



GRAM



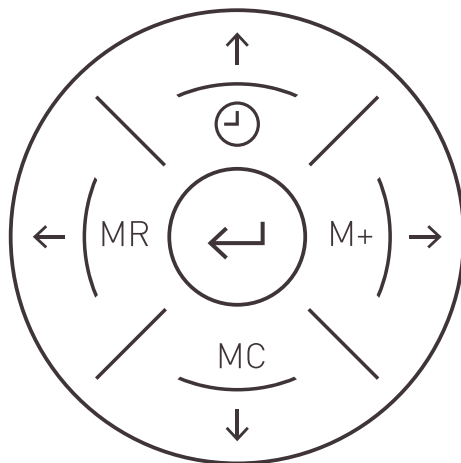
SERIE

K3 / K3P / K3i / K3i Printer

MK3 / MK3 Printer

S3/ S5i / S7i / TCamel 2T

V4.005 - 2019



EN

CE

OPERATION MANUAL



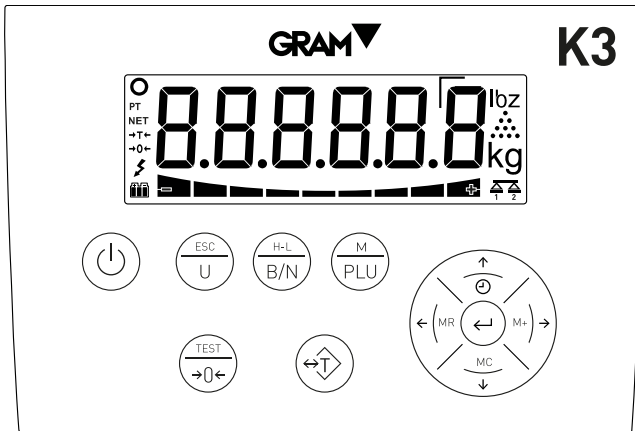
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1. KEYPAD AND LCD DISPLAY



Switches the unit On / Off. Pressing it lights up the indicator. With the indicator on, keeping it pressed for two seconds switches it off.



Piece counter mode. Activates or deactivates the piece counter mode. Double-pressing it gives access to the options menu of the piece counter mode. In menu mode you have the function of exiting the menu and returning to normal mode (Escape).



Gross/Net. When the tare is used, when pressed it shows the gross weight (total weight on the scale) and when pressed again it shows the net weight. Keeping it pressed for more than one second automatically selects the “Weight Limit” mode. Double-pressing it gives access to the limits configuration menu.



PLU - product code. Pressing it gives access to the product code memory (PLU). Keeping it pressed for more than one second leads to the scale configuration and settings menu. Double-pressing it activates or deactivates the HOLD mode.



Zero / Test / High-resolution. Zeroing the scale. Pressing it for more than one second shows the display test, capacity, division and

software version. Double-pressing the key activates the high-resolution mode. When editing the value of an alphanumerical data, it switches between upper case, lower case and numbers / symbols.



Tare. Pressing it once subtracts the weight of any receptacle or box placed on the platform until the weight is removed from the platform and this key is pressed again. Keeping it pressed switches between “fixed tare” and “normal tare” mode. Double-pressing it gives access to the tare memory, for selecting a record or editing the associated tare value.



M+ and right arrow. When pressed, it adds the weight indicated in the display to the total, initiates the accumulated ticket if it was not yet initiated and sends the ticket data to the printer. In addition, for a few moments it shows the accumulated total. In menu mode it displays the next option.



MR and left arrow. When pressing on it on the main screen, it closes and sends the totalizer ticket data and shows the accumulated weight total. In menu mode it returns to the previous menu.

















Enter. When pressing on it on the main screen, it sends the current weight data to the printer (single ticket). Keeping it pressed for two seconds activates the blocking/unblocking of the keypad. In menu mode it confirms the selection/modification made.



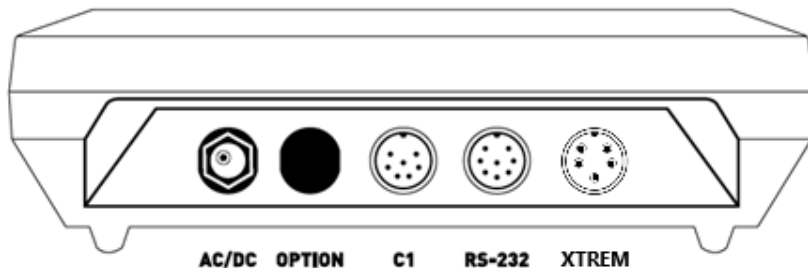
Clock and Up Arrow. A short press displays the accumulated value in the total. Pressing it for more than a second displays the date and time. In menu mode, when editing the content of a parameter, it increases the value (digit) of the display.



MC and Down Arrow. In menu mode, when editing a parameter, the value (digit) shown in the display decreases. If kept pressed for more than one second, it runs the “Clear” function: It voids the tare, cancels the “hold” mode and resets the accumulated weight total.

	Displays the weight on the scale platform. In HOLD mode, the reading is shown intermittently to signal that it is not indicating the real weight on the scale but the latest stable weight recorded.
kg/g lb/oz	Unit of measurement in which the weight is indicated.
	Piece counter mode: The display shows the number of units, not the weight.
	Stable weight reading: There is a weight on the platform that is not fluctuating. Intermittent or switched off to indicate that there is movement in the scale.
	Negative sign. This reading may be negative if a tare is activated (in preset tare mode) or to indicate a problem when setting it to zero.
NET	Indicates net weight. The net weight is the real weight on the scale minus the tare. It is only displayed if a tare has been used.
	Tare activated. The reading flashes when "normal" tare mode has been activated. A "preset" tare is retained even after the weight is removed from the scale platform.
PT	Tare in memory. The tare being subtracted from the weight is a value recorded in the indicator memory, not necessarily a measured value.
	Scale set to zero: The weight on the load receptor is lower than 1/4 interval (division).
	Reading in high-resolution mode. It shows a division 10 times smaller than the one defined in the weighing scale range.
	In double range mode, it indicates that the scale's range 1 is being used.
	In double range mode, it indicates that the scale's range 2 is being used.
	The weight is below the lower limit. The 4 segments of this indicator are activated proportionally to the difference between the weight on the scale and the value of the lower limit. The thickest segment indicates that the weight is lower than the value set as the lower limit in a proportion of 100% or more.
	The weight is within the interval encompassed between the lower limit and the upper limit.
	The weight is above the upper limit. The 4 segments of this indicator are activated proportionally to the difference between the weight on the scale and the value of the upper limit. The thickest segment indicates that the weight is higher than the value set as the upper limit in a proportion of 100% or more.
	Battery-operated. Not connected to the mains. The load level is indicated.
	AC/DC supply connected to the power outlet.

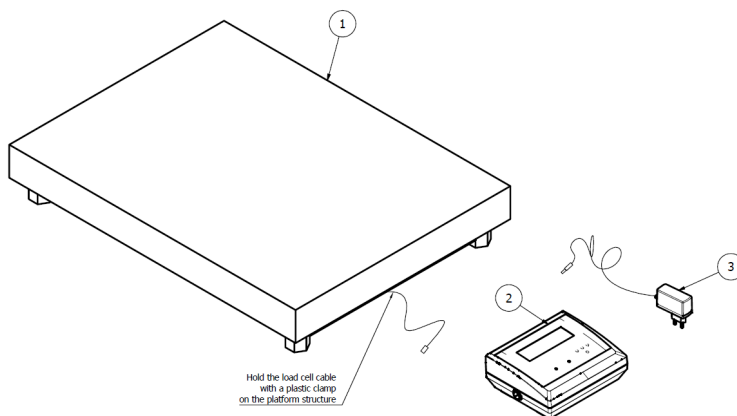
2. BEFORE USING THE SCALE



1. AC/DC adapter, output 12 Vdc – 1 A
2. Space allocated for optional enlargements
3. Connector for the C1 load receptor platform
4. RS-232 data output
5. Connector for the XTREM platform

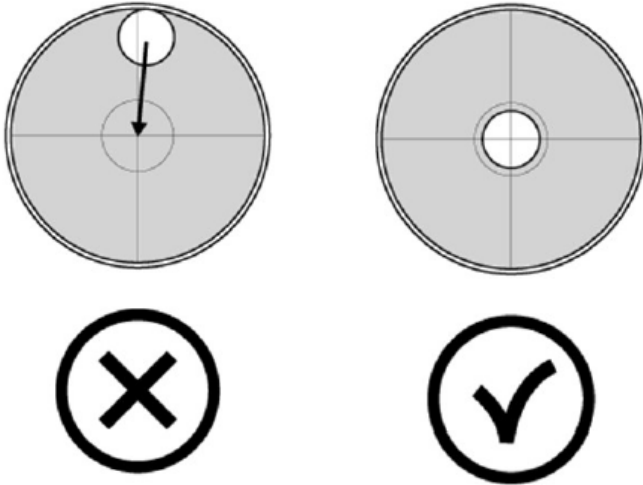
Connect the AC/DC power source to the unit and to a power outlet suitable for charging the battery before its first use.

Connect the load receptor platform cable in the C1 connector of the K3 indicator.



The load receptor platform should be placed on a flat surface free of any irregularities.

For the proper functioning of the instrument, the platform should be horizontally levelled. Before using the scale, check the bubble level included in the actual platform and adjust the levelling feet if necessary.



Both the K3 indicator and the weight sensors included in the platform are sensitive to changes in ambient temperature. To achieve maximum precision, we recommend you keep the scale switched on for at least 30 minutes in its set-up site before using it.

3. ON / OFF



Press on the key. The display switches on and performs the following sequence:

1. All segments and symbols switch on for a second on the LCD display to verify that they are functioning properly.
2. It then shows the unit's firmware version code during one second.
3. Finally, for one second it displays the scale's maximum capacity and the interval.

After the power-up sequence the scale is ready for use.

To switch off the unit, press on the same power-on key and keep it pressed for 2 seconds. An **OFF** message will appear to warn that the device will be switched off when the key is released.

4. INITIAL RESET TO ZERO

When switching on the unit, it will automatically set to zero. This will be indicated in the display with the message **-00-**.

Automatically resetting to zero at the start requires the scale to remain stable for at least 5 seconds. For as long as the scale is moving, the **-00-** indication will be maintained for a maximum of 10 seconds.

If this time period is exceeded without obtaining a stable reading, the display will show an **Err 0** message followed by the weight on the scale.

If the weight on the load receptor is higher than 10% of the scale's maximum capacity, the error message **Err 0** will be displayed, followed by the weight on the scale.

The **In 1-0** option in the configuration menu activates or deactivates the initial zeroing.

5. OPERATION

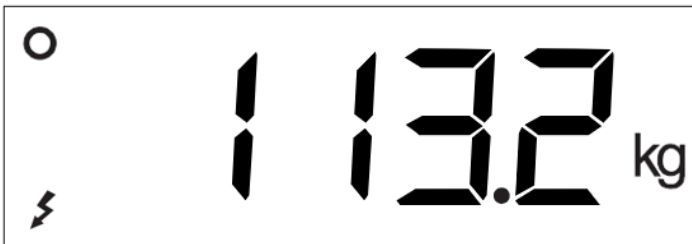
5.1. USE OF THE SCALE

Once the unit is switched on, the weight display will indicate that the scale:

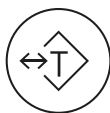
- $\rightarrow 0 \leftarrow$ is set to zero, meaning that there is no load placed on the platform.
- \bigcirc the reading is stable, that is to say, there is no external influencing factor (such as an air current or the vibration of a nearby engine) that may be producing significant disruption.



To find out the weight of any object within the scale's maximum range, place it on the load receptor platform: The zero reading and the stability reading disappears from the indicator; the weight value will increase until the stability reading becomes visible again. The value indicated in the display is the result of the measurement.



5.2. TARE AND TARE RECORD IN MEMORY



A short press on this key activates the tare function: The scale memorizes the weight currently on the load receptor and subtracts it from the total weight until the tare function is deactivated or cancelled.

The tare function only operates if the weight is stable. If the stability indicator is switched off, pressing this key has no effect. It is possible to change this feature by changing the E-5E6 option in the configuration menu to “NO”.

It can be “Normal Tare” or “Fixed Tare” depending on the operating mode selected in the configuration menu (see option P-ER).

- **Preset tare.** The tare remains after emptying the load receptor. The >T< indication on the display stays constant, non-flashing. When the scale is emptied, the display shows the tare value with a negative sign. To cancel the tare, press on the tare button again after emptying the plate.
- **Normal tare.** The tare is automatically deactivated when the plate is emptied. The >T< indicator is switched on intermittently in the LCD display.

Keeping this key pressed for 2 seconds switches the operating mode from “fixed tare” to “normal tare”. The default operating mode for tare is “preset tare”, although this value can be changed in the options menu (see option P-ER).

It is possible to apply a tare previously memorized in the unit. The K3 indicator has up to 20 tare records, numbered from 1-20. Double-press the tare key to access this record and select one of the memorized tares.

The display will show the n-EL message; press on the ↵ key, enter the tare record number you wish to select and validate by double-pressing the ↵ key. The display will show for one second the tare value associated to the selected record. It will then return to the weight reading mode and will apply the tare.

Should no tare value have been entered previously for the selected record, the display shows the **URLUE** option of the configuration menu, which allows the tare value to be entered.

When a memorized tare is used, the display shows the **PT** (“preset tare”) reading.

To add a value to the tare memory or to modify the value associated to a tare record, follow this procedure:

1. Double-press the tare key and select the desired record in the **n-ELU** option as indicated in the previous paragraph.
2. Once the record is selected, the display will again show the **n-ELU** message. Pressing on the **→** key on the display will show the **URLUE** (“value”) option; pressing on the **↵** key will display the tare value associated to the selected record. If no value has previously been entered for the selected record, the **K3** indicator will show the current weight on the scale in the field for editing.
3. Enter the desired value by using the **← →** arrow keys to change the next digit and the **↑↓** keys to modify the value of each digit. Double-press the **↵** key to validate the content of the display and store it in the indicator memory.

To cancel the tare when the operating mode is “fixed tare”, with the load receptor empty press the tare button again. The “clear” function (keep the **MC** button pressed for more than one second) also deactivates the tare. The scale’s zeroing key also deactivates the tare.



When the tare function is activated, a short press on the “B/N” key switches between a view of the net weight and gross weight every time the button is pressed. While net weight is displayed, the “NET” indication will appear on the LCD display.

5.3. ZEROING



Zeroing the scale: A short press on this key sets it to zero. The scale is deemed to be “set to zero” when the weight on the load receptor is lower than $\frac{1}{4}$ of division.

While the scale is “set to zero”, the reading is shown in the $\rightarrow 0 \leftarrow$ display.

When the scale is set to $\rightarrow 0 \leftarrow$ the automatic “zero tracking” device is in operation. This function automatically sets to zero when variations of less than $\frac{1}{4}$ division occur if they do not add up to more than $\frac{1}{2}$ division during one second. This function can be deactivated in the $\square - \text{ERR}$ option of the configuration menu.

Pressing on the $\rightarrow 0 \leftarrow$ key also deactivates the tare if it happens to be activated.

The zeroing of the scale is limited to 4% of its maximum capacity. Should this margin be exceeded, the display shows the ERR error message. It is possible to change this margin with the $\text{PRN} - \square$ option in the configuration menu.

5.4. LCD DISPLAY TEST



Keeping this key pressed for more than one second shows the LCD display test (all segments and pictograms switched on), the unit’s firmware version code and, finally, the scale’s maximum capacity and interval.

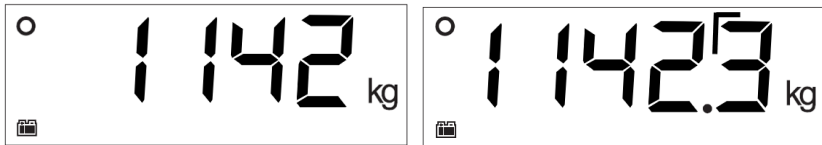
5.5. HIGH-RESOLUTION MODE



Double-pressing the TEST key activates the high-resolution mode. In this mode the scale's resolution is enlarged by x10, allowing the weight to be viewed with a 10-times-smaller division.

An additional digit appears in the weight display, and the decimal point is shifted to the left by one position. This additional digit is indicated with a straight angle in its top left corner:

1 Example for a scale with a 1-kg division in normal mode and in high-resolution mode



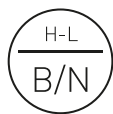
5.6. HOLD MODE



Double-pressing the PLU key activates / deactivates the "HOLD" mode. For an instant, the display shows the **hO_Ld** message to indicate that it has been activated, or the **hO_Ld** message to indicate that it has been deactivated.

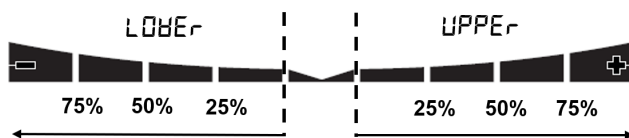
When this operating mode is activated, the weight of the last load placed on the plate always remains on the display. This means that, even when the load is removed from the plate, the display continues to show the last indicated weight. If the load has been removed, the weight is shown intermittently to indicate that the **hold** mode is in operation.

5.7. H-L MODE (CONTROL OF UPPER/LOWER LIMITS)



Keeping this key pressed for more than one second activates or deactivates the upper and lower limit control mode. For an instant, the display shows the $h-L$ $\square n$ message to indicate that it has been activated, or the $h-L$ $\square F$ message to indicate that it has been deactivated.

When the limit control is activated, a reading lights up in the bottom part of the LCD display to signal whether the net weight on the plate is lower than the $L \square h$ value or higher than the $h \square h$ value. When the weight lies between the two values, a sign appears indicating that the weight is in the interval defined by the lower limit and the upper limit.



The colour of the display's backlighting changes to red when the weight is outside the interval defined by the upper and lower limit, and changes to green when the weight is within said interval.

The 4 segments of this reading are activated proportionally to the difference between the net weight on the scale and the value of the lower or upper limit. The thicker segment indicates that the weight is below the value set as the limit in a proportion of 100% or more.

Double-press on the H-L key to access the configuration and change the lower and upper limits. The possible options are:

$L \square h$

Value for the lower limit, including the decimal part.



$h \square h$

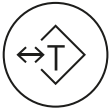
Value for the upper limit, including the decimal part.

$ACT \square$

Yes / No: Activating the limit control when switching on the unit.

5.8. DOSAGE MODE

The dosage mode is activated and configured by accessing the options menu in the   section (see section 20 in this manual).



Pressing the tare key initiates the dispense cycle, closing the K1 and K3 relay contacts. The display changes to blue to indicate that the dispense cycle has been initiated.

Upon reaching the weight set point established for *SPEED 1* (coarse flow), contact K1 is opened and the display colour changes to indicate that the fine flow is in operation.

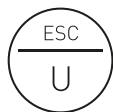
Upon reaching the weight set point established for *SPEED 2* (fine flow), contact K3 is opened and contact K2 is closed to indicate that the dispense cycle has finished. The light of the LCD display changes to green to indicate that the dispense cycle has finished.

Relay K2 (signalling the end of the dispense cycle) stays closed until the weight is removed from the scale. It is not possible to initiate a new dispense cycle if the cycle end outlet (K2 relay contact) stays closed.

To stop and pause a dispense cycle being run, press on the “tare” key. This action will open the K1 and K3 relay contacts, halting the filling until the tare key is pressed again.

To cancel a dispense cycle being run, double-press on the tare key.

5.9. PIECE COUNTER MODE



Pressing the “U” key activates or deactivates the piece counter mode. In this work mode, the reading shows the number of pieces on the scale instead of the weight.

The number of pieces is calculated by dividing the net weight on the scale by a unit weight value.

The K3 indicator has a memory space for 20 unit weight records.

When pressing on the “U” key and changing to piece counter mode, the $\square \uparrow$ message and the $\square \text{ n}$ message appear for a moment to indicate the unit weight record number being used (the number at the end of the message will change from 1 to 20 depending on the selected record). When deactivating the piece counter mode, the $\square \text{ F}$ message appears for a moment before returning to weight reading mode.

If the unit weight value of the selected record is outside the scale’s measurement range, the indicator will automatically show the $\square \text{L} - \text{u}$ option in the configuration menu of the piece counter mode. This option allows the unit weight to be automatically calculated from a sample with a known number of pieces.

In piece counter mode, the measurement unit is the “number of units” and is indicated by the ⋯ pictogram.



The number of pieces is always a whole number; there is no decimal fraction. It can be a negative value if the fixed tare is kept activated and the load receptor is completely emptied.

In piece counter mode, all of the scale's functions remain available: tare and memorized tare, high resolution, limit control, PLU selection, ticket printing or adhesive label.

If limit control mode is activated, the value for the lower limit and for the upper limit refers to the number of pieces, not to the net weight on the scale.

Double-pressing on the "U" key gives access to the piece counter options menu. The possible options are:

`n-CLU`

Selecting record number (1-20).

`CARL-UB`

Automatic unit weight calculation from a sample with a known number of pieces. For the selected record number.

`U BE IG`

Manual input of the divisor of the A/D converter count value for calculating the number of pieces for the selected record number.

For automatically calculating the unit weight of a piece, these are the steps to follow:

1. Make sure that the scale is set to zero (the $\rightarrow 0 \leftarrow$ reading should appear on the display). If necessary, place an empty receptacle on the load receptor to contain the sample of pieces and perform a tare.
2. Double-press on the "U" key. The first option in the piece counter configuration menu will appear, `n-CLU`. Press the \downarrow key.
3. Enter the piece counter record number with which you wish to work (1 to 20) and double-press the \downarrow key to validate.
4. When the `n-CLU` message appears again, press the \rightarrow key to go to the `CARL-UB` option and press the \downarrow key to access it.
5. Use the scroll keys $\leftarrow \rightarrow$ and $\downarrow \uparrow$. Enter in the display the number of pieces contained in the prepared sample to calculate the unit weight (minimum 10 pieces).
6. Double-press on the \downarrow key to validate. For a few seconds the display will show the `-CnE-` message intermittently while it automatically calculates the unit weight.

7. Once this process is complete, the unit weight for the selected record is stored in the unit's memory and the indicator will automatically switch to piece counter mode, using the unit weight that has just been calculated.

If the calculation of the unit weight produces a value outside the indicator's measurement range, the **Error** message will appear and the operation will be cancelled.

5.10. PLU - SELECTION OF PRODUCT CODE

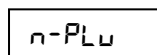


When pressing on the PLU key, the indicator jumps to the product codes configuration menu to select or edit a record.

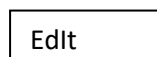
The K3 indicator has a memory with 85 PLU records.

This memory allows a 6-character alphanumerical information field to be associated to each one of these records. This information is printed on the weighing labels if a PLU record has previously been selected.

The possible options are:



Selection of the number of PLU records (1-85).

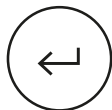


Inputting the 6-character alphanumerical code associated to the selected record.

When inputting the content of the alphanumerical field, the "TEST" key allows switching between upper case, lower case and numbers or symbols.

To cancel the selected PLU, access the **n-PLU** option, enter the "0" value and validate by double-pressing the **↵** key.

5.11. PRINTING A WEIGHING TICKET



In “weight indicator” mode and in “piece counter” mode, the ↵ key acts as a print key.

When pressing this key, a ticket is printed with the weight shown on the LCD display. The ticket shows print date and time, the ticket’s serial number, gross weight, tare and net weight. If the indicator is in piece counter mode, the ticket shows the number of pieces, the unit weight and the tare.

The date and time are only available if the optional real-time clock accessory is installed.

Additionally you can print a 3-line header and a footer line with constant information.

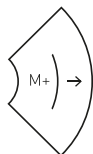
GRAM PRECISION		
Travessia Industrial 11 L'Hospitalet de Llobregat		
PLU: CLIPS	Num.	85
	N LOT:	123456
B	243	g
T	65	g
.....		
N	178	g
www.gram-group.com		

GRAM PRECISION		
Travessia Industrial 11 L'Hospitalet de Llobregat		
PLU: CLIPS	Num.	84
	N LOT:	123456
Q	107	pcs
	0.3551	g/u
T	5	g
www.gram-group.com		

1 Weighing ticket in weight indicator mode and in piece counter mode

The print key will only be effective if the weight on the scale is stable (the stability indicator is switched on).

This gross/tare/net ticket is only possible provided no ticket with accumulated total has been initiated, which has a different format.



To initiate a totalizer ticket, weigh the first object to be included in the ticket and press the M+ key. The weight shown on the display is printed and added to the accumulated total. Repeat this operation to add and print each one of the subsequent weighings.



At the end of each weighing sum, the total accumulated sum appears in the display. To complete the ticket and print the line for the total, press on the MR key. You can view the total at any time before completing the ticket by pressing on the ↑key.

GRAM PRECISION	
Travessia Industrial 11	
L'Hospitalet de Llobregat	
	Num. 93
	N LOT:123456
1	ABCDEF 43 g
2	GRAM 15 g
3	GRAPAS 178 g
4	GRAPAS 133 g
.....	
Total	369 g
www.gram-group.com	

2 Example of totalizer ticket

6. CONFIGURATION OPTIONS MENU



To access the configuration options menu, keep the “M” key pressed for two seconds. The display shows the ΠΕΝΔ message for ½ second to indicate that from then on the indicator will start showing the different selection options. In “menu” mode, use the arrow keys to change to the next option or change the value of one digit in the display when editing the value of a parameter.



Returns to the menu’s previous level without making any change.

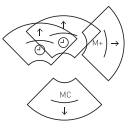
When in the main menu, exit the menu mode and return to normal operation mode (weight mode).



Moves to the next menu option in the “left” direction or changes between the different values. It is possible to assign to a particular option.



Moves to the next level of the options menu or shows the current value of an option. When changing the selected value for an option (using the ← and → keys), pressing this key will validate the change. In “edition” mode (manual input of a parameter value), one short press moves you to the next digit on the display. A long hold or a double-press validates the entered value.

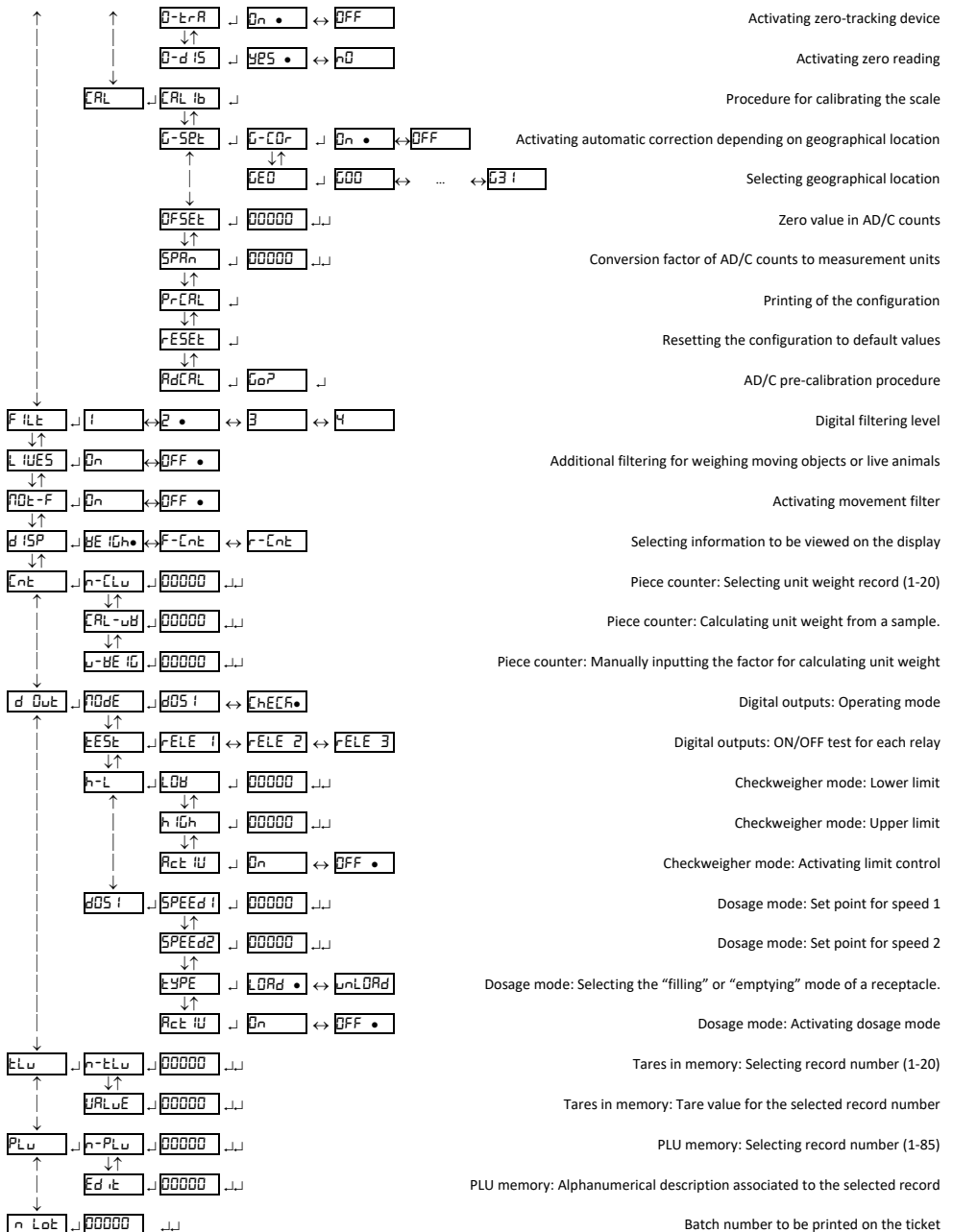


Moves to the next menu option in the “right” direction or changes between the different values. It is possible to assign to a particular option.

To change the value of one digit in the display when inputting a data item.

La siguiente tabla resume las diferentes opciones de configuración y ajuste:

<p>Menu</p> <p>↓</p> <p>A-OFF OFF • ↔ 30n ↔ 1h ↔ 1h30h</p> <p>↓</p> <p>bL-On OFF ↔ On ↔ Auto •</p> <p>↑</p> <p>bEEP OFF ↔ On •</p> <p>↑</p> <p>tAR-E P-tAr YES • ↔ n0</p> <p>↓</p> <p>tAR-r YES ↔ n0 •</p> <p>↓</p> <p>t-Stb YES • ↔ n0</p> <p>↓</p> <p>hOId OFF • ↔ LASt ↔ PEAK</p> <p>↓</p> <p>LOCk OFF • ↔ On</p> <p>↑</p> <p>rS232 bAudr 9600 • ↔ 19200 ↔ 38400 ↔ 57600 ↔ 115200</p> <p>↓</p> <p>COA 1 S-Mod 1 Pr Int • ↔ EOnE ↔ StAb ↔ r-ENDEE ↔ HtREN ↔ nonE</p> <p>↓</p> <p>ForA 1 Pr4 • ↔ Pr6 ↔ PC-0 ↔ USB ↔ USBFr ↔ rd3</p> <p>↓</p> <p>WLES YES ↔ n0 •</p> <p>↓</p> <p>WIFI-H Pr4-B ↔ URAN0 ↔ ... ↔ URAN9</p> <p>↓</p> <p>COA 2 S-Mod 2 Pr Int • ↔ EOnE ↔ StAb ↔ nonE</p> <p>↓</p> <p>ForA 2 Pr4 • ↔ Pr6 ↔ PC-0 ↔ USB ↔ USBFr ↔ rd3</p> <p>↓</p> <p>tICRt tINE YEAr ↔ MOntH ↔ dAY ↔ hOur ↔ MInut</p> <p>↓</p> <p>SER-n 00000 </p> <p>↓</p> <p>A-Cut OFF • ↔ On</p> <p>↓</p> <p>DEC-S d0E ↔ COmMA •</p> <p>↓</p> <p>SCALE unIt g ↔ kg • ↔ OZ ↔ lb</p> <p>↓</p> <p>MAH 00000 </p> <p>↓</p> <p>dIU 1 • ↔ 2 ↔ 5 ↔ 10 ↔ 20 ↔ 50</p> <p>↓</p> <p>DEC dP 0 • ↔ dP 1 ↔ dP 2 ↔ dP 3</p> <p>↓</p> <p>2-rAn r-nod n0 • ↔ 2-rAN0 ↔ 2-int</p> <p>↓</p> <p>MAH2 00000 </p> <p>↓</p> <p>dIU2 1 • ↔ 2 ↔ 5 ↔ 10 ↔ 20 ↔ 50</p> <p>↓</p> <p>ZER0 In I-0 YES • ↔ n0</p> <p>↓</p> <p>MAH-0 0 InL • ↔ 100</p>	<p>Options for automatically switching off the unit</p> <p>Options for backlighting the LCD display</p> <p>Activating sound when pressing on a key</p> <p>Activating fixed tare</p> <p>Activating automatic tare</p> <p>Requiring stability for performing a tare</p> <p>Operational style in "hold" mode</p> <p>Activating keypad lock</p> <p>Transmission speed of serial port</p> <p>Serial port 1: Data transmission mode</p> <p>Format of frame data sent</p> <p>Serial port 1: "Wireless" option installed</p> <p>Serial port 1: Wi-Fi network selection</p> <p>Serial port 2: Data transmission mode</p> <p>Format of frame data sent</p> <p>Inputting date and time</p> <p>Editing ticket number</p> <p>Automatic paper cutting</p> <p>Decimal separator for USB keypad adapter</p> <p>Measurement unit of the scale</p> <p>Maximum capacity (Max₁ in the event of 2 ranges and intervals)</p> <p>Division (e₁ interval)</p> <p>Position of decimal point</p> <p>Activating double range or double interval option</p> <p>Max₂ in the event of 2 ranges / intervals</p> <p>e₂ in the event of double range</p> <p>Activating initial auto-zero</p> <p>Action range of zeroing device</p>
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NOTE: The • symbol in the above table shows the default value for each configuration parameter.

7. AUTO-OFF OPTION

A-OFF

This option programs the device's automatic switch-off after a time on idle (not being used). The device is understood to be on idle if there is no variation in the weight indication, and no key is pressed.

The possible options are the following:

OFF ●

The device always remains switched on. Option selected at source.

30n

The device switches off automatically after 30 minutes of inactivity.

1h

The device switches off automatically after 1 hour of inactivity.

1h30n

The device switches off automatically after 1:30 hours of inactivity.

8. BACKLIGHTING THE DISPLAY

bL-On

This option controls the performance of the LCD display backlight. Together with the **Auto-off** option, it reduces power consumption and extends battery life. The unit is deemed to be inactive if the scale is set to zero and there are no changes in the weight reading and no key is pressed. The possible options are the following:

AUTO ●

The *backlight* switches off automatically after 10 seconds of inactivity. This is the option selected at source.

OFF

The *backlight* is always switched off.

On

The *backlight* is always switched on.

9. SOUND WHEN PRESSING A KEY

бЕЕР

This function activates (“On”) or deactivates (“Off”) the emission of a sound when one of the keypad buttons is pressed.

The factory setting for this option is “On”.

10. TARE OPTIONS

тРrЕ

The possible options are:

P-тРr

Preset tare: The tare will be kept until the tare key is pressed again with an empty load receptor platform. It is the default option.

Р-тРr


Auto-tare: When a stable weight is detected, the indicator sets a tare automatically. When the plate is emptied, the tare disappears (reverts to zero).

т-Stb


Yes (default option): The weight needs to be stable to set a tare.

11. Hold MODE

hOld

The **hold** mode is activated by double-pressing the  key. When this operating mode is activated, the weight value for the last load placed on the platform always remains in the display.

You previously need to select in the options menu the operating mode for the **hold** function.

To select the desired **hold** mode, keep the  key pressed until the LCD display shows the message giving access to the options in the configuration menu.

Press the → key until the display shows the **h \bar{O} Ld** option and then press the ↵ key to access this submenu.


It is possible to select three operating styles for the **hold** mode:

- **OFF** The mode is disabled (this is the default option).
- **LAST** The display shows the last stable weight placed on the scale platform.
- **PEAK** The display shows the highest weight value measured by the instrument since the last load was placed on the scale platform.

Press the → key to select the desired operating mode and then press ↵ to validate.

The **SAVE** message will appear to indicate that the configuration has been stored in the unit's non-volatile memory. Once this option is selected, it is recorded in the non-volatile memory and it is no longer necessary to repeat this operation until you decide to change the mode of use.

Once the operating mode is selected for the **hold** key, press repeatedly on the **ESC** key to return to the weight reading mode.

Double-pressing the  key activates or deactivates the **hold** mode. When this operating mode is activated, the last stable weight of the load deposited on the platform will always remain in the display. In other words, even if the load is removed from the platform, the display will continue to show the last stable weight reading. If the load has been removed, the weight is viewed intermittently to indicate that the **hold** mode is in operation.

12. KEYPAD LOCK

LOCK

This function locks the keypad except for the on / off button and access to the options menu.

When a key is pressed with the keypad lock activated, no action is performed and the display shows LOCK for 1 second. That is to say, while the keypad is locked it is not possible to set a tare, reset to zero, print a ticket or reset total accumulated weight.

This option stays in the memory and is not deactivated when the device is switched off and on.

The keypad lock can be activated / deactivated by keeping the key pressed for more than 2 seconds ↵.

13. COMMUNICATION

r5232

The **K3** indicator can be connected to other devices to send and receive information via an RS-232 interface (standard) or a Wi-Fi 802.11 interface (optional). The **K3** indicator can have up to 2 serial RS232 outputs. The second serial output is supplied optionally.

In the r5232 menu it is possible to configure the different data transmission options from the indicator.

bAudr

It allows the speed to be selected at which the serial interface will be connected. The possible options are: 9600 bauds, 19200 bauds, 38400 bauds, o 57600 bauds. The transmission format for each byte is 8 bits, without parity bit, 1 stop bit ("8,n,1") and it is not configurable.

COM 1

Configuration of serial port 1.

COM 2

Configuration of serial port 2.

Each one of the serial ports is configured independently, allowing different devices with differentiated running modes to be connected. The configuration options available are the following:

5-Mod

Mode in which the data transmission will be made:

PrInt ●

- When pressing the print key.

Cont

- Continuously, at a rate of 5 frames sent per second.

StAb

- Automatically every time there is a new stable weight on the scale.

rEMOTE

- Operation as remote indicator (only available for COM1).

HErEIN

- Operation as a digital weight reading for a scale equipped with XTREM. This option is only available for the COM1 port.

nonE

- The serial port is deactivated, both for transmitting and for receiving data.

ForM

Format of frame data to be transmitted. Enables selecting the following options.

Pr4 ●

Connection to model **PR4** printer. A ticket is sent in a format for this printer model.

Pr6

Connection to model **PR6** printer. A ticket is sent in a format for this printer model.

PC-0

Frame data in a compatible format with the GRAM model **Z3** weight indicator. For connecting to **PC with Virtual Key application**.

USB

Frame data in a format for the **GRAM USB** adapter cable.

USBFR

Frame data in a format for the **GRAM USBFR** adapter cable (emulating “AZERTY” keypad).

rd3

Frame data in a format for the **GRAM RD3** model weight repeater display.

Q2

Connection to **Q2** labeller. A ticket is sent in a format for this printer model.

SOLET1

Connection to SOLET1 labeller. A ticket is sent in a format for this printer model.

R3 rEN

Frame data in a format for connection from another GRAM weight indicator running as a remote display. (Only available for COM1).

WLES

Wireless mode for use with GRAM wireless adapters. (Only available for COM1).

WIFI

“Wi-Fi 802.11” mode for use with Wi-Fi GRAM adapters. (Only available for COM1).

13.1. Remote indicator mode

The K3 indicator can operate as a remote display for another scale by using the “GRAM remote” communication protocol. When a K3 indicator is not configured as a remote indicator, it obtains the weight information from another scale via the RS232 serial port. The connection available for load cell is deactivated.

To configure a K3 indicator as a remote display, select the **REMOTE** option in the **Serial** section of the options menu for the COM1 serial port.

The scale to which the “remote indicator” will be connected should have the **REMOTE** option selected in the **Serial** section of the configuration options menu for the RS232 serial port to which the cable will be connected. Moreover, in the **Serial** section of this RS232 communications port, you should select the **CONT** option (data transmission in continuous mode).

13.2. XTREM mode

When selecting the **XTREM** option as the operating mode for the serial port **COM1** in the options menu **Serial**, the K3 indicator will operate as the terminal of a digital scale equipped with the XTREM weight transmitter.



The weight measurement is performed by the XTREM equipment (installed in the scale’s weight load receptor), whereas the K3 indicator is just a terminal in which the weight reading is viewed and the instrument’s different functions (tare, semi-automatic zero, zero-tracking device, printout of results, piece counter, etc.) are operated.

For as long as the XTREM digital scale is not connected to the COM1 serial port of the K3 indicator, a communication error occurs and the display shows the “-” sign moving along the display. For as long as this error situation is occurring (there is no communication with the digital scale) it is not possible to access any K3 indicator function, including the options menu.

In the event of this error occurring:

- Make sure that the green LED on the XTREM scale is on (fixed or flashing) and that the red LED that indicates a malfunction is off.
- Check that the cable of the XTREM scale is properly connected to the COM1 serial port of the K3 indicator.
- Verify that the K3 indicator is configured at the same transmission speed as the XTREM scale (option $r5232 \rightarrow bAudr$). The transmission speed of the serial port configured as a default option in a new unit is 9600 bauds, both for the K3 indicator and for the XTREM weight transmitter.

If necessary, to return to the operating mode of the K3 as an analogue weight indicator and to have access to the options and configuration menu, press

the following keys at the same time:  and .

13.3. PR4/PR6/Q2 printer

When selecting this option, the scale will send weight information in a ticket print format for GRAM PR4, PR6 printers or Q2 labeller.

The ticket can have up to 3 header lines and 1 footer line. The header and footer content is programmable by the user.

The options for configuring this document are in the E [FEE] section of the main menu.

If selecting a **PR6** printer, the **A-Cut** (automatic paper cutting) option in the **Ticket** menu automatically changes to **ON**.

13.4. Frame format RD3

Format compatible with **GRAM RD3** weight repeater display.

When selecting this transmission format, the weight indicated by the **S2** scale appears simultaneously in the **RD3** repeater.

13.5. Frame format USB

Format compatible with the **GRAM USB** adapter for PC-type computer with Microsoft Windows operative system.

From the PC's point of view, the **GRAM USB** adapter is a keypad emulation that transforms the information transmitted by indicator **K3** into a keypad input.

This option should be selected to make the data transmission from indicator **K3** compatible with a keypad input in the PC. If using a French "AZERTY" keypad, select the **USbFr** format.

13.6. Frame format PCO

The indicator sends the following byte frames (always 14 bytes in length).

0	1	2	3	4	5	6	7	8	9	10	11	12	13
02h	69h	20h	20h	20h	30h	2Eh	30h	30h	30h	6Bh	67h	0Dh	03h
STX	'l'	spc	spc	spc	0	.	0	0	0	k	g	CR	ETX

0 Start of text.

1 Status (tare, zero, net, stable, unstable).

2 Sign (blank space if value is positive, or '-' if negative).

3..9 Numerical value (ASCII) of the weight shown on the LCD display, including the decimal point.

10..11 Measurement unit: 'g', 'kg', 'oz', 'lb'.

12 Carriage return.

13 End of text.

The status byte is built from the binary values of the display indications (tare, zero, gross/net and stability). 20h is added to the result to ensure that the result is printable.

- Bit 0 (01h)** The transmitted value is the gross weight.
- Bit 1 (02h)** A tare is set.
- Bit 2** Not used, always 0.
- Bit 3 (08h)** The indicator is set to zero.
- Bit 4** Not used, always 0.
- Bit 5** Not used, always 0.
- Bit 6 (40h)** The weight is stable.
- Bit 7** Not used, always 0.

Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
N/A	Stability	N/A	N/A	Zero	N/A	Tare	B / W

Examples:

The status byte is **61h ('a')**

61h – 20h = 41h →

Bit 7	Bit 6 (stable)	Bit 5	Bit 4	Bit 3 (no zero)	Bit 2	Bit 1 (Tare off)	Bit 0 (Gross)
0	1	0	0	0	0	0	1

The status byte is **69h ('i')**

69h – 20h = 49h →

Bit 7	Bit 6 (stable)	Bit 5	Bit 4	Bit 3 (zero)	Bit 2	Bit 1 (Tare off)	Bit 0 (Gross)
0	1	0	0	1	0	0	1

The status byte is **62h ('b')**

62h – 20h = 42h →

Bit 7	Bit 6 (stable)	Bit 5	Bit 4	Bit 3 (no zero)	Bit 2	Bit 1 (Tare on)	Bit 0 (Net)
0	1	0	0	0	0	1	0

The status byte is **63h** ('c')

63h – 20h = 43h →

Bit 7	Bit 6 (stable)	Bit 5	Bit 4	Bit 3 (no zero)	Bit 2	Bit 1 (Tare on)	Bit 0 (Gross)
0	1	0	0	0	0	1	1

The status byte is **6Ah** ('j')

6Ah – 20h = 4Ah →

Bit 7	Bit 6 (stable)	Bit 5	Bit 4	Bit 3 (zero)	Bit 2	Bit 1 (Tare on)	Bit 0 (Net)
0	1	0	0	1	0	1	0

The status byte is **6Bh** ('k')

6Ah – 20h = 4Ah →

Bit 7	Bit 6 (stable)	Bit 5	Bit 4	Bit 3 (zero)	Bit 2	Bit 1 (Tare on)	Bit 0 (Gross)
0	1	0	0	1	0	1	1

13.7. Communication protocol

The **K3** indicator is equipped with a communication protocol that allows the unit to be commanded remotely.

The table below lists the available commands and the response of the **K3** indicator.

COMMAND	RESPONSE
v	Returns a message with the identification of the "GRAM K3 Vxxxx" firmware version.
\$	Weight request. The indicator transmits a frame of weight information in a PC0 format.
z	The scale performs auto-zeroing.
t	The scale performs a tare.
f	Increases the value of the digital filter (1..4). If the filter is 4, the 'f' command sets the filter to 1.
H1	Programs line 1 of the ticket header and responds "H1 OK".
H2	Programs line 2 of the ticket header and responds "H2 OK".
H3	Programs line 3 of the ticket header and responds "H3 OK".
F1	Programs the ticket's footer line and responds "F1 OK".

For commands H1, H2, H3 and F1, the format is the following:

0	1	2	3	4	5	6	...	30	31	32	33	34	35
STX	C	C	L	L	L	L	...	L	L	L	L	L	ETX

Where:

STX = ASCII 2

ETX = ASCII 3

C = Command (2 characters)

L = 32-character ASCII text line

14. TICKET PRINT OPTIONS

⌵ ⌵⌵⌵

This menu has various options for configuring the information that appears printed in the tickets generated by the **K3** indicator.

t mE

Setting the time on the scale's internal clock. Only if the optional real-time clock board is installed.

SEr-n

Value of the next ticket number to be printed. It is automatically increased with each print, whether it is a single ticket or a ticket with accumulated total.

R-CUt

Automatic paper cutting ON/OFF. This function is only possible with ESC/Pos printers equipped with paper cutting device.

Programming the ticket header and footer is not performed via the scale's keypad but via the RS-232 serial port. In the downloads zone of our website a program for PC is available with Microsoft Windows operative system for performing this function.



15. CONFIGURING THE SCALE

SCALE

This menu features the options for parameterizing and setting the measurement scale of the instrument.

UN IT	Measurement unit: g, kg, oz, lb.
MAX	Maximum capacity of the scale. Enter the value, including the decimal digits.
dIU	Division: The smallest increment that the instrument can measure. Possible values are 1, 2, 5, 10, 20 or 50.
dEC	Position of decimal point.
ZER0	Configuration menu for the instrument's options associated with "zero".
In 1-0	Initial zero setting at start Yes / No. Allows you to select the limit of the zero-setting device. Possible options are MAX (zero is allowed for any weight on the scale) or OIML (follows established rules by the OIML R76 / EN 45501 technical regulation).
MAX-0	
0-trA	Zero tracking device activated or deactivated.
0-d IS	Show zero indicator in the display Yes/No.
CAL	Settings menu for the instrument.

15.1. Settings menu CAL

The settings menu can be directly accessed when switching on the unit. To do this, switch on the unit and, while the LCD test appears with all segments on, at the same time press on the  and  keys (a short press, not sustained).

<code>CAL 1b</code>	Calibration using a known weight (automatically sets the initial zero and pending calibration).
<code>G-SEt</code>	Gravity adjustment depending on the scale's geographical location:
<code>G-COr</code>	ON / OFF correction (activates/deactivates automatic correction according to geographical location).
<code>GEO</code>	Geographical location code (see attached table).
<code>OFSEt</code>	Manual input (keypad) of the initial zero (in ADC accounts).
<code>SPAn</code>	Manual input of the span slope, 5 digits.
<code>PrCAL</code>	Prints a ticket with the configuration and calibration settings in the device's memory.
<code>rESEt</code>	Perform a deletion of the internal information of the equipment, do not do it without technical advice. The equipment may become temporarily unusable.
<code>AdCAL</code>	ADC span pre-calibration. Only to be used at factory using the correct load cell reference.

15.2. Scale calibration `CAL 1b`

1. With the platform free of any load, select the “`CAL 1b`” option.
2. The display will show that the initial zero value is in progress with the blinking message “`CAL 0`”.
3. Once the zero value has been calibrated, place the calibration weight (a known mass weight) on the load receptor.
4. Enter the weight value in the indicator, including the decimal positions. Use the cursor movement keys to move through the different positions on the display.

- Once you enter the weight value, double-press on the \downarrow key to validate and move to next step. The display will show the blinking message “-CAL-” while acquiring the calibration value.
- Lastly, it will show the message “CEC” for a few seconds, asking for the code of the geographical location where you did the calibration. The geographical location code is a value from 0 to 31, which you have to choose from the attached table. Use the \leftarrow and \rightarrow keys to change the value and validate by pressing on the \downarrow key.
- Lastly, the message “SAVE” will briefly appear, indicating that the calibration has been saved in the non-volatile memory. The indicator returns to normal use mode, displaying the weight on the load receptor.

If the automatic correction of weight reading according to geographical latitude and height (option “G-COR”) is activated, the next time the scale is switched on after a calibration, once the display test and the initial welcome message are completed, the user will be asked to input the value corresponding to the geographical zone where the scale will be used.

Once the value has been entered for the geographical zone in which the scale is used, it is recorded in the non-volatile memory and will not be requested again.

The geographical area where the scale is used can be modified later whenever you wish by entering the menu with MENU \rightarrow SCALE \rightarrow CAL \rightarrow G-SET \rightarrow CEC \rightarrow G nn (for nn {0-31}).

The automatic correction of the setting according to geographical area can be disabled by entering the menu with MENU \rightarrow SCALE \rightarrow CAL \rightarrow G-SET \rightarrow G-COR \rightarrow OFF.

16.3 Table of geographical adjustment values

Geographical latitude in the northern or southern hemisphere in degrees and minutes.	Elevation above sea level in metres										
	0	325	650	975	1300	1625	1950	2275	2600	2925	3250
	325	650	975	1300	1625	1950	2275	2600	2925	3250	3575
	Elevation above sea level in feet										
	0	1060	2130	3200	4260	5330	6400	7460	8530	9600	10660
	1060	2130	3200	4260	5330	6400	7460	8530	9600	10660	11730
00°00' - 05°46'	5	4	4	3	3	2	2	1	1	0	0
05°46' - 09°52'	5	5	4	4	3	3	2	2	1	1	0

09°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
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°06'	20	19	19	18	18	17	17	16	16	15	15
50°06' - 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
59°32' - 60°49'	24	24	23	23	22	22	21	21	20	20	19
60°49' - 62°09'	25	24	24	23	23	22	22	21	21	20	20
62°09' - 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°52'	29	29	28	28	27	27	26	26	25	25	24
77°52' - 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

F I L T

16. DIGITAL FILTER

Every 100ms, the A/D converter of the S2 scale provides a reading of the electrical output voltage of the connected load cell.

The digital filter consists of a moving average of these readings.

Possible values are **1** (moving average of 2 readings), **2** (4 readings), **3** (8 readings), or **4** (16 readings).

A smaller filter value implies that rapid oscillations in the weight become more visible and vice versa.

17. WEIGHING OF LIVE ANIMALS L WES

An additional filtering is available for weighing live animals or persons which, when moving on the load receptor, cause disruption in the weight reading by exerting a variable force on the load cells.

By activating this filtering in conjunction with the digital filter, an average reading is obtained that discards the extreme values caused by the shifting on the load receptor platform.

18. MOVEMENT FILTER MOE-F

When activating the movement filter, the indicator does not show inconsistent changes of more than one division with a duration of less than 100ms.

The result is that the indicator retains the last stable value while the weight has no consistent movement (in the same direction).

Put another way, a sudden quick blow on the scale does not have any effect on the reading. Although the weight value shown on the display is not affected, the stability reading in the top left corner of the display will go off to indicate this situation.

19. INFORMATION TO BE VIEWED d ISP

Allows you to select the value that should be shown in the LCD display. The options are the following:

WE 19h

The indicator shows the weight. It is the default option.

F-Count

Filtered A/D converter counts.

r-Count

Unfiltered A/D converter counts.

20. DIGITAL OUTPUTS d Out

This section of the options menu allows the operation of the optional 3-relay board available for the K3 indicator to be configured.

These 3 relay outputs can be used either for controlling an external signalling of the high/low/ok limits in the running mode as a checkweigher (H-L mode) or for the dosage of a product at two speeds. Moreover, it is possible to select whether the dosage is performed for filling a receptacle on the scale (loading) or for emptying a receptacle (unloading). The options in this section of the menu are the following:

MODE

Running mode for controlling the optional relay board.

CHECK ●

The relay outputs will be controlled by the H-L running mode. The K1 relay closes when the weight on the scale is greater than the limit h h . The K2 relay closes when the weight is between the L h and h h limits. The K3 relay closes when the weight is below the L h value.

dos 1

The relay outputs will be controlled by the dosage mode.

test

Allows each one of the 3 relays to be checked and operated by the user.

h-L

Setting the upper and lower values for running the “checkweigher” mode.

LOW	Value of the lower limit, including the decimal part.
HIGH	Value for the upper limit, including the decimal part.
ACT L	Yes / No: Activating the limits control when switching on the unit. The H-L key activates or deactivates the limits control.

dos 1 Setting of values for dosage.

SPEED 1	Weight set point for speed 1.
SPEED 2	Weight set point for speed 2.
TYPE	Type of dosage. Loading (LOAD) or unloading (unLOAD).
ACT L	Yes / No: Activating the dosage mode when switching on the unit.

21. TECHNICAL SPECS

Load cell connection

Maximum input signal	±4 mV/V
Maximum input voltage	-0.3 to 5.3 V
Internal resolution	AD 20bits converter, 1000000 counts (100000 external)
Measurement frequency	10 samples per second
Linearity error	≤0.01% of the measurement range
Exciting voltage	5 Vdc
Minimum transducer impedance	· Without relay board: 31,666 Ω (12 cells x 380 Ω) · With relay board: 47.5 Ω (8 cells x 380 Ω)
Cable length	30 m/mm ² max. (6 wires)

User interface

Main indicator	6-digit LCD 25.4 mm in height and weight limits visualizer. Backlit with 3-LED (RGB) back light panel
Keypad	11-key keypad
Acoustic warning	Piezoelectric intermittent-sound mini-buzzer (2300±300 Hz y 85 dB)

Communications

Port Tx/Rx: (Port 1)	Two-way RS-232C
Port Tx/Rx: (Port 2)	Transmission-only RS-232C.
Transmission speed	1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200
Number of bits and parity	8 bits, no parity, 1 bit stop

Input / output options

Wi-Fi 802.11 board	Wi-Fi adapter for Ethernet communication via TCP socket
RTC board	RTC for date and time
3-relay board	240VAC / Max current 15A / 360W

Power

Network connection	Via 12-V supply; 1 A
Battery	6V-5AH; Service time 25/60 hours depending on use.

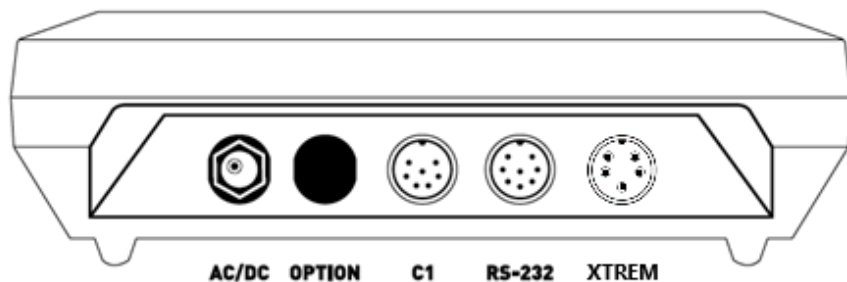
Operating conditions and mechanical data

Operational temperature range	+5°C/+35°C
Size (mm)	220 x 180 x 83
Weight (kg)	1.5 (including battery)
Assembly	Desktop Optional: Swivel mount wall/column
Tightness	IP-65 (K3); IP-67 (K3i)

Thermal printer (K3iP and MK3P models)

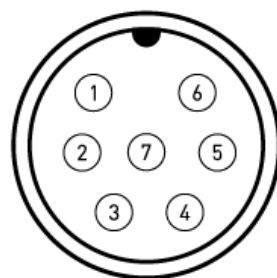
Printer life	6000000 printed lines
Resolution	8 dots/mm
Print speed	30 mm/sec
Paper type	Thermal paper reel (57mm wide, 30 mm \varnothing)
Print width	48 mm
Print sizes	6x8 points, 8x16 points, 12x24 points

22. CONNECTIONS

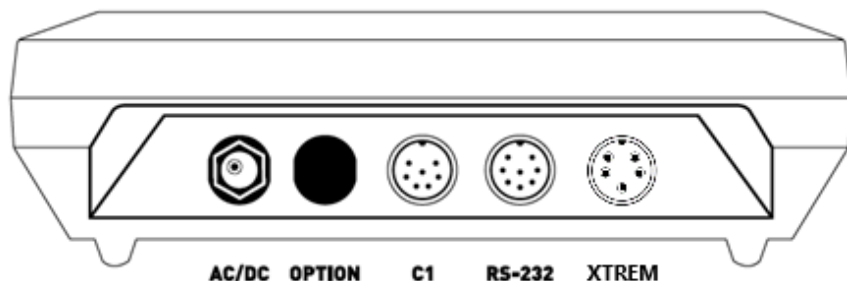


C1 connector, load cell

PIN No.	SIGNAL	TYPE A	TYPE B
PIN 1	SIG -	Blue	White
PIN 2	SIG +	Brown	Green
PIN 3	MESH	Mesh	Mesh
PIN 4	EXC -	Black	Black
PIN 5	SENSE -	-	Blue
PIN 6	EXC +	Red	Red
PIN 7	SENSE +	-	Yellow

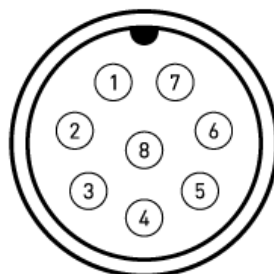


4 MULTI-PIN MOBILE MALE
(P700) 7 PINES



RS-232 serial output

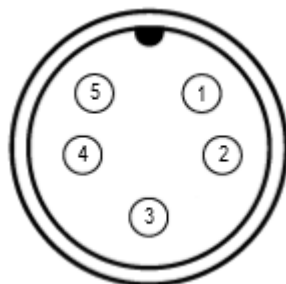
PIN No.	SIGNAL
PIN 4	RxD
PIN 5	TxD
PIN 6	GND



*5 MULTI-PIN MOBILE MALE
(P700) 8 PINES*

XTREM scale connector

PIN No.	SIGNAL
PIN 1	+Vcc
PIN 2	TxD
PIN 3	RxD
PIN 4	No conectado
PIN 5	GND



*6 MULTI-PIN MOBILE MALE (P700)
5 PINES*

23. ERROR MESSAGES

$RdC-E$	ADC fault: No response from ADC.	Malfunction in scale. Consult helpdesk.
$RdC-h$	Sensor input signal too high (>20mV).	Faulty load cell. Cabling in poor condition.
$RdC-L$	Sensor input signal too low (<-20mV).	Faulty load cell. Cabling in poor condition.
bAt	Dead battery.	Connect the AC/DC adapter to charge the battery.
$Err 0$	a) Auto-zero device out of range. b) A stable measurement could not be obtained when attempting initial zeroing.	Empty the load receptor before switching on the scale.
$Err n$	Calibration weight > Max.	Calibration weight should be < Max.
$Err d$	The division should be >10 ADC counts.	Resolution is too high. Change the division to a higher value.
$Err C$	A stable measurement could not be obtained for setting the scale.	
$-0 L-$	Overload: Weight > Max+9·div	
$LOCK$	The keypad locking function is activated.	Unlock the keypad by keeping the ↵ key pressed for two seconds.
$nOrtC$	The optional RTC is not present or the circuit is damaged.	Consult helpdesk.
$t ICOn$	A totalizer ticket has now been initiated.	Print the total before initiating a new ticket.

005/04112020



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