

METTLER TOLEDO



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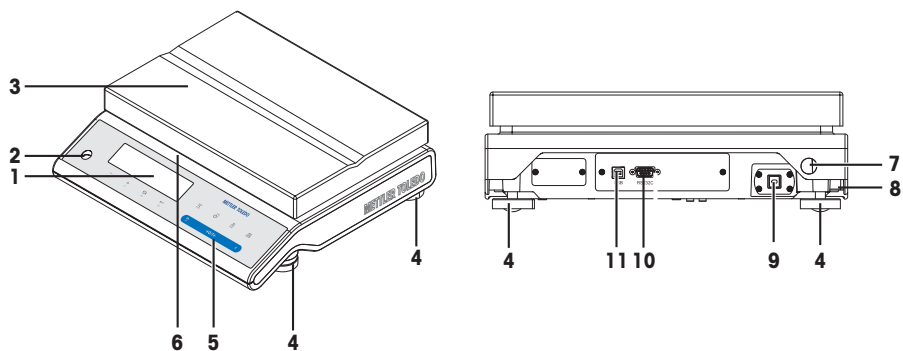


This User Manual is a brief instruction that provides information to handle with the first steps of the instrument in a safe and efficient manner. Personnel must have carefully read and understood this manual before performing any tasks.

For full information, always consult the Reference Manual (RM).

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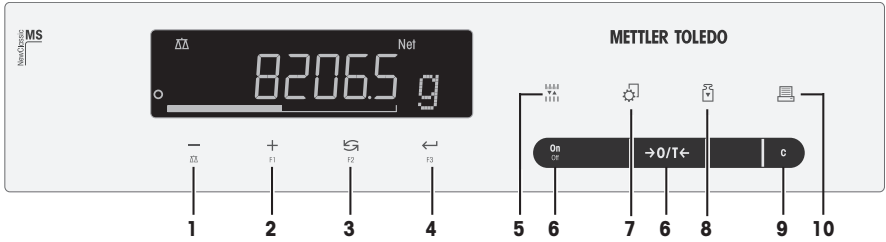
## Overview L platform















### Legend L platform




1	Display	2	Level indicator
3	Weighing pan	4	Leveling foot
5	Operation keys	6	Model sticker (with approved models only)
7	Security slot for anti-theft purposes	8	Product label
9	Socket for AC adapter	10	RS232C serial interface
11	USB device interface		

## Overview operation keys



### Legend key functions

No.	Key	Press briefly (less than 1.5 s) 	Press and hold (longer than 1.5 s) 
1		<ul style="list-style-type: none"> <li>To navigate back (scroll up) within menu topics or menu selections</li> <li>Decrease (numerical) parameters within menu and in applications</li> </ul>	<ul style="list-style-type: none"> <li>To select the weighing application</li> <li>Decrease (numerical) parameters quickly within menu and in applications</li> </ul>
2		<ul style="list-style-type: none"> <li>To navigate forward (scroll down) within menu topics or menu selections</li> <li>Increase (numerical) parameters within menu and in applications</li> </ul>	<ul style="list-style-type: none"> <li>To select assigned F1 application and entering the parameter settings of application.</li> <li>Default F1 application assignment: Piece counting</li> <li>Increase (numerical) parameters quickly within menu and in applications</li> </ul>
3		<ul style="list-style-type: none"> <li>With entries: scroll down</li> <li>To navigate through menu topics or menu selections</li> <li>To toggle between unit 1, recall value (if selected), unit 2 (if different from unit 1) and the application unit (if any)</li> </ul>	<ul style="list-style-type: none"> <li>To select assigned F2 application and entering the parameter settings of application.</li> <li>Default F2 application assignment: Percent weighing</li> </ul>
4		<ul style="list-style-type: none"> <li>To enter or leave menu selection (from / to menu topic)</li> <li>To enter application parameter or switch to next parameter</li> <li>To confirm parameter</li> </ul>	<ul style="list-style-type: none"> <li>To select assigned F3 application and entering the parameter settings of application.</li> <li>Default F3 application assignment: Formulation</li> </ul>
5		<ul style="list-style-type: none"> <li>To change display resolution (1/10d function) while application is running</li> <li> <b>Note</b> not available with approved models in selected countries.</li> </ul>	no function
6		<ul style="list-style-type: none"> <li>Switch on</li> <li>Zero/Tare</li> </ul>	<ul style="list-style-type: none"> <li>Switch off</li> </ul>
7		<ul style="list-style-type: none"> <li>Enter or leave menu (Parameter settings)</li> <li>Save parameters</li> </ul>	no function
8		<ul style="list-style-type: none"> <li>Execute predefined adjusting (calibration) procedure</li> </ul>	no function
9		<ul style="list-style-type: none"> <li>Cancel and to leave menu without saving (one step back in the menu).</li> </ul>	no function

No.	Key	Press briefly (less than 1.5 s) 	Press and hold (longer than 1.5 s) 
10		<ul style="list-style-type: none"> <li>• Printout display value</li> <li>• Printout active user menu settings</li> <li>• Transfer data</li> </ul>	no function

# 1 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.
- The electronic Reference Manual contains a full description of the instrument and its use.
- 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.

## 1.1 Further applicable documents



This User Manual is a brief instruction that provides information to handle with the first steps of the instrument in a safe and efficient manner. Personnel must have carefully read and understood this manual before performing any tasks.

For full information, always consult the Reference Manual (RM).

► [www.mt.com/ms-l-RM](http://www.mt.com/ms-l-RM)

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## 1.2 Definitions of signal warnings 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

<b>WARNING</b>	A hazardous situation with medium risk, possibly resulting in death or severe injury if not avoided.
<b>CAUTION</b>	A hazardous situation with low risk, resulting in minor or moderate injury if not avoided.
<b>NOTICE</b>	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



Electrical shock



General hazard: read the documentation for information about the hazards and the resulting measures.



Notice

## 1.3 Product specific safety notes

### Intended use

This instrument is designed to be used in laboratories by trained staff. The instrument is intended for weighing purposes.

Any other type of use and operation beyond the limits of technical specifications without written 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 any person 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.

## Personal protective equipment



Chemical resistant safety gloves are intended to protect hands against aggressive chemicals.



The protective goggles protect the eyes from flying parts and liquid splashes.

## 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 approved METTLER TOLEDO power supply cable and AC/DC adapter with a current-limited SELV output.
- 2 Connect the power cable to a grounded power outlet, ensure correct polarity.
- 3 Keep all electrical cables and connections away from liquids and moisture.
- 4 Check the cables and power plug for damage and replace damaged cables and power plugs.



### **NOTICE**

#### **Damage to the instrument due to the use of unsuitable parts**

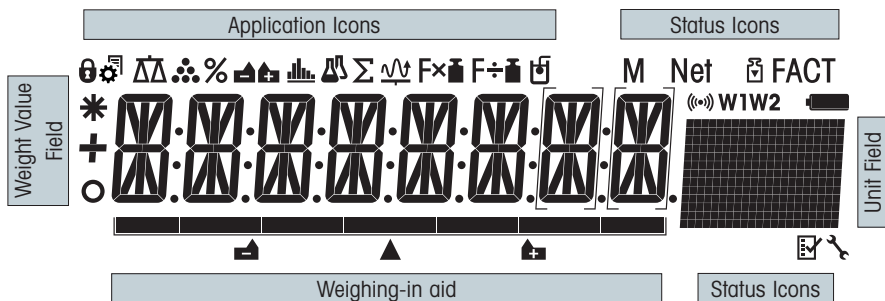
Using unsuitable parts with the instrument can damage the instrument or cause it to malfunction.

- Only use parts from METTLER TOLEDO that are intended to be used with your instrument.

A listing of all parts can be found in the Reference Manual (RM).



## 2 Display

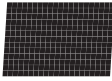


Application icons			
	Menu locked		Application "Formulation / Net-Total"
	Menu setting activated		Application "Totaling"
	Application "Weighing"		Application "Dynamic weighing"
	Application "Piece counting"		Application "Multiplication factor"
	Application "Percent weighing"		Application "Division factor"
	Application "Check weighing"		Application "Density"
	Application "Statistics"		

While an application is running, the corresponding application icon appears at the top of the display.

Status icons			
<b>M</b>	Indicates stored value (Memory)		Service reminder
<b>Net</b>	Indicates Net weight values		Acoustic feedback for pressed keys activated
	Adjustments (calibration) started	<b>W1</b>	Weighing range 1 (Dual Range models only)
<b>FACT</b>	FACT activated	<b>W2</b>	Weighing range 2 (Dual Range models only)
	Applications "Diagnostics" and "Routine Test"		Charge of battery: full, 2/3, 1/3, discharged (Battery operated models only)

Weight value field and weighing-in aid			
	Indicates negative values		Brackets to indicate uncertified digits (approved models only)
	Indicates unstable values		Marking of nominal or target weight
	Indicates calculated values		Marking of tolerance limit T+
			Marking of tolerance limit T-

Unit field						
	<b>g</b>	gram	<b>ozt</b>	troy ounce	<b>fls</b>	Singapore taels
	<b>kg</b>	kilogram	<b>GN</b>	grain	<b>tlf</b>	Taiwan taels
	<b>mg</b>	milligram	<b>dwt</b>	pennyweight	<b>tola</b>	tola
	<b>ct</b>	carat	<b>mom</b>	momme	<b>baht</b>	baht
	<b>lb</b>	pound	<b>msg</b>	mesghal		
	<b>oz</b>	ounce	<b>tlh</b>	Hong Kong taels		

### 3 Installation and Putting into Operation

#### 3.1 Selecting the location

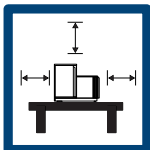
A balance is a sensitive precision instrument. The location where it is placed will have a profound effect on the accuracy of the weighing results.

##### Requirements of the location

According to the environmental condition, **see** chapter "General data".

##### Ensure that the instrument is:

- indoor on stable table
- with sufficient distance (> 15 cm)
- in level
- adequately lit



##### Avoid:

- direct sunlight
- vibrations
- strong drafts
- temperature fluctuations



#### 3.2 Scope of delivery

- Balance
- Weighing pan 246 × 351 mm
- Universal AC/DC adapter with country-specific plug
- Protective cover
- User Manual
- Declaration of conformity

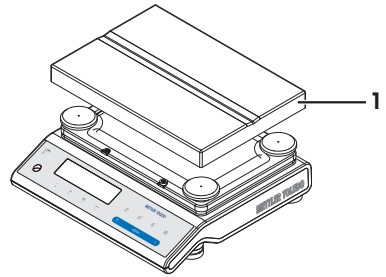
#### 3.3 Unpacking

Open the balance packaging. Check the balance for transport damage. Immediately inform a METTLER TOLEDO representative in the event of complaints or missing accessories.

Retain all parts of the packaging. This packaging offers the best possible protection for transporting the balance.

### 3.4 Installing the components

- Place the weighing pan (1) on the balance.



### 3.5 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 approved METTLER TOLEDO power supply cable and AC/DC adapter with a current-limited SELV output.
- 2 Connect the power cable to a grounded power outlet, ensure correct polarity.
- 3 Keep all electrical cables and connections away from liquids and moisture.
- 4 Check the cables and power plug for damage and replace damaged cables and power plugs.



#### **NOTICE**

##### **Damage to the AC/DC adapter due to overheating**

If the AC/DC adapter is covered or in a container, it is not sufficiently cooled and will overheat.

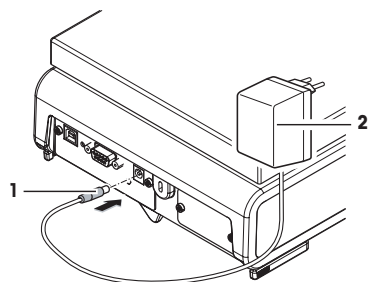
- 1 Do not cover the AC/DC adapter.
- 2 Do not put the AC/DC adapter in a container.

The balance is supplied with an universal AC/DC adapter and a country-specific plug. The AC/DC adapter is suitable for use with the following voltage range: 100 – 240 V AC, 50/60 Hz.

- Install the cables so that they cannot be damaged or interfere with operation.
- Insert the power cable in a grounded power outlet that is easily accessible.

- 1 Connect the AC/DC adapter (1) to the connection socket on the back of your balance.
- 2 Connect the power cable (2) to the power socket.

⇒ The balance is ready for use.



#### **Note**

Always connect the AC/DC adapter to the balance before connecting to the power.

## 3.6 Setting up the balance

### 3.6.1 Switching on the balance

Before using the balance, it must be warmed up in order to obtain accurate weighing results. To reach operating temperature, the balance must be acclimatized and connected to the power supply for at least 30 minutes.

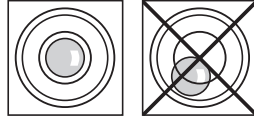
### 3.6.2 Leveling the balance

Exact horizontal and stable positioning are essential for repeatable and accurate weighing results.

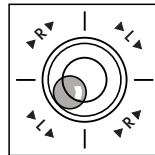
There are four adjustable leveling feet to compensate for slight irregularities in the surface of the weighing bench.

The balance must be leveled and adjusted each time it is moved to a new location.

- 1 Position the balance at the selected location.
- 2 Align the balance horizontally.
- 3 Turning the leveling feet of the housing until the air bubble is in the middle of the glass.



- 4 In this example, turn the left leveling feet counterclockwise.



#### Example

Air bubble at 12 o'clock:

turn both feet clockwise.

Air bubble at 3 o'clock:

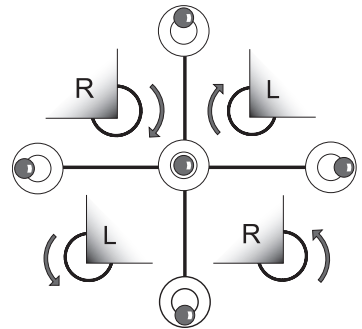
turn left foot clockwise, right foot counterclockwise.

Air bubble at 6 o'clock:

turn both feet counterclockwise.

Air bubble at 9 o'clock:

turn left foot counterclockwise,  
right foot clockwise.



### 3.6.3 Adjusting the balance

To obtain accurate weighing results, the balance must be adjusted to match the gravitational acceleration at its location. This is also dependent on the ambient conditions. After reaching the operating temperature, it is important to adjust the balance in the following cases:

- Before the balance is used for the first time.
- If the balance has been disconnected from the power supply or in the event of power failure.
- After significant environmental changes, e.g., temperature, humidity, air draft or vibrations.
- At regular intervals during weighing service.



For full information, always consult and download the Reference Manual (RM).

► [www.mt.com/ms-l-RM](http://www.mt.com/ms-l-RM)

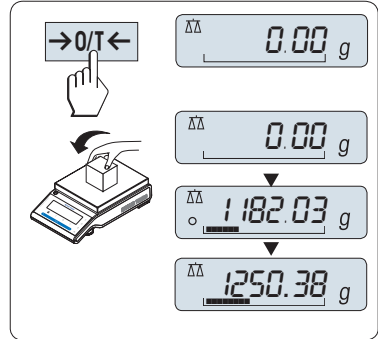
### 3.7 Performing a simple weighing



The weighing application allows you to perform simple weighings and how you can accelerate the weighing process.

If your balance is not in the weighing mode, press and hold the  $\Delta\Delta$  key down until **WEIGHING** appears in the display. Release the key. Your balance is in the weighing mode and set to zero.

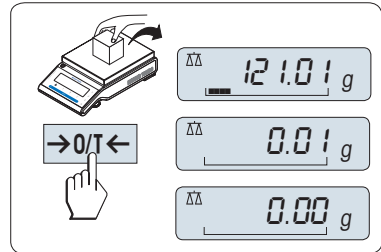
- 1 Press  $\rightarrow 0/T \leftarrow$  to zero the balance.
- 2 Place weighing sample on the weighing pan.
- 3 Wait until the instability detector  $\circ$  disappears.
- 4 Read the result.



#### Zeroing

Use the  $\rightarrow 0/T \leftarrow$  zeroing key before you start with a weighing.

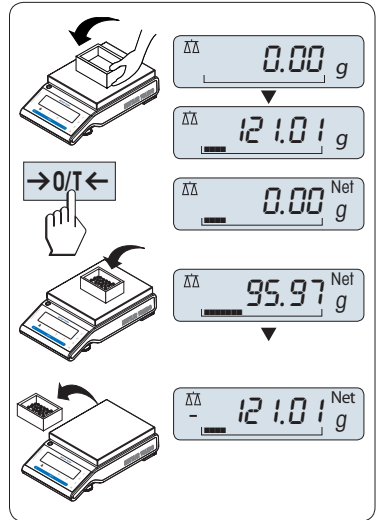
- 1 Unload the balance.
- 2 Press  $\rightarrow 0/T \leftarrow$  to set the balance to zero.  
All weight values are measured in relation to this zero point.



## Taring

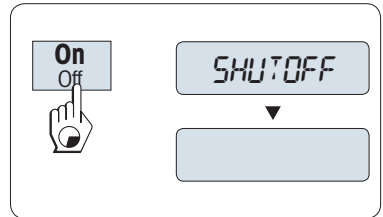
If you are working with a weighing container, first set the balance to zero.

- 1 Place empty container on the weighing pan.  
⇒ The weight is displayed.
- 2 Press **→0/T←** to set the balance to zero.  
⇒ **0.00 g** and **Net** appears in the display. **Net** indicates that all weight values displayed are net values.
- 3 Place weighing sample into the weighing container.  
⇒ The result appears in the display.
  - If the container is removed from the balance, the tare weight will be shown as a negative value.
  - The tare weight remains stored until the **→0/T←** key is pressed again or the balance is switched off.



## Switching off

- Press and hold the **Off** key until **SHUTOFF** appears on the display. Release the key.
- ⇒ Balances switch into standby mode.



### Note

- After switching on from standby mode, your balance needs no warm-up time and is immediately ready for weighing.
- Standby mode is not possible with approved balances (only available in selected countries).
- If your balance has been switched off after a preselected time, the display is dimly lit and shows date, time, maximum load and readability.
- If your balance has been switched off manually, the display is off.
- To completely switch off mains operated balances, they must be disconnected from the power supply.



For full information, always consult and download the Reference Manual (RM).

► [www.mt.com/ms-l-RM](http://www.mt.com/ms-l-RM)

## 3.8 Transporting the balance

- 1 Press and hold the **ON/OFF** key.
- 2 Disconnect the balance from the power supply.
- 3 Disconnect all interface cables.

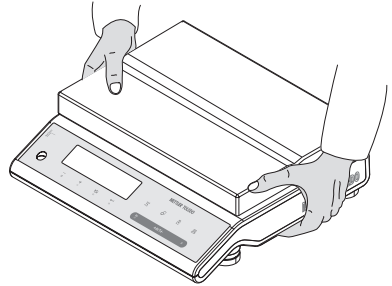
### 3.8.1 Transporting over short distances

To move the balance over a short distance to a new location, follow the instructions below.

- 1 Hold the balance with both hands as shown.
- 2 Carefully lift the balance and carry it to its new 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.



### 3.8.2 Transporting over long distances

For transporting the balance over long distances, always using the original packaging.

### 3.8.3 Packaging and storage

#### Packaging

Store all parts of packaging in a safe place. The elements of the original packaging are developed specifically for the balance and its components to ensure maximum protection during transportation or storing.

#### Storage

Store the balance under following conditions:

- Indoor and in the original packaging.
- According to the environmental condition, **see** chapter "General data".
- When storing for longer than six months, the rechargeable battery may be down (date and time get lost).



## 4 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.

### 4.1 Maintenance table

Maintenance action	Recommended interval	Remarks
Performing an internal adjustment	<ul style="list-style-type: none"><li>• Daily</li><li>• After cleaning</li><li>• After leveling</li><li>• After changing the location</li></ul>	<b>see</b> chapter "Fully automatic adjustment FACT"
Performing routine tests (sensitivity test, repeatability test). METTLER TOLEDO recommends to perform at least a sensitivity test.	<ul style="list-style-type: none"><li>• After cleaning</li></ul>	<b>see</b> below
Cleaning	Depending on the degree of pollution or your internal regulations (SOP), clean the instrument: <ul style="list-style-type: none"><li>• After every use</li><li>• After change of sample</li></ul>	<b>see</b> chapter "Cleaning the balance"

### 4.2 Performing routine tests

There are several routine tests. Depending on your internal regulations, specific routine test must be performed by the user.

METTLER TOLEDO recommend to perform an sensitivity test after cleaning and reassembling the balance.

To perform a routine test, proceed how described in chapter "Application routine test".



For full information, always consult and download the Reference Manual (RM).

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### 4.3 Cleaning



For full information, always consult and download the Reference Manual (RM).

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#### **⚠ 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.

### 4.3.1 Cleaning the balance



#### NOTICE

##### Damage due to improper cleaning

Improper cleaning can damage the weighing 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.

##### Protective equipment:

- Gloves
- Goggles

The following procedures describe the cleaning of the weighing pan and all components.

##### Around the balance

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

##### Cleaning the balance

- 1 Use a lint-free cloth moistened with a mild cleaning agent to clean the surface of the balance.
- 2 Remove powder or dust at first with a disposable tissue.
- 3 Remove sticky substances with a damp lint-free cloth and a mild solvent, e.g., isopropanol or ethanol 70%.

##### Cleaning all removable parts

- Clean all removed part with a damp cloth or a tissue and a mild cleaning agent or clean them in a dishwasher up to 80 °C.



##### Note

Useful details to avoid soiling are described in the METTLER TOLEDO "SOP for Cleaning a Balance".

### 4.3.2 Putting into operation after cleaning

- 1 Reassemble the balance.
  - 2 Press **On/Off** to switch on the balance.
  - 3 Warm up the balance. Wait 1 h for the acclimatization, before starting the tests.
  - 4 Check the level status, level the balance if necessary.
  - 5 Perform an internal adjustment.
  - 6 Perform a routine test due to the internal regulations of your company. METTLER TOLEDO recommends to perform an repeatability test after cleaning the balance.
  - 7 Press **→0/T←** to zero the balance.
- ⇒ The balance has been putting into operation and is ready to use.

## 5 Troubleshooting

Possible causes for faults and fault correction tasks are described in the following chapters. If there are faults that cannot be corrected through the instructions below, contact the METTLER TOLEDO.

### 5.1 Error messages

Error message	Possible cause	Diagnostic	Remedy
<b>NO STABILTY</b>	Vibrations at the workplace.	Place beaker with tap water on the weighing table. Vibrations cause ripples on the water surface.	<ul style="list-style-type: none"> <li>Protect weighing location against vibrations (vibration absorber, etc.).</li> <li>Set weighing parameters coarser (change <b>ENVIRON.</b> from <b>STABLE</b> to <b>STANDARD</b> or even <b>UNSTABLE</b>).</li> <li>Find a different weighing location (by agreement with customer).</li> </ul>
	Draft due to open window or similar.	Make sure window is closed.	<ul style="list-style-type: none"> <li>Close window.</li> <li>Set weighing parameters coarser (change <b>ENVIRON.</b> from <b>STABLE</b> to <b>STANDARD</b> or even <b>UNSTABLE</b>).</li> </ul>
	The location is not suitable for weighing.	–	Check and observe the requirements for the location, refer to the "Selecting the location" chapter.
	Something is touching the weighing pan.	Check for touching parts or dirt.	Remove touching parts or clean the balance.
<b>WRONG ADJUSTMENT WEIGHT</b>	Wrong adjustment weight.	Check weight.	Place correct weight on the weighing pan.
<b>REFERENCE TOO SMALL</b>	Reference for piece counting too small.	–	Increase reference weight.
<b>EEPROM ERROR - PLEASE CONTACT CUSTOMER SERVICE</b>	Data in EEPROM damaged.	–	Please contact your METTLER TOLEDO customer service.
<b>WRONG CELL DATA - PLEASE CONTACT CUSTOMER SERVICE</b>	Defect load cell data.	–	Please contact your METTLER TOLEDO customer service.
<b>NO STANDARD ADJUSTMENT - PLEASE CONTACT CUSTOMER SERVICE</b>	–	–	Please contact your METTLER TOLEDO customer service.
<b>PROGRAM MEMORY DEFECT - PLEASE CONTACT CUSTOMER SERVICE</b>	–	–	Please contact your METTLER TOLEDO customer service.

Error message	Possible cause	Diagnostic	Remedy
<b>TEMP SENSOR DEFECT - PLEASE CONTACT CUSTOMER SERVICE</b>	AC/DC adapter connected to power before connecting to the balance. Temperature sensor of load cell defect.	–	Remove the AC/DC adapter from the power and connect first to the balance before connecting to the power if persist please contact your METTLER TOLEDO customer service.
<b>WRONG LOAD CELL BRAND - PLEASE CONTACT CUSTOMER SERVICE</b>	Wrong load cell installed.	–	Please contact your METTLER TOLEDO customer service.
<b>WRONG TYPE DATA SET - PLEASE CONTACT CUSTOMER SERVICE</b>	Wrong type data set.	–	Please contact your METTLER TOLEDO customer service.
<b>BATTERY BACKUP LOST - CHECK DATE TIME SETTINGS</b>	Backup battery/capacitor is empty. This battery/capacitor ensures that the date and time are not lost when the balance is disconnected from power.	The battery/capacitor provides enough power for approximately 2 days when having the balance not connected to the power supply.	Connect the balance to the power supply for charging the battery (e.g., during the night) or contact METTLER TOLEDO customer service.
<b>INITIAL ZERO RANGE EXCEEDED</b>	Wrong weighing pan. Pan is not empty.	Check weighing pan.	Mount correct weighing pan or unload weighing pan.
<b>BELOW INITIAL ZERO RANGE</b>	Wrong weighing pan. Pan is not empty.	Check weighing pan.	Mount correct weighing pan.
<b>MEM FULL</b>	Memory full.	–	Clear the memory by finishing all applications where a measurement is ongoing.
<b>FACTOR OUT OF RANGE</b>	Factor is outside the allow range.	–	Select a new factor.
<b>STEP OUT OF RANGE</b>	Step is outside the allow range.	–	Select a new step.
<b>OUT OF RANGE</b>	Sample weight is outside the allow range.	–	Unload the pan and load a new sample weight.

## 5.2 Error symptoms


Error symptoms	Possible cause	Diagnostic	Remedy
Display is dark	Instrument is switched off.	–	Switch on the instrument.
	Power plug not connected.	Check	Connect power cable to power supply.
	Power supply not connected to balance.	Check	Connect power supply.
	Power supply is faulty.	Check/test	Replace power supply.
	Wrong power supply.	Check that input data on type plate match the power supply values.	Use proper power supply.
	Connector socket on balance is corroded or faulty.	Check	Please contact your METTLER TOLEDO customer service.

<b>Error symptoms</b>	<b>Possible cause</b>	<b>Diagnostic</b>	<b>Remedy</b>
Display is dark	Display is faulty.	Replace display.	Please contact your METTLER TOLEDO customer service.
Operation Keys do not work	Keypad is defect.	Replace the keypad.	Please contact your METTLER TOLEDO customer service.
The value drifts into plus or minus	Room, environment not suitable.	–	<b>Environmental recommendations</b> <ul style="list-style-type: none"> <li>• Windowless, non air-conditioned room, e.g., basement.</li> <li>• Only one person in the weighing room.</li> <li>• Sliding doors. Standard doors cause pressure changes.</li> <li>• No draft in weighing room (check with suspended threads).</li> <li>• No air conditioning (temperature oscillates, draft).</li> <li>• Acclimatize balance, take dummy measurements.</li> <li>• Instrument uninterruptedly connected to the power supply (24h per day).</li> </ul>
	Direct sunlight or other heat source.	Is any sun shade (blinds, curtains, etc.) available?	Select location according to chapter "Selecting the location" (customer responsibility).
	Weighing sample absorbs moisture or evaporates moisture.	<ul style="list-style-type: none"> <li>• Is the weighing result with a test weight stable?</li> <li>• Sensitive weighing samples e.g. paper, cardboard, wood, plastic, rubber, liquids.</li> </ul>	<ul style="list-style-type: none"> <li>• Use aids.</li> <li>• Cover weighing sample.</li> </ul>
	Weighing sample is electrostatically charged.	<ul style="list-style-type: none"> <li>• Is the weighing result with a test weight stable?</li> <li>• Sensitive weighing samples e.g. plastic, powder, insulating materials.</li> </ul>	<ul style="list-style-type: none"> <li>• Increase air humidity in weighing chamber (45% - 50%).</li> <li>• Use ionizer.</li> </ul>
	Weighing sample is hotter or colder than the air in the weighing chamber.	Weighing operation with test weight does not show this effect.	Bring weighing sample to room temperature before weighing.

Error symptoms	Possible cause	Diagnostic	Remedy
The value drifts into plus or minus	Instrument has not yet reached thermal equilibrium.	<ul style="list-style-type: none"> <li>Was there a power outage?</li> <li>Was power supply disconnected?</li> </ul>	<ul style="list-style-type: none"> <li>Acclimatize instrument for at least 1 hour. Depending on climatic conditions, extend this period accordingly.</li> <li>Instrument switched on for at least 1 hour, refer to the "General data" chapter.</li> </ul>
Display shows overload or underload	The weight on the weighing pan exceeds the weighing capacity of the instrument.	Check weight.	Reduce the weight on the weighing pan.
	Wrong weighing pan.	Slightly lift or press weighing pan. The weight display appears.	Use proper weighing pan.
	No weighing pan.	–	Install weighing pan.
	Incorrect zero point at switch-on.	–	<ul style="list-style-type: none"> <li>Switch off balance.</li> <li>Disconnect and reconnect power cable.</li> </ul>
Display flashes 0.0000	Loose cables.	Check all cable connections.	Connect all cables. Please contact your METTLER TOLEDO customer service if the problem persists.
Taring not possible	Vibrations at the workplace.	Display unstable.	Press Tare again.
		Place beaker with tap water on the weighing table. Vibrations cause ripples on the water surface.	<ul style="list-style-type: none"> <li>Protect weighing location against vibrations (vibration absorber, etc.).</li> <li>Set weighing parameters coarser (change <b>ENVIRON.</b> from <b>STABLE</b> to <b>STANDARD</b> or even <b>UNSTABLE</b>).</li> <li>Find a different weighing location (by agreement with customer).</li> </ul>

### 5.3 Status messages/Status icons

Status messages are displayed by means of small icons. The status icons indicate the following:

Icon	Status description	Diagnostic	Remedy
	Service due.	<b>See</b> menu topic <b>SERV.ICON</b> in chapter "Description of menu topic" -> "Advanced menu".	Please contact your METTLER TOLEDO-Support representative.

### 5.4 Putting into operation after correction of fault


After correcting the fault, perform the following steps to put the balance into operation:

- Ensure that the balance is completely reassemble and cleaned.
- Reconnect the balance to the power supply.

## 6 Technical Data

### 6.1 General data

#### Power supply

AC/DC adapter:	Primary: 100 - 240 V~ 0.8 A, 50 – 60 Hz 60 - 80 VA Secondary: 12 V DC, 2.5 A LPS (with electronic overload protection)
Cable for AC/DC adapter:	3-core, with country-specific plug
Polarity:	 with a current limited SELV (Safety Extra Low Voltage) output
Balance power consumption:	12 V DC, 0.3 A

#### Protection and standards

Overvoltage category:	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 in closed interior rooms only

#### Environmental conditions

Height above mean sea level:	Up to 4000 m
Ambient temperature:	5 - 40 °C
Relative air humidity:	Max. 80% up to 31 °C, linearly decreasing to 50% at 40 °C, noncondensing
Warm-up time:	At least <b>30</b> minutes after connecting the balance to the power supply

#### Materials

Housing:	Die-cast aluminum, lacquered
Weighing pan:	Stainless steel X5CrNiMo 18-10 (1.4301)
Protective cover:	Plastic (PET)



## 7 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.





# GWP®

Good Weighing Practice™

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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

 [www.mt.com/GWP](http://www.mt.com/GWP)

[www.mt.com/msl-precision](http://www.mt.com/msl-precision)

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