





# 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](http://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](http://www.mt.com/productregistration) so we will provide you with information tailored to your specific needs. Additionally, you will receive promotions that you as a METTLER TOLEDO product owner can benefit from at your convenience.
- 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.

### FCC Notice

This device complies with Part 15 of the FCC Rules and the Radio Interference Requirements of the Canadian Department of Communications. Operation is subject to the following conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This equipment complies with FCC radiation exposure limits set forth for uncontrolled equipment and meets FCC radio frequency (RF) Exposure Guidelines. This equipment should be installed and operated with at least 2cm and more between the radiator and person's hands.

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

### IC Notice

This device contains license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's license-exempt RSS(s). Operation is subject to the following two conditions:  
(1) This device may not cause interference.  
(2) This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans la présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

- (1) L'appareil ne doit pas produire de brouillage ;
- (2) L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

This equipment complies with IC radiation exposure limits set forth for uncontrolled equipment and meets IC radio frequency (RF) Exposure Guidelines. This equipment should be installed and operated with at least 2cm and more between the radiator and person's hands.

Avis : Pour répondre à la IC d'exposition pour les besoins de base et mobiles dispositifs de transmission de la station, sur une distance de séparation de 2 cm ou plus doit être maintenue entre l'antenne de cet appareil et les personnes en cours de fonctionnement. Pour assurer le respect, l'exploitation de plus près à cette distance n'est pas recommandée. L'antenne(s) utilisé pour cet émetteur ne doit pas être localisés ou fonctionner conjointement avec une autre antenne ou transmetteur.

For indoor use only.

#### Caution:

- 1) The device for operation in the band 5150-5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems;
- 2) For devices with detachable antenna(s), the maximum antenna gain permitted for devices in the bands 5250-5350 MHz and 5470-5725 MHz shall be such that the equipment still complies with the e.i.r.p. limit;
- 3) For devices with detachable antenna(s), the maximum antenna gain permitted for devices in the band 5725-5850 MHz shall be such that the equipment still complies with the e.i.r.p limits specified for point-to-point and non-point-to-point operation as appropriate;

And DFS(Dynamic Frequency Selection) products that operate in the bands 5250-5350MHz, 5470-5600MHz, and 5650-5725MHz.

#### Avertissement:

- 1 ) Le dispositif fonctionnant dans la bande 5150-5250 MHz est réservé uniquement pour une utilisation à l'intérieur afin de réduire les risques de brouillage préjudiciable aux systèmes de satellites mobiles utilisant les mêmes canaux;
- 2 ) Le gain maximal d'antenne permis pour les dispositifs avec antenne(s) amovible(s) utilisant les bandes 5250-5350 MHz et 5470-5725 MHz doit se conformer à la limitation P.I.R.E.;
- 3 ) Le gain maximal d'antenne permis pour les dispositifs avec antenne(s) amovible(s) utilisant la bande 5725-5850MHz doit se conformer à la limitation P.I.R.E spécifiée pour l'exploitation point à point et non point à point, selon le cas.

Les produits utilisant la technique d'atténuation DFS (sélection dynamique des fréquences) sur les bandes 5250-5350 MHz, 5470-5600 MHz et 5650-5725MHz.

## Safety Instructions

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

► [www.mt.com/ComplianceSearch](http://www.mt.com/ComplianceSearch)

Please scan the QR code below and download from ► [www.mt.com/ind400](http://www.mt.com/ind400).



### **WARNING**

Use the device only for weighing in accordance with its corresponding user manual. Any other type of use and operation beyond the limits of technical specifications is considered as not intended.



### **WARNING**

The device is for indoor use only.



### **WARNING**

Only permit qualified personnel to service the equipment. Exercise care when making checks, tests and adjustments that must be made with power on. Failure to observe this precaution could result in bodily harm and/ or property damage.



### **WARNING**

Keep the equipment away from processes that generate high charging potential such as electrostatic coating, rapid transfer of non-conductive materials, rapid air jets, and high pressure aerosols.



### **WARNING**

Avoid plastic covers over the equipment. The protection cover used must be officially approved by METTLER TOLEDO.



### **WARNING**

Ensure proper equipotential grounding of the equipment, mounting accessories, and the scale base.

**⚠ WARNING**

If the keyboard, display lens or enclosure is damaged, the defective component must be repaired immediately. Remove power immediately and do not reapply power until the display lens, keyboard or enclosure has been repaired or replaced by qualified service personnel. Failure to do so could result in bodily harm and/or property damage.

**⚠ WARNING**

Only the components specified in the user manual can be used in this device. All equipment must be installed in accordance with the installation instructions detailed in the user manual. Incorrect or substitute components and/or deviation from these instructions can impair the intrinsic safety of the equipment and could result in bodily injury and/or property damage.

**⚠ WARNING**

For continued protection against shock hazard, connect to properly grounded power source only. Do not remove the grounding connection.

**⚠ WARNING**

When this equipment is included as a component part of a system, the resulting design must be reviewed by qualified personnel who are familiar with the construction and operation of all components in the system and the potential hazards involved. Failure to observe this precaution could result in bodily harm and/or property damage.

**⚠ WARNING**

All equipment must be installed in accordance with the installation instructions detailed in its corresponding user manual. Deviation from the instructions can impair the intrinsic safety of the equipment and void the agency approval.

**⚠ WARNING**

Before connecting/disconnecting any internal electronic components or inter-connecting wiring between electronic equipment always remove power and wait at least thirty (30) seconds before any connections or disconnections are made. Failure to observe these precautions could result in damage to or destruction of the equipment and/or bodily harm.

**⚠ WARNING**

Replacing equipment components with non-original parts can lead to performance losses and property damage. Use only original or compatible spare parts and accessories from METTLER TOLEDO.

**⚠ WARNING**

Be certain that the communication circuits are wired exactly as shown in the installation section of its corresponding user manual. If the wires are not connected correctly, the equipment or interface board may be damaged.

**⚠ WARNING**

Observe precautions for handling electrostatic sensitive devices.

**⚠ WARNING**

Avoid direct exposure to sunlight.

**⚠ WARNING**

The mains connection of the power supply unit must be made by a professional electrician authorized by the owner and in accordance with the respective terminal diagram, the accompanying installation instructions as well as the country-specific regulations.

**⚠ WARNING**

Before service, disconnect power from this device.

**⚠ WARNING**

The protective ground connection must be checked after service work is performed. Perform the check between the protective ground contact on the power plug and the housing. This test must be documented in the service report.

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

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







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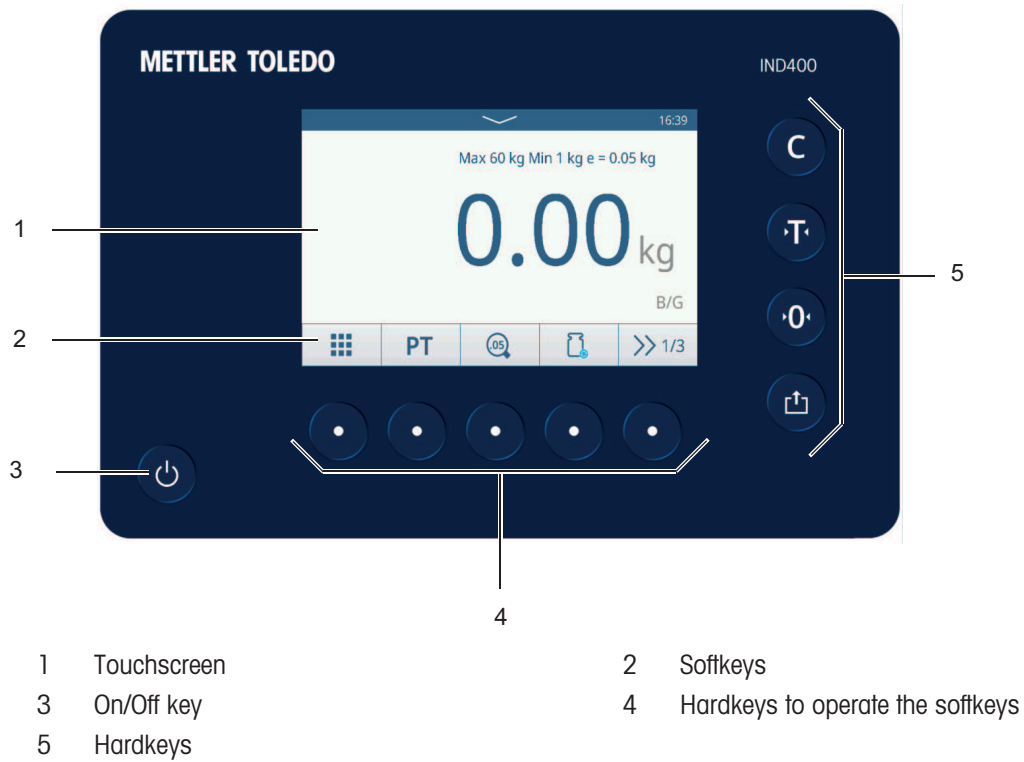
# 1 Introduction

## 1.1 Presentation

IND400 is a transaction weighing terminal with touchscreen and additional hardkeys for better operation, e.g. when working with gloves.

IND400 provides one scale interface and up to two optional data interfaces.

### 1.1.1 Device overview






## 1.1.2 Main screen



- |   |                                  |   |                       |
|---|----------------------------------|---|-----------------------|
| 1 | Quick setting menu access button | 2 | System bar            |
| 3 | Metrology line                   | 4 | Weight value and unit |
| 5 | Status line                      |   |                       |




### System bar

In the system bar the following symbols can be displayed:

- |   |  |   |                    |
|---|--|---|--------------------|
|    | APR320 / APR220 printer connected              |  | Message box status |
|  | Battery status, for versions with battery only | <b>hh:mm</b>  | Time               |

### Status line

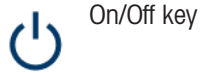
In the status line the following symbols can be displayed:

- |                        |  |   |   |
|------------------------|--|---|---|
| <b>&gt; 0 &lt;</b>     | Center of zero   |  | Calculated weight value, e.g. in animal weighing            |
| <b>B/G</b>             | Gross weight   | <b>T</b>  | Indicates the current tare weight                           |
| <b>NET</b>             | Net weight   | <b>PT</b>   | Indicates the current tare preset                           |
| <b>~</b>               | Stability monitor  |  | When blinking: MinWeigh error                               |
| <b>&gt;   1   &lt;</b> | Current weighing range/interval, for multiple range / multi-interval scales only |  | Indicates that the weight display is in a higher resolution |
| <b>&gt;   2   &lt;</b> |  |   |   |
| <b>&gt;   3   &lt;</b> |  |   |   |

### 1.1.3 Hard and softkeys

#### Hardkeys

The following hardkeys are available:



On/Off key



Clear



Tare



Zero



Print / transfer data

#### Softkeys

In the basic weighing application the following softkeys are available, separated in up to 3 softkey ribbons.



Select application



Information



Pretare



Open transaction table



Higher resolution



Open tare table



Switch unit



Open basic setup



Scroll to the next softkey ribbon



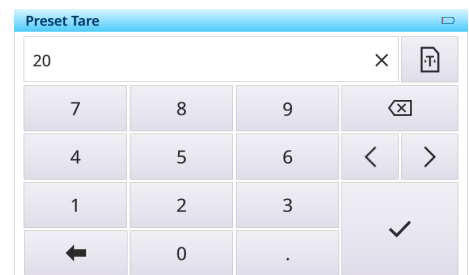
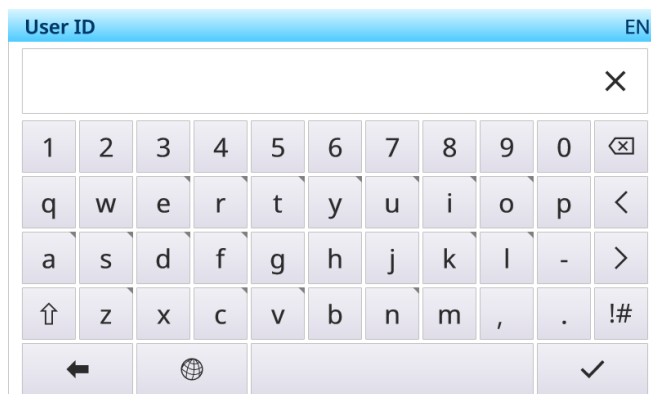
Open Quick setting menu

#### Note

The softkeys can also be operated using the hardkey located below the displayed softkey.

#### Input of text or numbers

When an input of numbers or text is required, touch the corresponding input field and a keypad is displayed on the screen.



#### Input of special characters

- For special characters touch and hold a character, e.g. "a".
  - The available variants of the character "a" are displayed.



### 1.1.4 Data integrity

IND400 is available as versions without and with the Data Integrity feature.

Data integrity is the overall accuracy, completeness and consistency of data. Data integrity also refers to the safety of data in regard to regulatory compliance and security. When the integrity of data is secure, the information saved in the database will remain complete, accurate and reliable no matter how long it is saved or how often it is accessed.

Data Integrity should be complied with throughout the whole life-cycle of the data. It comprises the following features:

- Input validation
- Data validation
- Removal of duplicated data
- Data backup
- Control access to data
- Audit trail log
- Electronics signature

Data Integrity on the IND400 is working with the following applications:

- Over/under checkweighing
- Manual Filling/Dosing
- Totalization
- Classification

Data Integrity is not available for the Animal Weighing and Counting applications.

#### **IND400 data integrity features**

Four-eye principle: Only data reviewed from a second person can be exported.

Special role in the user management: QA for reviewing

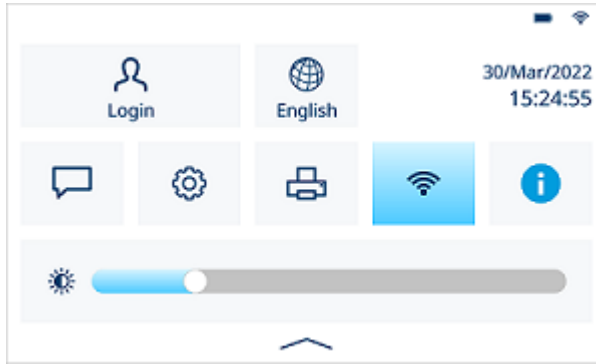
Electronics signature

For operation with data integrity refer to [Working with Data Integrity ▶ Page 37], for data integrity settings refer to [Application -> Data Integrity ▶ Page 88].



## 1.2 Quick setting menu

Touch  in the system bar or softkey  to open the following menu:



Show battery status



Show Wi-Fi status



Display of the current user  
Open login/logout



Display of the current language  
Open language setting

30/Mar/2022  
15:24:55

Date and time in the format defined in the Terminal setup



Open message box



Open setup, refer to [Configuration ▶ Page 78]



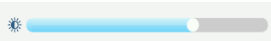
Activate/deactivate a printer



Open information menu, see [Info/log features ▶ Page 17]




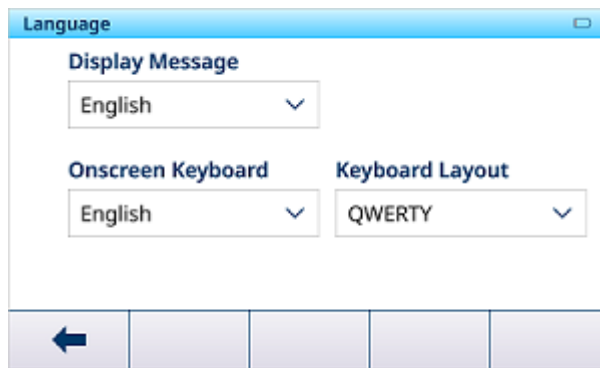
Activate/deactivate Wi-Fi



Set the brightness of the display

## Selecting language

Touch  to open the following menu:



Setup item	Description	Possible settings
Display Message	Select the language to display messages on the terminal display.	English, Chinese, Deutsch, Français, Italiano, Español, Português, Japanese, Polski
Onscreen Keyboard	Select the language for the onscreen keyboard to enter text.	English, Chinese
Keyboard Layout	Select the keyboard layout for the onscreen keyboard.	QWERTY, QWERTZ, AZERTY

## Message box

Depending on the last message and the message box status, there are different icons on the system bar to open the message box.

Messages are classified with the following icons:



Failure



Out of specification



Maintenance required



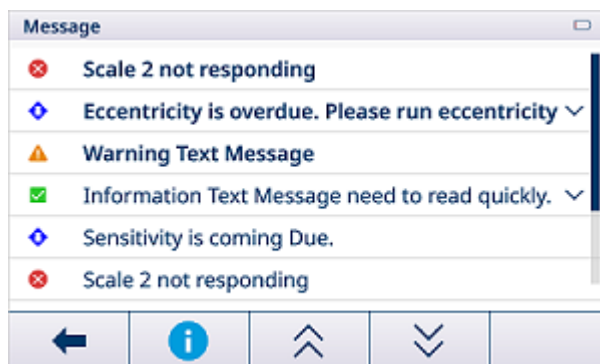
Normal condition




Alarm



No new message since the last recall of the message box

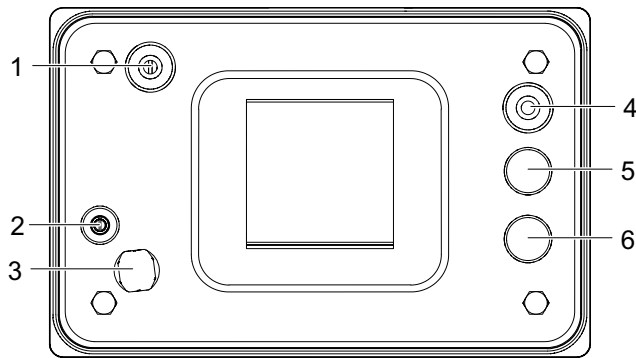


## Leaving the Quick setting menu

- Touch  in the bottom line to leave the Quick setting menu.
  - ➔ The main screen is displayed.

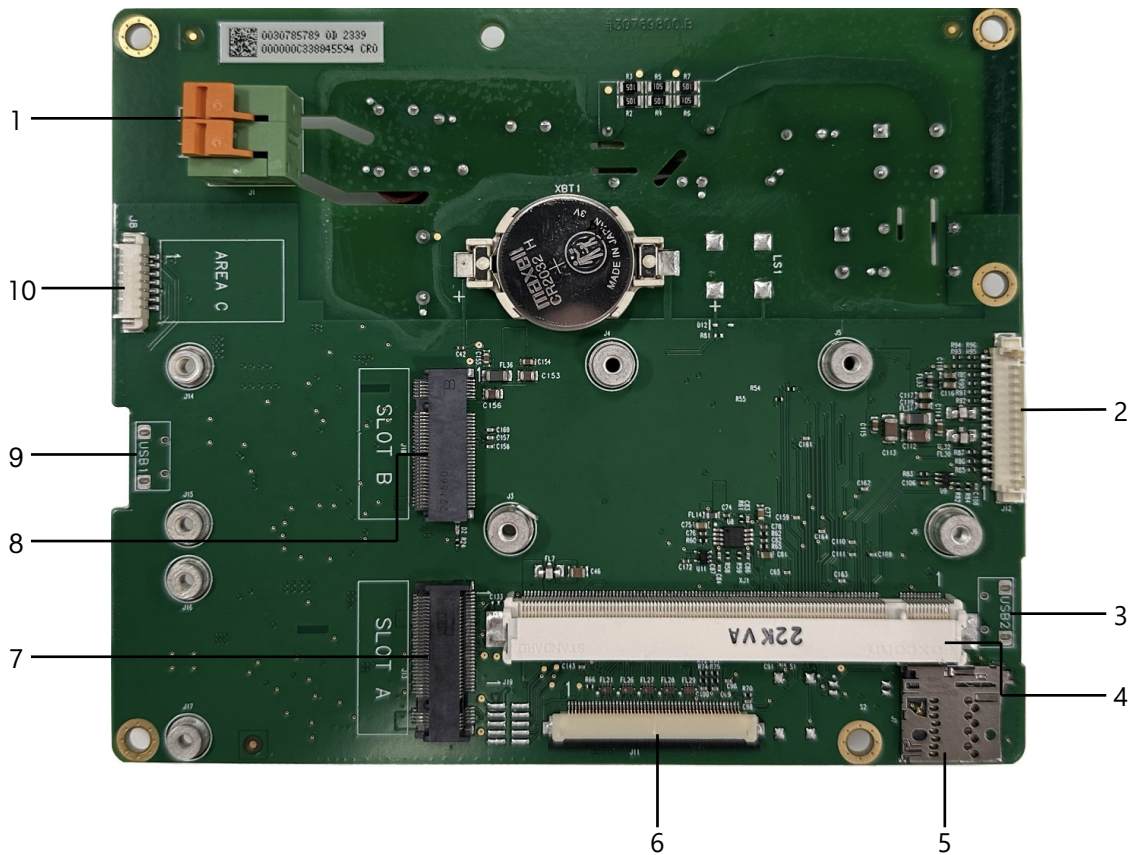
### 1.3 Connections

On the back, the following connections are available:



- |   |                             |   |                         |
|---|-----------------------------|---|-------------------------|
| 1 | Scale interface             | 2 | Metrology sticker/screw |
| 3 | Pressure compensation valve | 4 | Power supply            |
| 5 | Optional data interface     | 6 | Optional data interface |

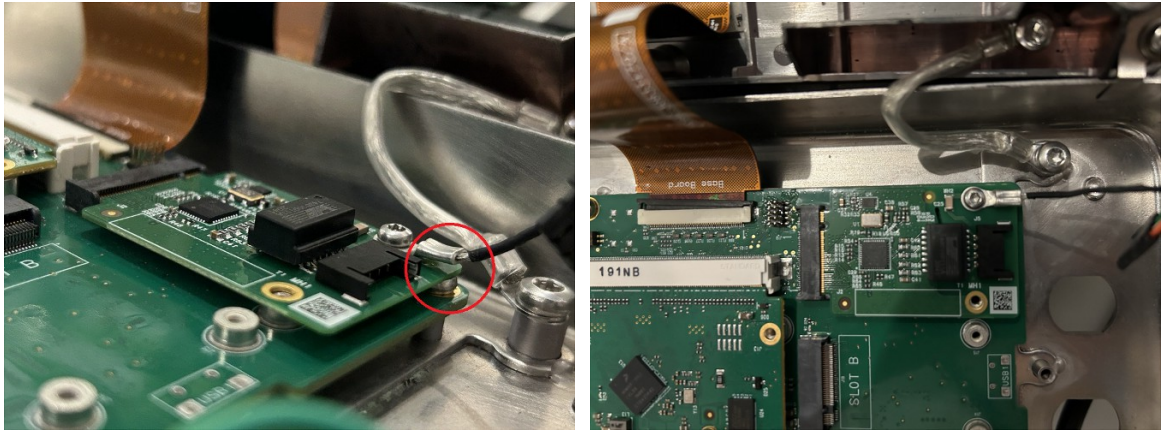
### 1.4 Base Board connections, ports and switches



1	Power supply	2	Scale board interface
3	USB 2 (not used)	4	Core board interface
5	SD card slot	6	HMI interface
7	Option board interface A	8	Option board interface B
9	USB 1	10	COM1 (RS232)

**Note**

One screw of the Base Board is covered by the Ethernet Board. When replacing the Base Board, the Ethernet Board has to be removed first.



## 1.5 Commissioning

### 1.5.1 Selecting the location

#### **WARNING**

##### **Risk of heat dissipation**

- When installing the weighing terminal, ensure that the unit is at least 10 cm away from the wall and other devices.

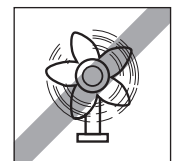
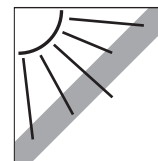
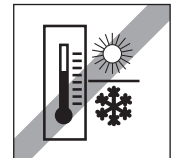
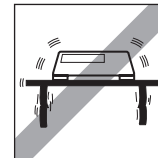
#### **CAUTION**

##### **Limited cable lengths for approved weighing systems**

- For approved weighing systems, a cable length of 30 m between weighing terminal and weighing platform as well as between weighing terminal and external devices (like printer, PC, etc.) must not be exceeded.

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



### 1.5.2 Weighing platform connection

#### **Analog weighing platforms**

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

#### **Weighing platforms with digital scale interface**

- Connect the weighing platform connector to the weighing terminal.



You can disconnect the weighing platform from the weighing terminal of an approved weighing system without violating the approval.  
 If another weighing platform is connected to the weighing terminal, the system is not approved.  
 If the weighing platform of the approved system is connected again, the approval is valid again.  
 If you have connected a non-approved weighing platform and want to have the system approved, call the METTLER TOLEDO service technician.

### 1.5.3 Power supply connection



#### **WARNING**

##### **Risk of electric shock!**

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

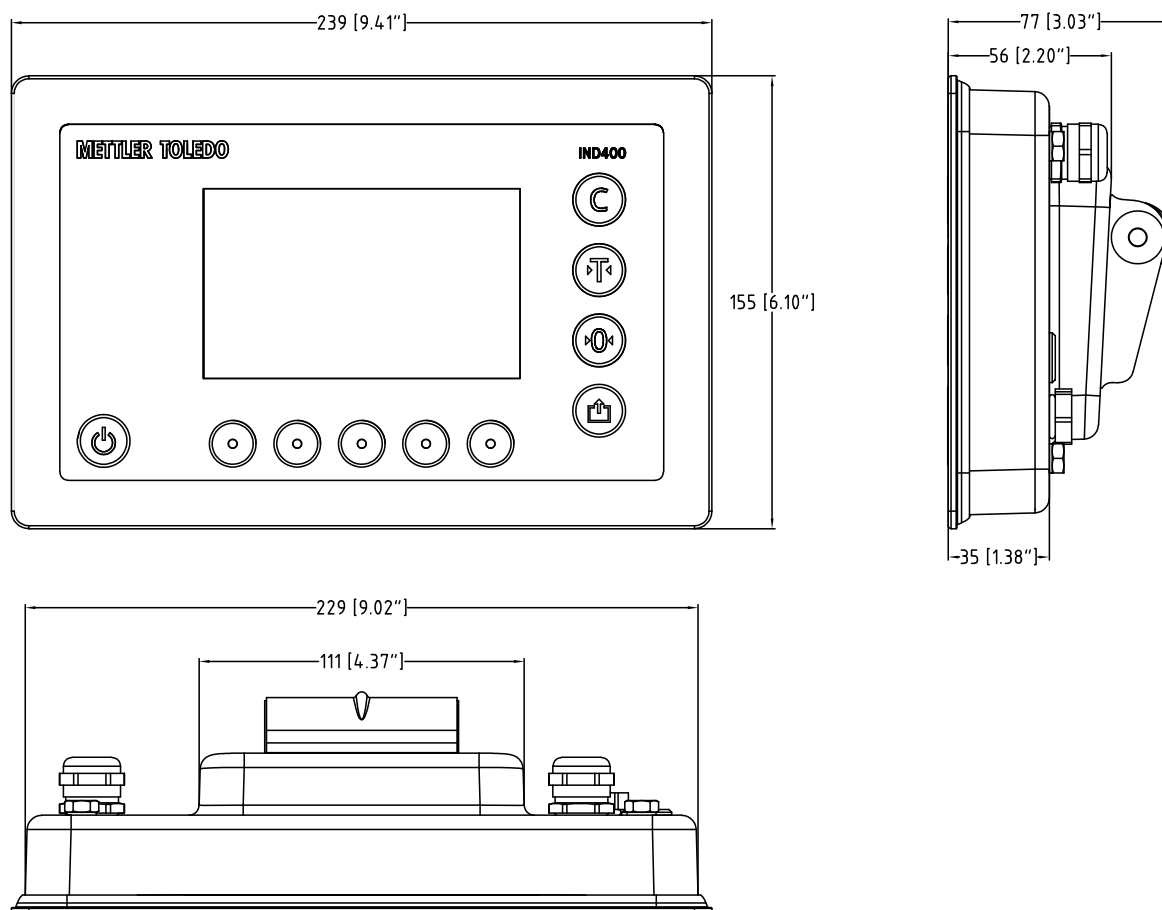
- Plug the power plug into the power socket.
- ➔ For the startup procedure, refer to [Switching on/off ▶ Page 16].

### 1.6 Technical data

Housing	Stainless steel
Display	High resolution touch graphic display, 5", 800 x 480 px
Keypad	Membrane keyboard
Protection type	IP68 / IP69K
Net weight / Gross weight	2 kg / 2.5 kg
Package size	351 x 221 x 202 mm
Power supply connection	Wide range power supply 100 - 240 V
Mains supply voltage fluctuations	-15% - +10%
Ambient conditions	Application: Indoor use only Altitude: Up to 2,000 m Temperature range Class III: -10 ... 40 °C / 14 ... 104 °F Overvoltage category: II Pollution degree: 2 Humidity range: 10 to 95 % relative humidity, non-condensing
W & M approvals	USA: NTEP Class II 100,000d; Class III/IIIL 10,000d Canada: Class II 100,000d; Class III 10,000d; Class IIIHD 10,000d Europe: OIML Class II, III, IIII CPA: IND400 SS Analog, Class III 10,000d, 0.3µV/e
Scale interface	Analog, SICSpro
Data interfaces	Up to 2 data interfaces (RS232, RS485, USB (OTG), Modbus TCP, Modbus RTU, DIO, Wi-Fi, Ethernet)
Cable length for approved weighing systems	For approved weighing systems, a cable length of 30 m between weighing terminal and weighing platform as well as between weighing terminal and external devices (like printer, PC, etc.) must not be exceeded. Installation outside of buildings is not allowed.

## Dimensional drawing

The physical dimensions for the IND400 terminal are shown in the figures below in mm and inch.

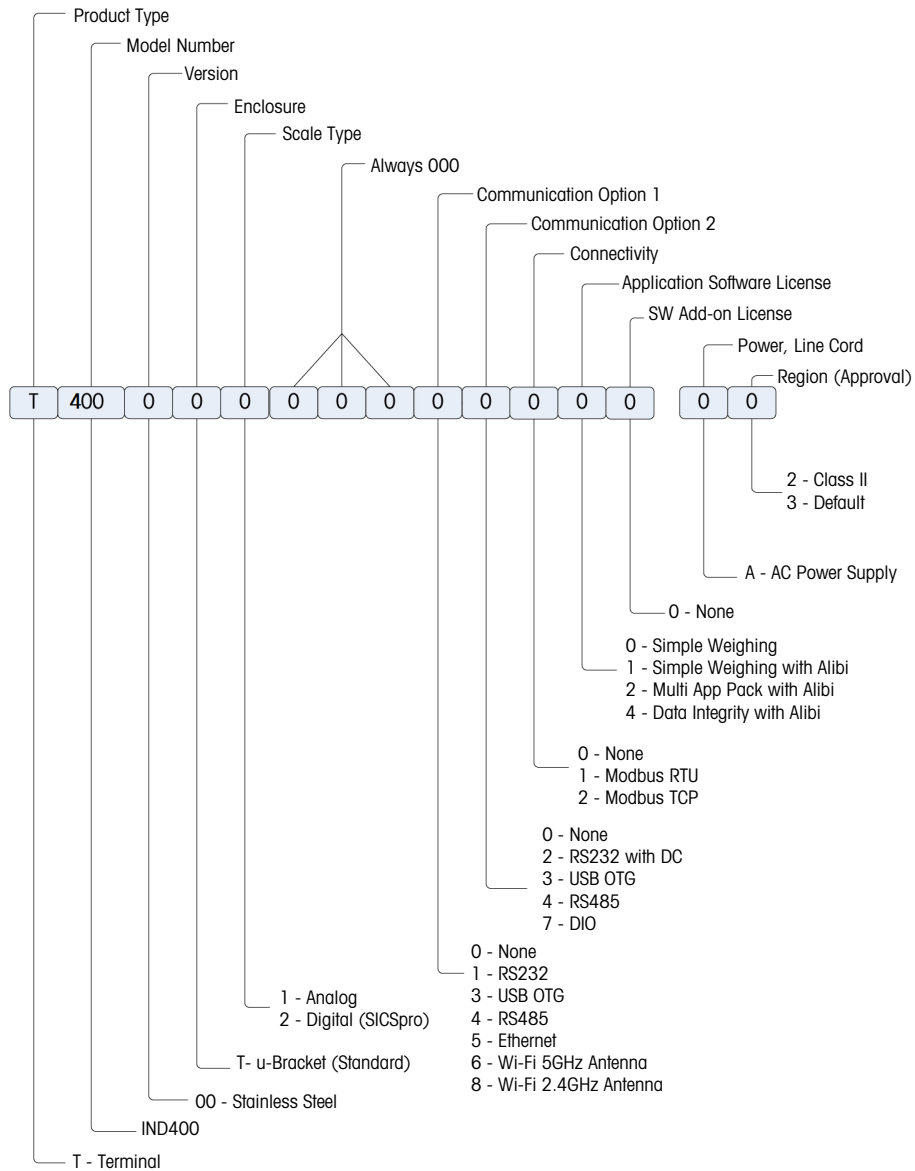


### 1.6.1 Analog scale interface

Impedance	40 Ohm to 3,000 Ohm
Excitation	5 V
Sensitivity	2 mV/V or 3 mV/V
Max. resolution	10,000 e (OIML)
Min. verification interval	0.3 $\mu$ V/e

## 1.6.2 Type designation code

The following figure shows the configuration options for the terminal.




## 2 Operation

### 2.1 Non-weighing operation

#### 2.1.1 Switching on/off


##### Switching on

- Press .
- ➔ For a few seconds the device shows a start-up screen with relevant device data.

##### Note



For approved weighing systems a countdown is running for warming up.

##### Switching off

- Press and hold  for approx. 2 seconds.
- ➔ The device is switched off.

##### Note

If the power is disconnected by unplugging the power supply when the terminal is in the power-on state, the terminal will automatically power on when the power is reconnected after about 3 seconds.




If the power is disconnected by first pressing  and then unplugging the power supply, the terminal can be started by pressing  when power is reconnected within 2 minutes, while the terminal will automatically power on when power is reconnected after 2 minutes.

#### 2.1.2 Login / logout without Data Integrity

When starting the device or after a logout, the default operator is logged in.





Users have to be created in the setup, refer to [Terminal -> User Management ▶ Page 91].

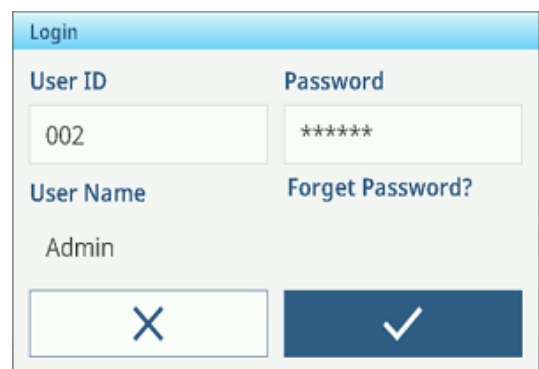
##### Logout

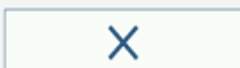

- 1 Open the Quick setting menu, refer to [Quick setting menu ▶ Page 9].
  - ➔ Below the symbol  the name of the current user is displayed.
- 2 Touch symbol .
- ➔ A safety prompt is displayed.
- 3 Confirm the logout with .
- ➔ The current user is logged out and the default operator is logged in.

##### Login

To login other than as default operator proceed as follows:

- 1 Open the Quick setting menu, refer to [Quick setting menu ▶ Page 9].
- 2 Touch symbol .
- ➔ You are asked if you want to log out.
- 3 Touch symbol .
- 4 Confirm the logout of the default operator with .
- ➔ The window to enter User ID and password is displayed.
- 5 Enter your User ID and password and confirm with .
- ➔ The new user is logged in and the main screen is displayed.



Login	
User ID	Password
002	*****
User Name	Forget Password?
Admin	
	





### 2.1.3 Login / logout with Data Integrity

When starting the device or after a logout, the default user "Viewer" is logged in. This user has no access rights, except viewing the weight.

Users have to be created in the setup, refer to [Terminal -> User Management ▶ Page 91].

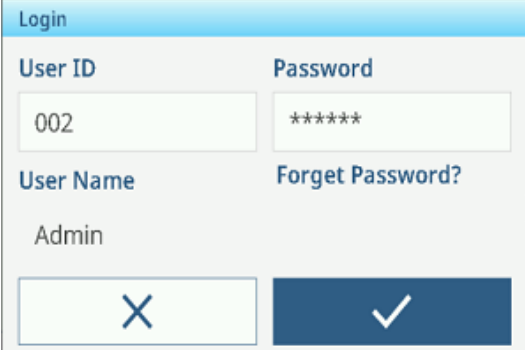
#### Login

To login proceed as follows:

- 1 Open the Quick setting menu, refer to [Quick setting menu ▶ Page 9].
- 2 Touch symbol .
  - ➔ The window to enter User ID and password is displayed.
- 3 Enter your User ID and password and confirm with .
  - ➔ The new user is logged in and the main screen is displayed.




#### Note

When you are logging in for the first time, you are asked to change your password.



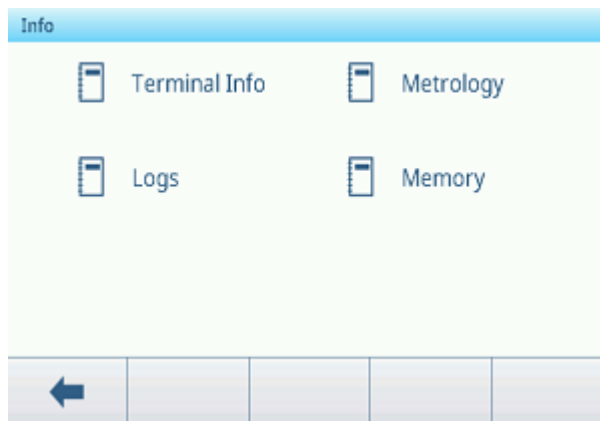
The screenshot shows a 'Login' dialog box with a light blue header. It contains two input fields: 'User ID' with the value '002' and 'Password' with '\*\*\*\*\*'. Below these are 'User Name' (displaying 'Admin') and a 'Forget Password?' link. At the bottom, there are two buttons: a light blue button with a white 'X' and a dark blue button with a white checkmark.

#### Logout

- 1 Open the Quick setting menu, refer to [Quick setting menu ▶ Page 9].
- 2 Touch symbol .
- 3 Touch symbol .
  - ➔ A safety prompt is displayed.
- 4 Confirm the logout with .
  - ➔ The current user is logged out and the default user "Viewer" is logged in.

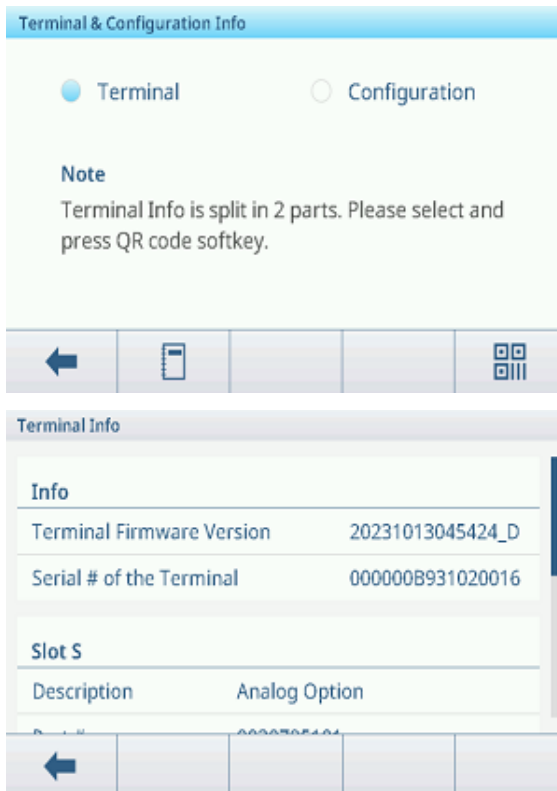
### 2.1.4 Info/log features

Touch  in the Quick setting menu to gain access to the following information:



- Touch the desired information category.


## Terminal Info



In case you want to contact the METTLER TOLEDO service, a QR code can be displayed with information relevant for a service technician.

Either select Terminal or Configuration.

Touch softkey  to show a QR code.

For detailed information on the device touch softkey .

- Scroll the window for detailed system information on the slots.

The following information is available:

Terminal Firmware Version

Serial Number of the Terminal

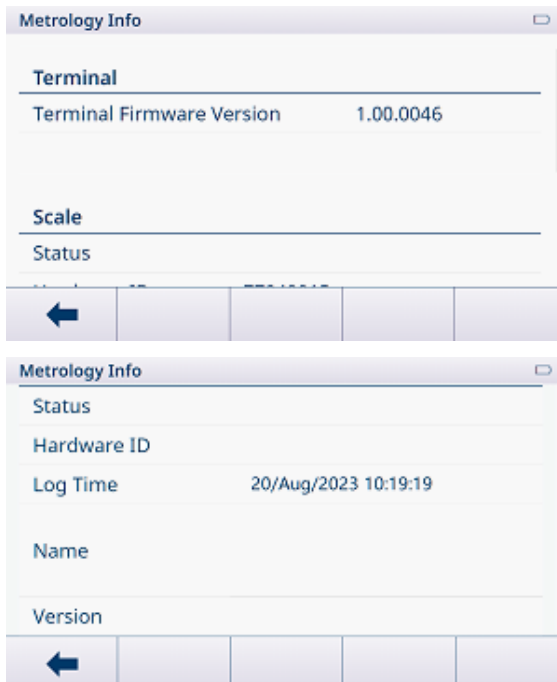
Checksum

Slot S: Information on the scale interface

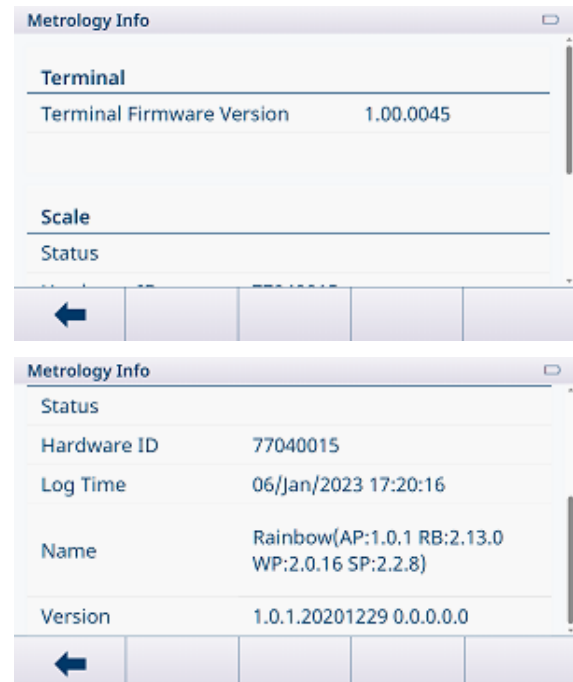
Slot A / Slot B: Information on the data interfaces

## Metrology Info (for approved scales only)

### Analog Scale



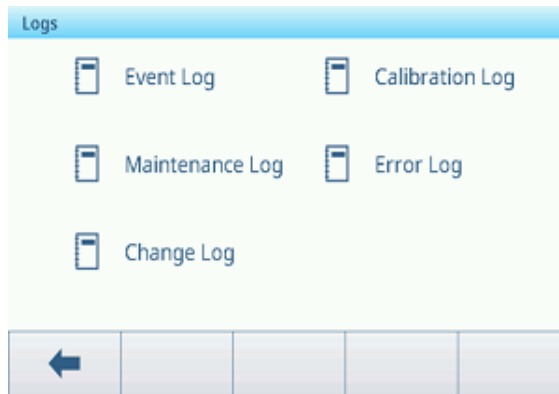
### SICSpro Scale



### Note

The Name display in Metrology Info is the same as the Serial Number display in Setup -> Scale -> Identification.

## Logs



– Select a log to display the respective log records.

## Event Log

Test Result	Date & Time	Technician
✓	14/Nov/2023 10:27:24	Admin
✓	14/Nov/2023 10:23:39	Admin

The screenshot shows the Event Log interface with a table of records. Below the table is a navigation bar with a back arrow, an information icon, a filter icon, and a page indicator showing "1/2".

In the Event Log, all planned maintenance actions are reported.

## Calibration Log

ID	Date & Time	Unit	Gross
7	14/Nov/2023 09:38:55	kg	17.00
6	14/Nov/2023 09:38:46	kg	19.70
5	14/Nov/2023 09:38:39	kg	22.35
4	14/Nov/2023 09:38:32	kg	27.65
3	14/Nov/2023 09:38:24	kg	17.45

The screenshot shows the Calibration Log interface for "Alibi Table" with a table of records. Below the table is a navigation bar with a back arrow, an information icon, a filter icon, and a page indicator showing "1/2".

In the Calibration Log, all calibration actions are reported.

## Maintenance Log

Date & Time	User Name	Scale ID
14/Nov/2023 09:48:21	Admin	1
14/Nov/2023 09:47:23	Admin	1
14/Nov/2023 09:45:55	Admin	1
14/Nov/2023 09:45:12	Admin	1
14/Nov/2023 09:44:25	Admin	1

The screenshot shows the Maintenance Log interface with a table of records. Below the table is a navigation bar with a back arrow, an information icon, a filter icon, and a page indicator showing "1/2".

In the Maintenance Log, all maintenance actions are reported.

## Error Log

Error Log		
Date & Time	Severity	Error Code

Navigation icons: back, filter, forward, 1/2

In the Error Log, all errors are reported.

## Audit Log (for IND400 with Data Integrity only)

Audit Log			
ID	Date & Time	User Name	User
38	20/Sep/2023 08:59:34	Admin	002
37	20/Sep/2023 08:57:29	Admin	002
36	20/Sep/2023 08:56:48	Admin	002
35	20/Sep/2023 08:56:25	Admin	002
34	20/Sep/2023 08:43:32	Admin	002

Navigation icons: back, info, filter, forward, export

In the Audit Log, user operations are reported.

## Change Log

Change Log		
Date & Time	User Name	Object
01/Aug/2023 09:41:26	MT	xs0105

Navigation icons: back, info, filter, forward, 1/2

In the Change Log, all changes on the device are reported.

### Additional actions in the logs



Show detailed information on the event



Filter the logs by the respective heads of columns, e.g. Date, Technician  
For more details refer to [Filtering logs and tables ▶ Page 23]



Export data to a computer/printer  
For more details refer to [Importing/exporting data ▶ Page 26]




Reset data

**Note**

All data will be deleted.

### 2.1.5 Recalling the transaction table

Each transaction is stored in the application-specific transaction table.






- Touch softkey  .
  - ➔ The last weighing transactions are displayed.
  - ➔ Swiping horizontally will show the complete information on the transactions.
  - ➔ Swiping vertically will show further transactions.

Basic Weighing Transactions			
ID	Date & Time	Unit	Gross
3	17/Apr/2023 15:50:51	kg	36.50
2	17/Apr/2023 15:50:34	kg	18.50
1	17/Apr/2023 15:50:14	kg	13.85
			
			 1/2

The following information is stored for each transaction in the Basic Weighing application:

ID	Serial number of the transaction
Date & Time	Date and time of the transaction
Unit	Weight unit of the transaction
Gross	Gross weight
Tare	Tare weight
Net	Net weight
Tare Type	"PT" for a tare preset, otherwise blank
Scale #	For IND400: always "1"
Material ID	ID of the selected material
Material Description	Description of the selected material
ID1 ... ID3	Identifications
User Name	Name of the user logged in

In the transaction table the following operations are available:


-  Show the above information for the selected transaction
-  Filter transactions, see [Filtering logs and tables ► Page 23]
-  Print transaction, only if an APR320 / APR220 printer is connected
-  Transfer transaction
-  Refresh transaction table

 **Note**

When working with data integrity, additional fields regarding review status and reviewer are shown. Transferring the transaction table is possible for reviewed data only. For more information refer to [Working with Data Integrity ► Page 37].

## 2.1.6 Recalling the Alibi log file

If requested by national regulations, the 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 Alibi memory.

- 1 Open the Quick setting menu and touch .
- 2 Select Applications -> Memory -> Alibi Table.
  - ➔ The Alibi records of the last weighings are displayed.
  - ➔ Swipe horizontally to see the complete information on the transactions.
  - ➔ Swipe vertically to see further records.






The following information is stored for each transaction:

Alibi Table			
ID	Date & Time	Unit	Gross
7	14/Nov/2023 09:38:55	kg	17.00
6	14/Nov/2023 09:38:46	kg	19.70
5	14/Nov/2023 09:38:39	kg	22.35
4	14/Nov/2023 09:38:32	kg	27.65
3	14/Nov/2023 09:38:24	kg	17.45

Navigation icons: back, info, filter, refresh, next page (1/2)

ID	Serial number of the log
Date & Time	Date and time of the transaction
Unit	Weight unit of the transaction
Gross	Gross weight
Net	Net weight
Tare	Tare weight
Scale #	For IND400: always "1"
Tare Type	"PT" for a tare preset, otherwise blank
User Name	Name of the user logged in

In the Alibi table the following operations are available:

-  Show the above information for the selected Alibi record
-  Filter Alibi records, see [Filtering logs and tables ▶ Page 23]
-  Print Alibi log file, only if an APR320 / APR220 printer is connected
-  Transfer Alibi log file
-  Refresh Alibi log file


### Note

When working with data integrity, transferring the Alibi log file is possible for reviewed data only.

## 2.1.7 Filtering logs and tables

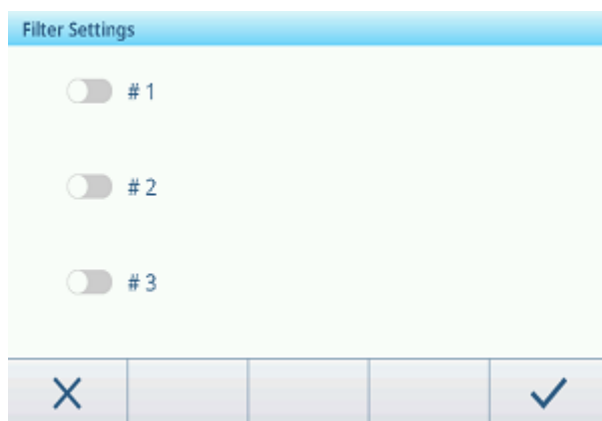
When filtering logs and tables you can combine up to three filter settings. You can filter by all parameters of the current log or table.


### Activate a filter

- 1 Select a log or a table.
- 2 Touch softkey .
  - ➔ A window to activate up to three filter settings is displayed.
- 3 Activate a filter setting.
- 4 For the next steps refer to the following examples.



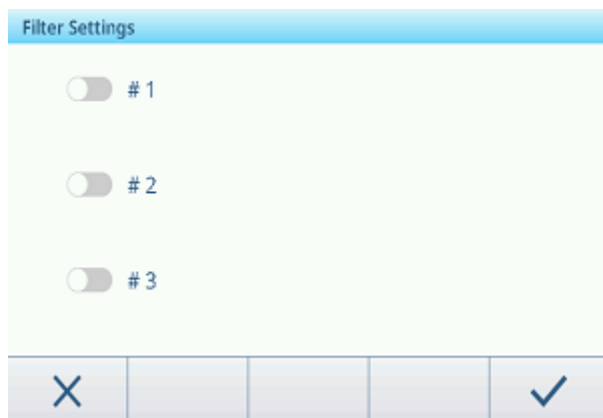
### Example 1: Searching for successful results, e.g. in the Calibration log



- 1 Select the parameter you want to search for, e.g. Result.
- 2 Select an operator, e.g. ==.  
Possible operators: ==, <, <=, !=, > >= or a range
- 3 Enter or select the searched parameter value.
- 4 If desired, swipe to the next filter setting and proceed as described in the examples.
- 5 When all filters are set, confirm the current filter settings with softkey .
- ➔ The results are displayed in the respective log.

### Example 2:

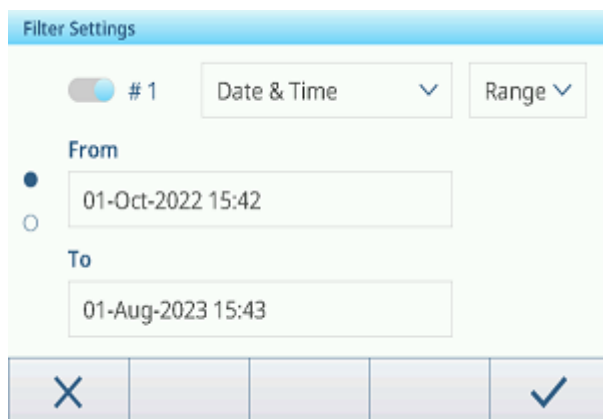
#### Searching for gross weights in the range of 10.00 to 15.00 kg, e.g. in the Transaction table



- 1 Select the parameter you want to search for, e.g. Gross.
- 2 Select an operator, e.g. Range.  
Possible operators: ==, <, <=, !=, > >= or a range
- 3 Enter parameters From and To, e.g. 10.00 and 15.00.
- 4 If desired, swipe to the next filter setting and proceed as described in the examples.
- 5 When all filters are set, confirm the current filter settings with softkey ✓.  
➔ The results are displayed in the respective table.

### Example 3:

#### Searching for all weighings in a time range, e.g. in the Alibi log



- 1 Select the parameter you want to search for, e.g. Date & Time.
- 2 Select an operator, e.g. Range.  
Possible operators: <, <=, !=, > >= or a range
- 3 Enter parameters From and To, for date and time.  
As default the current time is entered.
- 4 If desired, swipe to the next filter setting and proceed as described in the examples.
- 5 When all filters are set, confirm the current filter settings with softkey ✓.  
➔ The results are displayed in the respective log.

### Display of the filtered results

When the filtered results are displayed, there are new softkeys available.



Indicates a filtered list.

To edit the filter settings touch this softkey.








To delete the filter settings and show the complete list touch this softkey.






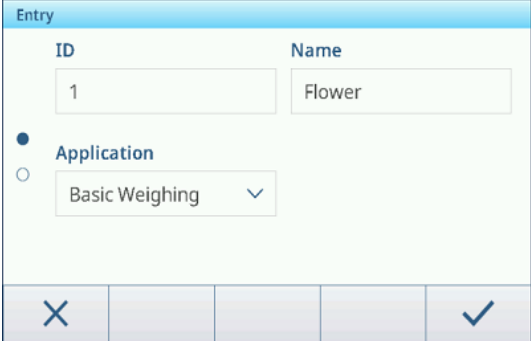
## 2.1.8 Editing tables

When opening a table, the following additional soffkeys are available:



	Search for a specific entry in the table, refer to [Filtering logs and tables ▶ Page 23]
	Add a new entry to the table
	Edit the selected table entry
	Delete the selected table entry
	Reset the table. All data will be deleted. <b>Note</b> Only available for IND400 without Data Integrity. For IND400 with Data Integrity, a reset is necessary to clear tables.

### Adding/editing a table entry, e.g. in the material table

- 1 In the table view, touch soffkey  or mark a table entry and touch soffkey .
  - ➔ The (first) page where you can enter data is displayed.
- 2 Enter or change the displayed data.
- 3 If applicable, swipe to the next page to enter/change further data.
- 4 When finished with entering all data, confirm the table entry with soffkey .
  - ➔ The stored table entry can be selected for further use.



## 2.1.9 Importing/exporting data

Using the import/export function via setup items or via softkeys  /  allows you to edit lists or tables on an external computer or to transfer lists or tables from one device to another.

### Importing data

Setup item	Description	Possible settings / comments
Device	Select the device from which the data will be imported	Internal File, USB Mass Memory
Type	Select data type, for importing templates only	ASCII, Label
Path	Path where the data to be imported has to be stored	Ensure that the data to be imported is stored in the correct folder

### Exporting data

Setup item	Description	Possible settings / comments
Device	Select the device where the data will be exported to	Internal File, USB Mass Memory
Type	Select data type, for importing templates only	ASCII, Label
Path	Path where the exported data will be stored	Ensure that the indicated folder is existent

## 2.1.10 Verification test

The weighing instrument is verified if:

The accuracy class is displayed in the metrological line.

The approval readability is shown as "e = readability".

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.

The validity is not expired.

### Note

The period of validity is country-specific. It is in the owner's responsibility 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 can be displayed in the [Metrology setup ▶ Page 80].
  - ➔ The Geo code value for your location is shown in the [Table of Geo code values ▶ Page 118].
- 2 Call the METTLER TOLEDO service technician if the Geo code values do not match.


### Screen display when the sealing is broken

When the sealing is broken, the screen will automatically open the Scale menu. The actual menu display depends on the user access right. The screen displays below are under Admin access right.

#### Analog scale


Scale	
Scale >	Metrology
Applications >	Identification
Terminal >	Capacity & Increment
Communication >	Linearization & Calibration
Maintenance >	Control Mode
	

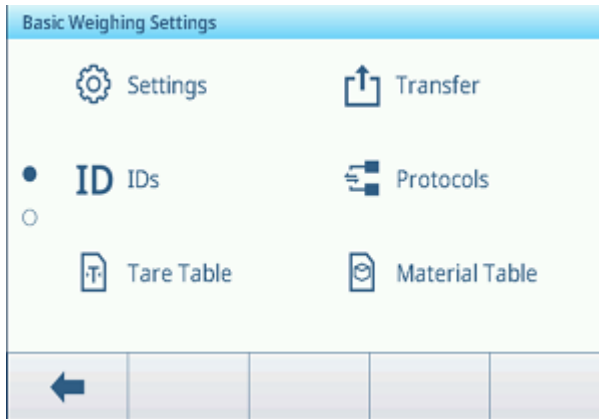
#### SICSpro scale

Scale	
Scale >	Advanced Setup Mode >
Applications >	
Terminal >	
Communication >	
Maintenance >	
	

## 2.2 Basic weighing operation








### 2.2.1 Basic weighing settings

Touching softkey  opens the Basic Weighing Settings menu. Thus you do need not to enter the setup for settings regarding the application.



**Note**

For more settings swipe the screen.


	<b>Settings</b>	Basic weighing application settings.
	<b>Transfer</b>	Settings for transferring the data to a computer or printer, see also [How to set up a printer ▶ Page 99].
<b>ID</b>	<b>IDs</b>	Setup of the identifications.
	<b>Protocols</b>	Setup of protocols.
	<b>Tare Table</b>	Setup of the tare table for frequently used known tare values.
	<b>Material Table</b>	Setup of the material table for frequently used weighing materials.
	<b>Barcode Reader</b>	Setup of a barcode reader, see also [How to set up a barcode reader ▶ Page 100].
	<b>Advanced Settings</b>	Open setup, refer to [Configuration ▶ Page 78].

**Note**

For more information on how to edit tables refer to [Editing tables ▶ Page 25] and [Filtering logs and tables ▶ Page 23].

## Settings

The following setup items are available:

Setup item	Sub items	Description
Save & Transfer	<b>Manually</b>	Saving and transferring a transaction has to be confirmed manually by using the transfer key  .
	Automatically	Saving and transferring a transaction takes place automatically.
Material Change	<b>Deviation (30d) +/-</b>	To detect a change in weight, a deviation of at least 30 d is required.
	Return to zero (<9d)	To detect a change in weight, the scale must be emptied first (below 9 d).

### Note

Default settings are shown in **bold**.



## Transfer

A list of the existing transfer settings is displayed.

Connection			
Rec. #	Connection	COM	Mode
1	Connection2	EPort1	Transfer

←
+
🗑️
✎
✓

To create/edit a transfer setting the following setup items are available:

Setup item	Sub items	Description
Type	Lot Print	Manual data output to the printer with  .
	Demand Continuous	Ongoing output of all weight values via the interface.
Instant Print	Enable/disable	Manual data output of the current weight value (either stable or not) to the printer with  .
Connection	None	No transfer/print out.
	Connection 1 ... Connection #	Select/edit a connection. COM – COM1, COM2, ... Mode – Print Print Type – ASCII Printer – Smart Printer – Label Printer Length – 1 ... 100 characters
Template	Basic Weighing Lot Standard	Predefined template for Basic Weighing results.
Copies		Enter the number of copies of the printout.

## IDs

Define up to three IDs which you want to assign to your weighing transactions.

Setup item	Sub items	Description
ID1	Enable/ <b>disable</b>	If enabled, the <b>ID</b> softkey is available to enter identification data for the transaction.
ID2		
ID3	Title	Enter the title (name) of the ID

## Protocols

A list of the existing protocol settings is displayed.

Protocols			
Rec. #	Mode	Connection	COM
1	SICS Server	Connection1	COM1

To create/edit a protocol the following modes are available:

- SICS Server
- SICS Continuous
- Input Template
- Second Display
- Post
- DigiTol
- Demand Mode
- PM
- Remote Display
- PSCP

### Note

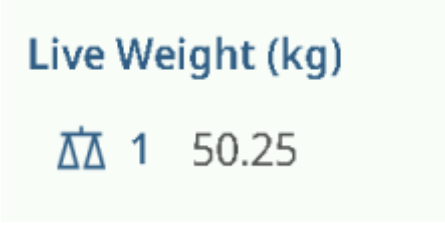
Sub items depend on the selected mode.

## Tare Table

A list of the stored tare values is displayed.

Tare Table			
ID	Tare Value	Unit	Description
1	2.95	kg	Box
2	0.2	kg	Bag
3	7.5	kg	Container small
4	11.25	kg	Container medium
5	19.75	kg	Cotainer large

To create/edit a tare value the following setup items are available:

Setup item	Description
ID	Numerical ID of the tare weight
Tare Value	<p>Weight value of the tare weight</p> <p>Either enter the weight value numerically or weigh the container.</p> <p><b>Weighing the container</b></p>  <p>1 Place the container on the scale.            ➔ At the bottom right the weight on the scale is displayed (Live Weight).</p> <p>2 Touch softkey <b>T</b> to save the displayed weight as tare weight.</p>
Unit	Unit of the tare value.
Description	Description of the tare weight.

### Material Table

A list of the existing materials is displayed.

Material Table	
ID	Name
01	Flour
02	Water
03	Sugar
04	Salt
05	Milk

Navigation icons: ←, +, ✎, 🗑️, >> 1/2

To create/edit a material the following setup items are available:

Setup item	Description
ID	Numerical ID of the material.
Name	Name of the material.
Application	<p>Select the application for which the material will be used.</p> <p><b>Note</b></p> <p>If a material is used for several applications you need to save the material for each application.</p> <p>Only materials assigned to the current application can be selected in the application's material table.</p>
Tare ID	If the material is always used in combination with a specific tare weight stored in the tare table, enter the corresponding tare ID.
Target Type	Select the target type, for Over/Under, Manual Filling/Dosing applications only.
Target ID	Enter the corresponding target ID, for Over/Under, Manual Filling/Dosing applications only.

## Barcode Reader

An overview of the existing barcode reader settings is displayed.

Barcode Reader Settings			
Rec. #	Connection	COM	Mode
1	Connection2	EPort2	Input Template


Navigation icons: ← + 🗑️ ✎

To create/edit a barcode reader setting the following setup items are available:

Setup item	Sub items	Description
COM		COM port where the barcode reader is connected.
Mode	Input Template	Fixed setting for a barcode connection.
Preamble Length	0 ... 20 (characters)	The barcode may contain additional data before the relevant data (preamble) and behind (postamble). – Enter the number of characters of preamble, (relevant) data and postamble.
Data Length	1 ... 99 (characters)	
Postamble Length	0 ... 20 (characters)	
Assignment	<b>None</b> Keypad Preset Tare Tare ID ID1 ... ID 3 Target ID Material ID	Select the item to be entered via barcode scanner.
Termination character	None, SOH, STX, ETX, EOT, ENQ, ACK, BEL, BS, HT, LF, VT, FF, <b>CR</b> , SO, SI, DLE, DC1, DC2, DC3, DC4, NAK, SYN, ETB, CAN, EM, SUB, ESC, FS, GS, RS, US	Select the termination character which is used by the connected barcode scanner.





## 2.2.2 Straight weighing

- 1 Place the weighing sample on the scale.
- 2 Wait until the stability monitor  disappears.
- 3 Read the weighing result.

## 2.2.3 Switching units

The device offers up to three display units. It is possible to switch between these weight units.

- Touch .
- ➔ The weight value is displayed in the next unit.

 Possible units depend on the active scale and the local Weights and Measures regulations.

## 2.2.4 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 .
- ➔ Zero appears in the display,  $>0<$  appears in the status line.

### Automatic


For OIML approved scales, the automatic zero point correction is always activated. The default zero range is 0.5 d.

In case of non-approved scales, automatic zero point correction can be deactivated in the setup or the zero range can be changed.


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


## 2.2.5 Weighing with tare

### 2.2.5.1 Taring a container

- Place the empty container on the scale and touch .
- ➔ The zero display appears.
- ➔ In the status line, the tare weight with symbol  $\tau$  and the symbol NET are displayed.
- ➔ The tare weight remains stored until it is cleared or a new tare weight is set.

### 2.2.5.2 Clearing the tare

- Press .
- ➔ The symbol NET disappears, the gross weight and the symbol B/G appear on the display.

 If the Auto Clear Tare function is activated in the Scale setup, the tare weight is automatically cleared as soon as the scale is unloaded.

### 2.2.5.3 Clearing the tare automatically

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

#### Prerequisite

The Auto Clear Tare function is activated in the Scale setup.



The tare weight must be heavier than the clear threshold.

### 2.2.5.4 Automatic taring

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

#### Prerequisite

The Auto Tare Mode is activated in the Scale setup.



The weight to be tared automatically, e.g. packaging material, must be heavier than the tare threshold.

### 2.2.5.5 Chain tare

For Analog scales only: When Chain Tare is activated in the Scale setup, it is possible to tare several times if e.g. cardboard is placed between individual layers in a container.

- 1 Place the first container or packaging material on the scale and press **·T**.
  - ➔ The weight of the packaging is automatically saved as tare weight, the zero display appears.
  - ➔ In the status line the tare weight with **T** symbol and the **NET** symbol are displayed.
- 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 new tare weight, the zero display appears.
  - ➔ In the status line the total tare weight with **T** symbol and the **NET** symbol are displayed.
- 4 Load the sample in the second container and read/print out the result.
- 5 Repeat steps 3 and 4 for further containers.

### 2.2.5.6 Tare preset

For established container weights the tare weight can be entered numerically or via 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 Touch **PT** and enter the known tare weight.
  - ➔ The weight display shows the negative tare weight.
  - ➔ In the status line the tare weight with **PT** symbol and the **NET** symbol are displayed.
- 2 Place the full container on the weighing platform.
  - ➔ The net weight is displayed.

## Tare preset with tare table

### Note

To setup the tare table refer to [Basic weighing settings ▶ Page 28].

- 1 Touch **PT**.
- 2 Touch  on the top right.
  - ➔ The list of stored tare values is displayed.
- 3 Mark the desired tare value.
  - ➔ For filtering the tare table refer to [Filtering logs and tables ▶ Page 23].
- 4 Touch  to load the tare value.
  - ➔ The weight display shows the negative tare weight.
  - ➔ In the status line the tare weight with **PT** symbol and the **NET** symbol are displayed.
- 5 Place the full container on the weighing platform.
  - ➔ The net weight is displayed.



Tare Table			
ID	Tare Value	Unit	Description
1	2.95	kg	Box
2	0.2	kg	Bag
3	7.5	kg	Container small
4	11.25	kg	Container medium
5	19.75	kg	Container large

## 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.
  - ➔ In the status line the tare weight with **PT** symbol and the **NET** symbol are displayed.
- 2 Place the full container on the weighing platform.
  - ➔ The net weight is displayed.

### 2.2.6 Using the material table

Materials including their tare weights can be stored in the material table.

### Note

To setup the material table refer to [Basic weighing settings ▶ Page 28]

Only materials assigned to the current application can be recalled.

For each material the following information is stored:

Numerical ID

Name

Tare ID



Target Type (for Over/Under, Manual Filling/Dosing applications)

Target ID (for Over/Under, Manual Filling/Dosing applications)

Value of the tare weight


Unit of the tare weight

Alphanumeric description of the tare weight

- 1 Touch .
  - ➔ The list of stored materials and symbols for editing are displayed.
- 2 Mark the desired material.
  - ➔ For filtering the material table refer to [Filtering logs and tables ▶ Page 23].
- 3 Touch  to load the material.
  - ➔ If a tare ID is assigned to the material the weight display shows the negative tare weight. In the status line, the tare weight with PT symbol and the NET symbol are displayed.

Material Table	
ID	Name
01	Flour
02	Water
03	Sugar
04	Salt
05	Milk

Navigation icons: back, plus, edit, delete, next (1/2)



 The recalled material is valid until a new material is selected or the material is cleared.



### Clearing a material

- Touch softkey .
  - ➔ The material and the tare value (if included) are cleared.

## 2.2.7 Working in a higher resolution

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



- Touch .
  - ➔ The weight value is displayed in orange and in a resolution that is at least 10x higher.
  - ➔ In the status line the symbol  is displayed.

 With approved weighing platforms the higher resolution is displayed for 5 seconds.  
 With non-approved weighing platforms the weight value is displayed in a higher resolution until  is touched again.

## 2.2.8 Printing/transferring 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 Application setup.  
 If Alibi Memory Table is enabled in the Application setup, the weighing result is stored in the Alibi memory when pressing .

## 2.2.9 Working with identifications

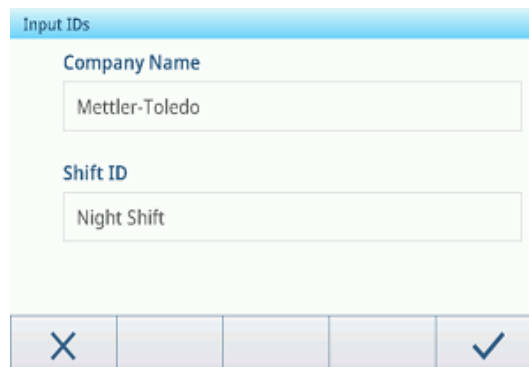
Up to 3 identifications with up to 40 alphanumeric characters or 20 Chinese characters can be assigned to weighing series. Identifications can also be printed out in the protocols. If, for example, a customer name and a batch number are assigned, you can easily identify which batch was weighed for which customer.

### Prerequisite

In the Application setup at least one ID is enabled.

### Procedure

- 1 Touch softkey **ID**.
  - ➔ The required identifications are displayed.
- 2 Enter the required identifications and confirm with **✓**.
  - ➔ The defined identifications are assigned to the following weighings until the identifications are cleared or new identifications are set.



## 2.2.10 Working with Data Integrity

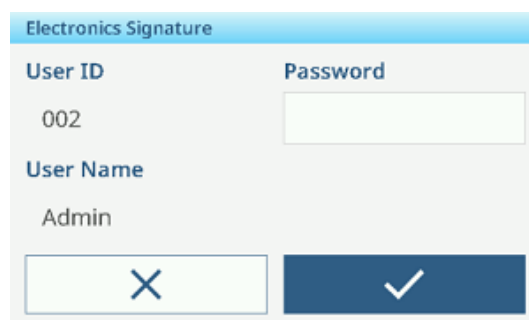
For Data Integrity settings refer to [Application -> Data Integrity ▶ Page 88].

### Data generation without Electronic signature




- Electronic signature is disabled
- 1 Login to the terminal.
  - 2 Perform a weighing operation.
  - 3 When the weight value is stable, press the transfer key **⇩**.
    - ➔ The weight record is stored in both alibi and transaction table and printed out in the selected template, if configured.
- ➔ The terminal is ready for the next transaction.

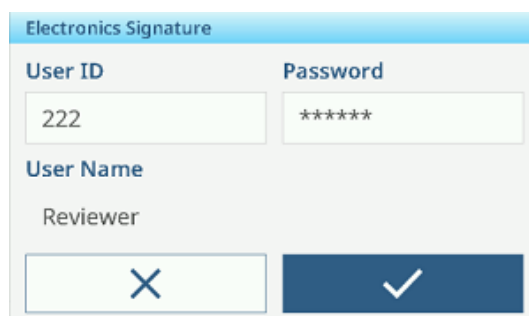
### Data generation with Electronic signature


- Electronic signature enabled, Review immediately disabled
- 1 Login to the terminal.
  - 2 Perform a weighing operation.
  - 3 When the weight value is stable, press the transfer key **⇩**.
    - ➔ The Electronics Signature opens with the logged in user data.
  - 4 Enter your password and confirm with **✓**.
    - ➔ The weight record is stored in both alibi and transaction table and printed out in the selected template, if configured.
- ➔ The terminal is ready for the next transaction.



## Data generation with Electronic signature and immediate review

- Electronic signature enabled, Review immediately enabled
- 1 Login to the terminal.
- 2 Perform a weighing operation.
- 3 When the weight value is stable, press the transfer key .
  - ➔ The Electronics Signature opens with the logged in user data.
- 4 Enter your password and confirm with .
  - ➔ The weight record is stored in both alibi and transaction table in unreviewed state.
  - ➔ The Electronics Signature opens again to review the transaction.
- 5 Have another person with QA access rights enter another User ID and password and confirm with .
  - ➔ The review page opens.







- 6 Check the displayed transaction data.
- 7 Touch softkey  to review the transaction.
  - ➔ The weight record in both alibi and transaction table is set to reviewed state and printed out in the selected template, if configured.
- ➔ The terminal is ready for the next transaction.



ID	12
Date & Time	21/Sep/2023 15:33:28
Gross	6.45 kg
Tare	0.00 kg

## Reviewing a record in the transaction table

- 1 Touch softkey .
  - ➔ The last weighing transactions are displayed.
- 2 Touch softkey  to see the record's status.
  - ➔ Possible status: Reviewed, Blank (not reviewed yet) and Cancelled.
- 3 Touch softkey  to review the record.
  - ➔ The status changes to Reviewed.





ID	9
Date & Time	21/Sep/2023 15:03:21
Status	
Gross	20.35 kg
Tare	0.00 kg
Net	20.35 kg

## Cancelling a record in the transaction table

### Note

Only records in blank state can be cancelled.

One record can be cancelled for twice at most. Once the user confirms the final cancellation, the record will be cancelled finally and can't be recovered or reviewed. At this time, the cancel, recover and review soffkeys won't display.

- The user has access rights to cancel.
  - Soffkey  is available.
- 1 Select a record and touch soffkey  .
    - ➔ A page to enter the reason for cancelling is displayed.
  - 2 Enter the reason for cancelling. This is mandatory and the field cannot be blank.
    - ➔ The record is marked as cancelled and struck through.


### Note

Deleting a record is recorded in the Audit log.

Entry	
ID	2
Date & Time	26/Sep/2023-15:32:27
Status	Cancelled
Gross	30.75 kg
Tare	0.00 kg
Net	30.75 kg

## Recovering a cancelled record





- In the Entry page of a cancelled record touch soffkey  .
  - ➔ The status of the record is set to blank.

### Note

Recovering a record is recorded in the Audit log.


## Export functions in the transaction table

- All data records in the transaction table are reviewed.
- Select a report and proceed as described in [Importing/exporting data ▶ Page 26].

Report	Data integrity report	Electronics batch report	Transaction report
	This report can be edited. All the fields of the application-specific transaction table can be added to the report.		This report is application-specific.
Softkey			
Contents	<b>ID</b> in the transaction list <b>Date &amp; Time</b> <b>Unit</b> <b>Gross</b> <b>Tare</b> <b>Net</b> Tare Type Scale # Material ID Material Description ID1 ... ID3 <b>User Name</b> <b>Status</b> <b>Reviewer</b> <b>Review Time</b>  <b>Note</b> Items in bold are default items.	<b>ID</b> in the transaction list <b>Date &amp; Time</b> Material ID <b>Gross</b> <b>Net</b> <b>Tare</b> <b>User Name</b> <b>Reviewer</b> <b>Unit</b>	Refer to the application settings.

## Audit Log

In the Audit Log all user actions are recorded.

- Touch softkey .
  - ➔ The Audit Log of the last user actions is displayed.




The Audit Log contains the following information:

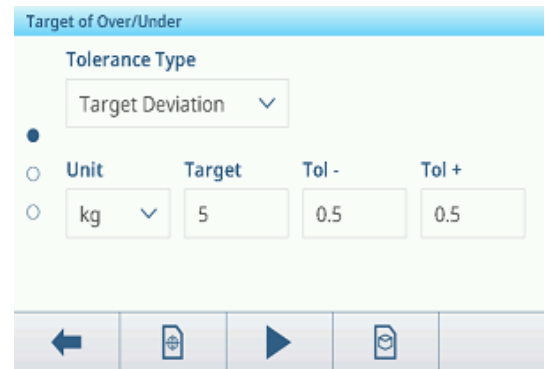
ID in the transaction list  
 Date & Time  
 User Name  
 User ID  
 Category  
 Event  
 Action  
 Field  
 Old  
 New  
 Detail





## 2.3 Over/Under checkweighing

### 2.3.1 Activating Over/Under checkweighing


- 1 On the main screen, touch softkey .
  - ➔ The available applications are displayed.
- 2 Select  .
  - ➔ The window to set the target is displayed.
- 3 Touch softkey  to start the Over/Under checkweighing application.

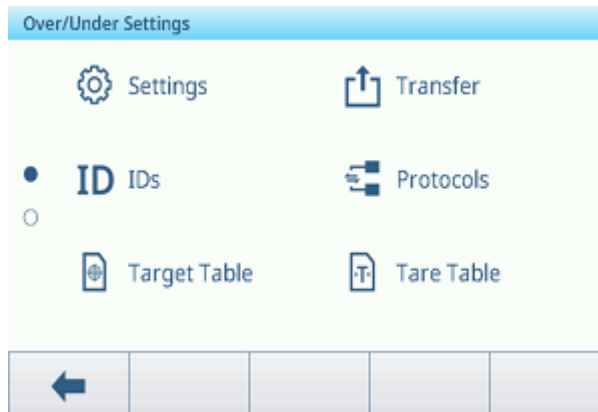


#### Leaving the Over/Under checkweighing application

- 1 On the 3rd softkey ribbon, touch softkey .
  - ➔ A safety prompt is displayed.
- 2 Confirm leaving the Over/Under checkweighing application with .
  - ➔ The Over/Under checkweighing application is closed.
  - ➔ The Basic Weighing application is active.





### 2.3.2 Over/Under checkweighing settings





When the application is running, touch softkey  on the third softkey ribbon to open the Over/Under checkweighing settings. Thus you do not need to enter the setup for settings regarding the application.



#### Note

For more settings swipe the screen.

	<b>Settings</b>	Over/Under checkweighing settings, see below.
	<b>Transfer</b>	Settings for transferring the data to a computer or printer, refer to [Basic weighing settings ▶ Page 28] and [How to set up a printer ▶ Page 99].
<b>ID</b>	<b>IDs</b>	Setup of the identifications, refer to [Basic weighing settings ▶ Page 28].
	<b>Protocols</b>	Setup of protocols, refer to [Basic weighing settings ▶ Page 28].
	<b>Target Table</b>	Setup of the target table for frequently used target values, see below.


	<b>Tare Table</b>	Setup of the tare table for frequently used known tare values, refer to [Basic weighing settings ▶ Page 28].
	<b>Material Table</b>	Setup of the material table, refer to [Basic weighing settings ▶ Page 28]. <b>Note</b> Only materials assigned to the Over/Under checkweighing application can be selected in the material table later.
	<b>Barcode Reader</b>	Setup of a barcode reader, refer to [Basic weighing settings ▶ Page 28] and [How to set up a barcode reader ▶ Page 100].
	<b>Advanced Settings</b>	Open setup, refer to [Configuration ▶ Page 78].

**Note**

For more information on how to edit tables refer to [Editing tables ▶ Page 25] and [Filtering logs and tables ▶ Page 23].

**Settings**

The following setup items are available:

Setup item	Sub items	Description	
Save & Transfer	<b>Manually</b>	Saving and transferring a transaction has to be confirmed manually using the transfer key  .	
	Automatically	Saving and transferring a transaction takes place automatically.	
Visualization	<b>Bargraph</b>	Checkweighing status indicated by a bargraph.	
	Color Weigh	Checkweighing status indicated by colors.	
Threshold (%)	0 ... <b>10</b> ... 90%	Threshold to determine at which weight the status of Tol- is indicated.	
Material Change	<b>Deviation (30d) +/-</b>	To detect a change in weight, a deviation of at least 30 d is required.	
	Return to zero (<9d)	To detect a change in weight, the scale must be emptied first (below 9 d).	
Over Color	Green, Red, Orange, Yellow, Black, Grey, Blue, Cyan, Custom	Select the colors for visualization of the weighing state.	
OK Color			
Under Color			
Below Threshold Color			
... Color -> Custom	Text	Black	Black text on white background.
		<b>White</b>	White text on black background.
	Type	<b>RGB</b>	RGB color space. Enter values for R, G and B.
		Hex	Hex code color space. Enter a hex value.
Totalization	<b>Enable/disable</b>		
	Sub Total	Enable/disable sub totals.	
	Totalization unit	Select unit for the totals.	
	Clear on Transfer	Select one of the following methods to clear the total on transfer: <b>Off</b> Clear Total & Subtotal Clear Subtotal	
	Undo Transaction	Only available for IND400 without Data Integrity. Select one of the following methods to undo a transaction: <b>Off</b> Last Transaction Unlimited	
Tare after Transfer in Net Mode	<b>Enable/disable</b>	When enabled, the scale is tared after transferring a net weight.	

Setup item	Sub items	Description
Motion Check	Enable/ <b>disable</b>	When enabled, only stable weight values can be transferred.
Statistic	Enable/ <b>disable</b>	
Stealth Mode	Enable/ <b>disable</b>	Only available for IND400 without Data Integrity. If enabled, no weight value is displayed but the colors will indicate the weighing state

**Note**

Default settings are shown in **bold**.

**Over/Under checkweighing target table**

Setup item	Sub items	Description
ID		Enter a numerical ID of the target.
Tolerance Type	<b>Target Deviation</b>	The target weight has to be entered as an absolute weight, upper and lower tolerances as deviations in weight from the target weight.
	Percentage	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.
	Exact Limits	A low and a high weight value must be entered. These weights and all weights within this range are treated as being within tolerance.
Tolerance Type = Target Deviation or Percentage	Unit	Unit of target weight and tolerances.
	Target	Weight value of the target weight.
	Tol -	Lower tolerance of the target weight.
	Tol +	Upper tolerance of the target weight.
Tolerance Type = Exact Limits	Unit	Unit of target weight and tolerances.
	Under Limit	Minimum target weight
	Over Limit	Maximum target weight
Mode	<b>Standard</b>	When totalizing: Adding up the items.
	Take Away	Totalizing when unloading e.g. from a container.
Data Source	Gross Weight	The target is a gross weight.
	<b>Net Weight</b>	The target is a net weight.
Description		Enter an alphanumerical description of the target.

### 2.3.3 Over/Under checkweighing operation



The device offers an Over/Under checkweighing function. The colored weight ranges or the bargraph allow a rapid detection of the weight status.

#### 2.3.3.1 Display in Over/Under checkweighing

Depending on the Over/Under checkweighing settings, the following display variants are available:

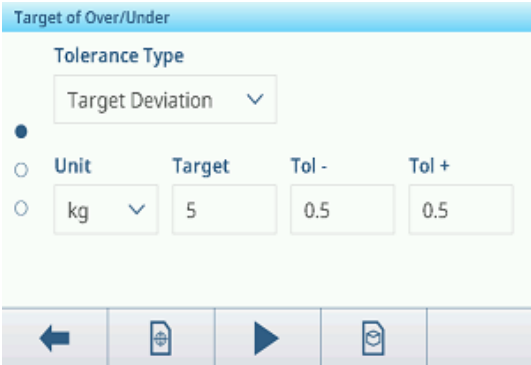
Visualization	Color Weighing	B/G <span style="float: right; font-size: 2em;">4.45 kg</span>
		B/G <span style="float: right; font-size: 2em;">5.05 kg</span>
		B/G <span style="float: right; font-size: 2em;">5.65 kg</span>
Bargraph		<div style="display: flex; justify-content: space-around; border: 1px solid black; padding: 2px;"> <span style="background-color: red; color: white; padding: 5px;">&lt;</span> <span style="background-color: white; color: black; padding: 5px;">✓</span> <span style="background-color: white; color: black; padding: 5px;">&gt;</span> </div> <div style="display: flex; justify-content: space-around; border: 1px solid black; padding: 2px; margin-top: 2px;"> <span style="background-color: white; color: black; padding: 5px;">&lt;</span> <span style="background-color: green; color: white; padding: 5px;">✓</span> <span style="background-color: white; color: black; padding: 5px;">&gt;</span> </div> <div style="display: flex; justify-content: space-around; border: 1px solid black; padding: 2px; margin-top: 2px;"> <span style="background-color: white; color: black; padding: 5px;">&lt;</span> <span style="background-color: white; color: black; padding: 5px;">✓</span> <span style="background-color: red; color: white; padding: 5px;">&gt;</span> </div>
	<p><b>Note</b> The colors can be set individually, refer to [Over/Under checkweighing settings ▶ Page 41]</p>	
	Tolerance Type	Target Deviation
	Percentage	Tol -: 10 %     5.00 kg    Tol +: 10 %
	Exact Limits	Under Limit: 4.50 kg    Over Limit: 5.50 kg

### 2.3.3.2 Setting target values

- 1 Touch softkey .
  - ➔ A window opens to enter target and tolerance values.
- 2 Enter the target weight and the tolerance values.
- 3 Touch softkey .
  - ➔ The Over/Under checkweighing display appears.




 **Note**

With Tolerance Type = **Exact Limits**, only the upper and lower tolerance have to be specified.






Unit	Target	Tol -	Tol +
kg	5	0.5	0.5

#### Using the target table

- 1 Touch .
  - ➔ The list of existing targets is displayed.
- 2 Select a target and confirm with .
  - ➔ The selected target values are active.
- 3 Touch softkey .
  - ➔ The Over/Under checkweighing display appears.

#### Using the material table

- 1 Touch .
  - ➔ The list of existing materials is displayed.
- 2 Select a material and confirm with .
  - ➔ The selected material data are assigned to the following checkweighing operations.
- 3 Touch softkey .
  - ➔ The Over/Under checkweighing display appears.

 **Note**

Only materials assigned to the Over/Under checkweighing application are available.

### 2.3.3.3 Over/Under checkweighing

- When the target is set, place the weighing sample on the weighing platform.
  - ➔ The weight value and the over/under weight status is displayed.



#### Weight status



Target reached.  
Weight within Tol- and Tol+.



Weight outside Tol+.



Weight outside Tol-.

#### **Note**

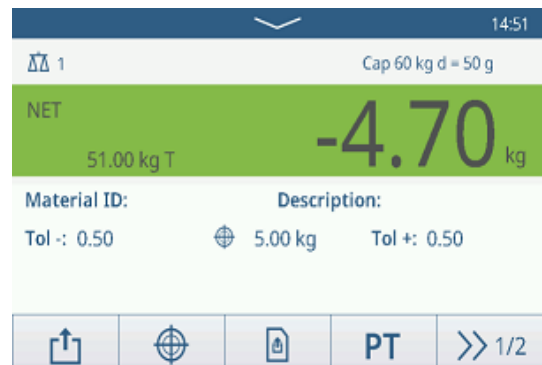
Even if **C** is touched, the target values remain stored in the target input screen until a new target is set or the application is disabled.

### 2.3.3.4 Over/Under checkweighing in Take Away mode

- 1 Recall a target with mode setting Take Away.
- 2 Put the full container on the weighing platform.
- 3 Tare the full container.
- 4 Remove the first sample from the container.
- 5 Touch **U** to save and transfer the sample.
  - ➔ The message "Saving and Transferring" is displayed.
- 6 Tare the container.
- 7 Repeat steps 3 to 5 for further samples.

#### **Note**

When Tare After Transfer in Net Mode is activated in the Over/Under checkweighing settings, you do not have to tare after each sample.

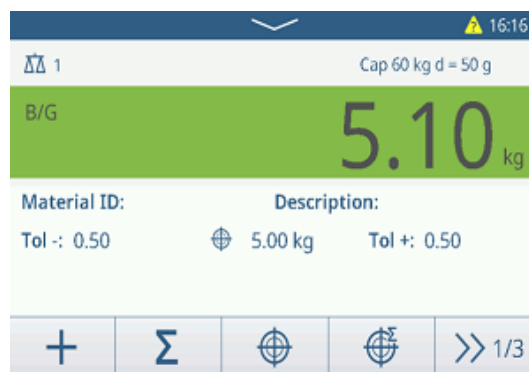


### 2.3.3.5 Totalizing in Over/Under checkweighing

- 1 Put the first sample on the weighing platform.
  - 2 Touch **+** to add the sample to the total.
    - ➔ The message "Saving and Transferring" is displayed.
  - 3 Unload the sample.
  - 4 Repeat steps 1 to 3 for further samples.
- 
- 5 When all samples are totalized, touch **■**.
    - ➔ The total is displayed.
  - 6 To clear the total, touch **€**.  
To clear the subtotal, touch **Ⓢ**.
    - ➔ A safety prompt is displayed.
  - 7 Confirm clearing the (sub)total with **✓**.
    - ➔ The weighing terminal is ready for the next process of totalization.

**i Note**

For more totalization features, refer to [Totalization operation ▶ Page 69].




The screenshot shows the 'Recall Totals' screen. It has a title bar 'Recall Totals' and a table with the following data:

Totals	
Batch #	202308040008
Total	51.40 kg
Counter	2
Sub #	1
Subtotal	51.40 kg

At the bottom, there is a row of four buttons: a left arrow, a Euro symbol (€), a summation symbol (Σ), and a right arrow.

### 2.3.3.6 Over/Under checkweighing transaction table

- Touch softkey  .
  - ➔ The last checkweighing transactions are displayed.
  - ➔ Swiping horizontally will show the complete information on the transactions.
  - ➔ Swiping vertically will show further transactions.

The following information is stored for each transaction in the Over/Under checkweighing application:

Over/Under Transactions			
ID	Date & Time	Result	Batch
5	07/Aug/2023 16:36:14	Over	202301
4	07/Aug/2023 16:26:17	Over	202301
3	07/Aug/2023 14:19:59	OK	202301
2	07/Aug/2023 11:07:42	OK	202301
1	07/Aug/2023 11:02:29	Over	202301




 1/2

ID	Serial number of the transaction
Date & Time	Date and time of the transaction
Status	For IND400 with Data Integrity only: Review status of the weighing
Result	Result of the Over/Under checkweighing transaction
Batch #	Batch number (YearMonthDay+4-digit running number)
Sub #	Number of subtotals
Gross	Gross weight value
Tare	Tare weight value
Net	Net weight value
Deliver Weight	
Tare Type	
Scale #	For IND400: always "1"
Material ID	ID of the selected material
Material Description	Description of the selected material
ID1 ... ID3	Identifications
Mode	Over/Under checkweighing mode: Standard or Take Away
Data Source	Gross or Net weight
Target	Target value
Under Limit	Lower tolerance value
Over Limit	Upper tolerance value
Total Value	Total value
Total Counter	Number of items in total
Subtotal Value	Subtotal value
Subtotal Counter	Number of items of the subtotal
User Name	Name of the user logged in

 **Note**

For more actions in the transaction table refer to [Recalling the transaction table ▶ Page 21] and [Filtering logs and tables ▶ Page 23].



 **Note**

When working with data integrity, additional fields regarding review status and reviewer are shown. Transferring the transaction table is possible for reviewed data only. For more information refer to [Working with Data Integrity ▶ Page 37].



## Over/Under checkweighing statistics

The device offers the statistical evaluation of a batch.



- 1 On the second softkey ribbon of the transaction table, touch softkey .
- 2 Select a batch for the statistical evaluation and confirm with .
- ➔ The statistical parameters are displayed.
- 3 Scroll to display the following parameters:

Statistic Parameters	
Item	Value
Batch #	202308100005
Total Value	24.80 kg
Total Counter	3
Over Limit	5.50 kg
Under Limit	4.50 kg

Batch #	Batch number (YearMonthDay+4-digit running number)
Total Value	Total value
Total Counter	Number of items in total
Over Limit	Upper tolerance value
Under Limit	Lower tolerance value
Statistic Size	Number of items in the statistic
Mean Value	Mean value of the batch
Mean Value (OK)	Mean value of the good items
Max. Value	Maximum value of the batch
Min. Value	Minimum value of the batch
Median	Median value of the batch
%Ratio (OK)	Ratio of the good weighings
Number (OK)	Number of the good weighings
%Ratio (Over)	Ratio of the high weighings
Number (Over)	Number of the high weighings
%Ratio (Under)	Ratio of the low weighings
Number (Under)	Number of the low weighings



## 2.4 Counting

### 2.4.1 Activating Counting application


- 1 On the main screen, touch softkey .
  - ➔ The available applications are displayed.
- 2 Select  Counting.
  - ➔ The Counting application screen is displayed.

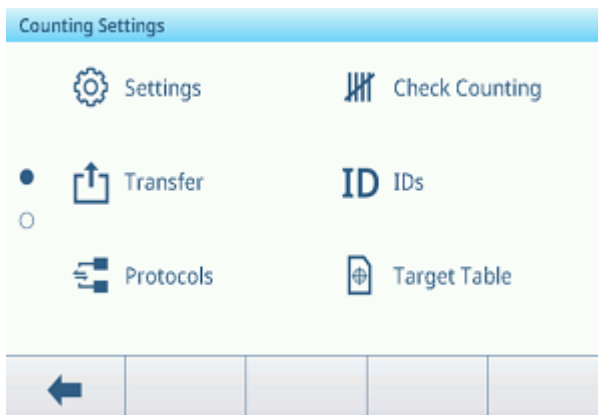


#### Leaving the Counting application

- 1 On the 4th softkey ribbon, touch softkey .
  - ➔ A safety prompt is displayed.
- 2 Confirm leaving the Counting application with .
  - ➔ The Counting application is closed.
  - ➔ The Basic Weighing application is active.






### 2.4.2 Counting settings







Touching softkey  opens the Counting Settings menu. Thus you do need not to enter the setup for settings regarding the application.



#### Note

For more settings swipe the screen.

	<b>Settings</b>	Counting application settings, see below.
	<b>Check Counting</b>	Check Counting application settings, see below.
	<b>Transfer</b>	Settings for transferring the data to a computer or printer, refer to [Basic weighing settings ▶ Page 28] and [How to set up a printer ▶ Page 99].
	<b>IDs</b>	Setup of the identifications, refer to [Basic weighing settings ▶ Page 28].
	<b>Protocols</b>	Setup of protocols, refer to [Basic weighing settings ▶ Page 28].



	<b>Target Table</b>	Setup of the target table for frequently used target values, see below.
	<b>Tare Table</b>	Setup of the tare table for frequently used known tare values, refer to [Basic weighing settings ▶ Page 28].
	<b>Material Table</b>	Setup of the material table, refer to [Basic weighing settings ▶ Page 28]. <b>Note</b> Only materials assigned to the Counting application can be selected in the material table later.
	<b>Reference Balance</b>	Setup of a reference balance, see below.
	<b>Barcode Reader</b>	Setup of a barcode reader, refer to [Basic weighing settings ▶ Page 28] and [How to set up a barcode reader ▶ Page 100].
	<b>Advanced Settings</b>	Open setup, refer to [Configuration ▶ Page 78].

**Note**

For more information on how to edit tables refer to [Editing tables ▶ Page 25] and [Filtering logs and tables ▶ Page 23].

**Settings**

The following general setup items are available:

Setup item	Sub items	Description
Reference pieces	<b>Fix Reference pcs</b>	In the operating mode you can select from 5, <b>10</b> , 20, 50, 100 reference pieces.
	Var. Reference pcs	The number of reference pieces can be set in the operating mode.
	Lock ref. pcs	If enabled, the set number of reference pieces cannot be changed in the operating mode.
APW Optimization	<b>Off</b>	No optimization of the average piece weight.
	Manually	Manual optimization of the average piece weight using sofkey  .
	Automatic	Automatic optimization of the average piece weight.
	Update Target Table	If enabled and the APW is recalled from the target table, the target table will be updated with the optimized average piece weight.
Material Change	<b>Deviation (30d) +/-</b>	To detect a change in weight, a deviation of at least 30 d is required.
	Return to zero (<9d)	To detect a change in weight, the scale first must be emptied (below 9 d).
Save & Transfer	<b>Manually</b>	Saving and transferring a transaction has to be confirmed manually using the transfer key  .
	Automatically	Saving and transferring a transaction takes place automatically.
Tare After Transfer in Net Mode	<b>Enabled/disabled</b>	If enabled, the scale is tared after transferring a net weight
Check Process Tolerance	<b>Enabled/disabled</b>	If enabled, set the value for the maximum uncertainty allowed in the counting process.
	Value	Default: <b>20.0</b> %

Setup item	Sub items	Description
Totalization	Enable/ <b>disable</b>	
	Sub Total	Enable/ <b>disable</b> sub totals.
	Clear on Transfer	Select one of the following methods to clear the total on transfer: <b>Off</b> Clear Total & Subtotal Clear Subtotal
	Undo Transaction	Only available for IND400 without Data Integrity. Select one of the following methods to undo a transaction: <b>Off</b> Last Transaction Unlimited

### Check Counting

The following setup items for Check Counting are available:


Setup item	Sub items	Description	
Data Source	Counts	Fixed setting for Check Counting	
	Motion Check	If enabled, only stable weight values can be transferred.	
Visualization	<b>Bargraph</b>	Checkcounting status indicated by a bargraph.	
	Color Weighing	Checkcounting status indicated by colors.	
Threshold	0 ... <b>10</b> ... 90%	Threshold to determine at which weight the status of Tol- is indicated.	
Over Color	Green, Red, Orange, Yellow, Black, Grey, Blue, Cyan, Custom	Select the colors for visualization of the checkcounting state.	
OK Color			
Under Color			
Below Threshold Color			
... Color -> Custom	Text	Black	Black text on white background.
		<b>White</b>	White text on black background.
	Type	<b>RGB</b>	RGB color space. Enter values for R, G and B.
		Hex	Hex code color space. Enter a hex value.

### Target table

A list of the existing checkcounting targets is displayed.

Counting Target Table			
ID	Description	Mode	APV
←	+		
			>> 1/2

To create/edit a material the following setup items are available:

Setup item	Sub items	Description
ID		Numerical ID of the APW target.
Description		Description of the APW target.
Mode	<b>Standard</b>	When totalizing: Adding up the items.
	Take Away	When totalizing: Totalizing when unloading e.g. from a container.
APW Unit		Unit of the average piece weight.
Determine APW	<b>Live Weight</b>	Using the weight on the scale as reference weight. 1 Enter the number of reference pieces: 1 ... <b>10</b> ... 9999. 2 Touch softkey  to determine the APW out of the reference weight on the scale and the number of reference pieces. ➔ The APW is determined and displayed.
	Manual	Enter the APW weight value.
	Reference Pcs.	Enter the number of reference pieces.
APW Opt. %	0 ... <b>30</b> ... 100 (%)	Maximum correction factor when optimizing the APW.
APW Tolerance Type	<b>Target Deviation</b>	APW Tol- and APW Tol+ must be entered
	Percentage	APW Tol- and APW Tol+ must be entered in percent
	Exact Limits	APW Limit (Under) and APW Limit (Over) must be entered
<b>Check Counting</b>		Enable/disable Check Counting
Check Tolerance Type	<b>Target Deviation</b>	The target weight has to be entered as a number of pieces, Check Tol- and Check Tol+ as deviations in pieces from the target piece number.
	Exact Limits	Piece numbers for Check Limit (Under) and Check Limit (Over) must be entered. Piece numbers within this range are treated as being within tolerance.
Target (pcs)		Enter the target weight as number of pieces.

 **Note**

The displayed order when editing a target is different from the order in the table.

**Reference Balance**

If the connection to a reference balance is already existing, the connection details are displayed.

For setting up or editing a scale connection, the following settings are available:

Setup item	Sub items	Description
COM	EPort1 ... EPort3	Select the port where the reference balance is connected.
	Client	
Mode	Reference Balance	Fixed setting
Port	1701	Fixed setting



 **Note**

Only one reference balance connections is possible.


## 2.4.3 Counting operation

The device offers the Over/Under checkweighing function. The colored weight ranges or the bargraph allow rapid detection of the weight status.

### 2.4.3.1 Counting with fix reference number

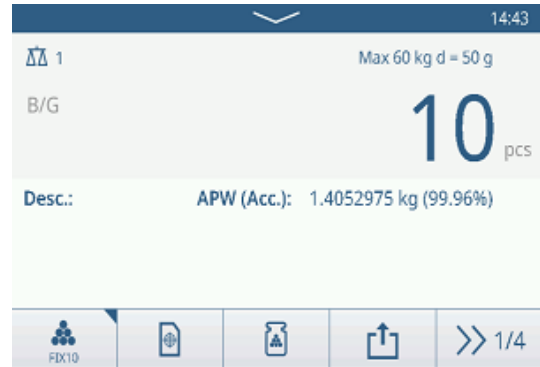
- Softkey  or another softkey **FIX...** available.
- 1 Put the indicated number of reference pieces on the scale.
  - 2 Touch softkey .
    - ➔ The weight display indicates the number of reference pieces.
    - ➔ In the line below the average piece weight with accuracy is indicated.
  - 3 Add more pieces.

#### Note



The number of fix reference pieces can be changed by touching  longer until a pop-up window with the possible fix reference pieces is displayed. Possible settings: 5, 10, 20, 50, 100.

#### Note

The average piece weight is valid until it is cleared or a new average piece weight is set.

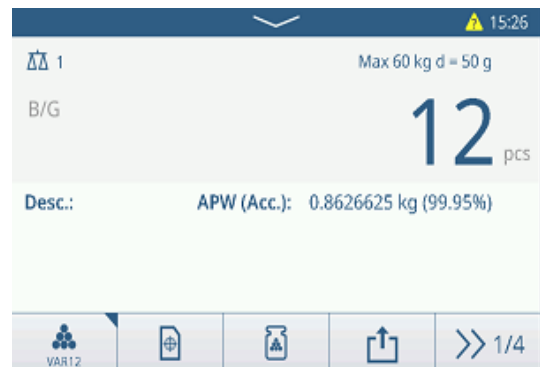


### 2.4.3.2 Counting with variable reference number



- Softkey  or another softkey **VAR...** available.
- 1 Touch softkey  for a longer time until a window to enter the variable number of reference pieces is displayed.
  - 2 Enter the desired number of reference pieces, e.g. 12.
    - ➔ The value in the softkey is changed accordingly.
  - 3 Put the indicated number of reference pieces on the scale.
  - 4 Touch softkey **VAR...**
    - ➔ The weight display indicates the number of reference pieces.
    - ➔ Below the average piece weight with accuracy is indicated.
  - 5 Add more pieces.

#### Note

The average piece weight is valid until it is cleared or a new average piece weight is set.

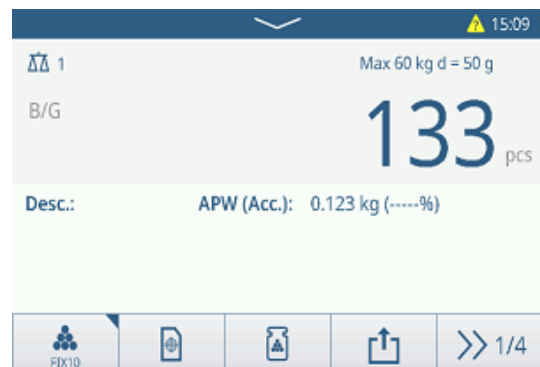


### 2.4.3.3 Counting with a known average piece weight


- Softkey  available.
- 1 Touch softkey .
  - 2 Enter the known average piece weight. In the example: 0.123 kg.
  - 3 Put the pieces to count on the scale.
    - ➔ The weight display indicates the current number of pieces.
    - ➔ In the line below the average piece weight is indicated. When entering the average piece weight, no accuracy can be determined.

#### Note

The average piece weight is valid until it is cleared or a new average piece weight is set.






#### 2.4.3.4 Switching between number of pieces and weight

- When the number of pieces is displayed, touch softkey .
- ➔ For a few seconds the corresponding weight value is displayed instead of the number of pieces.

#### 2.4.3.5 Counting with APW optimization

The more reference parts, the more exact is the calculated average piece weight.

- Softkey  available.
- 1 Put the indicated number of reference pieces on the scale.
  - 2 Touch softkey  (**FIX...** or **VAR...**).
    - ➔ The weight display indicates the number of reference pieces.
    - ➔ In the line below the average piece weight with accuracy is indicated.
  - 3 Add more pieces for APW optimization.
  - 4 Touch softkey  .
    - ➔ The new APW is displayed, ideally with higher accuracy.





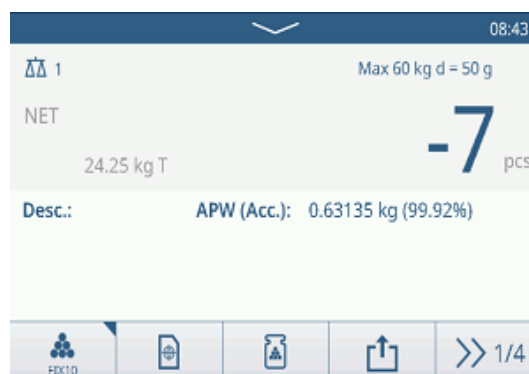
#### Note

If automatic APW optimization is enabled, additional parts after determining the APW are automatically used to optimize the APW. A message is displayed.

If Update Target Table is enabled and the APW is recalled from the target table, the target table will be updated with the optimized average piece weight.

#### 2.4.3.6 Counting in Take Away mode

- 1 Put the full container on the weighing platform.
- 2 Tare the full container.
- 3 Remove the indicated number of reference pieces and touch softkey  (**FIX...** or **VAR...**).
  - ➔ The negative number of reference parts is displayed.
- 4 Tare the container.
- 5 Remove the desired number of pieces.
- 6 Touch  to save and transfer the sample.
  - ➔ The message "Saving and Transferring" is displayed.
- 7 Repeat steps 4 to 6 for further samples.





#### Note





When Tare After Transfer in Net Mode is activated in the Over/Under checkweighing settings, you do not have to tare after each sample.

### 2.4.3.7 Counting with reference balance

For higher accuracy, e.g. when counting light items, a reference balance can be connected to determine the APW. Counting will be performed on the bulk scale.

- Reference balance configured, [Counting settings ▶ Page 50].
  - A second balance with higher resolution connected at the reference balance connection.
  - Softkey  or another softkey **FIX...** or **VAR...** available.
- 1 Put the indicated number of reference pieces on the **reference** scale.
  - 2 Touch softkey .
    - ➔ After determining the average piece weight the scale is automatically switched to the bulk scale.
    - ➔ The weight display indicates the number of reference pieces.
    - ➔ In the line below the average piece weight with accuracy is indicated.
  - 3 Add the parts on the bulk scale.

### 2.4.3.8 Totalizing in Counting

- Softkey **+** available.
- 1 Determine the average piece weight as described before.
  - 2 Count a sample.
  - 3 Touch **+** to add the sample to the total.
    - ➔ The message "Saving and Transferring" is displayed.
  - 4 Unload the sample.
  - 5 Repeat steps 2 to 4 for further samples.
- 
- 6 When all samples are totalized, touch .
    - ➔ The total is displayed.
  - 7 To clear the total, touch .  
To clear the subtotal, touch .
    - ➔ A safety prompt is displayed.
  - 8 Confirm clearing the (sub)total with .
    - ➔ The weighing terminal is ready for the next totalization process.


#### **Note**

For more totalization features, refer to [Totalization operation ▶ Page 69].






### 2.4.3.9 Counting transaction table

- Touch softkey  .
  - ➔ The last checkweighing transactions are displayed.
  - ➔ Swiping horizontally will show the complete information on the transactions.
  - ➔ Swiping vertically will show further transactions.

The following information is stored for each transaction in the Over/Under checkweighing application:

Counting Transactions			
ID	Date & Time	Result	Count
3	10/Oct/2023 08:39:29		27
2	10/Oct/2023 08:39:19		12
1	09/Oct/2023 12:42:39		17



ID	Serial number of the transaction
Date&Time	Date and time of the transaction
Status	For IND400 with Data Integrity only: Review status of the weighing
Result	Result of the Check Counting transaction (OK, Under, Over)
Count	Result of the Counting transaction in pieces
Batch #	Batch number (YearMonthDay+4-digit running number)
Sub #	Number of subtotals
Gross	Gross weight value
Tare	Tare weight value
Net	Net weight value
Tare Type	
APW	Average piece weight
Reference Pcs.	Number of reference pieces
Scale #	For IND400: always "1"
Material ID	ID of the selected material
Material Description	Description of the selected material
ID1 ... ID3	Identifications
Mode	Standard or Take Away
Data Source	Counts
Limit (Under)	Lower tolerance value in pieces
Limit (Over)	Upper tolerance value in pieces
Total Value	Total value in pieces
Total Counter	Number of items in the total
Subtotal Value	Subtotal value in pieces
Subtotal Counter	Number of items in the subtotal
User Name	Name of the user logged in

 **Note**

For more actions in the transaction table refer to [Recalling the transaction table ▶ Page 21] and [Filtering logs and tables ▶ Page 23].

 **Note**

When working with data integrity, additional fields regarding review status and reviewer are shown. Transferring the transaction table is possible for reviewed data only. For more information refer to [Working with Data Integrity ▶ Page 37].



## 2.4.4 Check Counting operation

### 2.4.4.1 Display in Check Counting

Depending on the Over/Under checkweighing settings, the following display variants are available:

Visualization	<b>Color Weighing</b>	B/G <span style="float: right; font-size: 2em;">25</span> pcs
		B/G <span style="float: right; font-size: 2em;">51</span> pcs
		B/G <span style="float: right; font-size: 2em;">56</span> pcs
Bargraph		<div style="display: flex; justify-content: space-around; border: 1px solid black; padding: 2px;"> <span style="background-color: red; color: white; padding: 5px;">&lt;</span> <span style="background-color: white; color: green; padding: 5px;">✓</span> <span style="background-color: white; color: gray; padding: 5px;">&gt;</span> </div> <div style="display: flex; justify-content: space-around; border: 1px solid black; padding: 2px; margin-top: 2px;"> <span style="background-color: white; color: gray; padding: 5px;">&lt;</span> <span style="background-color: green; color: white; padding: 5px;">✓</span> <span style="background-color: white; color: gray; padding: 5px;">&gt;</span> </div> <div style="display: flex; justify-content: space-around; border: 1px solid black; padding: 2px; margin-top: 2px;"> <span style="background-color: white; color: gray; padding: 5px;">&lt;</span> <span style="background-color: white; color: green; padding: 5px;">✓</span> <span style="background-color: red; color: white; padding: 5px;">&gt;</span> </div>
	<b>Note</b>	The colors can be set individually, refer to [Counting settings ▶ Page 50].
	<b>Target Deviation</b>	Tol -: 5      ⊕ 50 pcs      Tol +: 5
Tolerance Type	<b>Exact Limits</b>	<b>Under Limit: 45 pcs      Over Limit: 55 pcs</b>

### 2.4.4.2 Setting Target values




- APW determined as described before.
- 1 Touch softkey .
  - ➔ A window opens to enter target and tolerance values.
- 2 Enter the target piece number and the tolerance values respectively Under Limit and Limit (Over).
- 3 Touch softkey .
  - ➔ The Check Counting display appears.

Target of Check Counting




<b>Tolerance Type</b>	<b>APW (kg)</b>
Exact Limits <span style="font-size: 0.8em;">▼</span>	0.461745
<input checked="" type="radio"/> <b>Unit</b>	<b>Under Lmt.      Limit (Over)</b>
<input type="radio"/> pcs	45      55

←
→

#### Using the target table

- 1 Touch .
  - ➔ The list of existing targets is displayed.
- 2 Select a target and confirm with .
  - ➔ The selected target values are active.
- 3 Touch softkey .
  - ➔ The Over/Under checkweighing display appears.

## Using the material table

- 1 Touch .  
→ The list of existing materials is displayed.
- 2 Select a material and confirm with .  
→ The selected material data are assigned to the following checkweighing operations.
- 3 Touch softkey .  
→ The Over/Under checkweighing display appears.

### Note

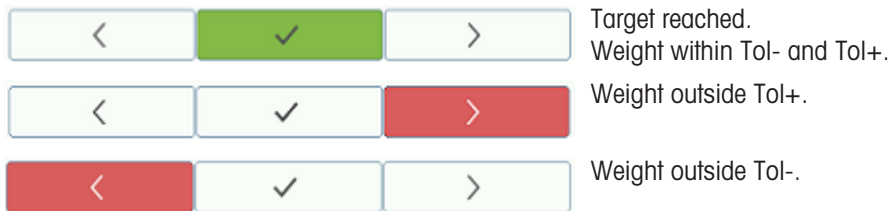
Only materials assigned to the Counting application are available.

### 2.4.4.3 Check Counting


- When the target is set, place the sample to be checked on the weighing platform.  
→ The number of pieces and the over/under weight status is displayed.



### Weight status



### Note

Even if  is touched, the target values remain stored in the target input screen, until a new target is set or the application is disabled.



## 2.5 Manual Filling/Dosing

### 2.5.1 Activating Manual Filling/Dosing application


- 1 On the main, screen touch softkey .
  - ➔ The available applications are displayed.
- 2 Select  Manual Filling/Dosing .
  - ➔ The window to set the target is displayed.
- 3 Touch softkey  to start the Manual Filling/Dosing application.

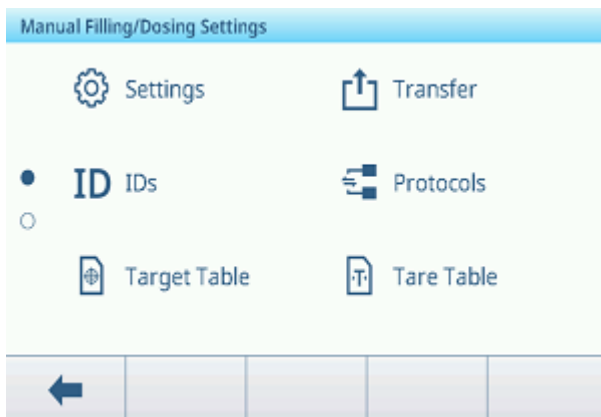


#### Leaving the Manual Filling/Dosing application

- 1 On the 3rd softkey ribbon, touch softkey .
  - ➔ A safety prompt is displayed.
- 2 Confirm leaving the Manual Filling/Dosing application with .
  - ➔ The Manual Filling/Dosing application is closed.
  - ➔ The Basic Weighing application is active.






### 2.5.2 Manual Filling/Dosing settings





When the application is running, touch softkey  on the second softkey ribbon to open the Manual Filling/Dosing settings menu. Thus you do need not to enter the setup for settings regarding the application.



#### Note

For more settings swipe the screen.

	<b>Settings</b>	Manual Filling/Dosing settings, see below.
	<b>Transfer</b>	Settings for transferring the data to a computer or printer, refer to [Basic weighing settings ▶ Page 28] and [How to set up a printer ▶ Page 99].
	<b>IDs</b>	Setup of the identifications, refer to [Basic weighing settings ▶ Page 28].
	<b>Protocols</b>	Setup of protocols, refer to [Basic weighing settings ▶ Page 28].
	<b>Target Table</b>	Setup of the target table for frequently used target values, see below.


	<b>Tare Table</b>	Setup of the tare table for frequently used known tare values, refer to [Basic weighing settings ▶ Page 28].
	<b>Material Table</b>	Setup of the material table, refer to [Basic weighing settings ▶ Page 28]. <b>Note</b> Only materials assigned to the Manual Filling/Dosing application can be selected in the material table later.
	<b>Barcode Reader</b>	Setup of a barcode reader, refer to [Basic weighing settings ▶ Page 28] and [How to set up a barcode reader ▶ Page 100].
	<b>Advanced Settings</b>	Open setup, refer to [Configuration ▶ Page 78].

**Note**

For more information on how to edit tables refer to [Editing tables ▶ Page 25] and [Filtering logs and tables ▶ Page 23].

**Settings**

The following setup items are available:

Setup Item	Sub items	Description
Save & Transfer	<b>Manually</b>	Saving and transferring a transaction has to be confirmed manually using the transfer key  .
	Automatically	Saving and transferring a transaction takes place automatically.
Threshold (%)	0 ... <b>10</b> ... 90%	Threshold to determine at which weight the status of Tol- is indicated.
Statistic	Enable/ <b>disable</b>	
Totalization	Enable/ <b>disable</b>	
	Sub Total	Enable/ <b>disable</b> sub totals.
	Totalization unit	Select unit for the totals.
	Clear on Transfer	Select one of the following methods to clear the total on transfer: <b>Off</b> Clear Total & Subtotal
	Undo Transaction	Only available for IND400 without Data Integrity. Select one of the following methods to undo a transaction: <b>Off</b> Last Transaction Unlimited
Tare after Transfer in Net Mode	Enable/ <b>disable</b>	When enabled, the scale is tared after transferring a net weight.
Stealth Mode	Enable/ <b>disable</b>	Only available for IND400 without Data Integrity. If enabled, no weight value is displayed but the colors will indicate the weighing state.

**Note**

Default settings are shown in **bold**.

## Manual Filling/Dosing Target Table

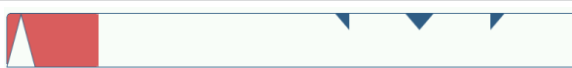


Setup item	Sub items	Description
ID		Enter a numerical ID of the target.
Description		Enter an alphanumerical description of the target.
Target		Weight value of the target weight.
Unit		Unit of the target weight.
Tol -		Lower tolerance of the target weight.
Tol +		Upper tolerance of the target weight.
Tolerance Type	<b>Target Deviation</b>	The target weight has to be entered as an absolute weight, upper and lower tolerances as deviations in weight from the target weight.
	Percentage	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.
Mode	<b>Standard</b>	When totalizing: Adding up the items.
	Take Away	Totalizing when unloading e.g. from a container.
Data Source	Gross Weight	The target is a gross weight.
	<b>Net Weight</b>	The target is a net weight.

### 2.5.3 Manual Filling/Dosing operation

The device offers a Manual Filling/Dosing function. The colored bargraph allows comfortable filling/dosing to a target.

#### 2.5.3.1 Display in Manual Filling/Dosing

##### Bargraph

	Weight far below the lower tolerance
	Weight too low, but almost near the lower tolerance
	Weight within the tolerances
	Target reached exactly
	Weight too high



##### Target indication

Tol -: 0.50    ⊕ 5.00 kg    Tol +: 0.50	Target indication with Tolerance Type = Target Deviation
Tol -: 1 %    ⊕ 5.00 kg    Tol +: 1 %	Target indication with Tolerance Type = Percentage

##### Note

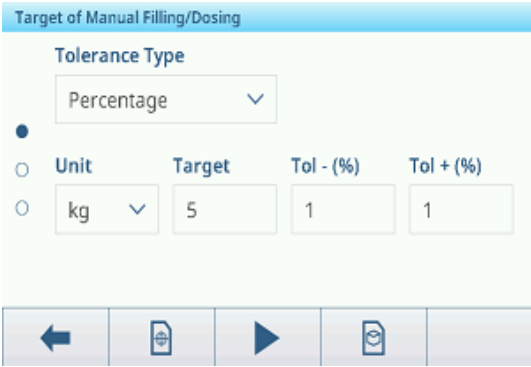
In Manual Filling/Dosing the colors green and red are fixed.

### 2.5.3.2 Setting Target values




- 1 Touch softkey .  
➔ A window opens to enter target and tolerance values.
- 2 Enter the target weight and the tolerance values.
- 3 Touch softkey .  
➔ The Manual Filling/Dosing display appears.

#### Note




With Tolerance Type = **Exact Limits**, only the upper and lower tolerance have to be specified.



### Using the target table

- 1 Touch .  
➔ The list of existing targets is displayed.
- 2 Select a target and confirm with .  
➔ The selected target values are active.
- 3 Touch softkey .  
➔ The Manual Filling/Dosing display appears.

### Using the material table

- 1 Touch .  
➔ The list of existing materials is displayed.
- 2 Select a material and confirm with .  
➔ The selected material data are assigned to the following filling/dosing operations.
- 3 Touch softkey .  
➔ The Manual Filling/Dosing display appears.

#### Note



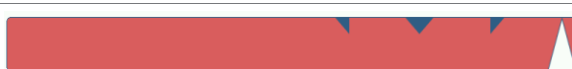
Only materials assigned to the Manual Filling/Dosing application are available.

### 2.5.3.3 Manual Filling/Dosing

- 1 When the target is set, place the empty container on the weighing platform.
- 2 Tare the container.
- 3 Start filling/dosing the material into the container.  
➔ The weight value and the filling/dosing status is displayed.




## Weight status

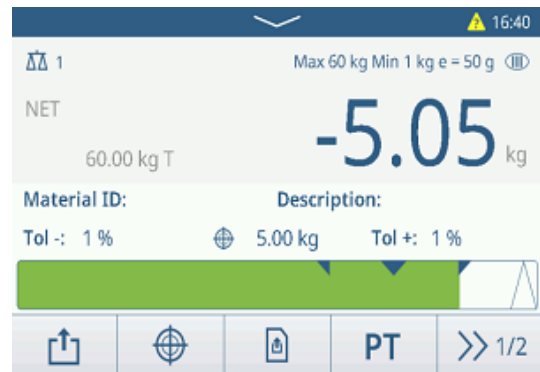
	Weight too low, but almost near the lower tolerance.
	Target reached. Weight within Tol- and Tol+.
	Weight too high.

### Note

Even if **C** is touched, the target values remain stored in the target input screen, until a new target is set or the application is disabled.

### 2.5.3.4 Manual Filling/Dosing in Take Away mode






- 1 Recall a target with mode setting Take Away.
- 2 Put the full container on the weighing platform.
- 3 Tare the full container.
- 4 Fill/dose the first sample from the container.
- 5 Touch  to save and transfer the sample.
  - ➔ The message "Saving and Transferring" is displayed.
- 6 Tare the container.
- 7 Repeat steps 3 to 5 for further samples.



### Note

When Tare After Transfer in Net Mode is activated in the Manual Filling/Dosing settings, you do not have to tare after each sample.

### 2.5.3.5 Totalizing in Manual Filling/Dosing

- 1 Fill in the first sample.
- 2 Touch  to add the sample to the total.
  - ➔ The message "Saving and Transferring" is displayed.
- 3 Unload the sample.
- 4 Repeat steps 1 to 3 for further samples.
- 5 When all samples are totalized, touch .
  - ➔ The total is displayed.
- 6 To clear the total, touch .
  - To clear the subtotal, touch .
  - ➔ A safety prompt is displayed.
- 7 Confirm clearing the (sub)total with .
  - ➔ The weighing terminal is ready for the next totalization process.




Recall Totals	
<b>Totals</b>	
Batch #	202308040008
Total	51.40 kg
Counter	2
Sub #	1
Subtotal	51.40 kg

### Note

For more totalization features, refer to [Totalization operation ▶ Page 69].



### 2.5.3.6 Manual Filling/Dosing transaction table

- Touch softkey  .
  - ➔ The last filling/dosing transactions are displayed.
  - ➔ Swiping horizontally will show the complete information on the transactions.
  - ➔ Swiping vertically will show further transactions.

The following information is stored for each transaction in the Manual Filling/Dosing application:

Manual Filling/Dosing Transactions			
ID	Date & Time	Result	Batch
5	16/Aug/2023 16:59:10	Over	202308
4	16/Aug/2023 16:58:37	Over	202308
3	16/Aug/2023 16:48:17	OK	202308
2	16/Aug/2023 16:46:59	OK	202308
1	16/Aug/2023 11:31:32	OK	202308

ID	Serial number of the transaction
Date & Time	Date and time of the transaction
Result	Result of the Manual Filling/Dosing transaction
Batch #	Batch number (YearMonthDay+4-digit running number)
Sub #	Number of subtotals
Unit	Weight unit of the samples
Gross	Gross weight value
Tare	Tare weight value
Net	Net weight value
Deliver Weight	
Tare Type	
Scale #	For IND400: always "1"
Material ID	ID of the selected material
Material Description	Description of the selected material
ID1 ... ID3	Identifications
Mode	Manual Filling/Dosign mode: Standard or Take Away
Data Source	Gross or Net weight
Target unit	Weight unit of the target weight
Target	Target value
Under Limit	Lower tolerance value
Over Limit	Upper tolerance value
Totalization unit	Weight unit of the total
Total Value	Total value
Total Counter	Number of items of the total
Subtotal Value	Subtotal value
Subtotal Counter	Number of items of the subtotal
User Name	Name of the user logged in

 **Note**



For more actions in the transaction table refer to [Recalling the transaction table ▶ Page 21] and [Filtering logs and tables ▶ Page 23].

 **Note**

When working with data integrity, additional fields regarding review status and reviewer are shown. Transferring the transaction table is possible for reviewed data only. For more information refer to [Working with Data Integrity ▶ Page 37].

## Manual Filling/Dosing statistics

The device offers the statistical evaluation of a batch.



- 1 On the second softkey ribbon of the transaction table, touch softkey .
- 2 Select a batch for the statistical evaluation and confirm with .
- ➔ The statistical parameters are displayed.
- 3 Scroll to display the following parameters:

Statistic Parameters	
Item	Value
Batch #	202308170001
Total Value	14.75 kg
Total Counter	3
Target	5.00 kg
Over Limit	5.50 kg

Batch #	Batch number (YearMonthDay+4-digit running number)
Total Value	Total value
Total Counter	Number of items of the total
Target	Target weight
Over Limit	Upper tolerance value
Under Limit	Lower tolerance value
Statistic Size	Number of items in the statistic
Standard deviation	Standard deviation of all items
Standard deviation (OK)	Standard deviation of the good items
Mean Value	Mean value of the batch
Mean Value (OK)	Mean value of the good items
Max. Value	Maximum value of the batch
Min. Value	Minimum value of the batch
Median	Median value of the batch
%Ratio (OK)	Ratio of the good weighings
Number (OK)	Number of the good weighings
%Ratio (Over)	Ratio of the high weighings
Number (Over)	Number of the high weighings
%Ratio (Under)	Ratio of the low weighings
Number (Under)	Number of the low weighings



## 2.6 Totalization

### 2.6.1 Activating Totalization application


- 1 On the main screen, touch softkey .
  - ➔ The available applications are displayed.
- 2 Select  Totalization.
  - ➔ The Totalization application screen is displayed.

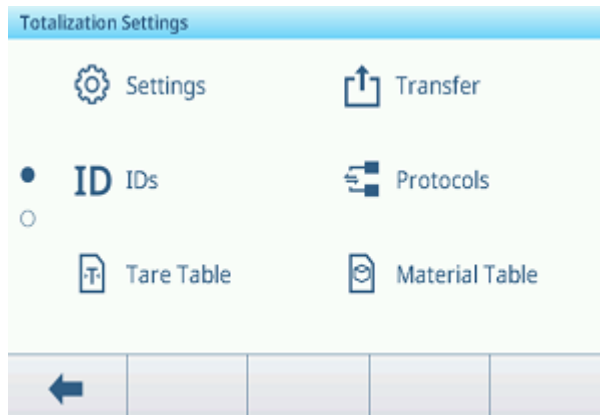


#### Leaving the Totalization application

- 1 On the 3rd softkey ribbon, touch softkey .
  - ➔ A safety prompt is displayed.
- 2 Confirm leaving the Totalization application with .
  - ➔ The Totalization application is closed.
  - ➔ The Basic Weighing application is active.






### 2.6.2 Totalization settings




Touching softkey  on the second softkey ribbon opens the Totalization settings menu. Thus you do need not to enter the setup for settings regarding the application.



#### Note

For more settings swipe the screen.

	<b>Settings</b>	Totalization application settings, see below.
	<b>Transfer</b>	Settings for transferring the data to a computer or printer, refer to [Basic weighing settings ▶ Page 28] and [How to set up a printer ▶ Page 99].
	<b>IDs</b>	Setup of the identifications, refer to [Basic weighing settings ▶ Page 28].
	<b>Protocols</b>	Setup of protocols, refer to [Basic weighing settings ▶ Page 28].
	<b>Tare Table</b>	Setup of the tare table for frequently used known tare values, refer to [Basic weighing settings ▶ Page 28].


	<b>Material Table</b>	Setup of the material table, refer to [Basic weighing settings ▶ Page 28]. <b>Note</b> Only materials assigned to the Totalization application can be selected in the material table later.
	<b>Barcode Reader</b>	Setup of a barcode reader, refer to [Basic weighing settings ▶ Page 28] and [How to set up a barcode reader ▶ Page 100].
	<b>Advanced Settings</b>	Open setup, refer to [Configuration ▶ Page 78].

**Note**

For more information on how to edit tables refer to [Editing tables ▶ Page 25] and [Filtering logs and tables ▶ Page 23].

### Settings

The following setup items are available:

Setup item	Sub items	Description
Totalization unit		Weight unit of the total.
Subtotal	Enable/ <b>disable</b>	Enable/disable subtotals.
Material Change	<b>Deviation (30d) +/-</b>	To detect a change in weight, a deviation of at least 30 d is required.
	Return to zero (<9d)	To detect a change in weight, the scale must be emptied first (below 9 d).
Save & Transfer	<b>Manually</b>	Saving and transferring a transaction has to be confirmed manually using the transfer key  .
	Automatically	Saving and transferring a transaction takes place automatically.
Mode	<b>Standard</b>	Adding up the items.
	Take Away	Totalizing when unloading e.g. from a container.
Data Source	Gross Weight	Gross weights will be totalized.
	<b>Net Weight</b>	Net weights will be totalized.
Tare After Sum	Enable/ <b>disable</b>	When enabled, the scale is automatically tared after each totalization action.
Clear on transfer	<b>Off</b>	No clearing of the total.
	Clear Total & Subtotal	On each transfer, total and subtotal are cleared.
Undo transaction	<b>Off</b>	Only available for IND400 without Data Integrity. A transaction cannot be withdrawn.
	Last Transaction	The last transaction can be withdrawn.
	Unlimited	Any transaction can be withdrawn.
Statistic	Enable/ <b>disable</b>	Enable/disable statistics.

**Note**

Default settings are shown in **bold**.

## 2.6.3 Totalization operation

### Batch number

To each total a Batch # is assigned. This number consists of the current date and a running number. E.g. batch # 20230804007 is the 7th total of August 4th in 2023.

#### Note

Depending on the Totalization Settings, Totalizing can be performed by adding up the items or by taking away items, e.g. from a container. The following scenarios will show these principles.


### 2.6.3.1 Totalizing in Standard mode

- 1 Put the first sample on the weighing platform.
- 2 Touch **+** to add the sample to the total.
  - ➔ The message "Saving and Transferring" is displayed.
  - ➔ The total and the number of samples is updated.
- 3 Unload the sample.
- 4 Repeat steps 1 to 3 for further samples.
  
- 5 When all samples are totalized, touch **Σ**.
  - ➔ The total is displayed.
- 6 To clear the total, touch **€**.
  - ➔ A safety prompt is displayed.
- 7 Confirm clearing the total with **✓**.
  - ➔ The weighing terminal is ready for the next totalization process.




### Undoing a transaction


This feature is only available for IND400 without Data Integrity.

When enabled in the Totalization settings, softkey  is available. There are two possible settings: Last Transaction and Unlimited.

#### Last Transaction

- 1 To undo the last transaction, touch softkey .
  - ➔ A safety prompt is displayed.
- 2 Confirm undoing the last transaction with **✓**.
  - ➔ The last transaction is deleted from the total.

#### Unlimited

- 1 To undo one or more transactions, touch softkey .
  - ➔ The list of the last transactions is displayed.
- 2 Select the transactions you want to delete and confirm with **✓**.
  - ➔ A safety prompt is displayed.
- 3 Confirm undoing the selected transactions with **✓**.
  - ➔ The selected transactions are deleted from the total.

### 2.6.3.2 Totalizing in Take Away mode

- 1 Put the full container on the weighing platform.
- 2 Tare the full container.
- 3 Remove the first sample from the container.
- 4 Touch **+** to add the sample to the total.
  - ➔ The message "Saving and Transferring" is displayed.
  - ➔ The total and the number of samples is updated.
- 5 Tare the container.
- 6 Repeat steps 3 to 5 for further samples.
  
- 7 When all samples are totalized, touch **Σ**.
  - ➔ The total is displayed.
- 8 To clear the total, touch **€**.
  - ➔ A safety prompt is displayed.
- 9 Confirm clearing the total with **✓**.
  - ➔ The weighing terminal is ready for the next totalization process.

**Note**

When Tare After Sum is activated in the Totalization settings, you do not have to tare after each sample.



Recall Totals	
Totals	
Batch #	202308040008
Total	51.40 kg
Counter	2
Sub #	1
Subtotal	51.40 kg

### 2.6.3.3 Totalizing to a target

#### Setting the target

- 1 Touch **⊕**.
- 2 Select the target mode:
  - ➔ Off – no target to be set
  - ➔ Lot(N) – set the target to e.g. 5 samples
  - ➔ Weight Value – set the target to a weight value, e.g. 10 kg
- 3 Enter the target, either e.g. 5 (items) or 10 (kg).
- 4 Confirm target settings with **✓**.
  - ➔ The totalizing screen with bargraph is displayed.

#### Totalizing to a target

- 1 Put the first sample on the weighing platform.
- 2 Touch **+** to add the sample to the total.
  - ➔ The message "Saving and Transferring" is displayed.
  - ➔ The bargraph shows the current total. In the line above the total and the number of samples is updated.
- 3 Unload the sample.
- 4 Repeat steps 1 to 3 for further samples.
  - ➔ When the target number of samples or the target weight is reached, a message is displayed.



- 5 Touch  $\Sigma$  .
  - ➔ The total is displayed.
- 6 To clear the total, touch  $\text{€}$  .
  - ➔ A safety prompt is displayed.
- 7 Confirm clearing the total with  $\checkmark$  .
  - ➔ The weighing terminal is ready for the next totalization process.

Recall Totals	
<b>Totals</b>	
Batch #	202308040008
Total	51.40 kg
Counter	2
Sub #	1
Subtotal	51.40 kg

### 2.6.3.4 Totalizing with subtotals

- 1 Put the first sample on the weighing platform.
  - 2 Touch  $+$  to add the sample to the total.
    - ➔ The message "Saving and Transferring" is displayed.
    - ➔ The total and the number of samples is updated.
  - 3 Unload the sample.
  - 4 Repeat steps 1 to 3 for further samples.
- 
- 5 When the samples for the subtotal are totalized, touch  $\Sigma$  .
    - ➔ The total and subtotal is displayed.
  - 6 To clear the subtotal, touch  $\text{€}$  .
    - ➔ A safety prompt is displayed.
  - 7 Confirm clearing the subtotal with  $\checkmark$  .
  - 8 Repeat steps 1 to 7 for totalizing further subtotals.
  - 9 To clear the grand total and all subtotals, touch  $\text{€}$  .
    - ➔ A safety prompt is displayed.
  - 10 Confirm clearing the grand total with  $\checkmark$  .
    - ➔ The weighing terminal is ready for the next totalization process.


Recall Totals	
<b>Totals</b>	
Batch #	202308040008
Total	51.40 kg
Counter	2
Sub #	1
Subtotal	51.40 kg

Recall Totals	
<b>Totals</b>	
Batch #	202308040008
Total	51.40 kg
Counter	2
Sub #	1
Subtotal	51.40 kg

Recall Totals	
<b>Totals</b>	
Batch #	202308040008
Total	51.40 kg
Counter	2
Sub #	1
Subtotal	51.40 kg



### 2.6.3.5 Totalization transaction table

**Note**

- Touch softkey  .
  - ➔ The last weighing transactions are displayed.
  - ➔ Swiping horizontally will show the complete information on the transactions.
  - ➔ Swiping vertically will show further transactions.

The following information is stored for each transaction in the Totalization application:

Totalization Transactions		
ID	Date & Time	Batch #
29	04/Aug/2023 15:54:18	202308040012
28	04/Aug/2023 15:53:11	202308040012
27	04/Aug/2023 15:52:34	202308040012
26	04/Aug/2023 15:52:26	202308040012
25	04/Aug/2023 10:51:08	202308040011

←


» 1/2

ID	Serial number of the transaction
Date & Time	Date and time of the transaction
Batch #	Batch number (YearMonthDay+4-digit running number)
Sub #	Number of subtotals
Unit	Weight unit
Gross	Gross weight value
Tare	Tare weight value
Net	Net weight value
Deliver Weight	
Tare Type	
Scale #	For IND400: always "1"
Material ID	ID of the selected material
Material Description	Description of the selected material
ID1 ... ID3	Identifications
Mode	Totalization mode: Standard or Take Away
Data Source	Gross Weight or Net Weight
Totalization Unit	Weight unit of the total
Total Value	Total weight value
Total Counter	Number of items of the total
Subtotal Value	Subtotal weight value
Subtotal Counter	Number of items of the subtotal
User Name	Name of the user logged in

**Note**

For more actions in the transaction table refer to [Recalling the transaction table ▶ Page 21] and [Filtering logs and tables ▶ Page 23].



**Note**

When working with data integrity, additional fields regarding review status and reviewer are shown. Transferring the transaction table is possible for reviewed data only. For more information refer to [Working with Data Integrity ▶ Page 37].



### Totalization statistics

The device offers the statistical evaluation of a batch.

- 1 On the second softkey ribbon of the transaction table, touch softkey .
- 2 Select a batch for the statistical evaluation and confirm with .
- 3 Scroll to display the following parameters:

Statistic Parameters	
Item	Value
Batch #	202308100001
Total Value	22.55kg
Total Count	2
Statistic Size	2
Std.Deviation	3.975kg

Batch #	Batch number (YearMonthDay+4-digit running number)
Total Value	Total value of all items
Total Counter	Number of items of the total
Statistic Size	Number of items of the statistic
Std. Deviation	Standard deviation of the items
Mean Value	Mean value of the batch
Max. Value	Maximum value of the batch
Min. Value	Minimum value of the batch
Median	Median value of the batch

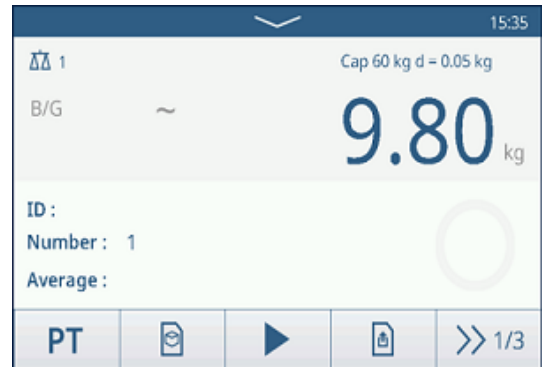
## 2.7 Animal Weighing

### 2.7.1 Activating the Animal Weighing application


**Note**

Animal Weighing is only available for IND400 without Data Integrity.


- 1 On the main screen, touch softkey .
  - ➔ The available applications are displayed.
- 2 Select  Animal Weighing.
  - ➔ The Animal Weighing application screen is displayed.

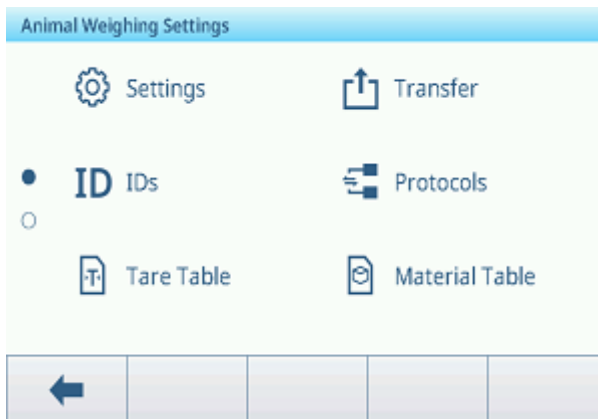


#### Leaving the Animal Weighing application

- On the 3rd softkey ribbon, touch softkey .
  - ➔ The Animal Weighing application is closed.
  - ➔ The Basic Weighing application is active.






### 2.7.2 Animal Weighing settings




Touching softkey  on the second softkey ribbon opens the Animal Weighing Settings menu. Thus you do need not to enter the setup for settings regarding the application.



**Note**

For more settings swipe the screen.

	<b>Settings</b>	Animal weighing application settings, see below.
	<b>Transfer</b>	Settings for transferring the data to a computer or printer, refer to [Basic weighing settings ▶ Page 28] and [How to set up a printer ▶ Page 99].
	<b>IDs</b>	Setup of the identifications, refer to [Basic weighing settings ▶ Page 28].
	<b>Protocols</b>	Setup of protocols, refer to [Basic weighing settings ▶ Page 28].
	<b>Tare Table</b>	Setup of the tare table for frequently used known tare values, refer to [Basic weighing settings ▶ Page 28].


	<b>Material Table</b>	Setup of the material table, refer to [Basic weighing settings ▶ Page 28]. <b>Note</b> Only materials assigned to the Animal Weighing application can be selected in the material table later.
	<b>Barcode Reader</b>	Setup of a barcode reader, refer to [Basic weighing settings ▶ Page 28] and [How to set up a barcode reader ▶ Page 100].
	<b>Advanced Settings</b>	Open setup, refer to [Configuration ▶ Page 78].

**Note**

For more information on how to edit tables refer to [Editing tables ▶ Page 25] and [Filtering logs and tables ▶ Page 23].

### Settings

The following setup items are available:

Setup item	Sub items / Settings	Description
Multi-object Support	Enable/ <b>disable</b>	When weighing several samples of the same kind, the average weight of the samples is calculated.
Sampling time	1 ... <b>5</b> ...9	Enter the time to average the weight value.
Start Mode	<b>Softkey</b>	Start animal weighing via softkey ▶ .
	Digital Input	Start animal weighing via a digital input signal.
	Automatic	Automatic start of the animal weighing cycle at a change of weight.
Threshold	0 ... <b>1 kg</b> ... max. capacity	Enter a threshold for starting animal weighing.
Save & Transfer	<b>Manually</b>	Saving and transferring a transaction has to be confirmed manually by using the transfer key  .
	Automatically	Saving and transferring a transaction is performed automatically.

**Note**





Default settings are shown in **bold**.

## 2.7.3 Animal Weighing operation

### Note






Depending on the Animal Weighing settings, animal weighing can be started manually or automatically. Transferring the transaction can either be configured manually or automatically. The following scenarios will show these principles.

### 2.7.3.1 Single sample - manual operation

- 1 Put the sample on the weighing platform.
- 2 Start Animal Weighing by touching softkey  .
  - ➔ A countdown is starting.
  - ➔ When the countdown is finished, the main weight display shows the total average weight with symbol  .  
In the lower left of the display the average weight is displayed, too.
- 3 Press the transfer key  to transfer or print the weighing result.
  - ➔ In the lower left of the display the value for the ID of the transaction counter increases.
- 4 Touch  to close the transaction.
- 5 Unload the weighing platform.
  - ➔ The weighing terminal is ready for the next animal weighing process.



### 2.7.3.2 Multi sample - manual operation

- 1 Put the samples on the weighing platform.
- 2 Touch softkey  and enter the number of samples.
- 3 Start animal weighing by touching softkey  .
  - ➔ A countdown is starting.
  - ➔ When the countdown is finished, the main weight display shows the total average weight with symbol  .  
In the lower left display the average weight of a single sample is displayed.
- 4 Press the transfer key  to transfer or print the weighing result.
  - ➔ In the lower left display the ID of the transaction counter increases.
- 5 Touch  to close the transaction.
- 6 Unload the weighing platform.
  - ➔ The weighing terminal is ready for the next animal weighing process.




### 2.7.3.3 Single sample - automatic start and transfer

- 1 Put the sample on the weighing platform.
  - ➔ When the weight is about the threshold, a countdown is starting.
  - ➔ When the countdown is finished, the main weight display shows the total average weight with symbol \*.
  - In the lower left of the display the average weight is displayed, too.
  - ➔ The message "Saving and transferring" is displayed.
  - ➔ In the lower left of the display the value or the ID of the transaction counter increases.
- 2 Touch ■ to close the transaction.
- 3 Unload the weighing platform.
  - ➔ The weighing terminal is ready for the next animal weighing process.

### 2.7.3.4 Animal Weighing transaction table

**Note**

Animal Weighing results are calculated values. They cannot be stored in the Alibi Memory but in the application-specific transaction table.

- Touch softkey  .
  - ➔ The last weighing transactions are displayed.
  - ➔ Swiping horizontally will show the complete information on the transactions.
  - ➔ Swiping vertically will show further transactions.

Animal Weighing Transactions		
Total Weight	Number	Average Weight
*26.75	15	*1.80
*44.30	1	*44.30
*18.35	1	*18.35
*2.75	1	*2.75
*30.05	1	*30.05

The following information is stored for each transaction in the Animal Weighing application:

ID	Serial number of the transaction
Date & Time	Date and time of the transaction
Total Weight	Result of the Animal Weighing transaction, marked with a *
Number	Number of samples
Average Weight	Average weight for a single sample
Unit	Weight unit of the transaction
Scale #	For IND400: always "1"
Material ID	ID of the selected material
Material Description	Description of the selected material
ID1 ... ID3	Identifications
User Name	Name of the user logged in

**Note**




For more actions in the transaction table refer to [Recalling the transaction table ▶ Page 21] and [Filtering logs and tables ▶ Page 23].

### 3 Configuration

In the setup, settings can be changed and functions can be activated. This enables the adaptation to individual weighing requirements.

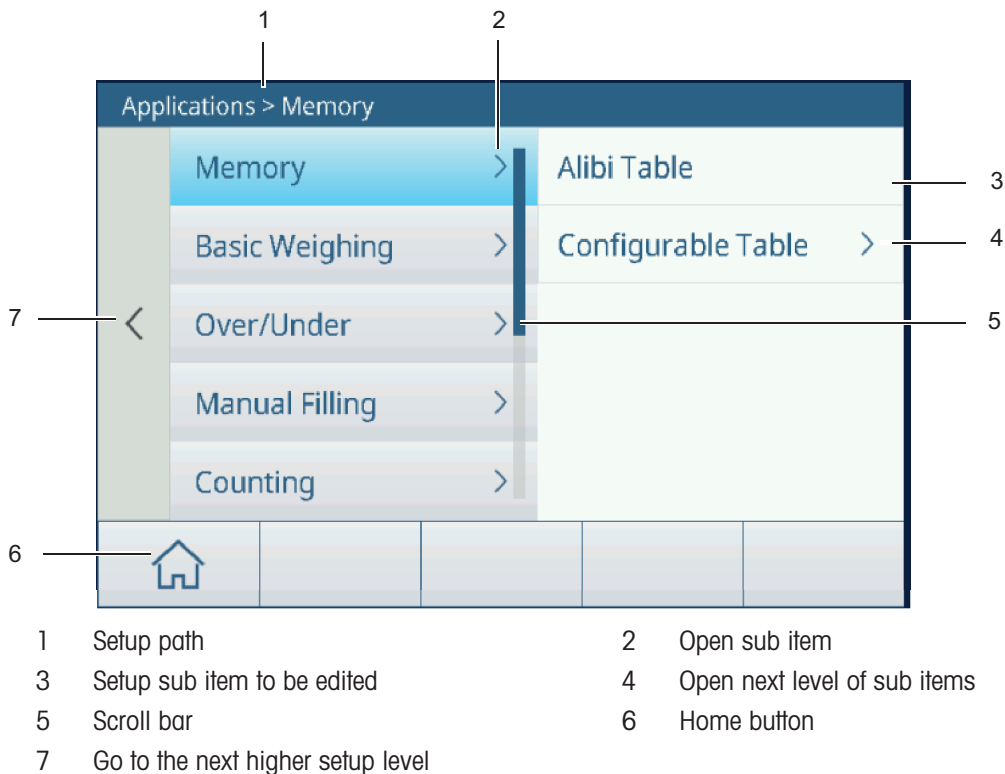
#### 3.1 Operating the setup

##### Entering the setup

- 1 In the Quick setting menu touch .  
➔ The main setup items are displayed.
- 2 Touch the desired setup block.  
➔ The corresponding sub items are displayed. The selected setup items are highlighted in blue.
- 3 Proceed until the settings page is displayed.
- 4 Make the required settings and confirm with .  
To leave the settings page without making changes, touch softkey . The previous setup items are displayed again.



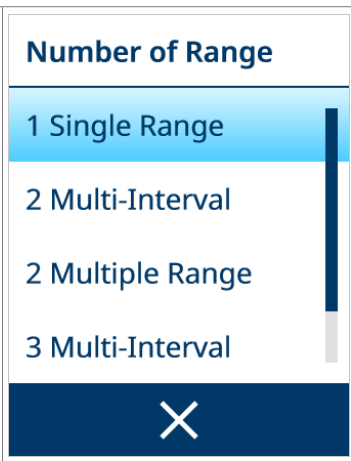

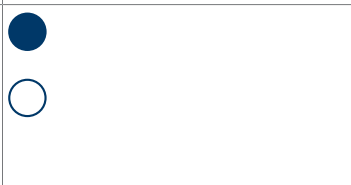
##### How to navigate in the setup



- |   |                                   |   |                              |
|---|-----------------------------------|---|------------------------------|
| 1 | Setup path                        | 2 | Open sub item                |
| 3 | Setup sub item to be edited       | 4 | Open next level of sub items |
| 5 | Scroll bar                        | 6 | Home button                  |
| 7 | Go to the next higher setup level |   |                              |

## How to operate the setup

Depending on the content, the following options are available to change settings in the setup:

<b>Pull-down menu</b>		Select an option from the displayed list of settings.
<b>Switch</b>		<b>Example</b> ID1 enabled ID2 disabled ID3 not available
<b>Page display</b>		When there are several pages of settings, this is displayed by the dots on the left side. In the example, there are two pages of settings and the first page is displayed. Go to the next page by swiping vertically.
<b>(Alpha-)Numeric entries</b>	On-screen keyboards are displayed, see [Hard and softkeys ▶ Page 7].	

## Exiting the setup


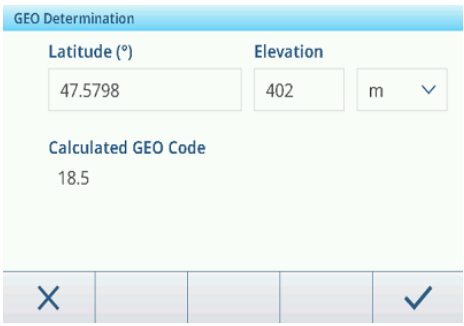
- Touch softkey .
- ➔ The weight display appears and the device will work with the new setup settings.

## 3.2 Scale setup

### 3.2.1 Metrology setup

 **Note**

Default settings are shown in **bold**.

Setup item	Sub items / possible settings	Comment
Approval	<b>None</b> , Argentina, Australia, Canada, OIML, USA, Korea, Thailand	Scale settings are restricted according to the local Weights and Measures regulations. A non-approved scale must not to be used in legal metrology.
Class (approved scales only)	II, <b>III</b> , III HD (Canada only), III L (USA only), IIII	When the verification class does not comply with the local Weights and Measures regulations, a message is displayed and you are directed to the respective setup item to correct capacity and increment settings accordingly.
Geo Value (strain gauge scales only)	Enter the Geo value for your region, see [Table of Geo code values ▶ Page 118]. Using softkey  the Geo value can be calculated depending on your geographical latitude and height above sea level.	 <p>The GEO Determination dialog box shows fields for Latitude (°) with value 47.5798 and Elevation with value 402 and unit m. Below these fields, it displays 'Calculated GEO Code' as 18.5. At the bottom, there are buttons for 'X' (cancel) and a checkmark (confirm).</p>
Lower Limit (°C)	-20°C ... <b>-10 °C</b> ... 59 °C	Setting the lower and upper temperature limits for operating the weighing system according to the connected scale. Temperature values outside the approved ranges are highlighted in red. The approved temperature ranges are stored in the load cells.
High Limit (°C)	19 °C ... <b>40 °C</b> ... 60 °C	



### 3.2.2 SICSpro/Analog scale setup

#### Overview

The SICSpro/Analog scale setup consists of the following setup items:

- Identification
- Capacity & Increments
- Linearization & Calibration
- Control Mode
- Units
- Zero
- Tare
- Filter
- Stability
- MinWeigh
- Warmup (for approved scales only)
- FACT (SICSpro scale only)
- Reset (SICSpro scale only)


**Note**

Default settings are shown in **bold**.

#### Identification setup

Identification	Displaying/setting scale identification data
Serial Number	Entering the serial number of the selected scale.
Scale Model	Entering the scale type, e.g. PBD555 - 15LA.
Scale Location	Entering the scale location, e.g. floor and room.
Scale Identification	Entering the scale identification, e.g. inventory number.
Note	Scale Location and Scale Identification can consist of up to 40 alphanumeric characters.

#### Capacity & Increments setup

Capacity & Increments	Setting capacity and increment
Primary Unit	Select from the following: <b>g</b> , <b>kg</b> , oz, lb, t, ton
#Range/Intervals	Select from the following: <b>1 Single Range</b> , 2 Multi-Interval, 2 Multiple Range, 3 Multi-Interval, 3 Multiple Range.
Range 1 ... Range 3	Set ranges according to #Range/Intervals. <b>Note</b> With Multi-Interval / Multiple Range observe the following, otherwise a message is displayed: Range/Interval 1 < Range/Interval 2 < Range/Interval 3
Resolution 1 ... Resolution 3	Set resolutions according to #Range/Intervals. <b>Note</b> With Multi-Interval / Multiple Range observe the following, otherwise a message is displayed: Resolution 1 < Resolution 2 < Resolution 3 For approved SICSpro scales, when the Class is II and e = 10 d, the increment must be $1 \times 10^k$ .
Blank Over Capacity (d)	Blanking of the display is used to indicate an overload condition  Set the number of divisions (d) that the scale is permitted to go over the maximum capacity before blanking. Possible settings: 0 ... <b>5</b> ... 99 (d)



## Linearization & Calibration setup

Linearization & Calibration	Calibrating the scale
Type -> <b>Set Zero</b>	Using this setup item the scale is set to zero. 1 Touch softkey ► and follow the instructions on the screen. ➔ When finished, a message is displayed. 2 Confirm the message. ➔ The calibration protocol is displayed. <b>Span adjustment</b> Touching softkey ⚙️ opens a screen for the span adjustment.
Type -> Span	Using this setup item the scale is calibrated by using the zero point and a test weight. 1 Enter weight value and name of the test weight. 2 Confirm test weight data with the checkmark. 3 Touch softkey ► and follow the instructions on the screen. ➔ When finished, a message is displayed. 4 Confirm the message. ➔ The calibration protocol is displayed.
Type -> 3-Point, 4-Point, 5 Point, 3-P. With Hysteresis, 4-P. With Hysteresis, 5-P. With Hysteresis	Using this setup items the scale is calibrated using the zero point and two or up to 4 test weights. 1 Enter weight value and name of the test weights. 2 Confirm test weight data with the checkmark. 3 Touch softkey ► and follow the instructions on the screen. ➔ When finished, a message is displayed. 4 Confirm the message. ➔ The calibration protocol is displayed.
Auto Print Cal.	If activated, the calibration data are automatically printed/transferred.
Last Calibration Date	Date of the last calibration.

## Calibration protocol

Set Zero	
Rec. #	1
✓ Result	Succeed
Date & Time	14/Nov/2023 09:18:52
SNo.Scale	Not Available
Type	Set Zero
Scale FW	Not Available

### Additional functions

-  Print/transfer the calibration protocol
-  Enter a comment on the current calibration


## Control Mode setup

Control Mode	Weight value in higher resolution
Control Mode	Displaying the weight value in higher resolution.

## Units setup

Units	Setting display units
Second Unit	Select from the following: g, kg, oz, <b>lb</b> , t, ton
Third Unit	Select from the following: g, <b>kg</b> , oz, lb, t, ton
Powerup Unit	Select which weight unit shall be used at a restart. <b>Primary Unit:</b> The scale restarts in the primary unit. Restart: The scale restarts with whichever unit was last displayed before the power cycle.
Note	In case of approved scales, individual sub-items of this setup item may not be available or only to a limited extent, depending on the country.

## Zero setup

Zero	Zero setting options
Startup Zero	Select which zero value shall be used at startup. <b>Capture New:</b> a new zero value is captured Use Last: the last zero value is used Use Calibrated: the calibrated zero value is used
Power Up Range - (%) Power Up Range + (%)	Set the range for zeroing at power up in % of the scale capacity. Possible settings: -99 ... <b>-10</b> ... 0 (%) resp. 0 ... <b>+10</b> ... +99 (%)
Push Button Zero	Activating/deactivating Push Button Zero.
Push Button Range - (%) Push Button Range + (%)	Set ranges for Push Button Zero in % for zeroing via <b>•0</b> . Possible settings: 0 ... <b>2</b> ... 99 (d)
Auto Zero Tracking	Activating/deactivating automatic zeroing.
Auto Zero Range (d)	Set the range for automatic zeroing. Possible settings: 0.0 ... <b>0.5</b> ... 9.9 (d)
Center of Zero	Activating/deactivating the indication of symbol <b>&gt;0&lt;</b> for a gross weight within +/- 0.25 e/d.
Under Zero Blank (d)	Blanking of the display is used to indicate an underload condition  – Set the number of divisions (d) that the scale is permitted to go under zero before blanking. Possible settings: 0 ... <b>20</b> ... 99 (d)
Note	In case of approved scales, individual sub-items of this setup item may not be available or only to a limited extent, depending on the country.

## Tare setup

Tare	Tare options
Startup Tare	Selecting which tare value shall be used at startup. <b>Clear:</b> an existing tare value is cleared Use last: the last tare value is used
Auto Tare Mode	If activated: When a load is placed on the scale and the gross weight exceeds the threshold for automatic taring, the weight is tared automatically.
Threshold (d)	Setting the threshold for automatic taring. Possible settings: 0 ... <b>9</b> ... 99 (d)
Reset Threshold (d)	Setting the threshold for clearing the tare. Possible settings: 0 ... <b>5</b> ... 99 (d)
Auto Clear Tare	If activated: When the load is removed and the weight drops below the clear threshold weight, the tare weight is cleared automatically.
Threshold (d)	Setting the threshold for clearing the tare automatically. Possible settings: 0 ... <b>9</b> ... 99 (d)

Tare	Tare options
Chain Tare	If activated: It is possible to tare several times if e.g. cardboard is placed between individual layers in a container.
Push Button Tare	If activated, taring via $\cdot T \cdot$ is enabled.
Keyboard Tare	If activated, the tare weight can be entered numerically.
Clear With Zero	If activated: When the load is removed and the weight drops below zero, the tare weight is cleared automatically.
Net Sign Correction	Under Legal for Trade mode, the Net Sign Correction function should be disabled.

### Filter setup

Filter	Filter settings
Low Pass Filter	Setting the condition above which all disturbances are filtered out. The lower the setting, the better the disturbance rejection, but the longer the setting time required for the scale. Possible settings: Low, <b>Middle</b> , High, Heavy High
Stability Filter	The stability filter works in conjunction with the standard low pass filter to provide a more stable final weight reading. The stability filter should only be used in transaction weighing applications, since the non-linear action of the filter switching may cause inaccurate cutoffs in batching or filling applications.

### Stability setup

Stability	Setting the stability detector (weight in motion)
Motion Range (d)	Setting the motion range (in divisions) that the weight is permitted to fluctuate and still have a no-motion condition. Possible settings: 0.1 ... <b>0.5</b> ...99.9 (d)
No-motion Interval (s)	The no-motion interval defines the amount of time (in seconds) that the scale weight must be within the motion range setting to have a no-motion condition. A shorter interval means that a no-motion condition is more likely, but may make weight measurement less precise. Possible settings: 0.0 ... <b>0.5</b> ...2.0 (s)

### MinWeigh setup

MinWeigh	MinWeigh function
MinWeigh Mode	Activating/deactivating the MinWeigh function. If activated and the weight on the scale drops below the set minimum value, $\boxtimes$ is blinking.
Value (kg)	Setting the minimum weight value in kg. Possible settings: <b>0</b> ... max. load
Note	If you attempt to record the weight while in the MinWeigh condition, the printout will include an asterisk (*) on the net weight value.

### Warmup setup

Warmup	Warmup time
Warmup (min)	Setting warmup time at startup, for approved scales only Possible settings: 0 ... <b>3</b> ... 99 (min)

### FACT setup

FACT	Fully Automatic Calibration Test (for SICSpro scales with internal calibration weight only)
Temperature	FACT is a temperature controlled adjustment device. When the FACT function is enabled, the temperature in the magnet is measured. If the specified temperature change is reached after the last adjustment, an internal adjustment is carried out as soon as the balance has not been used for 3 minutes. This adjustment will correct all temperature influences.

### Reset setup

Reset	Scale reset (SICSpro scale only)
Perform Reset?	Confirm with the checkmark. The scale settings will be reset to factory settings.

## 3.2.3 Default settings

### SICSpro/Analog Scale

Setup items		Default setting	Possible settings
Metrology	Approval	None	None, Argentina, Australia, Canada, OIML, USA, Korea, Thailand
	if approved	Class III	II, III, III HD (Canada only), III L (USA only), IIII
	Geo Value	19	0.0 ... 31.0
	Lower Limit	-10 °C	-20 °C to 59 °C
	High Limit	40 °C	-29 °C to 60 °C
	Display (metrology line)	non-approved: Cap/d approved: Max/Min/e	non-approved: Disabled, Cap/d, Max/Min/e approved: Max/Min/e
Capacity & Increments	Primary Unit	kg	non-approved: g, kg, oz, lb, t, ton approved: g, kg, t
	#Range/Intervals	1 Single Range	1 Single Range, 2 Multi-Interval, 2 Multiple Range, 3 Multi-Interval, 3 Multiple Range
	Blank Over Capacity (d)	5 (d)	0 ... 99 (d)
Linearization & Calibration	Type	Set Zero	Span, 3-Point, 4-Point, 5 Point, 3-P. With Hysteresis, 4-P. With Hysteresis, 5-P. With Hysteresis
	Auto Print Cal.	Off	On, Off
Units	Second Unit	non-approved: lb approved: None	non-approved: None, g, kg, oz, lb, t, ton approved: None, g, kg, t
	Third Unit	kg	approved: None, g, kg, t non-approved: None, g, kg, oz, lb, t, ton
	Power Up Unit	Primary Unit	Primary Unit, Restart

Setup items		Default setting	Possible settings
Zero	Startup Zero	Capture New	non-approved : Use Last, Capture New, Use Calibrated approved: Capture New
	Power Up Range - (%)	10 (%)	0 ... 99 (%)
	Power Up Range + (%)	10 (%)	0 ... 99 (%)
	Push Button Zero	On	On, Off
	Push Button Range - (%)	2	0 ... 99 (%)
	Push Button Range + (%)	2	0 ... 99 (%)
	Auto Zero Tracking	On	On, Off
	Auto Zero Range (d)	0.5 (d)	0.0 ... 9.9 (d)
	Center of Zero	Off	On, Off
	Under Zero Blank (d)	20 (d)	0 ... 99 (d)
Tare	Startup Tare	Clear	Clear, Use Last
	Auto Tare Mode	Off	On, Off
	Threshold (d)	9 (d)	0 ... 99 (d)
	Reset Threshold (d)	5 (d)	0 ... 99 (d)
	Auto Clear Tare	Off	On, Off
	Threshold (d)	9 (d)	
	Chain Tare Mode	On	On, Off
	Push Button Tare	On	On, Off
	Keyboard Tare	On	On, Off
	Clear With Zero	Off	On, Off
Net Sign Correction	Off	On, Off	
Filter	Low Pass Filter	Middle	Light, Middle, High, Heavy High
	Stability Filter	Off	On, Off
Stability	Motion Range (d)	0.5 (d)	0.1 ... 99.9 (d)
	No-Motion Interval (s)	0.5 (s)	0.0 ... 2.0 (s)
MinWeigh	MinWeigh Mode	Off	On, Off
	Value (kg)	0 (kg)	0 ... max. load
Warm up (approved scales only)	Warmup (min)	0 (min)	0 ... 99 (min)

## 3.3 Applications setup

### 3.3.1 Application -> Memory

The Memory setup consists of the following setup items:

Alibi Table

refer to [Recalling the Alibi log file ▶ Page 22]

Configurable Table

– Tare Table

refer to [Basic weighing settings ▶ Page 28]

– Over/Under Target Table

refer to [Over/Under checkweighing settings ▶ Page 41]

– Manual Filling/Dosing Target Table

refer to [Manual Filling/Dosing settings ▶ Page 60]

– Counting Target Table

refer to [Counting settings ▶ Page 50]

– Material Table

refer to [Basic weighing settings ▶ Page 28]

– Import / Export

refer to [Importing/exporting data ▶ Page 26]

**Note**

Default settings are shown in **bold**.

### 3.3.2 Application -> Basic Weighing

This setup item is another access to the following sub items:

Setup item	Reference
Settings	[Basic weighing settings ▶ Page 28]
Transfer	[Basic weighing settings ▶ Page 28]
Transaction Table	[Recalling the transaction table ▶ Page 21]

### 3.3.3 Application -> Over/Under

This setup item is another access to the following sub items:

Setup item	Reference
Settings	[Over/Under checkweighing settings ▶ Page 41]
Transfer	[Basic weighing settings ▶ Page 28]
Transaction Table	[Recalling the transaction table ▶ Page 21]

### 3.3.4 Application -> Counting

This setup item is another access to the following sub items:

Setup item	Reference
Settings	[Counting settings ▶ Page 50]
Check Counting	[Counting settings ▶ Page 50]
Transfer	[Basic weighing settings ▶ Page 28]
Transaction Table	[Recalling the transaction table ▶ Page 21]

### 3.3.5 Application -> Manual Filling/Dosing

This setup item is another access to the following sub items:

Setup item	Reference
Settings	[Manual Filling/Dosing settings ▶ Page 60]
Transfer	[Basic weighing settings ▶ Page 28]
Transaction Table	[Recalling the transaction table ▶ Page 21]

### 3.3.6 Application -> Totalization

This setup item is another access to the following sub items:

Setup item	Reference
Settings	[Totalization settings ▶ Page 67]
Transfer	[Basic weighing settings ▶ Page 28]
Transaction Table	[Recalling the transaction table ▶ Page 21]

### 3.3.7 Application -> Animal Weighing

This setup item is another access to the following sub items:

Setup item	Reference
Settings	[Animal Weighing settings ▶ Page 74]
Transfer	[Basic weighing settings ▶ Page 28]
Transaction Table	[Recalling the transaction table ▶ Page 21]

### 3.3.8 Application -> IDs

This setup item is another access to the setup of ID1 ... ID3. For details refer to [Basic weighing settings ▶ Page 28].

### 3.3.9 Application -> Data Integrity

This setup item is only available for IND400 with Data Integrity. The following settings are available:

Setup item	Description
Electronics Signature	When enabled, the electronic signature is required to sign and review the transaction. Transactions can only be exported, if the transactions are reviewed before.
Review Immediately	Only available if Electronics Signature is enabled. When transferring a transaction you are asked to review the transaction immediately.



### 3.4 Terminal setup

The Terminal setup consists of the following main setup blocks:

Device

User Management




#### 3.4.1 Terminal -> Device

##### 3.4.1.1 Terminal -> Device -> Region

**Note**

Default settings are shown in **bold**.




Setup item	Sub items	Possible settings/description	
Language	Display Message	<b>English</b> , Chinese, Deutsch, Français, Italiano, Español, Português, Japanese, Polski	
	Onscreen Keyboard	<b>English</b>	
	Keyboard Layout	<b>QWERTY</b> , QWERTZ, AZERTY	
	External Keyboard	<b>None</b> , English, Português, Français, Español, Italiano, Deutsch	
Date & Time	Preview of Time and Date		
	Use 24-Hour Clock	<b>On/Off</b>	
	Display Seconds	<b>On/Off</b>	
	Show 2-Digit Month	<b>On/Off</b>	
	Show 2-Digit Year	<b>On/Off</b>	
	Time Separator	<b>:</b> , <b>.</b>	
	Date Format	<b>Day Month Year</b> , Month Day Year, Year Month Day	
	Date Separator	<b>/</b> , None, (Space), Dash, <b>.</b> , <b>/</b> , <b>:</b>	
	Time Zone	Only available if Network Time Synchronization is set to On.	
	Daylight Saving Time	<b>On/Off</b>	
		Shift (H)	Shift of the daylight saving time
		Start - Summer	Start date of the daylight saving time
		End - Winter	End date of the daylight saving time
	Set Date	Set date and time in the selected format	
Hour			
Minute			

Setup item	Sub items	Possible settings/description
	Network Time Synchronization	On/Off
	Connect Timeout	1 ... <b>5</b> ... 30
	Time	Current time
	Last Synchronization	Time of the last synchronization
	Sync Cycle (Hours)	1 ... <b>8</b> ... 99
	Time Server IP Address	IP Address of a time server for your region
	Time Server Port #	123
	Alert (d)	0 ... <b>1</b> ... 30
	<p><b>Synchronizing data and time automatically</b></p> <p>When Network Time Synchronization is set to On and a time server is entered, date and time are synchronized with the time server automatically after the set Sync Cycle has elapsed.</p> <p><b>Synchronizing data and time manually</b></p> <p>For a manual synchronization with the time server, touch . After the synchronization a message is displayed and date and time are updated.</p> <p><b>Time zone and daylight saving time</b></p> <p>When leaving Network Time Synchronization with  you are directed to the Date &amp; Time page with the possibility to set a time zone and the daylight saving time. When Network Time Synchronization is set to On it is not possible to set the date and time.</p>	

### 3.4.1.2 Terminal -> Device -> License Management

In order to run advanced functionality or specific applications, a license is required for the desired functionality. If purchased with the terminal, the license or licenses are installed and activated in the factory. But if the terminal is installed already and a software license is purchased later, it has to be installed and activated in the field. To install or activate a software license, call the METTLER TOLEDO service.

This setup item shows a list of software licenses available on the device. The following information is displayed for each license:

#		Running number of the license
State		Activated
		Deactivated
		Pending, i.e. not activated yet
Name		Name of the license
License Key		License key in the format XXXXX-XXXXX-XXXXX-XXXXX-XXXXX
Product		Functionality of the license

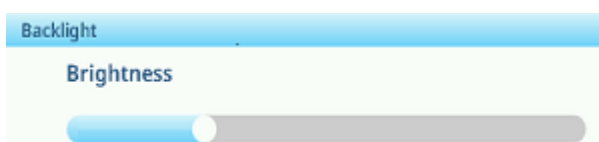
### 3.4.1.3 Terminal -> Device -> Screen Saver

After a set time without action on the terminal, a blue screen with METTLER TOLEDO can be displayed as screen saver.

- 1 **Enable**/disable the screen saver.
- 2 When enabled, set the timeout after which the screen saver will be active.  
Timeout settings: **1 min** to 60 min

### 3.4.1.4 Terminal -> Device -> Backlight

Set the brightness of the display.



### 3.4.1.5 Terminal -> Device -> Identification

Setup item	Description
Terminal ID #1	Enter up to 3 terminal identifications of max. 20 alphanumeric characters each.
Terminal ID #2	
Terminal ID #3	
Serial Number	Shows the serial number of the weighing terminal.

### 3.4.2 Terminal -> User Management

The device offers a user management with roles and users assigned to a role.

#### 3.4.2.1 Terminal -> User Management -> Role Definition

##### Roles without Data Integrity

Role Definition	
#	Name
1	Admin
2	Supervisor
3	Operator

##### Roles with Data Integrity

Role Definition	
#	Name
1	Admin
2	Supervisor
3	QA
4	Operator

The device offers the following roles:


- Admin
- Supervisor
- QA (with Data Integrity active only)
- Operator

There are different rights for each of the roles.

##### Role details

Touch **i** to show details of the marked role.

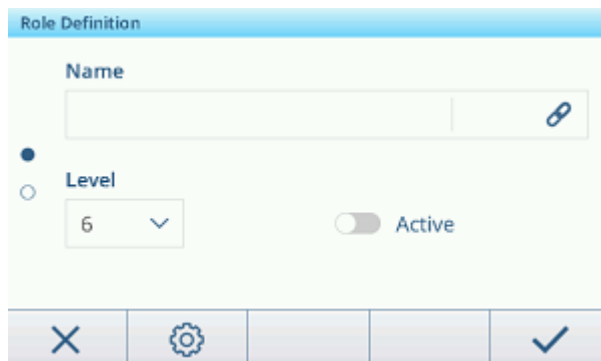
Role definition	Admin	Supervisor	QA	Operator
<b>Name</b>	Admin	Supervisor	QA	Operator
<b>Level</b>	1	2	2	6
<b>Description</b>				

Touch  in the next screen to show the role details regarding Permission Groups.

Permission Group	Admin		Supervisor		QA	Operator	
	without DI	with DI	without DI	with DI	with DI only	without DI	with DI
<b>W&amp;M</b>	Level 3		Level 2		Level 2	Level 1	
<b>Miscellaneous</b>	Terminal Device Communication		Terminal Device Communication		Terminal Device Communication	–	
<b>Transaction Memory</b>	View Export Reset	View Export Cancel & Restore Reprint* Review	View Export	View Export Cancel & Restore Reprint* Review	View Export Cancel & Restore Reprint* Review	View	View Review
<b>Application</b>	Application Entry		Application Entry		Application Entry	–	
<b>Material Memory</b>	Operate Configure		Operate Configure		Operate Configure	Operate	
<b>Maintenance Memory</b>	View Print & Export Enable & Disable & Reset	View Print & Export Enable & Disable	View Print & Export		View Print & Export	–	
<b>Audit Trail Memory</b>	–	View Print & Export	–		View Print & Export	–	
<b>Shared Data</b>	Read Write FTP		Read		–	–	
<b>User Management</b>	–	Role Definition Password Policy User Definition	–	Role Definition Password Policy User Definition	Role Definition Password Policy User Definition	–	

\* Reprint can be performed 5 times at most. After the 5<sup>th</sup> Reprint operation, the Reprint softkey won't display.


### Creating a new role (with Data Integrity active only)




- 1 In the list of roles touch softkey **+**.
- 2 Enter a name for the new role.
- 3 Select the access level for the new role.
- 4 Set the new role to Active, if desired.
- 5 On the second page enter a role description.

## Linked users

There are two possibilities to show which users are linked to a specific role:

On the Role Definition overview screen, mark a role and touch softkey .

The users linked to the role are displayed with their name and ID.

When the role details are displayed, touch the link symbol  at the right hand side of the role name.

The users linked to the role are displayed with their name and ID.

## Filtering roles

### Note

For more information on how to edit tables refer to [Editing tables ▶ Page 25] and [Filtering logs and tables ▶ Page 23].



### 3.4.2.2 Terminal -> User Management -> User Definition



The list of existing users is displayed.

User Management			
#	Active	Name	ID
1	✓	Admin	002
2	✓	Supervisor	003
3	✓	Operator	005
4	✓	tanner	100

<< 1/2

## Creating/editing a user



- To create a new user, touch softkey .
- To edit an existing user, mark the user and touch softkey .
- Make the following settings:

Setup item	Description	Possible settings / comments
Name	User name	max. 20 alphanumeric characters
Role	IND400 without Data Integrity: Select from Operator or Supervisor IND400 with Data Integrity: Select from Operator, QA, Supervisor or a custom role	 <b>Note</b> There is only one predefined user with the role of the Admin.  <b>Note</b> On the IND400 with Data Integrity, once a user has been activated, it cannot be deleted anymore.
ID	User ID	Use this User ID to login.
Description	Additional information on the user	
Enter Password	Password according to Password Policy	
Confirm Password		
Active	Set the user to "active"	
Default Login User	Set user to default user on startup and when logging out	For IND400 without Data Integrity only
Language	Select language of the user interface	English, Français, Deutsch, Español, Polski, Italiano, Protuguês, Chinese, Japanese

## Filtering users

For filtering users refer to [Filtering logs and tables ▶ Page 23].

### Password reset

- 1 Touch softkey .  
→ A safety prompt is displayed.
- 2 Confirm safety prompt with softkey .
- 3 Touch the password field and enter the new password.
- 4 Confirm the new password.  
→ The password is changed.

### 3.4.2.3 Terminal -> User Management -> Password Policy

If Password Policy is enabled, the following settings are available:

Setup item	Description	Possible settings
Upper Case	Upper case letter required.	On/Off
Lower Case	Lower case letter required.	On/Off
Numeric	Number required.	On/Off
Special Character	Special character required.	On/Off
Minimum Length	Required length of the password.	<b>4</b> ... 8 characters
Password Age (day)	Time after which the password has to be changed.	1 ... <b>30</b> ... 366 (days)
Enforce Password History	Ensure that the last passwords are not identical.	1 ... <b>10</b>
Invalid Logon Attempts	After the specified number of logon attempts, the login is locked.	<b>3</b> ... 10
Lockout (s)	Time within the login procedure must be finished.	<b>60</b> ... 600 (s)
Timeout (min)	The user will be logged out if there is no action within the specified time.	5 ... <b>30</b> ... 180 (min)

### 3.4.2.4 Terminal -> User Management -> Import/Export

The User Management settings can be imported resp. exported. Thus, it is possible to synchronize the User Management settings on several devices for example.

For details refer to [Importing/exporting data ▶ Page 26].

### 3.5 Communication setup

The Communication setup consists of the following main setup blocks:

- Template
- Connections
- Serial
- Ethernet
- VNC Server


#### 3.5.1 Communication -> Templates

Template		
Rec. #	Template	Application
1	Basic Weighing Lot Standard	General
2	Over/Under Lot Standard	Over/Under
3	Over/Under Final Standard	Over/Under
4	Manual Filling/Dosing Lot Standard	Manual Filling/Dosir
5	Manual Filling/Dosing Final...	Manual Filling/Dosir




A template has to be assigned to an application. There are 10 predefined templates available. These templates cannot be changed.

#### Setting up a new template

##### **Note**

Touch softkey  on the second softkey ribbon to copy an existing template for the desired application and to modify it.

For a new template proceed as follows:

- 1 Touch softkey .
- 2 Enter the name of the new template and assign an application.
- 3 Touch softkey .
  - ➔ The last element (Type = -END-) is displayed.
- 4 Touch softkey  to add and edit a new element.
  - ➔ The following settings are available per element.
  - ➔ The new element is displayed ahead of the -END- element.

Setup Item	Sub items	Description / possible settings
Type = SD Name	Alignment	Centered, Left, Right
	Data	Gross, Net, Tare, IDs, application specific data, user identification data, ...
	# Characters	Number of characters, depending on the output format
Type = Special Character	Data	Select a special character from the following: 01H_SOH, 02H_STX, 03H_ETX, 04H_EOT, 05H_ENQ, 06H_ACK, 07H_BEL, 08H_BS, 09H_HT, 0AH_LF, 0BH_VT, 0CH_FF, 0DH_CR, 0EH_SO, 0FH_SI, 10H_DLE, 11H_DC1, 12H_DC2, 13H_DC3, 14H_DC4, 15H_NAK, 16H_SYN, 17H_ETB, 18H_CAN, 19H_EM, 1AH_SUB, 1BH_ESC, 1CH_FS, 1DH_GS, 1F_US
	Quantity	Number of special characters





### Setting up a connection

Setup item	Sub items	Description / possible settings
COM	EPort1 ... EPort3	Connection Port
	Client	Operate the device as a client of a server
Mode	SICS Server	Select the connection mode. For details on the protocols refer to [Description of the available connection protocols ▶ Page 123].
	SICS Continuous	
	TOLEDO Continuous-W	
	TOLEDO Continuous-C	
	Input Template	
	Second Display	
	Post	
	DigiTol	
	Demand Mode	
	PM	
	Remote Display	
	Reference Balance	
	Transfer	
Parameter Server		
Modbus TCP/RTU		
PSCP		
Port	1701	For COM = EPort1 ... EPort3: fixed Port
Port	Remote Server	For COM = Client
	Remote Port	IP address and port of the remote server

### 3.5.3 Communication -> Serial

**Note**

Default settings are shown in **bold**.

Setup item	Sub items	Possible settings
COM1 (RS232)	Baud Rate	300, 600, 1200, 2400, 4800, <b>9600</b> , 19200, 38400, 57600, 115200
	Parity	7 None, 7 Odd, 7 Even, <b>8 None</b> , 8 Odd, 8 Even
	Handshake	<b>None</b> , Xon/Xoff
	Stop Bit	Not shown because not programmable, always set to 1.

**Note**

These are the settings of the standard communication interface.

### 3.5.4 Communication -> Ethernet -> Network setting

Setup item	Description
DHCP	When enabled, no more settings can be made
IP Address	
Subnet Mask	
Gateway	
MAC Address	MAC address of the IND400, cannot be changed

### 3.5.5 Communication -> VNC Server

Using the VNC server you can control the terminal remotely from another computer.

- 1 Enable the VNC Server.
- 2 Set a password for VNC control from another computer.
- 3 Confirm the password.
- 4 Confirm VNC settings with ✓.

**Note**

The password is valid as long as the VNC Server is enabled or until the password is changed.  
The VNC Server Port is fixed and set to 5900.

### 3.5.6 Communication -> WLAN -> WLAN Setting

**Note**

By default only the 5G Wi-Fi radio band is available. For the 2.4G radio band, contact the METTLER TOLEDO service.

#### Enabling a wireless network

- 1 Enable Wireless Setting.
  - ➔ The list of the detected wireless networks is displayed. The current connected wireless network is listed on top and marked with ✓.
- 2 If desired, select another wireless network.

#### Viewing the wireless network settings

- Select a wireless network and touch **i**.
  - ➔ Network Name and Suite (security status) are displayed.

#### Adding a new wireless network

- 1 When the list of detected wireless networks is displayed, touch **+**.
- 2 Enter the network name and select the Suite (security status) out of the following:  
Open, WEP, WPA-WPA2 Mix, WPA2, WPA3  
Alternatively the suite can be taken from the detected wireless network.
- 3 Depending on the selected suite, make the following settings:

Suite	Sub items	Description
Open	–	No more security settings
WEP	TX Key Index	Number of WEP keys: <b>1 ... 4</b>
	Key Size	Length of the WEP key: <b>40 bits</b> (5 characters), 104 bits (13 characters)
	Key 1 ... Key 4	Enter keys according to the TX Key Index and Key Size
WPA-WPA2 Mix	WPAx Authentication = PSK	Get the required settings from the detected network or set them manually.
WPA2	WPAx Authentication = 802.1X	
WPA3		


#### Wi-Fi module settings

- WLAN is enabled.
- On the WLAN Setting page touch **⚙**.
  - ➔ The following settings are available:

Setting	Description
Configuration page	If set to On, the web page of the Wi-Fi module is enabled.
AP	If set to On, SSID and IP Address of the Wi-Fi module are displayed (read only). SSID = MTAP[Serial_Number] IP Address = 192.168.0.1

### 3.5.7 How to set up a printer

#### Note

To initiate a printout via the transfer key , a printer has to be connected on the standard COM1 (RS232).

#### **Step 1: Setting up the connection**

- 1 In the setup go to Communication -> Connection.
- 2 Select the following:
  - ➔ COM = COM1
  - ➔ Mode = Transfer
  - ➔ Print Type = ASCII Printer - for an ASCII printer
  - ➔ Print Type = Smart Printer - for the METTLER TOLEDO APR220 printer
  - ➔ Print Type = Label Printer - for a label printer
- 3 For further connection settings refer to [Communication -> Connections ▶ Page 96].

#### **Step 2: Setting the communication parameters**

- 1 In the setup go to Serial -> COM1 (RS232).
- 2 Ensure that the communication parameters (Baud Rate, Parity, Handshake) of the weighing terminal and the printer are the same.
- 3 For further parameter settings refer to [Communication -> Serial ▶ Page 97].

#### **Step 3: Checking the printer templates**

#### Note



The device offers 10 predefined templates and the possibility to create your own templates. Templates are related to the weighing application.

- 1 In the setup go to Communication -> Templates.
- 2 Check if a suitable template is available. If not, create your own template, refer to [Communication -> Templates ▶ Page 95].


#### **Step 4: Setting up the application specific printout**

#### Note

When working with several weighing applications, the printout for each weighing application has to be set up separately.

- 1 Leave the setup.
- 2 Select a weighing application.
- 3 Touch softkey  to open the application settings.
- 4 Touch  **Transfer**.
- 5 Select a transfer setting or make a new transfer setting using the connection set up in Step 1 and the application specific templates.
- 6 For further transfer settings refer to [Basic weighing settings ▶ Page 28].
- 7 Leave the application settings.

#### **Result**

After Steps 1 to 4 have been finished, touching the transfer key  will initiate a printout on the connected printer.

### 3.5.8 How to set up a barcode reader

**Note**

IDs and a preset tare can be scanned with a barcode reader with serial or USB connection cable.

#### Step 1: Setting up the connection

- 1 In the setup go to Communication -> Connection.
- 2 Select the following:
  - ➔ For a serial connection: COM = COM1 or COM = COM2  
For a USB connection: COM = COM4
  - ➔ Mode = Input Template
- 3 Enter the required data limits and select the input assignment, e.g. an ID.
- 4 For further connection settings refer to [Communication -> Connections ▶ Page 96].

**Note**

Alternatively, the barcode reader can be set up in the application settings, refer to [Basic weighing settings ▶ Page 28].

#### Step 2: Setting the communication parameters

- 1 In the setup go to Serial -> COMx.
- 2 Ensure that the communication parameters (Baud Rate, Parity, Handshake) of the weighing terminal and the barcode reader are the same.
- 3 For further parameter settings refer to [Communication -> Serial ▶ Page 97].

#### Result

When the specific input is required, e.g. an ID, this can be entered via barcode.

#### See also

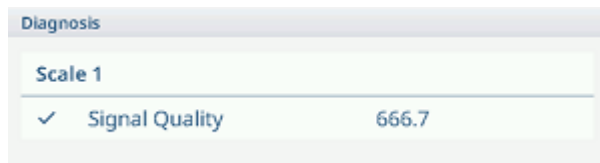
[Communication -> Templates ▶ Page 95](#)

## 3.6 Maintenance setup

### 3.6.1 Maintenance -> Diagnosis

#### 3.6.1.1 Maintenance -> Diagnosis -> Scale 1

This diagnosis item checks the signal quality of the analog scale connection.



Diagnosis	
Scale 1	
✓ Signal Quality	666.7

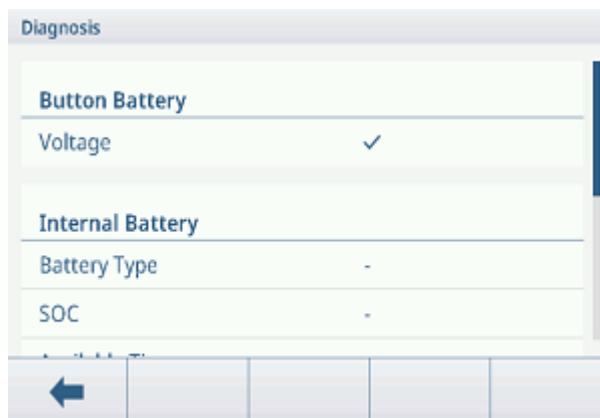
When the signal is sufficient, it is marked with ✓.

#### **Note**

For SICSpro scales there is no diagnosis information available.

#### 3.6.1.2 Maintenance -> Diagnosis -> Battery

This diagnosis item shows the status of the batteries.



Diagnosis	
Button Battery	
Voltage	✓
Internal Battery	
Battery Type	-
SOC	-

#### **Button battery**

The button battery is used for RTC and located on the Main Board.

When the voltage of the button battery is lower than 2.5 V, a SMART5™ message is displayed.

#### **Internal battery**

The internal battery is unavailable in the current product version. When available, the following information is displayed:

- Battery Type
- SOC (state of charge)
- Available Time
- Voltage
- Temperature
- Current
- SOH (state of health)
- Charging Cycle (e.g. 300 / 500)

#### **External battery**

When an external battery is detected, the battery voltage is displayed.

### 3.6.1.3 Maintenance -> Diagnosis -> Device

#### Display Test

You are guided through a test sequence to check the display quality.

- 1 Confirm the information screen with ✓.
  - ➔ A checkerboard pattern in red is displayed.
- 2 Check if all pixels are displayed correctly.
- 3 Press the transfer key **→** to switch to the next test screen.
- 4 Check if all pixels are displayed correctly.
- 5 Repeat steps 3 and 4 until the message "Test finished." is displayed.
- 6 Confirm finishing with ✓.

#### **i** Note

You can exit the display test at any time by pressing **C**.

#### Touch Test

You are guided through a test sequence to check the touch functionality.

- 1 Confirm the information screen with ✓.
  - ➔ The display is divided into 12 fields.
- 2 Touch all the fields in the order from 1 to 12.
  - ➔ When the touch functionality is alright, the field is marked with ✓.
  - ➔ After touching the last field the message "Passed." is displayed.
- 3 Confirm the message with ✓.

#### **i** Note

You can exit the touch test at any time by pressing **C**.

#### Keyboard Test

You are guided through a test sequence to check the hard keys.

- 1 Confirm the information screen with ✓.
  - ➔ A prompt to check the On/Off key is displayed.
- 2 Touch the requested hard key.
  - ➔ A prompt to check the next key is displayed.
- 3 Repeat step 2 until the message "Passed." is displayed.
- 4 Confirm the message with ✓.

#### **i** Note

You can exit the touch test at any time by pressing **C**.

#### Serial Port Test

This test will check the COM1 (RS232) serial port.

- 1 Touch **▶** to start the test.
  - ➔ The serial port test is performed.
  - ➔ The serial port status is displayed.
- 2 Leave the Serial Port Test with softkey **◀**.
  - ➔ A safety prompt is displayed.
- 3 Confirm leaving the test with ✓.

## Network Test

- 1 Confirm the information screen with ✓.
  - ➔ The serial port test is performed.
  - ➔ The serial port status is displayed.
- 2 Confirm the serial port status with ✓.
  - ➔ The Network Test is finished.

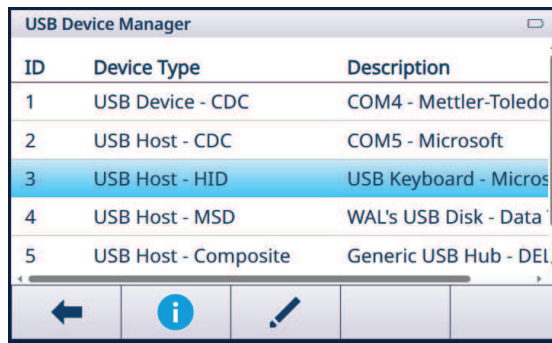
## USB Test

This test will check an external USB device.

- 1 Insert the USB device to be tested.
  - ➔ The device name is displayed.
- 2 Touch ▶ to start the test.
  - ➔ The USB test is performed.
  - ➔ The test result is displayed.
- 3 Leave the USB Test with softkey ←.

## USB Device Manager

The USB Device Manager shows all connected USB devices.



ID	Device Type	Description
1	USB Device - CDC	COM4 - Mettler-Toledo
2	USB Host - CDC	COM5 - Microsoft
3	USB Host - HID	USB Keyboard - Micros
4	USB Host - MSD	WAL's USB Disk - Data
5	USB Host - Composite	Generic USB Hub - DEL,

- Touch ⓘ to view the settings of the USB device.
- Touch ✎ to edit the USB device.

### 3.6.2 Maintenance -> Statistics

#### Scale 1

This page shows the statistics over all the weighings since the last Master Reset. The statistic is grouped as follows:

Peak Weight

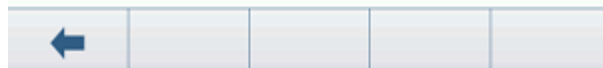
Scale Weighments (Usage, Capacity ranges)

Scale Status (Overloads, Underloads, Zero operations, Reset operations)

#### System

This page gives a system overview.

Statistic - System	
Internal Flash(Used / Total)	0.0 MB / 0.0 MB
Total Power On Time	0.39 Days
Total Use Time	0.30 Days
Current Power On Time	0.06 Days
Total Screen On Time	0.39 Days
Power Cycles	7



#### Key count

This page gives an overview of the keystrokes of each hardkey.



### 3.6.3 Maintenance -> Routine Test Management

Using this setup item you can plan and perform routine test events.

#### Setting up routine tests - general settings

Setup item	Sub items	Description
Event	Calibration Sensitivity Excentricity Repeatability 1-point Test Walk Test Customized Event	Select the test you want to perform. For a Customized Event a name can be entered. It can be used for any reminder purposes.
On Overdue	No Action Orange Weight No Weight	Select what to be displayed when the test is overdue.
Interval Days		Enter the interval for performing the test.
Reminder Days		Enter the interval for sending a reminder before the next test is due.
Last Date		Display of the date of the last test.
Due Date		Display of the date of the next test.
Reminder Date		Display of the date when the reminder for the next test will be sent.

#### Setting up sensitivity tests

– Mark a sensitivity test in the list and touch  for further settings.

➔ The following settings are available:


Setup item	Sub items	Description
Test Load Unit	g kg lb t oz ton	Select the unit of the test load you want to use for the sensitivity test.
Operator Test Weight Edit	Enable/ <b>disable</b>	When enabled, the operator is allowed to edit the test weight.
Auto Print Log	<b>Enable</b> /disable	When enabled, a test protocol is printed automatically.

– In the setup page touch  for setting up the test steps.

➔ The following settings are available:

Step No.	Automatic number
Test Load	Weight value of the test load
Weight Name	Name of the test load
Warning Limit	When the deviation is bigger than the warning limit but less than the control limit, a warning is displayed.
Control Limit	When the deviation is bigger than the control limit, the test fails.
Prompt	When a test event comes due, the prompt text shows on the Home Screen.


### Setting up eccentricity, repeatability and 1-Point tests

- Mark a respective test in the list and touch  for further settings.
  - ➔ The following settings are available:

Setup item	Sub items	Description
Test Load Unit	g kg lb t oz ton	Select the unit of the test load you want to use for the sensitivity test.
Test Load		Weight value of the test load
Weight Name		Name of the test load
Round		Number of test rounds, for repeatability tests only
Warning Limit		When the deviation is bigger than the warning limit but less than the control limit, a warning is displayed.
Control Limit		When the deviation is bigger than the control limit, the test is failed.
Operator Test Weight Edit	Enable/disable	When enabled, the operator is allowed to edit the test weight.
Auto Print Log	Enable/disable	When enabled, a test protocol is printed automatically.

### Setting up a walk-test


This test checks the repeatability and eccentricity of large weighing platforms by walking on the weighing platform.

- Mark a walk-test in the list and touch  for further settings.
  - ➔ The following settings are available:

Setup item	Sub items	Description
Round		Number of test rounds, for repeatability tests only
Repeatability Warning Limit		When the deviation in repeatability is bigger than the warning limit but less than the control limit, a warning is displayed.
Repeatability Control Limit		When the deviation in repeatability is bigger than the control limit, the test is failed.
Eccentricity Warning Limit		When the deviation in eccentricity is bigger than the warning limit but less than the control limit, a warning is displayed.
Eccentricity Control Limit		When the deviation in eccentricity is bigger than the control limit, the test is failed.
Operator Test Weight Edit	Enable/disable	When enabled, the operator is allowed to edit the test weight.
Auto Print Log	Enable/disable	When enabled, a test protocol is printed automatically.

### Setting up a customized event



A customized event can be used for any reminder purposes.

- Mark a customized event in the list and touch  for further settings.
  - ➔ The following settings are available:

Setup item	Sub items	Description
Prompt		Enter a reminder text.
Auto Print Log	<b>Enable/disable</b>	When enabled, a test protocol is printed automatically.

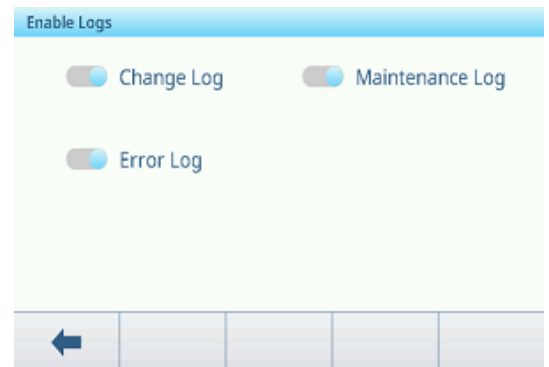
### Performing a routine test



- 1 Select the required event in the list of events.
- 2 Touch  to start the test.
  - ➔ You are guided through the test.
  - ➔ When the test is finished, the result is displayed.
- 3 Touch  to leave the test.

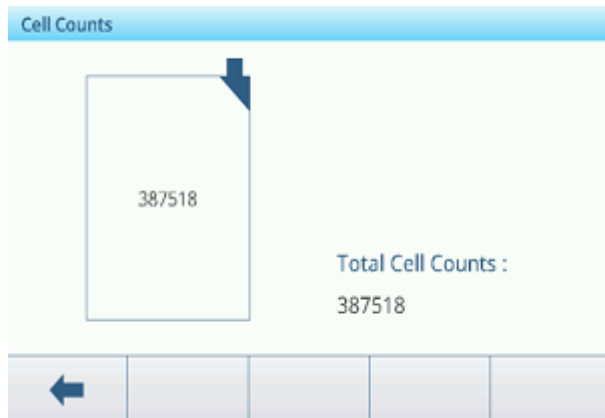
### 3.6.4 Maintenance -> Enable Logs

- Enable/disable the respective logs.



### 3.6.5 Maintenance -> Cell Counts

This maintenance items shows the raw weight.



### 3.6.6 Maintenance -> Calibration Values

**Note**


The available settings depend on the selected type of calibration.

	Span	3-Point	4-Point	5-Point	3-P. With Hysteresis	4-P. With Hysteresis	5-P. With Hysteresis
<b>Counts for Zero</b>	X	X	X	X	X	X	X
<b>#01 Test Load</b>	X	X	X	X	X	X	X
<b>Counts 1</b>	X	X	X	X	X	X	X
<b>Counts 1 Down</b>					X	X	X
<b>#02 Test Load</b>		X	X	X	X	X	X
<b>Counts 2</b>		X	X	X	X	X	X
<b>Counts 2 Down</b>						X	X
<b>#03 Test Load</b>			X	X		X	X
<b>Counts 3</b>			X	X		X	X
<b>Counts 3 Down</b>							X
<b>#04 Test Load</b>				X			X
<b>Counts 4</b>				X			X
Setting	Description						
Counts for Zero	Set the raw counts for zero						
#01 Test Load	Set the #01 test load weight						
Counts 1	Set the raw counts for #01 test load						
Counts 1 Down	Set the raw counts for #01 test load when unloading						
#02 Test Load	Set the #02 test load weight						
Counts 2	Set the raw counts for #02 test load						
Counts 2 Down	Set the raw counts for #02 test load when unloading						
#03 Test Load	Set the #03 test load weight						
Counts 3	Set the raw counts for #03 test load						
Counts 3 Down	Set the raw counts for #03 test load when unloading						
#04 Test Load	Set the #04 test load weight						
Counts 4	Set the raw counts for #04 test load						

### 3.6.7 Maintenance -> Backup

This setup item offers a backup of the complete system settings.

**Manual backup**

- For a manual backup touch softkey .
- ➔ The following settings are requested.

Setup item	Description	Possible settings / comments
Device	Select the device where the data will be exported to.	Internal File, USB Mass Memory.
Path	Enter the path where the exported data will be stored.	Ensure that the indicated folder is existent, especially when USB Mass Memory is selected.

- Confirm settings with .
- ➔ The backup is in progress. A message is displayed.


### Automatic backup

When Auto Backup is enabled, the backup is automatically made according to the following settings.

Setup item	Description
Interval Days	Set the interval of the automatic backup
Last Backup Date	Show the date of the last backup

- Confirm settings with ✓.
  - ➔ The backup is in progress. A message is displayed.
  - ➔ The next backup will be made automatically after set interval.

#### Note

You can make a manual backup at any time by touching softkey .

### 3.6.8 Maintenance -> Restore

This setup item allows to restore the complete system settings.

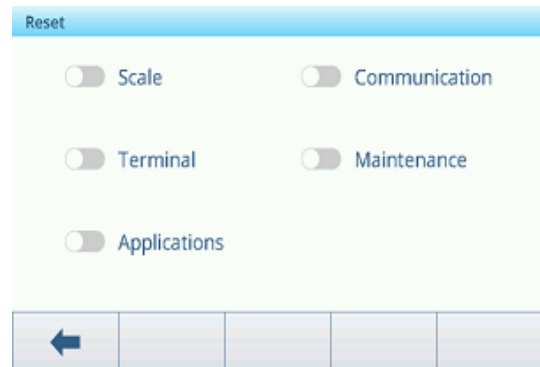
- To restore a system, make the following settings:

Setup item	Description	Possible settings / comments
Device	Select the device from which the data will be imported	Internal File, USB Mass Memory
Path	Path where the data to be imported has to be stored	Ensure that the data to be imported from the correct folder

- 1 Confirm settings with ✓.
  - ➔ A safety prompt is displayed.
- 2 Confirm restoring and restarting with ✓.
  - ➔ Restoring is in progress. A message is displayed.




### 3.6.9 Maintenance -> Reset

- 1 Select which part of the device shall be reset.
  - ➔ A safety prompt is displayed.
- 2 Confirm resetting with ✓.



## 4 Maintenance and service

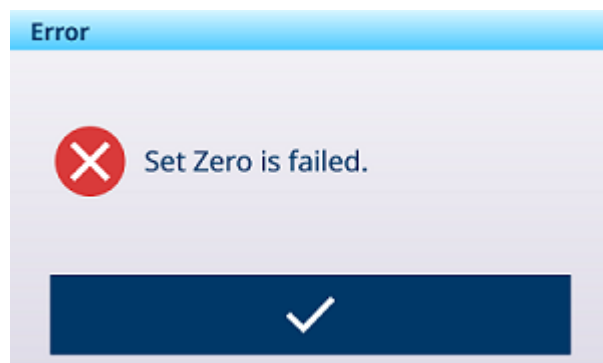
### 4.1 Error conditions

Error	Cause	Remedy
Display dark	Backlight timeout too short	– Increase backlight timeout.
	No power supply	– Check power supply.
	Unit switched off	– Switch on unit.
	Power supply cable not plugged in	– Plug in power supply cable.
	Brief error	– Unplug power supply cable and plug in again.
Weight display unstable	Unstable installation location	– Adjust environment filter.
	Draft	– Avoid draft.
	Unstable weighing sample	– Ensure that the weighing sample is more stable.
	Contact between weighing pan and/or weighing sample and surroundings	– Avoid 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	– Avoid 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

## 4.2 Errors and warnings

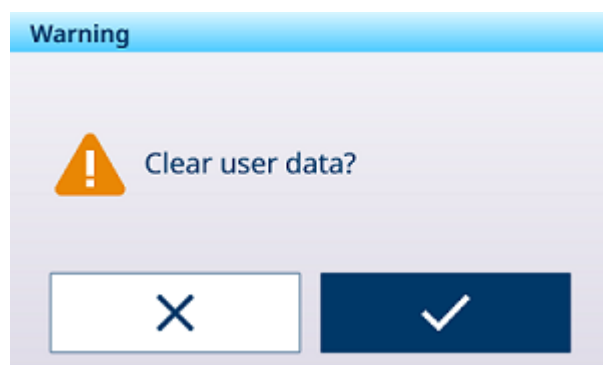
### Error messages

Error messages must be confirmed.



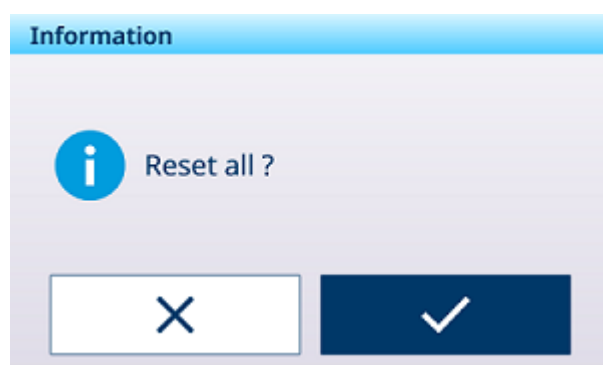
### Warnings

You can either cancel a warning or confirm it.



### Information

The information message has the function of a safety prompt.










### 4.3 SMART5™ events and alarms

SMART5™ is intended to harmonize events and alarms based on industry standards and common industry practice. These standards originated from the process control industry in chemistry, oil production and refining where there is a very high risk of explosion and bodily harm.

Some of the Smart5® alarms can also be observed at the PLC side. For details refer to the chapter [Error messages ▶ Page 114].

#### 4.3.1 NAMUR alarm / alert classification

The table that follows is an adaptation of NE107 for weighing devices.

Icon	Rank	Type	Description	Result
	5	Failure	Wrong weight / equipment failure	Alarm stops operation: Clearing the alarm will not reset the condition – the device must be repaired to eliminate the alarm.
	4	Maintenance required	Wrong weight / equipment failure expected based on predictive algorithms and sensors like temperature, humidity.	Alarm indicates failure is imminent within a period of one week or more. The alarm can be reset but will recur each day until the cause is eliminated.
	3	Out of specification	Wrong Operator Actions or device / application is operating out of specification.	Alarm and log the event. Alarms are only generated / transmitted at the request of the customer.
	2	Alarm	Routine test, Calibration or Preventative maintenance must be undertaken.	Alarm and log the event. Alarms are only generated / transmitted at the request of the customer.
	1	Normal Condition	Unit is operating correctly.	No action required.

### 4.3.2 Error messages

Message	Alarm code	Namur level	Error log	Action
Scale Type or Slot Changed!\nMaster Reset\nALL setup blocks.	1001	5	Yes	-
Scale Type or Slot Changed!\nMaster Reset\nALL setup blocks.	1002	5	Yes	-
Scale disconnected.	2012	5	Yes	Check scale connection cable
Transaction log of [Application] is size of 100%.	3038	3	Yes	Pls export the log file.
Transaction log of [Application] exceeds 90%.	3039	2	Yes	Pls export the log file.
Transaction log of [Application] exceeds 75%.	3040	2	Yes	Pls export the log file.
Analog Converter Fail	4041	5	Yes	Check scale connection cable.
Zero fail motion.	4042	0	No	Scale is moving.
Zero fail net.	4043	0	No	Remove load from scale.
Zero out of range.	4044	2	Yes	Remove load from scale.
Zero disabled	4045	0	No	Zero not permitted.
Tare fail motion.	4046	0	No	Scale is moving.
PB tare disabled.	4047	0	No	Tare not permitted.
KB tare disabled.	4048	0	No	Tare not permitted.
Chain tare not permitted.	4049	0	No	-
Chain Tare only allowed with positive net weight.	4050	0	No	-
Tare round fail.	4051	0	No	Tare operation not successful.
Tare too small.	4052	0	No	The scale is too large for this item.
Zero init. Fail.	4053	0	No	Remove load from scale.
Tare out of range.	4054	0	Yes	Tare weight exceeds capacity.
Tare negative fail.	4055	0	No	Zero the scale.
Tare failed - over (range).	4056	0	Yes	-
Clear Tare-Gross Zero	4057	0	No	Remove load from scale.
Tare failed - unknown.	4058	0	No	-
Analog Saturation Fail	4059	0	No	Weight far exceeds scale capacity.
Trade overload.	4064	3	Yes	Scale is too small for this item.
Trade underload.	4065	3	Yes	Pls rezero scale.
Sealing switch broken!	4066	3	Yes	-
Sample size too small.	4067	3	Yes	Choose a smaller scale for this item.
Adjustment failure	4069	3	Yes	Pls attempt a new adjustment.
MP Adjustment Failure	4070	3	Yes	Pls attempt a new adjustment.
Zero Required	4074	3	No	-
Sensitivity is overdue.\nPlease run sensitivity test.	4075	2	Yes	Run sensitivity test.
Calibration is overdue.\nPlease run calibration test.	4076	2	Yes	Run calibration test.
Calibration is overdue.\nScale is disabled.\nReset required.	4077	2	Yes	Run calibration test.

Message	Alarm code	Namur level	Error log	Action
Repeatability is overdue.\nPlease run repeatability test.	4078	2	Yes	Run repeatability test.
Repeatability is overdue.\nScale is disabled.\n\nReset is required.	4079	2	Yes	Run repeatability test.
1-Point is overdue.\nPlease run 1-Point Test.	4080	2	Yes	Run 1-Point Test.
1-Point is overdue.\nScale is disabled.\n\nReset required.	4081	2	Yes	Run 1-Point Test.
Walk-Test is overdue.\nPlease run Walk-Test.	4082	2	Yes	Run Walk-Test.
Walk-Test is overdue.\nScale is disabled.\n\nReset required.	4083	2	Yes	Run Walk-Test.
CustomEvent is overdue.\nPlease run CustomEvent test.	4084	2	Yes	Run custom test.
CustomEvent is overdue.\nScale is disabled.\n\nReset required.	4085	2	Yes	Run custom test.
Eccentricity is overdue.\nPlease run eccentricity test.	4086	2	Yes	Run eccentricity test.
Eccentricity is overdue.\nScale is disabled.\n\nReset required.	4087	2	Yes	Run eccentricity test.
Sensitivity is coming due.	4088	2	Yes	Run sensitivity test.
Calibration is coming due.	4089	2	Yes	Run calibration test.
Repeatability is coming due.	4090	2	Yes	Run repeatability test.
1-Point is coming due.	4091	2	Yes	Run 1-Point Test.
Walk-Test is coming Due.	4092	2	Yes	Run Walk-Test.
CustomEvent is coming due.	4093	2	Yes	Run custom test.
Eccentricity is coming due.	4094	2	Yes	Run eccentricity test.
Sensitivity is overdue.\nScale is disabled.\n\nReset required.	4095	2	Yes	Run sensitivity test.
Empty scale, place new weight on.	90001	3	No	-
Remove object or tare the scale.	90002	3	No	-
Put object on the platform.	90003	3	No	-
Exceeds the total target.	90004	3	No	-
No transaction generated	90005	3	No	-
Transaction not completed, cannot quit.	90006	3	No	-
Transaction is already saved.	90007	3	No	-
Weight is under threshold.	90008	3	No	-
Weight is out of OK range.	90009	3	No	-
Transfer is not allowed within 30d deviation.	90010	3	No	-
Totalization value overflow.	90011	3	No	-
APW optimization succeeded.	90012	1	No	-
Take away mode requires net mode, please tare the scale first.	90013	2	No	-
The take away mode is only applicable for unloading weight from the platform.	90014	2	No	-
The standard mode is only applicable for loading weight onto the platform.	90015	2	No	-
Scale in X10 mode.	90016	3	No	-
Network time synchronization failed.	90017	4	Yes	Please check NTP server setting.

Message	Alarm code	Namur level	Error log	Action
Battery critically low.	90018	5	Yes	Please replace battery.
Transferring failed	91001	0	No	-
Transferring failed	91002	0	No	-
Zero is not allowed in current situation.	91003	2	No	-
Tare is not allowed in current situation.	91004	2	No	-
Clear is not allowed in current situation.	91005	2	No	-
Scale In Expanded Mode	91006	0	No	-
Zero failed - zero bad.	91007	0	No	-
Print Error	91010	0	No	-
Scale In Motion	91011	0	No	-
Scale Under Zero	91012	0	No	-
Scale In Expanded Mode	91013	0	No	-
Print Error-No Zero	91014	0	No	-
Print Error	91015	0	No	-
Zero failed - unknown.	91018	0	No	-
Clear failed - unknown.	91019	0	No	-
Operation Fail -Unknown	91020	0	No	-
FACT Cancelled	91021	0	No	-
FACT Successful	91022	0	No	-
FACT Failure - Motion	91023	0	No	-
FACT Failure	91024	0	No	-
FACT In Progress	91025	0	No	-
FACT Failed - 3 Consecutive Failed Attempts	91026	0	No	-
Function disabled.	91027	0	No	-
Template parsing fail	91030	0	No	-
Totals overflow	91031	0	No	-
Target Total Overflow	91032	0	No	-
Tare Total Overflow	91033	0	No	-
ID Not Found	91034	0	No	-
ID Not Found	91035	0	No	-
-	91036	0	No	-
Remote Scale-No Data Transfer	91037	0	No	-
Remote Scale-No Remote Display	91038	0	No	-
Alibi log is size of 100%.	91039	3	Yes	Pls export the log file.
Alibi log exceeds 90%.	91040	2	Yes	Pls export the log file.
Alibi log exceeds 75%.	91041	2	Yes	Pls export the log file.
[Log Name] is size of 100%.	91042	3	No	Pls export the log file.
[Log Name] exceeds 90%.	91043	2	Yes	Pls export the log file.
[Log Name] exceeds 75%.	91044	2	Yes	Pls export the log file.
[Configurable table name] is size of 100%.	91045	3	No	Pls export the log file.
[Configurable table name] exceeds 90%.	91046	2	Yes	Pls export the log file.
[Configurable table name ] exceeds 75%.	91047	2	Yes	Pls export the log file.

## 4.4 Cleaning



### **WARNING**

#### **Risk of electric shock**

- 1 Do not open the weighing terminal for cleaning.
- 2 Before cleaning, unplug the power plug respectively shut off the power supply in order to disconnect the terminal from the power supply.
- 3 Cover open connectors with protective caps.

#### **Cleaning procedure**

- Wipe off the weighing terminal with a dry cloth or with a slightly damp cloth dampened only with clean water.

## 5 Appendix

### 5.1 Table of Geo code values

The Geo code feature provided in the weighing terminal permits adjustment by a METTLER TOLEDO service technician due to changes in elevation or latitude without reapplying test weights. This assumes that a previously accurate adjustment was done with the Geo code set properly for that original location and that the Geo code for the new location can be accurately determined.

When a weighing terminal is to be reinstalled at a different geographic location, gravitational and altitude changes can be accounted for by the following steps.

Note that this procedure is not necessary if an on-site adjustment is performed.

#### Determining the Geo code value

There are two methods to determine the Geo code value for your location.

##### Method A

- 1 Go to [www.welmec.org](http://www.welmec.org) and find the Gravity Information page to obtain the g value (e.g. 9.770390 m/s<sup>2</sup>) for your specific geographic location.
- 2 Check the METTLER TOLEDO Geo code Table A to select the Geo code according to your g value, e.g. Geo code 20 should be applied if your g value is 9.810304.

##### Method B

- Use the METTLER TOLEDO Geo code Table B to determine the Geo code for the new altitude and location where the scale will be used.  
The latitude and height above sea level can be found using this link [www.mapcoordinates.net/en](http://www.mapcoordinates.net/en).

#### Checking the Geo code value in the instrument

- Go to the Scales -> Approval setup and read the Geo code.

#### Comparing Geo codes

- 1 Compare the determined Geo code with the current Geo code setting of the weighing terminal.
- 2 If the two Geo code values do not match, call the METTLER TOLEDO service technician.  
When the system is certified, a re-verification will be necessary.

#### Note

Using the Geo code value for calibration adjustment is not as accurate as re-applying certified test weights and re-calibrating the scale in a new location.

**Table A: Definition of METTLER TOLEDO Geo codes with g value**

Geo code	g value (m/s <sup>2</sup> )	Geo code	g value (m/s <sup>2</sup> )	Geo code	g value (m/s <sup>2</sup> )	Geo code	g value (m/s <sup>2</sup> )
0	9.770390	8	9.786316	16	9.802295	24	9.818326
1	9.772378	9	9.788311	17	9.804296	25	9.820333
2	9.774367	10	9.790306	18	9.806298	26	9.822341
3	9.776356	11	9.792302	19	9.808300	27	9.824351
4	9.778347	12	9.794299	20	9.810304	28	9.826361
5	9.780338	13	9.796297	21	9.812308	29	9.828371
6	9.782330	14	9.798295	22	9.814313	30	9.830383
7	9.784323	15	9.800295	23	9.816319	31	9.832396

**Table B: Definition of METTLER TOLEDO Geo codes with geographic latitude and height**

Geographical latitude, North or South	Height above sea level											
	[m]	0 - 325	325 - 650	650 - 975	975 - 1300	1300 - 1625	1625 - 1950	1950 - 2275	2275 - 2600	2600 - 2925	2925 - 3250	3250 - 3575
	[ft]	0 - 1060	1060 - 2130	2130 - 3200	3200 - 4260	4260 - 5330	5330 - 6400	6400 - 7460	7460 - 8530	8530 - 9600	9600 - 10660	10660 - 11730
0° 0' - 5° 46' (0.0° - 5.77°)		5	4	4	3	3	2	2	1	1	0	0
5° 46' - 9° 52' (5.77° - 12.87°)		5	5	4	4	3	3	2	2	1	1	0
9° 52' - 12° 44' (12.87° - 12.73°)		6	5	5	4	4	3	3	2	2	1	1
12° 44' - 15° 6' (12.73° - 15.1°)		6	6	5	5	4	4	3	3	2	2	1
15° 6' - 17° 10' (15.1° - 17.17°)		7	6	6	5	5	4	4	3	3	2	2
17° 10' - 19° 2' (17.17° - 19.03°)		7	7	6	6	5	5	4	4	3	3	2
19° 2' - 20° 45' (19.03° - 20.75°)		8	7	7	6	6	5	5	4	4	3	3
20° 45' - 22° 22' (20.75° - 22.37°)		8	8	7	7	6	6	5	5	4	4	3
22° 22' - 23° 54' (22.37° - 23.9°)		9	8	8	7	7	6	6	5	5	4	4
23° 54' - 25° 21' (23.9° - 25.35°)		9	9	8	8	7	7	6	6	5	5	4
25° 21' - 26° 45' (23.35° - 26.75°)		10	9	9	8	8	7	7	6	6	5	5
26° 45' - 28° 6' (26.75° - 28.1°)		10	10	9	9	8	8	7	7	6	6	5
28° 6' - 29° 25' (28.1° - 29.42°)		11	10	10	9	9	8	8	7	7	6	6
29° 25' - 30° 41' (29.42° - 30.68°)		11	11	10	10	9	9	8	8	7	7	6
30° 41' - 31° 56' (30.68° - 31.93°)		12	11	11	10	10	9	9	8	8	7	7
31° 56' - 33° 9' (31.93° - 33.15°)		12	12	11	11	10	10	9	9	8	8	7
33° 9' - 34° 21' (33.15° - 34.35°)		13	12	12	11	11	10	10	9	9	8	8
34° 21' - 35° 31' (34.35° - 35.52°)		13	13	12	12	11	11	10	10	9	9	8
35° 31' - 36° 41' (35.52° - 36.68°)		14	13	13	12	12	11	11	10	10	9	9
36° 41' - 37° 50' (36.68° - 37.83°)		14	14	13	13	12	12	11	11	10	10	9
37° 50' - 38° 58' (37.83° - 38.97°)		15	14	14	13	13	12	12	11	11	10	10
38° 58' - 40° 5' (38.97° - 40.08°)		15	15	14	14	13	13	12	12	11	11	10
40° 5' - 41° 12' (40.08° - 41.2°)		16	15	15	14	14	13	13	12	12	11	11
41° 12' - 42° 19' (41.2° - 42.32°)		16	16	15	15	14	14	13	13	12	12	11
42° 19' - 43° 26' (42.32° - 43.43°)		17	16	16	15	15	14	14	13	13	12	12
43° 26' - 44° 32' (43.43° - 44.53°)		17	17	16	16	15	15	14	14	13	13	12
44° 32' - 45° 38' (44.53° - 45.63°)		18	17	17	16	16	15	15	14	14	13	13
45° 38' - 46° 45' (45.63° - 46.75°)		18	18	17	17	16	16	15	15	14	14	13
46° 45' - 47° 51' (46.75° - 47.85°)		19	18	18	17	17	16	16	15	15	14	14

Geographical latitude, North or South	Height above sea level											
	[m]	0 - 325	325 - 650	650 - 975	975 - 1300	1300 - 1625	1625 - 1950	1950 - 2275	2275 - 2600	2600 - 2925	2925 - 3250	3250 - 3575
	[ft]	0 - 1060	1060 - 2130	2130 - 3200	3200 - 4260	4260 - 5330	5330 - 6400	6400 - 7460	7460 - 8530	8530 - 9600	9600 - 10660	10660 - 11730
47° 51' - 48° 58' (47.85° - 48.97°)		19	19	18	18	17	17	16	16	15	15	14
48° 58' - 50° 6' (48.97° - 50.1°)		20	19	19	18	18	17	17	16	16	15	15
50° 6' - 51° 13' (50.1° - 51.22°)		20	20	19	19	18	18	17	17	16	16	15
51° 13' - 52° 22' (51.22° - 52.37°)		21	20	20	19	19	18	18	17	17	16	16
52° 22' - 53° 31' (52.37° - 53.52°)		21	21	20	20	19	19	18	18	17	17	16
53° 31' - 54° 41' (53.52° - 54.68°)		22	21	21	20	20	19	19	18	18	17	17
54° 41' - 55° 52' (54.68° - 55.87°)		22	22	21	21	20	20	19	19	18	18	17
55° 52' - 57° 4' (55.87° - 57.07°)		23	22	22	21	21	20	20	19	19	18	18
57° 4' - 56° 17' (57.07° - 56.28°)		23	23	22	22	21	21	20	20	19	19	18
56° 17' - 59° 32' (56.28° - 59.53°)		24	23	23	22	22	21	21	20	20	19	19
59° 32' - 60° 49' (59.53° - 60.82°)		24	24	23	23	22	22	21	21	20	20	19
60° 49' - 62° 9' (60.82° - 62.15°)		25	24	24	23	23	22	22	21	21	20	20
62° 9' - 63° 30' (62.15° - 63.5°)		25	25	24	24	23	23	22	22	21	21	20
63° 30' - 64° 55' (63.5° - 64.92°)		26	25	25	24	24	23	23	22	22	21	21
64° 55' - 66° 24' (64.92° - 66.4°)		26	26	25	25	24	24	23	23	22	22	21
66° 24' - 67° 57' (66.4° - 67.95°)		27	26	26	25	25	24	24	23	23	22	22
67° 57' - 69° 35' (67.95° - 69.58°)		27	27	26	26	25	25	24	24	23	23	22
69° 35' - 71° 21' (69.58° - 71.35°)		28	27	27	26	26	25	25	24	24	23	23
71° 21' - 73° 16' (71.35° - 73.27°)		28	28	27	27	26	26	25	25	24	24	23
73° 16' - 75° 24' (73.27° - 75.4°)		29	28	28	27	27	26	26	25	25	24	24
75° 24' - 77° 52' (75.4° - 77.87°)		29	29	28	28	27	27	26	26	25	25	24
77° 52' - 80° 56' (77.87° - 80.93°)		30	29	29	28	28	27	27	26	26	25	25
80° 56' - 85° 45' (80.93° - 85.75°)		30	30	29	29	28	28	27	27	26	26	25
85° 45' - 90° 0' (85.75° - 90.0°)		31	30	30	29	29	28	28	27	27	26	26



## 5.2 Available SICS commands

CLR	Clear key
D	Scale display
DAT	Inquire/set system date
DIO	Inquire input status / set output status
DW	Weight display
DY	Target values
GEO	Inquire Geo value
I0	Inquire all implemented MT-SICS commands
I1	Inquire MT-SICS level and MT-SICS versions
I2	Inquire device data
I3	Inquire terminal software version and type definition number
I4	Inquire serial number
I6	Inquiry of scale build parameters
I10	Inquire/set device identification
I11	Inquire model designation
I12	Inquire/set identifications ID1 / ID2 / ID3
I13	
I14	
I51	Power on time
K	Keyboard monitoring
LDR	Load material
MER	Inquire meridian
MO8	Inquire/set display brightness
M15	Language
M21	Inquire/set weight unit
PCS	Send number of pieces immediately
PMC	Set Over/under checkweighing parameters in counting mode
PMI	Inquire Over/under checkweighing parameters in weighing mode
PMW	Set Over/under checkweighing parameters in weighing mode
PRN	Initiate printout
PW	Inquire/set the piece weight
PWR	Switch off
REF	Counting: Build reference
RST	Restart
RO	Enable user input
R1	Disable user input
S	Send stable weight value
SI	Send weight value immediately
SIH	Send net value in high resolution immediately
SIR	Send weight value immediately and repeat
SIRU	Send weight value with currently displayed unit immediately and repeat
SIS	Send current net information
SIU	Send weight value with currently displayed unit immediately
SIX1	Current gross, net, tare values
SIX2	Current gross, net, tare, HighResNet values
SIX3	Current gross, net, tare, HighResNet, MaxResNet values
SM	Send stable net value with range information

SMI	Send net value with range information immediately
SMIR	Send net value with range information immediately and repeat
SMI	Perform animal weighing
SNS	Inquire/set the active scale
SR	Send weight value on weight change
SRU	Send weight value in display unit on weight change and repeat
ST	Send stable weight value after pressing the transfer key
STA	Preset tare value in the defined unit
SU	Send stable weight value in display unit
SV	Send stable net value
SVI	Send net value immediately
SVIR	Send net value immediately and repeat
SWU	Switch display unit
SX	Send stable weighing data
SXI	Send stable weighing data immediately
SXIR	Send stable weighing data immediately and repeat
T	Tare
TA	Inquire/set tare value
TAC	Clear tare value
TI	Tare immediately
TIM	Inquire/set system time
U	Unit change
Z	Zero
ZI	Zero immediately
@	Reset

**Note**

For more information on the SICS commands, refer to the MT-SICS Reference manual 30881805.

## 5.3 Description of the available connection protocols

### **Note**

Default settings are shown in **bold**.

### SICS Server

### **Note**

For more information on the SICS commands, refer to the MT-SICS Reference manual 30881805.

### SICS Continuous

The terminal continuously sends data packets (about 20 to 25 times) in the following format:

S_S_Weight value_Unit	Current stable weight in the unit currently set for Unit1
S_D_Weight value_Unit	Dynamic (unstable) weight in the unit currently set for Unit 1
S_I	Command understood, but not executabl at presend
S_+	Scale in overload range
S_-	Scale in underload range.

### **Note**

For more information on the SICS commands, refer to the MT-SICS Reference manual 30881805.

### TOLEDO Continuous-W

Weight values are transferred in the following format:

	Status			Field 1						Field 2							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
STX	SWA	SWB	SWC	MSD	-	-	-	-	LSD	MSD	-	-	-	-	LSD	CR	CHK

Field 1 Weight value without decimal point and unit

Field 2 Tare weight without decimal point and unit

STX "Start of text", can be activated/deactivated in the menu settings

SWAS, SWB, SWC Status words, see below

MSD Most significant digit

LSD Least significant digit

CR Carriage Return

CHK Checksum (2-complement of the binary sum of the 7 lower bits of all the characters sent before including STX and CR), can be activated/deactivated in the menu settings.

### Status word A

		Status bit						
Function	Selection	6	5	4	3	2	1	0
Decimal position	X00	0	1			0	0	0
	X0					0	0	1
	0.X					0	1	0
	0.OX					0	1	1
	0.00X					1	0	0
	0.000X					1	0	1
	0.0000X					1	1	1
Numerical increment	X1	0	1					
	X2	1	0					
	X5	1	1					

### Staus word B

Function	Value	Bit
Gross/Net	Net = 1	0
Sign	Negative = 1	1
Underload/Overload	Overload = 1	2
Movement	Movement = 1	3
kg/lb	kg = 1	4
1	1	5
Power up	Power up = 1	6

### Staus word C

Function/Value				Bit
kg/lb	g	t	oz	
0	1	0	1	0
0	0	1	1	1
0	0	0	0	2
Print request = 1				3
Expand data X10 =1, Normal = 0				4
Always = 1				5
Always = 0				6

### TOLEDO Continuous-C

This protocol is for the counting application. Piece count values are transferred in the following format:

	Status			Field 1						Field 2							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
STX	SWA	SWB	SWC	MSD	-	-	-	-	LSD	MSD	-	-	-	-	LSD	CR	CHK

Field 1            6 Byte for piece count, no leading "0", trailing space  
If not in counting application: 6 Byte filled with "0"

Field 2            6 Byte filled with "0"

STX                "Start of text", can be activated/deactivated in the menu settings

SWAS, SWB,      Status words, see below  
SWC

MSD               Most significant digit

LSD               Least significant digit

CR                 Carriage Return

CHK               Checksum (2-complement of the binary sum of the 7 lower bits of all the characters sent before including STX and CR), can be activated/deactivated in the menu settings.

### Input commands supported

P                   Printing out the current result

T                   Taring the scale

Z                   Zero setting of the display

C                   Deletiiing of the current value

U                   Switch unit

## Input Template

This protocol is used e.g. for a barcode connection.

Setup item	Possible settings
Preamble Length	<b>0</b> ... 20 (characters)
Data Length	<b>1</b> ... 99 (characters)
Postamble Length	<b>0</b> ... 20 (characters)
Assignment	<b>None</b> , Keypad, Preset Tare, Tare ID, ID1, ID2, ID3, Target ID, Material ID
Termination Character	None, SOH, STX, ETX, EOT, ENQ, ACK, BEL, BS, HT, LF, VT, FF, <b>CR</b> , SO, SI, DLE, DC1, DC2, DC3, DC4, NAK, SYN, ETB, CAN, EM, SUB, ESC, FS, GS, RS, US

## Second Display

Setup item	Sub items	Possible settings
<b>Toledo continuous-W</b>	Checksum	<b>On/Off</b>
Toledo continuous-C	STX	
AD-RS-M7		

## Post

Setup item	Possible settings
Post	<b>IBP</b> , IBP Demand, IP2420, IP2420 Demand, OPOS

## DigTol

Setup item	Possible settings
Gross	<b>G</b> , B, Off
Net	<b>On</b> , Off
Tare	<b>On</b> , Off

## Demand Mode

Setup item	Possible settings
Auto	On / <b>Off</b>
Print G	On / <b>Off</b>
Line Format	<b>Multiple</b> , Single, Fixed
Expanded	On / <b>Off</b>
Checksum	<b>On</b> / Off
STX	<b>On</b> / Off

## PM

Setup item	Possible settings
Special	On / <b>Off</b>

## Remote Display

Setup item	Sub items	Possible settings
SICS Client		
Toledo Continuous-W	Terminal Model	General, IND231/6, IND245, IND256X, ICS4XX, ICS4XX, <b>IND400</b> , IND570, IND500X, IND700, IND900 base pack IND900 FA
	Checksum	On / <b>Off</b>
	STX	<b>On</b> / Off

## Reference Balance

This mode is used to connect a reference balance for counting. There are no more settings.

## Transfer

Setup item	Sub Items	Remark
Print Type	<b>ASCII Printer</b>	All ASCII templates can be used for the printout
	Smart Printer	
	Label Printer	All Label templates can be used for the printout
Length	1 ... <b>24</b> ... 100 (characters)	For ASCII Printer and Smart Printer only
Encoding Format	<b>UTF8</b> , Unicode, GB2312, Shift_JIS, ISO/IEC 8859-15	

## Parameter Server

This mode is used to connect a server for importing/exporting parameters. There are no more settings.

## PSCP

Setup item	Possible settings
Format	<b>16 Bytes Without ID</b> , 22 Bytes With ID
Auto	On / <b>Off</b>

## 5.4 Disposal

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

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



### 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.

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