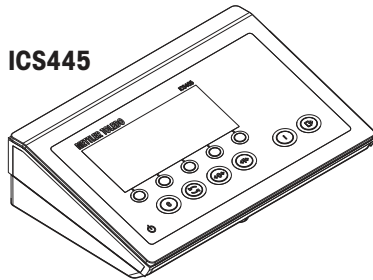


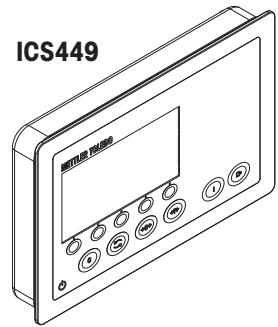
ICS445 / ICS449 / ICS465 / ICS469

Weighing systems

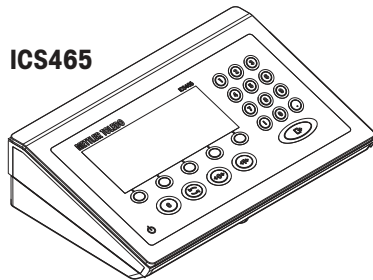
ICS445



ICS449



ICS465



ICS469



METTLER TOLEDO

METTLER TOLEDO Service

Congratulations on choosing the quality and precision of METTLER TOLEDO. Proper use of your new equipment according to this Manual and regular calibration and maintenance by our factory-trained service team ensures dependable and accurate operation, protecting your investment. Contact us about a service agreement tailored to your needs and budget. Further information is available at www.mt.com/service

There are several important ways to ensure you maximize the performance of your investment:

- 1 **Register your product:** 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 product.
- 2 **Contact METTLER TOLEDO for service:** The value of a measurement is proportional to its accuracy – an out of specification scale can diminish quality, reduce profits and increase liability. Timely service from METTLER TOLEDO will ensure accuracy and optimize uptime and equipment life.
 - ⇒ **Installation, Configuration, Integration and Training:** Our service representatives are factory-trained, weighing equipment experts. We make certain that your weighing equipment is ready for production in a cost effective and timely fashion and that personnel are trained for success.
 - ⇒ **Initial Calibration Documentation:** The installation environment and application requirements are unique for every industrial scale so performance must be tested and certified. Our calibration services and certificates document accuracy to ensure production quality and provide a quality system record of performance.
 - ⇒ **Periodic Calibration Maintenance:** A Calibration Service Agreement provides on-going confidence in your weighing process and documentation of compliance with requirements. We offer a variety of service plans that are scheduled to meet your needs and designed to fit your budget.

Table of Contents

| | | |
|----------|---|-----------|
| 1 | Introduction | 7 |
| 1.1 | Safety instructions | 7 |
| 1.2 | Presentation | 8 |
| 1.3 | Commissioning | 16 |
| 2 | Operation | 20 |
| 2.1 | Switching on/off | 20 |
| 2.2 | Straight weighing | 20 |
| 2.3 | Switching units | 20 |
| 2.4 | Zeroing / Zero point correction | 21 |
| 2.5 | Weighing with tare | 21 |
| 2.6 | Displaying information | 23 |
| 2.7 | Printing results | 24 |
| 2.8 | Average (dynamic) weighing | 25 |
| 2.9 | Working with identifications | 26 |
| 2.10 | Working in a higher resolution | 27 |
| 2.11 | Switching scales | 27 |
| 2.12 | Working with a prompt | 27 |
| 2.13 | Calling up alibi log file | 34 |
| 2.14 | Cleaning | 35 |
| 2.15 | Verification test | 36 |
| 3 | Counting | 37 |
| 3.1 | Counting parts into a container | 37 |
| 3.2 | Counting parts out of a container | 37 |
| 3.3 | Determining the parts in a full container | 38 |
| 3.4 | Counting with a known average piece weight | 38 |
| 3.5 | Changing reference quantity | 38 |
| 3.6 | Counting with reference weight check | 39 |
| 3.7 | Reference optimization | 40 |
| 3.8 | Counting with automatic reference determination | 40 |
| 3.9 | Counting with reference and bulk scale | 41 |
| 3.10 | Counting by calling up an article from the database | 42 |
| 4 | Over/Under Checkweighing | 44 |
| 4.1 | Overview | 44 |
| 4.2 | Specifying target values for Over/Under Checkweighing | 45 |
| 4.3 | Specifying target number of pieces for Over/Under Checkcounting | 45 |
| 4.4 | Over/Under Checkweighing or Checkcounting procedure | 46 |
| 4.5 | Over/Under Checkweighing during subtractive weighing | 46 |
| 4.6 | Over/Under Checkweighing with "Quick start" | 47 |
| 4.7 | Over/Under Checkweighing to zero | 47 |
| 4.8 | Over/Under Checkweighing by calling up an article from the database | 48 |
| 4.9 | Leaving Over/Under Checkweighing | 49 |
| 5 | Totalization | 50 |
| 5.1 | Totalizing manually | 50 |
| 5.2 | Automatic totalizing | 51 |
| 5.3 | Deleting items from the sum | 51 |
| 5.4 | Terminating totalizing | 51 |
| 6 | Settings in the menu | 52 |
| 6.1 | Menu overview | 52 |
| 6.2 | Operating the menu | 52 |
| 6.3 | Scale menu block | 55 |
| 6.4 | Application menu block | 64 |

| | | |
|----------|---------------------------------------|------------|
| 6.5 | Terminal menu block | 72 |
| 6.6 | Communication menu block | 76 |
| 6.7 | Maintenance menu block | 86 |
| 7 | Event and error messages | 88 |
| 7.1 | Error conditions | 88 |
| 7.2 | Errors and warnings | 89 |
| 7.3 | Smart weighing counter / spanner icon | 90 |
| 7.4 | Service information | 90 |
| 8 | Technical data and accessories | 91 |
| 8.1 | Devices for dry environment | 91 |
| 8.2 | Devices for wet environment | 98 |
| 8.3 | General technical data | 104 |
| 9 | Appendix | 105 |
| 9.1 | Metrological information | 105 |
| 9.2 | Table of Geo Code values | 105 |
| 9.3 | Disposal | 106 |
| 9.4 | Protocol printouts | 107 |
| | Index | 108 |

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 authorized personnel may open the device.

Devices with protection level IP5x or IP65

Devices with protection level IP54 or IP65 are protected against dust and splashing of water respectively dust-tight and protected from water jets according to EN 60529. They are suitable for use in dusty environments and brief contact with liquids.

- Ensure that the device is dried off 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-energized rapidly in emergencies.
- Ensure that the supply voltage at the installation site lies within the range of 100 V to 240 V.
- Ensure that there is a space of at least 3 cm (1.25") at the rear in order to prevent the power cable from being bent too strongly.
- 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 on the device must be closed.

Compact scales / Terminal and platform combinations

- Avoid falling and shock loads as well as any impact from the side.
- The maximum static safe load must never be exceeded. Observe the operation limits, see technical data of the connected weighing platform.

1.2 Presentation

1.2.1 Type overview

ICS445 / ICS449 / ICS465 / ICS469 weighing terminals vary in the following:

| | ICS445 | ICS449 | ICS465 | ICS469 |
|---|---------------|---------------|---------------|---------------|
| Numeric keypad | — | — | x | x |
| Color display | — | x | x | x |
| Environment | dry | wet | dry | wet |
| Available as compact scale | x | — | x | — |
| Available as terminal and platform combination | x | x | x | x |

Default equipment

Each weighing terminal offers the following interfaces:

- 1 serial RS232 interface
- 1 scale interface

Optional equipment

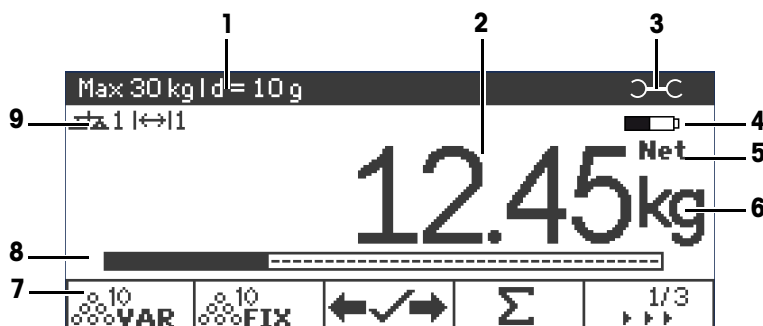
The weighing terminals can be equipped or retrofitted with an additional interface:

- 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
- IDNet

1.2.2 Display

To meet your special requirements, different display layouts are available in the menu under **Terminal** -> **Device** -> **Display** -> **Display layout**.

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 |

Straight weighing display – 3-line mode



Straight weighing display – Big font mode



Straight weighing display – Bargraph

The device offers a bargraph indicating the scale capacity.



The bargraph indicates roughly which part of the scale capacity is already occupied and what capacity is still available.

In the example above, approximately 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

i The metrological data is 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 |
|-----------------------------------|----------------------------|---|
| | 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 and if the scale is approved according to the Weights and Measures guidelines |
| Max , cap | Maximum capacity | cap for NTEP only |
| Min | Minimum capacity | Displayed only if the scale is approved according to the OIML Weights and Measures guidelines |
| e = | Approved resolution | Displayed only if the scale is approved (OIML) |
| d = | Display resolution | Please note for approved scales: OIML : Displayed only if d is different from e NTEP : Always displayed |
| Approved scale | Approved weighing device | Metrology display disabled for SICS scales, e.g., BBK422. 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 | For example for average weighing results |
| — | Sign | For negative weight values |
| ○ | Stability monitor | For unstable weight values |
| 1.234₃ kg | Non-approved last digit with e>d | For approved scales only The example shows the weight value for a scale with e=1g and d=0.1g. 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 |
|---|---------------------------------------|---|
|  | Scale number | Displayed only if 2 scales are connected |
| <-> | Weighing range | For multi range or multi interval scales only |
|  | 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 |
| ↓0 | Over/Under 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 optimization | APW optimization must be set to Auto |
| Σ | Totalization | Totalization active |
| Fact | Fact needs to be performed | Fact = Fully automatic calibration test. When Fact is displayed: Ensure that the weighing platform is empty and wait until the calibration test is done automatically. For ICS4_5k-.../f compact scales only. |

1.2.3 Keyboard





Function keys

| Key | Name | Function in the operating mode | Function in the menu |
|---|----------|---|--|
|  | Power | <ul style="list-style-type: none"> Switching on and off Cancelling editing | <ul style="list-style-type: none"> Cancelling editing Exiting menu |
|  | Clear | <ul style="list-style-type: none"> Clearing tare Leaving info page Leaving application | <ul style="list-style-type: none"> Clearing value Clearing digit |
|  | Switch | <ul style="list-style-type: none"> Switching over weight unit | <ul style="list-style-type: none"> Re-editing |
|  | Zero | <ul style="list-style-type: none"> Setting scale to zero Clearing tare | |
|  | Tare | <ul style="list-style-type: none"> Taring scale Clearing previous tare | |
|  | Info | <ul style="list-style-type: none"> Activating info screen Proceeding to the next info line / info page Freezing and releasing startup screen | |
|  | Transfer | <ul style="list-style-type: none"> Transferring data to a printer or computer | <ul style="list-style-type: none"> Confirming entry/selection |









Soft keys

To meet your specific application requirements, **ICS445 / ICS449 / ICS465 / ICS469** offer 16 soft keys which can be configured in the **Terminal** menu. The soft keys are divided into four lines (pages).

Factory setting ICS44_

| | | | | | |
|---------------|--|--|----------------------------------|---|--|
| Page 1 |  FIX Fix reference here: 10 pieces |  APW | x 10 Higher resolution | ID1 ID1 |  1/2 Scroll to page 2 |
| Page 2 | | | Alibi Alibi memory |  Switch scale |  2/2 Scroll to page 3 |

Factory setting ICS46_

| | | | | | |
|---------------|---|--|--|---|--|
| Page 1 |  VAR Variable reference here: 10 pieces |  FIX Fix reference here: 10 pieces |  Over/Under Checkweighing | Σ Totalizing |  1/2 Scroll to page 2 |
| Page 2 |  Save Over/Under Checkweighing parameters |  Load Over/Under Checkweighing parameters | Alibi Alibi memory |  Switch scale |  2/2 Scroll to page 3 |

Page 3, Page 4

Pages 3 and 4 are free for customer configuration.
When scrolling further after the last page, page 1 is displayed again.

Operating soft keys

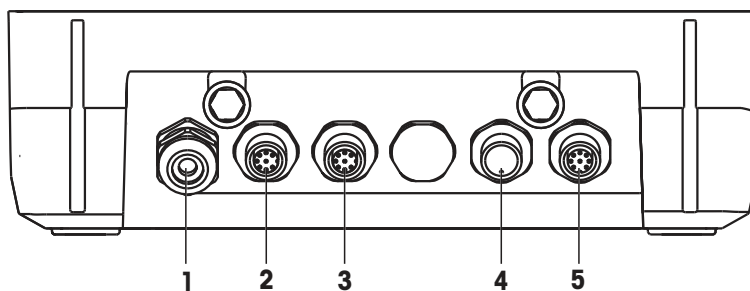
- Press the key below the desired function.

Soft key options

| Symbol | Menu setting | Function |
|--------|--------------------------|--|
| | Zero | |
| | Tare | |
| | High resolution | Show the weight value with 10 times higher resolution |
| | Average weighing | Start average weighing |
| | ID1, ID2, ID3 | Enter identifications |
| | | |
| | | |
| | Prompt | Start a predefined workflow. The user will be guided step by step. |
| | Alibi memory | Call up the optional alibi memory |
| | Switch scale | Switch between the connected scales |
| | Ref n var | Determine the average piece weight, freely adjustable |
| | Ref n fix | Determine the average piece weight, fixed reference sizes |
| | APW | Enter the average piece weight |
| | APW optimization | Reference weight optimization |
| | Weight/count | Switch between weight display and display of pieces |
| | Totalizing | |
| | Over/Under Checkweighing | Enter Over/Under Checkweighing parameters |
| | 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 |
| | Consecutive number | Enter start value for printout with consecutive number |

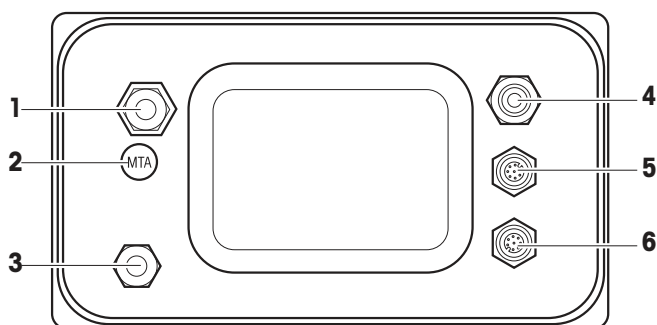
1.2.4 Connections

ICS4_5 weighing terminal for dry environments



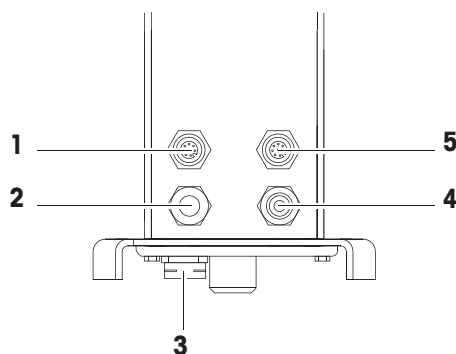
- | | | | |
|---|-------------------------------------|---|-------------------------------------|
| 1 | AC power supply or battery charging | 2 | Standard interface COM1 (RS232) |
| 3 | Optional interface COM2 | 4 | Weighing platform connection SCALE2 |
| 5 | Weighing platform connection SCALE1 | | |

ICS4_9 weighing terminal for wet environments



- | | | | |
|---|---------------------------------|---|-------------------------------------|
| 1 | Weighing platform connection | 2 | Verification securing seal |
| 3 | Pressure compensation | 4 | AC power supply or battery charging |
| 5 | Standard interface COM1 (RS232) | 6 | Optional interface COM2 |

ICS4_9a-.../c



- | | | | |
|---|---------------------------------|---|-------------------------------------|
| 1 | Optional interface COM2 | 2 | Analog weighing platform connection |
| 3 | Pressure compensation | 4 | AC power supply or battery charging |
| 5 | Standard interface COM1 (RS232) | | |

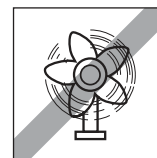
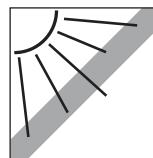
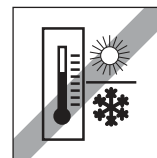
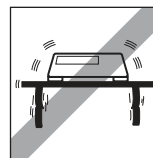
The verification securing seal is applied directly on the weighing terminal.

1.3 Commissioning

1.3.1 Selecting the location

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

- 1 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.
- 2 Observe the following environmental conditions:
 - ⇒ No direct sunlight
 - ⇒ No strong drafts
 - ⇒ No excessive temperature fluctuations

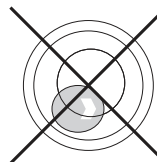
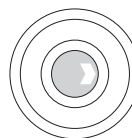


1.3.2 Levelling

Levelling of weighing platforms

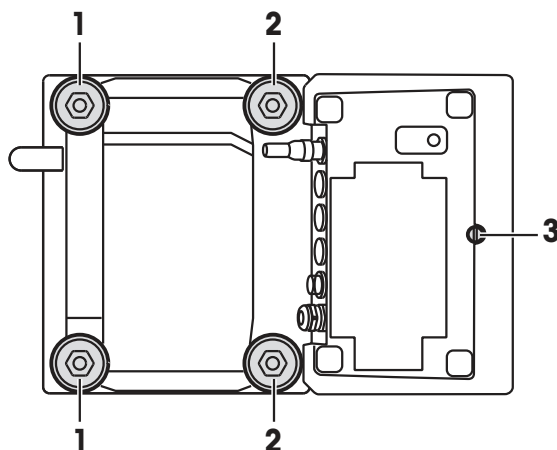
Only weighing platforms that have been levelled precisely horizontally, provide accurate weighing results. Weights and Measures approved weighing platforms have a level bubble to simplify levelling.

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



Levelling of compact scales ICS4_5-.../f

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



- 1 Turn the compact scale upside down.
- 2 Screw in the 2 adjustable feet (2) on the terminal side of the weighing platform.
- 3 Turn over the compact scale to its normal position.
- 4 Level the compact scale by turning the other 2 adjustable feet (1) of the weighing platform until the level bubble is inside the inner circle.
- 5 Screw out the feet (2) of the weighing platform until they have contact with the table.

i The adjustable foot (3) of the weighing terminal is screwed out for 7 mm at the factory and needs not be adjusted for levelling.

1.3.3 Weighing platform connection

Analog weighing platforms

- Call the METTLER TOLEDO service technician to connect an analog weighing platform to the **ICS4_5g / ICS4_9g** weighing terminal.

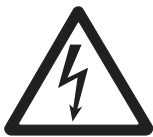
Weighing platforms with digital scale interface

- Connect the weighing platform connector to the **ICS4_5i / ICS4_9i** or **ICS4_5s / ICS4_9s** weighing terminal.



- If you have ordered an approved weighing system consisting of an **ICS4_5s** weighing terminal and an approved PBD555 weighing platform, the approval was done in the factory (not for the US market).
- You can disconnect the weighing platform from the **ICS4_5s / ICS4_9s** or **ICS4_5i / ICS4_9i** 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 ordered an approved weighing system consisting of an **ICS4_5s / ICS4_9s** weighing terminal and an approved PBK/PFK weighing platform, the approval was done in the factory (not for the US market).
- If you have connected a non-approved weighing platform and want to have the system approved, call the **METTLER TOLEDO** service technician.

1.3.4 Power supply connection



⚠ CAUTION

Risk of electric shock!

- a) Before connecting the power supply, check whether the voltage value printed on the label corresponds to your local system voltage.
- b) Do not, under any circumstances, connect the device if the voltage value on the label deviates from the local system voltage.
- c) 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 the storage battery

Battery symbol

The battery symbol shows the current charging status 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.

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

- Before the first operation charge the storage battery for at least 3 hours.
- The operating life depends on the intensity of use, the configuration, and the connected scale. For details concerning **ICS4_5**, see "Operating life with battery [► 94]", or concerning **ICS4_9**, see "Operating life with battery [► 100]".
- The charging time of the storage battery amounts to 4 to 5 hours. The storage battery is protected against overcharging.
- The storage battery has a service life of 500 to 1,000 charging/discharging cycles.



⚠ CAUTION

Charging the storage battery below 0° C (32 °F) or above 40 °C (104 °F) is prevented by the charging electronics!

- a) Make sure that the temperature is within the range of 0 °C to 40 °C (32 °F to 104 °F) to charge the storage battery.



⚠ CAUTION

Danger of soiling because the charger for the storage battery is not protected according to IP69K!

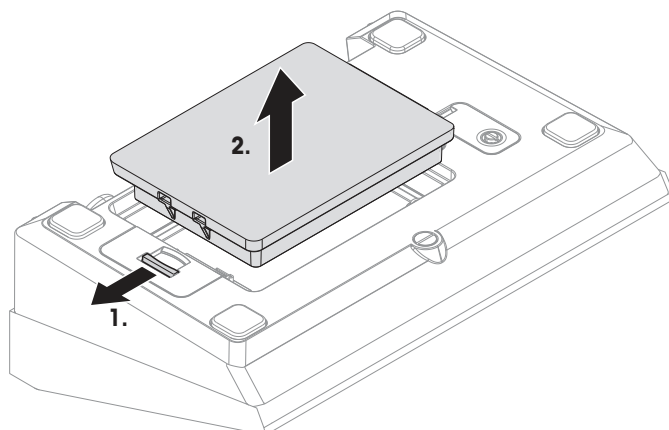
- a) Do not charge the device in humid or dusty rooms.
- b) After the storage battery has been charged, close the cover cap of the charging socket on the device.

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 appears, 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 range of 10 °C to 30 °C (50 °F to 86 °F). This also applies to discharging the battery.

Changing battery (ICS4_5 only)



- 1 Unlock the battery by moving the slider away from the battery and remove the discharged battery.
- 2 Insert the fully charged battery and secure it by moving the slider towards the battery.

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

1.3.6 Use in hygienically sensitive areas

ICS4_9 weighing terminals are easy to clean and are designed to be used in the food industry.

ICS4_9 features

- Protection degree IP68/69k
- Terminal housing and load plate made of stainless steel
- No open threads
- No screws with recesses
- Keypad made of PET with a smooth surface
- Reduced horizontal surfaces
- Continuous welding seams

i The standard load cell is made of aluminium. As an option, stainless steel potted and hermetically sealed load cells are available.

2 Operation

2.1 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 Code value.



- 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 weighing system, approval has been done in the factory already (not for the US market).
- With **ICS4_5k-.../f** compact scales ensure that the device is at room temperature before switching on. **To ensure accurate weighing results, wait 15 minutes after switching on before starting weighing operation.**

Switching off

- Press .


⇒ Before the display goes out, **-OFF-** appears briefly.

Resetting

- Press and hold  for approx. 5 seconds.

⇒ The device is switched off.

2.2 Straight weighing

- 1 Place weighing sample on the scale.
- 2 Wait until the stability monitor  disappears.
- 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.
- When in the menu **Scale -> Disp. unit & res. -> Unit roll** is set to **On**, the weight value can be displayed in all available weight units by repeatedly pressing .

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-approved scales, the automatic zero point correction can be deactivated in the menu or the zero range can be changed. Approved scales are set fixed at 0.5 d per second.

-  • The zero function is only available within a limited weighing range.
- After zeroing the scale, the whole weighing range is still available.



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  is displayed, i.e., the tare function `Auto clear tare` is activated in the `Scale` menu, the tare weight is automatically cleared as soon as the scale is unloaded.

2.5.3 Automatic clearing the tare

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

Prerequisite

The symbol  is displayed, i.e., the tare function `Auto clear tare` is activated in the `Scale` menu.


-  The tare weight must be heavier than 9 scale divisions.

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  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 scale divisions.

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.

- 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 Load the 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 Load the sample in the second container and read/print the result.
- 5 Repeat steps 3 and 4 for other containers.


2.5.6 Tare preset

For established container weights enter the tare weight numerically or via barcode / SICS command. Thus, you do not have to tare the empty container.

 The entered tare weight is valid until a new tare weight is entered or the tare weight is cleared.

Tare preset with numeric entry

- 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.

 Tare preset with numeric entry is only available for **ICS465** and **ICS469**.

Tare preset with barcode entry

- For barcode use, `Tare preset` is selected as destination for external input in the menu under `Communication -> COMx -> External input -> Destination`.
- 1 Enter the known tare weight via barcode.
 - ⇒ 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.

Tare preset with SICS command from a connected computer

- 1 Enter the known tare weight on the computer using the SICS command `TA_Value_Unit`.
 - ⇒ 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.

2.6 Displaying information

Up to 5 different items can be configured in the menu for the **i** key. Depending on the configuration in the menu under `Terminal -> Device -> Keyboard -> Info key`, the following data can be assigned in any order, e.g.,

- Date & Time
- Weight values
- Identifications
- Article information
- Application parameters
- Device information
- Serial numbers and software versions
- Network information

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**.

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


2.7 Printing results

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

- Press .

⇒ The defined data is printed out or transferred to the computer.



- The printout content can be defined in the menu under `Communication -> COMx -> Define Templates`. The template has to be assigned to the printout in the `Application` menu.
- If in the `Application` menu `Memory mode` is set to `Alibi` or `Transaction`, the weighing result is stored in the memory when pressing .

Printing without pressing a key (clever print)


- In the menu `Application -> Clever print -> Activate` is set to `On`.
 - To initiate the next printout, the weight must drop below the set threshold.
- 1 Put the weighing sample on the load plate.

⇒ When a stable weight value is reached, the result is printed automatically.
 - 2 Remove the weighing sample from the load plate and load the next weighing sample.



⇒ When the weight value has dropped below the set threshold, the next stable weight value is printed automatically.

Printout with consecutive number

The device offers the possibility to number the weighings on the printout.

- In the selected template `Consecutive number` is assigned to a line.
- To define a start value, a soft key must be defined as `Consecutive number` () in the menu under `Terminal -> Device -> Keyboard -> Soft keys`.

| | |
|----------|------------|
| Date | 11/04/2014 |
| Time | 17:17:39 |
| Gross | 0.815 kg |
| Cons. no | 10 |


- 1 To enter a start value for the consecutive number, press the soft key .
- 2 Enter the desired start number and confirm with .

⇒ The weighing results are printed out with a consecutive number, beginning at the entered start number.




- If no start value is entered, the consecutive number will start with 1.
- The consecutive number can be displayed in the auxiliary line as well (`Terminal -> Device -> Display -> Auxiliary line -> Consecutive number`)

2.8 Average (dynamic) weighing

With the average weighing function, it is possible to weigh moving weighing samples such as 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.

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 begin a new average weighing operation.

Start via hard key

- Application -> Average Weighing -> 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 begin 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 start a new average weighing operation.


2.9 Working with identifications

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

Direct entry (ICS445 and ICS449 only)

- At least one of the soft keys ID1, ID2 or ID3 is activated in the menu under Terminal -> Device -> Keyboard -> Soft keys.
 - To display the identification in the auxiliary line, ID1, ID2 or ID3 must be activated in the menu under Terminal -> Device -> Display -> Auxiliary line.
- 1 Press the desired soft key **ID1**, **ID2**, **ID3**.
⇒ The ID entered last is displayed.
 - 2 To edit the ID, press the soft key .
 - 3 Enter the ID using the , , ,  soft keys.
 - 4 Confirm entry with .
- ⇒ The entered ID is assigned to the following weighings until the ID is changed.

Direct entry (ICS465 and ICS469 only)

- At least one of the soft keys ID1, ID2 or ID3 is activated in the menu under Terminal -> Device -> Keyboard -> Soft keys.
 - To display the identification in the auxiliary line, ID1, ID2 or ID3 must be activated in the menu under Terminal -> Device -> Display -> Auxiliary line.
- 1 Press the desired soft key **ID1**, **ID2**, **ID3**.
⇒ The ID entered last is displayed.
 - 2 Enter the ID via the numeric keyboard 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 menu under Communication - COMx -> External input -> Destination.
 - To display the identification in the auxiliary line, ID1, ID2 or ID3 has to be activated in the menu under Terminal -> Display -> Auxiliary line.
- Scan the ID.
⇒ The ID is assigned to the following weighings until a new ID is scanned.

Using SICS command set (up to three identifications)

- To display the identification in the auxiliary line, ID1, ID2 or ID3 has to be activated in the menu under Terminal -> Display -> Auxiliary line.
- Send the ID command (I12, I13 or I14) from a PC.
⇒ The ID is assigned to the following weighings until a new ID is sent.

2.10 Working in a higher resolution

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

- Soft key `x10 Display` is activated in the `Terminal` menu.
- Press soft key `[x 10]`.
 - ⇒ The weight value is displayed in a resolution at least 10x higher and is marked with the symbol *****.
 - ⇒ The higher resolution is displayed until the soft key `[x 10]` is displayed again.

i With approved weighing platforms, the weight value appears in a higher resolution for 3 seconds after the soft key `[x 10]` is pressed.

2.11 Switching scales

- 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.

2.12 Working with a prompt

2.12.1 Prompt overview

The device offers prompts for frequently 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` – counting with first taring and then determining the average piece weight
- `Sample/Tare` – counting with first determining the average piece weight and then taring
- `Hands free` – counting without pressing any key
- `Multi tare` – taring several containers with the same tare weight
- `Additive tare` – adding different tare values
- `Take away` – checkweighing out of a container

i

- During prompting, no other soft keys are available.
- To start a prompt, the soft key `[Prompt]` must be activated in the `Terminal` menu.


2.12.2 Tare/Sample



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

| | |
|--------------------------|-----|
| Put tare on and press -> | ←T→ |
|--------------------------|-----|

| | |
|-------------------------|---|
| Put ref.on and press -> | ↕ |
|-------------------------|---|

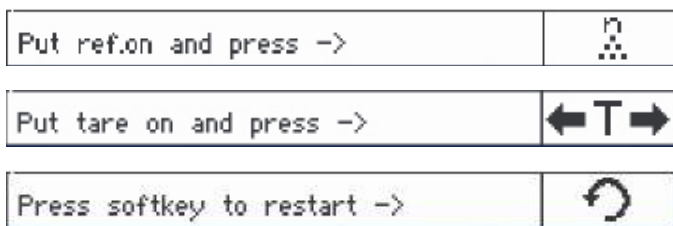
| | |
|-----------------------------|---|
| Press softkey to restart -> | ↺ |
|-----------------------------|---|

- 1 Check the current reference size which is indicated on the soft key  (Ref N var).
- 2 If necessary, change the reference size, see Counting section.
- 3 Press the prompt soft key.
 - ⇒ In the soft key line the instructions for the first step are displayed.
- 4 Load the tare weight and confirm with the indicated soft key.
 - ⇒ In the soft key line the instructions for the next step are displayed.
- 5 Load the reference parts and confirm with the indicated soft key.
 - ⇒ The display unit changes to PCS and the soft key line changes.
- 6 Load the weighing samples and read the number of pieces.
- 7 To restart counting with a new reference, press the indicated soft key.
 - ⇒ **Cleared** is displayed briefly before the first prompt is displayed again.
- 8 Repeat steps 4 to 7 for other references.
- 9 To leave piece counting, press **C**.
 - ⇒ **Cleared** is displayed briefly.

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

2.12.3 Sample/Tare

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




- 1 Check the current reference size which is indicated on the soft key (Ref n var).
- 2 If necessary, change the reference size, see Counting section.
- 3 Press the prompt soft key.
 - ⇒ In the soft key line the instructions for the first step are displayed.
- 4 Load the reference parts and confirm with the indicated soft key.
 - ⇒ The display unit changes to PCS and the soft key line changes.
- 5 Load the tare weight and confirm with the indicated soft key.
 - ⇒ In the soft key line the instructions for the next step are displayed.
- 6 Load the weighing samples and read the number of pieces.
- 7 To restart counting with a new reference, press the indicated soft key.
 - ⇒ **Cleared** is displayed briefly before the first prompt is displayed again.
- 8 Repeat steps 4 to 7 for other references.
- 9 To leave piece counting, press **C**.
 - ⇒ **Cleared** is displayed briefly.

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

2.12.4 Hands free

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

| | |
|--|---|
| Put weight on and wait for auto tare | |
| Load wt. and wait for autom. APW determination | |
| Press softkey to restart -> |  |

- 1 Press the prompt soft key.
 - ⇒ In the soft key line the instructions for the first step are displayed.
- 2 Load the tare weight.
 - ⇒ When the weight is stable, an automatic taring is carried out.
 - ⇒ In the soft key line the instructions for the next step are displayed.
- 3 Load the indicated number of reference parts.
 - ⇒ The average piece weight is determined automatically.
 - ⇒ The weight unit changes to PCS and the soft key line changes.
- 4 Load the weighing samples and read the number of pieces.

Restarting piece counting



- To restart counting with a new reference, press the indicated soft key.
 - ⇒ **Cleared** is displayed briefly before the first prompt is displayed again.

Leaving piece counting

- To leave piece counting, press **C**.
 - ⇒ **Cleared** is displayed briefly.

2.12.5 Multi tare

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

- 1 Press the prompt soft key.
⇒ The number of containers (n) is highlighted.
- 2 Enter the number of containers and confirm entry with the soft key 
⇒ 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 
⇒ When all entries are made, the weight is shown in the display.
E.g., with a bundle of 6 containers of 0.4 kg each, a PT (preset tare) value of 2.4 kg is displayed for the whole bundle.
- 4 Weigh the bundle.
⇒ The net weight of the bundle is displayed without extra taring.
- 5 To leave prompting, press **C**.
⇒ **Cleared** is displayed briefly.

| | | | | |
|---------------------------------|------|----|--|------|
| Enter number of containers: | | | | |
| n: | 0 | | | |
| Enter value for each container: | | | | |
| PT: | 0.00 | kg | | |
| Esc | | | | OK ✓ |

2.12.6 Additive tare

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

- 1 Press the soft key **Prompt**.
⇒ A table for tare weights is displayed
- 2 Press the soft key **+**.
⇒ A window opens to enter the tare weight of the first container.
- 3 Enter the known tare weight and confirm with the soft key **OK**.
⇒ The first tare weight is entered in the table.
- 4 When all tare weights are entered, press **→** to finish the entry.
⇒ The total of all tare weights is displayed as the pre-tare value indicated with PT.
- 5 Weigh the pallets.
⇒ The net weight of the pallet is displayed without extra taring.
- 6 To leave prompting, press **C**.
⇒ **Cleared** is displayed briefly.

| S. No | Tare value | Unit |
|-------|------------|------|
| | | |
| | | |
| | | |
| | | |
| | | |
| ESC | + | OK ✓ |

| S. No | Tare value | Unit |
|-------|------------|------|
| 1 | 1.20 | kg |
| | | |
| | | |
| | | |
| | | |
| ↑ | ↓ | + |
| ✎ | 🗑 | |

Soft key functions

| Soft key | Meaning |
|----------|-------------------------|
| ↓ | Selecting a tare weight |
| ↑ | |
| + | Adding a tare weight |
| ✎ | Modifying a tare weight |
| 🗑 | Deleting a tare weight |

2.12.7 Take away

This prompt will guide you through weighing the same items into a container or weighing out of a container without pressing a key between the actions.

- 1 Press the prompt soft key.
⇒ The screen to enter target values is displayed.
- 2 Enter target values as described in the Checkweighing section.
For weighing in, enter a positive target value. For weighing, out enter a negative target value.
⇒ **New target set!** is displayed briefly.
- 3 For weighing in, place the empty container on the scale.
For weighing out, place the full container on the scale.
- 4 Press →**T**← to tare the container.
- 5 For weighing in, place the checkweighing material into the container.
For weighing out, remove the checkweighing material from the container.
⇒ If the applied/removed weight or the applied/removed amount is within the tolerance values, taring is carried out automatically.
The next item can be weighed in/removed.
- 6 To leave prompting, press **C**.
⇒ **Cleared** is displayed briefly.




- When using an item which is too light or too heavy, taring must be carried out automatically.
- Select the `Auto print` feature to generate an automatic printout when the weight is within or outside of tolerances.

2.13 Calling up alibi log file








If requested by national regulations, the optional Alibi memory is available to trace all weighing activities on the scale. Each printout is automatically stored in the Alibi memory with the mandatory data. Up to 300,000 data records can be stored in the optional Alibi memory.

In addition, you can store one more item, e.g., device name, device location or article number. Select the additional item in the menu under **Application -> Memory -> Custom field**.

- Press the soft key **Alibi**.
 - ⇒ The alibi record of the last weighing is displayed.
 - ⇒ In the example, the **Custom field** is set to **APW** (Average Piece Weight).

| Memory | | | |
|------------|---|---|---------|
| | | | 12/12 |
| SNo. Scale | | Net | 0.21 kg |
| Date | 13/03/13 | Tare | 0.00 kg |
| Time | 14:25:35 | | |
| APW | 0.005494 kg | | |
| ESC |  |  | 1/2 |

Soft key functions

| Page | Soft key | Meaning |
|------|---|--|
| 1 | ESC | Leaving the Alibi memory |
| |  | Searching the Alibi memory |
| |  | To the next Alibi memory record |
| |  | To the previous Alibi memory record |
| 2 |  | Scroll the Alibi memory records forward in steps of 5 |
| |  | Scroll the Alibi memory records backward in steps of 5 |
| |  | To the first Alibi memor record |
| |  | To the last Alibi memory record |

i Searching is possible by all data fields, except the Custom field.

2.14 Cleaning



⚠ WARNING

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.

Cleaning of the ICS4_5 (dry environments)

- Clean the optional 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 prevent scratching the surface.
- Do not disassemble the weighing device.
- Remove any remaining detergent with a wet cloth.
- Observe all existing regulations on cleaning intervals and permissible cleaning agents.
- In case of a windshield, we recommend to clean it with a glass cleaner each day of usage in order to prolong the durability.

Cleaning of the ICS4_9 (wet environments)

These devices are designed to be used in a wet environment. Depending on the environment and the cleaning procedures, we suggest appropriate weighing platforms with different types of load cells. The following table provides a detailed overview of recommended environments and suitable cleaning procedures.

| | Terminal | Weighing platform | | |
|--|-------------|-------------------------------------|---|--|
| | ICS4_9 | Standard aluminium potted load cell | Option potted stainless steel load cell | Option hermetically sealed stainless steel load cell |
| IP rating | IP68/ IP69k | IP65 | IP65/IP67 | IP68/IP69k |
| Environment | | | | |
| Short time wet (30 min / day) | x | x | x | x |
| Part time wet (120 min/day) | x | — | x | x |
| Permanently wet | x | — | — | x |
| Cleaning procedure | | | | |
| Wet wipe down | x | x | x | x |
| Light hose down < 5 l/min, 20 kPa | x | x | x | x |
| Light wash down < 12.5 l/min, 30 kPa | x | — | x | x |
| Heavy wash down, high pressure water and steam jet up to 10000 kPa | x | — | — | x |
| Cleaning detergents | | | | |
| Mild detergents | x | x | x | x |
| Other detergents in accordance with the manufacturer's specifications and instructions | x | — | — | x |

- Clean the optional protective cover separately. The protective cover is dishwasher-safe.
- Replace the protective cover regularly.
- Take off the load plate and remove any dirt and foreign substances which may have collected underneath. Do not use any hard objects to prevent scratching the surface.
- Do not disassemble the weighing device.
- Remove any remaining detergent by rinsing with clear water.
- To prolong the lifetime of the load cell, dry it with a soft lint-free cloth immediately after cleaning.
- Observe all existing regulations on cleaning intervals and permissible cleaning agents.

Cleaning of other weighing platforms not 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.



- 1 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 value for your location is shown in the Appendix.
- 2 Call the **METTLER TOLEDO** service technician if the Geo Code values do not match.

3 Counting





3.1 Counting parts into a container

- The soft keys Ref N var () and/or Ref N fix () are activated in the menu under Terminal -> Device -> Keyboard -> Soft keys (if not shown by default).
- 1 Place the empty container on the scale and press **→T←**.
⇒ The container is tared, the zero display and the symbol **NET** appear.
- 2 Place the number of reference parts on the scale as indicated on the soft key  or  and press the corresponding 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 operation.







- The average piece weight remains saved until **C** is pressed or a new average piece weight is determined.
- With  or soft key  (Weight count) you can switch between the number of pieces and the weighing units preset.
- The average piece weight (APW), for example, the weight of an individual reference unit, can be displayed on the info page or in the auxiliary line.
- If Auto clear APW is set to On in the menu under Application -> Counting, the average piece weight is automatically cleared after each counting operation.
- The achieved counting accuracy can be displayed in the auxiliary line under Terminal -> Device -> Display -> Auxiliary line.

3.2 Counting parts out of a container



- The soft keys Ref N var () and/or Ref N fix () are activated in the menu under Terminal -> Device -> Keyboard -> Soft keys (if not shown by default).
- 1 Place the full container on the scale and press **→T←**.
⇒ The container is tared, the zero display and the symbol **NET** appear.
- 2 Remove the number of reference parts out of the container as indicated on the soft key  or  and press the corresponding 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 out of 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 operation.

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.

- The soft keys Ref N var () and/or Ref N fix () are activated in the menu under Terminal -> Device -> Keyboard -> Soft keys (if not shown by default).
- 1 Place the number of reference parts on the scale as indicated on the soft key  or  and press the corresponding soft key.
 - ⇒ The scale determines the average piece weight and then shows the number of reference pieces.
- 2 Enter or scan with a barcode reader the known tare weight and press → **T** ← to confirm.
 - ⇒ The weight display shows the negative tare weight and the symbol **NET** appears.
- 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




- The soft key APW (Average Piece Weight, ) is activated in the menu under Terminal -> Device -> Keyboard -> Soft keys (if not shown by default).
- 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 in Counting parts into a container [► 37].

i **ICS445 and ICS449:** To enter the average piece weight use soft key  to open entry and soft keys , , ,  to enter the average piece weight.

3.5 Changing reference quantity




3.5.1 Free reference quantity

- The soft key Ref N var () is activated in the menu under Terminal -> Device -> Keyboard -> Soft keys.
- In the Application -> Counting 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. In the soft key  the new number of reference parts is indicated.

The rest of the counting procedure is as described in Counting parts into a container [► 37].

3.5.2 Selecting reference quantity out of a set




With soft key  the following set of reference quantities is available: 5, 10, 20, 50, 100.

- The soft key Ref N fix () is activated in the menu under Terminal -> Device -> Keyboard -> Soft keys.
- 1 Place the desired number of reference parts (5, 10, 20, 50, 100) on the scale.
 - 2 Press and hold the soft key  until the soft key line changes.
 - 3 Press the soft key for the desired number of reference parts.
 - ⇒ The scale determines the average piece weight and then shows the number of pieces.
 - ⇒ In the soft key  the new number of reference parts is indicated.

The rest of the counting procedure is as described in Counting parts into a container [► 37].

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.

- At least one of the soft keys Ref N var () , Ref N fix () or APW () is activated in the menu under Terminal -> Device -> Keyboard -> Soft keys.
 - Ref. weight check is set to On under Application -> Counting.
- 1 Determine the average piece weight as described in "Counting parts into a container [► 37]"
 - ⇒ 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 in "Counting parts into a container [► 37]".

i The tolerance for the reference weight check can be modified in the menu under Application -> Counting -> Ref. weight -> Ref. weight check.

3.7 Reference optimization

3.7.1 Automatic reference optimization






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

- The soft keys Ref N var () and/or Ref N fix () are activated in the menu under Terminal -> Device -> Keyboard -> Soft keys.
 - In the Application -> Counting menu, APW optimization 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  or .
 - 2 Place additional reference parts on the scale. The maximum for the additional reference parts cannot be larger than the original sample.
 - ⇒ The scale automatically optimizes the average piece weight with the larger number of reference parts.

The rest of the counting procedure is as described in Counting parts into a container [► 37].

3.7.2 Manual reference optimization

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




- The soft keys Ref N var () and/or Ref N fix () are activated in the menu under Terminal -> Device -> Keyboard -> Soft keys.
 - In the Application -> Counting menu, APW optimization is set to Soft key.
 - In the Terminal -> Device -> Keyboard -> Soft keys menu, the soft key APW optimization is activated.
- 1 Place the indicated number of reference parts on the scale and press the soft key  or .
 - 2 Place additional reference parts on the scale and press soft key .
 - ⇒ The scale automatically optimizes the average piece weight with the larger number of reference parts.

The rest of the counting procedure is as described in Counting parts into a container [► 37].

3.8 Counting with automatic reference determination

- In the Application -> Counting 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 in Counting parts into a container [► 37].

 Pressing the soft key  (Ref n VAR) or  (Ref n FIX), the last average piece weight is cleared and the current weight is set as the new reference weight.

3.9 Counting with reference and bulk scale






3.9.1 Weighing systems with two scales

ICS4_5 / ICS4_9 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 for counting large quantities.
- Counting with **auxiliary scales**:
e.g., a high precision scale for counting small parts and a floor scale for counting bigger parts.

3.9.2 Counting with reference and bulk scale

- At least one of the soft keys Ref N var () , Ref N fix () or APW () is activated under Terminal -> Device -> Keyboard -> Soft keys.
 - In the Application -> Counting -> Counting system 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 Place the indicated number of reference parts on the **reference scale** and press the soft key  or .
⇒ After determining the average piece weight the scale is automatically switched to the bulk scale.
 - 2 Place the empty container on the bulk scale and press → **T** ←.
⇒ The container is tared and the zero display appears.
 - 3 Add the parts to the container until the required number of pieces is reached.

i Depending on the setting for Total count under Application -> Counting -> Counting system, the bulk scale will show either the number of pieces on the bulk scale only or the sum of pieces on both reference and bulk scale.

3.9.3 Counting with auxiliary scales





- At least one of the soft keys Ref N var () , Ref N fix () or APW () is activated in the menu under Terminal -> Device -> Keyboard -> Soft keys.
 - In the Application -> Counting -> Counting system menu, at least one scale of the system is configured as Auxiliary scale.
 - In the Terminal -> Device -> Keyboard -> Soft keys 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 in Counting parts into a container [► 37].



i 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

i The software tool METTLER TOLEDO databICS offers the possibility to define articles on a PC and to transfer this information to the database of the weighing terminal, see www.mt.com/ind-databics.

- At least one of the soft keys Ref N var () , Ref N fix () or APW () is activated in the menu under Terminal -> Device -> Keyboard -> Soft keys.
- The soft key Save article () is activated in the menu under Terminal -> Device -> Keyboard -> Soft keys.

1 Place the indicated number of reference parts on the **reference scale** and press the soft key  or .

2 Press the soft key .


⇒ A new screen is displayed to enter an article.

3 Enter the article and confirm with the soft key .

⇒ **Record stored** is displayed briefly. The article is stored.

- i**
- If the Description field is activated in the Application -> Database menu, you are able 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 using a soft key





- The soft key Load article () is activated in the menu under Terminal -> Device -> Keyboard -> Soft keys.

1 Press the soft key .

⇒ The database opens. The article data of the first database record are displayed.

⇒ For a counting article, the fields on the left side are significant.

| Database | | | |
|-----------|---------|------------|----------|
| Article : | # | Tol type : | Absolute |
| Desc. : | | T- : | 5.00 kg |
| Tare : | 0.00 kg | T : | 5.50 kg |
| APW : | 0.00 kg | T+ : | 6.00 kg |
| ESC | ↑ | ↓ | OK ✓ |

2 Use the soft keys  /  to navigate through the database records. On the second soft key page, the soft keys  and  are available to scroll in steps of 5.

3 Confirm the selected data record with the soft key

.

⇒ **Record loaded** is displayed briefly.


With a counting article, the weight unit changes to PCS.

3.10.3 Recalling an article from the database with a barcode reader

- If a barcode reader is connected to the weighing terminal via RS232 (COMx) or via USB Host (COM2), refer to the barcode reader documentation.
- The relevant COM port is configured as external input (Communication -> COMx -> Mode -> External input).
- The destination of the external input is configured as article (Communication -> COMx -> External input -> Destination).
- Scan the barcode with the barcode reader.
 - ⇒ The article data are loaded.

3.10.4 Recalling an article from the database by entering the article number

 This function is only available with **ICS465** and **ICS469**.

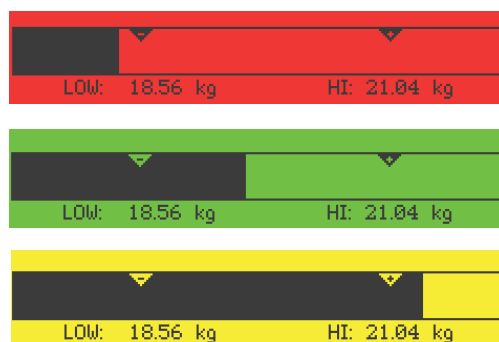
- If you know the article number, just enter the article number and press the soft key .

4 Over/Under Checkweighing

4.1 Overview

The devices offer Over/Under Checkweighing functions. The respective settings in the menu are described in the Application -> Over/Under menu section.

The correspondingly colored background lighting allows rapid detection of the status "too light" (factory setting: red), "good" (factory setting: green) and "too heavy" (factory setting: yellow). The colors can be modified in the menu.













- The colored background lighting is only available for **ICS449**, **ICS465**, **ICS469**.
- In the following, Over/Under Checkweighing is described with the color display.

Tolerance types







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

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

4.2 Specifying target values for Over/Under Checkweighing

- The soft key **Over/Under** () is activated in the menu under **Terminal** -> **Device** -> **Keyboard** -> **Soft keys** (if not shown by default).
- 1 Press the soft key .
 - ⇒ The current Over/Under 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 .
 - 5 Load the requested weight or enter the weight value and confirm with the soft key .
 - ⇒ The next weight is highlighted.
 - 6 Repeat step 5 until **New target set** is displayed.
 - ⇒ The Over/Under Checkweighing display appears, the scale is ready for Over/Under Checkweighing.
- i**
- 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 \geq Low) or, respectively, the target weight has to be greater than or equal to the lower tolerance value and smaller than or equal to the upper tolerance (Tol+ \geq Target \geq Tol-).
 - **ICS445** and **ICS449**: To enter target values use soft key  to open entry and soft keys , , ,  to enter the target values.

4.3 Specifying target number of pieces for Over/Under Checkcounting

- The soft key **Over/Under** () is activated in the menu under **Terminal** -> **Device** -> **Keyboard** -> **Soft keys** (if not shown by default).
 - At least one of the counting soft keys **Ref N VAR** () , **Ref N FIX** () or **APW** () is activated in the **Terminal** menu.
- 1 To determine the average piece weight, apply the indicated number of reference parts as indicated on the soft key  or  and press the corresponding soft key.
 - ⇒ The number of reference parts is displayed.
 - 2 To determine the target number of pieces, proceed as described in the previous section.
 - ⇒ The display unit is PCS.
- i**
- 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.
 - Once the target values are specified, the Over/Under Checkcounting procedures are the same as the Over/Under Checkweighing procedures.

4.4 Over/Under Checkweighing or Checkcounting procedure

The devices facilitate Over/Under Checkweighing and Checkcounting through differently colored background lighting for the status "too light" (factory setting: red), "good" (factory setting: green) and "too heavy" (factory setting: yellow).

- 1 Specify the target values as described in the previous sections.
- 2 Place the Over/Under Checkweighing or Checkcounting material on the scale.
 - ⇒ Depending on the applied weight, the color of the background lighting changes. Weight information is displayed in accordance with the display setting and the Over/Under Checkweighing settings.

Tolerance type "Absolute"



Tolerance type "Relative"



Tolerance type "Percent"



4.5 Over/Under Checkweighing during subtractive weighing


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

- 1 Specify target values as described in Specifying target values for Over/Under Checkweighing [► 45] Specifying target values for Over/Under Checkweighing or Filling.
 - ⇒ 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 status "good" (factory setting = green).
- 4 Tare the unit again.
 - ⇒ The scale is ready for the next removal.





4.6 Over/Under Checkweighing with "Quick start"

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

- 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.
- 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 status "good" (factory setting = green). Over/Under Checkweighing is activated.

4.7 Over/Under Checkweighing to zero

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



- For Over/Under 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 is displayed in the symbols and info line.
- 1 Specify the target values as described in the previous sections.
 - 2 Press the soft key .
 - ⇒ The target is displayed with a minus sign.
 - 3 Place the Over/Under Checkweighing material on the scale.
 - ⇒ Depending on the applied weight or the applied amount the color 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 %.

* -2.00 kg

* 0.01 kg

* 0.99 kg


Terminating Over/Under Checkweighing to zero



- Press soft key  again.
 - ⇒ The symbol  in the info line disappears, the net weight is displayed.

4.8 Over/Under Checkweighing by calling up an article from the database

4.8.1 Storing an article in the database


i The software tool METTLER TOLEDO databICS offers the possibility to define articles on a PC and to transfer this information to the database of the weighing terminal, see www.mt.com/ind-databics.







- The soft key **Save article** () is activated in the menu under **Terminal -> Device -> Keyboard -> Soft keys**.




- 1 Determine the target as described in the previous sections.
- 2 Press the soft key .
 - ⇒ A new screen is displayed to enter an article. Capital letters are active.
- 3 Enter the article and confirm with the soft key .
 - ⇒ **Record stored** is displayed briefly. The article is stored.

- i**
- If the **Description** field is activated in the **Application -> Database** menu, you are able 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 target.
 - If the selected article already exists, the message **Article already exists – Overwrite article?** is displayed.

4.8.2 Recalling an article from the database using a soft key

- The soft key **Load article** () is activated in the menu under **Terminal -> Device -> Keyboard -> Soft keys**.

- 1 Press the soft key .
 - ⇒ The database opens. The article data of the first database record are displayed.
 - ⇒ For an Over/Under Checkweighing article the fields on the right side are significant.
- 2 Use the soft keys  /  to navigate through the database records. On the second soft key page, the soft keys  and  are available to scroll in steps of 5.
- 3 Confirm the selected data record with the soft key .
 - ⇒ **Record loaded** is displayed briefly. The colored Over/Under Checkweighing display appears.


| Database | | | |
|-----------|---|---|--|
| Article : | # | Tol type : | Absolute |
| Desc. : | | T- : | 5.00 kg |
| Tare : | 0.00 kg | T : | 5.50 kg |
| APW : | 0.00 kg | T+ : | 6.00 kg |
| ESC |  |  | OK  |

4.8.3 Recalling an article from the database with a barcode reader

- If a barcode reader is connected to the weighing terminal via RS232 (COMx) or via USB Host (COM2), refer to the barcode reader documentation.
- The relevant COM port is configured as external input (Communication -> COMx -> Mode -> External input).
- The destination of the external input is configured as article (Communication -> COMx -> External input -> Destination).
- Scan the barcode with the barcode reader.
 - ⇒ The article data are loaded.

4.8.4 Recalling an article from the database by entering the article number

i This function is only available with **ICS465** and **ICS469**.



- If you know the article number, just enter the article number and press the soft key .

4.9 Leaving Over/Under Checkweighing

With clearing the Over/Under 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 Over/Under checkweighing parameters

- 1 Press the soft key .
 - ⇒ The straight weighing display appears, the Over/Under Checkweighing parameters are kept.
 - ⇒ The device operates in straight weighing mode.
- 2 To reactivate the Over/Under Checkweighing parameters, press the soft key .
 - ⇒ The most recently entered Over/Under Checkweighing parameters are displayed.

5 Totalization

5.1 Totalizing manually

Starting totalization

- Press the soft key Σ .
- ⇒ The following soft keys for totalizing are displayed.

| Soft key | Meaning |
|------------|---|
| ESC | Leave totalizing without clearing the sum |
| + | Add item to the sum |
| ↺ | Undo totalization |
| - | Add item to the negative sum |

Totalizing

- 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 totalizing, press **C**.
⇒ The total is cleared.

i Piece counting results and Over/Under Checkweighing results can be totalized the same way, but they cannot be mixed up in one totalizing action.

Totalizing 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 totalizing, press **C**.
⇒ The total is cleared.

i Piece counting results and Over/Under Checkweighing results can be totalized the same way, but they cannot be mixed up in one totalizing action.

5.2 Automatic totalizing

The automatic mode facilitates the totalizing process. After putting the load on the scale, the weight value is added automatically.


- Auto+ or Auto- is selected in the menu under Application -> Totalizing -> Mode.

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



- Piece counting results and Over/Under Checkweighing results can be totalized the same way.
- To avoid weighing a sample twice, the Zero return function can be enabled in the menu under Application -> Totalizing. A stable zero must be reached between two samples.

5.3 Deleting items from the sum


- Press the soft key .
- ⇒ The last weighing is deleted from the sum.

5.4 Terminating totalizing

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

- 1 Press the soft key .
- ⇒ The straight weighing display appears, the total is kept.
⇒ The device operates in straight weighing mode.
- 2 To continue totalizing, press the soft key .
- ⇒ The last total is displayed.

6 Settings in the menu

6.1 Menu overview

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 which are described in the following sections.



- Scale
- Application
- Terminal
- Communication
- Maintenance

6.2 Operating the menu



6.2.1 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.



- By default, no password is set. Therefore, confirm the password inquiry with  when you call up the menu for the first time.
- As long as no supervisor password is defined, operator access will offer the complete supervisor menu.
- If a password is not entered within a few seconds, the scale returns to the weighing mode.

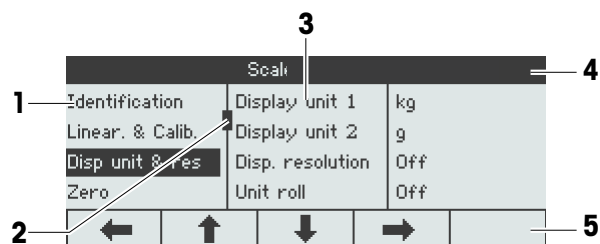
Emergency password for Supervisor access to the menu

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←** three times and confirm with .

6.2.2 Display in the menu

Menu items are displayed together with their context.










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

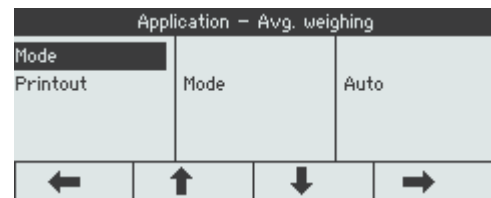
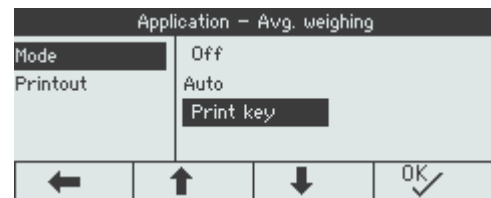
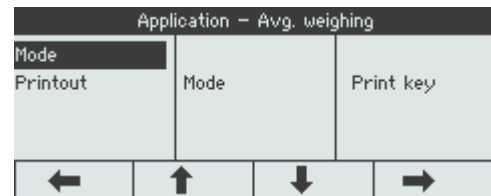
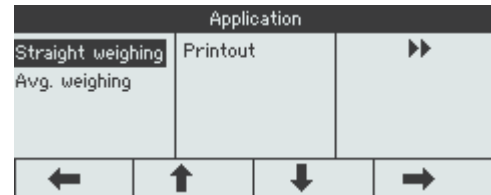
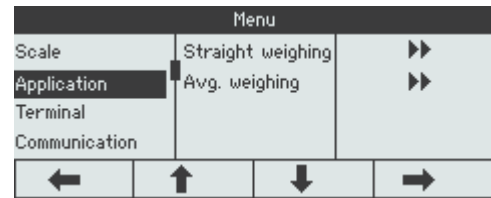
Exiting the menu


- Press .
- ⇒ **Save settings?** is displayed.
- Press the key to save the menu changes and to return to the weighing mode.
- or
- Press the key for further menu settings.
- or
- Press the key to discard changes and return to the weighing mode.

6.2.3 Selecting and setting parameters in the menu

Example: Setting 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 .
The setting of the average weighing mode has changed.



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

6.3 Scale menu block

6.3.1 Scale menu overview

The `Scale` menu depends on the connected load cell which is indicated on the type label.

| Type | Load cell | Scale menu |
|--------------------------|-----------|-------------------------------|
| ICS4_5g / ICS4_9g | Analog | Analog scale menu [► 56] |
| ICS4_5i / ICS4_9i | IDNet | IDNet scale menu block [► 61] |
| ICS4_5s / ICS4_9s | SICSpro | Analog scale menu [► 56] |
| ICS4_5k-.../f | MonoBloc® | Analog scale menu [► 56] |



- When entering the `Scale` menu block, an overview of the connected scales is displayed.
- After selecting Scale 1 or Scale 2, the `Scale` menu is available.
- If Scale 2 is a SICS scale, no further settings are available.

6.3.2 Scale menu block (Analog / SICSPRO)

Overview


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

| Level 1 | Level 2 | Level 3 | Level 4 |
|---|--|--|-----------------|
| Identification | Serial no. scale, Scale model, Scale location, Scale ID | | |
| Linear. & Calib. | Last calibration | | |
| | Start up FACT (for ICS4_5k-.../f compact scales only) | On, Off | |
| | Auto print calib. | On, Off | |
| | Perform calib. | | |
| 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 | | |
| | 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, Absolute | |
| | Stability | Fast, Standard , Precise | |
| MinWeigh | MinWeigh | On, Off | |
| | Display color (not for ICS445) | White, Yellow, Red , Green, Blue, Violet, Dark blue, Grey | |
| FACT (for ICS4_5k-.../f compact scales only) | Temperature | Off, 1K, 2K, 3K | |
| | Time | Time 1, Time 2, Time 3 | |
| | Days | Monday ... Sunday | Off , On |
| Reset | Perform reset? | | |

Description

| Identification | Displaying/setting scale identification data |
|------------------|---|
| Serial no. scale | Displaying the serial number of the weighing platform |
| Scale model | Displaying the scale type, e.g., PBD555 Available for METTLER TOLEDO scales only |
| Scale location | Entering the scale location, e.g., floor and room |
| Scale ID | Entering the scale identification, e.g., inventory number |
| Notes | <ul style="list-style-type: none"> Scale location and Scale ID can be displayed in the auxiliary or info lines or printed out. Scale location and Scale ID can consist of up to 24 alphanumeric characters. |

| Linear. & Calib | Linearization and calibration |
|------------------|---|
| Last calibration | Shows the date of the last calibration. |
| Start up FACT | When set to On , an internal calibration is performed every time the scale is switched on. It is recommended not to disable this setting if the scale will be moved to other locations. |
| Autoprint calib. | When set to On , a protocol is printed out automatically for each calibration process. |
| Perform calib. | <p>Important: With ICS4 5k-.../f weighing terminals make sure that the scale has been switched on at least 15 minutes before performing linearization/calibration.</p> <ol style="list-style-type: none"> Start calibration with <input type="button" value="OK"/>. ⇒ Preload is blinking. Ensure that the weighing platform is empty and confirm with <input type="button" value="OK"/>. ⇒ xx kg is blinking. If necessary, change the calibration weight value displayed using <input type="button" value="↓"/> / <input type="button" value="↑"/>. Put on the indicated calibration weight on the weighing platform and confirm with <input type="button" value="OK"/>. ⇒ Preload is blinking. Remove the calibration weight and confirm with <input type="button" value="OK"/>. ⇒ Passed is displayed briefly. |
| Notes | <ul style="list-style-type: none"> In order to achieve a particularly high precision, calibrate under full load. The calibration process can be aborted using <input type="button" value="ESC"/>. This menu item is not available for verified scales. |


| Disp. unit & res. | Display units and 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 set to On , the weight value can be displayed in all available units with  . |
| Notes | <ul style="list-style-type: none"> 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. On dual-range/dual interval scales, resolutions marked with I<->I 1/2 are divided into 2 weighing ranges/intervals, e.g., 2 x 3000 d. On triple-range/multi interval scales, resolutions marked with I<->I 1/2/3 are divided into 3 weighing ranges/intervals, e.g., 3 x 3000 d. |

| Zero | Automatic zero setting |
|---------------------------------|---|
| AZM | Automatic Zero Maintenance |
| On/Off | Switching automatic zero maintenance on/off. |
| Off; 0.5 d; 1 d; 2 d; 5 d; 10 d | Selecting zeroing range in digits per second. |
| Note | On verified scales, this menu item does not appear. |

| Tare | Tare function |
|-----------------|--|
| Auto tare | Switching on/off automatic taring Auto tare = On : 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 Chain tare = On : It is possible to tare several times if, e.g., cardboard is placed between individual layers in a container. |
| Auto clear tare | Switching on/off automatic clearing of the tare weight Auto clear tare = On : When the load is removed and the weight drops below 9 d, the tare weight is cleared automatically. |

| Restart | Automatic saving of zero point and tare value |
|---------|---|
| Restart | When set to On , 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. |

| Filter | Filter settings |
|------------------|---|
| 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 | Unstable environment. The scale works more slowly, but is less sensitive 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 (only for certain weighing platforms, e.g., PBK9-series / PFK9-series). |
| Absolute | For solid bodies under extreme conditions, e.g., strong vibrations. |
| Stability | Adjusting the stability detector The slower the scale works, the greater the reproducibility of the weighing results. |
| Fast | The scale operates very fast. |
| Standard | The scale operates at medium speed. |
| Precise | The scale operates with the greatest possible reproducibility. |

| MinWeigh | MinWeigh function |
|---------------|--|
| MinWeigh | Switching MinWeigh function on/off 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 color will change. |
| Display color | Setting the display color for weight values below the stored minimum weight. Not for ICS445 . |
| Note | Before you can use this function, the METTLER TOLEDO service technician has to determine and enter a minimum weight value. |

| FACT | Fully automatic calibration test (for ICS4_5k-.../f compact scales only) |
|------------------------|---|
| Temperature | Setting the temperature difference for automatic adjustment. |
| Off | Switching off automatic adjustment in 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 automatic adjustment. |
| Time 1, Time 2, Time 3 | Entering the times for the automatic adjustment (hours, minutes in 24 h format). To deactivate Time 2 and Time 3, set them to 00:00:00. |
| Days | Setting the days of the week for automatic adjustment. |
| Monday ... Sunday | On all days which are set to On , the automatic adjustment will be performed. |
| Note | FACT is executed under the following conditions: <ul style="list-style-type: none"> No key has been pressed for 3 minutes. – and – The displayed weight value is smaller than 30 d and stable. |

| Reset | Resetting the scale settings to factory settings |
|----------------|---|
| Perform reset? | <p>- Confirm with <input type="checkbox"/> <small>OK</small> <input checked="" type="checkbox"/> to reset the scale menu settings.</p> <p>For ICS4_5k-.../f compact scales only</p> <p>1 Press Reset for 5 seconds. ⇒ Reset User Calibration is displayed.</p> <p>2 Confirm with <input type="checkbox"/> <small>OK</small> <input checked="" type="checkbox"/> to reset the user calibration.</p> |


6.3.3 IDNet scale menu block

Overview

| Level 1 | Level 2 | Level 3 |
|---------------------------|---|---|
| Display unit & Resolution | Display unit 2 | g , kg, oz, lb, † |
| | Unit roll | On, Off |
| Zero | AZM | Off, 0.5d , 1d, 2d, 5d, 10d |
| Tare | Auto tare | On, Off |
| | Auto clear tare | On, Off , 9 d |
| | Chain tare | On , Off |
| Restart | On, Off | |
| Filter | Vibration | Stable, Normal , Unstable |
| | Process | Finefill, Universal , Absolute |
| | Stability | ASD = 0, 1, 2 , 3, 4, 5 |
| Update | The possible settings depend on the connected scale | |
| MinWeigh | Function | On, Off |
| | MinWeigh value | |
| | Display color (not for ICS445) | White, Yellow, Red , Green, Blue, Violet, Dark blue, Grey (not for ICS445) |
| Reset | Perform reset? | |

Description

| Identification | Displaying/setting scale identification data |
|------------------|---|
| Serial no. scale | Displaying the serial number of the weighing platform |
| Scale model | Displaying the scale type, e.g., PBD555 Available for METTLER TOLEDO scales only |
| Scale location | Entering the scale location, e.g., floor and room |
| Scale ID | Entering the scale identification, e.g., inventory number |
| Notes | <ul style="list-style-type: none"> Scale location and Scale ID can be displayed in the auxiliary or info lines or printed out. Scale location and Scale ID can consist of up to 24 alphanumeric characters. |

| Display unit & Resolution | Setting the weighing units |
|---------------------------|--|
| Unit 2 | Selecting weighing unit 2, different from unit 1. |
| Unit roll | When set to On , the weight value can be displayed in all available units with  . |
| Notes | <ul style="list-style-type: none"> In case of verified scales, individual sub-items of the Display unit & Resolution menu item may not be available or only to a limited extent, depending on the respective country. On dual-range/dual interval scales, resolutions marked with 1<-->1 1/2 are divided up into 2 weighing ranges/intervals, e.g., 2 x 3000 d. On triple-range/multi interval scales, resolutions marked with 1<-->1 1/2/3 are divided up into 3 weighing ranges/intervals, e.g., 3 x 3000 d. |


| Zero | Automatic zero setting |
|-----------------------|---|
| AZM | A utomatic Z ero M aintenance |
| On/Off | Switching automatic zero maintenance on/off. |
| 0.5d, 1d, 2d, 5d, 10d | Selecting the threshold for automatic zero setting. |
| Notes | <ul style="list-style-type: none"> On verified scales, this menu item does not appear. The effective range of the zero update mode can only be set by the METTLER TOLEDO service technician. |


| Tare | Tare function |
|------------------------|--|
| Auto tare | Switching on/off automatic taring. |
| On | When a load is placed on the scale and the gross weight exceeds 9 d, the weight is tared automatically. |
| Off | No automatic taring. |
| Auto clear tare | Configuring the automatic clearing of the tare weight. |
| On | The tare weight is automatically cleared if the gross weight is 0 or below zero. |
| Off | No automatic clearing of the tare weight. |
| 9 d | The tare weight is automatically cleared if the gross weight is within +/- 9 display steps. |
| Chain tare | Switching on/off chain tare. |
| On | It is possible to tare several times if, e.g., cardboard is placed between individual layers in a container. |
| Off | Taring is only possible once. |

| Restart | Automatic saving of zero point and tare value |
|---------|--|
| Restart | When set to On , 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. |

| Filter | Filter settings |
|------------------|---|
| 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 | Unstable environment. The scale works more slowly, but is insensitive to external influences. |
| Process | Adaptation to the weighing process |
| Dosing | Dispensing of liquid or powdered weighing samples manually. |
| Universal | Universal setting for all weighing samples and normal weighing goods. |
| Absolute | No adaptation, to perform automated filling processes, e.g., with PLC. |
| Stability | Adjusting the stability detector The slower the scale works, the greater the reproducibility of the weighing results. |
| ASD = 0 | Stability detector switched off. Only possible for non-verified scales. |
| ASD = 1 | Rapid display, good reproducibility |
| ... | ... |
| ASD = 4 | Slow display, excellent reproducibility |

| | |
|---------------|---|
| Update | Setting the display speed of the weight display |
| xx UPS | Selecting the number of updates per second (UPS). |
| Notes | <ul style="list-style-type: none"> This menu is only displayed if the Update function is supported by the connected scale. The possible settings depend on the connected scale. |

| | |
|-----------------|---|
| MinWeigh | MinWeigh function |
| MinWeigh | Switching MinWeigh function on/off 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 color will change. |
| Display color | Setting the display color for weight values below the stored minimum weight. Not for ICS445 . |
| Note | Before you can use this function, the METTLER TOLEDO service technician has to determine and enter a minimum weight value. |





| | |
|----------------|---|
| Reset | Resetting the scale settings to factory settings |
| Perform reset? | - Confirm resetting with  . |

6.4 Application menu block

6.4.1 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 |
| Notes | <ul style="list-style-type: none"> • Templates 1 ... 5 can be defined under <code>Communication -> Define templates</code>. • This menu item is only available if a COM port is set to Print mode. • There are 5 more templates available (Template 6 ... Template 10). Please ask your METTLER TOLEDO service technician to configure these templates or create them by yourself using the DatablCS software (www.mt.com/ind-datablcs), if desired. |

6.4.2 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 Info key Switch key Soft key | Calculating average weight with manual start of the weighing cycle via the selected key: Print key  , Info key  , Switch key  , Soft key  |

| Printout | Defining printer and template in the average weighing application |
|----------|---|
| | See Application → Straight weighing |

6.4.3 Application → Clever print



| Clever print | Settings for printing without pressing a key |
|--------------|--|
| Activate | When set to <code>On</code> , the result is automatically printed when the weight between two weighings has dropped below the threshold. |
| Threshold | Enter threshold for unloading the scale between two weighings. Possible settings: 0.0 kg ... max. capacity Factory setting: 0.0 kg |

6.4.4 Application → Counting

Overview


| Level 1 | Level 2 | Level 3 |
|------------------|-------------------------------------|-----------------------------|
| Reference size | | |
| Fixed ref. size | On, Off | |
| Ref. weight | Ref. wt. check | On, Off |
| | Ref. wt. value | 0 % ... 2 % ... 30 % |
| APW optimization | Off , Auto, soft key | |
| Autosampling | On, Off | |
| Auto clear APW | On, Off | |
| Counting system | Scale 1 | Bulk, Reference, Aux., Off |
| | Scale 2 | |
| | Total count | |
| | | Bulk , Bulk + Ref. |
| Printout | see Application → Straight weighing | |

Description

| Reference size | Defining a default reference size for soft key  |
|----------------|---|
| | E.g., when entering a reference size of 12 PCS, this reference size is displayed in the soft key  . |

| 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. |

| Ref Weight | Monitoring the minimum reference weight |
|----------------------------|--|
| Ref wt check | Monitoring the minimum reference weight |
| Off | No monitoring of the minimum reference weight |
| On | Monitoring the minimum reference weight. When the reference weight drops below the set tolerance value, the display color changes and a message is displayed which asks you to add more reference parts. |
| Ref wt value | Setting the process tolerance for the reference weight check |
| | Only displayed if Ref wt check is set to On. |
| 1 %, 2 % , ... 30 % | Setting the process tolerance for the reference weight check. The higher the process tolerance, the smaller the required minimum reference weight. Factory setting: 2 % |

| APW optimization | Optimization of the average piece weight |
|------------------|---|
| Off | No optimization of the average piece weight |
| Auto | Automatic optimization of the average piece weight |
| Soft key | Manual optimization 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 removed from the scale after a counting operation, the average piece weight is automatically cleared. The next counting operation will begin 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. Only the scales connected are displayed. |
| Bulk | The selected scale serves as bulk scale to count/measure quantities. The other scale of the system must be set to <i>Reference</i> . |
| Reference | The selected scale serves as reference scale to determine the average piece/unit weight. The other scale of the system must be set to <i>Bulk</i> . |
| 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. |
| Total count | Selecting the displayed number of pieces on the bulk scale |
| Bulk | Only the pieces on the bulk scale are displayed. |
| Bulk + Ref. | The pieces on the bulk scale and on the reference scale are displayed on the bulk scale. |

| Printout | Defining printer and template in the counting application |
|----------|---|
| | See Application → Straight weighing. |

6.4.5 Application → Over/Under

Overview

| Level 1 | Level 2 | Level 3 |
|-----------------------|-------------------------------------|--|
| Tolerance type | Off, Absolute, Relative, Percent | |
| Default values | Act. def. values | Off, On |
| | Rel. weight | Tol–, Tol+ |
| | Per. weight | Tol–, Tol+ |
| | Rel. pieces | Tol–, Tol+ |
| Output | Thresh % of Tol– | 0 ... 12 ... 100 % |
| | Beeper | Off, Within Tolerances, Outside Tolerances, Stable result |
| | Beeper mode | Stable result, Tolerance border |
| | Autoprint | Off, Within Tolerances, Outside Tolerances, Stable result |
| Display mode & Colors | Stealth mode | On, Off |
| | Good range | White, Yellow, Red, Green, Blue, Violet, Dark blue, Grey (not for ICS445) |
| | Under range | |
| | Over range | |
| | Below threshold | |
| Printout | See Application → Straight weighing | |

Description

| Tolerance type | Specifying which parameters have to be entered for Over/Under Checkweighing |
|----------------|--|
| Off | No tolerance type predefined. It can be set individually when entering Over/Under Checkweighing 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 |
|------------------|---|
| Act. def. values | Activating/deactivating usage of default tolerance values. |
| Rel. weight | Entering the default values for Tolerance – and Tolerance +. |
| Per. weight | Entering the default percentages for Tolerance – and Tolerance +. |
| Rel. pcs | Entering the default values for Tolerance – and Tolerance + in pieces. |
| Note | When always using the same tolerances for Over/Under Checkweighing, store these tolerances to avoid entering tolerances all the time. |

| Output | Setting output options |
|-------------------------------|---|
| Threshold as % of Tol– | <p>Threshold to determine at which weight the status of Tol– is indicated.</p> <p>To avoid Tol– being active at zero or a very low weight, you can define the "Threshold as % of Tol–".</p> <p>When Threshold as % of Tol– is reached, the colored display will change from the "Below threshold" color to the "Tolerance –" color.</p> <p>This feature can be used to show the "Tolerance –" color close to the target or as additional setpoint for I/O control.</p> <p>This setpoint is available on the optional digital I/O interface as well.</p> <p>Example: Target = 1000 g, Tol– = 100 g Threshold = x % * (Target – (Tol–)) Threshold = 12 % * (1000 g – 100 g) = 12 % * 900 g = 108 g In the example, the Tol– color is displayed for weights from 108 g up to 900 g.</p> |
| Beeper | Setting the beeper for Over/Under 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 |
| Stable result | A short beep will sound when a stable result is reached |
| Beeper mode | Defining how the beeper will act |
| Stable result | Beeping only when a stable weight value within the selected range is recognized |
| Tolerance border | Beeping on every entering or leaving of the good range |
| 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 |
| Stable result | Automatic printout when a stable result is reached |
| Note | For the automatic printout, the communication port at which the printer is connected, must be configured as follows: COMx -> Mode -> Print (and not Auto Print!) |

| Display mode & colors | Setting the weight display in the Over/Under Checkweighing application |
|-----------------------|---|
| Stealth mode | This menu item is not available for approved scales. When set to <input type="radio"/> On, there is no weight display, only the (colored) display for "too light", "good" and "too heavy". |
| Good range | Selecting the color to indicate a weight value within tolerances (not for ICS445) Factory setting: green |
| Under range | Selecting the color to indicate a weight value below "Tolerance –" (not for ICS445) Factory setting: red |
| Over range | Selecting the color to indicate a weight value above "Tolerance +" (not for ICS445) Factory setting: yellow |
| Below threshold | Selecting the color to indicate a weight value below "Threshold as % of Tol–" (not for ICS445) Factory setting: white |

| Printout | Defining printer and template in the Over/Under Checkweighing application |
|----------|---|
| | See Application -> Straight weighing |

6.4.6 Application → Totalizing

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 totalizing |
|--------------------|---|
| Mode | Selecting the totalizing mode |
| Manual | Items must be totalized manually with the soft key <input data-bbox="1182 651 1254 683" type="button" value="+"/> |
| Auto + | Stable weight values will be totalized automatically |
| Auto – | Automatic totalization 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 totalization of the next item is possible |
| Off | No load removal requested between two items |

| Printout | Defining printer and template in the totalizing application |
|----------------------------|--|
| Lot print | Printout for each individual item |
| Final print | Printout of the total at the end of totalizing |
| Summary print | Additional printout of the individual items |
| COM1, COM2 | Selecting the printer interface for the selected 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 |

6.4.7 Application → Memory

| Memory | Selecting information to be stored with the alibi data record in the additional custom field |
|--------------|---|
| Custom field | Select from the following: Off, Terminal model, Terminal location, Article, Article description, ID1, ID2, ID3, APW, Quantity, Counting accuracy, SNo. Terminal, Temperature (for ICS4_5k-.../f only), Weight position |

6.4.8 Application → Database

| Database | Database settings |
|-------------------|---|
| Description field | When set to On, each data record has an additional field to enter e.g., an article name |
| Delete record | Select a data record to be deleted. |
| Delete all | Delete all data records. A safety prompt is displayed. |
| Print all | Print all data records. |

6.4.9 Application → Prompting

| Prompting | Selecting workflows |
|---------------|--|
| Apps | Selecting the workflow which shall be supported by the prompt |
| 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 |
| Take away | Over/Under Checkweighing out of a container without pressing a key |

6.4.10 Application → Reset

| Reset | Resetting the application settings to factory settings |
|----------------|--|
| Perform reset? | - Confirm resetting with <input type="checkbox"/> OK <input checked="" type="checkbox"/> . |

6.5 Terminal menu block

6.5.1 Terminal menu overview

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

- Device
- Access
- Reset

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

6.5.2 Terminal → Device


Overview

| Level 1 | Level 2 | Level 3 | Level 4 | Level 5 |
|---------------------|-------------------|---|---------|---------|
| Region | Language | English , US-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 | | | |
| Energy save | Backlight | On , 5 seconds, 10 seconds, 15 seconds, 30 seconds | | |
| | Power off | Off , 1 minute, 3 minutes, 5 minutes, 15 minutes, 30 minutes | | |
| Identi- fication | Terminal location | | | |
| | Terminal ID | | | |
| Display | Display layout | Default , 3-lines mode, Color mode, Big font mode | | |
| | Contrast | 1 ... 5 ... 10 | | |
| | Brightness | 1 ... 10 | | |
| | Weight hold | 0 s ... 10 s | | |
| | Default color | White , Yellow, Red, Green, Blue, Violet, Dark blue, Grey (not for ICS445) | | |
| | Auxiliary line | Not used, Date & Time (for battery devices incl. remaining capacity in % and in hours), Gross, Net, Tare, High resolution (not available for approved scales), ID1, ID2, ID3, Bargraph, Temperature (for ICS4_5k-.../f only), Consecutive No., APW, Reference count, Quantity, Cnt.Accuracy, Target, Tolerance-, Tolerance+, Deviation, Article, Article descrip., Total gross, Total net, Total PCS, Lot | | |


| Level 1 | Level 2 | Level 3 | Level 4 | Level 5 |
|--------------|---------------------------|--|--|--|
| Keyboard | Hard keys | Power, Clear, Switch, Info, Transfer, Numeric keys | On, Off | |
| | Soft key | Soft key 1-1 ... Soft key 4-4 | Not used, Zero, Tare, High resolution, Avg. weighing, ID1, ID2, ID3, Prompt, Alibi memory, Switch scale, Ref N, APW, APW opt., Weight count, Totalizing, Over/Under, Save article, Recall article, Display layout, Consecutive No. | |
| | Info key | Page 1 | Item 1 ... Item 5 | Not used, Date & Time, Highres & Net, Gross, Net, Tare, ID1, ID2, ID3, Terminal ID, Terminal loc, Terminal model, SNo. Terminal, Terminal FW, SNo. Scale, Scale FW, Target, Tolerance—, Tolerance+, Deviation, APW, Quantity, Article, Article descrip., Total gross, Total net, Total PCS, Lot, Temperature (for ICS4_5k-.../f only), MinWeigh, IP address, Subnet mask, Gateway, USB version, Consecutive No. |
| | | | Info page 2 | Off, System info, Contact info |
| | | Page 2 & 3 | Info page 3 | Off, System info, Contact info |
| | Beeper | On , Off | | |
| Message time | 1 s, 2 s , ... 6 s | | | |
| Battery | Charge strategy | Full , Preservation | | |
| Timeout | Mode | Off, Rental, Rental info | | |
| | Set date | Set year, Set month, Set day | | |




Description

| Region | Country specific settings |
|--------------------|--|
| Language | Selecting the language of the operator interface. We will expand the available languages continuously. |
| Date format | Selecting the date format. |
| Set date | Entering the date 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 | Entering the time in the selected format. |
| Set hour | Entering the hour in the selected format. |
| Set minutes | Entering the minutes. |

| Energy save (Operator access) | Setting the energy saving mode |
|-------------------------------|---|
| Backlight | Settings for switching off the backlighting |
| On | Backlight always on |
| 5 seconds ... 30 seconds | Selecting the time period after which the device switches off display and backlighting 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 | Settings for switching off the device |
| Off | No energy saving mode |
| 1 minute ... 30 minutes | Selecting the time period after which the device switches off when not in use and gross weight is 0. 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 ID | Entering the terminal identification, e.g., inventory number |
| Notes | <ul style="list-style-type: none"> Terminal location and terminal identification can be displayed in the auxiliary or info lines or printed out. 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. |
| Contrast (Operator access) | Setting the contrast of the display. This menu item is accessible with Operator access rights. |
| Brightness (Operator access) | Setting the brightness of the display. This menu item is accessible with Operator access rights. |
| Weight hold | Setting how long (in seconds) the weighing result is frozen in the display after the transfer key  has been pressed or auto print was generated. |
| Default color | Setting the default color for straight weighing (not for ICS445). |
| Auxiliary line | Selecting the contents of the auxiliary display line. |

| Keyboard | Setting the keyboard according to your specific task |
|------------------|---|
| Hard keys | Locking/unlocking keys Possible keys: Power (), Clear (C), Switch / Toggle (), Info (i), Transfer (), Numeric keys (ICS465 and ICS469 only) |
| Soft keys | Assigning a function to the selected key |
| Soft key 1-1 | 1 Select the soft key number. |
| ... | 2 Assign function. |
| Soft key 4-4 | |
| Info key | Configuring the items to be displayed using the info key (i) |
| Page 1 | On the first page of the info key up to 9 information items on the weighing process can be configured. 1 Select item number. 2 Assign information |
| Page 2, Page 3 | On pages 2 and 3 system and contact information will be displayed. In case of a problem, here you will find your contact data and the system information the service technician will ask for. System information is set by the manufacturer, contact information can be entered directly. |
| Beeper | When set to On, each keystroke will be confirmed by a short beep. |

| Message time | Setting how long a message is displayed |
|------------------|--|
| 1, 2, 3, 4, 5, 6 | Setting how long a message is displayed in seconds |

| Battery | Battery settings |
|------------------------|---|
| Charge strategy | Setting the charging strategy. |
| Full | The battery will always be fully charged. |
| Preservation | Charging to prevent total discharge. |

| Time out | Setting the behaviour when no action takes place on the terminal |
|-----------------|---|
| Mode | Setting the time out mode. |
| Off | No time out setting. |
| Rental | The scale can only be used until a set date, e.g., when the scale is rented for a special event like a fair or a market. After the expiration date a message is displayed: Rental expired and the scale can no longer be used. |
| Rental info | When the set date has passed, a message is displayed: Rental expired . By pressing the key C , the message is cleared and the scale can be used as before. |
| Set date | Entering the expiration date. |
| Set year | Entering the year of the expiration date. |
| Set month | Entering the month of the expiration date. |
| Set day | Entering the day of the expiration date. |

6.5.3 Terminal → 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 4 characters. |

6.5.4 Terminal → Reset

| Reset | Resetting the terminal settings to factory settings |
|----------------|---|
| Perform reset? | - Confirm resetting with <input type="checkbox"/> <small>OK</small> <input checked="" type="checkbox"/> . |

6.6 Communication menu block

6.6.1 General



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 installed interfaces.
- 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.

6.6.2 Overview of the communication menu blocks

Possible settings

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

* for more information see SICS Reference manual

** only available for Toledo cont. modes

RS232 menu block

| Level 1 | Level 2 | Level 3 | Level 4 |
|----------------|---|---|---------------------------------|
| Mode | Print, Auto print, Instant print, Dialog , Continuous (Dialog), External input, Toledo Cont.-weight, Toledo Cont.-count, Second display, SICS scale, X scale | | |
| | Digitol B, Digitol G | Net Gross Tare | On, Off |
| Printer | Type | ASCII printer , Values only | |
| | ASCII Format | Line format | Multiple , Single, Fixed |
| | | Line length | 1 ... 24 ... 100 |
| | | Separator (for line format Single only) | , , ; – _ \ Space |
| | | Add line feed | 0 ... 9 |
| External input | Preamble length | | |
| | Data length | | |
| | Postamble length | | |
| | Termination character | CR, LF, EOT, ... | |
| | Destination | Off, Tare preset, ID1, ID2, ID3, APW, Article, Target | |
| 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? | | |

RS422 / RS485 menu block

| Level 1 | Level 2 | Level 3 |
|----------------|--|--|
| Mode | Print, Auto print, Instant print, Dialog , Continuous (Dialog), External input, Toledo Cont.-weight, Toledo Cont.-count, Second display, SICS scale, X scale, SICSpro scale | |
| Printer | see RS232 | |
| 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 ? | |

Ethernet menu block

| 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, FreeWeigh |
| | Local Port | 4305 |
| | Remote IP | |
| | Remote port | |
| | Connect timeout | |
| | Disconnect timeout | |
| Reset Ethernet | Perform Reset? | |

WLAN menu block

| Level 1 | Level 2 | Level 3 |
|------------------|--|----------------------------|
| Mode | see RS232 | |
| Printer | | |
| External input | | |
| Parameter | see Ethernet | |
| TCP mode | see Ethernet | |
| Wireless setting | 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 | |
| Status | Display the current status, e.g., connection status, signal strength | |
| Reset WLAN | Perform Reset? | |



A license file (RADIUS file) can be implemented via the DatabICS software (mt.com/ind-databics).

USB Host menu block

| Level 1 | Level 2 | Level 3 |
|------------------------------|-------------------|---------|
| USB version | | |
| Keyboard / Barcode Reader | Preamble length | |
| | Data length | |
| | Postamble length | |
| | Termination char. | |
| | Destination | |
| USB settings | Alibi on the fly | On, Off |



USB Device menu block

| Level 1 | Level 2 | Level 3 | Level 4 |
|-----------|--|------------------|----------------|
| Mode | Continuous (Dialog), Dialog , External input, Toledo Cont.-weight, Toledo Cont.-count, Print, Auto print, Instant print | | |
| | Digitol B, Digitol G | Net, Gross, Tare | On, Off |
| Printer | see RS232 | | |
| Parameter | Checksum | Off , On | |
| Reset USB | Perform Reset? | | |



The driver for USB Device is available on the CD delivered with the weighing terminal.

6.6.3 Description of the communication menu blocks

| 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) |
| Instant print | Manual data output of the current weight value (either stable or not) to the printer with  |
| Dialog | Bi-directional communication via MT-SICS commands, control of the device via PC |
| Continuous (Dialog) | Ongoing output of all weight values via the interface |
| External input | Input other than via terminal keypad. What the input is used for is defined in the <code>Destination</code> 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 connected. |
| SICSpro scale | On the selected interface port, a SICSpro scale is connected. |
| SICS scale | On the selected interface port, a SICS scale is connected. |
| X scale | On the selected interface port, an X scale is connected. |
| Digitol B Digitol G | Digitol compatible format. The gross weight is identified by "B". Digitol compatible format. The gross weight is identified by "G". |
| Net, Gross, Tare | Selecting the weight values to be transferred. |
| Notes | Printing conditions for <code>Auto print</code> : <ul style="list-style-type: none"> • The weight must be heavier than 9 display increments. • A weight change of at least 9 display increments is required to initiate the next printout. |

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






| External input | Configuring input via barcode reader |
|-------------------|---|
| Preamble length | The barcode may contain additional data before the relevant data (preamble) and behind (postamble). |
| Data length | |
| Postamble length | - Enter the number of characters of preamble, (relevant) data and postamble. |
| Termination char. | Selecting the termination character which is used by the connected barcode scanner |
| Destination | Selecting the item to be entered via barcode scanner |

| USB Host | Configuring the USB Host interface |
|----------------------------------|---|
| USB version | Show the implemented USB version |
| Keyboard / Barcode reader | Configure the external input via keyboard or barcode |
| Preamble length | The barcode may contain additional data before the relevant data (preamble) and behind (postamble). |
| Data length | |
| Postamble length | - Enter the number of characters of preamble, (relevant) data and postamble. |
| Termination char. | Selecting the termination character which is used by the connected barcode scanner |
| Destination | Selecting the item to be entered via barcode scanner |
| USB settings | Configuring an external alibi memory |
| Alibi on the fly | When set to <code>On</code> and a USB stick is inserted, the records are stored on the USB stick as well. |

Connecting an USB keyboard

- To connect an external keyboard via USB Host, the COM port has to be defined as `External input` with the termination character LF.
- If a function is assigned to the external input as well, e.g., "Load article", use the Enter key to confirm the external input.

The function keys of the USB keyboard correspond to the following keys on the weighing terminal:

| | | | |
|----|---|-------------|---|
| F1 |  | F8 | Displayed soft key 4 |
| F2 |  | F9 | Displayed soft key 5 (right) |
| F3 |  | ESC |  in the menu |
| F4 |  | Back | Delete text character by character |
| F5 | Displayed soft key 1 (left) | Enter | In straight weighing: print As external input: confirm |
| F6 | Displayed soft key 2 | Cursor keys | Cursor keys |
| F7 | Displayed soft key 3 | | |

| Parameter | Communication parameters |
|---------------|--|
| Baud | Selecting baud rate |
| Parity | Selecting parity |
| Handshake | Selecting handshake |
| Checksum | Activating/deactivating checksum byte |
| STX | Activating/deactivating STX If STX is set to <code>On</code> , 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: either RS422 or RS485 |
| Net Address | Assigning network address |
| Load resistor | To avoid reflections on a network, we recommend to make a defined termination. For this purpose, the load resistor within the terminal can be used. When set to <code>On</code> , a resistor of approx. 100 Ohm between the signal lines is enabled. |
| DHCP | If DHCP is set to <code>On</code> , 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 |
| Note | Not all parameters are available on all serial interfaces. Refer to the overviews of the interfaces to check which parameters are available. |

| TCP Mode | Transmission control protocol settings |
|---------------------------|---|
| TCP Mode | Configuring TCP mode |
| Server | Weighing terminal acting as server E.g., to execute SICS commands from a PC. To do so, the weighing terminal must be configured as Server and the PC must be configured as Client. |
| Client | Weighing terminal acting as client E.g., to print to a PC or printer. To do so, the weighing terminal must be configured as Client and the PC must be configured as Server. |
| FreeWeigh | To connect as SICS scale to freeweigh.net |
| Local Port | Displaying/entering the local port |
| Remote IP | Displaying/entering the remote IP address |
| Remote Port | Displaying/entering the remote port |
| Connect timeout | Setting timeout for connecting |
| Disconnect timeout | Setting timeout for disconnecting |

6.6.4 Digital I/Os menu block

| 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 -, Switch scale |
| Output | Ready, Stable, Tare, Zero, < Min weigh, >= Min weigh, Underload, Overload, <= Setpoint 1, > Setpoint 1, <= Setpoint 2, > Setpoint 2, Good range, < Tolerance-, > Tolerance+, 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 |

6.6.5 Define templates menu block

| Level 1 | Level 2 | Level 3 |
|------------|---------|--|
| Template 1 | Line 1 | Not used, Header *, Date, Time, Gross, Net, Tare, High |
| ... | ... | resolution, ID1, ID2, ID3, Terminal ID, Terminal location, SNR |
| Template 5 | Line 30 | 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.



There are 5 more templates available (Template 6 ... Template 10). Please ask your **METTLER TOLEDO** service technician to configure these templates or create them by yourself using the DatabICS software (www.mt.com/ind-databics), if desired.

6.7 Maintenance menu block

6.7.1 Overview

| Level 1 | Level 2 | Level 3 | Level 4 |
|---------------|------------------------------|-----------------|---------------|
| Scale test | Scale 1 | Internal test | Perform test? |
| | Scale 2 | 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. | Serial no. Scale | | |
| | Serial no. Terminal terminal | | |
| Print setup | Print menu settings | | |
| Tool comm. | Port | | |
| | Baudrate | | |
| | Start | | |
| Reset all | Perform reset? | | |

6.7.2 Description

| Scale test | Testing the selected scale |
|-----------------|--|
| Internal test | Testing scales with an internal test weight |
| Perform test? | <ul style="list-style-type: none"> Press <input type="button" value="OK"/> to start the test. ⇒ The deviation between test weight value and actually weighed value is displayed. |
| External test | Testing scales without an internal test weight |
| Perform test? | <ol style="list-style-type: none"> Press <input type="button" value="OK"/> to start the test. ⇒ Preload is displayed. If applicable, load the preload, and press <input type="button" value="OK"/>. ⇒ The test weight is blinking. Load the requested test weight and press <input type="button" value="OK"/>. ⇒ The deviation between test weight value and actually weighed value is displayed. |
| Conf. ext. test | Configuring the external test weight |
| Test weight | Setting the test weight value |
| Weight name | Entering the test weight name |
| Tolerance | Setting the test tolerance |
| Auto print | Automatic printout |
| | When set to On , a protocol is printed for each scale test. |

| Keyboard test | Testing the keyboard |
|---------------|--|
| Perform test? | <ol style="list-style-type: none"> 1 Press <input type="button" value="OK"/> to start the keyboard test. 2 Press the keys in the displayed order. <ul style="list-style-type: none"> ⇒ If the key works, the device switches to the next key. ⇒ The keyboard test is terminated by pressing <input type="button" value="Power"/>. |

| Display test | Testing the display |
|---------------|--|
| Perform test? | <ol style="list-style-type: none"> 1 Press <input type="button" value="OK"/> to start the display test. <ul style="list-style-type: none"> ⇒ A checkerboard pattern is displayed. 2 Press any key to invert the checkerboard pattern. 3 Press any key to show the colored display (ICS465 and ICS469 only). 4 Repeat pressing a key until Completed is displayed. 5 Press <input type="button" value="OK"/> to leave the display test. |
| Note | The display is working properly when 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 <input type="button" value="OK"/> to start the printout. |

| Tool communication | Testing the communication |
|--------------------|-------------------------------------|
| Port | Selecting the COM port to be tested |
| Baudrate | Setting the baudrate for testing |
| Start | Starting tool communication test |

| Reset all | Reset all settings to factory setting |
|----------------|---|
| Perform reset? | - Reset all settings to factory settings with <input type="button" value="OK"/> . |

7 Event and error messages

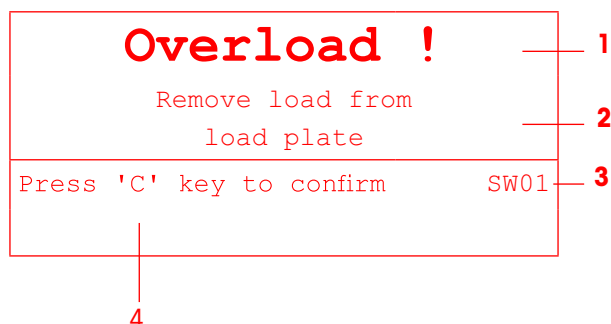
7.1 Error conditions

| Error | Cause | Remedy |
|---|--|--|
| Display dark | • Backlighting set too dark | - Set backlighting brighter. |
| | • No power supply | - Check power supply. |
| | • Unit switched off | - Switch on unit. |
| | • Power supply cable not plugged in | - Plug in power supply cable. |
| | • Brief fault | - Switch device off and on again. |
| Weight display unstable | • Unstable installation location | - Adjust vibration adapter. |
| | • Draft | - Avoid draft. |
| | • Unstable weighing sample | - Dynamic weighing. |
| | • Contact between weighing pan and/or weighing sample and surrounding | - Remedy contact. |
| | • Power supply fault | - Check power supply |
| 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 | - Place load plate on the scale. |
| | • Weighing range not reached | - Set to zero. |
| [_ _ _ _] | • Weighing range exceeded | - Unload scale. - 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

Error messages

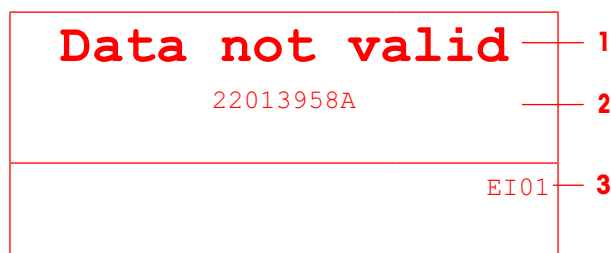
Error messages contain the following information:



- 1 Error message
- 2 Remedy
- 3 Message identifier
- 4 How to clear the message

Warnings

Warnings are displayed briefly and then disappear automatically.



- 1 Warning
- 2 Additional information, e.g., which data is not valid
- 3 Warning identifier


7.3 Smart weighing counter / spanner icon

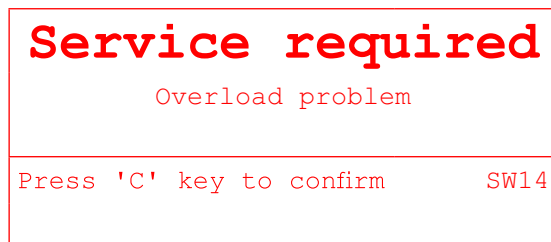
This weighing instrument features several control functions to monitor the condition of the device.

The **METTLER TOLEDO** service technician can setup and enable these functions.

This helps the user and the **METTLER TOLEDO** service technician to determine 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 Devices for dry environment

8.1.1 Technical data for weighing terminals for dry environments

| ICS4_5 weighing terminals | | |
|---------------------------|---|--|
| Housing | Aluminium diecast | |
| Display | LCD liquid crystal graphical display, with back lighting | |
| Keyboard | Tactile-touch membrane keypad (PET) Scratch-resistant labelling | |
| Protection type | With power supply connection | IP65 |
| | With built-in storage battery | IP65 |
| | With exchangeable battery | IP5x |
| | Weighing platform | IP5x / IP65 (option, not for 0.6XS) |
| Net weight | Weighing terminal | 2.0 kg / 4.4 lb |
| Power supply connection | Direct connection to power supply (supply voltage fluctuation not exceeding ± 10 % of the rated voltage) | |
| | Rated voltage | 100 ... 240 V AC / 50 ... 60 Hz / 300 mA |
| | Power cord | approx. 2.5 m / 8.2 ft |
| Battery operation | Supply of device | 12 V  / 2.5 A |
| | Up to 22 hours of operation possible | |
| 9-28 VDC power supply | Rated voltage | 9 ... 28 V  / max. 2.5 A |
| | 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 |
| | Altitude | up to 2,000 m |
| | Temperature range Class III | -10 ... 40 °C / 14 ... 104 °F |
| | Temperature range Class II with PBK785 | 10 ... 30 °C / 50 ... 86 °F |
| | with PBK9-series / PFK9-series | 0 ... 40 °C / 32 ... 104 °F |
| | Overvoltage category | II |
| | Pollution degree | 2 |
| Humidity | Max. rel. humidity 85 % for temperatures up to 40 °C / 104 °F | |
| W & M approvals | OIML Class II, III, IIII NTEP Class II, III | |
| Interfaces | | |
| Communication interfaces | 1 RS232 interface integrated 1 additional optional communication interface possible | |
| Scale interfaces | 1 scale interface integrated 1 additional optional scale interface possible, either analog or IDNet IDNet scales except F cell, AWU cell, GD16, GD17, Pik | |

8.1.2 Technical data for compact scales for dry environments



- The size of the weighing platform (0.6XS, 3XS, 6XS, 3SM, 6SM, 15LA, 35LA) is indicated at the end of the product name, e.g., **ICS445s-3XS/f**.
- Other combinations of weighing range and readability can be adjusted by the **METTLER TOLEDO** service technician on site.
- The table below indicates the factory settings of weighing range and readability.

Weighing ranges and readability ICS4_5s-.../f compact scales

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

| ICS4_5s-.../f | 3SM | 6SM | 15LA | 35LA |
|-------------------------------|-----------|-----------|-----------|----------|
| Capacity | 3 kg | 6 kg | 15 kg | 35 kg |
| | 6 lb | 12 lb | 30 lb | 60 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 |
| | 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 |

Weighing ranges and readability ICS4_5k-.../f and ICS4_5k-.../DR/f compact scales

- Approved resolution 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

| ICS4_5k-.../f | 0.6XS | 3XS | 6XS | 6SM | 15LA | 35LA |
|---------------------------|-------------|------------|------------|-----------|-----------|-----------|
| Capacity | 0.61 kg | 3.1 kg | 6.1 kg | 6.1 kg | 15.1 kg | 35.1 kg |
| | 1.2 lb | 6 lb | 12 lb | 12 lb | 30 lb | 60 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 |
| | 0.000002 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 | 0.2 g |
| | 0.000005 lb | 0.00005 lb | 0.0005 lb | 0.0005 lb | 0.0005 lb | 0.0005 lb |
| Weight | 6.3 kg | 5.7 kg | 5.7 kg | 5.7 kg | 9.0 kg | 9.0 kg |
| | 13.4 lb | 12.6 lb | 12.6 lb | 12.6 lb | 19.8 lb | 19.8 lb |

| ICS4_5k-.../DR/f | 0.6XS | 3XS | 6XS | 6SM | 15LA | 35LA |
|---------------------|----------------------|--------------------|--------------------|--------------------|-------------------|-------------------|
| Capacity | 0.12 kg / 0.61 kg | 0.6 kg / 3.1 kg | 1.2 kg / 6.1 kg | 1.2 kg / 6.1 kg | 3 kg / 15.1 kg | 3 kg / 15.1 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 / 1g | 0.1 g / 1g | 0.1 g / 1g |
| Approved resolution | 0.01 g | 0.1 g | 0.1 g | 1 g | 1 g | 1 g |

Max. mechanical preload without losing capacity

| ICS4_5 | 3SM | 6SM | 15LA | 35LA |
|----------------|---------|---------|---------|----------|
| Preload | 1.25 kg | 3.25 kg | 3.32 kg | 13.32 kg |
| | 2.76 lb | 7.17 lb | 7.32 lb | 29.37 lb |

| ICS4_5 | 0.6XS | 3XS | 6XS | 6SM | 15LA | 35LA |
|----------------|-------|---------|---------|---------|----------|---------|
| Preload | – | 1.73 kg | 0.73 kg | 2.25 kg | 20.32 kg | 0.32 kg |
| | – | 3.81 lb | 1.61 lb | 4.96 lb | 44.80 lb | 0.71 lb |

8.1.3 Operating life with battery

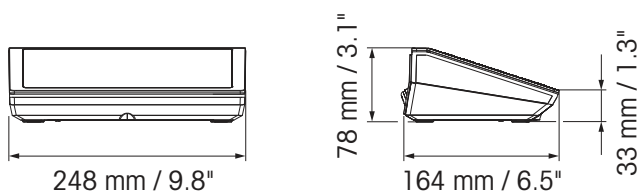
The operating life during battery operation varies depending on the intensity of use, the configuration and the connected scale.

The following approximate values apply with standard RS232 interface and the brightness set to 5.

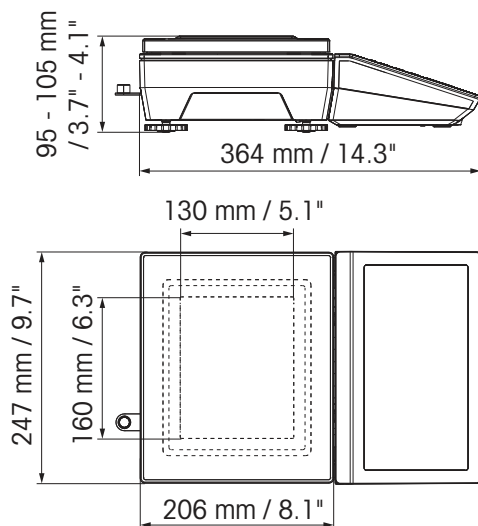
| Weighing platform | Weighing terminal type | Conditions | Duration |
|--------------------------------|------------------------|--------------------------------|----------|
| Strain gauge weighing platform | ICS4_5g | WLAN, continuous operation | 16 h |
| | | USB host, continuous operation | 16 h |
| MonoBloc® weighing platform | ICS4_5k | WLAN, continuous operation | 10 h |
| | | USB host, continuous operation | 10 h |

8.1.4 Dimensional drawings for devices for dry environments

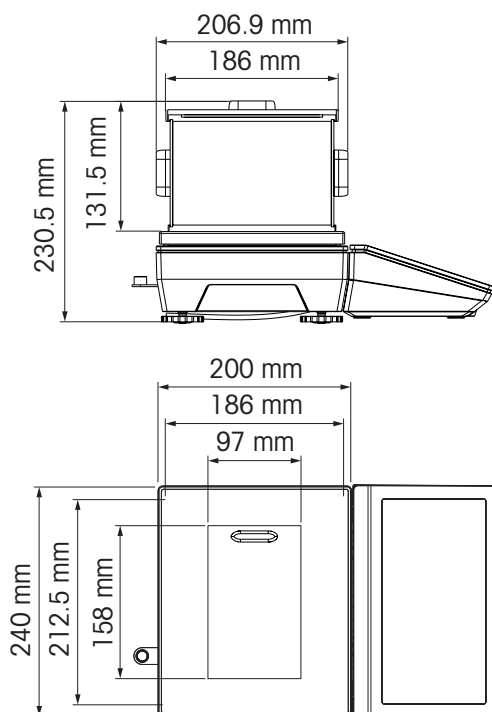
ICS4_5 weighing terminal



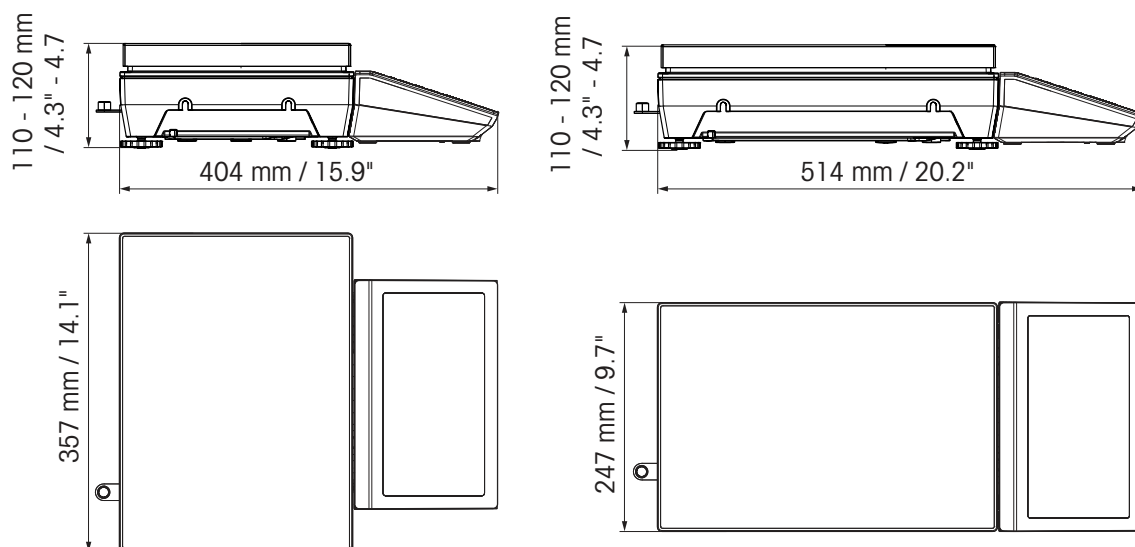
ICS4_5 compact scale with XS or SM weighing platform



ICS4_5 compact scale with XS weighing platform and windshield



ICS4_5 compact scale with LA weighing platform





8.1.5 Accessories for dry environments

| Accessories for ICS4_5 | Order no. |
|--|------------|
| Printer RS-P25/01 (for Europe only) | 11 124 300 |
| Printer RS-P26/01 (for Europe only) | 11 124 304 |
| Printer RS-P28/01 (for Europe only) | 11 124 301 |
| Printer APR510 Direct thermal Label Printer, 203 dpi | 64 090 256 |
| Printer APR510 Thermal Transfer Label Printer, 203 dpi | 64 090 257 |
| Printer APR510 Direct thermal Label Printer, 300 dpi | 64 090 258 |
| Printer APR510 Thermal Transfer Label Printer, 300 dpi | 64 090 259 |
| Printer APR710 Direct thermal Label Printer, 203 dpi | 64 688 858 |
| Printer APR710 Thermal Transfer Label Printer, 203 dpi | 64 688 859 |
| Printer APR710 Direct thermal Label Printer, 300 dpi | 64 688 861 |
| Protective cover for the weighing terminal, set of 5 pieces | 30 032 638 |
| Auxiliary display AD-RS-M7 (requiring cable 22 023 506) | 12 122 381 |
| Charging station for Battery pack (lithium ion) | 30 093 236 |
| Battery pack, lithium ion | |
| IP5x | 30 093 237 |
| IP65 | 30 093 238 |
| Windshield for ...XS weighing platforms | 72 262 929 |
| Wall bracket | 30 032 637 |
| Support for wheeled bench stand | 22 023 460 |
| Column for PBA655, PBD655 and ICS4_5 / ICS685 compact scales (requires wall bracket 30 032 637) | |
| Height 330 mm / 1.3 ft | 72 198 699 |
| Height 660 mm / 2.6 ft | 72 198 700 |
| Floor stand, height 1000 mm / 3.3 ft | |
| Painted steel | 22 023 451 |
| Stainless steel | 22 023 503 |
| Relaybox 4, for Digital I/O | 22 011 967 |
| Power supply for Relaybox 4 | 00 505 544 |

| Cables and plugs for ICS4_5 | Order no. |
|---|------------------|
| Cables | |
| Cable M12 USB Female Type A, USB Host | |
| 0.2 m / 0.7 ft | 22 017 604 |
| 3 m / 10 ft | 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 | |
| 5 m / 16 ft | 22 017 610 |
| 20 m / 66 ft | 22 017 614 |
| Cable for auxiliary display AD-RS-M7 | 22 023 506 |
| RS232 extension 0.5 m / 1.6 ft, incl. 5 V and 12 V | 30 035 358 |
| RS232 SICS (cross, M12 plug male / M12 male) 3 m | 22 023 528 |
| RS422/485 extension kit | 22 023 698 |
| SICSpro extension (M12 male / M12 female) | |
| 3 m / 10 ft | 22 023 696 |
| 10 m / 32 ft | 30 024 759 |
| SICSpro extension (M12 male / open end) 5 m / 16 ft | 30 024 768 |
| Cable for GA46 | |
| 0.4 m / 1.4 ft | 22 018 978 |
| 2.5 m / 8 ft | 22 018 979 |
| Plugs | |
| RS232 Counter plug (8 pin; for compact scales, extension 30 035 358 required) | 22 022 056 |
| Ethernet Counter plug (4 pin, D; not for compact scales) | 22 022 058 |
| USB Device Counter plug (4 pin, A; not for compact scales) | 22 022 059 |

8.2 Devices for wet environment

8.2.1 Technical data for weighing terminals for wet environments

| ICS4_9 weighing terminals | | |
|---------------------------|---|---|
| Housing | Stainless steel 1.4301 or AISI 304 | |
| Display | LCD liquid crystal graphical display, with back lighting | |
| Keyboard | Tactile-touch membrane keypad (PET) Scratch-resistant labelling | |
| Protection type | Terminal | IP68/IP69k |
| | Standard weighing platform | IP65 |
| | Weighing platform with option potted stainless steel load cell | IP65/IP67 |
| | Weighing platform with option hermetically sealed stainless steel load cell | IP68/IP69k |
| Net weight | Weighing terminal | 2.0 kg / 4.4 lb |
| | ICS4_9g.../c | 3.2 kg / 7.1 lb + weight of the weighing platform |
| Power supply connection | Direct connection to power supply (supply voltage fluctuation not exceeding ±10 % of the rated voltage) | |
| | Rated voltage | 100 ... 240 V AC 50 ... 60 Hz 300 mA |
| Battery operation | Supply of device | 12 V  / 2.5 A |
| | Up to 22 hours of operation possible | |
| 9-28 VDC power supply | Rated voltage | 9 ... 28 V  / max. 2.5 A |
| | 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 |
| | Altitude | up to 2,000 m |
| | Temperature range Class III | −10 ... 40 °C / 14 ... 104 °F |
| | Temperature range Class II | 0 ... 40 °C / 32 ... 104 °F |
| | Overvoltage category | II |
| | Pollution degree | 2 |
| | Humidity | Max. rel. humidity 80 % for temperatures up to 40 °C / 104 °F |
| W & M approvals | OIML Class II, III, IIII NTEP Class II, III | |
| Interfaces | | |
| Communication interfaces | 1 RS232 interface integrated 1 additional optional communication interface possible | |
| Scale interfaces | 1 scale interface integrated 1 additional optional scale interface possible, either analog or IDNet IDNet scales except F cell, AWU cell, GD16, GD17, Pik | |

8.2.2 Technical data for terminal and platform combinations for wet environments



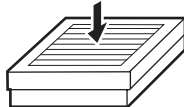
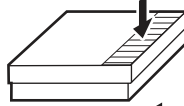
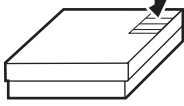
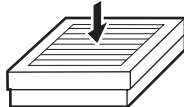
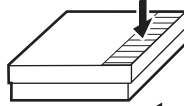
- The size of the weighing platform (A, BB, B, QA, QB) is indicated at the end of the product name, e.g., **ICS449g-QA6**.
- Other combinations of weighing range and readability can be adjusted by the **METTLER TOLEDO** service technician on site.
- The table below indicates the factory settings of weighing range and readability.

Weighing ranges and readability

| Model | A3 | A6 | A15 | BB30 | BB60 | B30 | B60 |
|----------------|----------|----------|----------|---------|---------|---------|---------|
| Weighing range | 3 kg | 6 kg | 15 kg | 30 kg | 60 kg | 30 kg | 60 kg |
| | 5 lb | 10 lb | 25 lb | 50 lb | 100 lb | 50 lb | 100 lb |
| Readability | 1 g | 2 g | 5 g | 10 g | 20 g | 10 g | 20 g |
| | 0.001 lb | 0.002 lb | 0.005 lb | 0.01 lb | 0.02 lb | 0.01 lb | 0.02 lb |

| Model | QA3 | QA6 | QB15 | QB30 | QB60 |
|----------------|----------|----------|----------|---------|---------|
| Weighing range | 3 kg | 6 kg | 15 kg | 30 kg | 60 kg |
| | 5 lb | 10 lb | 25 lb | 50 lb | 100 lb |
| Readability | 1 g | 2 g | 5 g | 10 g | 20 g |
| | 0.001 lb | 0.002 lb | 0.005 lb | 0.01 lb | 0.02 lb |

Operation limits – maximum static safe load

| Model | a – center load | b – side load | c – corner load | |
|-----------|-----------------|---------------|-----------------|---|
| A | 40 kg | 30 kg | 15 kg |  |
| | 80 lb | 60 lb | 30 lb | |
| BB | 100 kg | 70 kg | 35 kg |  |
| | 200 lb | 140 lb | 70 lb | |
| B | 200 kg | 140 kg | 75 kg |  |
| | 400 lb | 280 lb | 150 lb | |
| QA | 40 kg | 30 kg | 15 kg |  |
| | 80 lb | 60 lb | 30 lb | |
| QB | 100 kg | 70 kg | 35 kg |  |
| | 200 lb | 140 lb | 70 lb | |

Weights, approximate values

| Model | Standard: potted aluminium | Option: potted stainless steel | Option: hermetically sealed stainless steel |
|-----------|-------------------------------|-----------------------------------|--|
| A | 4.8 kg | 5.5 kg | 5.7 kg |
| | 10.6 lb | 12.1 lb | 12.6 lb |
| BB | 7.2 kg | 7.9 kg | 8.1 kg |
| | 15.9 lb | 17.4 lb | 17.9 lb |
| B | 12.0 kg | 15.0 kg | 15.2 kg |
| | 16.5 lb | 33.1 lb | 33.5 lb |
| QA | 3.7 kg | 4.4 kg | 4.6 kg |
| | 8.2 lb | 9.7 lb | 10.1 lb |
| QB | 6.0 kg | 6.7 kg | 6.9 kg |
| | 13.2 lb | 14.8 lb | 15.2 lb |

Length of load cell cable for ICS4_9g-.../t

| Models | Potted aluminum load cell | Potted stainless steel load cell Hermetically sealed stainless steel load cell |
|------------------|---------------------------|---|
| A, QA | 1 m / 3.3 ft | 3 m / 9.9 ft |
| BB, B, QB | 2 m / 6.6 ft | |

8.2.3 Operating life with battery

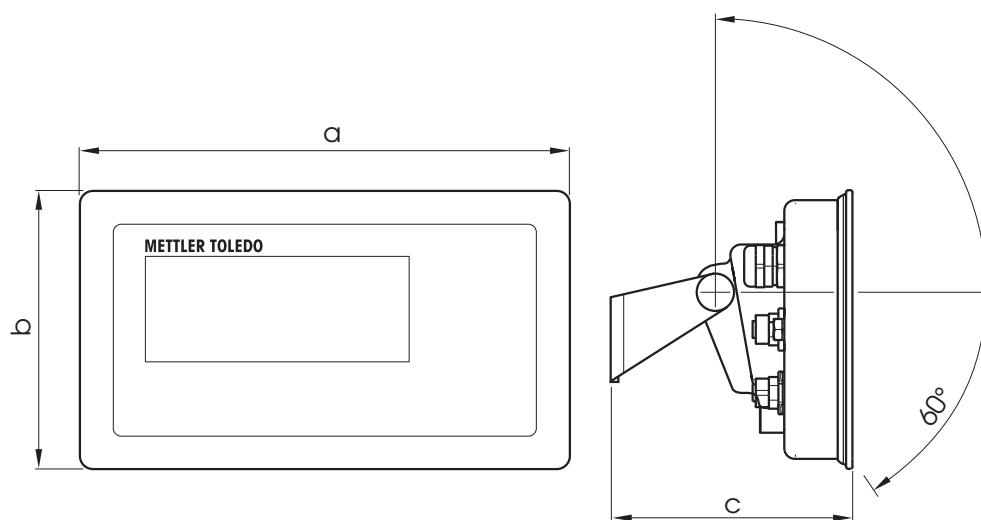
The operating life during battery operation varies depending on the intensity of use, the configuration and the connected scale.

The following approximate values apply with standard RS232 interface and the brightness set to 5.

| Weighing platform | Conditions | Duration |
|---|----------------------|----------|
| With 1 strain gauge load cell, e.g., ICS449g-A15... | Continuous operation | 25 h |
| With 4 strain gauge load cells, e.g., a floor scale | Continuous operation | 22 h |
| With PBK98_/PFK98_ | Continuous operation | 14 h |

8.2.4 Dimensional drawings for devices for wet environments

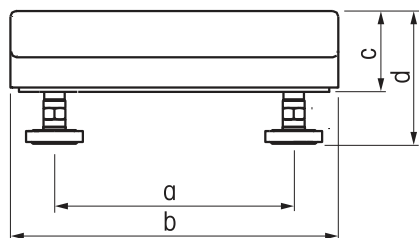
ICS4_9 weighing terminal



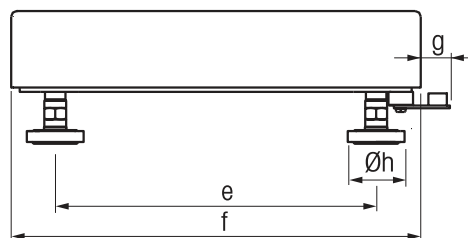
| Dimension | [mm] | ["] |
|-----------|------|------|
| a | 232 | 9.13 |
| b | 132 | 5.20 |
| c | 115 | 4.53 |

Weighing platforms for ICS4_9g terminal and platform combinations

Front view

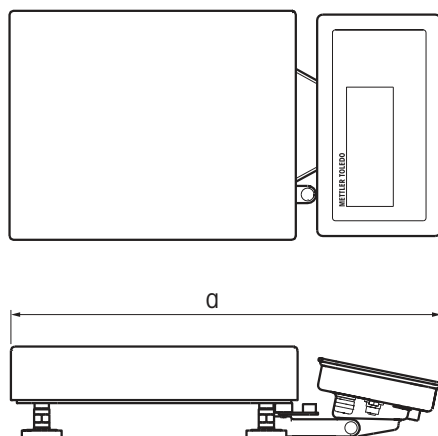


Side view



| | A | | B | | BB | | QA | | QB | |
|----------|------|-------|------|-------|-------|-------|------|------|------|-------|
| Dim. | [mm] | ["] | [mm] | ["] | [mm] | ["] | [mm] | ["] | [mm] | ["] |
| a | 175 | 6.89 | 235 | 9.25 | 335 | 13.81 | 163 | 6.41 | 240 | 9.45 |
| b | 240 | 9.45 | 300 | 11.81 | 400 | 15.74 | 228 | 8.97 | 305 | 12.00 |
| c | 59 | 2.32 | 76 | 2.99 | 108.5 | 4.27 | 59 | 2.32 | 76 | 2.99 |
| d | 97 | 3.81 | 108 | 4.25 | 134,5 | 5.29 | 97 | 3.81 | 108 | 4.25 |
| e | 235 | 9.25 | 335 | 13.81 | 435 | 17.12 | 163 | 6.41 | 254 | 10.0 |
| f | 300 | 11.81 | 400 | 15.74 | 500 | 19.68 | 228 | 8.97 | 305 | 12.00 |
| g | 21 | 0.83 | 18 | 0.70 | 17 | 0.70 | 21 | 0.83 | 17 | 0.67 |
| h | 42 | 1.65 | 42 | 1.65 | 42 | 1.65 | 42 | 1.65 | 42 | 1.65 |

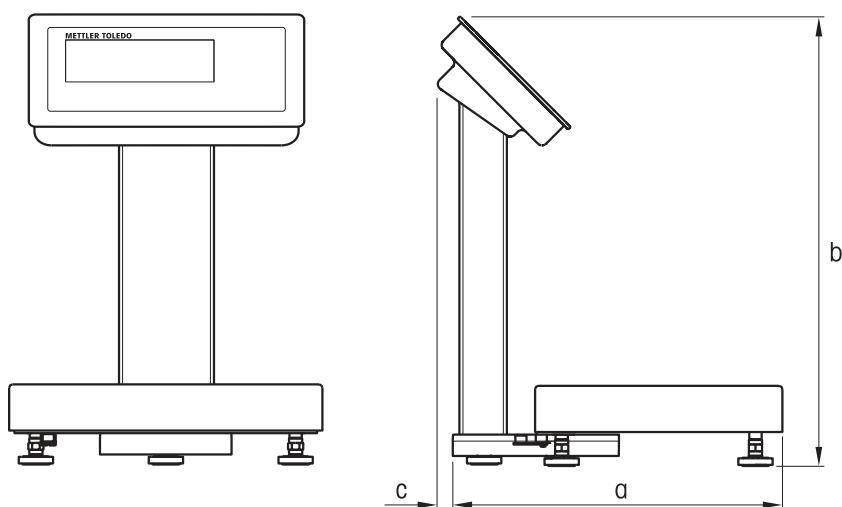
ICS4_9g-.../f terminal and platform combination



| | A | | B | | BB | | QA | | QB | |
|------|------|-------|------|-------|------|-------|------|-------|------|-------|
| Dim. | [mm] | ["] | [mm] | ["] | [mm] | ["] | [mm] | ["] | [mm] | ["] |
| a | 452 | 17.80 | 549 | 21.61 | 649 | 25.55 | 380 | 14.96 | 452 | 17.80 |

ICS4_9g-.../c terminal and platform combination

The size of the weighing platform (A, BB, B, QA, QB) is indicated at the end of the product name, e.g., **ICS449a-QA6**.



| | A | | B | | BB | | QA | | QB | |
|------|------|-------|------|-------|------|-------|------|-------|------|-------|
| Dim. | [mm] | ["] | [mm] | ["] | [mm] | ["] | [mm] | ["] | [mm] | ["] |
| a | 452 | 17.80 | 549 | 21.61 | 649 | 25.55 | 380 | 14.96 | 452 | 17.80 |
| b | 386 | 15.20 | 386 | 15.20 | 386 | 15.20 | 386 | 15.20 | 386 | 15.20 |
| c | 13 | 0.51 | 13 | 0.51 | 13 | 0.51 | 13 | 0.51 | 13 | 0.51 |

8.2.5 Accessories for wet environments

| Accessories for ICS4_9 | Order no. |
|--|------------|
| GA46 printer, RS232, incl. 8-pin M12 plug | |
| cable 2.5 m / 8.2 ft | 22 019 925 |
| cable 0.4 m / 1.3 ft | 22 019 926 |
| I/O accessories | |
| Relaybox 4, for Digital I/O | 22 011 967 |
| Power supply for Relaybox 4 | 00 505 544 |
| Mechanical parts | |
| Protective cover for terminals ICS4_9 , set of 3 pieces | 22 021 109 |
| Stand ICS4_9 , for .../f version or terminal with PBA226, PBA426, PBA429 | |
| Height 120 mm / 0.4 ft | 72 219 393 |
| Height 330 mm / 1.1 ft | 72 198 702 |
| Height 660 mm / 2.2 ft | 72 198 703 |
| Height 900 mm / 3.0 ft | 72 198 704 |
| Stand ICS4_9 for PBK, PFK, MA, MD and DB Platforms, height 330 mm / 1.1 ft | 22 014 836 |
| Bench stand ICS4_9 for scale bench 00 503 632 or 00 504 854, height 500 mm / 1.6 ft | 22 014 835 |
| Floor stand ICS4_9 , height 1000 mm / 3.3 ft | 22 014 834 |
| Standbase for floor stand | 22 011 982 |
| Wall bracket ICS4_9 , inclinable and swivelling | 22 014 833 |
| Desk mounting plate, for terminal and .../f version only | 22 021 111 |

| Cables and plugs for ICS4_9 | Order no. |
|---|------------|
| Cables | |
| RS232 cable for SICS scale, 8 pin M12 <--> 9 pin sub D plug, 3 m / 10 ft | 22 021 087 |
| RS232 cable for PC, 8 pin M12 <--> 9 pin sub D receptacle, 3 m / 10 ft | 22 021 088 |
| RS422/RS485 cable, 6 pin M12 <--> open ends, 3 m / 10 ft | 22 021 089 |
| Ethernet cable, 4 pin M12 coding D <--> RJ45 | |
| 5 m / 16.4 ft | 22 021 090 |
| 20 m / 65.6 ft | 22 021 091 |
| Cable to connect Digital I/O option with relay box, 12 pin M12 <--> open ends, 10 m / 32.8 ft | 22 021 093 |
| USB Device cable, connection to PC, 3 m / 10 ft | 22 021 092 |
| USB Host cable, connection to scanner, keyboard or USB stick, M12 USB female type A | |
| 0.2 m / 0.7 ft | 30 093 252 |
| 3 m / 10 ft | 30 093 253 |
| Plugs | |
| RS232 counter plug, 8 pin M12 (for .../f versions extension 30 035 358 required) | 22 022 056 |
| Ethernet counter plug, 4 pin, coding D, M12 (not for .../f versions) | 22 022 058 |
| USB Device counter plug, 4 pin, coding A, M12 (not for .../f versions) | 22 022 059 |
| RS422/485 extension kit | 22 023 698 |

8.3 General technical data

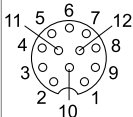
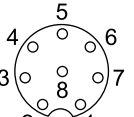
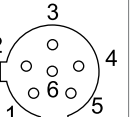
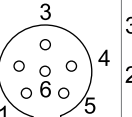
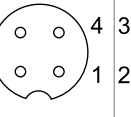
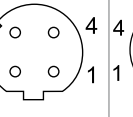

8.3.1 Applications

- Weighing
- Over/Under Checkweighing
- Piece counting
- Average weighing
- Prompting
- Totalizing
- Internal database with up to 100 records
- Alibi log file

8.3.2 Analog scale interface

| | |
|----------------------------|--|
| Impedance | ≥ 87.5 Ohm, e.g., 1 x 350 Ohm or 4 x 350 Ohm |
| Excitation | 3.3 V DC |
| Sensitivity | 2 to 3 mV/V |
| Max. resolution | 7,500 e (OIML) 300,000 d (non approvable) |
| Min. verification interval | 0.264 µV/e |

8.3.3 Assignment of the interface connections

| | Digital I/O | RS232 | RS422 | RS485 | USB Device 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 | | | | | | |

* max. 0.5 A

9 Appendix

9.1 Metrological information

Scales that have been factory-calibrated have a label indicating this on the packaging.

Scales with a green M on the type plate are ready for operation.

Scales that are calibrated in two stages have a label indicating this on the packaging.

These scales have only been calibrated in a first stage (declaration of conformity in accordance with EN 45501-8.2). The second stage of the calibration must be done on-site by authorized service personnel. Please contact your local representative.



i Medium accuracy scales that are used in commerce where certified calibration is required must be calibrated and certified.

Observe the respective measurement data guidelines in your country.

9.2 Table 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.

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

| Country | Geographical latitude | Geo Code | Country | Geographical latitude | Geo Code |
|----------|-----------------------|----------|----------------|-----------------------|----------|
| Austria | 46°22' – 49°01' | 18 | Liechtenstein | 47°03' – 47°14' | 18 |
| Belgium | 49°30' – 51°30' | 21 | Lithuania | 53°54' – 56°24' | 22 |
| Bulgaria | 41°41' – 44°13' | 16 | Luxemburg | 49°27' – 50°11' | 20 |
| Croatia | 42°24' – 46°32' | 18 | Netherlands | 50°46' – 53°32' | 21 |
| Czechia | 48°34' – 51°03' | 20 | Norway | 57°57' – 64°00' | 24* |
| Denmark | 54°34' – 57°45' | 23 | | 64°00' – 71°11' | 26 |
| Estonia | 57°30' – 59°40' | 24 | Poland | 49°00' – 54°30' | 21 |
| Finland | 59°48' – 64°00' | 25* | Portugal | 36°58' – 42°10' | 15 |
| | 64°00' – 70°05' | 26 | Romania | 43°37' – 48°15' | 18 |
| France | 41°20' – 45°00' | 17 | Slovakia | 47°44' – 49°46' | 19 |
| | 45°00' – 51°00' | 19* | Slovenia | 45°26' – 46°35' | 18 |
| Germany | 47°00' – 55°00' | 20 | Spain | 36°00' – 43°47' | 15 |
| Greece | 34°48' – 41°45' | 15 | Sweden | 55°20' – 62°00' | 24* |
| Hungary | 45°45' – 48°35' | 19 | | 62°00' – 69°04' | 26 |
| Iceland | 63°17' – 67°09' | 26 | Switzerland | 45°49' – 47°49' | 18 |
| Ireland | 51°05' – 55°05' | 22 | Turkey | 35°51' – 42°06' | 16 |
| Italy | 35°47' – 47°05' | 17 | United Kingdom | 49°00' – 55°00' | 21* |
| Latvia | 55°30' – 58°04' | 23 | | 55°00' – 62°00' | 23 |

* factory setting

Geo Code values 6000 e / 75000 e, OIML Class III (Altitude < 1000 m)

| Geographical latitude | Geo Code | Geographical latitude | Geo Code |
|-----------------------|----------|-----------------------|----------|
| 00°00' – 12°44' | 18 | 43°26' – 47°51' | 18 |
| 05°46' – 17°10' | 21 | 45°38' – 50°06' | 22 |
| 12°44' – 20°45' | 16 | 47°51' – 52°22' | 20 |
| 17°10' – 23°54' | 18 | 50°06' – 54°41' | 21 |
| 20°45' – 26°45' | 20 | 52°22' – 57°04' | 24*, 26 |
| 23°54' – 29°25' | 23 | 54°41' – 59°32' | 21 |
| 26°45' – 31°56' | 24 | 57°04' – 62°09' | 15 |
| 29°25' – 34°21' | 25*, 26 | 59°32' – 64°55' | 18 |
| 31°56' – 36°41' | 17, 19* | 62°09' – 67°57' | 19 |
| 34°21' – 38°58' | 20 | 64°55' – 71°21' | 18 |
| 36°41' – 41°12' | 15 | 67°57' – 75°24' | 15 |
| 38°58' – 43°26' | 19 | 71°21' – 80°56' | 24*, 26 |
| 41°12' – 45°38' | 26 | 75°24' – 90°00' | 18 |

* factory setting

9.3 Disposal

In accordance with the requirements of European Directive 2002/96 EC on Waste Electrical and Electronic Equipment (WEEE), this device may not be disposed of with domestic refuse. This also applies for countries outside the EU in accordance with their respective national regulations.



- Please dispose of this product in accordance with local regulations for the separate collection of waste electrical and electronic equipment.

Should you have any questions, please contact the corresponding authorities or the dealer from whom this device was purchased.

If this device is passed on (for example for further private or commercial/industrial use), this regulation is also to be passed on.

Many thanks for your contribution to the protection of the environment.

Battery disposal

Batteries contain heavy metals and therefore cannot be disposed of in the normal refuse.

- Observe local regulations on the disposal of materials that are hazardous to the environment.

9.4 Protocol printouts

Examples of what can be adjusted (GA46 printouts, in English)

Printout with header and identification data

```

METTLER TOLEDO
Tel. +49 7431 140
Germany
www.mt.com
Date      27/04/2015
Time      21:50:48
ID1       Company ABC
ID2       67195 Town
Net       0.57 kg
Tare      0.82 kg
Gross     1.39 kg
  
```

Piece counting

```

Date      08/01/2015
Time      00:06:31
Net       0.700 kg
Quantity  29 PCS
APW      23.96766 g
  
```

Over/Under Checkweighing default printout

```

Position  <Tolerance
METTLER TOLEDO
Tel. +49 7431 140
Germany
www.mt.com
Date      08/01/2015
Time      00:02:53
ID1       Company ABC
ID2       67195 Town
Gross     2.090 kg

Target    90 PCS
Tol -     1 PCS
Tol +     1 PCS
Tol.Type  Relative
Dev.      -3 PCS
  
```

Over/Under Checkweighing minimum printout

```

Position  >Tolerance
Net       0.925 kg
  
```

Index

A

| | |
|---------------------|-----|
| Accessories | |
| for dry environment | 96 |
| for wet environment | 103 |
| Alibi memory | |
| Calling up log file | 34 |
| Settings | 71 |
| Application | |
| Clever print | 64 |
| Average weighing | |
| Operation | 25 |
| Settings | 64 |

C

| | |
|--------------------------|--------|
| Calibration | 57 |
| Cleaning | |
| in dry environment | 35 |
| in wet environment | 35 |
| Clever print | 24, 64 |
| Connections | |
| Power supply | 17 |
| Weighing platform | 17 |
| Counting | |
| APW optimization | 66 |
| Auto clear APW | 66 |
| Autosampling | 66 |
| Bulk scale | 66 |
| Counting system | 66 |
| Fixed reference size | 65 |
| Minimum reference weight | 65 |
| Procedure | 37 |
| Reference scale | 66 |
| Reference size | 65 |
| Total count | 66 |

D

| | |
|-----------------------------|--------|
| Database | |
| Recalling article | 42, 48 |
| Settings | 71 |
| Storing article | 42, 48 |
| Digital I/Os | 84 |
| Dimensional drawings | |
| Devices for dry environment | 94 |
| Devices for wet environment | 101 |
| Display | |
| 3-line mode | 9 |
| Metrological data line | 10 |
| Serial numbers | 87 |
| Settings | 74 |
| Symbols and info line | 11 |
| Units | 58, 62 |
| Update | 63 |
| Weight value | 11 |
| Dynamic weighing | |
| Operation | 25 |
| Settings | 64 |

E

| | |
|------------------|----|
| Energy save | 74 |
| Error conditions | 88 |
| Error messages | 89 |
| External input | |
| Entry | 26 |
| Settings | 82 |

F

| | |
|----------|--------|
| FACT | |
| Settings | 59 |
| Symbol | 11 |
| Filter | 59, 63 |

G

| | |
|----------|-----|
| Geo Code | |
| Display | 20 |
| Values | 105 |

H

| | |
|------------------------------|----|
| High resolution | 27 |
| Hygienically sensitive areas | 19 |

I

| | |
|------------------------|--------|
| Identifications | |
| Scale data | 57, 61 |
| Terminal data | 74 |
| Weighing data | 26 |
| Info key | |
| Displaying information | 23 |
| Settings | 75 |
| Interfaces | |
| Pin assignment | 104 |

K

| | |
|---------------|----|
| Keyboard | |
| Function keys | 12 |
| Settings | 75 |
| Soft keys | 13 |

L

| | |
|---------------|----|
| Levelling | 16 |
| Linearization | 57 |
| Location | 16 |

M

| | |
|--------------------------|--------|
| Maintenance | 86 |
| Menu | |
| Analog scale | 56 |
| Application | 64 |
| Communication | 76 |
| Display | 53 |
| IDNet Scale | 61 |
| Maintenance | 86 |
| Operation | 52 |
| Operator menu | 52 |
| Scale | 55 |
| Supervisor menu | 52 |
| Metrological data line | 10 |
| Metrological information | 105 |
| MinWeigh | |
| Settings | 59, 63 |
| Symbol | 11 |

O

| | |
|--------------------------|--------|
| Over/Under Checkcounting | |
| Target values | 45 |
| Over/Under Checkweighing | |
| Display | 69 |
| Output | 68 |
| Procedure | 46 |
| Quick start | 47 |
| Subtractive weighing | 46 |
| Target values | 45 |
| To zero | 47 |
| Tolerance type | 44, 67 |

P

| | |
|------------------------|-----|
| Printing | 24 |
| Clever print | 24 |
| Printout configuration | 64 |
| Prompt | |
| Additive tare | 32 |
| Hands free | 30 |
| Multi tare | 31 |
| Sample/Tare | 29 |
| Settings | 71 |
| Take away | 33 |
| Tare/Sample | 28 |
| Protocol printouts | 107 |

R

| | |
|-------------|--------|
| Reset | |
| Application | 71 |
| Reset all | 87 |
| Scale | 60, 63 |
| Terminal | 76 |
| Resolution | 58 |
| Restart | 58, 62 |

S

| | |
|------------------------|--------|
| Safety instructions | 7 |
| Service information | 90 |
| Smart weighing counter | 90 |
| Spanner icon | 9, 90 |
| Storage battery | 18 |
| Straight weighing | 20, 64 |
| Supervisor menu access | 76 |
| Switching on/off | 20 |
| Switching scales | 27 |
| Switching units | 20 |

T

| | |
|--|--------|
| Taring | |
| Automatic | 21 |
| Automatic clearing the tare | 21 |
| Chain tare | 22 |
| Clearing the tare | 21 |
| Manual | 21 |
| Settings | 58, 62 |
| Tare preset | 22 |
| Technical data | |
| Compact scales | 92 |
| Terminal and platform combinations | 99 |
| Weighing terminals for dry environment | 91 |
| Weighing terminals for wet environment | 98 |
| Templates | |
| Assigning | 64 |
| Defining | 85 |
| Testing | |
| Communication | 87 |
| Display | 87 |
| Keyboard | 87 |
| Scale | 86 |
| Totalization | 50, 70 |

V

| | |
|-------------------|----|
| Verification test | 36 |
|-------------------|----|

W

| | |
|---------|----|
| Warning | 89 |
|---------|----|

Z

| | |
|-----------|--------|
| Zeroing | |
| Automatic | 21 |
| Manual | 21 |
| Settings | 58, 62 |

GWP®

Good Weighing Practice™

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

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

 www.mt.com/GWPwww.mt.com

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