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1 Introduction

Thank you for choosing a METTLER TOLEDO balance. The balance combines high performance with ease of use.

This document is based on the software version V 2.0.204.

EULA

The software in this product is licensed under the METTLER TOLEDO End User License Agreement (EULA) for Software.

When using this product you agree to the terms of the EULA.

1.1 Further documents and information

This document is available in other languages online.

For further questions, please contact your authorized METTLER TOLEDO dealer or service representative.

1.2 Explanation of conventions and symbols used

Conventions and symbols

Key and/or button designations and display texts are shown in graphic or bold text, e.g., Edit.

Note For useful information about the product.

Refers to an external document.

Elements of instructions

In this manual, step-by-step instructions are presented as follows. The action steps are numbered and can contain prerequisites, intermediate results and results, as shown in the example. Sequences with less than two steps are not numbered.

- Prerequisites that must be fulfilled before the individual steps can be executed.

1 Step 1
   ⇒ Intermediate result

2 Step 2
   ⇒ Result
### 1.3 Acronyms and abbreviations

<table>
<thead>
<tr>
<th>Original term</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTM</td>
<td>American Society for Testing and Materials</td>
</tr>
<tr>
<td>EMC</td>
<td>Electromagnetic Compatibility</td>
</tr>
<tr>
<td>FCC</td>
<td>Federal Communications Commission</td>
</tr>
<tr>
<td>GWP</td>
<td>Good Weighing Practice</td>
</tr>
<tr>
<td>ID</td>
<td>Identification</td>
</tr>
<tr>
<td>LPS</td>
<td>Limited Power Source</td>
</tr>
<tr>
<td>MT-SICS</td>
<td>METTLER TOLEDO Standard Interface Command Set</td>
</tr>
<tr>
<td>NA</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>OIML</td>
<td>Organisation Internationale de Métrologie Légale (International Organization of Legal Metrology)</td>
</tr>
<tr>
<td>RFID</td>
<td>Radio-frequency identification</td>
</tr>
<tr>
<td>RM</td>
<td>Reference Manual</td>
</tr>
<tr>
<td>RS (RS232C)</td>
<td>Recommended Standard (RS232C)</td>
</tr>
<tr>
<td>sd</td>
<td>Standard deviation</td>
</tr>
<tr>
<td>SELV</td>
<td>Safety Extra Low Voltage</td>
</tr>
<tr>
<td>SOP</td>
<td>Standard Operating Procedure</td>
</tr>
<tr>
<td>UM</td>
<td>User Manual</td>
</tr>
<tr>
<td>USB</td>
<td>Universal Serial Bus</td>
</tr>
<tr>
<td>USP</td>
<td>United States Pharmacopeia</td>
</tr>
</tbody>
</table>

### 1.4 Product range

#### 1.4.1 XSR analytical balances

<table>
<thead>
<tr>
<th>Balance</th>
<th>Models designation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Readability: <strong>0.01 mg</strong></td>
</tr>
<tr>
<td></td>
<td>• XSR105</td>
</tr>
<tr>
<td></td>
<td>• XSR105DU</td>
</tr>
<tr>
<td></td>
<td>• XSR205DU</td>
</tr>
<tr>
<td></td>
<td>• XSR225DU</td>
</tr>
<tr>
<td></td>
<td>Readability: <strong>0.1 mg</strong></td>
</tr>
<tr>
<td></td>
<td>• XSR64</td>
</tr>
<tr>
<td></td>
<td>• XSR104</td>
</tr>
<tr>
<td></td>
<td>• XSR204</td>
</tr>
<tr>
<td></td>
<td>• XSR204DR</td>
</tr>
<tr>
<td></td>
<td>• XSR304</td>
</tr>
</tbody>
</table>

### 1.5 Compliance information

National approval documents, e.g., the FCC Supplier Declaration of Conformity, are available online and/or included in the packaging.

Contact METTLER TOLEDO for questions about the country-specific compliance of your instrument.
**United States of America**

This equipment has been tested and found to comply with the limits for a **Class A** digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user’s authority to operate the equipment.

**Canada**

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada’s licence-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.
2 Safety Information

Two documents named "User Manual" and "Reference Manual" are available for this instrument.

- The User Manual is printed and delivered with the instrument.
- Keep both documents for future reference.
- Include both documents if you transfer the instrument to other parties.

Only use the instrument according to the User Manual and the Reference Manual. If you do not use the instrument according to these documents or if the instrument is modified, the safety of the instrument may be impaired and Mettler-Toledo GmbH assumes no liability.

2.1 Definitions of signal words and warning symbols

Safety notes contain important information on safety issues. Ignoring the safety notes may lead to personal injury, damage to the instrument, malfunctions and false results. Safety notes are marked with the following signal words and warning symbols:

Signal words

DANGER A hazardous situation with high risk, resulting in death or severe injury if not avoided.

WARNING A hazardous situation with medium risk, possibly resulting in death or severe injury if not avoided.

CAUTION A hazardous situation with low risk, resulting in minor or moderate injury if not avoided.

NOTICE A hazardous situation with low risk, resulting in damage to the instrument, other material damage, malfunctions and erroneous results, or loss of data.

Warning symbols

- General hazard: read the User Manual or the Reference Manual for information about the hazards and the resulting measures.
- Electrical shock Notice

2.2 Product-specific safety information

Intended use

This instrument is designed to be used by trained staff. The instrument is intended for weighing purposes. Any other type of use and operation beyond the limits of use stated by Mettler-Toledo GmbH without consent from Mettler-Toledo GmbH is considered as not intended.

Responsibilities of the instrument owner

The instrument owner is the person holding the legal title to the instrument and who uses the instrument or authorizes anyone to use it, or the person who is deemed by law to be the operator of the instrument. The instrument owner is responsible for the safety of all users of the instrument and third parties. METTLER TOLEDO assumes that the instrument owner trains users to safely use the instrument in their workplace and deal with potential hazards. METTLER TOLEDO assumes that the instrument owner provides the necessary protective gear.
Safety notes

**WARNING**

**Death or serious injury due to electric shock**
Contact with parts that carry a live current can lead to death or injury.

1. Only use the METTLER TOLEDO power supply cable and AC adapter designed for your instrument.
2. Connect the power cable to a grounded power outlet.
3. Keep all electrical cables and connections away from liquids and moisture.
4. Check the cables and the power plug for damage and replace damaged cables and power plugs.

**NOTICE**

**Damage to the instrument due to the use of unsuitable parts**
Using unsuitable parts with the instrument can damage the instrument or cause it to malfunction.

– Only use parts from METTLER TOLEDO that are intended to be used with your instrument.
3 Design and Function

3.1 Function description

The XSR line comprises a range of balances that differ from each other due to their weighing range and resolution. The balances of the XSR analytical line combine a large number of weighing and adjustment possibilities with a simple operation handling.

The following features are common to all models of the XSR analytical line:

- 4.3-inch capacitive color TFT-touch screen.
- Fully automatic adjustment using internal weights.
- Various methods that can be defined individually.
- Various routine tests that can be defined individually.
- History about performed tests and adjustments.
- Motor driven side doors.
- Easily removable draft shield elements.
- Built-in level sensor and leveling aid for fast and easy leveling.
### 3.2 Overview balance

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Terminal</td>
</tr>
<tr>
<td>2</td>
<td>Front panel draft shield</td>
</tr>
<tr>
<td>3</td>
<td>Top door draft shield</td>
</tr>
<tr>
<td>4</td>
<td>Handle for top door</td>
</tr>
<tr>
<td>5</td>
<td>Side door draft shield (right/left)</td>
</tr>
<tr>
<td>6</td>
<td>Balance type designation plate</td>
</tr>
<tr>
<td>7</td>
<td>Weighing pan</td>
</tr>
<tr>
<td>8</td>
<td>Door handle</td>
</tr>
<tr>
<td>9</td>
<td>Drip tray</td>
</tr>
<tr>
<td>10</td>
<td>Leveling feet</td>
</tr>
<tr>
<td>11</td>
<td>Side door release lever</td>
</tr>
<tr>
<td>12</td>
<td>Status light</td>
</tr>
<tr>
<td>13</td>
<td>Ethernet port</td>
</tr>
<tr>
<td>14</td>
<td>USB-A ports (to device)</td>
</tr>
<tr>
<td>15</td>
<td>Service seal</td>
</tr>
<tr>
<td>16</td>
<td>Socket for terminal connection cable</td>
</tr>
<tr>
<td>17</td>
<td>USB-B port (to host)</td>
</tr>
<tr>
<td>18</td>
<td>Socket for power adapter</td>
</tr>
</tbody>
</table>
3.3 Components description

3.3.1 Draft shield
The draft shield is a housing device that protects the weighing area against environmental impacts like drafts or moisture. The side doors can be opened manually or automatically. The top door can be opened manually.

3.3.2 Weighing pan
The weighing pan is the load receptor that serves directly to accommodate the weighing item.

3.3.3 Drip tray
The drip tray is positioned below the weighing pan on the weighing chamber base plate. The primary purpose of a drip tray is that of a dirt trap to ensure quick cleaning of the balance.

3.3.4 Door handle
The door handles are mounted on the door slides and are used to open the side and top doors of the draft shield manually.
3.3.5 Leveling feet
The balance stands on two height-adjustable feet. These feet are used to level the balance.

3.3.6 Terminal
The 4.3-inch balance terminal has a touch sensitive display. Further, on the front side of the terminal is a status light LED strip that indicate the current status of the balance.

3.3.7 Side door release lever
The side door release lever is located on the back side of the partition panel and locks/unlocks the draft shield side door.
3.4 Overview terminal

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ON/OFF</td>
<td>Switches the balance on/off. By tapping the balance is not completely switched off but goes into standby mode. To switch the balance completely off, it must be unplugged from the power supply.</td>
</tr>
<tr>
<td>Note</td>
<td>Do not disconnect the balance from the power supply unless the balance is not used for an extended period of time.</td>
</tr>
<tr>
<td>Tare</td>
<td>Tares the balance. This function is used when the weighing process involves containers. After taring the balance, the screen shows which indicates that all displayed weights are net.</td>
</tr>
<tr>
<td>Zero</td>
<td>Zeroes the balance. The balance must always be zeroed before starting the weighing process. After zeroing, the balance sets a new zero point.</td>
</tr>
<tr>
<td>Home</td>
<td>To return from any menu level to the main weighing screen.</td>
</tr>
<tr>
<td>Open/close door</td>
<td>Opens the weighing chamber door to the left or to the right (default value).</td>
</tr>
<tr>
<td>Methods</td>
<td>Opens the section Methods.</td>
</tr>
<tr>
<td>Protocol</td>
<td>Opens the section Protocol.</td>
</tr>
<tr>
<td>Balance menu</td>
<td>Opens the section Balance menu.</td>
</tr>
</tbody>
</table>

3.5 Overview type plate

The information on the type plate helps to identify the balance and terminal.

Terminal type plate

The terminal type plate is located on the terminal and contains the following information:

1. Terminal type
2. Terminal serial number
Weighing unit type plate

The balance type plate is located on the side of the weighing unit and contains the following information:

1. Designation of balance model
2. Year of manufacture
3. Readability
4. Maximum capacity
5. Manufacturer
6. Balance type
7. Serial number
8. Power supply

3.6 User interface

3.6.1 Main sections at a glance

The main weighing screen (1) is the central navigation point where all the menus and settings can be found. The Balance menu (2), Methods (3) and Protocol (4) open when pressing the symbols on the terminal.

See also

- Main weighing screen  Page 16
- Work screen “Balance menu”  Page 16
- Work screen “Methods”  Page 17
- Work screen “Protocol”  Page 17
3.6.2 Main weighing screen

![Main weighing screen diagram]

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Weighing value field</td>
<td>Shows the current weighing value.</td>
</tr>
<tr>
<td>2 Level indicator</td>
<td>Indicates if the balance is leveled (green) or not (red).</td>
</tr>
<tr>
<td>3 Warning and error</td>
<td>Shows current warning and/or error messages.</td>
</tr>
<tr>
<td>4 Button Add to protocol</td>
<td>Adds the result to the protocol. Depending on the selected method, the button can have different functions.</td>
</tr>
<tr>
<td>5 Weighing action field</td>
<td>Contains actions referring to the current task.</td>
</tr>
<tr>
<td>6 Method information area</td>
<td>Contains information about the sample, method or task IDs.</td>
</tr>
<tr>
<td>7 SmartTrac</td>
<td>Used as a weighing aid to define a target weight with upper and lower tolerances.</td>
</tr>
<tr>
<td>8 Weighing value area</td>
<td>Shows the results of the current weighing process.</td>
</tr>
<tr>
<td>9 Method name</td>
<td>Shows the name of the current method.</td>
</tr>
</tbody>
</table>

3.6.3 Work screen "Balance menu"

![Balance menu diagram]

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Leveling aid</td>
<td>Opens the leveling dialog.</td>
</tr>
<tr>
<td>2 History</td>
<td>Opens the history dialog.</td>
</tr>
<tr>
<td>3 Balance info</td>
<td>Shows Balance information.</td>
</tr>
<tr>
<td>4 Settings</td>
<td>Opens the complete settings dialog.</td>
</tr>
<tr>
<td>5 Maintenance</td>
<td>Opens the balance maintenance dialog.</td>
</tr>
<tr>
<td>6 Exit / Block balance</td>
<td>Opens the logout / block balance dialog.</td>
</tr>
</tbody>
</table>
### 3.6.4 Work screen "Methods"

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Methods list</td>
<td>Lists the methods already defined by the user. Methods can be edited, cloned, started or created.</td>
</tr>
<tr>
<td>2 Tests</td>
<td>Working with routine test.</td>
</tr>
<tr>
<td></td>
<td>• Sensitivity tests</td>
</tr>
<tr>
<td></td>
<td>• Repeatability tests</td>
</tr>
<tr>
<td></td>
<td>• Eccentricity tests</td>
</tr>
<tr>
<td></td>
<td>Routine test can be edited, started or created.</td>
</tr>
<tr>
<td>3 Adjustments</td>
<td>Lists all internal or external adjustments. Adjustment can be edited, created and started.</td>
</tr>
</tbody>
</table>

### 3.6.5 Work screen "Protocol"

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Result state</td>
<td>Shows the state of the weighing process.</td>
</tr>
<tr>
<td>2 Sample ID</td>
<td>Shows the Sample ID of the weighing.</td>
</tr>
<tr>
<td>3 Gross weight</td>
<td>Shows the gross weight.</td>
</tr>
<tr>
<td></td>
<td>D: indicates that the value was unstable.</td>
</tr>
<tr>
<td></td>
<td>*: indicates that the value was calculated.</td>
</tr>
<tr>
<td>4 Timestamp</td>
<td>Shows the individual timestamp of each weighing item.</td>
</tr>
<tr>
<td>5 Balance status</td>
<td>Shows stability, level state of the balance, minimum weight, tolerance state and test and adjustment state.</td>
</tr>
<tr>
<td>Name</td>
<td>Description</td>
</tr>
<tr>
<td>------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>6 Exclude</td>
<td>Result</td>
</tr>
<tr>
<td></td>
<td>Excludes the current protocol result. A comment can be added to the excluded result, e.g., to describe the reason of the exclusion.</td>
</tr>
<tr>
<td></td>
<td>Depending on the format of the protocol printout, the excluded result can be printed or not.</td>
</tr>
<tr>
<td>7 More</td>
<td>Opens the dialog More.</td>
</tr>
<tr>
<td></td>
<td>• Start adjustment</td>
</tr>
<tr>
<td></td>
<td>• Change display unit</td>
</tr>
<tr>
<td></td>
<td>• Configure tare</td>
</tr>
<tr>
<td></td>
<td>• Configure zero</td>
</tr>
<tr>
<td></td>
<td>• Save as method with templates (only available for methods with the option Templates)</td>
</tr>
<tr>
<td>8 Complete</td>
<td>Opens the dialog Complete task.</td>
</tr>
<tr>
<td></td>
<td>• Print task label manually</td>
</tr>
<tr>
<td></td>
<td>• Print protocol manually</td>
</tr>
</tbody>
</table>

### 3.6.6 Icons and symbols

#### 3.6.6.1 System status icons

System messages can appear due to a user action, a user input or a system process. Some messages leave it up to the user to choose upon acting, they will disappear after acknowledging. Other messages remain persistent, so the user can defer them but eventually has to handle them. These messages can be seen in the main status bar on the upper right-hand side of the display.

<table>
<thead>
<tr>
<th>Icon</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>⚪️</td>
<td>The balance is out of level.</td>
<td>The balance must be leveled. Information about leveling the balance can be found in the section <a href="#">Leveling the balance</a> Page 27. When the balance is leveled the symbol ⚪️ appears.</td>
</tr>
<tr>
<td>💬</td>
<td>Information</td>
<td>Information messages appear due to user actions or system processes and offer opportunities that are related to the current action or process.</td>
</tr>
<tr>
<td>⚠️</td>
<td>Warning</td>
<td>Warning messages appear due to user actions or system processes that could lead to a problem that can be prevented.</td>
</tr>
<tr>
<td>✗</td>
<td>Error</td>
<td>Error messages appear due to user actions or system processes that have failed. It is mostly still possible to handle such a problem.</td>
</tr>
</tbody>
</table>

#### 3.6.6.2 Weighing status icons

Weighing status icons appear due to the weight value matching certain quality criteria. The information on the status can be looked by tapping on any of the visible weighing status icons.

<table>
<thead>
<tr>
<th>Icon</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>⚫️</td>
<td>Stability indicator</td>
<td>When the stability indicator appears, the balance is not stable. Make sure that the balance is placed at an adequate location. Information about the adequate location can be found in the section Selecting the location.</td>
</tr>
<tr>
<td>Net</td>
<td>Net indicator</td>
<td>Appears when the tare key has been pressed and the tare weight has been subtracted.</td>
</tr>
<tr>
<td>Symbol</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>---------</td>
<td>-----------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Minimum weight violation</td>
<td>The current weight value undershoots the defined minimum weight definition. Make sure that the weight is not below the minimum weight.</td>
<td></td>
</tr>
<tr>
<td>Calculated value</td>
<td>The current weight value is calculated. This symbol only appears in the weighing value area when a container has been used with the function Pretare.</td>
<td></td>
</tr>
<tr>
<td>Balance invalid</td>
<td>The current balance configuration is invalid or quality criteria have not been fulfilled according to the GWP approved definition.</td>
<td></td>
</tr>
<tr>
<td>Weight not ready</td>
<td>The current weight measurement is not ready according to the GWP approved definition. This can be caused by undershooting the minimum weight, an overload or an underload.</td>
<td></td>
</tr>
<tr>
<td>Weight ready</td>
<td>The current weight measurement is ready according to the GWP approved definition. It can be added to the protocol.</td>
<td></td>
</tr>
<tr>
<td>External ionizer discharging</td>
<td>The external ionizer is currently discharging.</td>
<td></td>
</tr>
</tbody>
</table>
4 Installation and Putting into Operation

4.1 Selecting the location

A balance is a sensitive precision instrument. The location where it is placed will have a profound effect on the accuracy of the weighing results.

Requirements of the location

Place indoors on stable table
Ensure sufficient spacing
Level the instrument
Provide adequate lighting

Avoid direct sunlight
Avoid vibrations
Avoid strong drafts
Avoid temperature fluctuations

Sufficient spacing for balances: > 15 cm all around the instrument
Take into account the environmental conditions. See "Technical Data".

4.2 Unpacking the balance

Check the package, the packaging elements and the delivered components for damages. If any components are damaged, please contact your METTLER TOLEDO service representative.
Depending on the balance model, the components may look different. The procedure is always the same.

1 Open the box and lift the package out using the lifting strap (1).
2. Open the lifting strap (1) and remove the User Manual (2).

3. Remove the upper part of the package and remove the set with the AC adapter and power cable (3), the box containing several accessories (4), and the weighing pan (5).

4. Carefully remove the terminal (6).

5. Carefully remove the package set with the draft shield doors and the display holder (7).

6. Carefully remove the weighing unit (8) from the bottom packaging.

7. Remove the protective bag.

8. Store all parts of packaging in a safe place for future use.

⇒ The weighing unit is ready for assembling.
4.3 Scope of delivery

Balance
- Weighing unit
- Draft shield
- Drip tray and weighing pan

• Terminal with terminal holder and terminal connection cable
• AC/DC adapter with country-specific power cable
• MC Link Software (only comparators)

Documentation
- User Manual
- Production certificate

• Declaration of Conformity

Accessories
- ErgoClip basket
- SmartPrep, 2 pcs

• Brush

4.4 Installation

4.4.1 Attaching the terminal

NOTICE

Damage to the cables due to careless handling
- Do not kink or twist the cables.

The following procedure describes the assembling of the terminal.
1. Insert the slides of the display holder (1) into the front of the weighing unit (2).

2. Connect the terminal cable (3) with the terminal (4). Consider the pin assignment.
3 Place the terminal (5) onto the display holder (6).
4 Carefully tilt the balance to the left side.

5 Lead the cable (7) through the cable channel (8).
6 Carefully put the balance back on its feet.

7 Insert the terminal cable (9) into the socket of the balance (10). Consider the pin assignment.
   ⇨ The terminal is ready.

1 Insert the slides of the display holder (1) into the front of the weighing unit (2).
2 Connect the terminal cable (3) with the terminal (4). Consider the pin assignment.

3 Place the terminal (5) onto the display holder (6).
4 Carefully tilt the balance to its side.

5 Lead the cable (7) through the cable channel (8).
6 Carefully put the balance back on its feet.

7 Insert the terminal cable (9) into the socket of the balance (10). Consider the pin assignment.
⇒ The terminal is ready.

4.4.2 Assembling the balance

⚠️ CAUTION

Injury due to sharp objects or broken glass
Instrument components, e.g., glass, can break and lead to injuries.
– Always proceed with focus and care.
Note
Depending on the balance model, the components may look different. The procedure is always the same.

1. Insert the drip tray (1).
2. Carefully mount the weighing pan (2).

3. Place the side doors (3) into the grooves of the door slides (4) and tilt them up until they engage with the door lever (5). Consider the marks on the bottom frames (L = left / R = right).

4. Insert the front panel (6) into the grooves (7) and tilt it up until it engages.
5. Open the side doors.
6 Fit the top door (8) along the top frame of the side doors and into the rails of the back wall (9).
7 Push the top door (8) towards the front.
8 Close the side doors.
   => The balance is assembled and ready to be put into operation.

4.5 Putting into operation

4.5.1 Connecting the balance

WARNING

Death or serious injury due to electric shock
Contact with parts that carry a live current can lead to death or injury.
1 Only use the METTLER TOLEDO power supply cable and AC adapter designed for your instrument.
2 Connect the power cable to a grounded power outlet.
3 Keep all electrical cables and connections away from liquids and moisture.
4 Check the cables and the power plug for damage and replace damaged cables and power plugs.

1 Install the cables in such a way that they cannot be damaged or interfere with operation.
2 Insert the plug of the AC/DC adapter (1) in the power inlet of the instrument.
3 Secure the plug by firmly tightening the knurled nut.
4 Insert the plug of the power cable into a grounded power outlet that is easily accessible.
   => After connecting the balance to power, the side doors open and close slowly for initialization.

Note
Do not connect the instrument to a power outlet controlled by a switch. After switching on the instrument, it must warm up before giving accurate results.

4.5.2 Switching on the balance

EULA (End User License Agreement)
When the balance is switched on the first time, the EULA (End User License Agreement) appears on the screen.
1 Read the conditions.
2 Tap I accept the terms in the license agreement. and confirm with ✓ OK.
Warming up
Before the balance gives reliable results, it must warm up. This takes at least 120 minutes after connecting the balance. When the balance is switched on from standby, it is ready immediately.

- The balance has warmed up.
- Press the key.
  - The main weighing screen appears.
When the balance is switched on, the main weighing screen appears. The display will always show the screen of the method last used before switching it off.

4.5.3 Leveling the balance
Exact horizontal and stable positioning are essential for repeatable and accurate weighing results.
If the message **Balance is out of level** appears:
1 Tap the Level the balance.
  - The Leveling aid opens.
2 Turn both leveling feet (1) as instructed on the display until the dot is in the center of the level indicator
The leveling aid can also be accessed through the balance menu:

**Navigation:** Balances > Leveling aid

4.5.4 Performing an internal adjustment
- The adjustment Strategy is set to Internal adjustment.
1 Open the Methods section, tap the adjustment, and tap Start
- or -
  - from the main weighing screen, tap More and tap Start adjustment.
  - Internal adjustment is being executed.
  - When the adjustment has been completed, an overview of the adjustment results appears.
2 Tap Print if you want to print the results.
3 Tap Finish adjustment.
  - The balance is ready.

4.6 Performing a simple weighing

4.6.1 Opening and closing the draft shield doors
- Open the door manually with the door handle (1) or touch the key on the terminal (2).
The doors can be configured to open and close in different ways.

**See also**
- Doors > Page 65
4.6.2 Taring the balance

If a sample vessel is used, the balance must be tared.

1. Open the draft shield.
2. Clear the weighing pan.
3. Close the draft shield.
4. Press \( \rightarrow 0 \leftarrow \) to zero the balance.
5. Open the draft shield.
6. Place the sample vessel (1) on the weighing pan (2).
7. Close the draft shield.
8. Press \( \rightarrow T \leftarrow \) to tare the balance.

\( \Rightarrow \) The balance is tared. The icon \( \text{Net} \) appears.

4.6.3 Zeroing the balance

1. Open the draft shield.
2. Clear the weighing pan.
3. Close the draft shield.
4. Press \( \rightarrow 0 \leftarrow \) to zero the balance.

\( \Rightarrow \) The balance is zeroed.

4.6.4 Performing a weighing

1. Open the draft shield.
2. Place the weighing object into the sample vessel.
3. Close the draft shield.
4. Tap \(+ Add to protocol\) if you want to report the weighing result.

\( \Rightarrow \) The weight value is listed in the \text{Protocol}.

4.6.5 Completing the weighing

1. To save the weighing protocol, tap \( \text{Complete} \).

\( \Rightarrow \) The window \text{Complete task} opens.
2. Select an option to save or print the protocol.

\( \Rightarrow \) The respective menu window opens.
3. Follow the instructions of the wizard.
4. Tap \( \checkmark \text{Complete} \)

\( \Rightarrow \) The \text{Protocol} is saved/printed and then cleared.
4.7 Transporting, packing and storing

4.7.1 Transporting the balance over short distances

1. Disconnect the AC/DC adapter and unplug all interface cables.
2. Hold the weighing platform with both hands and carry the balance in horizontal position to the target location. Consider the requirements of the location.

If you want the balance put into operation, proceed as follows:
1. Connect in reverse order.
2. Level the balance.
3. Perform an internal adjustment.

4.7.2 Transporting the balance over long distances

METTLER TOLEDO recommends using the original packaging for transportation or shipment of the balance or balance components over long distances. The elements of the original packaging are developed specifically for the balance and its components and ensure maximum protection during transportation.

See also
Unpacking the balance  > Page 20

4.7.3 Packing and storing

Packing the balance
Store all parts of packaging in a safe place. The elements of the original packaging are developed specifically for the balance and its components, and ensures maximum protection during transportation and storage.

Storing the balance
Only store the balance under the following conditions:
- Indoor and in the original packaging
- According to the environmental conditions, see "Technical Data"

Note
When storing for longer than 6 months, the rechargeable battery may become empty (only date and time get lost).

See also
Technical Data  > Page 129

4.8 Installing devices

4.8.1 Connecting a printer via USB

NOTICE
Damage to the device from not following the instructions of the printer's manual.
- To use the printer, consult its User Manual.
The USB cable is connected to the printer.

The printer is connected to the power outlet and switched on.

The main weighing screen is shown on the balance terminal.

1. Connect the USB cable (1) to one of the USB-A ports (2) of the balance.
   - The balance detects the printer automatically and the dialog Add device appears.
   - A message, e.g., "System has found a device of type: Printer P-XX" appears.

2. Set a name for the printer, then tap Next.
   - The message "The connection to the device is configured and is now ready to use" appears.

3. Tap OK to close the dialog.
   - The printer is connected and saved to the system.
   - The dialog Printer settings opens.

4. If needed, configure the printer or print a test page.

Adding a printer via the balance settings

Another way to add a printer is through the balance settings.

Navigation: ☒ Balance menu > ☒ Settings > ➞ Devices / Printers

- The USB cable is connected to the printer.
- The printer is connected to the power outlet and switched on.

1. Tap Add device.
   - The message "Please connect the device via USB." appears.

2. Connect the device to one of the USB-A ports of the balance.

3. Follow the instructions from the wizard.

See also

Devices / Printers ▶ Page 68

4.8.2 Connecting a printer via Bluetooth

Navigation: ☒ Balance menu > ☒ Settings > ➞ Devices / Printers

- The printer is connected to the power outlet and switched on.

1. Connect the Bluetooth USB adapter (1) to one of the USB-A ports (2) of the balance.

2. Connect the Bluetooth RS adaptor (3) to the printer (4).
3. Tap **Add device**.
   ➞ The dialog **Add device** opens.

4. Select **Bluetooth connection** and tap ➔ **Next**.
   ➞ The dialog “Searching for devices” opens and a list of possible Bluetooth devices is displayed.

5. Check the bottom of the Bluetooth RS adaptor (3) at the printer for the MAC address (unique device address), select this one in the list and tap ➔ **Next**

6. The dialog **Authentication activated** opens and the **PIN Code** is displayed.

7. Tap ➔ **Next** to confirm the Bluetooth connection.
   ➞ The dialog closes, the printer is connected to the balance via Bluetooth.
   ➞ The dialog **Printer settings** opens.

8. If needed, configure the printer or print a test page.

**Note**

If the USB adapter is removed from the balance and plugged in again, the Bluetooth connection will be detected automatically. This may take up to 30 seconds.

**Note**

The balance always pairs with the Bluetooth RS adaptor, but not with the printer that is attached to it. As soon as the user re-uses a Bluetooth RS adaptor for another printer, the user must remove the configured printer in the balance software and add the new one.

**See also**

- Bluetooth ▶ Page 68
- Devices / Printers ▶ Page 68

### 4.8.3 Connecting a USB device

This section describes how to connect USB devices without an own power adapter, e.g., a foot switch or an ErgoSens. The connection procedure is the same for all USB devices.

**NOTICE**

Damage to the device from not following the instructions of the USB device's manual.
- To use the USB device, consult its User Manual.
• The USB cable is connected to the USB device.
• The main weighing screen is shown on the balance terminal.

1 Connect the USB cable (1) to one of the USB-A ports (2) of the balance.
   ⇒ The balance detects the USB device automatically and the dialog Add device with a message, e.g., “System has found a device of type: XXX” appears.

2 Set a name for the USB device, then tap → Next.
   ⇒ The message “The connection to the device is configured and is now ready to use” appears.

3 Tap ✓ OK to close the dialog.
   ⇒ The USB device is connected and saved to the system.

For more information on using the USB device, see Devices / Printer settings.

See also

Devices / Printers → Page 68

4.9 Weighing below the balance

Your balance is equipped with a weighing hook for performing weighing operations below the work surface (weighing below the balance).

• A weighing table or workbench is available, through which the weighing hook can be accessed.

1 Disconnect the balance from the AC/DC adapter.
2 Disconnect all interface cables.
3 Carefully tilt the balance to its side.
4 Loosen the screw (1) of the weighing hook cover (2).
   ⇒ The hook (3) is accessible.
5 Rotate the cover 90°.
6 Tighten the screw to secure the cover.
7 Carefully put the balance back on its feet.
8 Reconnect the AC/DC adapter and the interface cables.
   ⇒ The weighing hook is accessible and can be used for below-the-balance weighing.

See also

Dimensions → Page 134
5 Operation

5.1 Touch screen

5.1.1 Selecting or activating an item
- Tap the item or function to be selected or activated.

5.1.2 Scrolling
- Move the list up/down.

5.1.3 Entering characters and numbers
When tapping on fields that require letters, numbers, or special characters, a keyboard appears on the display.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Input field</td>
<td>Shows the data that has been entered.</td>
</tr>
<tr>
<td>2 Delete</td>
<td>Deletes the character left of the current cursor position. The cursor can be positioned by using the touch screen.</td>
</tr>
<tr>
<td>3 Confirm</td>
<td>Confirms the entered data.</td>
</tr>
<tr>
<td>4 Discard</td>
<td>Closes the keyboard dialog.</td>
</tr>
<tr>
<td>5 Numbers and special characters</td>
<td>Switches into the special character mode.</td>
</tr>
<tr>
<td>6 Shift</td>
<td>Switches between lower or upper case letters.</td>
</tr>
</tbody>
</table>
5.1.4 Changing the date and time

<table>
<thead>
<tr>
<th>Name</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Plus button</td>
<td>Increment</td>
</tr>
<tr>
<td>2 Display field</td>
<td>Shows the defined time or date.</td>
</tr>
<tr>
<td>3 Minus button</td>
<td>Decrement</td>
</tr>
</tbody>
</table>

**Note**
The format of date and time can be defined in the settings via the options **Date format** and **Time format**.

**See also**
[Date / Time / Language / Format](#) Page 66

5.2 Methods

A weighing method is an application for carrying out specific weighing tasks. The balance offers the method "General Weighing" with default parameters. You have the possibility to create a maximum of 50 methods and edit the methods. You can use these methods for your weighing task or edit them according to your requirements. Methods can also be deleted or cloned.

To support you while configuring new methods, a configuration wizard leads you through the whole process.

5.2.1 Methods overview

The section **Methods list** provides an overview of all methods already created on the balance. In this section, new methods can be defined and existing methods can be edited, cloned or deleted. It is also the starting point for using any method in a weighing procedure.

**Navigation:** **Methods**
The following methods are available:

- General Weighing (see section [Settings: method "General weighing"](#) Page 70)
- Simple formulation (see section [Settings: method "Simple formulation"](#) Page 80)
- Piece counting (see section [Settings: method "Piece counting"](#) Page 89)
- Titration (see section [Settings: method "Titration"](#) Page 97)
- Density determination (see section [Settings: method "Density determination"](#) Page 105)

5.2.2 Method "General weighing"

The method **General Weighing** offers the basic weighing functions (zeroing, taring, weighing). The method is used for simple weighing tasks or to perform a series of check weighing or dosing.

The parameters of the weighing item, e.g., sample ID and target weight, can either be entered manually or by using a template. Therefore two different methods exist:

- **General Weighing**: Select this method if you want to work without pre-defined templates.
- **General Weighing with templates**: Select this method if you want to use a template to define the parameters individually for each single weighing item. Templates are particularly useful when the weighing task consists of a series of weighings, each with its own individual parameters, such as target weight, tolerances, etc. For further information, see [Using method templates](#) Page 43.
5.2.2.1 Creating a method “General weighing”

Navigation: Methods > Methods list

1 Tap ➕ New in the action bar.
   ⇒ The method wizard opens, starting at 1. Method type.
2 Tap Method type and select the method type General Weighing or General Weighing with templates.
3 Tap ➔ Next.
   ⇒ The method wizard opens the section 2. Identification.
4 Define the Method name and Result description and tap ➔ Next.
   ⇒ The method wizard opens the section 3. Configuration.
5 Select a Tolerance profile and tap ➔ Next.
   ⇒ The method wizard opens the section 4. Save.
   ⇒ When selected General Weighing with templates, the wizard opens the optional section 4. Templates.
6 Select a template from the list and define the Sample ID, Unit, Target weight, —Tolerance, and +Tolerance. Tap ➔ Next.
   ⇒ The method wizard opens the last section 5. Save.
7 Tap ✔ Finish to save the new method.
   ⇒ The method has been created and appears in the list.

5.2.2.2 Performing a “General weighing”

This section describes a General Weighing example step by step. Depending on the defined settings and weighing objects, the procedure can be different from this example.

1 Open the Methods section.
2 Select a method from the Methods list or define a new method.
3 Tap ➔ Start method.
   ⇒ The main weighing screen appears with the selected method.
4 Press ➔ O to zero the balance.
5. Open the door and place the weighing object (1) on the weighing pan (2).
6. Close the door and wait until the weight stabilizes.
   ⇨ The weighing starts with Capturing weight...
7. Tap Add to protocol.
   ⇨ The weighing result is saved to the Protocol.
8. When the weighing process is finished, tap Complete in the action bar.
   ⇨ The window Complete task opens. The task-specific information can be printed on a label printer. The Protocol can be printed manually or automatically (depending on the method settings).
   ⇨ The task General Weighing was successfully completed.

Note
It is possible to exclude a weighing results from the protocol by opening the Protocol and tapping on Exclude result.
The window Complete task always appears after completing the task, even if the results are saved automatically.

5.2.3 Method "Simple formulation"

With the method Simple formulation the concentration of a substance can automatically be calculated.
The parameters of the weighing item, e.g., sample ID and target weight, can either be entered manually or by using a template. Therefore two different methods exist:
- **Simple formulation**: Select this method if you want to weigh a single component in a volumetric flask and have the concentration calculated automatically.
- **Simple formulation with templates**: Select this method if you want to follow a predefined solution recipe of one or several components. Templates are particularly useful when the weighing task consists of a series of weighings, each with its own individual parameters, such as target weight, tolerances, etc. For further information, see [Using method templates] Page 43.

For details about method settings:

See also
- Settings: method "Simple formulation" Page 80

5.2.3.1 Creating a method "Simple formulation"

Navigation: Methods > Methods list
1. Tap ✠ New in the action bar.
   ✝ The method wizard opens, starting at 1. Method type.
2. Tap Method type and select the method type Simple formulation or Simple formulation with templates.
3. Tap → Next.
   ✝ The method wizard opens the section 2. Identification.
4. Define the Method name and Result description and tap → Next.
   ✝ The method wizard opens the section 3. Configuration.
5. Select the options for Calculate concentration per component, Calculate amount of component and set a Tolerance profile.
6. Tap → Next.
   ✝ The method wizard opens the section 4. Save.
   ✝ When selected Simple formulation with templates, the wizard opens the optional creating section 4. Templates.
7. Select a template from the list and define the Sample ID, Unit, Target weight, −Tolerance, and +Tolerance. Tap → Next.
   ✝ The method wizard opens the last section 5. Save.
8. Tap ✓ Finish to save the new method.
   ✝ The method has been created and appears in the list.

5.2.3.2 Performing a "Simple formulation"

This example describes how to perform a simple formulation with two different components. It explains the basic functions of the method without the use of any templates. Advanced functions such as the calculation of the concentration of a component can be defined in the method settings.

1. Open the Methods section.
2. Select a method from the Methods list or define a new method.
3. Tap ➤ Start method.
   ✝ The main weighing screen appears with the selected method.
4. Define the target weight and the tolerance limits for the first component.
5. Select Component ID to define the first component.
6. Select Task ID to define the whole task.
7. Press ➡ O⬅ to zero the balance.
8. Open the door and place the sample vessel on the weighing pan.
9. Press ➡ T⬅ to tare the balance.
10. Open the door and add the first component in the sample vessel.
    ✝ The measurement starts.
11. Tap ➢ Add to protocol.
    ✝ The weighing result is saved to the Protocol.
12. Define the target weight and the tolerance limits for the second component.
13. Select Component ID to define the second component.
14. Open the door and add the second component in the sample vessel.
15. Tap ➢ Add to protocol.
    ✝ The weighing result is saved to the Protocol.
16. Tap ▪ Complete and select if you want to print or export the task protocol.
    ✝ The weight task is completed and the balance returns to the main weighing screen.
5.2.4 Method "Piece counting"

The method Piece counting allows you to determine the number of pieces put on the weighing pan. It is advantageous if all pieces are of approximately equal weight, since the unit quantity is determined on the basis of the average weight of a single piece.

<table>
<thead>
<tr>
<th>Methods</th>
<th>my Density 06/24/2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tests</td>
<td>my General Weighing 06/24/2019</td>
</tr>
<tr>
<td>Adjustments</td>
<td>my Piece Counting 06/24/2019</td>
</tr>
<tr>
<td>Close</td>
<td>my Simple Formulation</td>
</tr>
</tbody>
</table>

For details about method settings:

See also
- Settings: method "Piece counting" Page 89

5.2.4.1 Creating a method "Piece counting"

**Navigation:** Methods > Methods list

1. Tap New in the action bar.
2. The method wizard opens, starting at 1. Method type.
3. Tap Method type and select the method type Piece counting.
4. Tap Next.
5. Define the Method name and Result description and tap Next.
6. Select a Tolerance profile and tap Next.
7. Define a reference for pieces Reference PCS, a Reference average weight, Target weight and tap Next.
8. Tap Finish to save the new method.

5.2.4.2 Performing a "Piece counting"

This section describes how the method Piece counting is being used in a task example. In this example we are weighing pieces in a sample vessel.

1. Open the Methods section.
2. Select a method from the Methods list or define a new method.
3. Tap Start method.
   - The main weighing screen with the selected method opens. The balance displays the defined target value, the tolerance and the current average weight of one piece.
4. Press \(\rightarrow 0 \leftarrow\) to zero the balance.
   or
   If a container is used, place the container (1) on the weighing pan (2) and press \(\rightarrow T \leftarrow\) to tare the balance.
   ⇒ The door closes automatically (depending on the door settings)
   ⇒ The tare-measurement starts with Taring....
   ⇒ When taring is finished, the door opens automatically (depending on the door settings).
5. If not yet done, enter the average weight for a known number of pieces in the method settings. This serves as reference for the piece counting. Tap \(\rightarrow\) to capture the weight of the items on the weighing pan and use it as reference weight.
6. Place the pieces in the sample vessel.
7. Close the door and wait until the weight stabilizes.
8. Tap \(\rightarrow\) Add to protocol.
   ⇒ The weighing result is saved to the Protocol.
9. When the weighing process is finished, tap \(\rightarrow\) Complete in the action bar.
   ⇒ The window Complete task opens. The task-specific information can be printed on a label printer. The Protocol can be printed manually or automatically (depending on the method settings).
   ⇒ The task Piece counting was successfully completed.

**Note**

It is possible to exclude a weighing results from the protocol by opening the Protocol and tapping on Exclude result.

The window Complete task always appears after completing the task, even if the results are saved automatically.

### 5.2.5 Method “Titration”

The method Titration enables the interaction between the balance and the titrator via MT-SICS.

For details about method settings:

**See also**

- Settings: method “Titration”  Page 97
5.2.5.1 Creating a method "Titration"

**Navigation:** Methods > Methods list

1. Tap **New** in the action bar.
   - The method wizard opens, starting at **1. Method type**.
2. Tap **Method type** and select the method type **Titration**.
3. Tap **Next**.
   - The method wizard opens the section **2. Identification**.
4. Define the **Method name** and **Result description** and tap **Next**.
   - The method wizard opens the section **3. Configuration**.
5. Select a **RFID option**, a **Tolerance profile** and tap **Next**.
   - The method wizard opens the last section **4. Save**.
6. Tap **Finish** to save the new method.
   - The method has been created and appears in the list.

5.2.5.2 Performing a "Titration"

This example describes how to prepare a sample for titration and to transfer the information to the METTLER TOLEDO titrator via a USB connection. For more information about how to perform the titration, consult the manual of the titrator.

- A METTLER TOLEDO titrator is connected to the balance via USB.
- A titration method exists in the **Methods list**.
1. Open the **Methods** section.
2. Select the desired titration method from the **Methods list**.
3. Tap **Start method**.
   - The main weighing screen appears with the selected method.
4. Press **O** to zero the balance.
5. Open the door and place the sample vessel on the weighing pan.
6. Close the door and wait until the weight stabilizes.
7. Press **T** to tare the balance.
8. Open the door and place the sample in the sample vessel.
9. Close the door and wait until the weight stabilizes.
10. Tap **OK** to accept the measurement.
   - The weighing result is saved to the **Protocol** and automatically sent to the titrator.
11. Continue your workflow on the titrator.

5.2.6 Method "Density determination"

The method **Density determination** is used for determining the density of solids and liquids. Density determination is carried out based on **Archimedes' principle** according to which a body immersed in a fluid undergoes an apparent loss in weight that is equal to the weight of the fluid it displaces. Furthermore the
The method **Density determination** includes three method types:

- **Solid**: determines the density of a solid with the help of a density kit
- **Liquid (sinker)**: determines the density of a liquid with the help of a density kit and a sinker
- **Liquid (pycnometer)**: determines the density of a liquid in a glass vessel, e.g. pycnometer

### 5.2.6.1 Creating a method "Density determination"

**Navigation:** `Methods` > `Methods list`  
1. Tap `New` in the action bar.  
2. Tap **Method type** and select the method type **Density**.  
3. Tap `Next`.  
4. Define the **Method name** and **Result description** and tap `Next`.  
5. Select the **Determination type** and define the corresponding settings, e.g., **Density unit** and **Weighing settings**.  
6. Tap `Next`.  
7. Define **Initial values for weighing** and tap `Next`.  
8. Tap `Finish` to save the new method.  

**Note**  
The **Determination type** can only be selected as part of a new created method. If another **Determination type** (solid, liquid) is required, a new method must be created.

### 5.2.6.2 Performing a "Density determination"

This example describes how to determine the density of a solid using a density kit.

- A density kit is available for the balance.
1. Open the **Methods** section.
2 Select a method from the Methods list or define a new method.
3 Tap ➤ Start method. 
   ⇒ The main weighing screen appears with the selected method.
4 Tap ➤ Start.
5 Specify the Temperature and the Aux. liquid.
6 Tap ✓ OK.
7 Follow the instructions from the wizard.
   ⇒ The Protocol opens and shows a summary of the weighing results.
8 Tap □ Complete to open the printing options.
   ⇒ The dialog Complete task appears.
9 Tap ✓ Complete. 
   ⇒ The task Density determination was successfully completed.

5.2.7 Editing a method
To clone a method proceed as follows:
1 Open the Methods section.
2 Select the method that you want to edit.
   ⇒ The line color of the selected method becomes blue.
3 Tap Edit.
For details about method settings:

See also
□ Weighing methods settings ▶ Page 70

5.2.8 Cloning a method
To simplify the process to create a method, an existing method can be cloned one or several times. The cloned method will have the same parameter values as the original one. If weighing item templates exist, those will be cloned as well.
1 Open the Methods section.
2 Tap the method that you want to clone.
   ⇒ The line color of the selected method becomes blue.
3 Tap ⋮ More and tap ⬤ Clone.
   ⇒ A copy of the selected method appears in the list. The cloned method has the same settings as the original method.

Note
A method can be cloned several times. The name of the cloned method is always based on its original name, to which is appended a number.

5.2.9 Deleting a method
Both factory defined methods and user defined methods can be deleted if they are not needed. For this purpose proceed as follows:
1 Open the Methods section.
2 Tap the method that you want to delete.
   ⇒ The line color of the selected method becomes blue.
3 Tap ⋮ More.
4 Tap □ Delete.
   ⇒ The message Delete method and cancel tasks? appears on the screen.
5 Tap OK to delete the selected method.
⇒ The system returns to the method list. The method has been deleted and does not appear on the list anymore.

Note
There is always a method activated in the background. This method can not be directly deleted. To delete the method, another method must be started instead. Now the method is not activated anymore and can be deleted.

5.2.10 Using method templates

Working with templates can simplify the workflow, especially when several weighings with different predefined target weights have to be carried out one after the other. Characteristic information such as a target weight and tolerances can be defined in a template and must not be defined for every single weighing task. This may save time, especially when the weighing process consists of multiple steps.

The methods General Weighing with templates and Simple formulation with templates use templates.

Before a template can be used in the weighing process, it must be defined. There are two ways to define templates:

• The templates can be defined directly in the method creating process.
• The templates can be defined during the execution of a task within a method of the same type, without templates.

5.2.10.1 Defining a template during the method-defining process

This example describes how to define a template for the method General Weighing with templates.

1 Open the Methods section.
2 Tap New method.
3 Select Method type General Weighing with templates.
4 Step through the method wizard until step 4. Templates.
⇒ The dialog screen 4. Templates appears, the sample 1 can be defined.
5 Tap Unit to select the template unit.
6 Tap Target weight to define the target weight.
⇒ The options –Tolerance and +Tolerance appear.
7 Tap –Tolerance to define the lower tolerance.
8 Tap +Tolerance to define the upper tolerance.
9 Tap Next.
10 Tap Finish.
⇒ The method has been created and appears in the method list.

Note
This example only describes how to create templates for the method General Weighing with templates. For the other methods there might be several other options that can be defined.

5.2.10.2 Defining a template in a current task

It is also possible to create templates while performing a method without predefined templates, providing that the method type allows it. This example describes how to create templates for the method General Weighing, respectively for the method General Weighing with templates. Templates can also be used for Simple formulation methods.

1 Start a method General Weighing.
2 Perform three weighings and add the results to the protocol by tapping Add to protocol.
⇒ The results are saved to the Protocol.
3 Tap More.
4 Tap Save as method with templates.
5 Define a Method name.
6 Tap OK.
⇒ A method General Weighing with templates including three templates is created and added to the Methods list with the name defined by the user.

5.2.10.3 Working with templates
After the template has been created within a method, it can be used in a task.
1 Open the Methods section.
2 Select a method from the Methods list or define a new method.
3 Tap Start method.
⇒ The main weighing screen opens. The target weight and the tolerance limits that have been defined in the template appear.

5.3 Tests
Routine tests can be performed to ensure accurate weighing results according to GWP® or other QM systems. Therefore the tests should be performed in fixed, regular intervals depending on your QM system and the results should be documented in a traceable way.

Navigation: Methods > Tests

5.3.1 Overview routine tests
METTLER TOLEDO can help you to define the routine tests to be performed based on your process requirements. Please contact your local METTLER TOLEDO representative for additional information.

5.3.1.1 Eccentricity test
The purpose of the eccentricity test is to check if every eccentric load deviation (corner load deviation) is within the user SOP tolerances. The corner load is the deviation of the measurement value through off-center (eccentric) loading. The corner load increases with the weight of the load and its distance from the center of the weighing pan support. If the display remains consistent, even when the same load is placed on different parts of the weighing pan, the balance does not have corner load deviation.

The result corresponds to the highest of the four determined eccentric load deviations (2 to 5).

5.3.1.2 Repeatability test
The repeatability test calculates the standard deviation of a series of measurements with a single test weight in order to determine the repeatability of the balance.

Repeatability is a measure of the ability of a balance to supply the same result in repetitive weighings with one and the same load under the same measurement conditions. During the test, the same load is placed and measured in different parts of the weighing pan. Afterwards, the difference between the measured weight values is calculated. The spread of the measured results leads to the repeatability.

Repeatability is highly affected by the ambient conditions (drafts, temperature fluctuations and vibrations) and also by the skill of the person performing the weighing. Therefore, the series of measurements must be carried out by the same operator, in the same location, under constant ambient conditions and without interruption.

The following test types are available:
• Repeatab. - 1 TP: To test repeatability of the balance without tare weight.
• **Repeatab. - Tare - 1 TP**: To test repeatability of the balance with tare weight. The first test weight (tare weight) is used to simulate a tare container.

### 5.3.1.3 Sensitivity tests

The sensitivity of the balance defines the deviation between the balance reading and the actual load. The sensitivity test allows you to measure the sensitivity using one or two test points.

The following test types are available:

- **Sensitivity - 1 TP**: To test sensitivity of the balance with one test weight.
- **Sensitivity - 2 TP**: To test sensitivity of the balance with two test weights.
- **Sensitivity - Tare - 1 TP**: To test sensitivity of the balance with two test weights. The first test weight (tare weight) is used to simulate a tare container.
- **Sensitivity - Tare - 2 TP**: To test sensitivity of the balance with three test weights. The first test weight (tare weight) is used to simulate a tare container.

### 5.3.2 Creating an own new test

Before a test can be performed, the test settings have to be defined. A test wizard is leading you step-by-step through the process.

1. Open the **Methods** section.
2. Tap **Tests**.
3. Tap **New**.
   
   The wizard **Create new test** starts.
4. Select the test type.
5. Work through the process by using the button **Next** to go to the next step or the button **Back** to go back to the previous step.

For information concerning the settings for the different test types see the following chapters.

For details about test settings:

**See also**

Tests settings » Page 111

### 5.3.3 Defining a test weight

The user should enter data related to each test weight based on the corresponding certificate. This enables each external test weight to be clearly assigned to a specific certificate. Up to 12 external test weights can be configured. These test weights can be used to carry out external tests and adjustments.

**Navigation:** ☁ Methods > ☁ Tests

**Note**

An external test weight for an external adjustment has to weigh at least 10% of the balance capacity. External test weights under 10% of the balance capacity are not displayed on the balance.

1. Open the **Methods** section.
2. Tap •••• More and tap ☁ Tests.
3. Tap ☁ Test weights.
   
   The dialog **Edit test weights** opens.
4. Tap ☁ New test weight.
5. Define the test weight settings and confirm with ✅ Finish.
   
   The test weight is defined and will be available later in the test procedure.
### Test weights settings

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test weight name</td>
<td>Defines the name of the test weight.</td>
<td>Text (1…22 characters)</td>
</tr>
<tr>
<td>Test weight ID</td>
<td>Defines the test weight ID.</td>
<td>Text (1…22 characters)</td>
</tr>
<tr>
<td>Weight class</td>
<td>Defines the weight class according to OIML or ASTM. Alternatively, a</td>
<td>E1 E2 F1 F2 M1 M2 M3 ASTM000 ASTM00 ASTM0</td>
</tr>
<tr>
<td></td>
<td>customized tolerance class can be created with Own.</td>
<td>ASTM1 ASTM2 ASTM3 ASTM4 ASTM5 ASTM6 ASTM7</td>
</tr>
<tr>
<td>Actual weight</td>
<td>Defines the actual weight. The actual weight is a specific weight with a</td>
<td>Numeric</td>
</tr>
<tr>
<td></td>
<td>specific Conventional Mass Value (CMV) from the weight calibration certificate.</td>
<td></td>
</tr>
<tr>
<td>Next calibration date</td>
<td>Defines the next date for calibration.</td>
<td>Numeric</td>
</tr>
<tr>
<td>Certificate</td>
<td>If the certificate of the test weight is available, set to Active and fill</td>
<td>Active Inactive*</td>
</tr>
<tr>
<td></td>
<td>in the additional parameters related to the certificate information (see</td>
<td></td>
</tr>
<tr>
<td></td>
<td>below).</td>
<td></td>
</tr>
<tr>
<td>Certificate ID</td>
<td>Defines the certificate ID.</td>
<td>Text (1…22 characters)</td>
</tr>
<tr>
<td></td>
<td>This option only appears when the option Certificate ID is set to Active.</td>
<td></td>
</tr>
<tr>
<td>Certificate date</td>
<td>Defines the certificate date.</td>
<td>Date</td>
</tr>
<tr>
<td></td>
<td>This option only appears when the option Certificate ID is set to Active.</td>
<td></td>
</tr>
<tr>
<td>Weight set ID</td>
<td>Defines the weight set ID.</td>
<td>Text (1…22 characters)</td>
</tr>
</tbody>
</table>

#### 5.3.4 Performing a test

**NOTICE**

**Measurement errors due to deficient handling of the test weights.**

Deficient handling of the test weights can lead to incorrect result.
- Only handle test weights with gloves or forks.

You can perform an eccentricity test, a repeatability test or a sensitivity test. Which test you have to perform and when depends on the respective weighing processes. Mettler-Toledo GmbH can help you to define the routine tests to be performed based on your process requirements. Please contact your local METTLER TOLEDO representative for additional information.

Moments when tests could be performed:
- After cleaning
- After a software update
- Daily before putting into operation
- Depending on own SOP

Requirements:
- At least one test weight is defined.
- At least one sensitivity, one repeatability or one eccentricity test is created.

All of the following pictured test weights or vessels are examples. Actual test weights or vessels may look different.
See also
- Defining a test weight » Page 45
- Tests settings » Page 111

5.3.4.1 Performing an eccentricity test

1 Open the Methods section.
2 Tap ☰ Tests.  
   - The test(s) previously defined appear on the list.
3 Select the eccentricity test you wish to perform and tap ➤ Start.  
   - The test sequence starts.
4 Ensure that the weighing pan is empty and clear, the test weight is prepared, and weighing forks or gloves are ready.
5 When all requirements are fulfilled tap ✓ OK.
6 Make sure that the weighing pan is empty and tap ✓ OK.  
   - The door closes automatically (depending on the door settings) and the balance starts an automatic zeroing.
7 Choose an available test weight  
   - or -  
   add a new test weight and tap ✓ OK.
8 Open the door and place the test weight (1) carefully in position 1, in the middle of the weighing pan (2).  
   - The measurement starts with Capturing weight...  
   - The door closes automatically (depending on the door settings).  
   - When the measurement is finished, the door opens automatically (depending on the door settings).  
   - The result of the first measurement is placed in the Protocol as Position 1.
9 Lift the test weight and move to position 2 (front left corner of the weighing pan).  
   - The measurement starts with Capturing weight...  
   - The door closes automatically (depending on the door settings).  
   - When the measurement is finished, the door opens automatically (depending on the door settings).  
   - The result of the second measurement is placed in the Protocol as Position 2.
10 Lift the test weight and move to position 3 (back left corner of the weighing pan).
- The measurement starts with **Capturing weight**...
- The door closes automatically (depending on the door settings).
- When the measurement is finished, the door opens automatically (depending on the door settings).
- The result of the third measurement is placed in the **Protocol** as **Position 3**.

11 Lift the test weight and move to position 4 (back right corner of the weighing pan).
- The measurement starts with **Capturing weight**...
- The door closes automatically (depending on the door settings).
- When the measurement is finished, the door opens automatically (depending on the door settings).
- The result of the fourth measurement is placed in the **Protocol** as **Position 4**.

12 Lift the test weight and move to position 5 (front right corner of the weighing pan).
- The measurement starts with **Capturing weight**...
- The door closes automatically (depending on the door settings).
- When the measurement is finished, the door opens automatically (depending on the door settings).
- The result of the fifth measurement is placed in the **Protocol** as **Position 5**.
- The eccentricity test is finished.

13 Remove the test weight carefully and tap ✅ OK
- The door closes automatically (depending on the door settings) and the balance starts an automatic zeroing.

14 When the test procedure is finished, tap ✅ Finish.
- The result dialog opens.

15 To print the results tap ✉️ Print, to finish the test tap ✅ Finish.

**Test result**

If the test failed, see "Troubleshooting", search the error, remedy it and test again. If the test fails again, contact a METTLER TOLEDO representative.

**See also**
- Settings: eccentricity test ✂️ Page 111
- Troubleshooting ✅ Page 126

**5.3.4.2 Performing a repeatability test**

In this section, both repeatability tests are described. Which test you use depends on the respective test target.
**Repeability - 1 test point**

1. Open the **Methods** section.
2. Tap **Tests**.  
   - The test(s) previously defined appear on the list.
3. Select the repeatability test you wish to perform and tap **Start**.  
   - The test sequence starts.
4. Ensure that the weighing pan is empty and clear, the test weight is prepared, and weighing forks or gloves are ready.
5. When all requirements are fulfilled tap **OK**.
6. Make sure that the weighing pan is empty and tap **OK**.  
   - The door closes automatically (depending on the door settings) and the balance starts an automatic zeroing.
7. Choose an available test weight  
   - or -  
   add a new test weight and tap **OK**.
8. Open the door and place the test weight (1) carefully on the weighing pan (2).  
   - The measurement starts with **Capturing weight...**  
   - The door closes automatically (depending on the door settings).  
   - When the measurement is finished, the door opens automatically (depending on the door settings).  
   - The result of the measurement is saved to the **Protocol**.
9. Remove the test weight carefully and tap **OK**  
   - The door closes automatically (depending on the door settings) and the balance starts an automatic zeroing.  
   - Depending on the specified **Number of repetitions** you have to repeat the last two steps a certain number of times.
10. When the test procedure is finished, tap **Finish**.  
    - The result dialog opens.
11. To print the results tap **Print**, to finish the test tap **Finish**.

**Repeability - Tare - 1 test point**

1. Open the **Methods** section.
2. Tap **Tests**.  
   - The test(s) previously defined appear on the list.
3. Select the repeatability test you wish to perform and tap **Start**.  
   - The test sequence starts.
4. Ensure that the weighing pan is empty and clear, the test weight is prepared, and weighing forks or gloves are ready.
5. When all requirements are fulfilled tap **OK**.
6. Make sure that the weighing pan is empty and tap **OK**.  
   - The door closes automatically (depending on the door settings) and the balance starts an automatic zeroing.
7 Choose an available test weight/test container
- or -
add a new test weight/test container (1) and tap ✔ OK
and put it on the weighing pan (2).
⇒ The door closes automatically (depending on the
door settings) and the measurement starts with
Taring....
⇒ When the tare is finished, the door opens automatic-
ly (depending on the door settings).
⇒ The tare result is saved in the Protocol.

8 Carefully place the test weight (3) onto the weighing
pan or into the tare container (4).
⇒ The measurement starts with Capturing weight...
⇒ The door closes automatically (depending on the
door settings).
⇒ When the measurement is finished, the door opens
automatically (depending on the door settings).
⇒ The result of the measurement is saved to the
Protocol.

9 Remove the test weight, leave the container on the
weighing pan.
⇒ The door closes automatically (depending on the
door settings) and the measurement starts with
Taring....
⇒ When the tare is finished, the door opens automatic-
ly (depending on the door settings).
⇒ The tare result is saved in the Protocol.

10 Carefully place the test weight (3) onto the weighing
pan or into the tare container (4).
⇒ The measurement starts with Capturing weight...
⇒ The door closes automatically (depending on the
door settings).
⇒ When the measurement is finished, the door opens automatically (depending on the door settings).
⇒ The result of the measurement is saved to the Protocol.
⇒ Depending on the specified Number of repetitions you have to repeat the last two steps a certain
number of times.

11 When the test procedure is finished, tap Finish.
⇒ The result dialog opens.
12 To print the results tap Print, to finish the test tap ✔ Finish.

Test result
If the test failed, see "Troubleshooting", search the error, remedy it and test again. If the test fails again, contact
a METTLER TOLEDO representative.

See also
▷ Settings: repeatability test ‣ Page 114
▷ Troubleshooting ‣ Page 126
5.3.4.3 Performing a sensitivity test

In this section, two of four possible sensitivity tests are described. Which test you use depends on the respective test target. The procedure for the tests with two test points is similar, but additional test weights and test containers are necessary.

**Sensitivity - 1 test point**

1. Open the **Methods** section.
2. Tap **Tests**.
   ⇒ The test(s) previously defined appear on the list.
3. Select the sensitivity test you wish to perform and tap ➤ **Start**.
   ⇒ The test sequence starts.
4. Ensure that the weighing pan is empty and clear, the test weight is prepared, and weighing forks or gloves are ready.
5. When all requirements are fulfilled tap ✔ **OK**.
6. Make sure that the weighing pan is empty and tap ✔ **OK**.
   ⇒ The door closes automatically (depending on the door settings) and the balance starts an automatic zeroing.
7. Choose an available test weight
   - or -
   add a new test weight and tap ✔ **OK**.
8. Open the door and place the test weight (1) carefully on the weighing pan (2).
   ⇒ The measurement starts with Capturing weight...
   ⇒ The door closes automatically (depending on the door settings).
   ⇒ When the measurement is finished, the door opens automatically (depending on the door settings).
   ⇒ The result of the measurement is saved to the **Protocol**.
9. When the test procedure is finished, tap ➤ **Finish**.
   ⇒ The result dialog opens.
10. To print the results tap ➤ **Print**, to finish the test tap ✔ **Finish**.

**Sensitivity - Tare - 1 test point**

1. Open the **Methods** section.
2. Tap **Tests**.
   ⇒ The test(s) previously defined appear on the list.
3. Select the sensitivity test you wish to perform and tap ➤ **Start**.
   ⇒ The test sequence starts.
4. Ensure that the weighing pan is empty and clear, the test weight is prepared, and weighing forks or gloves are ready.
5. When all requirements are fulfilled tap ✔ **OK**.
6. Make sure that the weighing pan is empty and tap ✔ **OK**.
   ⇒ The door closes automatically (depending on the door settings) and the balance starts an automatic zeroing.
7 Choose an available test weight/test container
- or -
add a new test weight/test container (1) and tap ✔ OK
and put it on the weighing pan (2).
⇒ The door closes automatically (depending on the
doors settings) and the measurement starts with
Taring....
⇒ When the tare is finished, the door opens automatic-
ically (depending on the door settings).
⇒ The tare result is saved in the Protocol.

8 Carefully place the test weight (3) onto the weighing
pan or into the tare container (4).
⇒ The measurement starts with Capturing weight...
⇒ The door closes automatically (depending on the
doors settings).
⇒ When the measurement is finished, the door opens
automatically (depending on the door settings).
⇒ The result of the measurement is saved to the
Protocol.

9 When the test procedure is finished, tap ✔ Finish.
⇒ The result dialog opens.

10 To print the results tap Print, to finish the test tap ✔ Finish.

Test result
If the test failed, see “Troubleshooting”, search the error, remedy it and test again. If the test fails again, contact
a METTLER TOLEDO representative.

See also
- Settings: sensitivity test » Page 116
- Troubleshooting » Page 126

5.3.5 Editing a test

Navigation: Methods > Tests
1 Select the test to be edited from the list and tap Edit.
⇒ The test settings open.

2 Edit your test parameters, see section [Tests settings » Page 111].

See also
- Tests settings » Page 111

5.3.6 Printing test results

You can print a test manually, whether the parameter Automatic print in the test settings is activated or
deactivated. For this purpose proceed as follows:
1 Open the Methods section.
2 Tap Tests.
⇒ The test list opens.
3 Select the test to print and tap More and tap Print all
⇒ The test is printed.
5.3.7 Deleting a test

Running tests are labeled with the symbol \( \square \) and cannot be deleted. To delete a test, it must be finished or another test must be activated. To delete a test, proceed as follows:

1. Open the **Methods** section.
2. Tap **Tests**.
   - The test list opens.
3. Select the test to delete.
4. Tap **More** and tap **Delete**.
   - The section **Delete routine test** opens. The message **Do you really want to delete the selected routine test?** appears.
5. Tap **Yes** to delete the test. Tap **No** to cancel the deleting process.
   - After deleting the test, the system returns to the test list. The test has been deleted and does not appear on the list anymore.

5.3.8 Consulting the test history

**Navigation:** Balance menu > **History** > **Tests**
- Select a test.
  - The test history opens. Specific data are displayed for each test, such as the date and time, type of test, temperature, level state, test weight ID, and weight deviation.

See also
- **History**  Page 60

5.4 Adjustments

This section describes how internal and external adjustments can be defined and performed. Which type of adjustment is performed depends on the defined adjustment **Strategy**.

**Navigation:** Methods > **Adjustments**

See also
- **Adjustments settings**  Page 119

5.4.1 Internal adjustment

5.4.1.1 Editing an internal adjustment

1. Open the **Methods** section.
2. Tap **Adjustments**.
3. Tap **Edit**.
4. Set the **Strategy** to **Internal adjustment**.
5. Define the adjustment parameters.
6. Tap **Save**.
   - Your internal adjustment has been edited.

For details about adjustment settings:

See also
- **Adjustments settings**  Page 119
5.4.1.2 Performing an internal adjustment

- The adjustment **Strategy** is set to **Internal adjustment**.

1. Open the **Methods** section, tap ➕, select the adjustment, and tap ➔ **Start**
   - or -
   from the main weighing screen, tap ⌁ More and tap **Start adjustment**.
   ➔ **Internal adjustment** is being executed.
   ➔ When the adjustment has been completed, an overview of the adjustment results appears.

2. Tap ➔ **Print** if you want to print the results.

3. Tap ✔ **Finish adjustment**.
   ➔ The balance is ready.

5.4.2 External adjustment

5.4.2.1 Editing an external adjustment

1. Open the **Methods** section.

2. Tap ➔ **Adjustments**.

3. Tap ➔ **Edit**.

4. Set the **Strategy** to **External adjustment**.

5. Tap ➔ **Edit test weights**.
   ➔ The dialog **Edit test weights** opens.

6. Select a test weight from the list and tap ✔ **OK**
   - or -
   tap ➔ **New test weight** to define a new test weight.

7. Define the test weight settings and confirm with ✔ **OK**.

8. Tap ✔ **Save**.
   ➔ Your external adjustment has been edited.

For details about adjustment settings:

**See also**

- Adjustments settings ➔ Page 119
- Defining a test weight ➔ Page 45

5.4.2.2 Performing an external adjustment

After the external weights have been defined, the function **External adjustment** can be performed.

- The adjustment **Strategy** is set to **External adjustment**.

1. Open the **Methods** section, tap ➕, select the adjustment, and tap ➔ **Start**
   - or -
   from the main weighing screen, tap ⌁ More and tap **Start adjustment**.
   ➔ The adjustment process starts.

2. Ensure that the weighing pan is empty and clear, the test weight is prepared, and weighing forks or gloves are ready.

3. When all requirements are fulfilled tap ✔ **OK**.

4. Make sure that the weighing pan is empty and tap ✔ **OK**.

5. Choose an available test weight
   - or -
   add a new test weight and tap ✔ **OK**.
6 Open the door and place the test weight (1) carefully on the weighing pan (2).
   ⇒ The door closes and the adjustment starts.
   ⇒ After a few seconds the door opens.
7 Remove the test weight from the weighing pan and tap ✔ OK.
   ⇒ The door closes and opens. The adjustment is finishing and the adjustment results appear.
8 To print the results tap Print, to finish the test tap ✔ Finish.

5.4.3 Consulting the adjustment history

Navigation: Balance menu > History > Adjustments
   ⇒ Select an adjustment.
   ⇒ The adjustment history opens. Specific data are displayed for each adjustment such as the date and time, type of adjustment, temperature, level state, and correction.

See also
History Page 60

5.5 External devices

Navigation: Balance menu > Settings > Devices / Printers

5.5.1 Adding a device

Adding a new device
1 To add a new device, tap More, tap Add device
   ⇒ The Add device dialog opens.
2 Connect the device to one of the USB-A ports of the balance.
3 Follow the instructions from the wizard.

Note
A label printer and a strip printer can be connected simultaneously to the balance.

Example: adding a barcode reader
1 To add a new device, tap More, tap Add device
   ⇒ The Add device dialog opens.
2 Connect the device to one of the USB-A ports of the balance.
3 If you are installing a barcode reader you can scan the barcode displayed on the balance terminal. Tap Tools and tap Next.
   ⇒ The barcode of the device is shown.
4 Scan the barcode from the device.
   ⇒ The barcode is identified from the balance and the new device is connected.
5 To cancel the dialog, tap Cancel.

See also
Installing devices Page 29

5.5.2 Deleting a device

1 Select the device from the list of devices and printers.
2 Tap "More" and tap "Delete device.

⇒ The message of the type "Are you sure you would like to delete the selected device?" is shown.

3 To delete, tap "OK". To cancel the delete dialog, tap "Cancel".

⇒ The device is deleted.

5.5.3 Editing device settings

1 Select the device from the list of devices and printers.

⇒ Device type, name, status and settings are shown.

2 To change the name of the device, tap "Name", enter the name and tap "ok".

3 Some devices, e.g., printers, have additional editable settings. To edit those settings, tap "Printer settings".

⇒ The dialog printer settings opens.

5.5.4 Printing a test page

If you have installed a printer, a test page can be printed.

1 Select the printer in the list of devices.

2 Tap "More" and tap "Print test page".

5.6 Tolerance profiles

*Navigation: Balance menu > Settings > Balance > Weighing / Quality > Tolerance profiles*

Creating a Tolerance profile

1 Tap "New" to create a new profile.

2 Define the profile settings.

3 When all the settings have been defined, tap "OK".

⇒ The system returns to the profile list and the new profile appears on the list.

By tapping an existing profile, its settings can be changed, the profile can be deleted or it can be set as default value. Several profiles can be created. A default profile must be selected.

5.7 Data management

*Navigation: Balance menu > Maintenance > Import / Export*

The import or export of data can be used to save or transfer data from one balance to another.

The following data can be imported or exported:

- Balance settings
- Methods
- Tests and weights

5.7.1 Exporting data and settings

1 Select "Export data and settings".

⇒ The dialog Export data and settings opens.

2 Select "Export" and tap "Next"

⇒ The window Export data and settings appears.

3 Select the data type(s) you want to export.

4 Plug in the USB storage device to one of the USB-A ports of the balance.

5 Tap "Export".

⇒ A list of available USB storage devices opens.
6 Select the target USB storage device to store the data.
7 Tap → Next.
   ⇒ The system exports the data to the USB storage device. If the export was successful, the screen shows ✓ with the file name and its target folder.
8 Tap ✗ Close to finish the process.

5.7.2 Importing data and settings

With the function Import data and settings, settings from other balances can be imported to this balance. It is also possible to re-import settings that have been exported.
1 Select ⚙ Import data and settings.
2 Plug in the USB storage device with the data to import.
3 Tap → Next.
   ⇒ A list of available USB storage devices opens.
4 Select the USB storage device with the data to import.
5 Tap → Next.
6 Select the data file you want to import.
7 Tap → Next.
8 Select the data type(s) you want to import.
   ⇒ When importing methods, you can select if all methods or a selection of methods will be imported. Methods of the same name will be overwritten.
9 Tap ✓ Import.
   ⇒ The message Import of data and settings has been executed. appears. The import was successful. Tap ✗ Close to return to the main weighing screen.

5.8 Password protection and balance reset

The balance settings or the whole balance can be blocked to prevent unauthorized modifications or usage. An unblocking password first needs to be created.

NOTICE

Unusable balance due to forgotten password
A blocked balance cannot be unblocked without the unblocking password.
   – Note the password and keep it in a safe place.

5.8.1 Creating an unblocking password

Navigation: ⚙ Balance menu > ⚙ Settings > ⚙ Balance > ⚙ General
1 To create an unblocking password, tap ••• More in the action bar and select ⚙ Unblocking password
   ⇒ The dialog Set unblocking password opens.
2 Set a new password, confirm it, and tap ✓ OK.
3 In the dialog ⚙ General, tap ✓ Save and ✓ OK.
   ⇒ The unblocking password is created.
   ⇒ The additional option ⚙ Blocking is available in the action bar of the Balance menu. It can be used to block the balance or block/unblock the balance settings.

5.8.2 Blocking and unblocking the settings

Blocking the settings will prevent unauthorized modifications of the settings of the methods and the balance. Further usage of the balance is possible, but methods cannot be edited without the unblocking password.

Navigation: ⚙ Balance menu > ⚙ Blocking
5.8.2.1 Blocking the settings

1. To block the balance settings, tap ꔕ Block settings.
   ➔ The dialog Block balance opens.
2. Tap ✔ OK to block the settings.
   ➔ The balance settings are blocked. The balance can be used normally, but the balance and method settings cannot be edited.

5.8.2.2 Unblocking the settings

- The balance settings are blocked.
- The unblocking password is available.
1. To unblock the balance settings, tap ꔕ Unblock settings.
2. Type the unblocking password and tap ✔ OK.
   ➔ The balance settings are unblocked.

5.8.3 Blocking and unblocking the balance

Blocking the balance will prevent any further usage of the balance. The balance can only get unblocked with the unblocking password.

5.8.3.1 Blocking the balance

**Navigation:** Ⓒ Balance menu > Ⓔ Blocking

1. To block the balance tap ꔕ Block balance.
   ➔ The dialog Block balance opens.
2. Tap → Next.
3. Enter your unblocking password and tap ✔ Block balance.
   ➔ The balance is blocked and the blocking screen appears.

5.8.3.2 Unblocking the balance

- The balance is blocked and the blocking screen is open.
- The unblocking password is available.
1. To unblock the balance, type the unblocking password in the password field.
2. Tap ꔕ Unblock balance.
3. Tap ✔ Unblock balance to confirm.
   By tapping ✗ Cancel instead, the main weighing screen appears, but the balance is still blocked and only a limited number of settings can be edited.
   ➔ The balance is unblocked and the main weighing screen appears.

5.8.4 Resetting the balance

**Navigation:** Ⓒ Balance menu > Ⓔ Maintenance > Ⓔ Reset

**NOTICE**

Reset causes data loss

Resetting the balance will delete user application data and set the user configuration back to factory state.

1. To delete the data for test history and adjustment history, activate the option Also delete test and adjustment history.
2 Tap → **Next**.
   ⇒ The window **Reset balance** opens and warns that some data will be lost by resetting the balance.
3 Tap ✒ **Reset balance**.
   ⇒ The balance software restarts in factory state.
6 Software description

6.1 Balance menu settings

The Balance menu contains general settings and information. To open the section Balance menu, tap the symbol on the right-hand side of the display.

The section Balance menu is divided into the following subsections.

- ☄️ Leveling aid (see [Leveling aid Page 60])
- 📊 History (see [History Page 60])
- 📊 Balance info (see [Balance info Page 61])
- 📊 Settings (see [Settings Page 61])
- 🛠 Maintenance (see [Maintenance Page 70])

6.1.1 Leveling aid

Exact horizontal positioning and stable installation is essential for repeatable and accurate weighing results. With the Leveling aid the balance can be leveled.

Navigation: ☄️ Balance menu > ☄️ Leveling aid

Note

After leveling the balance an internal adjustment must be performed.

See also

☁️ Leveling the balance » Page 27

6.1.2 History

The balance permanently records the tests and adjustments that are performed in the section History

Navigation: ☄️ Balance menu > ☄️ History

The section History is divided into the following subsections:

- ⬈️ Adjustments, see below.
- 📈 Tests, see below.
- 🛠 Service, see below.

6.1.2.1 Adjustments

Navigation: ☄️ Balance menu > ☄️ History > ⬈️ Adjustments

A maximum of 500 entries can be stored in the adjustments history.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
<th>Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>⬈️</td>
<td>Filter</td>
<td>Tap to Filter the adjustment history by a defined date range or by a user ID.</td>
</tr>
<tr>
<td>📈</td>
<td>Print</td>
<td>Tap to print the adjustment history list.</td>
</tr>
<tr>
<td>⏰</td>
<td>Close</td>
<td>Tap to return to the section History</td>
</tr>
</tbody>
</table>

6.1.2.2 Tests

Navigation: ☄️ Balance menu > ☄️ History > 📈 Tests

A maximum of 500 entries can be stored in the test history.
### 6.1.2.3 Service

**Navigation:** 📌 Balance menu > ⌁ History > ⚒ Service

A maximum of 500 entries can be stored in the service history.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
<th>Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Filter</td>
<td>Tap to Filter the service history by a defined date range or by technician.</td>
</tr>
<tr>
<td></td>
<td>Print</td>
<td>Tap to print the service history list.</td>
</tr>
<tr>
<td></td>
<td>Close</td>
<td>Tap to return to the section History.</td>
</tr>
</tbody>
</table>

### 6.1.3 Balance info

**Navigation:** 📌 Balance menu > 📂 Balance info

The section **Balance info** shows numerous information about the specific balance such as:
- Identification
- Hardware
- Software
- Maintenance

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
<th>Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>License agreement</td>
<td>Tap to open the licence agreement.</td>
</tr>
<tr>
<td></td>
<td>Close</td>
<td>Tap to return to the section History.</td>
</tr>
</tbody>
</table>

### 6.1.4 Settings

This section describes the procedure for adapting the balance to suit specific requirements. The system settings apply to the entire weighing system and therefore to all user profiles and applications.

**Navigation:** 📌 Balance menu > ☑️ Settings

The section **Settings** is divided into the following subsections:
- 📌 Balance
- ☑️ Interfaces
- ☑️ Devices / Printers
6.1.4.1 Balance

Navigation: 📃 Balance menu > 🏷 Settings > ✎ Balance

The section Balance is divided into the following subsections:

- 🌍 Weighing / Quality
- ⛔️ Doors
- ⏰ Date / Time / Language / Format
- 🎨 Screen / StatusLight / Sound
- 📁 General

Weighing / Quality

Navigation: 📃 Balance menu > 🏷 Settings > ✎ Balance > Q Weighing / Quality

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leveling warning</td>
<td>Defines the behaviour of the option Leveling warning. When the option Forced leveling is selected and the balance is out of level, a weighing value cannot be added to the protocol (green button disabled).</td>
<td>Inactive</td>
</tr>
<tr>
<td>Tolerance profiles</td>
<td>A tolerance profile stores all the necessary balance settings needed for a certain weighing method. It is possible to create different tolerance profiles for different weighing methods. This option has several subsections and is described later in this chapter.</td>
<td></td>
</tr>
<tr>
<td>Automatic weight value output</td>
<td>Defines if and in which manner (MT-SICS and/or HID) the weighing values should be exported. This option has several subsections and is described later in this chapter.</td>
<td></td>
</tr>
<tr>
<td>GWP Approved mode</td>
<td>Good Weighing Practice (GWP®) is a program started by METTLER TOLEDO to help customers operate their weighing equipment in a safe and efficient way. It covers every relevant step in the life cycle of the instrument and provides clear guidance on how to specify, calibrate and operate weighing instruments. The GWP Approved mode observes if the following conditions are given: • Use of an appropriate tolerance profile. • The internal adjustment was successful. • Required tests were successful. • Setting up of enforced leveling. • No MinWeigh violation. If all conditions are given, the balance adds the GWP Approved sign behind every weighing result. The GWP Approved mode can only be enabled by a METTLER TOLEDO service technician.</td>
<td>Active</td>
</tr>
<tr>
<td>Balance recalib. reminder</td>
<td>Defines whether the user is reminded about the upcoming expiry date of the calibration.</td>
<td>Active</td>
</tr>
<tr>
<td>Days in advance</td>
<td>Defines the number of days before the reminder informs about the upcoming due date.</td>
<td>0…365</td>
</tr>
</tbody>
</table>
### Action when calib. expired
Defines the action when the calibration has expired.

**Block**: The balance will be blocked. In this case, the balance cannot be used anymore until a user with the appropriate right unblocks the balance.

<table>
<thead>
<tr>
<th>Values</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>None*</td>
<td>Block</td>
</tr>
</tbody>
</table>

### Days before blocking
Defines the number of days before the reminder informs about the upcoming expiry date.

| Days (30 days* | 0...400 days) |

### Weight recalib. reminder
Defines whether the user is reminded about the upcoming expiry date of the test weight calibration.

| Active | Inactive* | |

### Service reminder
Defines whether the user is reminded about the upcoming due date of the service.

| Active | Inactive* | |

* Factory setting

### Tolerance profiles
Settings relating to weighing performance and data from balance calibration can be stored in a tolerance profile.

For more information about creating tolerance profiles, see [Tolerance profiles Page 56](#)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Defines the name of the profile.</td>
<td>Text (0...22 characters)</td>
</tr>
<tr>
<td>Indicator</td>
<td>Defines the color of the indicator icon for the tolerance profile. The icon will appear above the weighing value unit. When a color is selected, a description of max. 3 characters can be added.</td>
<td>None*</td>
</tr>
<tr>
<td>Indicator text</td>
<td>Defines the text of the indicator icon.</td>
<td>Text (0...3 characters)</td>
</tr>
<tr>
<td>Calibration certificate</td>
<td>Selects a calibration certificate from a drop-down list of certificates available on the balance. New certificates can only be created by a service technician based on a performed balance calibration.</td>
<td>Calibration certificate</td>
</tr>
<tr>
<td>Environment</td>
<td>Defines the environmental conditions of the balance.</td>
<td>Very stable</td>
</tr>
<tr>
<td>Weighing mode</td>
<td>Defines the weighing mode of the balance.</td>
<td>Universal*</td>
</tr>
<tr>
<td>Value release</td>
<td>Defines the speed at which the balance regards the measured value as stable and releases it.</td>
<td>Very fast</td>
</tr>
</tbody>
</table>

**Very stable**: For an environment that is free from any drafts and vibrations.

**Stable**: For an environment that is practically free from drafts and vibrations.

**Standard**: For an average working environment subject to moderate variations in the ambient conditions.

**Unstable**: For an environment where the conditions are from time to time changing.

**Very unstable**: For an environment where the conditions are continuously changing.
### Display readability

Determines the readability [d] of the balance display.

- **1d**: Shows the maximum resolution
- **2d**: Shows the final digit in increments of 2
- **5d**: Shows the final digit in increments of 5
- **10d**: 10x smaller resolution
- **100d**: 100x smaller resolution
- **1000d**: 1000x smaller resolution

### Zero drift compensation

The function **Zero drift compensation** performs ongoing corrections of deviations from zero which may occur, for example, as a result of small amounts of dirt on the weighing pan.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zero drift compensation</td>
<td>The function <strong>Zero drift compensation</strong> performs ongoing corrections of deviations from zero which may occur, for example, as a result of small amounts of dirt on the weighing pan.</td>
<td>Active*</td>
</tr>
</tbody>
</table>

### Allowed units

Defines the units that are allowed in this tolerance profile.

- The available values are model-specific.

* Factory setting

### Automatic weight value output

The balance can be connected to a computer with a USB cable. Weighing results can then be directly transferred to a target application, e.g., Microsoft Excel.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output mode</td>
<td>Defines which weighing values are transferred via the communication interface, e.g., USB, Ethernet.</td>
<td>Protocol*</td>
</tr>
<tr>
<td>Target</td>
<td>Defines the way the weighing values are transferred.</td>
<td>HID*</td>
</tr>
</tbody>
</table>

### Weight field length

Defines the number of digits that will be transferred into the application on the computer, e.g., into an Excel field.

This parameter is only available if **Output mode** is set to **Protocol**.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight field length</td>
<td>Defines the number of digits that will be transferred into the application on the computer, e.g., into an Excel field.</td>
<td>Numeric (1*</td>
</tr>
</tbody>
</table>
Sign

Defines if the weighing result is displayed with an algebraic sign.

- **For all values**: Each weighing result is preceded by a plus or minus sign.
- **For negative values**: Only negative values are preceded by a minus sign. Positive values are transferred without algebraic sign.

This parameter is only available if **Output mode** is set to **Protocol**.

For all values | For negative values*

Sign position

Defines if the algebraic sign is positioned at the first place of the weight field or directly in front of the weight digits.

This parameter is only available if **Output mode** is set to **Protocol**.

Left of weight field | Left of weight digits*

Decimal delimiter

Defines the character used to separate the whole and fractional part of a numeric value.

This parameter is only available if **Output mode** is set to **Protocol**.

, | .*

Net indicator

In the standard output format, net weights are not specially marked. To place an N in front of net weights, this function can be activated. The net symbol is left-justified in the field.

This parameter is only available if **Output mode** is set to **Protocol**.

Active | Inactive*

Net indicator field length

Defines the field length of the Net indicator.

This parameter is only available if **Output mode** is set to **Protocol** and **Net indicator** is set to **Active**.

Numeric (2* | 1 ... 2)

Unit

Defines if a weighing unit is being shown in the weighing field.

This parameter is only available if **Output mode** is set to **Protocol**.

Active* | Inactive

Unit field length

Defines the field length of the weighing unit.

This parameter is only available if **Output mode** is set to **Protocol** and **Unit** is set to **Active**.

Numeric (1* | 1...6)

Field delimiter

Defines a character or sequence of characters to separate data fields.

This parameter is only available if **Output mode** is set to **Protocol**.

Outside* | TAB | , | ;

End of line character

Defines a character or sequence of characters signifying the end of a line.

This parameter is only available if **Output mode** is set to **Protocol**.

CRLF* | CR | LF | TAB | Outside | Enter

Updates/sec.

Defines the rate at which data is transferred.

This parameter is only available if **Output mode** is set to **Continuous**.

2 | 5 | 6* | 10

Format

Defines the format of the transferred data.

This parameter is only available if **Output mode** is set to **Continuous**.

MT-SICS* | PM | AT/MT

* Factory setting

**Doors**

**Navigation:** 🛑 Balance menu > 🛑 Settings > 🛑 Balance > 🗝️ Doors

Each of the following doors can be managed separately:

- **Door left**
### Door right

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Door drive mode</td>
<td>Defines the mode to open/close the door.</td>
<td>Motorized*</td>
</tr>
<tr>
<td>Door opening</td>
<td>Defines how far the door open. The following options appears only when Motorized is selected as the door drive mode. Enter the value manually or capture it by tapping on . The door will be open with the configured value.</td>
<td>Numeric (1...100%)</td>
</tr>
<tr>
<td>Door key left</td>
<td>Defines the automation of the left door key on the Terminal.</td>
<td>Active</td>
</tr>
<tr>
<td>Door key right</td>
<td>Defines the automation of the right door key on the Terminal.</td>
<td>Active</td>
</tr>
<tr>
<td>SmartSens left</td>
<td>Defines the touchless door function of the left optical sensor.</td>
<td>Active</td>
</tr>
<tr>
<td>SmartSens right</td>
<td>Defines the touchless door function of the right optical sensor.</td>
<td>Active</td>
</tr>
<tr>
<td>Devices</td>
<td>Defines the door opening or closing via an external device, such as an ErgoSens or a footswitch.</td>
<td>Active</td>
</tr>
<tr>
<td>Automatic (Tare / Zero / Result)</td>
<td><strong>Automatic (Tare / Zero / Result):</strong> Closes the door automatically when taring, zeroing the balance or adding to protocol.</td>
<td>Active</td>
</tr>
<tr>
<td>Automatic (Tare / Zero / Result)</td>
<td><strong>Automatic (Tare / Zero / Result):</strong> Closes the door automatically when taring, zeroing the balance or adding to protocol.</td>
<td>Active</td>
</tr>
</tbody>
</table>

* Factory setting for the right door / for the left door reverse

### Date / Time / Language / Format

**Navigation:** 📅 Balance menu > 🎒 Settings > 📅 Balance > ⏰ Date / Time / Language / Format

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>Defines the current date. Use the pick buttons Increment/Decrement to define the date.</td>
<td>Date</td>
</tr>
<tr>
<td>Time</td>
<td>Defines the current time. Use the pick buttons Increment/Decrement to define the time.</td>
<td>Time</td>
</tr>
<tr>
<td>Language</td>
<td>Defines the language of the interface navigation.</td>
<td>English</td>
</tr>
<tr>
<td>Time zone</td>
<td>Selects a time zone. When the time zone is set, the balance changes automatically between summer and winter time</td>
<td>see list on the screen</td>
</tr>
<tr>
<td>Date format</td>
<td>Selects the date format.</td>
<td>D.MM.MM.YYYY*</td>
</tr>
<tr>
<td>Time format</td>
<td>Selects the time format.</td>
<td>24:MM*</td>
</tr>
<tr>
<td>Keyboard layout</td>
<td>Defines the language of the keyboard layout.</td>
<td>English</td>
</tr>
</tbody>
</table>

* Factory setting
### Screen / StatusLight / Sound

**Navigation:** 🕒 Balance menu > ⚙️ Settings > ⚙️ Balance > ⚙️ Screen / StatusLight / Sound

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screen brightness</td>
<td>Defines the brightness of the display.</td>
<td>20 %</td>
</tr>
<tr>
<td>Sound volume</td>
<td>Defines the volume of the terminal sound.</td>
<td>Inactive</td>
</tr>
<tr>
<td>Sound on key press</td>
<td>Defines if there is a sound when a key is pressed.</td>
<td>Active*</td>
</tr>
<tr>
<td>Sound on info</td>
<td>Defines if there is a sound when an information appears on the screen.</td>
<td>Active*</td>
</tr>
<tr>
<td>Sound on warning</td>
<td>Defines if there is a sound when a warning appears on the screen.</td>
<td>Active*</td>
</tr>
<tr>
<td>Sound on error</td>
<td>Defines if there is a sound in case of an error.</td>
<td>Active*</td>
</tr>
<tr>
<td>StatusLight</td>
<td>Activates/deactivates the StatusLight.</td>
<td>Active*</td>
</tr>
<tr>
<td></td>
<td><strong>Active (without green light):</strong> All current status of the balance are monitored, the red/yellow lights will turn on if needed, but the green light will stay turned off.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• StatusLight is red: Error. The balance must not be used until the error is corrected.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• StatusLight is yellow: Warning. For example, the test manager has pushed a test to the balance or you are operating the balance between the date of the calibration reminder and the scheduled date of the next calibration. The balance can still be used.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• StatusLight is green or off: Ok. No problems detected and the balance is ready to weigh.</td>
<td></td>
</tr>
<tr>
<td>StatusLight brightness</td>
<td>Defines the brightness of the activated status light.</td>
<td>20 %</td>
</tr>
</tbody>
</table>

* Factory setting

### General

**Navigation:** 🕒 Balance menu > ⚙️ Settings > ⚙️ Balance > General

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balance ID</td>
<td>Defines the ID of the balance.</td>
<td>Text (0…22 characters)</td>
</tr>
<tr>
<td>Standby</td>
<td>Activates/deactivates the automatic standby mode.</td>
<td>Active*</td>
</tr>
<tr>
<td></td>
<td><strong>Active:</strong> The standby mode becomes active after a configurable time period the balance was not used.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Inactive:</strong> The standby mode has to be activated manually by tapping the ON/OFF button.</td>
<td></td>
</tr>
<tr>
<td>Wait time</td>
<td>Defines after how many minutes the balance switches automatically in standby mode when not used. This option is only activated when the option Standby is set to Active.</td>
<td>Numeric (10 minutes*</td>
</tr>
<tr>
<td>Software update on system start-up</td>
<td>With this option activated, software update can be performed from a USB storage device on startup.</td>
<td>Active*</td>
</tr>
</tbody>
</table>
6.1.4.2 Interfaces

**Navigation:** Balance menu > Settings > Interfaces

The section *Interfaces* has the following subsection:

- **Ethernet**
- **Bluetooth**

**Ethernet**

With the option *DHCP* activated, the parameters for the ethernet connection will be automatically set. With the option *Manual* activated, the options for the ethernet connection must be set manually by the user.

**Navigation:** Balance menu > Settings > Interfaces > Ethernet

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Host name</strong></td>
<td>Defines the balance host name.</td>
<td>Numeric (22*</td>
</tr>
<tr>
<td><strong>MAC address</strong></td>
<td>Information on the MAC address (Media Access Control) that is used to uniquely identify the balance in the network.</td>
<td>-</td>
</tr>
</tbody>
</table>
| **Network configuration** | **DHCP**: The parameters for the ethernet connection will be automatically set.  
**Manual**: The options for the ethernet connection must be set manually by the user. | DHCP* | Manual |
| **IP address**     | If the IP is not to be automatically obtained, you can enter it here.       | 000.000.000.000 … 255.255.255.255          |
| **Subnet mask**    | Defines the subnet mask that is used by the TCP/IP protocol to determine whether a host is on the local subnet or on a remote network. | 000.000.000.000 … 255.255.255.255          |
| **DNS server (primary)** | Defines the domain name server address of the primary server. | 000.000.000.000 … 255.255.255.255          |
| **DNS server (secondary)** | Defines the domain name server address of the secondary DNS server. | 000.000.000.000 … 255.255.255.255          |
| **Default gateway** | Defines the address of the default gateway that links the host's subnet to other networks. | 000.000.000.000 … 255.255.255.255          |

* Factory setting

**Bluetooth**

**Navigation:** Balance menu > Settings > Interfaces > Bluetooth

**Bluetooth identification**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Activation</strong></td>
<td>With the option Bluetooth you have the possibility to communicate with a printer via Bluetooth.</td>
<td>Inactive*</td>
</tr>
</tbody>
</table>

6.1.4.3 Devices / Printers

In this section optional external devices such as printers, barcode scanners, etc. can be added and configured.

**Navigation:** Balance menu > Settings > Devices / Printers

This section is divided into the following subsections:

- **Label printer**
- **Strip printer**
- **Barcode reader**
- **ErgoSens**
- **Foot switch**
### Label printer

**Navigation:** Balance menu > Settings > Devices / Printers > Label printer

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Printer category</td>
<td>Defines the type of the printer. Strip printer allows the printing of weighing results on strip paper.</td>
<td>Strip printer</td>
</tr>
<tr>
<td>Device</td>
<td>Allows to activate or deactivate the device.</td>
<td>Activated*</td>
</tr>
</tbody>
</table>

* Factory setting

### Strip printer

**Navigation:** Balance menu > Settings > Devices / Printers > Strip printer

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Printer category</td>
<td>Defines the type of the printer. Strip printer allows the printing of weighing results on strip paper.</td>
<td>Strip printer</td>
</tr>
</tbody>
</table>

### ErgoSens

**Navigation:** Balance menu > Settings > Devices / Printers > ErgoSens

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Function</td>
<td>Defines the function of hands-free operating that can be used to execute certain weighing functions.</td>
<td>None*</td>
</tr>
</tbody>
</table>

### Foot switch

**Navigation:** Balance menu > Settings > Devices / Printers > Foot switch

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Function</td>
<td>Defines the function be used to execute certain weighing functions.</td>
<td>None*</td>
</tr>
</tbody>
</table>

### 6.1.4.4 LabX / Services

To enable communication between LabX and instruments, the appropriate settings in the instruments must correspond with the settings in LabX.

LabX synchronizes the date and time on the instruments with the LabX Server each time a connection is made and each time a task is started. When an instrument is connected, the user interface language on the connected instrument is changed to the language currently installed on the LabX installation.

**Navigation:** Balance menu > Settings > LabX / Services

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>LabX service</td>
<td><strong>Network</strong>: A network connection to LabX will be established on startup.</td>
<td>Network I Inactive*</td>
</tr>
<tr>
<td></td>
<td><strong>Inactive</strong>: No connection to LabX will be established.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>USB</strong>: A USB connection to LabX will be established on startup.</td>
<td></td>
</tr>
<tr>
<td>MT-SICS service</td>
<td><strong>Network</strong>: A network connection to MT-SICS will be established on startup.</td>
<td>Network I Inactive*</td>
</tr>
<tr>
<td></td>
<td><strong>Inactive</strong>: No connection to MT-SICS will be established.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>USB</strong>: A USB connection to MT-SICS will be established on startup.</td>
<td></td>
</tr>
</tbody>
</table>

* Factory setting
6.1.4.5 Printing the settings

**Navigation:** ☉ Balance menu > ☀ Settings > ⋯ More

When all the balance settings are configured, you can print the complete list to archive the information.

- To print the balance settings, tap 📸 Print the settings
  ⇨ The complete balance settings are printed.

6.1.5 Maintenance

**Navigation:** ☉ Balance menu > ☁ Maintenance

The section Maintenance is divided into the following subsections:

- ☀ Import / Export
- ☁ Software update
- ⌚ Reset
- 🔄 Service

See also

- Data management ➞ Page 56
- Software update ➞ Page 125
- Resetting the balance ➞ Page 58

6.1.5.1 Service menu

**Navigation:** ☉ Balance menu > ☁ Maintenance > 🔄 Service

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
<th>Procedure</th>
</tr>
</thead>
</table>
| 📜     | Show adjustment state | Tap to open information about:  
- Temperature correction  
- Production and user linearization  
- User, production and standard calibration |
| 📁     | Save support files | Tap to save support files (all relevant information to an error) on a USB storage device like an USB stick to send it to a METTLER TOLEDO representative. |
| 📇     | Import log configuration | A log configuration file can be provided by METTLER TOLEDO to allow a more comprehensive collection of balance parameters to be stored in the support file. This is only used for troubleshooting purposes.  
Tap to import the log configuration from a USB storage device so that the enhanced list of parameters can be exported and sent to a METTLER TOLEDO representative. |

6.2 Weighing methods settings

6.2.1 Settings: method "General weighing"

In this section, the settings of the methods General Weighing and General Weighing with templates are described. Settings can be edited for a newly created method or an already existing method.
The section **General Weighing** is divided into the following subsections:

- **General**
- **ID format**
- **Weighing item** (Only available for the method **General Weighing**)
- **Templates** (Only available for the method **General Weighing with templates**)
- **Weighing**
- **Automation**
- **Print / Export**

**See also**

- Creating a method "General weighing"  

### 6.2.1.1 General

The **Method type** is defined in the wizard while creating the method and cannot be changed.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Method name</td>
<td>Defines the name of the method. The system copies the method name that has been defined with the function <strong>Method wizard</strong>.</td>
<td>Text (1...22 characters)</td>
</tr>
<tr>
<td>Comment</td>
<td>The method can be described with a comment.</td>
<td>Text (0...128 characters)</td>
</tr>
<tr>
<td>Lock method</td>
<td>Locks the method for other users and from further editing while running.</td>
<td>Active</td>
</tr>
</tbody>
</table>

* Factory setting

### 6.2.1.2 ID format

**Task IDs**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of task IDs</td>
<td>Defines the number of task IDs. If the value of the option Number of task IDs is larger than 0, the options Task ID, Description and Prefix/Default value appear for every single task ID.</td>
<td>0</td>
</tr>
<tr>
<td>Task ID 1</td>
<td>Defines the naming type of the task ID.</td>
<td>Manual with default</td>
</tr>
</tbody>
</table>
**Software description**

## Analytical Balances

### Result IDs

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of result IDs</td>
<td>Defines the number of result IDs. If the value of the option Number of result IDs is larger than 0, the options Result ID 1, Description and Prefix/Default value appear for every single result ID.</td>
<td>0</td>
</tr>
<tr>
<td>Result ID 1</td>
<td>Defines the naming type of the result ID. Manual with default: The value of the result ID can be entered manually at method execution time. Automatic counter: The system provides a value created from a prefix with an unique number (counter) appended.</td>
<td>Manual with default*</td>
</tr>
<tr>
<td>Description</td>
<td>Allows to define a label for each result ID.</td>
<td>Text (0...32 characters)</td>
</tr>
<tr>
<td>Default value</td>
<td>Defines a default value for the result ID. The value of the result ID can be changed manually while executing the method. This option only appears when the option Manual with default is activated.</td>
<td>Text (0...32 characters)</td>
</tr>
<tr>
<td>Prefix</td>
<td>Defines a prefix for the result ID. This option only appears when the option Automatic counter is activated.</td>
<td>Text (0...32 characters)</td>
</tr>
</tbody>
</table>

* Factory setting

### 6.2.1.3 Weighing item

A target weight with tolerance limits can be defined for the method. The method General Weighing includes a single item in Weighing item, whereas several items can be defined for the method General Weighing with templates in Templates.

### Initial values for weighing

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit</td>
<td>Defines the unit of the primary weighing result.</td>
<td>The available units depend on the balance model.</td>
</tr>
<tr>
<td>Target weight</td>
<td>Defines the target weight. The target weight will be shown in the weighing-in aid of the balance (SmartTrac). When a target weight including tolerances is defined, the SmartTrac indicates if the current display weight is in tolerance or not.</td>
<td>Numeric</td>
</tr>
<tr>
<td>–Tolerance</td>
<td>Defines the lower tolerance limit. This option only appears when the option Target weight is activated.</td>
<td>Numeric</td>
</tr>
</tbody>
</table>
### 6.2.1.4 Templates

This option is only available for the method General Weighing with templates.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample ID</td>
<td>Defines the name of the sample.</td>
<td>Text (0...32 characters)</td>
</tr>
<tr>
<td>Unit</td>
<td>Defines the unit of the primary weighing result.</td>
<td>The available units depend on the balance model.</td>
</tr>
<tr>
<td>Target weight</td>
<td>Defines the target weight. The target weight will be shown in the weighing-in aid of the balance (SmartTrac). When a target weight including tolerances is defined, the SmartTrac indicates if the current display weight is in tolerance or not.</td>
<td>Numeric</td>
</tr>
<tr>
<td>–Tolerance</td>
<td>Defines the lower tolerance limit. This option only appears when the option Target weight is activated.</td>
<td>Numeric</td>
</tr>
<tr>
<td>+Tolerance</td>
<td>Defines the upper tolerance limit. This option only appears when the option Target weight is activated.</td>
<td>Numeric</td>
</tr>
</tbody>
</table>

#### See also
- Creating a method "General weighing" ➤ Page 35
- Using method templates ➤ Page 43

### 6.2.1.5 Weighing

#### Custom unit

When the parameter Define custom unit is activated, additional parameters can be defined.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Define custom unit</td>
<td>With this option activated, a specific weighing unit can be defined. This allows calculations, e.g., surfaces or volumes, to be carried out directly during the determination of the weighing result. The custom units are available in all menus and input fields in which weighing units can be selected.</td>
<td>Active</td>
</tr>
<tr>
<td>Name</td>
<td>Defines the name of the custom unit.</td>
<td>Text (0...6 characters)</td>
</tr>
<tr>
<td>Formula</td>
<td>Defines how subsequently defined value for Factor is calculated. There are 2 formulae available: Multiplicative: Multiplies the net weight by the factor. Divisive: The factor is divided by the net weight. The formula can be used, for example, to simultaneously take into account a known error factor while weighing.</td>
<td>Multiplicative*</td>
</tr>
<tr>
<td>Factor</td>
<td>Defines the factor with which the effective weighing result (net weight) is calculated via the previously selected Formula.</td>
<td>Numeric</td>
</tr>
</tbody>
</table>
Display readability | Defines the formatting for the weighing result. Example: A setting of "0.05" defines two places after the decimal point with rounding to 5. A determined result of 123.4777 is consequently displayed as 123.50. This function can only be used to reduce the resolution of the weighing result. No value must therefore be entered that exceeds the maximum balance resolution. Values that are too small are automatically rounded off. | Numeric

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tolerance profile</td>
<td>A tolerance profile stores all the necessary balance settings needed for a certain weighing method. It is possible to create different tolerance profiles for different weighing methods.</td>
<td>Available tolerance profiles are model-specific.</td>
</tr>
<tr>
<td>Weight capture mode</td>
<td>Defines the behavior when the button to add the result was tapped or the add result was triggered by the automatic weighing result creation. <strong>Stable</strong>: The system waits for a stable weight. <strong>Immediate</strong>: The system doesn’t wait for a stable weight. The system waits for the defined amount of seconds (<strong>Weight capture delay</strong>). After the weight capture delay, the weight value from the weight stream is captured.</td>
<td>Stable*</td>
</tr>
<tr>
<td>Weight capture delay</td>
<td>Defines the time in seconds the balance waits for capturing the weight after the button to add the result was tapped or the add result was triggered by the automatic weighing result creation. This option only appears when the <strong>Weight capture mode</strong> is set to <strong>Immediate</strong>.</td>
<td>Numeric (5 seconds*</td>
</tr>
</tbody>
</table>

* Factory setting
## Statistics

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activate statistics</td>
<td>If <strong>Activate statistics</strong> is set to <strong>Active</strong>, the following statistics will be calculated:</td>
<td>Active</td>
</tr>
<tr>
<td></td>
<td>• <strong>Count</strong>: Number of items used for the statistics</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• <strong>Sum</strong>: Sum of all value (decimal places and unit according to the method settings)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• <strong>Minimum</strong>: Smallest value (decimal places and unit according to the method settings)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• <strong>Maximum</strong>: Largest value (decimal places and unit according to the method setting)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• <strong>Range</strong>: Difference between the largest and smallest values (decimal places and unit according to the method settings)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• <strong>Average</strong>: The values are summed up and divided by the number of values, rounded to 1 digit more than the configured decimal places in the method settings (unit according to the method settings)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• <strong>Standard deviation</strong>: Standard deviation rounded to 1 digit more than the configured decimal places in the method settings (unit according to the method settings)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• <strong>Relative standard deviation</strong>: Relative standard deviation (rounded to 2 decimal places, in %)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The statistical values are calculated and displayed as soon as a result is added or updated.</td>
<td></td>
</tr>
</tbody>
</table>

* Factory setting

## Electrostatic

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ionizer</td>
<td>Defines whether the ionizer is activated/deactivated.</td>
<td>Active</td>
</tr>
</tbody>
</table>

* Factory setting

### See also

- Creating a method "General weighing"  ➤ Page 35
### Automation

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barcode data target</td>
<td>If a barcode reader is connected to the balance, this option defines how the data is to be processed.</td>
<td>Keyboard Input*</td>
</tr>
<tr>
<td></td>
<td><strong>Keyboard Input</strong>: The data is written in the currently open input window. If no input window is open, the data is ignored.</td>
<td><strong>Target weight value</strong>: The barcode data is interpreted as a value for the target weight.</td>
</tr>
<tr>
<td></td>
<td><strong>Task ID 1</strong>: The received barcode data is treated as identification text for this task ID.</td>
<td><strong>Result ID 1</strong>: The received barcode data is treated as identification text for this result ID.</td>
</tr>
<tr>
<td></td>
<td>The available items in the drop-down menu depend on the <strong>Number of task IDs</strong> and <strong>Number of result IDs</strong> specified for the method.</td>
<td>Make sure that the characters of the scanned barcode are compatible with the format of the field where they should be inserted.</td>
</tr>
<tr>
<td></td>
<td>* Factory setting</td>
<td></td>
</tr>
</tbody>
</table>

### Weighing automation

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automatic zero</td>
<td>If <strong>Automatic zero</strong> is set to <strong>Active</strong>, the balance automatically zeros the balance when the weight falls below a predefined threshold.</td>
<td><strong>Active</strong></td>
</tr>
<tr>
<td>Automatic zero</td>
<td>Defines the threshold of the option <strong>Automatic zero</strong>.</td>
<td><strong>Numeric</strong></td>
</tr>
<tr>
<td>threshold</td>
<td>This option only appears when the option <strong>Automatic zero</strong> is activated.</td>
<td></td>
</tr>
<tr>
<td>Tare Mode</td>
<td>Defines the tare mode.</td>
<td><strong>None</strong>*</td>
</tr>
<tr>
<td></td>
<td><strong>None</strong>: No automatic tare.</td>
<td><strong>Automatic tare</strong>: The balance stores automatically the first stable weight as the tare weight.</td>
</tr>
<tr>
<td></td>
<td><strong>Automatic tare</strong>: The balance stores automatically the first stable weight as the tare weight.</td>
<td><strong>Pretare</strong>: Allows you to enter manually a numerical entry of a fixed tare weight.</td>
</tr>
<tr>
<td>Automatic tare</td>
<td>Defines the threshold of the option <strong>Tare Mode</strong>.</td>
<td><strong>Numeric</strong></td>
</tr>
<tr>
<td>threshold</td>
<td>This value defines the minimum weight that must be applied to the weighing pan so that it is automatically stored as the tare weight. If the weight is below the limits, it is not automatically transferred to the tare memory.</td>
<td></td>
</tr>
<tr>
<td>Pretare value</td>
<td>Defines a weight value for the pretare function.</td>
<td><strong>Numeric</strong></td>
</tr>
<tr>
<td></td>
<td>Instead of entering the value, the respective tare container can be placed on the weighing pan and the button [ ] subsequently pressed. The weight is directly taken over as pretare value.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>This option only appears when the option <strong>Tare Mode</strong> is set to <strong>Automatic tare</strong>.</td>
<td></td>
</tr>
</tbody>
</table>
### Automatic result

Automatically generates a weighing result after a threshold is reached.

- **None**: No automatic result will be generated.
- **With sample tare**: After a weight value that reached the threshold is being removed from the weighing pan, the balance is being tared.
- **Without sample tare**: After a weight value that reached the threshold is being removed from the weighing pan, the balance is not being tared.

### Automatic result threshold

Defines the threshold of the option **Automatic result**. The result is automatically added to the protocol only if the weight of the sample is larger than this threshold.

This option only appears when the option **Automatic result** is activated.

### Weight trigger

Defines the behaviour of the option **Automatic result threshold**.

- **Exceeding**: The weighing result is generated when the weight exceeds the defined threshold.
- **Falling below**: The weighing result is generated when the weight falls below the defined threshold.

This parameter is only available if **Automatic result** is set to **Without sample tare**.

### Automatic tare after result

If set to **Active**, the balance is automatically tared when a result is added to the **Protocol**.

### Automatic task completion

If **Automatic task completion** is set to **Active**, the balance automatically completes a running task after the last template has been added to the **Protocol**.

This option is only available if the method is using templates.

---

### Print / Export

This section is divided into the following subsections:

- **Protocol printout and data export**
- **Label printout for task**
- **Label printout for weighing item**

#### Protocol printout and data export

**Automatic data output**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strip printer</td>
<td>Activates/Deactivates automatic printing of the protocol on a strip printer when the <strong>Complete</strong> button is tapped. The data to be transmitted to the printer can be defined in the section <strong>Template settings</strong>.</td>
<td>Active</td>
</tr>
<tr>
<td>Weight value</td>
<td>Activates/Deactivates the option to automatically send the weighing value over USB or Ethernet when tapping <strong>Add to protocol</strong>.</td>
<td>Active</td>
</tr>
</tbody>
</table>

* Factory setting

---

**See also**

- Creating a method "General weighing"  ➤ Page 35

**6.2.1.7 Print / Export**

This section is divided into the following subsections:

- **Protocol printout and data export**
- **Label printout for task**
- **Label printout for weighing item**

---

**Automatic data output**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strip printer</td>
<td>Activates/Deactivates automatic printing of the protocol on a strip printer when the <strong>Complete</strong> button is tapped. The data to be transmitted to the printer can be defined in the section <strong>Template settings</strong>.</td>
<td>Active</td>
</tr>
<tr>
<td>Weight value</td>
<td>Activates/Deactivates the option to automatically send the weighing value over USB or Ethernet when tapping <strong>Add to protocol</strong>.</td>
<td>Active</td>
</tr>
</tbody>
</table>

* Factory setting
**Protocol template for printout**

This menu item can be used to define information to appear in the Protocol. The extensive menu is divided into six submenus in which options for the printout can be defined. Information can be enabled or disabled by activating or deactivating the corresponding checkbox.

Each individual parameter can set to **Inactive** or **Active** via the corresponding check box. To enable or disable all parameters at once, proceed as follows:

1. To deselect all check boxes at once, tap **Deselect all**
   - All parameters are set to **Inactive**.
2. To select all check boxes at once, tap **Select all**
   - All parameters are set to **Active**.

**Template settings**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Header and Footer</strong></td>
<td>Defines the header (with title, date and time) and/or footer (with</td>
<td>Header*</td>
</tr>
<tr>
<td></td>
<td>signature and end line) to be printed/exported.</td>
<td>Balance type</td>
</tr>
<tr>
<td><strong>Balance information</strong></td>
<td>Defines which information about the balance is being printed/exported.</td>
<td>Tolerance profile</td>
</tr>
<tr>
<td><strong>Quality information</strong></td>
<td>Defines which quality information is being printed/exported.</td>
<td>Method name</td>
</tr>
<tr>
<td><strong>Task information</strong></td>
<td>Defines which information about the task is being printed/export.</td>
<td>Show excluded weighing items</td>
</tr>
<tr>
<td><strong>Weighing item information</strong></td>
<td>Defines which information about the weighing items is being printed/exported.</td>
<td>Weight*</td>
</tr>
<tr>
<td><strong>Result detail information</strong></td>
<td>Defines which information related to the result of the measurement is being printed/exported.</td>
<td></td>
</tr>
</tbody>
</table>
Label printout for task

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automatic label printout for task</td>
<td>When set to <strong>Active</strong>, the task label is automatically printed when tapping <strong>Complete</strong>.</td>
<td>Active</td>
</tr>
<tr>
<td>Used template</td>
<td>Chooses the label template.</td>
<td>Available labels are shown below.</td>
</tr>
</tbody>
</table>

* Factory setting

**Field settings**

The content of each label field can be defined individually.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Label field 1</td>
<td>Defines which information appears in each label field. The number of label fields depends on the selected template.</td>
<td>Available entries depend on the method settings.</td>
</tr>
</tbody>
</table>

**Barcode settings**

The content of each barcode field can be defined individually. This section is only available when the selected **Used template** contains at least one 2D code.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delimiter</td>
<td>Defines the delimiter between the barcode entries. The option <strong>2D barcode delimiter</strong> appears only when the selected <strong>Used template</strong> contains several 2D codes.</td>
<td>TAB</td>
</tr>
<tr>
<td>Barcode field 1</td>
<td>Defines which information appears in each barcode. The number of the barcode fields depends on the selected template.</td>
<td>Available entries depend on the method settings.</td>
</tr>
</tbody>
</table>

Label printout for weighing items

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automatic label printout for task</td>
<td>When set to <strong>Active</strong>, the task label is automatically printed when tapping <strong>Complete</strong>.</td>
<td>Active</td>
</tr>
<tr>
<td>Used template</td>
<td>Chooses the label template.</td>
<td>Available labels are shown below.</td>
</tr>
</tbody>
</table>

* Factory setting

**Field settings**

The content of each label field can be defined individually.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Label field 1</td>
<td>Defines which information appears in each label field. The number of label fields depends on the selected template.</td>
<td>Available entries depend on the method settings.</td>
</tr>
</tbody>
</table>

**Barcode settings**

The content of each barcode field can be defined individually. This section is only available when the selected **Used template** contains at least one 2D code.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delimiter</td>
<td>Defines the delimiter between the barcode entries. The option <strong>2D barcode delimiter</strong> appears only when the selected <strong>Used template</strong> contains several 2D codes.</td>
<td>TAB</td>
</tr>
<tr>
<td>Barcode field 1</td>
<td>Defines which information appears in each barcode. The number of the barcode fields depends on the selected template.</td>
<td>Available entries depend on the method settings.</td>
</tr>
</tbody>
</table>

**Available labels**

The following label layouts can be selected:
6.2.2 Settings: method "Simple formulation"

Navigation: -Methods > -Methods list > Simple formulation > Edit

The section Simple formulation is divided into the following subsections:
- General
- Formulation
6.2.2.1 General

The Method type is defined in the wizard while creating the method and cannot be changed.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Method name</td>
<td>Defines the name of the method. The system copies the method name that has been defined with the function Method wizard.</td>
<td>Text (1...22 characters)</td>
</tr>
<tr>
<td>Comment</td>
<td>The method can be described with a comment.</td>
<td>Text (0...128 characters)</td>
</tr>
<tr>
<td>Lock method</td>
<td>Locks the method for other users and from further editing while running.</td>
<td>Active</td>
</tr>
</tbody>
</table>

* Factory setting

6.2.2.2 Formulation

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calculate target</td>
<td>In this section the flask volume and the concentration of the target can be defined.</td>
<td>None*</td>
</tr>
<tr>
<td>Calculate concentration per component</td>
<td>Calculates the concentration of the substance based on the molecular weight, purity volume and dosed amount of substance, e.g. mmol/l.  If this option is activated, the sub-options Reference weight (100%) and Concentration unit appear in the list.</td>
<td>Active</td>
</tr>
<tr>
<td>Calculate amount of component</td>
<td>Calculates the effective amount of a component based on the current weighing value.</td>
<td>Active</td>
</tr>
<tr>
<td>Concentration unit</td>
<td>Defines the concentration unit.</td>
<td>mol/l*</td>
</tr>
</tbody>
</table>
| Reference flask volume                          | Defines the volume of the reference flask. This parameter is only available if the Concentration unit is not set to %.                        | Numeric (1 ml* | 1...999999 ml)
**Reference weight (100%)**

Defines the reference weight. Instead of entering the reference weight manually, press subsequently the button . The applied weight is directly taken over as a reference weight. This parameter is only available if the **Concentration unit** is set to %.

Depending on the capacity of the balance.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production date</td>
<td>Defines the production date. <strong>Current date</strong>: The production date is set automatically to the date when starting the weighing task. <strong>Manual input</strong>: The production date can be entered manually when starting the weighing task.</td>
<td>None</td>
</tr>
</tbody>
</table>

| Expiry date | Defines the expiry date of the substance. **Period**: The expiry date is set automatically when starting the weighing task (expiry date = date when starting the weighing task + number of days defined in the field **Period**). **Manual input**: The expiry date can be entered manually when starting the weighing task. | None* | Period | Manual input |

| Period | Defines the period of the expiry date. This option only appears when the option **Expiry date** is set to **Period**. | Numeric (1 day* | 1...9999 days) |

* Factory setting

**Production and expiry date**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production date</td>
<td>Defines the production date. <strong>Current date</strong>: The production date is set automatically to the date when starting the weighing task. <strong>Manual input</strong>: The production date can be entered manually when starting the weighing task.</td>
<td>None</td>
</tr>
</tbody>
</table>

Expiry date | Defines the expiry date of the substance. **Period**: The expiry date is set automatically when starting the weighing task (expiry date = date when starting the weighing task + number of days defined in the field **Period**). **Manual input**: The expiry date can be entered manually when starting the weighing task. | None* | Period | Manual input |

Period | Defines the period of the expiry date. This option only appears when the option **Expiry date** is set to **Period**. | Numeric (1 day* | 1...9999 days) |

| Production date | Defines the production date. **Current date**: The production date is set automatically to the date when starting the weighing task. **Manual input**: The production date can be entered manually when starting the weighing task. | None | Current date* | Manual input |

| Expiry date | Defines the expiry date of the substance. **Period**: The expiry date is set automatically when starting the weighing task (expiry date = date when starting the weighing task + number of days defined in the field **Period**). **Manual input**: The expiry date can be entered manually when starting the weighing task. | None* | Period | Manual input |

| Period | Defines the period of the expiry date. This option only appears when the option **Expiry date** is set to **Period**. | Numeric (1 day* | 1...9999 days) |

* Factory setting

**See also**

Creating a method "Simple formulation" » Page 36

**6.2.2.3 ID format**

**Task IDs**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of task IDs</td>
<td>Defines the number of task IDs. If the value of the option <strong>Number of task IDs</strong> is larger than 0, the options <strong>Task ID</strong>, <strong>Description</strong> and <strong>Prefix/Default value</strong> appear for every single task ID.</td>
<td>0</td>
</tr>
</tbody>
</table>

Task ID 1 | Defines the naming type of the task ID. **Manual with default**: The value of the task ID can be entered manually at method execution time. **Automatic timestamp**: The system provides a value created from a prefix with the current date and time appended. | Manual with default* | Automatic timestamp |

Description | Allows to define a label for each task ID field. | Text (0...32 characters) |

Default value | Defines a default value for the task ID. The value of the task ID can be changed manually while executing the method. This option only appears when the option **Manual with default** is activated. | Text (0...32 characters) |

Prefix | Defines a prefix for the task ID. This option only appears when the option **Automatic timestamp** is activated. | Text (0...32 characters) |

* Factory setting
### Result IDs

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of result IDs</td>
<td>Defines the number of result IDs. If the value of the option <strong>Number of result IDs</strong> is larger than 0, the options <strong>Result ID 1, Description</strong> and <strong>Prefix/Default value</strong> appear for every single result ID.</td>
<td>0</td>
</tr>
<tr>
<td>Result ID 1</td>
<td>Defines the naming type of the result ID. <strong>Manual with default</strong>: The value of the result ID can be entered manually at method execution time. <strong>Automatic counter</strong>: The system provides a value created from a prefix with an unique number (counter) appended.</td>
<td>Manual with default*</td>
</tr>
<tr>
<td>Description</td>
<td>Allows to define a label for each result ID.</td>
<td>Text (0…32 characters)</td>
</tr>
<tr>
<td>Default value</td>
<td>Defines a default value for the result ID. The value of the result ID can be changed manually while executing the method. This option only appears when the option <strong>Manual with default</strong> is activated.</td>
<td>Text (0…32 characters)</td>
</tr>
<tr>
<td>Prefix</td>
<td>Defines a prefix for the result ID. This option only appears when the option <strong>Automatic counter</strong> is activated.</td>
<td>Text (0…32 characters)</td>
</tr>
</tbody>
</table>

* Factory setting

### 6.2.2.4 Weighing item

A target weight with tolerance limits can be defined for the method. The method **Simple formulation** includes a single item in **Weighing item**, whereas several items can be defined for the method **Simple formulation with templates** in **Templates**.

#### Initial values for weighing

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit</td>
<td>Defines the unit of the primary weighing result.</td>
<td>The available units depend on the balance model.</td>
</tr>
<tr>
<td>Target weight</td>
<td>Defines the target weight. The target weight will be shown in the weighing-in aid of the balance (SmartTrac). When a target weight including tolerances is defined, the SmartTrac indicates if the current display weight is in tolerance or not.</td>
<td>Numeric</td>
</tr>
<tr>
<td>–Tolerance</td>
<td>Defines the lower tolerance limit. This option only appears when the option <strong>Target weight</strong> is activated.</td>
<td>Numeric</td>
</tr>
<tr>
<td>+Tolerance</td>
<td>Defines the upper tolerance limit. This option only appears when the option <strong>Target weight</strong> is activated.</td>
<td>Numeric</td>
</tr>
</tbody>
</table>

#### See also

Creating a method "Simple formulation" - Page 36

### 6.2.2.5 Templates

#### Note

Detailed information about how to create templates and the use of templates can be found in the section Using templates.
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Component ID</td>
<td>Assigns a name to the component ID</td>
<td>Text (0...32 characters)</td>
</tr>
<tr>
<td>Purity</td>
<td>To define the purity of the component. This parameter is only accessible if <em>Calculate amount of component</em> is set to <em>Active</em>.</td>
<td>Numeric (0.001...100%)</td>
</tr>
<tr>
<td>Unit</td>
<td>Defines the unit of the primary weighing result.</td>
<td>The available units depend on the balance model.</td>
</tr>
<tr>
<td>Target weight</td>
<td>Defines the target weight. The target weight will be shown in the weighing-in aid of the balance (SmartTrac). When a target weight including tolerances is defined, the SmartTrac indicates if the current display weight is in tolerance or not.</td>
<td>Numeric</td>
</tr>
<tr>
<td>Target concentration</td>
<td></td>
<td>Numeric (0.001...100%)</td>
</tr>
<tr>
<td>-Tolerance</td>
<td>Defines the lower tolerance limit. This option only appears when the option <strong>Target weight</strong> is activated.</td>
<td>Numeric</td>
</tr>
<tr>
<td>+Tolerance</td>
<td>Defines the upper tolerance limit. This option only appears when the option <strong>Target weight</strong> is activated.</td>
<td>Numeric</td>
</tr>
</tbody>
</table>

See also

- Creating a method “Simple formulation” ➤ Page 36
- Using method templates ➤ Page 43

6.2.2.6 Weighing

Weighing settings

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tolerance profile</td>
<td>A tolerance profile stores all the necessary balance settings needed for a certain weighing method. It is possible to create different tolerance profiles for different weighing methods.</td>
<td>Available tolerance profiles are model-specific.</td>
</tr>
</tbody>
</table>

Electrostatic

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ionizer</td>
<td>Defines whether the ionizer is activated/deactivated.</td>
<td>Active</td>
</tr>
</tbody>
</table>

* Factory setting

See also

- Creating a method “Simple formulation” ➤ Page 36
### 6.2.2.7 Automation

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barcode data target</td>
<td>If a barcode reader is connected to the balance, this option defines how the data is to be processed. Keyboard Input: The data is written in the currently open input window. If no input window is open, the data is ignored. Target weight value: The barcode data is interpreted as a value for the target weight. Task ID 1: The received barcode data is treated as identification text for this task ID. Result ID 1: The received barcode data is treated as identification text for this result ID. The available items in the drop-down menu depend on the Number of task IDs and Number of result IDs specified for the method. Make sure that the characters of the scanned barcode are compatible with the format of the field where they should be inserted.</td>
<td>Keyboard Input* I Target weight value I Task ID 1 I Result ID 1 ...</td>
</tr>
</tbody>
</table>

* Factory setting

#### Weighing automation

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automatic zero</td>
<td>If Automatic zero is set to Active, the balance automatically zeros the balance when the weight falls below a predefined threshold.</td>
<td>Active I Inactive*</td>
</tr>
<tr>
<td>Automatic zero threshold</td>
<td>Defines the threshold of the option Automatic zero. This option only appears when the option Automatic zero is activated.</td>
<td>Numeric</td>
</tr>
<tr>
<td>Tare Mode</td>
<td>Defines the tare mode. None: No automatic tare. Automatic tare: The balance stores automatically the first stable weight as the tare weight. Pretare: Allows you to enter manually a numerical entry of a fixed tare weight.</td>
<td>None* I Automatic tare I Pretare</td>
</tr>
<tr>
<td>Automatic tare threshold</td>
<td>Defines the threshold of the option Tare Mode. This value defines the minimum weight that must be applied to the weighing pan so that it is automatically stored as the tare weight. If the weight is below the limits, it is not automatically transferred to the tare memory. Instead of entering the weight, the lightest tare container can be placed on the weighing pan and the button subsequently pressed. The applied weight is directly taken over as a limit. This option only appears when the option Tare Mode is set to Automatic tare.</td>
<td>Numeric</td>
</tr>
<tr>
<td>Pretare value</td>
<td>Defines a weight value for the pretare function. Instead of entering the value, the respective tare container can be placed on the weighing pan and the button subsequently pressed. The weight is directly taken over as pretare value. This option only appears when the option Tare Mode is set to Pretare.</td>
<td>Numeric</td>
</tr>
</tbody>
</table>
Automatic tare after result

If set to **Active**, the balance is automatically tared when a result is added to the **Protocol**.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strip printer</td>
<td>Activates/Deactivates automatic printing of the protocol on a strip printer when the <strong>Complete</strong> button is tapped. The data to be transmitted to the printer can be defined in the section <strong>Template settings</strong>.</td>
<td>Active</td>
</tr>
<tr>
<td>Weight value</td>
<td>Activates/Deactivates the option to automatically send the weighing value over USB or Ethernet when tapping <strong>Add to protocol</strong>.</td>
<td>Active</td>
</tr>
</tbody>
</table>

* Factory setting

**See also**

Creating a method *Simple formulation* ➤ Page 36

### 6.2.2.8 Print / Export

This section is divided into the following subsections:

- **Protocol printout and data export**
- **Label printout for task**
- **Label printout for weighing item**

### 6.2.2.8.1 Protocol printout and data export

**Automatic data output**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strip printer</td>
<td>Activates/Deactivates automatic printing of the protocol on a strip printer when the <strong>Complete</strong> button is tapped. The data to be transmitted to the printer can be defined in the section <strong>Template settings</strong>.</td>
<td>Active</td>
</tr>
<tr>
<td>Weight value</td>
<td>Activates/Deactivates the option to automatically send the weighing value over USB or Ethernet when tapping <strong>Add to protocol</strong>.</td>
<td>Active</td>
</tr>
</tbody>
</table>

* Factory setting

**Protocol template for printout**

This menu item can be used to define information to appear in the **Protocol**. The extensive menu is divided into six submenus in which options for the printout can be defined. Information can be enabled or disabled by activating or deactivating the corresponding checkbox.

Each individual parameter can set to **Inactive** or **Active** via the corresponding check box. To enable or disable all parameters at once, proceed as follows:

1. To deselect all check boxes at once, tap **Deselect all**
   ➔ All parameters are set to **Inactive**.
2. To select all check boxes at once, tap **Select all**
   ➔ All parameters are set to **Active**.

**Template settings**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Header and Footer</td>
<td>Defines the header (with title, date and time) and/or footer (with signature and end line) to be printed/exported.</td>
<td>Header*</td>
</tr>
<tr>
<td>Balance information</td>
<td>Defines which information about the balance is being printed/exported.</td>
<td>Balance type</td>
</tr>
<tr>
<td>Quality information</td>
<td>Defines which quality information is being printed/exported.</td>
<td>Tolerance profile Adjustment date/time Routine test name Routine test last execution date Routine test result GWP Approved state Level state MinWeigh state</td>
</tr>
<tr>
<td>---------------------</td>
<td>-----------------------------------------------------------</td>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td>Task information</td>
<td>Defines which information about the task is being printed/exported.</td>
<td>Method name Method comment Task ID Flask volume Reference weight Expiry date Production date*</td>
</tr>
<tr>
<td>Weighing item</td>
<td>Defines which information about the weighing items is being printed/exported.</td>
<td>Show excluded weighing items Result State Result IDs Molar mass Purity Amount of substance Concentration GWP Approved state Level state MinWeigh state Tolerance state Target and tolerances state*</td>
</tr>
<tr>
<td>Result detail</td>
<td>Defines which information related to the result of the measurement is being printed/exported.</td>
<td>Weight Tare weight Gross weight Info weight Date/time Stability</td>
</tr>
</tbody>
</table>

* Factory setting

**Label printout for task**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automatic label printout for task</td>
<td>When set to <strong>Active</strong>, the task label is automatically printed when tapping <strong>Complete</strong>.</td>
<td><strong>Active</strong></td>
</tr>
<tr>
<td>Used template</td>
<td>Chooses the label template.</td>
<td>Available labels are shown below.</td>
</tr>
</tbody>
</table>

* Factory setting

**Field settings**

The content of each label field can be defined individually.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Label field 1</td>
<td>Defines which information appears in each label field. The number of label fields depends on the selected template.</td>
<td>Available entries depend on the method settings.</td>
</tr>
</tbody>
</table>

**Barcode settings**

The content of each barcode field can be defined individually. This section is only available when the selected **Used template** contains at least one 2D code.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delimiter</td>
<td>Defines the delimiter between the barcode entries. The option <strong>2D barcode delimiter</strong> appears only when the selected <strong>Used template</strong> contains several 2D codes.</td>
<td><strong>TAB</strong></td>
</tr>
</tbody>
</table>
Barcode field 1 | Defines which information appears in each barcode. The number of the barcode fields depends on the selected template. | Available entries depend on the method settings.

### Label printout for weighing items

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automatic label printout for task</td>
<td>When set to <strong>Active</strong>, the task label is automatically printed when tapping <strong>Complete</strong>.</td>
<td>Active</td>
</tr>
</tbody>
</table>

* Factory setting

### Field settings

The content of each label field can be defined individually.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Label field 1</td>
<td>Defines which information appears in each label field. The number of label fields depends on the selected template.</td>
<td>Available entries depend on the method settings.</td>
</tr>
</tbody>
</table>

### Barcode settings

The content of each barcode field can be defined individually. This section is only available when the selected **Used template** contains at least one 2D code.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delimiter</td>
<td>Defines the delimiter between the barcode entries. The option <strong>2D barcode delimiter</strong> appears only when the selected <strong>Used template</strong> contains several 2D codes.</td>
<td>TAB</td>
</tr>
<tr>
<td>Barcode field 1</td>
<td>Defines which information appears in each barcode. The number of the barcode fields depends on the selected template.</td>
<td>Available entries depend on the method settings.</td>
</tr>
</tbody>
</table>

### Available Labels

The following label layouts can be selected:

- **5 large fields**
- **5 small fields**
- **10 small fields**
- **1D barcode with 3 large fields**
- **1D barcode with 3 small fields**
- **1D barcode with 6 small fields**
6.2.3 Settings: method "Piece counting"

The section **Piece counting** is divided into the following subsections:

- **General**
- **ID format**
- **Weighing item**
- **Weighing**
- **Automation**
- **Print / Export**

See also

Creating a method “Piece counting”  ➤ Page 38

### 6.2.3.1 General

The **Method type** is defined in the wizard while creating the method and cannot be changed.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Method name</td>
<td>Defines the name of the method. The system copies the method name that has been defined with the function <strong>Method wizard</strong>.</td>
<td>Text (1...22 characters)</td>
</tr>
<tr>
<td>Comment</td>
<td>The method can be described with a comment.</td>
<td>Text (0...128 characters)</td>
</tr>
<tr>
<td>Lock method</td>
<td>Locks the method for other users and from further editing while running.</td>
<td>Active</td>
</tr>
</tbody>
</table>

* Factory setting
### 6.2.3.2 ID format

#### Task IDs

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of task IDs</td>
<td>Defines the number of task IDs. If the value of the option <strong>Number of task IDs</strong> is larger than 0, the options <strong>Task ID</strong>, <strong>Description</strong> and <strong>Prefix/Default value</strong> appear for every single task ID.</td>
<td>0</td>
</tr>
<tr>
<td>Task ID 1</td>
<td>Defines the naming type of the task ID. <strong>Manual with default</strong>: The value of the task ID can be entered manually at method execution time. <strong>Automatic timestamp</strong>: The system provides a value created from a prefix with the current date and time appended.</td>
<td>Manual with default*</td>
</tr>
<tr>
<td>Description</td>
<td>Allows to define a label for each task ID field.</td>
<td>Text (0...32 characters)</td>
</tr>
<tr>
<td>Default value</td>
<td>Defines a default value for the task ID. The value of the task ID can be changed manually while executing the method. This option only appears when the option <strong>Manual with default</strong> is activated.</td>
<td>Text (0...32 characters)</td>
</tr>
<tr>
<td>Prefix</td>
<td>Defines a prefix for the task ID. This option only appears when the option <strong>Automatic timestamp</strong> is activated.</td>
<td>Text (0...32 characters)</td>
</tr>
</tbody>
</table>

* Factory setting

#### Result IDs

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of result IDs</td>
<td>Defines the number of result IDs. If the value of the option <strong>Number of result IDs</strong> is larger than 0, the options <strong>Result ID 1</strong>, <strong>Description</strong> and <strong>Prefix/Default value</strong> appear for every single result ID.</td>
<td>0</td>
</tr>
<tr>
<td>Result ID 1</td>
<td>Defines the naming type of the result ID. <strong>Manual with default</strong>: The value of the result ID can be entered manually at method execution time. <strong>Automatic counter</strong>: The system provides a value created from a prefix with an unique number (counter) appended.</td>
<td>Manual with default*</td>
</tr>
<tr>
<td>Description</td>
<td>Allows to define a label for each result ID.</td>
<td>Text (0...32 characters)</td>
</tr>
<tr>
<td>Default value</td>
<td>Defines a default value for the result ID. The value of the result ID can be changed manually while executing the method. This option only appears when the option <strong>Manual with default</strong> is activated.</td>
<td>Text (0...32 characters)</td>
</tr>
<tr>
<td>Prefix</td>
<td>Defines a prefix for the result ID. This option only appears when the option <strong>Automatic counter</strong> is activated.</td>
<td>Text (0...32 characters)</td>
</tr>
</tbody>
</table>

* Factory setting

### 6.2.3.3 Weighing item

#### Initial values for weighing

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference PCS</td>
<td>Defines a reference unit quantity. This allows you to determine the reference unit weight with a defined, fixed number of pieces.</td>
<td>Numeric (10*</td>
</tr>
</tbody>
</table>
Reference average weight

Defines the average weight for one piece. The average weight of one piece serves as basis for the piece counting. During task execution, the balance calculates the actual number of pieces on the weighing pan based on the measured weight and the average weight of one piece.

Target weight

Defines the target weight. The target weight will be shown in the weighing-in aid of the balance (SmartTrac). When a target weight including tolerances is defined, the SmartTrac indicates if the current display weight is in tolerance or not.

-Tolerance

Defines the lower tolerance limit.

This option only appears when the option Target weight is activated.

+Tolerance

Defines the upper tolerance limit.

This option only appears when the option Target weight is activated.

See also

Creating a method “Piece counting”  Page 38

6.2.3.4 Weighing

Weighing settings

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tolerance profile</td>
<td>A tolerance profile stores all the necessary balance settings needed for a certain weighing method. It is possible to create different tolerance profiles for different weighing methods.</td>
<td>Available tolerance profiles are model-specific.</td>
</tr>
<tr>
<td>Weight capture mode</td>
<td>Defines the behavior when the button to add the result was tapped or the add result was triggered by the automatic weighing result creation. Stable: The system waits for a stable weight. Immediate: The system doesn’t wait for a stable weight. The system waits for the defined amount of seconds (Weight capture delay). After the weight capture delay, the weight value from the weight stream is captured.</td>
<td>Stable*</td>
</tr>
<tr>
<td>Weight capture delay</td>
<td>Defines the time in seconds the balance waits for capturing the weight after the button to add the result was tapped or the add result was triggered by the automatic weighing result creation. This option only appears when the Weight capture mode is set to Immediate.</td>
<td>Numeric (5 seconds*</td>
</tr>
</tbody>
</table>

* Factory setting
### Statistics

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activate statistics</td>
<td>If <strong>Activate statistics</strong> is set to <strong>Active</strong>, the following statistics will be calculated:</td>
<td>Active</td>
</tr>
<tr>
<td></td>
<td>• <strong>Count</strong>: Number of items used for the statistics</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• <strong>Sum</strong>: Sum of all value (decimal places and unit according to the method settings)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• <strong>Minimum</strong>: Smallest value (decimal places and unit according to the method settings)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• <strong>Maximum</strong>: Largest value (decimal places and unit according to the method settings)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• <strong>Range</strong>: Difference between the largest and smallest values (decimal places and unit according to the method settings)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• <strong>Average</strong>: The values are summed up and divided by the number of values, rounded to 1 digit more than the configured decimal places in the method settings (unit according to the method settings)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• <strong>Standard deviation</strong>: Standard deviation rounded to 1 digit more than the configured decimal places in the method settings (unit according to the method settings)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• <strong>Relative standard deviation</strong>: Relative standard deviation (rounded to 2 decimal places, in %)</td>
<td></td>
</tr>
</tbody>
</table>

The statistical values are calculated and displayed as soon as a result is added or updated.

* Factory setting

### 6.2.3.5 Automation

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barcode data target</td>
<td>If a barcode reader is connected to the balance, this option defines how the data is to be processed.</td>
<td>Keyboard Input*</td>
</tr>
<tr>
<td>Keyboard Input</td>
<td>The data is written in the currently open input window. If no input window is open, the data is ignored.</td>
<td></td>
</tr>
<tr>
<td>Target weight value</td>
<td>The barcode data is interpreted as a value for the target weight.</td>
<td></td>
</tr>
<tr>
<td>Task ID 1</td>
<td>The received barcode data is treated as identification text for this task ID.</td>
<td></td>
</tr>
<tr>
<td>Result ID 1</td>
<td>The received barcode data is treated as identification text for this result ID.</td>
<td></td>
</tr>
</tbody>
</table>

The available items in the drop-down menu depend on the **Number of task IDs** and **Number of result IDs** specified for the method.

Make sure that the characters of the scanned barcode are compatible with the format of the field where they should be inserted.

* Factory setting

### Weighing automation

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automatic zero</td>
<td>If <strong>Automatic zero</strong> is set to <strong>Active</strong>, the balance automatically zeros the balance when the weight falls below a predefined threshold.</td>
<td>Active</td>
</tr>
</tbody>
</table>

* Factory setting
<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automatic zero threshold</td>
<td>Defines the threshold of the option <strong>Automatic zero</strong>. This option only appears when the option <strong>Automatic zero</strong> is activated.</td>
<td>Numeric</td>
</tr>
</tbody>
</table>
| Tare Mode                           | Defines the tare mode.  
**None**: No automatic tare.  
**Automatic tare**: The balance stores automatically the first stable weight as the tare weight.  
**Pretare**: Allows you to enter manually a numerical entry of a fixed tare weight.                                                                                       | None*  |
| Automatic tare threshold            | Defines the threshold of the option **Tare Mode**. This value defines the minimum weight that must be applied to the weighing pan so that it is automatically stored as the tare weight. If the weight is below the limits, it is not automatically transferred to the tare memory.  
Instead of entering the weight, the lightest tare container can be placed on the weighing pan and the button subsequently pressed. The applied weight is directly taken over as a limit.  
This option only appears when the option **Tare Mode** is set to **Automatic tare**.                                                                                           | Numeric|
| Pretare value                       | Defines a weight value for the pretare function. Instead of entering the value, the respective tare container can be placed on the weighing pan and the button subsequently pressed. The weight is directly taken over as pretare value.  
This option only appears when the option **Tare Mode** is set to **Pretare**.                                                                                              | Numeric|
| Automatic result                    | Automatically generates a weighing result after a threshold is reached.  
**None**: No automatic result will be generated.  
**Without sample tare**: After a weight value that reached the threshold is being removed from the weighing pan, the balance is not being tared.                                                      | None*  |
| Automatic result threshold          | Defines the threshold of the option **Automatic result**. The result is automatically added to the protocol only if the weight of the sample is larger than this threshold.  
This option only appears when the option **Automatic result** is activated.                                                                                                    | Numeric|
| Weight trigger                      | Defines the behaviour of the option **Automatic result threshold**.  
**Exceeding**: The weighing result is generated when the weight exceeds the defined threshold.  
**Falling below**: The weighing result is generated when the weight falls below the defined threshold.  
This parameter is only available if **Automatic result** is set to **Without sample tare**.                                                                                  | Exceeding* |
| Automatic tare after result         | If set to **Active**, the balance is automatically tared when a result is added to the **Protocol**.                                                                                                                                  | Active* |

* Factory setting

When using **Automatic result**, make sure that the **Reference average weight** of one piece is larger than the **Automatic result threshold**.

**See also**

- Creating a method "Piece counting" ➤ Page 38
### 6.2.3.6 Print / Export

This section is divided into the following subsections:

- Protocol printout and data export
- Label printout for task
- Label printout for weighing item

#### Protocol printout and data export

**Automatic data output**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strip printer</td>
<td>Activates/Deactivates automatic printing of the protocol on a strip printer when the <strong>Complete</strong> button is tapped. The data to be transmitted to the printer can be defined in the section <strong>Template settings</strong>.</td>
<td>Active</td>
</tr>
<tr>
<td>Weight value</td>
<td>Activates/Deactivates the option to automatically send the weighing value over USB or Ethernet when tapping <strong>Add to protocol</strong>.</td>
<td>Active</td>
</tr>
</tbody>
</table>

* Factory setting

**Protocol template for printout**

This menu item can be used to define information to appear in the **Protocol**. The extensive menu is divided into six submenus in which options for the printout can be defined. Information can be enabled or disabled by activating or deactivating the corresponding checkbox.

Each individual parameter can set to **Inactive** or **Active** via the corresponding check box. To enable or disable all parameters at once, proceed as follows:

1. To deselect all check boxes at once, tap **Deselect all** ⇒ All parameters are set to **Inactive**.
2. To select all check boxes at once, tap **Select all** ⇒ All parameters are set to **Active**.

**Template settings**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Header and Footer</td>
<td>Defines the header (with title, date and time) and/or footer (with signature and end line) to be printed/exported.</td>
<td>Header*</td>
</tr>
<tr>
<td>Balance information</td>
<td>Defines which information about the balance is being printed/exported.</td>
<td>Balance type</td>
</tr>
<tr>
<td>Quality information</td>
<td>Defines which quality information is being printed/exported.</td>
<td>Tolerance profile</td>
</tr>
<tr>
<td>Parameter</td>
<td>Description</td>
<td>Values</td>
</tr>
<tr>
<td>-----------</td>
<td>-------------</td>
<td>--------</td>
</tr>
<tr>
<td>Automatic label printout for task</td>
<td>When set to Active, the task label is automatically printed when tapping Complete.</td>
<td>Active</td>
</tr>
<tr>
<td>Used template</td>
<td>Chooses the label template.</td>
<td>Available labels are shown below.</td>
</tr>
</tbody>
</table>

* Factory setting

**Field settings**

The content of each label field can be defined individually.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Label field 1</td>
<td>Defines which information appears in each label field. The number of label fields depends on the selected template.</td>
<td>Available entries depend on the method settings.</td>
</tr>
</tbody>
</table>

**Barcode settings**

The content of each barcode field can be defined individually. This section is only available when the selected **Used template** contains at least one 2D code.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delimiter</td>
<td>Defines the delimiter between the barcode entries. The option <strong>2D barcode delimiter</strong> appears only when the selected <strong>Used template</strong> contains several 2D codes.</td>
<td>TAB</td>
</tr>
<tr>
<td>Barcode field 1</td>
<td>Defines which information appears in each barcode. The number of the barcode fields depends on the selected template.</td>
<td>Available entries depend on the method settings.</td>
</tr>
</tbody>
</table>
Label printout for weighing items

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automatic label printout for task</td>
<td>When set to <strong>Active</strong>, the task label is automatically printed when tapping <strong>Complete</strong>.</td>
<td><strong>Active</strong></td>
</tr>
<tr>
<td>Used template</td>
<td>Chooses the label template.</td>
<td><strong>Available labels are shown below</strong>.</td>
</tr>
</tbody>
</table>

* Factory setting

**Field settings**

The content of each label field can be defined individually.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Label field 1</td>
<td>Defines which information appears in each label field. The number of label fields depends on the selected template.</td>
<td><strong>Available entries depend on the method settings</strong>.</td>
</tr>
</tbody>
</table>

**Barcode settings**

The content of each barcode field can be defined individually. This section is only available when the selected **Used template** contains at least one 2D code.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delimiter</td>
<td>Defines the delimiter between the barcode entries.</td>
<td><strong>TAB</strong></td>
</tr>
<tr>
<td>Barcode field 1</td>
<td>Defines which information appears in each barcode. The number of the barcode fields depends on the selected template.</td>
<td><strong>Available entries depend on the method settings</strong>.</td>
</tr>
</tbody>
</table>

**Available Labels**

The following label layouts can be selected:

- 5 large fields
- 5 small fields
- 10 small fields
- 1D barcode with 3 large fields
- 1D barcode with 3 small fields
- 1D barcode with 6 small fields
6.2.4 Settings: method "Titration"

The section Titration is divided into the following subsections:

- General
- ID format
- Weighing item
- Weighing
- Automation
- Print / Export

See also

Creating a method "Titration" ➤ Page 40

6.2.4.1 General

The Method type is defined in the wizard while creating the method and cannot be changed.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Method name</td>
<td>Defines the name of the method. The system copies the method name that has been defined with the function Method wizard.</td>
<td>Text (1...22 characters)</td>
</tr>
<tr>
<td>Comment</td>
<td>The method can be described with a comment.</td>
<td>Text (0...128 characters)</td>
</tr>
<tr>
<td>Lock method</td>
<td>Locks the method for other users and from further editing while running.</td>
<td>Active</td>
</tr>
</tbody>
</table>

* Factory setting
### ID format

#### Task IDs

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of task IDs</td>
<td>Defines the number of task IDs. If the value of the option <strong>Number of task IDs</strong> is larger than 0, the options Task ID, Description and Prefix/Default value appear for every single task ID.</td>
<td>0</td>
</tr>
<tr>
<td>Task ID 1</td>
<td>Defines the naming type of the task ID.</td>
<td>Manual with default*</td>
</tr>
<tr>
<td><strong>Manual with default</strong>:</td>
<td>The value of the task ID can be entered manually at method execution time.</td>
<td></td>
</tr>
<tr>
<td><strong>Automatic timestamp</strong>:</td>
<td>The system provides a value created from a prefix with the current date and time appended.</td>
<td></td>
</tr>
<tr>
<td>Description</td>
<td>Allows to define a label for each task ID field.</td>
<td>Text (0…32 characters)</td>
</tr>
<tr>
<td>Default value</td>
<td>Defines a default value for the task ID. The value of the task ID can be changed manually while executing the method. This option only appears when the option Manual with default is activated.</td>
<td>Text (0…32 characters)</td>
</tr>
<tr>
<td>Prefix</td>
<td>Defines a prefix for the task ID. This option only appears when the option Automatic timestamp is activated.</td>
<td>Text (0…32 characters)</td>
</tr>
</tbody>
</table>

* Factory setting

#### Result IDs

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of result IDs</td>
<td>Defines the number of result IDs. If the value of the option <strong>Number of result IDs</strong> is larger than 0, the options Result ID 1, Description and Prefix/Default value appear for every single result ID.</td>
<td>0</td>
</tr>
<tr>
<td>Result ID 1</td>
<td>Defines the naming type of the result ID.</td>
<td>Manual with default*</td>
</tr>
<tr>
<td><strong>Manual with default</strong>:</td>
<td>The value of the result ID can be entered manually at method execution time.</td>
<td></td>
</tr>
<tr>
<td><strong>Automatic counter</strong>:</td>
<td>The system provides a value created from a prefix with an unique number (counter) appended.</td>
<td></td>
</tr>
<tr>
<td>Description</td>
<td>Allows to define a label for each result ID.</td>
<td>Text (0…32 characters)</td>
</tr>
<tr>
<td>Default value</td>
<td>Defines a default value for the result ID. The value of the result ID can be changed manually while executing the method. This option only appears when the option Manual with default is activated.</td>
<td>Text (0…32 characters)</td>
</tr>
<tr>
<td>Prefix</td>
<td>Defines a prefix for the result ID. This option only appears when the option Automatic counter is activated.</td>
<td>Text (0…32 characters)</td>
</tr>
</tbody>
</table>

* Factory setting
### 6.2.4.3 Weighing item

#### Initial values for weighing

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit</td>
<td>Defines the unit of the primary weighing result.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The available units depend on the balance model.</td>
<td></td>
</tr>
<tr>
<td>Target weight</td>
<td>Defines the target weight. The target weight will be shown in the weighing-in aid of the balance (SmartTrac). When a target weight including tolerances is defined, the SmartTrac indicates if the current display weight is in tolerance or not.</td>
<td>Numeric</td>
</tr>
<tr>
<td>–Tolerance</td>
<td>Defines the lower tolerance limit. This option only appears when the option Target weight is activated.</td>
<td>Numeric</td>
</tr>
<tr>
<td>+Tolerance</td>
<td>Defines the upper tolerance limit. This option only appears when the option Target weight is activated.</td>
<td>Numeric</td>
</tr>
</tbody>
</table>

#### 6.2.4.4 Weighing

#### Weighing settings

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tolerance profile</td>
<td>A tolerance profile stores all the necessary balance settings needed for a certain weighing method. It is possible to create different tolerance profiles for different weighing methods.</td>
<td>Available tolerance profiles are model-specific.</td>
</tr>
<tr>
<td>Weight capture mode</td>
<td>Defines the behavior when the button to add the result was tapped or the add result was triggered by the automatic weighing result creation.</td>
<td>Stable*</td>
</tr>
<tr>
<td></td>
<td><strong>Stable</strong>: The system waits for a stable weight.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Immediate</strong>: The system doesn’t wait for a stable weight. The system waits for the defined amount of seconds (Weight capture delay). After the weight capture delay, the weight value from the weight stream is captured.</td>
<td></td>
</tr>
<tr>
<td>Weight capture delay</td>
<td>Defines the time in seconds the balance waits for capturing the weight after the button to add the result was tapped or the odd result was triggered by the automatic weighing result creation. This option only appears when the Weight capture mode is set to Immediate.</td>
<td>Numeric (5 seconds*</td>
</tr>
</tbody>
</table>

* Factory setting

#### Electrostatic

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ionizer</td>
<td>Defines whether the ionizer is activated/deactivated.</td>
<td>Active</td>
</tr>
</tbody>
</table>

* Factory setting

#### See also

- Creating a method "Titration" ➤ Page 40
### 6.2.4.5 Automation

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barcode data target</td>
<td>If a barcode reader is connected to the balance, this option defines how the data is to be processed. <strong>Keyboard Input</strong>: The data is written in the currently open input window. If no input window is open, the data is ignored. <strong>Target weight value</strong>: The barcode data is interpreted as a value for the target weight. <strong>Task ID 1</strong>: The received barcode data is treated as identification text for this task ID. <strong>Result ID 1</strong>: The received barcode data is treated as identification text for this result ID. The available items in the drop-down menu depend on the <strong>Number of task IDs</strong> and <strong>Number of result IDs</strong> specified for the method. Make sure that the characters of the scanned barcode are compatible with the format of the field where they should be inserted.</td>
<td>Keyboard Input*</td>
</tr>
<tr>
<td></td>
<td><strong>Weighing automation</strong></td>
<td></td>
</tr>
<tr>
<td>Automatic zero</td>
<td>If <strong>Automatic zero</strong> is set to <strong>Active</strong>, the balance automatically zeros the balance when the weight falls below a predefined threshold.</td>
<td>Active</td>
</tr>
<tr>
<td>Automatic zero threshold</td>
<td>Defines the threshold of the option <strong>Automatic zero</strong>. This option only appears when the option <strong>Automatic zero</strong> is activated.</td>
<td>Numeric</td>
</tr>
<tr>
<td>Tare Mode</td>
<td>Defines the tare mode. <strong>None</strong>: No automatic tare. <strong>Automatic tare</strong>: The balance stores automatically the first stable weight as the tare weight. <strong>Pretare</strong>: Allows you to enter manually a numerical entry of a fixed tare weight.</td>
<td>None*</td>
</tr>
<tr>
<td>Automatic tare threshold</td>
<td>Defines the threshold of the option <strong>Tare Mode</strong>. This value defines the minimum weight that must be applied to the weighing pan so that it is automatically stored as the tare weight. If the weight is below the limits, it is not automatically transferred to the tare memory. Instead of entering the weight, the lightest tare container can be placed on the weighing pan and the button subsequently pressed. The applied weight is directly taken over as a limit. This option only appears when the option <strong>Tare Mode</strong> is set to <strong>Automatic tare</strong>.</td>
<td>Numeric</td>
</tr>
<tr>
<td>Pretare value</td>
<td>Defines a weight value for the pretare function. Instead of entering the value, the respective tare container can be placed on the weighing pan and the button subsequently pressed. The weight is directly taken over as pretare value. This option only appears when the option <strong>Tare Mode</strong> is set to <strong>Pretare</strong>.</td>
<td>Numeric</td>
</tr>
</tbody>
</table>
Automatic result

Automatically generates a weighing result after a threshold is reached.

None: No automatic result will be generated.
Without sample tare: After a weight value that reached the threshold is being removed from the weighing pan, the balance is not being tared.

<table>
<thead>
<tr>
<th>Automatic result</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>threshold</td>
<td>Defines the threshold of the option <strong>Automatic result</strong>. The result is automatically added to the protocol only if the weight of the sample is larger than this threshold. This option only appears when the option <strong>Automatic result</strong> is activated.</td>
<td>Numeric</td>
</tr>
<tr>
<td>Weight trigger</td>
<td>Defines the behaviour of the option <strong>Automatic result threshold</strong>. <strong>Exceeding</strong>: The weighing result is generated when the weight exceeds the defined threshold. <strong>Falling below</strong>: The weighing result is generated when the weight falls below the defined threshold. This parameter is only available if <strong>Automatic result</strong> is set to <strong>Without sample tare</strong>.</td>
<td>Exceeding*</td>
</tr>
<tr>
<td>Automatic tare after result</td>
<td>If set to <strong>Active</strong>, the balance is automatically tared when a result is added to the <strong>Protocol</strong>.</td>
<td>Active</td>
</tr>
</tbody>
</table>

* Factory setting

**See also**

Creating a method "Titration" » Page 40

### 6.2.4.6 Print / Export

This section is divided into the following subsections:

- **Protocol printout and data export**
- **Label printout for task**
- **Label printout for weighing item**

#### Protocol printout and data export

**Automatic data output**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strip printer</td>
<td>Activates/Deactivates automatic printing of the protocol on a strip printer when the <strong>Complete</strong> button is tapped. The data to be transmitted to the printer can be defined in the section <strong>Template settings</strong>.</td>
<td>Active</td>
</tr>
<tr>
<td>Weight value</td>
<td>Activates/Deactivates the option to automatically send the weighing value over USB or Ethernet when tapping <strong>Add to protocol</strong>.</td>
<td>Active</td>
</tr>
</tbody>
</table>

* Factory setting

**Protocol template for printout**

This menu item can be used to define information to appear in the **Protocol**. The extensive menu is divided into six submenus in which options for the printout can be defined. Information can be enabled or disabled by activating or deactivating the corresponding checkbox.

Each individual parameter can set to **Inactive** or **Active** via the corresponding check box. To enable or disable all parameters at once, proceed as follows:
1. To deselect all check boxes at once, tap **Deselect all**
   ⇒ All parameters are set to **Inactive**.

2. To select all check boxes at once, tap **Select all**
   ⇒ All parameters are set to **Active**.

**Template settings**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Header and Footer</td>
<td>Defines the header (with title, date and time) and/or footer (with signature and end line) to be printed/exported.</td>
<td>Header*</td>
</tr>
<tr>
<td>Balance information</td>
<td>Defines which information about the balance is being printed/exported.</td>
<td>Balance type</td>
</tr>
<tr>
<td>Quality information</td>
<td>Defines which quality information is being printed/exported.</td>
<td>Tolerance profile</td>
</tr>
<tr>
<td>Task information</td>
<td>Defines which information about the task is being printed/export.</td>
<td>Method name</td>
</tr>
<tr>
<td>Weighing item information</td>
<td>Defines which information about the weighing items is being printed/exported.</td>
<td>Show excluded weighing items</td>
</tr>
<tr>
<td>Result detail information</td>
<td>Defines which information related to the result of the measurement is being printed/exported.</td>
<td>Weight*</td>
</tr>
</tbody>
</table>

* Factory setting
### Parameter Description Values

<table>
<thead>
<tr>
<th>Weighing item information</th>
<th>Defines which information about the weighing items is being printed/exported.</th>
<th>Show excluded weighing items</th>
<th>Result State*</th>
<th>Result IDs*</th>
<th>Density</th>
<th>Correction factor</th>
<th>GWP Approved state</th>
<th>MinWeigh state</th>
<th>Tolerance state*</th>
<th>Target and tolerances state*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task information</td>
<td>Defines which information about the task is being printed/export.</td>
<td>Method name</td>
<td>Method comment</td>
<td>Task IDs</td>
<td>Automatic result settings</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Label printout for task

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automatic label printout for task</td>
<td>When set to <strong>Active</strong>, the task label is automatically printed when tapping <strong>Complete</strong>.</td>
<td><strong>Active</strong></td>
</tr>
<tr>
<td>Used template</td>
<td>Chooses the label template.</td>
<td>Available labels are shown below.</td>
</tr>
</tbody>
</table>

* Factory setting

### Field settings

The content of each label field can be defined individually.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Label field 1</td>
<td>Defines which information appears in each label field. The number of label fields depends on the selected template.</td>
<td>Available entries depend on the method settings.</td>
</tr>
</tbody>
</table>

### Barcode settings

The content of each barcode field can be defined individually. This section is only available when the selected **Used template** contains at least one 2D code.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delimiter</td>
<td>Defines the delimiter between the barcode entries. The option <strong>2D barcode delimiter</strong> appears only when the selected <strong>Used template</strong> contains several 2D codes.</td>
<td><strong>TAB</strong></td>
</tr>
<tr>
<td>Barcode field 1</td>
<td>Defines which information appears in each barcode. The number of the barcode fields depends on the selected template.</td>
<td>Available entries depend on the method settings.</td>
</tr>
</tbody>
</table>

### Label printout for weighing items

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automatic label printout for task</td>
<td>When set to <strong>Active</strong>, the task label is automatically printed when tapping <strong>Complete</strong>.</td>
<td><strong>Active</strong></td>
</tr>
<tr>
<td>Used template</td>
<td>Chooses the label template.</td>
<td>Available labels are shown below.</td>
</tr>
</tbody>
</table>

* Factory setting

### Field settings

The content of each label field can be defined individually.
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Label field 1</td>
<td>Defines which information appears in each label field. The number of label fields depends on the selected template.</td>
<td>Available entries depend on the method settings.</td>
</tr>
</tbody>
</table>

**Barcode settings**

The content of each barcode field can be defined individually. This section is only available when the selected *Used template* contains at least one 2D code.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delimiter</td>
<td>Defines the delimiter between the barcode entries.</td>
<td>TAB</td>
</tr>
<tr>
<td>Barcode field 1</td>
<td>Defines which information appears in each barcode. The number of the barcode fields depends on the selected template.</td>
<td>Available entries depend on the method settings.</td>
</tr>
</tbody>
</table>

**Available Labels**

The following label layouts can be selected:

<table>
<thead>
<tr>
<th>5 large fields</th>
<th>5 small fields</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>10 small fields</th>
<th>1D barcode with 3 large fields</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>1D barcode with 3 small fields</th>
<th>1D barcode with 6 small fields</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>2D barcode with 5 large fields</th>
<th>2D barcode with 5 small fields</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>2D barcode with 2 large fields and 6 small fields</th>
<th>2D barcode with 8 small fields</th>
</tr>
</thead>
</table>
6.2.5 Settings: method "Density determination"

The section **Density determination** is divided into the following subsections:

- **General**
- **Density**
- **ID format**
- **Weighing item**
- **Weighing**
- **Automation**
- **Print / Export**

**See also**
- Creating a method "Density determination"  Page 41

### 6.2.5.1 General

The **Method type** is defined in the wizard while creating the method and cannot be changed.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Method name</td>
<td>Defines the name of the method. The system copies the method name that has been defined with the function <strong>Method wizard</strong>.</td>
<td>Text (1...22 characters)</td>
</tr>
<tr>
<td>Comment</td>
<td>The method can be described with a comment.</td>
<td>Text (0...128 characters)</td>
</tr>
<tr>
<td>Lock method</td>
<td>Locks the method for other users and from further editing while running.</td>
<td>Active</td>
</tr>
</tbody>
</table>

* Factory setting

### 6.2.5.2 Density

The **Determination type** is defined in the wizard while creating the method and cannot be changed. If another **Determination type** is required, a new method must be created. All settings for all types of density determination are described here.
### Parameter | Description | Values
--- | --- | ---
**Determination type** | Defines the type of density determination measurement. **Solid** determines the density of a solid with the help of a density kit. **Liquid (sinker)**: determines the density of a liquid. **Liquid (pycnometer)**: determines the density of a liquid in a glass vessel like a pycnometer. | Liquid (pycnometer) | Liquid (sinker) | Solid*

| Density unit | Defines the unit to be used for density determination. **g/cm³** = grams per cm³. **kg/m³** = kilograms per m³. **g/l** = grams per liter. | g/cm³* | kg/m³ | g/l

| Density value decimal places | Defines the number of decimal places. The density determination result can be displayed and recorded with 1 to 5 decimal places. | 1 | 2 | 3* | 4 | 5

| Air density compensation | Defines the correction factor for force calibration. **Active** = the density determination result is corrected by the force calibration correction factor and mean air density. **Inactive** = no correction takes place. | Active* | Inactive

* Factory setting

**See also**
- Creating a method "Density determination" » Page 41

### 6.2.5.3 ID format

#### Task IDs

| Parameter | Description | Values
--- | --- | ---
**Number of task IDs** | Defines the number of task IDs. If the value of the option Number of task IDs is larger than 0, the options Task ID, Description and Prefix/Default value appear for every single task ID. | 0 | 1* | 2

| Task ID 1 | Defines the naming type of the task ID. **Manual with default**: The value of the task ID can be entered manually at method execution time. **Automatic timestamp**: The system provides a value created from a prefix with the current date and time appended. | Manual with default* | Automatic timestamp

| Description | Allows to define a label for each task ID field. | Text (0...32 characters)

| Default value | Defines a default value for the task ID. The value of the task ID can be changed manually while executing the method. This option only appears when the option Manual with default is activated. | Text (0...32 characters)

| Prefix | Defines a prefix for the task ID. This option only appears when the option Automatic timestamp is activated. | Text (0...32 characters)

* Factory setting
### Result IDs

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of result IDs</td>
<td>Defines the number of result IDs.</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>If the value of the option <strong>Number of result IDs</strong> is larger than 0,</td>
<td>1*</td>
</tr>
<tr>
<td></td>
<td>the options <strong>Result ID 1, Description</strong> and <strong>Prefix/Default value</strong></td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>appear for every single result ID.</td>
<td></td>
</tr>
<tr>
<td>Result ID 1</td>
<td>Defines the naming type of the result ID.</td>
<td>Manual with default*</td>
</tr>
<tr>
<td></td>
<td><strong>Manual with default</strong>: The value of the result ID can be entered</td>
<td>I</td>
</tr>
<tr>
<td></td>
<td>manually at method execution time.</td>
<td>Automatic counter</td>
</tr>
<tr>
<td></td>
<td><strong>Automatic counter</strong>: The system provides a value created from a</td>
<td></td>
</tr>
<tr>
<td></td>
<td>prefix with an unique number (counter) appended.</td>
<td></td>
</tr>
<tr>
<td>Description</td>
<td>Allows to define a label for each result ID.</td>
<td>Text (0…32 characters)</td>
</tr>
<tr>
<td>Default value</td>
<td>Defines a default value for the result ID. The value of the result ID</td>
<td>Text (0…32 characters)</td>
</tr>
<tr>
<td></td>
<td>can be changed manually while executing the method.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>This option only appears when the option <strong>Manual with default</strong> is</td>
<td></td>
</tr>
<tr>
<td></td>
<td>activated.</td>
<td></td>
</tr>
<tr>
<td>Prefix</td>
<td>Defines a prefix for the result ID.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>This option only appears when the option <strong>Automatic counter</strong> is</td>
<td></td>
</tr>
<tr>
<td></td>
<td>activated.</td>
<td></td>
</tr>
</tbody>
</table>

* Factory setting

### 6.2.5.4 Weighing item

The weighing item settings are different between the three types of density determination. The settings for **Initial values for weighing** are presented for each type individually.

#### Initial values for weighing (Determination Type: Solid)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit</td>
<td>Defines the unit.</td>
<td>The available units depend on the balance model.</td>
</tr>
<tr>
<td>Temperature</td>
<td>Defines the temperature of the solid.</td>
<td>Numeric (10°C.....30.9°C)</td>
</tr>
<tr>
<td>Aux. liquid</td>
<td>Defines the type of auxiliary liquid used for the determination of the</td>
<td>Distilled water* I Custom</td>
</tr>
<tr>
<td></td>
<td>density of a solid.</td>
<td></td>
</tr>
<tr>
<td>Aux. liquid name</td>
<td>Defines the name of the custom liquid. This option only appears when</td>
<td>Text (0…32 character)</td>
</tr>
<tr>
<td></td>
<td><strong>Aux. liquid</strong> is set to <strong>Custom</strong>.</td>
<td></td>
</tr>
<tr>
<td>Aux. liquid density</td>
<td>Defines the liquid density of the custom liquid. This option only appears</td>
<td>Numeric</td>
</tr>
<tr>
<td></td>
<td>when <strong>Aux. liquid</strong> is set to <strong>Custom</strong>.</td>
<td></td>
</tr>
</tbody>
</table>

* Factory setting

#### Initial values for weighing (Determination Type: Sinker)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit</td>
<td>Defines the unit.</td>
<td>The available units depend on the balance model.</td>
</tr>
<tr>
<td>Temperature</td>
<td>Defines the temperature of the auxiliary liquid (distilled water or custom)</td>
<td>Numeric (10°C.....30.9°C)</td>
</tr>
<tr>
<td>Sinker volume</td>
<td>Defines the volume of the sinker in cm³.</td>
<td>Numeric (0.0001.....500 cm³)</td>
</tr>
</tbody>
</table>
## Initial values for weighing (Determination Type: Pycnometer)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit</td>
<td>Defines the unit.</td>
<td>The available units depend on the balance model.</td>
</tr>
<tr>
<td>Temperature</td>
<td>Defines the temperature of the auxiliary liquid (distilled water or custom).</td>
<td>Numeric (10°C.....30.9°C)</td>
</tr>
<tr>
<td>Pycnometer volume</td>
<td>Defines volume of the pycnometer in cm³.</td>
<td>Numeric (0.0001....10000 cm³)</td>
</tr>
<tr>
<td>Pycnometer weight</td>
<td>Defines the weight of the pycnometer.</td>
<td>Numeric (0.00001....222.009 g)</td>
</tr>
</tbody>
</table>

### See also
- Creating a method "Density determination"  ➔ Page 41

## 6.2.5.5 Weighing

### Weighing settings

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tolerance profile</td>
<td>A tolerance profile stores all the necessary balance settings needed for a certain weighing method. It is possible to create different tolerance profiles for different weighing methods.</td>
<td>Available tolerance profiles are model-specific.</td>
</tr>
<tr>
<td>Weight capture mode</td>
<td>Defines the behavior when the button to add the result was tapped or the add result was triggered by the automatic weighing result creation. Stable: The system waits for a stable weight. Immediate: The system doesn't wait for a stable weight. The system waits for the defined amount of seconds (Weight capture delay). After the weight capture delay, the weight value from the weight stream is captured.</td>
<td>Stable*</td>
</tr>
<tr>
<td>Weight capture delay</td>
<td>Defines the time in seconds the balance waits for capturing the weight after the button to add the result was tapped or the add result was triggered by the automatic weighing result creation. This option only appears when the Weight capture mode is set to Immediate.</td>
<td>Numeric (5 seconds*</td>
</tr>
</tbody>
</table>

* Factory setting
### Statistics

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activate statistics</td>
<td>If <strong>Activate statistics</strong> is set to <strong>Active</strong>, the following statistics will be calculated:</td>
<td>Active</td>
</tr>
<tr>
<td></td>
<td>• <strong>Count</strong>: Number of items used for the statistics</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• <strong>Sum</strong>: Sum of all value (decimal places and unit according to the method settings)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• <strong>Minimum</strong>: Smallest value (decimal places and unit according to the method settings)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• <strong>Maximum</strong>: Largest value (decimal places and unit according to the method settings)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• <strong>Range</strong>: Difference between the largest and smallest values (decimal places and unit according to the method settings)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• <strong>Average</strong>: The values are summed up and divided by the number of values, rounded to 1 digit more than the configured decimal places in the method settings (unit according to the method settings)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• <strong>Standard deviation</strong>: Standard deviation rounded to 1 digit more than the configured decimal places in the method settings (unit according to the method settings)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• <strong>Relative standard deviation</strong>: Relative standard deviation (rounded to 2 decimal places, in %)</td>
<td></td>
</tr>
</tbody>
</table>

The statistical values are calculated and displayed as soon as a result is added or updated.

* Factory setting

#### 6.2.5.6 Automation

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barcode data target</td>
<td>If a barcode reader is connected to the balance, this option defines how the data is to be processed.</td>
<td>Keyboard Input*</td>
</tr>
<tr>
<td></td>
<td><strong>Keyboard Input</strong>: The data is written in the currently open input window. If no input window is open, the data is ignored.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Task ID 1</strong>: The received barcode data is treated as identification text for this task ID.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Result ID 1</strong>: The received barcode data is treated as identification text for this result ID.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The available items in the drop-down menu depend on the <strong>Number of task IDs</strong> and <strong>Number of result IDs</strong> specified for the method.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Make sure that the characters of the scanned barcode are compatible with the format of the field where they should be inserted.</td>
<td></td>
</tr>
</tbody>
</table>

* Factory setting

**See also**

- Creating a method "Density determination" ➤ Page 41
6.2.5.7 Print / Export

Protocol printout and data export

Automatic data output

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strip printer</td>
<td>Activates/Deactivates automatic printing of the protocol on a strip printer when the <strong>Complete</strong> button is tapped. The data to be transmitted to the printer can be defined in the section <strong>Template settings</strong>.</td>
<td>Active</td>
</tr>
</tbody>
</table>

* Factory setting

Protocol template for printout

This menu item can be used to define information to appear in the Protocol. The extensive menu is divided into six submenus in which options for the printout can be defined. Information can be enabled or disabled by activating or deactivating the corresponding checkbox.

Each individual parameter can set to **Inactive** or **Active** via the corresponding check box. To enable or disable all parameters at once, proceed as follows:

1. To deselect all check boxes at once, tap **Deselect all**
   ⇒ All parameters are set to Inactive.
2. To select all check boxes at once, tap **Select all**
   ⇒ All parameters are set to Active.

Template settings

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Header and Footer</td>
<td>Defines the header (with title, date and time) and/or footer (with signature and end line) to be printed/exported.</td>
<td>Header*</td>
</tr>
<tr>
<td>Balance information</td>
<td>Defines which information about the balance is being printed/exported.</td>
<td>Balance type</td>
</tr>
<tr>
<td>Quality information</td>
<td>Defines which quality information is being printed/exported.</td>
<td>Tolerance profile</td>
</tr>
<tr>
<td>Task information</td>
<td>Defines which information about the task is being printed/exported.</td>
<td>Method name</td>
</tr>
</tbody>
</table>
6.3 Tests settings

6.3.1 Settings: eccentricity test

1. Name and type

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test type</td>
<td>The test type has been pre-defined and cannot be changed in this menu.</td>
<td>Available test types</td>
</tr>
<tr>
<td>Name</td>
<td>Defines the name of the test.</td>
<td>Text (1…22 characters)</td>
</tr>
<tr>
<td>Test activated</td>
<td>Enables/disables the test.</td>
<td>Active*</td>
</tr>
<tr>
<td>Show preparation instructions</td>
<td>If activated, a predefined preparatory instruction is displayed in the test sequence.</td>
<td>Active*</td>
</tr>
<tr>
<td>Automatic print</td>
<td>When activated test results are immediately printed after the test result has been calculated on the enabled printer.</td>
<td>Active</td>
</tr>
</tbody>
</table>

* Factory setting

2. Test specification

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Result calculation</td>
<td>Select whether the nominal weight or the conventional mass value (CMV) is used for the result calculation.</td>
<td>On nominal weight*</td>
</tr>
<tr>
<td></td>
<td><strong>On nominal weight</strong>: Nominal value of a weight with a specific weight class.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>On actual weight (CMV)</strong>: Conventional mass value (CMV) of a weight from the weight calibration certificate.</td>
<td></td>
</tr>
</tbody>
</table>

* Factory setting

Test point

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal weight</td>
<td>Defines the value for the nominal weight. The nominal weight is defined as the expected weight of the measured object.</td>
<td>Numeric</td>
</tr>
</tbody>
</table>

Show excluded weighing items | Result State | Result IDs | GWP | Approved state | Level state | MinWeigh state | Temperature | Auxiliary | Liquid name and density | Volume of sample | Weight of sample in air | Weight of sample in liquid | Weight* | Tare weight | Gross weight | Info weight | Date/time* | Stability |
Weight class | Defines the weight class according to OIML or ASTM. Alternatively, a customized tolerance class can be created with **Own**.

| E1 | E2 | F1 | F2 | M1 | M2 | M3 | ASTM000 | ASTM00 | ASTM0 | ASTM1 | ASTM2 | ASTM3 | ASTM4 | ASTM5 | ASTM6 | ASTM7 | Own*

* Factory setting

**Eccentricity limits**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control limit</td>
<td>Defines the control limit. The control limit is the error tolerance of a process with respect to its set value. Exceeding the control limit is a violation of quality requirements and therefore requires a correction of the process. Result if the control limit is exceeded: The test failed, the balance is out of specification.</td>
<td>Numeric</td>
</tr>
<tr>
<td>Warning limit</td>
<td>Defines the warning limit. The warning limit is an upper or lower limit, which if exceeded or not reached, makes more stringent process monitoring necessary. The warning limit has to be smaller than the control limit. Result if the warning limit is exceeded: The test is passed, but the difference is higher than expected.</td>
<td>Numeric</td>
</tr>
</tbody>
</table>

* Factory setting

3. Test weights

4. Error management

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Block balance</td>
<td>Defines the behavior of the balance if a test has failed. <strong>Active</strong>: The balance will be blocked after a specified amount of failed tests. In this case, the balance cannot be used anymore until a user with the appropriate right unblocks the balance. <strong>Inactive</strong>: Blocking is not activated.</td>
<td>Active</td>
</tr>
<tr>
<td>Allowed number of retries</td>
<td>Defines the maximum allowed retries until the balance will be blocked.</td>
<td>Numeric</td>
</tr>
</tbody>
</table>

* Factory setting
5. Test planning

### Parameter | Description | Values
--- | --- | ---
Planning type | Specifies the schedule for the test to be performed. | Manually* | Daily | Weekly | Monthly | Quarterly | Annually
  - Manually: The test must be performed manually.
  - Daily: The test will be performed automatically every day at the specified time.
  - Weekly: The test is performed automatically at least once a week. Additional days can be selected if required.
  - Monthly: The test will be performed automatically every month at the specified day and time.
  - Quarterly: The test will be performed automatically every three months at the specified time.
  - Annually: The test will be performed automatically once a year at the specified time.

Start time | Defines the start time for executing the task. | Time

* Factory setting

### Notification

This section does not appear when the option **Planning type** is set to **Manually**.

### Parameter | Description | Values
--- | --- | ---
(x) hours before test | Defines the time period before the notification informs about the upcoming expiry date. | Different values depending on the selected frequency (Planning type).

Notification every (x) hours | Defines the time interval before the next notification is issued. | Different values depending on the selected frequency (Planning type).

### Preferred days

This option only appears when the option **Planning type** is set to **Weekly**.

### Parameter | Description | Values
--- | --- | ---
Preferred days | Defines the preferred weekday for the execution of the test. | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday

### Preferred day for execution

This section only appears when the option **Planning type** is set to **Monthly**.

### Parameter | Description | Values
--- | --- | ---
Preferred day for execution | Defines the preferred day for execution of the test. | None* | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday

Occurrence of day | Defines the occurrence of a given day of week within a month. | First* | Second | Third | Fourth

* Factory setting

**See also**
- Creating an own new test ➤ Page 45
- Defining a test weight ➤ Page 45
6.3.2 Settings: repeatability test

When parameter settings are different for the four repeatability tests you will be informed by a Note.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test type</td>
<td>The test type has been pre-defined and cannot be changed in this menu.</td>
<td>Available test types</td>
</tr>
<tr>
<td>Name</td>
<td>Defines the name of the test.</td>
<td>Text (1...22 characters)</td>
</tr>
<tr>
<td>Test activated</td>
<td>Enables/disables the test.</td>
<td>Active*</td>
</tr>
<tr>
<td>Show preparation instructions</td>
<td>If activated, a predefined preparatory instruction is displayed in the test sequence.</td>
<td>Active*</td>
</tr>
<tr>
<td>Automatic print</td>
<td>When activated test results are immediately printed after the test result has been calculated on the enabled printer.</td>
<td>Active</td>
</tr>
</tbody>
</table>

* Factory setting

2. Test specification

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Result calculation</td>
<td>Select whether the nominal weight or the conventional mass value (CMV) is used for the result calculation.</td>
<td>On nominal weight*</td>
</tr>
<tr>
<td></td>
<td><strong>On nominal weight</strong>: Nominal value of a weight with a specific weight class.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>On actual weight (CMV)</strong>: Conventional mass value (CMV) of a weight from the weight calibration certificate.</td>
<td></td>
</tr>
<tr>
<td>Number of repetitions</td>
<td>Defines the number of weight measurements of a series.</td>
<td>Numeric 10*</td>
</tr>
</tbody>
</table>

* Factory setting

Tare

This section only appears when the option Test type is set to Repeatab. - Tare - 1 TP.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tare name</td>
<td>Defines a name for the tare weight.</td>
<td>Text (1...22 characters)</td>
</tr>
<tr>
<td>Minimum tare weight</td>
<td>Defines the minimum weight for the tare container. The test is only continued if a tare container with at least this weight is placed on the balance.</td>
<td>Numeric</td>
</tr>
</tbody>
</table>

* Factory setting

Test point

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal weight</td>
<td>Defines the value for the nominal weight. The nominal weight is defined as the expected weight of the measured object.</td>
<td>Numeric</td>
</tr>
<tr>
<td>Weight class</td>
<td>Defines the weight class according to OIML or ASTM. Alternatively, a customized tolerance class can be created with Own.</td>
<td>E1</td>
</tr>
</tbody>
</table>

* Factory setting
### Test limits

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control limit</td>
<td>Defines the control limit. The control limit is the error tolerance of a process with respect to its set value. Exceeding the control limit is a violation of quality requirements and therefore requires a correction of the process. Result if the control limit is exceeded: The test failed, the balance is out of specification.</td>
<td><strong>Values</strong></td>
</tr>
<tr>
<td>Warning limit</td>
<td>Defines the warning limit. The warning limit is an upper or lower limit, which if exceeded or not reached, makes more stringent process monitoring necessary. The warning limit has to be smaller than the control limit. Result if the warning limit is exceeded: The test is passed, but the difference is higher than expected.</td>
<td><strong>Values</strong></td>
</tr>
</tbody>
</table>

* Factory setting

#### 3. Test weights

#### 4. Error management

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Block balance</td>
<td>Defines the behavior of the balance if a test has failed. <strong>Active</strong>: The balance will be blocked after a specified amount of failed tests. In this case, the balance cannot be used anymore until a user with the appropriate right unblocks the balance. <strong>Inactive</strong>: Blocking is not activated.</td>
<td><strong>Values</strong></td>
</tr>
<tr>
<td>Allowed number of retries</td>
<td>Defines the maximum allowed retries until the balance will be blocked.</td>
<td><strong>Values</strong></td>
</tr>
</tbody>
</table>

* Factory setting

#### 5. Test planning

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planning type</td>
<td>Specifies the schedule for the test to be performed. <strong>Manually</strong>: The test must be performed manually. <strong>Daily</strong>: The test will be performed automatically every day at the specified time. <strong>Weekly</strong>: The test is performed automatically at least once a week. Additional days can be selected if required. <strong>Monthly</strong>: The test will be performed automatically every month at the specified day and time. <strong>Quarterly</strong>: The test will be performed automatically every three months at the specified time. <strong>Annually</strong>: The test will be performed automatically once a year at the specified time.</td>
<td><strong>Values</strong></td>
</tr>
<tr>
<td>Start time</td>
<td>Defines the start time for executing the task.</td>
<td><strong>Values</strong></td>
</tr>
</tbody>
</table>

* Factory setting

**Notification**

This section does not appear when the option **Planning type** is set to **Manually**.
### Analytical Balances

#### Parameter Description

**(x) hours before test**
- Defines the time period before the notification informs about the upcoming expiry date.
- Different values depending on the selected frequency (Planning type).

**Notification every (x) hours**
- Defines the time interval before the next notification is issued.
- Different values depending on the selected frequency (Planning type).

* Factory setting

### Preferred day for execution

This option only appears when the option **Planning type** is set to **Weekly**.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preferred day for execution</td>
<td>Defines the preferred day for execution of the test.</td>
<td>None*</td>
</tr>
</tbody>
</table>

### Preferred days

This section only appears when the option **Planning type** is set to **Monthly**.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preferred day for execution</td>
<td>Defines the preferred day for execution of the test.</td>
<td>None*</td>
</tr>
<tr>
<td>Occurrence of day</td>
<td>Defines the occurrence of a given day of week within a month.</td>
<td>First*</td>
</tr>
</tbody>
</table>

* Factory setting

### See also

- Creating an own new test ➔ Page 45
- Defining a test weight ➔ Page 45

### 6.3.3 Settings: sensitivity test

When parameter settings are different for the four sensitivity tests you will be informed by a **Note**.

#### 1. Name and Type

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test type</td>
<td>The test type has been pre-defined and cannot be changed in this menu.</td>
<td>Available test types</td>
</tr>
<tr>
<td>Name</td>
<td>Defines the name of the test.</td>
<td>Text (1...22 characters)</td>
</tr>
<tr>
<td>Test activated</td>
<td>Enables/disables the test.</td>
<td>Active*</td>
</tr>
<tr>
<td>Show preparation instructions</td>
<td>If activated, a predefined preparatory instruction is displayed in the test sequence.</td>
<td>Active*</td>
</tr>
<tr>
<td>Automatic print</td>
<td>When activated test results are immediately printed after the test result has been calculated on the enabled printer.</td>
<td>Active</td>
</tr>
</tbody>
</table>

* Factory setting
2. Test specification

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Result calculation</td>
<td>Select whether the nominal weight or the conventional mass value (CMV) is used for the result calculation.</td>
<td>On nominal weight*</td>
</tr>
<tr>
<td></td>
<td><strong>On nominal weight</strong>: Nominal value of a weight with a specific weight class.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>On actual weight (CMV)</strong>: Conventional mass value (CMV) of a weight from the weight calibration certificate.</td>
<td></td>
</tr>
</tbody>
</table>

* Factory setting

Tare

⚠️ Note

This section only appears when the option Test type is set to Sensitivity - Tare - 1 TP or Sensitivity - Tare - 2 TP.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tare name</td>
<td>Defines a name for the tare weight.</td>
<td>Text (1...22 characters)</td>
</tr>
<tr>
<td>Minimum tare weight</td>
<td>Defines the minimum weight for the tare container. The test is only continued if a tare container with at least this weight is placed on the balance.</td>
<td>Numeric</td>
</tr>
</tbody>
</table>

Test point

Depending on the selected test, the following options can be defined for one or two test points:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal weight</td>
<td>Defines the value for the nominal weight. The nominal weight is defined as the expected weight of the measured object.</td>
<td>Numeric</td>
</tr>
<tr>
<td>Weight class</td>
<td>Defines the weight class according to OIML or ASTM. Alternatively, a customized tolerance class can be created with Own.</td>
<td>E1</td>
</tr>
<tr>
<td>Control limit</td>
<td>Defines the control limit. The control limit is the error tolerance of a process with respect to its set value. Exceeding the control limit is a violation of quality requirements and therefore requires a correction of the process. Result if the control limit is exceeded: The test failed, the balance is out of specification.</td>
<td>Numeric</td>
</tr>
<tr>
<td>Warning limit</td>
<td>Defines the warning limit. The warning limit is an upper or lower limit, which if exceeded or not reached, makes more stringent process monitoring necessary. The warning limit has to be smaller than the control limit. Result if the warning limit is exceeded: The test is passed, but the difference is higher than expected.</td>
<td>Numeric</td>
</tr>
</tbody>
</table>

* Factory setting
3. Test weights

4. Error management

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Block balance</td>
<td>Defines the behavior of the balance if a test has failed.</td>
<td>Active</td>
</tr>
<tr>
<td></td>
<td><strong>Active</strong>: The balance will be blocked after a specified amount of failed tests. In this case, the balance cannot be used anymore until a user with the appropriate right unblocks the balance.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Inactive</strong>: Blocking is not activated.</td>
<td></td>
</tr>
<tr>
<td>Allowed number of retries</td>
<td>Defines the maximum allowed retries until the balance will be blocked.</td>
<td>Numeric (3*</td>
</tr>
</tbody>
</table>

5. Test planning

* Factory setting

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planning type</td>
<td>Specifies the schedule for the test to be performed.</td>
<td>Manually*</td>
</tr>
<tr>
<td></td>
<td><strong>Manually</strong>: The test must be performed manually.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Daily</strong>: The test will be performed automatically every day at the specified time.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Weekly</strong>: The test is performed automatically at least once a week.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Additional days can be selected if required.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Monthly</strong>: The test will be performed automatically every month at the specified day and time.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Quarterly</strong>: The test will be performed automatically every three months at the specified time.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Annually</strong>: The test will be performed automatically once a year at the specified time.</td>
<td></td>
</tr>
<tr>
<td>Start time</td>
<td>Defines the start time for executing the task.</td>
<td>Time</td>
</tr>
</tbody>
</table>

* Factory setting

**Notification**

This section does not appear when the option Planning type is set to Manually.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>(x) hours before test</td>
<td>Defines the time period before the notification informs about the upcoming expiry date.</td>
<td>Different values depending on the selected frequency (Planning type).</td>
</tr>
<tr>
<td>Notification every (x) hours</td>
<td>Defines the time interval before the next notification is issued.</td>
<td>Different values depending on the selected frequency (Planning type).</td>
</tr>
</tbody>
</table>

**Preferred days**

This option only appears when the option Planning type is set to Weekly.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preferred days</td>
<td>Defines the preferred weekday for the execution of the test.</td>
<td>Monday</td>
</tr>
</tbody>
</table>

**Preferred day for execution**

This section only appears when the option Planning type is set to Monthly.
### Analytical Balances

#### 6.4 Adjustments settings

##### 1. Strategy

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preferred day for execution</td>
<td>Defines the preferred day for execution of the test.</td>
<td>None*</td>
</tr>
<tr>
<td>Occurrence of day</td>
<td>Defines the occurrence of a given day of week within a month.</td>
<td>First*</td>
</tr>
</tbody>
</table>

* Factory setting

#### See also
- Creating an own new test » Page 45
- Defining a test weight » Page 45

##### 2. Specification

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>'As found' test</td>
<td>At the start of the adjustment sequence, an internal test (sensitivity) is performed to ascertain the current status. The input test has automatically started when the adjustment sequence is activated and the result is displayed and recorded.</td>
<td>Active</td>
</tr>
<tr>
<td>'As left' test</td>
<td>When the adjustment is complete, an internal test (sensitivity) is performed.</td>
<td>Active</td>
</tr>
</tbody>
</table>

**Note**

This settings only appear when one of the options 'As found' test or 'As left' test is activated.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control limit</td>
<td>Defines the control limit. The control limit is the error tolerance of a process with respect to its set value. Exceeding the control limit is a violation of quality requirements and therefore requires a correction of the process. Result if the control limit is exceeded: The adjustment failed, the balance is out of specification.</td>
<td>Numeric</td>
</tr>
<tr>
<td>Warning limit</td>
<td>Defines the warning limit. The warning limit is an upper or lower limit, which if exceeded or not reached, makes more stringent process monitoring necessary. The warning limit has to be smaller than the control limit. Result if the warning limit is exceeded: The adjustment is passed, but the difference is higher than expected.</td>
<td>Numeric</td>
</tr>
</tbody>
</table>

* Factory setting
### 3. Error management

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Block balance</td>
<td>Defines the behavior of the balance if the adjustment has failed.</td>
<td>Active</td>
</tr>
<tr>
<td></td>
<td><strong>Active</strong>: The balance will be blocked after the adjustment has failed. In this case, the balance can not be used anymore until a user with the appropriate right unblocks the balance.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Inactive</strong>: The balance will not be blocked.</td>
<td></td>
</tr>
</tbody>
</table>

* Factory setting

### 4. Planning

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start after leveling</td>
<td>Defines if the internal adjustment starts after leveling.</td>
<td>Active</td>
</tr>
<tr>
<td>Start after temperature change</td>
<td>Defines if the internal adjustment starts automatically after a temperature change of 1°C.</td>
<td>Active</td>
</tr>
<tr>
<td>Schedule</td>
<td>Defines when the adjustment is being performed. It is possible to define several start times (1-3) per day. It can also be defined on what day/s the adjustment is being performed.</td>
<td>Inactive</td>
</tr>
<tr>
<td>Start time 1</td>
<td>Defines the start time for execution of the task.</td>
<td>Time</td>
</tr>
<tr>
<td>Start time 2</td>
<td>Defines the start time for second execution of the task.</td>
<td>Time</td>
</tr>
<tr>
<td>Preferred days</td>
<td>Defines the days for the scheduled adjustments. This section only appears with a defined start time.</td>
<td>Monday</td>
</tr>
</tbody>
</table>

* Factory setting

**See also**

- Defining a test weight  » Page 45
- Editing an internal adjustment » Page 53
- Editing an external adjustment » Page 54
### 7 Maintenance

To guarantee the functionality of the balance and the accuracy of the weighing results, a number of maintenance actions must be performed by the user.

#### 7.1 Maintenance tasks

<table>
<thead>
<tr>
<th>Maintenance action</th>
<th>Recommended interval</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performing an internal adjustment</td>
<td>• Daily • After cleaning • After leveling • After changing the location</td>
<td>see &quot;Adjustments&quot;</td>
</tr>
<tr>
<td>Performing routine tests</td>
<td>• After cleaning • After assembling the balance • After a software update • Depending on your internal regulations (SOP)</td>
<td>see &quot;Tests&quot;</td>
</tr>
<tr>
<td>(eccentricity test, repeatability test, sensitivity test)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cleaning</td>
<td>• After every use • After changing the substance • Depending on the degree of pollution • Depending on your internal regulations (SOP)</td>
<td>see &quot;Cleaning&quot;</td>
</tr>
<tr>
<td>Updating the software</td>
<td>• Depending on your internal regulations (SOP) • After a new software release.</td>
<td>see &quot;Software update&quot;</td>
</tr>
</tbody>
</table>

See also
- Adjustments ► Page 53
- Tests ► Page 44
- Cleaning ► Page 121
- Software update ► Page 125

#### 7.2 Cleaning

##### 7.2.1 Disassembling for cleaning

⚠️ **CAUTION**

**Injury due to sharp objects or broken glass**

Instrument components, e.g., glass, can break and lead to injuries.

- Always proceed with focus and care.
1 Open the top door (1) and pull it all the way back, outside of the rails of the side doors. Shortly before the top panel drops out, you can feel a slight resistance. Just keep pulling a little bit tighter.

2 Hold the side doors (2) and push down the lever (3) to release them.

3 Carefully remove both side doors (2).

4 Tilt the front panel (4) to the front and remove it.
5 Carefully lift the weighing pan (5) to unhook it and pull it out.
6 Remove the drip tray (6).
7 Store all removed components in a safe place.
⇒ The balance is ready for cleaning.

### 7.2.2 Cleaning agents

In the following table, cleaning tool and cleaning agents recommended by METTLER TOLEDO are listed. Pay attention to the concentration of the agents specified in the table.

<table>
<thead>
<tr>
<th>Tools</th>
<th>Cleaning agents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tools</td>
<td></td>
</tr>
<tr>
<td>Paper towel</td>
<td>✅ R — R — R ✓ R</td>
</tr>
<tr>
<td>Brush</td>
<td>R — — R — R ✓ R</td>
</tr>
<tr>
<td>Dishwasher</td>
<td>R — R R — R ✓ R</td>
</tr>
<tr>
<td>Water</td>
<td>— R R R — R ✓</td>
</tr>
<tr>
<td>Acetone</td>
<td>R — R R R —</td>
</tr>
<tr>
<td>Isopropanol (70%)</td>
<td>PR — — PR —</td>
</tr>
<tr>
<td>Ethanol (70%)</td>
<td>— — PR — R —</td>
</tr>
<tr>
<td>Hydrochloric acid (3-10%)</td>
<td>— — PR —</td>
</tr>
<tr>
<td>Sodium hydroxide (0.2-1.0 M)</td>
<td>— — PR —</td>
</tr>
<tr>
<td>Peroxide acid (2-3%)</td>
<td>— — — R —</td>
</tr>
</tbody>
</table>

**Legend**

- **✓** Best recommendation by METTLER TOLEDO; can be used without limitation.
- **R** Recommended by METTLER TOLEDO; can be used without limitation.
- **PR** Partially recommended by METTLER TOLEDO: individual resistance to acid and alkali must be evaluated, including dependence on the time exposure.
- **—** Not recommended. High risk for damage.
7.2.3 Cleaning the balance

**WARNING**

Death or serious injury due to electric shock
Contact with parts carrying a live current can lead to injury and death.
1. Disconnect the instrument from the power supply prior to cleaning and maintenance.
2. Prevent liquid from entering the instrument, terminal or AC/DC adapter.

**NOTICE**

Damage due to improper cleaning
Improper cleaning can damage the load cell or other essential parts.
1. Do not use any cleaning agents other than the ones specified in the “Reference Manual” or “Cleaning Guide”.
2. Do not spray or pour liquids on the instrument. Always use a moistened lint-free cloth or a tissue.
3. Always wipe out from inside to outside of the instrument.

Cleaning around the balance
- Remove any dirt or dust around the balance and avoid further contaminations.

Cleaning the terminal
- Clean the terminal with a damp cloth or a tissue and a mild cleaning agent.

Cleaning the removable parts
- Clean the removed part with a damp cloth or a tissue and a mild cleaning agent or clean in a dishwasher up to 80 °C.

Cleaning the weighing unit
1. Disconnect the balance from the AC/DC adapter.
2. Use a lint-free cloth moistened with a mild cleaning agent to clean the surface of the balance.
3. Remove powder or dust with a disposable tissue first.
4. Remove sticky substances with a damp lint-free cloth and a mild solvent, e.g., isopropanol or ethanol 70%.

**Note**
Useful details to avoid soiling the instrument are described in the Mettler-Toledo GmbH "SOP for Cleaning a Balance".

7.2.4 Putting into operation after cleaning
1. Reassemble the balance.
2. Check that the draft shield doors (top, sides) open and close normally.
3. Check if the terminal is connected to the balance.
4. Reconnect the balance to the AC/DC adapter.
5. Check the level status, level the balance if necessary.
6. Respect the warm-up time specified in the "Technical Data".
7. Perform an internal adjustment.
8. Perform a routine test according to the internal regulations of your company. METTLER TOLEDO recommends to perform a sensitivity test after cleaning the balance.
9. Press \[ \text{ O } \] to zero the balance.
   \[ \Rightarrow \] The balance is ready to be used.
7.3 Software update

Search for software downloads

Please contact a METTLER TOLEDO service representative if you need support updating the software. METTLER TOLEDO recommends saving the data on a storage device before updating the software.

Navigation: ☰ Balance menu > Maintenance > Software update

See also
 помещение данных и настроек » Page 56

7.3.1 Updating the software

A USB storage device containing the software installer (zip file format) is connected to the balance.

1. Tap ☰ Balance menu > Maintenance > Software update
2. Select Update software and tap Next.
   ⇒ An update wizard opens and will lead you step-by-step through the procedure.

7.3.2 Restoring the software to the previous version

The current software version can be rolled back to the previous software version.

1. Tap ☰ Balance menu > Maintenance > Software update
2. Select Restore the software to the previous version, and tap Next
   ⇒ An update wizard opens and will lead you step-by-step through the procedure.

7.3.3 Putting into operation after software update

1. Press ⬅ to switch on the balance.
2. Check the level status, level the balance if necessary.
3. Perform an internal adjustment.
4. Perform a routine test according to the internal regulations of your company.
5. Press ⬅ to zero the balance.
   ⇒ The balance is ready to be used.

See also
 помещение данных и настроек » Page 56
 помещение данных и настроек » Page 56

See also
 помещение данных и настроек » Page 56
 помещение данных и настроек » Page 56
8 Troubleshooting

Possible errors with their cause and remedy are described in the following chapter. If there are errors that cannot be corrected through these instructions, contact METTLER TOLEDO.

8.1 Error messages

<table>
<thead>
<tr>
<th>Error message</th>
<th>Possible cause</th>
<th>Diagnostic</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balance reset failed</td>
<td>Communication failure</td>
<td>--</td>
<td>Disconnect the power cable and reconnect after a few seconds.</td>
</tr>
<tr>
<td>The system has no valid date and time set</td>
<td>Low battery</td>
<td>--</td>
<td>Connect to the power outlet and let the battery charge for two to three days.</td>
</tr>
<tr>
<td>Weight cannot be determined</td>
<td>Data signal problems of electronics.</td>
<td>--</td>
<td>Disconnect the power cable and reconnect after a few seconds.</td>
</tr>
<tr>
<td></td>
<td>Bad connection between the terminal and the weighing unit</td>
<td>Check the cable for damage (kinked, twisted or broken pins)</td>
<td>Replace the terminal cable.</td>
</tr>
<tr>
<td>Cannot start adjustment</td>
<td>Initial zero was not reached when the balance was switched on</td>
<td>--</td>
<td>Disconnect the power cable and reconnect after a few seconds.</td>
</tr>
<tr>
<td>Preventive performance optimization</td>
<td>The balance memory (RAM) is too full.</td>
<td>--</td>
<td>Complete the current task. Disconnect the power cable and reconnect after a few seconds.</td>
</tr>
</tbody>
</table>

8.2 Error symptoms

<table>
<thead>
<tr>
<th>Error symptom</th>
<th>Possible cause</th>
<th>Diagnostic</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>The display is dark.</td>
<td>The instrument is on standby.</td>
<td>--</td>
<td>Switch on the instrument.</td>
</tr>
<tr>
<td>There is no power</td>
<td></td>
<td>Check the connection to the AC/DC adapter and the power outlet.</td>
<td>Connect the weighing unit to the power outlet. See &quot;Connecting the balance&quot;</td>
</tr>
<tr>
<td>The terminal is not connected to the instrument.</td>
<td>Check the terminal cable connection.</td>
<td>Connect the terminal cable to the instrument.</td>
<td>Replace the terminal cable.</td>
</tr>
<tr>
<td>The terminal cable is defective.</td>
<td>Check the cable for damage (kinked, twisted or broken pins).</td>
<td>Replace the terminal cable.</td>
<td>Replace the terminal cable.</td>
</tr>
<tr>
<td>The wrong AC/DC adapter is connected to the instrument.</td>
<td>Check it, see &quot;Technical Data&quot;.</td>
<td>Use the correct AC/DC adapter.</td>
<td>Use the correct AC/DC adapter.</td>
</tr>
<tr>
<td>The AC/DC adapter is defective.</td>
<td>The LED on the AC/DC adapter does not turn on.</td>
<td>Replace the AC/DC adapter.</td>
<td>Replace the AC/DC adapter.</td>
</tr>
<tr>
<td>The value on the display oscillates.</td>
<td>Vibrations on the weighing bench, e.g., building vibrations, foot traffic</td>
<td>Place a beaker with water on the weighing bench. Vibrations cause ripples on the water surface.</td>
<td>Protect the weighing location against vibrations, e.g. with an absorber. Find a different weighing location.</td>
</tr>
<tr>
<td>Error symptom</td>
<td>Possible cause</td>
<td>Diagnostic</td>
<td>Remedy</td>
</tr>
<tr>
<td>------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td>The value on the display oscillates.</td>
<td>Draft due to untight draft shield and/or open window.</td>
<td>Check the draft shield for gaps.</td>
<td>Fix the draft shield. Close the window.</td>
</tr>
<tr>
<td></td>
<td>The weighing sample is electrostatically charged.</td>
<td>Check if the weighing result is stable when using a test weight.</td>
<td>Increase the air humidity in the weighing chamber. Use an ionizer. See &quot;Accessories&quot;.</td>
</tr>
<tr>
<td></td>
<td>The location is not suitable for weighing.</td>
<td>–</td>
<td>Follow the requirements for the location. See “Selecting the location”.</td>
</tr>
<tr>
<td></td>
<td>Something is touching the weighing pan.</td>
<td>Check for touching parts or dirt.</td>
<td>Remove touching parts. Clean the balance.</td>
</tr>
<tr>
<td>The value on the display is drifting towards plus or minus.</td>
<td>The weighing sample absorbs moisture or evaporates moisture.</td>
<td>Check if the weighing result is stable when using a test weight.</td>
<td>Cover the weighing sample.</td>
</tr>
<tr>
<td></td>
<td>The weighing sample is electrostatically charged.</td>
<td>Check if the weighing result is stable when using a test weight.</td>
<td>Increase the air humidity in the weighing chamber. Use an ionizer. See &quot;Accessories&quot;.</td>
</tr>
<tr>
<td></td>
<td>The weighing sample is warmer or colder than the air in the weighing chamber.</td>
<td>Check if the weighing result is stable when using an acclimatized test weight.</td>
<td>Bring the sample to room temperature.</td>
</tr>
<tr>
<td></td>
<td>The balance has not yet warmed up.</td>
<td>–</td>
<td>Let the balance warm up. Adequate warm up time is specified in the &quot;General data&quot;.</td>
</tr>
<tr>
<td>The display shows overload or underload.</td>
<td>The wrong weighing pan is installed.</td>
<td>Slightly lift or press the weighing pan to see if the weight appears on the display.</td>
<td>Install the proper weighing pan.</td>
</tr>
<tr>
<td></td>
<td>No weighing pan is installed.</td>
<td>–</td>
<td>Install the proper weighing pan.</td>
</tr>
<tr>
<td></td>
<td>Incorrect zero point at power on.</td>
<td>–</td>
<td>Disconnect the power cable and reconnect after a few seconds.</td>
</tr>
<tr>
<td></td>
<td>The balance is not adjusted.</td>
<td>–</td>
<td>Perform a internal adjustment. See “Internal adjustment”.</td>
</tr>
<tr>
<td>The draft shield front panel is not exactly 90° from the weighing platform</td>
<td>The draft shield front panel is not perfectly adjusted.</td>
<td>–</td>
<td>Contact METTLER TOLEDO representative to adjust the front panel.</td>
</tr>
<tr>
<td>The draft shield side doors are not exactly closed.</td>
<td>The draft shield side doors are not perfectly adjusted.</td>
<td>–</td>
<td>Contact METTLER TOLEDO representative to adjust the side doors.</td>
</tr>
<tr>
<td>The user interface responds slowly.</td>
<td>Too many results are included in the Protocol of a task.</td>
<td>Check the Protocol of every running and pending task.</td>
<td>Complete all tasks: For each task in the list of Tasks, select the task, tap Continue task, and tap Complete.</td>
</tr>
</tbody>
</table>
8.3 Putting into operation after fixing an error

After fixing an error, perform the following steps to put the balance into operation:

- Ensure that the balance is completely reassembled and cleaned.
- Reconnect the balance to the AC/DC adapter.
9 Technical Data

9.1 General data

Power supply

AC/DC adapter: Primary: 100 – 240 V~, 50/60 Hz
Secondary: 12 V DC, 5 A, LPS, SELV

Cable for AC/DC adapter: 3-core, with country-specific plug

Balance power consumption: 12 V DC ± 10%, 2.25 A

Polarity: 

Protection and standards

Overvoltage category: II

Degree of pollution: 2

Standards for safety and EMC: See Declaration of Conformity

Range of application: Use only indoors in dry locations

Environmental conditions

The limit values apply when the balance is used under the following environmental conditions:

Height above mean sea level: Up to 5000 m

Ambient temperature: +10 – +30 °C

Temperature change, max.: 5 °C/h

Relative air humidity: 30 – 70%, non-condensing

Warm-up time: At least 120 minutes after connecting the balance to the power supply. When switched on from standby, the instrument is ready for operation immediately.

The balance can be used under the following environmental conditions. However, the weighing performances of the balance may be outside the limit values:

Ambient temperature: +5 – +40 °C

Relative air humidity: 20% to max. 80% at 31 °C, decreasing linearly to 50% at 40 °C, non-condensing

The balance can be disconnected and stored in its packaging under the following conditions:

Ambient temperature: -25 – +70 °C

Relative air humidity: 10 – 90%, non-condensing
9.2 Explanatory notes for the METTLER TOLEDO AC/DC adapter

The certified external AC/DC adapter complies to the requirements for Class II double insulated equipment. It is not provided with a protective earth connection but with a functional earth connection for EMC purposes. This earth connection is not a safety feature. Further information about the compliance of our products can be found in the “Declaration of Conformity” delivered with every product.

In case of testing with regard to the European Directive 2001/95/EC, the AC/DC adapter and the instrument have to be handled as Class II double insulated equipment.

Consequently, a grounding test is not required. It is not necessary to carry out a grounding test between the earth connector of the power plug and any exposed part of the metallic housing of the instrument.

Because the instrument is sensitive to static charges, a leakage resistor of 10 kΩ is connected between the earth connector (1) and the negative pole (2) of the AC/DC adapter. The arrangement is shown in the equivalent circuit diagram. This resistor is not part of the electrical safety arrangement and does not require testing at regular intervals.
## 9.3 Model-specific data

<table>
<thead>
<tr>
<th>Limit values</th>
<th>XSR105</th>
<th>XSR105DU</th>
<th>XSR205DU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity</td>
<td>120 g</td>
<td>120 g</td>
<td>220 g</td>
</tr>
<tr>
<td>Nominal load</td>
<td>100 g</td>
<td>100 g</td>
<td>200 g</td>
</tr>
<tr>
<td>Readability</td>
<td>0.01 mg</td>
<td>0.1 mg</td>
<td>0.1 mg</td>
</tr>
<tr>
<td>Capacity of fine range</td>
<td>-</td>
<td>41 g</td>
<td>81 g</td>
</tr>
<tr>
<td>Readability in fine range</td>
<td>-</td>
<td>0.01 mg</td>
<td>0.01 mg</td>
</tr>
<tr>
<td>Repeatability (at nominal load)</td>
<td>0.04 mg</td>
<td>0.1 mg</td>
<td>0.1 mg</td>
</tr>
<tr>
<td>Repeatability (at 5% load)</td>
<td>0.02 mg</td>
<td>0.02 mg</td>
<td>0.02 mg</td>
</tr>
<tr>
<td>Linearity deviation</td>
<td>0.2 mg</td>
<td>0.2 mg</td>
<td>0.2 mg</td>
</tr>
<tr>
<td>Eccentricity deviation (at test load)</td>
<td>0.3 mg (50 g)</td>
<td>0.3 mg (50 g)</td>
<td>0.3 mg (100 g)</td>
</tr>
<tr>
<td>Sensitivity offset (at nominal load)</td>
<td>0.4 mg</td>
<td>0.8 mg</td>
<td>0.8 mg</td>
</tr>
<tr>
<td>Sensitivity temperature drift</td>
<td>0.00015%/°C</td>
<td>0.00015%/°C</td>
<td>0.00015%/°C</td>
</tr>
<tr>
<td>Typical values</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Repeatability (at 5% load)</td>
<td>0.008 mg</td>
<td>0.01 mg</td>
<td>0.01 mg</td>
</tr>
<tr>
<td>Linearity deviation</td>
<td>0.06 mg</td>
<td>0.06 mg</td>
<td>0.06 mg</td>
</tr>
<tr>
<td>Eccentricity deviation (at test load)</td>
<td>0.1 mg (50 g)</td>
<td>0.1 mg (50 g)</td>
<td>0.1 mg (100 g)</td>
</tr>
<tr>
<td>Sensitivity offset (at nominal load)</td>
<td>0.08 mg</td>
<td>0.2 mg</td>
<td>0.16 mg</td>
</tr>
<tr>
<td>Minimum weight (USP, tolerance = 0.10%)</td>
<td>16 mg</td>
<td>20 mg</td>
<td>20 mg</td>
</tr>
<tr>
<td>Minimum weight (tolerance = 1%)</td>
<td>1.6 mg</td>
<td>2 mg</td>
<td>2 mg</td>
</tr>
<tr>
<td>Settling time</td>
<td>3 s</td>
<td>1.5 s</td>
<td>1.5 s</td>
</tr>
</tbody>
</table>

### Dimensions & other specifications

<table>
<thead>
<tr>
<th></th>
<th>XSR105</th>
<th>XSR105DU</th>
<th>XSR205DU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balance dimensions</td>
<td>195×456×292 mm</td>
<td>195×456×292 mm</td>
<td>195×456×292 mm</td>
</tr>
<tr>
<td>Weighing pan dimensions</td>
<td>78×73 mm</td>
<td>78×73 mm</td>
<td>78×73 mm</td>
</tr>
<tr>
<td>Usable height of draft shield</td>
<td>235 mm</td>
<td>235 mm</td>
<td>235 mm</td>
</tr>
<tr>
<td>Balance weight</td>
<td>8.6 kg</td>
<td>8.6 kg</td>
<td>8.6 kg</td>
</tr>
</tbody>
</table>

### Weights for routine testing

<table>
<thead>
<tr>
<th></th>
<th>XSR105</th>
<th>XSR105DU</th>
<th>XSR205DU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weights (OIML class)</td>
<td>5 g (E2)/ 100 g (F2)</td>
<td>5 g (E2)/ 100 g (F2)</td>
<td>10 g (F1)/ 200 g (F2)</td>
</tr>
<tr>
<td>Weights (ASTM class)</td>
<td>5 g (ASTM 1)/ 100 g (ASTM 1)</td>
<td>5 g (ASTM 1)/ 100 g (ASTM 1)</td>
<td>10 g (ASTM 1)/ 200 g (ASTM 1)</td>
</tr>
</tbody>
</table>

1) after adjustment with internal weight
2) determined at 5% load, k = 2
<table>
<thead>
<tr>
<th></th>
<th>XSR225DU</th>
<th>XSR64</th>
<th>XSR104</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Limit values</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capacity</td>
<td>220 g</td>
<td>61 g</td>
<td>120 g</td>
</tr>
<tr>
<td>Nominal load</td>
<td>200 g</td>
<td>60 g</td>
<td>100 g</td>
</tr>
<tr>
<td>Readability</td>
<td>0.1 mg</td>
<td>0.1 mg</td>
<td>0.1 mg</td>
</tr>
<tr>
<td>Capacity of fine range</td>
<td>121 g</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Readability in fine range</td>
<td>0.01 mg</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Repeatability (at nominal load)</td>
<td>0.1 mg</td>
<td>0.1 mg</td>
<td>0.1 mg</td>
</tr>
<tr>
<td>Repeatability (at 5% load)</td>
<td>0.02 mg</td>
<td>0.07 mg</td>
<td>0.07 mg</td>
</tr>
<tr>
<td>Linearity deviation</td>
<td>0.2 mg</td>
<td>0.2 mg</td>
<td>0.2 mg</td>
</tr>
<tr>
<td>Eccentricity deviation (at test load)</td>
<td>0.3 mg (100 g)</td>
<td>0.15 mg (20 g)</td>
<td>0.3 mg (50 g)</td>
</tr>
<tr>
<td>Sensitivity offset (at nominal load)</td>
<td>0.8 mg</td>
<td>0.6 mg</td>
<td>1 mg</td>
</tr>
<tr>
<td>Sensitivity temperature drift</td>
<td>0.00015%/°C</td>
<td>0.00015%/°C</td>
<td>0.00015%/°C</td>
</tr>
<tr>
<td><strong>Typical values</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Repeatability (at 5% load)</td>
<td>0.01 mg</td>
<td>0.04 mg</td>
<td>0.04 mg</td>
</tr>
<tr>
<td>Linearity deviation</td>
<td>0.06 mg</td>
<td>0.06 mg</td>
<td>0.06 mg</td>
</tr>
<tr>
<td>Eccentricity deviation (at test load)</td>
<td>0.1 mg (100 g)</td>
<td>0.05 mg (20 g)</td>
<td>0.1 mg (50 g)</td>
</tr>
<tr>
<td>Sensitivity offset (at nominal load)</td>
<td>0.16 mg</td>
<td>0.12 mg</td>
<td>0.2 mg</td>
</tr>
<tr>
<td>Minimum weight (USP, tolerance = 0.10%)</td>
<td>20 mg</td>
<td>82 mg</td>
<td>82 mg</td>
</tr>
<tr>
<td>Minimum weight (tolerance = 1%)</td>
<td>2 mg</td>
<td>8.2 mg</td>
<td>8.2 mg</td>
</tr>
<tr>
<td>Settling time</td>
<td>1.5 s</td>
<td>1.5 s</td>
<td>1.5 s</td>
</tr>
<tr>
<td><strong>Dimensions &amp; other specifications</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Balance dimensions (W×D×H)</td>
<td>195×456×292 mm</td>
<td>195×456×292 mm</td>
<td>195×456×292 mm</td>
</tr>
<tr>
<td>Weighing pan dimensions (W×D)</td>
<td>78×73 mm</td>
<td>78×73 mm</td>
<td>78×73 mm</td>
</tr>
<tr>
<td>Usable height of draft shield</td>
<td>235 mm</td>
<td>235 mm</td>
<td>235 mm</td>
</tr>
<tr>
<td>Balance weight</td>
<td>8.6 kg</td>
<td>8.6 kg</td>
<td>8.6 kg</td>
</tr>
<tr>
<td><strong>Weights for routine testing</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weights (OIML class)</td>
<td>10 g (F1)/ 200 g (F2)</td>
<td>2 g (E2)/ 50 g (F2)</td>
<td>5 g (E2)/ 100 g (F2)</td>
</tr>
<tr>
<td>Weights (ASTM class)</td>
<td>10 g (ASTM 1)/ 200 g (ASTM 1)</td>
<td>2 g (ASTM 1)/ 50 g (ASTM 1)</td>
<td>5 g (ASTM 1)/ 100 g (ASTM 1)</td>
</tr>
</tbody>
</table>

1) after adjustment with internal weight

2) determined at 5% load, k = 2
## Limit values

<table>
<thead>
<tr>
<th></th>
<th>XSR204</th>
<th>XSR204DR</th>
<th>XSR304</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity</td>
<td>220 g</td>
<td>220 g</td>
<td>320 g</td>
</tr>
<tr>
<td>Nominal load</td>
<td>200 g</td>
<td>200 g</td>
<td>300 g</td>
</tr>
<tr>
<td>Readability</td>
<td>0.1 mg</td>
<td>1 mg</td>
<td>0.1 mg</td>
</tr>
<tr>
<td>Capacity of fine range</td>
<td>-</td>
<td>81 g</td>
<td>-</td>
</tr>
<tr>
<td>Readability in fine range</td>
<td>-</td>
<td>0.1 mg</td>
<td>-</td>
</tr>
<tr>
<td>Repeatability (at nominal load)</td>
<td>0.1 mg</td>
<td>0.7 mg</td>
<td>0.1 mg</td>
</tr>
<tr>
<td>Repeatability (at 5% load)</td>
<td>0.07 mg</td>
<td>0.1 mg</td>
<td>0.08 mg</td>
</tr>
<tr>
<td>Linearity deviation</td>
<td>0.2 mg</td>
<td>0.5 mg</td>
<td>0.3 mg</td>
</tr>
<tr>
<td>Eccentricity deviation (at test load)</td>
<td>0.3 mg (100 g)</td>
<td>0.3 mg (100 g)</td>
<td>0.3 mg (100 g)</td>
</tr>
<tr>
<td>Sensitivity offset (at nominal load)</td>
<td>1 mg</td>
<td>1 mg</td>
<td>1 mg</td>
</tr>
<tr>
<td>Sensitivity temperature drift</td>
<td>0.00015%/°C</td>
<td>0.00015%/°C</td>
<td>0.00015%/°C</td>
</tr>
</tbody>
</table>

## Typical values

<table>
<thead>
<tr>
<th></th>
<th>XSR204</th>
<th>XSR204DR</th>
<th>XSR304</th>
</tr>
</thead>
<tbody>
<tr>
<td>Repeatability (at 5% load)</td>
<td>0.04 mg</td>
<td>0.04 mg</td>
<td>0.04 mg</td>
</tr>
<tr>
<td>Linearity deviation</td>
<td>0.06 mg</td>
<td>0.15 mg</td>
<td>0.1 mg</td>
</tr>
<tr>
<td>Eccentricity deviation (at test load)</td>
<td>0.1 mg (100 g)</td>
<td>0.1 mg (100 g)</td>
<td>0.1 mg (100 g)</td>
</tr>
<tr>
<td>Sensitivity offset (at nominal load)</td>
<td>0.24 mg</td>
<td>0.24 mg</td>
<td>0.24 mg</td>
</tr>
<tr>
<td>Minimum weight (USP, tolerance = 0.10%)</td>
<td>82 mg</td>
<td>82 mg</td>
<td>82 mg</td>
</tr>
<tr>
<td>Minimum weight (tolerance = 1%)</td>
<td>8.2 mg</td>
<td>8.2 mg</td>
<td>8.2 mg</td>
</tr>
<tr>
<td>Settling time</td>
<td>1.5 s</td>
<td>1.5 s</td>
<td>1.5 s</td>
</tr>
</tbody>
</table>

## Dimensions & other specifications

<table>
<thead>
<tr>
<th></th>
<th>XSR204</th>
<th>XSR204DR</th>
<th>XSR304</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balance dimensions (W×D×H)</td>
<td>195×456×292 mm</td>
<td>195×456×292 mm</td>
<td>195×456×292 mm</td>
</tr>
<tr>
<td>Weighing pan dimensions (W×D)</td>
<td>78×73 mm</td>
<td>78×73 mm</td>
<td>78×73 mm</td>
</tr>
<tr>
<td>Usable height of draft shield</td>
<td>235 mm</td>
<td>235 mm</td>
<td>235 mm</td>
</tr>
<tr>
<td>Balance weight</td>
<td>8.6 kg</td>
<td>8.6 kg</td>
<td>8.6 kg</td>
</tr>
</tbody>
</table>

## Weights for routine testing

<table>
<thead>
<tr>
<th></th>
<th>XSR204</th>
<th>XSR204DR</th>
<th>XSR304</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weights (OIML class)</td>
<td>10 g (F1)/ 200 g (F2)</td>
<td>10 g (F1)/ 200 g (F2)</td>
<td>10 g (F1)/ 200 g (F2)</td>
</tr>
<tr>
<td>Weights (ASTM class)</td>
<td>10 g (ASTM 1)/ 200 g (ASTM 1)</td>
<td>10 g (ASTM 1)/ 200 g (ASTM 1)</td>
<td>10 g (ASTM 1)/ 200 g (ASTM 1)</td>
</tr>
</tbody>
</table>

1) after adjustment with internal weight
2) determined at 5% load, k = 2
9.4 Dimensions

9.4.1 XSR analytical balances

Models: XSR105, XSR105DU, XSR205DU, XSR225DU, XSR64, XSR104, XSR204, XSR204DR, XSR304

<table>
<thead>
<tr>
<th>Outer dimensions [mm]</th>
<th>Clear dimensions [mm]</th>
<th>Position of the weighing hook axle</th>
</tr>
</thead>
<tbody>
<tr>
<td>160 78.5 20</td>
<td>145 195</td>
<td></td>
</tr>
<tr>
<td>150 250 20</td>
<td>145 195</td>
<td></td>
</tr>
<tr>
<td>126 328 235</td>
<td>194 88 292</td>
<td></td>
</tr>
<tr>
<td>80.5 20</td>
<td>194 88 292</td>
<td></td>
</tr>
<tr>
<td>65 39 150</td>
<td>482 170.5 194 88 292</td>
<td></td>
</tr>
<tr>
<td>130 65 160</td>
<td>130 65 160</td>
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</table>
10 Disposal

In conformance with the European Directive 2012/19/EU on Waste Electrical and Electronic Equipment (WEEE) this device may not be disposed of in domestic waste. This also applies to countries outside the EU, per their specific requirements.

Please dispose of this product in accordance with local regulations at the collecting point specified for electrical and electronic equipment. If you have any questions, please contact the responsible authority or the distributor from which you purchased this device. Should this device be passed on to other parties, the content of this regulation must also be related.
11 Accessories and Spare Parts

11.1 Accessories

Accessories are additional components that could help you in your workflow.

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<th>Description</th>
<th>Part No.</th>
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<td><strong>Weighing pans</strong></td>
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<tr>
<td>SmartGrid cover</td>
<td>11106709</td>
</tr>
<tr>
<td>Single-use aluminium weighing pans, 10 units</td>
<td>11106711</td>
</tr>
<tr>
<td><strong>ErgoClips</strong></td>
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</tr>
<tr>
<td>ErgoClip Stand</td>
<td>11140170</td>
</tr>
<tr>
<td>ErgoClip filter holder</td>
<td>30460844</td>
</tr>
<tr>
<td>ErgoClip flask, small</td>
<td>30460854</td>
</tr>
<tr>
<td>ErgoClip flask</td>
<td>30460842</td>
</tr>
<tr>
<td>ErgoClip syringe</td>
<td>30460859</td>
</tr>
</tbody>
</table>
ErgoClip tube

SmartPrep, single-use funnel for quick and easy sample preparation. For flask sizes 10/19, 12/21, 14/23. 50 pcs

ErgoClip Titrination Basket

ErgoClip Basket

ErgoClip Weighing Boat

ErgoClip Round-Bottom Flask

Pipette calibration

SmartCheck Trap 50 ml, > 20 - 2000 µl

Evaporation trap 100 ml

Evaporation trap 6/20 ml
**Antistatic kits**

- Compact ionizer with stand (USB) 30499859
- Additional compact ionizer (USB) for Compact ionizer with stand (30499859) 30496446

**Filter kits**

- Filter kit 30460857

**Density determination**

- Density kit 30460852
- Sinker 10 mL 210260
- Calibrated Sinker 10mL 210672
- Calibrated Thermometer 11132685

**Printers**

- P-52RUE dot matrix printer RS232C, USB and Ethernet connections, simple print-outs 30237290
  - Paper roll (length: 20 m), set of 5 pcs 00072456
  - Paper roll (length: 13 m), self-adhesive, set of 3 pcs 11600388
  - Ribbon cartridge, black, set of 2 pcs 00065975
P-56RUE thermal printer with RS232C, USB and Ethernet connections, simple print-outs, date and time

- Paper roll, white (length: 27 m), set of 10 pcs 30094723
- Paper roll, white, self-adhesive (length: 13 m), set of 10 pcs 30094724

P-58RUE thermal printer with RS232C, USB and Ethernet connections, simple print-outs, date and time, label printing, balance applications, e.g., statistics, formulation, totaling, SQC

- Paper roll, white (length: 27 m), set of 10 pcs 30094723
- Paper roll, white, self-adhesive (length: 13 m), set of 10 pcs 30094724
- Paper roll, white, self-adhesive labels (550 labels), set of 6 pcs 30094725

Dimension of the label 56×18 mm

**Anti-theft devices**

- Anti-theft cable with lock 11600361

**Hands-free accessories**

- Foot switch, optional switch for remote operation (USB connection) 30312558
- ErgoSens, optical sensor for remote operation (USB connection) 30300915

**Barcode readers**

- Corded USB barcode reader 30417466

**Cables for RS232C interface**

- USB-RS232 cable (to connect a balance via RS232C to a USB port) 64088427
**USB-RS232 cable with null modem (to connect peripherals via RS232C to a balance)**

**Wireless interfaces**

Bluetooth RS232C serial adapter ADP-BT-S for wireless connection between:
- Balance and PC
- Printer and balance

**Bluetooth USB adapter**

(Additional Bluetooth RS232 serial adapter 30086494 required for printer)

**Weighing tables**

**Weighing table**

**Power supplies**

AC/DC adapter (without power cable) 100–240 V AC, 0.8 A, 50/60 Hz, 12 V DC 2.5 A

Country-specific 3-Pin power cable with grounding conductor.

- Power cable AU
- Power cable BR
- Power cable CH
- Power cable CN
- Power cable DK
- Power cable EU
- Power cable GB
- Power cable IL
- Power cable IN
- Power cable IT
- Power cable JP
- Power cable TH, PE
- Power cable US
- Power cable ZA
Various

Drip pan, gray
30460856

Dust cover
30460849

Terminal cable, extended, length: 4.5 m
30300920
11.2 Spare parts

Spare parts are parts that are delivered with the original instrument but that can be replaced, if needed, without the help of a service technician.

11.2.1 Weighing chamber

<table>
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<tr>
<th>Order no.</th>
<th>Designation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>30416123 Cable terminal</td>
<td>–</td>
</tr>
<tr>
<td>2</td>
<td>30459875 Door right high draft shield</td>
<td>–</td>
</tr>
<tr>
<td>3</td>
<td>30460287 Leveling feet, set</td>
<td>Including: 2 leveling feet</td>
</tr>
<tr>
<td>4</td>
<td>30459877 Panel front high draft shield</td>
<td>–</td>
</tr>
<tr>
<td>5</td>
<td>30460282 Drip Tray XSR</td>
<td>–</td>
</tr>
<tr>
<td>6</td>
<td>30460285 Weighing pan SmartGrid XPR XSR</td>
<td>–</td>
</tr>
<tr>
<td>7</td>
<td>30459874 Door left high draft shield</td>
<td>–</td>
</tr>
<tr>
<td>8</td>
<td>30459876 Door top draft shield</td>
<td>–</td>
</tr>
</tbody>
</table>
11.2.2 Packaging all models

<table>
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<td>30460297</td>
<td>Packaging</td>
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<td></td>
<td></td>
<td>Including: Export box, inner protection material</td>
</tr>
<tr>
<td>2</td>
<td>30460298</td>
<td>Export box</td>
</tr>
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<td></td>
<td></td>
<td>Excluding: Inner protection material</td>
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GWP®
Good Weighing Practice™

GWP® is the global weighing standard, ensuring consistent accuracy of weighing processes, applicable to all equipment from any manufacturer. It helps to:

• Choose the appropriate balance or scale
• Calibrate and operate your weighing equipment with security
• Comply with quality and compliance standards in laboratory and manufacturing

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