Minebea intec
The true measure

Operating Instructions

Weight indicator Puro®

98628-000-62 Edition 1.0.0 11/27/2019

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

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Foreword

Must be followed!

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Table of contents

1 Introduction ... 3
1.1 Read the manual ... 3
1.2 This is what operating instructions look like ... 3
1.3 This is what lists look like ... 3
1.4 This is what menu items and softkeys look like ... 3
1.5 This is what the safety instructions look like ... 3

2 Safety instructions ... 5
2.1 General safety information ... 5
2.2 Incoming goods inspection ... 5
2.3 Before operational startup ... 6

3 Device installation ... 7
3.1 Package Contents ... 7
3.2 Requirements on location ... 7
3.3 Power supply ... 7
3.3.1 Battery Power ... 7
3.4 Connections ... 8
3.4.1 Connect platform ... 8
3.4.2 Connect printer ... 9
3.5 Mounting bracket ... 9

4 Device description ... 10
4.1 Operating ... 10
4.1.1 Display and operating elements ... 10

5 Operation ... 13
5.1 Basic Weighing Function ... 13
5.1.1 Turn on the device ... 13
5.1.2 Turn off the device ... 13
5.1.3 Adjust GEO setting ... 13
5.1.4 Select an application ... 13
5.2 Application Programs ... 14
5.2.1 Weighing Mode ... 14
5.2.2 Counting Mode ... 16
5.2.3 Check Mode ... 18
5.2.4 Totalizing and Statistics Mode ... 26

6 Menu Settings ... 31
6.1 Menu Mode ... 31
6.2 Menu Navigation ... 32
6.2.1 Menu Selection [APPLIC] ... 32

6.2.2 Menu Selection [METRO] 33
6.2.3 Menu Selection [UNIT] 33
6.2.4 Menu Selection [OP.FUNC] 34
6.2.5 Menu Selection [PRINT] 35
6.2.6 Menu Selection [PRN.COM] 36
6.2.7 Menu Selection [PC.OUT] 37
6.2.8 Menu Selection [PC.COM] 37
6.2.9 Menu Selection [CAL.ADJ] 38
6.2.10 Menu Selection [INFO] 38
6.2.11 Menu Selection [SECURE] 38

7 Calibration and Adjustment 40
7.1 [CAL] Calibration Procedure 40
7.2 [LIN] Linearity Calibration Procedure 42
7.3 [GEO] Geographical Factor Adjustment Procedure 45
7.4 GEO Code Table 47

8 Maintenance/repairs/cleaning 49
8.1 Repairs 49
8.2 Cleaning 49
8.2.1 Cleaning instructions 49
8.2.2 Cleaning agents 49

9 Disposal 50

10 Troubleshooting 51
10.1 Service Information 51

11 Technical data 52
11.1 Ambient Conditions 52
11.2 Specifications 52
11.3 Accessories (options) 53
11.4 Dimensions 54

12 Appendix 57
12.1 Printouts 57
12.2 Compliance 57
12.3 FCC Note 58

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 safety information

NOTICE

Warning of property and/or environmental damage.

The product was in perfect condition with regard to safety features when it left the factory.

▶ To maintain this condition and to ensure safe operation, the user must follow the instructions and observe the warnings in this manual.

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.
- Position the device so that the power plug is freely accessible and the power cord is not an obstacle or trip hazard.
- 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.
- Unplug the power cord from the mains supply befory servicing or making internal connections. The housing may only be opened by authorized and qualified personnel.

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 to get in contact.

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

- Indicator
- Safety Instructions and QR code with access to the detailed documentation
- 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 flutuations.
- 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.

3.3 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.

3.3.1 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.

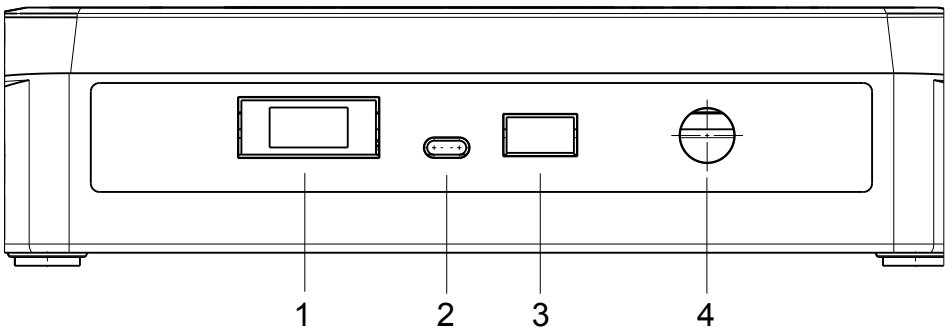
⚠ WARNING

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.

3.4 Connections



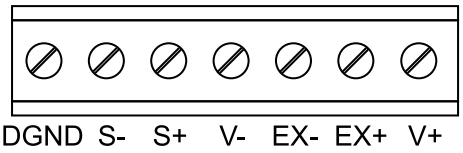
Pos.	Description
1	Accessory
2	DC IN USB-C
3	Printer port
4	LC (load cell)

3.4.1 Connect platform

Connection of an analog Puro® platform, or a commercially available strain-gauge load cell.

1. Turn the device off and disconnect it from power supply.
2. Turn the device upside down.
3. Remove the four rubber plugs at the rear side.

4. Losen the screws underneath.
5. Take the cover off.
6. Loosen the cable gland.
7. Insert the platform cable through the cable gland.
8. Screw the wires of the platform cable tightly into the clamps according to pin assignments.



DGND	Digital ground
S-	Signal-
S+	Signal+
V-	Sense-
EX-	Excitation-
EX+	Excitation+
V+	Sense+

9. Tighten the cable gland.
10. Reassemble housing, tighten screws and insert rubber plugs.

3.4.2 Connect printer

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

3.5 Mounting bracket

Align the mounting bracket over the threaded holes in the side of the indicator and install the knobs. Adjust the indicator to the desired angle and tighten the knobs.

4 Device description

4.1 Operating

4.1.1 Display and operating elements

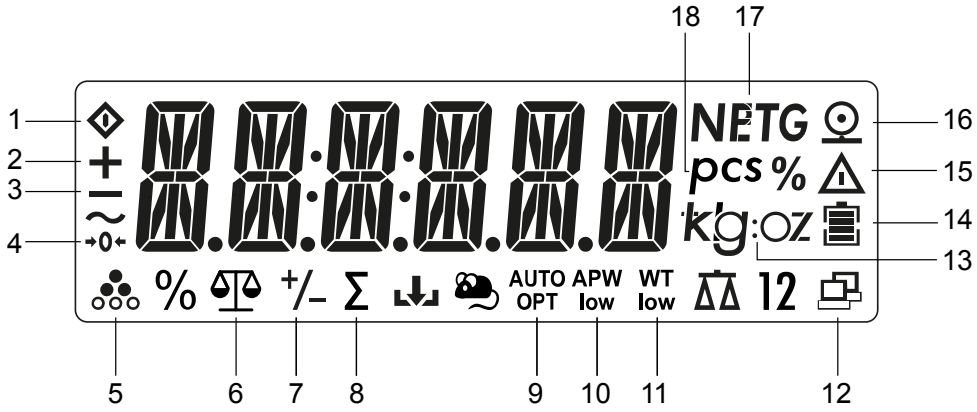
4.1.1.1 Overview

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	10	Low Average Piece Weight
2	Plus symbol	11	Low Sample Weight
3	Minus symbol	12	Data transfer
4	Zero-setting	13	Weight unit
5	Counting	14	Battery charge
6	Weighing	15	Warning symbol
7	Checkweighing	16	Printer Icon
8	Totalizing	17	NET, Preset Tare, Gross

Item	Description	Item	Description
9	Auto Taring Symbol	18	Pieces

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 5.2.3) and will light up according to the following rules:

	(Red) Weight value > upper tolerance limit (Green) Weight value ≤ ≥ is within OK range (Yellow) Weight value < lower tolerance limit

4.1.1.3 Operating elements

Button	Off →0←	→T←	M+ Menu	F Mode	Unit
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**

Button	Off →0←	→T←	M+ Menu	F 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.

5 Operation

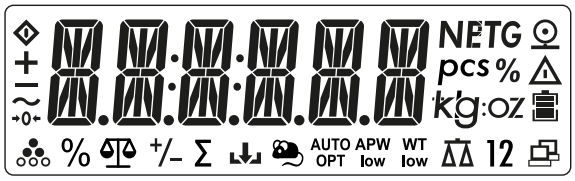
5.1 Basic Weighing Function

5.1.1 Turn on the device

▶ Press the Off →0← 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.

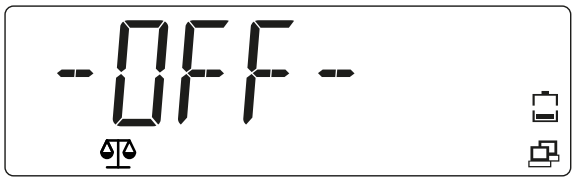
The latest active (selected) application before the last switch-off will be started. If the application has already been initialized, it starts with these parameters.

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 Off →0← 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 F Mode button.

▷ The application names are displayed every 2 seconds until the F Mode button is released.

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

Possible applications are:

[WEIGHT]	normal weighing mode
[COUNT]	count mode

[CHECK] Selectable modes (have to be selected in menu, see Chapter 6.2.1):	checkweighing - checkweighing mode - check count 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

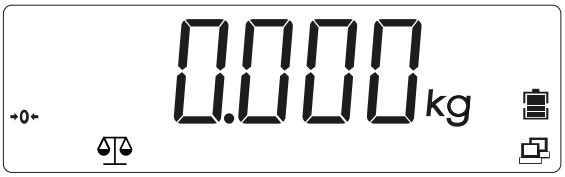
5.2.1 Weighing Mode

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

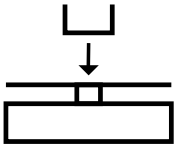
1. To select the weighing mode, press and hold the F Mode button until [WEIGHT] is displayed with application icon appear at bottom of the screen.

Release the button. The application is activated.

▷ [0.000] is displayed.



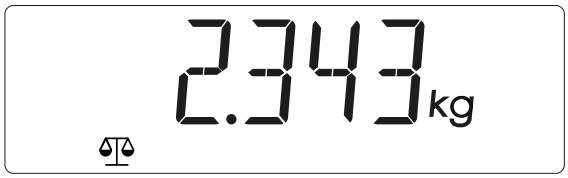
2. Place container on the scale (in this example, 0.598 kg).



5.2.1.1 Stability

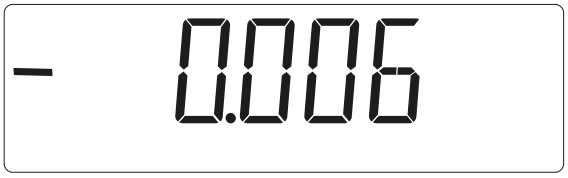
If a weighing value is stable, the unit symbol is displayed.

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.

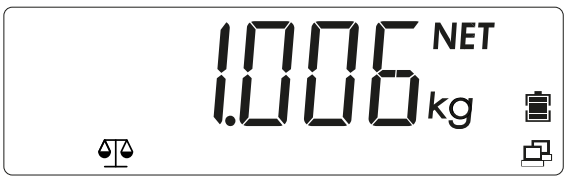
If the gross weight is >7d above Maxload, [H] is displayed.

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 Counting Mode

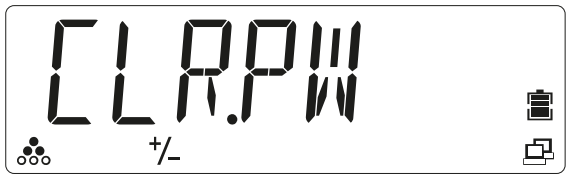
Counting items based on the weight of a reference sample count.

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

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

   Release the button. The application is activated.

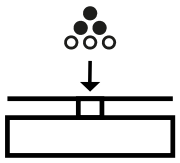
2. If there is already a piece weight initialized, [CLR.PW] is displayed. Otherwise [PUT 20] (for example) is displayed, then go on at step 4.



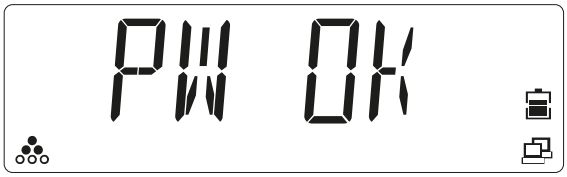
3. Press the Unit (No) button to use the stored reference weight.
4. Press the Off→0← (Yes) button to clear the stored PW (average piece weight) and set a new one.
5. [PUT 20] (for example) is displayed.

   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 F Mode button briefly (increment) or the Unit (No) button briefly (decrement) to toggle the choices (10, 20, 50, 100, 200).
7. Press the Off→0← (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 [Off →0←] (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 < reference quantity * d AND also calculated piece weight ≥ (2d/10), then the display will show[LOW.REF] for about 2 seconds.

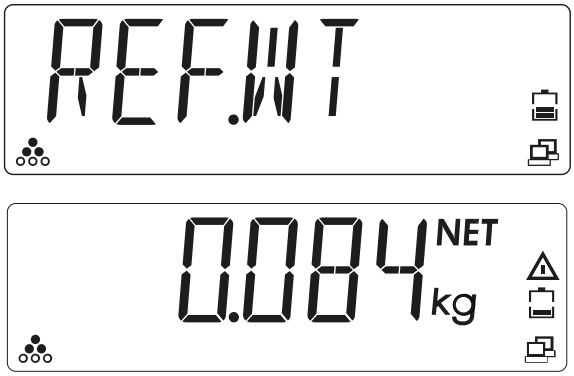
   Example: PUT 50 ; d = 0.2 g ; weight on the pan = 2.0 g ; then [LOW.REF] is displayed. But is the weight on the pan = 1.8 g, then [REF.ERR] is displayed.

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 [F Mode] button briefly.

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



5.2.3 Check Mode

Counting items based on the weight of a reference sample.

The scale supports positive, negative and zero check weighing.

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

5.2.3.1 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 F Mode button until [CHECK] is displayed with application icons ⚖ and +/– at bottom of the screen.

Release the button. The application is activated.

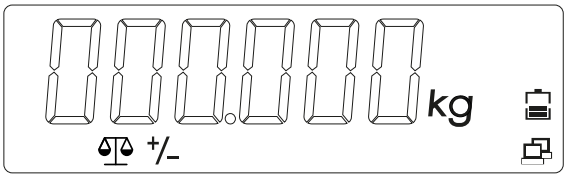
▷ [CLR.LIM] is displayed and all limit LEDs are on.

2. Press the Unit (No) button to use the stored limits. Go on at step 11.
3. Press the Off→0← (Yes) button to set new limits.

▷ [SET.LOW] (set low limit) is displayed and the yellow LED for the low limit is on.

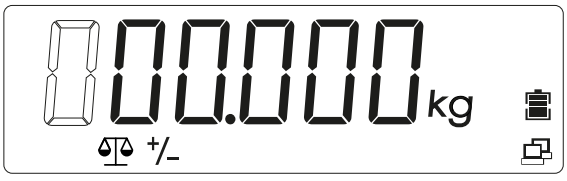
4. Press the Off→0← (Yes) button to view the Low limit value.

▷ The Display will show stored low limit with all digits blinking [000.000] (in this example, 0.000 kg).



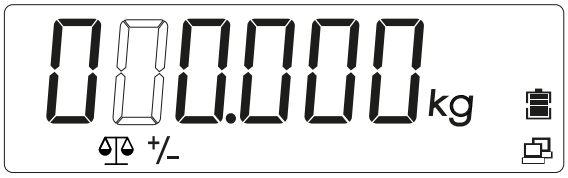
5. Press the Unit (No) button to edit the value.

▷ The first digit is blinking [_00.000].

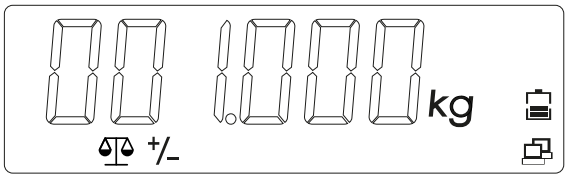


6. Press the Off→0← (Yes) button to accept and highlight the next digit (or press the M+ Menu (exit) button to go back one digit).

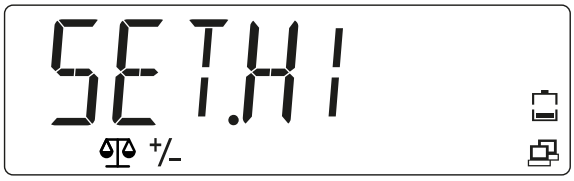
▷ The 2nd digit is blinking [0_0.000].



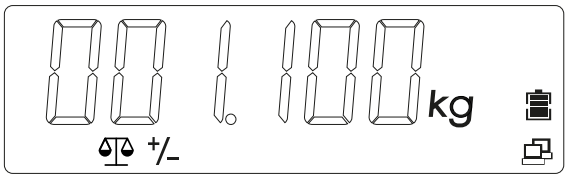
7. Press the [Unit] button to increase or the [F Mode] button to decrease the digit value.
   ▷ The Display will show the low limit value with all digit blinking [001.000] (in this example, 1.000 kg).



8. Repeat until all the digits are correct.
9. Press the [Off →0←] (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).

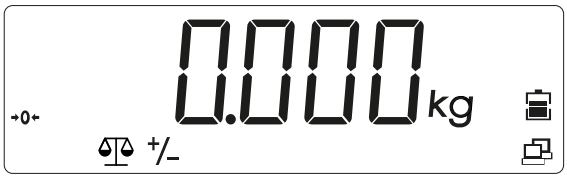


11. Press the [Off →0←] (Yes) button to accept high limit value.

    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 [Off →0←] (Yes) button to establish new check limit value or press the [Unit] (No) button to use stored check limit value.
14. Place container on the scale (in this example, 0.527 kg).

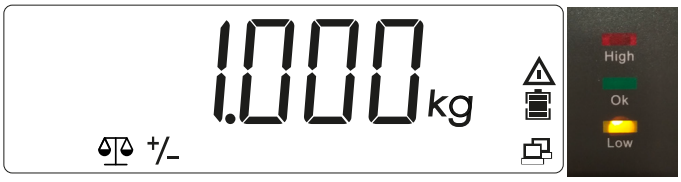
    Taring the container on scale.

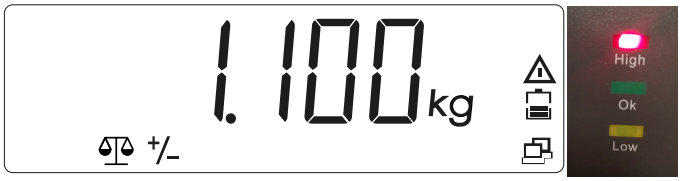
15. Press the [→T←] button with [NET] appear beside the weight value.
16. Place sample in the container.

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 [F Mode] 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.





5.2.3.2 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)

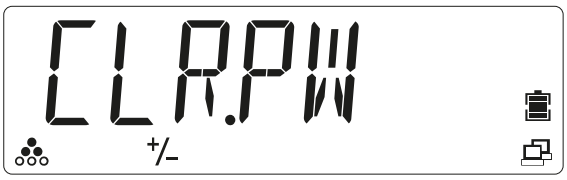
Note:

Activation of this mode must be done prior via menu. See Chapter 6.2.1.

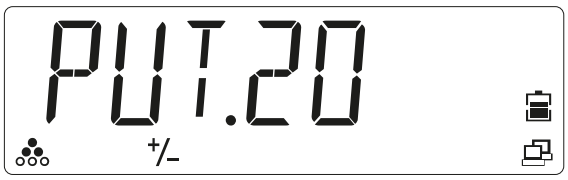
1. To select the check count mode or restart with a new reference quantity sample, press and hold the F Mode button until [CHECK] is displayed with application icons and +/- at bottom of the screen.

Release the button. The application is activated.

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

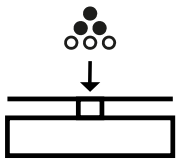


2. Press the Unit (No) button to use the stored piece weight (PW) and go on at step 11.
3. Press the Off →0← (Yes) button to clear the stored piece weight (PW) and set a new PW.
   ▷ The scale will display [PUT.20] (for example).



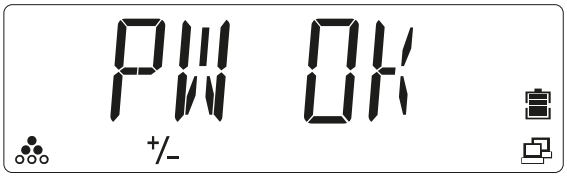
4. Choose the desired reference quantity sample by pressing the F Mode button briefly (increment) or Unit (No) button (decrement) to toggle the choices [10, 20, 50, 100, 200].
5. Press the Off →0← (Yes) button to confirm reference sample quantity.
   ▷ If the pan is empty [PUT.PW] (put piece weight) is shown on the display.

6. Put the desired reference quantity on the pan or container and press the [Off →0←] (Yes) button to store the reference quantity sample.



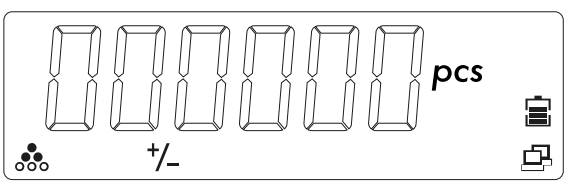
▷ If there are no reference samples put on the pan or the weight is smaller than 2d, the display shows [REF.ERR] (reference error) briefly.

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).

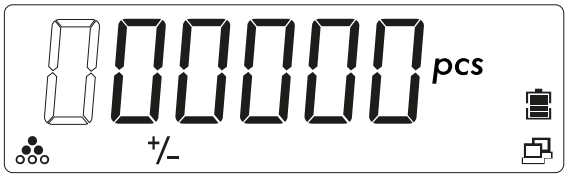


7. Press the [Unit] (No) button to use the stored limits and go on at step 18.
8. Press the [Off →0←] (Yes) button to set new limits.
   ▷ The scale will then display [SET.LOW] (set low limit).

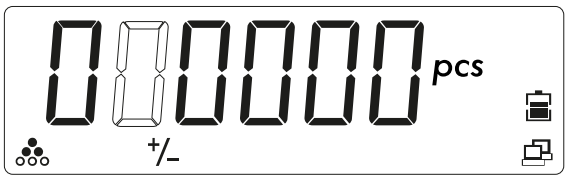
9. Press the [Off →0←] (Yes) button to set the low limit.
   ▷ The Display will show stored low limit with all digit blinking [000000] (in this example, 0 pcs).



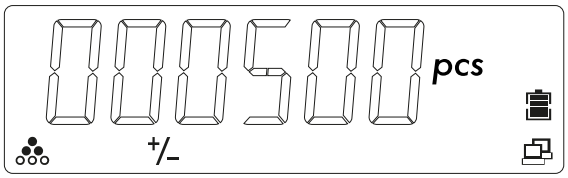
10. Press the [Unit] (No) button to edit the value.
    ▷ The first digit is blinking [_00000].



11. Press the [Unit] button to increase or the [F Mode] button to decrease the digit value.
12. Press the [Off →0←] (Yes) button to accept and highlight the next digit.
    ▷ The 2nd digit is blinking [0_0000].

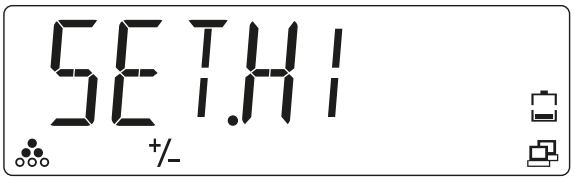


13. Press the [Unit] button to increase or the [F Mode] button to decrease the digit value.
14. Repeat until all the digits are correct.
15. Press the [Off →0←] (Yes) button to confirm.
    ▷ The Display will show the low limit value with all digit blinking [000500] (in this example, 500 pcs).

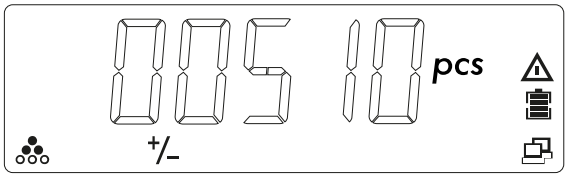


16. Press the [Off →0←] (Yes) button accept the low limit value.

    The scale will then display [SET.HI] (set high limit).



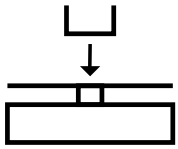
17. Same procedure like low limit setting.
    ▷ The Display will show the high limit value with all digit flashing [00510.0] (in this example, 510 pcs).

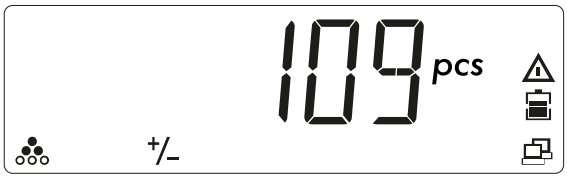


18. Press the [Off →0←] (Yes) button to accept high limit value.
    ▷ The scale is ready for check counting application with new checklimit. Go on step 21.

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

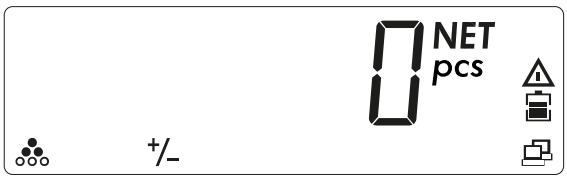
19. Repeat again the setup procedure.





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 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 Totalizing and Statistics Mode

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

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

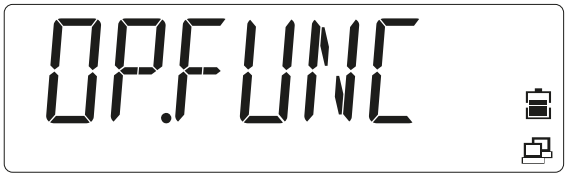
5.2.4.1 Procedure on Setting up the Totalization Application

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

Release the button.

▷ The 1st menu item [APPLIC] shown on display.

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

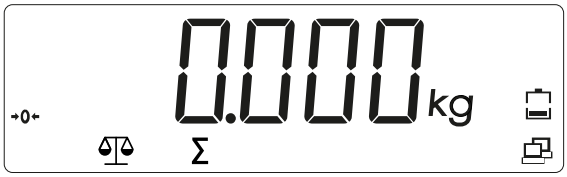


4. Press Off →0← (Yes) button to enter into sub-menu item.
5. Change menu item until [TOT.SET] (totalizing setting) is shown on display.

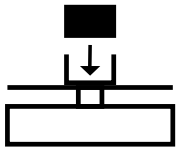
6. Press the Off →0← (Yes) button to enter the displayed sub-menu, then select one option [OFF / AUTO / MAN] using the Unit button and store the selection with the Off →0← (Yes) button.
7. Leave the setup menu with the M+ Menu button.

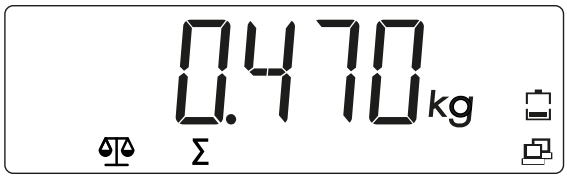
5.2.4.2 (Totalization) Displayed Values

The Totalization Mode is active when Σ icon is displayed.



1. Put the first item on the scale.





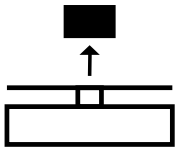
2. Press the M+ Menu button to add the weight to accumulation data (under manual mode).

OR

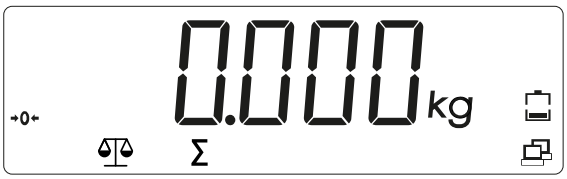
The weight value will add automatically to accumulation data once reading is stable (under automatic mode).

The Σ icon will keep flashing until the weight is removed.

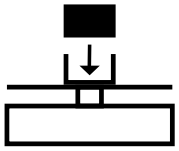
3. Empty the weighing pan.



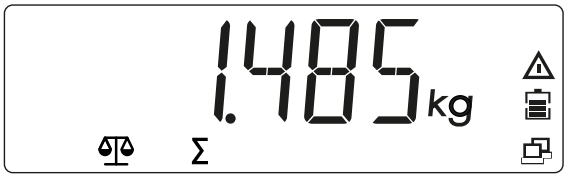
The item must be removed from the pan before the next item can be accumulated.



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



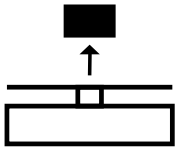
▷ The Σ icon will keep flashing until the weight is removed.

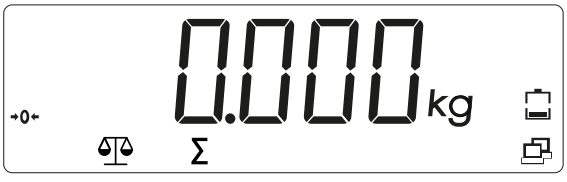


5.2.4.3 Viewing and Clearing Statistical Data

The pan must be empty to view the stored statistics.

1. Empty the weighing pan.

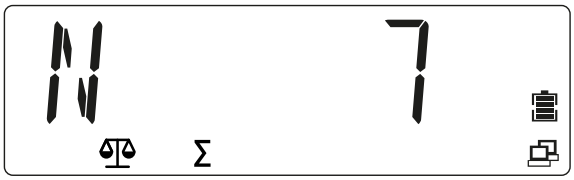




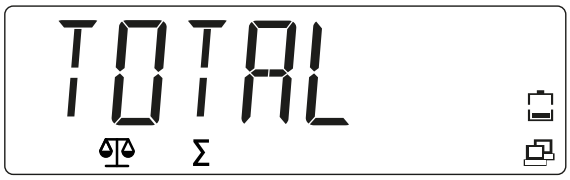
2. Press the M+ Menu key to display the stored totalizing data.

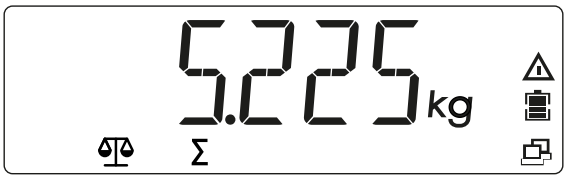
   The scale will display the statistical information in following order:

   Number of weighing done (N = 7):

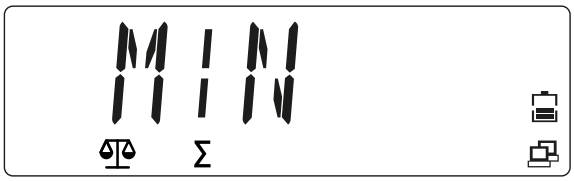


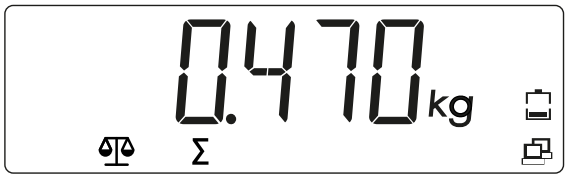
   Totalized value (TOTAL = 5.225g)



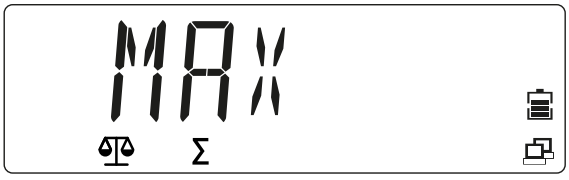


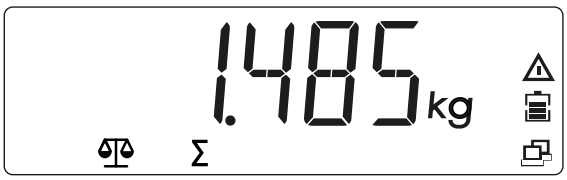
   Minimum value (Min = 0.47kg):





   Maximum value (Max = 1.485kg)





   To clear the totalizing memory:

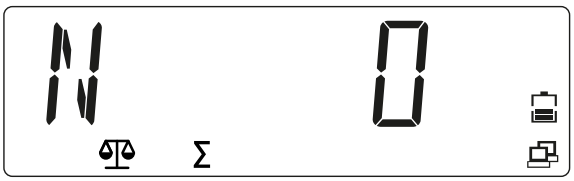
3. Press and hold the →T← button while the pan is unloaded and the totalizing data is displayed.

▷ The message [CLR.TOT] appears.

4. Press the Off→0← (Yes) button to confirm or press the Unit (No) button to cancel.

   To verify the totalizing memory has been cleared:

5. Press the M+ Menu 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.

6 Menu Settings

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

Note:

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

See Interface User Manual for the additional setting information.

6.1 Menu Mode

Enter into Menu Mode:

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

Release the button.

▷ The 1st menu item [APPLIC] shown on display.

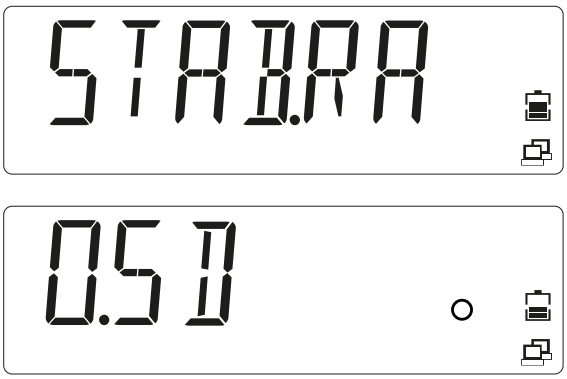
2. To enter into menu item (in this example [APPLIC] - [WEIGH] , press [Off →0←] (Yes) button.

3. Or press the [Unit] button to move to the next menu item or [F Mode] button move to previous menu item.

▷ The 2nd 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 [Off →0←] (Yes) button to Accept setting or the [Unit] (No) button to change setting. The current selection is signed by [∘].



5. When [END] is displayed, press [Off →0←] (Yes) button to return to sub-menu selections.

6. Press the [Unit] (No) button to return to the first item in the current menu.
7. Press the [M+ Menu] button to exit the menu.

6.2 Menu Navigation

Overview of Menu Mode options.

METRO	Metrology (see chapter 6.2.2)
UNIT	Weighing units (see chapter 6.2.3)
OP.FUNC	Operation functions (see chapter 6.2.4)
PRINT	Printer outputs (see chapter 6.2.5)
PRN.COM	Printer port communication (see chapter 6.2.6)
PC.OUT	PC output (see chapter 6.2.7)
PC.COM	PC port communication (see chapter 6.2.8)
CAL.ADJ	Calibration / Adjustment (see chapter)
INFO	Information (shows serial number and type designation)(see chapter)
SECURE	Block menu items (see chapter)
E.N.D.	Leave menu

6.2.1 Menu Selection [APPLIC]

Enter this menu to select application to be used.

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

Default settings are identified by an "*"

APPLIC

WEIGH	Weighing mode
OFF	disabled
ON	enabled*
COUNT	Count mode

OFF	disabled
ON	enabled*
CHECK	Check mode
OFF	disabled*
CHE.WEI	Check Weighing enabled
CHE.CNT	Check Counting enabled
RESET	Factory setting
NO	not restored*
YES	enabled
END	Leave menu level

6.2.2 Menu Selection [METRO]

Enter this menu to customize display functionality.

Default settings are identified by an "*"

METRO

STAB.RA	Stability range
0.5d	1/2 digit
1d	1 digit*
2d	2 digit
4d	4 digit
FILTER	Adaption Filter
LOW	Less precion, short stabilization time
MED	Normal precion, medium stabilization time*
HI	High Precion, Long stabilization time
A.ZERO.T	Auto Zero-Tracking
OFF	Turn off
0.5d	Drift of 1/2 digit*
1d	Drift of 1 digit
3d	Drift of 3 digit
AUT.OFF	Auto Off Timer
OFF	Turn off*
1 MIN	power off after 1 minute of no activities
5 MIN	power off after 5 minute of no activities
10 MIN	power off after 10 minute of no activities
DYN.TIM	has no effect in this device
5 SEC	has no effect in this device
10 SEC	has no effect in this device
15 SEC	has no effect in this device
20 SEC	has no effect in this device
25 SEC	has no effect in this device
30 SEC	has no effect in this device
RESET	Factory setting
NO	not restored*
YES	enabled
END	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 "*"

UNIT	
├ **kg**	Kilogram
│ ├ **OFF**	disabled
│ ├ **ON**	enabled*
├ **g**	Gram
│ ├ **OFF**	disabled
│ ├ **ON**	enabled*
├ **lb**	Pound
│ ├ **OFF**	disabled
│ ├ **ON**	enabled*
├ **oz**	Ounce
│ ├ **OFF**	disabled
│ ├ **ON**	enabled*
├ **lb:oz**	Pound / Ounce
│ ├ **OFF**	disabled*
│ ├ **ON**	enabled
├ **RESET**	Factory setting
│ ├ **NO**	not restored*
│ ├ **YES**	enabled
├ **END**	Leave menu level

6.2.4 Menu Selection [OP.FUNC]

Enter this menu to setup scale parameters.

Default settings are identified by an "*"

OP.FUNC	
├ **ZERO.R**	Zero Range
│ ├ **2%**	zero up to 2% capacity
│ ├ **10%**	zero up to 10% capacity*
├ **A.TARE**	Automatic Tare
│ ├ **OFF**	disabled*
│ ├ **ON**	1st stable weight is tared
│ ├ **ON-ACC**	Stable loads within the accept limits are tared (in Checkweighing mode)
├ **BEEP.SI**	Beeper Signal (in Checkweighing Mode)
│ ├ **OFF**	disabled*
│ ├ **ACCEPT**	Alarm when the weight is within the Accept range
│ ├ **UNDER**	Alarm when the weight is under the low limit
│ ├ **OVER**	Alarm when the weight is over the high limit
│ ├ **UNDOVR**	Alarm when the weight is outside Accept range
├ **BEEP.KE**	Button Sound
│ ├ **OFF**	disabled
│ ├ **ON**	enabled*
├ **TOT.SET**	Totalization Setting
│ ├ **OFF**	disabled
│ ├ **AUTO**	Automatic Totalization
│ ├ **MAN**	Manual Totalization*
├ **LIGHT.T**	Back lighting time (D.LIGHT = AUTO)
│ ├ **3 SEC**	Backlight off after 3 minutes of no activity
│ ├ **5 SEC**	Backlight off after 5 minutes of no activity*
│ ├ **8 SEC**	Backlight off after 8 minutes of no activity

D.LIGHT	Display Backlight
OFF	disabled
ON	enabled
AUTO	turns on when a button is pressed or the displayed weight changes*
COM.EQU	Communication Module
OFF	disabled*
BLUE.TH	Bluetooth Enabled (when Bluetooth module installed)
WIFI	Wi-Fi Enabled (when WIFI module installed)
ETHER.N	Ethernet Enabled (when Ethernet module is installed)
RESET	Factory setting
NO	not restored*
YES	enabled
END	Leave menu level

6.2.5 Menu Selection [PRINT]

Enter this menu to print scale parameters.

Default settings are identified by an "*"

PRINT

STABLE	Printing criteria
OFF	values are printed immediately
ON	values are only printed when stable*
A.PRINT	Automatic Print
OFF	disabled*
ON.STAB	Print on stability
INTER	Printing at the defined interval
1...3600	1 ... 3600 second
CONT	Print continously
ACCEPT	Print on stable and within checklimit
CONTNT	Content
RESULT	Display Value
OFF	disabled
ON	enabled*
GROSS	Gross Value
OFF	disabled*
ON	enabled
NET	Net Value
OFF	disabled*
ON	enabled
TARE	Tare
OFF	disabled*
ON	enabled
HEADER	Header info
OFF	disabled*
ON	enabled
FOOTER	Footer info
OFF	disabled*
ON	enabled
MODE	Mode info

OFF	disabled*
ON	enabled
INFO	Reference info (CkWt, CkCount, Count)
OFF	disabled*
ON	enabled
TOTAL	Total Value
OFF	disabled*
RESULT	Accumulated result is printed
ALL	Accumulated data is printed
LI.SET	List Set
FORMAT	Format send to printer and to PC
MULTI	Multi-line (single column) printout*
SINGLE	Single line printout
FEED	Paper Feed Setting
LINE	Move a paper up one line after printing
4LF	Move a paper up four lines after printing*
FORM	Form feed after printing
RESET	Factory setting
NO	not restored*
YES	enabled
END	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

BAUD	Baud Rate
2400	2400
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 date bits, no parity*
STOP	Stop Bit
1	1*
2	2
HAND.SH	Handshake
NONE	No Handshaking*
XON-.XOF	XON / XOFF software handshaking
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 date 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	XON / XOFF software handshaking
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 M+ Menu until [M.E.N.U] displayed.

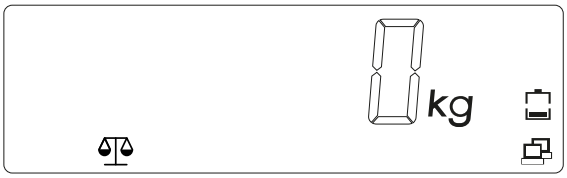
Release the button.

▷ The 1st menu item [APPLIC] is displayed.

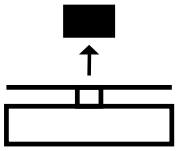
2. Press the Unit button move to next menu item or F Mode button move to previous menu item.
3. Change menu item until [CAL.ADJ] is displayed.

4. Press Off→0← (Yes) button to enter into sub-menu item.
   ▷ Sub-menu item [CAL] (Calibration) is displayed.

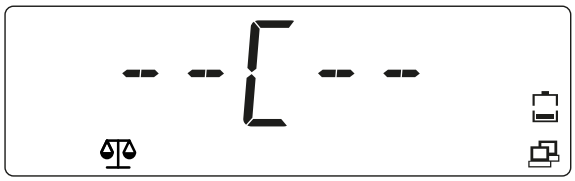
5. Press [Off →0←] (Yes) button enter into sub-menu item.
   ▷ [0 kg] is displayed. [0] is blinking.



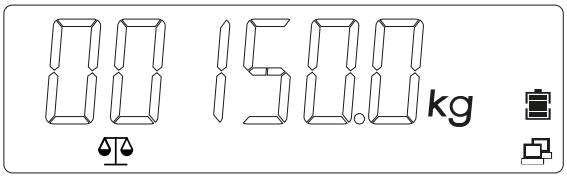
6. Empty the weighing pan.



7. Press [Off →0←] (Yes) button to start zero point calibration.
   ▷ [--C--] is displayed while zero reading is stored.



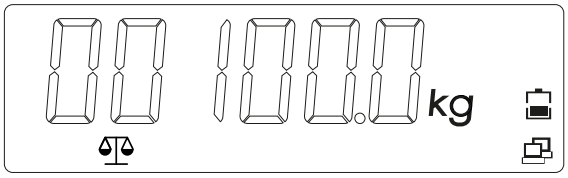
   The display shows the calibration weight value with all digit blinking [001500.0] (in this example, 150 kg)



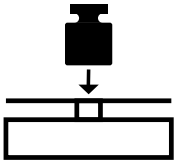
8. For changing the calibration weight value, press the [Unit] (No) button to edit the value.
   ▷ The first digit is blinking [_015.000 kg].

9. Press [Off →0←] (Yes) button to accept and highlight the next digit.
   ▷ The 2nd digit is blinking [0_15.000 kg].

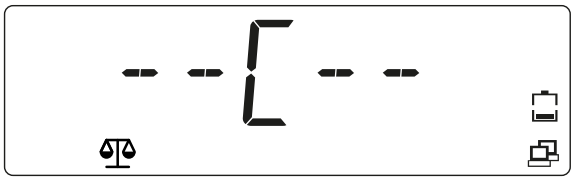
10. Press the [Unit] button to increase or the [F Mode] button to decrease the digit value.
11. Repeat until all the digits are correct.
    ▷ The Display shows the calibration value with all digit blinking [00100.0] (in this example, 100 kg)



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



13. Press [Off →0←] (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 [M+ Menu] until [M.E.N.U] displayed.

Release the button.

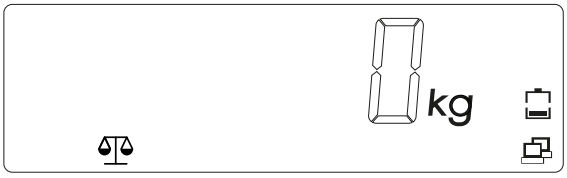
▷ The 1st menu item [APPLIC] shows on display.

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

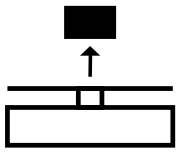
4. Press [Off →0←] (Yes) button enter into sub-menu item.
5. Change menu item until [LIN] shows on display.

6. Press [Off →0←] (Yes) button to start zero point calibration.

▷ [0 kg] shows on display. [0] is blinking.

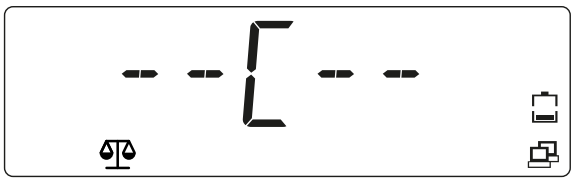


7. Empty the weighing pan.

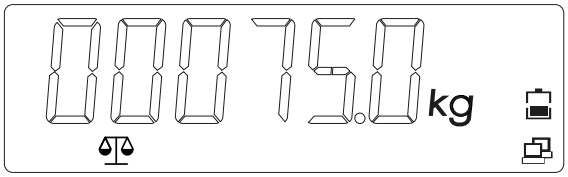


8. Press the [Off →0←] (Yes) button to confirm.

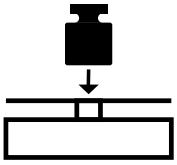
▷ [--C--] will be displayed while zero reading is stored.



The display will show the linearization weight value at 50% of scale capacity with all digit blinking [00075.0] (in this example, 75 kg).

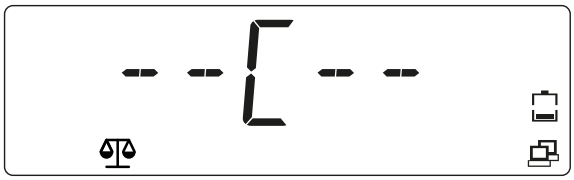


9. Put specified weight on pan.

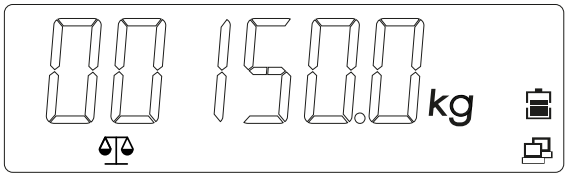


10. Press (Yes) button to start linearity adjustment at 50% capacity.

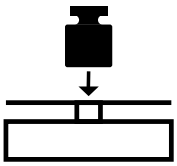
▷ [--C--] will be displayed while reading is stored.



The display will show the linearization weight value at 100% of scale capacity with all digit blinking [00150.0] (in this example, 150 kg).

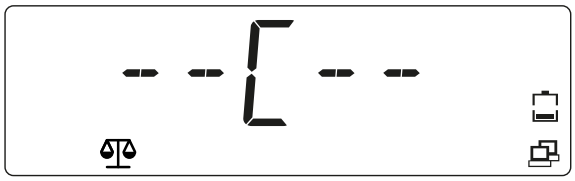


11. Put specified weight on pan.



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

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

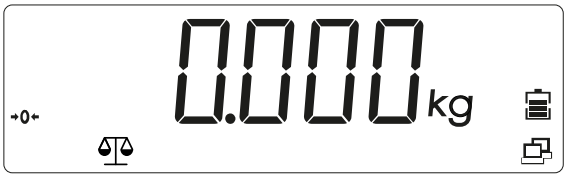


The display will show the linearization weight value at 100% of scale capacity [00150.0] (in this example, 150 kg).

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:

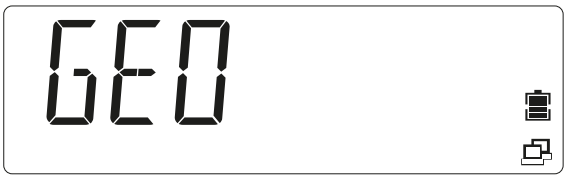
1. Press and hold M+ Menu until [M.E.N.U] displayed.

Release the button.

▷ The 1st menu item [APPLIC] shown on display.

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

4. Press [Off→0←] (Yes) button enter into sub-menu item.
5. Press the [Unit] button move to next menu item or [F Mode] button move to previous menu item.
6. Change menu item until [GEO] is displayed.



7. Press [Off→0←] (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 [Unit] button to increase or the [F Mode] button to decrease the GEO factor value.
9. Press [Off→0←] (Yes) button to confirm GEO Factor value.
   ▷ The GEO factor has been stored, when [END] is displayed.

10. Press [Off→0←] (Yes) button to return to sub-menu selections.
11. Press [Unit] (No) button to return to the first item in the current menu.
12. Press the [M+ Menu] 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 Maintenance/repairs/cleaning

8.1 Repairs

Immediately disconnect a defective device from the power supply and notify Minebea Intec Customer Service.

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 technical personnel using original spare parts.

8.2 Cleaning

8.2.1 Cleaning instructions

The device should be cleaned at regular intervals.

Disconnect the device from the supply voltage before cleaning.

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.

Cleaning the surfaces

All stainless steel parts should be cleaned at regular intervals.

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.

Remove all traces of corrosive substances on a regular basis.

8.2.2 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).

9 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.

Should you have any further questions, please contact your local service representative.

Minebea Intec Bovenden GmbH & Co. KG

Repair center

Leinetal 2

37120 Bovenden, Germany

Phone: +49.551.30983.333

service.bov@minebea-intec.com

10 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.

10.1 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 office nearest you.

11 Technical data

11.1 Ambient Conditions

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

11.2 Specifications

Model number **EF - IN**	**P (plastic)**	**S (stainless steel)**
Full scale capacity range	5 to 20,000 lb or kg	
Displayed resolution	1:30,000 max	
Weighing units	kg, g, lb, oz, lb:oz	
Construction/material	ABS plastic housing	stainless steel 304 housing
Display	LCD display with white backlight, 1.1 in / 28 mm height digits	
Checkweighing indicators	3 LED's (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	
Minimum average piece weight	1d	
Load cell excitation/input sensitivity	U_{DC} = 5 V /0.1 µV/d or 1µV/e	
Load cell drive	Up to four load cells	
Power	U_{DC} = 5 V, 2A AC adapter or portable rechargeable lithium battery	
Battery operation	Up to 210 hours operation time (with standard battery) between recharges with 8 hours recharge time	
Calibration	External, with freely selectable calibration weights	
Interface	Built-in USB-C, Printer Port, RS232, LC	
Operating temperature (°C)	-10...40	
Storage temperature (°C)	-20...50	
Product dimension mm (w x d x h)	230 x 128 x 70	230 x 128 x 70

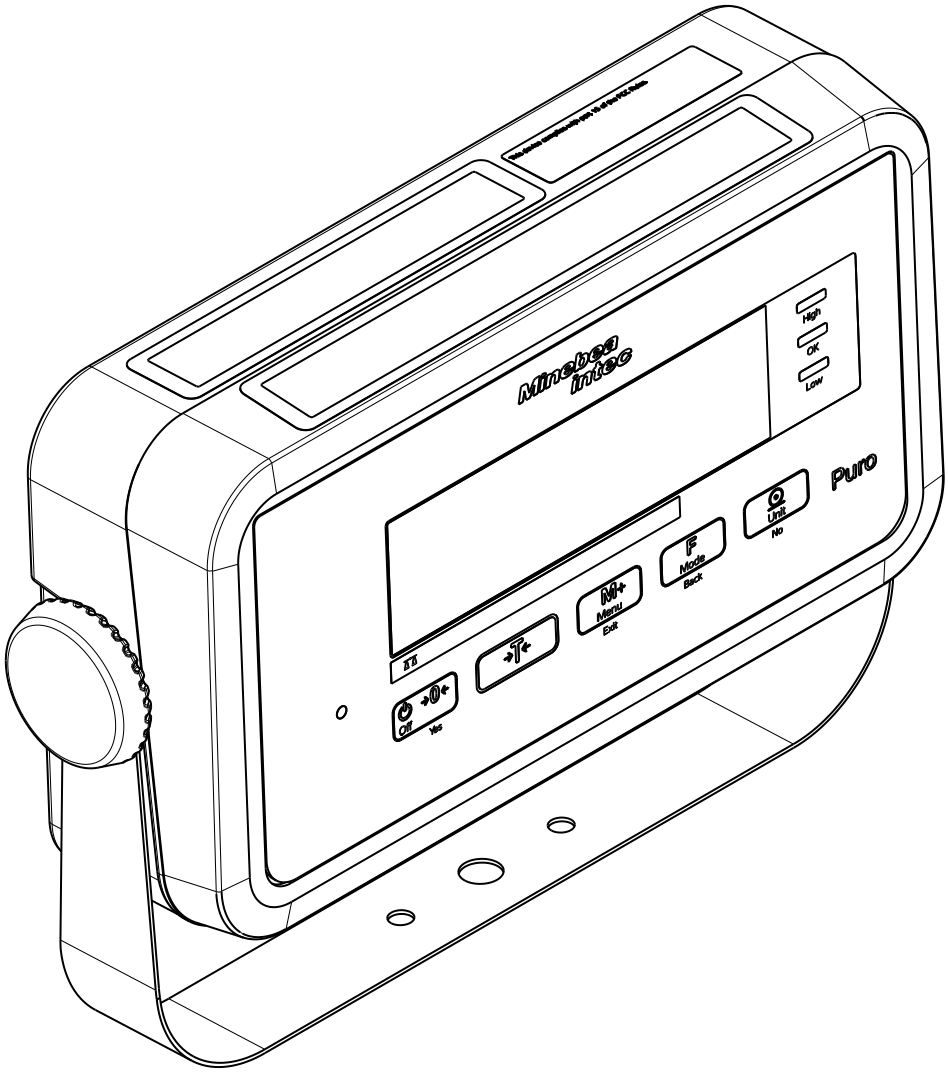
Model number EF - IN	P (plastic)	S (stainless steel)
Shipment dimension mm (w x d x h)	280 x 228 x 95	280 x 228 x 95
Net weight (kg)	3.8	4.1
Shipping weight (kg)	4.2	4.7

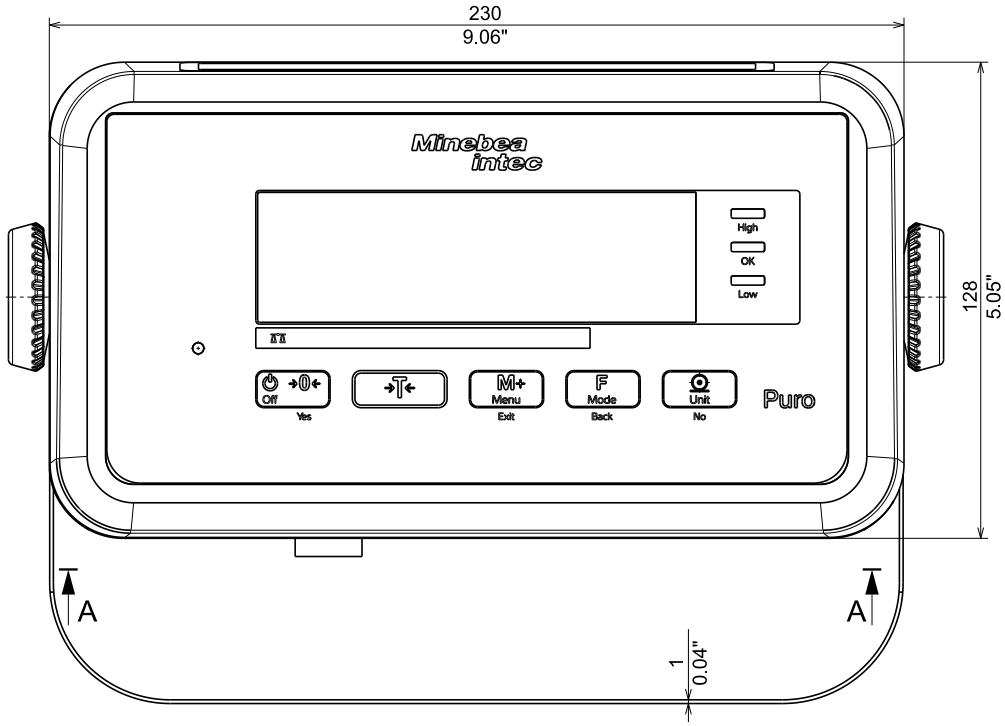
11.3 Accessories (options)

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

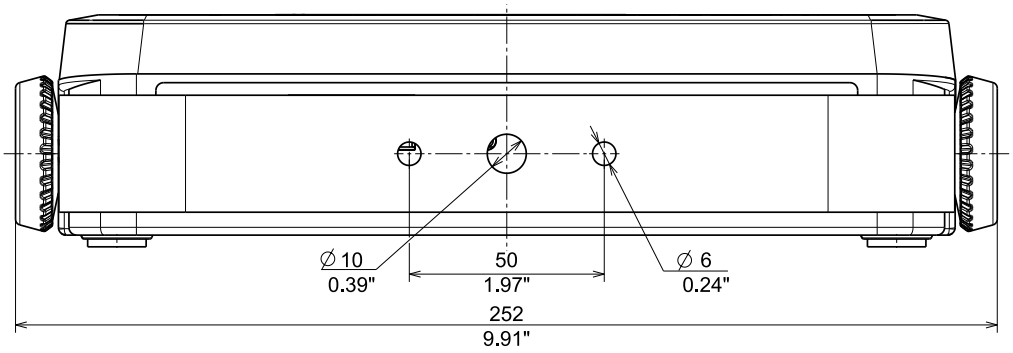
11.4 Dimensions

EF-IN

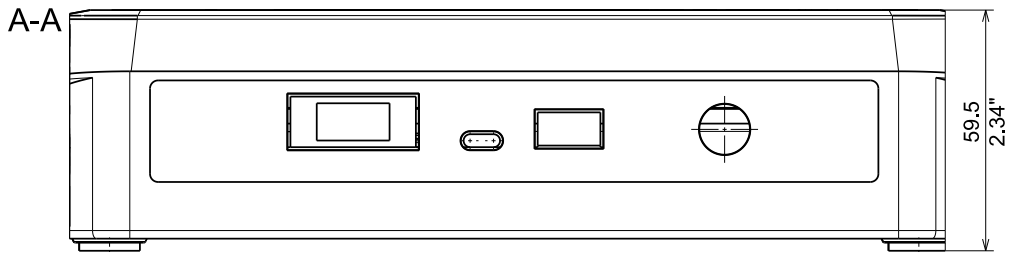




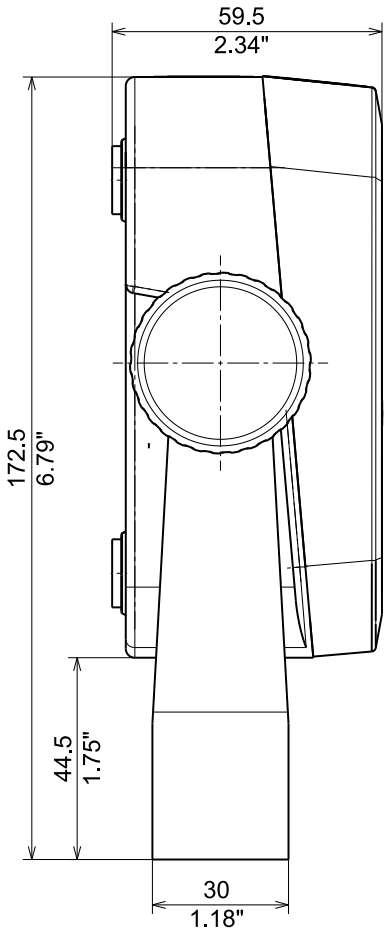
all dimensions in mm / inch



all dimensions in mm / inch



all dimensions in mm / inch



all dimensions in mm / inch

12 Appendix

12.1 Printouts

The following sample printouts are generated by the Unit 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

Check Weighing Mode Printout

	Description	Comment
`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

12.2 Compliance

Compliance to the following standards is indicated by the corresponding mark on the product.

Mark	Standard
CE	This product conforms to - the EMC Directive 2014/30/EU, - the Low Voltage Directive 2014/35/EU

12.3 FCC Note

Note:

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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The true measure