Minebea intec
The true measure

Operating Instructions

Compact scale Puro® LargeCount

98628-000-63 Edition 1.0.2 6/25/2020

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Foreword

Must be followed!

Any information in this document is subject to change without notice and does not represent a commitment on the part of Minebea Intec unless legally prescribed. This product should only be operated/installed by trained and qualified personnel. In correspondence concerning this product, the type, name, and release number/serial number as well as all license numbers relating to the product have to be cited.

Note

Table of contents

1 Introduction

1.1 Read the manual

- Please read this manual carefully and completely before using the product.
- This manual is part of the product. Keep it in a safe and easily accessible location.

1.2 This is what operating instructions look like

1. - n. are placed before steps that must be done in sequence.

▶ is placed before a step.

▷ describes the result of a step.

1.3 This is what lists look like

- indicates an item in a list.

1.4 This is what menu items and softkeys look like

[ ] frame menu items and softkeys.

Example:

[Start]- [Applications]- [Excel]

1.5 This is what the safety instructions look like

Signal words indicate the severity of the danger involved when measures for preventing hazards are not followed.

⚠ DANGER

Warning of personal injury

DANGER indicates death or severe, irreversible personal injury which will occur if the corresponding safety measures are not observed.

▶ Take the corresponding safety precautions.

⚠ WARNING

Warning of hazardous area and/or personal injury

WARNING indicates that death or severe, irreversible injury may occur if appropriate safety measures are not observed.

▶ Take the corresponding safety precautions.

⚠ CAUTION

Warning of personal injury.

CAUTION indicates that minor, reversible injury may occur if appropriate safety measures are not observed.

▶ Take the corresponding safety precautions.

NOTICE

Warning of damage to property and/or the environment.

NOTICE indicates that damage to property and/or the environment may occur if appropriate safety measures are not observed.

▶ Take the corresponding safety precautions.

Note:

User tips, useful information, and notes.

2 Safety instructions

2.1 General information

- The device may only be used as intended for weighing tasks.
- Observe the operating limits of the device.
- Do not apply loads that exceed the capacity of the scale.
- The voltage rating printed on the power supply (see type plate) must be the same as the local line voltage.
- Before connecting or disconnecting electronic peripheral devices, disconnect the device from the mains or from the data interface.
- Unplug the power cord from the mains supply before cleaning.
- Make sure that no liquid enters the device.
- The device may only be opened by authorized technicians.

2.2 Incoming goods inspection

Check the contents of the consignment for integrity. Check the contents visually to determine whether any damage has occurred during transport. If there are grounds for rejection of the goods, a claim must be filed with the carrier immediately. A Minebea Intec sales or service organization must also be notified. Visit our website http://www.puroscales.com or contact your dealer.

2.3 Before operational startup

NOTICE

Perform visual inspection.

Before operational startup as well as after storage or transport, inspect the product visually for signs of mechanical damage.

▶ The product should not be put into operation if it displays signs of visible damage and/or is defective.

2.3.1 Danger of explosion

Do not use the device in hazardous areas.

2.3.2 IP protection

The model fulfills protection grade IP43.

2.3.3 Storage and transport conditions

NOTICE

Material damage is possible.

Unpacked devices may lose their precision due to strong vibrations; strong vibrations may impair the safety of the device.

- ▶ Do not subject the device to extreme temperatures, moisture, shocks, and vibrations.

2.4 Failure and excessive stresses

If the device or the power cord display visible damage: Disconnect the power supply and secure the device to prevent it being used further.

Do not unnecessarily subject the device to extreme temperatures, corrosive chemical vapors, moisture, shocks, and vibrations.

Extreme electromagnetic influences can affect the display value. Once the disturbance has ceased, the product can be used again as intended.

3 Device installation

3.1 Mechanical preparation

3.1.1 Ambient conditions

- Only use within buildings.
- Operating temperature: -10°C to +40°C
- Storage temperature: -20°C to +50°C
- Relative humidity: 20% to 85%, non-condensing
- Altitude: up to 3,575 m

3.1.2 Installation location

- Place the device on a stable, flat surface.
- Position the device so that the power plug is freely accessible and the power cord does not present an obstacle or trip hazard.

Avoid unsuitable influences at the installation location:

- Extreme temperatures and excessive temperature fluctuations
- Heat due to proximity to heaters or due to direct sunlight
- Aggressive chemical vapors
- Extreme moisture
- Extreme vibrations

3.1.2.1 Shock resistance

NOTICE

Falling objects, side impacts, and shock loads may affect the performance and the accuracy of the scale and damage the platform.

▶ Avoid shock loads!

3.1.3 Unpacking

▶ Unpack the device and check it for visible external damage.

▷ If there is damage, follow the instructions in the chapter "Safety check".

▶ Keep the original packaging in case the device needs to be returned. Remove all cables before sending.

3.1.4 Checking the equipment supplied

- 1 scale
- 1 load plate
- 1 USB power supply with cable
- Safety instructions and QR code for access to the complete documentation

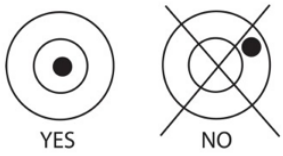
3.1.5 Leveling the weighing platform

To achieve reproducible weighing results at all times, the weighing platform must be set up to be precisely horizontal.

Therefore the weighing platform must be re-leveled every time it is moved to a different location.

Leveling the weighing platform

- ▶ Use the adjustable feet to align the weighing platform so that the air bubble of the level indicator is in the center of the circle.
- ▶ Check that all four of the adjustable feet are touching the surface.
  - ▷ The weight of the platform must be spread equally across the adjustable feet.
- ▶ Adjust the adjustable feet: Retract the adjustable feet (clockwise) in order to lift the scale. Extend the adjustable feet (counter-clockwise) in order to lower the scale.



3.1.6 Acclimatizing the device

If a cold device is brought into a warm environment, condensation may form.

- ▶ Keep the device disconnected from the mains and allow it to acclimatize at room temperature for approx. two hours.

3.2 Connection

3.2.1 Electrical supply

The scale is supplied using a power supply unit, unless a battery supply is required.

Connect the USB-C male plug connector with the USB-C female plug connector on the underside of the device, then connect the power supply unit to the wall socket.

Note:

Do not use the USB-C connector cable for the PC communication. Instead, use a standard USB-C cable.

3.2.1.1 Battery power

The scale can be operated immediately with the power supply. In order to operate the scale with the battery, the battery should first be charged for 12 hours. If there is a power outage or if the power cord is disconnected, the scale switches into battery operation automatically. In the event of supply via a power supply, the battery is constantly charged meaning that the battery charging display (see Chapter 4.1.2) is continuously illuminated. The scale can be used during the charging process; the battery is protected against excess charging.

When the device is switched on, the battery status LED illuminates in red while the battery is charging, and it goes green when the battery is fully charged.

The battery must be charged in a dry environment. For a maximum operating time, the battery should be charged at room temperature.

During battery operation, the battery icon displays the battery's remaining charge status. The display switches off automatically when the batteries are empty.

Icon	Charge status
	0 to 10% remaining
	11 to 40% remaining
	41 to 70% remaining
	71 to 100% remaining

Note:

If the battery icon flashes rapidly, then there is around 30 minutes of working time left.

When [lo.bat] is displayed, the scale switches off.

⚠ WARNING

Danger of explosion

If the rechargeable battery is replaced with a battery of the wrong type, or if it is not connected correctly, then there is a danger of explosion.

- ▶ The battery may only be replaced with the same type by an authorized Puro® service dealer.
- ▶ The battery must be disposed of according to the locally valid laws and regulations.

If the hardware does not recognize a connected rechargeable battery, the following applies:

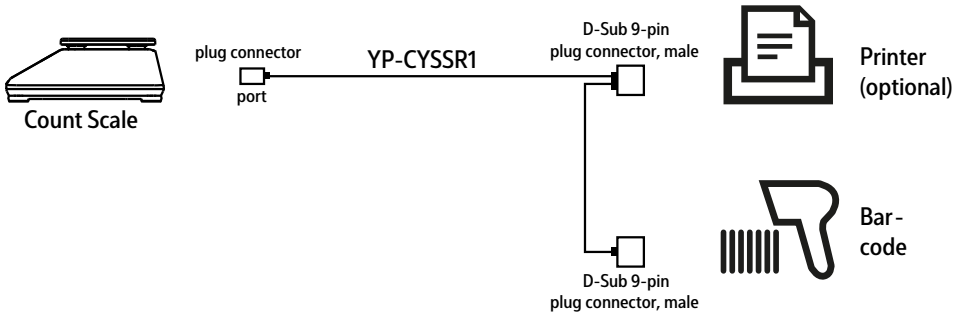
Rechargeable battery	USB-C cable	LED display charging	Display icon
Battery not full	Connect	Red	No icon
Battery full	Connect	Green	No icon
No battery installed	Connect	Red	No icon
Battery not full	Disconnect	Switched off	Charge status of the battery
Battery full	Disconnect	Switched off	Battery full

3.2.2 Connecting a printer

A printer can be connected via the printer port on the underside of the device.

3.2.3 Connecting a scanner

Connect the scanner according to the following diagram. The scanner must be connected using the original cable YP-CYSSR1.

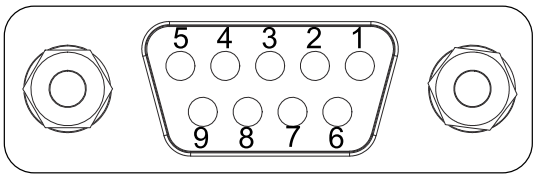


3.2.4 Connecting a second weighing platform

An analog weighing platform can be connected to the compact scale Puro® LargeCount and used as a second scale (weighing point).

- ▶ Turn the device on its side.
- ▶ Open the flap on the bottom of the device.
- ▶ Connect the weighing platform's 9-pin D-Sub male plug connector with the 9-pin D-Sub female plug connector. Pay attention to the pin assignment of the female plug connector and the color allocation of the cable.

  Pin assignment of the 9-pin D-Sub female plug connector:



1	DGND	Ground
2	-	Not assigned
3	-	Not assigned
4	Ex+	Supply voltage+
5	Ex-	Supply voltage-
6	Se+	Sense+
7	Si+	Signal+
8	Si-	Signal-
9	Se-	Sense-

- ▶ The A/D converter must then be configured and a two-point calibration carried out. For more information about the second weighing platform, see Chapters 5.1.10 and 5.3.4.9.

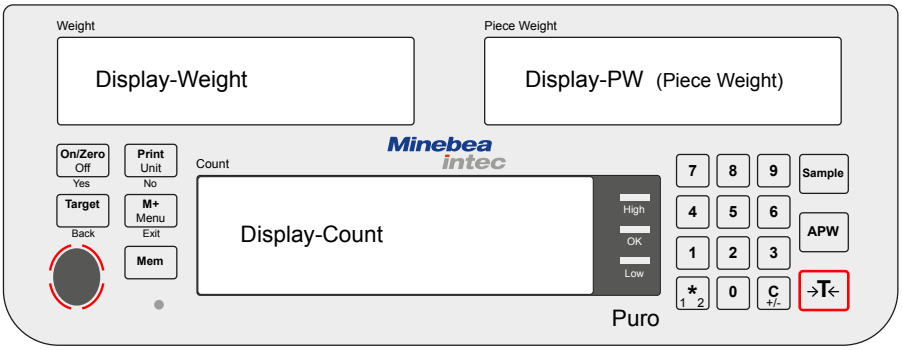
4 Device description

4.1 Display and operating elements

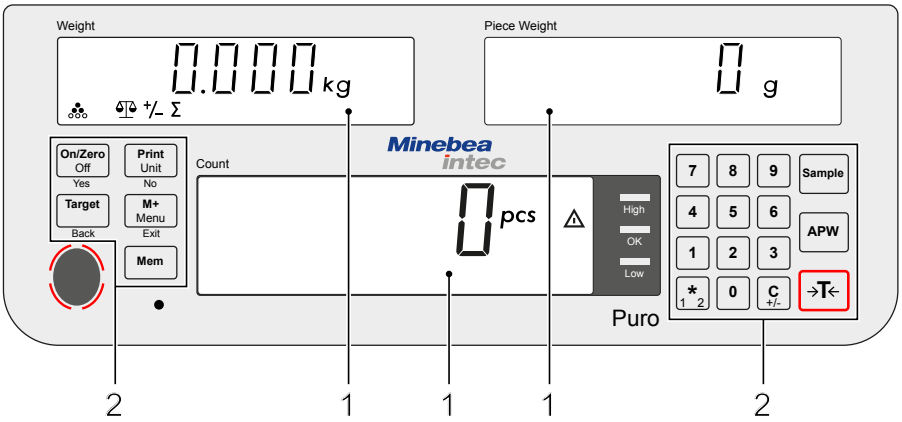
4.1.1 Overview

Display definitions:

- "Weight" (weight) display = small display on the left-hand side
- "PW" (sample weight) display = small display on the right-hand side
- "Count" (Counting) display = larger display in the middle

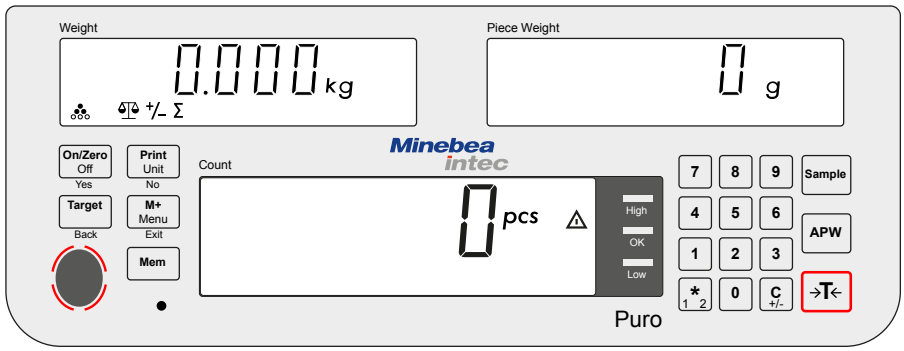


Control panel

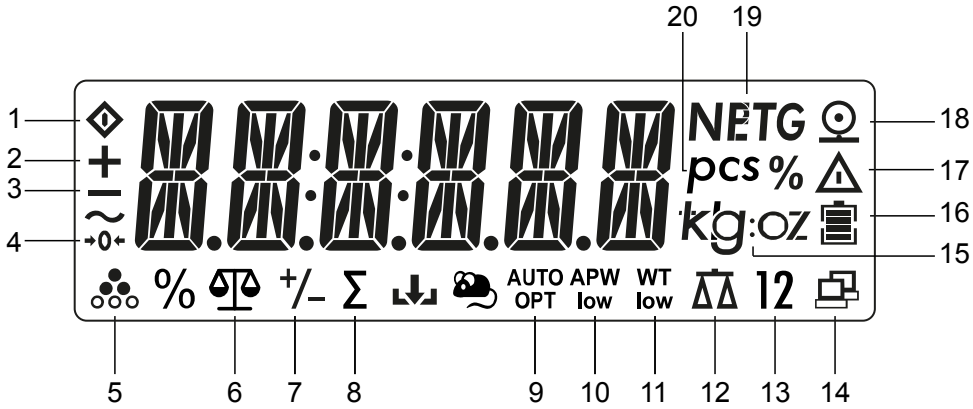


No.	Description
1	Display elements, see Chapter 4.1.2.
2	Operating elements, see Chapter 4.1.3.

4.1.2 Display elements

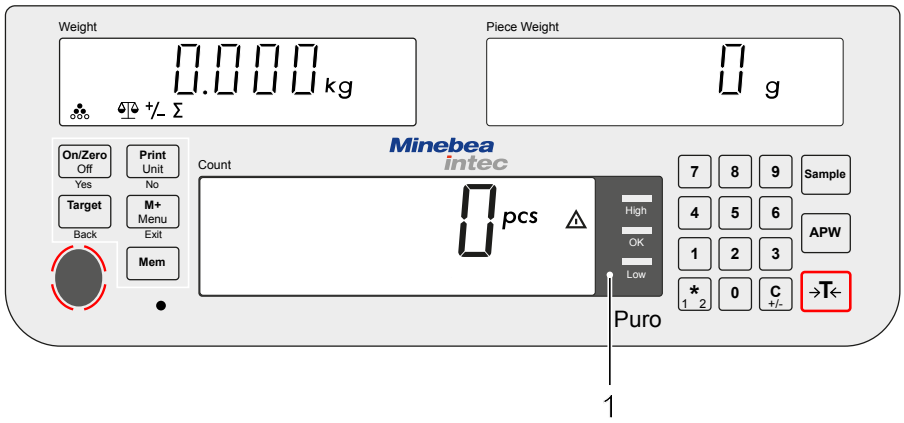


LCD display



Item	Description	Item	Description
1	Busy (process running)	2	Plus sign
3	Minus sign	4	1/4 d range around zero
5	Counting application active	6	Weighing application active
7	Checking application active	8	Totalizing application active
9	Icon for automatic tare or automatic reference optimization	10	Average sample weight too low
11	Sample weight too low	12	Two scales are active
13	Number of the active scale	14	Data transmission active
15	Weight unit	16	Battery charging
17	Warning icon	18	Printer icon
19	Net, preset, tare value, gross	20	Item (value in items)

LED displays



The colored LED displays (1) on the right-hand side of the control panel for counting are used in the Checking application (see Chapter 5.2.4.2.2) and illuminate according to the following rules:

	(Red) weight value > upper tolerance limit (Green) weight value ≤ ≥ lies within the tolerance limits (Yellow) weight value < lower tolerance limit

4.1.3 Operating elements

Key	Primary function (Brief press) < 1 second	Secondary function (Extended press) holding > 2 seconds
On/Zero Off	**On/Zero** Switch on the scale (if the scale is switched off), zero (if the scale is switched on)	**Off** Switch off the scale
Print Unit	**Print** Send the current value to the selected COM ports if the "Out" option is specified for automatic printing.	**Unit** Change weight unit
Target	**Target** Specify tolerance limits if the Check Weighing or Check Counting application is active	Select Check Weighing application
M+ Menu	**M+** Write into the totalizing memory or exit the entry process.	**Menu** Call up the user menu
Mem	**Mem** Save or load a product	Start product definition
Sample	**Sample** Adopt quantity of the reference weights and calculate the sample weight	
APW	**Average sample weight** Adopt sample weight	

Key	Primary function (Brief press) < 1 second	Secondary function (Extended press) holding > 2 seconds
→T←	**Tare** Specify or delete a tare value	Delete totalizing memory
0 ... 9	**0...9** Enter characters	
* 1 2	***12**	Switch scale
C +/-	**C +/-** Delete the last character entered or exit the display of the totalized values	Switch the algebraic sign

Keys for the menu navigation

Key	Menu function (Brief press) < 1 second
On/Zero Off	**Yes** Adopt the current setting in the display
Print Unit	**No** Discard the current setting in the display and switch to the next available setting Switch to the next menu or item/display the next value
Target	**Back** Switch to the previous menu items/display the previous value
M+ Menu	**Exit** Exit the user menu Cancel the ongoing calibration

5 Operating

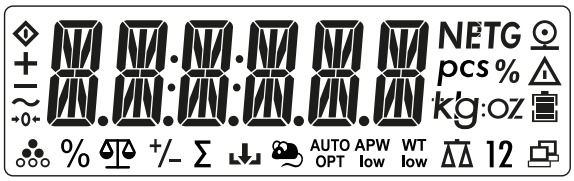
5.1 Basic functions

5.1.1 Switching on the device

▶ Briefly press the On/Zero Off key.

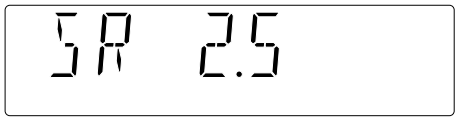
▷ All elements of **all** displays are displayed for 2 seconds.

All LEDs of the Checking application illuminate for 2 seconds.

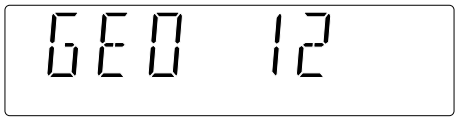


Then the software version number (here [SR 2.5]) is displayed for 2 seconds in the "Weight" display; at the same time, the selected GEO area is displayed in the "Piece Weight" display, e.g.: [GEO 12]. Nothing is displayed in the "Count" display.

Weight



Piece Weight



The combination of applications that was most recently active (selected) before switching off is started. If the applications had not yet been initialized, they start with the following parameters:

The default unit when starting for the first time is [kg].

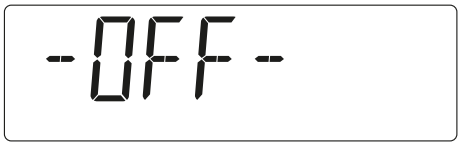
If a second scale is defined in the menu, the device always starts with WP1 (weighing platform 1).

5.1.2 Switching off the device

▶ Press and hold the On/Zero Off key.

▷ [-OFF-] is displayed for approx. 2 seconds in the "Count" display.

Count



The other displays are dark. Then the device switches off and all displays are dark.

This key is active in **ALL** application and menu statuses.

5.1.3 Adjusting the GEO setting

Adjust the GEO setting according to the location in order to guarantee accurate weighing results. See Chapter 5.4.3.

5.1.4 Display functions

In the normal weighing mode, the displays have the following functions:

- The actual weight value is displayed with the selected unit in the "Weight" display.
- The actual sample weight in grams or ounces is displayed in the "PW" display.
- The calculated number of parts is displayed with the unit [pcs] (parts) in the "Count" display.

The icon for "Charging" is only displayed in the "Weight" display if a rechargeable battery is connected.

The icon for "active scale" 12 is only displayed in the "Weight" display. If only one weighing platform is connected, the icon for "active scale" is dark.

5.1.5 Increment d

"d" stands for the lowest weight value that can be displayed.

Example d = 0.02 g → 2 d = 0.04 g → 3 d = 0.06 g

5.1.6 Scale with no load

In general there is no load on a scale if the weight on the weighing pan is under 2 d (< 2 d).

5.1.7 Enter values

Values can be entered via the keypad; the display takes place in the "Count" display.

At the start of an entry, the display is dark and on the right-hand side a flashing underscore (cursor) marks the last position. The entry can be corrected using the C +/- key, which is used to delete the last digit of the entry in each case.

Alternatively, the decimal point * 1 2 can also be entered as the first character. The software then automatically adds the zero in front of the decimal point.

5.1.8 Initializations

During an initialization it is not possible to activate the menu.

5.1.9 Applications activated during initial commissioning

The Weighing and Totalizing applications are automatically activated during the initial commissioning of the device. Counting is active, but not initialized. The Checking application is switched off.

5.1.10 Connecting a second scale

A second scale can be connected in order to achieve a counting system that consists of a reference scale and a scale for larger amounts.

Each scale has a separate serial number with 13 characters.

Number concept:

- Serial number for scale 1: W1 38457989
- Serial number for scale 2: W2 38457989

The following is printed:

```
SERNO: W1 38457989
SERNO: W2 38457989
```

The following is displayed under [INFO] in the menu:
[W1 38457989] and [W2 38457989]

5.2 Application programs

5.2.1 General information

In principle the main Counting application is always activated.
The following applications can be activated in parallel to the Counting application:

- Checking (two applications: Check Weighing and Check Counting)
- Totalizing (for totalizing parts or weights)
- Automatic tare
- Automatic printout

The product memory is available for 30 products.

5.2.2 Weighing application

If the Counting application has not been initialized (sample weight = 0), the application icon for weighing is displayed in the "Weight" display.

Weight

5.2.2.1 Stability

The weight value and the application icons are displayed in the "Weight" display.
If a weight value is stable, the unit symbol is displayed in the "Weight" display and in the "Count" display:

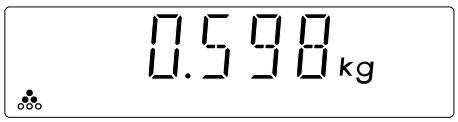
stable:	[2.342 kg]	and [47 pcs]
not stable:	[2.342]	and [47]

and printed:

stable:	2.342 kg, 47 pcs
not stable:	2.342 , 47

Stable weight value in the "Weight" display:

Weight



5.2.2.2 Set tare

▶ To tare, briefly press the →T← key when there is a load on the weighing pan.
▷ The icon [NET] is displayed in the "Weight" display.

During the tare process, the busy icon is displayed in the "Weight" display with no weight value; the "Count" display is dark.

Tared value in the "Weight" display:

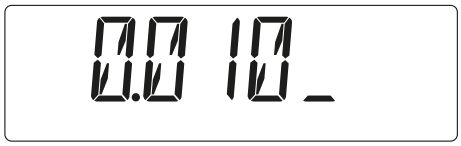
Weight

5.2.2.3 Preset tare value

There is only **one** tare memory in the device, which contains either a measured weight value (press →T← key) or an entered value (preset tare value).

1. Enter a weight value such as [0.010] via the numeric keypad or using a scanner.
   ▷ This value is displayed in the "Count" display.

Count



2. Briefly press the →T← key.
   ▷ The entered value is specified as the preset tare value with the corresponding unit; the value currently in the tare memory is overwritten.

   The weight value in the "Weight" display is calculated in advance using this preset tare value.

   The actual number of parts on the weighing pan is recalculated and displayed in the "Count" display.

The preset tare value can be deleted as follows:

3. Press the →T← key if there is no load on the weighing pan.
   ▷ Delete the tare memory.

Specify a new tare value as follows:

Press the →T← key, if there is a load on the weighing pan, in order to overwrite the tare memory with the weight on the weighing pan.

Or press the On/Zero Off key if there is no load on the weighing pan. Delete the tare memory.

The preset tare value is deleted after the device is switched off.

5.2.2.4 Weight unit key

The display of a weight value can be switched between various weight units.

▶ Pressing and holding the Print Unit key changes the displayed unit.

Possible units are: Gram [g], Kilogram [kg], Pound [lb], Ounce [oz], Pound-ounce [l:o].

Only units that have been activated in the menu can be changed.

While the key is held down, the unit changes and after around 2 seconds the next unit is displayed, and so on, until the key is released.

This is how the switched units are displayed in the "Weight" display and in the "PW" display:

Units in the "Weight" display	Units in the "PW" display
Kilogram	Gram
Gram	Gram
Pound	Ounce
Ounce	Ounce
Pound: Ounce	Ounce

5.2.2.5 Printouts

The elements to be printed are configured in the menu.

Printout	Description
5.003 g N	Positive net weight value
- 0.003 g N	Negative net weight value
2.003 g G	Positive measured gross weight value
2.003 g G#	Positive calculated gross weight value
1.003 g T	Tare weight value (measured value)
0.010 g PT	Preset tare value (entered value)
- 0.010 ! G	Stable gross weight below zero

5.2.3 Counting application

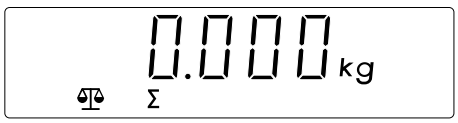
The scale starts with "Counting". If a sample weight had been specified before switching off the device, the device starts with this sample weight.

The Counting application is always active. However, there is the option for this application not to be initialized.

If no sample weight has been initialized, both displays show [0.] and the application icon ⚖ (weighing) is displayed in the "Weight" display.

The device starts with the Totalizing application activated.

Weight



Counting is uninitialized

Weight

Counting is initialized

5.2.3.1 Initializing the Counting application

- Initialization with a known reference quantity (see Chapter 5.2.3.1.1)
- Initialization with a known sample weight (see Chapter 5.2.3.1.2)

The initialization of the Counting application is only possible on scale 1. The initialization is carried out with the internal scale resolution.

5.2.3.1.1 Initialization with known reference quantity

This initialization is only carried out when the weight values are stable.

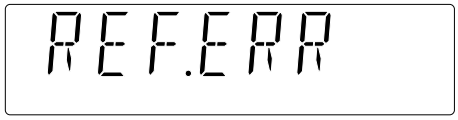
- Initialization (see Chapter 5.2.3.1.1.1)
- Initialization of a negative sample (see Chapter 5.2.3.1.1.2)

These initializations are possible even if a sample weight has already been calculated.

The entry can be corrected using the C +/- key, which is used to delete the last digit of the entry in each case.

If there is no load on the weighing pan (< 2 d), the error message [REF.ERR] is displayed for around 2 seconds in the "PW" display.

Piece Weight



5.2.3.1.1.1 Initializing

1. Place some parts on the weighing pan.
2. Enter the known number of parts on the weighing pan via the keypad (only whole number values) or using a scanner.
   ▷ The entered value is displayed in the "Count" display.
3. Briefly press the Sample key.
   ▷ The newly calculated sample weight is displayed in the "PW" display, and the actually calculated number of parts is displayed in the "Count" display.

5.2.3.1.1.2 Initialization via the removal of parts

If the removal of parts from a container is required:

1. Place a full container on the scale.
2. Briefly press the →T← key (tare container).
3. Remove some parts from the container.
   ▷ Now a negative weight value is displayed in the "Weight" display.

Proceed with step 2 in Chapter 5.2.3.1.1.1.

5.2.3.1.2 Initialization according to known sample weight

1. Enter the desired sample weight via the keypad or using a scanner.
   ▷ The entered value is displayed in the "Count" display.
2. Briefly press the APW key.
   ▷ The newly adopted sample weight is displayed in the "PW" display, and the actually calculated number of parts is displayed in the "Count" display.

5.2.3.2 Performing Counting (without check weighing)

Automatic reference optimization (see Chapter 5.2.3.2.1).

If a sample weight is initialized, it is displayed in the "PW" display.

- ▶ Place a weight on the weighing pan.
  - ▷ The actual weight value is displayed in the "Weight" display.

    The calculated number of parts is displayed in the "Count" display.

    The application icon (Counting) is displayed in the "Weight" display.
- ▶ Briefly pressing the Print Unit key will generate a printout.
- ▶ Pressing and holding the Print Unit key changes the unit in the "Weight" display (in certain cases also in the "PW" display [see Chapter 5.2.4.1]).
- ▶ Briefly pressing the APW key or the Sample key or the keypad starts an initialization as described above.
- ▶ Press and hold or briefly press the Target key (see Chapter 5.2.4)
- ▶ Press the Mem key (see Chapter 5.2.8)
- ▶ Pressing the C +/- key will delete the sample weight.

5.2.3.2.1 Automatic reference optimization

If in the menu [OP.FUNC]- [A.OPT]- [ON] is set, the automatic reference optimization is activated. The icon AUTO is displayed in the "PW" display.

The main feature is the automatic more precise calculation of the sample weight.

The sample weight is recalculated during the optimization if the following conditions are all met:

- Scale is at a standstill
- No prefix change
- The current quantity exceeds the original reference quantity by at least two. The new quantity may not exceed twice the old reference quantity (this limitation does not apply for the first optimization if the sample weight was entered using a bar code scanner or the keyboard).
- The internally calculated quantity (e.g. 17.24) must be less than ± 0.3 parts different from the whole number (in the example: 17).
- If an optimization has been carried out, the icon AUTO OPT is displayed in the "PW" display, and the newly calculated sample weight is also displayed in the "PW" display.

The automatic optimization is not carried out on scale 2.

5.2.3.3 Printouts (without checking)

Normal printout:

Printout	Description
`441 pcs QNT`	Positive value
`- 41 pcs QNT`	Negative value
`MODE: COUNT`	Activated application
`WREF 4.15431 oz`	Sample weight, same value as that displayed in the "PW" display

5.2.4 Checking application

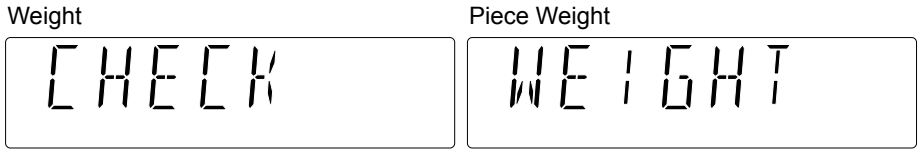
For the Checking application, there are indicator LEDs that show the current range.

5.2.4.1 Activating the checking application

While the Counting application is being performed, the checking applications can be activated via the Target key.

▶ Press and hold the Target key.

▷ [CHECK] is shown in the "Weight" display.



The activated checking mode is displayed for approx. 2 seconds in the "PW" display. The "Count" display is dark.

After this waiting time the next mode is displayed and so on. If the Target key is released, the mode displayed in the "PW" display is selected.

The following selection is possible:

[OFF]	Checking is switched off.
[WEIGHT]	Check Weighing is activated
[COUNT]	Check Counting is activated

If the Check Weighing application [WEIGHT] is activated and the Counting application has not been initialized, the following application icons will be displayed in the "Weight" display: ⚖ +/–.

If the Counting application [COUNT] has been initialized, the Counting application icon will also be displayed: ⁂ ⚖ +/–.

If the Check Counting application [COUNT] is activated and the Counting application has been initialized, the following application icons will be displayed in the "Weight" display: ⁂ +/–.

5.2.4.2 Checking weight values

- Initializing Checking application (see Chapter 5.2.4.2.1)
- Execution mode (see Chapter 5.2.4.2.2)
- Print outs (see Chapter 5.2.4.2.3)

5.2.4.2.1 Initializing checking

Pressing and holding the C +/- key will generate a minus algebraic sign in the entry mode in the "Count" display.

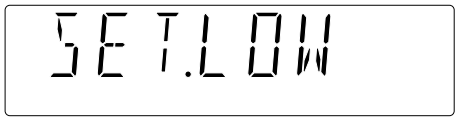
Pressing and holding the M+ Menu (Exit) key will stop the initialization process immediately, without saving a new entry or limit.

Briefly pressing the Print Unit (No) key or C +/- will delete the flashing limit value; on the right-hand side, a flashing cursor indicates that a new entry can be made.

Initialization is possible on both scales.

1. After selecting a checking application, briefly press the Target key.
   ▷ [SET.LOW] is shown in the "Weight" display.

   Weight

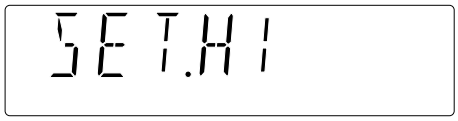
   The previous lower limit is also displayed in the "PW" display with the unit that was activated before pressing the Target key.

   This weight value is also displayed flashing in the "Count" display. The yellow LED illuminates.
2. Use the keypad or a scanner to enter a numerical weight value, which is then displayed in the "Count" display.
   ▷ The "Count" display shows the same unit as in the "Weight" display.

   The entered value does not flash. Only the actual cursor position (which is designated by an underscore) flashes. The entry starts on the right-hand side.
3. Confirm the entry by briefly pressing the On/Zero Off (Yes) key.
   ▷ Briefly pressing the Target (Back) key will discard the entry; the limit is not changed.

   [SET.HI] is shown in the "Weight" display.

   Weight

   The previous upper limit is also displayed in the "PW" display with the unit that was activated before pressing the Target key.

   This weight value is also displayed flashing in the "Count" display. The red LED illuminates.
4. Use the keypad or a scanner to enter a numerical weight value, which is then displayed in the "Count" display.
   ▷ The entered value does not flash. Only the actual cursor position (which is designated by an underscore) flashes.
5. Confirm the entry by briefly pressing the On/Zero Off (Yes) key or discard by pressing the Target key.
   ▷ If the limit conditions are correct, the checking application is initialized.

Count

If there is an error present, because, e.g., upper limit < lower limit, [LIM.ERR] is displayed for roughly 2 seconds in the "Count" display and the display returns to step 1.

The normal Counting application is activated again. In addition, the test LEDs are activated when there is a load on the weighing pan.

When checking additive weights, both limits must be a positive value.

When checking removed weights, both limits must be a negative value.

When using "Check Against Zero", the upper limit is a positive value and the lower limit is a negative value.

When checking a precise weight, the lower and upper limits must be the same.

5.2.4.2.2 Execution mode

Limit value LEDs:

positive weight	< lower limit	Yellow LED illuminates
positive weight	≥ lower limit and ≤ upper limit	Green LED illuminates
positive weight	> upper limit	Red LED illuminates
negative weight	> lower limit	Yellow LED illuminates
negative weight	≤ lower limit and ≥ upper limit	Green LED illuminates
negative weight	< upper limit	Red LED illuminates

When using "Check Against Zero", the reference weight is placed on the weighing pan and then the scale is tared. The reference weight is removed; then the weight to be checked is placed on the weighing pan.

5.2.4.2.3 Printouts

Counting is uninitialized:

Printout	Description
`115 g OVER`	Positive net value > upper limit
`- 115 g OVER`	Negative net value < negative upper limit
`99 g ACCEPT`	Positive net value in the target range
`75 g UNDER`	Positive net value < lower limit
`MODE: CHECKWEIGH`	Activated application
`UNDER LIMIT 81 g`	Lower limit
`OVER LIMIT 100 g`	Upper limit

Counting is initialized:

Printout	Description
`115 g OVER`	Positive net value > upper limit
`- 115 g OVER`	Negative net value < negative upper limit
`99 g ACCEPT`	Positive net value in the target range
`75 g UNDER`	Positive net value < lower limit
`115 pcs`	Net quantity
`MODE: CHECKWEIGH`	Activated application
`UNDER LIMIT 81 g`	Lower limit
`OVER LIMIT 100 g`	Upper limit
`WREF 0.35423 g`	Sample weight

5.2.4.3 Checking number of parts

- Initializing Check Counting (see Chapter 5.2.4.3.1)
- Execution mode (see Chapter 5.2.4.3.2)
- Print outs (see Chapter 5.2.4.3.3)

5.2.4.3.1 Initializing Check Counting

Pressing and holding the C +/- key will generate a minus algebraic sign in the entry mode in the "Count" display.

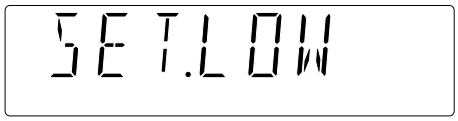
Pressing and holding the M+ Menu (Exit) key will stop the initialization process immediately, without saving a new entry or limit.

Briefly pressing the Print Unit (No) key or C +/- will delete the flashing limit value; on the right-hand side, a flashing cursor indicates that a new entry can be made.

Initialization is possible on both scales.

1. After selecting a checking application, briefly press the Target key.
   ▷ [SET.LOW] is shown in the "Weight" display.

   Weight

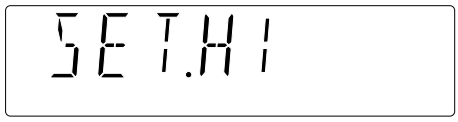
   The previous lower limit is displayed in the "PW" display.

   This number of parts is also displayed flashing in the "Count" display. The yellow LED illuminates.
2. Use the keypad or a scanner to enter a number of parts, which is then displayed in the "Count" display.
   ▷ The entered value does not flash. Only the actual cursor position (which is designated by an underscore) flashes. The entry starts on the right-hand side.
3. Confirm the entry by briefly pressing the On/Zero Off (Yes) key.

▷ Briefly pressing the Target (Back) key will discard the entry → the limit is not changed.

[SET.HI] is shown in the "Weight" display.

Weight



The previous upper limit is also displayed in the "PW" display.

This number of parts is also displayed flashing in the "Count" display. The red LED illuminates.

4. Use the keypad or a scanner to enter a number of parts, which is then displayed in the "Count" display.
   ▷ The entered value does not flash. Only the actual cursor position (which is designated by an underscore) flashes.
5. Confirm the entry by briefly pressing the On/Zero Off (Yes) key or discard by pressing the Target key.
   ▷ If the limit conditions are correct, the checking application is initialized.

Count

If there is an error present, because, e.g., upper limit < lower limit, [LIM.ERR] is displayed for roughly 2 seconds in the "Count" display and the display returns to step 1.

The normal Counting application is activated again. In addition, the test LEDs are activated when there is a load on the weighing pan.

When checking additive weights, both limits must be a positive value.

When checking removed weights, both limits must be a negative value.

When using "Check Against Zero", the upper limit is a positive value and the lower limit is a negative value.

When checking a precise weight, the lower and upper limits must be the same.

5.2.4.3.2 Execution mode

- Only the number of parts is checked.

Limit value LEDs:

Positive number of parts	< lower limit	Yellow LED illuminates
Positive number of parts	≥ lower limit and ≤ upper limit	Green LED illuminates
Positive number of parts	> upper limit	Red LED illuminates
Negative number of parts	> lower limit	Yellow LED illuminates

Negative number of parts	≤ lower limit and ≥ upper limit	Green LED illuminates
Negative number of parts	< upper limit	Red LED illuminates

When using "Check Against Zero", the reference quantity to be checked is placed on the weighing pan and then the scale is tared. The reference quantities are removed; then the number of parts to be checked is placed on the weighing pan.

The warning symbol ⚠ appears in the "Count" display if the unit [pcs] is displayed.

5.2.4.3.3 Printouts

Counting is uninitialized:

Printout	Description
`115 g N`	Normal net value as result
`MODE: CHECKWEIGH`	Activated application
`UNDER LIMIT -20 pcs`	Lower limit
`OVER LIMIT -60 pcs`	Upper limit

Counting is initialized:

Printout	Description
`115 pcs OVER`	Positive net number > upper limit
`- 115 pcs OVER`	Negative net number < negative upper limit
`99 pcs ACCEPT`	Positive net number in the target range
`75 pcs UNDER`	Positive net number < lower limit
`MODE: CHECKCOUNT`	Activated application
`UNDER LIMIT -20 pcs`	Lower limit
`OVER LIMIT -60 pcs`	Upper limit
`WREF 0.35423 oz`	Sample weight, as displayed

5.2.4.4 Menu settings

For the Checking application there are other functions that can be activated via the menu:

OP.FUNC

A.TARE	Automatic tare
OFF	deactivated* (default setting)
ON	1st stable weight is tared
ON-ACC	Stable loads within the acceptance limits are tared (in all Checking applications)
BEEP.SI	Signal (in the check weighing mode)
OFF	deactivated* (default setting)
ACCEPT	Signal when the weight is within the tolerance range
UNDER	Signal when the weight is below the lower limit
OVER	Signal when the weight is above the upper limit
UNDOVR	Signal when the weight is outside of the tolerance range

5.2.5 Totalizing application

The application icon looks like this: Σ. It is only displayed in the "Weight" display.

If the Counting application has not been initialized, only weights are totalized. If the Counting application has already been initialized, parts and weights are totalized.

Only net values can be totalized.

5.2.5.1 Menu selection

This application can be selected in the menu:

OP.FUNC

TOT.SET	Totalizing setting
OFF	deactivated* (default setting)
AUTO	Automatic totalizing
MAN	Manual totalizing

5.2.5.2 Execution modes

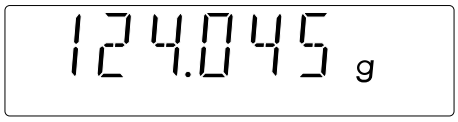
- Manual mode (see Chapter 5.2.5.2.1)
- Automatic mode (see Chapter 5.2.5.2.2)
- Print outs (see Chapter 5.2.5.2.3)

▶ The statistics information can be displayed by briefly pressing the M+ Menu key in the display.

For this purpose there must be no load on the weighing pan (weight < 2 d).

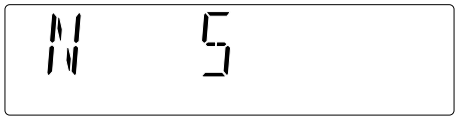
The following parameters are displayed for three seconds:

Weight



Totalized weight with unit

Piece Weight



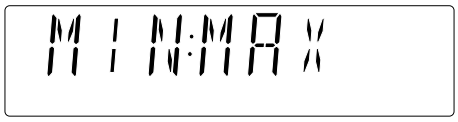
Number of items in the totalizing memory

Count

If counting is active, the total parts are displayed. If only weighing is active, the display is dark.

Once the first three seconds have elapsed, the next statistics parameters are also displayed for three seconds:

Weight

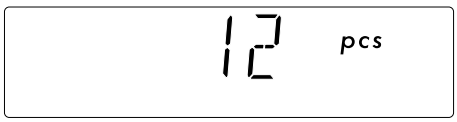


Text for minimum and maximum value

Piece Weight

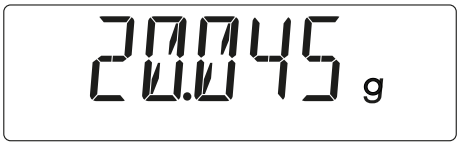
Min. weight

Piece Weight



Min. number of parts

Count



Max. weight

Count

Maximum number of parts if counting is active.

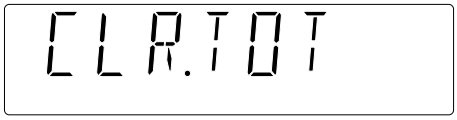
The C +/- key is used to exit this status prematurely and reactivate the previous status.

This status is exited automatically when the waiting time has expired. The switch to the previous status takes place.

▶ Statistics information can be deleted by pressing and holding the →T← key.

For this purpose there must be no load on the weighing pan: Weight on the weighing pan < 2 d.

Weight



[CLR.TOT] is now displayed.

▶ If the statistics information needs to be deleted, briefly press the On/Zero Off (Yes) key.

▶ If the statistics information does not need to be deleted, briefly press the Print Unit (No) key.

▶ The initialization of Counting can be canceled by briefly pressing the C +/- key or by initializing Counting again; in this case the totalizing parameters are deleted.

After writing into the totalizing memory, the "Weight" display shows the total weight (= total value following adoption), the "PW" display shows the number of items in the totalizing memory, and the "Count" display shows the totalized number of parts. This display lasts for around 2 seconds.

If a weight or a number of parts has been adopted into the totalizing memory, the total symbol flashes until the weight is removed from the weighing pan and the weight is < 2 d. A new totalizing process can only be started if the load has previously been removed from the weighing pan.

If two weighing platforms are connected, the displayed weights are totalized accurately according to the display. Example: The first element in the totalizing memory is taken from WP1 and the second is taken from WP2:

1.003 kg	// WP1 with accuracy 1 g
= 5.15 kg	// WP2 with accuracy 50 g
= 6.153 kg	// total = totalizing memory

It is also possible to totalize negative weight values (deduction mode). Place weights on the weighing pan, press the →T← (Tare) key. Remove the first weight. Add to the totalizing memory. Press the →T← (Tare) key again. Then remove the second weight. Add to the totalizing memory.

5.2.5.2.1 Manual mode

Stable weights ≥ 2 d can be totalized by briefly pressing the M+ Menu key. This also applies for a number of parts if there is stability.

The next weight/the next quantity can be totalized if the load had previously been removed from the scale.

5.2.5.2.2 Automatic mode

Stable weights ≥ 2 d are automatically totalized if the load had previously been removed from the scale. This also applies for a quantity if there is stability.

5.2.5.2.3 Printouts

Min, Max is only printed if "All" is selected as print content in the menu [PRINT]-[CONTNT]- [TOTAL].

Weights as parameters (= weight total printout):

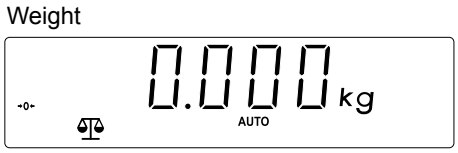
Printout	Description
`N:  2`	Number of items, here: 2
`TOTAL:  1.955 g`	Totalized value
`MAX:  1.485 g`	Maximum value
`MIN:  0.470 g`	Minimum value

Parts as parameters (= parts and weight total printout)

Printout	Description
`N:  25`	Number of items, here: 25
`TOTAL:  148 g`	Totalized value of the weights
`124 pcs`	Totalized value of the parts
`MAX:  20 g`	Maximum value as weight
`10 pcs`	Maximum value as number of parts
`MIN:  4 g`	Minimum value as weight
`2 pcs`	Minimum value as quantity

5.2.6 Automatic tare

The application icon AUTO is displayed in the "Weight" display.



5.2.6.1 Menu selection

OP.FUNC

A.TARE	Automatic tare
OFF	deactivated* (default setting)
ON	first stable weight ≥ 2 d is tared
ON-ACC	Test: Each stable weight within the acceptance values is tared. This means that the automatic tare is not just carried out once!

5.2.6.2 Execution mode

Standard performance:

- The first weight that is placed on the weighing pan is tared if ≥ 2 d.
- If there is no load on the scale (< 2 d), the tare memory is deleted.

Performance during "checking":

- First option [ON]:

  The first weight (≥ 2 d) that is placed on the weighing pan is tared

- Second option [ON-ACC]:

  In the event of load ≥ 2 d, only stable values within the tolerance range are tared. Here, each weight in the accepted limit range is tared.

This function is carried out before the automatic printing and also before the automatic totalizing. The automatic tare has a higher priority than printing and totalizing. The first applied weight is tared, the second is adopted into the totalizing memory and automatically printed out if "Automatic Printing" and "Automatic Totalizing" are selected in the menu.

"Automatic tare" is not carried out if the menu is activated or an initialization is being carried out.

"Automatic tare" is deactivated if a preset tare value has been entered or a product with preset tare value has been activated.

5.2.7 Automatic Printing

Printing is carried out automatically **once** if the net weight on the weighing pan is ≥ 2 d.

If the weight is removed from the weighing pan and the net weight is < d, the next net weight ≥ 2 d generates printing again.

5.2.7.1 Menu selection

Specify conditions under the menu item [PRINT] (printing):

PRINT

A.PRINT	automatic printing
OFF	deactivated* (default setting)

ON.STAB	automatic printing at standstill once, if weight > 1 d
INTER	automatic printing in defined second intervals **without** standstill
25	Interval can be entered in seconds in the range from 1 to 3,600
CONT	automatic printing for each weighing cycle **without** standstill
ACCEPT	automatic printing once **at standstill** within the control limits

5.2.7.2 Execution mode

- Execution mode, general (see Chapter 5.2.7.2.1)
- Execution mode: ON STABLE (see Chapter)
- Execution mode: INTER (see Chapter 5.2.7.2.2)
- Execution mode: CONTNT (see Chapter 5.2.7.2.3)
- Execution mode: ACCEPT (see Chapter 5.2.7.2.4)

5.2.7.2.1 Execution mode, general

"Automatic Printing" normally has second priority after "Automatic tare". However, if "Automatic Totalizing" is also active then this is carried out before the printing.

Each selected element in [PRINT]- [CONTNT] is printed, apart from the total parameters if the Totalizing application is not activated in the menu.

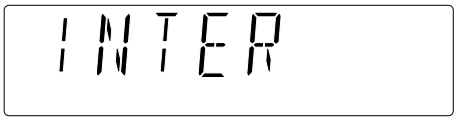
5.2.7.2.2 Execution mode: INTER

An interval is selected in the menu. The divisions can be selected in seconds from 1 to 3,600 seconds.

Example: If 5 seconds is selected, then a printout is created automatically every 5 seconds. The printout is carried out irrespective of whether or not the weight value is stable.

Weight

Piece Weight



In this status, the number of seconds that can be entered via the keypad or using a scanner is displayed in the "Weight" [A.PRINT] display, in the "PW" [INTER] display, and in the "Count" display.

5.2.7.2.3 Execution mode: CONTNT

The elements are printed as quickly as possible with and without standstill.

5.2.7.2.4 Execution mode: ACCEPT

Automatic Printing is only carried out when the "Checking" application is activated AND the weight applied or the weight removed is within the control limits.

This automatic printing is generated **after the** totalizing (automatic mode), if "Totalizing" is activated.

5.2.8 Product memory

The device has a product memory for a maximum of 30 products.

Each product contains:

- Product ID (memory item number)
- Product name = 12 ASCII characters long. Alphanumeric characters are possible when using a scanner!
- Preset tare value
- Sample weight
- "Checking" lower limit = a weight value or a number of parts.
- "Checking" upper limit = a weight value or a number of parts.

If a checking limit is not equal to zero, the "checking" application is activated automatically. If these limits are zero, "checking" is automatically deactivated.

Example: "Checking" is activated. When a product is loaded that only contains counting parameters, "checking" is set to [OFF] (deactivated).

If the Mem key is pressed briefly and the user wants to exit this status (saving or loading), briefly press the M+ Menu (Exit) key.

If two scales are defined in the menu, the product can still be loaded even if the scales have different accuracies. This is the customer's responsibility.

5.2.8.1 Saving product data

Requirement for saving: The application has already been initialized.

1. Briefly press the Mem key.
   ▷ The following is displayed in the displays:

   Weight: STORE

   Piece Weight: PROJ

   Count: MEM 12

   = the next free product memory number flashes

   The memory number (ID) can be changed using the keyboard or the scanner.

2. Briefly press the Mem or On/Zero Off (Yes) key in order to save the product parameters.

   The first product memory has the number 1.

   If the entry of the memory number contains an error, e.g. if the memory number is too big, then [LIM.ERR] is displayed in the "Count" display for approx. 2 seconds.

   Count: LIM.ERR

During the saving process, the busy icon is activated in the Weight display; the other displays are dark.

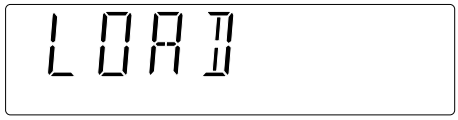
The memory number can be freely selected. It does not have to be the next free one.

If the selected memory is already occupied, this memory is overwritten.

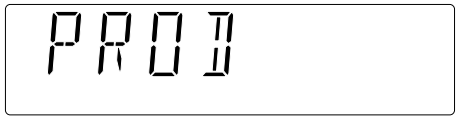
5.2.8.2 Loading product parameters

1. Enter a product memory number via the keypad or using a scanner.
   ▷ The number is displayed in the "Count" display.
2. Briefly press the [Mem] key.
   ▷ The following is displayed in the displays:

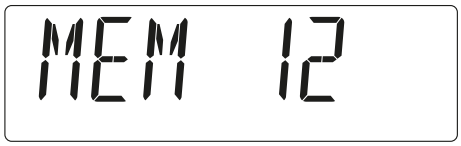
Weight



Piece Weight



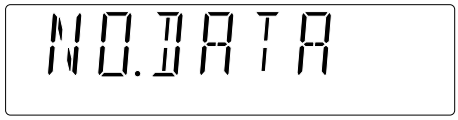
Count



3. Press the [Mem] or [On/Zero Off] (Yes) key.
   ▷ The product parameters of the selected product are loaded.

   If the memory is empty, [NO.DATA] is displayed for approx. 1 second in the "Weight" display.

Weight



   Then the device switches back into the status from before entering the product number.

The product ID in the "Count" display can be changed by briefly pressing the [Print Unit] (No) and [Target] (Back) keys.

Pressing the [Print Unit] (No) key will incrementally increase the number.

Pressing the [Target] (Back) key will incrementally decrease the number.

Example: Memory items 1, 2, 5, 7 are occupied. If the displayed number is 5, pressing the [Print Unit] (No) key will display → 7. Pressing [Target] (Back) will display → 5.

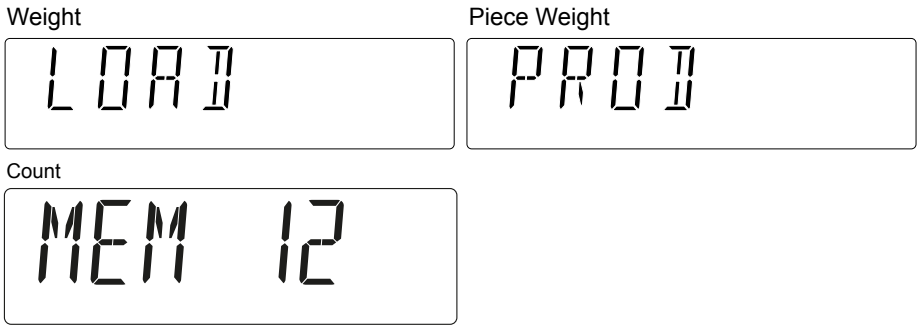
5.2.8.3 Changing/defining product parameters

A current product can be changed or a new product can be defined.

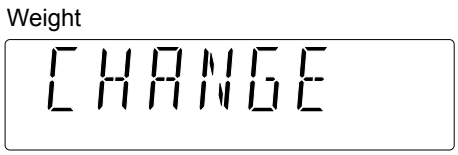
Briefly pressing the M+ Menu (Exit) key in any status of this entry process will reset the device into the status before starting this entry process.

- All entries can be made via the keyboard or using a scanner.
- The unit of the parameters is the one that was used before activating this change process.

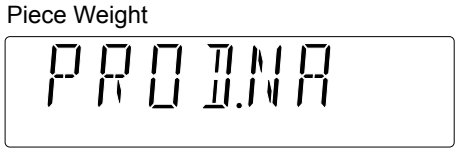
1. Enter the desired product ID via the keypad or using a scanner.
   ▷ The number is displayed in the "Count" display.
2. Briefly press the Mem key.
   ▷ The following is displayed in the displays:



3. Press and hold the Mem key.
   ▷ [CHANGE] is displayed in the "Weight" display for as long as the key is held down.



If the Mem key is released, [PROD.NA] is displayed in the "Weight" display for 2 seconds.



After these 2 seconds, the saved product name is displayed flashing in the "Weight" display and in the "PW" display. The entered product ID is displayed in the "Count" display (no change).

If a product name is entered while [PROD.NA] is being displayed, the entry process starts directly with a flashing underscore (cursor) of the last digit in the "PW" display.

The product name, which may be up to 12 characters long, can be entered in the "PW" display and in the "Weight" display. The characters that can be used are numbers, capital letters, "-", "/", ".", and spaces.

Example: The product name is 123456789012.

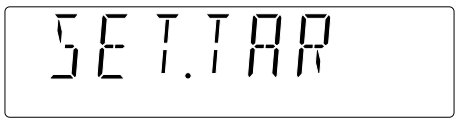
Then [123456] is displayed in the "Weight" display and [789012] is displayed in the "PW" display.

4. Briefly press the C +/- key while the product name is flashing.
   ▷ The entire product name is deleted in the displays, and a flashing underscore is displayed at the last position for a new entry in the "PW" display.
5. Briefly press the C +/- key while the cursor is flashing.
   ▷ The last digit before the flashing cursor is deleted.

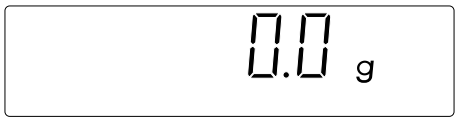
   Pressing a key on the keypad will delete the old name and display the printed number.
6. Briefly press the On/Zero Off (Yes) key.
   ▷ The entered sequence of characters is adopted. Continue with point ①.

- ① Display up

Weight

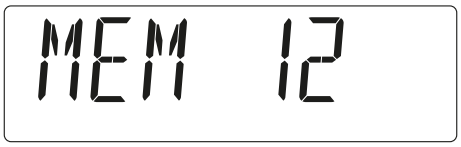


Piece Weight



Flashing weight value of the preset tare value

Count

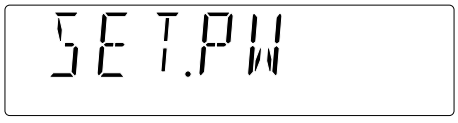


Adopt the value by briefly pressing the On/Zero Off (Yes) key. Continue with point ②.

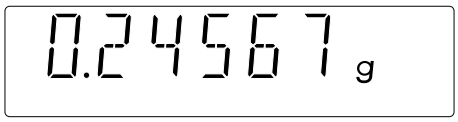
Press the Target (Back) key to return to entering the product name.

- ② Sample weight entry display

Weight

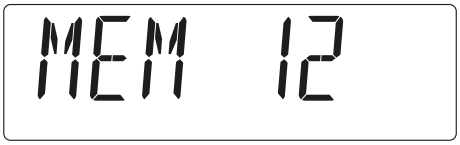


Piece Weight



Flashing weight value of the sample weight in the unit (only g or oz are possible as units here)

Count

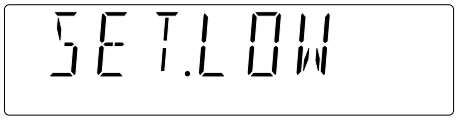


Adopt the value by briefly pressing the On/Zero Off (Yes) key. Continue with point ③.

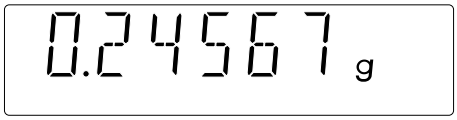
Press the Target (Back) key to return to point ①.

- ③ Lower checking limit entry display

Weight

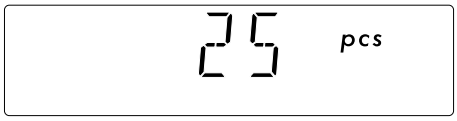


Piece Weight



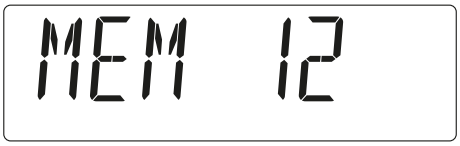
flashing weight value of the lower limit, if Check Weighing has been initialized.

Piece Weight



Flashing quantity, if Check Counting has been initialized.

Count



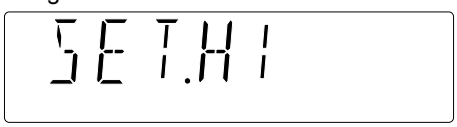
Pressing and holding the Print Unit key will switch the unit between a weight unit and a pieces unit, if the product had not been initialized in advance (= empty product). This selection also affects point ④ (specifying upper limit).

Adopt the entered value by briefly pressing the On/Zero Off (Yes) key. Continue with point ④.

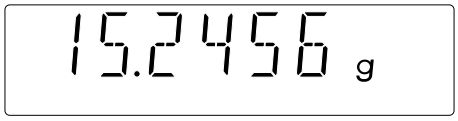
Press the Target (Back) key to return to point ②.

- ④ Upper checking limit entry display

Weight



Piece Weight

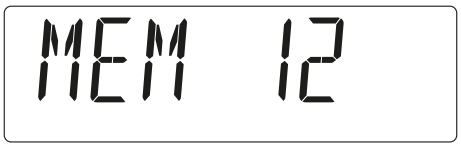


flashing weight value of the upper limit, if Check Weighing has been initialized.

Piece Weight

Flashing quantity, if Check Counting has been initialized

Count



For handling of an empty product, see point ③.

Adopt the value by briefly pressing the On/Zero Off (Yes) key. Continue with point ⑤.

Press the Target (Back) key to return to point ③.

The limit values are checked under the same conditions as defined in Chapter 5.2.4.2.1.

If a condition is not complied with, [LIM.ERR] is displayed briefly on the "PW" display.

Count

Then the entry process is continued for the lower limit with the old value.

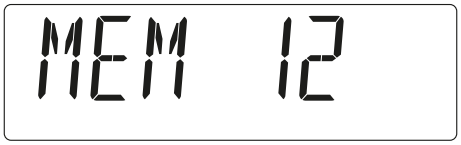
- ⑤ Saving entry display

Weight

flashes

The "PW" display is empty.

Count



Adopt the product by briefly pressing the On/Zero Off (Yes) key or Mem.

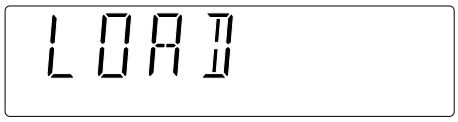
Press the Target (Back) key to return to point ④.

- The applications are initialized depending on the product data. If Check Weighing has previously been deactivated and the product now contains a limit value > 0, Check Weighing is automatically initialized and vice versa.
- The applications are run, the change or initialization process has been completed.

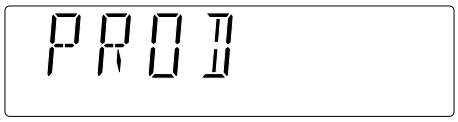
5.2.8.4 Deleting product memory/parameters

1. Enter a product number via the keypad or using a scanner.
   ▷ The number is displayed in the "Count" display.
2. Briefly press the [Mem] key.
   ▷ The following is displayed in the displays:

   Weight

   Piece Weight

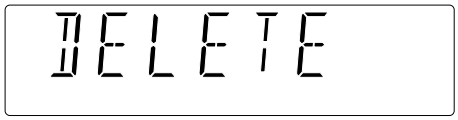
   

   Count

3. Briefly press the [C +/-] key.
   ▷ The following is displayed in the displays:

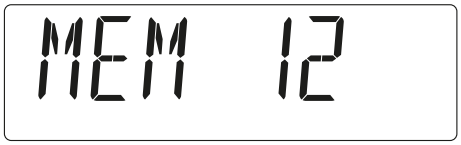
   Weight

   flashes

   The "PW" display is empty.

   Count

4. Briefly pressing the [On/Zero Off] (Yes) key or the [Mem] (Exit) key will delete the product memory; briefly pressing the [M+ Menu] (Exit) key will cancel the process.

5.2.8.5 Printouts

In the menu:[PRINT]- [CONTNT] it is possible to specify that the product memory and product name need to be printed:

Printout	Description
`PROD-ID:  2`	Product memory number (ID), here 2
`PROD-NAME: Metal4712123`	Product name; max. 12 alphanumeric characters.

5.2.9 Handling of the second scale

If a second scale is activated, the "Weight" display looks like this:

Weight

scale WP1 is activated

Weight

scale WP2 is activated

Press and hold the * 1 2 key to switch between the scales: If scale 1 is activated, this switches to scale 2 (and vice versa).

The scale values of the active scale are adopted into the display and used for the applications Counting, Checking as well as Printing and PC Output. This means that only the weights from the visible scale are used.

The initialization of the Counting application only takes place on scale 1. The initialization of the checking application, on the other hand, can take place on both scales. The initialized application is run on scale 2. A product can be loaded irrespective of the active scale.

5.3 Menu

Activated menu selections are marked with the following icon: [o].

When the last menu level has been reached, the active selected parameter, which is marked with [o], is displayed first.

If there has been a change in one or more menu items, these parameters are retained after exiting the menu.

If the menu is activated by pressing and holding the M+ Menu key, then [M.E.N.U] is displayed. If the key is released, the first element of the top menu level [METRO] is displayed.

The menu item [END] can be used to exit a menu level. The display switches to the level above. If the top menu level is active and [E.N.D] is selected, the menu is exited.

Entries via the keyboard are only possible in a status in which an entry is expected.

The scale settings can be adjusted in the user menu (menu mode).

Note:

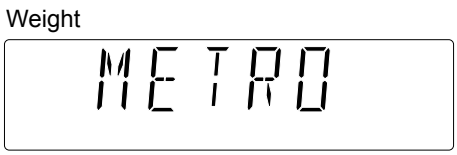
If appropriate interface options are installed, additional sub-menus may be available. Information on this can be found in the manual for the interface used.

5.3.1 Menu display in displays

Display of the first three menu levels in the three displays.

Example:

- First menu level:

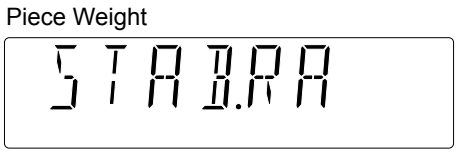


First menu level

"PW" display and "Count" display are empty.

- The second menu level is selected:

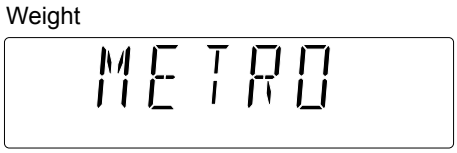
First menu level



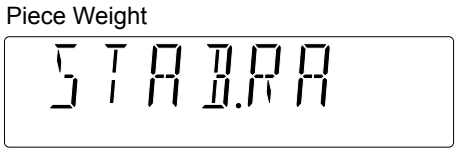
Second menu level

The "Count" display is empty.

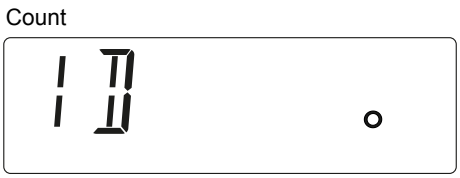
- The third level is reached:



First menu level



Second menu level



Third menu level = selection

If there are more than three menu levels, the last level is displayed.

Example:

- The second level is reached:

  Weight

  Second menu level

  Piece Weight

  Third menu level

  The "Count" display is empty.

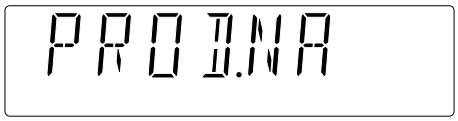
- The third level is reached:

  Weight

  Second menu level

  Piece Weight

  Third menu level

  The "Count" display is empty.

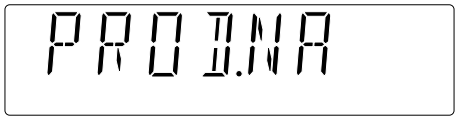
- The fourth level is reached:

  Weight

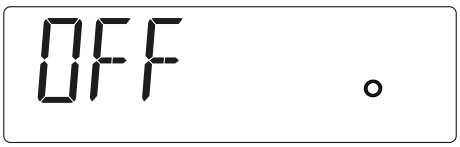
  Second menu level

  Piece Weight

  Third menu level

Count



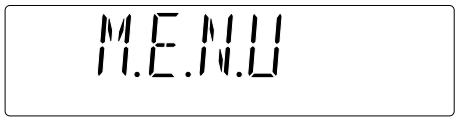
Fourth menu level = selection

5.3.2 Menu mode

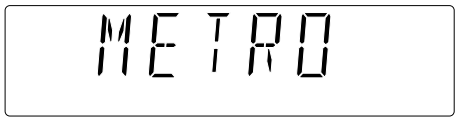
Call up the menu mode:

1. Press and hold the M+ Menu key.
   ▷ In the "Weight" display, [M.E.N.U] is displayed for two seconds and then the 1st menu item [Metro] is displayed.

   Weight

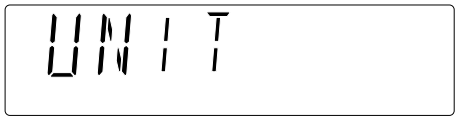
   

   Weight

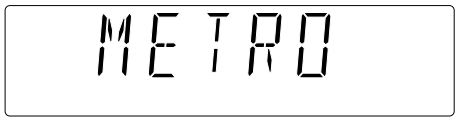
2. Press the Print Unit (No) key to access the next menu item.
   ▷ The second menu item [UNIT] is shown in the "Weight" display.

   Weight

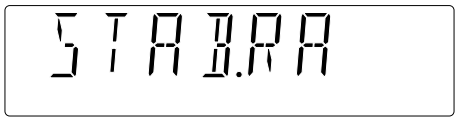
   

3. Or press the On/Zero Off (Yes) key to display the sub-menu in the "PW" display (in this example [[METRO][STAB.RA]]).
   ▷ The second menu level is displayed in the "PW" display.

   Weight

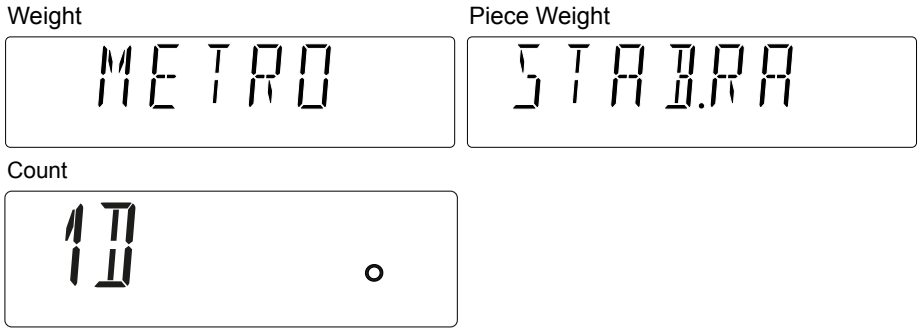
   

   Piece Weight

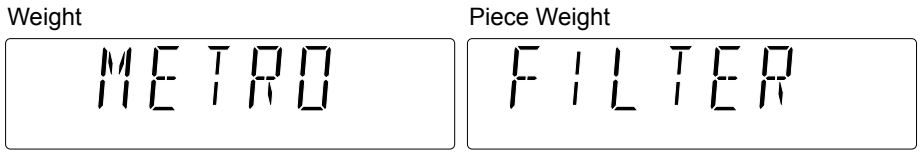
   The "Count" display is empty.

4. To call up a menu selection (in this example [[METRO][STAB.RA]]), press the On/Zero Off (Yes) key.
   ▷ The value 1D flashes in the "Count" display.



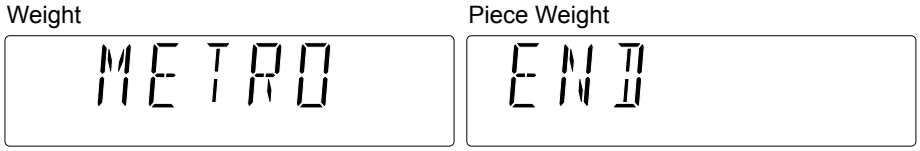
The current selection is marked with [∘].

5. Press the Print Unit (No) key in order to change the setting, or the On/Zero Off (Yes) key in order to adopt the setting.
   ▷ The next element of the second menu level [FILTER] is displayed in the "PW" display.

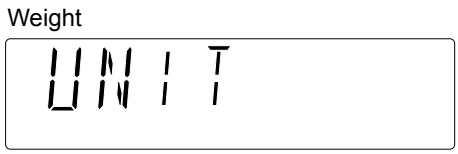


The "Count" display is empty.

6. Press the Print Unit (No) key in order to select the next sub-menu in the "PW" display, or press the Target (Back) key to go back.



7. Press the On/Zero Off (Yes) key when [END] is displayed.
   ▷ The second menu item [UNIT] is shown in the "Weight" display.



8. Press the M+ Menu (Exit) key to exit the menu.

5.3.3 Processing entered values in the menu

For menu items with numerical settings, e.g. interval, the current setting is displayed with flashing digits.

1. Press the On/Zero Off (Yes) key in order to adopt the setting, or the Print Unit (No) key in order to continue processing.

2. To exit the menu elements, press the On/Zero Off (Yes) key to access the next menu item, or the Print Unit (No) key to access the top level of the current menu.

5.3.4 Menu navigation

Overview of the first menu level:

METRO	Metrology (see Chapter 5.3.4.1)
UNIT	Weight units (see Chapter 5.3.4.2)
OP.FUNC	Operating functions (see Chapter 5.3.4.3)
PRINT	Printer outputs (see Chapter 5.3.4.4)
PRN.COM	Printer port communication (see Chapter 5.3.4.5)
PC.OUT	PC output (see Chapter 5.3.4.6)
PC.COM	PC port communication (see Chapter 5.3.4.7)
CAL.ADJ	Calibration/adjustment (see Chapter 5.3.4.8)
AD.CON2	ADC configuration of the second scale, **is only displayed if** [AD.CON2] (see Chapter 5.3.4.9) has been activated previously
INFO	Info (display of serial number and type designation)(see Chapter 5.3.4.10)
SECURE	Block menu items (see Chapter 5.3.4.11)
E.N.D.	Exiting menus

5.3.4.1 [METRO] menu selection

The functions of the displays and scales can be adjusted in this menu.

Factory settings are marked with "*"

METRO	
STAB.RA	Stability range value for both scales
0.5D	1/2 d
1D	1 d*
2D	2 d
4D	4 d
FILTER	Adjustment filter valid for both scales
LOW	Lower accuracy, short stabilization time
MED	Normal accuracy, average stabilization time*
HI	High accuracy, long stabilization time
A.ZERO.T	Automatic zero point tracking valid for both scales
OFF	Switching off
0.5D	Drift up to 0.5 d/second*
1D	Drift up to 1 d/second
3D	Drift up to 3 d/second
AUT.OFF	Counter for automatic switching off
OFF	Switching off*
1 MIN	Switching off after 1 minute with no activity
5 MIN	Switching off after 5 minutes with no activity
10 MIN	Switching off after 10 minutes with no activity
RESET	Factory settings
NO	not reset*
YES	activated
END	Exit menu level

5.3.4.2 [UNIT] menu selection

The weight unit can be selected in this menu.

Factory settings are marked with "*"

UNIT	
├ **kg**	Kilogram
│ ├ **OFF**	deactivated
│ └ **ON**	activated*
├ **g**	Gram
│ ├ **OFF**	deactivated
│ └ **ON**	activated*
├ **lb**	Pound
│ ├ **OFF**	deactivated
│ └ **ON**	activated*
├ **oz**	Ounce
│ ├ **OFF**	deactivated
│ └ **ON**	activated*
├ **lb:oz**	Pound:ounce
│ ├ **OFF**	deactivated*
│ └ **ON**	activated
├ **RESET**	Factory settings
│ ├ **NO**	not reset*
│ └ **YES**	activated
└ **END**	Exit menu level

5.3.4.3 [OP.FUNC] menu selection

The scale parameters can be specified in this menu.

Factory settings are marked with "*"

OP.FUNC	
├ **WP2**	Activate a second scale
│ ├ **OFF**	deactivated*
│ └ **ON**	activate
├ **UNIT.ON**	Select unit when switching on
│ ├ **AUTO**	Last unit used when switching off*
│ ├ **kg**	Kilogram
│ ├ **g**	Gram
│ ├ **lb**	Pound
│ ├ **oz**	Ounce
│ └ **lb:oz**	Pound:ounce
├ **ZERO.RA**	Zero range
│ ├ **2%**	2% max. load
│ └ **10%**	10% max. load*
├ **A.OPT**	Automatic optimization of the sample weight
│ ├ **OFF**	deactivated
│ └ **ON**	activate*
├ **A.TARE**	Automatic tare
│ ├ **OFF**	deactivated*
│ ├ **ON**	1st stable weight is tared
│ ├ **ON-ACC**	Stable loads within the tolerance limits are tared (in all checking applications)
├ **BEEP.OP**	

	Signal when the sample weight has been automatically optimized
OFF	deactivated
ON	activate*
BEEP.SI	Signal (in the Checking application)
OFF	deactivated*
ACCEPT	Signal when the weight is within the tolerance limits
UNDER	Signal when the weight is below the lower limit
OVER	Signal when the weight is above the upper limit
UNDOVR	Signal when the weight is outside the tolerance limits
BEEP.KE	Key tone
OFF	deactivated
ON	activated*
TOT.SET	Totalizing setting
OFF	deactivated
AUTO	Automatic totalizing
MAN	Manual totalizing*
LIGHT.T	Duration of the background lighting (D.LIGHT = AUTO)
3 SEC	Switching off of the background lighting after 3 seconds with no activity
5 SEC	Switching off of the background lighting after 5 seconds with no activity*
8 SEC	Switching off of the background lighting after 8 seconds with no activity
D.LIGHT	Background lighting of the display
OFF	deactivated
ON	activated
AUTO	Switches on when a key is pressed or the displayed weight changes*
COM.EQU	Communication module
OFF	deactivated*
BLUE.TH	Bluetooth activated (if the Bluetooth module is installed)
WIFI	WiFi activated (if the WiFi module is installed)
ETHER.N	Ethernet activated (if the Ethernet module is installed)
RESET	Factory settings
NO	not reset*
YES	activated
END	Exit menu level

5.3.4.4 [PRINT] menu selection

print conditions and printouts can be configured in this menu.

Factory settings are marked with "*"

PRINT

STABLE	Print criteria
OFF	Values are printed immediately
ON	Values are only printed if they are stable*

A.PRINT	Automatic printout
OFF	deactivated*
ON.STAB	One-time printing on stability, if weight > 1 d
INTER	Printing in the specified interval
1...3600	1 ... 3,600 seconds
CONT	Print continuously
ACCEPT	Printing on stability and within the tolerance limits
CONTNT	Content of a printout
RESULT	Displayed value
OFF	deactivated
ON	activated*
GROSS	Gross value
OFF	deactivated*
ON	activated
NET	Net value
OFF	deactivated*
ON	activated
TARE	Tare
OFF	deactivated*
ON	activated
PRE.TAR	Preset tare value, if available
OFF	deactivated*
ON	activated
HEADER	Header is described via the PC interface (see SBI specifications)
OFF	deactivated*
ON	activated
FOOTER	Info on the footer; is specified via the user interface (see SBI specifications)
OFF	deactivated*
ON	activated
MODE	Info on the application mode
OFF	deactivated*
ON	activated
INFO	Application parameters
OFF	deactivated*
ON	activated
PW	Sample weight
OFF	deactivated*
ON	activated
TOTAL	Totalizing memory/statistics data
OFF	deactivated*
RESULT	Totalizing memory is printed
ALL	Result and statistics parameters such as min, max, etc.
PROD.ID	Product memory location number
OFF	deactivated*
ON	activated
PROD.NA	Product name; max. 12 alphanumeric characters
OFF	deactivated*

ON	activated
SERNO	Serial number of the active (displayed) scale Example: W1 38457989 or W2 38457989
OFF	deactivated*
ON	activated
LI.SET	Totalizing memory
FORMAT	Format sent to printer and PC
MULTI	Multi-line (single-column) printout*
SINGLE	Single-line printout; the entire content defined above is printed in one line
FEED	Setting of the paper feed
LINE	One-line feed
4LF	Four-line feed*
FORM	Page feed after printing
END	
PROD.LI	Print entire product memory
NO	deactivated*
YES	Print all products This happens at the time when Yes is selected. Then all products are printed. Afterwards No is specified automatically.
RESET	Factory settings
NO	not reset*
YES	activated
END	Exit menu level

In this case "without stability" means weight values with or without stability.

In this case "with stability" means only weight values with stability.

5.3.4.5 [PRN.COM] menu selection

The parameters for the print communication can be specified in this menu.

Factory settings are marked with "*"

PRN.COM

BAUD	Baud rate
2400	2,400
4800	4,800
9600	9,600*
19200	19,200
38400	38,400
57600	57,600
115200	115,200
PARITY	Parity
7 EVEN	7 data bits, even parity
7 Odd	7 data bits, odd parity
7 NONE	7 data bits, no parity
8 NONE	8 data bits, no parity*
STOP	Stop bit
1	1*
2	2
RESET	Factory settings
NO	not reset*
YES	activated

├ **END**	Exit menu level

5.3.4.6 [PC.OUT] menu selection

The parameters for the PC output can be specified in this menu.

This is an additional interface based on RS-232 with USB-C port.

Factory settings are marked with "*"

PC.OUT	
├ **MODE**	PC output mode
│ ├ **OFF**	deactivated*
│ ├ **MAN.OUT**	Manual output without stability = device expects a request via the serial interface. The response is generated **immediately**.
│ ├ **MAN.STA**	Manual output without stability = device expects a request via the serial interface.
│ ├ **INT.OUT**	Interval output with 16 characters **without** stability = device sends weight values automatically without stability in the selected interval of the update cycles for the display (see below)
│ ├ **AUT.OUT**	Automatic output **without** stability with 16 characters = device sends weight values without stability automatically **on every** update cycle for the display
│ ├ **AUT.STA**	Automatic output with stability **with** 16 characters on every value change = device automatically sends weight values with stability
├ **INTERV**	Specify output interval (if INT.OUT is selected)
│ ├ **1 CYC**	Every display cycle
│ ├ **2 CYC**	After 2 display cycles
│ ├ **5 CYC**	After 5 display cycles
│ ├ **10 CYC**	After 10 display cycles*
│ ├ **20 CYC**	After 20 display cycles
│ ├ **50 CYC**	After 50 display cycles
│ ├ **100 CYC**	After 100 display cycles
├ **RESET**	Factory settings
│ ├ **NO**	not reset*
│ ├ **YES**	activated
├ **END**	Exit menu level

In this case "without stability" means weight values with or without stability.

In this case "with stability" means only weight values with stability!

5.3.4.7 [PC.COM] menu selection

The parameters for the PC communication can be specified in this menu.

Factory settings are marked with "*"

PC.COM	
├ **BAUD**	Baud rate
│ ├ **4800**	4,800
│ ├ **9600**	9,600*
│ ├ **19200**	19,200
│ ├ **38400**	38,400

57600	57,600
115200	115,200
PARITY	Parity
7 EVEN	7 data bits, even parity
7 Odd	7 data bits, odd parity
7 NONE	7 data bits, no parity
8 NONE	8 data bits, no parity*
7 MARK	7 data bits, mark parity
7 SPACE	7 data bits, space parity
STOP	Stop bit
1	1*
2	2
HAND.SH	Handshake
NONE	No handshake*
XON.XOF	No function
RESET	Factory settings
NO	not reset*
YES	activated
END	Exit menu level

5.3.4.8 [CAL.ADJ] menu selection

Factory settings are marked with "*"

CAL.ADJ

CAL	Initiates a two-point calibration (zero and max. load)
WP 1	Initiates a two-point calibration for WP1 The calibration weight can be freely selected by entering the value.
WP 2	**Only visible if a second scale is defined in the menu [OP.FUNC]- [WP2]**: Initiates a two-point calibration for WP2 The calibration weight can be freely selected by entering the value.
LIN	Initiates a linearization (zero, half weighing range and max. load)
WP 1	Initiates a linearization for WP1 The weight values are fixed.
WP 2	**Only visible if a second scale is defined in the menu [OP.FUNC]- [WP2]**: Initiates a linearization for WP2 The weight values are fixed.
GEO	The adjustment of the calibration based on the current location is carried out using the geographic adjustment factor (GEO)
12	Selectable range from 0 to 31 in individual increments*
END	Exit menu level

5.3.4.9 [AD.CON2] menu selection

The ADC configuration for scale 2 is carried out in this menu.

Note:

- The increment (readability) of the second scale must be bigger than the increment of the first scale (d2 > d1).

  Example: If the readability of the first scale = d1 = 1 g, then the readability of the second scale must be = d2 = 2 g (d2 cannot be 1 g or 0.5 g).

- The quotient from calibration weight and readability (CAL.WGT / d) must be ≥ 1,000. This also affect the max. load (MAX.CAP), as: MAX.CAP ≥ CAL.WGT.

AD.CON2	
D	The readability (1 position) can only be changed via the Print Unit key or the Target key.
CAL.WGT	Calibration weight, which is used in [CAL.ADJ]-[CAL]- [WP2] and can be freely selected within 30% of the max. load and min. load
MAX.CAP	Max. load of the scale If this entered load has been reached, "H" is displayed.
END	Menüebene verlassen

5.3.4.10 [INFO] menu selection

INFO	
SER.NUM	Display serial number (if two scales are selected, two serial numbers are displayed)
W1.471	Using the Print Unit (No) key or the Target key will display the next six digits or display the first six digits again.
W2.471	Using the Print Unit (No) key or the Target key will display the next six digits or display the first six digits again.
END	
TYPE	Display type name of the scale
SFT.VER	Display software version
SR 2.64	
GEO.DAT	Display selected GEO area, which is valid for both scales
12	Selected GEO area
WP1	Info WP1
D	Readability
MAX	Max. load
END	
WP2	Info WP2, if selected in the menu
D	Accuracy
MAX	Max. load
END	
LFT.MOD	Display status of the legal metrology mode: ON or OFF for **both** scales
OFF	Default mode

├ **ON**	Legal metrology mode is activated
├ **LOCK.SW**	Display status of the locking switch for both scales
├ **OPEN**	Switch is open
├ **CLOSED**	Switch is closed
├ **END**	Exit menu level

5.3.4.11 [SECURE] menu selection

The safety setting (lock) for menu access can be defined via this menu in order to prevent unauthorized interventions.

Factory settings are marked with "*"

SECURE

├ **S.METRO**	Metrology menu
├ **OFF**	Menu item can be changed*
├ **ON**	Lock menu item
├ **S.UNIT**	Unit menu
├ **OFF**	Menu item can be changed*
├ **ON**	Lock menu item
├ **S.OP.FUN**	Operating functions menu
├ **OFF**	Menu item can be changed*
├ **ON**	Lock menu item
├ **S.PRINT**	Print menu
├ **OFF**	Menu item can be changed*
├ **ON**	Lock menu item
├ **S.PR.COM**	Print communication menu
├ **OFF**	Menu item can be changed*
├ **ON**	Lock menu item
├ **S.PC.OUT**	PC output menu
├ **OFF**	Menu item can be changed*
├ **ON**	Lock menu item
├ **S.PC.COM**	PC communication menu
├ **OFF**	Menu item can be changed*
├ **ON**	Lock menu item
├ **S.CAL.AD**	Calibration menu
├ **OFF**	Menu item can be changed*
├ **ON**	Lock menu item
├ **S.ADC.CO**	ADC menu
├ **OFF**	Menu item can be changed*
├ **ON**	Lock menu item
├ **RESET**	Restore factory setting of the current menu
├ **OFF**	Menu item can be changed*
├ **ON**	Lock menu item
├ **END**	Exit menu level

5.4 Calibration, adjustment

5.4.1 Calibration

The calibration takes place following activation of menu item [WP1] or [WP2] in the menu.

Weights for calibration points can be freely selected when the value is flashing.

If the unit used for normal weighing is pounds, the calibration unit is also lb (pound).

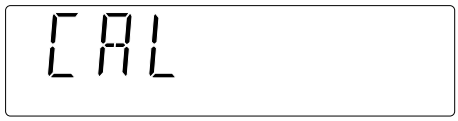
If the unit used for normal weighing is ounces, the calibration unit is also oz (ounce).

If a metric unit (kg or g) is used for normal weighing, the calibration unit is kg (kilograms).

5.4.1.1 Calibration

1. WP1 or WP2 (if available) has been activated.
   ▷ The following is displayed in the displays:

   Weight

   Second menu level = calibration

   Piece Weight

   Third menu level = here WP1

   Count

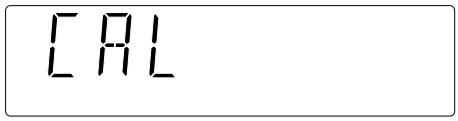
   

   First weight value (flashing)

2. Remove all weights from the weighing pan and press the On/Zero Off (Yes) key.
   ▷ Now the first calibration point is adopted and saved internally.

   In this time, the following is displayed in the displays:

   Weight

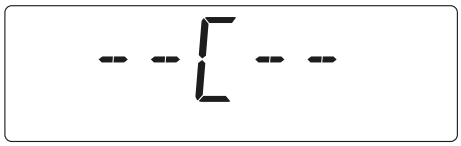
   Second menu level = calibration

   Piece Weight

   Third menu level = here WP1

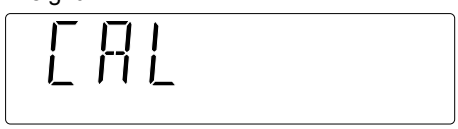
   Count

   Wait message, until the weight has been adopted

   The second weighing point is displayed flashing.

   Weight

   Second menu level = calibration

Piece Weight

Third menu level = here WP1

Count

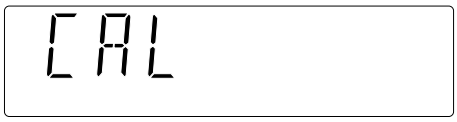
Flashing weight, which can be changed via the keypad

3. If the correct second weighing point is selected, press the On/Zero Off (Yes) key.

   Adopt the second weighing point. During the internal calculations, the same display appears in the display as for step 2.

   If the calculations were error-free, the following is displayed on the display for around 2 seconds:

   Weight

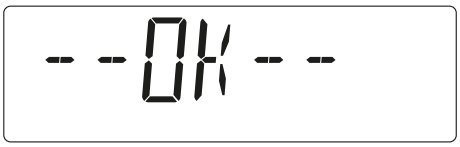
   Second menu level = calibration

   Piece Weight

   Third menu level = here WP1

   Count

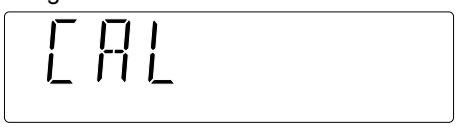
   

   OK message = calibration is complete

   The device exits the menu and returns back to the normal application mode.

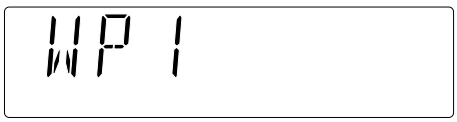
   If an error occurred during the calibration, the following is displayed on the displays for around 2 seconds:

   Weight

   Second menu level = calibration

   Piece Weight

   Third menu level = here WP1

   Count

   Error message = calibration is canceled

The device exits the menu and returns back to the normal application mode.

The process is repeated for WP2. WP2 is displayed in the "PW" display and the device switches automatically to scale 2.

5.4.1.2 Menu settings

CAL.ADJ	
CAL	Selection of the scale to be calibrated and start of calibration
WP 1	Initiates a two-point calibration (zero and max. load) for WP1 This process can be canceled by pressing the "Exit" key. The calibration weight can be freely selected by entering the value.
WP 2	**Only visible if a second scale is defined in the menu**: Initiates a two-point calibration (zero and max. load) for WP2 This process can be canceled by pressing the "Exit" key. The calibration weight can be freely selected by entering the value.
LIN	
GEO	
END	Exit menu level

5.4.2 Linearization

The linearization takes place following activation of menu item [WP1] or [WP2] in the menu.

5.4.2.1 Linearization process

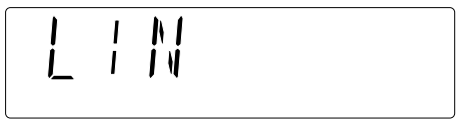
Linearization weights are fixed. There are three points: Zero, 0.5* maximum load, maximum load.

The procedure is similar to the procedure for the calibration. The following is displayed in the "Weight" display: [LIN]

▶ WP1 or WP2 (if available) has been activated.

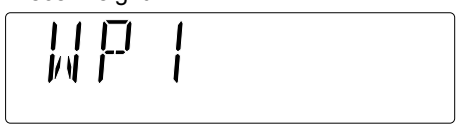
▷ The following is displayed in the displays:

Weight



Second menu level = calibration

Piece Weight



Third menu level = here WP1

Count

First weight value (flashing)

5.4.2.2 Menu settings

CAL.ADJ

- **CAL**
- **LIN** — Selection of the scale to be linearized and starting the linearization initiates a linearization process for WP1
  - **WP 1** — Initiates a linearization process for WP1. This process can be canceled by pressing the M+ Menu (Exit) key. The weight values are fixed.
  - **WP 2** — **Only visible if a second scale is defined in the menu.** Initiates a linearization process for WP2. This process can be canceled by pressing the M+ Menu (Exit) key. The weight values are fixed.
- **GEO**
- **END** — Exit menu level

5.4.3 Geographic adjustment factor (GEO) – procedure

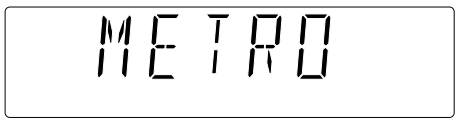
The adjustment of the calibration based on the current location is carried out using the geographic adjustment factor [GEO]. (Settings from 0 ... 31 are available.) The table under 5.4.4 contains the GEO values for a wide range of latitudes.

Call up the menu mode:

1. Press and hold the M+ Menu key.

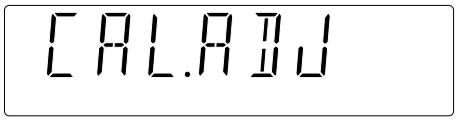
   ▷ The first menu item [METRO] is displayed in the "Weight" display.

   Weight

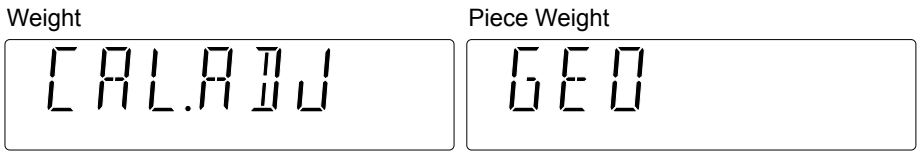
2. Press the Print Unit (No) key until the menu item [CAL.ADJ] is displayed in the "Weight" display.

   Weight

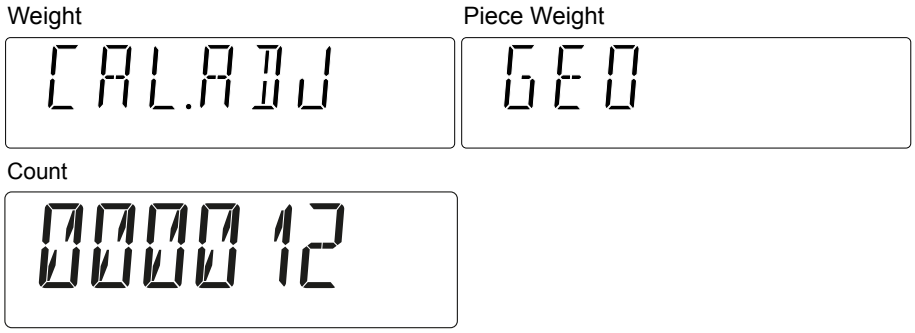
   

3. Press the On/Zero Off (Yes) key to access the sub-menu item.

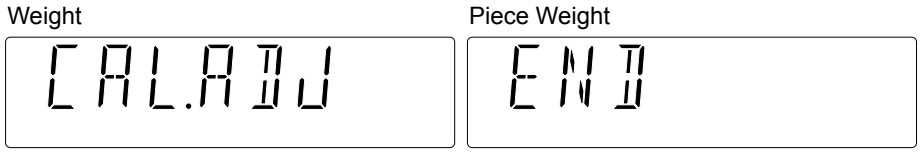
4. Press the Print Unit (No) key until the menu item [GEO] is displayed in the "PW" display.



5. Press the On/Zero Off (Yes) key to start the GEO selection.
   ▷ The GEO value [12] set by default flashes in the display.



6. To change the value, a value from 0 ... 31 can be entered using the keypad.
7. Press the On/Zero Off (Yes) key to confirm the GEO value.
   ▷ The GEO value has been saved when [END] is displayed in the "PW" display.



8. Press the On/Zero Off (Yes) key.
   ▷ The menu item [INFO] is displayed in the "Weight" display.
9. Press the M+ Menu (Exit) key to exit the menu.

5.4.4 GEO code table

		Altitude in meters										
		0	**325**	**650**	**975**	**1,300**	**1,625**	**1,950**	**2,275**	**2,600**	**2,925**	**3,250**
		325	**650**	**975**	**1,300**	**1,625**	**1,950**	**2,275**	**2,600**	**2,925**	**3,250**	**3,575**
		Altitude in feet										
		0	**1,016**	**2,130**	**3,200**	**4,260**	**5,330**	**6,400**	**7,460**	**8,530**	**9,600**	**10,660**
		1,060	**2,130**	**3,200**	**4,260**	**5,330**	**6,400**	**7,460**	**8,530**	**9,600**	**10,660**	**11,730**
Latitude		**GEO value**										
0°00'	**5°46'**	5	4	4	3	3	2	2	1	1	0	0
5°46'	**9°52'**	5	5	4	4	3	3	2	2	1	1	0
9°52'	**12°44'**	6	5	5	4	4	3	3	2	2	1	1

		Altitude in meters										
		0	325	650	975	1,300	1,625	1,950	2,275	2,600	2,925	3,250
		325	650	975	1,300	1,625	1,950	2,275	2,600	2,925	3,250	3,575
		Altitude in feet										
		0	1,016	2,130	3,200	4,260	5,330	6,400	7,460	8,530	9,600	10,660
		1,060	2,130	3,200	4,260	5,330	6,400	7,460	8,530	9,600	10,660	11,730
Latitude		GEO value										
12°44'	15°06'	6	6	5	5	4	4	3	3	2	2	1
15°06'	17°10'	7	6	6	5	5	4	4	3	3	2	2
17°10'	19°02'	7	7	6	6	5	5	4	4	3	3	2
19°02'	20°45'	8	7	7	6	6	5	5	4	4	3	3
20°45'	22°22'	8	8	7	7	6	6	5	5	4	4	3
22°22'	23°54'	9	8	8	7	7	6	6	5	5	4	4
23°54'	25°21'	9	9	8	8	7	7	6	6	5	5	4
25°21'	26°45'	10	9	9	8	8	7	7	6	6	5	5
26°45'	28°06'	10	10	9	9	8	8	7	7	6	6	5
28°06'	29°25'	11	10	10	9	9	8	8	7	7	6	6
29°25'	30°41'	11	11	10	10	9	9	8	8	7	7	6
30°41'	31°56'	12	11	11	10	10	9	9	8	8	7	7
31°56'	33°09'	12	12	11	11	10	10	9	9	8	8	7
33°09'	34°21'	13	12	12	11	11	10	10	9	9	8	8
34°21'	35°31'	13	13	12	12	11	11	10	10	9	9	8
35°31'	36°41'	14	13	13	12	12	11	11	10	10	9	9
36°41'	37°50'	14	14	13	13	12	12	11	11	10	10	9
37°50'	38°58'	15	14	14	13	13	12	12	11	11	10	10
38°58'	40°05'	15	15	14	14	13	13	12	12	11	11	10
40°05'	41°12'	16	15	15	14	14	13	13	12	12	11	11
41°12'	42°19'	16	16	15	15	14	14	13	13	12	12	11
42°19'	43°26'	17	16	16	15	15	14	14	13	13	12	12
43°26'	44°32'	17	17	16	16	15	15	14	14	13	13	12
44°32'	45°38'	18	17	17	16	16	15	15	14	14	13	13
45°38'	46°45'	18	18	17	17	16	16	15	15	14	14	13
46°45'	47°51'	19	18	18	17	17	16	16	15	15	14	14
47°51'	48°58'	19	19	18	18	17	17	16	16	15	15	14
48°58'	50°16'	20	19	19	18	18	17	17	16	16	15	15
50°16'	51°13'	20	20	19	19	18	18	17	17	16	16	15

		Altitude in meters										
		0	325	650	975	1,300	1,625	1,950	2,275	2,600	2,925	3,250
		325	650	975	1,300	1,625	1,950	2,275	2,600	2,925	3,250	3,575
		Altitude in feet										
		0	1,016	2,130	3,200	4,260	5,330	6,400	7,460	8,530	9,600	10,660
		1,060	2,130	3,200	4,260	5,330	6,400	7,460	8,530	9,600	10,660	11,730
Latitude		GEO value										
51°13'	52°22'	21	20	20	19	19	18	18	17	17	16	16
52°22'	53°31'	21	21	20	20	19	19	18	18	17	17	16
53°31'	54°41'	22	21	21	20	20	19	19	18	18	17	17
54°41'	55°52'	22	22	21	21	20	20	19	19	18	18	17
55°52'	57°04'	23	22	22	21	21	20	20	19	19	18	18
57°04'	58°17'	23	23	22	22	21	21	20	20	19	19	18
58°17'	59°32'	24	23	23	22	22	21	21	20	20	19	19
58°17'	59°32'	24	23	23	22	22	21	21	20	20	19	19
60°49'	62°90'	25	24	24	23	23	22	22	21	21	20	20
62°90'	63°30'	25	25	24	24	23	23	22	22	21	21	20
63°30'	64°55'	26	25	25	24	24	23	23	22	22	21	21
64°55'	66°24'	26	26	25	25	24	24	23	23	22	22	21
66°24'	67°57'	27	26	26	25	25	24	24	23	23	22	22
67°57'	69°35'	27	27	26	26	25	25	24	24	23	23	22
69°35'	71°21'	28	27	27	26	26	25	25	24	24	23	23
71°21'	73°16'	28	28	27	27	26	26	25	25	24	24	23
73°16'	75°24'	29	28	28	27	27	26	26	25	25	24	24
75°24'	77°55'	29	29	28	28	27	27	26	26	25	25	24
77°55'	80°56'	30	29	29	28	28	27	27	26	26	25	25
80°56'	85°45'	30	30	29	29	28	28	27	27	26	26	25
85°45'	90°00'	31	30	30	29	29	28	28	27	27	26	26

5.5 Print

During every print process, [PRINT] is displayed in the "Weight" display for around 1 second (maximum).

5.5.1 Output format

General definitions:

- Space = 0x20 hex as ASCII character.
- CRLF = 0x0D0A hex as ASCII character.
- The algebraic sign is inserted directly next to the MSB of a value with a space in between.

  Example: `- 14.112`
- The values are written over each other:

  Example:

```
- 10.075 oz OVERCRLF
   0.015 oz TCRLF
- 10.060 oz G#CRLF
```

- A stable weight value is printed with a unit. `10.25 kg`

  A non-stable weight value is printed without a unit: `10.25`
- A stable negative gross weight value has a "!" instead of a unit: `- 0.25 !`

  A non-stable negative gross weight value has no unit symbol: `- 0.25`
- A defective format is generated if no valid weight value is displayed/if an error message is displayed. The error number in the display is also printed: e.g. [Err 8.1].

5.5.2 Product memory

Print entire product memory, see menu item [PRINT]- [PROD.LI]:

Printout	Description
`PROD-ID: 2`	Product memory, here 2. Memory 1 is empty
`PROD-NAME: Metal4712123`	Product description
`5.23 g PT`	Preset tare value
`WREF 0.43245 g`	Sample weight
`UNDER LIMIT 580.0 g`	Lower limit
`OVER LIMIT 681.0 g`	Upper limit
`MODE: CHECK WEIGHT`	Checking application
	Line feed
`PROD-ID: 3`	Product memory, here 3. Only counting without preset tare value
`PROD-NAME: Metal458ab`	Product description
`0.0 g PT`	Preset tare value
`WREF 0.83241 g`	Sample weight
`UNDER LIMIT 0.0 g`	Lower limit
`OVER LIMIT 0.0 g`	Upper limit
`MODE: CHECK OFF`	Checking application
	Line feed
`PROD-ID: 8`	Product memory, here 8. Memory 4, 5, 6, 7 are empty
`PROD-NAME: Metal471`	Product description
`0.0 g PT`	Preset tare value
`WREF 0.0 g`	Sample weight
`UNDER LIMIT 580.0 g`	Lower limit
`OVER LIMIT 681.0 g`	Upper limit
`MODE: CHECK WEIGHT`	Checking application
	Line feed

5.5.3 Menu settings: Print

The [PRINT] menu item has the following sub-menus:

PRINT

STABLE	Print criteria
A.PRINT	Automatic printout
CONTNT	Content of a log printout
LI.SET	Frame format
PROD.LI	Print entire product memory
RESET	Set [PRINT] menu item to factory setting
END	Exit menu level

Print conditions

Define conditions in the [PRINT] menu item (see Chapter 5.3.4.4)

Printout contents

- The contents of a print log are specified in the menu item [PRINT]- [CONTNT] (see Chapter 5.3.4.4).

  Any parameter selected here is printed for **every** printout, even if there is no content there.

  Example: If there is no tare value available, `0.000 kg T` is printed.

This does not apply for totalizing and a preset tare value. The parameters for totalizing are only printed if totalizing is activated in the menu!

The preset tare is only printed if the memory is published.

- In the case of a stable weight value, the unit is always printed. A selection is not possible!

Frame format

The frame format is configured in the menu item [PRINT]- [LI.SET] (see Chapter 5.3.4.4).

Settings for the print interface

Selection of the interface parameters for printing [PRN.COM] (see Chapter 5.3.4.5).

5.6 PC output

This is an additional interface, which is based on the USB-C standard.

5.6.1 SBI interface

A computer connected via the PC interface (SBI communication) can send control commands to the analysis device in order to control the scale or application functions.

All commands have a shared frame format (data input format). They start with the characters ESC and end with the command end EOC (end of command). The end of command may also be a combination of CR and LF. The scale ignores all entries after EOC and before ESC.

Reading the displayed value:

ESC	P	EOC

Response (16 bytes):

V	W	W	W	W	W	W	W	W	W		E	E	E	CR	LF

V	Algebraic sign	Possible characters: "+", "–", " "
W	Weight value	Possible characters: "0"..."9", ". ", " "
E	Unit	Possible characters: "a"..."z", "A"..."Z", " "
CR	Carriage return	ASCII 0x0D
LF	Line feed	ASCII 0x0A

This format is also used for automatically generated telegrams, which are released according to the menu settings: [INT.OUT], [AUT.OUT], [AUT.STA] (see above).

Zeroing the scale:

ESC	Z	EOC

Response: see special response telegrams

Taring the scale:

ESC	T	EOC

Response: see special response telegrams

Special response telegrams:

There are some special responses, which are used as standard responses. Example: Error or confirmation. Special response telegrams are always 5 bytes.

OK (confirmed)

1	2	3	4	5
O	K	!	CR	LF

The scale confirms error-free performance of the command.

ERROR (error)

1	2	3	4	5
E	R	R	CR	LF

The scale reports an error when performing the command.

LOCKED (locked)

1	2	3	4	5
L	O	C	CR	LF

The command cannot be performed because a parameter is currently blocked.

6 Maintenance/repairs/cleaning

6.1 Repairs

Disconnect a defective device from the mains immediately.

Defective or damaged cables or screw connections must be replaced as a complete unit.

⚠ WARNING

Improper repairs can pose considerable risks to the user.

- Only have repairs carried out by Minebea Intec qualified dealers using original spare parts.

6.2 Cleaning

6.2.1 Instructions for cleaning

The device must be cleaned of contaminants on a regular basis.

Before cleaning, maintenance, or repairs, disconnect the device from the supply voltage.

If the scale is in a dry environment, wipe the weighing platform with a damp cloth. Household cleaning agents can be used. Please check the information provided by the manufacturer.

In the case of devices with an IP43 protection grade, no liquid must get into the scale.

The device must not be cleaned using a high-pressure or steam cleaner. Observe the IP protection grade.

If the device is cleaned with water that is too hot or too cold due to temperature differences, condensation may form in the device. Condensation may cause malfunctions in the device.

6.2.2 Cleaning agents

NOTICE

Some cleaning agents may not be compatible with the device material.

- Only use disinfectants and cleaning agents in line with the manufacturer's instructions.
- Do not use cleaning agents that are very acidic, very alkaline, or that contain a high level of chlorine. Avoid substances with a high or low pH value as otherwise there is an increased risk of corrosion.
- Do not use any abrasive sponges containing iron, steel brushes, or cleaning sponges made of steel wool.
- Always test cleaning agents and materials in non-critical areas first before using them.

7 Waste disposal policy

If the packaging is no longer required, please take it to your local waste disposal facility and/or a reputable disposal company or collection point. The packaging largely consists of environmentally friendly materials, which are suitable for recycling.

It is not permitted—even for small businesses—to dispose of this product with the regular household waste or at collection points run by local public waste disposal companies.

EU legislation requires its Member States to collect electrical and electronic equipment and dispose of it separately from other unsorted municipal waste so that it can then be recycled.

Before disposing of or scrapping the product, any batteries should be removed and taken to a suitable collection point.

Please see our T&Cs for further information.

We reserve the right not to accept products that have been contaminated with hazardous substances (ABC contamination) for repair.

8 Error correction

The table lists frequent problems, as well as possible causes and corrective measures.
If the problem persists, inform Minebea Intec or an authorized dealer.

Symptom	Possible cause	Corrective measure
Switching on not possible	Scale is not supplied with power	Check connections and voltage
Poor accuracy	Incorrect calibration Unstable environment	Perform a calibration Put scale in a suitable location
Application cannot be called up	Application has not been activated	Activate the application in the menu
Unit cannot be called up	Unit has not been activated	Activate the unit in the menu
Battery icon is flashing	Low battery level	Connect scale to the mains and charge battery
[Err 8.1]	Error during switching on	Read weight exceeds start-up/zeroing limit
[Err 8.2]	Error during switching on	Read weight falls below start-up/zeroing limit
[Err 8.3]	Overload range error	Read weight exceeds overload limit
[Err 8.4]	Underload range error	Read weight falls below overload limit
[Err 8.5]	Tare outside of the tare range	Adjust tare value accordingly
[Err 8.6]	Display capacity fallen short of	Weight > 6 characters
[Err 9.5]	Incorrect calibration data	Repeat calibration
	Busy	Display during tare setting, zero point setting, printing
[--NO--]	Action not permitted	Function cannot be performed
[CAL.ERR]	Calibration error Unstable environment Incorrect calibration weight	Repeat calibration Put scale in a suitable location Use correct calibration weight
[LIM.ERR]	Entered value outside of the permitted range	Enter a permitted value
[REF.ERR]	Invalid reference weight	The weight on the load plate is too high or too low in order to define a valid reference weight. Reduce or increase reference weight
Battery cannot be fully charged	Battery is defective	Have battery replaced by authorized Minebea Intec service dealer.

8.1 Service information

Contact the authorized service partners if a problem cannot be rectified with the aid of the troubleshooting information or is not described there. Our website http://www.puroscales.com provides information about your closest service partner.

9 Technical data

9.1 Specification

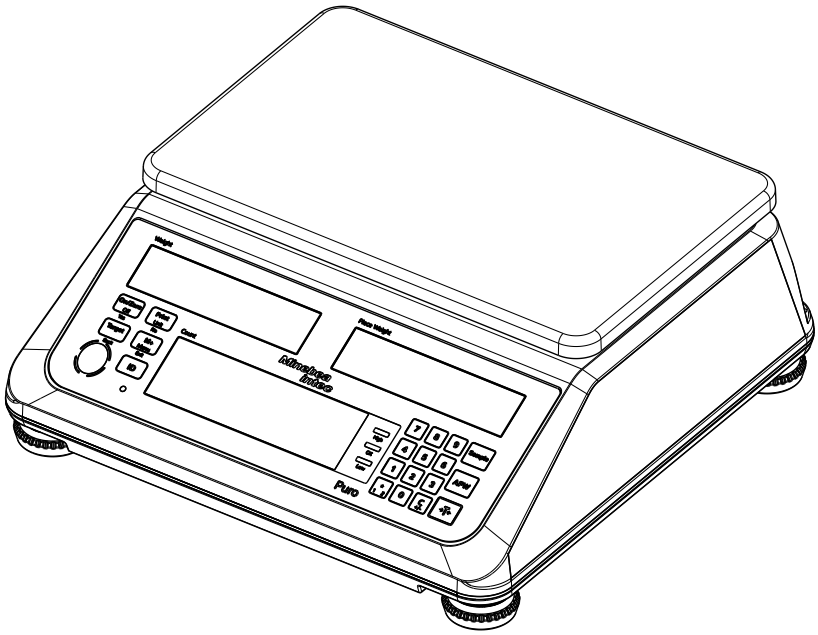
Model number	EF - LT	P1	P3	P6	P15	P30
Max load (g)		1,500	3,000	6,000	15,000	30,000
Readability d (g)	- 30 d	0.05	0.1	0.2	0.5	1
Max. resolution		30,000	30,000	30,000	30,000	30,000
Readability d (g)	- 6 d	0.2	0.5	1	2	5
Max. resolution		7,500	6,000	6,000	7,500	6,000
Application package Counting Professional		Weighing, Automatic Tare, Automatic Printing, Counting Professional, Checking				
Min. recommended sample weight (g)		1	2	4	10	20
Min. average recommended sample weight (g)		0.005	0.01	0.02	0.05	0.1
Max. internal resolution during counting		1:1,500,000 internal/1:300,000 external				
Weight units		kg, g, lb, oz, lb:oz				
Version/materials		Housing made of ABS plastic, weighing platform made of stainless steel 304				
Protection grade		IP43				
Display		3-window LCD display with white background lighting, digit height 1.1 inches/28 mm				
Indicator displays		3 LEDs (yellow, green, red), function can be configured, acoustic alarm signal				
Memory		Library for 30 products				
Keypad		8 function, 12 mechanical number keys				
Zero range		2 or 10% of the max. load of the scale				
Tare range		Max. load via subtraction				
Stabilization time		1 second				
Automatic zero point correction		Off, 0.5; 1 or 3 display increments				
Safe overload range		150% of the max. load of the scale				
Leveling aids		Externally visible level indicator and adjustable, non-slip leveling feet				
Electrical supply		U_{DC} = 5 V, 100–240 V–50/60 Hz power supply or installed rechargeable lithium battery				
Battery operation time		Up to 210 hours operation time (with standard battery) between the charging processes, 12 hours charge time				
Calibration		External, with freely selectable calibration weights				

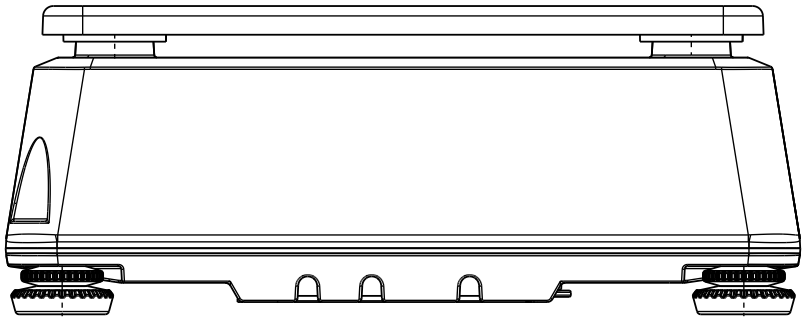
Model number	EF - LT	P1	P3	P6	P15	P30
Interface		USB-C, printer port, RS-232 installed, Bluetooth, or WIFI optional				
Operating temperature (°C)		-10 ... +40				
Storage temperature (°C)		-10 ... +50				
Product dimensions (W x D x H)		310 x 302 x 115 mm				
Platform size (W × L)		280 x 180 mm				
Shipping dimensions (W x D x H)		370 x 370 x 220 mm				
Net weight		2.9 kg				
Shipping weight		4.5 kg				

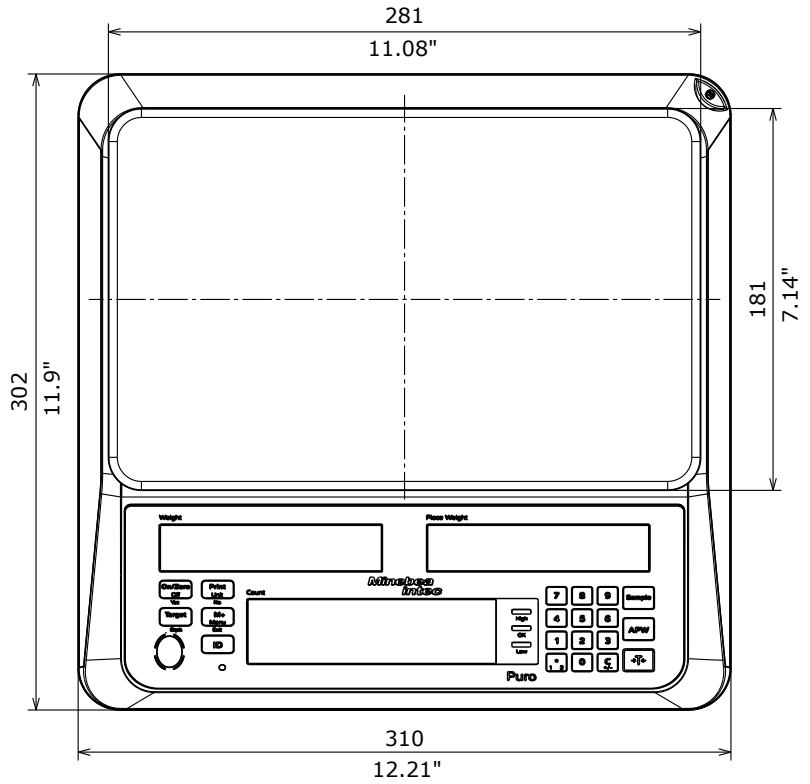
9.2 Accessories

Option	Order no.
Data printer	YP-DP1
Paper for data printer	YP-P1
Printer cable	YP-CAS1
USB-C cable	YP-CAC1
Manual laser barcode scanner	MD2000
Scanner cable	YP-CYSSR1
USB charging device	YP-PS1
Weighing hooks	YP-H1

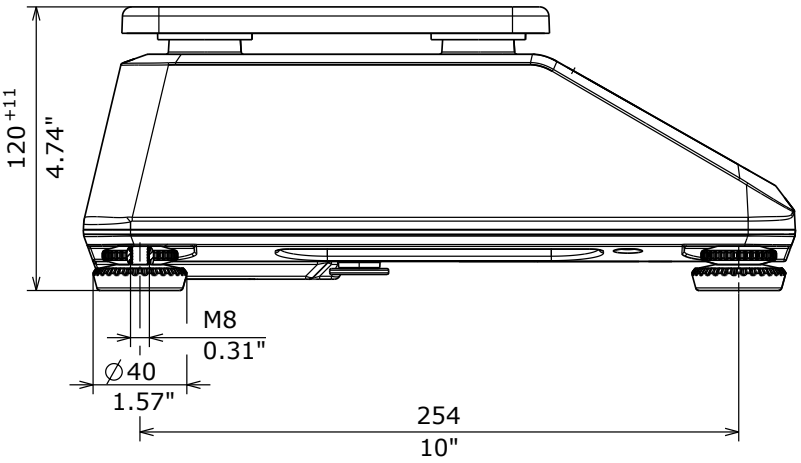
9.3 Dimensions



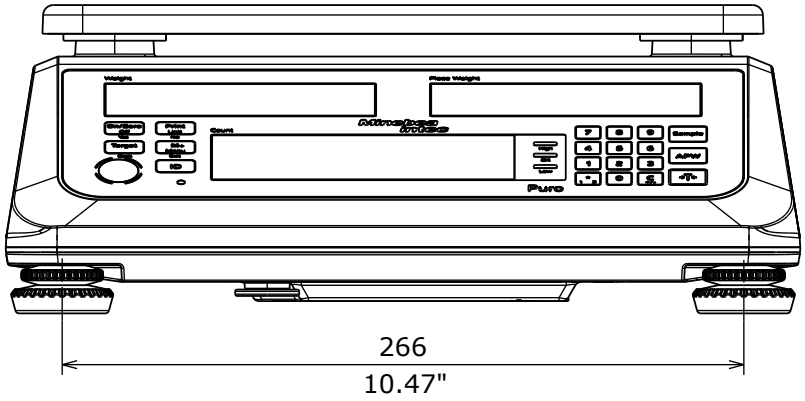




All dimensions in mm / inch



All dimensions in mm / inch



All dimensions in mm / inch

10 Appendix

10.1 Printouts

The elements to be printed are configured in the menu.

Weighing printout

Printout	Description
`  5.003 g  N`	Positive net weight value
`- 0.003 g  N`	Negative net weight value
`  2.003 g  G`	Positive measured gross weight value
`  2.003 g  G#`	Positive calculated gross weight value
`  1.003 g  T`	Tare weight value (measured value)
`  0.010 g  PT`	Preset tare value (entered value)
`- 0.010 !  G`	Stable gross weight below zero

Counting application printout (without checking application)

Printout	Description
`  441 pcs  QNT`	Positive value
`- 41 pcs  QNT`	Negative value
`MODE: COUNT`	Activated application
`WREF  4.15431 oz`	Sample weight

Check Weighing application printout (Counting application not initialized)

Printout	Description
`  115 g  OVER`	Positive net value > upper limit
`- 115 g  OVER`	Negative net value < negative upper limit
`  99 g  ACCEPT`	Positive net value in the target range
`  75 g  UNDER`	Positive net value < lower limit
`MODE: CHECKWEIGH`	Activated application
`UNDER LIMIT  81 g`	Lower limit
`OVER LIMIT  100 g`	Upper limit

Check Weighing application printout (Counting application initialized)

Printout	Description
115 g OVER	Positive net value > upper limit
- 115 g OVER	Negative net value < negative upper limit
99 g ACCEPT	Positive net value in the target range
75 g UNDER	Positive net value < lower limit
115 pcs	Net number >
MODE: CHECKWEIGH	Activated application
UNDER LIMIT 81 g	Lower limit
OVER LIMIT 100 g	Upper limit
WREF 0.35423 oz	Sample weight, as displayed

Check Weighing application printout with parts (Counting not initialized)

Printout	Description
115 g N	Normal net value as result
MODE: CHECKWEIGH	Activated application
UNDER LIMIT -20 pcs	Lower limit
OVER LIMIT -60 pcs	Upper limit

Check Counting application printout (Counting initialized)

Printout	Description
115 pcs OVER	Positive net number > upper limit
- 115 pcs OVER	Negative net number < negative upper limit
30 pcs ACCEPT	Positive net number in the target range
15 pcs UNDER	Positive net number < lower limit
MODE: CHECKCOUNT	Activated application
UNDER LIMIT -20 pcs	Lower limit
OVER LIMIT -60 pcs	Upper limit
WREF 0.35423 oz	Sample weight, as displayed

Totalizing application printout (= weight total printout)

Printout	Description
N: 2	Number of items, here: 2
TOTAL: 1.955 g	Totalized value
MAX: 1.485 g	Maximum value
MIN: 0.470 g	Minimum value

Totalizing application printout (= parts and weight total printout)

Printout	Description
N: 25	Number of items, here: 25
TOTAL: 248 g	Totalized value of the weights
124 pcs	Totalized value of the parts
MAX: 22 g	Maximum value as weight
11 pcs	Maximum value as quantity
MIN: 4 g	Minimum value as weight
2 pcs	Minimum value as quantity

10.2 FCC notice

Note:

This device has been tested and found to comply with the limits for digital devices of class B as per part 15 of the FCC regulations. These limits were created in order to ensure appropriate protection against interference when operating in residential areas. This device generates, uses, and may emit high-frequency energy and, if it is not installed and used in accordance with the operating instructions, may cause interference with radio communication. However, there is no guarantee that interference will not occur in certain facilities. If this device causes interference with the radio or television reception, which can be determined by switching the device off and then back on again, we recommend one or more of the following measures to eliminate the interference:

- Realignment or repositioning of the reception antenna
- Increasing the distance between the device and the receiver
- Connecting the device and the receiver to separate electric circuits
- Call in the dealer or an experienced radio/television technician

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