

## Operating Instructions

### Compact Scale Puro® - Advanced



98628-101-05 Edition 1.0.0 02/18/2020

**Checked on the basis of Puro® scale with software version 2.89**

## **Foreword**

### **Must be followed!**

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### **Note**

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# 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.

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## 2 Safety instructions

### 2.1 General safety information

Follow these safety precautions:

- The equipment may only be used as intended for weighing tasks.
- The device may only be opened by authorised personnel.
- Observe the operating limits of the device.
- Ensure that the supply voltage at the installation site matches the AC input voltage indicated on the data label.
- Avoid shock stress (falling down, hard shocks, falling loads, any impact from the side).
- Do not use the equipment in hazardous areas and unstable environments.
- Do not expose the equipment to aggressive chemical vapors or to unnecessarily extreme temperatures, moisture, or vibration.
- Unplug the device before you connect or disconnect any electronic peripheral devices to or from the interface port.
- Unplug the power cord from the mains supply before cleaning.
- Make sure that no liquid enters the equipment.
- Do not use loads that exceed the capacity of the scale.

### 2.2 Incoming goods inspection

The shipment must be checked for completeness. A visual inspection must be performed to determine if the shipment has been damaged. If there are grounds for a complaint, this must be brought to the attention of the delivery company immediately. A Minebea Intec sales or service point must be informed. 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 may not be put into operation if it has visible damage and/or is defective.

## 3 Device installation

### 3.1 Package Contents

- Scale
- Sub-platform
- Safety Instructions and QR code with access to the detailed documentation
- Pan
- USB power supply and cord

### 3.2 Requirements on location

- Set up the device on a stable, even surface.
- Position the device so that the power plug is freely accessible and the power cord is not an obstacle or trip hazard.
- Avoid placing the device in close proximity to a heater or otherwise exposing the scale to heat or direct sunlight.
- Do not expose the device to excessive temperature fluctuations.
- Protect the device from drafts that come from open windows or doors.
- Avoid exposing the device to extreme vibrations during weighing.
- Protect the device from aggressive chemical vapors.
- Do not expose the device to extreme moisture over long periods.

#### NOTICE

##### Acclimatizing the device

Condensation can form on the surfaces of a cold device when it is brought into a substantially warmer area.

- Unplug the device from the power supply and allow it to acclimatize for about 2 hours at room temperature.

### 3.3 Leveling the equipment

#### Purpose:

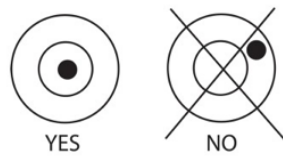
- to compensate for unevenness at the place of installation
- to ensure that the device is placed in a perfectly horizontal position for consistently reproducible weighing results

Always re-level the device any time after it has been moved to a different location.

- Level the scale using the four leveling feet.
- Ensure that all leveling feet make contact with the floor.
- Turn the feet until the air bubble is centered in the level indicator.
  - ▷ Each of the leveling feet must support an equal load.



- **Adjusting the leveling feet:** To raise the scale, extend the leveling feet (turn clockwise). To lower the weighing platform, retract the leveling feet (turn counterclockwise).



3.4 Power supply

AC power is used to power the scale when battery power is not needed. Plug the USB-C plug into the USB-C jack on the bottom of the unit, then plug the AC power supply into a wall outlet.

**Note:**

Do not use the USB-C power supply cable for the PC communication. Instead use a standard USB-C cable.

3.4.1 Battery Power

The scale can be used on AC power immediately. Allow the battery to charge for 12 hours before using the scale on battery power. The Scale will automatically switch to battery operation if there is a power failure or the power cord is removed. With AC power, the scale is constantly charging, so the battery charge indicator (see Chapter 4.1.1.2) will remain lit. The scale can be operated during charging, and the battery is protected against overcharging.

When the device is switched on, the battery status LED lights red while the battery is charging and green when the battery is fully charged.

For maximum operating time, the battery should be charged at room temperature.

During battery operation, the battery symbol indicates the battery charge level remaining. The indicator will automatically turn off when the batteries are empty.

Symbol	Charge level
	0 to 10 % Remaining
	11 to 40 % Remaining
	41 to 70 % Remaining
	71 to 100 % Remaining

**Note:**

When battery symbol blinks fast, approximately 30 minutes working time is left.

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

Charging the scale must be performed in a dry environment.

**⚠ WARNING****Risk of explosion can occur**

If the rechargeable battery is replaced with the wrong type or if it is not properly connected.

- ▶ Battery is to be replaced only by an authorized Puro® service dealer.
  - ▶ Dispose of battery according to local laws and regulations.
- 

### 3.5 Connect printer

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

4 Device description

4.1 Operating

4.1.1 Display and operating elements

4.1.1.1 Overview

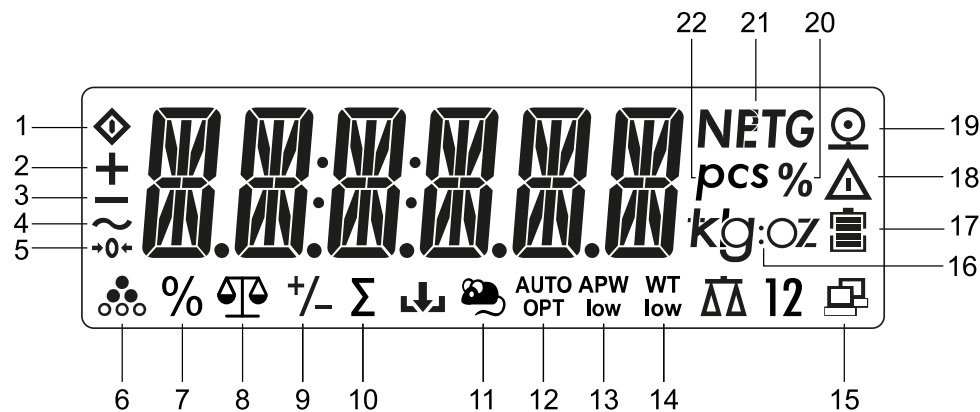
Front Control Panel with LCD Display.



No.	Description
1	Display elements, see Chapter 4.1.1.2.
2	Operating elements, see Chapter 4.1.1.3.

4.1.1.2 Display elements

LCD Display

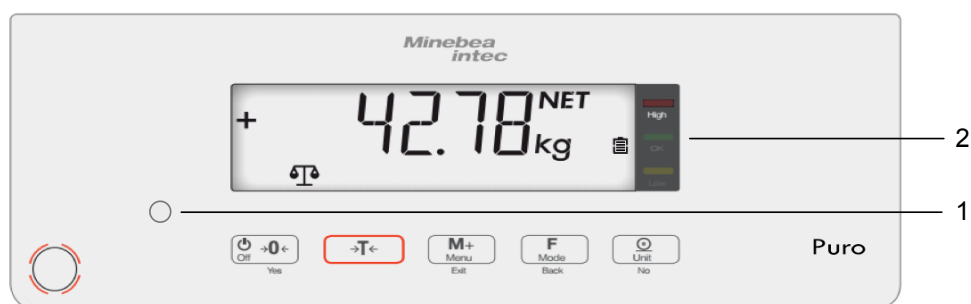


Item	Description	Item	Description
1	Busy	12	Auto Taring Symbol
2	Plus symbol	13	Low Average Piece Weight
3	Minus symbol	14	Low Sample Weight
4	Hold symbol	15	Data transfer
5	Zero-setting	16	Weight unit
6	Counting	17	Battery charge
7	Weighing in Percent	18	Warning symbol

Item	Description	Item	Description
8	Weighing	19	Printer Icon
9	Checkweighing	20	% (Percent)
10	Totalizing	21	NET, Preset Tare, Gross
11	Averaging	22	Pieces

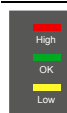
**Note:**

Some modes / units may not be available in all models.

**LED indicators**

When the device is switched on, the battery status LED (1) lights red while the battery is charging and green when the battery is fully charged.

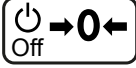

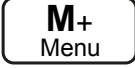


The colored LED indicators (2) on the right side of the control panel are used in Check mode (see Chapter 5.2.4) and will light up according to the following rules:



- (Red) Weight value > upper tolerance limit
- (Green) Weight value  $\leq \geq$  is within OK range
- (Yellow) Weight value < lower tolerance limit

4.1.1.3 Operating elements



Button					
Primary Function	On / Zero	Tare	M+	Function	Print
(short press) < 1 second	Power on the scale (when scale is off). Set zero (when scale is on).	Set a tare value.	Accumulates the weight or display the accumulated information.	Triggers a function.	Sends the current value to the selected COM ports if AUTO-PRINT is set to off.
Secondary Function	Off		Menu	Mode	Unit
(long press) hold > 2 second	Power off the scale.	Initiates clearing function of totalizing.	Enter the user menu.	Allows changing the application mode.	Changes the weighing unit.
Menu Function	Yes		Exit	Back	No
(short press) < 1 second	Accepts the current setting on the display.		Exits the user menu. Aborts the calibration in progress. Advances to the previous digit in input process.	Moves back to previous menu items. Decrement the digit.	Rejects the current setting on the display and advances to the next available setting. Advances to the next menu or item. Increment the digit.

#### 4.1.1.4 Rear Display


The models LargeTall (LT) and SmallTall (ST) have an additional rear display, which shows the same display elements as the front display. (See Chapter [4.1.1.2](#)).

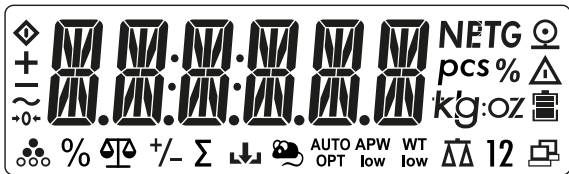


## 5 Operation

### 5.1 Basic Weighing Function

#### 5.1.1 Turn on the device

- ▶ Press the  button.
  - ▷ All elements of the display are shown for 2 seconds.  
All Checkweighing LEDs are on for this time.




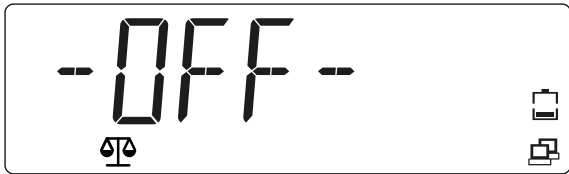
The software version number is displayed for 2 seconds.

The latest active (selected) application before the last switch-off will be started. If the application has already been initialized, it starts with these parameters.

If the scale is turned ON for the very first time then applications "Weighing" plus "Totalizing" (manually) are active.

#### 5.1.2 Turn off the device

- ▶ Press and hold the  button until [OFF] is displayed.
  - ▷ The display shows [- OFF -] for about 1 second.





The device switches off, display is dark.

#### 5.1.3 Adjust GEO setting

Adjust the GEO setting according to your location to ensure accurate weighing results.  
See Chapter [7.3](#).

#### 5.1.4 Select an application

- ▶ Press and hold the  button.
  - ▷ The application names are displayed every 2 seconds until the  button is released.

If the  button is released, the displayed application is selected and starts.

Possible applications are:

[WEIGHT]	normal weighing mode
[PERCNT]	percentage mode
[COUNT]	count mode

[CHECK]	checkweighing
Selectable modes (have to be selected in menu, see Chapter 6.2.1):	<ul style="list-style-type: none"> <li>- checkweighing mode</li> <li>- check percent mode</li> <li>- check count mode</li> </ul>
[AVERAG]	Average mode
[D.HOLD]	Display-Hold mode



Applications "Totalization", "Auto Tare" and "Automatic Print" can be activated via Menu.

[OP.FUNC]		
	[A.TARE]	Auto Tare
	[TOT.SET]	Totalization
[PRINT]		
	[A.PRINT]	Automatic Print

## 5.2 Application Programs

### 5.2.1 Weighing Mode

Display the weight of the sample in lb, oz, lb:oz, kg or g.

- To select the weighing mode, press and hold the  button until [WEIGHT] is displayed with application icon  appear at bottom of the screen.

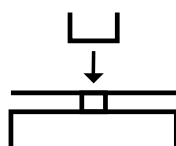


Release the button. The application is activated.

- ▷ [0.000] is displayed.



- Place container on the scale (in this example, 0.598 kg).







### 5.2.1.1 Stability

If a weighing value is stable, the unit symbol is displayed.

Stable weighing value:



Unstable weighing value:



Stable gross weighing value below zero (no unit visible):



If the gross weight is 20d below zero, [L] is displayed.

If the gross weight is >7d above Maxload, [H] is displayed.

### 5.2.1.2 Taring

- For taring the container on the scale, press the →T← button if the pan is loaded.
- ▷ [NET] is shown on the display.

Tared value:



### 5.2.1.3 Weight Unit switch

You can toggle the display of a weight value between different weight units.

- To select the weight unit, press the Unit button until the desired weight unit is displayed, when these units are activated in menu before. [kg / g / lb / oz / lb:oz]. Release the button to select.

Possible units are:

gram	[g]
------	-----

kilogram	[kg]
pound	[lb]
ounce	[oz]
pound-ounces	[lb:oz]

#### 5.2.1.4 Negative weighing value


Negative stable netto weight value is displayed like this:



#### 5.2.2 Percent Mode

Display the weight in percent of the reference weight.

Example: Determine an unknown percentage; store the weight on the scale as the reference percentage (100%).



1. To select application Percent, press the  button, until [PERCNT] is displayed with application icon % at bottom of the screen.



Release the button. The application is activated.

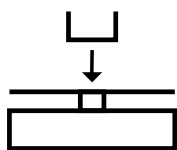
- ▷ If there is already a reference weight for 100% initialized, [CLR.REF] is displayed. Otherwise [PUT.REF] is displayed, then go on at step 5.




2. Press the  (No) button to use the stored reference weight. Go on at step 8.
3. Press the  (Yes) button to set a new reference weight.
4. [PUT.REF] is displayed.




5. Put the desired reference weight on the pan.



6. If a weight is put on the pan, press the  (Yes) button. If there is more than 1d on the pan, the pan is loaded.
- ▷ If the weight on the pan is  $\geq 100\%$  reference weight \* d then [REF.OK] is displayed for 2 seconds. Go on at step 7.



If the weight on the pan is  $< 100\%$  reference weight \* d AND  $\geq 2d$  [LOW.REF] is displayed for 2 seconds. After that go on to step 8, otherwise go to step 7.

If the desired weight isn't put on the pan or the desired weight is smaller than 2d and the  (Yes) button is pressed, [REF.ERR] is displayed for 2 seconds. After that go to step 5.




7. Application is initialized. Display shows [100%]. Reference weight is stored permanently.



8. Replace the reference material with the sample material.
- ▷ The display shows the percentage of the sample compared to reference weight.





9. To view the current reference weight (in this example, 0.580 kg) press the  button briefly.
- ▷ The scale will display [REF.WT] and the reference weight value.



### 5.2.3 Counting Mode

Counting items based on the weight of a reference sample count.

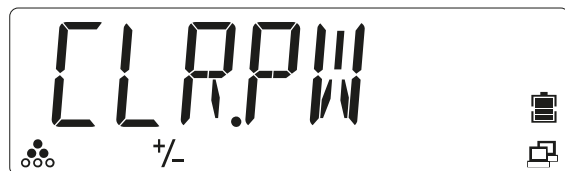
Example: Determine the number of parts; weigh in the selectable reference sample quantity (in this example: 20).



1. To select application Count, press the  button, until [COUNT] is displayed with application icon  at bottom of the screen.



Release the button. The application is activated.




2. If there is already a piece weight initialized, [CLR.PW] is displayed. Otherwise [PUT 20] (for example) is displayed, then go on at step 4.



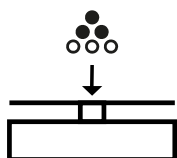
3. Press the  (No) button to use the stored reference weight.
4. Press the  (Yes) button to clear the stored PW (average piece weight) and set a new one.
5. [PUT 20] (for example) is displayed.




The stored reference quantity from the initialization before is displayed. The number of selectable samples is blinking.

6. Choose the desired reference quantity sample by pressing the  button briefly (increment) or the  (No) button briefly (decrement) to toggle the choices (10, 20, 50, 100, 200).
7. Press the  (Yes) button to confirm reference sample quantity.

8. If the pan is empty, then [PUT.PW] (put reference) is shown on the display. Put the desired reference quantity on the pan and go on at step 7.



9. Press the  (Yes) button to store the reference quantity sample.
- ▷ The display shows [PW.OK] (piece weight ok) for 2 seconds. Go on step 10.



If there are no reference samples put on the pan or the weight is smaller than  $2d$  or the calculated piece weight would be smaller than  $2d/10$ , the display will show [REF.ERR] for about 2 seconds and then goes back to step 9.



If the weight on the pan is  $< \text{reference quantity} * d$  AND also calculated piece weight  $\geq (2d/10)$ , then the display will show [LOW.REF] for about 2 seconds.


Example: PUT 50 ;  $d = 0.2 \text{ g}$  ; weight on the pan =  $2.0 \text{ g}$  ; then [LOW.REF] is displayed. But is the weight on the pan =  $1.8 \text{ g}$ , then [REF.ERR] is displayed.

10. Counting is initialized. On the display, the actual number of pieces is shown: [20 pcs] for example.

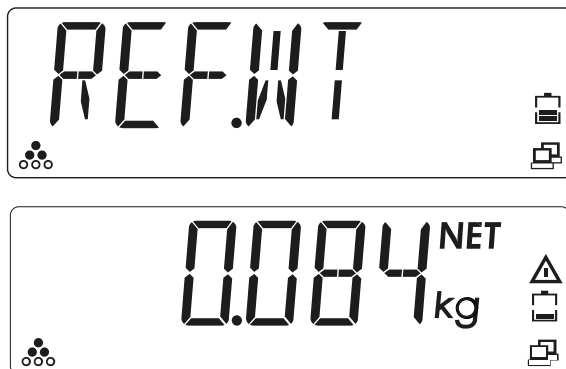


11. Replace the reference sample with the test sample.
- ▷ The display shows the quantity of the sample count.



12. Press the  button briefly.



▷ The scale will display [REF.WT] and the reference piece weight value.



## 5.2.4 Check Mode

Counting items based on the weight of a reference sample.

The scale supports positive, negative and zero check weighing.

Positive Check	<p>To determine when the material added to the scale is within the target range.</p> <p>In this case the limit values UNDER and OVER must both be <b>positive</b> values.</p> <p><b>The OVER limit must be greater than the UNDER limit.</b></p> <p>Add material to the scale until it is within the ACCEPT (green) range.</p>
Negative Check	<p>To determine when the material removed from the scale is within the target range.</p> <p>In this case the limit values UNDER and OVER limits are <b>negative</b> values.</p> <p><b>(The UNDER limit must be greater than the OVER limit, i.e. UNDER = -10 / OVER = -15).</b></p> <p>Place the item to be weighed on the scale and press .</p> <p>Remove a portion of the item until it is within the ACCEPT range.</p>
Zero Check	<p>For comparison of subsequent samples with an initial reference sample.</p> <p>In this case, the UNDER limit must be <b>negative</b> value and the OVER limit must be <b>positive</b> value or zero.</p> <p>Place the reference item on the scale and press .</p> <p>Remove the reference sample and place the item to be compared on the scale to determine if it is within the ACCEPT range.</p>

Checking for exact one piece or percentage weight value is also possible. Enter for the low AND high limit the same value.

The different check modes must be activated prior via menu (see Chapter [6.2.1](#)).



### 5.2.4.1 Check Weighing Mode

Compare the weight of items to a targeted weight range.

Example: The required target weighing range is between 1 kg (low limit) to 1.1 kg (high limit)

**Note:**

Activation of this mode must be done prior via menu. See Chapter [6.2.1](#).



1. To select application Check Weighing Mode, press and hold the  button until [CHECK] is displayed with application icons  and  $\pm$  at bottom of the screen.




Release the button. The application is activated.

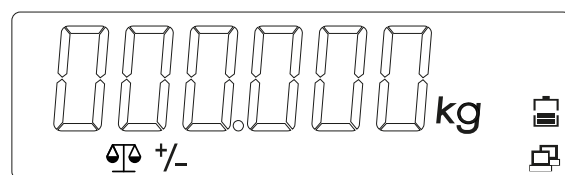
- ▷ [CLR.LIM] is displayed and all limit LEDs are on.




2. Press the  (No) button to use the stored limits. Go on at step 11.
3. Press the  (Yes) button to set new limits.
  - ▷ [SET.LOW] (set low limit) is displayed and the yellow LED for the low limit is on.





4. Press the  (Yes) button to view the Low limit value.
  - ▷ The Display will show stored low limit with all digits blinking [000.000] (in this example, 0.000 kg).





5. Press the  (No) button to edit the value.
  - ▷ The first digit is blinking [\_00.000].



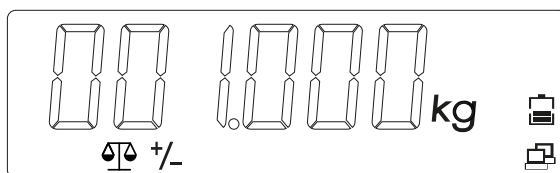
6. Press the  (Yes) button to accept and highlight the next digit (or press the  (exit) button to go back one digit).


- ▷ The 2nd digit is blinking [0\_0.000].

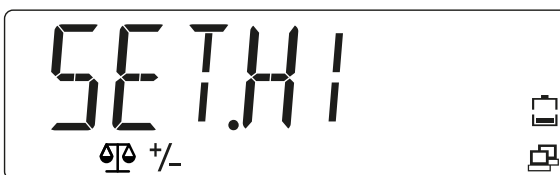


7. Press the  button to increase or the  button to decrease the digit value.

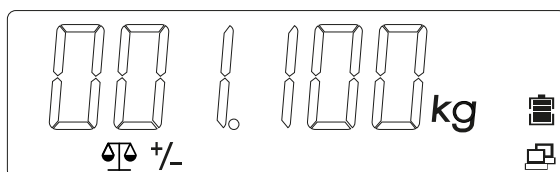
- ▷ The Display will show the low limit value with all digit blinking [001.000] (in this example, 1.000 kg).



8. Repeat until all the digits are correct.
9. Press the  (Yes) button to accept the low limit value when all digits are blinking again.
- ▷ The scale will then display [SET.HI] (set high limit).



10. Same procedure like low limit setting.
- ▷ The Display will show the high limit value with all digit blinking [001.100] (in this example, 1.100 kg).



11. Press the  (Yes) button to accept high limit value.

In case the check limit values are wrongly set, [LIM.ERR] (limit error) will be displayed briefly followed by [CLR.LIM] (clear limit).





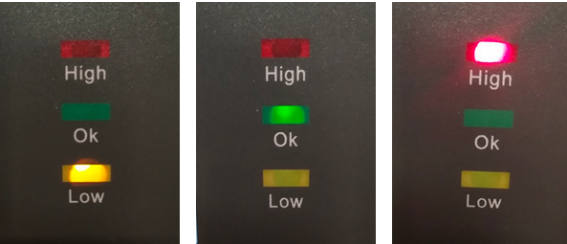
The scale is ready for check weighing application with new checklimit.  
Go on at step 14.



- 12. Repeat again the setup procedure.
- 13. Press the (Yes) button to establish new check limit value or press the (No) button to use stored check limit value.
- 14. Place container on the scale (in this example, 0.527 kg).  
Taring the container on scale.

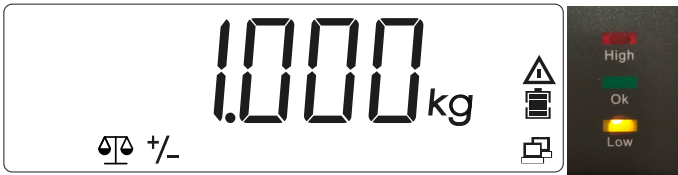


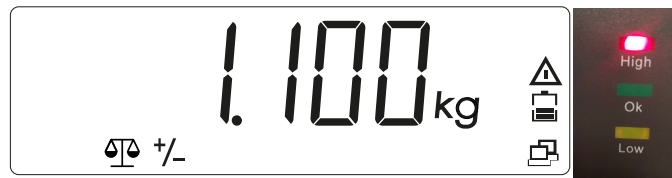
- 15. Press the button with [NET] appear beside the weight value.
- 16. Place sample in the container.



sample weight < target range	Yellow LED lights up.
sample weight within target range	Green LED lights up.
sample weight > target range	Red LED lights up.

- 17. To view the current check limit reference value (in this example, low limit value is 1 kg and high limit value is 1,100 kg), press the button briefly at anytime during check weighing process.
  - ▷ The scale displays the low limit value with yellow LED light briefly and the high limit value with red LED light briefly.





#### 5.2.4.2 Check Percent Mode

Compare the percentage of items to a targeted percentage range.


Example: The required target weighing range is between 95% (low limit) to 105% (high limit).

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##### Note:

Activation of this mode must be done prior via menu. See Chapter [6.2.1](#).

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1. To select the check percent mode or restart with a new reference weight or check limit, press and hold the  button until [CHECK] is displayed with application icons % and +/- at bottom of the screen.




Release the button. The application is activated.

- ▷ [CLR.REF] (clear reference) will then display.



If no reference weight exists, the scale will display [PUT.REF] (put reference). Proceed to step 4 if reference weight shall not be changed.



2. Press the  (Yes) button to establish a new reference.
  - ▷ The scale will now display [PUT.REF] (put reference).




3. Add the desired reference material to the pan or container.

4. Press the  (Yes) button to store the reference weight.

▷ The scale will display [REF OK] for 2 seconds.

The scale will display [CLR.LIM] (clear check limits).





5. Press the  (No) button to use the stored check limits and proceed to step 14.

6. Press the  (Yes) button to establish new check limits.

▷ The scale will then display [SET.LOW] (set low limit).






7. Press the  (Yes) button to view the "low" limit value.

8. Press the  (Yes) button to accept or press the  (No) button to edit the "low" limit value.


▷ The stored value then displays with the first digit blinking [\_00.000%] (set low limit).



9. Repeatedly press the  (No) button until the desired number appears (or press the  (exit) button to go one digit back).

10. Press the  (Yes) button to accept and highlight the next digit.

11. Repeat until all the digits are correct.

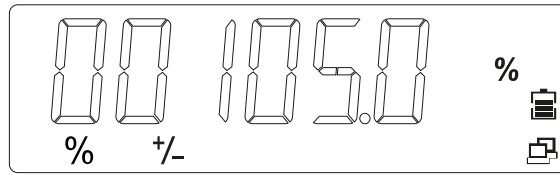
12. Press the  button to accept the "low" limit value.

▷ [SET.HI] will be displayed.



13. Repeat the same procedure like low limit setting to accept or edit the "high" value.

▷ The Display will show the high limit value with all digit blinking [00105.0] (in this example, 105.0%).

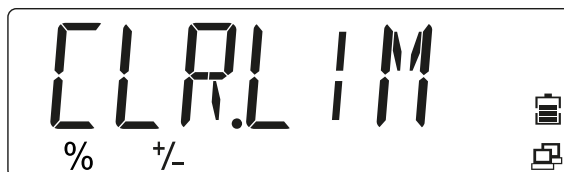




14. Press the  (Yes) button to accept high limit value.

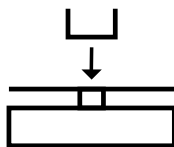
▷ The scale is ready for check percentage application with new checklimit. Go on step 17.




In case the check limit values are wrongly set, [LIM.ERR] (limit error) will be displayed briefly follow by [CLR.LIM] (clear limit).



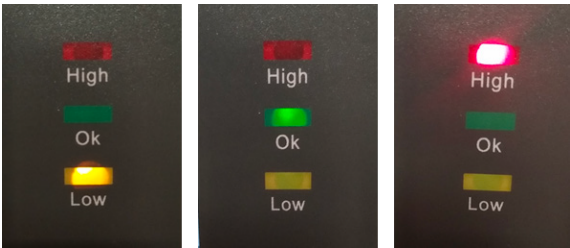
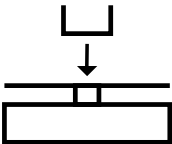
15. Repeat again the setup procedure.
16. Press the  (Yes) button to establish new check limit value or press the  (No) button to use stored check limit value.
17. Place container on the scale (in this example, 55.0%).



18. For taring the container on the scale, press the  button. [NET] appears beside the weight value.

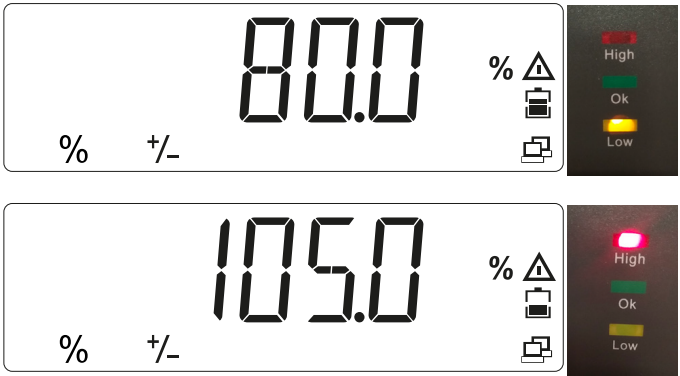


19. Place sample in the container.



sample weight < target range	Yellow LED lights up.
sample weight within target range	Green LED lights up.
sample weight > target range	Red LED lights up.

20. To view the current check limit reference value (In this example, low limit value is 80.0% and high limit value is 105.0%), press the F Mode button briefly at anytime during check weighing process.
- ▶ The scale will display the low limit value with yellow LED light briefly and the high limit value with red LED light briefly.





5.2.4.3 Check Count Mode

Compare the quantity of items to a targeted quantity range.  
Example: The required target quantity range is between 500 pcs (low limit) to 600 pcs (high limit)

**Note:**

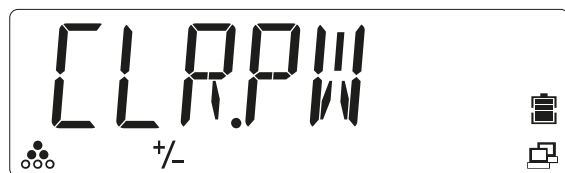
Activation of this mode must be done prior via menu. See Chapter [6.2.1](#).



1. To select the check count mode or restart with a new reference quantity sample, press and hold the  button until [CHECK] is displayed with application icons  and +/- at bottom of the screen.







Release the button. The application is activated.

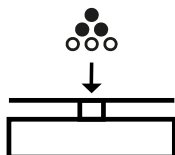
If there is already a piece weight initialized, [CLR.PW] (clear piece weight) is displayed.



2. Press the  (No) button to use the stored piece weight (PW) and go on at step 11.
3. Press the  (Yes) button to clear the stored piece weight (PW) and set a new PW.
  - ▷ The scale will display [PUT.20] (for example).



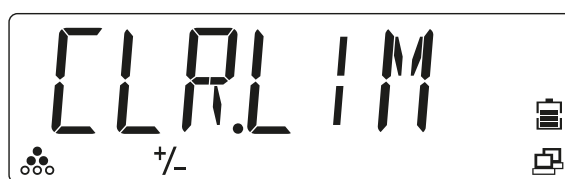
4. Choose the desired reference quantity sample by pressing the  button briefly (increment) or  (No) button (decrement) to toggle the choices [10, 20, 50, 100, 200].
5. Press the  (Yes) button to confirm reference sample quantity.
  - ▷ If the pan is empty [PUT.PW] (put piece weight) is shown on the display.
6. Put the desired reference quantity on the pan or container and press the  (Yes) button to store the reference quantity sample.





- ▷ If there are no reference samples put on the pan or the weight is smaller than 2d, the display shows [REF.ERR] (reference error) briefly.




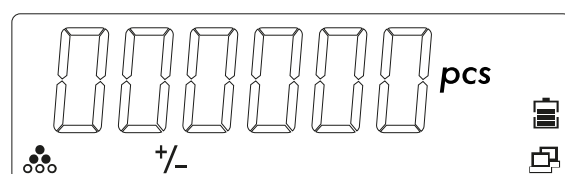
If there are reference samples put on the pan, the display shows [PW OK] (piece weight ok) for 2 seconds then [CLR.LIM] (clear limit).




7. Press the  (No) button to use the stored limits and go on at step 18.
8. Press the  (Yes) button to set new limits.
  - ▷ The scale will then display [SET.LOW] (set low limit).






9. Press the  (Yes) button to set the low limit.
  - ▷ The Display will show stored low limit with all digit blinking [000000] (in this example, 0 pcs).






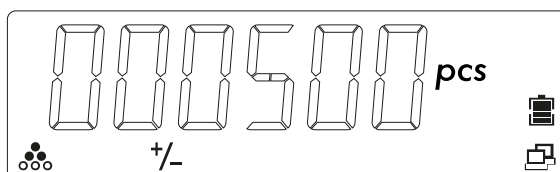
10. Press the  (No) button to edit the value.
  - ▷ The first digit is blinking [ \_00000].




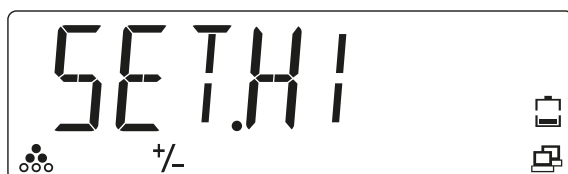
11. Press the  button to increase or the  button to decrease the digit value.
12. Press the  (Yes) button to accept and highlight the next digit.
  - ▷ The 2nd digit is blinking [0\_0000].



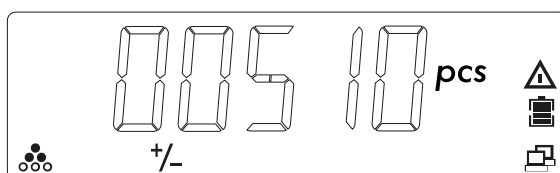
13. Press the  button to increase or the  button to decrease the digit value.
14. Repeat until all the digits are correct.
15. Press the  (Yes) button to confirm.
  - ▷ The Display will show the low limit value with all digit blinking [000500] (in this example, 500 pcs).




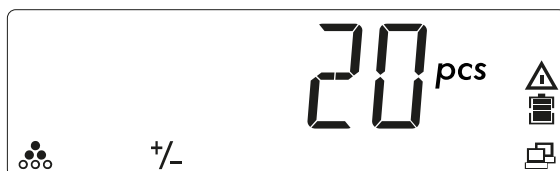
16. Press the  (Yes) button accept the low limit value.  
The scale will then display [SET.HI] (set high limit).



17. Same procedure like low limit setting.
  - ▷ The Display will show the high limit value with all digit flashing [00510.0] (in this example, 510 pcs).

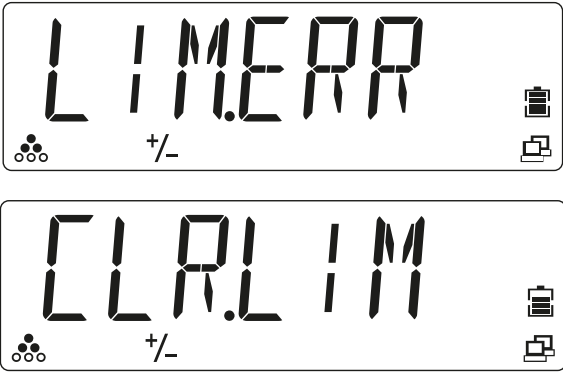


18. Press the  (Yes) button to accept high limit value.
  - ▷ The scale is ready for check counting application with new checklimit. Go on step 21.

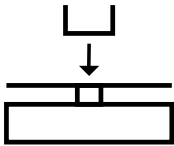




In case the check limit values are wrongly set, [LIM.ERR] (limit error) will be displayed briefly followed by [CLR.LIM] (clear limit).





19. Repeat again the setup procedure.



20. Press the  (Yes) button to establish new check limit value or press the  (No) button to use stored check limit value.

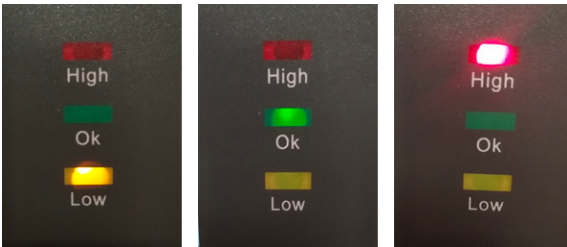
21. Place container on the scale (in this example, 109 pcs).

Taring the container on scale.




22. Press the  button with [NET] appear beside the weight value.

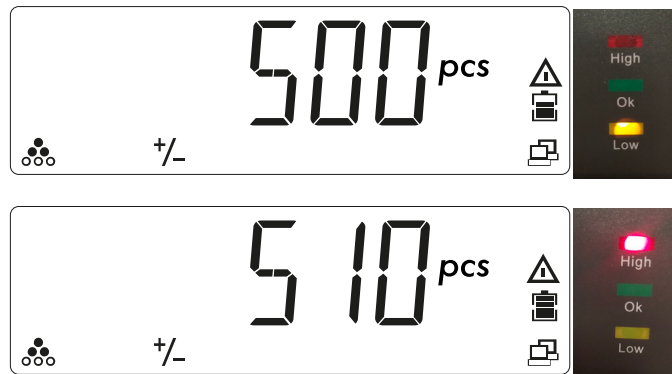
23. Place sample in the container.



sample weight < target range	Yellow LED lights up.
sample weight within target range	Green LED lights up.
sample weight > target range	Red LED lights up.

24. To view the current check limit reference value (In this example, low limit value is 500pcs and high limit value is 510 pcs), press the  button briefly at anytime during check weighing process.

▷ The scale will display the low limit value with yellow LED light briefly and the high limit value with red LED light briefly.



### 5.2.5 Average (Dynamic) Mode

Weight determination for unstable samples (e.g. living animals) or under uneasy environmental conditions.

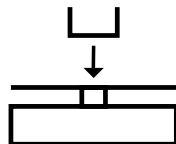
---


#### Note:

Activation of this mode must be done prior via menu. See Chapter [6.2.1](#).



---

1. Place the tare weight (e.g. box, container) on the scale (in this example, 0.598 kg).



2. For taring the container on scale, press the  button. [NET] appears beside the weight value.



3. To select the Average (Dynamic) mode, press and hold the  button until [AVERAG] is displayed with application icon  at bottom of the screen.

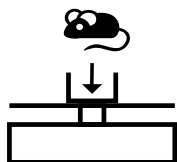


Release the button.

▷ [READY] is displayed.



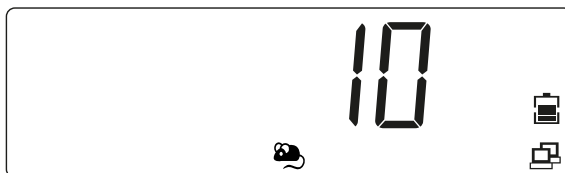
4. Place the load (animal) on the container.



Automatic | Semi-Automatic Mode:

Measurement will start automatically.

The countdown timer decreases in 1 second interval.



Manual mode:

5. Press the  button to start measurement.

The countdown timer decreases in 1 second interval.

The average weight is displayed on screen.



6. Remove the sample from pan.

Automatic mode:

Countdown timer resets automatically, if the pan is unloaded for about 7 seconds.

Semi-automatic / Manual mode:

7. Press the  button to restart.




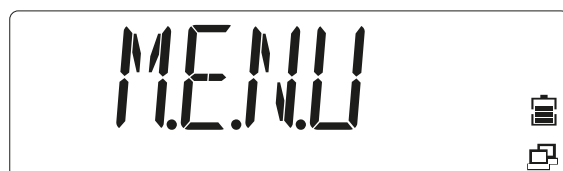
## 5.2.6 Totalizing and Statistics Mode

The Totalizing feature enables manual or automatic totalizing of displayed values.

Statistical data (total accumulated weight, min/max weights, pieces, percent and total number of weighing objects) is stored in memory for review and printing. Totalizing works in combination with each application mode except Average and Display-Hold. Totalization manual is set to ON by default.

### 5.2.6.1 Procedure on Setting up the Totalization Application



1. To enter into menu mode, press and hold the  button until [M.E.N.U] is displayed.




Release the button.

- ▷ The 1<sup>st</sup> menu item [APPLIC] shown on display.







2. Press the  button to move to the next menu item or  button to move to the previous menu item.
3. Change menu item until [OP.FUNC] (operating function) is shown on display.



4. Press  (Yes) button to enter into sub-menu item.
5. Change menu item until [TOT.SET] (totalizing setting) is shown on display.



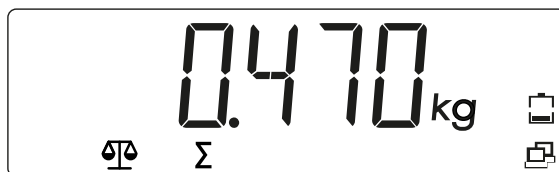
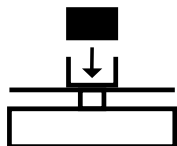
6. Press the  (Yes) button to enter the displayed sub-menu, then select one option [OFF / AUTO / MAN] using the  button and store the selection with the  (Yes) button.
7. Leave the setup menu with the  button.


### 5.2.6.2 (Totalization) Displayed Values

The Totalization Mode is active when  $\Sigma$  icon is displayed.



1. Put the first item on the scale.

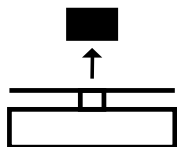


2. Press the  button to add the weight to accumulation data (under manual mode).  
OR

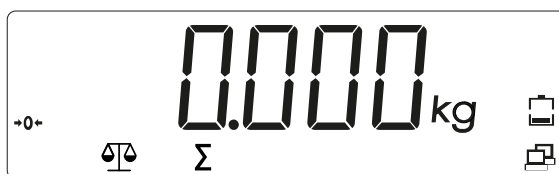
The weight value will add automatically to accumulation data once reading is stable (under automatic mode).

The  $\Sigma$  icon will keep flashing until the weight is removed.

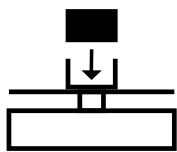
3. Empty the weighing pan.



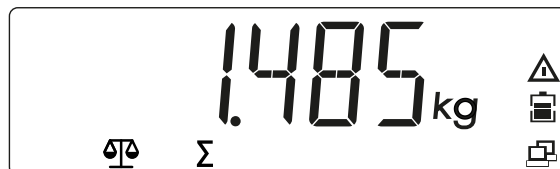
The item must be removed from the pan before the next item can be accumulated.



4. Put another sample on scale and follow same operation (Automatic or Manual mode).



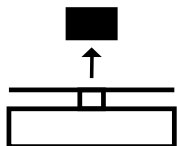
- ▷ The  $\Sigma$  icon will keep flashing until the weight is removed.



### 5.2.6.3 Viewing and Clearing Statistical Data

The pan must be empty to view the stored statistics.

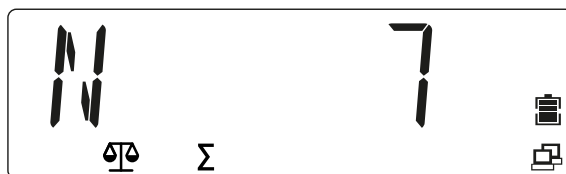
1. Empty the weighing pan.



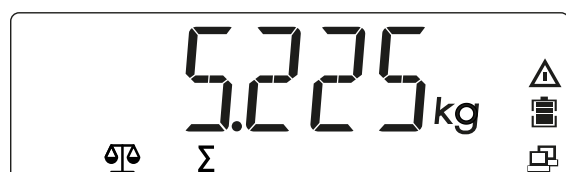
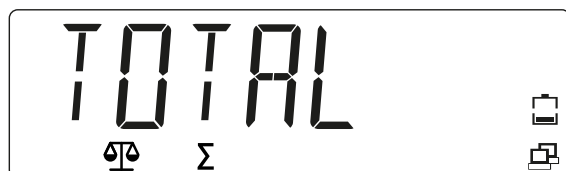
2. Press the **M+** Menu key to display the stored totalizing data.

The scale will display the statistical information in following order:

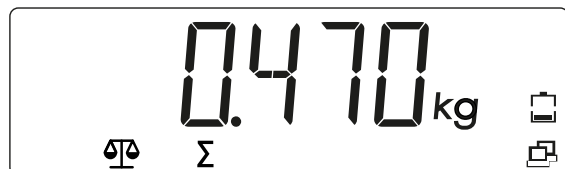
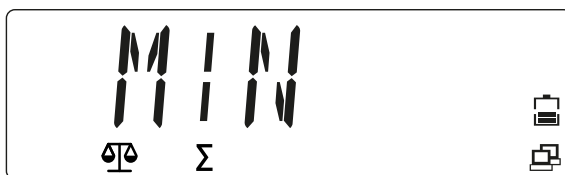
Number of weighing done (N = 7):



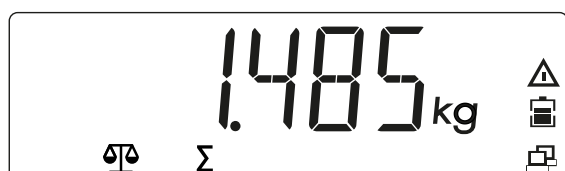
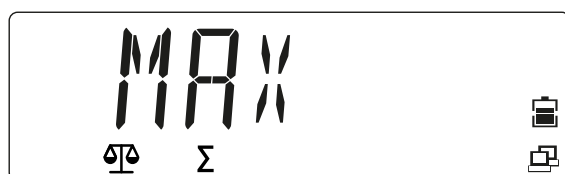
Totalized value (TOTAL = 5.225g)




Minimum value (Min = 0.47kg):



Maximum value (Max = 1.485kg)



To clear the totalizing memory:

3. Press and hold the  button while the pan is unloaded and the totalizing data is displayed.
  - ▷ The message [CLR.TOT] appears.



4. Press the  (Yes) button to confirm or press the  (No) button to cancel.

To verify the totalizing memory has been cleared:

5. Press the  button to display the statistical information.



**Note:**



- The item must be removed from the pan before the next item can be accumulated.
- Only stable weights are stored to totalizing memory.
- Changing the application mode will clear the totalizing memory.
- Gross loads and net loads cannot be added to the same total.
  - If the first load is a gross weight, following loads must also be gross weights.
  - If the first load is a net weight, following loads must also be net weights.

**5.2.7 Display-Hold [D.HOLD]**

Capture the first stable weight value. This value will stay on the display even after removing the sample.

**Note:**

Activation of this mode must be done prior via menu. See Chapter [6.2.1](#).

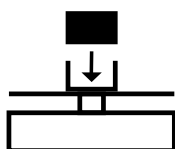
1. To select the Display-Hold mode, press and hold the  button until [D.HOLD] is displayed with application icon  appear at the left side of the screen.




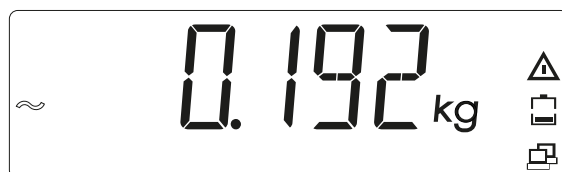
Release the button. The application is activated.



2. Place the load on the scale (in this example, 0.192 kg).





- ▷ Application icon  is blinking to indicate the value is hold on display.



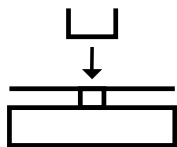
If the load is removed, the weight value remains on the display.



3. Press the  button to unlock the display hold (Application icon  stops blinking).

Display hold procedure with tare function:

4. Place sample in container on scale (in this example, 0.534 kg).







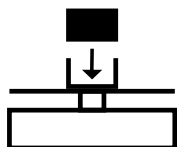
The application icon  is blinking.



- ▷ Blinking application icon  indicates that the value is hold on display.

The value remain on display even after removing the item.

5. Press the  button to unlock the display hold.
  - ▷ Application icon  will stop blinking.
6. Press the  button to tare the container.
7. For successive weighing. (i.e. continuously adding samples to the container) (in this example adding 412 g, i.e. total weight become 0.946 kg), add sample to the container. Press the  button to unlock the display hold.



- ▷ Application icon will short stop blinking.

## 6 Menu Settings

The User Menu (Menu Mode) allows the customizing of scale settings.

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### Note:

Additional Sub-Menus may be available if Interface Options are installed.

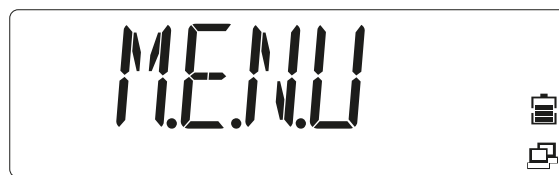
See Interface User Manual for the additional setting information.

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### 6.1 Menu Mode

Enter into Menu Mode:


1. Press and hold  button until [M.E.N.U] is displayed.

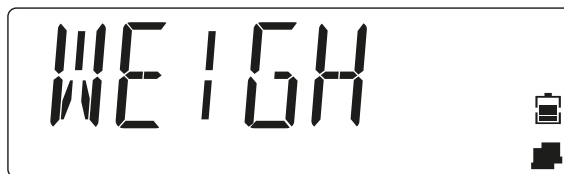




Release the button.

- ▷ The 1<sup>st</sup> menu item [APPLIC] shown on display.



2. To enter into menu item (in this example [APPLIC] - [WEIGH] , press  (Yes) button.





3. Or press the  button to move to the next menu item or  button move to previous menu item.


- ▷ The 2<sup>nd</sup> menu item [METRO] shown on display.





When viewing the setting (in this example [APPLIC] - [WEIGH] - [STAB.RA] value 0.5d).

4. When viewing the setting (in this example [APPLIC] - [WEIGH] - [STAB.RA] value 0.5d), press  (Yes) button to Accept setting or the  (No) button to change setting. The current selection is signed by [◦].



5. When [END] is displayed, press  (Yes) button to return to sub-menu selections.



6. Press the  (No) button to return to the first item in the current menu.  
 7. Press the  button to exit the menu.

## 6.2 Menu Navigation

Overview of Menu Mode options.

— <b>APPLIC</b>	Application (see chapter <a href="#">6.2.1</a> )
— <b>METRO</b>	Metrology (see chapter <a href="#">6.2.2</a> )
— <b>UNIT</b>	Weighing units (see chapter <a href="#">6.2.3</a> )
— <b>OP.FUNC</b>	Operation functions (see chapter <a href="#">6.2.4</a> )
— <b>PRINT</b>	Printer outputs (see chapter <a href="#">6.2.5</a> )
— <b>PRN.COM</b>	Printer port communication (see chapter <a href="#">6.2.6</a> )
— <b>PC.OUT</b>	PC output (see chapter <a href="#">6.2.7</a> )
— <b>PC.COM</b>	PC port communication (see chapter <a href="#">6.2.8</a> )
— <b>CAL.ADJ</b>	Calibration / Adjustment (see chapter <a href="#">6.2.9</a> )
— <b>ADC.CON</b>	ADC configuration (see chapter )
— <b>INFO</b>	Information (shows serial number and type designation)
— <b>SECURE</b>	Block menu items (see chapter <a href="#">6.2.11</a> )
— <b>E.N.D.</b>	Leave menu

### Note:

Some modes / units may not be available in all models.

### 6.2.1 Menu Selection [APPLIC]

Enter this menu to select application to be used.

Only activated units will be accessible with the  (Mode) Button.

Default settings are identified by an "\*"

<b>APPLIC</b>	
— <b>WEIGH</b>	Weighing mode
— <b>OFF</b>	disabled
— <b>ON</b>	enabled*
— <b>PERCNT</b>	Percentage mode
— <b>OFF</b>	disabled
— <b>ON</b>	enabled*
— <b>COUNT</b>	Count mode
— <b>OFF</b>	disabled
— <b>ON</b>	enabled*
— <b>CHECK</b>	Check mode
— <b>OFF</b>	disabled*
— <b>CHE.WEI</b>	Check Weighing enabled
— <b>CHE.PER</b>	Check Percentage enabled
— <b>CHE.CNT</b>	Check Counting enabled
— <b>AVERAG</b>	Averaging mode
— <b>AUTO</b>	Automatic
— <b>OFF</b>	disabled*
— <b>MAN</b>	Manual
— <b>SEMI</b>	Semi-automatic
— <b>D.HOLD</b>	Display Hold mode
— <b>OFF</b>	disabled*
— <b>ON</b>	enabled
— <b>RESET</b>	Factory setting
— <b>NO</b>	not restored*
— <b>YES</b>	enabled
— <b>END</b>	Leave menu level

### 6.2.2 Menu Selection [METRO]

Enter this menu to customize display functionality and scale functionality.

Default settings are identified by an "\*"

<b>METRO</b>	
— <b>STAB.RA</b>	Stability range
— <b>0.5d</b>	1/2 digit
— <b>1d</b>	1 digit*
— <b>2d</b>	2 digit
— <b>4d</b>	4 digit
— <b>FILTER</b>	Adaption Filter
— <b>LOW</b>	Less precion, short stabilization time
— <b>MED</b>	Normal precion, medium stabilization time*
— <b>HI</b>	High Precion, Long stabilization time
— <b>A.ZERO.T</b>	Auto Zero-Tracking
— <b>OFF</b>	Turn off
— <b>0.5d</b>	Drift of 1/2 digit*
— <b>1d</b>	Drift of 1 digit
— <b>3d</b>	Drift of 3 digit
— <b>AUT.OFF</b>	Auto Off Timer
— <b>OFF</b>	Turn off*
— <b>1 MIN</b>	power off after 1 minute of no activities
— <b>5 MIN</b>	power off after 5 minute of no activities

— 10 MIN	power off after 10 minute of no activities
— <b>DYN.TIM</b>	Set the average/dynamic mode countdown timer
— 5 SEC	count down from 5s
— 10 SEC	count down from 10s*
— 15 SEC	count down from 15s
— 20 SEC	count down from 20s
— 25 SEC	count down from 25s
— 30 SEC	count down from 30s
— <b>RESET</b>	Factory setting
— NO	not restored*
— YES	enabled
— <b>END</b>	Leave menu level

### 6.2.3 Menu Selection [UNIT]

Enter this menu to customize weighing unit to be used.

Only activated units will be accessible with the  (Unit) Button.

Default settings are identified by an "\*"

<b>UNIT</b>	
— <b>kg</b>	Kilogram
— OFF	disabled
— ON	enabled*
— <b>g</b>	Gram
— OFF	disabled
— ON	enabled*
— <b>lb</b>	Pound
— OFF	disabled
— ON	enabled*
— <b>oz</b>	Ounce
— OFF	disabled
— ON	enabled*
— <b>lb:oz</b>	Pound / Ounces
— OFF	disabled*
— ON	enabled
— <b>RESET</b>	Factory setting
— NO	not restored*
— YES	enabled
— <b>END</b>	Leave menu level

### 6.2.4 Menu Selection [OP.FUNC]

Enter this menu to setup scale parameters.

Default settings are identified by an "\*"

<b>OP.FUNC</b>	
— <b>ZERO.R</b>	Zero Range
— 2%	zero up to 2% capacity
— 10%	zero up to 10% capacity*
— <b>A.TARE</b>	Automatic Tare
— OFF	disabled*
— ON	1st stable weight is tared
— <b>ON-ACC</b>	

— <b>BEEP.SI</b>	Stable loads within the accept limits are tared (in Checkweighing mode)
— <b>OFF</b>	Beeper Signal (in Checkweighing Mode) disabled*
— <b>ACCEPT</b>	Alarm when the weight is within the Accept range
— <b>UNDER</b>	Alarm when the weight is under the low limit
— <b>OVER</b>	Alarm when the weight is over the high limit
— <b>UNDOVR</b>	Alarm when the weight is outside Accept range
— <b>BEEP.KE</b>	Button Sound
— <b>OFF</b>	disabled
— <b>ON</b>	enabled*
— <b>TOT.SET</b>	Totalization Setting
— <b>OFF</b>	disabled
— <b>AUTO</b>	Automatic Totalization
— <b>MAN</b>	Manual Totalization*
— <b>LIGHT.T</b>	Back lighting time (D.LIGHT = AUTO)
— <b>3 SEC</b>	Backlight off after 3 minutes of no activity
— <b>5 SEC</b>	Backlight off after 5 minutes of no activity*
— <b>8 SEC</b>	Backlight off after 8 minutes of no activity
— <b>D.LIGHT</b>	Display Backlight
— <b>OFF</b>	disabled
— <b>ON</b>	enabled
— <b>AUTO</b>	turns on when a button is pressed or the displayed weight changes*
— <b>COM.EQU</b>	Communication Module
— <b>OFF</b>	disabled*
— <b>BLUE.TH</b>	Bluetooth Enabled (when Bluetooth module installed)
— <b>WIFI</b>	Wi-Fi Enabled (when WIFI module installed)
— <b>ETHER.N</b>	Ethernet Enabled (when Ethernet module is installed)
— <b>RESET</b>	Factory setting
— <b>NO</b>	not restored*
— <b>YES</b>	enabled
— <b>END</b>	Leave menu level

### 6.2.5 Menu Selection [PRINT]

Enter this menu to print scale parameters.

Default settings are identified by an "\*"

#### PRINT

— <b>STABLE</b>	Printing criteria
— <b>OFF</b>	values are printed immediately
— <b>ON</b>	values are only printed when stable*
— <b>A.PRINT</b>	Automatic Print
— <b>OFF</b>	disabled*
— <b>ON.STAB</b>	Print on stability
— <b>INTER</b>	Printing at the defined interval
— <b>1...3600</b>	1 ... 3600 second
— <b>CONT</b>	Print continuously
— <b>ACCEPT</b>	Print on stable and within checklimit

— <b>CONTNT</b>	Content
— <b>RESULT</b>	Display Value
— OFF	disabled
— ON	enabled*
— <b>GROSS</b>	Gross Value
— OFF	disabled*
— ON	enabled
— <b>NET</b>	Net Value
— OFF	disabled*
— ON	enabled
— <b>TARE</b>	Tare
— OFF	disabled*
— ON	enabled
— <b>HEADER</b>	Header info
— OFF	disabled*
— ON	enabled
— <b>FOOTER</b>	Footer info
— OFF	disabled*
— ON	enabled
— <b>MODE</b>	Mode info
— OFF	disabled*
— ON	enabled
— <b>INFO</b>	Reference info (CkWt, CkCount, Ck%, Count, %)
— OFF	disabled*
— ON	enabled
— <b>TOTAL</b>	Total Value
— OFF	disabled*
— <b>RESULT</b>	Accumulated result is printed
— <b>ALL</b>	Accumulated data is printed
— <b>LI.SET</b>	List Set
— <b>FORMAT</b>	Format send to printer and to PC
— <b>MULTI</b>	Multi-line (single column) printout*
— <b>SINGLE</b>	Single line printout
— <b>FEED</b>	Paper Feed Setting
— <b>LINE</b>	Move a paper up one line after printing
— <b>4LF</b>	Move a paper up four lines after printing*
— <b>FORM</b>	Form feed after printing
— <b>RESET</b>	Factory setting
— <b>NO</b>	not restored*
— <b>YES</b>	enabled
— <b>END</b>	Leave menu level

### 6.2.6 Menu Selection [PRN.COM]

Enter this menu to setup Print Communication parameters.

Default settings are identified by an "\*"

#### PRN.COM

— <b>BAUD</b>	Baud Rate
— <b>2400</b>	2400
— <b>4800</b>	4800
— <b>9600</b>	9600*
— <b>19200</b>	19200

38400	38400
57600	57600
115200	115200
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 setting
NO	not restored*
YES	enabled
END	Leave menu level

### 6.2.7 Menu Selection [PC.OUT]

Enter this menu to define PC Output parameters.

Default settings are identified by an "\*"

PC.OUT	
MODE	PC Output Mode
OFF	disabled*
MAN.OUT	Manual output
MAN.STA	Manual output
INT.OUT	Interval output
AUT.OUT	Automatic output
AUT.STA	Automatic output when data is stable
INTERV	Set the output interval (when INT.OUT is selected)
1 CYC	Each display cycle
2 CYC	After 2 display cycle
5 CYC	After 5 display cycle*
10 CYC	After 10 display cycle
20 CYC	After 20 display cycle
50 CYC	After 50 display cycle
100 CYC	After 100 display cycle
RESET	Factory setting
NO	not restored*
YES	enabled
END	Leave menu level

### 6.2.8 Menu Selection [PC.COM]

Enter this menu to define PC Communication parameters.

Default settings are identified by an "\*"

PC.COM	
BAUD	Baud Rate
4800	4800
9600	9600*
19200	19200
38400	38400
57600	57600



115200	115200
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, no parity
7 SPACE	7 data bits, no parity
STOP	Stop Bit
1	1*
2	2
HAND.SH	Handshake
NONE	No Handshaking*
XON-.XOF	has no function
RESET	Factory setting
NO	not restored*
YES	enabled
END	Leave menu level

### 6.2.9 Menu Selection [CAL.ADJ]

Enter this menu to perform calibration and adjustment of your scale (see chapter 7).

CAL.ADJ	
CAL	Initiates a span calibration procedure (zero and span)
LIN	Initiates a linearity calibration procedure (zero, mid-point and span)
GEO	Geographical Adjustment Factor (GEO) is used to adjust the calibration based on the current location. (Settings from 0 ... 31, default 12)
END	Leave menu level

### 6.2.10 Menu Selection [INFO]

INFO	
TYPE	show model name
SER.NUM	show serial number

### 6.2.11 Menu Selection [SECURE]

Enter this menu to define Security setting (Lock) on menu option to prevent tampering. Default settings are identified by an "\*"

SECURE	
S.APPLI	Application Menu
OFF	Unlock*
ON	Locked
S.UNIT	Unit Menu
OFF	Unlock*
ON	Locked
S.OP.FUN	Operation Function Menu
OFF	Unlock*
ON	Locked
S.METRO	Metrology Menu
OFF	Unlock*

—	—	ON	Locked
—	S.PRINT	—	Print Menu
		OFF	Unlock*
		ON	Locked
—	S.PR.COM	—	Communication Menu
		OFF	Unlock*
		ON	Locked
—	S.PC.OUT	—	PC Output Menu
		OFF	Unlock*
		ON	Locked
—	S.PC.COM	—	PC Communication Menu
		OFF	Unlock*
		ON	Locked
—	S.CAL.AD	—	Calibration / Adjustment Menu
		OFF	Unlock*
		ON	Locked
—	RESET	—	Restore factory setting of current menu
		OFF	Unlock*
		ON	Locked
—	END	—	Leave menu level

## 7 Calibration and Adjustment

Enter this menu to perform calibration and adjustment of your scale.

### Initial Calibration

When the scale is operated for the first time, a Span Calibration is recommend to ensure accurate weighing results. Before performing the calibration, be sure to have the appropriate calibration weights.

Adjust the GEO setting according to your location (see table 7.4).

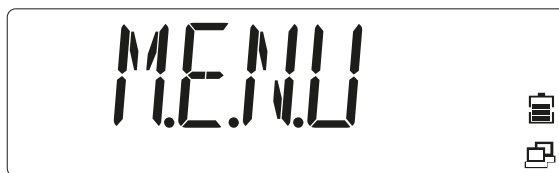
### CAL.ADJ

— CAL	Initiates a span calibration procedure (zero and span)
— LIN	Initiates a linearity calibration procedure (zero, mid-point and span)
— GEO	Geographical Adjustment Factor (GEO) is used to adjust the calibration based on the current location. (Settings from 0 ... 31, default 12)
— END	Leave menu level

### 7.1 [CAL] Calibration Procedure

Enter into Menu Mode:



1. Press and hold  until [M.E.N.U] displayed.

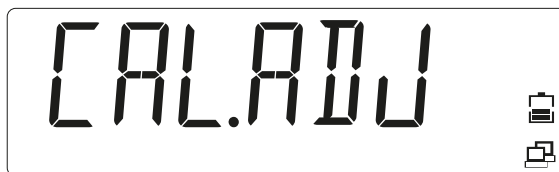



Release the button.

- ▷ The 1<sup>st</sup> menu item [APPLIC] is displayed.



2. Press the  button move to next menu item or  button move to previous menu item.
3. Change menu item until [CAL.ADJ] is displayed.



4. Press  (Yes) button to enter into sub-menu item.
 

▷ Sub-menu item [CAL] (Calibration) is displayed.

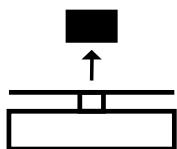



5. Press  (Yes) button enter into sub-menu item.

▷ [0 kg] is displayed. [0] is blinking.

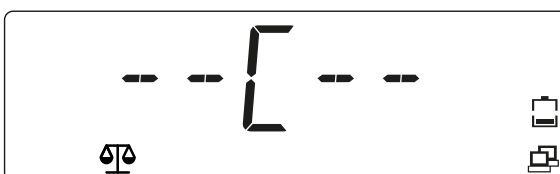


6. Empty the weighing pan.

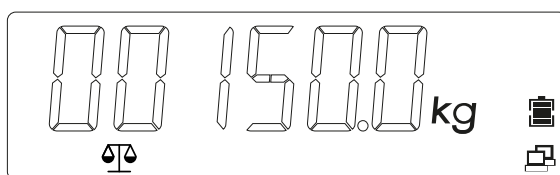



7. Press  (Yes) button to start zero point calibration.

▷ [--C--] is displayed while zero reading is stored.




The display shows the calibration weight value (selected in the ADC configuration) with all digit blinking [001500.0] (in this example, 150 kg)



8. For changing the calibration weight value, press the  (No) button to edit the value.



▷ The first digit is blinking [\_015.000 kg].

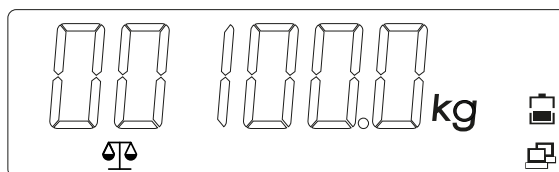


9. Press  (Yes) button to accept and highlight the next digit.

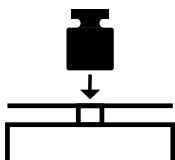
▷ The 2nd digit is blinking [0\_15.000 kg].




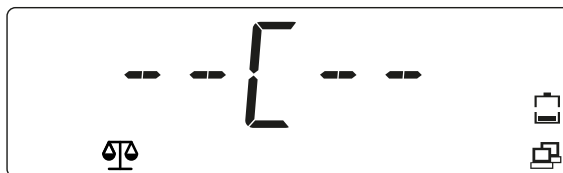
10. Press the  button to increase or the  button to decrease the digit value.
11. Repeat until all the digits are correct.
  - ▷ The Display shows the calibration value with all digit blinking [00100.0] (in this example, 100 kg)



12. When calibration weight value is correct, put specified weight on pan.



13. Press  (Yes) button to start span calibration.
  - ▷ [--C--] will be displayed while calibration weight is stored.



In case of any mistake during the calibration process [CALE] (Calibration Error) is displayed.



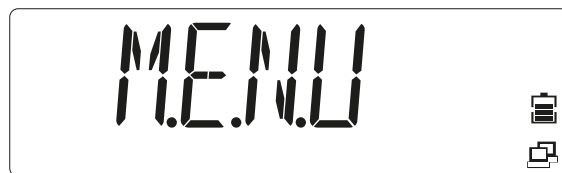
14. Remove the weight after finish.
  - ▷ The scale is ready for weighing.



## 7.2 [LIN] Linearity Calibration Procedure

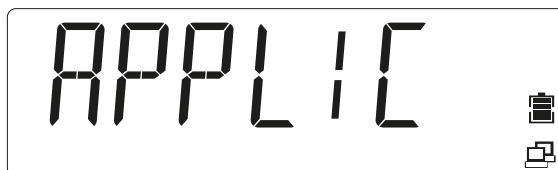
Enter into Menu Mode:



1. Press and hold  until [M.E.N.U] displayed.

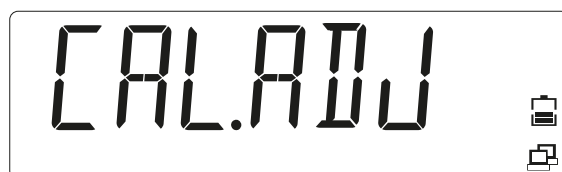



Release the button.

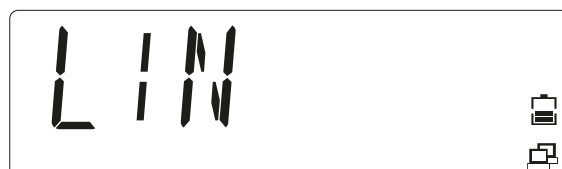
- ▷ The 1<sup>st</sup> menu item [APPLIC] shows on display.




2. Press the  button move to next menu item or  button move to previous menu item.
3. Change menu item until [CAL.ADJ] shows on display.



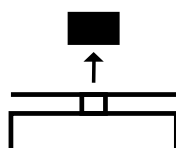
4. Press  (Yes) button enter into sub-menu item.
5. Change menu item until [LIN] shows on display.




6. Press  (Yes) button to start zero point calibration.
- ▷ [0 kg] shows on display. [0] is blinking.

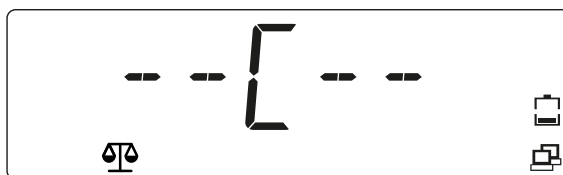


7. Empty the weighing pan.

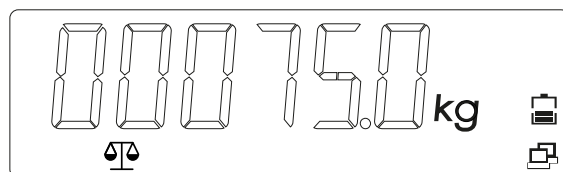


8. Press the  (Yes) button to confirm.

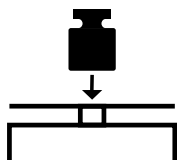
- ▷ [--C--] will be displayed while zero reading is stored.



The display shows the 1<sup>st</sup> linearization weight value (50% of scale capacity) with all digit blinking [00075.0] (in this example, 75 kg). This value cannot be modified.

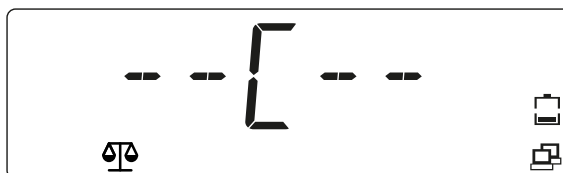


9. Put the 1<sup>st</sup> linearization weight on the pan.

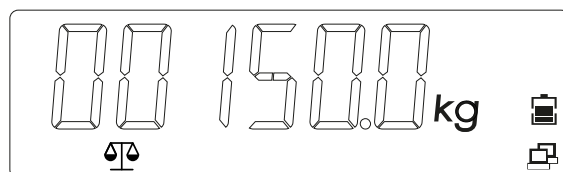


10. Press  (Yes) button to start linearity adjustment at 50% of scale capacity

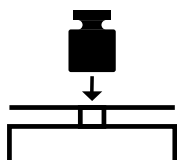
- ▷ [--C--] will be displayed while reading is stored.



The display shows the the 2<sup>nd</sup> linearization weight value at 100% of scale capacity with all digit blinking [00150.0] (in this example, 150 kg).

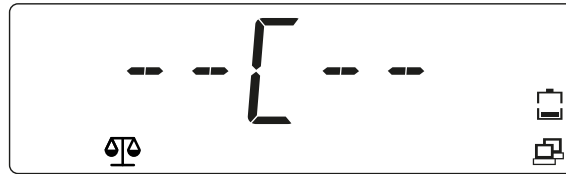


11. Put 2<sup>nd</sup> linearization weight on the pan.



12. Press  (Yes) button to start linearity adjustment at 100% of scale capacity.

- ▷ [--C--] is displayed while reading is stored.



The display shows the linearization weight value at 100% of scale capacity [00150.0] (in this example, 150 kg).



In case of any mistake during the linearization process [CALE] (Calibration Error) will be displayed.



13. Remove the weight after finish.
  - ▷ The scale is ready for weighing.

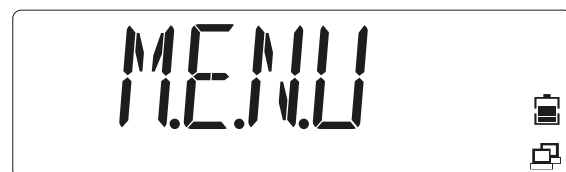


### 7.3 [GEO] Geographical Factor Adjustment Procedure

The Geographical Adjustment Factor [GEO] is used to adjust the calibration based on the current location. (Settings from 0 ... 31 are available). Refer to table 7.4 to determine the GEO factor that corresponds to your location.

Enter into Menu Mode:

1. Press and hold  until [M.E.N.U] displayed.





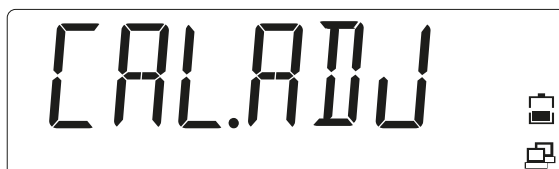
Release the button.




- ▷ The 1<sup>st</sup> menu item [APPLIC] shown on display.






2. Press the  button move to next menu item or  button move to previous menu item.
3. Change menu item until [CAL.ADJ] show on display.






4. Press  (Yes) button enter into sub-menu item.
5. Press the  button move to next menu item or  button move to previous menu item.
6. Change menu item until [GEO] is displayed.






7. Press  (Yes) button to start GEO Factor selection.
  - ▷ The default GEO factor [12] is indicated and blinking.



8. If changing the value is needed, selection from 0 ... 31, press the  button to increase or the  button to decrease the GEO factor value.
9. Press  (Yes) button to confirm GEO Factor value.
  - ▷ The GEO factor has been stored, when [END] is displayed.



10. Press  (Yes) button to return to sub-menu selections.
11. Press  (No) button to return to the first item in the current menu.
12. Press the  button to exit the setup menu and return to the weighing mode.

## 7.4 GEO Code Table

		Elevation in meters										
		0	325	650	975	1300	1625	1950	2275	2600	2925	3250
		325	650	975	1300	1625	1950	2275	2600	2925	3250	3575
		Elevation in feet										
		0	1016	2130	3200	4260	5330	6400	7460	8530	9600	10660
		1060	2130	3200	4260	5330	6400	7460	8530	9600	10660	11730
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
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

		Elevation in meters										
		0	325	650	975	1300	1625	1950	2275	2600	2925	3250
		325	650	975	1300	1625	1950	2275	2600	2925	3250	3575
		Elevation in feet										
		0	1016	2130	3200	4260	5330	6400	7460	8530	9600	10660
		1060	2130	3200	4260	5330	6400	7460	8530	9600	10660	11730
Latitude		GEO value										
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
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

## 8 SBI Interface

You can enter certain commands to control weighing platform functions through the SBI interface. Each command starts with an escape sequence. The command is always closed with an end of command (EOC). The end of command can be any combination of CR and LF. Every data after EOC and before ESC will be ignored by the scale.

### Read displayed value:

ESC	P	EOC
-----	---	-----

Answer (16 Byte):

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

V	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

### Zero the weighing platform:

ESC	Z	EOC
-----	---	-----

Answer: see special Response Commands

### Tare the weighing platform:

ESC	T	EOC
-----	---	-----

Answer: see special Response Commands

### Special Response commands:

There are some special response commands. These Commands are used as Standard responses. For example, error or confirmation. Special Response Commands always have the same size of 5 Bytes!

### OK

1	2	3	4	5
O	K	!	CR	LF

The Scale confirmed the command execution without any errors.

**ERROR**

1	2	3	4	5
E	R	R	CR	LF

The Scale has reported an Error during command execution.

**LOCKED**

1	2	3	4	5
L	O	C	CR	LF

The command can not be executed because the parameter is currently locked.

## 9 Maintenance/repairs/cleaning

### 9.1 Repairs

Immediately disconnect a defective device from the power supply.

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

The seals placed on the device indicate that the device may only be opened and serviced by authorized specialists to ensure trouble-free and safe operation of the device, and to ensure that the warranty remains valid.

#### **WARNING**

**Improper repairs can pose considerable risks to the user.**

- Repairs should only be performed by Minebea Intec authorized dealers using original spare parts.

### 9.2 Cleaning

#### 9.2.1 Cleaning instructions

The device should be cleaned at regular intervals.

Disconnect the device from the supply voltage before cleaning.

Remove all traces of corrosive substances on a regular basis.

If the scale is located in a dry environment, then wipe the weighing platform using a damp cloth.

Do not allow liquid to enter devices with an IP43 degree of protection.

The device may not be cleaned using a high-pressure or steam cleaner. Consider the IP rating.

Condensation may form in the device if it is cleaned with water that is too hot or too cold, due to temperature differences. Condensation may cause the device to malfunction.

#### 9.2.2 Cleaning agents

#### **NOTICE**

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

- Do not use cleaning agents for stainless steel parts that contain chlorine, alkalines, acetic acid, hydrochloric acid, sulfuric acid, or citric acid.
- The use of cleaning sponges made of steel wool is prohibited (e.g. S.O.S pads).
- Use a damp cloth or sponge to clean stainless steel parts on the scale (if present). You can use any commercially available household cleaning agent that is suitable for use on stainless steel.

## 10 Disposal

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 can be used as secondary raw materials.

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 are contaminated with hazardous substances (ABC contamination) for repair.

## 11 Troubleshooting

The Table lists common problems and possible causes and remedies.

If the problem persists, contact Minebea Intec or your authorized dealer.

Symptom	Possible Cause	Remedy
Cannot turn on	No power to scale	Verify connections and voltage
Poor accuracy	Improper adjustment Unstable environment	Perform adjustment Move scale to suitable location
Cannot access mode	Mode not enabled	Enter menu and enable mode
Cannot access unit	Unit not enabled	Enter menu and enable unit
Battery icon flashing	Low Battery error	Connect the scale to AC power and charge the battery
[Err 8.1]	Power On Error	Weight reading exceeds Power On Zero limit
[Err 8.2]	Power On Error	Weight reading below Power On Zero limit
[Err 8.3]	Over Range Error	Weight reading exceeds Overload limit
[Err 8.4]	Under Range Error	Weight reading below Underload limit
[Err 8.5]	Tare out of range	Adjust tare value to be within range
[Err 8.6]	Display overflow	Weight exceeds 6 digits
[Err 9.5]	Calibration data error	Calibration data not present
	Busy	Displayed during tare setting, zero setting, printing
[--NO--]	Action not allowed	Function not executed
[CAL E]	Calibration error Unstable environment Incorrect calibration weight	Calibration value outside allowed limits Move the scale to suitable location Use correct calibration weight
[REF.ERR]	Unacceptable reference weight	Reference weight too small. Weight on the pan is too small to define a valid reference weight. Increase reference weight
Battery fails to charge fully	Battery is defective	Have battery replaced by Minebea Intec authorized service dealer.

### 11.1 Service Information

If the troubleshooting chapter does not resolve or describe your problem, contact your authorized service agent. Please visit our website <http://www.puroscales.com> to locate the Electronic Precision Scales/Balances office nearest you.



## 12 Technical data

### 12.1 Ambient Conditions

- Indoor use only
- Operating temperature: -10°C to +40°C
- Storage temperature: -10°C to +50°C
- Relative humidity: 20 % to 85 % relative humidity, non-condensing
- Altitude: up to 3575 m

### 12.2 Specifications

Model number	EF - ..	P1	P3	P6	P15	P30
Max. Capacity (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		Weighing, Automatic tare, Percent Weighing, Parts Counting, Checkweighing, Accumulation, Dynamic Weighing, Display Hold, Automatic Print, Totalizing				
Weighing units		kg, g, lb, oz, lb:oz				
Construction/material		ABS plastic housing, stainless steel 304 weighing platform				
Ingress protection rating		IP43				
Display		Front and back LCD display with white backlight, 1.1 in / 28 mm height digits				
Checkweighing indicators		3 LED (yellow, green, red) with configurable operation and alert beeper				
Keypad		5 mechanical keys				
Zero range		2 % or 10 % of full scale capacity				
Tare range		Full capacity by subtraction				
Stabilization time		1 second				
Auto-zero tracking		Off, 0.5, 1 or 3 divisions				
Safe overload capacity		150 % of rated scale capacity				
Levelling components		Externally visible level indicator and adjustable, non-slip levelling feet				
Power		U <sub>DC</sub> = 5 V, 2A, AC adapter or portable rechargeable lithium battery				

Model number	EF - ..	P1	P3	P6	P15	P30
Battery operation		Up to 210 hours operation time (with standard battery) between recharges with 12 hour recharge time				
Calibration		External, with freely selectable calibration weights				
Interface	-LT -LF	Built-in USB-C, Printer-Port, RS232				
Interface	-ST -SF	Built-in USB-C, Printer-Port				
Operating temperature (°C)		-10 ... +40				
Storage temperature (°C)		-10 ... +50				
Product dimension mm (w x d x h)	- LT	310 x 302 x 115 mm				
Platform size (w x l)		280 x 180 mm				
Shipment dimension mm (w x d x h)		370 x 370 x 220 mm				
Net weight		2.9 kg				
Shipping weight		4.5 kg				
Product dimension mm (w x d x h)	- LF	310 x 302 x 85 mm				
Platform size (w x l)		280 x 180 mm				
Shipment dimension mm (w x d x h)		370 x 370 x 220 mm				
Net weight		2.7 kg				
Shipping weight		4.3 kg				
Product dimension mm (w x d x h)	- ST	246 x 302 x 129 mm				
Platform size (w x l)		218 x 180 mm				
Shipment dimension mm (w x d x h)		370 x 370 x 220 mm				
Net weight		2.8 kg				
Shipping weight		4.5 kg				
Product dimension mm (w x d x h)	- SF	246 x 302 x 90 mm				
Platform size (w x l)		218 x 180 mm				
Shipment dimension mm (w x d x h)		370 x 370 x 220 mm				
Net weight		2.6 kg				
Shipping weight		4.1 kg				

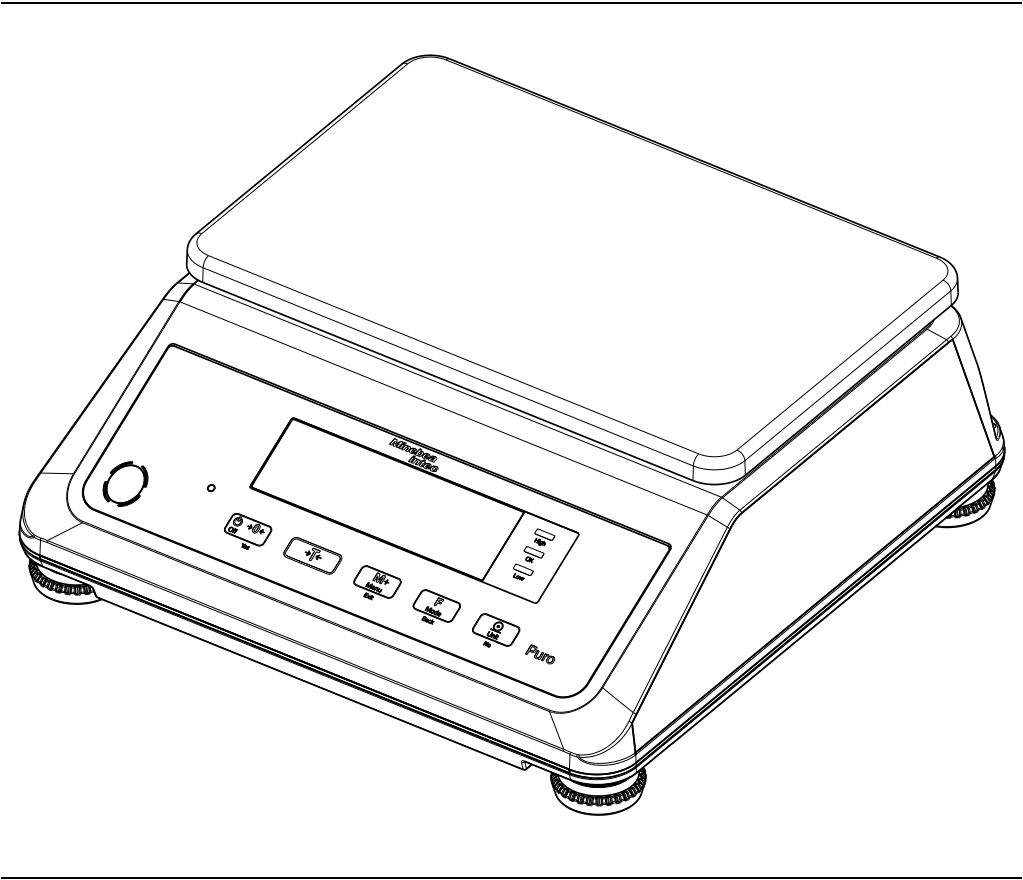
Model number	EF - ..	P1	P3	P6	P15	P30
Accessories		Data printer, USB-C cable (not usable for PC communication), Printer port cable, weighing hook, lithium battery pack				

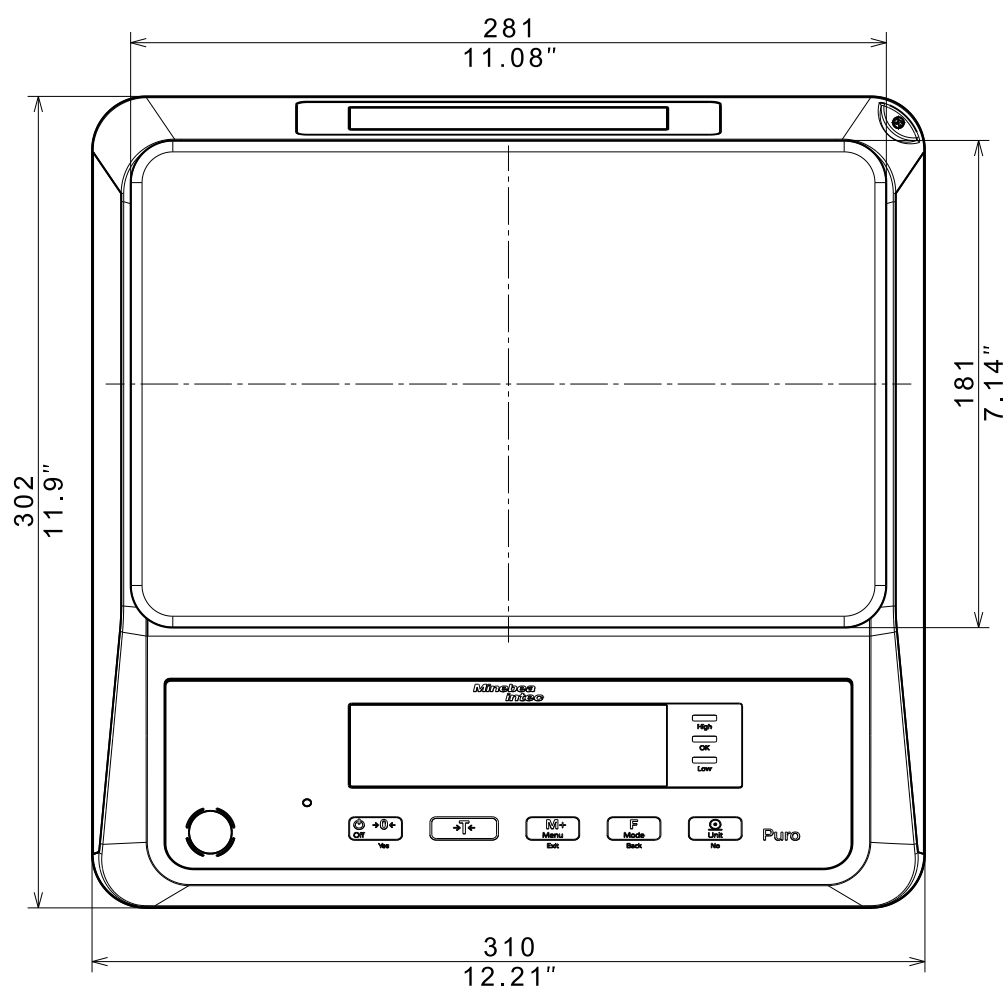
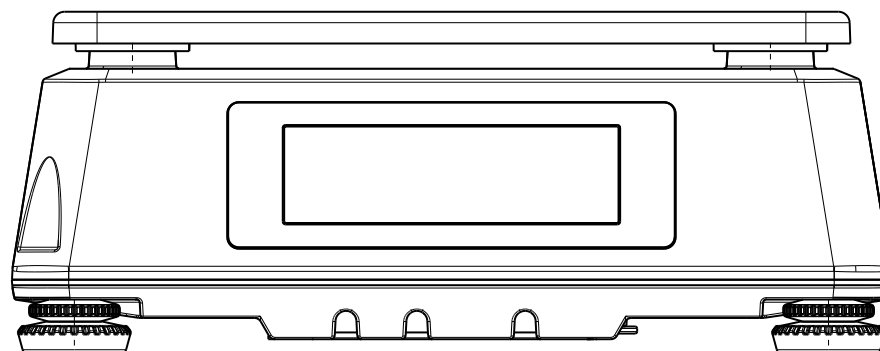
12.3 Accessories

Option	Order-No.
Data Printer	YP-DP1
Paper for Data Printer	YP-P1
USB-C cable (not usable for PC communication)	YP-CAC1
Printer cable	YP-CAS1
USB Charger	YP-PS1
Weighing hook	YP-H1

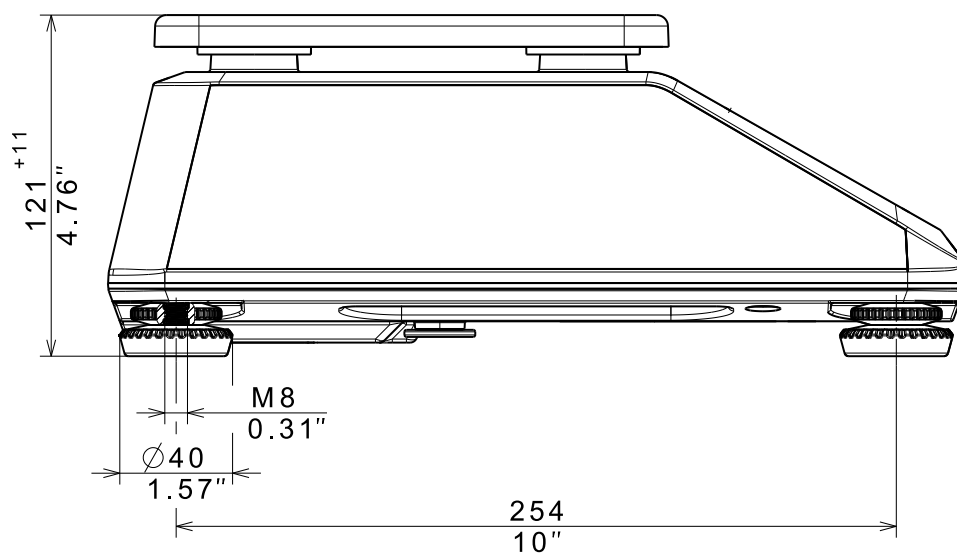
12.4 Dimensions

LargeTall (LT)

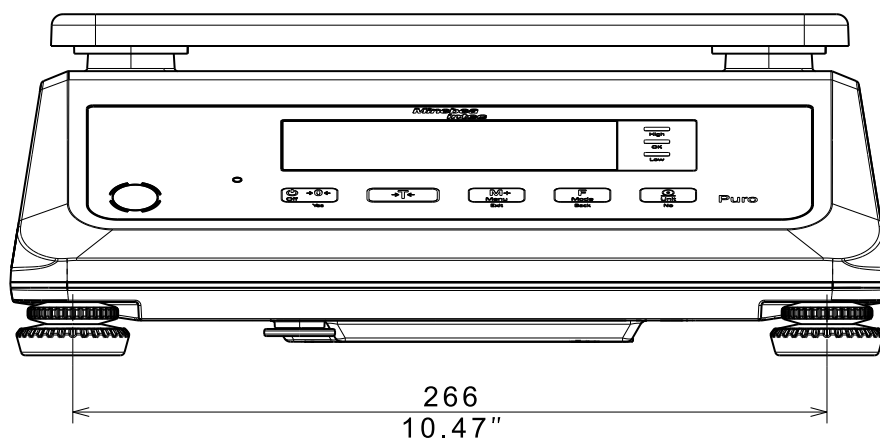




all dimensions in mm / inch



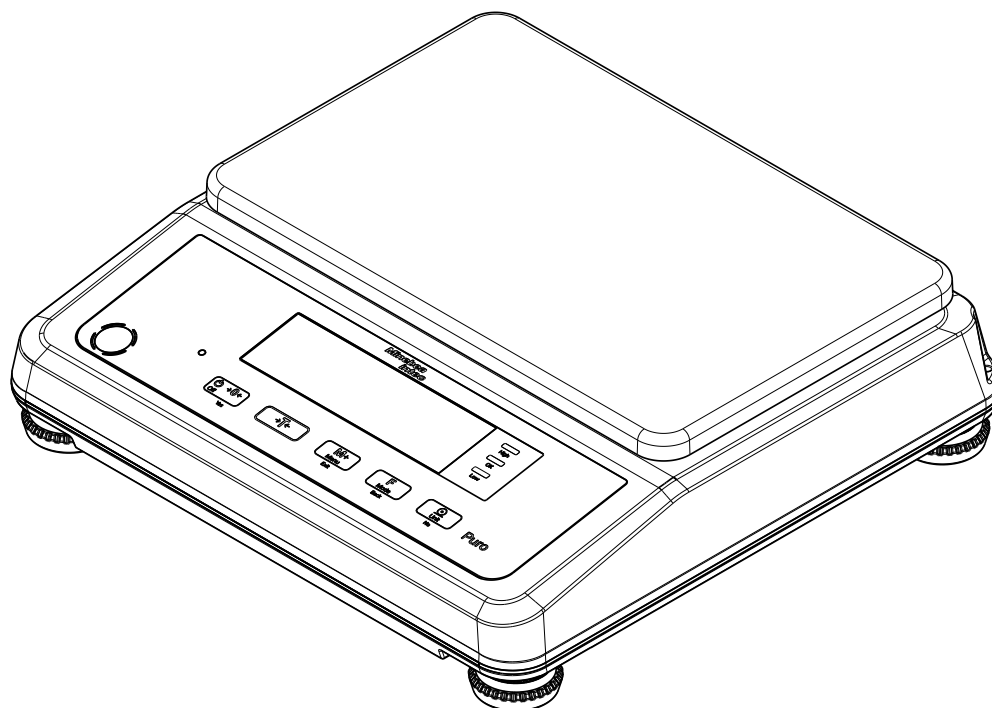
all dimensions in mm / inch

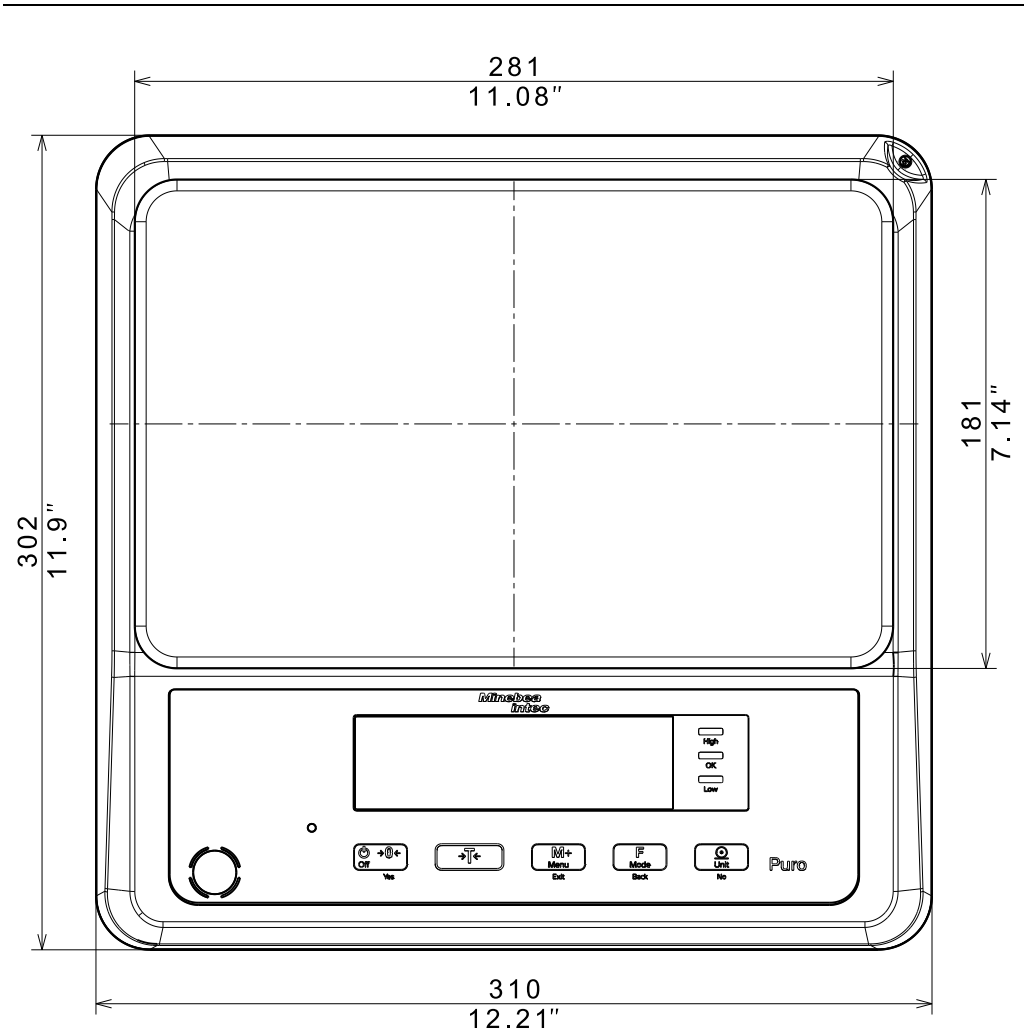


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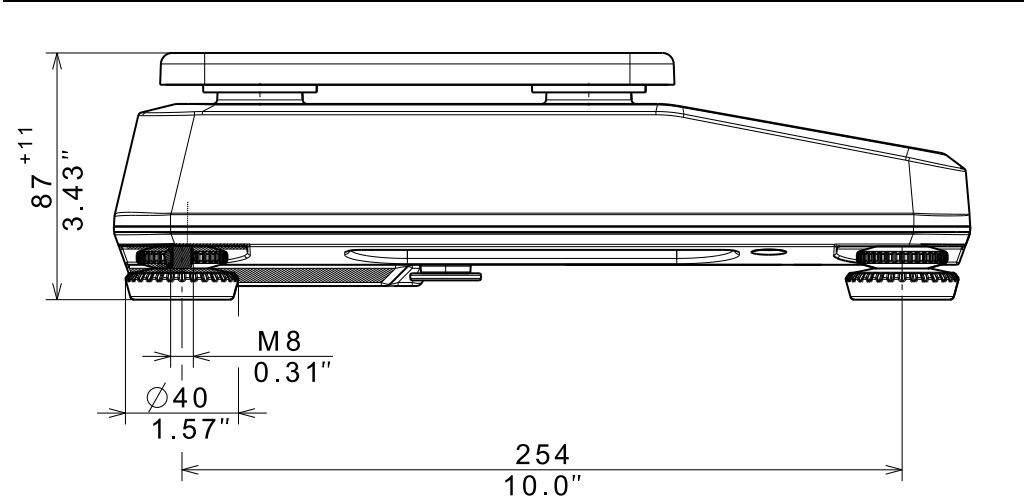
**LargeFlat (LF)**

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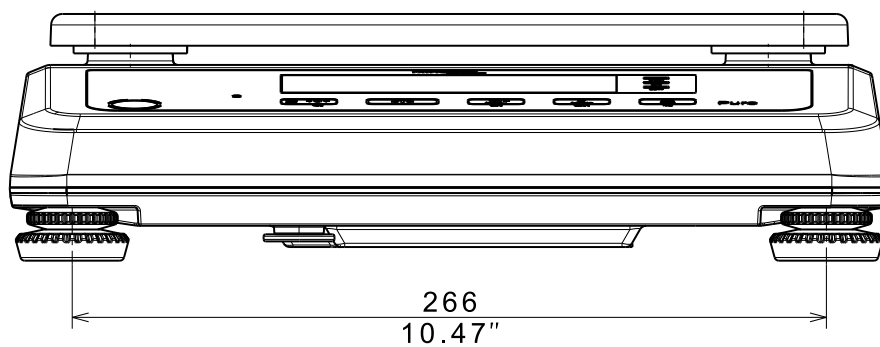




all dimensions in mm / inch



all dimensions in mm / inch

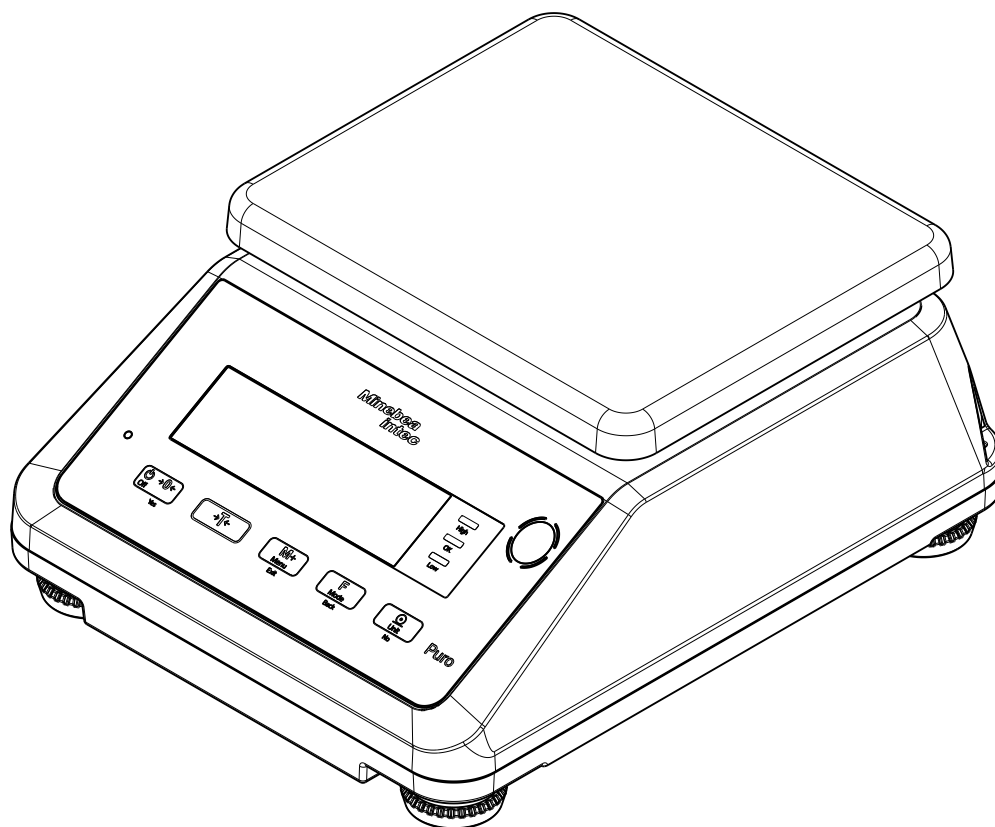


all dimensions in mm / inch

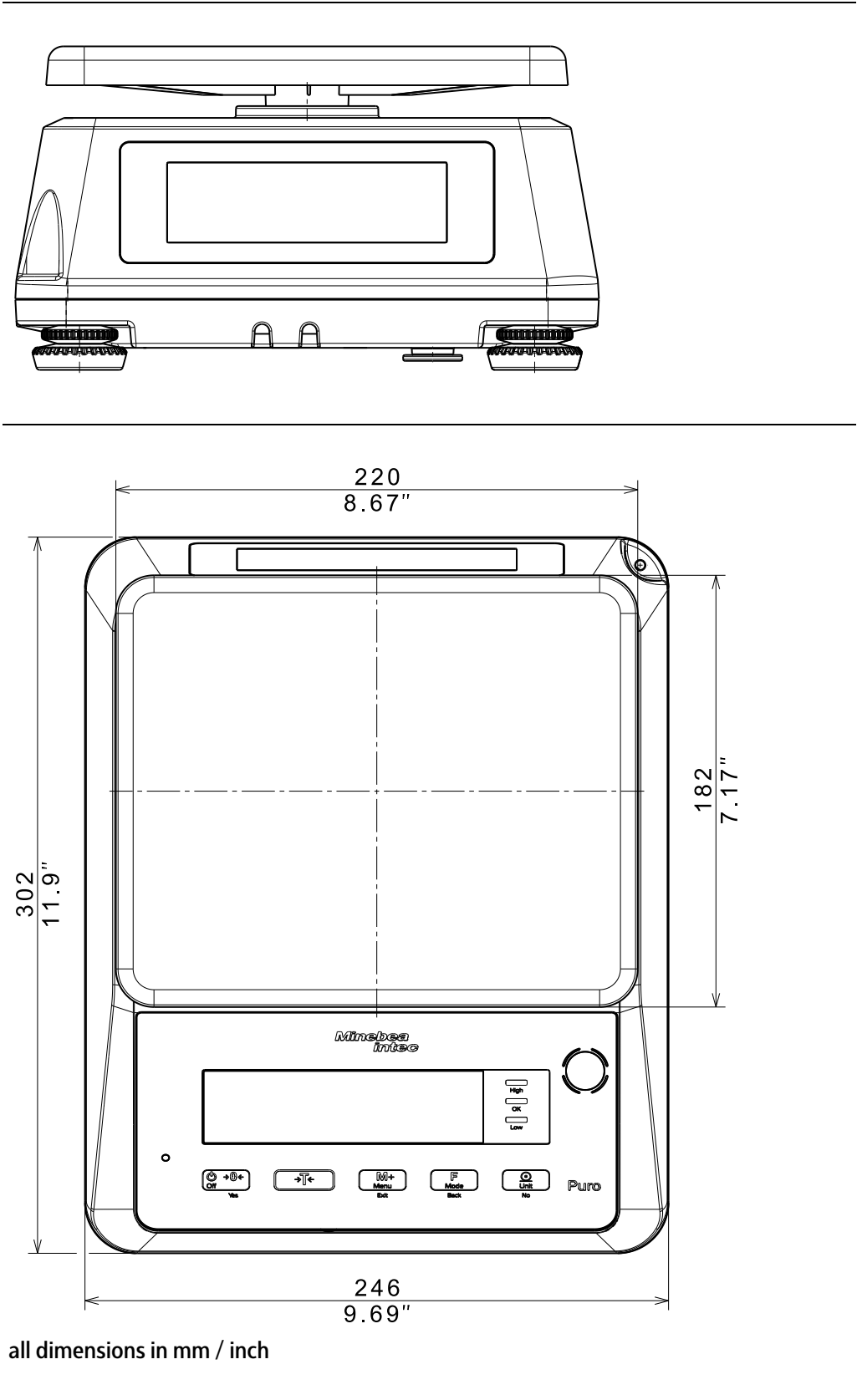
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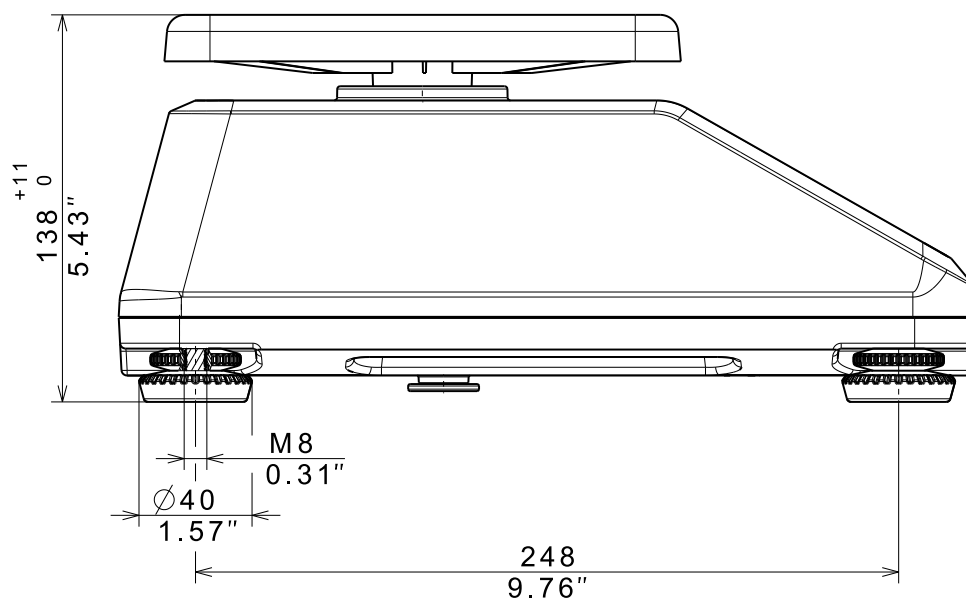
### SmallTall (ST)

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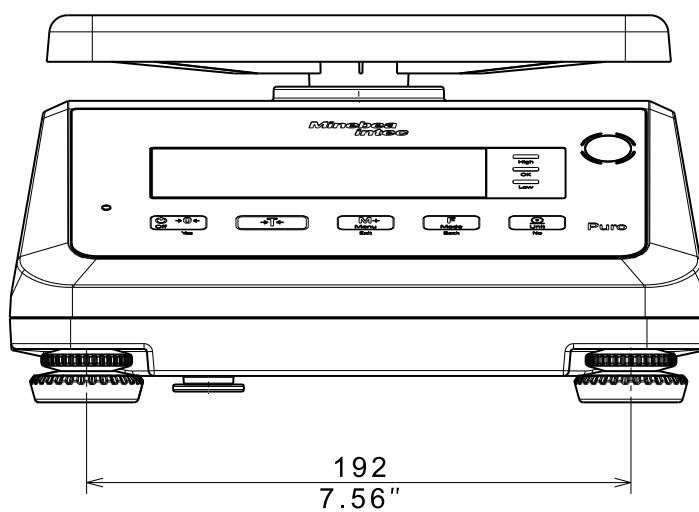








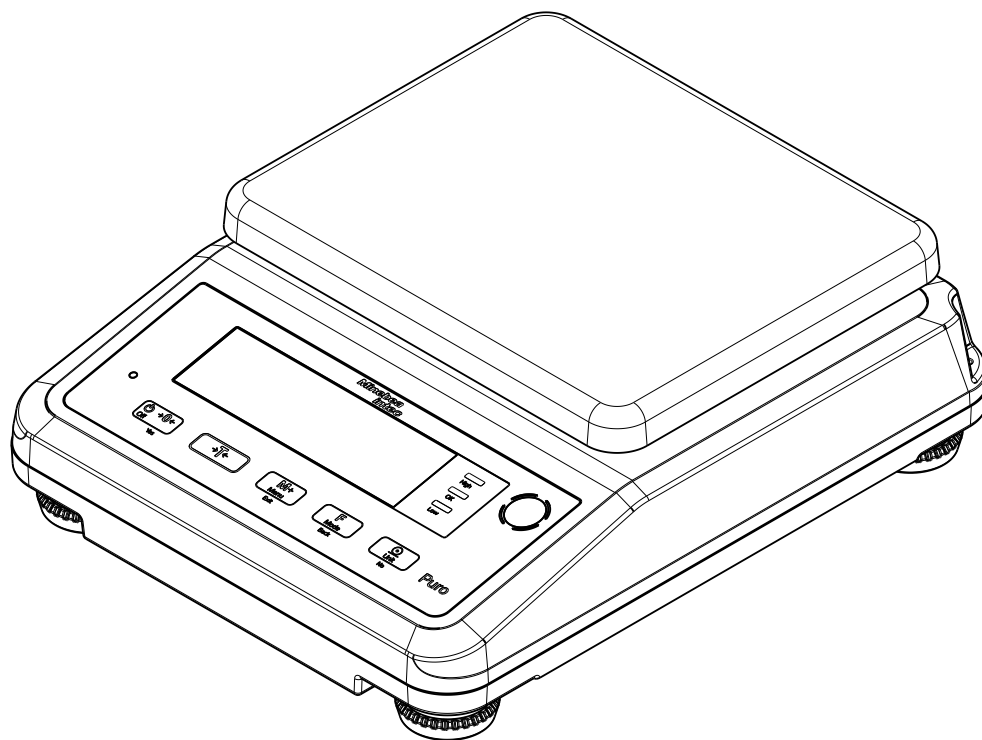
all dimensions in mm / inch



all dimensions in mm / inch

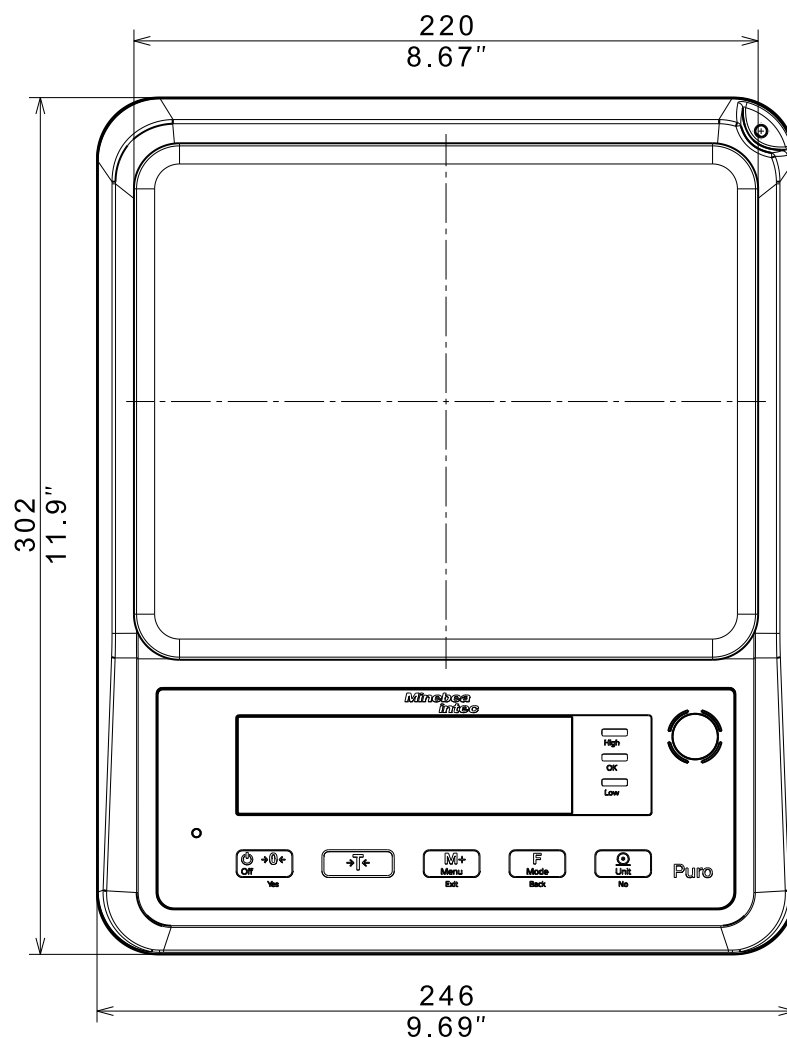
**SmallFlatt (SF)**

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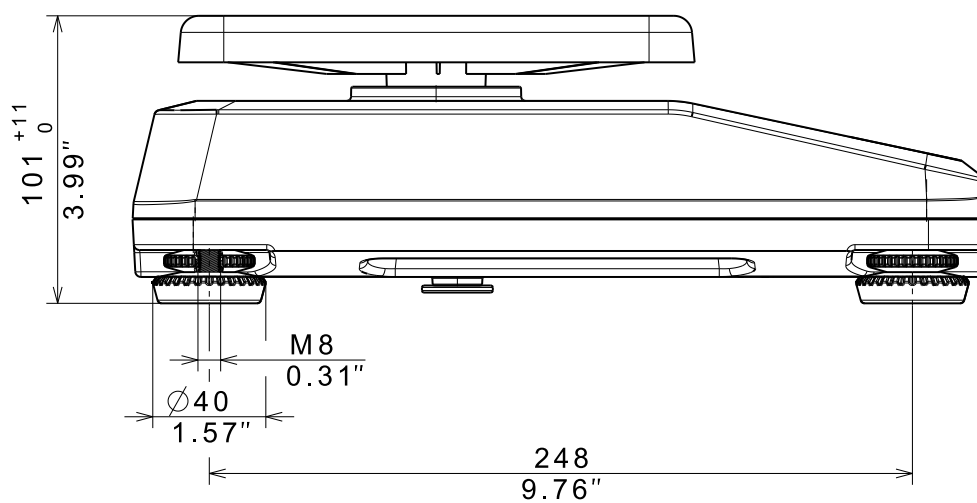


all dimensions in mm / inch

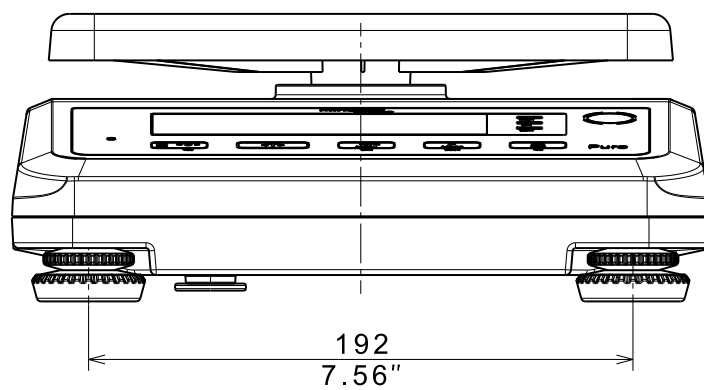
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all dimensions in mm / inch




all dimensions in mm / inch



all dimensions in mm / inch

## 13 Appendix

### 13.1 Printouts

The following sample printouts are generated by the  button, "P" Command or alternate print command. The content of the printout is defined in the Print Content menu item.

#### Weigh Mode Printout

	Description			Comment
11.11 kg N	Result line			If Printx → Content → Result is ON
1.23 kg T	Tare value line			If Printx → Content → Tare is ON
11.11 kg N	Net value line			If Printx → Content → Net is ON
12.34 kg G	Gross value line			If Printx → Content → Gross is ON
MODE: WEIGHT	Mode line			If Printx → Content → Application Mode is ON
<no line printed>	Information line			If Printx → Content → Info is ON

#### Weigh Mode with Totalization Printout

	Description			Comment
11.11 kg N	Result line			If Printx → Content → Result is ON
1.23 kg T	Tare value line			If Printx → Content → Tare is ON
11.11 kg N	Net value line			If Printx → Content → Net is ON
12.34 kg G	Gross value line			If Printx → Content → Gross is ON
MODE: WEIGHT	Mode line			If Printx → Content → Application Mode is ON
N: 4	Accumulation line			If Printx → Content → Total is All
TOTAL: 50.35 kg	Accumulation line			If Printx → Content → Total is All or Result
MIN: 11.11 kg	Accumulation line			If Printx → Content → Total is All
MAX: 14.85 kg	Accumulation line			If Printx → Content → Total is All

#### Percent Mode Printout

	Description			Comment
102.83 % PRC	Result line			If Printx → Content → Result is ON
12.34 kg G	Gross value line			If Printx → Content → Gross is ON
11.11 kg N	Net value line			If Printx → Content → Net is ON
1.23 kg T	Tare value line			If Printx → Content → Tare is ON
MODE: PERCENT	Mode line			If Printx → Content → Application Mode is ON
W100%: 12 kg	Information line			If Printx → Content → Info is ON

**Check Weighing Mode Printout**

			<b>Description</b>	<b>Comment</b>
11.11	kg	OVER	Result line	If Printx → Content → Result is ON
12.34	kg	G	Gross value line	If Printx → Content → Gross is ON
11.11	kg	N	Net value line	If Printx → Content → Net is ON
1.23	kg	T	Tare value line	If Printx → Content → Tare is ON
MODE: CHECKWEIGHT			Mode line	If Printx → Content → Application Mode is ON
UNDER LIMIT 1.00 kg			Information line	If Printx → Content → Info is ON
OVER LIMIT 2.00 kg			Information line	If Printx → Content → Info is ON

**13.2 FCC Note****Note:**

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

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

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Minebea Intec Bovenden GmbH & Co. KG | Leinetal 2 | 37120 Bovenden, Germany

Phone: +49.551.309.83.0 | Email: [info@minebea-intec.com](mailto:info@minebea-intec.com)

[www.minebea-intec.com](http://www.minebea-intec.com)

