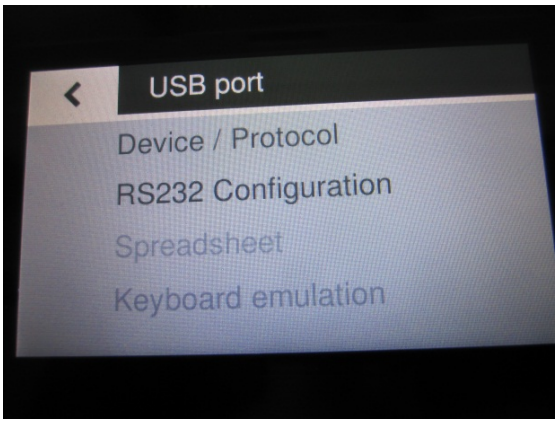


Push the wrench button on the left



The ‘Settings’ view opens, scroll down to USB ports,

Push ‘USB port’,



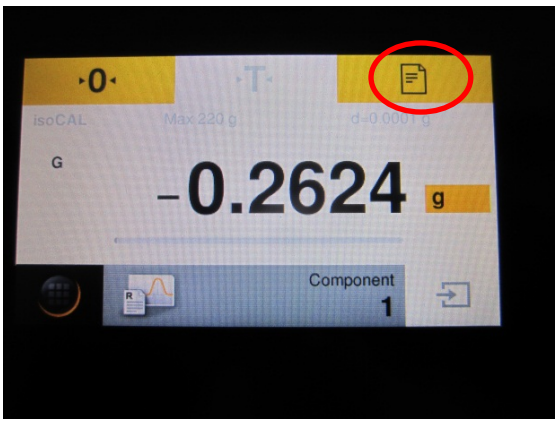
and then push RS232 Configuration.

Check all parameters as indicated in the table:

Baud rate	9600
Data bits	8
Parity	None
Stop bits	1
Handshake	Hardware (CTS, RTS)

Go back to the Main dialogue.

Return to the home screen by touching the back arrow. The print icon should now be on the top right corner



Power down the system by returning to the menu and touching the power icon.

3. *Connecting to 900TC / Ti-Touch*

Switch off the Titrator and connect it with the USB/RS-232 Converter (6.2148.050) and the Sartorius balance cable. to the Sartorius balance:

Power on the titrator.

4. *Configuring USB/RS-232 Converter at the TC / Ti-Touch*

Press the <<SYSTEM>> button on the lower left of the home screen.

From the System menu press the <<Device Manager>> button on the lower left of the screen.

Make sure <<USB/RS-232 Adapter>> is a menu item.

Select <<USB/RS-232 Adapter>> and press the <<Edit>> button in the lower right of the screen.

In the device setting screen confirm that COM1 lists the following setting: **9600/8/N/1/HW**

If it does not, select COM1 and press the <<EDIT>> button in the lower right corner of the screen and make the following settings:

Baud rate	9600
Data bits	8
Parity	None
Stop bits	1
Handshake	Hardware (CTS, RTS)

Return to the <<Device Manager>> menu.

5. *Configuring a balance on the Touch Control / Ti-Touch*

In the <<Device Manager>> press the <<New>> button in the lower center of the screen

Press the <<Balance>> button

Return to the <<Device Manager>> screen and there a balance will be listed

Highlight the <<Balance>> entry by pressing it and press the <<Edit>> button in the lower right of the screen

On the Device Manager / Edit screen for the Balance complete the following fields as follows:

Device Name: Balance

Comment: Leave blank or comment if desired

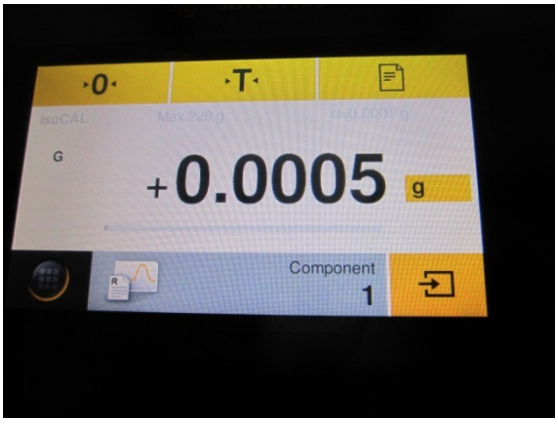
Balance type: Sartorius

RS-232: COM1

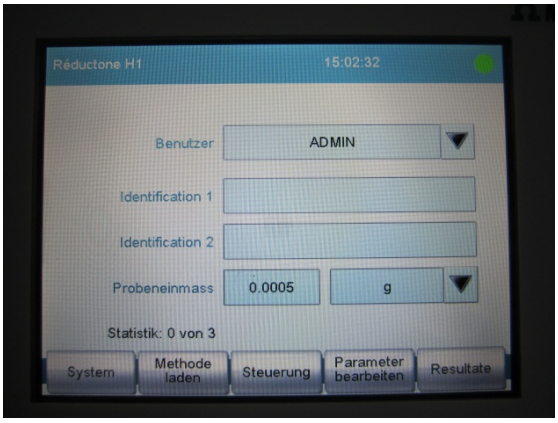
Press the <<Home>> button to return home.

6. *Confirming the balance is connected properly*

If the home screen contains Favourite buttons instead of the sample data entry lines, press the <<Sample Data>> button.
Press the print button on the balance



and the TC / Ti-Touch dialog will pop up with the weight information from the balance:



7. *Connecting Sartorius Cubis® to Touch Control / Ti-Touch*

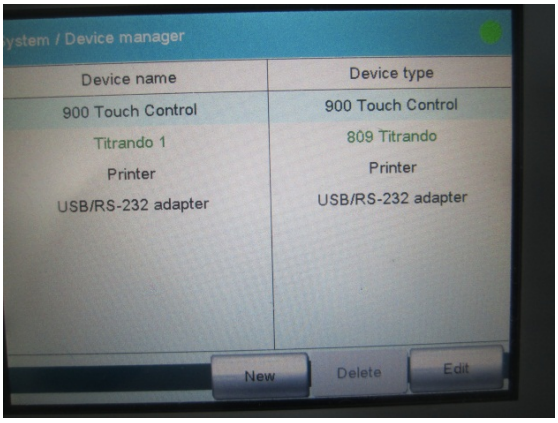
Connect the Sartorius Cubis® with Cable USB A St-USB to the TC / Ti-Touch. Connect the USB B to the balance

and the USB A directly at the TC / Ti-Touch:

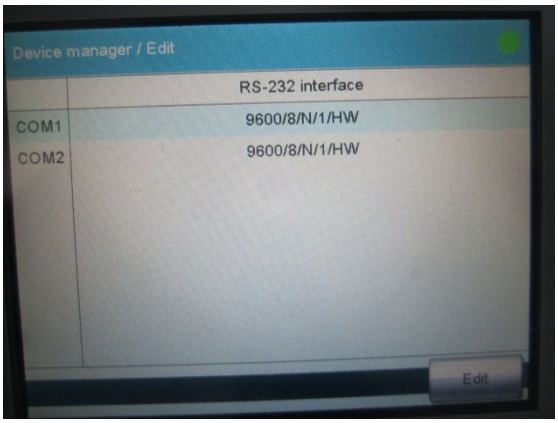
Now switch on the TC / Ti-Touch and wait until the software is started up.

8. *Configure balance / RS-232 on TC / Ti-Touch*

Push the button <<SYSTEM>>. When the Sartorius Cubis® is connected then you can see under ‘System / Device manager’ ‘Device name / Device type’ the ‘USB/RS-232 adapter’:



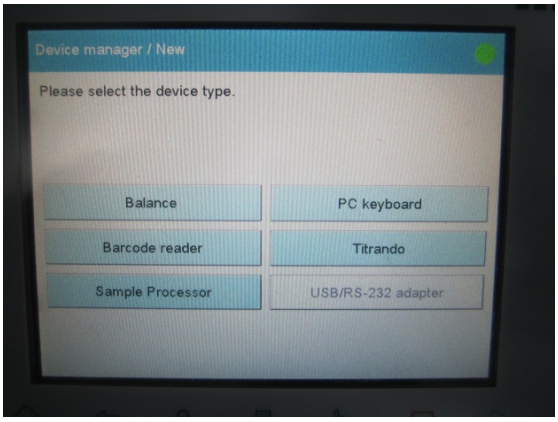
Activate the ‘USB/RS-232 adapter’, click ‘Edit’:



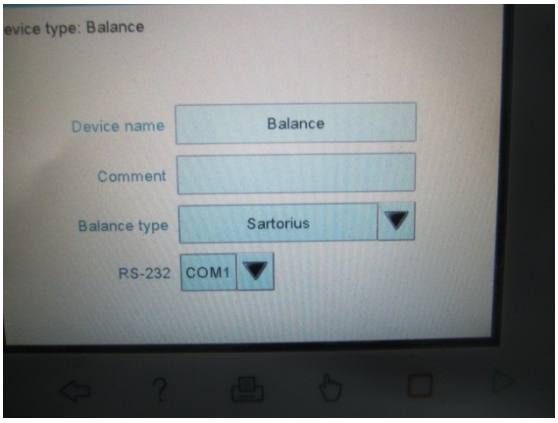
Activate now ‘COM1’, click ‘Edit’ and check the settings:

Baud rate	9600
Data bits	8
Parity	None
Stop bits	1
Handshake	Hardware (CTS, RTS)

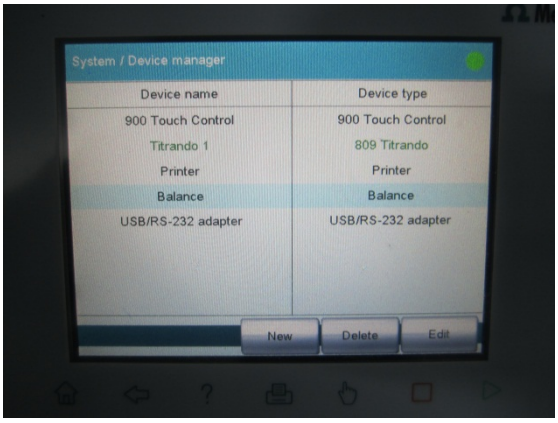
Now go back to the ‘Device manager’ and click ‘New’:



Choose ‘Balance’, then the following view comes up:



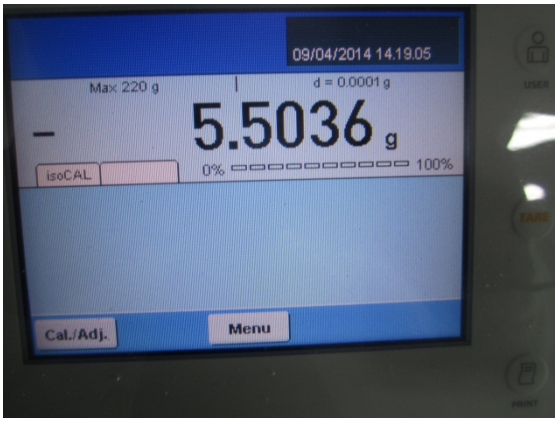
There choose ‘Sartorius’ as ‘Balance type’ and COM1 for RS-232. Go Back to the ‘Device manager’. Now you can see the balance in the Device manger:



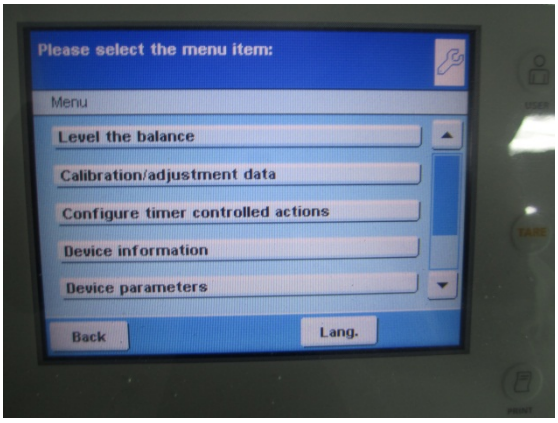
Push the ‘Home’ button.

9. *Configure Cubis® Balance for communication with TC / Ti-Touch*

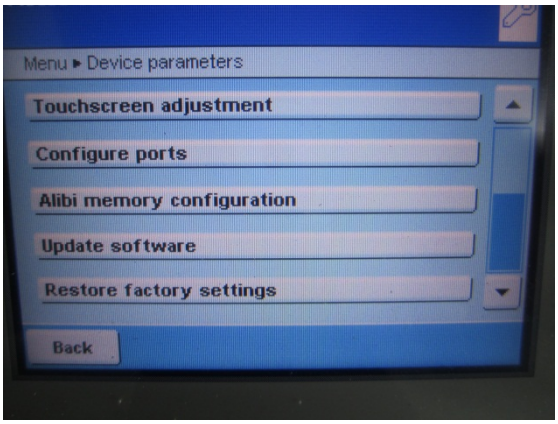
Push the button ‘Menu’ at the Sartorius Cubis®:



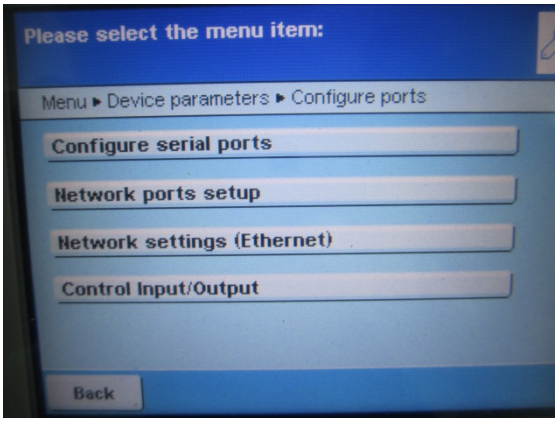
Push in the Menu the button ‚Device parameters’:



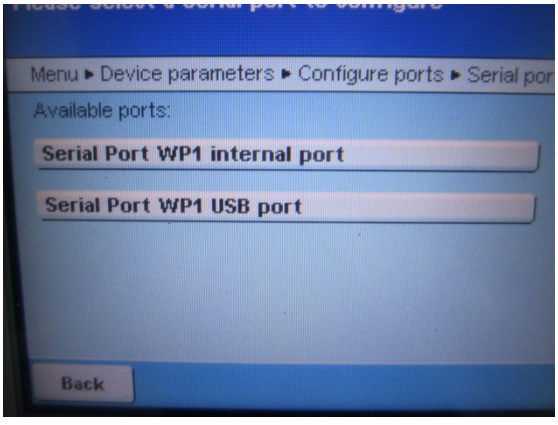
In the next view, scroll down and choose ‘Configure ports’:



and then ‚Configure serial ports’:



and then ‘Serial Port WP1 USB port’:

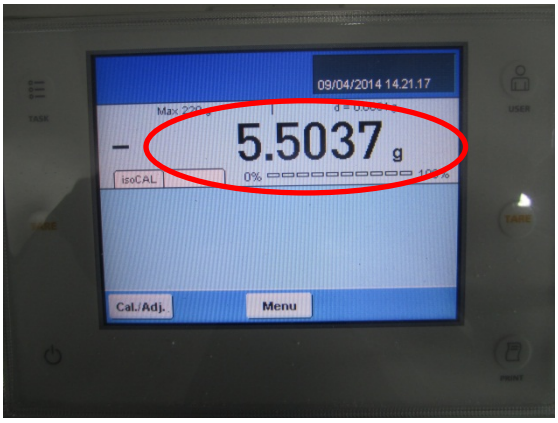


Compare the settings at your balance with the settings in the pictures of the touch screen

If all settings are in accordance with the following

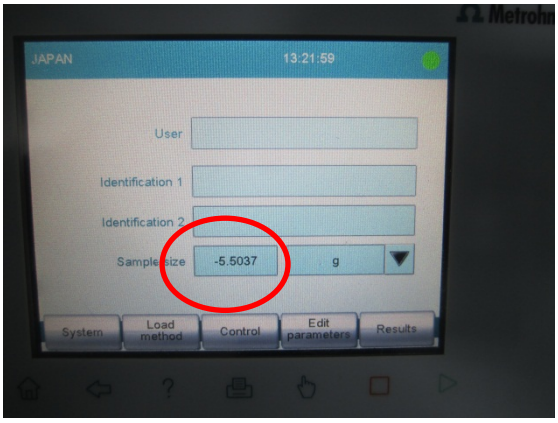
Operating mode	SBI
Selected protocol	No protocol
Baud rate	9600
Data bits	8
Parity	None
Stop bits	1
Log data	off

Push the button <Save>. Now push the button ‘Back’ until you are back at the Main menu:



Then push the print button on the right of the screen:

Then the actual weight is transferred to the TC / Ti-Touch:



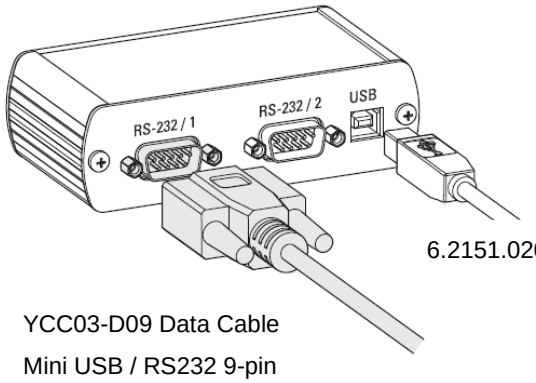
The Sartorius Cubis® balance is now ready for use together with the TC / Ti-Touch.

4. Connecting Sartorius Secura®/ Quintix® to 848 / 877 Titrino plus / 870 KF Titrino plus

To connect a Sartorius Secura®/ Quintix® to 848 / 870 / 877 Titrino plus you require a RS-232/USB Box (6.2148.030) and the Sartorius Data Cable Mini USB / RS232 9-pin, (YCC03-D09).

Connect the RS-232/USB Box with a 6.2151.020 USB cable to the 848 Titrino plus by means of a USB hub or a 6.2151.100 adapter.

Connect the 9-pin plug of the Sartorius YCC03-D09 Data Cable Mini USB / RS232 9-pin to the RS 232/1 connector of the RS-232/USB Box.



6.2151.020 USB cable

YCC03-D09 Data Cable
Mini USB / RS232 9-pin

Now switch on the Titrino plus.

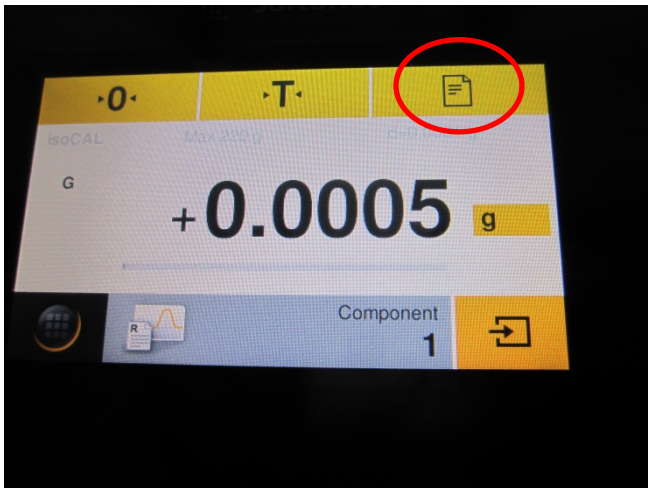
Check the settings for the COM port 1 at the 848 / 877 Titrino plus / 870 KF Titrino plus:

>COM1 settings:

Baud rate	9600
Data bits	8
Parity	None
Stop bits	1
Handshake	Hardware

Choose for ‘Balance’ under external devices ‘Sartorius’. Go back to the main menu.

Go to the Sartorius Secura®/ Quintix® and enter the same settings under Settings→USBport→RS232 Configuration for Baud rate, Data bits Stop bits, Parity and Handshake (see above). Go back to the Main dialog and push the print button



The sample size is now transferred to the Titrino plus and visible in the line ‘Sample size’ at the Main dialogue of the Titrino plus.