GRAM Next Z8i

Touch screen weighing terminal

EN OPERATION MANUAL

Administrator account

Configuration settings are protected using a password.

The Xtrem application uses a SQL database including a users' table.
Functions available depend on the user's role.
User's role can be defined as "administrator" or "operator".
Operator users have limited options for managing the configuration settings as well as the database options. There is an administrator user defined in factory settings that will allow you manage the configuration settings at the start, including adding other users to the database and assigning a role to each user.

To have full access to all the configuration settings during the first launch, login as user **a*dmin*** using the password ***admin123*** **(see 5. Operation).**

User: **admin**

Password: **admin123**

The "admin" account cannot be deleted.
Change the "admin" password as soon as possible.

After changing the administrator account password, it is your own responsibility to save the password you have introduced in a safe place. Losing the password will involve reinstalling the application which will result in the loss of the database information and configuration settings.

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1. Introduction

Z8i terminal is a software-controlled device based on the Android system with loadable software.

Z8i is provided with a 10-inch TFT graphic colour LCD display, equipped with a capacitive touch screen, mounted in an IP-67 stainless-steel casing. A mechanical button in the front is provided to power on / power off the device.

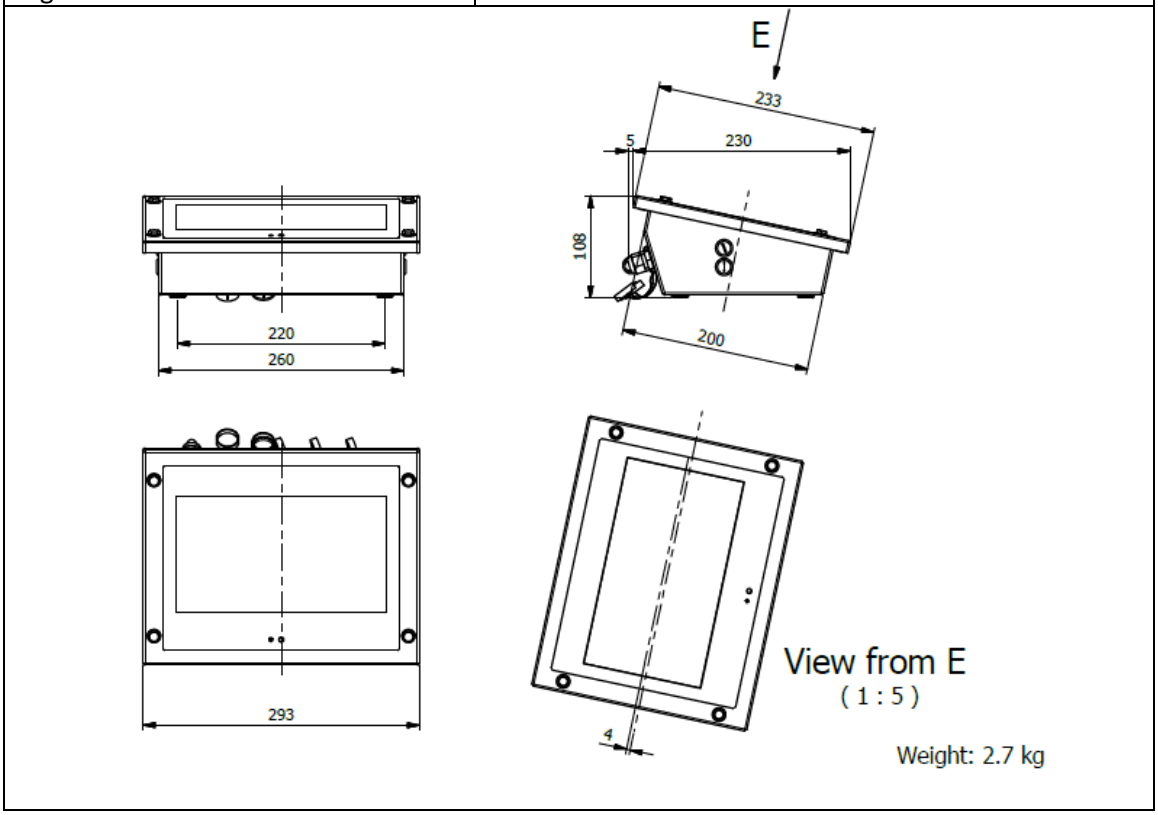
Features:

- Desktop, wall / column (mounting bracket included), or panel mount
- Weighing terminal for Xtrem digital scales (OIML R76 / EN45501 approved)
- Scale calibration and configuration
- Checkweigher function
- Tare memory
- Database including tables of users, products, and weighing operations
- Printing and recording weighing operations
- Customizable label / ticket
- Ethernet interface
- USB 2.0 host available at the back for connecting any compatible peripheral: printers, barcode / QR scanners, memory sticks…

2. Specifications

Operating conditions and mechanical data

Operational temperature range	-10ºC/+70ºC
Size (max)	293(L) x 235(W) x 108(H) mm
Weight	2,7 kg
Shipping weight	4,5 kg
Assembly	Desktop, swivel wall/column mount, panel.
Tightness	IP-67



User interface

Display / Resolution / Colour	TFT 10.1-inch / 1024 x 600 pixel /16,7M
Contrast/Luminance (cd/m^2)	800 / 400
Touch screen	Projected capacitive. Operation force 10g. Hardness 6H

CPU

Processor	Rockchip PX30K (64-bit quad-core ARM Cortex-A35 @ 1.3Ghz
Memory	LPDDR3 1GB (or 2GB) / eMMC 8GB

Communications

COM ports (RS232)	1 x RS-232C (reserved for Xtrem ADPD module) 1 x RS-232C (serial printer output)
Network (LAN)	10/100Mbps Ethernet
USB ports	1 x USB 2.0 host

Power

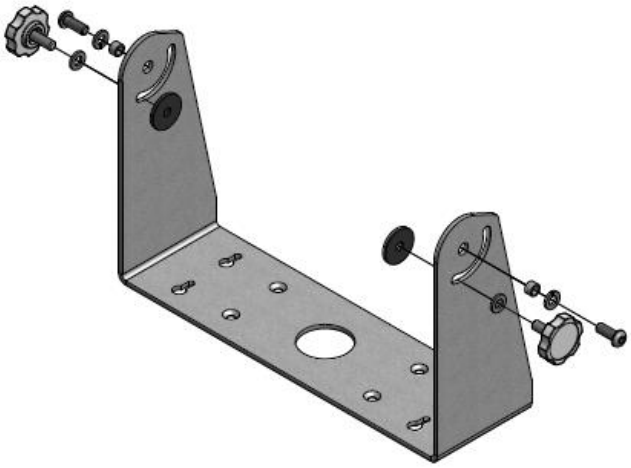
AC/DC adaptor	input 100- 240Vac / 50-60Hz / 1,2A output 12Vdc /3,5A

3. Installation

Package contents:

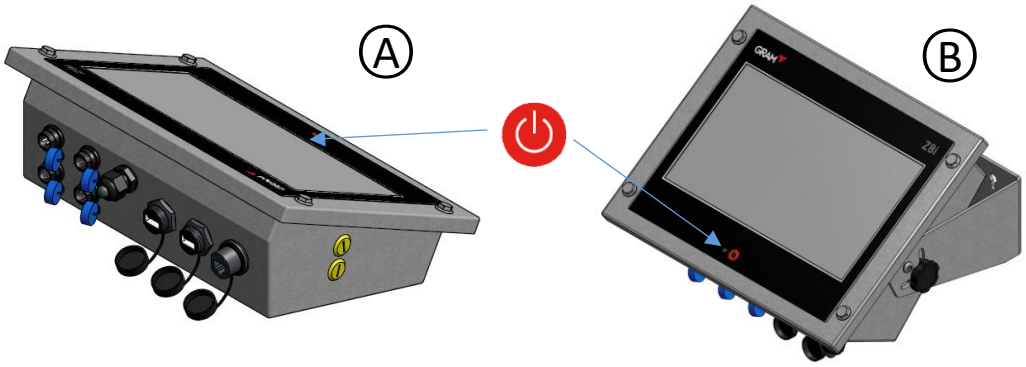
- Z8i terminal

- U support for wall mounting and its assembly accessories in a separate plastic bag.



- Power adapter and power cable in a separate plastic bag.
- Cable adapter for Xtrem scales.

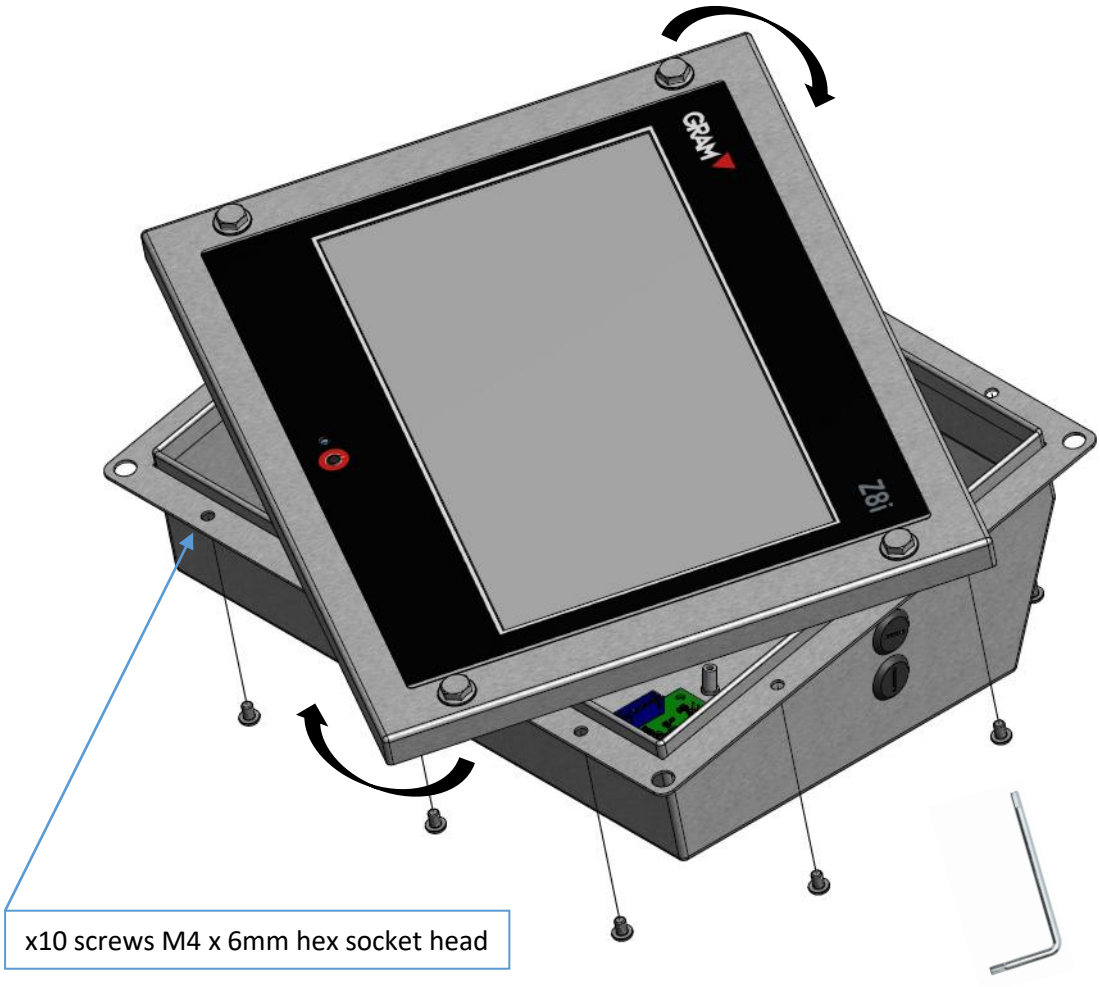
3.1 Changing the Screen Orientation



Ⓐ Desk mounting: The button is placed on the opposite side of the connectors.

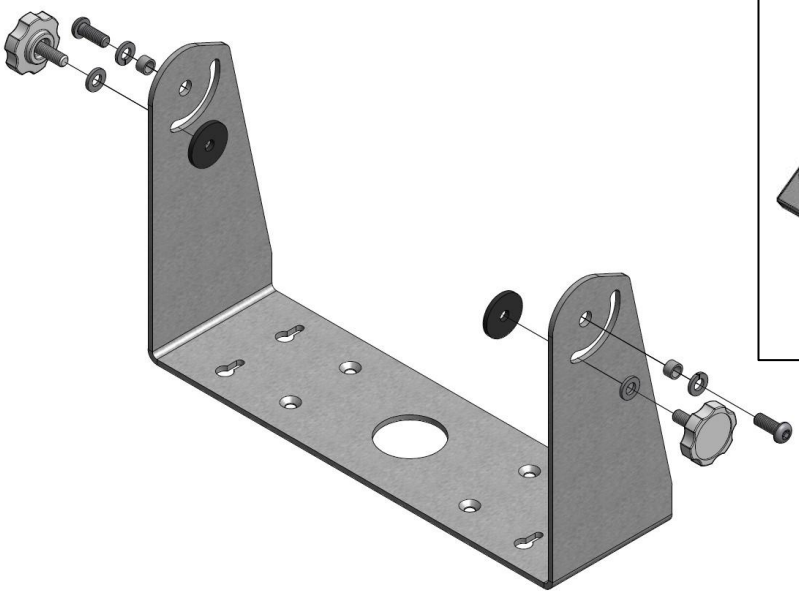
Ⓑ Wall mounting: The button is placed on the same side as the connectors.

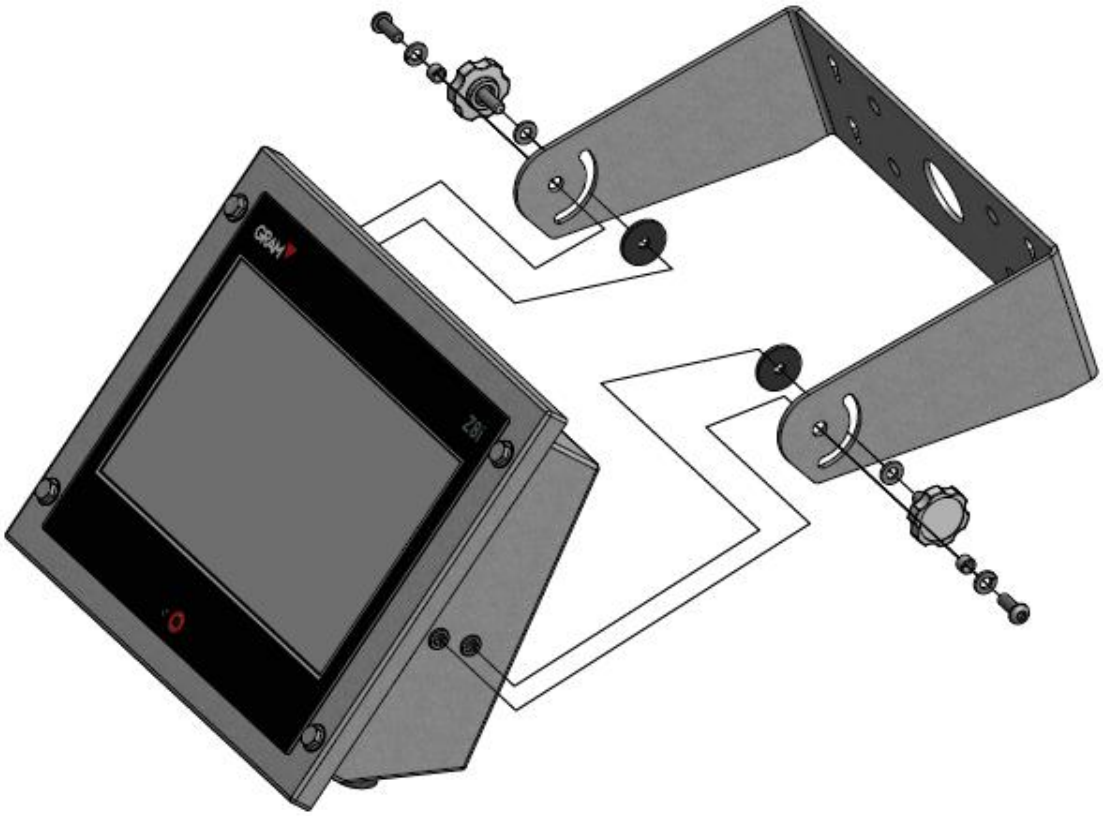
To change the orientation, it is necessary to remove the screws that secure the screen to the device case using a 2,5mm hex wrench (Allen key):



3.2 Wall Mounting

Wall mounting accessory is included in the Z8i package.

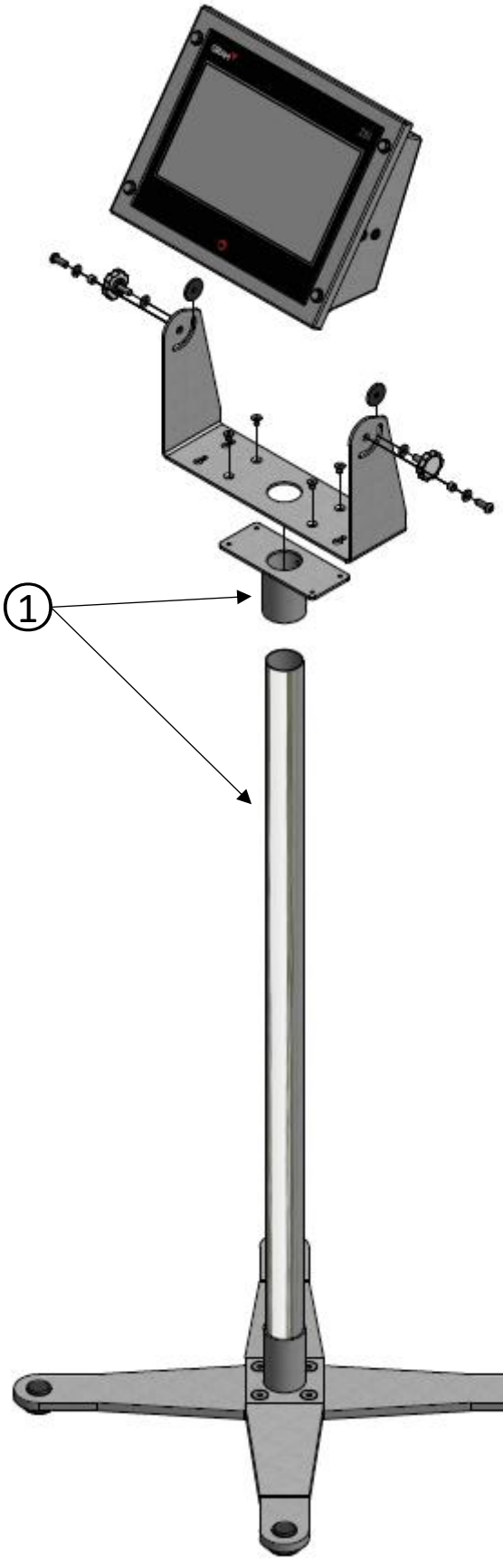




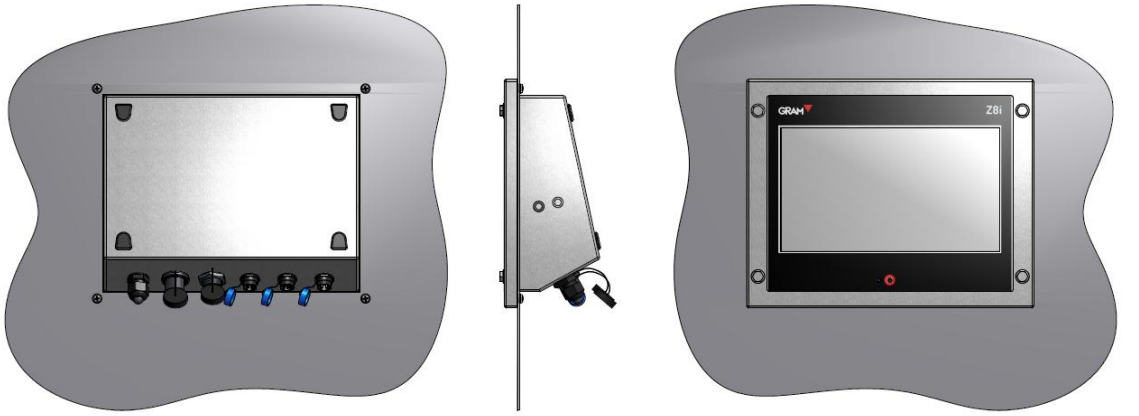
3.3 Column Mounting

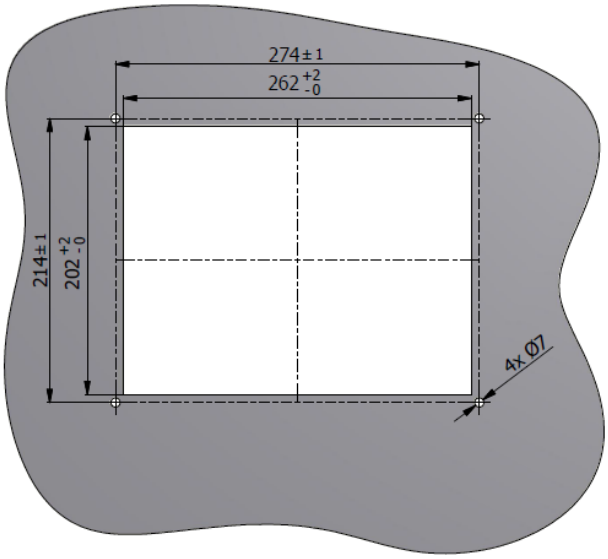
The column is not included with the Z8i terminal.

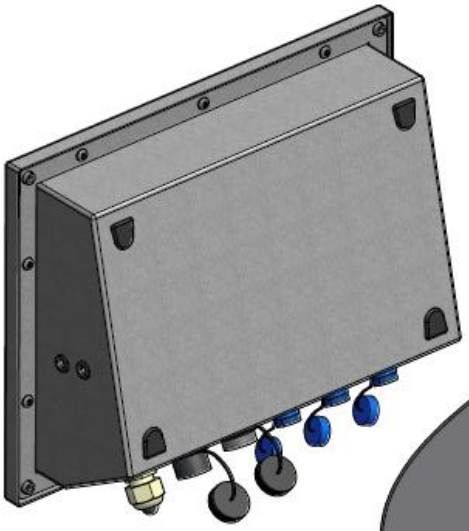
It must be ordered as an optional accessory.

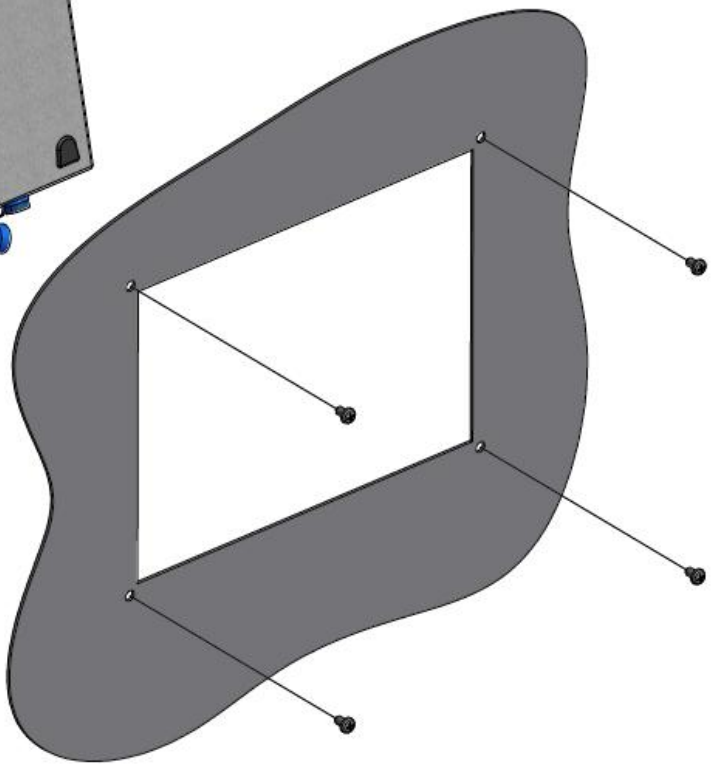


3.4 Panel Mounting

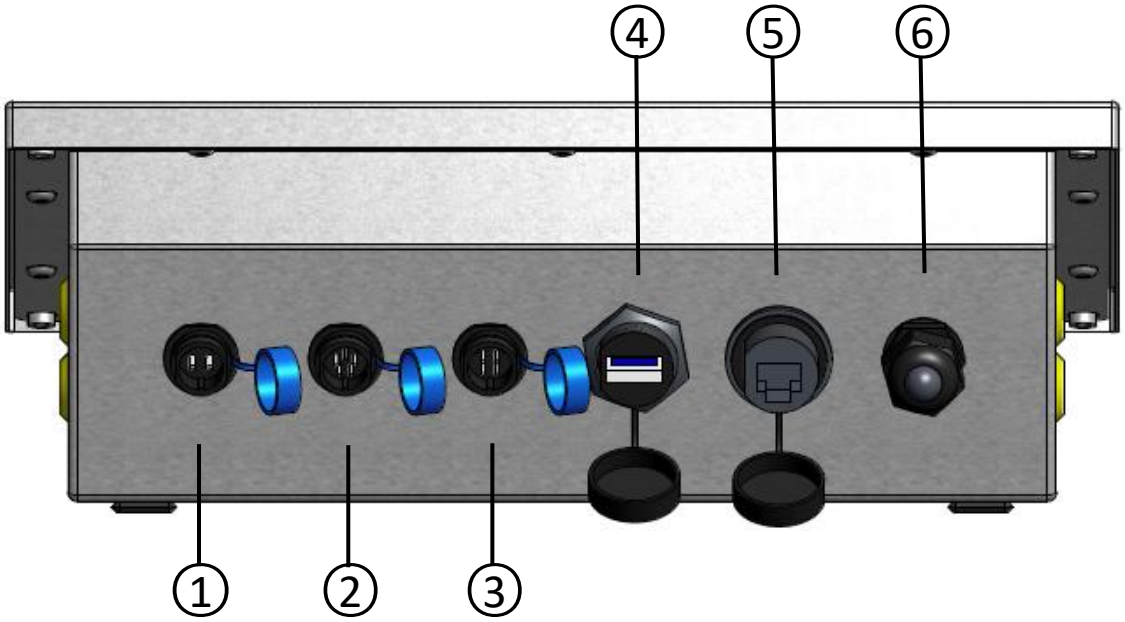








4. Connections



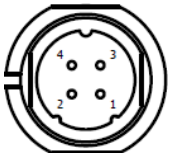
1 **Power adapter.** Connector SJ-M13 IP68 ABS 2 pin male socket.

PIN No.	SIGNAL
1	+12Vdc
2	GND

2 **Xtrem ADPD (scale platform).** Connector SJ-M13 IP68 ABS 5 pin male socket.

PIN No.	SIGNAL
1	+6Vdc
2	RxD
3	TxD
4	-not connected-
5	GND

3 **Serial RS232 (printer).** Connector SJ-M13 IP68 ABS 4 pin male socket.



PIN No.	SIGNAL
1	-not connected-
2	RxD
3	TxD
4	GND

4 **USB 2.0 host,** connector USB type A

5 **Ethernet interface (LAN).** RJ45 modular connector.

6 **Cable gland M16x1.5** reserved for additional options.

4.1 Connecting USB Peripherals

Z8i is equipped with a USB 2.0 host which allow you to connect many standard peripherals available in the market:

- Input and pointing devices: barcode/QR scanners, standard keyboards, mouse.
- Printers: both receipt printers and label printers using a USB interface.
- Removable storage devices: USB memory sticks.

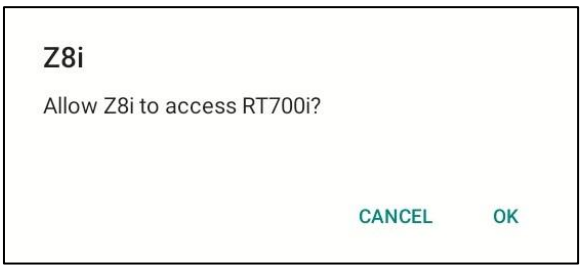
Z8i application has several automation options using three basic USB devices:

- Barcode / QR scanner allows you to automatically record a weighing operation by scanning a barcode / QR code.
- Printer.
- A memory stick: to export data .

Z8i is equipped with a single USB connector at his back. If you want to connect several USB peripherals, you can use a standard USB hub.

When sharing the single USB connector between different devices there are some rules to follow:

- Scanners and keyboards (HID interfaces) are automatically connected to the system without requiring any intervention.
- When connecting a printer or a memory stick, the Android system will ask for permission the first time. Each time that you connect one of these devices, you must grant permissions after the system prompt.
  Example:
  You plug a RT600i printer to the Z8i USB connector.
  After selecting that printer in the Printer Settings section of the application, the system will ask for permission to access the printer:
  Printing will not be possible if you don't allow access to the printer by touching the ok button.



  If you unplug that printer to connect a different USB device - such a memory stick to obtain a file of recorded weighing operations - this process will be needed to be repeated after reconnecting the printer.
- **After powering up the Z8i, the Android system will ask for permission for all the USB devices already connected and turned on. When having a printer connected to the Z8i, it is a good idea to power on the printer before powering on the Z8i unit. This way, you will be prompted for permissions upon start up, while getting the printer ready.**

5. Operation

Log-in as administrator

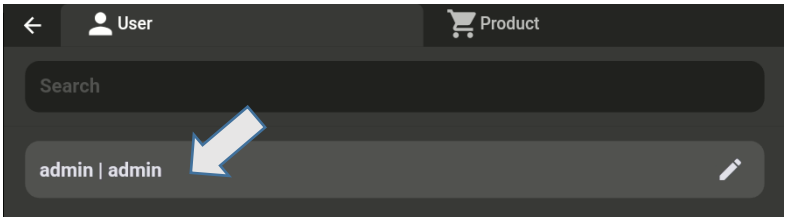
Configuration settings are protected using a password.

The Xtrem application uses a SQL database including a user's table.
Functions available depends on the user's role.
User role can be defined as "administrator" or "operator".
Operator users have limited options for managing the configuration settings as well as the database options. There is an administrator user defined as factory settings that will allow you manage the initial configuration setting, including adding other users to the database and assigning a role to each user.

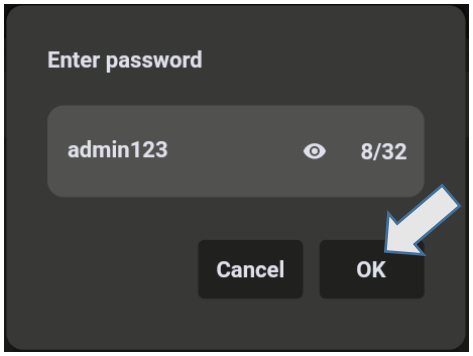
To have full access to all the configuration settings upon first power on, log-in as user ***admin*** using password ***admin123.***

Tap the button next to the User label in the main screen.

It will show the users list. Tap the "admin" record:



Enter the password *admin123* when prompted and then tap the OK button:



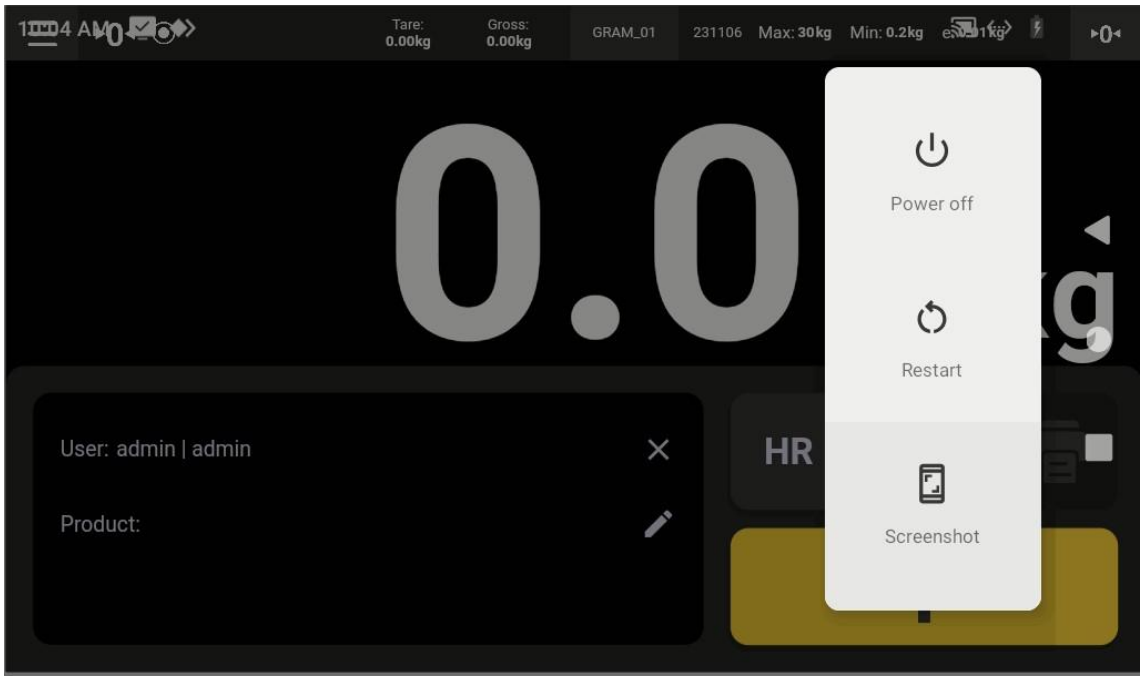
The main screen will show the user logged in. Tap the button to log-out at any time.

5.1 Switching ON / OFF

The system will boot automatically after plugging in the device to the power outlet. The blue LED light next to the on/off button will stay on as long as the terminal is on.

Turn off the Z8i terminal by pressing and holding the button.

Three on-screen buttons will appear on the screen providing you with options to restart or power off the device. Tap the power off button on the screen to turn it off.



Turn on by pressing the button. This will cause the system to boot. After a few seconds the weighing indicator will appear on the screen.

5.2 Initial Zero Setting

When the unit is turned on, it will automatically set the scale to zero.

Verify that there is no load on the scale platform before turning on the terminal.

Automatic zero resetting upon start requires the scale to remain stable for at least 5 seconds. If the scale is moving, the -00- indication will be maintained for a maximum of 10 seconds. If this time is exceeded without obtaining a stable reading, the display will show the weight on the scale.

If the weight on the load receptor is higher than 10% of the scale's maximum capacity, the scale will not set to zero, and the display will show the weight on the scale.

The Zero options in the configuration menu allow to enable or disable the initial zeroing as well as change the initial zero setting range.

5.3 Display Description

① On / off button and LED

② Primary indication

③ Selected records from the database

④ Descriptive marks of the instrument

Primary indication always displays the net weight. When a tare is set, tare and gross weight are shown on the top bar. The following symbols will appear above the weight value, on the top bar:

◉	Stable reading: The weight on the platform that is not fluctuating. Intermittent or switched off to indicate that there is movement in the scale.
▸ 0 ◂	Scale is set to zero (weight value is less than ¼ division)
▸ T ◂	Automatic tare enabled
▸ PT ◂	Pre-set tare enabled
NET	Weight value is the net weight.
R1	Double range mode, when using the scale range 1
R2	Double range mode, when using the scale range 2

Buttons

Configuration menu.
Tap to enter the configuration menu.
The button is placed in the top left corner of the screen.

Zero button. Sets the scale to zero.
The button is located in the top right corner of the screen.

Extended Resolution. Tap to enable / disable. It changes the current interval of the instrument to 1/10 e. When ADPD module “seal switch” is set to the LOCK position, it works for only 4” before automatically deactivating.

Hold mode.
Tap to enable / disable the “Hold mode”.
When enabled, the weight display will continue to show the last stable weight that was measured even though the scale platform has been unloaded.
This feature is not available if the ADPD module “seal switch” is set to the LOCK position.

Record / Print. Records the current weighing data to the storage.
When a printer is connected, it also prints the weighing information into the selected format.

Checkweigher mode. Tap to enable / disable the checkweigher mode.

Tare
Tap to perform a semi-automatic tare.
Tap and hold to manually input a tare value.

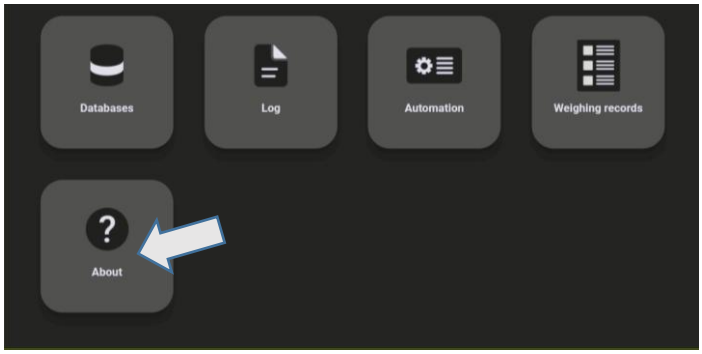
The second button on the keypad below the weight indication is marked with an “F” letter in its top left corner. It means that this is a user configurable function.

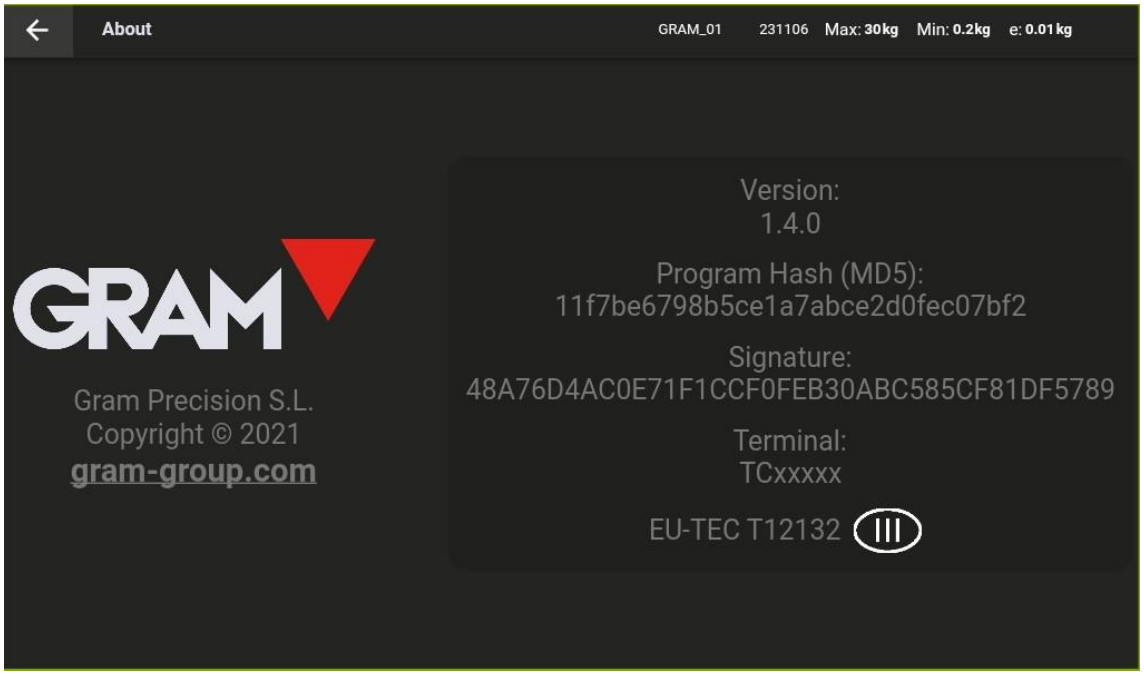
You can assign a different function to this button following the instructions in the chapter 5.7.4 Action Button.

5.4 Software ID

Tap the menu button to enter the configuration menu.

Software version number is shown by clicking on the **About** option on the configuration menu.



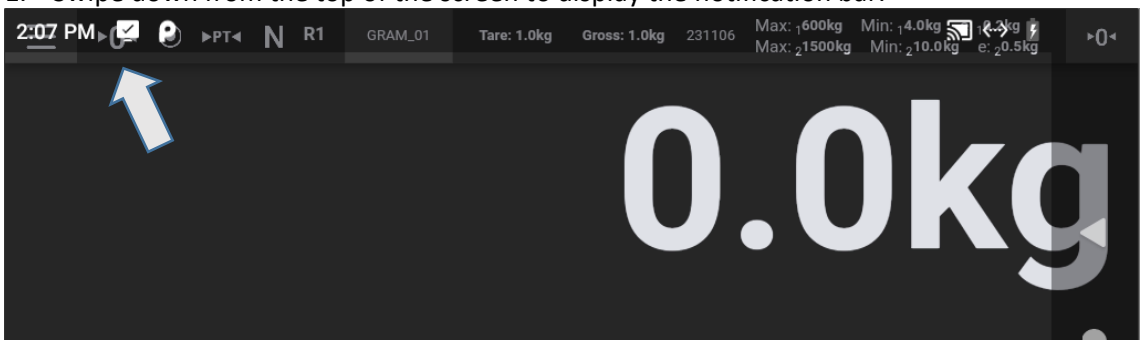


5.5 System Configuration

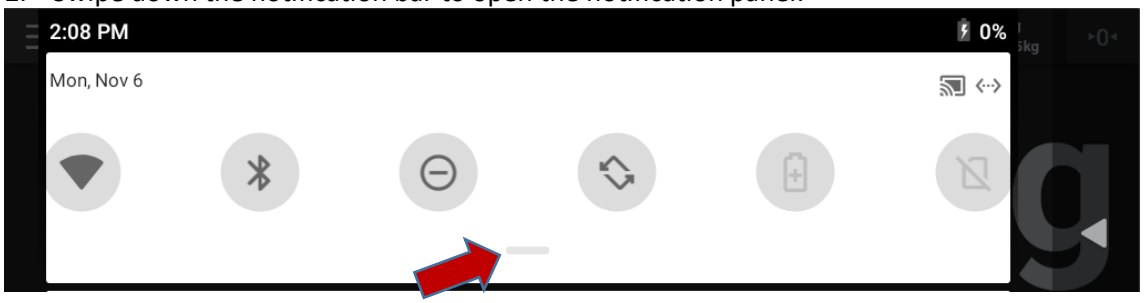
Z8i is running under the Android operating system.
System settings will allow you to change the language, adjust the real time clock, modify screen settings, virtual keyboard, network configuration as well as any other system configuration.

GRAM XTREM weighing app is the home screen of the Z8i. To access system settings, follow the steps below.

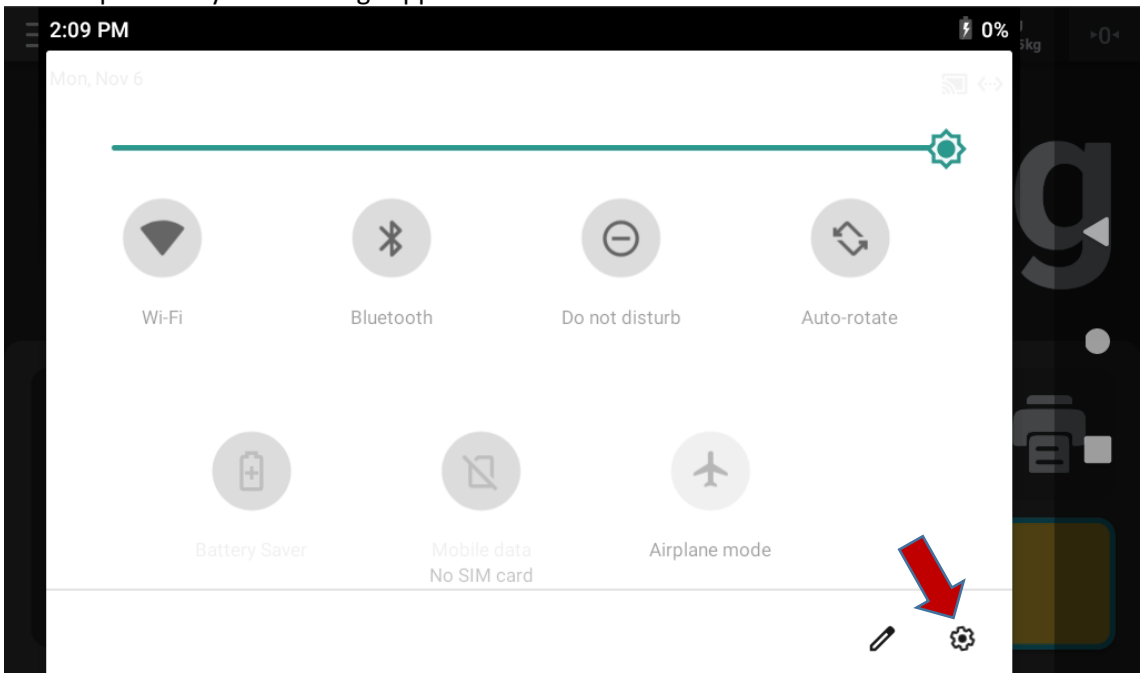
1. Swipe down from the top of the screen to display the notification bar:



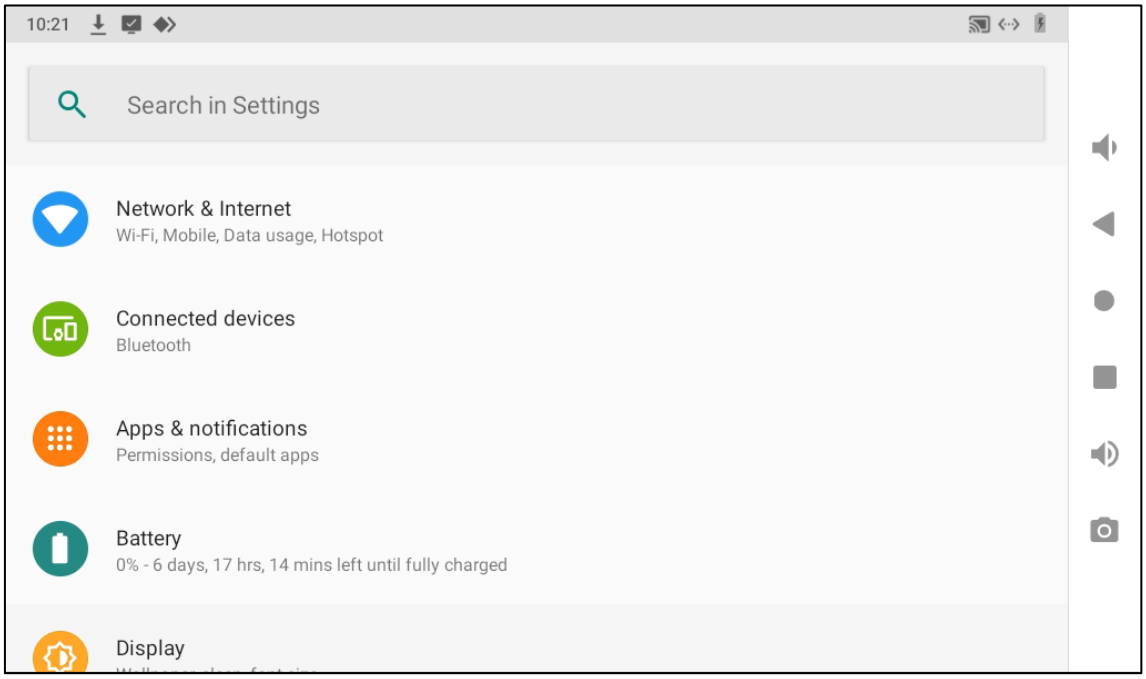
2. Swipe down the notification bar to open the notification panel:



3. Swipe down the notification panel to show all the available options and tap the gear icon to open the system settings application:



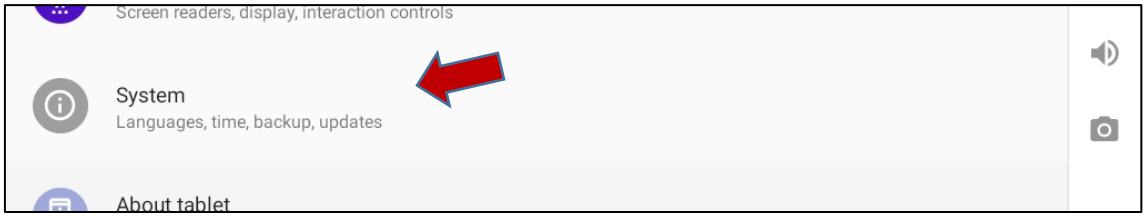
Once the system settings app is open, swipe up and down to show all the content.
Tap on the desired option for select the settings to edit.



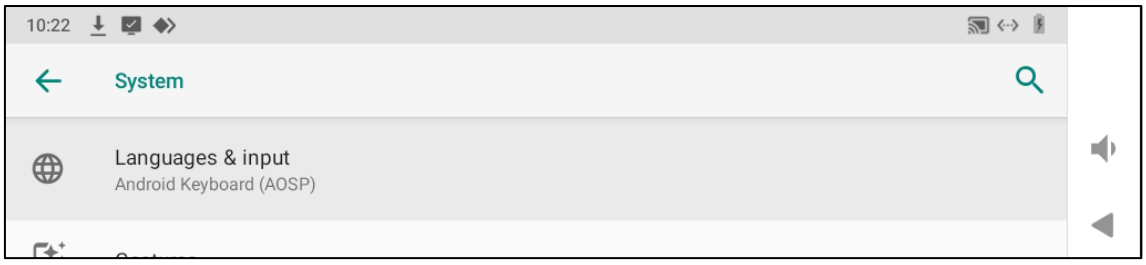
To return to the weighing app tap the ◀ button as many times as necessary until you reach the Xtrem app.

5.5.1 Language and Regional Settings

Open the **System** settings:



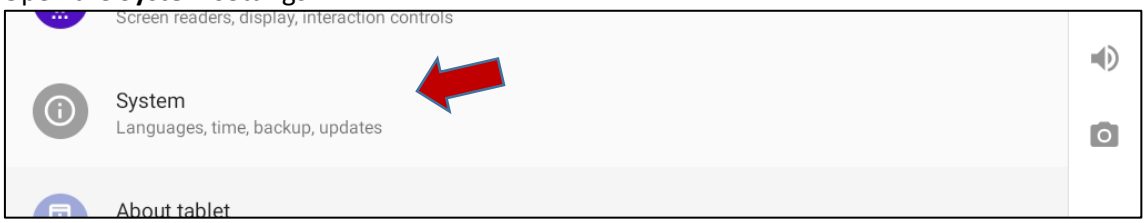
Then, choose **Languages & input** to change the system language.



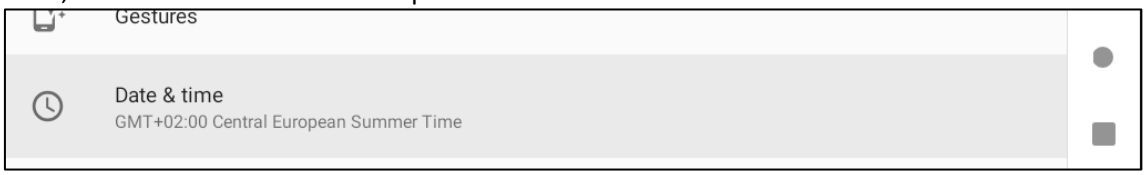
Z8i app is translated into English, French, German, Spanish, Italian and Portuguese.
If you select a different language, the GRAM Xtrem app will automatically use the English version.

5.5.2 Date and Time

Open the **System** settings:



Then, choose **Date & time** to set up the real time clock.

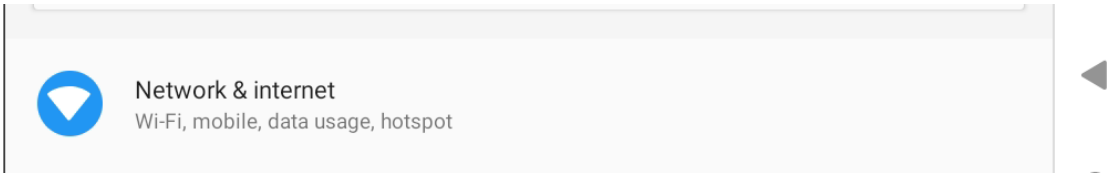


Set the Z8i's date and time manually or let it do it automatically in case it is connected to the internet through your network.

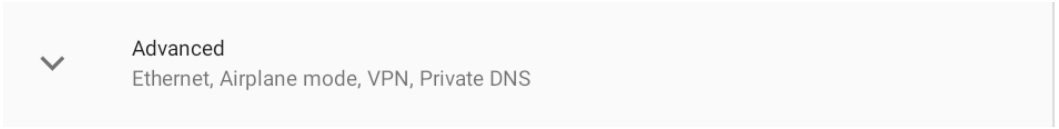
5.5.3 Internet Connection

Plug an RJ45 cable to the LAN port of your Z8i.

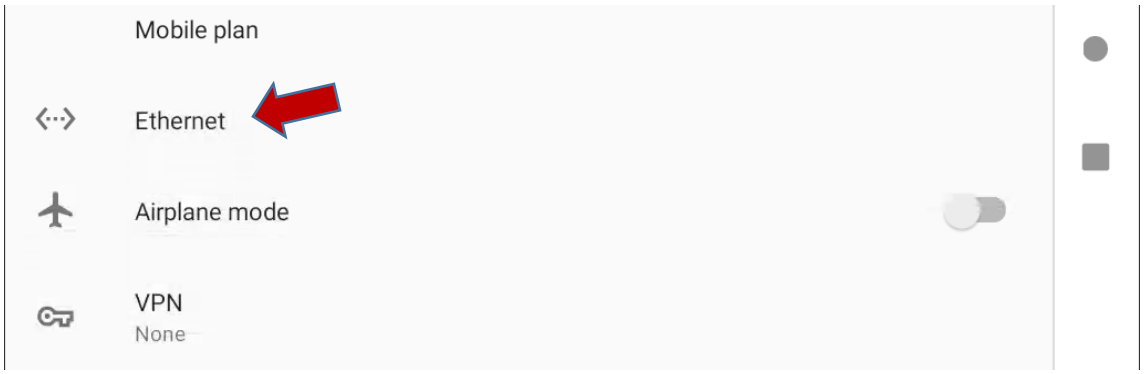
Open the **Network & internet** settings:



Then, choose **Advanced** to expand more options.



Then, choose **Ethernet** to set up different parameters to connect your Z8i to a network.



5.6 Scale Operation

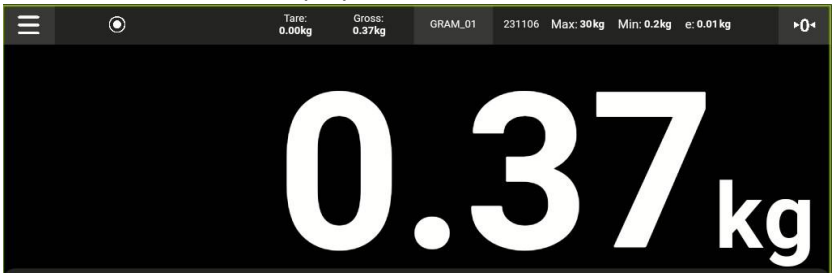
5.6.1 Use of the Scale

Once the unit is switched on, the display will indicate that the scale:

- ▸0◂ is set to zero, meaning that there is no load placed on the platform.
- ◉ the reading is stable: there is no external influencing factor (such as an air current or the vibration of a nearby engine) that may be producing significant disruption.

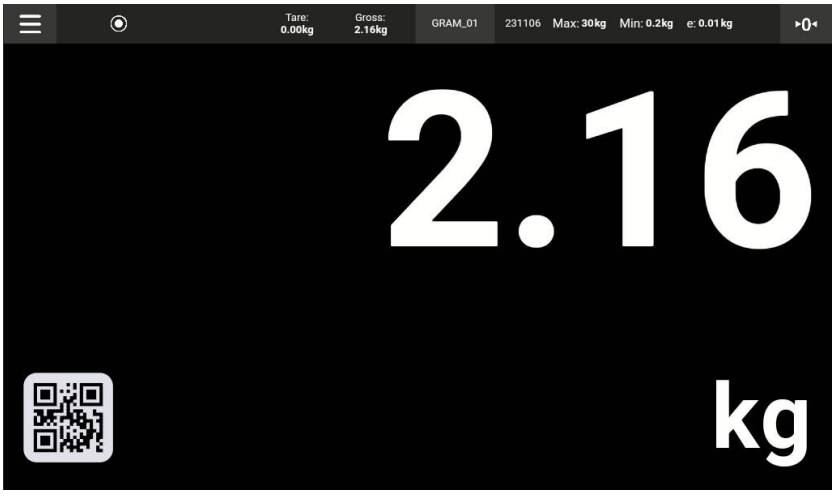
To establish the weight of any object within the scale's maximum range, place it on the load receptor platform:

- The zero reading and the stability reading disappears from the indicator.
- The weight value will change until the stability reading becomes visible again.
- The value indicated on the display is the result of the measurement.



Swipe down the screen to hide the keypad and display only the weight value. Swipe up the screen to show the keypad again.

When the QR option in the configuration menu is enabled, a QR code will appear below the primary indication to allow you to capture the weight value from a different device using a QR scanner.



5.6.2 Tare Function

Tap the tare button: The scale memorizes the weight on the load receptor and subtracts it from the total weight until the tare function is disabled or cancelled.

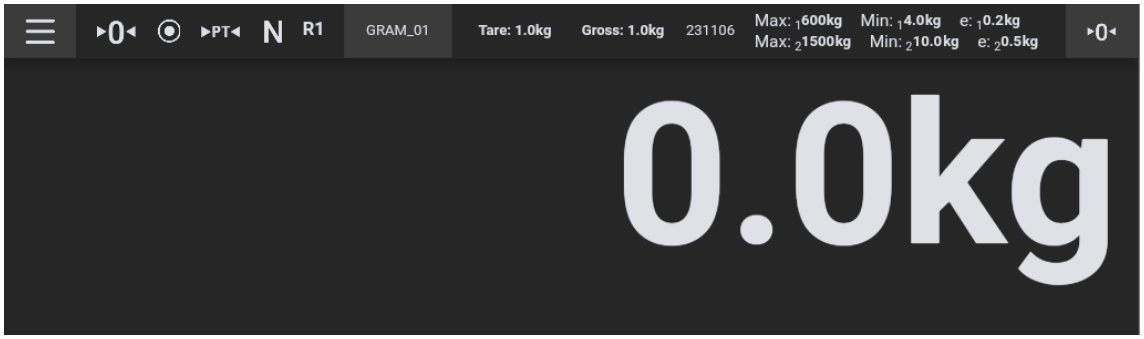
The tare function only operates if the weight is stable. If the stability indicator is switched off, tare button has no effect.

Tare function can only be used when the weight on the scale is superior to zero.

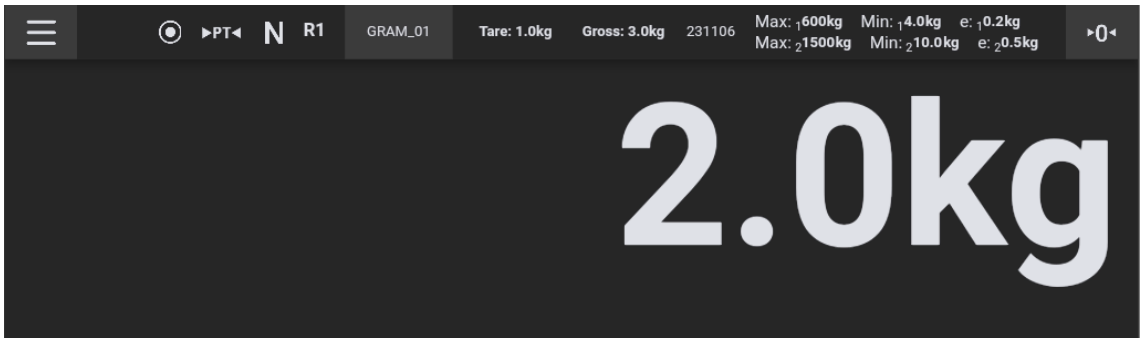
Options "M*easured Tare*" or "*Pre-set Tare*" can be used depending on the operating mode selected in the configuration menu (see **Tare options** in the scale setup).

- **Pre-set tare.** The tare remains set after unloading the scale. When the scale is unloaded, the display shows the tare value with a negative sign. To cancel the tare, press on the tare button again after unloading the load receptor.
- **Measured tare**. The tare is automatically disabled when the load receptor is unloaded.

Right after setting a tare, the display will show both the tare and the gross weight in a secondary field at the top bar of the weighing indicator. The signs ▸**T**◂ (*tare*) and **N** (*net weight*) will appear on top of the weighing indicator.



After loading any object on the scale, the main indicator will display the net weight.

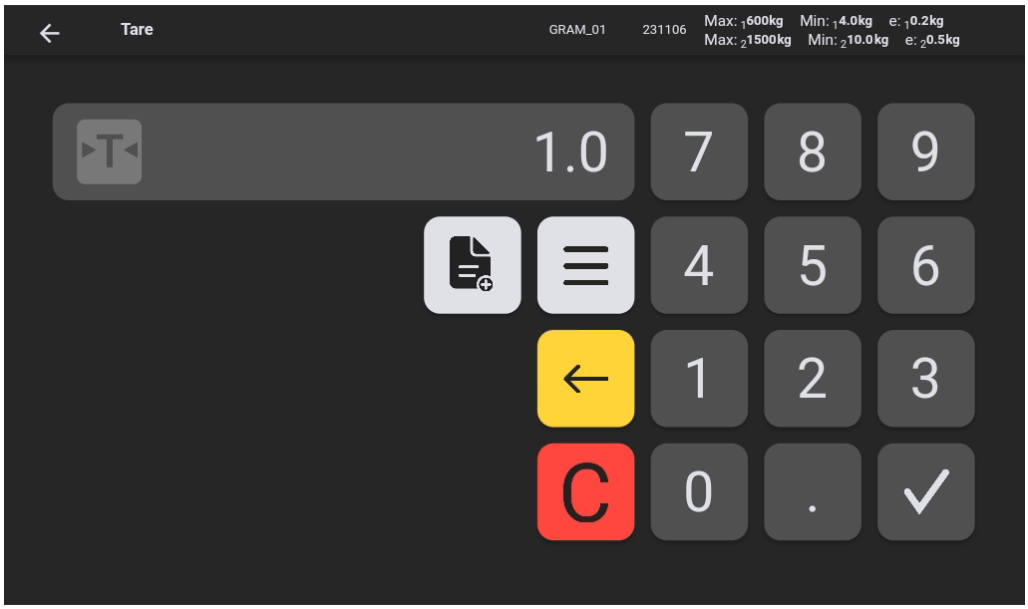


After unloading the scale, when a “pre-set” tare is active, the weighing indicator will show the tare as a negative value.

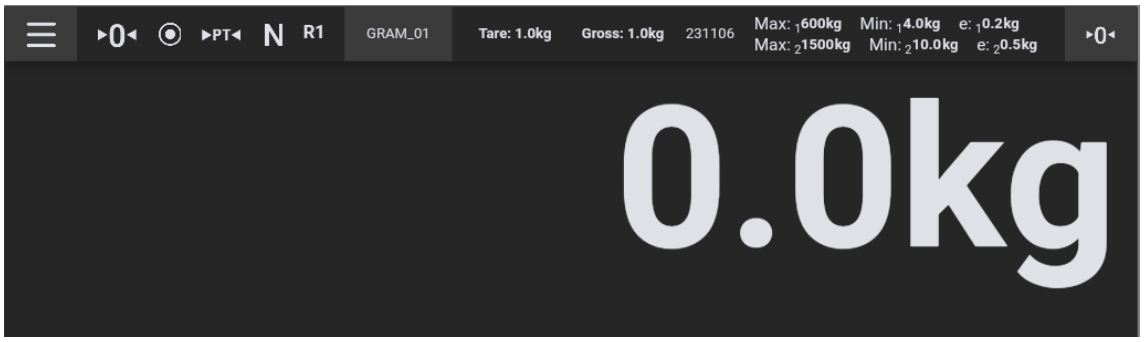
To cancel the tare, with the load receptor empty, press the tare button again. The zero-setting button also disables the tare.

5.6.3 Manual Tare Input

Place a load on the scale, then hold the tare button: The screen will show a numeric keyboard to manually enter the tare value.



Enter the value and tap the validation button to apply the tare.

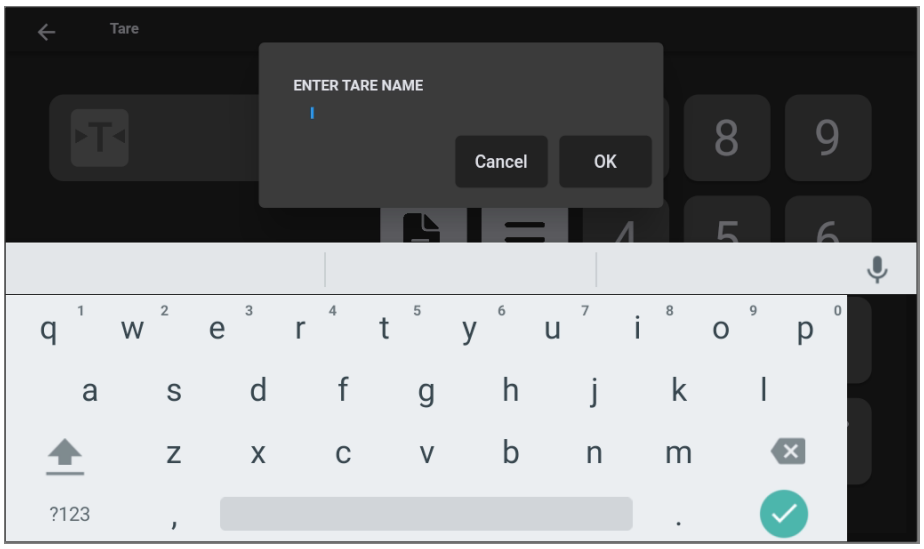


5.6.4 Tare Memory

After entering a manual tare, you can store it in the memory, making this tare value available for further operations.

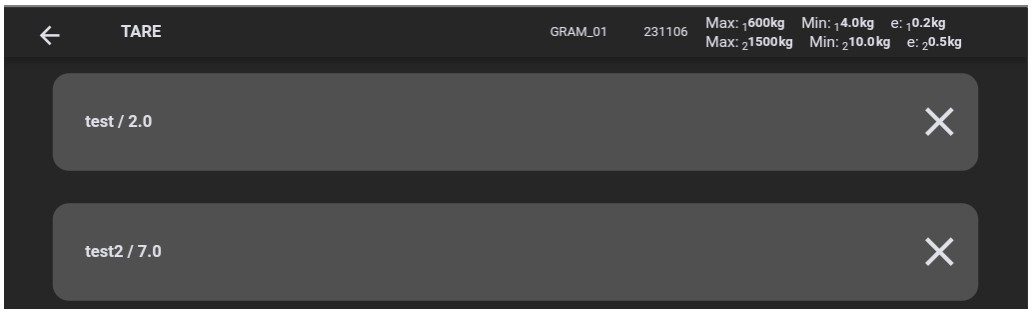
Hold the tare button to view the manual tare input screen.

Enter the tare value, then tap the button on the numeric keyboard to add a new record. The display shows a message box prompting for a name to identify the new tare record. As you tap on the text field, the display will show the Android keyboard to allow you type the tare's name.



To select a tare value already stored in memory, tap the icon next to the value box,

Then, select a tare from the list in the screen:



5.6.5 Zero Setting

Tap the zero button to set the scale to zero. The scale is deemed to be “set to zero” when the weight on the load receptor is lower than ¼ of the scale interval.

While the scale is “set to zero”, the ▸ 0 ◂ sign is shown in the display.

When the scale is set to zero the automatic “zero tracking” device is in operation. This function automatically sets to zero when variations of less than ¼ division occur and if they do not add up to more than 1/2 division during one second. This function can be disabled in the zero options of the configuration menu.

The zero button also disables the tare if it happens to be enabled.

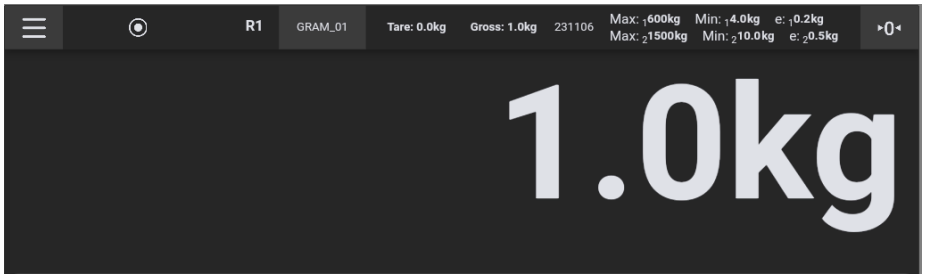
The zeroing of the scale is limited to 4% of its maximum capacity (in an interval from -2% to +2% of Max). Pressing the zero-setting button will not be effective if this margin is exceeded.

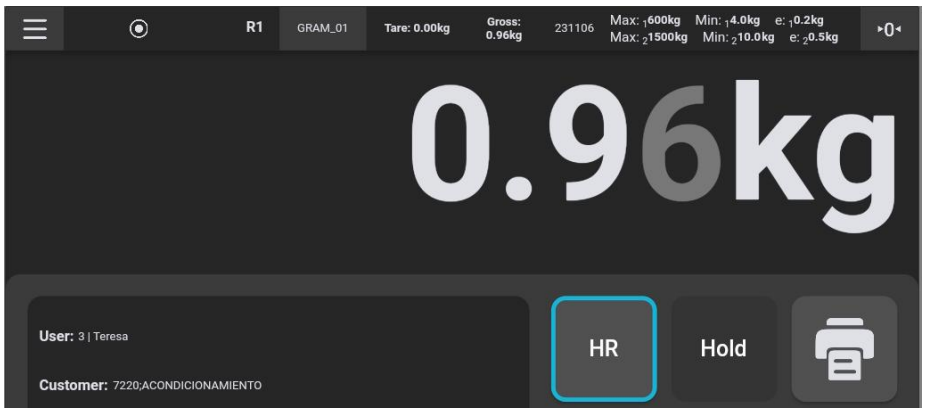
5.6.6 Extended Resolution Mode

Tap HR button to enable / disable the extended resolution mode. The scale’s resolution is incremented by x10, allowing the weight to be viewed with a 10-times-smaller scale interval.

When the scale is sealed for its use in legal metrology, the high-resolution mode will be automatically disabled after 4 seconds.

An additional digit appears in the weight display, and the decimal point is shifted to the left by one position. This additional digit is indicated by a different colour signalling that the extended resolution mode is enabled:

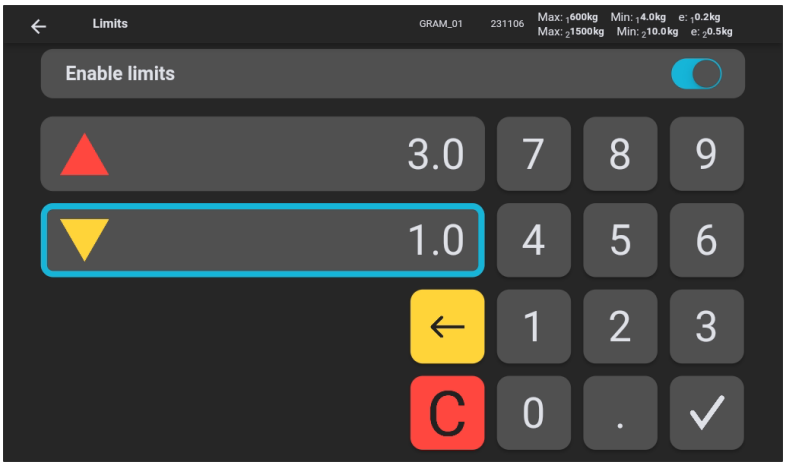




5.6.7 Checkweigher Mode (Control of Upper/Lower Limits)

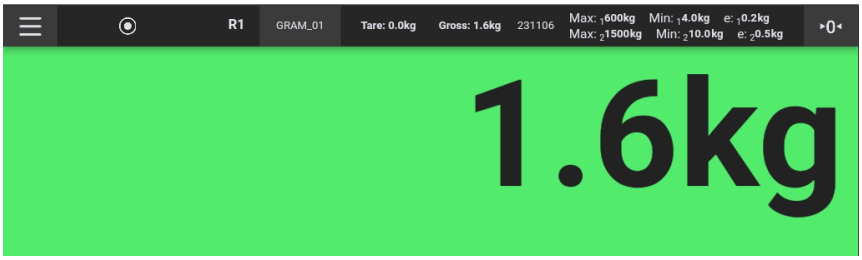
Tap the checkweigher button on the main screen.

The screen will show a numeric keyboard to enter the upper and lower value.

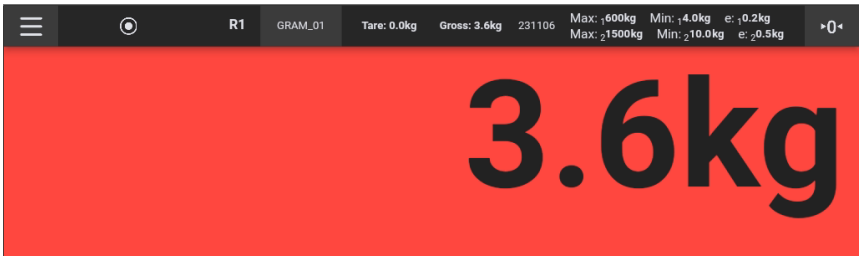


Enter the value and tap the validation ☑ button to launch the checkweigher mode. Moreover, a switch button allows you to enable or disable the checkweigher mode.

As long as the weight value stays within the interval defined by the H/L limits, the indicator's background will be green.



The indicator's background will change to red if the weight exceeds the upper limit and it will change to yellow when the weight is lower than the lower limit.



5.6.8 Printing and Recording a Weighing Operation.

Tap the **Record / Print** button to record the current weighing data to the database. When a printer is connected, it will also print the weighing information into the selected format. To configure a printer, see chapter Printer Configuration.

The record / print feature is only available when the scale is loaded, and the weight indication is stable.

To avoid repeated entries, after recording a weighing operation, the button becomes disabled until the scale has been unloaded.

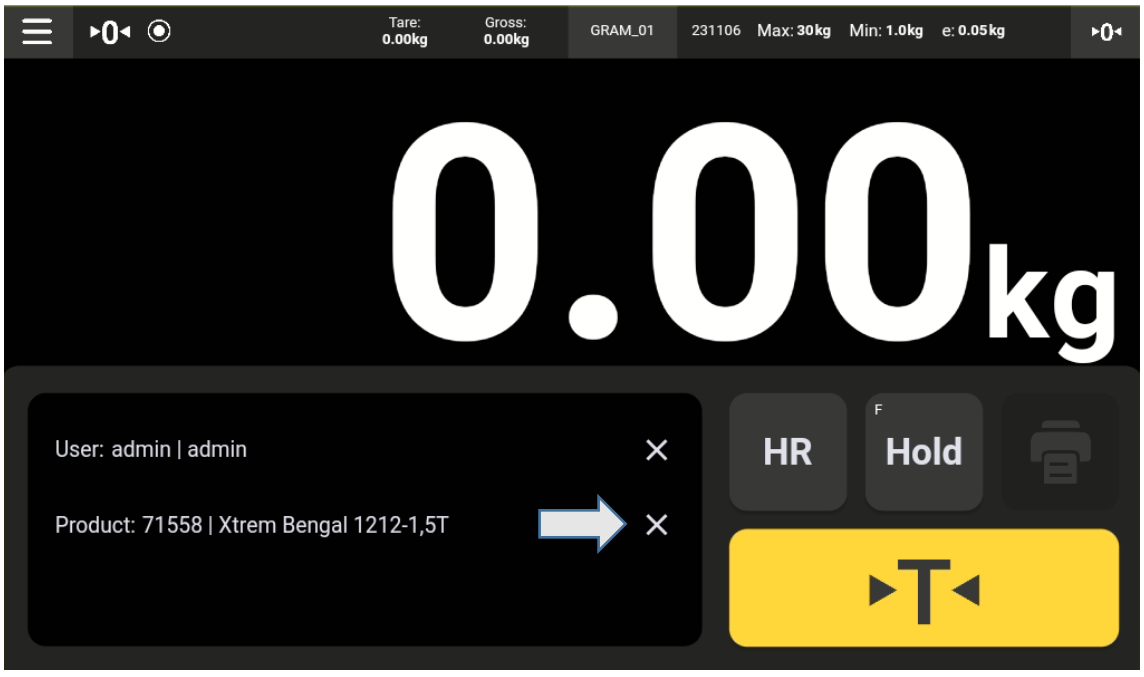
In addition to the weighing information, the record / printout will include the data associated to the user and product selected from the database.

See chapter Database for detailed information on the system database and the weighing record.

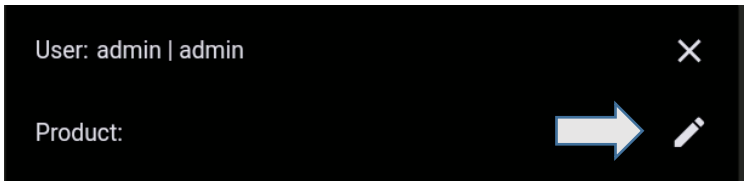
5.6.9 Manual Selection of a Database Record

In the main view the display indicates the user and product currently selected.

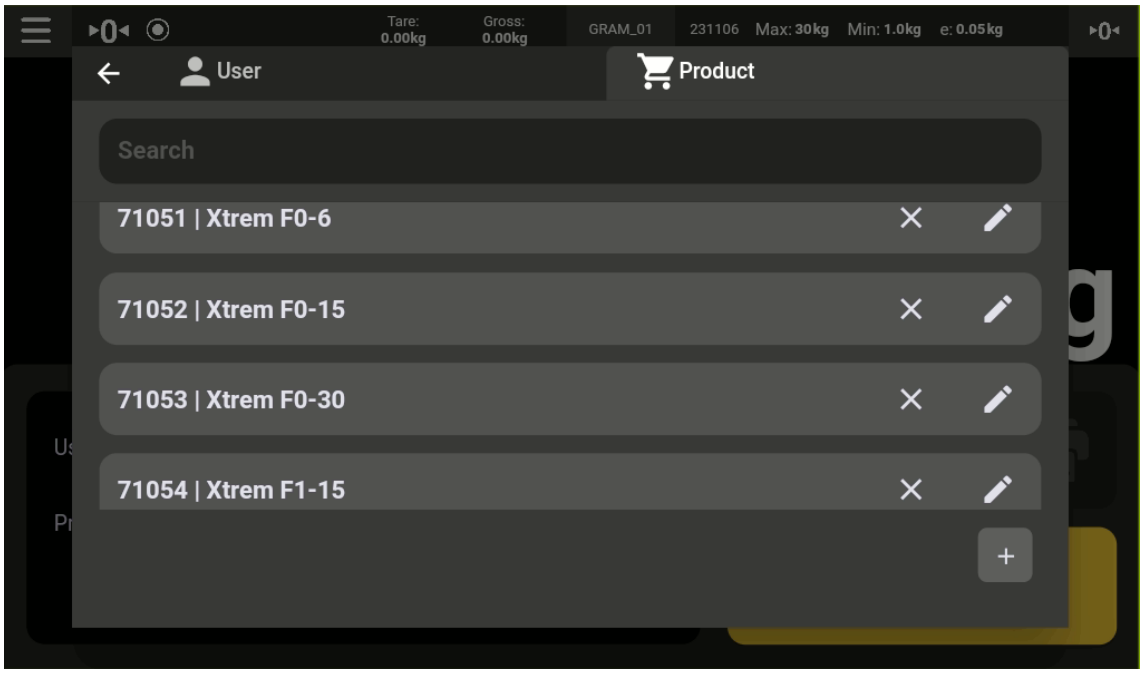
Tap on the X button to cancel the current selection if any.



Then tap the pencil icon to select a different item.

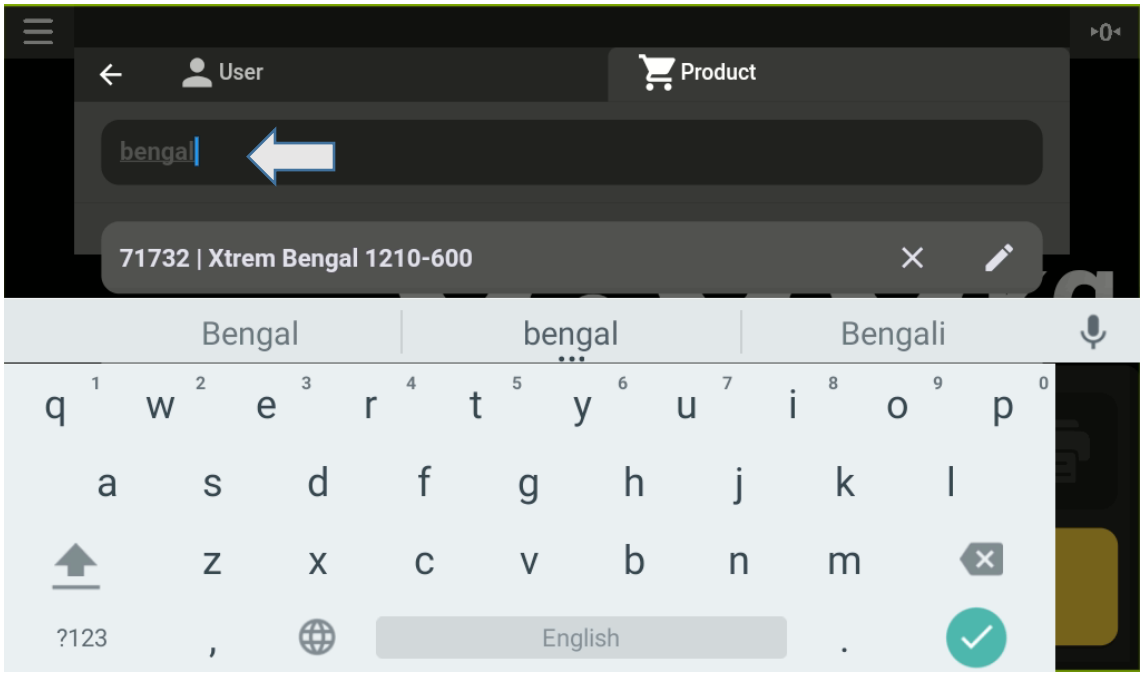


A scrollable view with all the available records of the chosen table will appear on the screen.

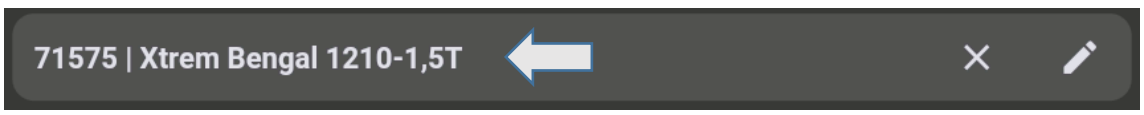


Scroll up to view more elements.

To find a specific record, enter a keyword to filter the database records.



To select a record, tap on a result.



After selecting a record, the Z8i will return the main indication screen, with the record selected.

5.6.10 Automatic Operation Using a Barcode / QR Scanner

Connecting a scanner to the Z8i USB 2.0 connector allows to automatically input a record from the database, both from the Users table as well as from the Product table.

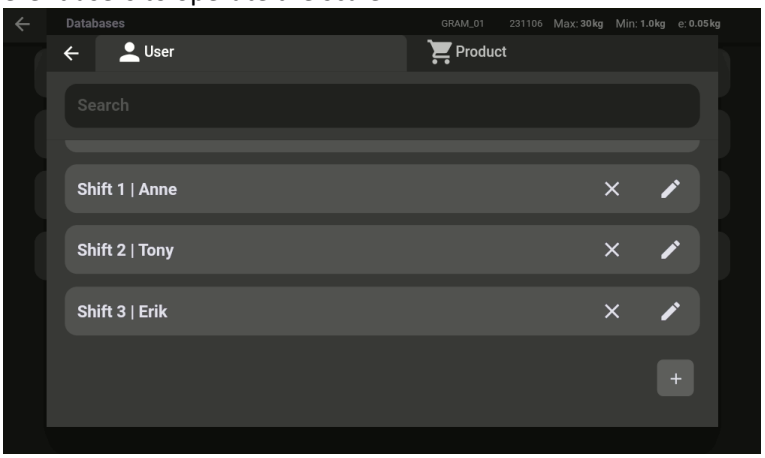
After reading a barcode with the scanner, the Z8i will search the database finding a User's or Product's reference matching the reading. The record found will be automatically selected for the next weighing operation.

Barcodes must carry a prefix and a suffix as follows:

	User	**Product**
Prefix	SZ80	SZ81
Suffix	EZ8	

Please refer to the manual of your barcode scanner to set up the prefix and suffix needed. Another way is to print your own QR codes adding the prefix and the suffix to the reference.
Configuration example for semi-automatic login with different users:

- I have 3 different users to operate the scale:



The operating instructions for them is to scan the QR on their own card at the start of his shift to log on the Z8i application. You can print a card with a QR code for each user:

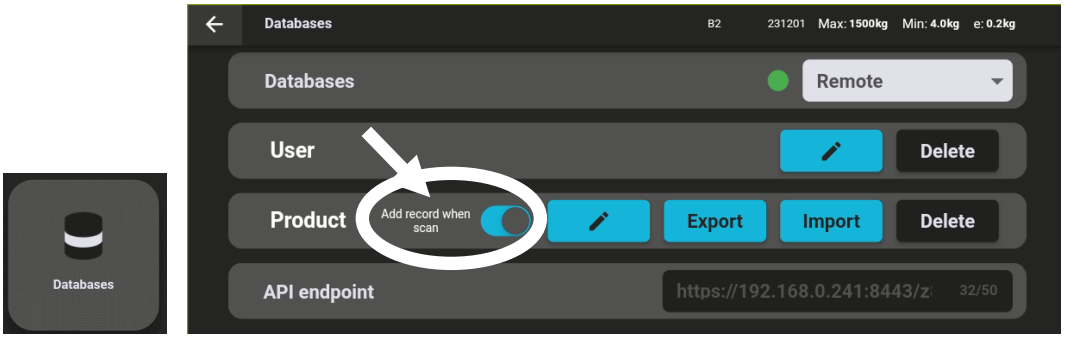
By checking the QR codes above, you can see that the embedded data on each code is as follows:

- Shift 1 | Anne, the embedded data in the QR code is **SZ80**Shift 1**EZ8.** So, the prefix to search a reference in the Users table, the user's reference, and the suffix.
- Shift 2 | Tony, the embedded data in the QR code is **SZ80**Shift 2**EZ8.**
- Shift 3 | Erik, the embedded data in the QR code is **SZ80**Shift 3**EZ8.**

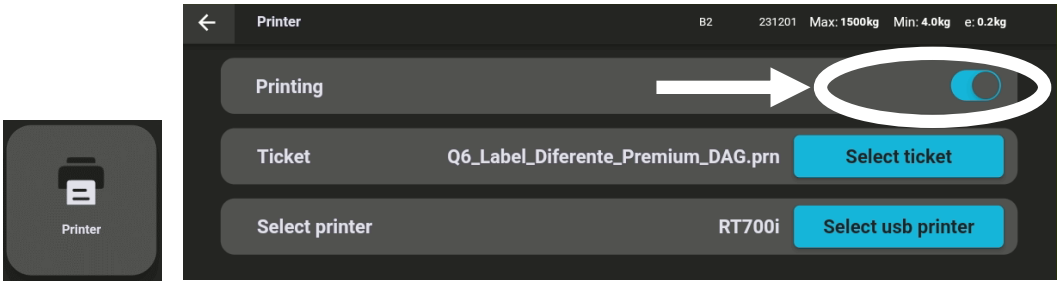
Using the scanner with a product reference is similar, but it has additional effects:

- If there is a tare memory associated to a product reference, the tare will be automatically set upon scanning the barcode.
- If there are checkweigher settings (the upper and lower limits alarm) associated to a product reference, the Checkweigher Mode (see 5.6.7) will be automatically enabled.
- If you enable the "Add record when scan" switch in the Database settings, **a new weighing record will be automatically added after scanning the barcode**. If you have a printer selected, the printout will be done automatically.

Settings to automatically add a new weighing record after scanning a product reference:



Settings to automatically print a label / receipt after recording a new weighing operation:



When scanning a barcode without the "SZ8" prefix, the Z8i will automatically add a new record to the database. The data in the barcode is added as additional information in a column of the weighing record table (see 6. Database). It allow you insert information not directly related to the user or product categories. An example of use of this feature is to record the weight using the scanner in two different steps:

- 1st scanning a QR code with the product reference.
- 2nd scanning a different barcode with a serial number (or batch information).

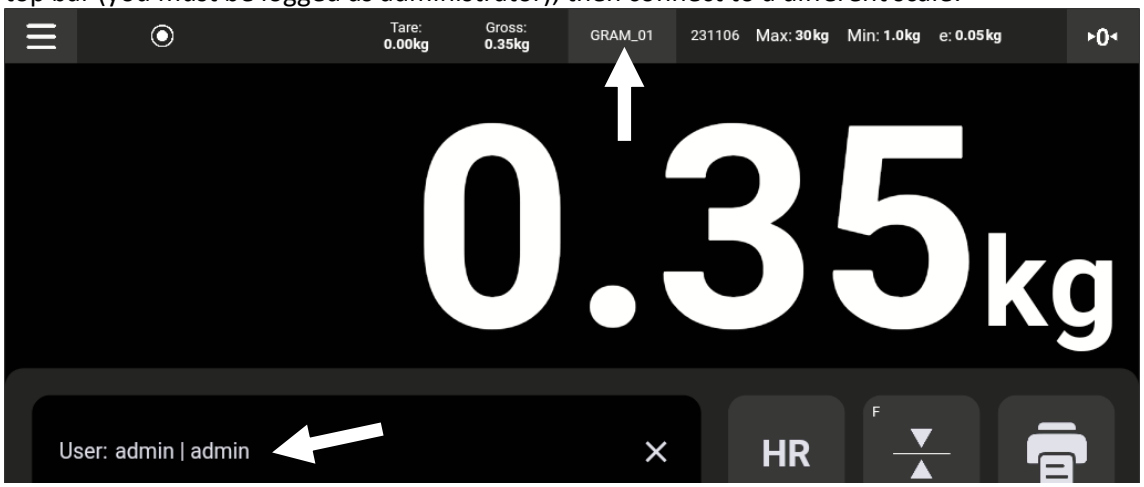
5.6.11 Multi-Scale Operation

Each Z8i unit can be used to display any Xtrem scale connected:

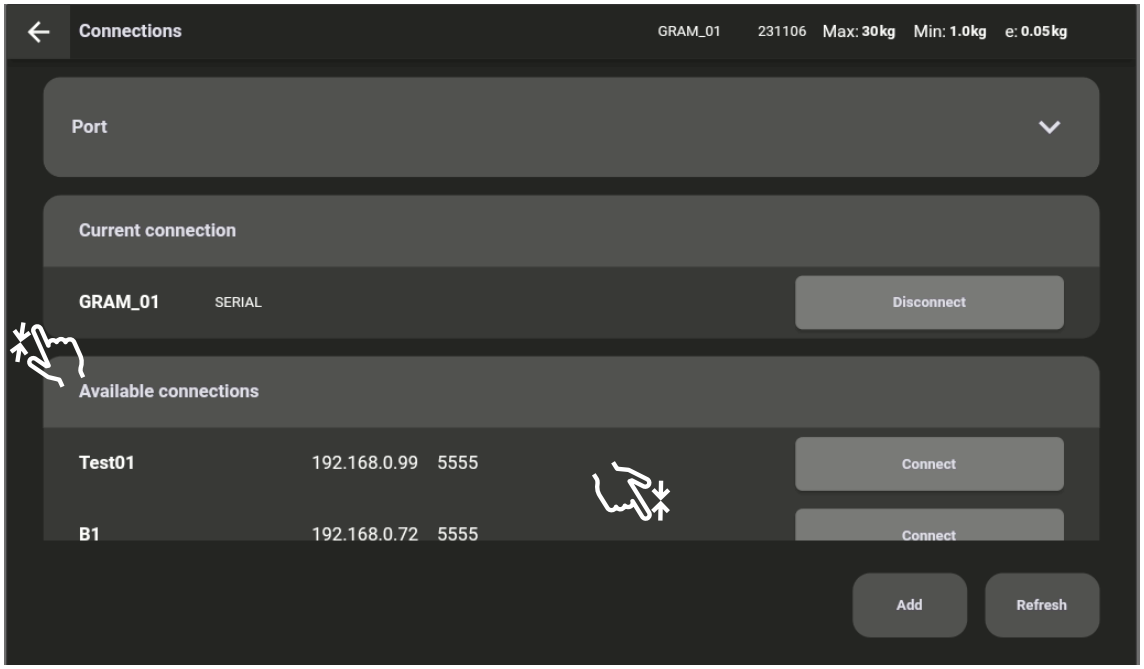
- **Scales directly wired to the Z8i.** It is possible to connect 2 different Xtrem scales using its serial RS232 interface. The two connectors available on Z8i are (2) and (3) (see 4. Connections).
- **Scales connected to the LAN network** using the Xtrem optional interface.

By default, the Z8i will try to connect to the scale plugged to the connector (2) after booting. This is the RS232 serial port *dev/ttyS3* on the Z8i system. In addition to the serial communication, the connector (2) is supplying power to the Xtrem scale plugged in.

To select, view, and operate a different scale, tap the current scale's name on the main screen top bar (you must be logged as administrator), then connect to a different scale:

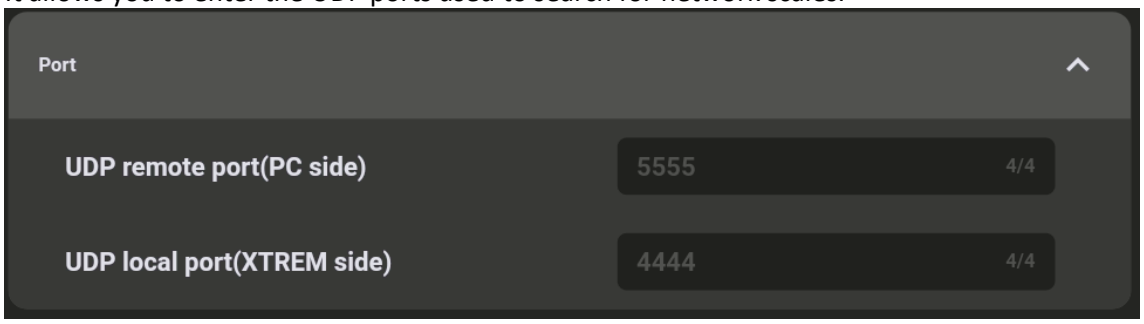


The screen will show the **Connections** view:



Tap on the border and drag to scroll up / down the view.
Tap on the **Available connections** list and drag to scroll up / down.

Port
It allows you to enter the UDP ports used to search for network scales.



The remote port is the port which receives the scale messages. It is set as 5555 as default factory settings.
The local port is the port used to send commands to the scale. It is set as 4444 as default factory settings.

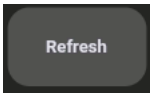
Current connection It shows the current scale connected to the Z8i.

Disconnect button allows you to disconnect the current scale.

Available Connections
It shows the available scales that can be connected to the Z8i terminal. The list doesn't include the scale already connected.

Tap on the list and drag to scroll up / down.
Tap the **Connect** button to select the scale you want to use. After tapping the **Connect** button, the Z8i will return to the main screen and connect to the chosen scale.

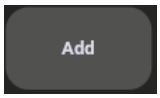
Refresh Button



Tap on **Refresh** to explore both network and serial ports for scales available. The list of available scales will be updated.

Searching for network scales is done by sending a broadcast message through the network using the UDP local port. After the message has been sent, the application collects the responses received through the UDP remote port.

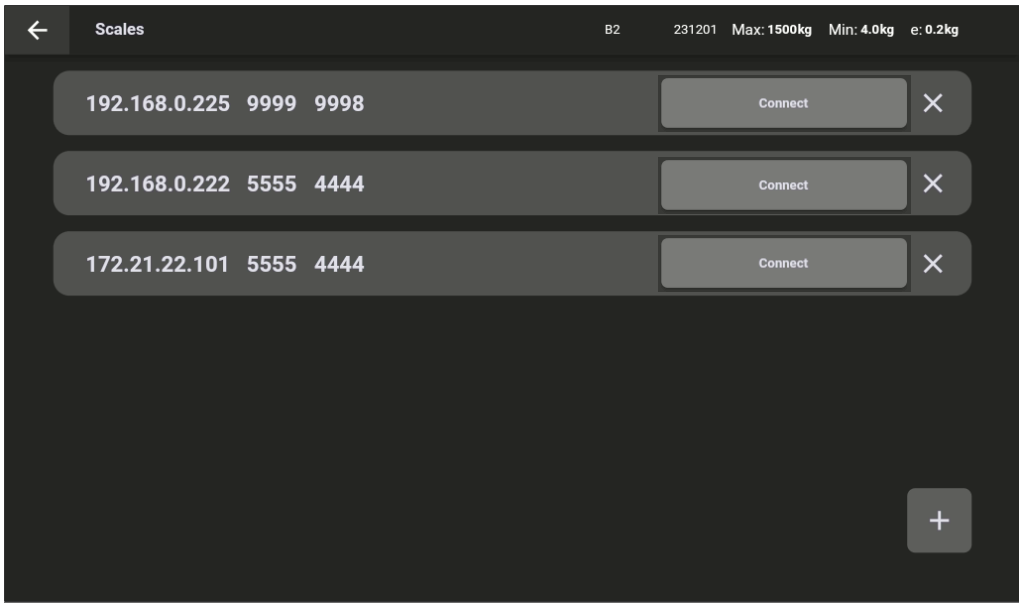
Add Button

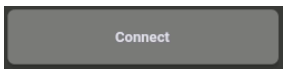


Tap **Add** to manually enter / edit a list of network scales.
It will open a new screen to manage a list of network scales.

This method allows you to configure scales that have special network settings that prevent them from appearing in the list of **available connections**. As example:

- A special configuration of UDP ports on an Xtrem scale.
- A network configuration that doesn't allow broadcasting.

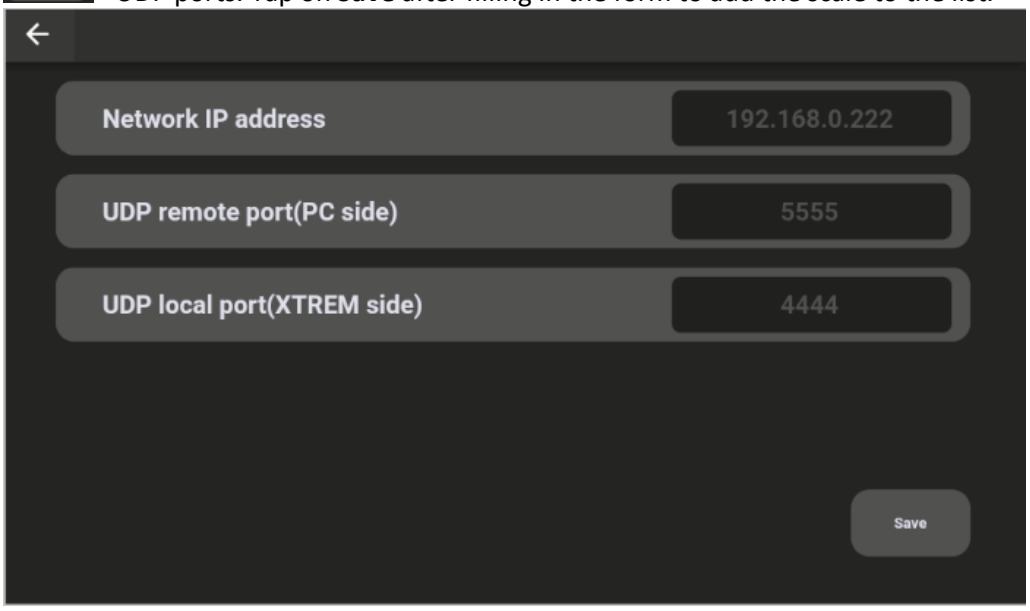




Tap to connect to the scale and return to the main screen.

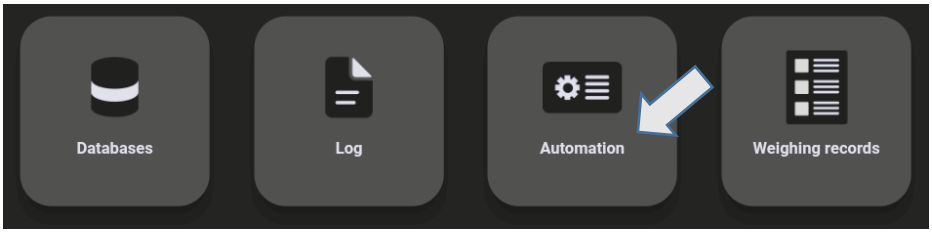
Tap to delete an element.

Tap to open a form to add a new scale to the list.
It will open a form to enter the scale IP address as well as the configuration of the UDP ports. Tap on **Save** after filling in the form to add the scale to the list.



5.7 Automation Options

Tap the menu button to enter the configuration menu.
Go over the **Automation** option on the configuration menu



Settings on this screen allows to configure **automatic** printing / recording.
It is possible to configure two alternative modes of automatic weighing:

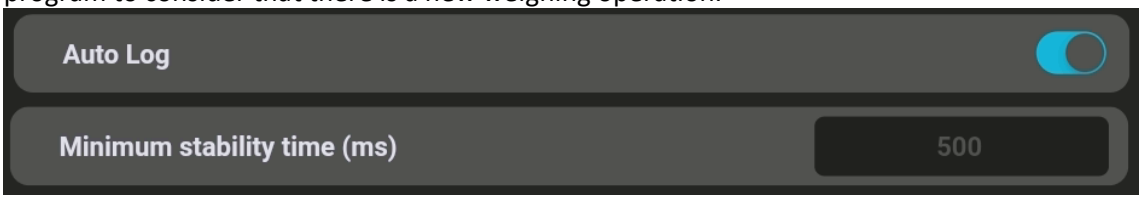
- **Auto Log** mode: A new weighing operation is recorded each time that the scale detects a new weight value under certain conditions.
- **Data Logger** mode: A new weighing record is added to the database in a fixed time frequency.

Automation modes can be turned ON / OFF using a switch on the screen:

turned ON turned OFF

5.7.1 Auto Log Mode

Auto Log will automatically record a new weighing operation every time the weight on the scale changes. The stability indication must remain visible for a minimum of time for the program to consider that there is a new weighing operation.



Min stability time (ms) allows to define the minimum time in stability for the system to consider that there is a new weight on the scale each time the weight on the display changes. This value must be expressed in ms (milliseconds).

Force unload, when turned ON**,** it will not allow the registration of a new weighing operation until the scale has been unloaded (the weight on the pan is lower than the *minimum weight for recording*). **Min weight for recording** sets a minimum threshold to record a weighing operation.

These settings affects both manual / semi-automatic operations as well as the automatic operations when the **Auto log** switch is set to ON.

5.7.2 Data Logger Mode

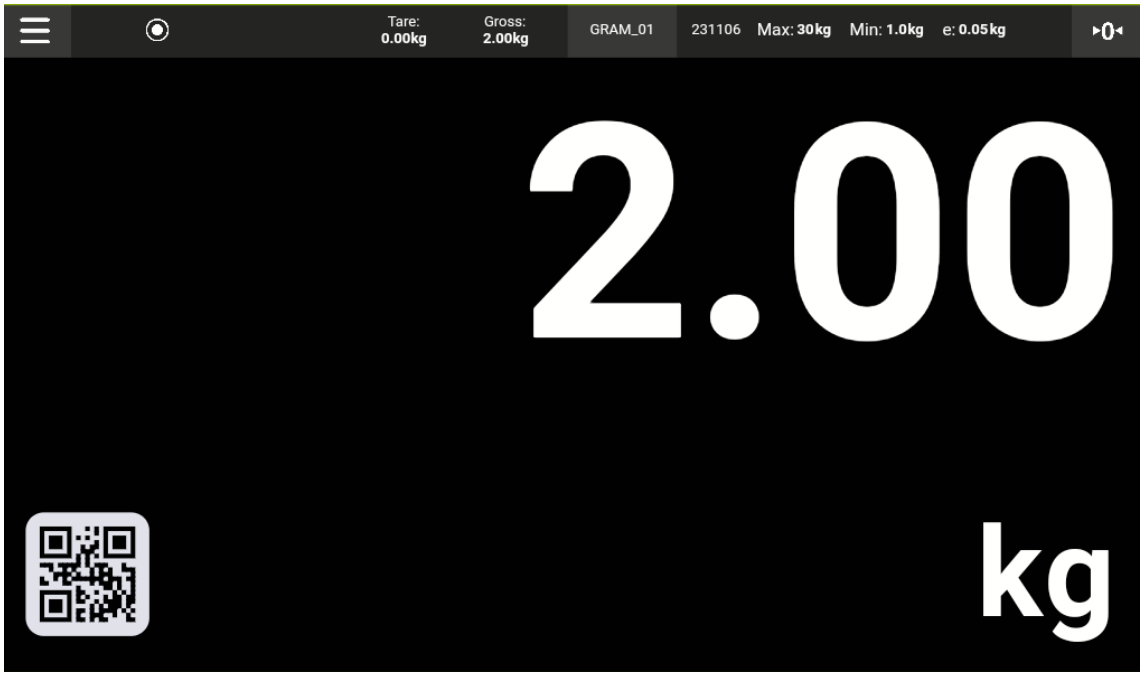
Data logger mode allows you to configure the application to record the weight on the display with a constant frequency, which is indicated in the **Timelapse (ms)** section. The value in this field must be expressed in ms (milliseconds). When this function is enabled, the weight is recorded regardless of the stability indication or the minimum weight.

5.7.3 Show QR Code When Stable

When this option is enabled, the main screen will show a QR code with the weight value. This option allows to capture the weight value from a different device using a QR scanner. The QR code will be displayed when the indication is show at full screen.

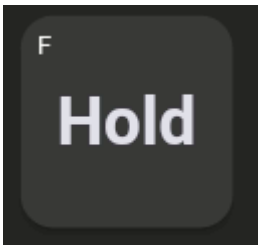
Swipe down the screen to hide the keypad and display only the weight value. Swipe up the screen to show the keypad again.

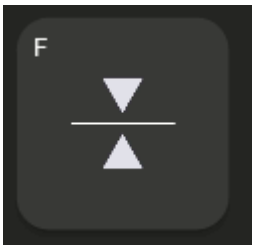
The QR code will be shown only if the stability indication is visible, and the weight value is higher than 0.



5.7.4 Action Button

Action buttons are marked with a small “F” letter in their top left corner.
It means that this is a user’s configurable function.





You can choose which function to assign to this button as follows:
Enter the Automation settings in the configuration menu and go to the **Action button** configuration:

Finally, tap on the list control and select the function to assign to the **Action button**:

6. Database

Log-in as administrator

Configuration settings are protected with a password.

The Xtrem application uses a SQL database including a users' table.
Functions available depends on the user's role.
User role can be defined as "administrator" or "operator".
Operator users have limited options for managing the configuration settings as well as the database options. There is an administrator user defined as factory settings that will allow you manage the initial configuration settings, including adding other users to the database and assigning a role to each user.

To have full access to all the configuration settings during the first power on, log-in as user ***admin*** using password ***admin123.***

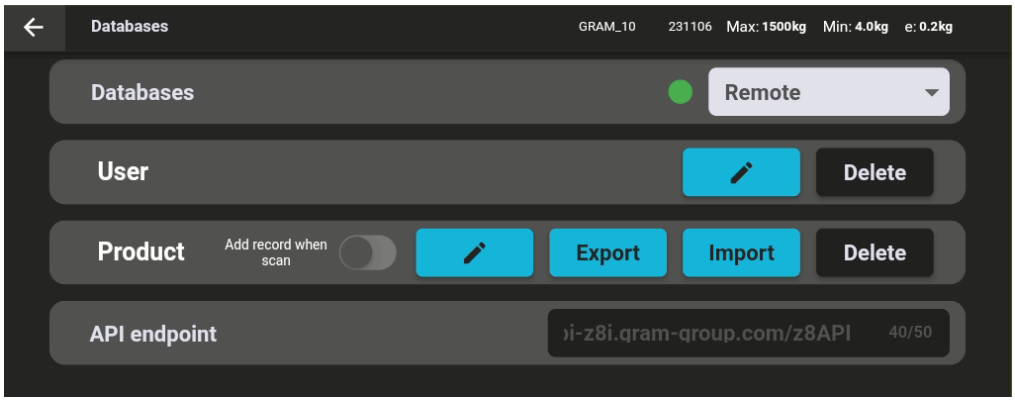
The Z8i application manages a SQL database with the data tables: User, Product, Record and Trash.

The database can be ***local***, stored on the Z8i device memory storage, or ***remote***, stored on a network server.

Local database uses the **SQLite** database engine, which is integrated into the Android OS. Local database is located into the application folder, and it is only accessible using the Z8i application. When uninstalling the application, all data will be erased. To avoid data loss, before uninstalling the Z8i application, export a copy of the records for safekeeping.

Remote database uses **MySql** (Oracle) database engine which must be installed into the server system. To access the remote database, it is also needed to install our REST API software, **z8API** in the system server. Remote database requires the Z8i device to be connected to the network.

To manage the database using the Z8i device, tap the menu button to enter the configuration menu. Go over the **Databases** option on the settings menu.



6.1 Users' Table

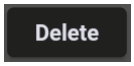
User table stores users' information and role:

Field name	Description
id	Record's ID
reference	User reference or short name for login.
name	Full username
role	User's role
password	Login password

Data in this table is encrypted and can only be managed using the Z8i application and the z8API.

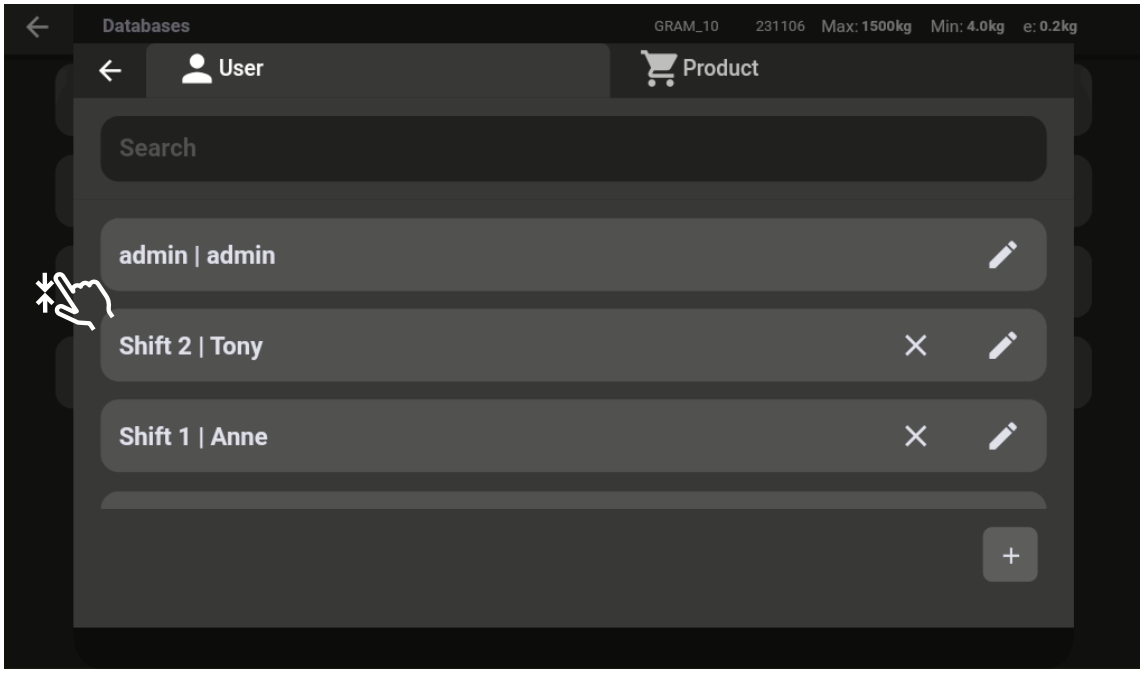
There are two different options available for the **User** table in the **Databases** screen.

The **Edit** button allows to view / edit the information on the table.



The **Delete** button allows to delete all the contents in the table. The system will ask for confirmation.

For viewing / editing the table, tap the pencil icon in the **Databases** screen. It will open a new screen with a view of the contents:



Tap on the border and drag to scroll up / down the view.
Use the **search** box to filter the view.

Tap on the [X] button to delete a record. Note that "admin" account cannot be deleted but is still possible to change the password.
Tap on the pencil icon to edit a record. Users with the "admin" role has a password. When selecting an "admin" account, the system will prompt for the account password.

Tap on the button [+] at the bottom right of the screen to add a new user.

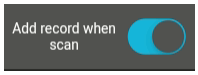
6.2 Products' Table

Product table stores information on the items to be weighed:

Field name	Description
id	Record's ID
reference	Product reference or short name.
name	Product full description.
max	Upper limit to be applied when using the check weighing feature.
min	Lower limit to be applied when using the check weighing feature.
tare	Recorded tare associated to this product.
observation	Free text.

- If there is a tare memory associated to a product reference, the tare will be automatically set upon scanning the barcode. Updating the values in the **tare memory** (see Tare Memory) will not update the tare associated to each product reference.
- If there are checkweigher settings (the upper and lower limits alarm) associated to a product reference, the Checkweigher Mode (see 5.6.7) will be automatically enabled.

The options available for the **Product** table in the **Databases** screen are:

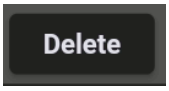


If **enabled**, a new weighing record will be automatically added after scanning the barcode of the product reference.

The **Edit** button allows to view / edit the information on the table.

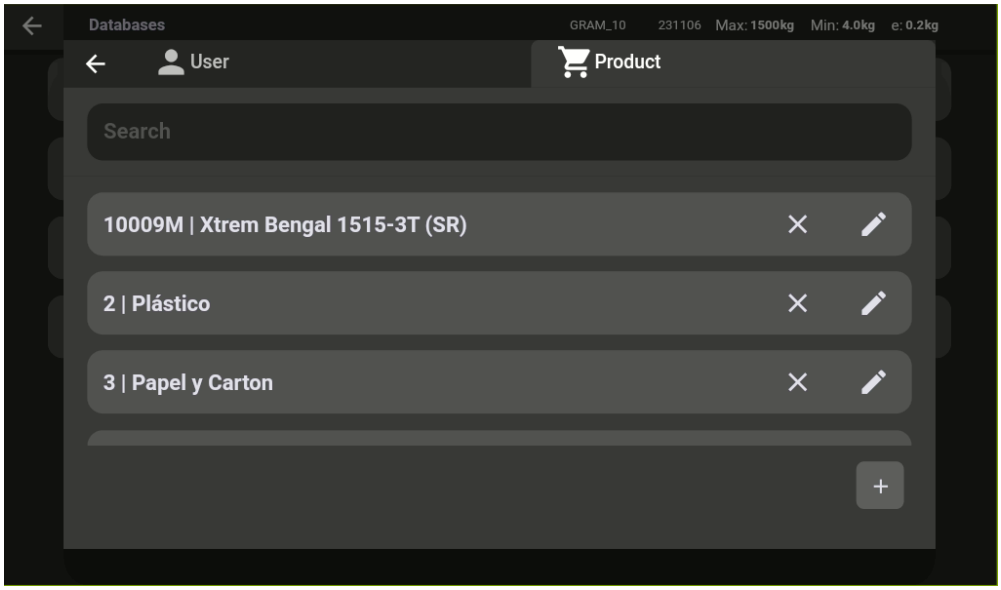
Connect a memory stick and tap to **export** all the **Product** records to a CSV file.

Connect a memory stick and tap to **import Product** records from a CSV file.



Tap to delete all the records in the table. The system will prompt for confirmation.

To view / edit the table, tap the pencil icon in the **Databases** screen. It will open a new screen with a view of the contents:



Tap on the border and drag to scroll up / down the view.
Use the **search** box to filter the view.

Tap on the [X] button to delete a record

Tap on the pencil icon to edit a record.

Tap on the button [+] at the bottom right of the screen to add a new product record.

The table below shows the data recorded for each weighing record:

Field name	**Description**
id	Record's ID
date	Date and time of record creation (DD/MM/YYYY hh:mm:ss format)
userref	User reference
user_name	Username obtained from the users' table.
productref	Product reference
product_name	Product name / description from the products table
unit	Weighing unit (kg / g)
gross	Gross weight
net	Net weight
serial	Scale's serial number
tare	Tare value
tare_type	Tare mode (automatic or preset tare)
scanner	Extra information provided by a scanner
crc	CRC of the data included in the record. It allows to check that the stored information has not been accidentally corrupt.

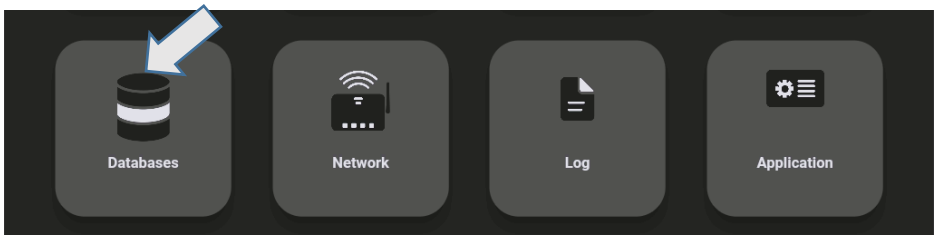
The scale serial number, timestamp, and weighing information is automatically set by the application. User's and product's data fields must be selected from the database before recording the weighing operation.

The id number for each record, starting from "1", is set as a counter automatically increased after each operation.

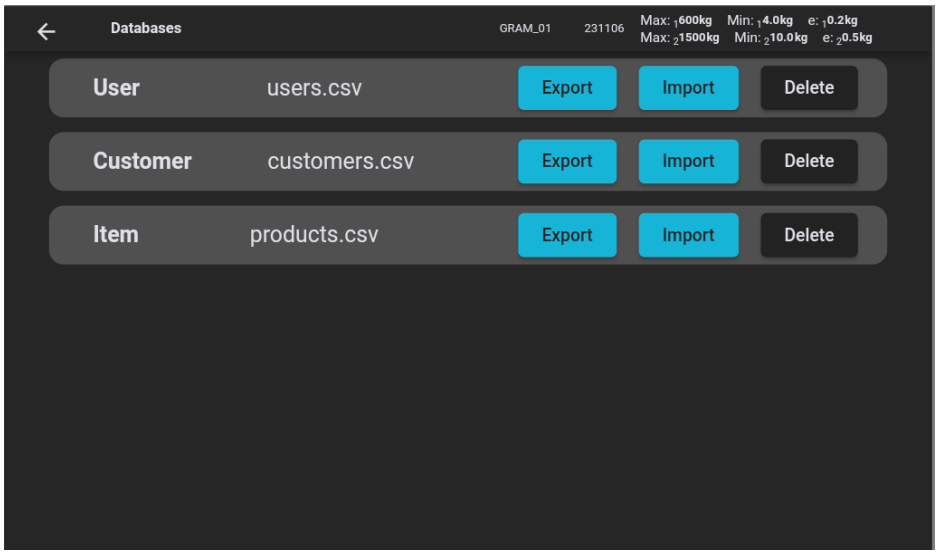
6.2.1.1 Manage the Database Associated File

Tap the menu button to enter the configuration menu.

To manage the database, go over the **Databases** option on the configuration menu.



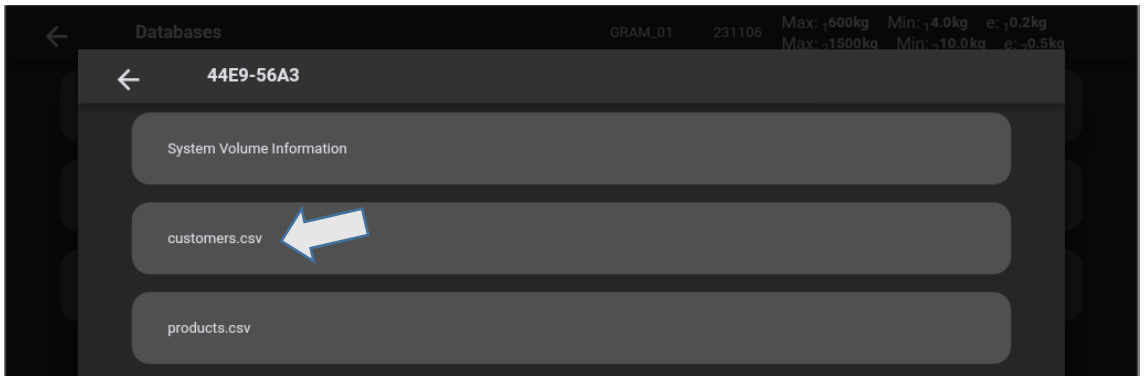
The view shows the three available tables.



The buttons next to each database allow to manage the associated table.

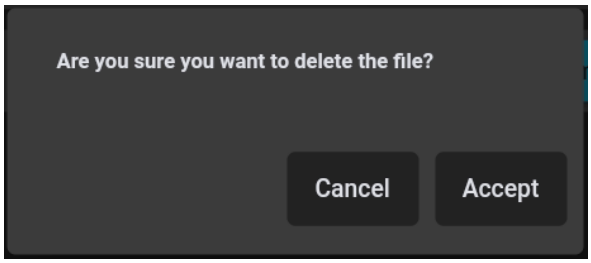
Export Exports the associated database file to a memory stick. The procedure to follow is the same as the one described in the records export process. The resulting file will have the same name and extension.

Import Imports a csv file from a memory stick.



Once a csv file is selected from the memory stick, the database dialog box will display the information of the imported file.

Delete Deletes the associated database file.

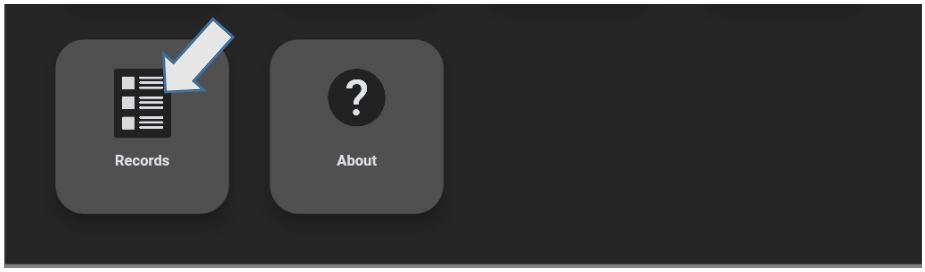


If the prompt is accepted, the entire selected table will be erased.

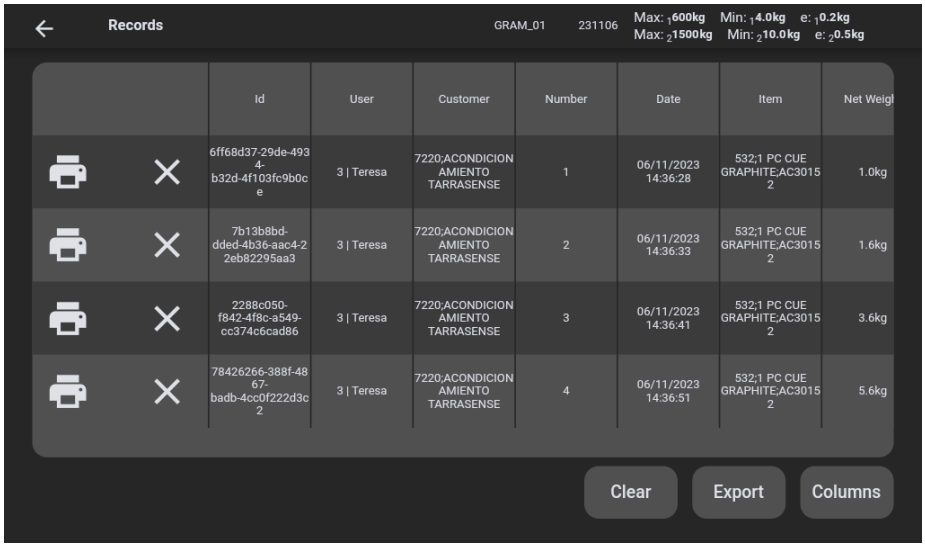
6.2.2 Managing the Weighing Record Table

Tap the menu button in the top left corner of the screen to enter the configuration menu.

To open the weighing record viewer, go on the **Records** option on the configuration menu.



The screen shows the last records in the table. Swipe up to scroll down the records list.



The action buttons of each record allow you to interact with them.

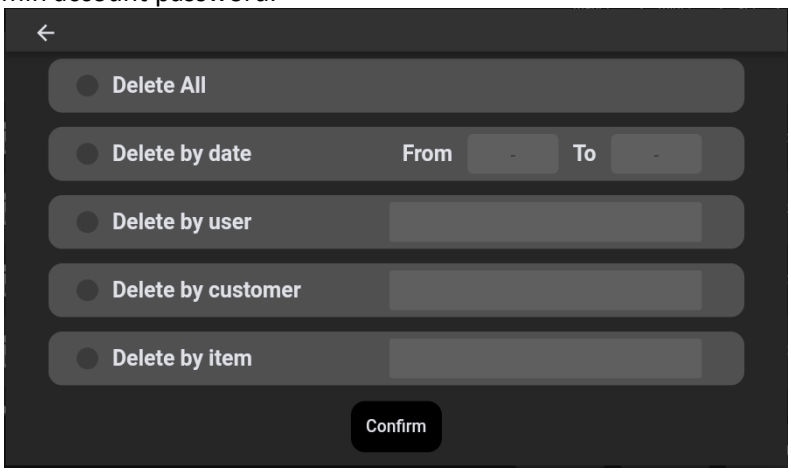
If a printer is connected, it allows you to print the weighing information of the record.

Allows to delete a specific record.

The buttons in the right bottom corner of the screen allow to manage the weighing record file:

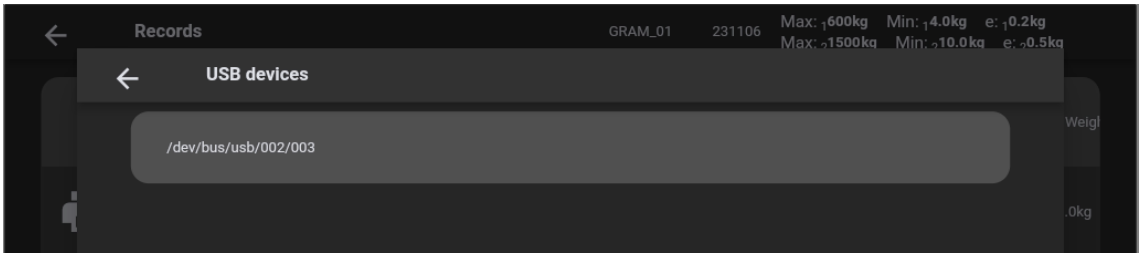
Columns Allows to select the data fields of the weighing record to show in the screen.

Clear Opens a dialog to delete records by different filters. The application will prompt for an admin account password.

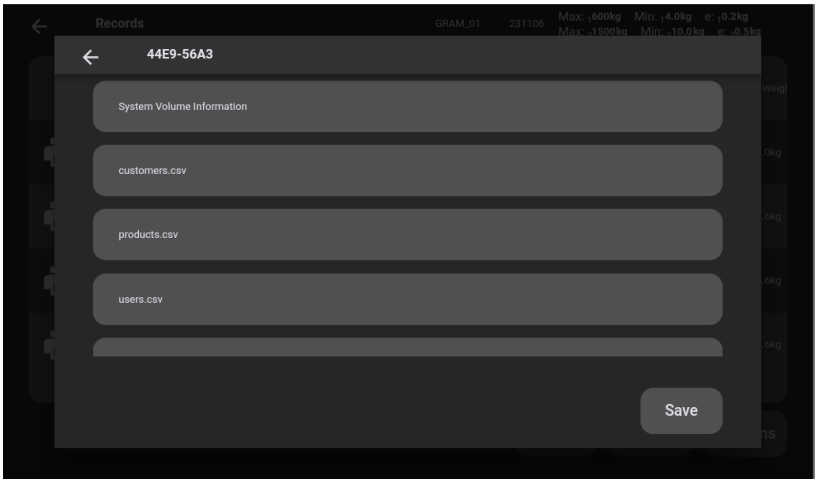


All filters are cumulative, unless you select delete all, which will erase all the records.

Export If there is a memory stick inserted in the USB connector, it will open a dialog with the available devices.



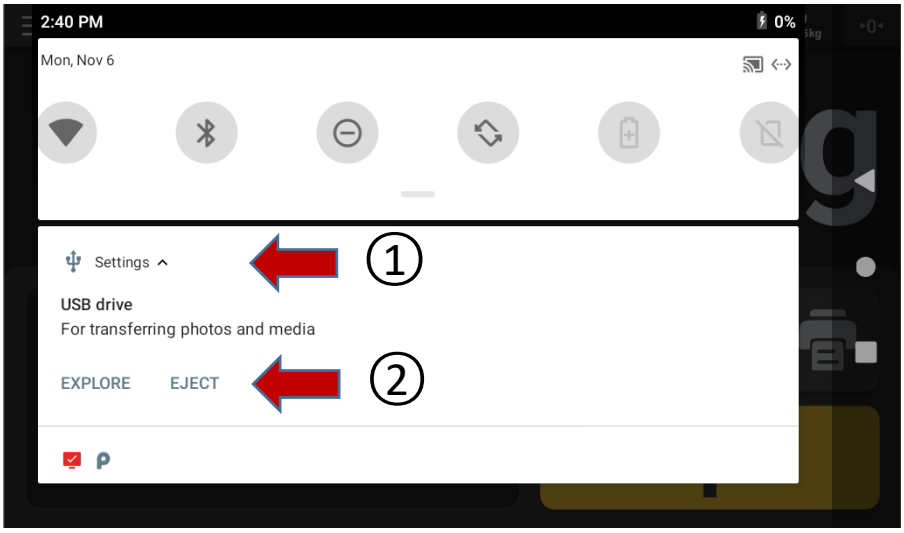
Once you select one, you can browse the files of your memory stick. Once you have located on the folder where you intend to save your records, select the Save button.



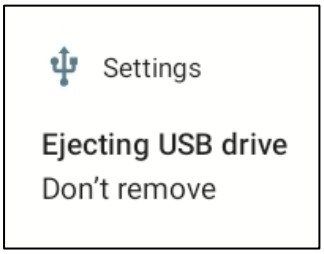
It will save the records in a csv file. The filename is “recordsDD-MM-YYYY-HH-MM-SS.csv”, where DD-MM-YYYY-HH-MM-SS is the current system date and time.

NOTE: Before removing the USB flash drive, it is highly recommended to perform the "EJECT" procedure to avoid data loss. Follow the steps below:

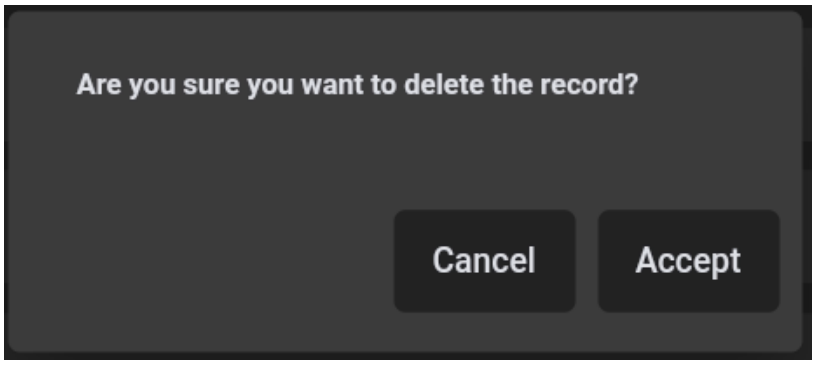
1. Swipe down from the top of the screen to show the notification bar and open the notification panel.
2. Open the settings of the USB flash drive and tap the EJECT button:



3. Wait until the end of the EJECT process before removing the USB flash drive.



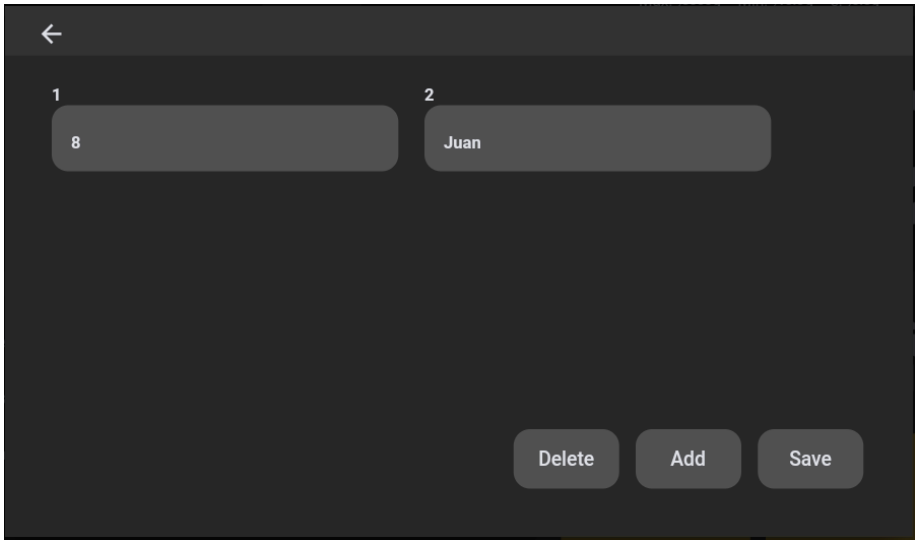
If you wish to delete a record of the database, tap on the button.



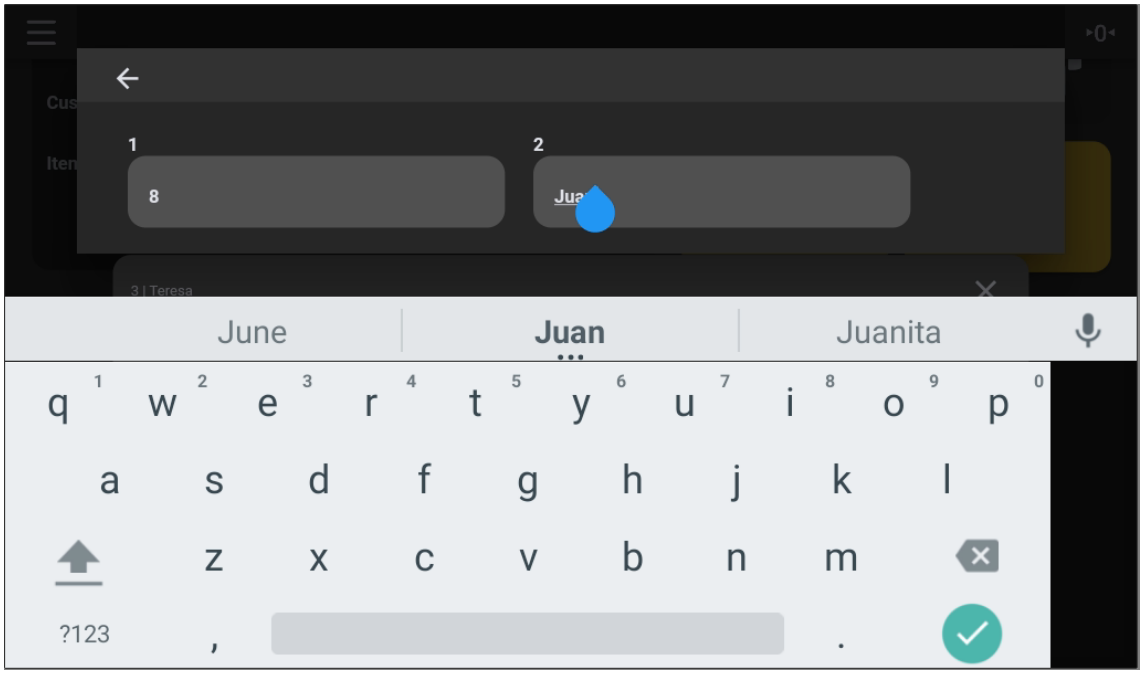
A dialogue box will require you to accept the operation.

To add a new record to the database, tap the button in the right bottom corner of the display.

A new dialogue box will open to enter a new record.



To introduce data, please use the virtual keyboard which will appear if you tap on the text box.

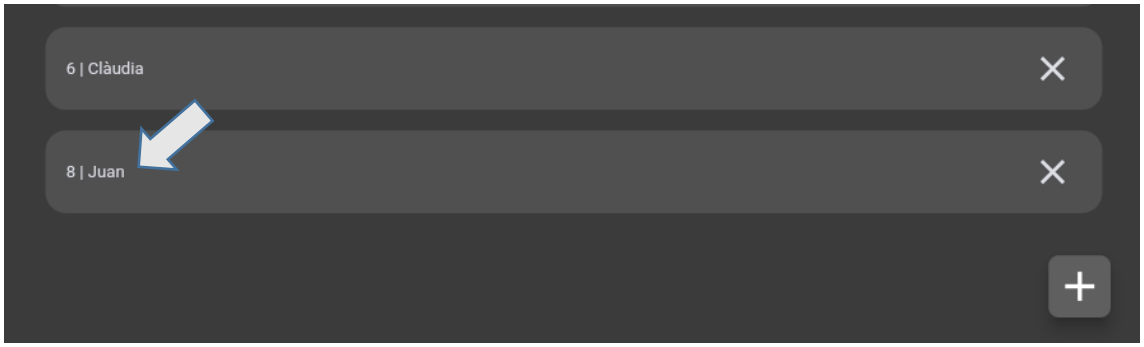


The buttons in the right bottom corner of the screen allow you to manage the record.

Delete — Removes the last column of the record.

Add — Adds a new column to the record.

Save — Once you have entered all the columns, tap on the save button to introduce the record on the database.

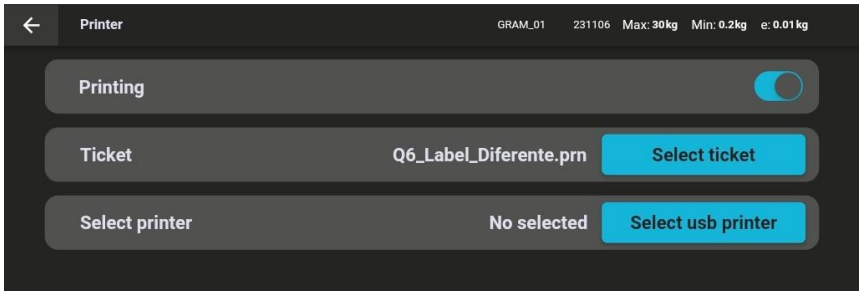


The columns of the record will be displayed separated by | symbol.

7. Printer Configuration

It is possible to connect USB printers using ZPL, EPL, TSPL, DPL and compatible languages, both for printing labels and receipts. **Z8i cannot be used with ESC/Pos printers.**

Tap the menu button to enter the configuration menu.
To set up the printer, tap the **Printer** option on the configuration menu.

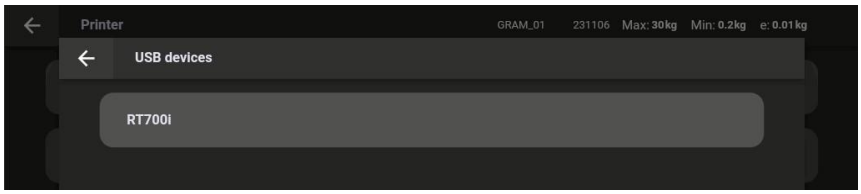


Printing switch allows to enable or disable automatic printing after recording a new weighing operation.

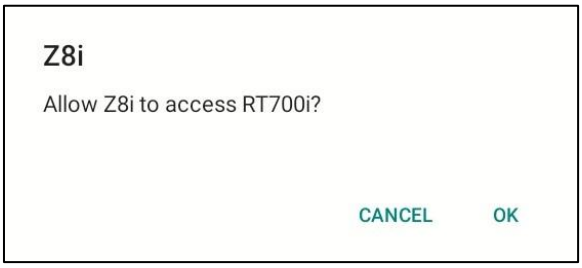
7.1 Connect and Select a Printer

Select usb printer

Connect a USB printer and tap this button. It will show a list of USB printers connected. Choose the desired one and tap to select.



Once one is selected, system permissions will be requested, select OK to continue.

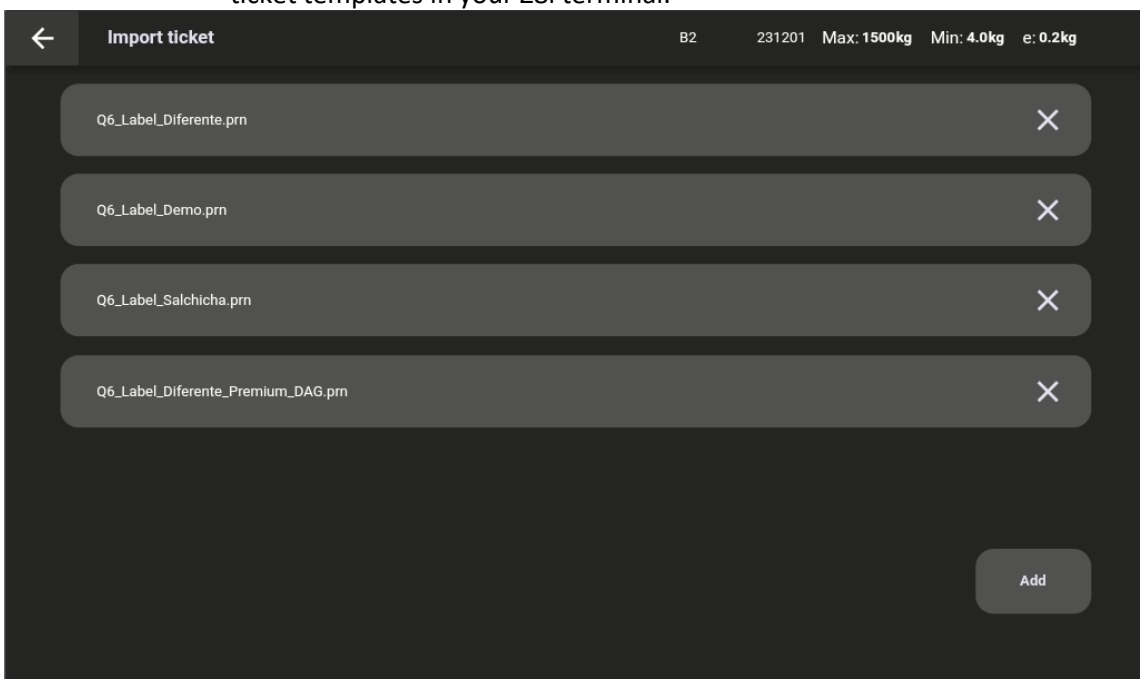


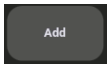
Upon powering up the Z8i, the Android system will ask for permission for all the USB devices already connected and turned on. When having a printer connected to the Z8i, **is a good idea to power on the printer before to power on the Z8i unit. This way, you will be prompted for permissions at the start up, getting the printer ready.**

7.2 Select a Printout Format

Z8i allow to manage different printout formats using receipt / label templates.
These ticket formats are *.prn* files generated using a label designer software on a desktop computer. As factory default, Z8i is delivered with several receipt / label formats for two different printer models.

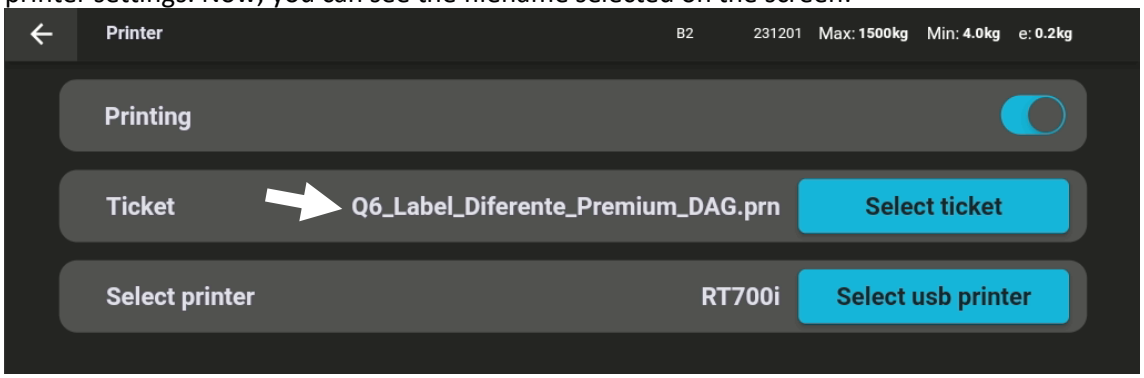
Tap the **Select ticket** button. It will show a new screen with the available ticket templates in your Z8i terminal.





To add a new ticket template, plug a memory stick into the USB port, then tap the **Add** button. It will open a new screen with the files in your memory stick. Select the *.prn* file to add to the Z8i.

Tap on the chosen one to select it from the list of available files. The screen will return to the printer settings. Now, you can see the filename selected on the screen:



7.3 Design a Label and Generate a .prn File

To design a label template, you must use a label designer.

The variable data on each weighing operation is represented using a field name enclosed by curly braces. Inside the curly braces, after the field name, you can add an align specification separated by a comma. Format is as follows:

{*data_field*[,*Align*]}

Align is just a letter:

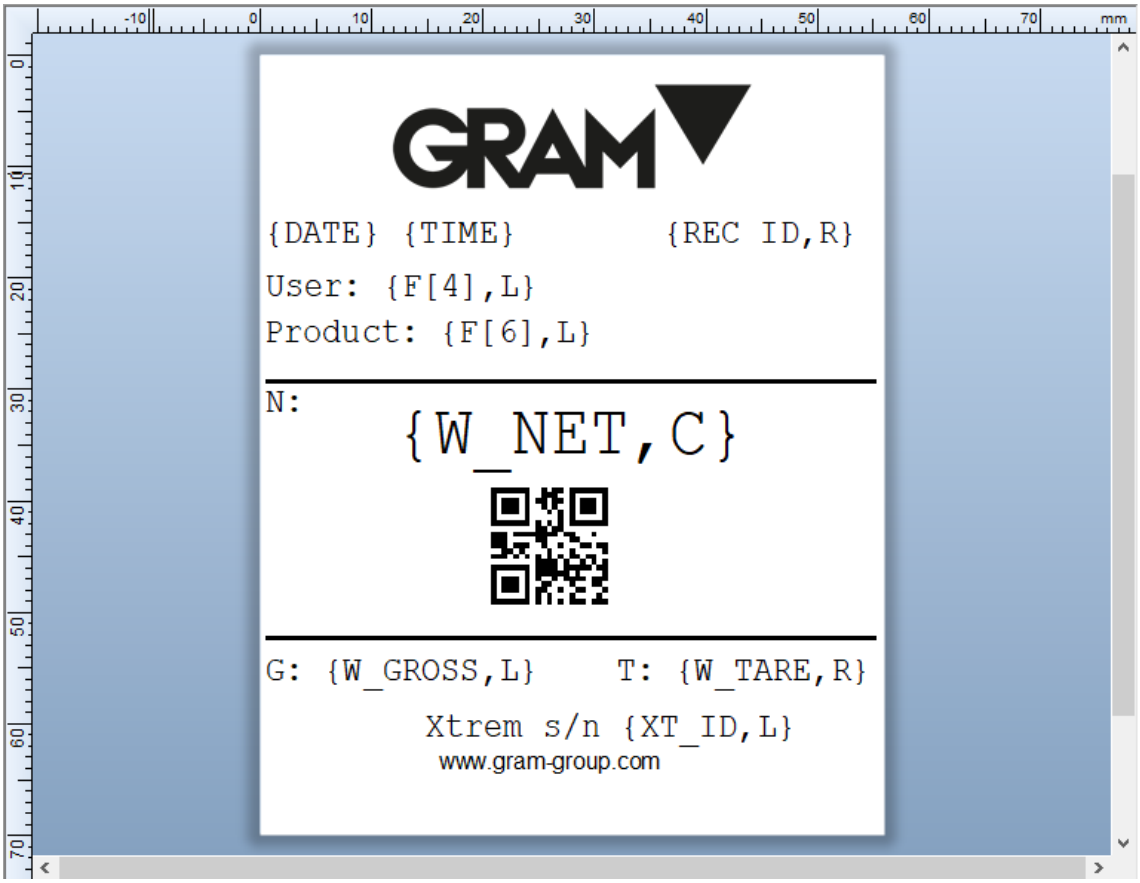
- ***C*** stands for centred.
- ***L*** stands for aligned to the left.
- ***R*** aligned to the right.

This is a list of the variable data fields available:

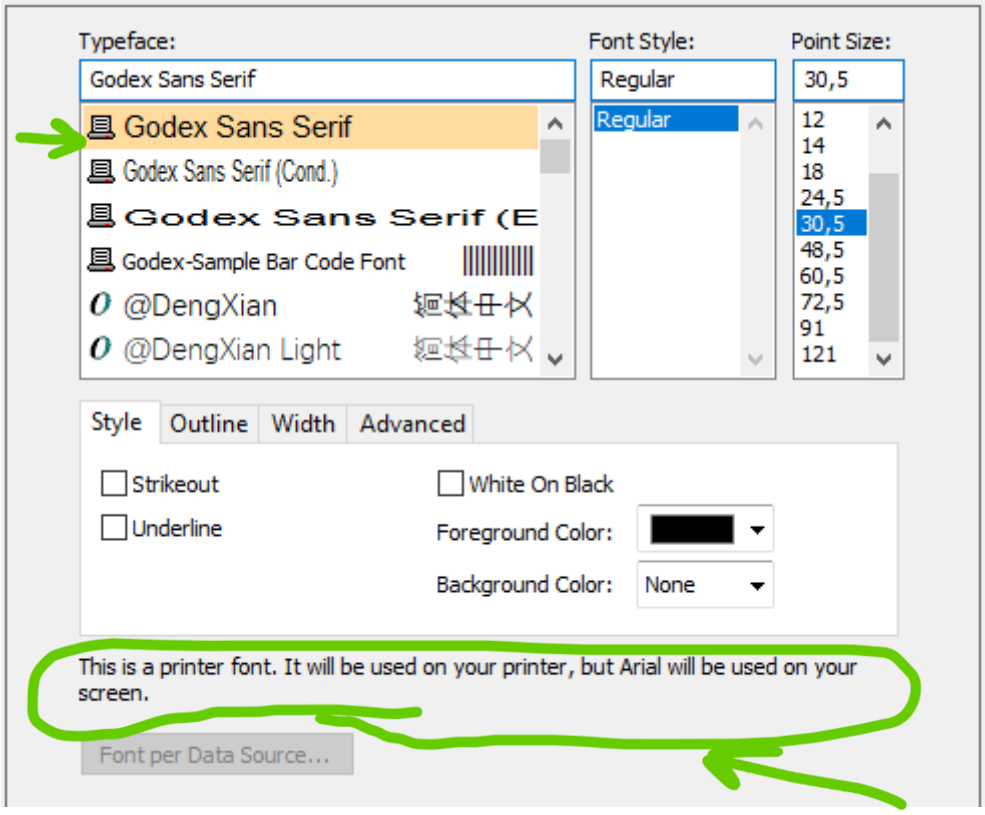
{DATE[,Align]}	System date dd/mm/yy
{TIME[,Align]}	System time hh:mm:ss
{W_GROSS[,Align]}	Gross weight -nnnnnnn.nnn uu (including weighing unit)
{W_TARE[,Align]}	Tare weight (including weighing unit)
{W_NET[,Align]}	Net weight (including weighing unit)
{W_TMOD[,Align]}	Tare mode
{XT_ID[,Align]}	Xtrem scale serial number
{REC_ID[,Align]}	Receipt / label serial number
{F(n) [,Align]}	Field *n* from the weighing's record.
{SCAN[,Align]}	Scanned data.
Align	Horizontal alignment: C = Center (used as default if omitted) L = Left R = Right

Weighing record field	
{F(1) [,Align]}	Id
{F(2) [,Align]}	Date
{F(3) [,Align]}	Userref
{F(4) [,Align]}	User_name
{F(5) [,Align]}	Productref
{F(6) [,Align]}	Product_name
{F(7) [,Align]}	Unit
{F(8) [,Align]}	Gross
{F(9) [,Align]}	Net
{F(10) [,Align]}	Serial
{F(11) [,Align]}	Tare
{F(12) [,Align]}	Tare_type
{F(13) [,Align]}	Scanner
{F(14) [,Align]}	Crc

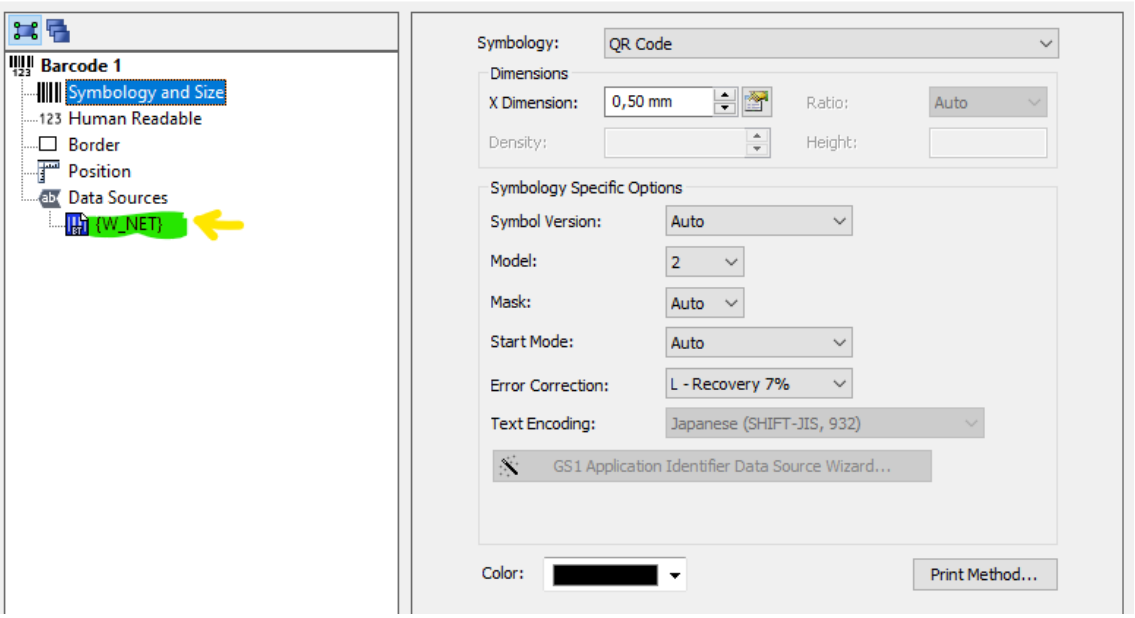
To place a variable data field in your label template, just add a text box in your designer software and write the data field wanted in the format above mentioned.



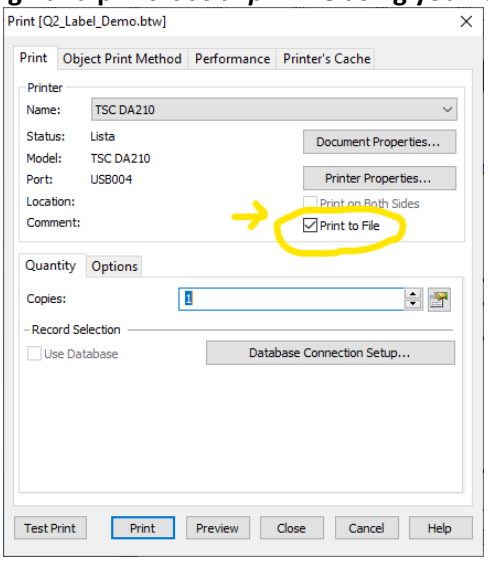
Font type and size applied to the variable data must be an internal printer font:



To place barcodes or QR codes using variable data, refer to the manual of your label designer program. As example, the QR code on the label above has been configured as follows:



Finally, save your label design and print it as a *.prn* file using your label designer application:



Copy the generated *.prn* file to a memory stick and add the new label format to the Z8i as show in 7.2 Select a Printout Format

When sending a printout to the printer, the Z8i app will replace the variable data in the label template with the actual data for each weighing operation.

8. Scale Setup and Calibration

Tap the menu button to enter the configuration menu.
In the settings screen you will find some configuration options.

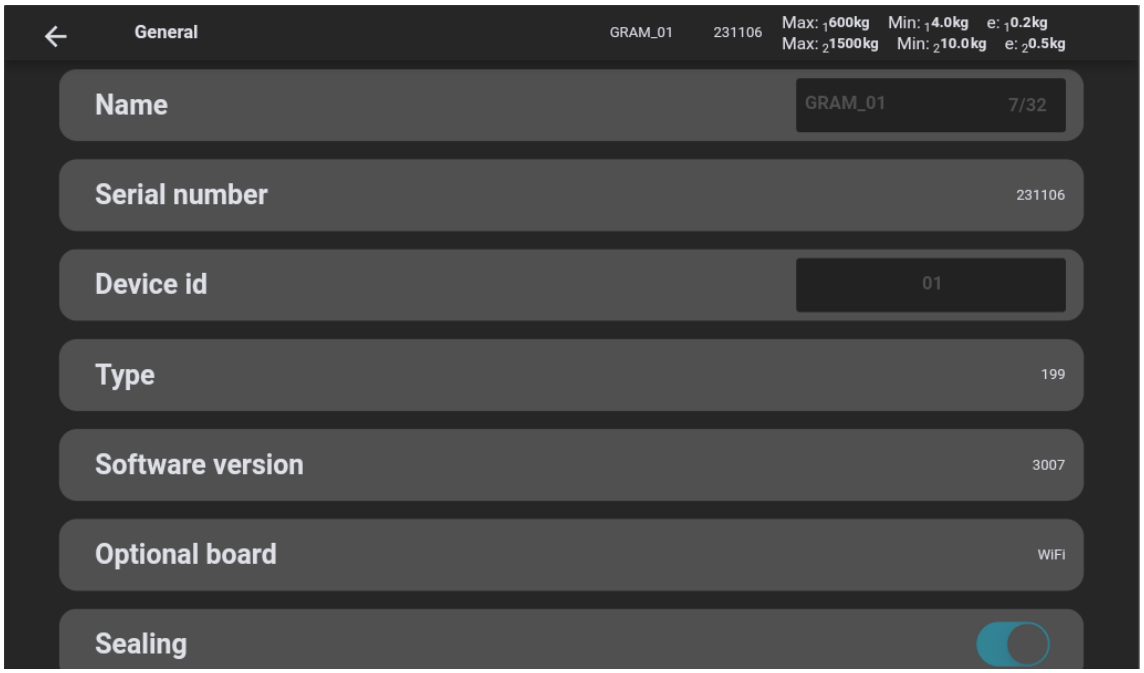
In the different tabs of the settings screen, you can visualize and configure the settings needed to define and adjust the measurement scale of the instrument.

If the weighing scale has been sealed to meet legal regulations, the Z8i terminal will not allow changes to many of these settings.

The Xtrem unit records the date and time of the last modification of any of these parameters. Modifying these parameters may imply the loss of the equipment warranty.

8.1 General

It shows information about the weighing scale and allows to change the scale name.



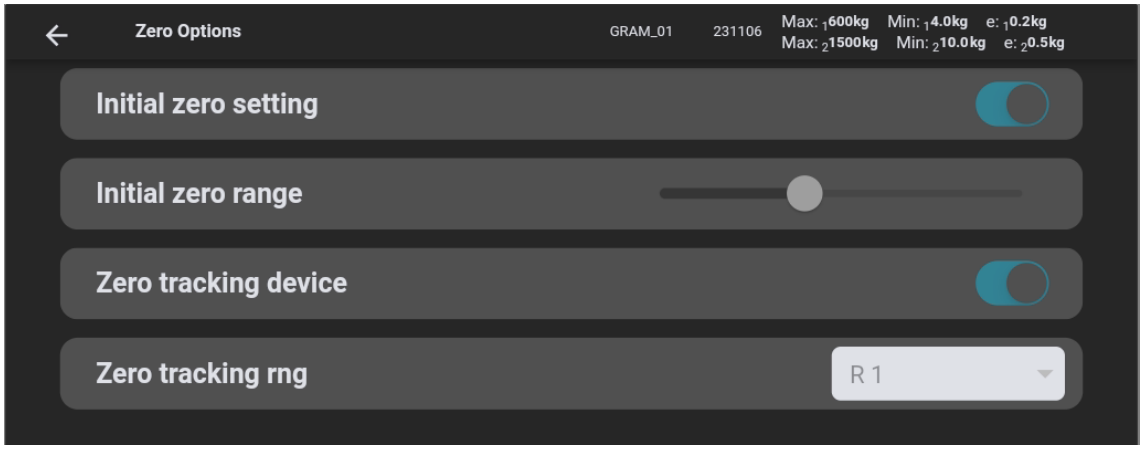
The **Sealing Switch** will inform whether the scale is sealed to be used as “legal for trade”. In this case, many of the scale settings cannot be modified.

8.2 Zero Options

Xtrem scales are featured with three different zeroing devices:

- The zero button on the home screen (see 5.6.5)
- The automatic initial zero setting
- The automatic zero-tracking device

Options in this tab allow to customize the automatic zero setting upon power on as well as the automatic zero tracking device.



Initial Zero Setting enables / disables the automatic zeroing upon power on by touching the switch control:

turned ON turned OFF

Initial Zero Range operational range of the auto-zero upon power on in % of the Max capacity of the scale. If the load on the platform upon power on is out of this range, the scale will not set to zero upon power on. This range is limited to a ±5% in "legal for trade" scales.

Zero Tracking Device enables / disables the zero-tracking device. This function automatically sets to zero when variations of less than ¼ division occurs or if they do not add up to more than 1/2 division during one second.

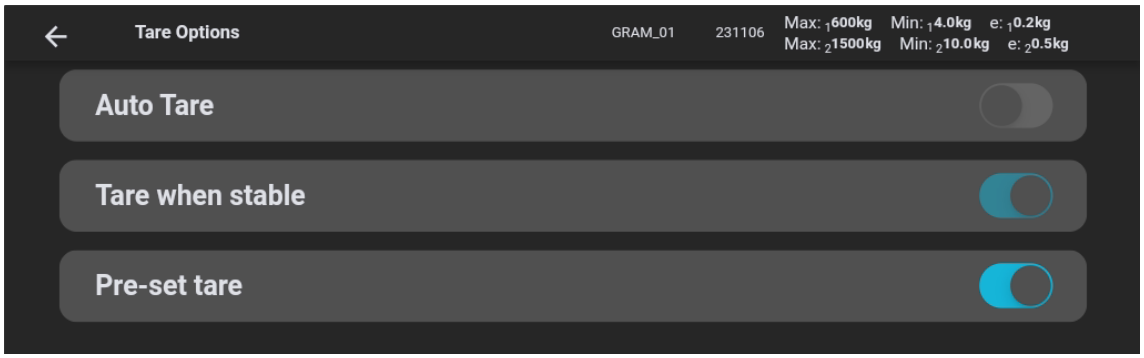
turned ON turned OFF

Zero Tracking Range allows to select between 4 different levels of zero-tracking operation.

8.3 Tare Options

These settings allow to change the tare behaviour.

Auto-Tare option and “Tare when stable” cannot be used when the scale is sealed as “legal for trade”.



Auto Tare When switched on, the scale performs an automatic measured tare each time that you load the scale. It is used when using the scale while filling recipients to avoid using the tare button each time.

turned ON turned OFF

Tare when stable. The tare function only works if the weight indication is stable. Switching off this function allows to use the tare regardless of the stability indication.

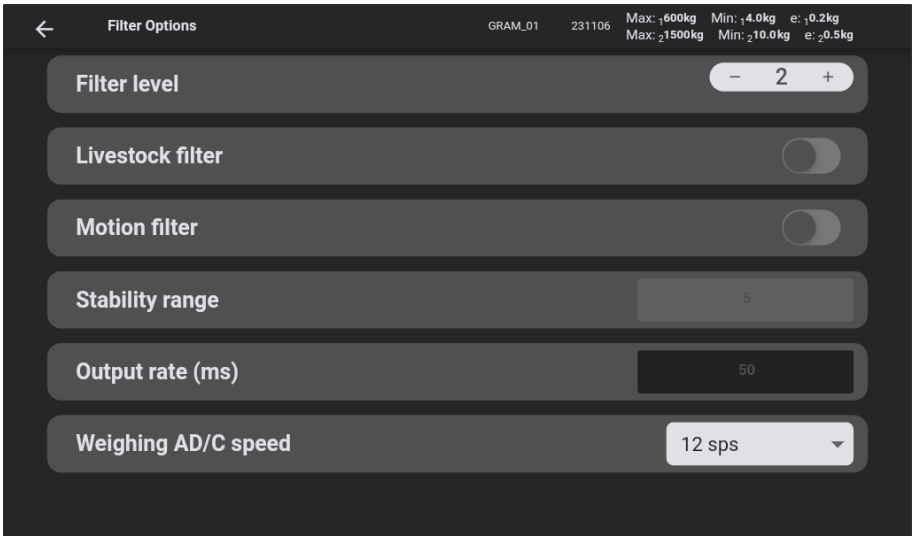
turned ON turned OFF

Pre-set tare. Switch the tare mode from pre-set tare to measured tare. The factory default setting is pre-set tare. It means that the tare will remain as a negative weight value after unloading the scale, allowing to perform a new weighing operation using the same tare value. If you select the measured tare mode, after unloading the scale, the tare is also cancelled.

Pre-set tare Measured tare

8.4 Filter Options

Filtering options allow the scale to be configured to be used in harsh environments or to weigh moving products, such as liquid tanks or live animals.



Filter Level. Possible values are from **1** up to **6**. A smaller value means that rapid oscillations in the weight become more visible and vice versa. Default value is level **2.**

Livestock filter Additional filter for weighing live animals or people that, who, when moving on the load receptor, cause oscillations in the weight indication by exerting a variable force on the load cells.

turned ON turned OFF

Motion filter When enabled, the indicator will not show intermediate weight values when loading / unloading the scale. The result is that the indicator retains the last stable value until the acquisition of a new stable weight or zero.

turned ON turned OFF

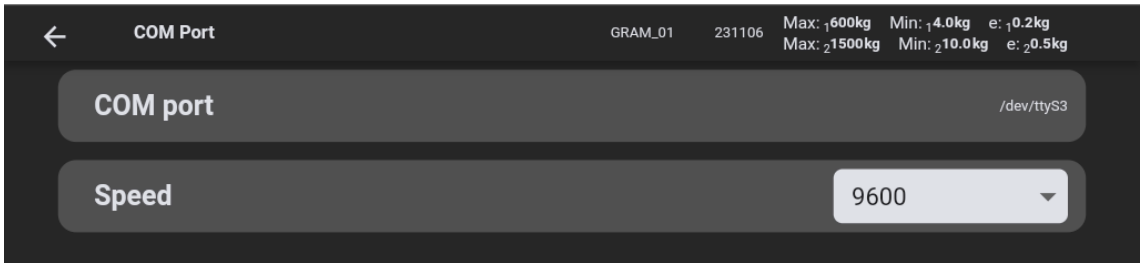
Stability range Stability is determined as a comparison between the weight values acquired in a short period. This value sets the maximum deviation between different weights to consider that the load is stable. This deviation is expressed in 1/10 of the scale interval. Default value is 5, which means a maximal deviation of ±0,5 e . A value of 10 means a maximal deviation of ±1 e.

Output rate (ms) Output rate of sending data from the Xtrem scale to the Z8i terminal in milliseconds. Enter the value in milliseconds. Default value is 50 ms.

Weighing AD/C speed: A/D converter sampling speed. Possible values are 12 sps / 50 sps (samples per second). A higher sample rate per second will result in faster weight acquisition but will also show short spikes due to a blow or draft.

8.5 COM Port

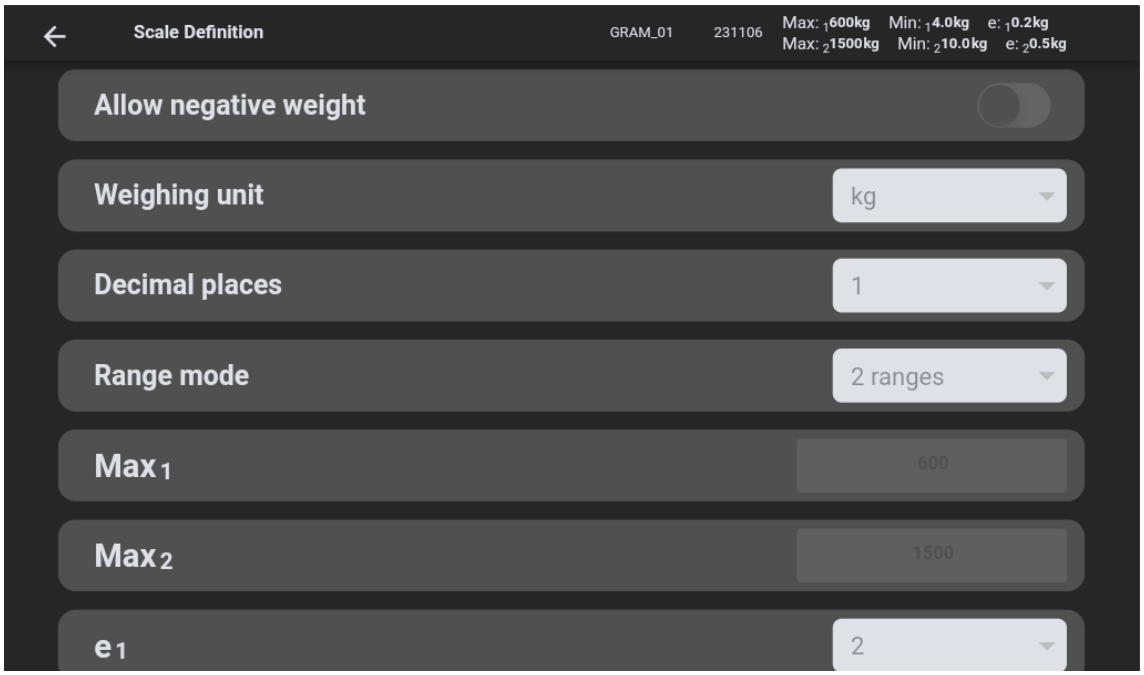
Allow to change the baud rate of the scale serial port.



8.6 Scale Definition

View and configure the settings needed to define and adjust the measurement scale of the weighing instrument.

These configuration options are reserved for technical staff. Changes to these settings could cause the instrument to malfunction.



Allow negative weight. When disabled, if the scale reports a "negative weight" (weight value less than -19e), the display shows the following error:

Weighing unit: Choose the units according to the scale's calibration.

Decimal places: Choose the number of decimal places according to the scale's calibration and measurement unit.

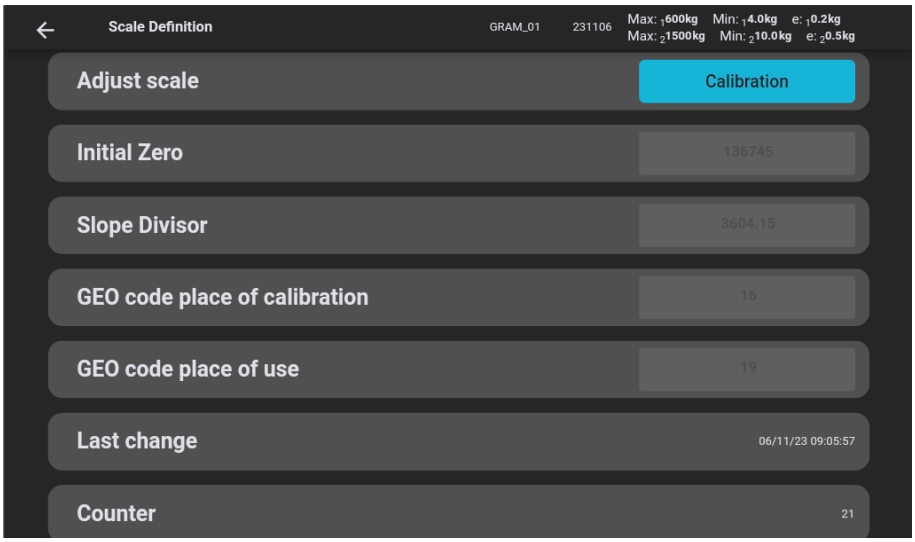
Range mode. Choose the desired configuration.

Max. Maximum capacity. Enter the value using the keyboard.

e. Scale interval. The smallest increment that the instrument can measure. Possible values are 1, 2, 5, 10, 20 or 50.

8.7 Scale Calibration

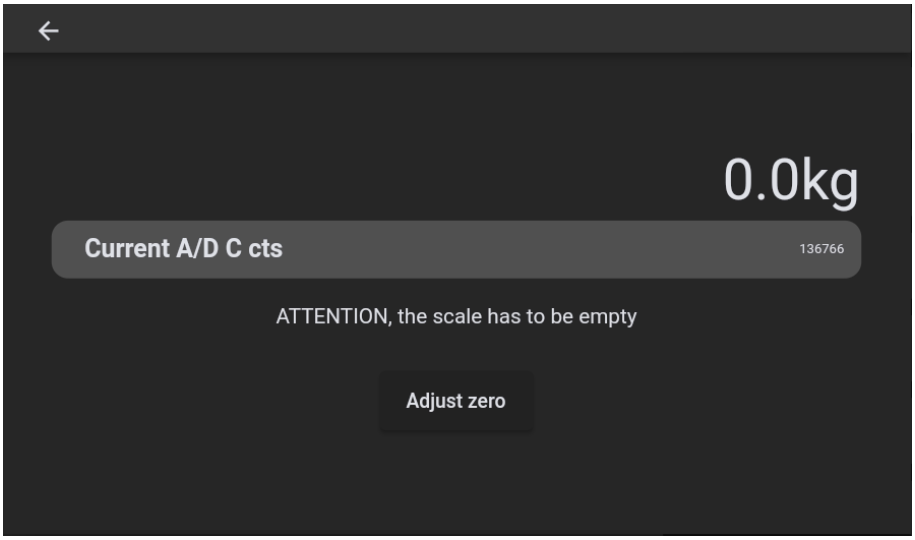
The following fields on the "Scale Definition" screen allow you to calibrate the scale.



Calibration can be done in two different ways:

a) Key-in of the signal offset (initial zero) and slope divider if you already know the relationship between the load cell signal and the measurement scale.

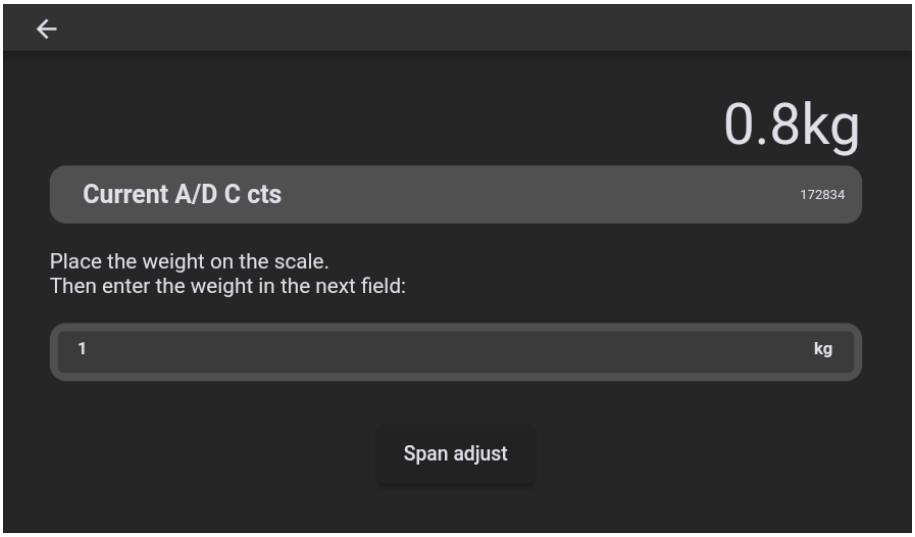
b) Use the Calibration button. This button will show a dialog box to follow the steps to accomplish the calibration.



The **A/D cts** field shows the signal input from the loadcell, expressed as a 24bit integer value in a range from −8,388,608 to 8,388,607.

Adjust zero records the current signal as the loadcell signal offset due to the load receptor weight. Check that the scale is unloaded before touching the Adjust Zero button.

Span adjust Place a standard weight on the load receptor, tap this button, and enter the weight value:



The Z8i will calculate the divisor needed to convert the load cell signal to the previously defined weighing scale.

The Xtrem scale automatically calculates a correction factor when the scale is calibrated at a location different than the place of use. The geographical location code is a value from 0 to 31, which you must select from the table below. In the **GEO code** fields a geographic code must be entered depending on the location of the scale.

GEO code (place of calibration) Enter the code for the location of the scale at calibration time.

GEO code (place of use) Enter the code for the final location of the scale.

When calibrating the scale using a standard weight, both GEO codes must be set to the calibration place. After calibration, change the GEO code for the place where the scale will be used.

8.8 Table of Geographical Adjustment Values

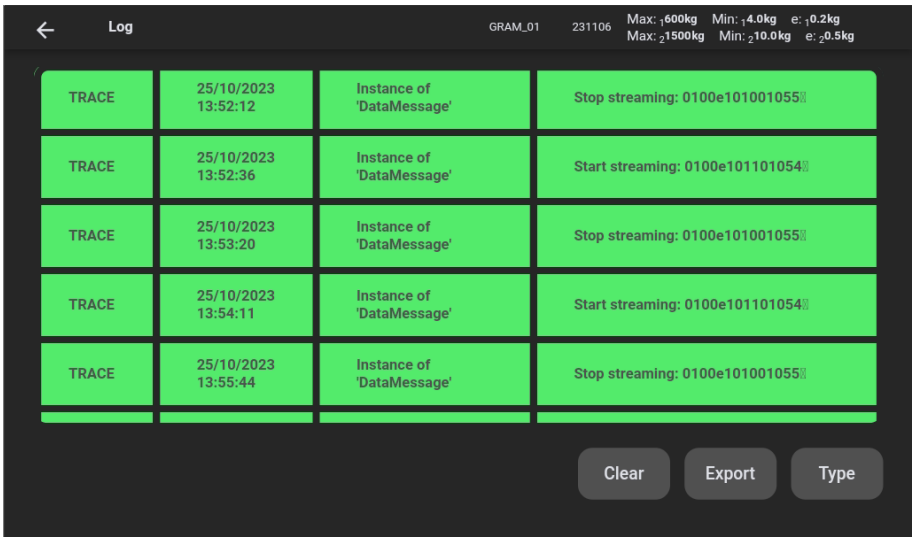
Geographical latitude in the northern or southern hemisphere in degrees and minutes	Elevation above sea level in meters										
	0	325	650	975	1300	1625	1950	2275	2600	2925	3250
	325	650	975	1300	1625	1950	2275	2600	2925	3250	3575
	Elevation above sea level in feet										
	0	1060	2130	3200	4260	5330	6400	7460	8530	9600	10660
	1060	2130	3200	4260	5330	6400	7460	8530	9600	10660	11730
00°00' - 05°46'	5	4	4	3	3	2	2	1	1	0	0
05°46' - 09°52'	5	5	4	4	3	3	2	2	1	1	0
09°52' - 12°44'	6	5	5	4	4	3	3	2	2	1	1
12°44' - 15°06'	6	6	5	5	4	4	3	3	2	2	1
15° 06' - 17°10'	7	6	6	5	5	4	4	3	3	2	2
17°10' - 19°02'	7	7	6	6	5	5	4	4	3	3	2
19°02' - 20°45'	8	7	7	6	6	5	5	4	4	3	3
20°45' - 22°22'	8	8	7	7	6	6	5	5	4	4	3
22°22' - 23°54'	9	8	8	7	7	6	6	5	5	4	4
23°54' - 25°21'	9	9	8	8	7	7	6	6	5	5	4
25°21' - 26°45'	10	9	9	8	8	7	7	6	6	5	5
26°45' - 28°06'	10	10	9	9	8	8	7	7	6	6	5
28°06' - 29°25'	11	10	10	9	9	8	8	7	7	6	6
29°25' - 30°41'	11	11	10	10	9	9	8	8	7	7	6
30°41' - 31°56'	12	11	11	10	10	9	9	8	8	7	7
31°56' - 33°09'	12	12	11	11	10	10	9	9	8	8	7
33°09' - 34°21'	13	12	12	11	11	10	10	9	9	8	8
34°21' - 35°31'	13	13	12	12	11	11	10	10	9	9	8
35°31' - 36°41'	14	13	13	12	12	11	11	10	10	9	9
36°41' - 37°50'	14	14	13	13	12	12	11	11	10	10	9
37°50' - 38°58'	15	14	14	13	13	12	12	11	11	10	10
38°58' - 40°05'	15	15	14	14	13	13	12	12	11	11	10
40°05' - 41°12'	16	15	15	14	14	13	13	12	12	11	11
41°12' - 42°19'	16	16	15	15	14	14	13	13	12	12	11
42°19' - 43°26'	17	16	16	15	15	14	14	13	13	12	12
43°26' - 44°32'	17	17	16	16	15	15	14	14	13	13	12
44°32' - 45°38'	18	17	17	16	16	15	15	14	14	13	13
45°38' - 46°45'	18	18	17	17	16	16	15	15	14	14	13
46°45' - 47°51'	19	18	18	17	17	16	16	15	15	14	14
47°51' - 48°58'	19	19	18	18	17	17	16	16	15	15	14
48°58' - 50°06'	20	19	19	18	18	17	17	16	16	15	15
50°06' - 51° 13'	20	20	19	19	18	18	17	17	16	16	15
51°13' - 52°22'	21	20	20	19	19	18	18	17	17	16	16
52°22' - 53°31'	21	21	20	20	19	19	18	18	17	17	16
53°31' - 54°41'	22	21	21	20	20	19	19	18	18	17	17
54°41' - 55°52'	22	22	21	21	20	20	19	19	18	18	17
55°52' - 57°04'	23	22	22	21	21	20	20	19	19	18	18
57°04' - 58°17'	23	23	22	22	21	21	20	20	19	19	18
58°17' - 59°32'	24	23	23	22	22	21	21	20	20	19	19
59°32' - 60°49'	24	24	23	23	22	22	21	21	20	20	19
60°49' - 62°09'	25	24	24	23	23	22	22	21	21	20	20
62°09' - 63°30'	25	25	24	24	23	23	22	22	21	21	20
63°30' - 64°55'	26	25	25	24	24	23	23	22	22	21	21
64°55' - 66°24'	26	26	25	25	24	24	23	23	22	22	21
66°24' - 67°57'	27	26	26	25	25	24	24	23	23	22	22
67°57' - 69°35'	27	27	26	26	25	25	24	24	23	23	22
69°35' - 71°21'	28	27	27	26	26	25	25	24	24	23	23
71°21' - 73°16'	28	28	27	27	26	26	25	25	24	24	23
73°16' - 75°24'	29	28	28	27	27	26	26	25	25	24	24
75°24' - 77°52'	29	29	28	28	27	27	26	26	25	25	24
77°52' - 80°56'	30	29	29	28	28	27	27	26	26	25	25
80°56' - 85°45'	30	30	29	29	28	28	27	27	26	26	25
85°45' - 90°00'	31	30	30	29	29	28	28	27	27	26	26

9. Troubleshooting

Indicator display	Issue	Solution
	No communication between the Z8i unit and the Xtrem scale.	Check wiring. Is the weighing scale powered up?
	Z8i is connected to the Xtrem scale but it is not receiving data.	
Negative weight	Negative weight (weight < -19e)	Check the load receptor and tap the zero button.
Overload	Overload: Weight > Max+9e	
ADC input signal < -20mV	Load cell input signal too low (<-20mV).	
ADC input signal > 20mV	Load cell input signal too high (>20mV).	
Vcc output to the load cell out of range	Power input to the scale is too high.	
Hash error		
ADC input signal out of range		
ADC does not work		
Error reading the E2PROM settings		

9.1 Debug Log

Shows debug information about operations carried out by the application and the Xtrem scale. This report can help the after-sales support to debug the application and solve system errors.

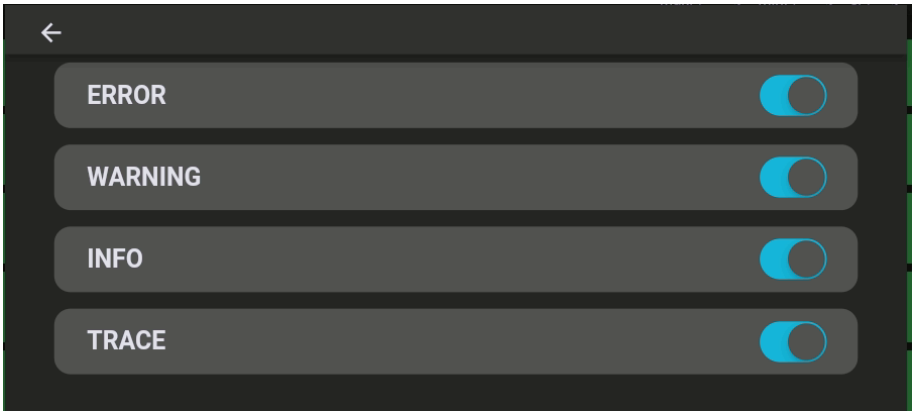


The buttons in the right bottom corner of the screen allows to manage the logs.

Clear — Remove all the logs.

Export — Allows to export the logs file to a memory stick. The procedure to achieve that is the same mentioned in the records export. The result filename is logsDD-MM-YYYY-HH-MM-SS.csv, where DD-MM-YYYY-HH-MM-SS is the current system date and time.

Type — It will display a dialog box with different types of logs and allows you to filter which type to display.



Travessia Industrial, 11. 08907
Hospitalet de Llobregat (Barcelona)
93 300 33 32

gram-group.com