# Table of Contents

1 Introduction

1.1 Symbols and presentations used

2 Safety Information

2.1 Definition of signal warnings and symbols

2.2 Product specific safety notes

3 Overview of XP56/XP26 Micro Balances

4 Installation and Putting into Operation

4.1 Unpacking and checking the delivered items

4.1.1 Unpacking the balance

4.2 Scope of delivery

4.3 Selecting a location

4.4 Assembling the balance

4.4.1 Inner draft shield

4.4.2 Outer draft shield

4.5 Power supply

4.6 Operating of the outer draft shield and the inner draft shield

4.6.1 Outer draft shield

4.6.2 Inner draft shield

4.7 Setting the reading angle and positioning the terminal

4.7.1 Setting the reading angle

4.7.2 Remove terminal and place close to the balance

4.8 Transporting the balance

4.8.1 Transporting over short distances

4.8.2 Transporting over long distances

4.9 Below-the-balance weighing

4.10 Installing the ErgoClip

4.11 Installing the grid weighing pan cover

5 First Steps

5.1 Switching on / off

5.2 Leveling the balance

6 Maintenance

6.1 Cleaning

6.2 Disposal

7 Technical Data

7.1 General data

7.2 Explanatory notes for the METTLER TOLEDO AC adapter

7.3 Model-specific data

7.4 Dimensions

7.5 Interfaces

7.5.1 Specifications of RS232C

7.5.2 Specifications of “Aux” connection
<table>
<thead>
<tr>
<th>Chapter</th>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>Accessories and Spare Parts</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>8.1 Accessories</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>8.2 Spare parts</td>
<td>44</td>
</tr>
<tr>
<td>9</td>
<td>Appendix</td>
<td>46</td>
</tr>
<tr>
<td></td>
<td>9.1 MT-SICS interface commands and functions</td>
<td>46</td>
</tr>
<tr>
<td></td>
<td>9.2 Procedure for certified balances</td>
<td>46</td>
</tr>
<tr>
<td>10</td>
<td>Index</td>
<td>48</td>
</tr>
</tbody>
</table>
1 Introduction

Thank you for choosing a METTLER TOLEDO balance.

The balances of the XP line combine a large number of weighing and adjustment possibilities with exceptionally convenient operation.

In this chapter you will be given basic information about your balance. Please read right through this chapter carefully even if you already have experience with METTLER TOLEDO balances. Please pay special attention to the safety warnings!

The different models have different characteristics regarding equipment and performance. Special notes in the text indicate where this makes a difference to operation.

The XP line comprises a range of balances which differ from each other in relation to their weighing range and resolution.

The following features are common to all models of the XP lines:

- Glass draft shield with motorized drive and inner glass draft shield for precise weighing even in unstable environments.
- Fully automatic adjustment "ProFACT" using internal weights.
- Built-in level sensor, illuminated level indicator and Leveling Assistant for fast and easy leveling.
- Built-in applications for normal weighing, statistics, formulation, piece counting, percent weighing, density, differential weighing and LabX Client.
- Integral RS232C interface.
- Slot for second interface (optional).
- Touch-sensitive graphics terminal ("Touch screen") with color display.
- Two programmable sensors for hands-off operation ("SmartSens") to speed up frequently recurring tasks.

A brief word about standards, guidelines, and methods of quality assurance: The balances comply with usual standards and guidelines. They support standard procedures, specifications, working methods, and reports according to GLP (Good Laboratory Practice). In this connection, records of working procedures and adjustments become very important; for this purpose we recommend you to use a printer from the METTLER TOLEDO range, since these are optimally adapted to your balance. The balances conform to the applicable standards and guidelines and possess a EC declaration of conformity. METTLER TOLEDO is certified as manufacturer according to ISO 9001 and ISO 14001.

The operating instructions for the XP balances consist of 3 separate documents, whose contents are listed below.

Part 1, this document

Contents

- Introduction
- Safety information
- Installation and putting into operation
- Leveling the balance
- Cleaning and service
- Technical data
- Accessories
- Spare parts
- Interface commands and MT-SICS functions
1.1 Symbols and presentations used

The following conventions apply to the operating instructions: part 1, part 2 and part 3.

Key and button designations are indicated by a picture or text in square brackets (e.g. \[\text{On/Off}\]).

\[\text{This symbol indicates press key briefly (less than 1.5 s).}\]

\[\text{This symbol indicates press and hold key down (longer than 1.5 s).}\]

These symbols indicate an instruction:

\[\text{▶ prerequisites}\]

1 steps

2 …

\[\text{⇒ results}\]
2 Safety Information

2.1 Definition of signal warnings and symbols

Safety notes are indicated by signal words and warning symbols and contain warnings and information about safety issues. Ignoring safety notes can lead to personal injury, damage to the instrument, malfunctions and erroneous results.

**Signal words**

**WARNING** for a hazardous situation with medium risk, possibly resulting in severe injuries or death if not avoided.

**CAUTION** for a hazardous situation with low risk, resulting in damage to the device or the property or in loss of data or minor or medium injuries if not avoided.

**Attention** (no symbol) for important information about the product.

**Note** (no symbol) for useful information about the product.

**Warning symbols**

- ![General hazard](triangle.png)
- ![Electrical shock](lightning.png)

2.2 Product specific safety notes

**Intended use**

Your balance is used for weighing. Use the balance exclusively for this purpose. Any other type of use and operation beyond the limits of technical specifications without written consent from Mettler-Toledo AG, is considered as not intended.

It is not permitted to use the instrument in explosive atmosphere of gases, steam, fog, dust and flammable dust (hazardous environments).

**General safety information**

Your instrument meets the state of the art technology and complies with all recognized safety rules, however, certain hazards may arise in extraneous circumstances. Do not open the housing of the instrument: It does not contain any parts which can be maintained, repaired or replaced by the user. If you ever have problems with your instrument, contact your authorized METTLER TOLEDO dealer or service representative.

Always operate and use your balance only in accordance with the operating instructions part 1, part 2 and part 3.

The instructions for setting up your new balance must be strictly observed.

**If the instrument is not used according to the manufacturer’s operating instructions (part 1, part 2 and part 3), protection of the instrument may be impaired.**

**Staff safety**

In order to use the instrument, you must have read and understood the operating instructions. Keep the operating instructions for further reference.

Never make any modifications or constructional alterations to the instrument and use only original spare parts and optional equipment from METTLER TOLEDO.
Safety notes

CAUTION

Damage of device

– For use only in dry interior rooms.

– Do not use sharply pointed objects to operate the keyboard! Although your balance is very ruggedly constructed, it is nevertheless a precision instrument. Treat it with corresponding care.

– Do not open the balance: It does not contain any parts which can be maintained, repaired, or replaced by the user. If you ever have problems with your balance, contact your METTLER TOLEDO dealer.

– Use only balance accessories and peripheral devices from METTLER TOLEDO; they are optimally adapted to your balance.

CAUTION

Risk of electric shock

Use only the original universal AC adapter delivered with your balance, and check that the voltage printed on it is the same as your local power supply voltage. Only plug the adapter into a socket which is grounded.
## 3 Overview of XP56/XP26 Micro Balances

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Overview</strong></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Terminal (details see Operating Instructions – Part 2)</td>
</tr>
<tr>
<td>2</td>
<td>Display (Touch-sensitive &quot;Touch screen&quot;)</td>
</tr>
<tr>
<td>3</td>
<td>Operating keys</td>
</tr>
<tr>
<td>4</td>
<td>SmartSens sensors</td>
</tr>
<tr>
<td>5</td>
<td>Drip tray</td>
</tr>
<tr>
<td>6</td>
<td>Grid weighing pan</td>
</tr>
<tr>
<td>7</td>
<td>Handle/Coupling element for the operation of the outer draft-shield doors</td>
</tr>
<tr>
<td>8</td>
<td>Inner glass draft shield</td>
</tr>
<tr>
<td>9</td>
<td>Outer glass draft shield</td>
</tr>
<tr>
<td>10</td>
<td>Type name</td>
</tr>
<tr>
<td>11</td>
<td>Handle for operation of the outer draft-shield top door</td>
</tr>
<tr>
<td>12</td>
<td>Guide for top door of draft shield and handle for transport</td>
</tr>
<tr>
<td>13</td>
<td>Removable clips for feeding cables or hoses</td>
</tr>
<tr>
<td>14</td>
<td>Level indicator / Level sensor</td>
</tr>
<tr>
<td>15</td>
<td>Slot for second interface (optional)</td>
</tr>
<tr>
<td>16</td>
<td>Socket for AC adapter</td>
</tr>
<tr>
<td>17</td>
<td>Fastening point for anti-theft device</td>
</tr>
<tr>
<td>18</td>
<td>Foot screw</td>
</tr>
<tr>
<td>19</td>
<td>Cooling element (based on model)</td>
</tr>
<tr>
<td>20</td>
<td>RS232C serial interface</td>
</tr>
<tr>
<td>21</td>
<td>Aux 2 (connection for &quot;ErgoSens&quot;, hand- or foot-switch)</td>
</tr>
<tr>
<td>22</td>
<td>Aux 1 (connection for &quot;ErgoSens&quot;, hand- or foot-switch)</td>
</tr>
</tbody>
</table>
4 Installation and Putting into Operation

This chapter explains how to unpack your new balance, and how to set it up and prepare it for operation. When you have carried out the steps described in this chapter, your balance is ready for operation.

4.1 Unpacking and checking the delivered items

4.1.1 Unpacking the balance

1. Open the outer packaging box.
2. Remove it from the packaging the Unpacking and packing instructions.
3. Lift the cardboard box (1) out of the packaging.

Overview

1. Cardboard box with 2 sets (see next 2 pictures)
2. Top packing cushion
3. Set with inner draft shield, drip tray, and grid weighing pan micro
4. Balance
5. Lifting strap
6. Terminal

Note
The terminal is connected to the balance by a cable!

7. Bottom packing cushion

– Take out the Operating Instructions and other documents (8) that explain the further procedure for unpacking and assembling your balance.

1. Pull out set (9) with AC adapter, power supply cable, tweezers, and the set containing ErgoClip basket micro and grid weighing pan cover micro.
2. Pull out set (10) with outer draft shield doors and terminal support.
Set with:

- ErgoClip basket micro
- Support (11)
- Basket (12)
- Grid weighing pan cover micro (13).

Use the lifting strap to lift the balance out of the packaging carton.

1. Unfasten lifting strap (5).
2. Remove top packing cushion (2).

- Pull out set (3) with inner draft shield etc.

- Carefully pull the terminal out of the bottom packing cushion and remove the protective cover.

Note
The terminal is connected to the balance by a cable, so only pull the terminal just far enough out of the packing cushion to remove the protective cover.
1 Place the terminal on the front of the balance.
2 Hold the balance by the guide or handle, hold the terminal firmly with your other hand, and pull the balance and terminal together out of the bottom packing cushion.

1 Place the balance with the terminal in the place where the balance will be used for weighing.
2 Remove the cover from the balance.

Note
Please keep all parts of the packaging. This packaging guarantees best possible protection of your balance for transportation.
See Transporting the balance (page 20).

4.2 Scope of delivery

The standard scope of delivery contains the following items:

- Balance with terminal
  - RS232C interface
  - Slot for second interface (optional)
  - Feedthroughs for below-the-balance weighing and for antitheft device
- Set with outer draft shield and terminal support
- Set with inner draft shield, drip tray and grid weighing pan micro
- Set with:
  - Ergo Clip basket micro with support
  - Grid weighing pan cover micro (attachment for grid weighing pan)
- Protective cover for the terminal
- AC adapter with country-specific power cable
- Tweezers
- Cleaning brush
- Production certificate
- CE declaration of conformity
4.3 Selecting a location

Choose a position which is stable, free from vibration, and as nearly horizontal as possible. The supporting surface must be able to bear the weight of the fully loaded balance safely.

Avoid the following:
- Direct sunlight
- Draft (e.g. from fans or air conditioning)
- Excessive fluctuations in temperature.

Further information can be found in Weighing the Right Way.

Observe ambient conditions.

See Technical Data (page 29).

Note
If the balance is not horizontal from the beginning, it will have to be leveled during initial operation.

See Leveling the balance (page 26).

4.4 Assembling the balance

4.4.1 Inner draft shield

1. Insert the front glass (1) of the inner draft shield.
2. Ensure the glass is centered and pushed in as far as the stop.
1. Insert the drip tray (1) from the side under the upper 2 pins. The notches must be positioned by the springs.
2. Insert the grid weighing pan (2) from above.
3. Check that the grid weighing pan is correctly hooked in on both sides.

1. Insert the side window (1) of the inner draft shield. At an angle of approximately 45 degrees to the final position, place the 2 black clips on the back guide shaft.
2. Push the window up until you can swivel it in over the front glass.

1. Insert the window (1) of the inner draft shield into the guide of the front glass and lower it to the floor.
2. The window must run easily.
3. Press the coupling pins (2) toward the inside.
4. Now insert the window on the other side of the inner draft shield. The procedure is the same.
1 Put the top glass (1) on.
2 Insert the sealing cover (2).

**Note**
The sealing cover closes the opening in the top glass through which you can pipette into a high container.

**Attention**
Do not use the sealing cover to lift the top glass of the draft shield!

### 4.4.2 Outer draft shield

1 Insert the top door of the draft shield (1) at an angle (slightly less than 30 degrees) into the guide positioned at the back.
2 Swivel the draft-shield door (2) carefully down, see figure.
The handles (A) must be turned toward the outside to allow installation of the side draft shield doors!

1 Insert the side doors of the draft shield according to the following instructions, see figure below.
2 Insert the side door at an angle of approx. 30° into the 2 openings, see figure.
3 Check that the side door is correctly inserted as shown!
4 Swivel the side door up against the balance until it engages with a click.
5 The side door must run easily, otherwise it is not correctly inserted.
6 Insert the second side door of the draft shield.
   ⇨ The procedure is identical.
7 Push the side doors completely to the back.

---

1 Insert the front glass (2) of the draft shield.
2 In the bottom part of the balance at the front, move at an angle from the top toward the bottom until the two hooks of the front glass of the draft shield lie on the rollers (1).
3 Swivel the front glass of the draft shield up until it engages.

1 Insert the terminal support.
2 First lay the cable in the guide by the terminal support.
3 Insert the terminal support into the opening of the front glass of the draft shield.
   ⇨ The terminal support must engage with a click.
1 Mount the terminal.
2 Place the terminal in the center of the support.
3 Push it against the balance until it swivels slightly down at the front by the terminal support.
   ⇒ You can push the cable into the balance.

Attention
The balance and the terminal are not fastened together by the terminal support! When transporting by hand, always hold the balance and the terminal firmly.
See Transporting the balance (page 20).

Note
You can also place the terminal free of the terminal support anywhere around the balance where the length of the cable allows.

4.5 Power supply

WARNING
Risk of electric shock
– Ensure that the AC power pack for the balance is only used in accordance with the specifications listed in chapter General Data.
– Your instrument is supplied with a 3-pin power cable with an equipment grounding conductor. Only extension cables which meet this relevant standards and also have an equipment grounding conductor may be used. Intentional disconnection of the equipment grounding conductor is prohibited.

• Your balance is delivered complete with an AC adapter and a country-specific power supply cable. The AC adapter is suitable for all power supply voltages in the range of: 100 – 240 VAC, 50/60 Hz, for exact specifications.
See Technical Data (page 29).
• First, check whether the voltage of the power supply matches your local line voltage. If this is not the case, on no account connect the balance to the power, but contact your METTLER TOLEDO sales representative or dealer.
• Guide the cables so that they cannot become damaged and will not be in your way during your daily work! Take care that the AC adapter cannot come into contact with liquids!
• The power plug must be always accessible.
• Before operating, check all cables for damage.
Plug the AC adapter (1) into the socket (2) in the back of your balance and into the power supply.

After the balance has been connected to the power supply, it carries out a self test and is then ready for operation.

Note
If the display field remains dark, even though the power supply connection functions.
1 First disconnect the balance from the power supply.
2 Open the terminal.
3 Press both buttons (3) on the back of the terminal and open the upper part of the terminal.
4 Check that the plug for the terminal cable (4) is connected correctly inside the terminal.

4.6 Operating of the outer draft shield and the inner draft shield

4.6.1 Outer draft shield

The outer draft shield of your balance can be adapted to the environmental conditions and your weighing style, as well as to the type of weighing and loading.

The doors of the outer draft shield can be opened and closed either by means of the [1] key, the “SmartSens” sensors, or by hand, see Operating Instructions – Part 2.

Try various different combinations by moving the 3 external handles up/inside and down/outside. We recommend you to set up the outer draft shield so that it only opens on the side where the balance is loaded. Your balance then works faster, because there are fewer troublesome currents of air than when both doors of the outer draft shield are opened together.
1 For **motorized door operation** the handles must be connected.
   ⇒ Side doors: Handles turned toward the inside.
   ⇒ Top door: Handle down in horizontal position.
2 For **manual door operation** the handles must be disconnected.
   ⇒ Side doors: Handles turned toward the outside.
   ⇒ Top door: Handle up in vertical position.

**Note**
It is best to make connections when the draft shield is closed.

### 4.6.2 Inner draft shield

- For **motorized operation** of the inner draft shield the coupling bolts (1) must be pressed inward.
  ⇒ The two side doors can be controlled separately.

You can also open the side doors of the inner draft shield only partway, with a choice of 25 %, 50 % or 75 %, see Operating Instructions – Part 2.

### 4.7 Setting the reading angle and positioning the terminal

#### 4.7.1 Setting the reading angle

1 Press in the two buttons (1) on the back of the terminal.
  ⇒ The top of the terminal can then be pulled up or pushed down until it engages in the desired position. A total of 3 setting positions are available.
2 Move it in an appropriate position.

#### 4.7.2 Remove terminal and place close to the balance

The terminal is connected to the balance by a cable. So you can arrange your workplace optimally, the terminal can be removed from the balance and placed separately.
Place the terminal separately

1 Switch the balance off.
2 Carefully lift the terminal off the terminal support.
   You can leave the terminal support on the balance or remove it.
3 Pull the cable carefully out from the balance as far as possible.
4 Place the terminal where you want it to be.

Note
The cable can also be led out of the back of the balance. If working
this way would be convenient for you, call your METTLER TOLEDO
dealer who will adapt the balance for you.

4.8 Transporting the balance

1 Switch off the balance.
2 The balance must be disconnected from the power supply.
3 Remove any interface cable from the balance.

4.8.1 Transporting over short distances

If you wish to move your balance over a short distance to a new location, proceed as follows.

CAUTION
Damage of device
Never lift the balance by the glass draft shield or the cooling element, as this can cause damage!

1 With one hand, hold the balance by the guide for the top door of
   the draft shield.
2 With your other hand, hold the terminal. The terminal is not rigidly
   fastened to the balance, so you must always hold the balance with
   one hand and the terminal with the other.
3 Carefully lift the balance and carry it to its new location.
   See Selecting a location (page 13).
4.8.2 Transporting over long distances

If you want to transport or ship your balance over long distances, or if it is not certain that the balance will be transported upright, use the complete original packaging.

Disassemble the following parts

1. Lift the terminal (1) out of the terminal support and place it next to the support.
2. Pull the terminal support (2) off the balance.
3. Swivel the front glass (3) of the outer draft shield away from the balance.
4. Carefully fold the side doors (4+5) against the respective handles and pull the side doors out of the guide.
5. Swivel the front of the top door (6) of the outer draft shield up and pull the door out of the guide.
6. Remove the sealing cover (7).
7. Lift the top glass (8) of the inner draft shield off.
8. Pull both side doors (9 + 10) off. Pull up, turn to the side, and pull away.
9. Lift the grid weighing pan (11) and lift it out of the guides.
10. Pull the drip tray (12) out at the side.
11. Pull the front glass (13) up and away.

Pack the outer draft shield and the terminal support (Pos. 3-6 and 2)

- Place these parts in the compartments provided in the original packaging.

Note
We advise you to place a sheet of paper between the sides glasses of the draft shield.
Pack the inner draft shield, the drip tray, and the grid weighing pan (Pos. 7-13)
- Place these parts in the special compartments provided in the original packaging.

Pack the set with
- ErgoClip basket micro
  - Support (1)
  - Basket (2)
- Grid weighing pan cover micro (3).

Pack the 2 sets (1 + 2)
- Set (1) with AC adapter, power cable, tweezers, and the set with the ErgoClip Basket micro and grid weighing pan cover micro.
- Set (2) with the outer draft shield and terminal support.
- The Operating Instructions and other documents.

CAUTION
Damage of device
These instructions must be followed exactly, otherwise the balance may be damaged when inserting it into the packing cushions.

1. Push the guide of the upper draft shield door right to the front.
2. Push the guide of the draft shield side doors right to the front.
3. Fold the handles of the guides up/in.
Note
For packing both the balance and the terminal, you have a protective cover in which they were delivered. These are deliberately not shown in the illustrations so you can see better how the individual items must be positioned. However, we recommend you to use these protective covers.

1. Place the terminal on the balance (see illustration) and carefully insert the balance into the bottom packing cushion.
2. Take the terminal and place it in front of the packing cushion on the table.

   - Place the set in the packing cushion along with the inner draft shield, see illustration.

   - Insert the terminal into the packing cushion as shown in the illustration.

1. Now put the top packing cushion in place.  
   ⇒ Taking care to position it correctly.
2. Pass the lifting strap around both packing cushions, see illustration.
3. Tighten it until it lies close against the packaging.  
   ⇒ You can now lift the packed balance by the lifting strap and insert it into the transport carton.
Place the packaging with the outer draft shield and AC adapter sets on the balance in the transportation carton.

4.9 Below-the-balance weighing

So that weighings can be carried out below the working surface (below-the-balance weighing), your balance is provided with a special hanger.

1. Switch off the balance.
2. Unplug the cable of the AC adapter from the back of the balance.
3. Also remove any interface cables.
4. Push all the doors of the glass draft shield completely to the back.
5. Lift the terminal off the terminal support.
6. Open the terminal and carefully pull the connecting cable out, see Power supply (page 17).
7. Put the terminal down at the side of the balance.
8. Pull the balance over the table edge just far enough that you see the opening from below, see figure left.
9. Slacken the screw until the cover plate can be turned to the side and the hanger for weighing below the balance is easily accessible. You must now fasten the cover plate in the new position by tightening the screw, see figure right.
   ⇒ Your balance is now ready for mounting your equipment for below-the-balance weighings.

4.10 Installing the ErgoClip

Attention
Before you install an ErgoClip you must switch off the balance [On/Off] key.

To install the ErgoClip included in the delivery, or an optional ErgoClip, please proceed as follows:
1. Remove the grid weighing pan (SmartGrid) from the balance.
2. Insert the support (1) for the "ErgoClip Basket micro".
3. Place the basket (2) on the guide (3) of the support.

**Important to know!**
If you do not switch the balance off before you do the installation, the ProFACT function is not activated.

**Reason**
Addition of the ErgoClip causes the dead-load tolerance range of the balance to be exceeded. The balance therefore does not activate ProFACT, so as not to interrupt the assumed weighing operation.
When this status icon appears in the display, it means: “The balance wants to execute ProFACT” but cannot.

### 4.11 Installing the grid weighing pan cover

**Note**
For standard operation with conventional tare containers, we do not recommend using this weighing pan. Its use may affect the stabilization time and degree of accuracy. The listed specifications are reached without a weighing pan.

---

**CAUTION**

**Hand injuries**
Take care when handling the weighing pan, the corners and edges are extremely sharp!

**Attention**
With installed grid weighing pan cover, the balance does not switch to "Standby" mode!

1. For the installation, remove the grid weighing pan from the weighing chamber.
2. Gently press the cover onto the grid weighing pan.
3. Replace the grid weighing pan with the installed grid weighing pan cover.
5 First Steps

5.1 Switching on / off

Switching on
– Press [On/Off].
⇒ The display appears.

Note
If the balance has not been set up exactly horizontally, a warning text will appear shortly after the balance is turned on, prompting you to level the balance.

Switching off

Note
Do not disconnect the balance from the power supply except if you will not be using the balance for an extended period.

5.2 Leveling the balance

Your balance has a built-in levelcontrol, that constantly checks the correct horizontal alignment.

When the levelcontrol detects that the level is incorrect, a warning will appear and a warning beep will sound. A status icon will also appear in the upper right-hand corner of the display.
1 To start the Leveling Assistant, tap [Info].
   ⇒ The Leveling Assistant will guide you step by step through the
   leveling process.

2 Watch the levelcontrol located of your balance and press the
   appropriate button of the current position.
   ⇒ The Leveling Assistant will show you with red arrows in which
   direction you need to turn the two foot screws on the back of the
   balance.

3 Screw the foot screw until the air bubble is in the inner circle.

4 Tap [Exit].
   ⇒ A message appears that advises you to adjust the balance.

5 Confirm with [OK].
   ⇒ Status icon will no longer appear and balance returns to normal
   operation.
6 Maintenance

6.1 Cleaning

Periodically clean the weighing chamber, the housing, and the terminal of your balance using the brush supplied with it. The maintenance interval depends on your standard operating procedure (SOP).

Please observe the following notes

**WARNING**

Risk of electric shock
- The balance must be disconnected from the power supply.
- Ensure that no liquid comes into contact with the balance, the terminal or the AC adapter.
- Never open the balance, terminal or AC adapter – they contain no components, which can be cleaned, repaired or replaced by the user.

**CAUTION**

Damage of balance
On no account use cleaning agents which contain solvents or abrasive ingredients, as this can result in damage to the terminal overlay.

Cleaning

Your balance is made from high quality, resistant materials and can therefore be cleaned with a commercially available, mild cleaning agent.

1. To clean the weighing chamber thoroughly, swivel the glasses of the draft shields (inner and outer draft shield) away from the balance and pull them out of their fastenings. It may be necessary to turn the weighing pan slightly to remove it.

2. Carefully raise the front of the weighing pan and lift it out of the guide.

3. Pull the drip tray away from the balance.

4. When you replace these parts, make sure they are in the correct position.

**Note**

Please contact your METTLER TOLEDO dealer for details of the available service options. Regular servicing by an authorized service engineer ensures constant accuracy for years to come and prolongs the service life of your balance.

6.2 Disposal

In conformance with the European Directive 2002/96/EC 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 (for private or professional use), the content of this regulation must also be related.

Thank you for your contribution to environmental protection.
7 Technical Data

7.1 General data

CAUTION

Use only with a tested AC Adapter with SELV output current.
Ensure correct polarity.

Power supply
Power supply connector with AC/DC adapter:
Primary: 100-240 VAC, -15%/+10%, 50/60 Hz
Secondary: 12 VDC ±3%, 2.0 A (with electronic overload protection)

Cable to AC adapter:
Design: 3-core, with country-specific plug

Note
Make sure the power supply plug is freely accessible

Power supply to the balance:
12 VDC ±3%, 2.0 A, maximum ripple: 80 mVpp

Protection and standards
Overvoltage category: Class II
Degree of pollution: 2
Protection: Protected against dust and water
Standards for safety and EMC: See Declaration of Conformity
Range of application: For use only in closed interior rooms

Environmental conditions
Height above mean sea level: Up to 4000 m
Ambient temperature: 5-40 °C
Relative air humidity: Max. 80% at 31 °C, linearly decreasing to 50% at 40 °C, non-condensing
Warm-up time: At least 120 minutes after connecting the balance to the power supply; when switched on from standby-mode, the balance is ready for operation immediately

Materials
Housing: Die-cast aluminum, plastic, chrome steel and glass
Terminal: Die-cast zinc, chromed and plastics
Grid weighing pan: Chrome-nickel steel X5CrNi18-10

7.2 Explanatory notes for the METTLER TOLEDO AC adapter

The certified external power supply which conforms to the requirements for Class II double insulated equipment 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 conformance of our products can be found in the brochure "Declaration of Conformity" which is coming with each product.

In case of testing with regard to the European Directive 2001/95/EC the power supply and the balance have to be handled as Class II double insulated equipment.

Consequently an earth bonding test is not required. Similarly it is not necessary to carry out an earth bonding test between the supply earth conductor and any exposed metalwork on the balance.
Because the balance are sensitive to static charges a leakage resistor, typically 10 kΩ, is connected between the earth connector and the power supply output terminals. 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.

7.3 Model-specific data

<table>
<thead>
<tr>
<th>Limit values</th>
<th>XP26</th>
<th>XP26DR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum capacity</td>
<td>22 g</td>
<td>22 g</td>
</tr>
<tr>
<td>Readability</td>
<td>0.001 mg</td>
<td>0.01 mg</td>
</tr>
<tr>
<td>Tare range (from...to)</td>
<td>0 … 22 g</td>
<td>0 … 22 g</td>
</tr>
<tr>
<td>Maximum capacity, fine range</td>
<td>–</td>
<td>5.1 g</td>
</tr>
<tr>
<td>Readability, fine range</td>
<td>–</td>
<td>0.002 mg</td>
</tr>
<tr>
<td>Repeatability (at nominal load)</td>
<td>sd 0.0025 mg (20 g)</td>
<td>0.008 mg (20 g)</td>
</tr>
<tr>
<td>Repeatability (at low load)</td>
<td>sd 0.0015 mg (1 g)</td>
<td>0.005 mg (1 g)</td>
</tr>
<tr>
<td>Repeatability, fine range (at low load)</td>
<td>sd –</td>
<td>0.002 mg (1 g)</td>
</tr>
<tr>
<td>Linearity deviation</td>
<td>0.004 mg</td>
<td>0.01 mg</td>
</tr>
<tr>
<td>Eccentricity deviation (test load)</td>
<td>0.02 mg (10 g)</td>
<td>0.025 mg (10 g)</td>
</tr>
<tr>
<td>Sensitivity offset (test weight)</td>
<td>0.08 mg (20 g)</td>
<td>0.1 mg (20 g)</td>
</tr>
<tr>
<td>Sensitivity temperature drift</td>
<td>0.0001%/°C</td>
<td>0.0001%/°C</td>
</tr>
<tr>
<td>Sensitivity stability</td>
<td>0.0001%/a</td>
<td>0.0001%/a</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Typical values</th>
<th>XP26</th>
<th>XP26DR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Repeatability</td>
<td>sd 0.0007 mg</td>
<td>0.004 mg</td>
</tr>
<tr>
<td>Repeatability, fine range</td>
<td>sd –</td>
<td>0.0012 mg</td>
</tr>
<tr>
<td>Linearity deviation</td>
<td>0.003 mg</td>
<td>0.0048 mg</td>
</tr>
<tr>
<td>Eccentricity deviation (test load)</td>
<td>0.006 mg (10 g)</td>
<td>0.008 mg (10 g)</td>
</tr>
<tr>
<td>Sensitivity offset (test load)</td>
<td>0.04 mg (20 g)</td>
<td>0.048 mg (20 g)</td>
</tr>
<tr>
<td>Minimum sample weight (according to USP)</td>
<td>2.1 mg</td>
<td>12 mg</td>
</tr>
<tr>
<td>Minimum sample weight (according to USP), fine range</td>
<td>–</td>
<td>3.6 mg</td>
</tr>
<tr>
<td>Minimum sample weight (U=1%, k=2)</td>
<td>0.14 mg</td>
<td>0.8 mg</td>
</tr>
<tr>
<td>Minimum sample weight (U=1%, k=2), fine range</td>
<td>–</td>
<td>0.24 mg</td>
</tr>
<tr>
<td>Settling time</td>
<td>3.5 s</td>
<td>2.5 s</td>
</tr>
<tr>
<td>Settling time, fine range</td>
<td>–</td>
<td>3.5 s</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>XP26</th>
<th>XP26DR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balance dimensions (WxDxH)</td>
<td>263x487x322 mm</td>
<td>263x487x322 mm</td>
</tr>
<tr>
<td>Weighing pan dimensions</td>
<td>40x40 mm (WxD)</td>
<td>40x40 mm (WxD)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Typical uncertainties and supplementary data</th>
<th>XP26</th>
<th>XP26DR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Repeatability</td>
<td>sd 0.0007 mg+0.000004%·Rgr</td>
<td>0.004 mg+0.000005%·Rgr</td>
</tr>
<tr>
<td>Repeatability, fine range</td>
<td>sd –</td>
<td>0.0012 mg+0.00001%·Rgr</td>
</tr>
<tr>
<td></td>
<td>XP26</td>
<td>XP26DR</td>
</tr>
<tr>
<td>------------------------------</td>
<td>-----------------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>Differential linearity deviation</td>
<td>( \sqrt{(0.12pg \cdot Rnt)} )</td>
<td>( \sqrt{(0.3pg \cdot Rnt)} )</td>
</tr>
<tr>
<td>Differential eccentric load deviation</td>
<td>0.00003%( \cdot Rnt )</td>
<td>0.00004%( \cdot Rnt )</td>
</tr>
<tr>
<td>Sensitivity offset (^2)</td>
<td>0.0001%( \cdot Rnt )</td>
<td>0.00012%( \cdot Rnt )</td>
</tr>
<tr>
<td>Minimum sample weight (according to USP) (^1)</td>
<td>2.1mg + 0.012%( \cdot Rgr )</td>
<td>12mg + 0.015%( \cdot Rgr )</td>
</tr>
<tr>
<td>Minimum sample weight (according to USP), fine range (^1)</td>
<td>–</td>
<td>3.6mg + 0.03%( \cdot Rgr )</td>
</tr>
<tr>
<td>Minimum sample weight (U=1%, k=2) (^1)</td>
<td>0.14mg + 0.0008%( \cdot Rgr )</td>
<td>0.8mg + 0.001%( \cdot Rgr )</td>
</tr>
<tr>
<td>Minimum sample weight (U=1%, k=2), fine range (^1)</td>
<td>–</td>
<td>0.24mg + 0.002%( \cdot Rgr )</td>
</tr>
<tr>
<td>Weighing time</td>
<td>18 s</td>
<td>14 s</td>
</tr>
<tr>
<td>Weighing time, fine range</td>
<td>–</td>
<td>18 s</td>
</tr>
<tr>
<td>Interface update rate</td>
<td>23 /s</td>
<td>23 /s</td>
</tr>
<tr>
<td>Weight of balance</td>
<td>11.5 kg</td>
<td>11.5 kg</td>
</tr>
<tr>
<td>Number of built-in reference weights</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

**Weights for routine testing**

<table>
<thead>
<tr>
<th>OIML CarePac</th>
<th>Weights</th>
<th>ASTM CarePac</th>
<th>Weights</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>20 g F1, 1 g E2</td>
<td>#11123006</td>
<td>20 g F1, 1 g E2</td>
</tr>
<tr>
<td></td>
<td>20 g 1, 1 g 1</td>
<td>#11123106</td>
<td>20 g 1, 1 g 1</td>
</tr>
</tbody>
</table>

sd = Standard deviation  \( \text{Rnt} = \text{Net weight (sample weight)} \)
Rgr = Gross weight  \( \text{a} = \text{Year (annum)} \)

\(^1\) Valid for compact objects
\(^2\) After adjustment with built-in reference weight
\(^3\) On DeltaRange models: fine range starts at zero gross load

<table>
<thead>
<tr>
<th></th>
<th>XP56</th>
<th>XP56DR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limit values</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum capacity</td>
<td>52 g</td>
<td>52 g</td>
</tr>
<tr>
<td>Readability</td>
<td>0.001 mg</td>
<td>0.01 mg</td>
</tr>
<tr>
<td>Tare range (from…to)</td>
<td>0 … 52 g</td>
<td>0 … 52 g</td>
</tr>
<tr>
<td>Maximum capacity, fine range</td>
<td>–</td>
<td>11 g</td>
</tr>
<tr>
<td>Readability, fine range</td>
<td>–</td>
<td>0.002 mg</td>
</tr>
<tr>
<td>Repeatability (at nominal load)</td>
<td>sd 0.006 mg (50 g)</td>
<td>0.014 mg (50 g)</td>
</tr>
<tr>
<td>Repeatability (at low load)</td>
<td>sd 0.0015 mg (1 g)</td>
<td>0.006 mg (1 g)</td>
</tr>
<tr>
<td>Repeatability, fine range (at low load)</td>
<td>sd –</td>
<td>0.002 mg (1 g)</td>
</tr>
<tr>
<td>Linearity deviation</td>
<td>0.2 mg</td>
<td>0.03 mg</td>
</tr>
<tr>
<td>Eccentricity deviation (test load)</td>
<td>0.03 mg (20 g)</td>
<td>0.035 mg (20 g)</td>
</tr>
<tr>
<td>Sensitivity offset (test weight) (^2)</td>
<td>0.125 mg (50 g)</td>
<td>0.15 mg (50 g)</td>
</tr>
<tr>
<td>Sensitivity temperature drift</td>
<td>0.0001%/°C</td>
<td>0.0001%/°C</td>
</tr>
<tr>
<td>Sensitivity stability</td>
<td>0.0001%/a</td>
<td>0.0001%/a</td>
</tr>
</tbody>
</table>

| Typical values               |                       |                       |
| Repeatability                | sd 0.0007 mg          | 0.004 mg              |
| Repeatability, fine range    | –                     | 0.0012 mg             |
| Linearity deviation          | 0.01 mg               | 0.015 mg              |
| Eccentric deviation (test load) | 0.012 mg (20 g) | 0.016 mg (20 g) |
| Sensitivity offset (test load) \(^2\) | 0.06 mg (50 g) | 0.08 mg (50 g) |
| Minimum sample weight (according to USP) \(^1\) | 2.1 mg | 12 mg |
| Minimum sample weight (according to USP), fine range \(^1\) | – | 3.6 mg |
| Minimum sample weight (U=1\%, k=2) \(^1\) | 0.14 mg | 0.8 mg |
| Minimum sample weight (U=1\%, k=2), fine range \(^1\) | – | 0.24 mg |
| Setting time                 | 3.5 s                 | 2.5 s                 |
| Setting time, fine range     | –                     | 3.5 s                 |

**Dimensions**

| Balance dimensions (WxDxH)   | 263x487x322 mm         | 263x487x322 mm         |
| Weighing pan dimensions     | 40x40 mm (WxD)          | 40x40 mm (WxD)          |

**Typical uncertainties and supplementary data**
### Technical Data

<table>
<thead>
<tr>
<th></th>
<th>XP56</th>
<th>XP56DR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Repeatability</strong></td>
<td>0.0007 mg + 0.000006% (Rgr)</td>
<td>0.004 mg + 0.000006% (Rgr)</td>
</tr>
<tr>
<td><strong>Repeatability, fine range</strong></td>
<td>—</td>
<td>0.0012 mg + 0.00001% (Rgr)</td>
</tr>
<tr>
<td><strong>Differential linearity deviation</strong></td>
<td>(\sqrt{(0.5 pg \cdot Rnt)})</td>
<td>(\sqrt{(1.2 pg \cdot Rnt)})</td>
</tr>
<tr>
<td><strong>Differential eccentric load deviation</strong></td>
<td>0.00003% (Rnt)</td>
<td>0.00004% (Rnt)</td>
</tr>
<tr>
<td><strong>Sensitivity offset</strong></td>
<td>0.00006% (Rnt)</td>
<td>0.00006% (Rnt)</td>
</tr>
<tr>
<td><strong>Minimum sample weight (according to USP)</strong></td>
<td>2.1 mg + 0.018% (Rgr)</td>
<td>12 mg + 0.018% (Rgr)</td>
</tr>
<tr>
<td><strong>Minimum sample weight (according to USP), fine range</strong></td>
<td>—</td>
<td>3.6 mg + 0.03% (Rgr)</td>
</tr>
<tr>
<td><strong>Minimum sample weight (U=1%, k=2)</strong></td>
<td>0.14 mg + 0.0012% (Rgr)</td>
<td>0.8 mg + 0.0012% (Rgr)</td>
</tr>
<tr>
<td><strong>Minimum sample weight (U=1%, k=2), fine range</strong></td>
<td>—</td>
<td>0.24 mg + 0.002% (Rgr)</td>
</tr>
<tr>
<td><strong>Weighing time</strong></td>
<td>18 s</td>
<td>14 s</td>
</tr>
<tr>
<td><strong>Weighing time, fine range</strong></td>
<td>—</td>
<td>18 s</td>
</tr>
<tr>
<td><strong>Interface update rate</strong></td>
<td>23 /s</td>
<td>23 /s</td>
</tr>
<tr>
<td><strong>Weight of balance</strong></td>
<td>11.5 kg</td>
<td>11.5 kg</td>
</tr>
<tr>
<td><strong>Number of built-in reference weights</strong></td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

### Weights for routine testing

<table>
<thead>
<tr>
<th>OIML CarePac</th>
<th>Weights</th>
<th>#11123003</th>
<th>20 g, 0.1 g E2, #11123004</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTM CarePac</td>
<td>Weights</td>
<td>#11123103</td>
<td>20 g, 0.1 g E2, #11123104</td>
</tr>
</tbody>
</table>

sd = Standard deviation
\(Rnt\) = Net weight (sample weight)
\(Rgr\) = Gross weight
\(\alpha\) = Year (annum)

1) Valid for compact objects
2) After adjustment with built-in reference weight
3) On DeltaRange models: fine range starts at zero gross load
7.4 Dimensions

Dimensions in mm.
7.5 Interfaces

7.5.1 Specifications of RS232C

<table>
<thead>
<tr>
<th>Interface type:</th>
<th>Voltage interface according to EIA RS-232C/DIN 66020 (CCITT V24/V.28)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. cable length:</td>
<td>15 m</td>
</tr>
<tr>
<td>Signal level:</td>
<td>Outputs: +5 V ... +15 V (RL = 3 – 7 kΩ) Inputs: +3 V ... 25 V</td>
</tr>
<tr>
<td></td>
<td>–5 V ... –15 V (RL = 3 – 7 kΩ) –3 V ... 25 V</td>
</tr>
<tr>
<td>Connector:</td>
<td>Sub-D, 9-pole, female</td>
</tr>
<tr>
<td>Operating mode:</td>
<td>Full duplex</td>
</tr>
<tr>
<td>Transmission mode:</td>
<td>Bit-serial, asynchronous</td>
</tr>
<tr>
<td>Transmission code:</td>
<td>ASCII</td>
</tr>
<tr>
<td>Baud rates:</td>
<td>600, 1200, 2400, 4800, 9600, 19200, 384001) (firmware selectable)</td>
</tr>
<tr>
<td>Bits/parity:</td>
<td>7-bit/even, 7-bit/odd, 7-bit/none, 8-bit/none (firmware selectable)</td>
</tr>
<tr>
<td>Stop bits:</td>
<td>1 stop bit</td>
</tr>
<tr>
<td>Handshake:</td>
<td>None, XON/XOFF, RTS/CTS (firmware selectable)</td>
</tr>
<tr>
<td>End-of-line:</td>
<td>&lt;CR&gt;&lt;LF&gt;, &lt;CR&gt;, &lt;LF&gt; (firmware selectable)</td>
</tr>
</tbody>
</table>

![Pin configuration diagram]

1) 38400 baud is only possible in special cases, such as:
- Weighing platform without terminal, or
- Weighing platform with terminal, only via the optional RS232C interface.

7.5.2 Specifications of "Aux" connection

You can connect the METTLER TOLEDO "ErgoSens" or an external switch to sockets "Aux 1" and "Aux 2". This allows you to start functions such as taring, zeroing, printing and others.

**External connection**

- **Connector:** 3.5 mm stereo jack connector
- **Electrical data:**
  - Max. voltage: 12 V
  - Max. current: 150 mA

![External connection diagram]
8 Accessories and Spare Parts

8.1 Accessories

You can increase the functionality of your balance with accessories from the METTLER TOLEDO range. The following options are available:

<table>
<thead>
<tr>
<th>Description</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Printers</strong></td>
<td></td>
</tr>
<tr>
<td>BT-P42 printer with Bluetooth connection to instrument</td>
<td>11132540</td>
</tr>
<tr>
<td>Paper roll, set of 5 pcs</td>
<td>00072456</td>
</tr>
<tr>
<td>Paper roll, self-adhesive, set of 3 pcs</td>
<td>11600388</td>
</tr>
<tr>
<td>Ribbon cartridge, black, set of 2 pcs</td>
<td>00065975</td>
</tr>
<tr>
<td>RS-P42 printer with RS232C connection to instrument</td>
<td>00229265</td>
</tr>
<tr>
<td>Paper roll, set of 5 pcs</td>
<td>00072456</td>
</tr>
<tr>
<td>Paper roll, self-adhesive, set of 3 pcs</td>
<td>11600388</td>
</tr>
<tr>
<td>Ribbon cartridge, black, set of 2 pcs</td>
<td>00065975</td>
</tr>
<tr>
<td>RS-P25 printer with RS232C connection to instrument</td>
<td>11124300</td>
</tr>
<tr>
<td>Paper roll, set of 5 pcs</td>
<td>00072456</td>
</tr>
<tr>
<td>Paper roll, self-adhesive, set of 3 pcs</td>
<td>11600388</td>
</tr>
<tr>
<td>Ribbon cartridge, black, set of 2 pcs</td>
<td>00065975</td>
</tr>
<tr>
<td>RS-P26 printer with RS232C connection to instrument (with date and time)</td>
<td>11124303</td>
</tr>
<tr>
<td>Paper roll, set of 5 pcs</td>
<td>00072456</td>
</tr>
<tr>
<td>Paper roll, self-adhesive, set of 3 pcs</td>
<td>11600388</td>
</tr>
<tr>
<td>Ribbon cartridge, black, set of 2 pcs</td>
<td>00065975</td>
</tr>
<tr>
<td>LC-P45 application printer with additional functions</td>
<td>00229119</td>
</tr>
<tr>
<td>Paper roll, set of 5 pcs</td>
<td>00072456</td>
</tr>
<tr>
<td>Paper roll, self-adhesive, set of 3 pcs</td>
<td>11600388</td>
</tr>
<tr>
<td>Ribbon cartridge, black, set of 2 pcs</td>
<td>00065975</td>
</tr>
<tr>
<td><strong>Optional interfaces</strong></td>
<td></td>
</tr>
<tr>
<td>Second RS232C Interface</td>
<td>11132500</td>
</tr>
</tbody>
</table>
Ethernet Interface for connection to an Ethernet network 11132515

BT option: Bluetooth Interface for multipoint connection for up to 6 Bluetooth devices 11132530

BTS option: Bluetooth Interface, single-point connection 11132535

PS/2 option: Interface for connecting commercial keyboards and barcode readers 11132520

LocalCAN option: Interface for connection of up to 5 LC (LocalCAN) instruments 11132505

MiniMettler option: Interface MiniMettler, for connection to older (legacy) METTLER TOLEDO systems 11132510

RS232 - USB converter cable – Cable with converter to connect a balance (RS232) to a USB port 64088427

Cables for RS232C interface

RS9 – RS9 (m/f): connection cable for PC, length = 1 m 11101051
RS9 – RS25 (m/f): connection cable for PC, length = 2 m 11101052

Cables for LocalCAN interface

LC – RS9: Cable for connecting a PC with RS232C, 9-pin (f), length = 2 m 00229065

LC – RS25: Cable for connecting a printer or PC with RS232C, 25-pin (m/f), length = 2 m 00229050

LC – CL: Cable for connecting a device with METTLER TOLEDO CL interface (5-pin), length = 2 m 00229130

LC – LC2: Extension cable for LocalCAN, length = 2 m 00229115

LC – LC5: Extension cable for LocalCAN, length = 5 m 00229116

LC – LCT: Cable branch (T-connector) for LocalCAN 00229118

Cables for MiniMettler interface

MM – RS9f: RS232C connection cable to MiniMettler interface, length = 1.5 m 00229029
Cables for terminal

- Terminal extension cable, length = 4.5 m 11600517

Cable, one-sided open (2-pin)

- Cable between balance and AC adapter, length = 4 m 11132037

Auxiliary displays

- BT-BLD Bluetooth auxiliary display for table mounting, 168 mm, LCD display with backlighting 11132555
- LC/RS-BLD auxiliary display on bench stand, backlit (incl. RS cable and separate AC adapter) 00224200
- RS/LC-BLDS auxiliary display for table or balance mounting, 480 mm, LCD display with backlighting 11132630

Sensors

- ErgoSens, optical sensor for hands-free operation 11132601

LC-Switchbox

- For connection of up to 3 balances with LocalCAN interface to a printer 00229220
Footswitches

Footswitch with selectable function for balances (Aux 1, Aux 2) 11106741

LC-FS foot switch with selectable function for balances with LocalCAN interface 00229060

AntiStatic kit integrable point-electrode

Integrable antistatic kit incl. 1 point-electrode and power supply 11107761

Optional: Second point-electrode* 11107762
 Optional: U-electrode* 11107764
 * Regulated power supply for optional, second point-electrode 11107762, or the optional U-electrode 11107764

Universal AntiStatic kit

Universal antistatic kit complete U-shaped, including electrode and power supply 11107764

Optional: Second U-electrode* 11107765
 Optional: Point-electrode* 11107766
 * Power supply for optional, second U-electrode 11107764, or for optional point-electrode 11107765

ErgoClips

ErgoClip "Basket micro" (basket for small weighing objects) 11107889

ErgoClip "Flask micro" (for volumetric flask) 11107879

ErgoClip "Stand micro" (Holder to store up to 3 ErgoClips) 11140175
ErgoClip "Solution Kit micro" 11140253

SmardGrid Cover, chromium-nickel steel 11106262

Single-use weighing boats, 500 units, 41 x 56 x 8 mm 11106712

MinWeigh Door micro ideal for use with ErgoClip "Flask micro" 11107869

XP-SE kit

Separate electronics kit 11106743
  Extension cable 0.6 m 00211535
  Extension cable 5.0 m 00210688

Pipette calibration

Evaporation Trap micro 11140041

1-channel suction pump complete 11138268
  Hose 2 m for suction pump 11138132

Reagent reservoirs, 5 pcs. 11600616
Calibry PC Software
- Calibry Light; for single channel pipettes
  - Update
- Calibry Single workstation; for calibration with one system MPC
  - Update
- Calibry Network; Installation on several PC of the network accessing the same database
  - Update
- Calibry Validation manual

Barcode reader

**RS232C Barcode Reader**

The following accessories are needed for operation (not included):
- RS232 F cable
- Null modem adapter

Plus one of the following:
- AC adapter 5 V for EU
- AC adapter 5 V for US
- AC adapter 5 V for GB
- AC adapter 5 V for AU

**RS232C Barcode Reader – Cordless**

The following accessories are needed for operation (not included):
- Cradle
- RS232 F cable
- Null modem adapter

Plus one of the following:
- AC adapter 12 V for EU
- AC adapter 12 V for US
- AC adapter 12 V for GB
- AC adapter 12 V for AU

**PS/2 Barcode Reader, without cable**

PS/2 wedge single cable
**PS/2Y Barcode Reader, without cable**

PS/2 wedge twin (Y) cable

21901297

21901308

**Anti-theft devices**

Steel cable

11600361

**Transport cases**

Transport case

11106729

**Protective covers**

Protective cover for XP Terminal

11132570

**Dust covers**

Dust cover

30035838

**Software**

**LabX software for one click™ weighing solutions**

Enables you to perform One Click™ Standard Preparation, One Click™ Loss on Drying, One Click™ Sieve Analysis and many other applications.

Simply start the method with the One Click™ shortcut on the balance touchscreen. LabX guides you step-by-step through the SOP on the balance, performs your calculations automatically, and takes care of saving all your data. The complete solution can be tailored to match your process requirements. Visit [www.mt.com/one-click-weighing](http://www.mt.com/one-click-weighing) for more information.

Freeweigh.Net

21900895

Visit [www.mt.com/one](http://www.mt.com/one) for more information on request.
Various

Terminal and printer stand, mounting on balance 11106730

Wall fixture for terminal 11132665

AC/DC adapter (without power cable) 100–240 VAC, 50/60 Hz, 0.3 A, 12 VDC 2.25 A 11107909

Country-specific 3-Pin power cable with grounding conductor.
- Power cable AU 00088751
- Power cable BR 30015268
- Power cable CH 00087920
- Power cable CN 30047293
- Power cable DK 00087452
- Power cable EU 00087925
- Power cable GB 00089405
- Power cable IL 0225297
- Power cable IN 11600569
- Power cable IT 00087457
- Power cable JP 11107881
- Power cable TH, PE 11107880
- Power cable US 00088668
- Power cable ZA 00089728

IP54 protective housing for AC adapter 11132550

Level bubble mirror 11140150
### 8.2 Spare parts

<table>
<thead>
<tr>
<th>Pos</th>
<th>Description</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Front glass outer draft shield (IR protection)</td>
<td>11107994</td>
</tr>
<tr>
<td>2</td>
<td>Side outer draft shield door</td>
<td>11106841</td>
</tr>
<tr>
<td>3</td>
<td>Top outer draft shield door</td>
<td>11106842</td>
</tr>
<tr>
<td>4</td>
<td>Intermediate shelf</td>
<td>11106803</td>
</tr>
<tr>
<td>5</td>
<td>Clip</td>
<td>11106511</td>
</tr>
<tr>
<td>6</td>
<td>Foot screw</td>
<td>11106323</td>
</tr>
<tr>
<td>7</td>
<td>Terminal support</td>
<td>11106540</td>
</tr>
<tr>
<td>8</td>
<td>Drip tray</td>
<td>11106687</td>
</tr>
<tr>
<td>9</td>
<td>Grid weighing pan</td>
<td>11106403</td>
</tr>
<tr>
<td>10</td>
<td>Grid weighing pan cover</td>
<td>11106262</td>
</tr>
<tr>
<td>11</td>
<td>Front glass inner draft shield</td>
<td>11107996</td>
</tr>
<tr>
<td>12</td>
<td>Side glass inner draft shield</td>
<td>11107995</td>
</tr>
<tr>
<td>13</td>
<td>Sealing cover inner draft shield</td>
<td>11106690</td>
</tr>
<tr>
<td>14</td>
<td>Glass cover inner draft shield</td>
<td>11106689</td>
</tr>
<tr>
<td>15</td>
<td>XP Terminal complete with firmware</td>
<td>11130692</td>
</tr>
</tbody>
</table>

Packaging complete 11107998
<table>
<thead>
<tr>
<th>Pos</th>
<th>Description</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Export box</td>
<td>11106657</td>
</tr>
</tbody>
</table>
Appendix

9.1 MT-SICS interface commands and functions

Many of the instruments and balances used have to be capable of integration in a complex computer or data acquisition system.

To enable you to integrate balances in your system in a simple manner and utilize their capabilities to the full, most balance functions are also available as appropriate commands via the data interface.

All new METTLER TOLEDO balances launched on the market support the standardized command set “METTLER TOLEDO Standard Interface Command Set” (MT-SICS). The commands available depending on the functionality of the balance.

For further information please refer to the Reference Manual MT-SICS downloadable from the Internet under http://www.mt.com/micro

9.2 Procedure for certified balances

Preface

Certified balances are subject to the national, legal requirements of “non-automatic balances”.

Switching on the balance

- **Switching on**
  - Immediately after being switched on, the balance displays 0.000.. g.
  - The balance is always started up with the “Factory setting” unit.

- **Switch-on range**
  - At maximum 20% of the type load, otherwise overload is displayed (OIML R76 4.5.1).

- **Stored value as switch-on zero point**
  - It is not permissible to use a stored value as a switch-on zero point; the MT-SICS M35 command is not available (OIML R76 T.5.2).

Display

- **Display of the weight value**
  - The "e" certification value is always shown in the display and is specified at the model designation plate (OIML R76 T.3.2.3 and 7.1.4).
  - If the display increment is lower than the "e" certification value, this is variably displayed for the net, gross and weighed tare. (Graying of the digits or certification brackets) (OIML R76 T.2.5.4 and 3.4.1).
  - In accordance with guidelines, the tested display increment (certification value) is never lower than 1 mg (OIML R76 T.3.4.2).
  - At balances with d = 0.1 mg, the digits below 1 mg are displayed in gray. These digits in brackets are printed. In accordance with legal metrology requirements, this illustration does not affect the accuracy of the weighing results.

- **Units of measurement**
  - The display and info unit are firmly set to g or mg (depending on the model).
  - The following applies for the “Custom unit”:
    - No certification brackets.
    - The following names are blocked, this applies to upper and lower case letters.
      - All official units (g, kg, ct etc.).
      - c, ca, car, cm, ct, cart, kt, gr, gra, gram, grm, k, kilo, to, ton.
      - All names with "o" which can be replaced by a zero (Oz, Ozt etc.).
• **Identification of the weight display**
  - Gross, net, tare and other weight values are accordingly marked (OIML R76 4.6.5).
    - T for the weighed tare.
    - PT for the specified tare.
    - * or diff for the difference between the net or gross.

• **Info field**
  - The info weight value is handled metrologically in the same way as the weight value in the main display.

**Printout (OIML R76 4.6.11)**
• If a tare value is entered manually (PreTare), the PreTare value is always printed along with the net value (PT 123.45 g).
• The printed weight values are identified in the same way as the weight value on the display.
  - i.e. N, B or G, T, PT, diff or *, with differentiation.
  - Example:
    - Single-range balance.
      
      \[
      \begin{array}{ll}
        N & 123.4[5] \text{ g} \\
        PT & 10.00 \text{ g} \Rightarrow \text{for PreTare} \\
        G & 133.4[5] \text{ g} \\
      \end{array}
      \]
    - DR balance with 100.00 g fine range.
      
      \[
      \begin{array}{ll}
        N & 80.4[0] \text{ g} \\
        T & 22.5[6] \text{ g} \Rightarrow \text{for weighed tare} \\
        G & 102.9[\text{ }] \text{ g} \\
      \end{array}
      \]

**Balance functions**
• **Reset to zero**
  - The zero range is limited to a maximum of ± 2% of the full load (OIML R76 4.5.1).

• **Tare**
  - No negative tare values are permitted.
  - Tare immediate (TI) is not permitted, the MT-SICS TI command is not available (OIML R76 4.6.4).

• **1/xd**
  - **e = d**
    - The 1/xd switchover is not permitted (OIML R76 3.1.2).
  - **e = 10d**
    - This is only permitted in the case of the 1/10d switchover.
  - **e = 100d**
    - Only the 1/10d and 1/100d switchover are permitted.
## Index

<table>
<thead>
<tr>
<th>A</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>AC adapter</td>
<td>29, 29</td>
</tr>
<tr>
<td>Accessories</td>
<td>35</td>
</tr>
<tr>
<td>Aux connections</td>
<td>34</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Balance functions</td>
<td>47</td>
</tr>
<tr>
<td>Below-the-balance weighing</td>
<td>24</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Certified balances</td>
<td>46</td>
</tr>
<tr>
<td>Cleaning</td>
<td>28</td>
</tr>
<tr>
<td>Conventions</td>
<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>D</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions</td>
<td>33</td>
</tr>
<tr>
<td>Display</td>
<td>46</td>
</tr>
<tr>
<td>Display field remains dark</td>
<td>18</td>
</tr>
<tr>
<td>Display of the weight value</td>
<td>46</td>
</tr>
<tr>
<td>Disposal</td>
<td>28</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>E</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental conditions</td>
<td>29</td>
</tr>
<tr>
<td>ErgoClip</td>
<td>11, 24</td>
</tr>
<tr>
<td>ErgoSens</td>
<td>34</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>F</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Features</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>G</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>General safety information</td>
<td>7</td>
</tr>
<tr>
<td>GLP</td>
<td>5</td>
</tr>
<tr>
<td>Good Laboratory Practice</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>I</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Identification of the weight display</td>
<td>47</td>
</tr>
<tr>
<td>Info field</td>
<td>47</td>
</tr>
<tr>
<td>Inner draft shield</td>
<td>13, 19</td>
</tr>
<tr>
<td>Installing the grid weighing pan cover</td>
<td>25</td>
</tr>
<tr>
<td>Interface</td>
<td></td>
</tr>
<tr>
<td>MT-SICS</td>
<td>46</td>
</tr>
<tr>
<td>ISO 14001</td>
<td>5</td>
</tr>
<tr>
<td>ISO 9001</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>L</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Level sensor</td>
<td>26</td>
</tr>
<tr>
<td>Levelcontrol</td>
<td>26</td>
</tr>
<tr>
<td>Leveling Assistent</td>
<td>27</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>M</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Materials</td>
<td>29</td>
</tr>
<tr>
<td>MT-SICS</td>
<td>46</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>O</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Outer draft shield</td>
<td>18</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>P</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Pack</td>
<td>21</td>
</tr>
<tr>
<td>Power supply</td>
<td>17, 29</td>
</tr>
<tr>
<td>Power supply voltages</td>
<td>17</td>
</tr>
<tr>
<td>Printout</td>
<td>47</td>
</tr>
<tr>
<td>Protection and standards</td>
<td>29</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>R</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Remove terminal</td>
<td>19</td>
</tr>
<tr>
<td>Reset to zero</td>
<td>47</td>
</tr>
<tr>
<td>RS232C interface</td>
<td>34</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>S</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>safety information</td>
<td>7</td>
</tr>
<tr>
<td>Safety information</td>
<td></td>
</tr>
<tr>
<td>General</td>
<td>7</td>
</tr>
<tr>
<td>Staff safety</td>
<td>7</td>
</tr>
<tr>
<td>Scope of delivery</td>
<td>12</td>
</tr>
<tr>
<td>Self test</td>
<td>18</td>
</tr>
<tr>
<td>Setting the reading angle</td>
<td>19</td>
</tr>
<tr>
<td>Setting up</td>
<td>10</td>
</tr>
<tr>
<td>SmartSens</td>
<td>18</td>
</tr>
<tr>
<td>Spare parts</td>
<td>45</td>
</tr>
<tr>
<td>Staff safety</td>
<td>7</td>
</tr>
<tr>
<td>Switching off</td>
<td>26</td>
</tr>
<tr>
<td>Switching on</td>
<td>26</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>T</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Tare</td>
<td>47</td>
</tr>
<tr>
<td>Technical data</td>
<td>29</td>
</tr>
<tr>
<td>Transporting over long distances</td>
<td>21</td>
</tr>
<tr>
<td>Transporting over short distances</td>
<td>20</td>
</tr>
<tr>
<td>Transporting the balance</td>
<td>20</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>U</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Units of measurement</td>
<td>46</td>
</tr>
<tr>
<td>Unpacking the balance</td>
<td>10, 11</td>
</tr>
</tbody>
</table>
GWP® – Good Weighing Practice™

The global weighing guideline GWP® reduces risks associated with your weighing processes and helps to
• choose the appropriate balance
• reduce costs by optimizing testing procedures
• comply with the most common regulatory requirements

www.mt.com/GWP