believing in technology

INSTRUCTION MANUAL

HL SERIES

20 – 25 – 30 – 50

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Translation from the Original

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FUNCTIONS

HL Series 20

- Total weight visualization
- Partial weight visualization
- Available divisions 1-2-5-10-20kg
- Modify of the measurement system function (es. da Kg a Lb)
- Calibration and weight zeroing function
- Possibility to connect the Multilink as TR60/70, DRIVE8, printer, etc…
- Integrated hour counter
- Overload control system
- Total weight local/unlock function
- Multilanguage
- Weight/volume conversion
- 4-20mA Output (Optional)
- Automatic activation of warranty after some hours of function

HL Series 25

- All the HL Series 20 functions (NO WEIGHT-VOLUME CONVERSION)
- Managing of only one load
- Managing of only one unload
- Load and unload lock function
- Total weight lock and unlock function
- Possibility to connect the alarm
- Pre alarm at the 85% of the load/unload operations
- Settable alarm time at the end of the load/unload

HL Series 30 / HL Series 30 TOPCUT

- All the HL Series 20 function (NO WEIGHT-VOLUME CONVERSION)
- 15 Recipes
- 15 Components per recipe
- 15 Unloads per recipe
- Animals, totals or percentage programming
- TOPCUT* function (with DRIVE8)
- Settable mixing time
- Possibility to name components and recipes
- Warehouse managing
- Load and unload lock function
- Total weight lock and unlock function
- Possibility to connect the alarm
- Pre alarm at the 85% of the load/unload operations
- Settable alarm time at the end of the load/unload

HL Series 50 / HL Series 50 TOPCUT

- All the HL Series 20 function (NO WEIGHT-VOLUME CONVERSION)
- 50 Recipes
- 30 Components per recipe
- 30 Unloads per recipe
- Animals, totals or percentage programming
- TOPCUT* function (with DRIVE8)
- Settable mixing time
- Possibility to name components and recipes
- Warehouse managing
- Load and unload lock function
- Total weight lock and unlock function
- Possibility to connect the alarm
- Pre alarm at the 85% of the load/unload operations
- Settable alarm time at the end of the load/unload

***TOPCUT:** *Device used to control knives for the product decompression inside the mixer wagon at personalised time intervals.*

TECHNICAL FEATURES

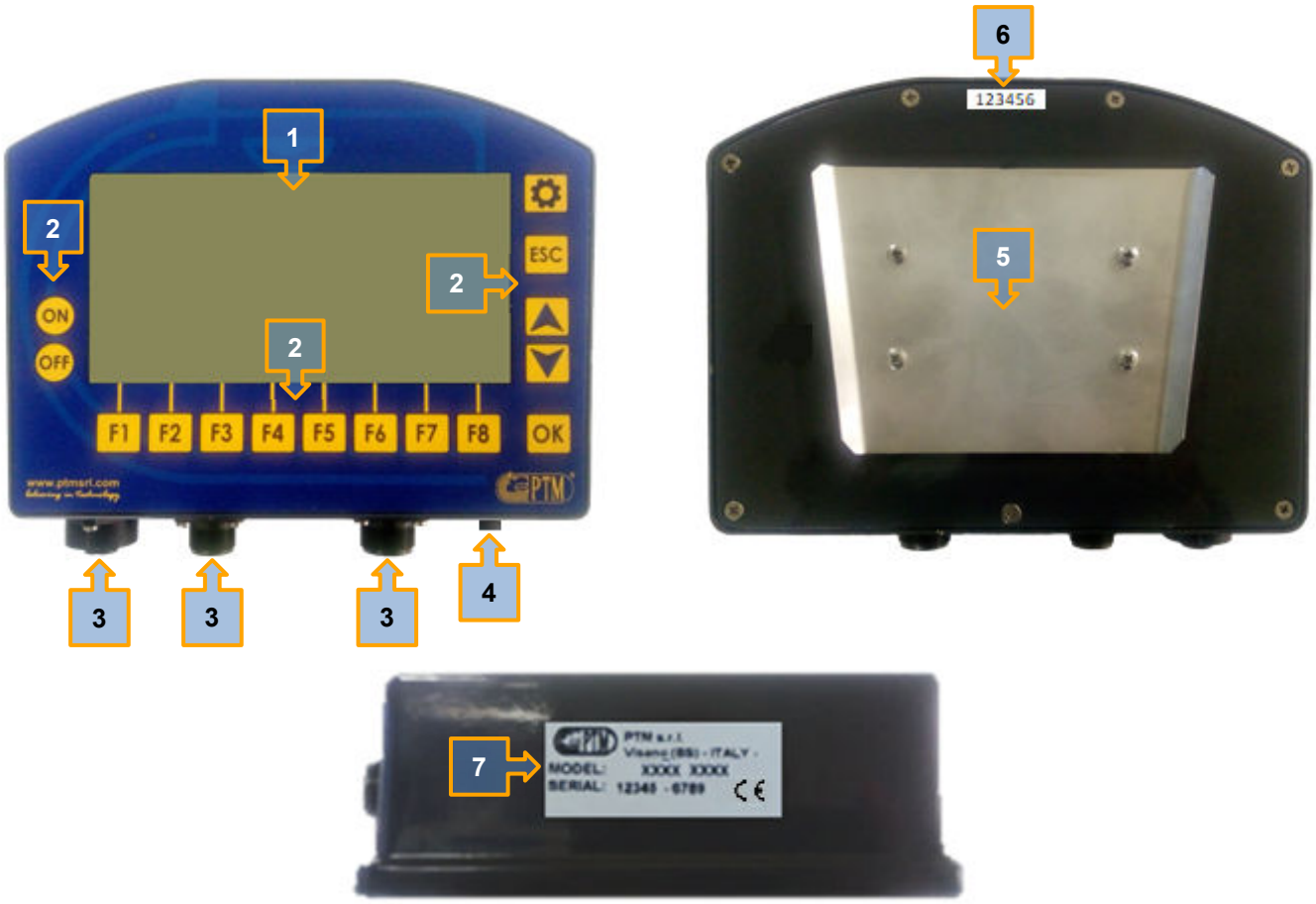
High-sensibility membrane keyboard
Die-cast aluminium case
Protection: IP 68 with connected connectors
Dimensions : L 230 X H 180 X P 65 mm
Weight: 1800 grams ca.
Display: LCD with FSTN technology transflective, led backlit. Dimension H 80 x 158 mm. Made by 5 alphanumeric digits (English flag) of H 47mm and a mold of 178 x 28 pixel. High visible Display both with few illuminations and under sunlight.
Memory: non-volatile Eeprom
Clock/ Calendar
Programmable divisions: Kg. 1 – 2 – 5 – 10 - 20
Resolution: 135.000 dd
Working conditions: - 20 + 70 C°
Relative humidity:95 %
Power supply: da 9 a 32 V dc
Absorbed power: 2,5 VA max (without connected load cells)
Load cells in parallel connection: Max 12 (350 Ω)
Load cell power supply: 5 Vcc
Reading error: +/- Kg. 1 on Kg. 10.000
Display data field: +99999 ; -99999
Measuring range: ± 2 mV; ± 20 mV
Reading speed per second: 10 / sec.
Serial output: 1 fixed; 2 optional; RS485 optional
Consumption: 180mA a 12V (with no load cells connected)
Alarm output
Protection against radiofrequency interferences
Elimination of power supply interferences
Signalling of low tension

MULTILINK ACCESSORIES

Repeater Display: AV41 – Big Display
Portable Display: AV50 - AV60 - AV70 - AV80
TR60 Multilink: RF Antenna for Handheld Display AV50 - AV60 - AV80
TR70 Multilink: RF Antenna for Handheld Display AV70
Drive 8 Multilink: I/O Board
RF7 Multilink: RF Antenna for radio control
Multilink Mod. P1000 Printer
Inverter Power supply
Plug power supply

NOTA: All the HL-Series weight indicators, can be compatible with some previous generation accessories.

WHAT IS THE WEIGHING INDICATOR COMPOSED OF?



1. **Display:** graphic Display in which is visualized the information of the weight indicator and where all the different phases of the weighing operations are indicated. In order to facilitate the end user utilization, the weighing indicator has an intuitive, easy and interactive graphic.

2. **Keys:** In this part of the weight indicator there are the switch on/switch off keys, the function keys, the direction keys, the confirmation key, the exit key and the menu key.

3. **Connectors:** there are the connectors for the power supply and the Multilink accessories connection.

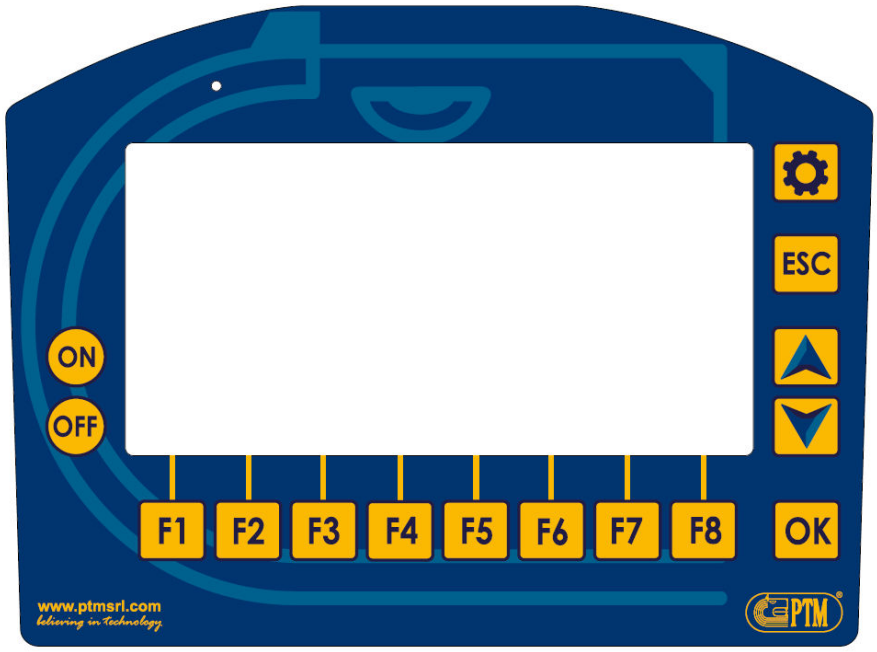
4. **Vent valve:** Valve used for the compensation of the pressure caused by change of temperature and humidity.

5. **Male mounting plate:** mounting place. In equipment with the weighing system there is also the female mounting plate.

6. **Serial number:** serial number of the weighing indicator. In case of technical assistance, please communicate this number to PTM or to the authorized retailer in order to permit the product identification.

7. CE **Identification plate:** weighing indicator identification plate. In case of technical assistance, please communicate this number to PTM or to the authorized retailer in order to permit the product identification. Please do not remove or damage the identification plate.

KEYS FUNCTIONS



ON ➢ SWITCH ON	OFF ➢ SWITCH OFF
OK ➢ CONFIRM THE OPERATION	ESC ➢ ESC
➢ ACCESS TO THE PRINCIPAL MENU ➢ ADVANCED PARAMETERS	
➢ MOVEMENT OF THE CURSOR UP ➢ SELECT RECIPE ➢ MOVE TO THE NEXT COMPONENT ➢ GO TO NEXT UNLOAD ➢ . . .	➢ MOVEMENT OF THE CURSOR DOWN ➢ SELECT RECIPE ➢ GO TO PREVIOUS COMPONENT ➢ GO TO PREVIOUS UNLOAD ➢ . . .
F1 ➢ FUNCTION KEY 1	F2 ➢ FUNCTION KEY 2
F3 ➢ FUNCTION KEY 3	F4 ➢ FUNCTION KEY 4
F5 ➢ FUNCTION KEY 5	F6 ➢ FUNCTION KEY 6
F7 ➢ FUNCTION KEY 7	F8 ➢ FUNCTION KEY 8

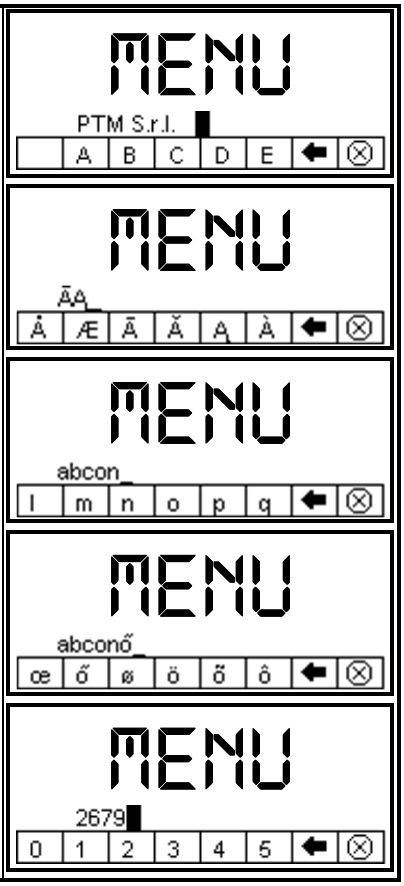
NOTE: Depending on the menu where you are, some keys (for example the function keys) may have extra functions or different functions from the ones in the chart. For more information please go ahead reading this manual.

TEXT AND NUMBER INSERTION

HOW TO USE THE KEYBOARD

- To insert numbers and text use function keys from F1 to F6.
- To scroll characters groups, use keys ▲ ▼ in circular way.
- To insert accented/special vowels press for some seconds the function keys from F1 to F6 in correspondence of the desired entry.
- By pressing the key ⚙ it is possible to modify the kind of writing in capital letters, lowercase letter, numbers and special characters.
- By pressing F8 → ↩ it is possible to go back to standard characters writing.
- To delete the last inserted character, press key F7 → ⬅.
- To delete all the inserted characters, press key F8 → ⊗.
- To confirm the insertion of characters, press key OK.
- To leave without confirming the characters insertion, press key ESC.

If the weighing indicator is in Russian language, it is displayed the representation of characters in Russian.



PRINCIPAL PROGRAMMATION MODALITY

With the **HL-Series 30 e HL-Series 50** weighing indicators it is possible to program the recipes with the doses of components to load for ANIMAL (*ANIMAL MODALITY*) or for TOTAL (*TOTAL MODALITY)*.

The unloading quantity can be calculated for ANIMAL (*ANIMAL MODALITY*) or for TOTAL (*TOTAL MODALITY)*.

ANIMAL MODALITY (LOAD/UNLOAD)

In this modality the recipe is programmed by setting:

- The loading components quantity as ration of a single animal
- The number of animals for each loading group

The weighing indicator will calculate the total quantity of loading components and the ration for each unloading group.

TOTAL MODALITY (LOAD/UNLOAD)

In this modality the recipe is programmed by setting:

- The total amount of components to load
- The ration for each unloading group.

PERCENTAGE MODALITY (LOAD/UNLOAD)

In this mode the recipe is programmed by setting:

- The total amount of components to load
- The ration for each unloading group.

THE WORKING MODALITY OF THE WEIGHING COMPUTER IS SET BY THE CONSTRUCTOR.

NOTE: In this manual are given the explanation about the weighing computer settings, programming and use in ANIMAL/ANIMAL MODALITY.

TO START

The operations below are the basic functioning operations for the HL-Series 30 e HL-Series 50.

If you want more information about HL Series weighing indicator functioning and the work modalities, please continue reading this document.

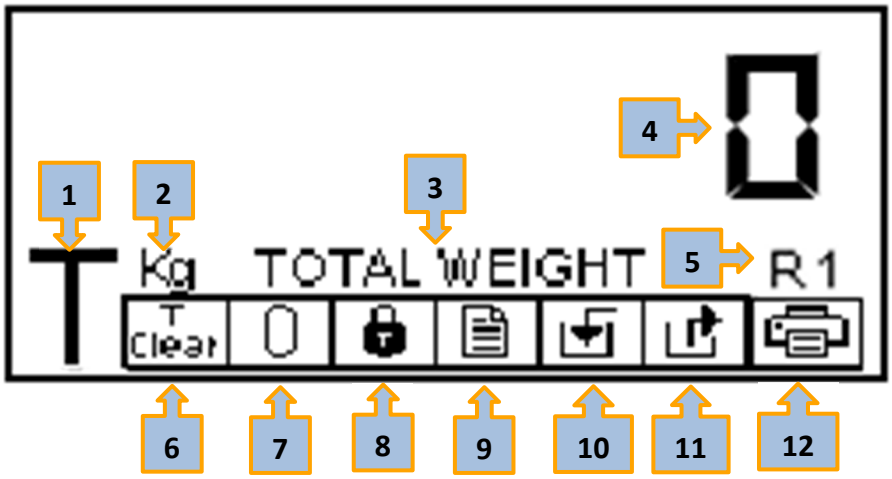
SWITCH ON /SWITCH OFF

Press ON to switch on the weighing indicator.

Press OFF to switch off the weighing indicator.

TOTAL WEIGHT

Screen description:



1. State icon: total weight/partial weight/alarm Multilink accessories *(optional)*/TOPCUT *(optional)*
2. Measurement unity used by the weighing computer
3. Current screenshot indication (total weight/partial weight) /recipe name *(only for weighing indicators with that functionality)*
4. Total or partial weight value detected by the weighing indicator
5. Number of the recipe actually selected
6. Zeroing tare key
7. Partial weight key
8. Weight lock key
9. Recipe programming key *(only for weighing indicators with that functionality)*
10. Start of the loading operation key *(only for weighing indicators with that functionality)*
11. Start of the unloading operation key *(only for weighing indicators with that functionality)*
12. Print key *(optional)*

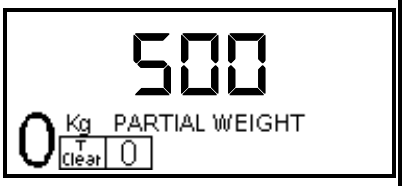
TOTAL WEIGHT → ZEROING

Press T Clear (F2) for about 3 seconds, then confirm with OK

Otherwise ESC to null the zeroing.

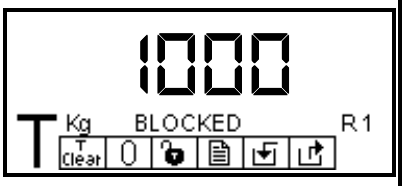
TOTAL WEIGHT → PARTIAL WEIGHT

Press [0] (F3) to move to partial weight.
The singular components can be changed manually. This operation can be executed for more one time by pressing the key after each loaded component.
Press [T Clear] (F2) or [ESC] to go back to total weight.



WEIGHT LOCK

Press [🔒] (F4) to lock the visualized weight on the weighing indicator. The visualized weight will be visualized intermittently and an acoustic signal will indicate the weight lock presence. Press the key [🔓] (F4) to unlock the weight.

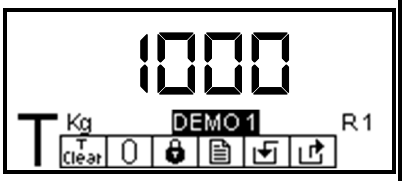


VISUALIZATION CURRENT RECIPE NAME

ONLY FOR HL Series 30-50

Press [OK] on the total weight menu in order to visualize the current recipe name.

NOTE: for more detailed information see the session WORK MODALITY FOR HL SERIES 30 AND HL SERIES 50



DATA PRINT (OPTIONAL)

Press [🖨] (F8) to print the total or partial weight data depending on the menu in which you are.

NOTE: only with Printer Multilink P1000 and Code 81 habilitated.

TOPCUT (OPTIONAL)

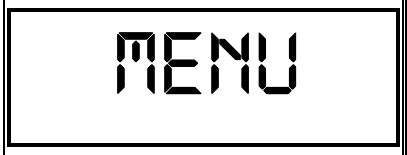
ONLY FOR HL Series 30-50

Press the key [TOP CUT] (F1) to activate the TOPCUT from total weight.
If you set AUTO the knifes will move in and out as set on the current recipe.
If set on MAN the user should move manually in and out the knifes by pressing the key F1 each time you want to move in/out the knifes.
NOTE: only with accessory Multilink Drive8 and Code 34 habilitated,

MAIN MENU

MAIN MENU

To access the main menu press  in the total weight screen.



INSIDE THE MENU …

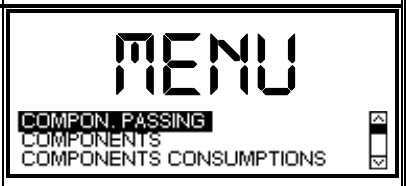
Inside the menu you can find the following submenus:

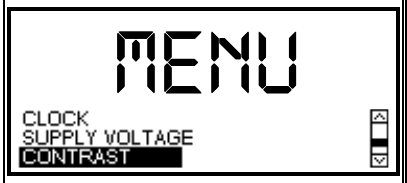
- DENSITY *(OPTIONAL)*
- COMPONENTS PASSING
- COMPONENTS
- COMPONENTS CONSUMPTION
- RECIPE NAMES
- RECALCULATION ACTIVATION
- FLYING WEIGHT PARAMETERS
- MANUAL TOPCUT
- CLOCK
- SUPPLY VOLTAGE
- CONTRAST
- BRIGHTNESS
- BUZZER VOLUME
- LANGUAGE [LANGUAGE]

Press  and  to move into the different menus.

Press  to access to the underlined submenu.

Press  to exit without modifying.





SUBMENU

DENSITY *(OPTIONAL)*

ONLY FOR HL Series 20

This menu is visible only if the conversion of the weight value in volume is activated. Activating this function in the work menu it will be visualized both the weight and the volume of the liquid contained in the vessel under which there are the load cells. The volume value, in litres, is indirectly calculated from the weight value, through a conversion coefficient that the user will have to properly set.

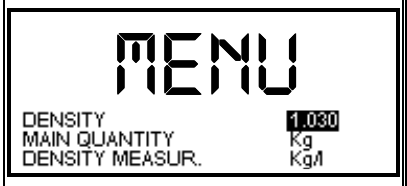
Into the DENSITY submenu it is possible to set the following parameters:

DENSITY
Coefficient for the conversion of the weight value detected by the sensors into a volume. This coefficient can be expressed in Kg/l or l/Kg by virtue of the parameter selected in the DENSITY MEASURE menu.

PRINCIPAL SIZE
The principal size visualized on the English flag display; it is possible to select the weight or the volume calculated. Depending on what it is set on this menu, the working menu will have a different visualization.

DENSITY MEASUREMENT
Unit of measurement for the value of liquid density. It is possible to select Kg/l or l/Kg. Moving from one unit of measurement to another, the weighing indicator will automatically calculate the new coefficient.
Es. 2,500 Kg/l = 0,4 l/Kg

NOTE: The weighing indicator permits using a density value with 3 decimals, so by continuously changing the DENSITY MEASUREMENT parameter, the DENSITY parameter value may drift. This may happen as an effect of the rounding automatically effectuated by the weighing indicator during the calculations.



COMPONENT PASSING

ONLY FOR HL Series 30-50

Press ▲ and ▼ o selects the components manual or automatic passage in the load or unload phase. The passage automatic/ manual works for all loads and unloads.

COMPONENTS

ONLY FOR HL Series 30-50

This menu allows visualize, add, modify and delete the components that could be used in the load operations of the single recipe.

Press ▲ and ▼ to visualize the components list.

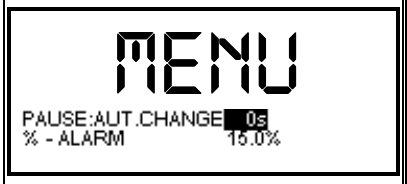
Press OK to go on the component modify. Press ESC to exit.

COMPONENTS → ADVANCED PARAMETERS

ONLY FOR HL Series 30-50

By pressing the key (F8) in correspondence of the selected component, it will be possible to set the following advanced parameters:

- PAUSE AUTOMATIHIC CHANGE: last load component pause, it means a waiting time counted at the end of the component load.
- ALARM PERCENTAGE: During this component load, once reached the set percentage the alarm will start ringing.



COMPONENTS CONSUMPTION

ONLY FOR HL Series 30-50

Menu in which it is visualized the total of the different components consumes.

Press and to select the component.

- Press (F7) to zero the selected component consumes.
- Press (F8) to zero all components consumes.
- Press (F6) to print all the components consumes (OPTIONAL)

RECIPE NAMES

ONLY FOR HL Series 30-50

This menu permits visualizing, add, modify the recipes names.

Press and to visualize the recipes list.

Press OK to move to the recipe modify. Press ESC to exit

RECALCULATIONS ACTIVATION

ONLY FOR HL Series 30-50

This menu allows enable or disable the recalculations functions

- **LEFTOVER RECALCULATION**: allows recalculate in proportion the components doses of the recipe during the load operation if there is a leftover in the wagon.
  This function is activated when the recalculation of the first component is disabled.
- **UNLOAD RECLACULATION**: Allows recalculate in proportion the unload groups ration in case of excessive load of the quantities.
- **FIRST COMPONENT RECLACULATION**: Allows recalculate in proportion the components in the recipe during the load operations of the recipe in case a surcharge of the first component.

FLYING WEIGHT PARAMETERS

ONLY FOR HL Series 25-30-50
with OUTPUT LOADS/UNLOADS modality activated

This menu, allows to set the cue parameters in the load/unload operations:

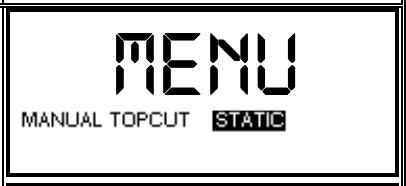
- **FLYING WEIGHT**: Allows to set the flying weight
- **FLYING TIME**: allows to set the flying time that is that time in which the system waits for the flying weight to go down.

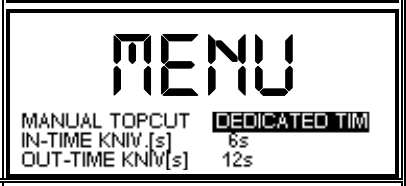
MANUAL TOP CUT

ONLY FOR HL Series 30-50

This menu allows three TopCut modalities:

- **STATIC**: it will be the user to allow the IN and OUT of the knifes with the dedicated key.
- **RECIPES TIMES**: The knifes IN and OUT times are those set in the recipes advances settings. Those times will be different for each recipe.
- **DEDICATED TIMES**: Allows to set the IN e OUT knifes times, not depending on the selected recipe.





CLOCK

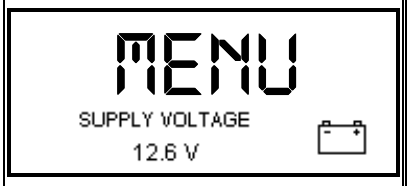
This menu allows to visualize and set the hour and date.

Press OK to select and confirm

Press ▲ and ▼ to modify. Press ESC to exit

SUPPLY VOLTAGE

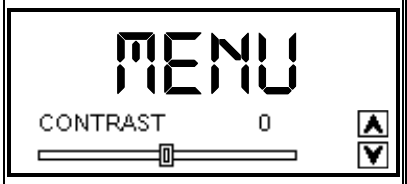
This menu permits to visualize the supply voltage value applied to the HL series weighing indicator,



CONTRAST

This menu is used to set out the contrast of the graphic display. The 5 digits big display is automatically contrasted.

Press the keys ▲ and ▼ to change the value.



BRIGHTNESS

In this menu it is possible to set the brightness.

Press the keys  and  to change the value.

BRIGHTNESS → AUTMATIC BRIGHTNESS

Press the key  in the brightness menu it is possible to set the automatic brightness of the display.

The weighing scale will automatically establish the correct brightness level based on the light conditions to which the weighing scale is subjected.

BUZZER VOLUME

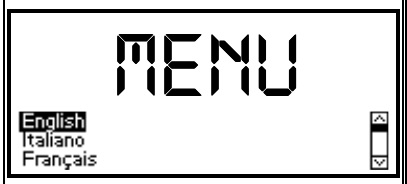
This menu allows to set the buzzer volume.

Press the keys  and  to change the value.

LANGUAGE

This menu allows to set the language used by the weighing indicator.

Press the keys  and  to select the language.



LANGUAGE → STANDARD COMPONENTS NAMES

ONLY FOR HL Series 30-50

When the language used by the weighing indicator is changed it is possible to change the Components names Default Set of the new selected language.

This change involves the modify of the component's names into the programmed recipes.

Press  to confirm. Press  to exit

WORK MODALITY
HL-SERIES 30 AND HL-SERIES 50

The explications for the HL Series 30 and HL Series 50 work modality are described following the logic of the ANIMALS work modality.

The weighing indicators can work also in TOTALS and PERCENTAGE modality.

If you want a different work modality please contact your installer or the closest PTM Service.

RECIPES PROGRAMMING

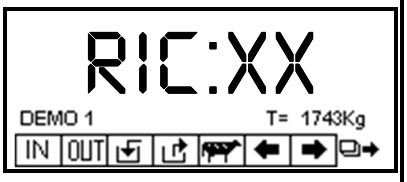
Press (F5) to access the recipes programming menu.

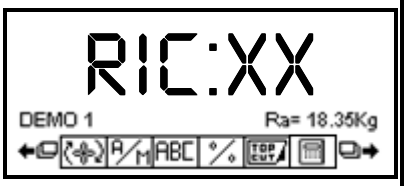
Select the recipe to program with the keys and (F7) (F8).

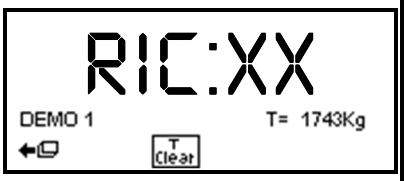
Depending on the selected recipe, in this menu it is possible to:

- Scroll the different pages by pressing (F8) or (F1)
- Program the components to load by pressing IN (F1)
- Program the unloads by pressing OUT (F2)
- Start the recipe load by pressing (F3)
- Start the recipe unload by pressing (F4)
- Insert the total number of animals from the recipe by pressing: (F5)
- To Add a recipe mixing time by pressing the key: (F2 Pagina2)
- Choose the components automatic or manual passage during the loading phase by pressing the key A/M (F3 Page 2)
- Modify the recipe name by pressing ABC (F4 Page2)
- To add a percentage variation to the recipe by pressing the key: (F5 Page2)
- Set the TopCut IN and OUT knifes times per recipe by pressing the key TOP CUT (F6 Page 2) **(OPTIONAL)**
- Activate the recalculation of the first component by pressing the key; (F7 Page2)
- Cancel the recipe by pressing T Clear (F4 Page3)

On the left side of the display is visualized the current recipe name and on the right side the recipe total or the ration for animal.



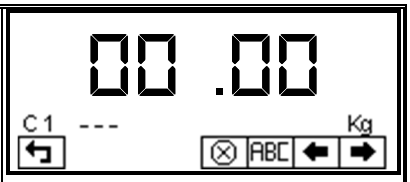


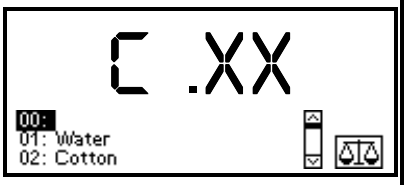


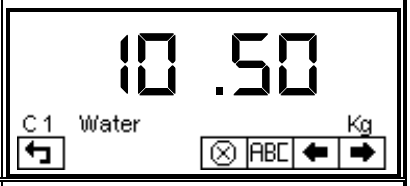
RECIPES PROGRAMMING → LOAD

Press IN (F1) to access to the components programming menu.
In this menu it is possible to set names and quantities of recipe's components.

- Press the key ABC (F6) to set the component's name.
- Press ▲ ▼ y ← (F7) → (F8) to set the quantity
- Press OK to go to next component
- Press ↰ (F1) to go back
- Press ESC to end the programming
- Press ⊗ (F5) to zero the component







RECIPE PROGRAMMING → UNLOAD

Press OUT (F2) to access to the unload programming menu.
Into this menu (after having set the total number of animals) it is possible to set the number of animals for each unload.

- Press ▲ ▼ and ← (F7) → (F8) to set the number of animals for each unload.
- Press OK to go to the next unload.
- Press ↰ (F1) to go back
- Press ESC to end the programming
- Press ⊗ (F5) to zero the unload.

It is possible to visualize on the right part of the display the rest of animals to program in the unload.

LOAD → PRESTART

Press ↓ (F6) to pre-start the loading process.

Select the recipe you want to start the load with, using the keys ▲ ▼ and ← (F7) e → (F8).
In this menu it is possible to:

- Add a percent variation to the recipe by pressing the key % (F4)
- Insert the total amount of animals in the recipe by pressing 🐄 (F5)
- Start the loading process of the recipe by pressing ↓ (F6)

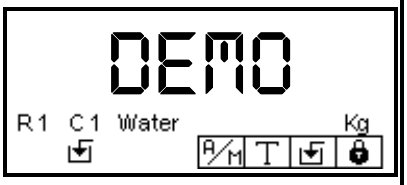
It is possible to visualize the recipe's name, recipe's total, the number of animals in the recipe and the ration for each animal.

LOAD → START

Once selected the recipe press (F6) or OK to start the selected recipe load.

It will be visualized the components name, the programmed loading weight and during the loading operation the weight will gradually decrease to 0. When the programmed load will reach the 85% the alarm will start ringing intermittently. The sound frequency will gradually increase as the loading program will get to its end. Once reached the set weight, the acoustic signal will continue for about 4 seconds.

- In case of manual passage, press the key to move to next component. Press key to go to previous component.
- In case of automatic passage of the component, the weight indicator will automatically pass to the next component when it reaches the set weight. It is possible to use the keys and to move between the different components.
- By pressing A/M (F5) while working, it is possible to modify the setting AUTO - MAN passage. Press ESC to exit.
- By pressing (F4) it is possible to lock the displayed weight. The locked weight will flash through an alarm. Press again (F4) to unlock the weight.
- To rest the loading quantity, press (F7)
- Through the key T (F6) it's displayed the total weight.
- At the end of components load, it will be counted, if programmed, the final mixing time. Once finished the alarm will ring and the weighing indicator will exit from the loading operation and it will go back to the total weight menu. If the time hasn't been set, at the end of the components load, the weighing indicator will directly go back to the total weight screen.
- To interrupt the loading operation press ESC for 3 seconds. The weighing indicator will ask to confirm the operation and then it will go back to total weight menu.
- If a printer is connected to the weighing indicator, at the end of the load operation there is the data printing.
- In no matter what moment of the loading process, the operator can activate or deactivate the TopCut system with the key F1 **(OPTIONAL)**



UNLOAD → PRESTART

Press (F7) to prestart the unload.

Select the recipe you want to start the unload with, using the keys and (F7) and (F8).
In this menu it is possible to:

- Add a percentage variation to the recipe by pressing (F5)
- Start the recipe unload by pressing (F6)

It is possible to visualize the recipe name, the recipe's total and the ration per animal.

UNLOAD → START

Once selected the recipe press (F6) or OK to start the unload of the selected recipe.

It will be visualized the components name, the programmed unloading weight and during the unloading operation the weight will gradually decrease to 0. When the programmed unload will reach the 85% the alarm will start ringing intermittently. The sound frequency will gradually increase as the unloading program will get to its end. Once reached the set weight, the acoustic signal will continue for about 4 seconds.

- In case of manual passage, press the key to move to the next unload.
- In case of automatic passage of the component, the weight indicator will automatically pass to the next component when it reaches the set weight.
- By pressing (F5) while working, it goes into AUTO - MAN. Press ESC to exit.
- By pressing (F4) it is possible to lock the visualized weight. The locked weight will flash intermittently trough an acoustic sound. Press again the key (F4) to unlock the weight.
- To restore the unloading quantity, press the key (F7).
- Through the key (F6) it is visualized the total weight.
- To interrupt the unloading process, press ESC for 3 seconds. The weight indicator will ask the operation confirmation and then it will go automatically back to the total weight menu.
- If to the weighing indicator is connected a printer, at the end of the unloading operation there will be the data printing

TOPCUT TIMES IN DETAIL (ONLY FOR HL SERIES 30-50)

Global time [min]

Total duration of the TopCut cycle.

- Minimum value allowed → 5min
- Maximum value allowed → 60min

Wait time[s]

Waiting time before the introduction of the knifes into the wagon.

- Minimum value allowed → 30sec
- Maximum value allowed → 300sec

Knifes time IN[s]

Time in which the knifes are inside the wagon.

- Minimum value allowed → 5sec
- Maximum value allowed → 150sec

T.Knife OUT[s]

Time in which the knifes are out of the wagon.

- Minimum value allowed → 5sec
- Maximum value allowed → 150sec

Start TopCut

It defines from which component the TopCut system should start.

Stop TopCut

It defines from which component the system ends the TopCut
If the value is “0” the TopCut system function from the first component set until the end of the global time.
If the value set is higher than “1 the TopCut system function from the start component to the Stop component.
If only the Global time is set, it will be executed at the end of the last loaded component.

HL-SERIES 25 WORK MODALITY

PROGRAMMATION MENU

Press [F5] (F5) from the total weight menu to go into the HL Series 25 programming menu.

In this menu it possible to:

- Program the loading quantity by pressing the key [IN] (F1)
- Program the unloading quantity by pressing [OUT] (F2)
- Start the loading process by pressing [F3] (F3)
- Start the unloading process by pressing [F4] (F4)

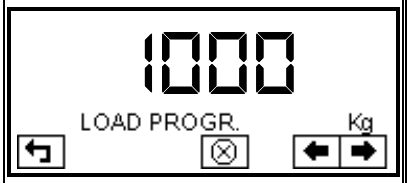
PROGRAMMING MENU → LOADING PROGRAMMING

Press the key [IN] (F1) to go into the loading menu programming.

With the keys [▲] and modify the flashing number, while to move from a character to another use the keys [←] (F7) and [→] (F8).

Once set the desired quantity:

- Press the key [OK] to confirm the set quantity.
- Press the key [F3] (F3) to start the loading process.
- Press [F5] (F5) to cancel the loading quantity.
- Press [F1] (F1) to go back to the programming menu



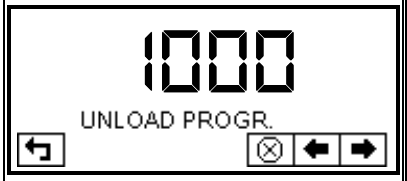
PROGRAMMING MENU → UNLOADING PROGRAMMING

Press the key [OUT] (F1) to go into the unloading menu programming.

With the keys [▲] and [▼] modify the flashing number, while to move from a character to another use the keys [←] (F7) and [→] (F8).

Once set the desired quantity:

- Press the key [OK] to confirm the set quantity.
- Press the key [F4] (F4) to start the unloading process.
- Press [F5] (F5) to cancel the quantity to unload.
- Press [F1] (F1) to go back to the programming menu.

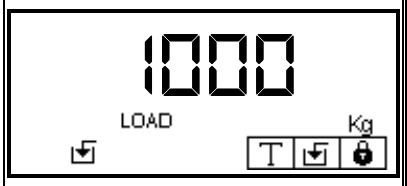


LOAD EXECUTION

Press the key  (F6) to start the loading process of the set quantity. The operation will last until the set component is not loaded.

During the loading process it is possible:

- Visualize the total weight in the wagon by pressing the key  (F6)
- Restore the loading quantity by pressing the key  (F7)
- Lock the weight by pressing  (F8) / Unlock the weight by pressing the key  (F8). The locked weight will flash intermittently through the acoustic signal.
- Interrupt the loading operation by pressing the key  for 3 seconds. The weighing indicator will automatically go back into the total weight menu.

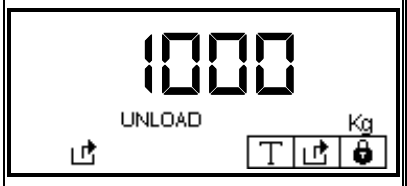


UNLOADING EXECUTION

Press the key  (F6) to start the unloading operation previously set. The operation will last until the quantity won't be totally unloaded.

During the unloading process it is possible:

- Visualize the total weight in the wagon by pressing the key  (F6)
- Restore the unloading operation by pressing the key  (F7)
- Lock the weight by pressing  (F8) / Unlock the total weight by pressing the key  (F8). The locked weight will flash intermittently through an acoustic sound.
- Interrupt the unloading process by pressing the key  for 3 seconds. The weighing indicator will automatically go back into the total weight menu. CONFIRM??

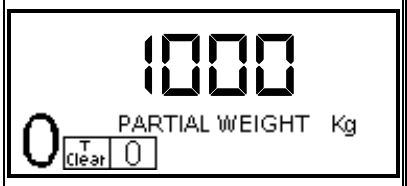


HL-SERIES 20 WORK MODALITY

LOAD / UNLOAD EXECUTION

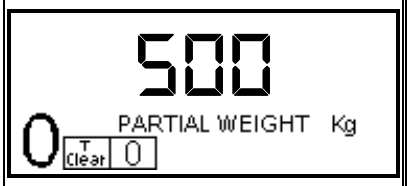
Press [0] (F3) to start with the load / unload dosage.

The weighing indicator will visualize the partial weight menu.



PASSAGE TO THE COMPONENT / NEXT LOAD

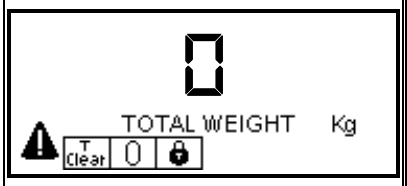
When the desired weight is reached, press [0] (F3) to pass to the next load/unload dosage.



LOAD / UNLOAD END

Press [T Clear] (F2) to end the load / unload.

The weighing indicator will go back to the total weight menu.

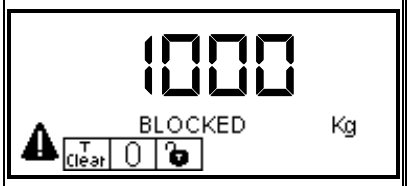


WEIGHT LOCK

Pressing [🔒] (F4) it is possible to lock the weight visualized on the weighing indicator.

The locked weight will flash intermittently trough an acoustic sound.

Press again the key [🔓] (F4) to unlock the weight.



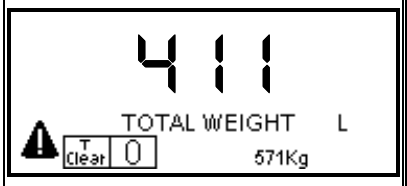
VOLUME VISUALIZATION (ONLY FOR HL-SERIES 20)

WEIGHT – VOLUME VISUALIZATION

Enabling the weight/volume conversion into the weighing indicator advances codes, the TOTAL WEIGHT menu will be modified with the visualization both of weight and volume values. The display visualization can vary depending on what is set in the PRINCIPAL SIZE parameter of the DENSITY submenu.

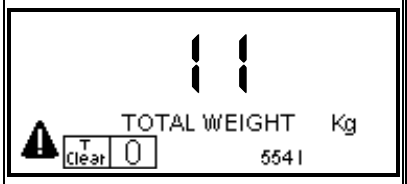
PRINCIPAL SIZE: VOLUME

On the English flag display, it will be visualized the VOLUME calculated by the weighing indicator while on the matrix display there will be the weight detected by the load cells and the wording L, to indicate which unit of measurement is used for the volume.



PRINCIPAL SIZE: WEIGHT

On the English flag display, it will be visualized the WEIGHT calculated by the weighing indicator, while on the matrix display there will be the volume value obtained by the weight that weigh on the load cells and the wording Kg, to indicate which unit of measurement is used for the weight.



PARTIAL WEIGHT INVERSION

Optionally, into the weighing indicator advanced codes, it is possible to invert the partial weight visualization in order to facilitate the unloading operation of liquid into a recipient.
In this case, the eventual positive weight variation (tank filling) will be visualized with the negative weight indication, vice versa the negative weight variations (tank emptying) will be visualized with the positive weight indication.
NOTE: the partial weight inversion is valid also for the weight print values

USER CODES MENU

CODE	DESCRIPTION
9	Measured /Real weight
10	Sample weight
15	Components names on the digits
27	Weight calibration number
45	Weight filter
50	Alarm percentage
54	Buzzer
55	Output 4-20mA (OPTIONAL)
57	Filtering 4-20mA (OPTIONAL)
81	Activate printer
84	Accessory
86	Warranty start
99	Release Software
Pw	Installer Password

HOW TO USE THE CODES MENU

The HL Series weighing indicators have the possibility to set some parameters which usually are not visible in the menus and submenus.

Please note that the weighing indicator can memorize codes menu date and time access, allowing the qualified staff to understand if manipulations have been done to the weighing indicators.

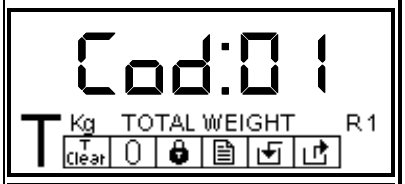
To enter the codes menu, go to total weight menu, click at the same time the keys F2 and F3 for 3 seconds.

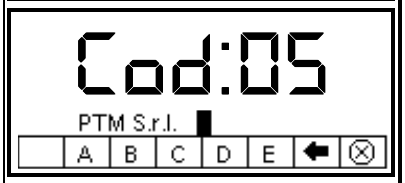
If the process has been correctly completed the weighing indicator will emit a sound and, on the display, will be shown the code selection screen.

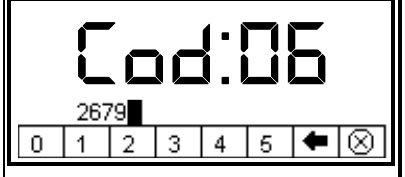
In the codes menu it is possible to:

- Press ▲ ▼ to select the code
- Press OK to enter the modify mode.
- Press ▲ ▼ to select the different items inside the code
- Write the characters trough the keys from F1 to F8.
- To write the numbers trough the keys from F1 to F8.
- Press OK to save the modifications or ESC to go out without saving
- In some menu there could be the following two icons:
  - ■ → disabled function
  - ▣ → enabled function

To leave the codes menu press ESC.







CODE PW: INSTALLER/OEM PASSWORD

The access to this code is reserved to the installer ONLY and occurs trough a password.

NOTE: For the access to OEM customized codes digit the password OEM

CODE 9: MEASURED WEIGHT / REAL WEIGHT

In this code it is possible to carry out a sharp calibration of the weight by knowing the real value of the weight currently measured by the indicator.

The value of the measured weight indicated with the current calibration is shown in the line “MEASURED WEIGHT” while the value in the line “REAL WEIGHT” is the one that should be inserted in order to modify the calibration.

The weight should be as high as possible and always higher than 100 units, both values cannot be too different from a factor of 10: for lower weight values or too different values, it will be shown an advice screen page and it won’t be possible to calibrate.

Confirm the change with the key OK

EXAMPLE 1: Calibration of the weighing system without material on the scale:

- Place a "known" amount of material (e.g. 1567 Kg) on the scale.
- Note down the weight value displayed on the scale (e.g. 2500 Kg)

Carry out code 9, by using 1567Kg as MEASURED WEIGHT and 2500Kg as REAL WEIGHT.

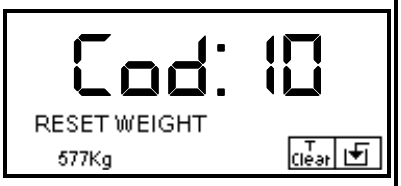
EXAMPLE 2: Calibration of the weighing system with material present on the scale:

- Write down the weight detected by the indicator (e.g. 5300 kg)
- Take an amount of material away from the tank, and take it to an external scale. Write down the weight detected by the indicator. (e.g. 4750 kg)
- Calculate the amount of material unloaded as difference (e.g. 5300 – 4750 = 550 Kg)
- Weigh the material taken away from the tank on an external scale, and note down the weight value (e.g. 680 Kg).

Carry out CODE 9, by using the value 550 Kg as MEASURED WEIGHT, and the value 680 Kg as REAL WEIGHT.

CODE 10: SAMPLE WEIGHT

Our instruments are calibrated in our laboratory according to the type of load cells used. Precision depends on the application of the load cells and is closed to 0,1%. To reach a higher precision, it is necessary to set the scale to zero through Code 10 by using a sample weight of at least a fourth of the total weight. The weight should be at least 90. When using our systems in very cold areas it is necessary to switch the scale on at least 25/30 minutes before being used, in order to reach the right temperature of scale and load cells.

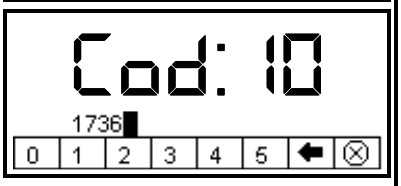


In this code it is possible to carry out a precise weight calibration through a known sample weight.

As for the code 9 the sample weight must be of at least 100 units displayed by the scale, but the higher is the weight of the sample, the better is the precision of said calibration. For lower weight values it will be shown a message and the calibration won't be possible.

In order to calibrate in the correct way:

- Press OK to start the calibration
- If on the scale:
  - There is some material already, remove it and press F7 to carry out the tare
  - There is the sample weight already, go to calibration by pressing F8



- Put the sample weight on the scale
- If the weight:
  - Is too low the scale will show the message LOW WEIGHT!!
  - Changes quickly, the scale will show the message UNSATABLE WEIGHT!!!
  - It's correct press OK to pass to value modify.

Press again OK to confirm the new calibration.

CODE 15: COMPONENTS NAMES ON THE DIGITS

(ONLY FOR HL Series 30-50)

In this code it is possible to set out the parameters for display and scroll of the component's names on the digits of the display at the beginning of the loading operation.

It is possible to set:

- The quantity of material to load for each component, which once exceeded will stop the visualization of the name but will keep the visualization of the quantity that still have to be loaded.
- The visualization repetition range of the component's name on the display (before the exceeding of the value, set as LOADING STOP NAME)

It is possible to add values of:

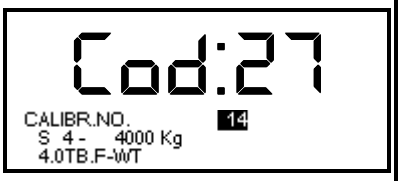
- Weight between 1 and 99
- Time between 1 and 99 seconds

CODE 27: N. WEIGHT CALIBR.

In this code it is possible to choose the calibration number from the chart at the end of this manual.

The calibration number that should be used depends on the number and kind of load cells installed on the system.

By modifying the N. WEIGHT CALIBR., the model (third line), number of load cells (right) and the capacity (second line) are updated.



CODE 45: WEIGHT SPEED

In this code it is possible to set out the speed of weight visualization, which is the time passing from the moment, when the weight is put on the load cells, to the moment, when it is shown on the display.

It is possible to set out the speed from 1 (very slow) to 20 (very quick).

CODE 50: ALARM PERCENTAGE
(ONLY FOR HL Series 25-30-50)

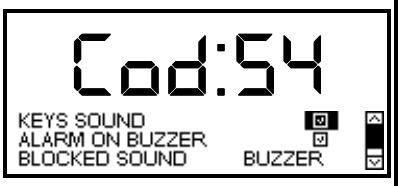
In this code it is possible to set out the parameters of the acoustic alarm. There are two different parameters

- ALARM. PERCENT: the percentage of started alarms, that is the percentage of carried out loading and unloading, starting from when the alarm begins ringing out intermittently (from 0% to 30%)
- ALARM ALWAYS ON: is the seconds during which the alarm will continue ringing out after the end of the loading and unloading operation, before going on to the next component. (0 a 60 sec)

CODE 54: BUZZER

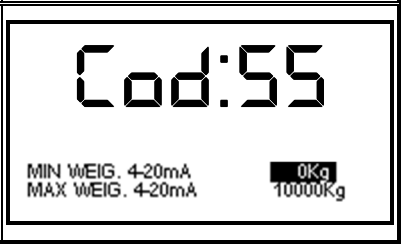
In this code it is possible to activate (ON) or deactivate (OFF) the sounds emitted from the weighing indicator:

- KEYS SOUND: sound emitted by pressing the keys
- ALARM ON BUZZER: sounds associated to events of the external alarm
- LOCKED SOUND: With this parameter it is possible to exclude the sounds of the internal BUZZER, of the ALARM or of both, when a programmed loading or unloading are in execution.



CODE 55: OUTPUT 4-20mA
(OPTIONAL)

In this code it is possible to set the min. and max. weight value of the 4-20mA output.



CODE 57: FILTERING 4-20mA (OPTIONAL)

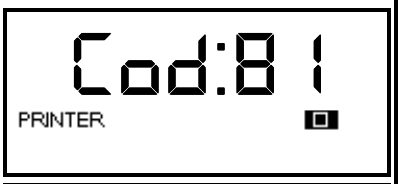
In this code there are two parameters for the suppression of possible power peaks, where the system, on which the weight indicator is installed, appears to be very unstable.

MAXIMUM VARIATION
Maximum range of each sample detected from the weighing indicator. If the variation detected from the weighing indicator exceeds the set threshold, the power value won't be updated until the weight is not considered stable. The weighing indicator will enter the "stable weight" state only when the weight won't exceed the set threshold for a time as indicated in the parameter SAMPLES WEIGHT STABILITY.

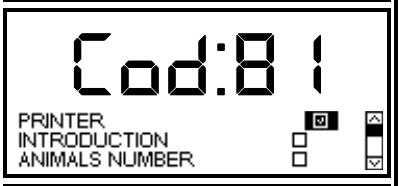
SAMPLES WEIGHT STABILITY
Time within which the weight value should be stable, it shouldn't exceed the threshold set on the MAXIMUM VARIATION parameter, before updating the 4-20mA output value. Until the weighing indicator won't consider stable the weight, the output power value won't be updated.

CODE 81: PRINTER ACTIVATION

In this code it is possible to enable (ON) or disable (OFF) a printer connected to the weighing indicator and set the type of data to be printed depending on the HI-Series weighing indicator model.

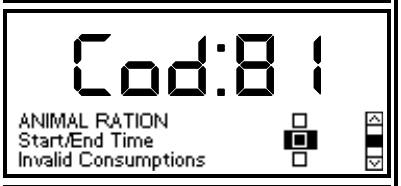


The press entries refer to:



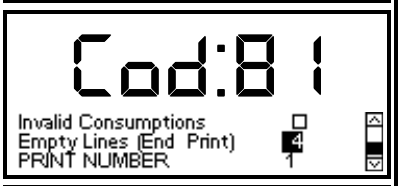
PRESENTATION
Enabling/disabling the initial heading line print.

NUMBER OF ANIMALS
Enabling/disabling the print of number of animals associated to the recipe



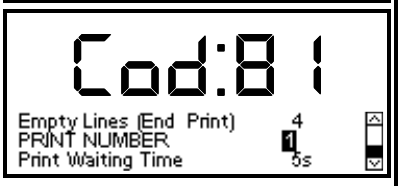
ANIMAL RATION
Activation / Deactivation of the ration printing for each animal in the recipe.

Start/end time
Enabling/disabling the print of the start and end time of the operation.



Null consumptions
Enabling/disabling the components print with null consumption in the menu COMPONENTS CONSUMPTION.

Empty lines (End print)
Enabling/disabling the print of some empty lines in order to make the paper cut easier at the end of print.



NUMBER OF PRINTS
It is possible to activate the printing from 1 to 3 prints.

Break Prints
It is possible to set a break in seconds between a copy and the following in order to allow a correct paper cut at the end of each print.

CODE 84: ACCESSORIES

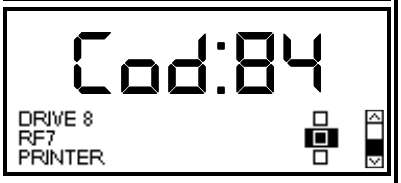
In this code it is possible to activate (ON) or deactivate (OFF) the devices connected to the weighing indicator through MULTILINK connection.

It is possible to set the usage of one singular non-Multilink terminal by selecting among the following options:

- AV20: Remote Display MV6/AV20-5
- BIG DISPLAY: Big dimension remote display
- AV50: AV40-5 and RF AV/50/60/70/80 remote displays

Differently, with the Multilink bus it is possible to use different devices connected at the same time:

- Giving the possibility to the system to detect the connected devices (AUTOMATIC MULTILINK)
- By activating (ON) or deactivating (OFF) manually (MANUALE MULTILINK) the following devices:
  - TR60/TR70: RF Antenna for AV50/60/70/80 remote displays
  - AV41: remote Display
  - DRIVE8: Input/Output board
  - RF7: RF Antenna for remote control
  - PRINTER: printer

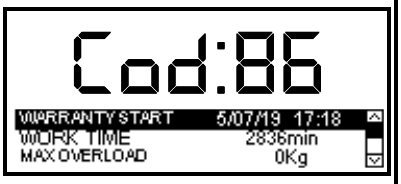


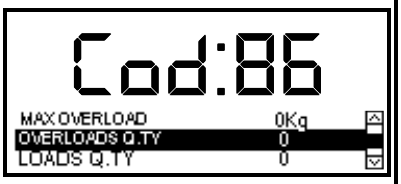
CODE 86: WARRANTY

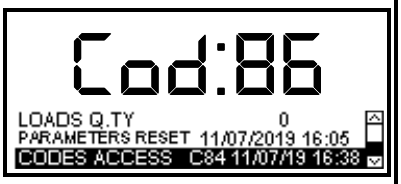
In this code it is possible to see the working data and the data regarding the weighing indicator warranty.

In detail, the following data are stored automatically by the weighing indicator:

- WARRANT START: It shows date and time of warrant beginning. The beginning of warranty is set out automatically by the system after a few hours of work.
- WORKING TIME: It shows the total working time of the weighing indicator and it means the time during which the weighing indicator carries out loading/unloading operations.
- MAX OVERLOAD: it shows the biggest detected overload.
- N. OVERLOADS: it shows the number of detected overloads.
- LOADINGS NUMBER: it shows the number of the executed loadings.
- RESET PARAMETRS: It shows time and hour of the last execution of code 37.
- CODES ACCESS: It show the last accessed code with corresponding date and time.

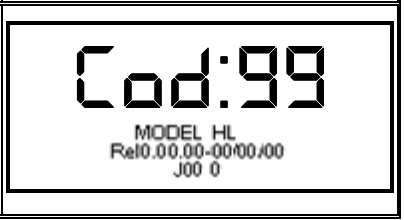






CODE 99: SOFTWARE RELEASE

In this code it is possible to visualize the software version installed on the weighing indicator, and the weighing indicator model.



PRINTING EXAMPLES

LOAD

```
************************
------------------------
RECIPE               xx
REMAININGS           xx
NUM. ANIMALS       xxxx

START    date     xx/xx/xx
         time        xx:xx
End      Date     xx/xx/xx
         Time        xx:xx
LOADING
------------------------
N.     NOMIN.     REAL
------------------------
 1      xxxxx     xxxxx
 2      xxxxx     xxxxx
 3      xxxxx     xxxxx
 4      xxxxx     xxxxx
 5      xxxxx     xxxxx
 6      xxxxx     xxxxx
------------------------
TOT.   xxxxxx    xxxxxx
************************
```

UNLOAD

```
************************
------------------------
RECIPE          N°    xx
REMAININGS      N°    xx
NUM.ANIMALS     N°  xxxx

START    Date     xx/xx/xx
         Time        xx:xx
END      date     xx/xx/xx
         time        xx:xx
LOADING
------------------------
N.     NOMIN.     REAL
------------------------
 1      xxxxx     xxxxx
 2      xxxxx     xxxxx
 3      xxxxx     xxxxx
 4      xxxxx     xxxxx
 5      xxxxx     xxxxx
 6      xxxxx     xxxxx
------------------------
TOT.   xxxxxx    xxxxxx
************************
```

ACCUMULATIONS

```
************************
xxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxx
------------------------
RECIPE         xx
Date     xx/xx/xx
Time        xx:xx

ACCUMULATIONS
------------------------
N.           KG.
------------------------
 1     xxxxxxxx
 2     xxxxxxxx
 3     xxxxxxxx
 4     xxxxxxxx
 5     xxxxxxxx
 6     xxxxxxxx
 7     xxxxxxxx
 8     xxxxxxxx
 9     xxxxxxxx
10     xxxxxxxx
************************
```

TOTAL/PARTIAL WEIGHT

```
************************
xxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxx
------------------------
Date    xx/xx/xx
time       xx:xx
------------------------
T:         xxxxx Kg
************************
```

```
************************
xxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxx
------------------------
Date    xx/xx/xx
Time       xx:xx
------------------------
P:         xxxxx Kg
************************
```

NOTE: The unit of measurement printed on the total/partial weight receipt can vary depending on the calibration used.
If the Weight-Volume conversion is enabled, the principal unit of measurement will be printed.

OPTIONALS

The HL-Series weighing indicators can have the following accessories:

MULTILINK ACCESSORIES:

- **AV41:** external display connected with the weight indicator by cable
- **BIG DISPLAY:** external display connected with the weight indicator by cable and RF.
- **MULTILINK TR60:** RF ANTENNA FOR **AV50, AV60, AV80** REMOTE CONTROLS
- **MULTILINK TR70:** RF ANTENNA FOR **AV70 AND AV85** REMOTE CONTROLS
- **MULTILINK DRIVE 8: I/O BOARD**
- **MULTILINK RF7:** ANTENNA RF FOR **RF7** REMOTE CONTROL
- **MULTILINK PRINTER: P1000** MODEL

COMPATIBLE ACCESSORIES OF PREVIOUS GENERATIONS (USE FOR OLD SPARE PARTS):

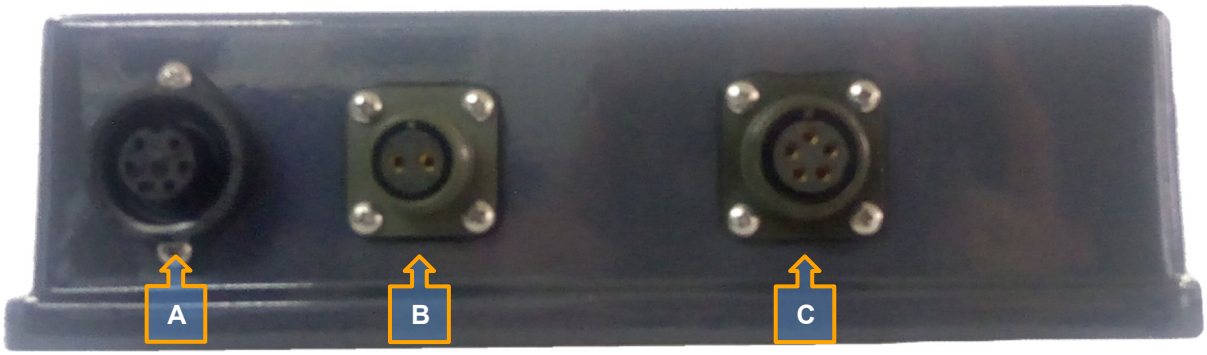
- **REPEATER DISPLAYS:**
  - **AV20-5:** external display connected to the weighing indicator by cable.
  - **REPEATER DISPLAY AV40-5:** external display connected to the weighing indicator by cable.
- **REMOTE DISPLAYS:**
  - **TRASMITTER FOR AV50, AV60, AV80:** RF Transmitter for each remote display.
  - **TR60 PER AV50, AV60, AV80:** RF Transmitter for each remote display.

POWER SUPPLY:

- **INVERTER POWER SUPPLY**
- **PLUG POWER SPULLY**

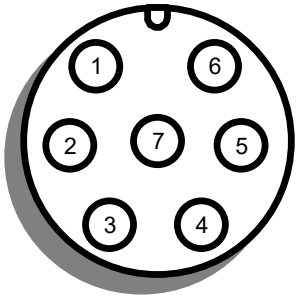
FOR NEW ORDERS USE MULTILINK ACCESSORIES ONLY

CONNECTORS PLAN



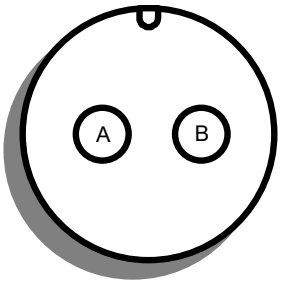
Connector "**A**": 7-pin female connector for optional and accessories.
Connector "**B**": 2 -pin female connector for power supply.
Connector "**C**": 5 -pin female connector for the connection of load cells.

CONNECTOR "A" – 7-PIN FEMALE CONNECTOR FOR OPTIONAL DISPLAYS AND ACCESSORIES



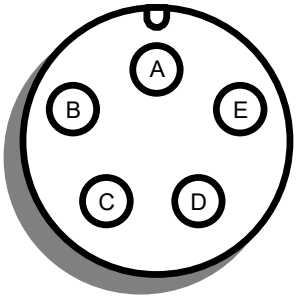
CONTACT	FUNCTION
1	+ 12 Volt cc (max 2 A)
2	Not used
3	Rx serial RS232 repeater display
4	Tx serial RS232 repeater display
5	+12 V cc (with passage for on\off contact- max 0.5 A)
6	Out Alarm
7	-12 V GND (common power supply)

CONNECTOR "B" – 2 -PIN FEMALE CONNECTOR FOR POWER SUPPLY



CONTACT	FUNCTION
A	+12 V cc, Positive power supply
B	-12 V common - GND, negative power supply

CONNECTOR "C" – 5 -PIN FEMALE CONNECTOR FOR THE CONNECTION OF LOAD CELLS



CONTACT	FUNCTION
A	Negative signal
B	Positive power supply
C	Positive signal
D	Negative power supply
E	Not used

TROUBLE SHOOTING

ERROR DESCRIPTION	ACTION TO CARRY OUT	EFFECT	SOLUTION
Not stable weight: The visualized weight value keeps going up and down. **Weight drift:** The visualized weight keeps increasing and decreasing,  	**POINT 1:** press T/CLEAR and then ENTER.	The message ERROR disappears and the weight becomes stable	The scale was out of range; by pressing the key T/CLEAR the problem was solved through the scale software.
		Either the message ERROR is still shown on the display, or the weight is visualized in an unstable way.	Check the integrity of the weighing system and of the load cells. To better understand what is broken, carry out the action described in the **POINT 2.**
	POINT 2: Disconnect the 5-pin connector (metal circular connector) of the load cell cable from the scale.	Weight still fluctuates /drifts / shows ERROR.	Check if the 5-pin female connector of the scale has humid contacts. If so, use warm air to dry off the connector (use for instance a hairdryer). If after this operation the weight still fluctuates, contact service.
		Weight gets stable, even though a wrong value is shown.	Carry out the action described in the **POINT 3.**
	POINT 3: Disconnect the junction cable from all the load cells and reconnect the 5-pin connector to the scale, avoiding the contact between the different connection wires.	Weight still fluctuates /drifts / shows ERROR.	Check if the cable is damaged; if so, replace it. Check if the junction box contains humidity; if so, dry the junction box.
		Weight gets stable.	The reason of the problem is that one or more load cells do not work properly. To better understand the cause of the failure, carry out the action described in the **POINT 4**
	POINT 4: press T/CLEAR and after ENTER Wait for some seconds. Connect one single load cell to the junction cable, by connecting each single wire colour by colour, and pay attention that the wires do not touch each other.	Weight still fluctuates /drifts / shows ERROR.	The connected load cell doesn't work properly; contact service.
		Weight gets stable.	The load cell doesn't work properly; disconnect the load cell and connect another one. This operation must be repeated for all load cells.
Weight fluctuates, or it is not stable while working only.	**POINT 5:** Make sure that the cables of the load cells are not torn or crushed.	The cables are seriously damaged or broken.	Replace the damaged cables.
		The cables are intact	Carry out the action described in **POINT 6**
	POINT 6: Check that the tank, or the device receiving the weight, does not touch the frame in any point.	The tank lays on the frame.	Arrange for the tank not to touch the frame in any point.
		The tank does not lay on the frame.	Contact service.

ERROR DESCRIPTION	ACTION TO CARRY OUT	EFFECT	SOLUTION
The weighing scale switches off, when the alarm starts to ring.	Disconnect the 2-pin connector of the alarm from the cable controlling it.	The scale works properly.	The alarm doesn't work properly and must be replaced.
		The scale still switches off.	The cause could lie in the cable controlling the alarm. Carry out the action described in the **POINT 7**
	POINT 7: Disconnect the cable controlling the alarm of the scale, by means of the 7-pin connector.	The scale works properly.	The cable controlling the alarm is damaged. Replace it.
		The scale still switches off.	Contact service.
The weight shown by the scale is not correct.	Carry out a new calibration of the system as indicated in the specific documentation.	The weight shown is correct.	The calibration of the system was successful.
		The weight shown is not correct.	Contact service.
The scale does not switch on, or the message Low Bat appears.	Check if the power supply complies with the technical features of the product.	The scale switches on.	
		The scale does not switch on: go on to the **POINT 8**	
	POINT 8: Check if the power supply cable is interrupted or damaged, and if the power plug and the battery clamps are oxidized. If necessary, replace them.	The scale switches on.	
		The scale does not switch on.	Contact service.