



**Temporary Manual**  
**Pending to Final Release.**  
**Instruction for the “QUICK” mode**



VERSION 1.2    MAY 2010

PRODUCT CODE: RS00654

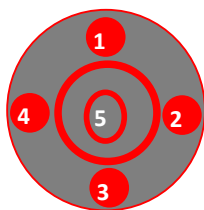


## **1/ Liminaires.**

The Readsensor is an optical reader suitable for the reading of dipsticks manufactured by Unisensor. The development of this instrument was brought by a German company specializing in optical surface analysis and by Unisensor who develops dipsticks-based analysis tests. To our knowledge, most requests of our customers have been incorporated and the reader has now several options that can be chosen depending on the environment in which the device will be installed.

The Readsensor can be used either independently or by connecting to a computer. The definitive manual who is in writing will address deeply these two possibilities. In addition, to best meet the request of our customers there are two operational modes. The so called “LONG” mode, where the full indication of the reagent and operator is introduced and the “QUICK” mode where only the sample number is needed to proceed with a measurement. There is only the “QUICK” mode that is detailed here below.

The Readsensor is equipped with an integrated keyboard (circle keypad containing 5 keys, cf scheme 1). To be more flexible for the introduction of numerical sample ID there is an external numerical keypad (KeySonic) and also a printer that can be connected to the reader.



*Key « 5 » = OK or « enter »*

*Key « 4 » = to go to the left or previous page.*

*Key « 3 » = to go down.*

*Key « 2 » = to go to the right or next page.*

*Key « 1 » = to go up.*

Picture 1 : Circle keyboard of Readsensor

## **2 / The device description.**

In the right side of the instrument there is a drawer that can be opened and closed easily. This drawer has a central groove where the dipstick should be placed horizontally with the visible side up. The dipstick settles in the central groove by taking care to put the extremity of the dipstick that has been in contact with milk to the inside of the reading system. To avoid introducing milk in the optical part, it is recommended to gently remove filter soaked in milk.

The Readsensor is calibrated automatically at every switch-on and does not require using calibrated or white strip. However this option will become available on request. If the drawer is not correctly closed during the initialization the system will ask to “Close Drawer” before to proceed with further calibration.

The instrument has two different keyboards:

An internal keyboard (circle) which is fixed to the upper face of the instrument and contain five keys whose functions are described here below.

An external numerical keyboard that is connected to the instrument using one of the two serial ports. We recommend connecting the numerical keypad to the serial port that is located just behind the USB port. Be aware that no other keypad can be used without damaging the system and that the numerical keypad must be connected using the specific short cable "USB-Serial" that is provided in the package. This numerical keyboard becomes automatically active when the blue led is lit (Num Lock). So please be patient and do not type numbers before to see the blue led. In some cases it can take 2 or 3 seconds. There are only the numerical keys and the "enter" key that are active. The key Star "\*" is the key back-erase but the other keys are disabled and should not be used.

### **3 / Basic operation.**

Today the instrument is programmed in the QUICK mode. However, it can be converted at any time to the other "LONG" mode according to a procedure which will be detailed later. This operation needs to connect the reader to a computer using the appropriate software.

#### **3.1. Connect interfaces to the reader.**



1: Power source (large adapter type PHIHONG, model PSA120R 115P).

2: USB to the computer (NOT FOR KEYPAD).

3: Barcode, printer, RFID, or external keyboard

4: Barcode, printer, RFID, or external keyboard.

Recommended configuration is underlined.

1/ Reader contains rechargeable batteries but for continuous and intensive use we recommend to plug it on sector. When the reader is not plugged to sector it will automatically switch-off in respect to what has been set in the //Main Menu / SETUP / Shutdowntime (standard is 1 minute).

2/ If you do not want to retrieve results on a computer, it is not necessary to connect your instrument to a computer. But if you want to do so, you need first to install the adapted software (called LFC for Lateral Flow Control or LFM for Lateral Flow Manage) This part is not described in this temporary manual but these PDF files are on the CD provided with the Readsenser.

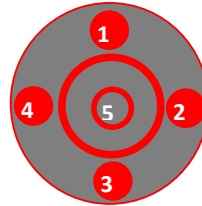
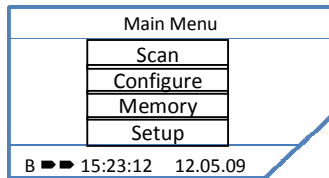
3/ Connect the external keyboard throughout the USB extension (the short black cable provided in the package).

4/ Connect printer if you want the result to be printed.

### 3.2. Switch-on the instrument to access the MAIN MENU (recommended first).

Use the Circle keypad of the reader and press simultaneously 2 keys like follows: Press FIRST the key "1" of the device (the top button) and maintain this key down while pressing the key "5" or "ENTER" (central button) of the same circle keypad. **You therefore need to press two keys simultaneously but firstly the top button and secondly central button.**

The reader makes a series of internal calibration before to be released for further operation. When ready, you are in the Main Menu.



To move up, use « 1 », to move down use « 3 », to turn to next page use « 2 » to turn to previous page use « 4 ».

**SCAN:** to access the measurement commands. Take care because when the "QUICK" mode is installed, it will not be possible to come back to the Main Menu without switching it off, while you are going to the Scan mode.

**CONFIGURE:** to select the type of test and the batch number.

**MEMORY:** to retrieve measures stored in the instrument.

**SETUP:** to see the settings of the instrument.

#### A. Select the type of test in relation to the type of dipstick to read.

Being on "SCAN" go down to CONFIGURE by pressing one time to key "3" and then key "5" (enter).

Press one more time the key "5" to move cursor to the right and then use keys "1" and "3" to select the name of the desired test. When name appears (white on black) accept it by pressing "5".

If you want to add the batch number of the used Kit, proceed like follow: Go to the line "lot ID" and press "5" and wait a 2 seconds to activate the external keyboard. Introduce batch number like "090203 and ENTER". Pay attention that to save time; the batch number will not be printed in the QUICK mode, but only in the LONG mode. However the batch number will be downloaded to computer together with all data of the measurement. Therefore there is no reason to introduce the batch number if you are working in the Quick mode but do so when connected to computer.

Verify that you have properly introduced the "right type" of test and the correct "Lot ID" and go up to the cross "X" by pressing twice on the button "1" and then one time the key "5" to return to the Main Menu.

B. Go to "SCAN" to perform a first measurement.

When "SCAN" is highlighted, press key " 5 " to be in the Scan Test Menu. The selected Type of Test is the one you have just selected in the Main Menu.

The external keyboard is becoming active after 2 to 3 seconds and the cursor automatically go to the right position waiting your instruction for the Sample Identification. For the introduction of the sample number use the numerical external keypad.

C. To perform a measurement proceed as follows:

1. Open the drawer using the index and the thumb of the right hand.
2. Raise the "black dipstick cover".
3. Load in the central groove the dipstick with the visible side up and insert the part which has been in contact with the sample of milk to the inside of the reader. Verify that the test strip is well located in the groove on its 4 sides.
4. Drop down the "black dipstick cover".
5. Push the drawer back to its initial position.
6. Using the external numerical keyboard enter the number of the milk sample and "enter".

The measurement is started..... wait a few seconds the result.

The result is automatically displayed on the screen and if the printer is connected it is automatically printed.

7. The upper key **NT**, meaning "NEXT TEST" is enabled and therefore it is very easy to proceed with the next measurement by pressing "enter" with external keyboard (or the key "5" with the instrument keypad.)
8. Type the number of the following sample and "ENTER".
9. If you forgot to change the dipstick, meaning that if the drawer has not been opened within 2 measurements, the instrument asks you to change the test strip. You have to open and to reclose the drawer to automatically enable the next measurement.
10. For the next measurements, go to point 7, etc ...

REMARKS:

When the memory exceed 100 results there is a warning indicating that the new results will replace the oldest one. To prevent the lost of results we recommend to save every day your results using any of the LFC or LFM software or to save each result one by one using a USB stick. To do so, go to MAIN MENU/MEMORY (See pg 11; Main Menu Workflow) and use the button **S** for "Safe". Please note that if you do so the data should first be re-imported using

the LFM (or LFC) before being converted with the "Export Results" in a format compatible with Excel.

### 3.3. For routine measurements.

If you are using only one single Type of Test, meaning that you are using always the same kind of product, you can directly enter to the Measurement Mode without going first to the Main Menu.

Turn off the device by maintaining your finger on the central button  $\Phi$  (key "5") until you hear 3 "beep" and see the inscription "SHUTTING DOWN", and then do the following.

1. Turn on the reader **by pressing the central key "5" only**. The reader makes a series of internal calibration before to release the instrument to further operation. This time the external keyboard becomes automatically active. Note that the Test Type that has been selected in the Main Menu is shown on the screen. When the pointer is front of the "Sample ID", in the right part of the screen, you can directly enter the sample number with the help of the numerical external keypad.
2. Open the drawer using the index and the thumb of the right hand.
3. Raise the "black dipstick cover".
4. Load in the central groove the dipstick with the face up and insert the part which has been in contact with the sample of milk to the inside of the reader. Verify that the test strip is well located in the groove on its 4 sides.
5. Drop down the "black dipstick cover".
6. Push the drawer back to its initial position.
7. Using the external numerical keyboard enter the number of the milk sample and "enter".

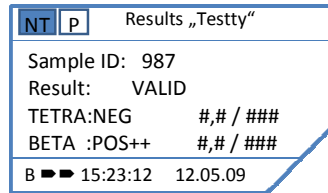
The measurement is started..... wait a few seconds the result.

The result is automatically displayed on the screen and if the printer is connected it is automatically printed.

8. The upper key **NT**, meaning "NEXT TEST" is enabled and therefore it is very easy to proceed with the next measurement by pressing "enter" with external keyboard (or the key "5" with the instrument keypad.)
9. Type the following sample ID and "ENTER".
10. If you forgot to change the dipstick, meaning that if the drawer has not been opened within 2 measurements, the instrument asks you to change the test strip. You have to open and to reclose the drawer to automatically enable the next measurement.
11. For the next measurements, go to point 7, etc ...

### 3.4. Results display.

When a result is achieved, it is displayed in the screen and but also printed out if printer is connected.



Data interpretation such as "NEG" or "POS ++" can be changed at your wish. This must be done with the help of your distributor using specific software called LFS.

The value "#, #" indicates the value of the RATIO, meaning the value of the TEST line divided by the value of the CONTROL line. A RATIO of " 1 " means that TEST and CONTROL lines have the same value. Most of the time, the RATIO " 1 " is obtained when the sample has about the concentration that is indicated in the limit of detection of the kit.

The value "###" indicates the value of the corresponding TEST line.

The button **NT**, "Next Test", can either be activated using the external keyboard "enter" or the key "5" on the internal keypad.

The button **P**, which means "Print", is to print the result that is shown on the screen. To activate this button use the key "2" of the circular pad and the key "5" or the "ENTER" key on the keyboard.

Obviously, you have understood that the key "ENTER" of the external keyboard will activate the command that is selected on the screen. So if you are on **P** (on background gray) the key "print" is active. In conclusion, to make a second measurement, the NT key is activated by default (**NT** gray background) so you just have to press the "ENTER" following by the "Sample ID" and "ENTER" again. Therefore there is no need to use the circular keypad to run successive measurements.

### 4 / Comments.

Using the "QUICK" mode, when you are in the Measurement Mode, the only way to return to the Main Menu (for changing Test Type for instance) is to turn the unit off and then to switch it on again using the two buttons simultaneously as described in 3.2. We built it like this to avoid none authorized people to change settings by error or to select the non appropriate method that does not fit to the product they are using. Doing so, we recommend that it will only be the lab manager that should have access to the Main Menu to put settings in the right way. The user will have access only to the Measurement Menu being not able to go to Main Menu for changing methods or any other

parameters. We recommend therefore to do not allow "simple operators" to return to the Main Menu that remains the responsibility of the Lab Manager.

Using the "QUICK" mode, the print-out will not integrate the reagent Lot ID, so there is no need to introduce it. If there is a need to print the Lot ID and the other linked info together with the result, we recommend using the "LONG" mode (not explained in this temporary manual).

An invalid result is clearly indentified as being "INVALID". Most of the time it happens when 1/ no dipstick has been introduce into the reading drawer, 2/ The selected method does not match the right dipstick, 3/ the signal at the control line is not strong enough, 4/ the dipstick is at the wrong position or up-side down. When the overall measure is INVALID there will be no value screened or printed but the sign "~" will be represented.

You can connect the printer at any time, but we recommend plugging it to the reader when it is switch-off.

For Deleting all results you should go to "MAIN MENU / SETUP 3/4" Take care to delete all results that have not been saved.

Result interpretation can be adapted to your specific requirements. If you want to do so, please contact your local distributor.

Thermal paper is standard; the reference is specified in the inside of the place where the paper roll is. It can be purchased at [www.thermalpaperbox.com](http://www.thermalpaperbox.com) under the reference "1678" or at Unisensor under reference RS00658. A leaflet containing the printer specifications is added in the reader case.

It is not possible to use any other type of printer than the one provided b Unisensor.

Steps in Main Menu and Measurement Menu for the quick mode are listed below.

## **6 References.**

RS00654: Optical Reader: Readsensor itself

RS00655: Printer GEBE

RS00656: Keyboard external KeySonic

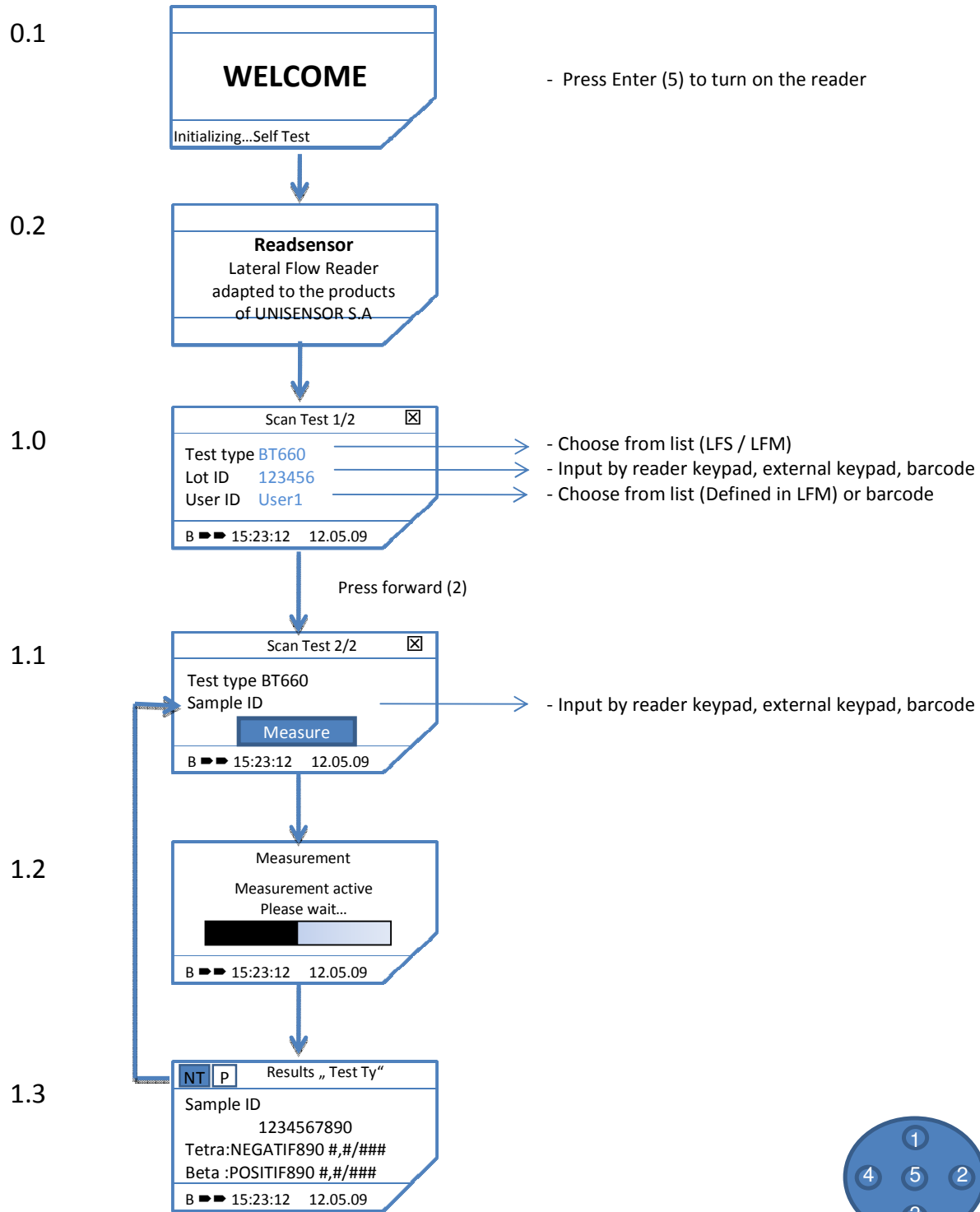
RS00657: Barcode

RS00658: Paper roll for printer GEBE, (set of 10 rolls).

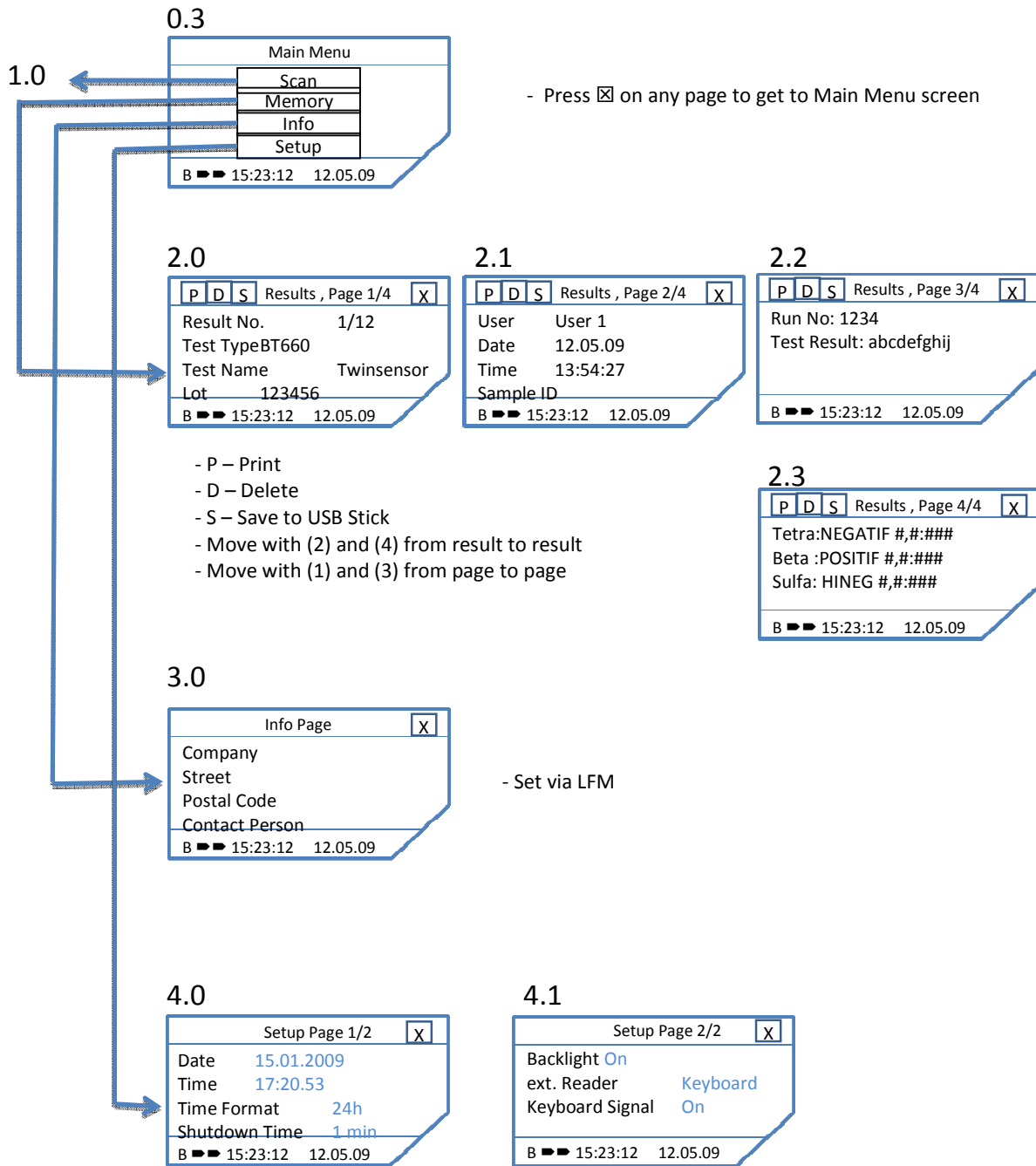
In case of problems please contact your distributor or send an email to [info@unisensor.be](mailto:info@unisensor.be).

# Unisensor Lateral Flow Reader Workflow Definition – Long Mode

## Main / Measurement Workflow:

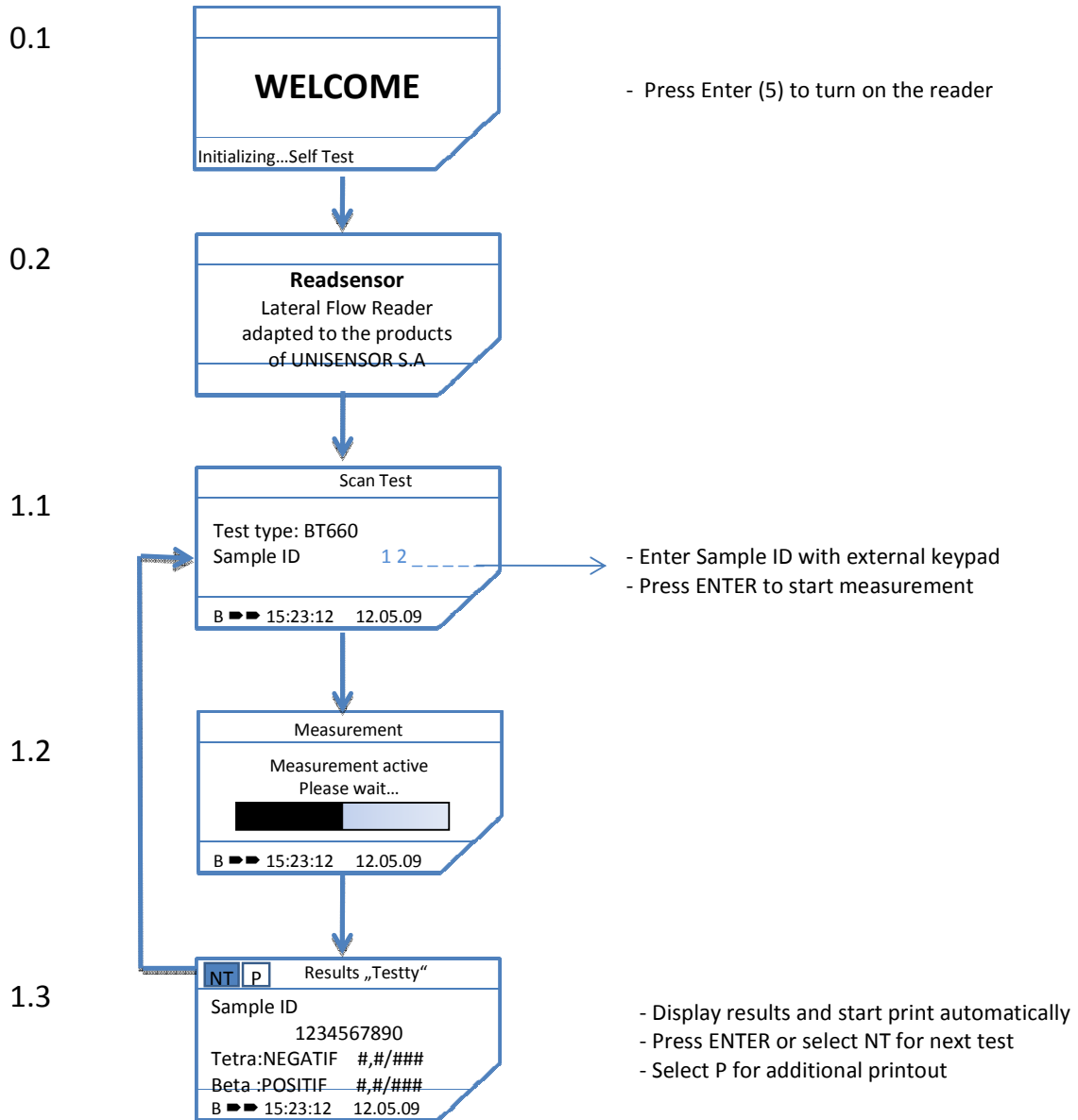


### Main Menu Workflow:



## Unisensor Lateral Flow Reader Workflow Definition – Quick Mode

### Main / Measurement Workflow:



## Main Menu Workflow:

