



**RADWAG BALANCES AND SCALES**  
ADVANCED WEIGHING TECHNOLOGIES

IMMB-12-01-09-20-EN

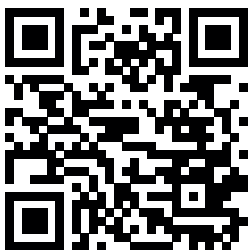
Start up Guide

# Moisture Analyzer

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- MA R

To view a complete User Manual go to the website or scan QR code:



[radwag.com/en/manuals/2802](http://radwag.com/en/manuals/2802)

## 1. CONTENT



Moisture analyzer  
x 1



Disposable pan  
x 10



Cross-shaped  
holder  
x 1



Drying pan  
handle  
x 1



Drying pan  
shield  
x 1

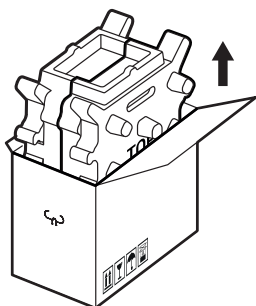


Power cord  
x 1

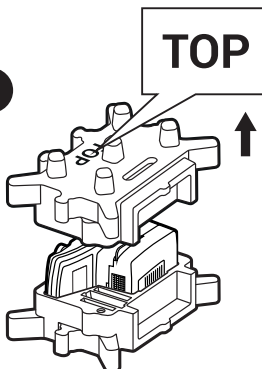
*\*The plug type may vary by country.*

## 2. UNPACKING

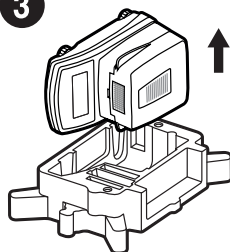
1



2

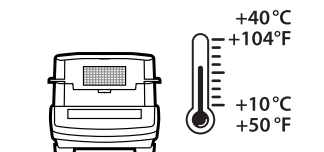


3



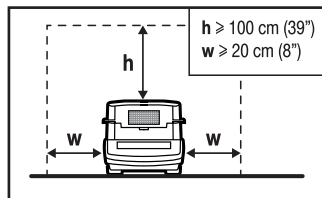
Keep the packaging should a  
warranty claim or service be required.

### 3. RECOMMENDATIONS AND WARNINGS

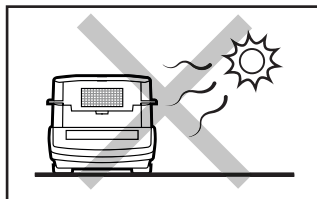


Operate the device in a room where the temperature ranges between 10–40 °C (50–104 °F) and where the relative humidity is below 80%.

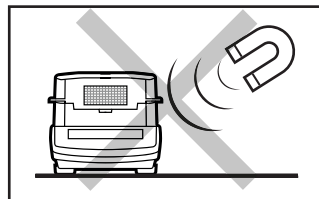
Place the moisture analyzer on a solid surface to ensure stability. To obtain stable and repeatable weighing results, an anti-vibration table is recommended.



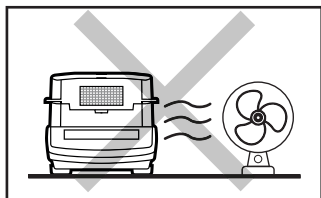
Keep free space around the device:  
h = min. 100 cm (39 in.),  
w = min. 20 cm (8 in.).



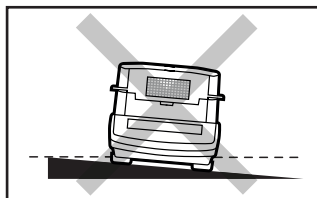
Place the device away from heat sources. Avoid exposing the device to the sunlight.



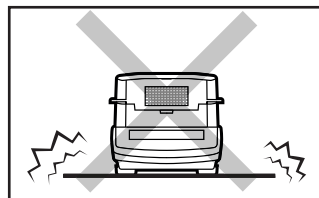
Avoid exposing the device to a magnetic field. Do not weigh magnetic substances.



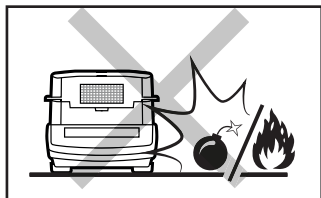
Avoid air drafts and air movements at the workstation.



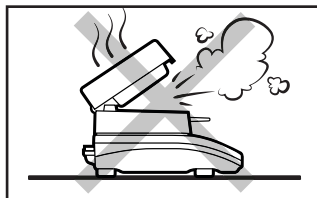
Make sure that the device is placed on an even surface.



Do not place the device on an unstable surface exposed to shocks and vibrations.



Do not place the device in a hazardous area. Do not weigh explosive or flammable materials.



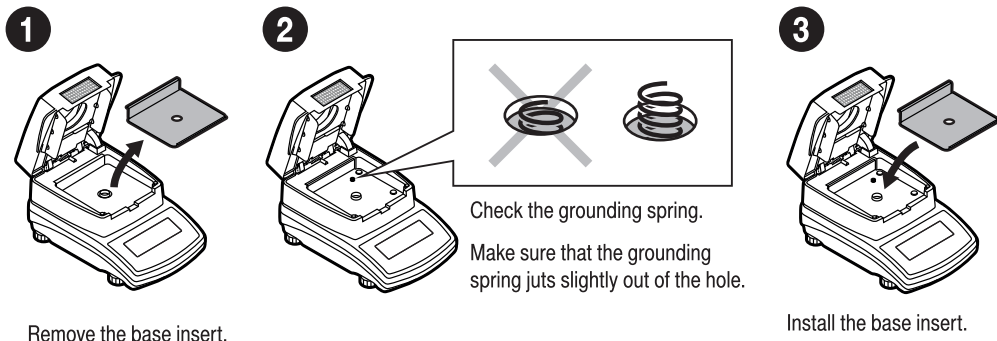
Do not open in the course of operation since the heating components reach very high temperature.



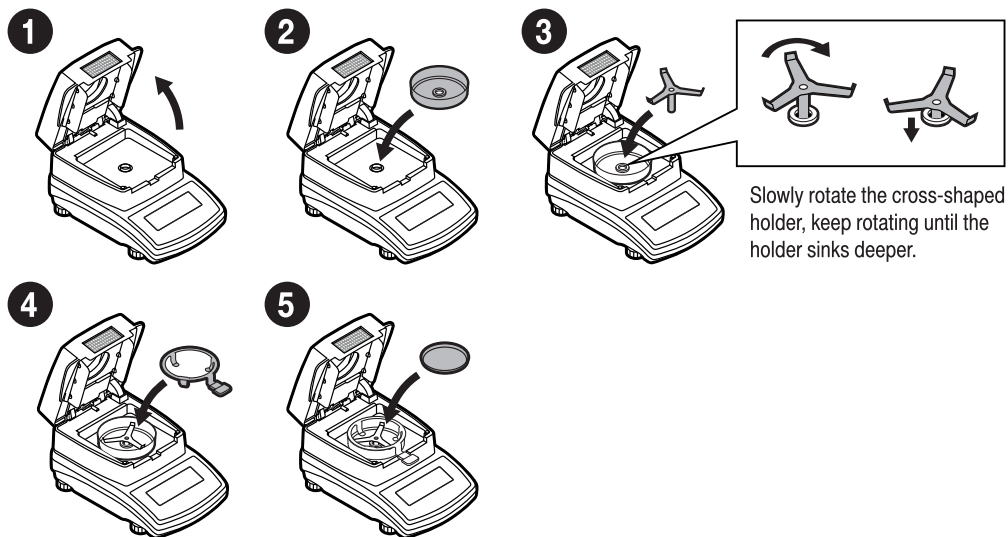
Be extremely careful while taking the sample out. The sample and the moisture analyzer elements may be hot.

## 4. ACTIVITIES TO BE DONE PRIOR TO OPERATION

### 4.1. Grounding spring check



## 5. COMPONENTS ASSEMBLY



## 6. PREPARING FOR WORK



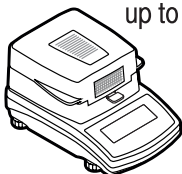
Place the moisture analyzer at the workstation, wait until it reaches room temperature.

### 6.1. Temperature stabilisation

1

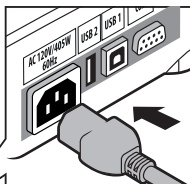
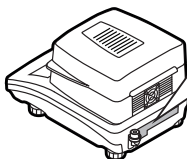


up to 4 h



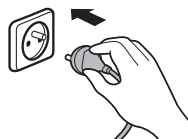
Prior to switching the device on let it reach room temperature (estimated stabilisation time: up to 4 hours).

2



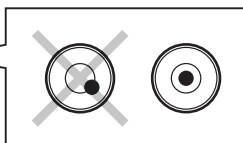
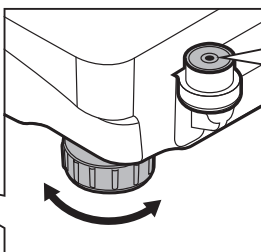
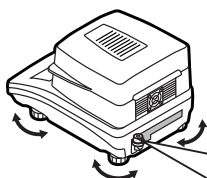
Connect the power cord to the AC socket located at the back of the device.

3



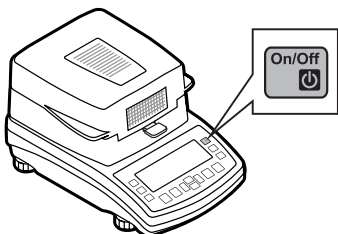
Connect the device to the mains.

### 6.2. Levelling



To level the balance, turn its feet and keep turning the feet until an air bubble takes the central position.

### 6.3. Switching the device on



To switch the device on, press ON / OFF key.

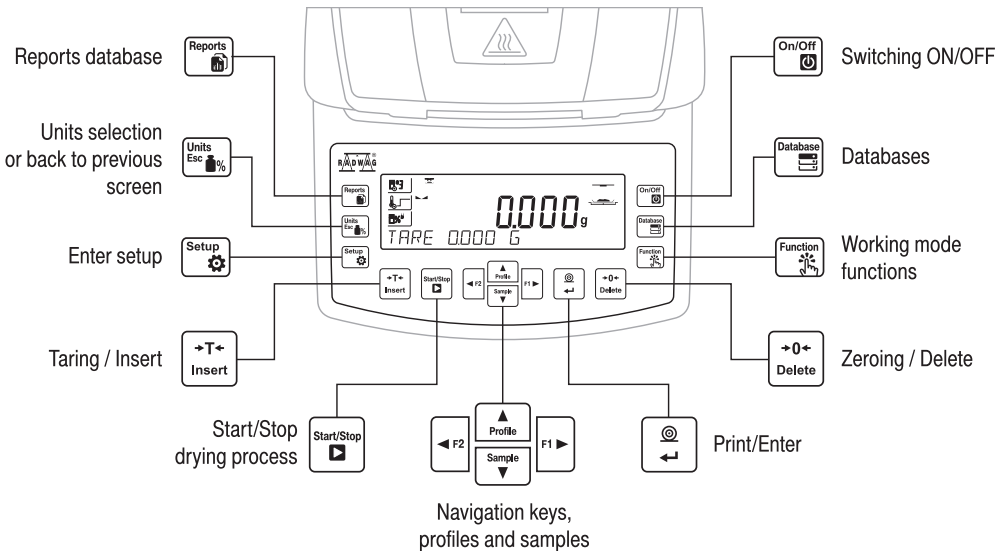


**The moisture analyzer is ready to use!**

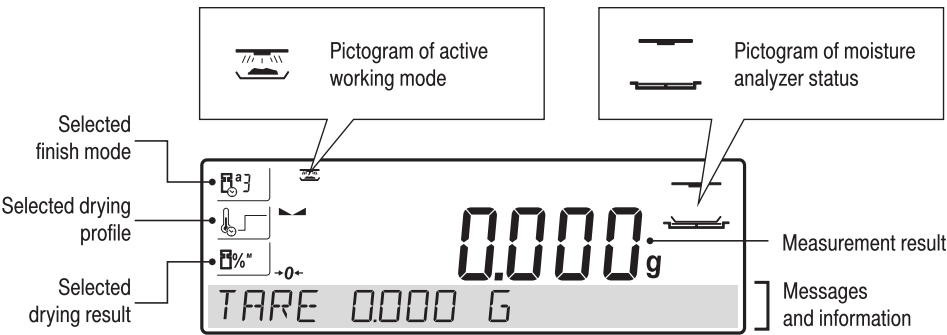
Before using WEIGHING mode, carry out instrument adjustment: refer to section 8.1. (adjustment is not required for DRYING mode).

# 7. PANEL AND SCREEN

## 7.1. Panel keys




## 7.2. Home screen



# 8. BASIC OPERATIONS

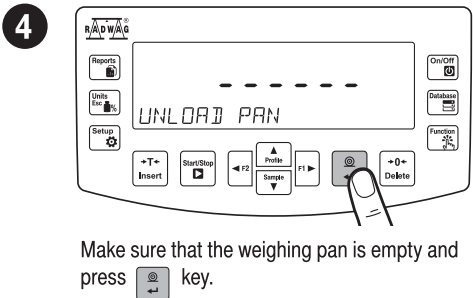
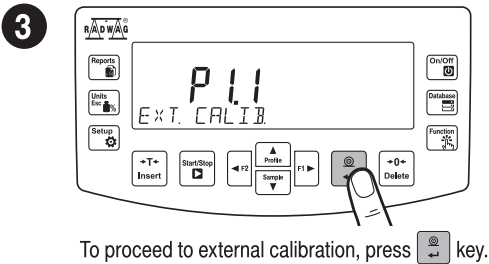
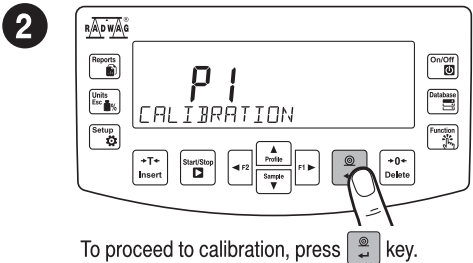
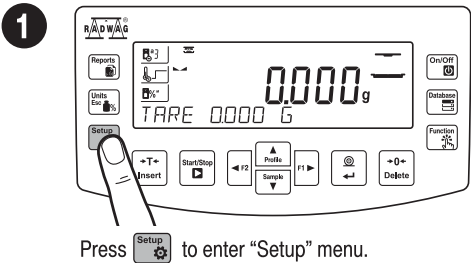
## 8.1. Adjustment

It is recommended to carry out adjustment operation prior to running the WEIGHING mode (adjustment is not required for DRYING). External adjustment is carried out using an external mass standard of the right accuracy and weight value, which value depends on device type and capacity.

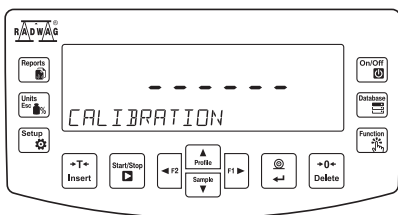
 The adjustment mass standard does not come with the moisture analyzer. Prior to adjustment prepare the right mass standard. You are recommended to use mass standard of class F1 or F2. View the table and select the mass standard you need.

| Balance model | Mass standard [g] |
|---------------|-------------------|
| MA 50/1.R     | 50                |
| MA 50.R       | 50                |
| MA 110.R      | 100               |
| MA 210.R      | 200               |

**Caution!** Make sure that the disposable weighing pan has been installed (read point 5.5.). Do not close the drying chamber in the course of adjustment.

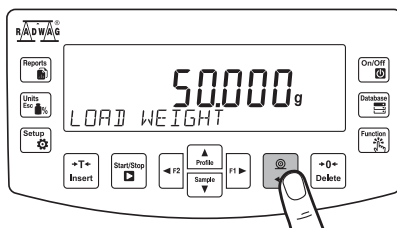



5



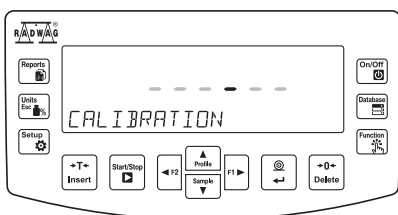
Wait for completion of the start mass determination process.

6



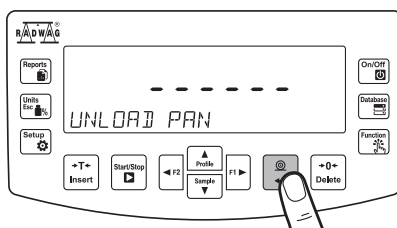
Load the weighing pan with mass standard and press  key.


7



Wait for the adjustment completion.

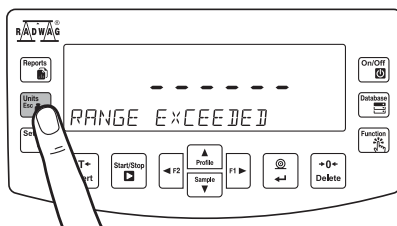
8




Upon process completion unload the weighing pan and press  key.

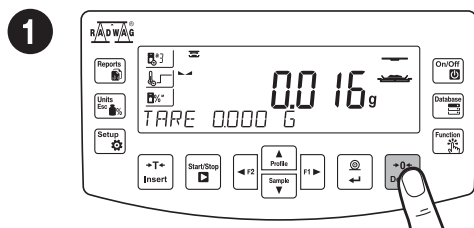


If “**RANGE EXCEEDED**” message (load too heavy) is displayed, remove the load and restart the adjustment process.

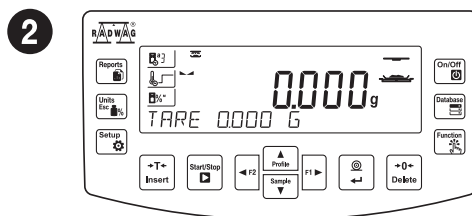


Adjustment process can be aborted if necessary by pressing  key at any time during the process.

## 8.2. Zeroing

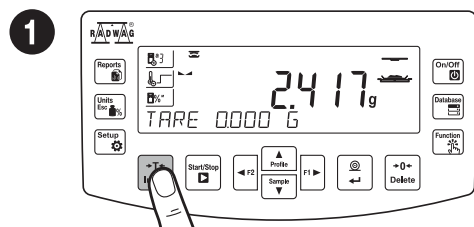


Make sure that the weighing pan is empty and press **0** key.

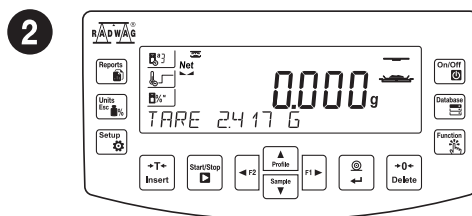


The moisture analyzer has been zeroed.

## 8.3. Taring



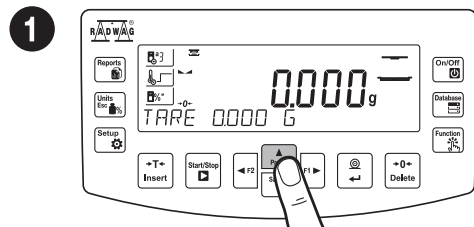
With loaded weighing pan: upon stabilisation of the weighing result, press **T** button.



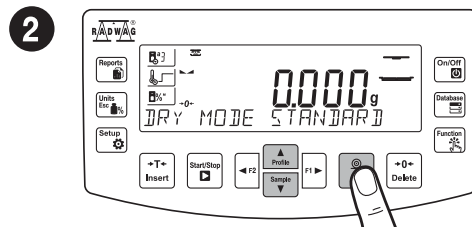
The moisture analyzer has been tared.

## 9. DRYING MODE SETTINGS

### 9.1. Settings for “Standard”, “Fast” and “Mild” profiles

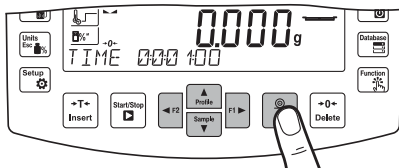


Press **Profile** key to display list of drying profiles.



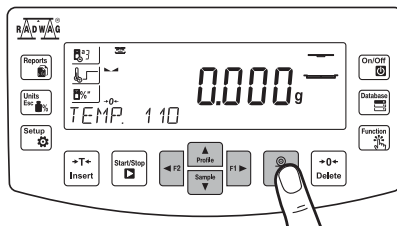
Using **Up/Down** keys select drying profile and press **Confirm** key to confirm.

- 3**  **Skip this step if you have selected "Standard" drying profile.**



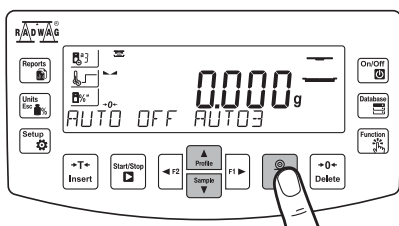
Using   keys set drying time and press  key to confirm.




**4**



Using   keys select drying temperature and press  key to confirm.

**5**

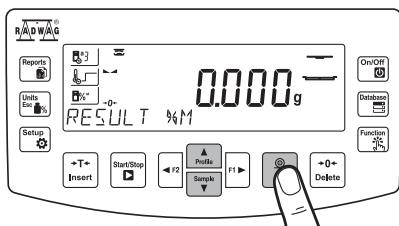





Using   keys select drying switch-off option and press  key to confirm.

#### Auto switch-off option:

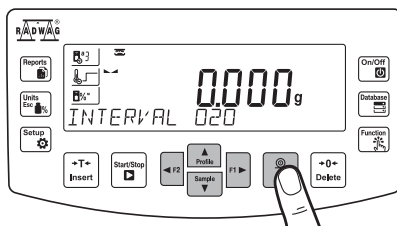
- Auto 1 - change 1mg/10s
- Auto 2 - change 1mg/25s
- Auto 3 - change 1mg/60s
- Auto 4 - change 1mg/90s
- Auto 5 - change 1mg/120s




**6**



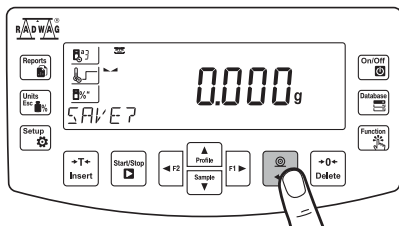
Using   keys select measurement unit and press  key to confirm.


**7**



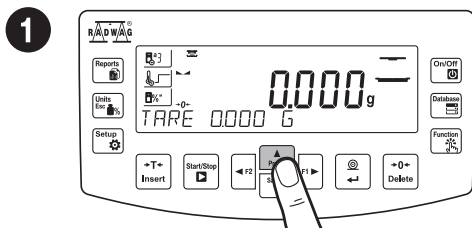
Using   keys set interval for printouts of drying process results and press  key to confirm.

**8**

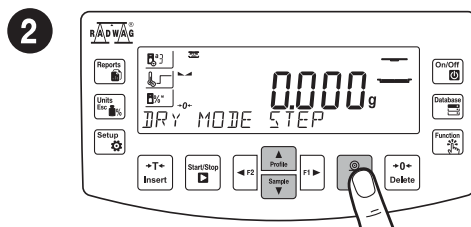


Press  key to save all settings.

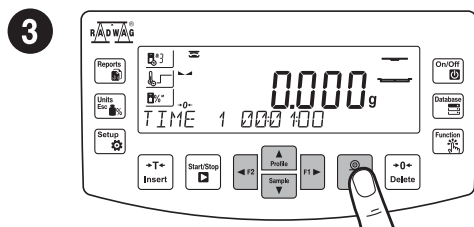
## 9.2. Settings for “Step” profile



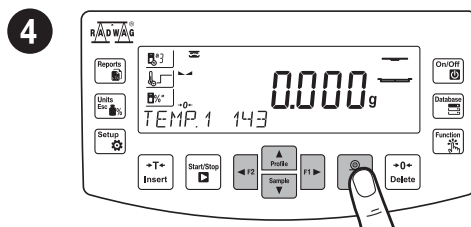
Press key to display list of drying profiles.



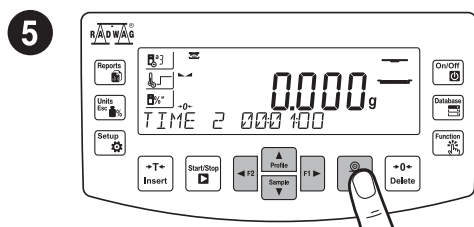
Using keys select STEP drying profile and press key to confirm.



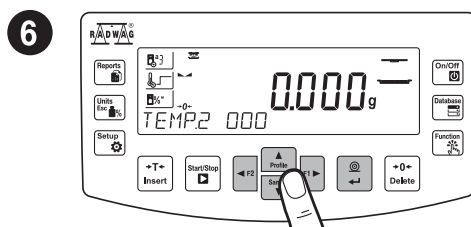
Using keys set heating time for step 1 and press key to confirm.



Using keys set heating temperature for step 1 and press key to confirm.

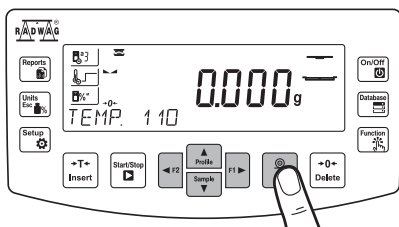





Using keys set heating time for step 2 and press key to confirm.



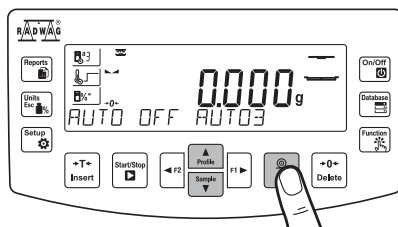
Using keys set heating temperature for step 2 and press key to confirm.




7



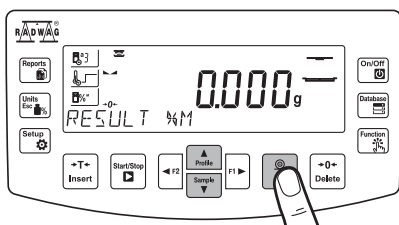
Using keys   set drying temperature and press  key to confirm.




8



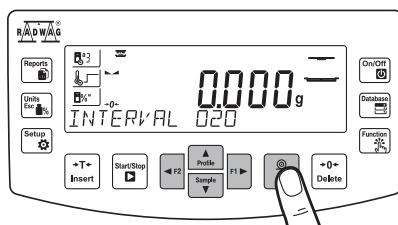
Using keys   select finish mode option and press  key to confirm.





9



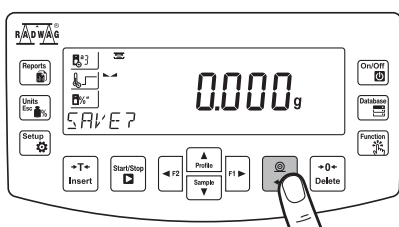
Using keys   select measurement unit and press  key to confirm.


10



Using    keys set interval for printouts of drying process results and press  key to confirm.

11



Press  key to save all settings.

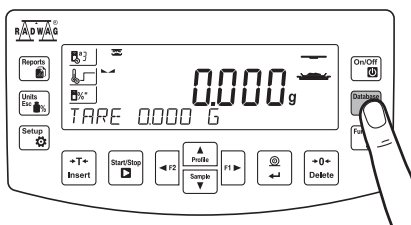
## 10. MOISTURE ANALYZER SETTINGS



Some balance settings are accessible for Administrator exclusively.  
Prior to balance parameters setup, log in as Administrator.

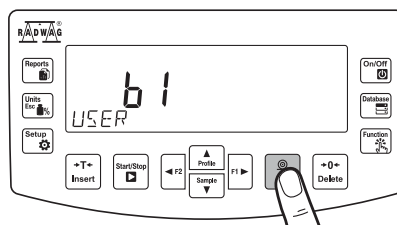
### 10.1. Administrator's logging in

1



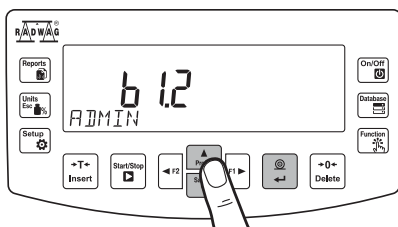
Press  key to enter "Database" menu.

2



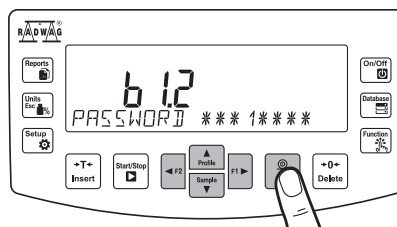
To enter user parameters, press  key.





3



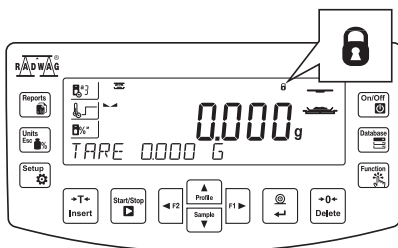
Using  keys select "Admin" and press  key to confirm.

4



Using    keys select "1111" and press  key to confirm.

5



You have logged as the administrator.



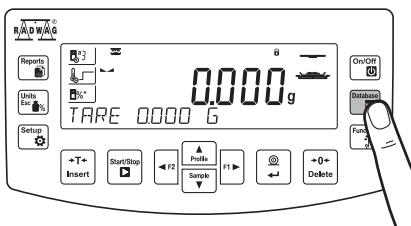
Upon logging in  pictogram is displayed


## 10.2. User settings



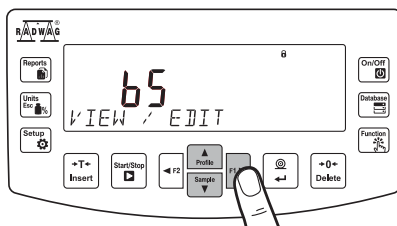
Prior to balance users setup, log in as Administrator (point 10.1.).



1



Press  key to enter databases.

2



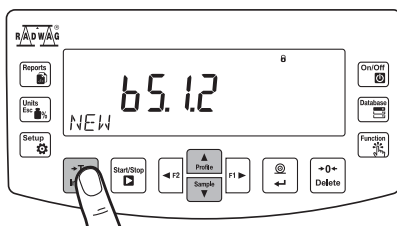
Using  keys select "View/Edit" and press  key to confirm.



3



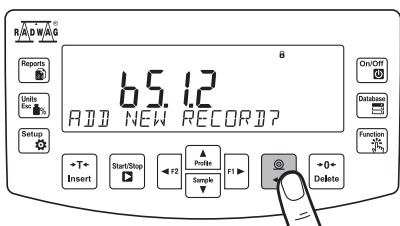
To select "Users" parameters, press  key.


4



Using  keys select "New" and press  key to confirm.

5

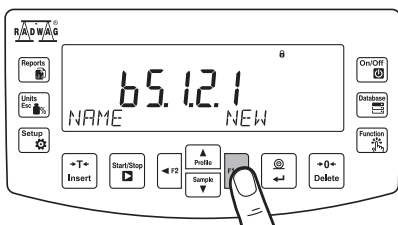



Press  key to add new user.

In the following steps, set:

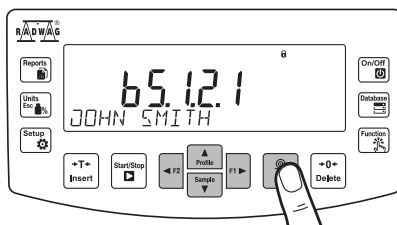
- User name
- Code
- Password
- Permissions level
- Language





6



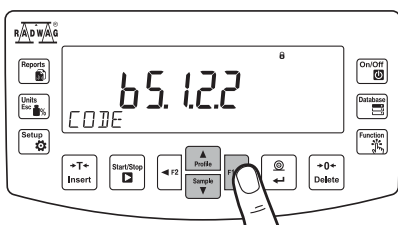
Press  key to add new user.





7



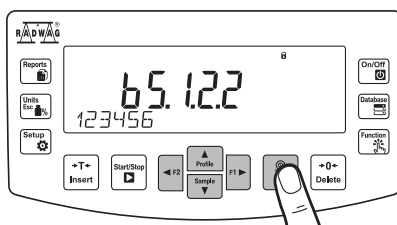
Using    keys enter user name and press  key to confirm.





8



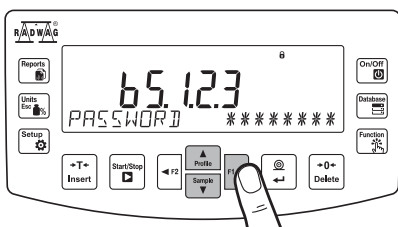
Using    keys select "Code" and press  key to confirm.





9



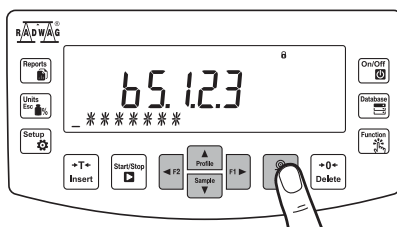
Using    keys enter user code and press  key to confirm.





10



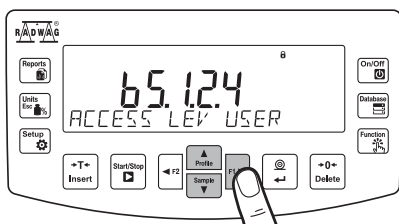
Using    keys select "Password" and press  key to confirm.

11



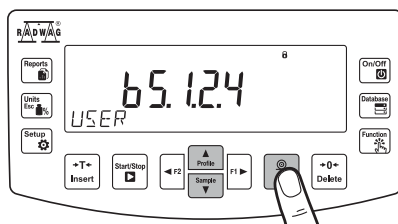
Using    keys enter user password and press  key to confirm.

12



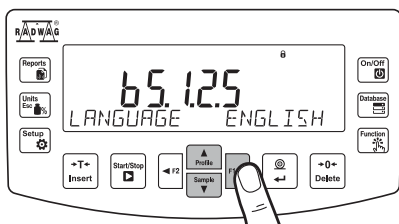
Using keys select "Access Level" and press key to confirm.

13



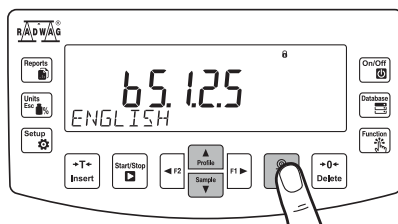
Using keys select permissions level and press key to confirm.

14



Using keys select "Language" and press key to confirm.

15



Using keys select menu language and press key to confirm.

## 11. SAMPLES AND DRYING METHODS

### 11.1. Preparing samples

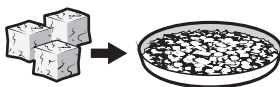


Optimal sample structure and size are crucial features influencing measurements speed, accuracy and repeatability.



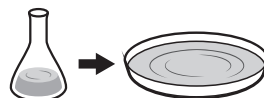
#### Solids:

- sample crushing necessary,
- sample of low weight required,
- large sample surface.



#### Samples with low moisture content:

- sample of heavy weight required (10 - 15 g).



#### Liquids:

- large sample surface.

### 11.2. Handling hazardous samples



Some sample types require particular caution!

They may pose risk for people and objects. It is the moisture analyzer operator who is responsible for potential loss being a result of such samples use.



**Substances that in the course of heating may emit vapours causing corrosion (e.g. acids).**

Apply small amount of samples, this helps to prevent risk of settling of vapour over cool housing components.



**Explosive and flammable materials and substances that in the course of heating emit flammable vapours.**

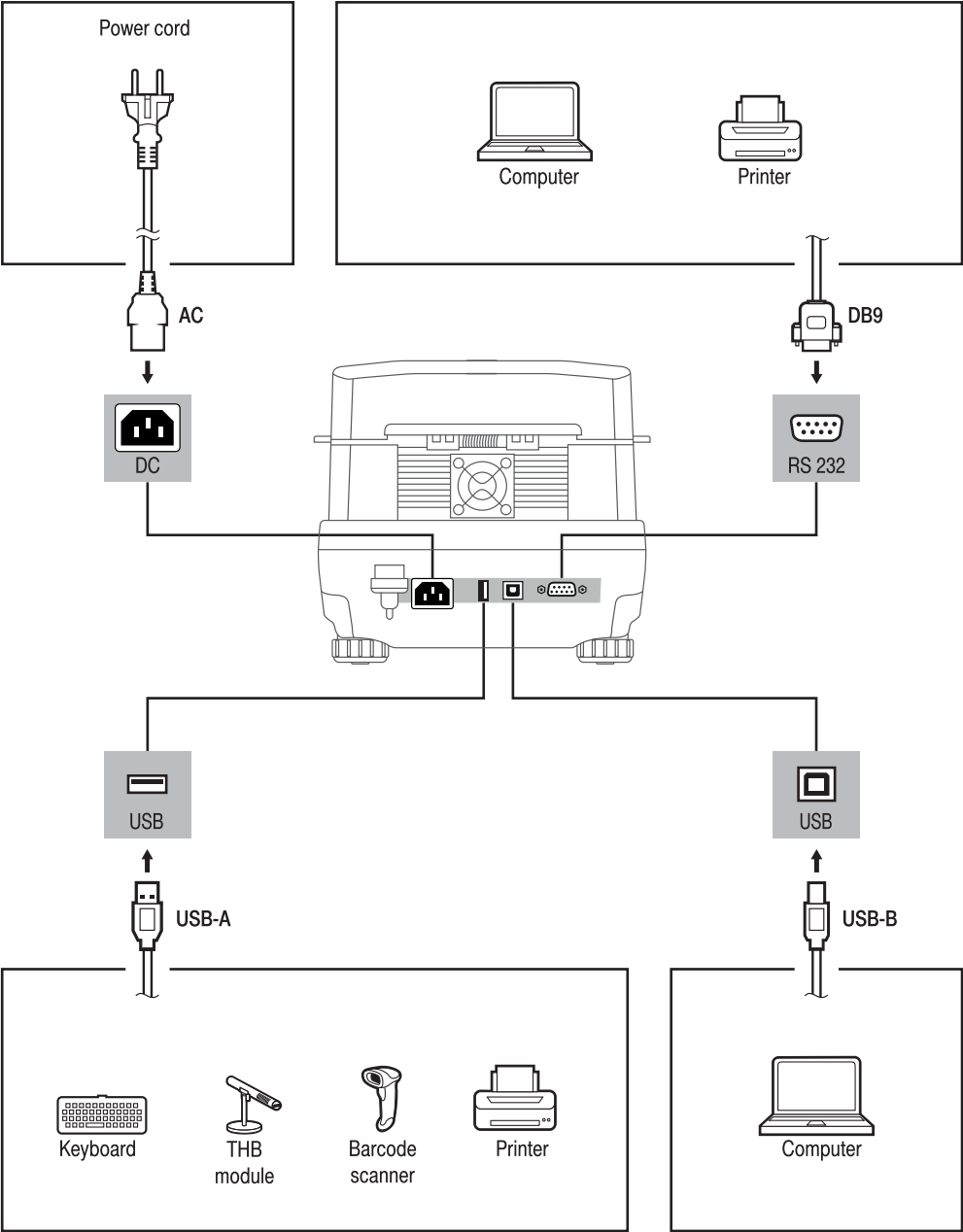
Apply small amount of samples and lower drying temperature, this helps to prevent flames from rising and explosion. Use glasses and protective gloves.



**Toxic and corrosive substances and substances that in the course of heating emit toxic vapours.**

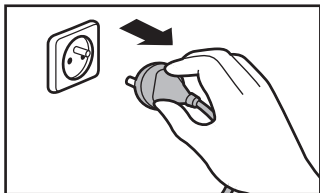
Due to risk of eyes, skin and lungs irritation, and due to risk of death, such samples must be dried in fume cupboard.

# 12. PERIPHERAL DEVICES CONNECTORS

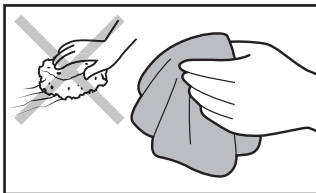


## 13. DEVICE CLEANING

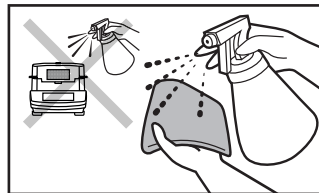
### 13.1. Guidelines and precautions



Prior to cleaning it is necessary to disconnect the device from the mains! Remove the plug from the outlet, disconnect all cables.



Use soft cloth made of either natural or synthetic fiber exclusively. Avoid using cloth made of stiff/hard fabric, this could cause scratches on the surface!



Apply the cleanser onto the cloth. Mind not to apply the cleanser directly onto the device!



**Do not use aggressive cleaning agents** (e.g. solvents, chlorine preparations, corrosive chemicals, bleach).



**Neither use substances of sharp structure nor intended for scrubbing.**



**Make sure that neither dust nor liquid gets inside the weighing system (device inside).**

### 13.2. Cleaning instructions

- **GLASS PANES AND COMPONENTS** can be cleaned using window cleaner.
- **WEIGHING PANS AND STAINLESS STEEL OR ALUMINIUM COMPONENTS** can be cleaned using a cloth slightly soaked in a solution of water and gentle cleanser (e.g. soap or dishwashing liquid).
- **OPERATION PANEL AND HOUSING** can be cleaned using a cloth slightly soaked in a solution of water and gentle cleanser (e.g. soap or dishwashing liquid).
- Dry sample leftovers can be removed using either brush or handheld vacuum cleaner.
- Clean components can be dried using soft cloth or dust-free paper towel, with this the remaining moist will be absorbed.
- **Install all the components providing they are completely dry.**



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