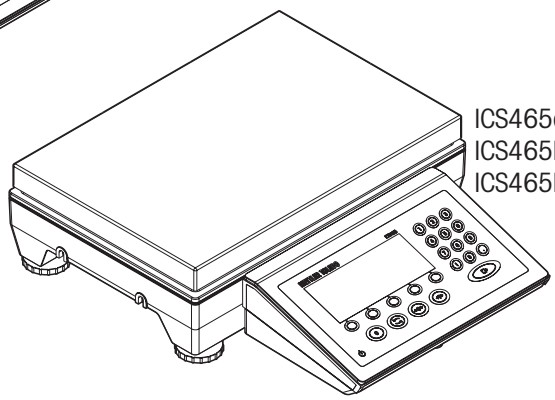
User manual

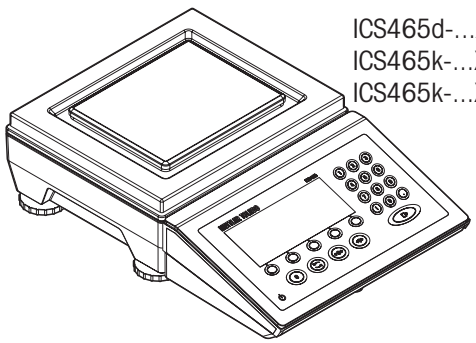
# ICS465

## Weighing terminals
## Compact scales

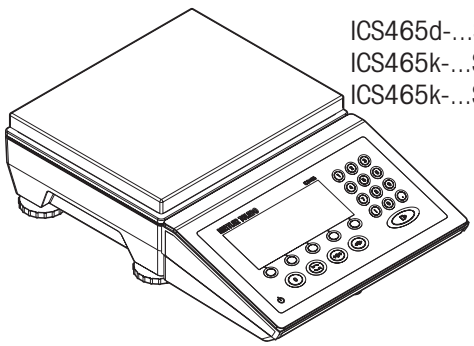
ICS465a
ICS465d



ICS465d-…LA/f
ICS465k-…LA/f
ICS465k-…LA/DR/f



ICS465d-…XS/f
ICS465k-…XS/f
ICS465k-…XS/DR/f



ICS465d-…SM/f
ICS465k-…SM/f
ICS465k-…SM/DR/f

METTLER TOLEDO

# METTLER TOLEDO Service

Congratulations on choosing the quality and precision of METTLER TOLEDO. Proper use according to these instructions and regular calibration and maintenance by our factory-trained service team ensure dependable and accurate operation to protect your investment. Contact us about a ServiceXXL agreement tailored to your needs and budget.

We invite you to register your product at

www.mt.com/productregistration

so we can contact you about enhancements, updates and important notifications concerning your METTLER TOLEDO product.

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# 1 Introduction

## 1.1 Safety instructions

**General**

- ▲ Do not use the device in a hazardous environment. Special devices are available in our range of products for hazardous environments.
- ▲ The safety of the device cannot be ensured if it is not operated in accordance with these operating instructions.
- ▲ Only authorised personnel may open the device.

**Devices with protection level IP65**

Devices with protection level IP65 are dust-tight and protected from water jets according to EN 60529. They are suitable for use in dusty environment and brief contact with liquids.

- ▲ Ensure that the device is dried off again after coming into contact with liquid.
- ▲ Do not use the device in environments with a risk of corrosion.
- ▲ Do not flood the device or submerge it in liquid.

**Devices with built-in power supply unit**

- ▲ Ensure that the power socket outlet for the device is earthed and easily accessible, so that it can be de-energised rapidly in emergencies.
- ▲ Ensure that the supply voltage at the installation site lies within the range of 100 V to 240 V.
- ▲ Check the power cable regularly for damage. If it is damaged, immediately disconnect the device from the power supply unit.

**Devices with built-in storage battery**

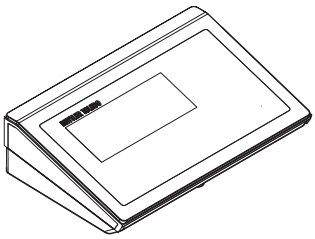
- ▲ Only use storage batteries from the manufacturer.
- ▲ Do not use the battery charger in humid or dusty rooms or below 0 °C (32 °F) ambient temperature.
- ▲ After the storage battery has been charged, the cover cap of the charging socket at the device must be closed.

**Compact scales**

- ▲ Avoid falling loads, shock loads as well as impacts from the side.

## 1.2 Presentation

### 1.2.1 Weighing terminals



There are two versions of the ICS465 weighing terminal:

**ICS465a** with **analog** scale interface:
to connect analog weighing platforms

**ICS465d** with **digital** scale interface SICSpro, which is based on RS422:
to connect METTLER TOLEDO weighing platforms with digital scale interface SICSpro, e.g., PBD 655

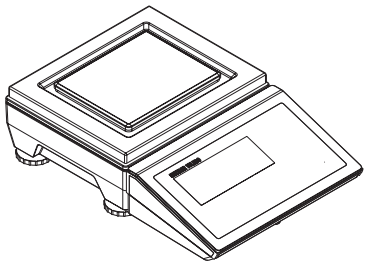
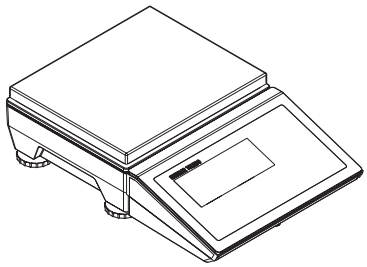
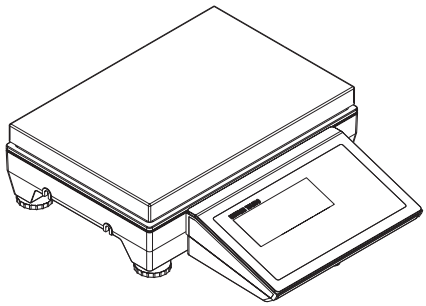
### 1.2.2 Compact scales

A compact scale consists of a weighing terminal with digital scale interface SICSpro and a weighing platform which are fixed together.

Depending on the connected weighing platform there are two basic versions of the ICS465 compact scales:

**ICS465d-.../f** ICS465 compact scale with strain gauge load cell
**ICS465k-.../f** ICS465 compact scale with MonoBloc® load cell

The weighing platforms are available in three different sizes as shown below.

| **ICS465d-...XS/f**<br>**ICS465k-...XS/f**<br>**ICS465k-...XS/DR/f** | **ICS465d-...SM/f**<br>**ICS465k-...SM/f**<br>**ICS465k-...SM/DR/f** | **ICS465d-...LA/f**<br>**ICS465k-...LA/f**<br>**ICS465k-...LA/DR/f** |
|---|---|---|
|  |  |  |
| extra small weighing platform | small weighing platform | large weighing platform |

**Naming**

The complete name of a compact scale also indicates the type, size and capacity of the connected weighing platform. E.g., ICS465k-6SM/DR/M/f stands for

| | |
|---|---|
| ICS465k | ICS465 terminal, weighing platform with MonoBloc® load cell |
| 6 | weighing capacity in kg |
| SM | size of the weighing platform |
| DR | if present: Delta Range weighing platform |
| M | if present: weighing platform verified by the manufacturer |
| /f | mechanical design: fixed connection |

## 1.2.3 Options

### Interfaces

**Default equipment**

**ICS465a / ICS465d weighing terminals**

- 1 serial interface RS232
- 1 analog scale interface resp. digital scale interface SICSpro

**ICS465d.../f / ICS465k.../f compact scales**

- 1 serial interface RS232
- 1 digital scale interface SICSpro

One additional interface is possible.

- RS232 (usable as data interface or SICS scale)
- RS422/485 (usable as data interface or scale interface SICSpro)
- USB Device
- USB Host
- Ethernet
- WLAN
- Digital I/O
- Analog scale

**Weighing platform resolutions for compact scales**

| | Default | Optional |
|---|---|---|
| **ICS465d-.../f** | 1 x 6,000 d, non-approved | 1 x 30,000 d, non-approved<br>1 x 60,000 d, non-approved<br>1 x 6,000 d, approved, e = d |
| **ICS465k-.../f** | up to 1 x 610,000 d, non-approved | up to 1 x 61,000 d, approved, e = 10d |

**Further options**

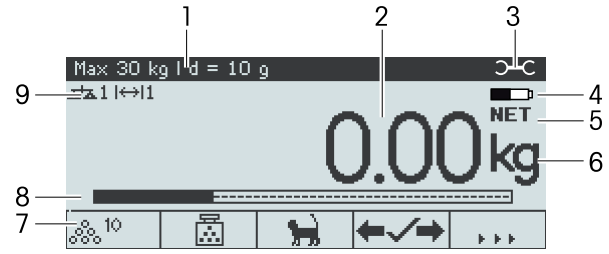
- Exchangeable storage battery (IP54)
- Built-in storage battery (IP65)
- Alibi memory

### 1.2.4 Display

To meet your special requirements different display layouts are available in the Terminal menu.

#### Straight weighing display

**Default layout**

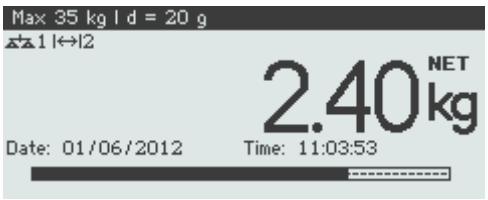



**1** Metrological data – for details see following table
**2** Weight value with star, sign and stability monitor – for details see following table
**3** Spanner icon: service needed – for details see Event and error messages
**4** Battery symbol
**5** Net/Gross
**6** Unit
**7** Soft keys (factory setting, page 1)
**8** Auxiliary data line – the contents is defined in the menu; here: bargraph
**9** Symbol and info line – for details see following table

**Weight values in 3-line mode**


#### Bargraph

The device offers a bargraph indicating the scale capacity available.




The bargraph indicates roughly which part of the scale capacity is already occupied and what capacity is still available.
In the example, approx. 3/4 of the scale capacity is occupied, although the applied net weight isn't really high. The reason therefore could be a high tare weight.

### Metrological data line

The metrological data are stored in the weighing platform. The weighing terminal only serves as indicator.

In the metrological data line the following information is displayed:

| Symbol | Information | Remark |
|---|---|---|
| I, II, III, IIII | Accuracy classes | Displayed only if the scale is approved according to the Weights and Measures guidelines |
| W1, W2, W3 | Weighing range information | For multi range devices only, displayed only if the scale is approved according to the Weights and Measures guidelines |
| Max, cap | Maximum capacity | – |
| Min | Minimum capacity | Displayed only if the scale is approved according to the OIML Weights and Measures guidelines |
| e = | Approved resolution | OIML: Displayed only if the scale is approved<br>NTEP: Displayed only if the scale is approved and d is different from e |
| d = | Display resolution | Please note for approved scales:<br>OIML: Displayed only if d is different from e<br>NTEP: Displayed always |
| Approved scale | Approved weighing device | Metrology display disabled, Weights and Measures data must be indicated on a label near the weight display |

### Weight value

The weight value can be marked with the following symbols:

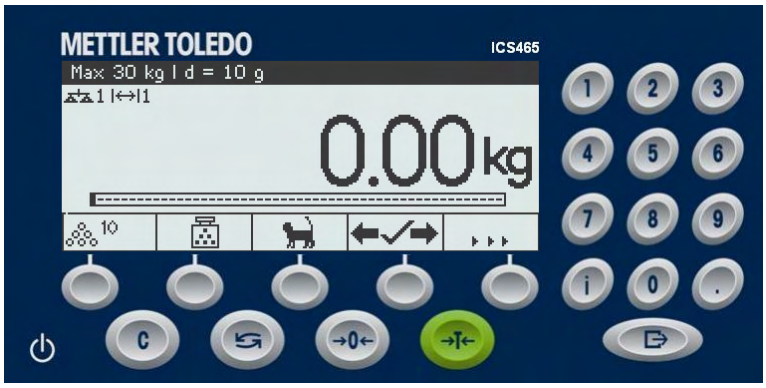
| Symbol | Information | Remark |
|---|---|---|
| * | Calculated weight value | E.g., for average weighing results |
| – | Sign | For negative weight values |
| O | Stability monitor | For unstable weight values |
| **1.234₃ kg** | Non-approved last digit with e > d | For approved scales only<br>The example shows the weight value for a scale with e = 1 g and d = 0.1 g<br>The last, smaller digit is not approved |

### Symbols and info line

In the symbols and info line the following information can be displayed:

| Symbol | Information | Remark |
|---|---|---|
| **I<–>I 1** | Weighing range | For multi range or multi interval scales only |
|  | Scale number | – |
|  | Weight below minimum weight | `MinWeigh` must be activated in the menu |
|  | Average weighing | `Average` must be activated in the menu |
|  | Automatic taring | `Auto Tare` must be activated in the menu |
|  | Automatic clearing of the tare weight | `A-Clear Tare` must be activated in the menu |
|  | Checkweighing to zero | `To zero` must be assigned to a soft key in the menu |
| **>0<** | Center of zero indication | Availability depending on local Weights and Measures regulations |
|  | Automatic APW optimisation | `APW optimisation` must be set to `Auto` |
| Σ | Totalisation | – |

### 1.2.5 Keyboard




| Key | Name | Function in the operating mode | Function in the menu |
|---|---|---|---|
| ⏻ | Power | • Switching on and off<br>• Cancel editing | • Cancel editing<br>• Exit menu |
| C | Clear | • Clear tare<br>• Leave info page<br>• Leave counting | • Clear value<br>• Clear digit |
| ⟳ | Switch | • Switch over weight unit | • Re-edit |
| →0← | Zero | • Set scale to zero<br>• Clear tare | – |
| →T← | Tare | • Tare scale<br>• Clear tare | – |
| i | Info | • Activate info screen<br>• Proceed to next info line / info page<br>• Freeze and release startup screen | – |
| ⎆ | Transfer | • Transfer data to a printer or computer | • Confirm entry / selection |

### 1.2.6 Soft keys

To meet your specific application requirements, ICS465 offers 16 soft keys which can be configured in the `Terminal` menu. The soft keys are divided into four lines (pages).

**Factory setting**

**Page 1**

|  |  |  |  | ▶▶▶ |
|---|---|---|---|---|
| Reference n here: 10 pieces | APW | Average weighing | Checkweighing | Scroll to page 2 |

**Page 2**

| Σ | | **Alibi** | | ▶▶▶ |
|---|---|---|---|---|
| Totalising | | Alibi memory | | Scroll to page 3 |

**Page 3, Page 4** Pages 3 and 4 are free for customer configuration.
When scrolling from page 4, page 1 is displayed again.

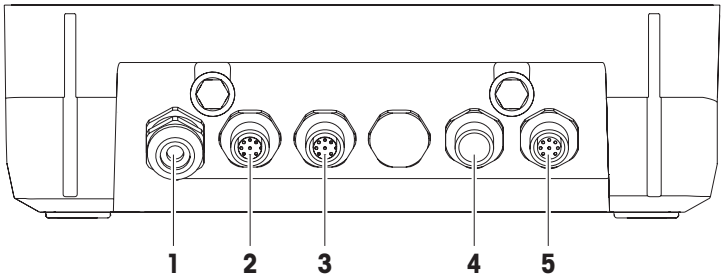
**Operating soft keys**

➜ Press the key below the desired function.

**Soft key options**

| Symbol | Menu setting | Function |
|---|---|---|
| ←0→ | Zero | |
| ←T→ | Tare | |
| x 10 | High resolution | Show the weight value with 10 times higher resolution |
|  | Average weighing | Start average weighing |
| **ID1**,**ID2**, **ID3** | ID1, ID2, ID3 | Enter identifications |
| **Prompt** | Prompt | Starting a predefined workflow. The user will be guided step by step. |
| **Alibi** | Alibi memory | Calling up the optional alibi memory |
|  | Switch scale | |
|  | Ref n | Determine the average piece weight |
|  | APW | Enter the average piece weight |
|  | APW optimisation | Reference weight optimisation |
|  | Weight/count | Switch between weight display and display of pieces |
|  | ToZero | Checkweighing to zero |
| Σ | Totalising | |
|  | Checkweighing | |
|  | Save article | Save the current article parameters in the database |
|  | Recall article | Recall parameters from the database |
|  | Display layout | Switch between default weight display and 3-line mode |

### 1.2.7 Connections

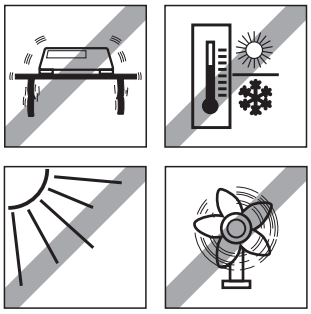



**1** AC power supply or battery charging
**2** Standard interface COM1 (RS232)
**3** Optional interface COM2 incl. digital scale interface SICSpro and SICS scale
**4** Weighing platform connection SCALE 2, to connect analog weighing platforms only
**5** (Digital) weighing platform connection SCALE 1

The SCALE connections for analog weighing platforms are without plug, but with cable exit.

## 1.3 Commissioning

### 1.3.1 Selecting the location

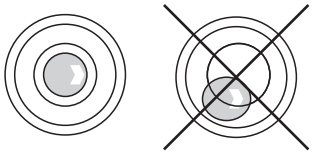


The correct location is crucial to the accuracy of the weighing results.

➜ Select a stable, vibration-free and, if possible, a horizontal location for the weighing platform.
The ground must be able to safely bear the weight of the fully loaded weighing platform.

➜ Observe the following environmental conditions:
- No direct sunlight
- No strong drafts
- No excessive temperature fluctuations

### 1.3.2 Levelling the weighing platform



Only weighing platforms that have been levelled precisely horizontally provide accurate weighing results. Weights and Measures approved weighing platforms have a spirit level to simplify levelling.

➜ Turn the adjustable feet of the weighing platform until the spirit level's air bubble is inside the inner circle.

**Levelling of compact scales**

On compact scales levelling can be done in an easier way.

1. Turn the compact scale upside down.
2. Unscrew the plastic screw in the middle of the terminal front side far enough that it does support the terminal.
3. Screw in the 2 adjustable feet on the side facing the terminal.
4. Turn over the compact scale into its normal position.
5. Level the compact scale by turning the other 2 adjustable feet of the weighing platform until the spirit level's air bubble is inside the inner circle.

### 1.3.3 Weighing platform connection

**Analog weighing platforms**

➜ Call the METTLER TOLEDO service technician to connect an analog weighing platform to the ICS465a weighing terminal.

**Weighing platforms with digital scale interface SICSpro**

➜ Connect the weighing platform connector to the ICS465d weighing terminal.

- If you have ordered an approved weighing system consisting of an ICS465d weighing terminal and an approved PBD... weighing platform, the approval was done in the factory.
- Due to the new digital scale interface SICSpro, you can disconnect the weighing platform from the weighing terminal of an approved weighing system without violating the approval.
  - If another weighing platform is connected to the weighing terminal, the system is not approved.
  - If the weighing platform of the approved system is connected again, the approval is valid again.
- If you have connected a non-approved weighing platform and want to approve the system, call the METTLER TOLEDO service technician.

### 1.3.4 Power supply connection

**CAUTION**
**Risk of electric shock!**

- ▲ Before connecting the power supply, check whether the voltage value printed on the rating plate corresponds to your local system voltage.
- ▲ Do not under any circumstances connect the device if the voltage value on the rating plate deviates from the local system voltage.
- ▲ Make sure the weighing platform has reached room temperature before switching on the power supply.

➜ Plug the power plug into the power socket.
After it has been connected, the device runs a self-test. The device is ready to operate when zero appears on the display.

### 1.3.5 Handling of the storage battery

Note the following when operating a device with a built-in storage battery:

- The operating life depends on the intensity of use, the configuration and the connected scale. For details see the technical data.

- The battery symbol shows the current state of charge of the storage battery.
  - One segment corresponds with approx. 25 % capacity.
  - If the symbol flashes, the storage battery has to be charged.
  - During charging the segments are "running" until the battery is fully charged and all segments light up continuously.
- The charging time of the storage battery amounts to approx. 6 hours.
  The storage battery is protected against overcharging.
- The storage battery has a service life of approx. 2 years or 500 to 1,000 charging/discharging cycles.

**CAUTION**
**No success in charging the storage battery due to low temperatures!**

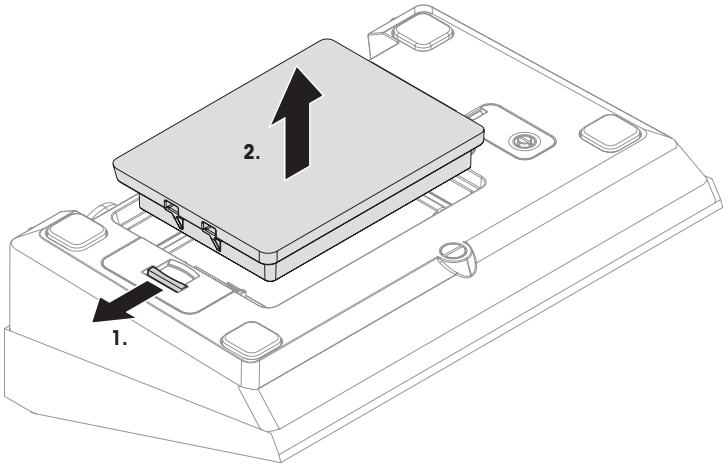
- ▲ Do not charge the battery if the battery temperature is below 0 °C (32 °F). Charging is not possible in this temperature range.
- ▲ Do not operate the battery charger outside its temperature range of 0 °C to 40 °C (32 °F to 104 °F).

**Recommended use of the storage battery**

The characteristics mentioned above are only valid if the following recommendations are observed:

- Change the battery as soon as the warning message "Low battery" appears and the battery symbol starts flashing. When the message appeares you still have enough time (at least 10 minutes) to complete your current task.
- For optimum battery performance operate the device with built-in storage battery at an ambient temperature in the range of 10 °C to 30 °C (50 °F to 86 °F). This applies to discharging as well as charging the battery.
- If you plan to put the scale out of operation for a longer period, charge the battery completely.
- Even if you do not use the instrument, charge the battery at least every 3 months to avoid deep discharge.
- On devices with removable battery, remove the battery prior to long term storage.

**Changing battery**




1. Unlock the battery by moving the slider to the outside and remove the discharged battery.
2. Insert the fully charged battery and secure it by moving the slider to the inside.

With optional IP65 protection, the battery is not accessible from the outside. Please call the METTLER TOLEDO service technician.

# 2 Operation

## 2.1 Switching on and off

### 2.1.1 Switching on/off

**Switching on**

➜ Press ⏻.
For a few seconds the device shows a start-up screen with device name, software version, serial number of the weighing terminal and the Geo value (not for MonoBloc® weighing platforms).

- You can freeze the start-up screen by pressing i.
- When you start a compact scale, the metrology line shows whether it is approved or not. If you have ordered an approved compact scale, approval has been done in the factory already.
- When user management is active, you are asked to select your name and enter the corresponding password.

**Switching off**

➜ Press ⏻.
Before the display goes out, `-OFF-` appears briefly.

### 2.1.2 Resetting

➜ Press and hold ⏻ for approx. 5 seconds.
The device is reset and will operate with the last saved settings.

## 2.2 Simple weighing

1. Place weighing sample on the scale.
2. Wait until the stability monitor ○ goes out.
3. Read the weighing result.

## 2.3 Switching units

If an additional second weight unit is configured in the menu, it is possible to switch back and forth between the two weight units.

➜ Press ⟳.
The weight value is displayed in the second unit.

Possible units are g, kg, oz, lb, lb-oz, t and PCS in piece counting.

## 2.4 Zeroing / Zero point correction

Zeroing corrects the influence of slight changes on the load plate or minor deviations from the zero point.

**Manual**

1. Unload scale.
2. Press →0←.
   Zero appears in the display.

**Automatic**

In case of non-verified scales, the automatic zero point correction can be deactivated in the menu or the zero range can be changed. Approved scales are set fixed to 0.5 d.
By default, the zero point of the scale is automatically corrected when the scale is unloaded.

- The zero function is only available within a limited weighing range.
- After zeroing the scale, the whole weighing range is still available.
- A successful zeroing will always delete a tare weight.

## 2.5 Weighing with tare

### 2.5.1 Taring

➜ Place the empty container on the scale and press →T←.
The zero display and the symbol **NET** appear.
The tare weight remains stored until it is cleared.

### 2.5.2 Clearing the tare

➜ Press **C**.
The symbol **NET** goes out, the gross weight appears in the display.

If the symbol T is displayed, i.e., the `A-Clear Tare` function is activated in the menu under `Scale -> Tare`, the tare weight is automatically cleared as soon as the scale is unloaded.

### 2.5.3 Automatic clearing of the tare

A tare weight is automatically cleared when the scale is unloaded.

**Prerequisite**

✓ The symbol T is displayed, i.e., the tare function `A-Clear Tare` is activated in the `Scale` menu.

### 2.5.4 Automatic taring

If you place a weight on an empty scale, the scale tares automatically and the symbol **NET** is displayed.

**Prerequisite**

✓ The symbol [T] is displayed, i.e., the tare function `Auto Tare` is activated in the `Scale` menu.

The weight to be tared automatically, e.g., packaging material, must be heavier than 9 display steps of the scale.

### 2.5.5 Chain tare

With this function it is possible to tare several times if, e.g., cardboard is placed between individual layers in a container.

**Prerequisite**

✓ The tare function `Chain tare` is activated in the `Scale` menu.

1. Place the first container or packaging material on the scale and press →T←.
   The packaging weight is automatically saved as the tare weight, the zero display and the symbol **NET** appear.
2. Weigh the weighing sample and read/print out the result.
3. Place the second container or packaging material on the scale and press →T← again.
   The total weight on the scale is saved as the new tare weight. The zero display appears.
4. Weigh the weighing sample in the second container and read/print the result.
5. Repeat steps 3 and 4 for other containers.

### 2.5.6 Tare preset

If you know the weight of your containers, you can enter the tare weight numerically. Thus you do not have to tare the empty container.

1. Enter the known tare weight and press →T← to confirm.
   The weight display shows the negative tare weight and the symbol **NET** appears.
2. Place the full container on the weighing platform.
   The net weight is displayed.

- The entered tare weight is valid until a new tare weight is entered or the tare weight is cleared.
- The tare weight can be entered via barcode or SICS command as well.

## 2.6 Displaying information

Up to 5 different items for display can be configured in the menu for the info key. Depending on the configuration in the `Terminal` menu, the following data can be assigned in a free order, e.g.,

- Date & Time
- Weight values
- Identifications
- Device information
- Serial numbers and software versions

On the second and third info page, system and contact information can be displayed.

1. Press **i**.
   The (first) info page is displayed.
2. Press **i** again.
   The next info screen is displayed.
3. To leave the info screens, press **C**.

An info screen is displayed until **i** is pressed again or **C** is pressed.

## 2.7 Printing results

If a printer or computer is connected, weighing results and other information can be printed or transferred to a computer.

➜ Press ⇨.
The defined data is printed or transferred to the computer.

The printout content can be defined in the `Templates` menu.

## 2.8 Average (dynamic) weighing

With the average weighing function, it is possible to weigh restless weighing samples such as living animals. If this function is activated, is displayed in the info line.
With average weighing, the scale calculates the mean value from weighing operations within a certain time interval. The time interval for calculation can be set in the `Application` menu.

**Start via soft key (factory setting)**

✓ Weighing sample heavier than 9 scale divisions.

1. Place the weighing sample on the scale.
2. Press the soft key to start average weighing.
   During average weighing, stars appear in the display, and the average result will be displayed with the symbol ✱.
3. Unload the scale to be able to start a new average weighing operation.

**Start via hard key**

✓ `Application -> Average -> Mode –> Print key` (factory setting), `Info key` or `Switch key` is selected in the menu.
✓ Weighing sample heavier than 9 scale divisions.

1. Place the weighing sample on the scale.
2. Press the key defined in the menu to start average weighing.
   During average weighing, stars appear in the display, and the average result will be displayed with the symbol ✱.
3. Unload the scale to be able to perform a new average weighing operation.

**With automatic start**

✓ `Application -> Average -> Mode –> Auto` is selected in the menu.
✓ Weighing sample heavier than 9 scale divisions.

1. Place the weighing sample on the scale.
   Average weighing starts automatically.
   During average weighing, stars appear in the display, and the average result will be displayed with the symbol ✱.
2. Unload the scale to be able to perform a new average weighing operation.

## 2.9 Working with identifications

Weighing series can be assigned 3 identification numbers ID1, ID2 and ID3 with up to 40 characters that are also printed out in the protocols. If for example a customer number and an article number are assigned, it can be clearly seen in the protocol which article was weighed for which customer.

**Direct entry**

✓ At least one of the soft keys ID1, ID2 or ID3 is activated in the Terminal menu.

1. Press the desired soft key ID1, ID2 or ID3.
   The last entered ID is displayed.
2. Enter the ID and confirm with ⮆.
   The entered ID is assigned to the following weighings until the ID is changed.

**Barcode use (for one identification only)**

✓ `ID1`, `ID2` or `ID3` is selected as destination for external input in the `Communication` menu.

✓ To display the identification, in the `Terminal` menu `ID1`, `ID2` or `ID3` is activated for an auxiliary line.

**Using SICS command set (up to three identifications)**

✓ To display the identification(s), in the `Terminal` menu `ID1`, `ID2` and/or `ID3` is activated for the auxiliary line.

## 2.10 Working in a higher resolution

The weight value can be displayed in a higher resolution continuously or when called.

**Prerequisite**

✓ Soft key `x10 Display` is activated in the `Terminal` menu.

➜ Press soft key **x10**.
The weight value is displayed in at least 10x higher resolution and is marked with the symbol ✱.
The higher resolution is displayed until the soft key **x10** is displayed again.

With verified weighing platforms, the weight value only appears in a higher resolution as long as the soft key **x10** is pressed.

## 2.11 Working with a prompt

ICS465 offers prompts for often used workflows. The weighing terminal will then lead you from step to step.
In the `Application` menu one of the following prompts can be activated:

- Tare/Sample
- Sample/Tare
- Hands free
- Multi tare
- Additive tare

During prompting no other soft keys are available.

### 2.11.1 Tare/Sample

This prompt will guide you through piece counting with first taring and then determining the average piece weight.

1. Press the soft key **Prompt**.
   In the soft key line the following is displayed:


2. Load the tare weight and confirm with the soft key below the symbol.
   The soft key line changes.


3. Put on the indicated number of reference parts and confirm with the soft key below the symbol.
   The display unit changes to PCS and the soft key line changes.


4. Put on the weighing samples and read the number of pieces.
5. To leave piece counting press the soft key **C**.
   "Cleared" is displayed briefly.

If a printer is connected, each individual result can be printed out by pressing ⎙→.

### 2.11.2 Sample/Tare

This prompt will guide you through piece counting with first determining the average piece weight and then taring.

1. Press the soft key **Prompt**.
   In the soft key line the following is displayed:


2. Put on the indicated number of reference parts and confirm with the soft key below the symbol.
   The display unit changes to PCS and the soft key line changes.


3. Load the tare weight and confirm with the soft key below the symbol.
   "0 PCS" is displayed and the soft key line changes.


4. Put on the weighing samples and read the number of pieces.
5. To leave piece counting press the soft key **C**.
   "Cleared" is displayed briefly.

If a printer is connected, each individual result can be printed out by pressing ⎙→.

### 2.11.3 Hands free

This prompt will guide you through piece counting without pressing a key.

1. Press the soft key **Prompt**.
   In the soft key line the following instruction is displayed:
   **"Put on weight and wait for Auto tare."**
2. Put on the tare weight.
   When the weight is stable, an automatic taring is carried out.
   In the soft key line the next instruction is displayed:
   **"Load ... reference parts and wait for Auto ref n."**
3. Load the indicated number of reference parts.
   The weight unit changes to PCS and the following soft key line is displayed:


4. Put on the weighing samples and read the number of pieces.
5. To leave piece counting press the soft key **C**.
   "Cleared" is displayed briefly.

### 2.11.4 Multi tare

This prompt will guide you through taring a bundle of containers with the same known tare weight.

1. Press the soft key **Prompt**.
   The number of containers (n) is highlighted.


2. Enter the number of containers and confirm entry with the soft key **OK**.
   The tare value of a single container is highlighted.
3. Enter the known tare weight of a single container and confirm entry with the soft key **OK**.
   When all entries are made, the weight display is shown.
   E.g., with a bundle 6 containers of 0.4 kg each, a PT value of 2.4 kg is displayed for the whole bundle.
4. Weigh the bundles.
   The net weight of the bundle is displayed without extra taring.
5. To leave prompting press **C**.
   "Cleared" is displayed briefly.

### 2.11.5 Additive tare

This prompt will guide you through taring e.g., a pallet with containers on it with known tare weights.

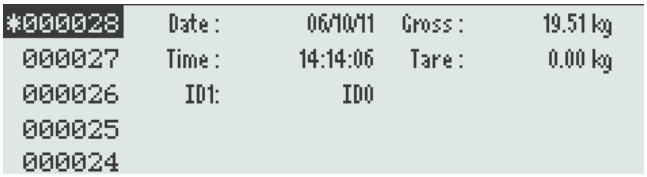
1. Press the soft key **Prompt**.
   The following screen is displayed:


2. Enter the known tare weights and confirm each entry with the soft key **OK**.
   – Use the soft key ⬇ to proceed to the next tare weight. When there is no more tare weight entered, the marking switches to the first tare weight.
   – Use the soft key ⌫ to delete a tare weight.
3. When all tare weights are entered, press the soft key **OK** to finish the entry.
   The total of all tare weights is displayed as pretare value indicated with PT.
4. Weigh the pallets or similar.
   The net weight of the pallet is displayed without extra taring.
5. To leave prompting press **C**.
   "Cleared" is displayed briefly.

## 2.12 Calling up alibi log file

If requested by national regulations, the optional Alibi memory is available to trace all weighing activities on the scale.
The alibi log file stores all weighings with the mandatory data. In addition you can store one more item, either device name, device location or article number (`Application -> Memory -> Custom field`).

1. Press the soft key **Alibi**.
   The alibi records of the last 5 weighing operations are displayed.




   The weighing data of the data record with the highlighted number are displayed.
2. Use the soft keys ⬇/⬆ to scroll the list. Soft key **End** leads you to the last weighing.
3. Press the soft key **Esc** to leave the Alibi memory.

## 2.13 Switching scales

**Prerequisite**

✓ Two scales are connected to the weighing terminal.
✓ The soft key `Switch scale` is activated in the `Terminal` menu.

➜ Press the soft key ⚖ to switch the active scale.
The current active scale is displayed in the symbol and info line on the top of the display.

## 2.14 Cleaning

**Risk of electric shock**

▲ Before cleaning, unplug the power plug in order to disconnect the terminal from the power supply.

▲ Cover open connectors with protective caps.

- Clean the protective cover separately. The protective cover is dishwasher-safe.
- Take off the load plate and remove any dirt and foreign substances which may have collected underneath. Do not use any hard objects to do so.
- Do not disassemble the weighing device.
- Remove any possibly remaining detergent by rinsing with clear water.
- Observe all the existing regulations on cleaning intervals and permissible cleaning agents.

**Cleaning of other weighing platforms than described in this user manual**

➜ Make sure to observe the cleaning instructions for the connected weighing platform. The weighing platform may not be designed for the environments and cleaning procedures described above.

## 2.15 Verification test

The weighing instrument is verified if

- the accuracy class is displayed in the metrological line,
- the approval readability is shown with "e = readability",
- it bears an official verification mark, e.g., the green M sticker (OIML),
- the validity is not expired.

The weighing instrument is also verified if

- the metrological line shows "Approved scale",
- labels with the metrological data are placed near the weight display,
- the securing seal is not tampered with,
- it bears an official verification mark, e.g., the green M sticker (OIML),
- the validity is not expired.

The period of validity is country-specific. It is in the responsibility of the owner to renew verification in due time.

**Strain gauge weighing platforms**

Strain gauge weighing platforms use a Geo Code to compensate gravitational influence.
The manufacturer of the weighing instrument uses a defined Geo Code value for verification.

➜ Check if the Geo Code in the instrument corresponds with the Geo Code value defined for your location.
The Geo Code value is displayed when you switch on the instrument.
The Geo Code for your location is shown in the Appendix.

➜ Call the METTLER TOLEDO service technician if the Geo Code values do not match.

# 3 Counting

## 3.1 Counting parts into a container

1. Place the empty container on the scale and press →T←.
   The container is tared and the zero display appears.
2. Place the number of reference parts on the scale as indicated on the soft key and press the soft key.
   The scale determines the average piece weight and then shows the number of reference pieces.
3. Add more parts to the container until the required number of pieces is reached.
4. When piece counting is completed, press **C** to clear the reference.
   The scale is ready for the next weighing or counting.

- The average piece weight remains saved until **C** is pressed or a new average piece weight is determined.
- With or soft key you can switch between the number of pieces and the weighing units preset.
- The average piece weight (APW), i.e., the weight of an individual reference unit, can be displayed on the info page or in the auxiliary line.
- If in the menu `Auto clear APW` is set to `On`, the average piece weight is automatically cleared after each counting operation.
- The achieved counting accuracy can be displayed in the auxiliary lines.

## 3.2 Counting parts out of a container

1. Place the full conatiner on the scale and press →T←.
   The container is tared and the zero display appears.
2. Remove the number of reference parts on the scale as indicated on the soft key and press the soft key.
   The scale determines the average piece weight and then shows the number of reference pieces removed, together with a minus sign.
3. Remove more parts to the container until the required number of pieces is reached.
4. When piece counting is completed, press **C** to clear the reference.
   The scale is ready for the next weighing or counting.

## 3.3 Determining the parts in a full container

When you know the tare weight of the container, the number of parts in the container can be determined.

1. Enter the known tare weight and press →T← to confirm.
   The weight display shows the negative tare weight and the symbol **NET** appears.
2. Place the number of reference parts on the scale as indicated on the soft key and press the soft key.
   The scale determines the average piece weight and then shows the number of reference pieces.
3. Place the full container on the weighing platform.
   The number of pieces in the container is displayed.

## 3.4 Counting with a known average piece weight

➜ Enter the known average piece weight and press the soft key .
The scale changes the unit to PCS.

The rest of the counting procedure is as described before.

## 3.5 Counting with variable reference quantity

**Prerequisite**

✓ In the `Application` menu, `Fixed ref. size` is set to `Off`.

1. Place any number of reference parts on the scale.
2. Enter the number of reference parts and press the soft key .
   The scale determines the average piece weight and then shows the number of pieces.

The rest of the counting procedure is as described before.

## 3.6 Counting with reference weight check

The reference weight check ensures that the reference weight is high enough to lead to a good counting result.

**Prerequisite**

✓ In the `Application` menu, `Ref. weight check` is set to `On`.

1. Determine the average piece weight as described before.
   If the average piece weight is not sufficient, `Add x PCS` appears.
2. Add the displayed number of pieces.
   The average piece weight is determined again with the larger reference quantity.

The rest of the counting procedure is as described before.

## 3.7 Reference optimisation

The greater the reference quantity, the more accurately the scale determines the number of pieces.

### 3.7.1 Automatic reference optimisation

**Prerequisite**

✓ In the `Application` menu, `APW optimisation` is set to `Auto`, the symbol appears in the display.

1. Place the indicated number of reference parts on the scale and press the soft key .
2. Place additional reference parts on the scale, max. the same number as for the first determination of the average piece weight.
   The scale automatically optimises the average piece weight with the larger number of reference parts.

The rest of the counting procedure is as described before.

### 3.7.2 Manual reference optimisation

**Prerequisite**

✓ In the `Application` menu, `APW optimisation` is set to `Soft key`.
✓ In the `Terminal` menu, the soft key `APW optimisation` is activated.

1. Place the indicated number of reference parts on the scale and press the soft key .
2. Place additional reference parts on the scale, max. the same number as for the first determination of the average piece weight and press soft key .
   The scale automatically optimises the average piece weight with the larger number of reference parts.

The rest of the counting procedure is as described before.

## 3.8 Counting with automatic reference determination

**Prerequisite**

✓ In the `Application` menu, `Autosampling` is set to `On`.

➜ Place the indicated number of reference parts on the scale.
The scale automatically determines the average piece weight and then shows the quantity.

The rest of the counting procedure is as described before.

Pressing **C** the last average piece weight is cleared and the current weight is set as the new reference weight.

## 3.9 Counting with two scales

The ICS465 can handle a weighing system with 2 scales.
There are two possibilities for counting with a scale system:

- Counting with **reference scale** and **bulk scale**
  e.g., a high precision scale for determining the reference and a floor scale to count large quantities
- Counting with **auxiliary scales**
  e.g., a high precision scale for counting small parts and a floor scale for counting bigger parts.

### 3.9.1 Counting with reference and bulk scale

**Prerequisite**

✓ In the `Application` menu one scale is configured as `Reference` scale for determining the average piece weight and the other scale is configured as `Bulk` scale for counting large numbers of pieces.

1. Make sure that the reference scale is the currently active scale.
2. On the reference scale determine the average piece weight as described before.
   After determining the average piece weight the scale is switched automatically.
3. Place the empty container on the bulk scale and press →T←.
   The container is tared and the zero display appears.
4. Add the parts to the container until the required number of pieces is reached.

### 3.9.2 Counting with auxiliary scales

**Prerequisite**

✓ In the `Application` menu at least one scale of the system is configured as `Auxiliary` scale.
✓ In the `Terminal` menu the soft key `Switch scale` is activated.

1. Make sure that the selected scale is suitable for the product to be counted.
2. Carry out counting as described before.

When changing the product to be counted, always check which of the auxiliary scales is the most suitable. If necessary, change the scale.

## 3.10 Counting by calling up an article from the database

### 3.10.1 Storing an article in the database

**Prerequisite**

✓ The soft key `Save article` is activated in the `Terminal` menu.

1. Determine the reference weight as described before.
2. Press the soft key  .
   A new screen is displayed to enter an article.
3. Enter the article and confirm with the soft key **OK**.
   "Record stored" is displayed briefly. The article is stored.

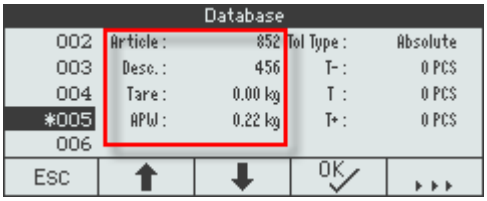
- If in the `Description field` is activated in the `Application` menu, you are asked to enter an article description as well.
- When you always use the same container, the tare weight can be saved with the article. Just tare the container before determining the reference.
- If the selected article already exists the message "Article already exists – Overwrite article?" is displayed.

### 3.10.2 Recalling an article from the database

**Prerequisite**

✓ The soft key `Recall article` is activated in the `Terminal` menu.

1. Press the soft key  .
   The database opens. The article data of the highlighted record number are displayed.




   For a counting article the fields in the frame are significant.
2. Use the arrow keys to navigate through the database records. On the second soft key page ⬆⬆ and ⬇⬇ are available to scroll a page up or down.
3. Confirm the selected data record with the soft key **OK**.
   "Record loaded" is displayed briefly. The weight display changes to unit PCS.

# 4 Checkweighing

The device offers Checkweighing functions. The respective settings in the menu are described in the `Application` menu section.
The corresponding coloured background lighting allows rapid detection of the states "too light" (factory setting: red), "good" (factory setting: green) and "too heavy" (factory setting: yellow). The colours can be modified in the menu.

**Prerequisite**
✓ The soft key `Checkweighing` is activated in the `Terminal` menu.

## 4.1 Specifying target values

Different entries are required at the beginning of Checkweighing / Checkcounting, depending on the tolerance type setting.

**Tolerance type "Absolute"**
A low and a high weight value must be entered. These weights and all weights within this range are treated as being within tolerance.

**Tolerance type "Relative"**
Target weight (Target) as well as lower tolerance (Tol–) and upper tolerance (Tol+) have to be specified. The tolerances are displayed as relative deviations from the target weight.

**Tolerance type "Percent"**
Target weight (Target) as well as lower tolerance (Tol–) and upper tolerance (Tol+) have to be specified. At Checkweighing the weight value is represented as a percentage of the target weight. The target weight value is 100 % or 0 % at Checkweighing to zero.

### 4.1.1 Weighing in target values

1. Press the soft key ⬅✓➡.
   The current Checkweighing parameters are displayed.
2. Check the tolerance type.
3. To change the tolerance type press the soft key ✎.
4. Confirm the tolerance type with the soft key **OK**.
5. Load the requested weight and confirm with the soft key **OK**.
   The next weight is highlighted.
6. Repeat step 5 until "New target set!" is displayed.
   The coloured Checkweighing display appears, the scale is ready for Checkweighing.

- If tolerance default values have been set in the menu, only the target has to be specified with tolerance types "Relative" and "Percent".
- The upper tolerance value has to be greater than or equal to the lower one (High ≥ Low) or, respectively, the target weight has to be greater than or equal to the lower tolerance value and smaller than or equal the upper tolerance (Tol+ ≥ Target ≥ Tol–).

### 4.1.2 Entering known target values

1. Press the soft key ⬅✓➡.
   The current Checkweighing parameters are displayed.
2. Check the tolerance type.
3. To change the tolerance type press the soft key ✎.
4. Confirm the tolerance type with the soft key **OK**.
5. Enter the requested weight value and confirm with the soft key **OK**.
   The next weight is highlighted.
6. Repeat step 5 until "New target set!" is displayed.
   The coloured Checkweighing display appears, the scale is ready for Checkweighing.

- If tolerance values have been set in the menu, only the target has to be specified with tolerance types "Relative" and "Percent".
- The upper tolerance value has to be greater than the lower one (High > Low) or, respectively, the target weight has to be greater than the lower tolerance value (Tol+ > Target > Tol–).

### 4.1.3 Specifying target number of pieces

**Prerequisite**

✓ At least one of the counting soft keys `Ref n` or `APW` is activated in the `Terminal` menu.

**Determining the piece weight**

➜ Apply the indicated number of reference parts and press the soft key ⁂.
The number of reference parts is displayed.

- For alternate procedures to determine the average piece weight refer to the Counting section.
- When using the unit PCS, the tolerance type Percent is not available.

**Determining target number of pieces**

➜ Proceed as described in the section "Weighing in target values" or "Entering known target values".
The display unit is PCS.

### 4.1.4 Storing an article in the database

**Prerequisite**

✓ The soft key `Save article` is activated in the `Terminal` menu.

1. Determine the target as described before.
2. Press the soft key 💾.
   A new screen is displayed to enter an article.
3. Enter the article and confirm with the soft key **OK**.
   "Record stored" is displayed briefly. The article is stored.

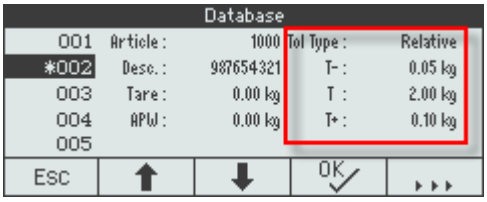
- If in the `Description field` is activated in the `Application` menu, you are asked to enter an article description as well.
- When you always use the same container, the tare weight can be saved with the article. Just tare the container before determining the reference.
- If the selected article already exists the message "Article already exists – Overwrite article?" is displayed.

### 4.1.5 Recalling an article from the database

**Prerequisite**

✓ The soft key `Recall article` is activated in the `Terminal` menu.

1. Press the soft key ⇨.
   The database opens. The article data of the highlighted record number are displayed.




   For checkweighing articles the fields in the frame are significant.
2. Use the arrow keys to navigate through the database records. On the second soft key page ⬆⬆ and ⬇⬇ are available to scroll a page up or down.
3. Conform the selected data record with the soft key **OK**.
   "Record loaded" is displayed briefly. The coloured checkweighing display appears.

## 4.2 Checkweighing procedure

The device facilitates Checkweighing and Checkcounting through different coloured background lighting for the states "too light" (factory setting: red), "good" (factory setting: green) and "too heavy" (factory setting: yellow).

1. Specify the target values as described above.
2. Place the checkweighing material on the scale.
   Depending on the applied weight the colour of the background lighting changes.
   Weight information is displayed in accordance with the display setting and the Checkweighing settings.

With factory settings for display type and colours, the following is displayed for "too light", "good", "too heavy":

**Display for Checkweighing and tolerance type "Absolute"**




**Display for Checkweighing and tolerance type "Relative"**




**Display for Checkweighing and tolerance type "Percent"**



## 4.3 Checkweighing during subtractive weighing

Assistance through the coloured background and the graphical weighing aid is also possible during subtractive weighing and subtractive counting.

**Procedure**

1. Specify target values as described above.
   The target value is indicated with a negative sign.
2. Place a full container on the weighing platform and tare it.
3. Remove as much from the weighing sample as required for the display to change to the state "good" (factory setting = green).
4. Tare the unit again.
   The scale is ready for the next removal.

**Display for subtractive Checkweighing**

With factory settings for display type and colours the following is displayed for "too light", "good", "too heavy":




## 4.4 Checkweighing with "Quick start"

If default values for the tolerances are used with tolerance types "Relative" or "Percent", Checkweighing can be started by pressing just one key.

**Prerequisites**

✓ The setting `On` is selected in the menu under `Application` –> `Over/Under` –> `Default Values`.
✓ Tolerance values are defined under `Application` –> `Over/Under` –> `Default Values`.
✓ The selected tolerance type matches the entered default values.

**Procedure**

➜ Place the target weight or target amount on the scale and press the soft key ⬅✓➡.
The applied weight or the applied amount is stored as the target weight or target amount respectively. The display changes to the state "good" (factory setting = green). Checkweighing is activated.

## 4.5 Checkweighing to zero

The weight value or the number of pieces can also be represented as the difference to the target weight.

### Prerequisites

- ✓ For Checkweighing to zero, tolerance types "Relative" or "Percent" are selected
  For Checkcounting to zero, tolerance type "Relative" is selected
- ✓ The soft key `To zero` is activated in the `Terminal` menu, the symbol ⬇0 is displayed in the symbols and info line
- ✓ Display layout "Colour mode" or "3-line mode" selected in the `Terminal` menu

### Procedure

1. Specify the target values as described above.
2. Press the soft key ⇩⌀.
   The target is displayed with a minus sign.
3. Place the checkweighing material on the scale.
   Depending on the applied weight or the applied amount the colour of the background lighting changes.
   The display value is displayed in accordance with the tolerance type setting.
   The target value is 0 (kg or PCS) or 0.00 %.

### Display at Checkweighing to zero

With display type "Colour mode" and default colours the following is displayed for "too light", "good", "too heavy":




### Terminating Checkweighing to zero

➜ Press soft key ⇩⌀ again.
The symbol ⬇0 in the info line disappears, the net weight is displayed.

## 4.6 Terminating Checkweighing

**With clearing the Checkweighing parameters**

➜ Press **C**.
"Cleared" appears in the display.
The target values are cleared and the straight weighing display appears.
The device operates in straight weighing mode.

**With keeping the Checkweighing parameters**

➜ Press the soft key **ESC**.
The straight weighing display appears, the Checkweighing parameters are kept.
The device operates in straight weighing mode.

➜ To reactivate the Checkweighing parameters, press the soft key ⬅✓➡.
The last entered Checkweighing parameters are displayed.

# 5 Totalisation

## 5.1 Starting totalisation

➜ Press the soft key Σ.
The following soft keys for totalising are displayed:

| Esc | + | | ↺ | – |
|---|---|---|---|---|
| Leave totalising without clearing the sum | Add item to the sum | | Undo totalisation | Add item to the sum with subtractive weighing |

## 5.2 Totalising manually

### Totalising

1. Load the first sample and press the soft key **+**.
   Total Net, Total Gross and number of items are displayed.
2. Unload the scale.
3. Load the next sample and press the soft key **+** again.
   The totals are updated.
4. Unload the scale.
5. Repeat steps 3 and 4 for further items.
6. To finish totalising, press **C**.
   The total is cleared.

Piece counting results and Checkweighing results can be totalised the same way, but they cannot be mixed up in a total.

### Totalising in subtractive weighing

1. Load the full container and press →**T**←.
   The full container is tared.
2. Remove the first portion from the container and press the soft key **–**.
   Total Net, Total Gross and number of items are displayed.
3. Press →**T**←.
4. Remove the next portion and press the soft key **–** again.
   The total is updated.
5. Repeat steps 3 and 4 for further portions.
6. To finish totalising, press press **C**.
   The total is cleared.

Piece counting results and Checkweighing results can be totalised the same way, but they cannot be mixed up in a total.

## 5.3 Automatic totalising

**Prerequisites**

✓ `Auto print` is activated in the `Communication` menu or in the `Application -> Over/Under` menu (for Checkweighing only).

**Totalising**

1. Load the first sample.
   The total is displayed in the auxiliary lines.
2. Unload the scale.
3. Load the next sample.
   The total is updated.
4. Unload the scale.
5. Repeat steps 3 and 4 for further items.
6. To finish totalising, press **C**.
   The total is cleared.

Piece counting results and Checkweighing results can be totalised the same way, but they cannot be mixed up in a total.

## 5.4 Deleting items from the sum

➜ Press the soft key ↶.
The last weighing is deleted from the sum.

## 5.5 Terminating totalising

**With clearing the total**

➜ Press **C**.
"Cleared" appears in the display.
The total is cleared and the straight weighing display appears.
The device operates in straight weighing mode.

**With keeping the total**

➜ Press the soft key **ESC**.
The straight weighing display appears, the total is kept.
The device operates in straight weighing mode.

➜ To continue totalising, press the soft key Σ.
The last total is displayed.

# 6 Settings in the menu

In the menu, settings can be changed and functions can be activated. This enables adaptation to individual weighing requirements.
The menu consists of the following 5 main blocks containing various submenus on several levels.

| | |
|---|---|
| `Scale` | see section 6.2 |
| `Application` | see section 6.3 |
| `Terminal` | see section 6.4 |
| `Communication` | see section 6.5 |
| `Maintenance` | see section 6.6 |

## 6.1 Operating the menu

### 6.1.1 Calling up the menu and entering the password

The menu differentiates between 2 operating levels: Operator and Supervisor. The Supervisor level can be protected by a password. When the device is delivered, both levels are accessible without a password.

**Operator menu**

1. Press ⮆ and keep it pressed until `Enter code` appears.
2. Press ⮆ again.
   The menu item `Terminal` is displayed. Only parts of the submenu `Device` are accessible.

**Supervisor menu**

1. Press ⮆ and keep it pressed until `Enter code` appears.
2. Enter the password and confirm with ⮆
   The first menu item `Scale` is highlighted.

No supervisor password has been defined when the device is first delivered. Therefore, confirm the password inquiry with ⮆ when you call up the menu for the first time.
If a password has still not been entred after a few seconds, the scale returns to the weighing mode.

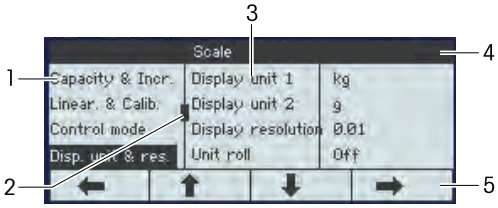
**Emergency password for Supervisor access to the menu**

If a password has been issued for Supervisor access to the menu and you have forgotten it, you can still enter the menu:

➜ Press →0← 3 times and confirm with ⮆.

### 6.1.2 Display presentation in the menu

Menu items are displayed together with their context.




**1** Menu items; the selected menu item is highlighted
**2** Scroll flag, like the scroll bar of your PC
**3** Sub-menu items
**4** Menu info line, i.e., menu path of the current menu item
**5** Soft key line: use the soft keys below to navigate the menu as indicated

#### Exiting the menu

1. Press ⏻.
   "Save settings ?" is displayed.
2. Press **OK**.
   The menu changes are saved and the terminal returns to the weighing mode.
   – or –

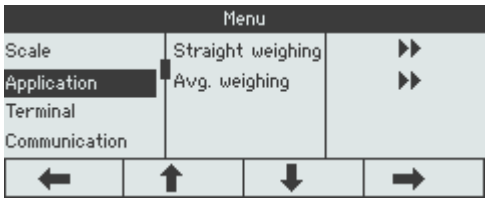
➜ Press **ESC** for further menu settings.
   – or –

➜ Press **NO** to discard changes and return to the weighing mode.

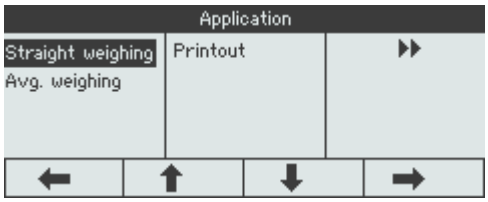
### 6.1.3 Selecting and setting parameters in the menu

**Example: Setting of the average weighing mode to automatic**

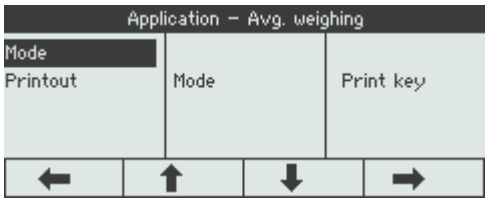
1. In the menu start screen use ⬇ to select (highlight) the `Application` menu.
   The submenus are displayed in the middle column.



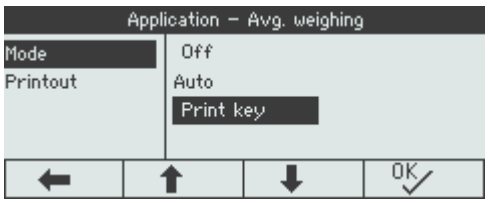

2. Press ➡ to enter the `Application` menu.



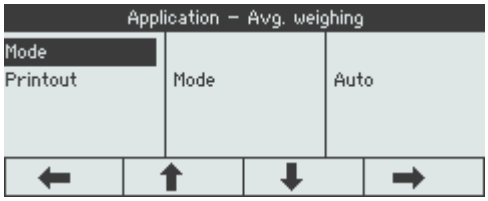

3. Press ⬇ and then press ➡ to open the `Avg. weighing` submenu.
   The current setting of the highlighted menu item is displayed in the right column.




4. Press ➡ to enter the `Mode` submenu.
   The possible settings of the selected menu item are displayed on the right side.




5. Press ⬆ to select (highlight) `Auto` and confirm selection with **OK**.
   The setting of the average weighing mode has changed.




If all the settings of a menu item cannot be displayed on one page (e.g., all the info items), just use ⬇ to proceed to the hidden items.

## 6.2 Scale menu block

When entering the SCALE menu block, an overview of the connected scales is displayed: If SCALE 2 is a SICS scale, no more settings are available.

### 6.2.1 Overview

Factory settings are printed in **bold** in the following overview.

After selecting the Scale 1 or Scale 2, the following menu is available:

| Level 1 | Level 2 | Level 3 | Level 4 |
|---|---|---|---|
| Identification | Scale location | | |
| | Scale ident. | | |
| Linear. & Calib. | Linearisation | | |
| | Calibration | | |
| | Auto print calib. | **On**, Off | |
| Disp. unit & res. | Display unit 1 | g, **kg**, oz, lb, lb-oz, t | |
| | Display unit 2 | **g**, kg, oz, lb, lb-oz, t | |
| | Disp. resolution | Off, ... | |
| | Unit roll | On, **Off** | |
| Zero | AZM | Off, **0.5d**, 1d, 2d, 5d, 10d | |
| Tare | Auto tare | On, **Off** | |
| | Chain tare | **On**, Off | |
| | Auto clear tare | On, **Off** | |
| Restart | On, **Off** | | |
| Filter | Vibration | Low, **Medium**, High | |
| | Process | **Universal**, Dosing | |
| | Stability | Fast, **Standard**, Precise | |
| MinWeigh | Function | On, **Off** | |
| FACT * | Temperature | Off, 1K, 2K, 3K | |
| | Time | Time 1, Time 2, Time 3 | |
| | Days | Monday, ... Sunday | **Off**, On |
| Reset | Perform reset ? | | |

* for MonoBloc® load cells only

### 6.2.2 Scale 1 / Scale 2 –> Identification

| | |
|---|---|
| **Scale location** | Entering the scale location, e.g., floor and room |
| **Scale ident.** | Entering the scale identification, e.g., inventory number |
| Note | • Scale location and scale identification can be displayed in the auxiliary or info lines or printed out.<br>• Scale location and scale identification can consist of up to 12 characters (0 ... 9 and decimal point) |

### 6.2.3 Scale 1 / Scale 2 –> Linearization & Calibration

This menu item is not available for verified scales.

| | |
|---|---|
| **Last calibration** | Shows the date of the last calibration. |
| **Autoprint calib.** | When set to On, a protocol is printed out automatically for each calibration process. |
| **Perform calib.**<br>------ blinking<br>Preload blinking<br>xx kg blinking | 1. Unload the scale.<br>2. Apply preload and confirm with **OK**.<br>3. If necessary, change the calibration weight value displayed using ⬇ / ⬆.<br>4. Apply the indicated calibration weight on the weighing platform and confirm with **OK**.<br>Passed is displayed briefly. |
| Note | In order to achieve a particularly high precision, calibrate under full load. The calibration process can be aborted using ⏻. |

### 6.2.4 Scale 1 / Scale 2 –> Display units & resolution

| | |
|---|---|
| **Display unit 1** | Selecting weighing unit 1 |
| **Display unit 2** | Selecting weighing unit 2, different from unit 1 |
| **Display resolution** | Selecting readability (resolution), the possible settings depend on the connected scale. When set to Off, only the default resolution of the weighing platform is available. |
| **Unit roll** | When unit roll is switched on, the weight value can be displayed in all available units with ⟳. |
| Notes | • In case of verified scales, individual sub-items of the Display/Units & Resolution menu item may not be available or only to a limited extent, depending on the respective country.<br>• On dual-range/dual interval scales, resolutions marked with **I<–>I 1/2** are divided up into 2 weighing ranges/intervals, e.g., 2 x 3000 d. |

### 6.2.5 Scale 1 / Scale 2 –> Zero – Automatic zero update

| | |
|---|---|
| **AZM** | On verified scales, this menu item does not appear.<br>Switching on/off automatic zero update and selecting zeroing range. |

### 6.2.6 Scale 1 / Scale 2 –> Tare – Tare function

| | |
|---|---|
| **Auto tare**<br>On, Off | Configuring automatic taring<br>Switching automatic taring on/off<br>When a load is placed on the scale and the gross weight exceeds 9 d, the weight is tared automatically. |
| **Chain tare** | Switching on/off chain tare |
| **Auto clear tare**<br>On, Off | Configuring automatic clearing of the tare weight<br>Switching automatic clearing of the tare weight on/off<br>When the load is removed and the weight drops below 9 d, the tare weight is cleared automatically |

### 6.2.7 Scale 1 / Scale 2 –> Restart – Automatic saving of zero point and tare value

| | |
|---|---|
| **Restart** | When the Restart function is activated, the last zero point and the tare value are saved. After switching off/on or after a power interruption, the device continues to work with the saved zero point and tare value. |

### 6.2.8 Scale 1 / Scale 2 –> Filter – Adaptation of the ambient conditions and the weighing type

| | |
|---|---|
| **Vibration** | Adaptation to ambient conditions |
| Low | • Very steady and stable environment. The scale works very rapidly, but is very sensitive to external influences. |
| Medium | • Normal environment. The scale operates at medium speed. |
| High | • Restless environment. The scale works more slowly, but is insensitive to external influences. |
| **Process** | Adaptation to the weighing process |
| Universal | • Universal setting for all weighing samples and normal weighing goods. |
| Dosing | • Dispensing liquid or powdery weighing samples. |
| **Stability** | Adjusting the stability detector |
| Fast | • The scale operates very fast. |
| Standard | • The scale operates at medium speed. |
| Precise | • The scale operates with the greatest possible reproducibility.<br>The slower the scale works, the greater the reproducibility of the weighing results. |

### 6.2.9 Scale 1 / Scale 2 –> MinWeigh – Minimum weighing-in quantity

Before you can use this function, the METTLER TOLEDO service technician has to determine and enter a minimum weight value.

| | |
|---|---|
| **Function** | MinWeigh function |
| On/Off | Switching MinWeigh function on/off<br>When set to On and if the weight on the scale drops below the stored minimum weight, < will appear in the symbols and info line and the display colour will change. |
| **Display colours** | Setting the display colour for weight values below the stored minimum weight. |

### 6.2.10 Scale 1 / Scale 2 –> FACT – automatic temperature-dependent adjustment

This menu item appears only on scales with an internal calibration weight.

| | |
|---|---|
| **Temperature** | Setting the temperature difference for automatic adjustment. |
| Off | Switching off automatic adjustment in the case of a temperature difference. |
| 1K, 2K, 3K | Automatic adjustment in case of the selected temperature change. |
| **Time** | Setting up to 3 times per day for the automatic adjustment. |
| Time 1 ... Time 3 | Entering the times for the automatic adjustment (hours, minutes in 24 h format).<br>If you do not want 3 times per day, just set all the times to the same value. |
| **Days** | Setting the days of the week for the automatic adjustment. |
| Monday ... Sunday | On all days which are set to On, the automatic adjustment will be performed. |

### 6.2.11 Scale 1 / Scale 2 –> Reset – Resetting scale settings to factory settings

| | |
|---|---|
| **Perform reset ?** | Confirmation inquiry<br>• Reset the scale settings to factory settings with **OK**. |

## 6.3 Application menu block

Factory settings are printed in **bold** in the following overview.

### 6.3.1 Application –> Straight weighing

| **Printout** | **Defining printer and template in the straight weighing application** |
|---|---|
| COM1 ... COM2 | Selecting the COM port for the desired printer. E.g., COM1 for printout to a PC and the optional COM2 for printout on an office (ASCII) printer |
| Off | No printout on this COM port |
| Standard | Printout with the standard template on the selected printer |
| Template 1 ... Template 5 | Assigning a customer template to the selected printer |
| Note | Templates can be defined under Communication –> Define templates |

### 6.3.2 Application –> Average weighing

| **Mode** | **Selecting mode for determining the average weight for an unstable load (dynamic weighing)** |
|---|---|
| Auto | Calculating average weight with automatic start of the weighing cycle |
| Print key<br>Info key<br>Switch key<br>**Soft key** | Calculating average weight with manual start of the weighing cycle via the selected key.<br>Print key<br>Info key<br>Switch key<br>Soft key |
| **Printout** | **Defining printer and template in the average weighing application** |
| | See "Straight weighing" |

### 6.3.3 Application –> Counting

**Overview**

| Level 1 | Level 2 | Level 3 |
|---|---|---|
| Fixed ref. Size | **Off**, On | |
| Reference size | | |
| Ref weight check | **Off**, On | |
| | 0 % ... 30 % | |
| APW optimisation | **Off**, Auto, Soft key | |
| Autosampling | **Off**, On | |
| Auto clear APW | **Off**, On | |
| Counting system | Scale 1<br>Scale 2 | Bulk, Reference, Aux., Off |
| Printout | see "Straight Weighing" | |

**Description**

| | |
|---|---|
| **Fixed ref. size** | **Selecting the reference size** |
| **Off** | Variable reference size, i.e., any number of parts can be used as reference size |
| On | Determining the average piece weight is only possible with the default reference size |
| **Reference size** | **Define a default reference size, e.g., 12 PCS. The reference size is displayed in the corresponding soft key ⁂.** |
| **Ref Weight** | **Monitoring the minimum reference weight** |
| Ref wt check | Activating/deactivating the reference weight check function |
| Off | No monitoring of the minimum reference weight |
| On | Monitoring the minimum reference weight. When the minimum reference weight drops below the set tolerance value, the display colour changes and a message is displayed which asks you to add more reference parts. |
| Ref wt value | Only displayed if Ref wt check is set to On. |
| 1 % ... 30 % | Setting the factor for the reference weight check. The higher the factor, the smaller the required minimum reference weight.<br>Factory setting: 20 % |
| **APW optimisation** | **Optimisation of the average piece weight.** |
| **Off** | No optimisation of the average piece weight |
| Auto | Automatic optimisation of the average piece weight |
| Soft key | Manual optimisation of the average piece weight with soft key ✓. |

| | |
|---|---|
| **Autosampling** | **Automatic determination of the average piece weight** |
| On | After taring, the average piece weight is determined with the next weight placed on the scale and the displayed reference size. |
| **Off** | No automatic determination of the average piece weight |
| **Auto clear APW** | **Automatic clearing of the average piece weight** |
| On | When the load is taken off the scale after a counting operation, the average piece weight is automatically cleared. The next counting operation begins with determining the average piece weight again. |
| **Off** | The average piece weight must be cleared manually with **C**. |
| **Counting system** | **Configuring a system of several scales for counting** |
| Scale 1, Scale 2 | Selecting the scale to assign a function in the counting system.<br>Only the scales connected are displayed. |
| Bulk | The selected scale serves as bulk scale to count/measure quantities.<br>Another scale of the system must then be set to Reference. |
| Reference | The selected scale serves as reference scale to determine the average piece/unit weight.<br>Another scale of the system must then be set to Bulk. |
| Aux. | The selected scale can be used for determining the average piece/unit weight as well as for counting/measuring. |
| Off | The selected scale is not part of a counting system. |
| **Printout** | **Defining printer and template in the counting application** |
| | See "Straight weighing" |

### 6.3.4 Application –> Checkweighing

**Overview**

| Level 1 | Level 2 | Level 3 |
|---|---|---|
| Tolerance type | **Off**, Absolute, Relative, Percent | |
| Default values | Act. deft. values | **Off**, On |
| | Rel. weight | Tol –, Tol + |
| | Per. weight | Tol –, Tol + |
| | Rel. pieces | Tol –, Tol + |
| Output | Thresh % of tol– | |
| | Beeper | **Off**, Within Tolerances, Outside Tolerances |
| | Beeper mode | Continuous, Stable |
| | Autoprint | **Off**, Within Tolerances, Outside Tolerances |
| Display mode & Colours | Stealth mode | On, Off |
| | Good range | White, Green, Red, Yellow, Blue, Brown, Violet, Orange |
| | Under range | |
| | Over range | |
| | Below threshold | |
| Printout | see "Straight Weighing" | |

**Description**

| Tolerance type | Specifying which parameters have to be entered for Checkweighing/Filling |
|---|---|
| **Off** | No tolerance type predefined, it can be set individually when entering Checkweighing/ Filling parameters. |
| Absolute | A low and a high weight value must be entered. These weights and all weights within this range are treated as being within tolerance. |
| Relative | The target weight has to be entered as an absolute weight, upper and lower tolerances as deviations in weight from the target weight. |
| Percent | The target weight has to be entered as an absolute weight, upper and lower tolerances as deviations in percent from the target weight. This setting is not available for counting. |

| **Default values** | **Storing default tolerance values** |
|---|---|
| | If you always use the same tolerances for Checkweighing, you can store these tolerances and thus avoid entering tolerances all the time. |
| Act. deft. values | Activating usage of default tolerance values. |
| **Off** | Default tolerance values not used |
| On | Default tolerance values used |
| Rel. weight | Entering the default values for Tolerance – and Tolerance +. |
| Per. weight | Entering the default percentages for Tolerance – and Tolerance +. |
| Rel. pieces | Entering the default values for Tolerance – and Tolerance + in pieces. |
| **Output** | **Setting output options** |
| Thresh % of tol– | When Thresh % of tol– is reached, the coloured display will change from the "Below threshold" colour to the "Tolerance –" colour.<br>This feature can be used to show the "Tolerance –" colour when you are already near the target or if you need an additional setpoint for I/O control.<br>This setpoint is available on the optional digital I/O interface as well.<br>Possible settings 0 ... 100 % (of the "Tolerance –" value)<br>Factory setting 12 % |
| Beeper | Setting the beeper for Checkweighing |
| **Off** | No beeper |
| Within tolerances | A short beep will sound when a weight value within the tolerance values is reached |
| Outside tolerances | A short beep will sound when a weight value outside the tolerance values is reached |
| Beeper mode | Defining how the beeper will act |
| Continuous | Beeping on every change in weight within the selected range |
| Stable | Beeping only when a stable weight value within the selected range is recognised |
| Autoprint | Setting the automatic printout |
| **Off** | No automatic printout |
| Within tolerances | Automatic printout when a stable weight value within the tolerance values is reached |
| Outside tolerances | Automatic printout when a stable weight value outside the tolerance values is reached |

| Display mode & colours | Setting the weight display in the Checkweighing application |
|---|---|
| Stealth mode | This menu item is not available if the scale is approved. |
| **Off** | Weight display |
| On | No weight display, only the coloured display for "too light", "good" and "too heavy". |
| Good range | Selecting the colour to indicate a weight value within tolerances<br>Factory setting: green |
| Under range | Selecting the colour to indicate a weight value below "Tolerance –"<br>Factory setting: red |
| Over range | Selecting the colour to indicate a weight value above "Tolerance +"<br>Factory setting: red |
| Below threshold | Selecting the colour to indicate a weight value below "Threshold as % of Tol –"<br>Factory setting: white |
| Possible colours | White, Green, Red, Yellow, Blue, Brown, Violet, Orange |
| **Printout** | **Defining printer and template in the Checkweighing application** |
| | See "Straight weighing" |

### 6.3.5 Application –> Totalising

**Overview**

| Level 1 | Level 2 | Level 3 | Level 4 |
|---|---|---|---|
| Mode | Mode | **Manual**, Auto +, Auto - | |
| | Zero return | **Off**, On | |
| Printout | Lot print | COM1, COM2 | Off, Standard, Template 1 ... Template 10 |
| | Final print | | |
| | Summary print | | |

**Description**

| **Mode** | **Configuring totalising** |
|---|---|
| Mode | |
| Manual | Items must be totalised manually with the soft key **+** |
| Auto + | Stable weight values will be totalised automatically |
| Auto – | Automatic totalisation of stable weight values in subtractive weighing |
| Zero return | Reaching a stable zero point between two items |
| **On** | All load must first be removed from the scale before totalisation of the next item is possible |
| Off | No load removal requested between two items |
| **Printout** | **Configuring printouts** |
| Lot print | Printout for each individual item |
| Final print | Printout of the total at the end of totalising |
| Summary print | Additional printout of the individual items and the total after completion of totalisation. |
| COM1, COM2 | Selecting the printer interface for the lot printout |
| Off | No automatic printout |
| Standard | Automatic printout using the standard template which is predefined in the factory. |
| Template 1 ... Template 10 | Automatic printout using the selected template |

### 6.3.6 Application –> Memory

| | |
|---|---|
| **Custom field** | Selecting information to be stored with the alibi data record in the additional custom field<br>Select from the following:<br>Off, Scale SNo., Terminal model, Terminal location, ID1 ... ID3, APW, Quantity, Terminal SNo., Temperature (for MonoBloc® load cells only) |

### 6.3.7 Application –> Database

| | |
|---|---|
| **Description field** | |
| On | Each data record has an additional field to enter e.g., an article name |
| Off | No field for entering a description. |
| **Delete record** | Select a data record to be deleted. |
| **Delete all** | Delete all data records.<br>A safety prompt is displayed. |
| **Print all** | Print all data records. |

### 6.3.8 Application –> Prompting

| | |
|---|---|
| Mode | Configuring start of the prompting |
| Automatic | Prompting always active, no other functions available |
| **Soft key** | Start by a soft key |
| Apps | Selecting the workflow which shall be supported by the prompt |
| **Off** | No workflow |
| Tare/Sample | Reference determination: First tare, then add reference parts |
| Sample/Tare | Reference determination: First weigh reference parts, then tare |
| Handsfree | Counting without a keystroke |
| Multi tare | Taring of several containers with the same tare weight |
| Additive tare | Adding the known tare weight of different containers |

### 6.3.9 Application –> Reset – Resetting application settings to factory settings

| | |
|---|---|
| **Perform reset ?** | Confirmation inquiry<br>• Reset the application settings to factory settings with **OK**. |

## 6.4 Terminal menu block

The Terminal menu block consists of the following main subblocks, which are described in detail in the following.

- Device
- Access

Factory settings are printed in **bold** in the following overview.

### 6.4.1 Terminal –> Device – General device settings

**Overview**

| Level 1 | Level 2 | Level 3 | Level 4 | Level 5 |
|---|---|---|---|---|
| Region | Laguage | **English**, Deutsch, Français, Italiano, Español, Chinese, ... | | |
| | Date format | MM/DD/YY, MM/DD/YYYY, MMM/DD/YYYY, DD/MM/YY, DD/MMM/YYYY, YY/MM/DD, YYYY/MMM/DD, YYYY/MM/DD, **DD/MM/YYYY** | | |
| | Set date | Set year | | |
| | | Set month | | |
| | | Set day | | |
| | Time format | 24:MM, 12:MM tt, **24:MM:SS**, 12:MM:SS tt | | |
| | Set time | Set hour | | |
| | | Set minutes | | |
| Sleep / Power off | **Off**, 1 minute, 3 minutes, 5 minutes, 15 minutes, 30 minutes | | | |
| Identification | Terminal location | | | |
| | Terminal identification | | | |
| Display | Display layout | **Default**, 3-lines mode, Colour mode | | |
| | Brightness | 1 ... **10** | | |
| | Weight hold | **0 s** ... 10 s | | |
| | Default color | Yellow, light blue, dark blue, red, purple, green, orange, light green, pink, **white** | | |
| | Auxiliary line | Not used, **Date & Time**, Gross, Net, Tare, High resolution (not available for approved scales), ID1, ID2, ID3, Name of active scale, Target, Tolerance+, Tolerance–, Article description, Deviation to target, APW, Reference count, Quantity, Article, Total net, Total gross, Total PCS, n, Bargraph, Temperature (for MonoBloc® load cells only) | | |

| Level 1 | Level 2 | Level 3 | Level 4 | Level 5 |
|---|---|---|---|---|
| Keyboard | Hard keys | Power,<br>Clear,<br>Switch,<br>Info,<br>Transfer,<br>Numeric keys | **On**, Off | |
| | Soft key | Soft key 1-1<br>...<br>Soft key 4-4 | Not used, Zero, Tare, High Resolution, Average weighing, ID1, ID2, ID3, Prompt, Alibi Memory, Switch scale, Ref N, APW, APW optimisation, Weight count, To zero, Totalising, Checkweighing, Save article, Recall article, Display layout | |
| | Info key | Page 1 | Item 1<br>...<br>Item 5 | Not used, Date & Time, Gross, Net, Tare, ID1, ID2, ID3, Terminal Identification, Terminal Location, Terminal Model, SNR Terminal, SNR Scale, Firmware Vers., Target, Tol–, Tol+, Dev. to target, APW, Quantity, Record number, Total net, Total gross, Total PCS, n, HighRes, Temperature (for MonoBloc® load cells only), Alibi no, MinWeigh, Scale model, Scale location, Scale identification |
| | | Page 2 & 3 | Info page 2 | Off, **System info**, Contact info |
| | | | Info page 3 | **Off**, System info, Contact info |
| | Beeper | **On**, Off | | |
| Timeout | Mode | **Off**, Rental, Screensaver | | |
| | Days | | | |
| Reset | Perform reset? | | | |

| | Description |
|---|---|
| **Region** | **Country specific settings** |
| Language | Selecting the language of the operator interface.<br>We will expand the available languages continuously. |
| Date format | Selecting the date format |
| Set date | |
| Set year | Entering the year in the selected format |
| Set month | Entering the month in the selected format |
| Set day | Entering the day in the selected format |
| Time format | Selecting the time format |
| Set time | |
| Set hour | Entering the hour in the selected format |
| Set minutes | Entering the minutes |

| | |
|---|---|
| **Sleep (Operator access)** | **Setting the sleep mode** |
| Off<br>1 minute<br>...<br>30 minutes | This menu item only appears on devices in **mains operation**.<br>When Sleep is activated, the device switches off display and backlighting after the time period set when not in use and gross weight is 0. Display and backlighting are switched on again by pressing a key or if the weight changes. |
| **Power off (Operator access)** | **Setting the power off mode** |
| Off<br>1 minute<br>...<br>30 minutes | This menu item only appears on devices in **battery operation**.<br>When Power off is activated, the device switches itself off automatically after the time period set when not in use. After this, it must be switched on again using ⏻. |

| | |
|---|---|
| **Identification** | **Setting terminal identification data** |
| Terminal location | Entering the terminal location, e.g., floor and room |
| Terminal ident. | Entering the terminal identification, e.g., inventory number |
| Note | • Terminal location and terminal identification can be displayed in the auxiliary or info lines or printed out.<br>• Terminal location and terminal identification can consist of up to 12 characters (0 ... 9 and decimal point) |

| Display | Setting the display according to your specific task |
|---|---|
| Display Layout | Selecting the presentation of the weight value. |
| Brightness<br>(Operator access) | Setting the brightness of the display.<br>This menu item is accessible with Operator access rights. |
| Weight hold | Setting how long the weighing result is frozen in the display after the transfer key has been pressed or auto print was generated. |
| Default colour | Setting the default colour for straight weighing. |
| Auxiliary line | Selecting the contents of the auxiliary display line. |

| Keyboard | Setting the keyboard according to your specific task |
|---|---|
| Hard keys | Locking/unlocking keys.<br>Possible keys Power ( ), Clear ( C ), Switch / Toggle ( ), Info ( i ), Transfer ( ), Numeric keys |
| Soft keys<br>Soft key 1-1<br>...<br>Soft key 4-4 | Assigning a function to the selected key.<br>1. Select the soft key number<br>2. Assign function |
| Info key<br>Page 1<br><br><br><br>Page 2, Page 3 | Configuring the items to be displayed using the info key (i)<br>On the first page of the info key up to 9 information items on the weighing process can be configured.<br>1. Select item number<br>2. Assign information<br>On pages 2 and 3 system and contact information will be displayed.<br>In case of a problem, here you will find your contact data and the system information the service technician will ask for.<br>System information is set by the manufacturer, contact information is set by your sales representative. |
| Beeper | When set to On, each keystroke will be confirmed by a short beep. |

| Time out | Setting the behaviour when no action takes place on the terminal |
|---|---|
| Mode<br>Off<br>Rental<br><br>Screensaver | Setting the time out mode.<br>No time out setting.<br>The scale can be used for a set time interval, e.g., when the scale is rented for a special event like a fair or a market.<br>When there is no action on the scale for the set time, the display will show the screensaver. |
| Days | Entering the number of days the scale will be active in rental mode. |

### 6.4.2 Terminal –> Access – Password for Supervisor menu access

| Supervisor | Password for Supervisor menu access |
|---|---|
| Password | Enter password for Supervisor menu access. |
| Retype Password | Repeat the password entry. |
| Note | The password can consist of up to 6 characters. |

### 6.4.3 Terminal –> Reset

| Perform reset ? | Confirmation inquiry |
|---|---|
| | • Reset the terminal settings to factory settings with **OK**. |

## 6.5 Communication menu block

For detailed information on interface protocols and commands refer to the SICS Reference manual.

The Communication menu block consists of the following subblocks:

| | |
|---|---|
| Overview | Showing the interfaces installed. |
| COM1 | Parameter settings for the standard RS232 interface COM1. |
| COM2 | Parameter settings for the optional second interface COM2. |
| Define templates | Defining templates to be assigned to the application specific printouts |

The interfaces identify themselves. Therefore only those menu settings appear which are relevant for the individual interface.
If no optional interface is installed, the COM2 menu will not appear.

### 6.5.1 Communication menu blocks for serial interfaces

**Possible settings for serial interfaces**

| | | COM1 | COM2 | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | **RS232** | **RS232** | **RS422 / RS485** | **Ethernet** | **WLAN** | **USB Device** | **USB Host** |
| Mode | Print<br>Auto print<br>Continuous (Dialog) * | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | – |
| | Dialog * | Factory setting | | | | | | |
| | External input | ✔ | ✔ | ✔ | ✔ | ✔ | – | ✔ |
| | Toledo cont.-weight<br>Toledo cont.-count<br>Second display<br>Digitol B<br>Digitol G | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ |
| Printer | | ✔ | ✔ | ✔ | ✔ | ✔ | – | ✔ |
| External input | | ✔ | ✔ | ✔ | ✔ | ✔ | – | ✔ |
| Parameter | Baud (factory setting) | 9600 | 9600 | 9600 | – | – | – | – |
| | Parity (factory setting) | 8 none | 8 none | 8 none | – | – | – | – |
| | Handshake | ✔ | ✔ | ✔ | – | – | – | – |
| | Checksum | ✔ | ✔ | ✔ | ✔ | ✔ | – | ✔ |
| | STX | ✔ | ✔ | ✔ | ✔ | ✔ | – | – |
| | RS Type<br>Net Address<br>Load resistor | – | – | ✔ | – | – | – | – |
| | DHCP<br>IP address<br>Subnet mask<br>Gateway | – | – | – | ✔ | ✔ | – | – |
| TCP settings | | – | – | – | ✔ | ✔ | – | – |
| Wireless settings | | – | – | – | – | ✔ | – | – |

* for more information see Reference manual "MT-SICS for ICS4xx/ICS6xx"

**Overview RS232 menu block (COM1 / COM2)**

| Level 1 | Level 2 | Level 3 | Level 4 |
|---|---|---|---|
| Mode | Print, Auto print, Continuous (Dialog), **Dialog**, External input, Toledo Cont.-weight, Toledo Cont.-count, Second display | | |
| | Digitol B,<br>Digitol G | Net<br>Gross<br>Tare | On, **Off** |
| Printer | Type | **ASCII printer**, Label printer | |
| | ACII Format | Line format | **Multiple**, Single, Fixed |
| | | Line length | 1 ... **24** ... 100 |
| | | Separator | . , : ; – _ / \ Space |
| | | Expanded | On, **Off** |
| | | Add line feed | **0** ... 9 |
| External input | Preamble length | | |
| | Data length | | |
| | Postamble length | | |
| | Termination char. | CR, LF, EOT, ... | |
| | Destination | **Off**, Tare preset, ID1 ... ID3 | |
| Parameter | Baud | 300, 600, ... **9600,** ... 115200 baud | |
| | Parity | 7 none, **8 none**, 7 odd, 8 odd, 7 even, 8 even | |
| | Handshake | **Off**, Xon - Xoff | |
| | Checksum | **Off**, On | |
| Reset RS232 | Perform Reset ? | | |

**Overview RS422 / RS485 menu block (COM2)**

| Level 1 | Level 2 | Level 3 |
|---|---|---|
| Mode | see RS232 | |
| Printer | | |
| External input | | |
| Parameter | Baud | 300, 600, ... **9600**, ... 115200 baud |
| | Parity | 7 none, **8 none**, 7 odd, 8 odd, 7 even, 8 even |
| | Handshake | **Off**, Xon - Xoff |
| | RS-Type | **RS422**, RS485 |
| | Net address | **0** ... 31 |
| | Checksum | **Off**, On |
| | Load resistor | **Off**, On |
| Reset RS4xx | Perform Reset ? | |

**Overview Ethernet menu block (COM2)**

| Level 1 | Level 2 | Level 3 |
|---|---|---|
| Mode | see RS232 | |
| Printer | | |
| External input | | |
| Parameter | DHCP | **Off**, On |
| | Local IP | |
| | Subnet mask | |
| | Gateway | |
| | Checksum | **Off**, On |
| TCP Mode | TCP Mode | **Server**, Client, Both |
| | Local Port | |
| | Remote IP | |
| | Remote Port | |
| | Connect Timeout | |
| | Disconnect Timeout | |
| Reset Ethernet | Perform Reset ? | |

**Overview WLAN menu block (COM2)**

| Level 1 | Level 2 | Level 3 |
|---|---|---|
| Mode | see RS232 | |
| Printer | | |
| External input | | |
| Parameter | see Ethernet | |
| TCP Mode | see Ethernet | |
| Wireless setting | SSID | Enter SSID |
| | Encryption | Off, WEP, WPA |
| | WEP settings | 64 Bit, 128 Bit |
| | WEP key | Key 1, Key 2, Key 3, Key 4 |
| | WPA settings | WPA-TKIP, WPA2-AES |
| | Password | Enter password |
| Status | Display the current status, e.g., connection status, signal strength. | |
| Reset WLAN | Perform Reset ? | |

**Overview USB Device and USB Host menu blocks (COM2)**

| Level 1 | Level 2 | Level 3 | Level 4 |
|---|---|---|---|
| Mode | Continuous (Dialog), **Dialog**, External input *, Toledo Cont.-weight, Toledo Cont.-count, Second display | | |
| | Digitol B, Digitol G | Net<br>Gross<br>Tare | On, **Off** |
| Printer * | see RS232 | | |
| External input * | | | |
| Parameter * | Checksum | **Off**, On | |
| Reset USB | Perform Reset ? | | |

*USB Host only

### 6.5.2 Description of the communication menu blocks for serial interfaces

**Communication –> COMx –> Mode – Operating mode of the serial interface**

| | |
|---|---|
| **Print** | Manual data output to the printer with ⇨ |
| **Auto print** | Automatic output of stable results to the printer (e.g., for series weighing operations) |
| **Continuous (Dialog)** | Ongoing output of all weight values via the interface |
| **Dialog** | Bi-directional communication via MT-SICS commands, control of the device via PC |
| **External input** | Input other than via terminal keypad. What the input is used for is defined in the `Destination` menu block |
| **Toledo Cont.-weight** | TOLEDO Continuous mode |
| **Toledo Cont.-count** | TOLEDO Continuous mode with counting results |
| **Second display** | On the selected interface port a second display is installed |
| **Digitol B,**<br>**Digitol G**<br>`Net, Gross, Tare` | Digitol compatible format. The gross weight is either identified by "B".<br>Digitol compatible format. The gross weight is either identified by "G".<br>Selecting the weight values to be transferred. |
| Note | Printing conditions for `Auto print` and `Demand m auto`:<br>• The weight must be heavier than 9 display increments.<br>• A weight change of at least 9 display increments is required to initiate the next printout. |

**Communication –> COMx –> Printer – Settings for protocol printout**

| **Type** | **Selecting printer type** |
|---|---|
| `ASCII printer`<br>`Label printer` | **Note**<br>If Label printer is selected, the transmitted data does not include the name of the variable, e.g., date, gross, ID1, but the value and, if apropriate, the unit as a separate line. This allows the label printer to fill its template with the required data. |
| **ASCII Format** | **Selecting formats for the protocol printout** |
| `Line format` | Selecting line format: |
| `Multiple` | Mutiple lines |
| `Single` | Single line |
| `Fixed` | Fixed (Records output in single lines; every record includes the number of characters that was defined under `Line length`) |
| `Line length` | Setting line length<br>This item is only displayed for the line formats `Multiple` and `Fixed` |
| `Separator` | Selecting the separator<br>This item is only displayed for the line format `Single` |
| `Add line feed` | Adding line feeds |

**Communication –> COMx –> External input – Configuring barcode input**

| | |
|---|---|
| **Preamble length** | The barcode may contain additional data ahead of the relevant data (preamble) and behind (postamble).<br>➜ Enter the number of characters of preamble, (relevant) data and postamble |
| **Data length** | |
| **Postamble length** | |
| **Termination char.** | Selecting the termination character which is used by the connected barcode scanner |
| **Destination** | Selecting the item to be entered via barcode scanner |

**Communication –> COMx –> Parameter – Communication parameters**

Not all parameters are available on all serial interfaces. Refer to the overviews of the interfaces to check which parameters are available.

| | |
|---|---|
| **Baud** | Selecting baud rate |
| **Parity** | Selecting parity |
| **Handshake** | Selecting handshake |
| **Checksum** | Activating/deactivating checksum byte |
| **STX** | Activating/deactivating STX<br>If STX is enabled, the STX signal (0x02) is sent at the beginning of each output string that is sent via the interface. |
| **RS Type** | Selecting type of the optional RS422/RS485 interface |
| **Net Address** | Assigning network address |
| **Load resistor** | To avoid reflexions on a network, we recommend to make a defined termination. For this purpose the load resistor within the terminal can be used.<br>When set to "On", a resistor of approx. 100 Ω between the signal lines is enabled |
| **DHCP** | If DHCP is set to "On", the device will receive the IP address automatically. Then IP address, Subnet mask and Gateway are read-only fields |
| **Local IP** | Displaying/entering the local IP address |
| **Subnet mask** | Displaying/entering subnet mask |
| **Gateway** | Displaying/entering gateway address |

### 6.5.3 Communication menu block für digital I/Os

**Overview Digital I/O menu block (COM2)**

| Level 1 | Level 2 | Level 3 |
|---|---|---|
| Input | Input pin 1 ... Input pin 4 | Off, Zero, Tare, Transfer, Switch, Clear, Info, Target, Softkey 1-1 ... 4-5, Total +, Total –, Start |
| Output | Ready, Stable, Tare, Zero, < Min weigh, >= Min weigh, Underload, Overload, <= Setpoint 1, > Setpoint 1, <= Setpoint 2, > Setpoint 2, Good range, < Tolerance –, > Tolerance +, Good range, Star | **Off**, Output pin 1 ... Output pin 4 |
| Setpoints | Setpoint 1, Setpoint 2 | |
| Output mode | Continuous, Stable | |

**Configuring inputs**

1. Select an input pin.
2. Assign an input signal to the selected input pin.

**Configuring outputs**

1. Select an output signal.
2. Assign an output pin.

**Configuring setpoints**

➜ Enter values for the setpoints.

**Setting output mode**

| | |
|---|---|
| Continuous | Digital outputs are updated continuously |
| Stable | Digital outputs are updated only when the weight is stable |

### 6.5.4 Communication – Define templates

| Level 1 | Level 2 | Level 3 |
|---|---|---|
| Template 1<br>...<br>Template 5 | Line 1<br>...<br>Line 30 | Not used, Header *, Date, Time, Gross, Net, Tare, High resolution, ID1, ID2, ID3, Terminal ID, Terminl location, SNR Terminal, SNR Scale, Star line, New line, Form feed, Target, Tolerance –, Tolerance +, Tol. type, Description field, Deviation, Weight position, Average PW, Reference count, Quantity, Article, Article description |

* The content of these items has to be entered via SICS command.

**Configuring templates**

1. Select a template.
2. Select a line.
3. Assign an item.

## 6.6 Maintenance menu block

### 6.6.1 Overview

| Level 1 | Level 2 | Level 3 | Level 4 |
|---|---|---|---|
| Scale test | Scale 1<br>Scale 2 | Internal test | Perform test? |
| | | External test | Perform test? |
| | | Conf. ext. test | Test weight |
| | | | Weight name |
| | | | Tolerance |
| | Auto print | On, **Off** | |
| Keyboard test | Perform test? | | |
| Display test | Perform test? | | |
| Serial No. | SNR scale | | |
| | SNR terminal | | |
| Print setup | Print menu settings? | | |
| Reset all | Perform reset? | | |

### 6.6.2 Description

| Scale test | Testing the selected scale |
|---|---|
| Internal test<br>Perform test? | For scales with an internal test weight<br>➜ Press **OK** to start the test.<br>The deviation of test weight value and actually weighed value is displayed. |
| External test<br>Perform test? | For scales without an internal test weight<br>1. Press **OK** to start the test.<br>Preload is displayed.<br>2. If applicable, load the preload, and press **OK**.<br>The test weight is blinking.<br>3. Load the requested test weight and press **OK**.<br>The deviation of test weight value and actually weighed value is displayed. |
| Conf. ext. test<br>Test weight<br>Weight name<br>Tolerance | Configuring the external test weight<br>Setting the test weight value<br>Entering the test weight name<br>Setting the test tolerance |
| Auto print | When set to On, a protocol is printed for each scale test. |

| Keyboard test | Testing the keyboard |
|---|---|
| Perform test? | 1. Press **OK** to start the keyboard test.<br>2. Press the keys in the displayed order.<br>If the key works, the device switches to the next key.<br>The keyboard test is terminated by pressing ⏻. |

| Display Test | Testing the display |
|---|---|
| Perform test? | 1. Press **OK** to start the display test.<br>A checkerboard pattern is displayed.<br>2. Press any key to invert the checkerboard pattern.<br>3. Press any key to show the coloured display.<br>4. Repeat pressing a key until "Perform test?" is displayed again.<br>The display is working properly if all fields are displayed without missing pixels. |

| Serial number | Displaying serial numbers |
|---|---|
| SNo. scale | Displaying the serial number of the connected weighing platform. |
| SNo. terminal | Displaying the serial number of the weighing terminal. |

| Print Setup | Printout of a list of all menu settings |
|---|---|
| Print menu settings | ➜ Press **OK** to start the printout. |

| Reset All | Reset all settings to factory settings |
|---|---|
| Perform reset ? | Confirmation inquiry<br>• Reset all settings to factory settings with **OK**. |

# 7 Event and error messages

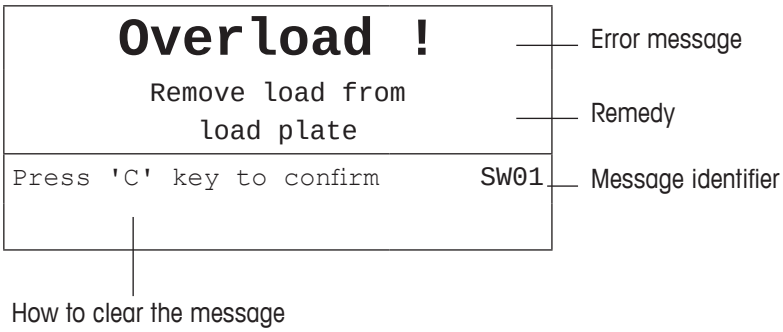
## 7.1 Error conditions

| Error | Cause | Remedy |
|---|---|---|
| Display dark | • Backlighting set too dark | ➜ Set backlighting brighter. |
| | • No mains voltage | ➜ Check mains. |
| | • Unit switched off | ➜ Switch on unit. |
| | • Mains cable not plugged in | ➜ Plug in mains cable. |
| | • Brief fault | ➜ Switch device off and on again. |
| Weight display unstable | • Restless installation location | ➜ Adjust vibration adapter. |
| | • Draft | ➜ Avoid draft. |
| | • Restless weighing sample | ➜ Dynamic weighing. |
| | • Contact between weighing pan and/or weighing sample and surroundings | ➜ Remedy contact. |
| | • Mains fault | ➜ Check mains. |
| Incorrect weight display | • Incorrect zeroing | ➜ Unload scale, set to zero and repeat weighing operation. |
| | • Incorrect tare value | ➜ Clear tare. |
| | • Contact between weighing pan and/or weighing sample and surroundings | ➜ Remedy contact. |
| | • Weighing platform tilted | ➜ Level weighing platform. |
| [_____] | • Load plate not on the scale<br>• Weighing range not reached | ➜ Place load plate on the scale.<br>➜ Set to zero. |
| [‾‾‾‾‾] | • Weighing range exceeded | ➜ Unload scale.<br>➜ Reduce preload. |
| _____ | • Result not yet stable | ➜ If necessary, adjust vibration adapter. |
| "Attention: Approval invalid" alternating with metrological data | • Approval was tampered with | ➜ Call METTLER TOLEDO service technician. |

## 7.2 Errors and warnings

### 7.2.1 Error messages

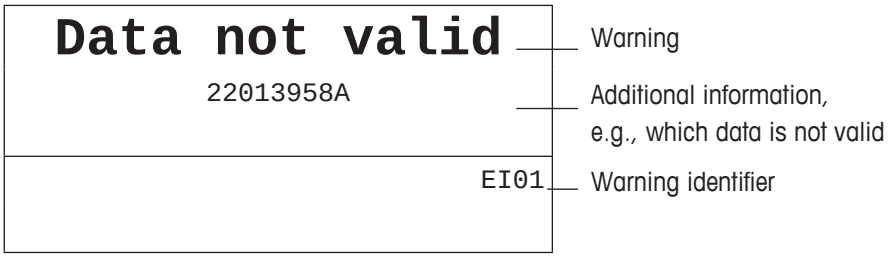
Error messages contain the following information:




### 7.2.2 Warnings

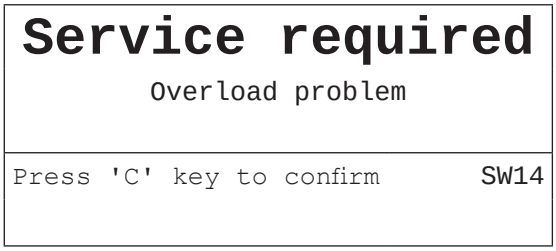
Warnings are displayed briefly and then disappear automatically.

**Example**



## 7.3 Smart weighing counter / spanner icon

This weighing instrument features several control functions to monitor the condition of the device.
The METTLER TOLEDO service technician can setup and enable these functions.
This helps the user and the METTLER TOLEDO service technician to detemine how the device is treated and what measures are needed to keep it in a good shape.
If the control functions triggers an alert, a message is shown.
You can confirm the message and continue to work with the weighing instrument. The spanner icon lights up.




In case of an alert we strongly recommend calling the METTLER TOLEDO service technician
- to replace parts which are at the end of lifetime,
- to correct wrong settings,
- to educate operators about proper handling,
- to perform routine service work,
- to reset the alert.

The control functions monitor the following conditions:
- number of weighings
- number of overloads
- maximum weight
- zero commands and zero failures
- battery charging cycles
- power-on time
- date for the next service inspection

## 7.4 Service information

In case you need the METTLER TOLEDO service technician, you can read the necessary system and contact information from the device.

1. Press **i** twice.
   System information data are displayed.
2. Press **i** again.
   Your contact data are displayed.

# 8 Technical data and accessories

## 8.1 Technical data weighing terminal

| | |
|---|---|
| Housing | • Aluminium diecast |
| Display | • LCD liquid crystal graphical display, with backlighting |
| Keyboard | • Tactile-touch membrane keypad (PET)<br>• Scratch-resistant labelling |
| Protection type | • With power supply connection IP65<br>• With built-in storage battery IP65<br>• With exchangeable battery IP54<br>• Weighing platform IP54 / IP65 (option, not for XS) |
| Net weight | • Weighing terminal 2.0 kg / 4.4 lb |
| Mains connection | • Direct connection to power supply (supply voltage fluctuation not exceeding ±10 % of the rated voltage)<br>• Rated voltage 100 ... 240 VAC / 50 ... 60 Hz / 300 mA<br>• Power cord approx. 2.5 m / 8.2 ft |
| Storage battery operation | • Supply of device: 12 V ⎓ / 2.5 A<br>• If the supply voltage is interrupted, the device automatically switches over to storage battery operation |
| 9-28 VDC power supply | • Rated voltage: 9 ... 28 V ⎓ / max. 2.5 A<br>• Power cord approx. 5 m / 16 ft, open ends |
| Battery charger | • Ambient conditions: 0 ... 40 °C / 32 ... 104 °F, dry environment |
| Ambient conditions | • Application indoor use only<br>• Altitude up to 2,000 m<br>• Temperature range Class III –10 ... 40 °C / 14 ... 104 °F<br>• Temperature range Class II 10 ... 30 °C / 50 ... 86 °F<br>• Overvoltage category II<br>• Pollution degree 2<br>• Humidity: Max. rel. humidity 85 % for temperatures up to 40 °C |
| Interfaces | • 1 interface RS232 and 1 scale interface integrated<br>• 1 additional optional communication interface possible |
| W & M approvals | • OIML Class II, III, IIII<br>• NTEP Class II, III |

**Applications**

- Weighing
- Average weighing
- Counting
- Checkweighing
- Totalising
- Database
- Prompting
- Alibi Memory

**Operating life with storage battery**

The operating life during storage battery operation varies depending on the intensity of use, the configuration and the connected scale.
The following approximate values apply with standard RS232 interface and the brightness set to 5.

| Weighing platform | Conditions | Duration |
|---|---|---|
| With strain gauge weighing platform, e.g., ICS465a-...SM/f | WLAN, continuous operation | 8 h |
| | USB host, continuous operation | 13 h |
| With MonoBloc® weighing platform, e.g., ICS465k-...SM/f | WLAN, continuous operation | 7 h |
| | USB host, continuous operation | 11 h |

**Analog scale interface**

| | |
|---|---|
| Impedance | • ≥ 80 Ω |
| Excitation | • 3.3 V |
| Sensitivity | • 2 to 3 mV/V |
| Max. resolution | • 7500 e (OIML<br>• 300,000 d (non approvable) |
| Min. verification interval | • 0.5 µV/e |

## 8.2 Technical data weighing platforms

### 8.2.1 Strain gauge weighing platforms

**ICS465d-.../f** compact scales use a weighing platform with strain gauge load cell.

- Approved resolution of 1 x 6,000 e (OIML, NTEP)
- Non-approved resolutions up to 60,000 d

| ICS465d-.../f | 3SM | 6SM | 15LA | 35LA |
|---|---|---|---|---|
| **Capacity** | 3 kg | 6 kg | 15 kg | 35 kg |
| | 6 lb | 12 lb | 30 lb | 70 lb |
| **Readability** | | | | |
| Standard resolution: 6,000 d | 0.5 g | 1 g | 2 g | 5 g |
| | 0.001 lb | 0.002 lb | 0.005 lb | 0.01 lb |
| Optional resolution: 30,000 d | 0.1 g | 0.2 g | 0.5 g | 1 g |
| | 0.0002 lb | 0.0005 lb | 0.001 lb | 0.002 lb |
| Optional resolution: 60,000 d | 0.05 g | 0.1 g | 0.2 g | 0.5 g |
| | 0.0001 lb | 0.0002 lb | 0.0005 lb | 0.001 lb |
| Approved resolution: 6,000 e | 0.5 g | 1 g | 2 g | 5 g e |
| | 0.001 lb | 0.002 lb | 0.005 lb | 0.01 lb |
| **Repeatability (sd)** | 0.05 g | 0.1 g | 0.2 g | 0.5 g |
| | 0.0001 lb | 0.0002 lb | 0.0005 lb | 0.001 lb |
| **Linearity** | 0.1 g | 0.2 g | 0.5 g | 1 g |
| | 0.0002 lb | 0.0005 lb | 0.001 lb | 0.002 lb |
| **Weight** | 5.5 kg | 5.5 kg | 7.7 kg | 7.7 kg |
| | 12.1 lb | 12.1 lb | 17.0 lb | 17.0 lb |

### 8.2.2 Monoblock weighing platforms

**ICS465k-.../f** and **ICS465k-.../DR/f** compact scales use a weighing platform with MonoBloc® load cell.

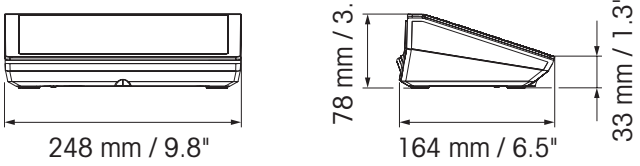
- Approved resolution of up to 61,000 e (OIML, NTEP)
- Non-approved resolutions up to 610,000 d
- FACT function (Fully Automatic Calibration Technology) calibrates the scale according to temperature changes thus increasing weighing accuracy
- **ICS465k-.../DR/f** provide a range with higher resolution.

| ICS465k-.../f | 0.6XS | 3XS | 6XS | 6SM | 15LA7 | 35LA |
|---|---|---|---|---|---|---|
| **Capacity** | 0.6 kg | 3 kg | 6 kg | 6 kg | 15 kg | 35 kg |
| | 1.2 lb | 6 lb | 12 lb | 12 lb | 30 lb | 70 lb |
| **Readability** | | | | | | |
| Standard resolution | 0.001 g | 0.01 g | 0.01 g | 0.1 g | 0.1 g | 0.1 g |
| | 0.000002 lb | 0.00002 lb | 0.00002 lb | 0.0002 lb | 0.0002 lb | 0.0002 lb |
| Approved resolution | 0.01 g | 0.1 g | 0.1 g | 1 g | 1 g | 1 g |
| | 0.00002 lb | 0.0002 lb | 0.0002 lb | 0.002 lb | 0.002 lb | 0.002 lb |
| **Repeatability (sd)** | 0.001 g | 0.01 g | 0.01 g | 0.1 g | 0.1 g | 0.1 g |
| | 0.00002 lb | 0.00002 lb | 0.00002 lb | 0.0002 lb | 0.0002 lb | 0.0002 lb |
| **Linearity** | 0.002 g | 0.02 g | 0.02 g | 0.2 g | 0.2 g | 0.3 g |
| | 0.000005 lb | 0.00005 lb | 0.00005 lb | 0.0005 lb | 0.0005 lb | 0.0005 lb |
| **Weight** | 5.7 kg | 5.7 kg | 5.7 kg | 5.7 kg | 9.0 kg | 9.0 kg |
| | 12.6 lb | 12.6 lb | 12.6 lb | 12.6 lb | 19.8 lb | 19.8 lb |

| ICS465k-.../DR/f | 0.6XS | 3XS | 6XS | 6SM | 15LA | 35LA |
|---|---|---|---|---|---|---|
| **Capacity** | 0.12 kg / 0.6 kg | 0.6 kg / 3 kg | 1.2 kg / 6 kg | 1.2 kg / 6 kg | 3 kg / 15 kg | 7 kg / 35 kg |
| **Readability** | | | | | | |
| Standard resolution | 0.001 g / 0.01 g | 0.01 g / 0.1 g | 0.01 g / 0.1 g | 0.1 g / 1 g | 0.1 g / 1 g | 0.1 g / 1 g |
| Approved resolution | 0.01 g / 0.1 g | 0.1 g / 1 g | 0.1 g / 1 g | 1 g / 10 g | 1 g / 10 g | 1 g / 10 g |
| **Repeatability (sd)** | 0.001 g | 0.01 g | 0.01 g | 0.1 g | 0.1 g | 0.1 g |
| **Linearity** | 0.002 g | 0.02 g | 0.02 g | 0.2 g | 0.2 g | 0.3 g |
| **Weight** | 5.7 kg | 5.7 kg | 5.7 kg | 5.7 kg | 9.0 kg | 9.0 kg |

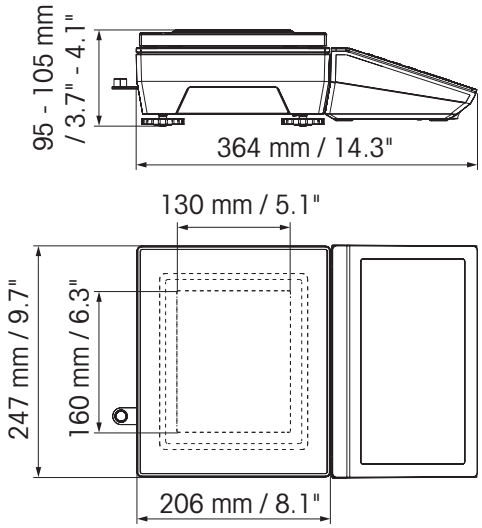
## 8.3 Dimensional drawings

### 8.3.1 Weighing terminal

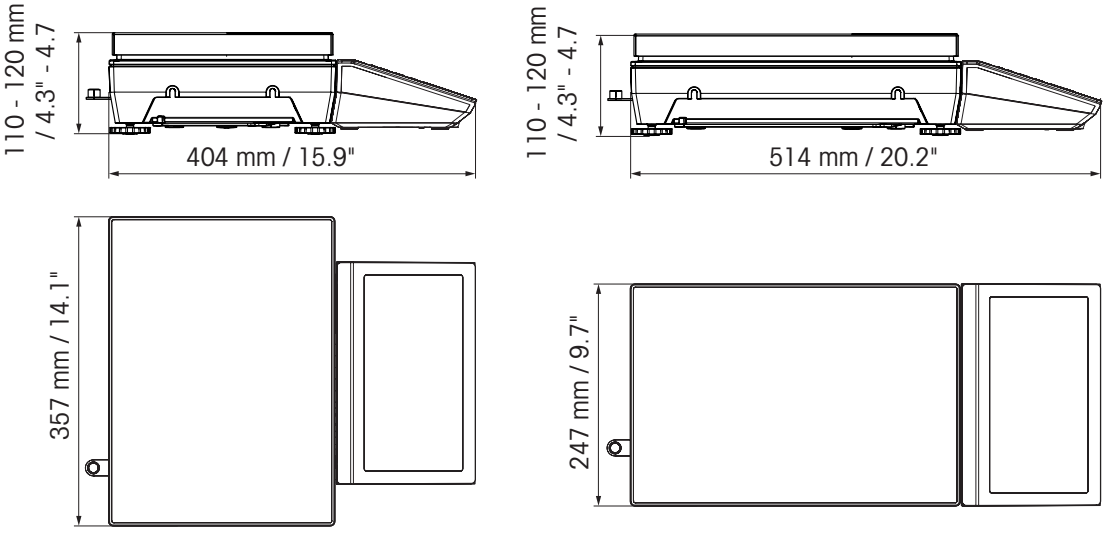



### 8.3.2 Compact scales

Compact scale with **XS** or **SM** weighing platform



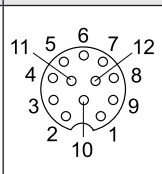
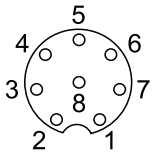
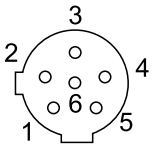
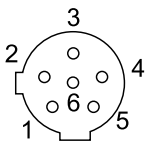
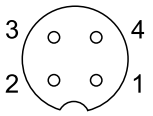
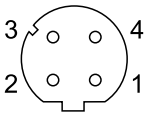
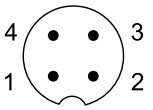

Compact scale with **LA** weighing platform



## 8.4 Accessories

| Accessories | Order no. |
|---|---|
| Printer RS-P25/02<br>Printer USB-P25/02<br>Printer RS-P26/02<br>Printer RS-P28/02 | 11 124 310<br>11 124 311<br>11 124 313<br>11 124 314 |
| Protective cover for the weighing terminal, set of 5 pieces | 30 032 638 |
| Auxiliary display AD-RS-M7 | 12 122 381 |
| Power supply 9-28 V (conversion kit) | 22 023 504 |
| Charging station | 30 035 339 |
| Battery pack | 30 032 647 |
| Windshield for ...XS weighing platforms | 72 262 929 |
| Wall bracket | 30 032 637 |
| Support for wheeled bench stand | 22 023 460 |
| Column for PBA330, PBA655, PBD655<br>(requires wall bracket 30 032 637)<br>Height 330 mm / 13 ft<br>Height 660 mm / 26 ft | <br><br>72 198 699<br>72 198 700 |
| Floor stand, height 1000 mm / 3,3 ft<br>Painted steel<br>Stainless steel | <br>22 023 451<br>22 023 503 |
| Relaybox 4, for Digital I/O | 22 011 967 |
| Power supply for Relaybox 4 | 00 505 544 |
| **Cables** | **Order no.** |
| Cable M12 USB Female Type A, USB host<br>0.2 m / 0.7 ft,<br>3 m / 10 ft | <br>22 017 604<br>22 017 608 |
| Cable M12 USB Male Type A, USB device, 3 m / 10 ft | 22 018 967 |
| Cable M12 RS232 Female Sub D 9 pin (crossed; used for PC) | 22 017 601 |
| Cable M12 RS232 Male Sub D 9 pin (not crossed; used for SICS scale) | 22 017 602 |
| Cable M12 RS422/485, open ends | 22 017 603 |
| Cable M12 Digital I/O, open ends | 22 018 969 |
| Cable M12 Ethernet RJ45<br>5 m / 16 ft,<br>20 m / 66 ft | <br>22 017 610<br>22 017 614 |
| Cable for auxiliary display AD-RS-M7 | 30 041 060 |

**Assignment of the interface connections**

| | Digital I/O | RS232 | RS422 | RS485 | USB Device<br>USB Host | Ethernet | Power |
|---|---|---|---|---|---|---|---|
| **Socket** |  |  |  |  |  |  |  |
| **Pin 1** | In 0 | CTS | TxD+ | T/RxD+ | +5 V | TD+ | +12 V |
| **Pin 2** | In 1 | TxD | TxD– | T/RxD– | D– | RD+ | +12 V |
| **Pin 3** | In 2 | RTS | RxD+ | – | GND | TD– | GND |
| **Pin 4** | In 3 | RxD | +12 V | +12 V | D+ | RD– | GND |
| **Pin 5** | In_GND | +12 V | GND | GND | | | |
| **Pin 6** | Out 0 | +5 V | RxD– | – | | | |
| **Pin 7** | Out 1 | – | | | | | |
| **Pin 8** | Out 2 | GND | | | | | |
| **Pin 9** | Out 3 | | | | | | |
| **Pin 10** | Out_GND | | | | | | |
| **Pin 11** | +12 V | | | | | | |
| **Pin 12** | GND | | | | | | |

# 9 Appendix

## 9.1 Notice for verified instruments in EC countries

Weighing instruments verified at the place of manufacture bear the preceding mark on the packing label and a green "M" sticker on the descriptive plate. They may be set to work immediately.

Weighing instruments which are verified in two steps have no green "M" on the descriptive plate and bear the preceding identification mark on the packing label. The second step of the verification must be carried out by the approved METTLER TOLEDO service or Weights and Measures authorities. Please contact your METTLER TOLEDO organisation. The first step of the verification has been carried out at the manufacturing plant.
If national regulations in individual countries limit the period of validity of the verification, the operator of such a weighing instrument is himself responsible for its timely re-verification.

## 9.2 Tables of Geo Code values

For weighing instruments verified at the manufacturer's, the Geo Code value indicates the country or geographical zone for which the instrument is verified. The Geo Code value set in the instrument (e.g."Geo 18") appears briefly after switching on.
Table "Geo Code values 3000e" shows the Geo Code values for European countries.
Table "Geo Code values 6000e/7500e" shows the Geo Code values for different gravitation zones.

### 9.2.1 Geo Code values 3000e, OIML Class III (European Countries)

| Country | Geographical latitude | Geo Code value |
|---|---|---|
| Austria | 46°22′ – 49°01′ | 18 |
| Belgium | 49°30′ – 51°30′ | 21 |
| Bulgaria | 41°41′ – 44°13′ | 16 |
| Croatia | 42°24′ – 46°32′ | 18 |
| Czechia | 48°34′ – 51°03′ | 20 |
| Denmark | 54°34′ – 57°45′ | 23 |
| Estonia | 57°30′ – 59°40′ | 24 |
| Finland | 59°48′ – 64°00′ | 25* |
| | 64°00′ – 70°05′ | 26 |
| France | 41°20′ – 45°00′ | 17 |
| | 45°00′ – 51°00′ | 19* |
| Germany | 47°00′ – 55°00′ | 20 |
| Greece | 34°48′ – 41°45′ | 15 |
| Hungary | 45°45′ – 48°35′ | 19 |
| Iceland | 63°17′ – 67°09′ | 26 |
| Ireland | 51°05′ – 55°05′ | 22 |
| Italy | 35°47′ – 47°05′ | 17 |
| Latvia | 55°30′ – 58°04′ | 23 |

| Country | Geographical latitude | Geo Code value |
|---|---|---|
| Liechtenstein | 47°03′ – 47°14′ | 18 |
| Lithuania | 53°54′ – 56°24′ | 22 |
| Luxemburg | 49°27′ – 50°11′ | 20 |
| Netherlands | 50°46′ – 53°32′ | 21 |
| Norway | 57°57′ – 64°00′ | 24* |
| | 64°00′ – 71°11′ | 26 |
| Poland | 49°00′ – 54°30′ | 21 |
| Portugal | 36°58′ – 42°10′ | 15 |
| Romania | 43°37′ – 48°15′ | 18 |
| Slovakia | 47°44′ – 49°46′ | 19 |
| Slovenia | 45°26′ – 46°35′ | 18 |
| Spain | 36°00′ – 43°47′ | 15 |
| Sweden | 55°20′ – 62°00′ | 24* |
| | 62°00′ – 69°04′ | 26 |
| Switzerland | 45°49′ – 47°49′ | 18 |
| Turkey | 35°51′ – 42°06′ | 16 |
| United Kingdom | 49°00′ – 55°00′ | 21* |
| | 55°00′ – 62°00′ | 23 |

* factory setting

### 9.2.2 Geo Code values 6000e/75000e OIML Class III (Height ≤ 1000 m)

| Geographical latitude | Geo Code value |
|---|---|
| 00°00′ – 12°44′ | 18 |
| 05°46′ – 17°10′ | 21 |
| 12°44′ – 20°45′ | 16 |
| 17°10′ – 23°54′ | 18 |
| 20°45′ – 26°45′ | 20 |
| 23°54′ – 29°25′ | 23 |
| 26°45′ – 31°56′ | 24 |
| 29°25′ – 34°21′ | 25*, 26 |
| 31°56′ – 36°41′ | 17, 19* |
| 34°21′ – 38°58′ | 20 |
| 36°41′ – 41°12′ | 15 |
| 38°58′ – 43°26′ | 19 |
| 41°12′ – 45°38′ | 26 |

| Geographical latitude | Geo Code value |
|---|---|
| 43°26′ – 47°51′ | 18 |
| 45°38' – 50°06' | 22 |
| 47°51′ – 52°22′ | 20 |
| 50°06′ – 54°41′ | 21 |
| 52°22′ – 57°04′ | 24*, 26 |
| 54°41′ – 59°32′ | 21 |
| 57°04′ – 62°09′ | 15 |
| 59°32′ – 64°55′ | 18 |
| 62°09′ – 67°57′ | 19 |
| 64°55′ – 71°21′ | 18 |
| 67°57′ – 75°24′ | 15 |
| 71°21′ – 80°56′ | 24*, 26 |
| 75°24′ – 90°00′ | 18 |

* factory setting

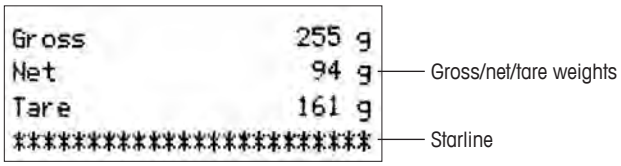
## 9.3 Disposal

In conformance with the European Directive 2002/96 EC on Waste Electrical and Electronic Equipment (WEEE), this device may not be disposed of with domestic waste. This also applies to countries outside the EU, according to 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.

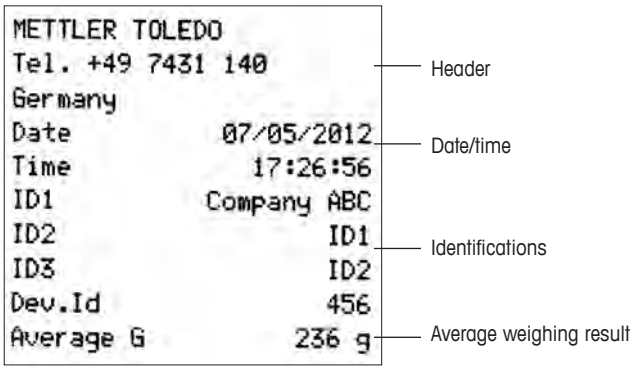
## 9.4 Protocol printouts

### P25 printouts, in English

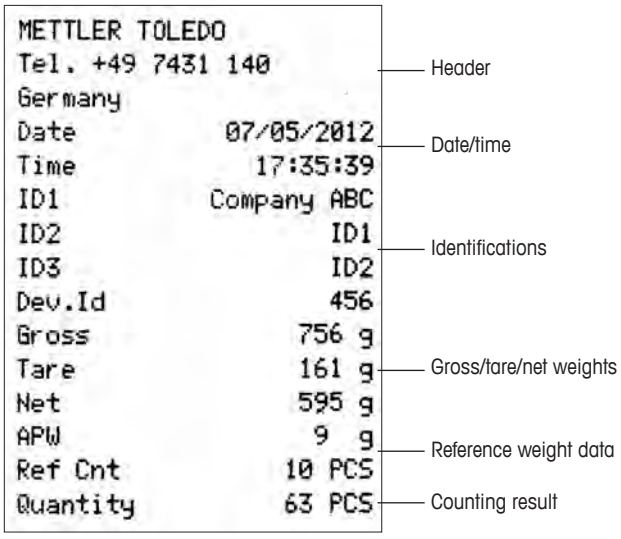
#### Straight weighing – standard template



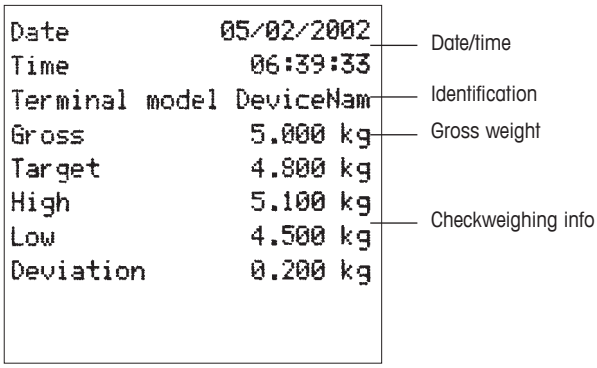

#### Average weighing with header and identification data




#### Piece counting with header and identification




#### Checkweighing



## 9.5 Index

**V**



**W**



**Z**

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