



OPERATOR'S MANUAL

DG8000

Feeding Monitoring



dinamica generale®
Electronic Solutions & Sensors

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dinamica generale 团队

INDICE

INDICE	1
TECHNICAL DATA	3
DIMENSIONS	3
CONFIGURATION	4
CONNECTIONS SCHEME	5
UNIVERSAL BOX	5
SLIM BOX	10
SPECIFICATION ON FUNCTION KEYS	16
SYMBOLS	21
SYSTEM CONFIGURATION	23
WORKING DATA	23
SETTING OF THE BASE PARAMETERS	24
AUTOMATIC SKIP OF THE COMPONENTS	30
CHECKING THE HARDWARE MODULES	32
STRING SETUP	33
CONFIGURATION PROTECTED BY PASSWORD	34
LIST OF THE PASSWORDS	34
PASSWORD 4 – PRINTING WORK PROCESS	35
PASSWORD 45 - CALIBRATION WITH SAMPLE WEIGHT	37
PASSWORD 46 – INVERSE CALIBRATION WITH SAMPLE WEIGHT	39
PASSWORD 166 – SCHEDULER ACTIVATION	41
PASSWORD 387 – CANCELLATION SCHEDULER MEMORY	41
PASSWORD 603 – HOW TO ENABLE THE XL DISPLAY	42
PASSWORD 1066 – USER AND PASSWORD ACTIVATION	42
PASSWORD 1289 – EDITING OF GPRS CONNECTION MODE (YOU CAN ENTER ONLY IF PASSWORD 1290 IS ENABLE)	45
PASSWORD 1290 – ACTIVATION OF GPRS COMMUNICATION	45
SETTING OF CUSTOMER CODE	46
USE OF THE DATA TRANSFER (MEMORY CARD)	48
INITIAL SETTING	50
DISPLAY CONTRAST	50
SETTING DATE AND TIME	51
USE OF THE MICROCOMPUTER	52
MANUAL WEIGHING	52
PROGRAMMING FROM THE INDICATOR	54
HOW TO USE THE EDIT FUNCTION	54
RECIPES	55
UNLOADING PROGRAMS	58
COMPONENTS AND UNLOADING POINTS	59
CUSTOMER	60
RECIPES MANAGEMENT	60
PENS MANAGEMENT	61
EXECUTION OF THE RECIPE (LOADING PROGRAM)	62
END OF THE EXECUTION	67
EXECUTION OF THE UNLOADING PROGRAM	68
SUSPENDED EXECUTION	73
REFUSED MANAGEMENT	73
HOW TO RESET THE REFUSED WEIGHT	75
AUTO LINK BETWEEN AN UNLOADING PROGRAM AND A RECIPE	77

DATA TRANSFER BY MODEM.....	78
SCHEDULER MANAGEMENT.....	80
TO ENABLE THE SCHEDULER ON THE INDICATOR.....	80
TO DISABLE THE SCHEDULER.....	81
SCHEDULER MANAGEMENT FROM THE INDICATOR	81
MANAGEMENT OF DATA	82
HARDWARE CHECKUP OF IRM SYSTEM	83
WIFI MANAGEMENT	87
TO START THE WIFI SYNCRONIZATION	87
OPTIONAL ACCESSORIES.....	88
CAN BUS CONNECTOR	88
ACTIVATION OF COMMUNICATION PROTOCOL J1939.....	88
SEARCHING FOR FAULTS.....	89
MESSAGES OF CLOCK ERROR	91
CHECK THE DAMAGED COMPONENTS	92
EU DECLARATION OF CONFORMITY	98
WARNING	99
ENVIRONMENT: DISPOSAL RULES.....	99
GUARANTEE	100

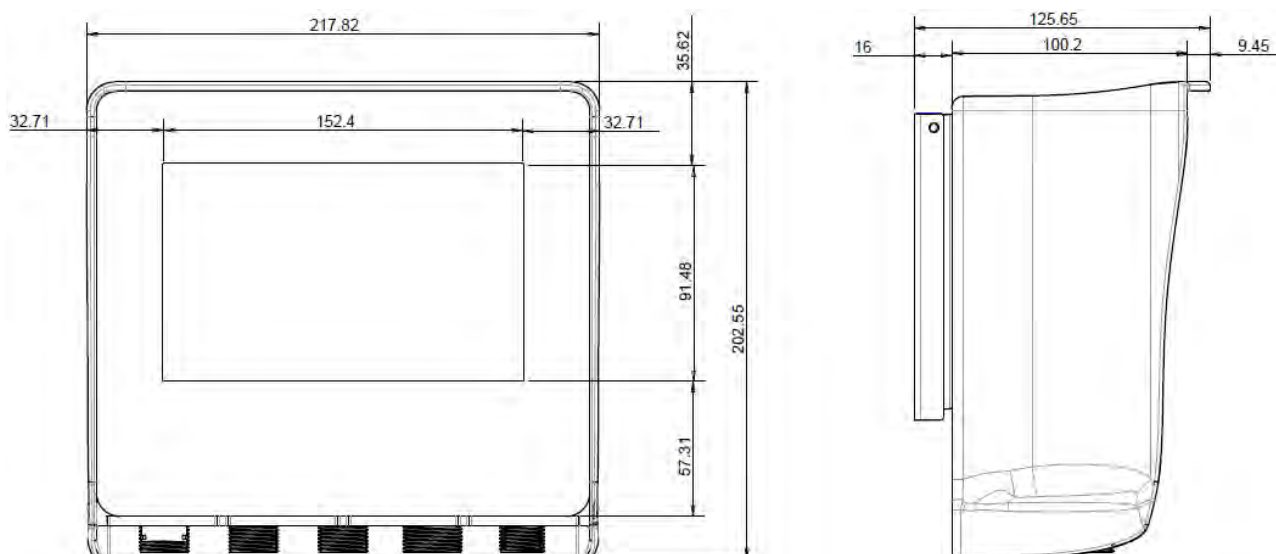
TECHNICAL DATA

Range (f.s.):	0 - 999.999
Resolution:	1 - 2 - 5 -10 - 20 - 50
Accuracy:	< +/- 0,015 % f.s.
Operating temperature:	-30° / +65 °C (-22° / +150 °F) (-45 °C /-49°F on request)
Power supply:	9,5 – 32 Vd.c. ("LOW BATTERY" alarm < 9,5 Vdc)
Dimensions:	UNIVERSAL BOX: 233 x 230 x 112 mm (9.2 x 9.0 x 4.4 inches) SLIM BOX: 220 x 190 x 80 mm (8.6 x 7.5 x 3.1 inches)
Weight:	UNIVERSAL BOX: 2500gr (5.5 lbs) SLIM BOX: 1900 gr (4.2 lbs)
Case:	Polyamide (PA) 30% glass fiber, noise shielded
Protection grade:	IP 68*
Display:	Graphical Display WVGA Full Color 152.4 x 91.5 mm (7" WVGA) ** 16:9 format 800x480

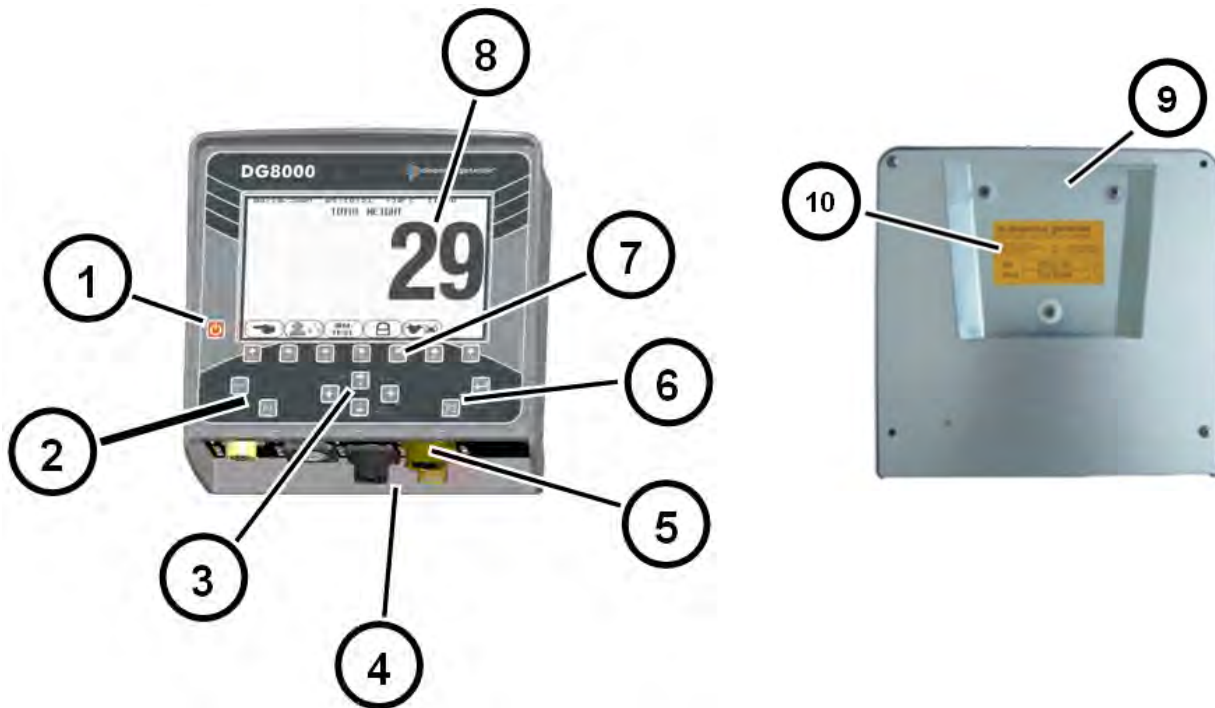
* Completely dust-proof and splash-proof, water-proof in full water immersion up to 1 meter with connectors closed by cap or with cables/ accessories connected.

** Perfect visibility in any weather condition (sunny, cloudy, rainy)

DIMENSIONS



CONFIGURATION

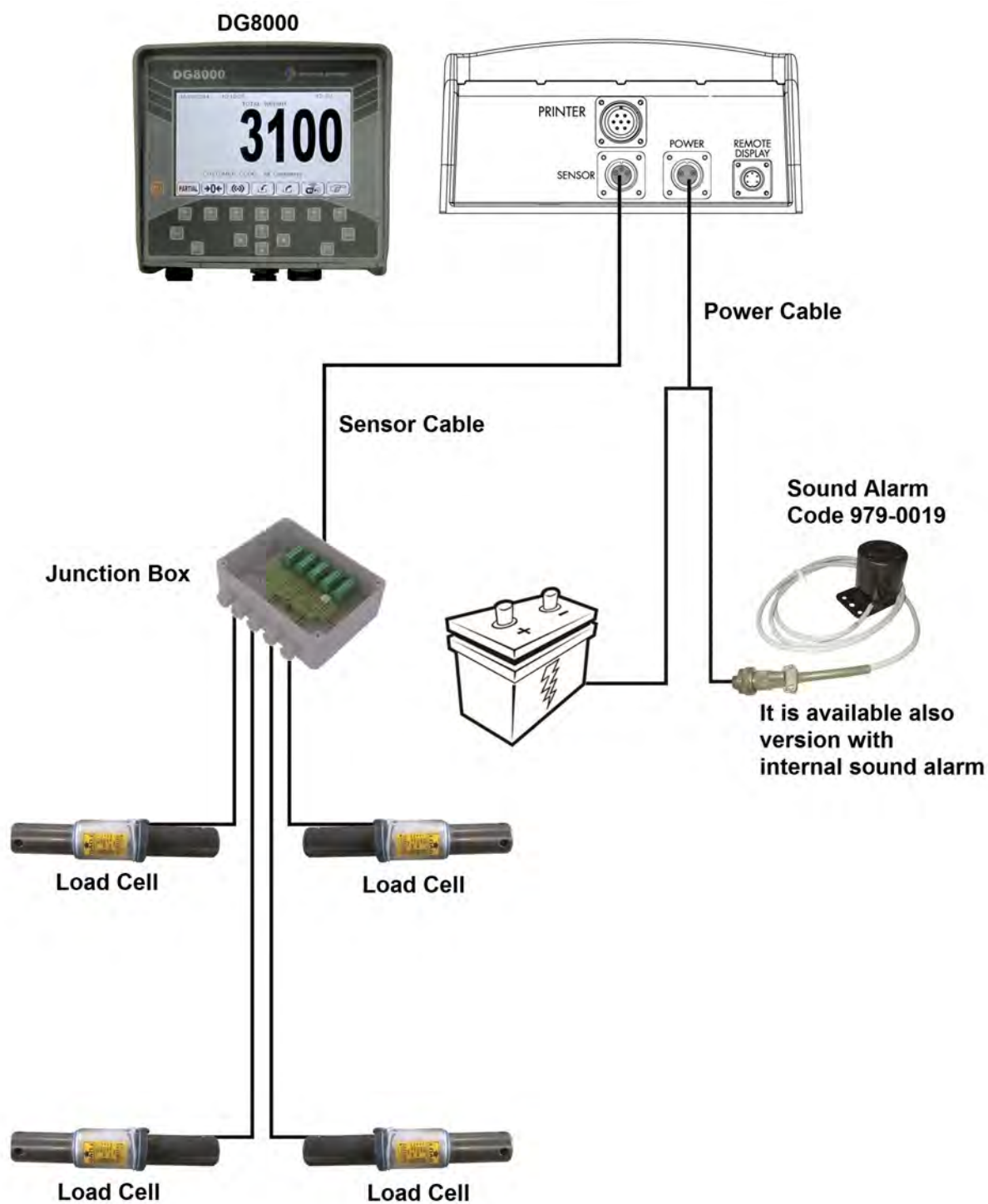


1. ON / OFF key.
2. RESET key.
3. Directional keys.
4. Power, sensor and accessories connectors.
5. Data Transfer connector.
6. ENTER key.
7. Function and setting keys.
8. Graphical Display WVGA Full Color.
9. Dovetail fastener.
10. Identification label.

CONNECTIONS SCHEME

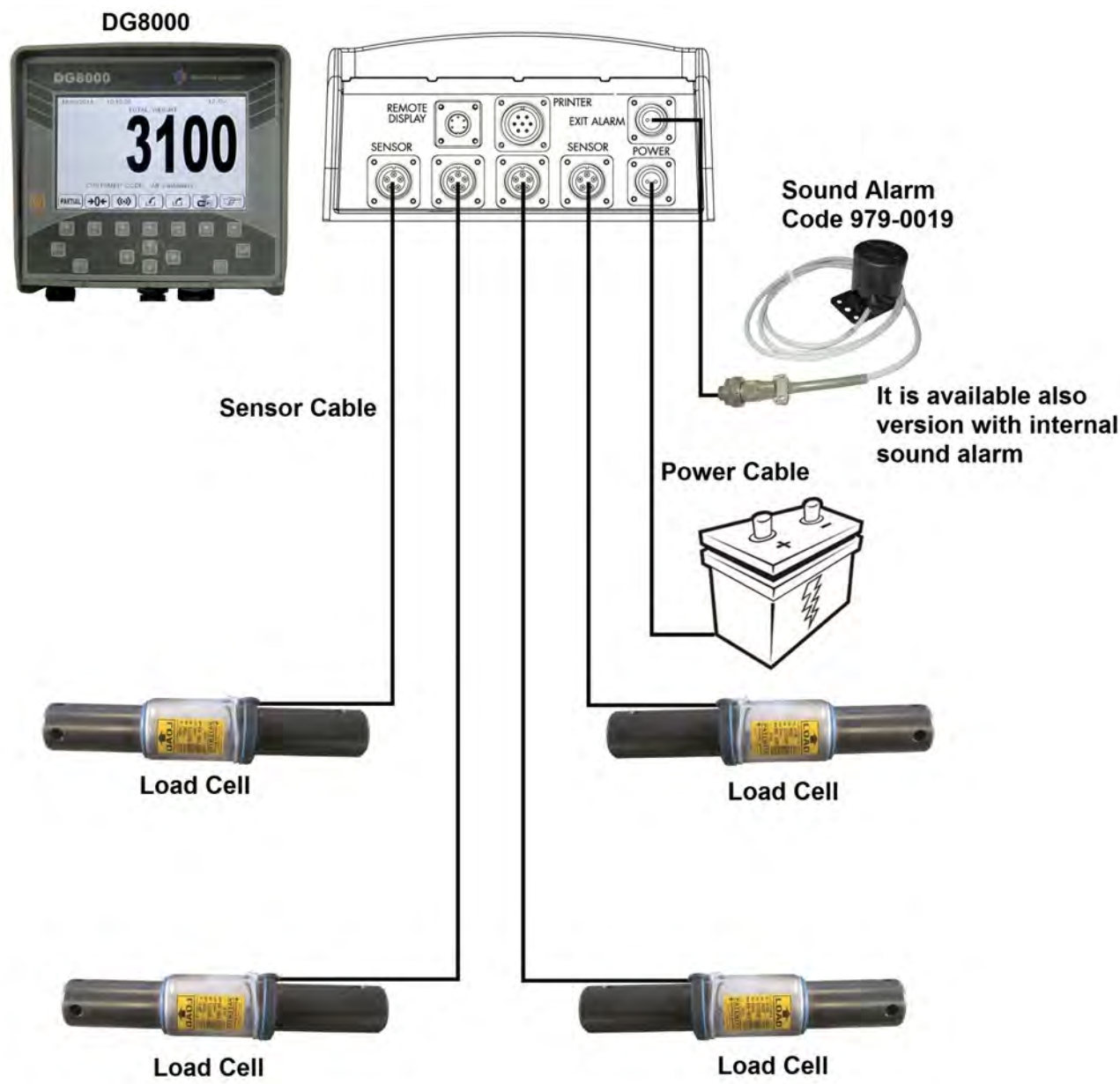
UNIVERSAL BOX

Power and sensor connections (system with junction box)



If the load cells are not all connected to the indicator, it's necessary to close the connectors not used with the special cap.

Power and sensor connection (system without junction box)

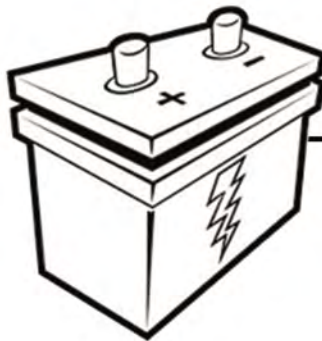


Accessories connection (NIR Scanner and Power & Communication Box)

NIR Scanner
Code 979-0300



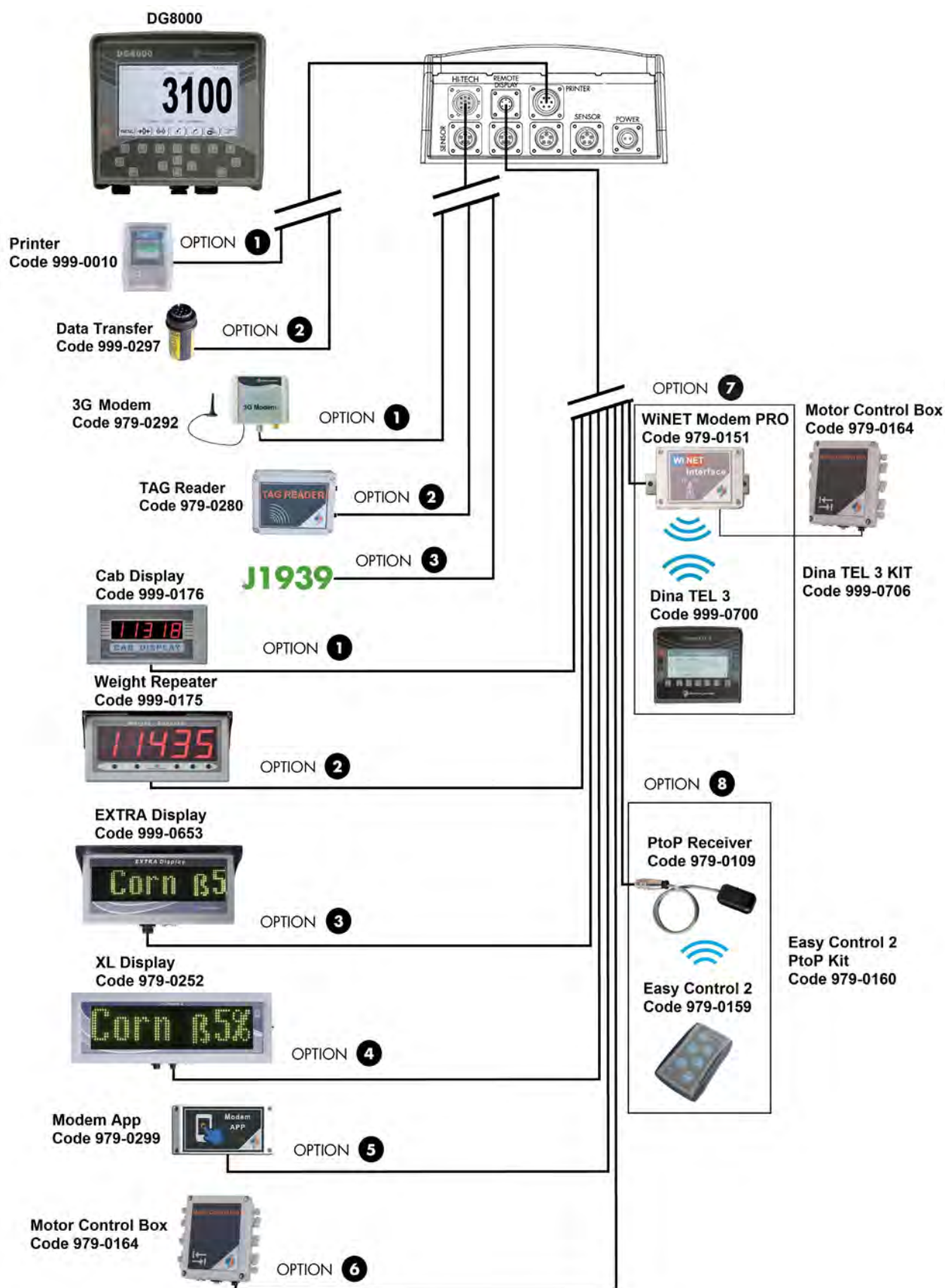
**Power &
Communication Box**
Code 979-0222



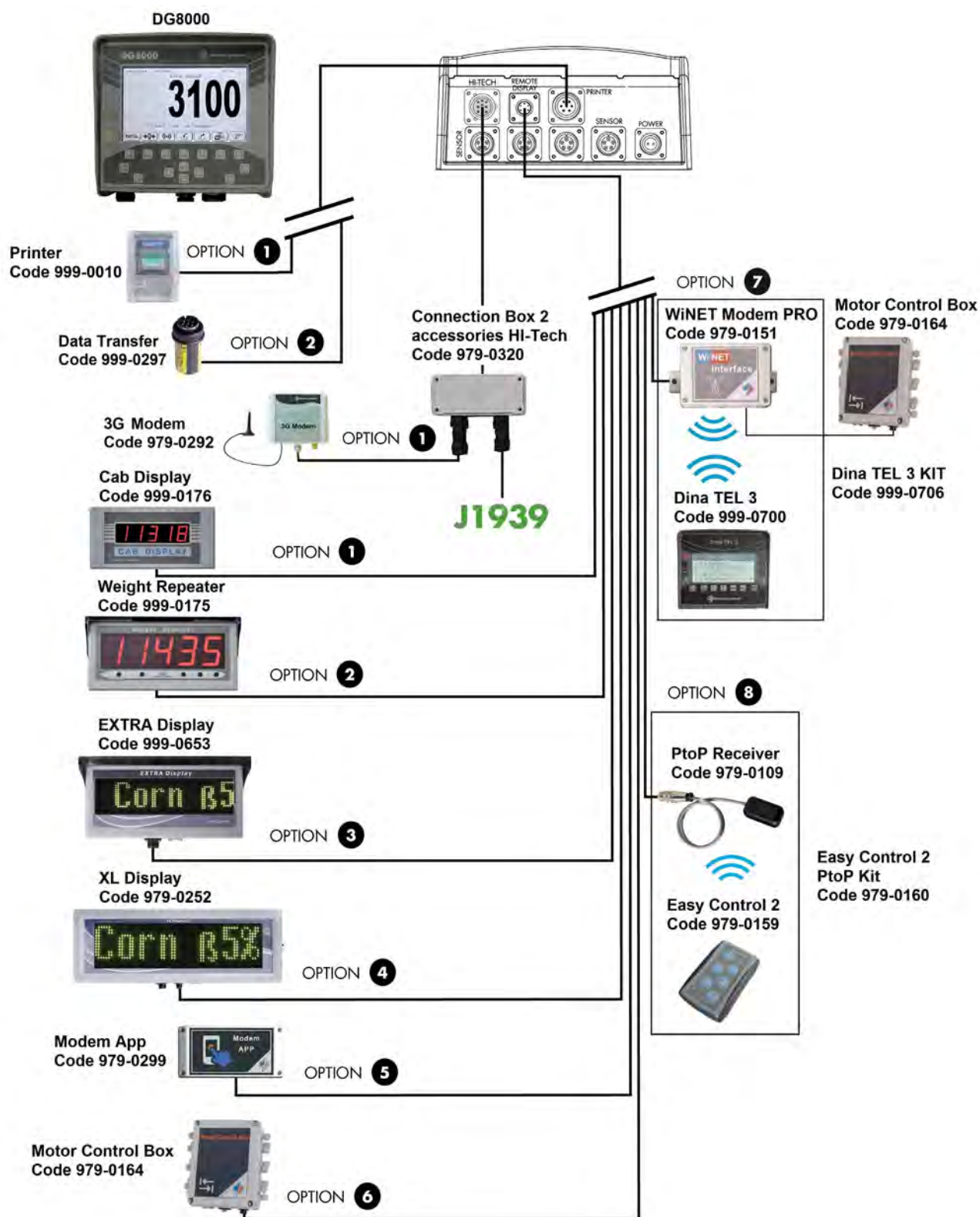
DG8000

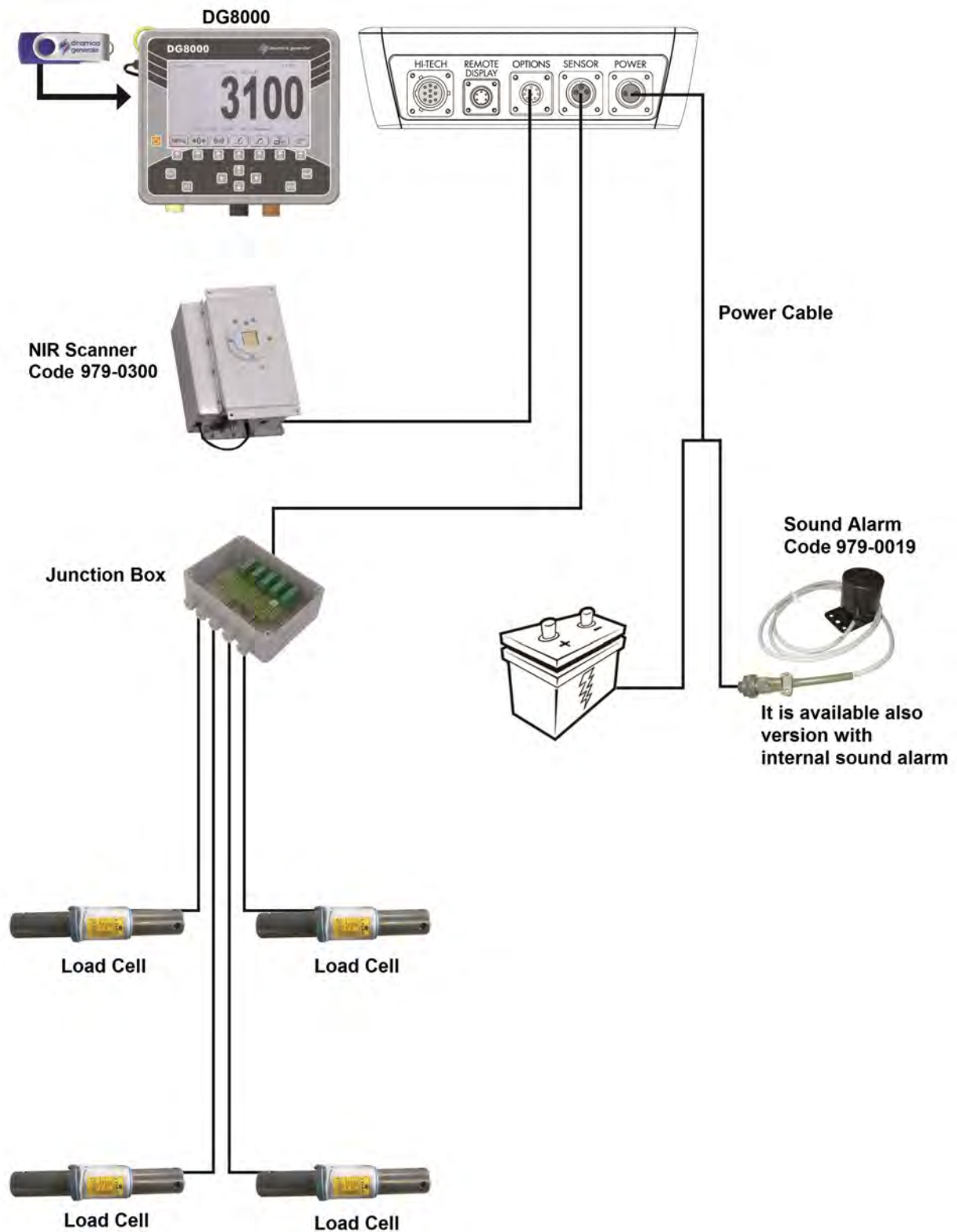


Accessories connection (system with 4 sensor connectors)

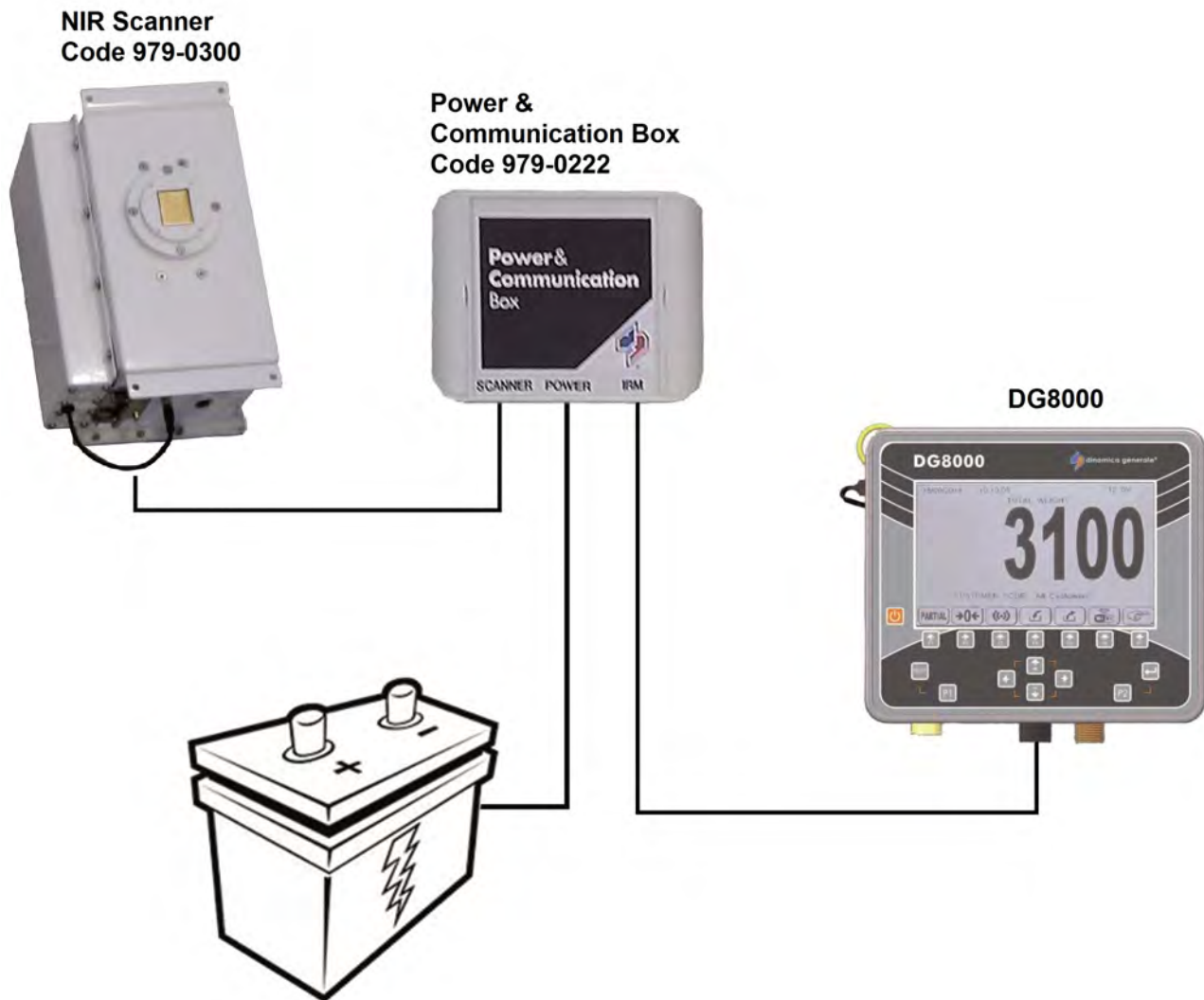


Accessories connection (system with connection box 2 accessories Hi-Tech)

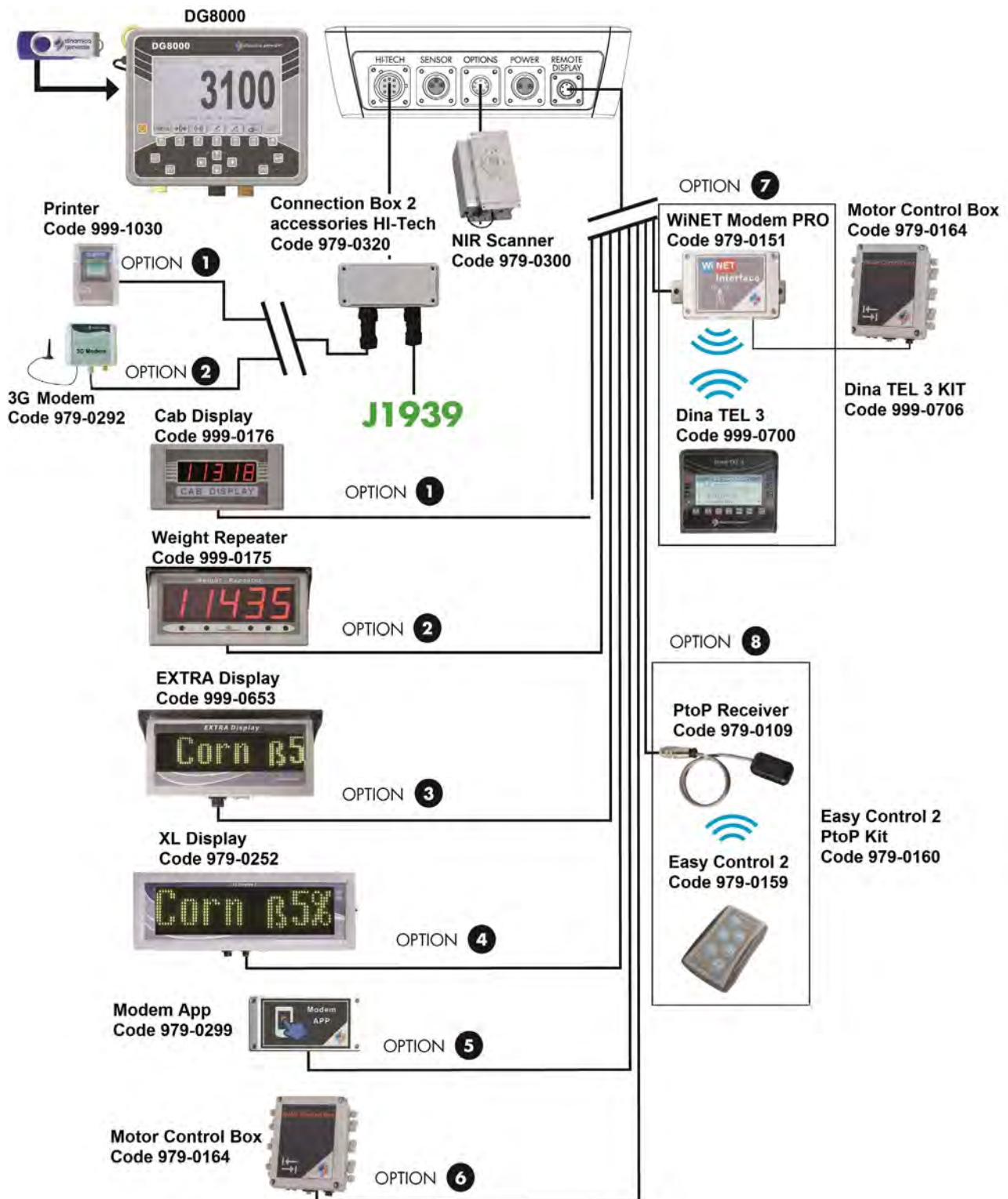


SLIM BOX***Power and sensor connection (system with junction box)***

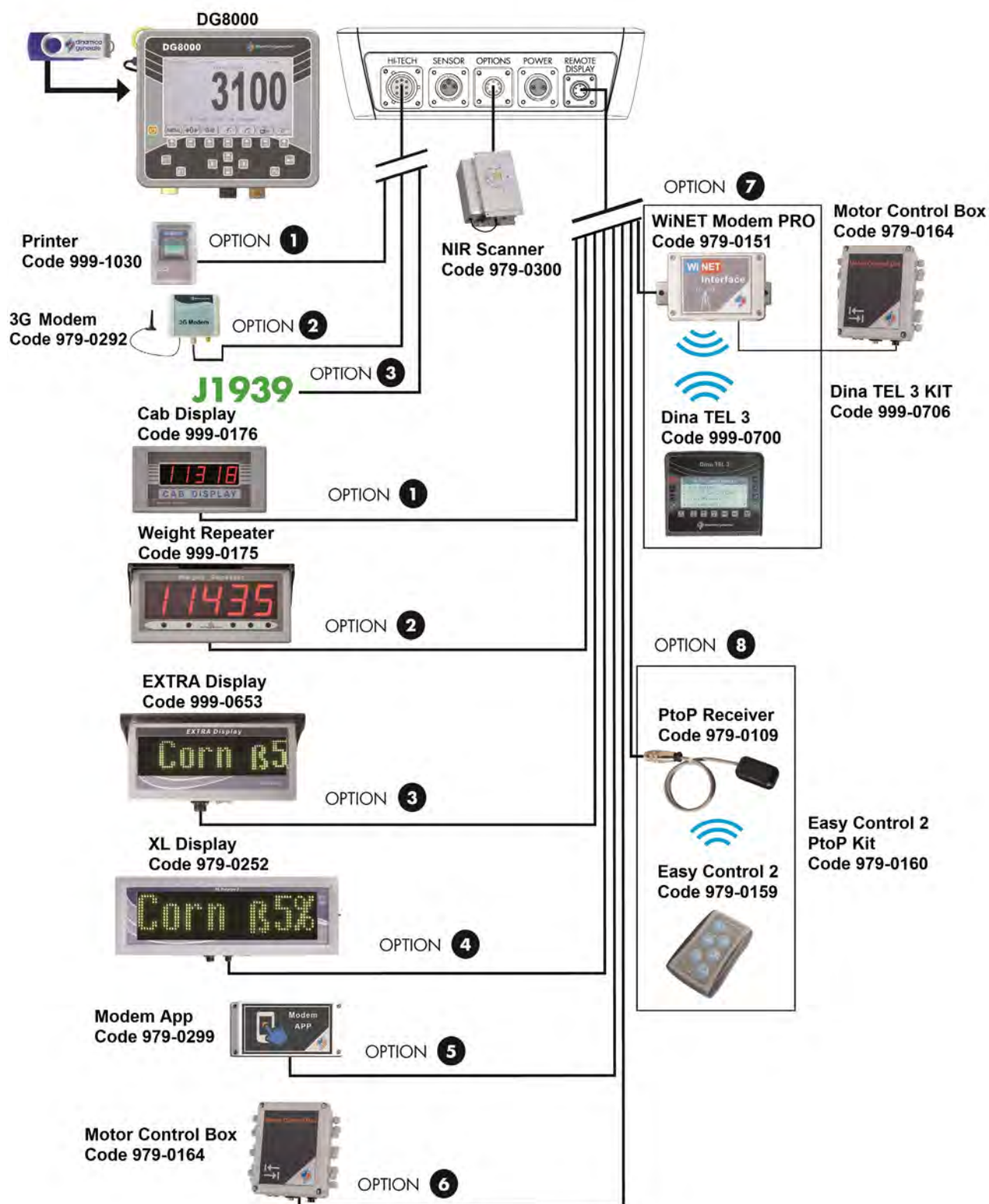
If the load cells are not all connected to the indicator, it's necessary to close the connectors not used with the special cap.

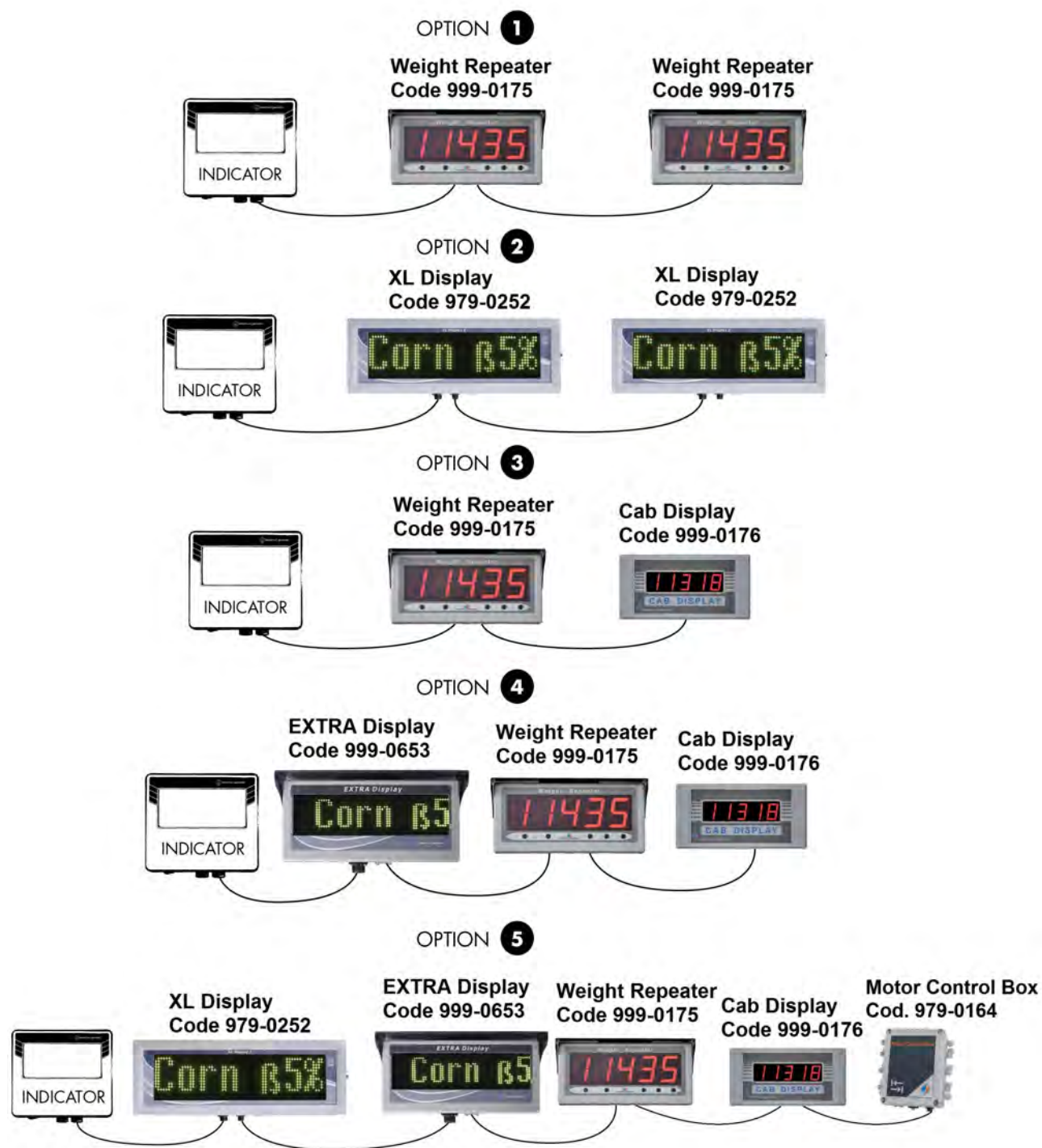
Accessories connection (NIR Scanner and Power & Communication Box)

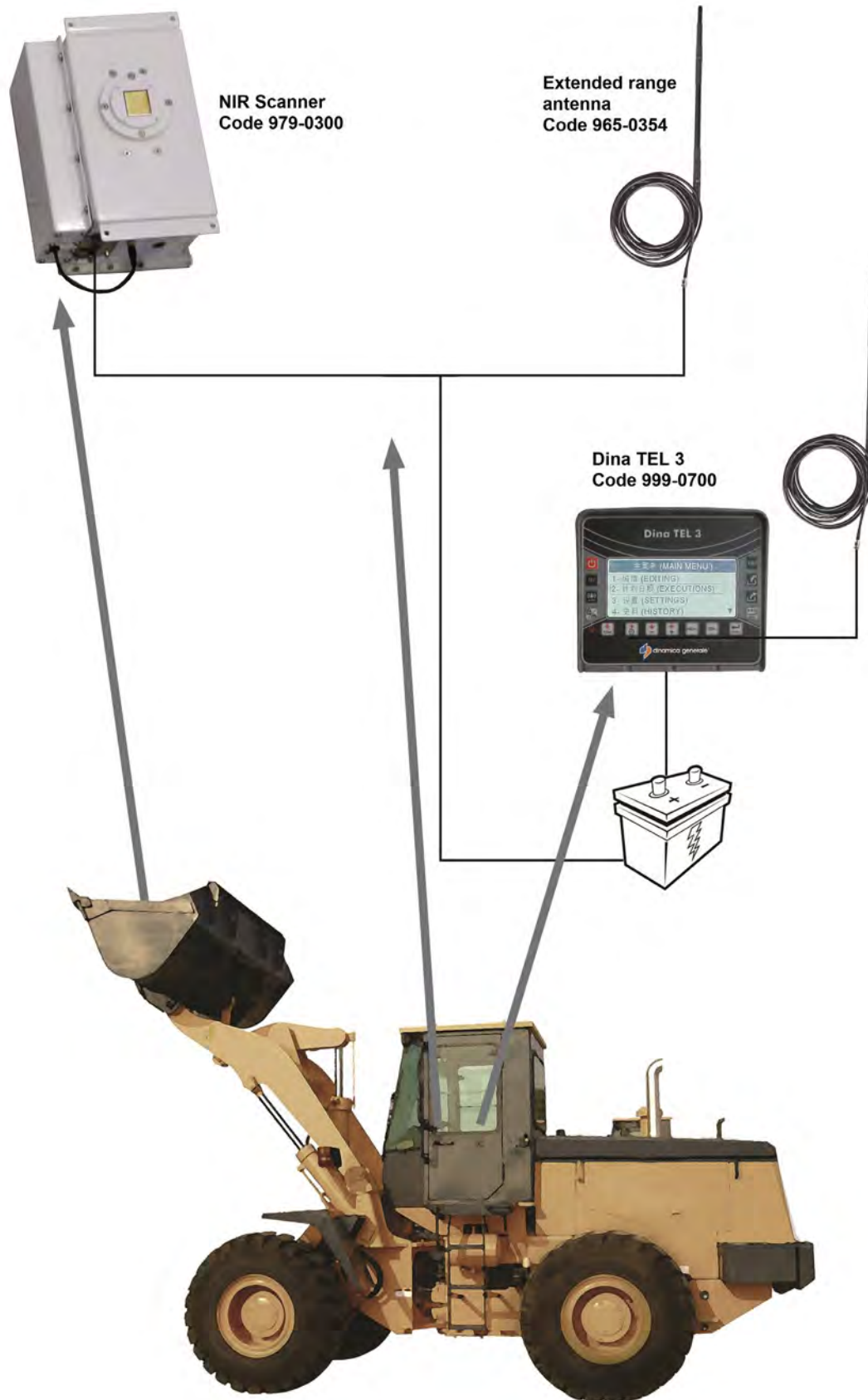
Accessories connection (system with connection box 2 accessories Hi-Tech)



Accessories connection (system without connection box 2 accessories Hi-Tech)

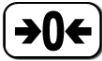


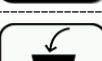
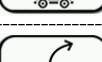

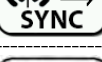


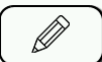
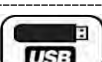
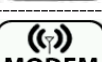
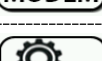


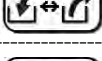
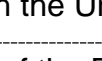


Display connection (available for UNIVERSAL BOX and for SLIM BOX)

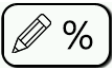



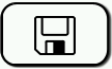



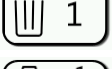



Connection front loader side

Specification on function Keys






MAIN MENU

	System calibration (zero setting of the system)		
	Block mode to freeze the weight		
	Partial weighing mode		
	Load execution mode		
	Unload execution mode		
	WiFi Synchronization		
	Loading programming mode / Recipes		
	Unloading Programming mode		
	Programming mode		
	USB data management mode		
	Modem connection mode		
	Settings		
	Hardware Checkup of NIR System		
	Associating the Recipe with the Unloading Program		
	Cancelling the association of the Recipe with the Unloading Program		
	To the next display		Back to the previous display

GENERAL SUB-MENUS

	Variation % mode
	Change of total weight to load/unload
	Total weighing mode (gross weight)
	Switching unit mode (kg / %)
	Saving data
	
	Print data
	
	
	Delete data
	
	Weight setting
	Customer editing

SPECIFIC SUB-MENUS**Partial weighing**

	Partial weighing mode (net weighing mode)
	Setting of the alarm threshold
	Refused mode
	Refused weight mode
	Delete refused

Recipe execution mode

	Loading mode
---	--------------



Recipe programming mode



Animals number editing



Recipe start time editing



Show components

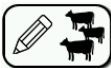
Unloaing program execution mode



Unloading mode

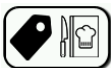


Show unloading points



Animals weight editing

Recipe programming mode



Recipe name editing



Select component



Component weight editing



Recipe mix time editing

Unloading program programming mode



Unloading point name editing



Select unloading point



Animal weight editing



Animal number editing

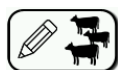
Programming mode



Component programming mode



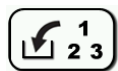
Component name editing (only if the parameter #89 is disabled)



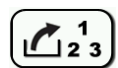
Unloading points programming (only if the parameter #89 is disabled)



Unloading points name editing (only if the parameter #89 is disabled)

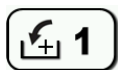


Mode "Management of the Components accumulations" (recipes)

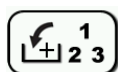


Mode "Management of the pen accumulations" (unloading programs)

Recipes management mode

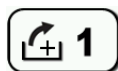


Managed components list view of the recipe

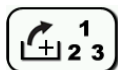


Managed and not managed components list view of the recipe

Unloading program management mode



Managed unloading points list view of the recipe



Managed and not managed components list view of the unloading points

Modem connection mode



Modem's information verification



Modem's initialization

Settings mode



Scheduler execution mode



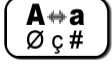

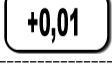
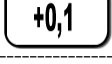
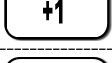
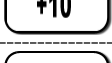
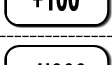
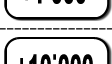
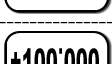
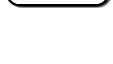


Setting of display contrast



Setting of date and time

CONFIGURATION + WORD PROCESS KEYS and VALUES INCREASE

	Go back to the initial parameter configuration
	Recall the default values of parameters
	Change the type format
	Delete the character at the right of the cursor
	Increase value by 0.01 unit
	Increase value by 0.1 unit
	Increase value by 1 unit
	Increase value by 10 units
	Increase value by 100 units
	Increase value by 1000 units
	Increase value by 10000 units
	Increase value by 100000 units

SYMBOLS

CONVENTIONAL SIGNS

This user's manual uses some conventional signs, in order to lead the user through the reading of important instructions and advices; especially while setting the parameters of the system for it to work properly.

Please pay attention to the following icons:



It indicates explanations and further information.



It highly recommends to pay attention.



It signals an operation that can be repeated many times, cyclically.



It highlights a double working option.



It suggests to follow the hint.

CONVENTIONAL TERMINOLOGY

This manual uses a conventional terminology to describe the main concepts of the Feeding Process.

Below is a list of the main important terms and their meanings:

Component: Ingredient used in order to create a Recipe (or Diet) to feed the cattle.

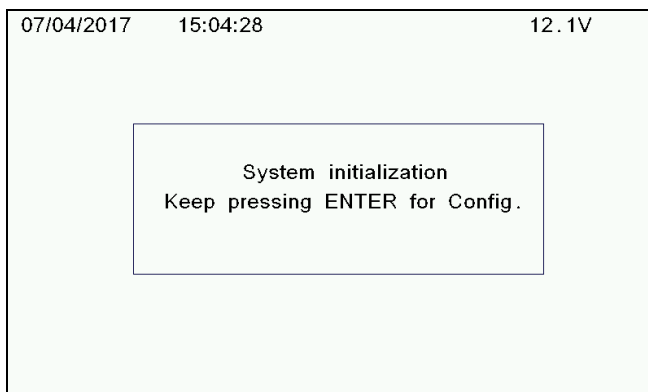
Unloading Point: Position of the group of animals to be fed.

Unloading Program: indicates the list of all the unloading points that must be covered by a specific execution.

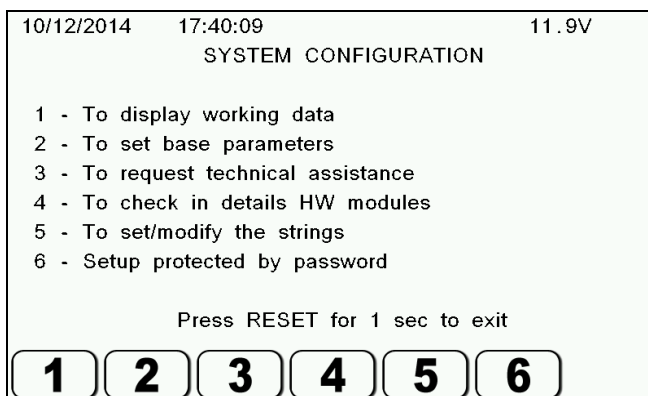
Recipe (or Diet): indicates a group of ingredients (components), planned by the nutritionist, with relative weight or percentage of the total. A recipe corresponds to a daily ration of the animal.

SYSTEM CONFIGURATION

- 1 Switch on the DG8000 weight Indicator.
- 2 The message "System Initialization" will appear on the display. Press ENTER to get into the configuration menu of the system.



- 3 Select an option from the list by pressing the button with the corresponding number.



Shown below the individual options.

WORKING DATA

- 1 This display shows information about the functioning of DG8000:

-Name

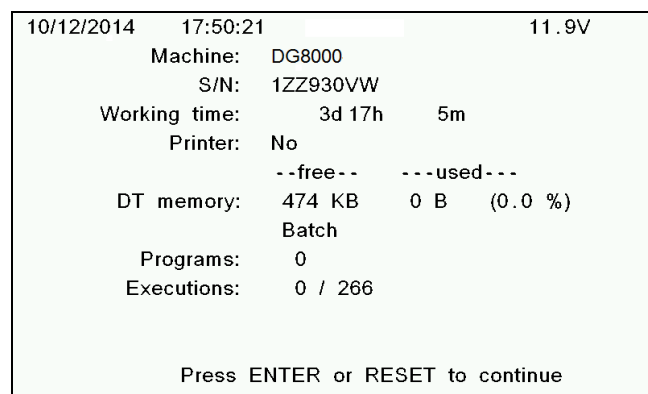
-Series number

-Actual working time

-Information on free or used memory

-Information on loading/Unloading Programs for programming and execution.

The data contained in this section cannot be changed directly by the operator. Go back to the main configurations menu by pressing ENTER o RESET.



SETTING OF THE BASE PARAMETERS

16/07/2018	08:49:13	12.1V
01	Device Name	TopScale
02	PC/GSM Address	0
03	Handy Address	3
08	Motion Sensitivity Value	750
09	Resolution	1
10	Alarm Threshold (%)	15
11	Alarm Delay	4
12	Filter Level	5
14	Auto-Advance Component	YES
15	Manual Comp. Selection	Both

Access through the key number 2 of the Setup menu.

In this section, all parameters necessary for the correct functioning of the weighing system are set up. All data contained in this section can be modified by the operator.

The programming mode is the following:


- 1 Select the parameter using the keys ↑ and ↓ (using the → or ← keys you can move from one page to the other one at a time).


- 2 Press ENTER to enter the “modify data/value” mode.


- 3 Use the ↑ or ↓ keys or the keys to increase the value to set/select the datum/the desired value.

- 4 Confirm your choice by pressing the ENTER key

- 5 Repeat the cycle

- 6 At the end of the programming phase, keep the  key pressed for 5 seconds to store the data into the memory.

- 7 Furthermore, in case of errors, the system gives you the possibility of recalling the default data set up by the manufacturer. Press this key , to recall the default data.

With this key,  you can recall the initial configuration or the last saved data.

- 8 Go back to the main configuration menu by pressing RESET.

DG8000 –Base Parameters

Parameter	Name	Values (default)	Description
01	Device Name	(DG8000)	Name of the device
02	PC/GSM Address	0..65535 (0)	Address for the GSM network
03	Handy Address	0..255 (3)	Identification code that allows the indicator to connect, by RF, only to those devices that have the same address without creating problems of interference with other devices that use different addresses.
08	Motion Sensitivity Value	0..10000 (750)	Alarm MOTION Alarm that indicates sudden weight changes that could cause damage to the system.
09	Resolution	1,2,5,10, 20,50 (1)	Resolution of the weigh on the screen
10	Alarm Threshold (%)	0..50% (15)	Minimum alarm threshold expressed in percentage When the %value of the total is still to be loaded/unloaded, the system will beep intermittently
11	Alarm Delay	0..60 sec (4)	Alarm duration expressed in seconds When the total amount to be loaded/unloaded is reached, the system will beep continuously for this period of time (this is also the time needed to pass from a Component /Unloading Point to the following if their automatic passage has been set up)
12	Filter Level	1..10 (5)	If the weight on the display is unstable, the parameter has to be increased; if, on the other hand, the weight is too stable (slow update) the visualization will be improved if this value is decreased.
13	Filter Delta Time	1..10 (5)	Not used.
14	Auto-Advance Component	AUTOMATIC/MANUAL /DTM (AUTOMATIC)	Automatic passage from a Component/Unloading Point to the following one. If you select "NO", the system will ask for the operator to send a signal (by pressing ENTER) before carrying out the passage

15	Manual Component Selection	LOAD UNLOAD BOTH NONE (BOTH)	When executing programs, it is not possible to carry out what follows, if not enabled: Scrolling the Components with the ↑ or ↓; Confirm a partial execution of a Component by pressing ENTER. It is possible enable this function during the loading (for the component), the unloading (for the unloading point), for both or for none.
16	Stabilization Time	0..100 sec (0)	Time to wait in order to have a stabilization of the weight at the end of the load of every Component during the execution of loading Recipes
17	Language	(English)	Select the desired language English, Italian, Spanish, German, French, Portuguese, Danish, Dutch, Polish, Russian, Hungarian, Czech, Swedish, Turkish, Chinese
19	Multiple Print	YES/NO (NO)	If enabled, it allows you to manage a number of multiple printouts as specified in the parameter "Repeated Print Number".
20	Repeated Print Number	1..99 (1)	Repeated print Number. This is a default value if the number of printouts is shown on the screen. It is modifiable in the sections where it is listed.
24	Modify Name	Si..NO (Si)	Refer to the menu (To set/modify the strings) in the SYSTEM CONFIGURATION. If enabled, the operator can have access to the strings management menu where it is possible to change the names of components/unloading points.
25	Maximum Value	100..999999 (15000)	Overloading value. If this value is exceeded, the system will activate an overload alarm (over range). The maximum value that can be set might be limited to factory settings, set by the manufacturer of the machine on which Dinamica Generale's indicator is installed.
26	Local Prog. Modify	Abilitato/ Disabilitato (Abilitato)	If not enabled, it is not possible to enter the programming menu for loading/Unloading Programs. In addition to that, it is not possible to enter the editing menu with names of Components and Unloading Points.
28	Mixing Timer Status	Abilitato/ Disabilitato (Abilitato)	If it is not enabled, it is not possible to set the mixing time at the end of the execution of a Recipe.
29	Mixing Timer Value	0..50 min (0)	Mixing time at the end of the execution of a Recipe.
33	Filter Threshold	1..30000 (30000)	Not used.

34	Unit of Measure	Kg, Lb (Kg)	Measuring unit for weight.
35	Customer ID	0..99 (0)	Customer code.
44	Manual Alarm Value	0..65000 (0)	Alarm threshold (weight) in "Partial" mode.
47	Mix Transmission Ratio	1,00..650,00 (1,00)	Transmission relationship between cardan joint and auger.
78	Scheduling Alarm Delay	3..60 (15)	Duration in seconds of the acoustic alarm in case of automatic activation by means of the scheduler of a program
81	Unload Stabilization Time	0..100 (0)	Weight stabilization time (after each unloading). The parameter "Stabilization Time" is only referred to the load
82	Minimum Temperature	-20...-50°C (-20)	Temperature under which a relative event is saved when it is exposed to low temperatures.
83	Maximum Temperature	20..60°C (50)	Temperature over which a relative event is saved when it is exposed to high temperatures.
88	% Start Loading	0..100 (5)	Percentage of weight loaded, in respect to the total amount of the Component. When reached, the beginning time of the loading of the Component is saved.
89	Data Transfer Enabled	YES/NO (NO)	Enable/disable of the DT card.
91	Remote Display Operation Mode	MENU/TOTAL (MENU)	Function mode of the weight repeater. <i>MENU</i> shows the weight visualized on the display <i>TOTAL</i> always shows the total amount loaded on the mixer.
99	Suggested weight to unload	Theoretic; Tot Loaded; Tot Mixer; (Theoretic.)	At the end of a loading execution you automatically pass to the unloading phase. The quantity proposed to unload could be the same as: <i>Tot loaded</i> : total loaded during the execution <i>Tot mixer</i> : total present in the mixer <i>Theoretic</i> : total programmed on the scale head at the beginning of the execution

104	Next operation	Next load/None (None)	<p>This operation to be made at the end of a program loading.</p> <p>NONE: At the end of the execution of one Recipe (and eventually its linked Unloading Program) , DG8000 Indicator, normally goes to the grid where there is the list of all available Recipes</p> <p>NEXT LOAD : At the end of one Recipe (and eventually its linked Unloading Program), the DG8000 Indicator goes automatically inside the next Recipe (not in grid where there is the list of all Recipes)</p>
107	Auto Next Mode	None Weight Percent (None)	<p>The base parameter Auto Next Mode allows you to set a loading mode of a Component such that you can activate a timer after which the DG8000 will automatically switch to the next Component, even if you have not reached the target of the Component.</p> <p>(see paragraph “Automatic skip of the Component”)</p>
108	Auto Next Threshold %	0-50 (0)	(see paragraph “Automatic skip of the Component”)
109	Auto next Threshold Weight	0-65535 (0)	(see paragraph “Automatic skip of the Component”)
110	Auto next timer	0-2000 (0)	(see paragraph “Automatic skip of the Component”)
114	Component sec delay XL display	0..60 sec (5)	Time (in seconds) that displays the name of the Component on the XL display
115	WiFi Calls Delay	10..240 (10)	Number of seconds between an attempt to WiFi and another.
116	WiFi Calls Number	2..240 (10)	Number of attempt before the scale goes in error
127	Max Unl. Runtime	0..240 (0)	It indicates the minutes maximum stay for each Unloading Point
154	BLOCK	DG..M1 (DG)	<p>DG: BLOCK enabled in Total mode and in Execution mode, in output move the tare - TOTAL does not modify the tare.</p> <p>M1: BLOCK enabled only in Execution mode (not in Total), in output doesn't move the tare - TOTAL does not used.</p>
155	Auto confirm. WiFi communication	YES..NO (YES)	If enabled, it is not blocker for the final report screen of data transfer WiFi
166	Save Load Total	YES..NO (YES)	Enable/Disable the saving the modifies made to the loads before of the execution

167	Save Unload Total	YES..NO (YES)	Enable/Disable the saving the modifies made to the unloads before of the execution
168	WiFi Report Confirmation	YES..NO (NO)	Enable/Disable the requirements to press a key when you see the report at the end of the WiFi communication.
177	Max Load Runtime	0...240 (0)	It indicates the maximum time (expressed in minutes) where the DG8000 Indicator will show one Component inside one loading execution. If this parameter is set on 0 , there is no limit about time
178	Load updated by Unload	YES..NO (NO)	This parameter enables the automatic recalculation of the loading, if linked Unloading Program has been changed
179	Save Load Head Number	YES..NO (YES)	This parameter enables the automatic saving of the cow number in order to show it again during the next loading execution.
180	Save unload head number	YES..NO (YES)	This parameter enables the automatic saving of the cow number in order to show it again during the next unloading execution.
181	Enable RealTime IRM Saving	YES..NO (NO)	YES: When the reset key is pressed from the execution of a program, the execution is saved regardless of whether it is finished or not. NO: No operation is saved until the program exit confirmation.
182	GPRS Retry	1..50 (5)	It indicates the number of retry answer wait of the modem after a request.
183	Normalized variation	YES..NO (NO)	Parameter to define how the percentage change value is shown in the load or unload screens; Parameter NO, no variation 0% Parameter YES, no variation 100%
185	DTM Authentication	YES..NO (NO)	This parameter enables the confirm request by the operator during the receipt of a message via GPRS. YES: the message "ENTER to accept or RESET to reject." Appears.

AUTOMATIC SKIP OF THE COMPONENTS

Parameters Involved	Position
Auto Next Mode	DG8000 Base Parameters
Auto Next Threshold Weight	DG8000 Base Parameters
Max. Prealarm Time	DG8000 Base Parameters
Auto Next Threshold %	DG8000 Base Parameters
Alarm Threshold %	DG8000 Base Parameters
Alarm Delay	DG8000 Base Parameters
Stabilization Time	DG8000 Base Parameters
Tolerance (Weight)	DTM – Editing Component ¹

The base parameter Auto Next Mode allows you to set a particular loading mode of a Component such that you can activate a timer after which the DG8000 will automatically switch to the next Component, even if you have not reached the Target Weight of the Component.

This is useful in particular for the automated systems (stationary mixer), if a problem occurs such as the Target Weight is not reached or if the value of the Tolerance (Weight) (if set on the DTM) is overestimated.

The possible options are: **None, Weight, Percent**

Auto Next Mode = None

If set to None, it will automatically switch to the next Component in standard mode. Therefore, depending on how the base parameters (Alarm Threshold%, Alarm Delay and Stabilization Time) are set. When you load a weight equal to:

Target – [(Alarm Threshold%) * Target / 100]

It activates the siren intermittently; once the target is reached the siren sounds for a fixed time equal to Alarm Delay, then shown on the display is a countdown equal to Stabilization Time (if the Stabilization Time is set) after which the DG8000 automatically switches to the next Component.

Auto Next Mode = Weight

To work with this mode you must appropriately set the parameters Auto Next Threshold Weight, Auto Next Timer and possibly the field Tolerance (Weight) on the DTM. The base parameter (Alarm Threshold%) is ignored, while Alarm Delay and Stabilization Time are managed. Using this mode when you load a weight equal to

Target – Weight

It activates the siren intermittently and starts a countdown equal to Auto Next Timer after which, even if you have not reached the Target Weight (and also after an acoustic alarm fixed to (Alarm Delay) and eventually to a Stabilization Time (if the Stabilization Time is set)) the DG8000 automatically switches to the next Component.

The value is equal to the Tolerance (Weight) of the Component (if set on the DTM), otherwise to the value set into the Auto Next Threshold Weight set on the DG8000 and equal for all the Components.

¹ Not available on all the DTM version

Auto Next Mode = Percent

In order to work properly with this mode you must appropriately set the parameters Auto Next Threshold % and Auto Next Timer. The parameter Alarm Threshold% and the Tolerance (Weight) on the DTM are ignored, while Alarm Delay and Stabilization Time are managed. Using this mode when you load a weight equal to

$$\text{Target} - [(\text{Auto Next Threshold \%}) * \text{Target} / 100]$$

It activates the siren intermittently, and starts a countdown equal to Auto Next Timer, at the end of this timer even if you have not reached the Target Weight (and also after an acoustic alarm fixed to (Alarm Delay) and eventually to a Stabilization Time (if the Stabilization Time is set)), the DG8000 automatically switches to the next Component.

Tolerance (Weight)

The field Tolerance (Weight), can be set only on DTM; it is used only in relation to the parameter Auto Next Mode = Weight, otherwise it is ignored. (see information above)

CHECKING THE HARDWARE MODULES

02/07/2015	10:57:24		11.4V
	DG8000	- System Check	
A Display	OK	J A/D chip	OK
B Keyboard	OK	K Power	OK
C RAM CPU	OK	L Temp	OK
D RAM ext	OK	M Buzzer	OK
E Flash ext	OK	N Serial	-
F Eeprom	OK	O CANBus	-
G SD Memory	OK	P GPRS	Fail
H DataTransf	NoDev	Q Printer	NoDev
I Clock	OK		
- Check Completed -			

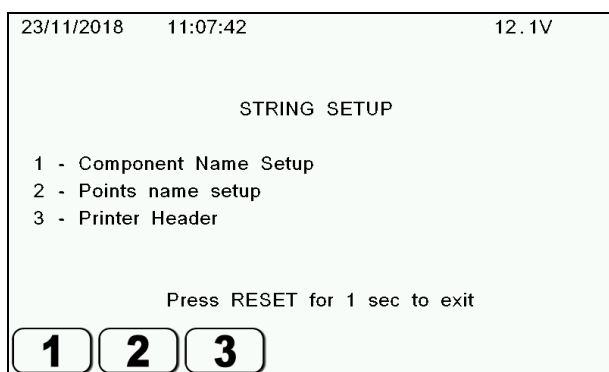
Access through the key number 4 of the Setup menu.

This section carries out a check on the hardware parts of the system:

- Display
- Keyboard (it is possible to strike a key and see the corresponding acquired code);
- Jumpers HW (different symbols for closed or opened jumpers)
- RAM CPU (if accessible or not)
- Flash #1 (if accessible or not)
- Flash #2 (if accessible or not)
- EEPROM #1 (if accessible or not)
- EEPROM #2 (if accessible or not);
- Data Transfer (if cartridge is connected or not);
- Clock (date/time)
- A/D chip: values read by the A/D 4 channels;
- Power: voltage Vbat =supply, Vcc = logic tension 5V, V3p3 = logic tension 3.3V, Vlcd = display contrast tension
- Temp (temperature value)
- Buzzer
- Led
- Printer (if connected or not)

You can move from one step to the subsequent one by pressing ENTER. When the check is over, go back to the main configuration menu by pressing RESET.

STRING SETUP



Access through the key number 5 of the Setup menu. In this section it is possible to change the components and unloading points in the same way described in the section *Use of microcomputer → programming from the indicator → Components and Unloading points*.

It is also possible change the header of the printer by pressing the number 3.

Programming the printer registration




1 Select the line to be programmed with the ↑ or ↓ keys (using the → or ← keys you can move from one page to the other one at a time).

2 Press  to enter the programming mode

3 Use the ↑ or ↓, → or ← and the word process keys to program the datum to be included.

4 Confirm the programming by pressing ENTER

5 By pressing this key  is possible to recall all data, which were default programmed by the manufacturer.

6 Once all the desired data have been programmed, go back to the main configuration menu by pressing RESET.

CONFIGURATION PROTECTED BY PASSWORD

10/12/2014	17:52:01	11.9V
ADVANCED SETUP		
Set the password:		<input type="text" value="0"/>
<input type="button" value="+100'000"/>	<input type="button" value="+10'000"/>	<input type="button" value="+1'000"/>
<input type="button" value="+100"/>	<input type="button" value="+10"/>	<input type="button" value="+1"/>

In this section you can access the password-protected menus. The information considered so important as to require a password concern the calibration of the instrument and other specific passwords.

Using the increase keys, enter the desired password.

LIST OF THE PASSWORDS

4	Printing working process
12	Calibration
23	Calibration procedure with fixed values
45	Calibration with sample weight
46	Inverse Calibration with sample weight
67	Modification of the weight in % (fine calibration)
166	Scheduler activation
387	Cancellation scheduler memory
603	How to enable the XL display
1066	User and Password Activation
1289	Editing of GPRS connection mode (you can enter only if password 1290 is enable)
1290	Activation of GPRS communication
1999	Remote display with simple protocol

Password 4 – Printing Work Process

10/12/2014	17:52:34	11.9V
SET OPTION		
Print of working process ticket		
<div style="border: 1px solid black; padding: 2px; display: inline-block;">Yes</div>		
Press UP/DOWN to modify the value ENTER to confirm, RESET to cancel		

Enables the printing at the end of the working process (Loading + Unloading Program)

Password 12 - Calibration

In this section, the calibration value of the local plant is set:

10/12/2014	17:53:04	11.9V
Load cell #1 CALIBRATING		
Define the cell constant value		
Cell constant 3200		
Press ENTER or RESET		

- 1 The system waits for the operator to confirm, by pressing ENTER. By pressing RESET, you can go back to the main configuration menu.
- 2 Enter the calibration value according to the loading cells connected to the system. Use the ↑ or ↓ keys or the value increase keys (do not display the icons on the screen)
- 3 Press ENTER to confirm the value;
- 4 A waiting message will show. After that, the microcomputer asks for confirmation of the modification which has just occurred. If no errors are there, you can confirm by pressing ENTER
- 5 In case of errors, you need to press RESET and start the cycle afresh



In case of a configuration with 4 independent channels, this procedure needs to be repeated for every single channel.

Password 23 - Calibration procedure with fixed values

In this section, the calibration value of the local plant is set from a list of pre-defined values for given loading cell types:

- 1 The system waits for the operator to confirm, by pressing ENTER, that he/she wants to proceed with calibration (by pressing RESET, you can go back to the main configuration menu).

- 2 Select the kind of loading cell connected to the system with the ↑ or ↓ keys.

The available kinds are:

- Cell BAA3-60
- Cell 63-axle (diameter 63 installed on the axle)
- Cell 63 (diameter 63 standard)
- Cell 54 (diameter 54 standard)
- Cell 42 (diameter 42 standard)
- Cell BAA3-80

10/12/2014	17:53:37	11.9V
Load cell #1 CALIBRATING		
Select the cell model and type ENTER		
BAA3-60 = 2780		
Press ENTER or RESET		

- 3 Press ENTER to confirm the selected cell;
- 4 A waiting message will show. In the meantime the system will recall the calibration value associated with the selected loading cell. After that, the microcomputer asks for confirmation of the modification which has just occurred. If no errors are there, you can confirm by pressing ENTER;
- 5 In case of errors, you need to press RESET and start the cycle afresh



In case of a configuration with 4 independent channels, this procedure needs to be repeated for every single channel.

Password 45 - Calibration with sample weight

This procedure allows to carry out the calibration of the weighing system on the basis of a known weight that must be appropriately weighed on the medium in which the weighing system is mounted.

Before to start, take care that the wagon is carefully emptied.

- 1 Confirm with the ENTER button to proceed with the calibration.

26/05/2016 17:29:56 12.1V
Load cell #1 CALIBRATING

Ready to calibration range?

Press ENTER or RESET

- 2 At this point, the top is completely empty wagon, confirm with the ENTER key.

26/05/2016 17:30:22 12.1V
Load cell #1 CALIBRATING

Set ZERO and press ENTER

Press ENTER or RESET

- 3 Wait for the scan job in progress.

26/05/2016 17:30:41 12.1V
Load cell #1 CALIBRATING

Waiting: acquisition in progress ...

Press ENTER or RESET

- 4 Load the material / weight known and enter the value of the reference weight placed in the wagon (in kg or pounds depending Unit currently set size) with ↑ or ↓ buttons and confirm with the ENTER key.

26/05/2016 17:31:03 12.2V
Load cell #1 CALIBRATING

ZERO value: 16935268

Set the calibration value: 3200

Press ENTER or RESET

- 5 Wait until the value of the NEW CALIBRATION is saved. Confirm with ENTER or cancel the calibration with the RESET button.

26/05/2016 17:31:45 12.2V
Load cell #1 CALIBRATING

ZERO value: 16935268
Set the calibration value: 3200
Waiting: acquisition in progress ...

Press ENTER or RESET

- 6 The message with the electrical signal appears. Confirm with the ENTER key or cancel the calibration with the RESET button.

26/05/2016 17:32:05 12.2V
Load cell #1 CALIBRATING

ZERO value: 16935268
Set the calibration value: 3200
Ratio value: 2.854594230652
Do you confirm the calibration?

Press ENTER or RESET

- 7 The "Calibration data stored in memory" message appears.

26/05/2016 17:32:25 12.1V

calibration data
stored in memory.

- 8 If the "CALIBRATED CHANNEL" message appears, means that the calibration procedure was successful.

26/05/2016 17:32:43 12.2V

CALIBRATED CHANNELS: 1/4

Password 46 – Inverse Calibration with sample weight

This procedure allows to carry out the calibration of the weighing system on the basis of a known weight that must be appropriately weighed on the medium in which the weighing system is mounted.

Load the weight known inside the wagon before turn on the indicator!

<p>1 Enter the value of the reference weight placed in the wagon (in kg or pounds depending Unit currently set size) with ↑ and ↓ buttons and confirm with the ENTER key.</p>	<div>26/05/2016 17:31:03 12.2V</div> <div>Load cell #1 CALIBRATING</div> <div>ZERO value: 16935268</div> <div>Set the calibration value: 3200</div> <div>Press ENTER or RESET</div>
<p>2 Confirm with the ENTER button to proceed with the calibration.</p>	<div>26/05/2016 17:29:56 12.1V</div> <div>Load cell #1 CALIBRATING</div> <div>Ready to calibration range?</div> <div>Press ENTER or RESET</div>
<p>3 Empty the wagon and press the ENTER button to start the calibration</p>	<div>26/05/2016 17:30:22 12.1V</div> <div>Load cell #1 CALIBRATING</div> <div>Set ZERO and press ENTER</div> <div>Press ENTER or RESET</div>
<p>4 Wait for the scan job in progress.</p>	<div>26/05/2016 17:30:41 12.1V</div> <div>Load cell #1 CALIBRATING</div> <div>Waiting: acquisition in progress ...</div> <div>Press ENTER or RESET</div>

- 5 The message with the electrical signal appears. Confirm with the ENTER key or cancel the calibration with the RESET button.

26/05/2016 17:32:05 12.2V
Load cell #1 CALIBRATING

ZERO value: 16935268
Set the calibration value: 3200

Ratio value: 2.854594230652
Do you confirm the calibration?

Press ENTER or RESET

- 6 The "Calibration data stored in memory" message appears.

26/05/2016 17:32:25 12.1V

calibration data
stored in memory.

- 7 If the "CALIBRATED CHANNEL" message means that the calibration procedure was successful.

26/05/2016 17:32:43 12.2V

CALIBRATED CHANNELS: 1/4

Password 67 - Modification of the weight in % (fine calibration)

In this section, a percentage calibration value is set to modify the calibration value of the local plant:

- 1 The system waits for the operator to confirm, by pressing ENTER you proceed with calibration (by pressing RESET you can go back to the main configuration menu)

10/12/2014 17:54:15 11.9V
Load cell #1 CALIBRATING

Define the adjustment factor (+/- 100%)
Adj. Factor: 0.64 %

Press ENTER or RESET

- 2 Enter the percentage calibration value that you want to add or to remove. Use the ↑ or ↓ keys or the value increase keys (do not display the icons on the screen)
- 3 Press ENTER to confirm the entered value;
- 4 A waiting message will show. After that, the microcomputer asks for confirmation of the modification which has just occurred. If no errors are there, you can confirm by pressing ENTER
- 5 In case of errors, you need to press RESET and start the cycle afresh



In case of a configuration with 4 independent channels, this procedure needs to be repeated for every single channel.

Password 166 – Scheduler Activation

- 1 Enabling of the scheduler function for the automatic start of the programs.
Select YES or NO with the ↑ or ↓ keys and confirm the choice with the Enter key.

10/12/2014	17:54:51	11.9V
SET OPTION		
Scheduler activation		
<input type="button" value="Yes"/>		
Press UP/DOWN to modify the value ENTER to confirm, RESET to cancel		

Password 387 – Cancellation Scheduler Memory

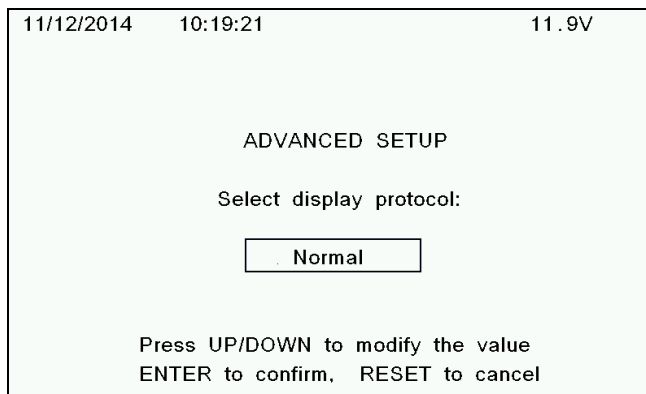
- 1 Cancellation of all the scheduler programs that are present in the internal memory of the DG8000.
With the Enter key the cancellation is carried out while with the Reset key cancellation is not carried out.

10/12/2014	17:55:21	11.9V
<div style="border: 1px solid black; padding: 10px; margin: 10px auto; width: 80%;"> Warning! Delete all Scheduler programs in internal memory? </div>		
ENTER to confirm, RESET to cancel		

Password 603 – How to Enable the XL Display

- 1 Selection of the communication protocol with the display accessories:
 Normal (to communicate with Weight Repeater),
 Advanced (to communicate with XL Display),
 Full (to communicate with Weight Repeater and XL Display)

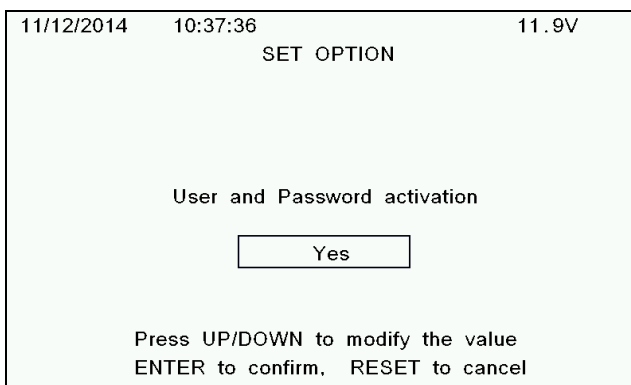
 Select the desired mode with the ↑ or ↓ keys and confirm the selection with the Enter key



Password 1066 – User and Password Activation

The DG8000 gives you the possibility to have a different access to all functions in order to trace the loading /unloading operations made by a specific user. This function has to be enabled/disabled specifically by the user following these easy steps:

- 1 Once entered the password, “*User and Password Activation*” will appear on the screen, select *Yes* by using the cursor and afterwards *Enter* to confirm.



- 2 Regarding the “*Active User list Auto update*” item:
 - a) Select *Yes*, if you prefer that the operators list is *UPDATED* with all the new operators present in the memory card
 - b) Select *No*, if you prefer that the operators list is *NOT UPDATED* with all the new operators present in the memory card.



The DG8000 gives you the possibility to *enable/ disable* the function “*Operators Management*”. The creation of the OPERATORS is possible only by DTM software.

- 3 Once the operators have been created, they will be transferred when the user transfers the recipes and the unloading programs to the memory card (for more information, see the Quick Users Guide or the help on line for the DTM). After connecting the reprogrammed memory card, the DG8000 proposes this message:
- a) Pressing *ENTER*, the DG8000 will copy all the details of the operators inside the Internal memory of the indicator
 - b) Pressing *RESET*, the DG8000 proposes the recipes and unloading programs that are present on the card.

New Programming in the card!
Overwrite local Program Data
And use Card (ENTER)
Or Only use connected Card (Reset?)

- 4 After that, the DG8000 will ask for the USERNAME. Choose it and confirm with *ENTER*.

17/12/2014 14:14:08 11.5V




Set User:

- 1 David
- 2 Kyle
- 3 Brain

- 5 Insert the *PASSWORD* and then press *ENTER*.

17/12/2014 14:14:29 11.6V

Set Password

  1  A↔a
Ø ç #

- 6 If the user types in the wrong password, the DG8000 proposes the following message.



- 7 After inserting the Username and password, the DG8000 proposes a "Welcome Message":

Once the welcome message has been visualized:


- a) The DG8000 proposes to the User only the recipes and the unloading programs that are related to the specific operator or to an undefined operator.
- b) All executions that are made by the operator will be related to this specific operator that is logged on to the DG8000.



Password 1289 – Editing of GPRS connection mode (you can enter only if password 1290 is enable)

- Using the ↑ and ↓ keys, select the desired connection mode:

DAILY: The synchronization is made daily.

MANUAL: The synchronization is made manually by pressing  from total weight.

AUTOMATIC: The synchronization is made automatically.

DISABLED: The synchronization is disabled.


SCHED. TIME: The synchronization is made daily at a scheduled time.

ENDBATCH: The synchronization is made at the end of a program.

Press ENTER to confirm or RESET to cancel and go back to the main configuration menu.

13/12/2018	10:25:23	12.0V
Gprs Connection Mode		
Connection mode	<input type="text" value="DAILY"/>	
ENTER to confirm, RESET to cancel		



The key  in the total weight screen, allows the manual synchronization even if you have planned a programming in the password 1289.

Password 1290 – Activation of GPRS communication

- Using the ↑ and ↓ keys, select “YES” to set enable the connection with the GPRS or “NO” to disable it.

Press ENTER to confirm or RESET to cancel and return to the main configuration menu.

13/12/2018	10:33:35	12.0V
SET OPTION		
GPRS Communicat. Enabled		
<input type="text" value="Yes"/>		
Press UP/DOWN to modify the value ENTER to confirm, RESET to cancel		

Password 1999 – Remote display with simple protocol

- Selection of the communication protocol for the Motor Control Box:
Yes (default value),
No (to communicate with a Motor Control Box directly connected by cable to the DG8000).

17/12/2014	14:38:09	11.5V
SET OPTION		
Remote display with simple protocol		
<input type="text" value="Yes"/>		
Press UP/DOWN to modify the value ENTER to confirm, RESET to cancel		

SETTING OF CUSTOMER CODE

The DG8000 is able to show the description of the customer and the association Customer/Recipes (or Unloading program) so that it allows the operator to see only the Recipes (or Unloading program) related to a specific customer during the executions. In order to select a specific customer and trace all the activities follow these simple steps:



- 1 Program the memory card by using the DTM, being sure to have saved, at least one customer (for more information see the Quick user Guide and the Help on line about the DTM)

- 2 Connect the memory card to the DG8000

- 3 When the DG8000 shows the message;

New Programming in the card!
Overwrite local Program Data
And use Card (ENTER)
Or Only use connected Card (Reset?)

- 4
 - a) Press *ENTER* and the indicator will copy the customer information (together with the recipes, unloading programs, and the operator information) inside the internal memory so that the customers' information will also be available without the card being connected.
 - b) By pressing *RESET* the indicator will not copy the customer information inside the internal memory so the customers' information will be available only with the card connected.

- 5 At this point, when the DG8000 is in TOTAL WEIGHT, press the  key that is in the second page, and then press on the  key to enter in the *CUSTOMER CODE* section.

17/12/2014	14:34:24	11.5V
CUSTOMER CODE		
0	All Customers	
1	Customer ID	
2	Customer ID	
3	Customer ID	
4	Customer ID	
5	Customer ID	
6	Customer ID	
7	Customer ID	
8	Customer ID	
9	Customer ID	

- 6 Moving the cursor with the ↑ or ↓ keys, select the desired customer and press ENTER

The DG8000 returns in TOTAL WEIGHT and it visualizes, as a reminder, the customer that has been previously selected.



- 7 At this point:

- a) The indicator proposes only the recipes and the unloading programs related to this specific customer or to "All Customers".
- b) All executions made on the DG8000 will be related to this specific customer. This information appears before the beginning of each recipe execution, unloading program.



While the system is running, at top of the display you will always see date, time, internal temperature of the power unit and supply voltage.

When you turn on the power unit during the initialization phase you can see the software version at the bottom of the display.

USE OF THE DATA TRANSFER (MEMORY CARD)



Before to perform any operations of data transfer, it is necessary connect the memory card to the indicator and format it.

DG8000 allows to program the Recipes or Unloading programs in the following ways:

- a) MEMORY CARD CONNECTED (DG8000 shows the message “Data Transfer INSERTED”)
- b) MEMORY CARD NOT CONNECTED



Like shown in the CONNECTIONS SCHEME section, the universal box uses a data transfer card, and the slim box uses a USB key. The two devices work exactly the same.

- 1 If the base parameter number 89 Data Transfer Enabled is set to YES the recipes will be read directly by the memory card and subsequently the executions will be memorized on the card.



If this parameter is set to YES when the indicator is turned on, without the memory card connected the message “DT IGNORED” will appear; push the ENTER key to continue.

On the contrary if the indicator is turned on with the memory card connected the message “DT INSERTED” will appear.

- 2 If the base parameter Data Transfer Enabled is set to NO the Indicator will work without the card, so not one execution will be saved on the card.

- 3 Every time the memory card is reprogrammed by the DTM, and then connected to the Indicator the DG8000 will ask to the user "OVERWRITE LOCAL PROGRAM DATA AND USE CARD OR ONLY USE CONNECTED CARD?":

If select YES: all the programs (Recipes/Unloading) currently on the indicator will be substituted by the new ones saved on the card (the previous program will be deleted).

If select NO: the programs (Recipes/Unloading program) currently on the DG8000 will not be cancelled.

New Programmation in the card!
Overwrite local Program Data
And use Card (ENTER)
Or Only use connected Card (Reset?)

- 4 Before the execution of a batch the system checks if there is enough space on the memory card.
- If the memory card is full, the insufficient space message appears. It is necessary to download data on the DTM software.

Warning! Execution memory size
less then the lower limit!
Type ENTER to continue



When the operator connects/disconnects the card, the Indicator Power always has to be OFF!

INITIAL SETTING





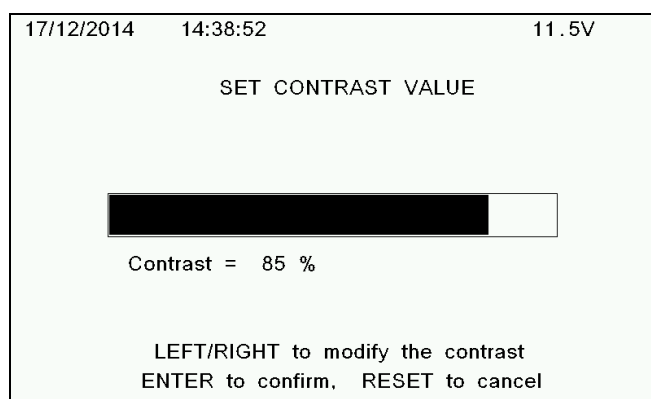
It is advisable to turn on the power unit and wait 10/15 minutes before you start work in order to eliminate interference on weight due to initial temperature jumps of electronic components.

Before you start work with DG80000 it is advisable to set the following settings.

DISPLAY CONTRAST

- 1 If when you turn on the display you do not see anything there may be a problem in the setting of the contrast: So you should turn off the power unit and turn it on again keeping both keys ↑ and ↓ pressed. The system will set a default contrast value.

- 2 If you want to adjust the contrast manually, wait for the indicator to go into TOTAL WEIGHT. On the second page open the menu  and select the key .





- 3 Set the desired value by pressing the ↑ or ↓ keys

- 4 Press ENTER to confirm setting

- 5 If you want to quit without saving the setting press the RESET key.

SETTING DATE AND TIME

- 1 Wait for the indicator to go into TOTAL WEIGHT. On the second page open the menu  and then select the key  .

17/12/2014	14:39:13	11.5V
SET DATE AND TIME		
17 / 12 / 2014 - 14 : 39 : 12		
Wednesday 17 December 2014		
RIGHT/LEFT to move ENTER to confirm UP/DOWN to modify RESET to cancel		

-
- 2 Use the ↑ or ↓ keys to modify values
 - 3 Use the → and ← keys to move from one position to the other
 - 4 Press ENTER to confirm setting
 - 5 If you want to quit without saving the setting press the RESET key.

USE OF THE MICROCOMPUTER


MANUAL WEIGHING

Turning on the microcomputer



- 1 Turn the microcomputer on with the ON / OFF button.
- 2 Wait for the system to initialize until the screen with the weight appears.




Calibration (zero set the system)

- 1 Press the  key for 3 seconds in order to calibrate the system.
- 2 Check that weight is "0" +/- 1



Partial / total weighing (net /gross)

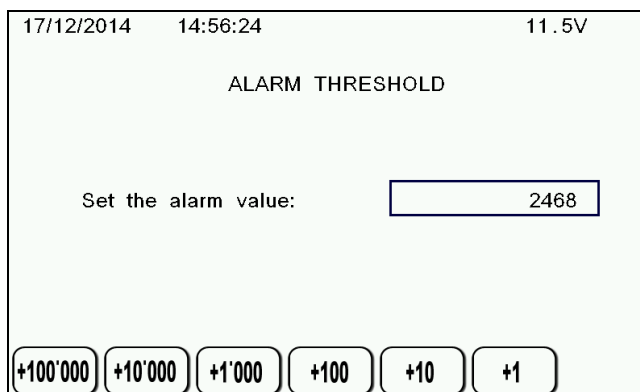
- 1 The system allows you to make successive partial weighings:
After calibrating the system, enter in Partial weighing menu . When you complete each partial weighing press the  key. Every time the display will show the weight at "0" in order to have a more precise indication of what you are loading (net weight).



- 2 Once you have made all partial weighings if you press the  key on the display the loaded total weight (gross weight) will appear

Weighings with alarm (net weight with alarm)

- 1 After calibrating the system, enter the partial weighing menu . then press the  key in order to enter into the alarm threshold set screen



- 2 Use the ↑ or ↓ keys or the quick increment keys in order to set the desired alarm value. Press RESET to return to the value 0.
- 3 Press ENTER to confirm setting. If you want to quit without saving the setting press the RESET key.

- 4 In any case the system returns to the total weight screen.



- 5 Once you have set the alarm value:

If you press the **PARTIAL** key the system will turn into partial weighing mode and at the bottom of the display you will see the set alarm threshold value.

Load the weight, when you reach the set % threshold value (see parameters section), the acoustic alarm will emit an intermittent sound which will become continuous when you reach the weight set as threshold.




The acoustic alarm will ring for all the set alarm time (see parameters section) then the system will automatically go back to the total weighing mode.



The weighings with alarm can be made both in loading and in unloading, the system will automatically understand the running mode.

PROGRAMMING FROM THE INDICATOR

NOTE: To activate the following functions, it is necessary to set the Data Transfer Enabled (basic parameter number 89) to "No".


From TOTAL WEIGHT mode, press the keys in second page  (Recipes) /  (Unloading Programs) /  in order to enter in the various programming mode described below.

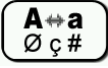


How to use the edit function

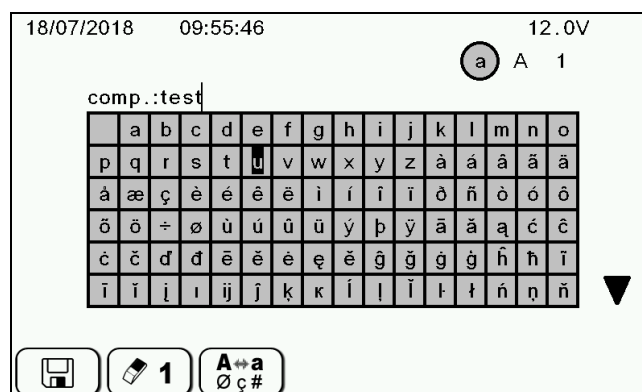
(refer this section every time you have to enter/modify a text part)

Move through the keyboard by using the ↓ ↑ and → ← keys.

The  key permits to erase the character to the right of the cursor.

The  key is used to change the keyboard from letters, number and special characters.

Save by pressing on . Press on RESET to exit without saving.



Recipes

- 1 From the programming main screen, enter the edit recipe mode by pressing



the . A list of the recipes identified by their number and name will appear.







NOTE: It is possible to create a new recipe by selecting a free space in the grill using the key ↓ ↑ and → ←.

28/11/2018 12:29:18 12.1V

R.#1 : Robot 1 Mrch 12

Info: 3 comp. 135 cows 6696 kg

01	08	17	25	33	41	49	57	65	73	81	89	97
02	10	16	26	34	42	50	58	66	74	82	90	98
03	11	19	27	35	43	51	59	67	75	83	91	99
04	12	20	28	36	44	52	60	68	76	84	92	100
05	13	21	29	37	45	53	61	69	77	85	93	
06	14	22	30	38	46	54	62	70	78	86	94	
07	15	23	31	39	47	55	63	71	79	87	95	
08	16	24	32	40	48	56	64	72	80	88	96	

 1 1 2 3



If you program the Recipe with the Memory card connected and Base Parameter "DATA TRANSFER ENABLED" set to "YES" the indicator will show all the Recipes that are present inside the memory card.

In this case, the Recipes and all the eventual modifications, will be available only with the memory card connected.

If you program the Recipe without the Memory card connected and Base Parameter "DATA TRANSFER ENABLED" set to "NO" the indicator will show all the Recipes that are present inside the internal indicator memory.

In this case, the Recipes and all the eventual modifications will be available only without the memory card;


Each Recipe modified or created by the user on the DG8000 can be properly acquired by the DTM;

Press then press ENTER for 1 second to delete the selected recipe.

Press then press ENTER for 6 seconds, to delete all active recipes.

Press to print the list of active recipes with name, number of components, and set total weight.

If you press inside of the programming section, you can have the print of the selected recipe.

Press the button  to associate an Unloading Program with the Recipe selected. In this way, the Unloading Program is run automatically at the end of the completion of the Recipe.

Scroll through the Unloading Programs using the keys ↓ and ↑ and select the desired one with the ENTER key.

The top right screen shows the name of the Unloading Program associated. If there is no Unloading Program associated, no data will be displayed.



19/10/2016		11:02:00		12.1V 2G	
R.#1 : Test 1					
Info:		1	comp.	40 cows	400 kg
01	09	1	S_Totali	89	97
02	10	2	S_Capi	90	98
03	11	3	S_Perc	91	99
04	12	4	Empty	92	100
05	13	5	Empty	93	
06	14	6	Empty	94	
07	15	7	Empty	95	
08	16	8	Empty	96	
		9	Empty		
		10	Empty		


28/11/2018 12:29:18 12.1V


R.#1 : Robot 1 Mrch 12


Info: 3 comp. 135 cows 6696 kg


01	08	17	25	33	41	49	57	65	73	81	89	97
02	10	16	26	34	42	50	58	66	74	82	90	98
03	11	19	27	35	43	51	59	67	75	83	91	99
04	12	20	28	36	44	52	60	68	76	84	92	100
05	13	21	29	37	45	53	61	69	77	85	93	
06	14	22	30	38	46	54	62	70	78	86	94	
07	15	23	31	39	47	55	63	71	79	87	95	
08	16	24	32	40	48	56	64	72	80	88	96	


 1

 1 2 3








Press the button  to cancel the association of the Unloading Program with the Recipe. When you are prompted "Cancel Association?", press ENTER to confirm or RESET to go back.


19/10/2016	11:02:58	12.1V 2G
<div> Delete Association? ENTER to confirm, RESET to cancel </div>		













The association of the Unloading Program with the Recipe is only possible if the Basic parameter "DT ENABLED" is set to "NO". If the parameter is set to "YES", the function is not available because it is associated with the software component.


2 View and edit the detail of a selected

recipe by pressing on  again.


The  key permits to edit the name of a recipe. Refer to the section **How to use the edit text function** for the details of editing.

18/07/2018		09:58:43		12.0V					
#1 : High Production									
Info:		3 comp.	22.00 kg	Mix time					
1:	Corn Silage		15.00 kg	30 s					
2:	Alfalfa Hay		5.00 kg	0 s					
3:	Concentrate		2.00 kg	120 s					
4:	test								
5:	test								
6:	test								
Total: 22 kg Mix time: 10 min.									
									




The  key is used to add components to a recipe.



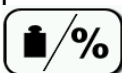
Use the  function to set/ modify the weight of a selected component.

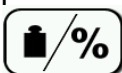


The  key permits to set/ modify the mix time of a selected component of the recipe.




Press on the  key to edit the mix time of the entire recipe.

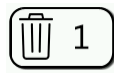


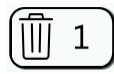
On the second page, the  allows choosing whether to manage the components in the Kg/pounds mode or in the % mode.

At the end of the programming of components in percentage, set a




reference weight, then press  to set the total weight per head per day.




The key  allows to delete the selected recipe.



By pressing the print key , it is possible to print the data that appears on the screen.



Use the  key to return to the edit recipe mode and save your modifications. Press RESET and ENTER to return to edit recipe mode without saving any modifications done.

18/07/2018	09:59:35	12.0V
#1 : High Production		
Info:	2 comp.	7.00 kg Mix time
1:	Corn Silage	11.00
2:	Alfalfa Hay	5.00 kg 0 s
3:	Concentrate	2.00 kg 120 s
4:	test	
5:	test	
6:	test	
Total: 7 kg Mix time: 10 min.		
<div> <div>+100</div> <div>+10</div> <div>+1</div> <div>+0,1</div> <div>+0,01</div> </div>		

18/07/2018	10:00:17	12.0V
#1 : High Production		
Info:	3 comp.	18.00 kg Mix time
1:	Corn Silage	11.00 kg 40 s
2:	Alfalfa Hay	5.00 kg 0 s
3:	Concentrate	2.00 kg 120 s
4:	test	
5:	test	
6:	test	
Total: 18 kg Mix time: 10 min.		
<div> <div>+100'000</div> <div>+10'000</div> <div>+1'000</div> <div>+100</div> <div>+10</div> <div>+1</div> </div>		

NOTE: Once the programming of components has completed, the value in the upper right and the value in the lower left of the screen show the total weight that cows should receive during the day.

Unloading programs

- From the programming main screen, enter the edit unloading programs by




pressing the  key. A list of unloading programs will appear.

03/12/2018 13:48:21 12.2V


#1 : prog.1

Info: 2 points 14873 kg


01	09	17	25	33	41	49	57	65	73	81	89	97
02	10	18	26	34	42	50	58	66	74	82	90	98
03	11	19	27	35	43	51	59	67	75	83	91	99
04	12	20	28	36	44	52	60	68	76	84	92	100
05	13	21	29	37	45	53	61	69	77	85	93	
06	14	22	30	38	46	54	62	70	78	86	94	
07	15	23	31	39	47	55	63	71	79	87	95	
08	16	24	32	40	48	56	64	72	80	88	96	



1



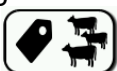
1
2 3










- View and edit the detail of a selected unloading program by pressing on


 again.

NOTA: It is possible to create a new program by selecting a free space in the grill.


The  key permits to edit the name of a program. Refer to the section **How to use the edit text function** for the details of editing.

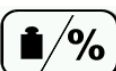
28/11/2018 13:11:24		12.2V	
#1 : Unload 1			
Info:	2	points	cows weight Adj.
1:	Pen 1		500 kg 100.00
2:	Pen 2		400 kg 100.00
3:			
4:			
5:			
6:			
Total: 900 kg			




The  key is used to add the unloading points to the program.

Use the  function to set/ modify the weight of a selected animal.


Use the  function to set / modify the animals number in the current unloading program.


On the second page, the key  allows choosing whether to manage the unloading points in the Kg/pounds mode or in the % mode.

At the end of the programming of unloading points in percentage, set a



reference weight, then press  to set the total weight per head per day.

The key  allows to delete the selected unloading programs.

By pressing the print key , it is possible to print the data that appears on the screen.

Use the  key to return to the edit mode and save your modifications. Press RESET and ENTER to return to edit mode without saving any modifications done.

Components and unloading points

- 1 Enter the components editing mode by pressing the  key or unloading points by pressing the  key.



EDIT COMPONENTS:

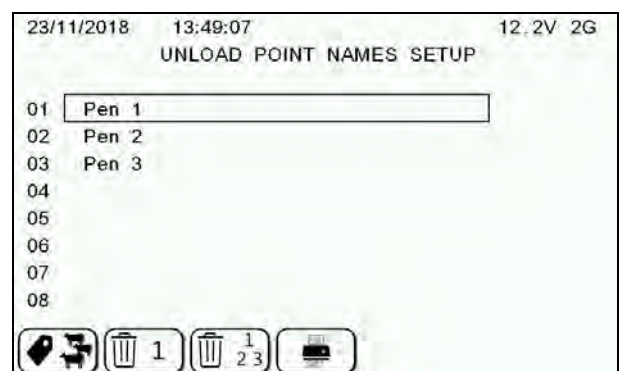
A list of components with their number and name will appear




Press  to edit the name of components.

EDIT UNLOADING POINTS:

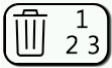
A list of unloading points with their number and name will appear




Press  to edit the name of unloading points.

Refer to the section **How to use the edit text function** for the details of editing.


Press  to delete the selected component/unloading point.

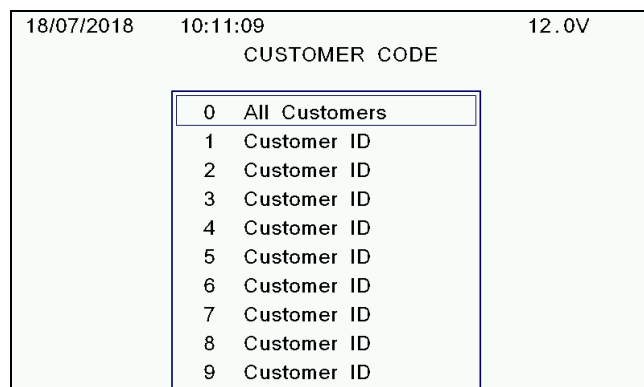
Press  to delete all the components / unloading points.

Press  to print the data visualized on the screen.

Customer

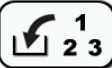
- 1 From the programming main screen, use

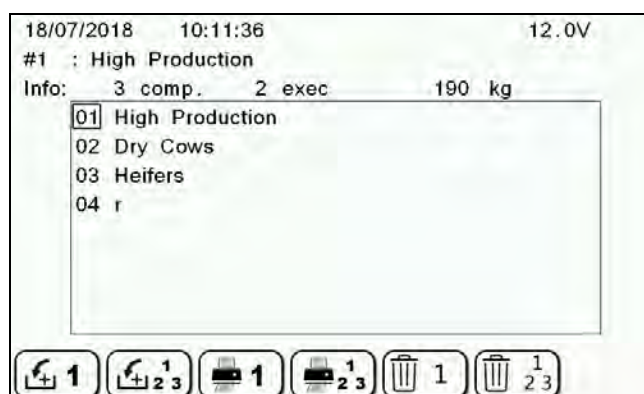
the  key to select the desired customer.



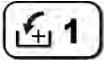
Recipes management

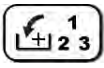
- 1 From the programming main screen, use

the  key to enter the management of amount data of the components mode, either for individual recipes or for all recipes.




In this screen at the top you can find information about the recipe: name, number of programmed components, number of executions carried out and actual loaded total during all executions.

- 2 Press the  key to have all the information about the total of individual components loaded during all executions of the selected recipe.

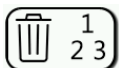
- 3 Press the  key to have all the information about the total of the individual components loaded during all executions of all recipes.

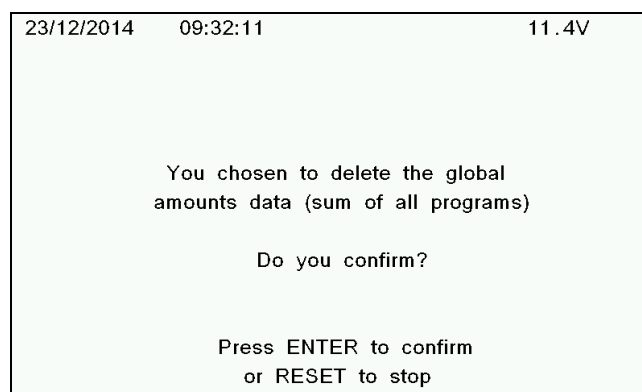
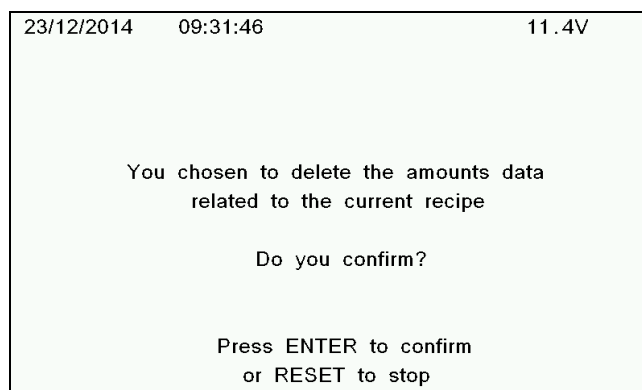
- 4 You can print the amounts data for individual recipe, by pressing the  key.

- 5 Print the amounts for all recipes pressing .

- 6 The two amounts data sections are independent from one another, and can be deleted (zeroed) regardless of one

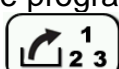
another: press  in order to delete the amounts data related to the selected

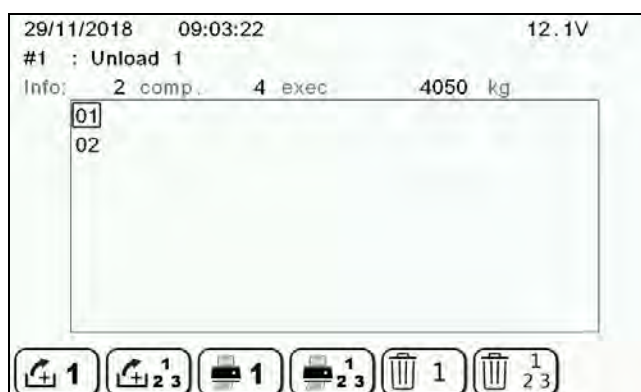
recipe, press  in order to delete the amounts data related to all recipes. Press ENTER in order to confirm.



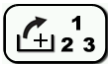
Due to such independence of the two sections from one another you can find amounts data of an individual recipes that are higher than the amounts data for the total of recipes.

Pens management



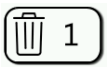

- 1 From the programming main screen, use the  key to enter the management of amount data of the components mode, either for individual recipes or for all recipes.




This screen provides you at the top with the information about the pen: name, number of programmed feeds, number of executions carried out and actual unloaded total during all executions.

- 2 If you press the  key you can have all the information about the unloaded total of each individual pen during all unloading executions.

18/07/2018		15:57:24	11.9V
<div> <div>Last date 00/00/ 0</div> <div>First date 00/00/ 0</div> </div>			
1	main	0	
2	small_pen	0	
3	No Pen		
4	No Pen		
5	No Pen		
6	No Pen		
7	No Pen		
8	No Pen		

- 3 By pressing  it is possible to print the data of single pen.
- 4 You can print the amounts data for each pen, pressing the  key.
- 5 By pressing  it is possible to delete the datas related to single pen.
- 6 Press  in order to delete the amounts data related to all pens.
- 7 In order to confirm deletion you must press the ENTER key for 10 seconds.

EXECUTION OF THE RECIPE (LOADING PROGRAM)

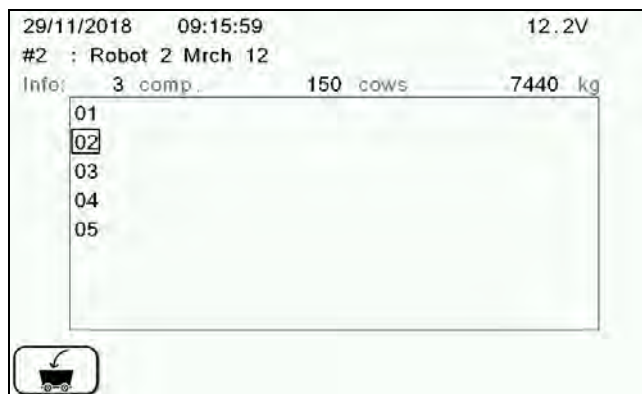
- 1 Press the  key to enter in the recipe execution mode. At this point there are two options.



Original DTM: decide to execute the Recipe as programmed originally by the DTM software or;

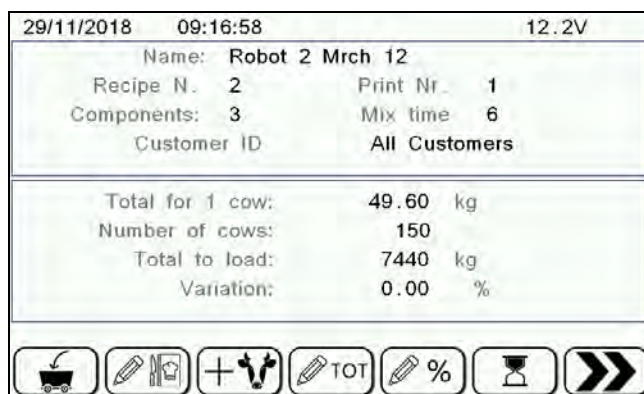
Last Scale modified: decide to execute the Recipe with the last modification made;

- 2 Select the Recipe you want to execute using the ↑ ↓ and → ← (on the display you will only see active programs).



- 3 Press  or ENTER to enter in the program.

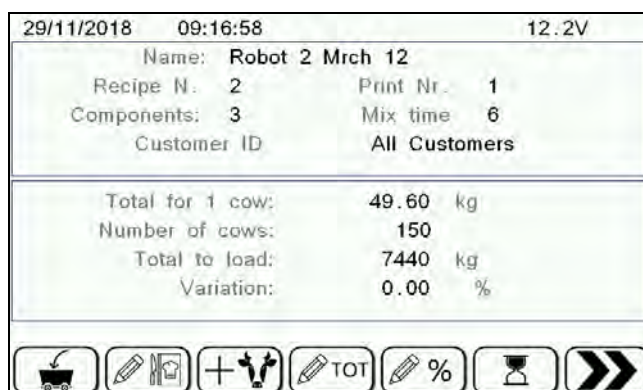
Recipe load












- 1 Check that the data on the display is correct.


Shown below the functions of the display keys.










- 2 Press the  key to enter in the recipe editing mode.

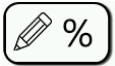











- 3 Press the  to edit the cows number of recipe, the system will automatically update the total value to be loaded.


29/11/2018 09:16:58		12.2V
Name: Robot 2 Mrch 12		
Recipe N.	2	Print Nr. 1
Components:	3	Mix time 6
Customer ID	All Customers	
Total for 1 cow: 49.60 kg		
Number of cows:	150	
Total to load:	7440 kg	
Variation:	0.00 %	
        		










- 4 Press the  key to change the total weight to be loaded.
Change the value using the \uparrow / \downarrow keys on the keypad or the display increment keys.
The system will automatically update the change in percentage of the change operated.

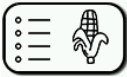
29/11/2018 09:16:58		12.2V
Name: Robot 2 Mrch 12		
Recipe N.	2	Print Nr. 1
Components:	3	Mix time 6
Customer ID	All Customers	
Total for 1 cow: 49.60 kg		
Number of cows:	150	
Total to load:	7440 kg	
Variation:	0.00 %	
        		

- 5 By pressing on the  key, you can edit the percentage change on the total loaded. The system will automatically update the total value to be loaded according to the changes made. This function allows you to not have to reprogram the recipe in those periods when the animal requires less or more food (summer, possible illness, etc.).


29/11/2018 09:16:58		12.2V
Name: Robot 2 Mrch 12		
Recipe N.	2	Print Nr. 1
Components:	3	Mix time 6
Customer ID	All Customers	
Total for 1 cow: 49.60 kg		
Number of cows:	150	
Total to load:	7440 kg	
Variation:	0.00 %	
        		

- 6 The  key allows you to set the mixing time that will start automatically at the end of the load phase execution. After pressing this key, select with \uparrow and \downarrow keys if you want to change Time mix or Rotations and then press ENTER. Use \uparrow and \downarrow or increment keys to change the value and press ENTER again to confirm.

29/11/2018 09:16:58		12.2V
Name: Robot 2 Mrch 12		
Recipe N.	2	Print Nr. 1
Components:	3	Mix time 6
Customer ID	All Customers	
Total for 1 cow: 49.60 kg		
Number of cows:	150	
Total to load:	7440 kg	
Variation:	0.00 %	
        		

- 7 On the second page, by pressing the  key, it appears a window showing the distribution (updated automatically in case of changes to the total load values) of the individual components of the recipe. Press ENTER or RESET to return to the batch scheduling.

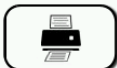
29/11/2018	10:00:21	12.2V
Name: Robot 2 Mrch 12		
Recipe N.	2	Print Nr. 1
Components:	3	Mix time 6
Customer ID		All Customers
N	Components	Weight ID
1	Haylage	2250 2
2	Premix	780 4
3	CornSilag	4410 5

- 8 On the second page, press the  key in order to manage the refused on the mixer previously charged and store (see section Refused Management). Press ENTER to confirm and return to the batch program. Press RESET to return to the batch program if not considering the refused value.

29/11/2018	10:01:06	12.2V
Name: Robot 2 Mrch 12		
Recipe N.	2	Print Nr. 1
Components:	3	Mix time 6
Customer ID		All Customers
Programmed Total: 7440 kg		
Refuse: 0 kg		
Refuse Current Date & Time		
22/11/2018 12:19:10		
Total to load: 7440 kg		
ENTER to confirm, RESET to cancel		




The use of the refused updates the total amount to be loaded and consequently the singular weights of each component are recalculated. This modification can be seen on the home screen of recipe load.

- 9 On the second page, press the  key in order to set the number of prints you want at the end of the execution of the load (the system will print automatically).

29/11/2018	10:02:59	12.2V
Name: Robot 2 Mrch 12		
Recipe N.	2	Print Nr. <input type="text" value="1"/>
Components:	3	Mix time 6
Customer ID		All Customers
Total for 1 cow: 49.60 kg		
Number of cows: 150		
Total to load: 7440 kg		
Variation: 0.00 %		
<input type="button" value="+100'000"/> <input type="button" value="+10'000"/> <input type="button" value="+1'000"/> <input type="button" value="+100"/> <input type="button" value="+10"/> <input type="button" value="+1"/>		

- 10 Use the  key to select the customer.

- 11 After checking and, if necessary, modified the values, press the  to enter and start the loading phase. The system will automatically place on the first component and will wait.



The screens, during the whole phase of the execution, will provide several pieces of useful information as shown below.



The left column shows the loading state of each component, the right column shows the loading state of the whole recipe.

At the bottom you can find the number and the name of the component and the value of the total loaded up to that moment. At the end of the program load, a screen will appear showing at the top you some information about the number of prints to be made and the end of the execution and the mixing time that will automatically start once the loading has been made and the name of the program.

1

By pressing the  or  it is possible to load the components without considering the order of programming in the recipe.

A "Save quantity?" window will appear, then press ENTER again. It is possible disable this function by setting the value of base parameter 15 "Manual Comp.Selection" equal to "Unload" or "None".


2




Some of the components (like premix) should be added to the batch in a very small quantity that is often not correctly recognized by the weighing system due to external impact (vibrations of the mixer wagon, etc.). To minimize this kind of error we have introduced handheld components. These components are weighed on the external accurate scale and then added to the mixer. During their loading the weight readings of the mixer will not change. After the component loading microcomputer operator has to press ENTER key twice to confirm the operation and advance to the next component.

The handheld components will have the line "HH-" added before its name.



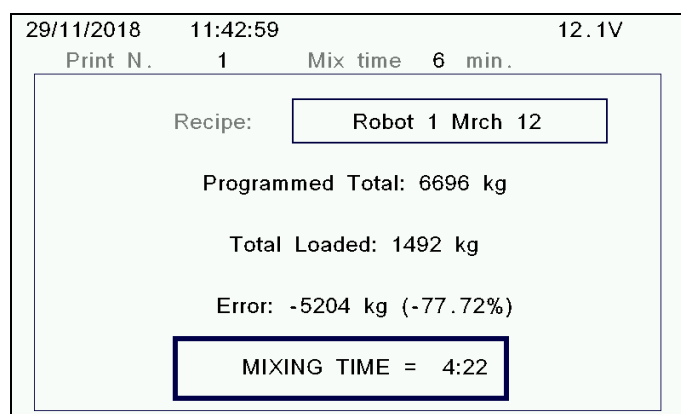
- 3 If you press the  key you can suspend the program during the movements of the wagon so that the soil conditions and mechanical tensions do not alter the weight, on the display you will see the "program suspended" message.
- Press the same key to re-start the program and resume working, the system will show the weight the was on the display before suspension.



- 4 If you press the  key you can recall the programmed value of a component. This function is used in case of mistakes by the operator or in case the program is not suspended during the movements and a variation in the weight of the component to be loaded occurs. You must keep it pressed for 2 seconds (as indicated on screen).


End of the execution

When the execution is completed, the message "Execution saved" appears and then the system shows the programmed total to be loaded, the total actually loaded, the error in Kg and in percentage obtained and will start the mixing time if programmed.



It is possible stop the mixing time by pressing the RESET key.
At the end of the load the system will be positioned on the program for this group.

EXECUTION OF THE UNLOADING PROGRAM

- 1 Press the  key to enter in the unloading program execution mode. At this point there are two options.



Original DTM: decide to execute the program as programmed originally by the DTM software or;

Last Scale modified: decide to execute the program with the last modification made on this program;

- 2 Select the unloading program you want to execute using the ↑ ↓ and → ← keys (on the display you will only see active programs).



- 3 Press the  key or ENTER to enter the chosen program.



- 4 Check that the data on the display is correct the name of program and the start time cannot be modify in this section).


Shown below the functions of the display keys.

- 5 Press  to visualize the unloading points of program.

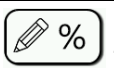
30/11/2018	12:27:31	12.1V
Program N.	1 - prog.1	
Points	2	Print Nr. 1
Customer ID	All Customers	
Suggested weight to unl.:	Tot loaded	
Program prepared by cows		
1 Point-1	1594	kg
2 Point-3	11	kg
Variation:	-89.21	%
Number of cows:	43	

- 6 Press  to modify the weight of animals.

03/12/2018	08:11:00	12.2V
Program N.	1 - prog.1	
447.64		
Variation:	-89.81	%
Number of cows:	43	
<div> <div>+100</div> <div>+10</div> <div>+1</div> <div>+0,1</div> <div>+0,01</div> </div>		

- 7 Press the  key to change the total weight to be loaded. Change the value using the \uparrow / \downarrow keys on the keypad or the display increment keys. The system will automatically update the change in percentage of the change operated.


03/12/2018	08:13:27	12.1V
Program N.	1 - prog.1	
Points	2	Print Nr. 1
Customer ID	All Customers	
Suggested weight to unl.:	Tot loaded	
Program prepared by cows		
Programmed Total:	14873	kg
Total to unload:	1520	kg
Variation:	-89.77	%
Number of cows:	43	
<div> <div>+100'000</div> <div>+10'000</div> <div>+1'000</div> <div>+100</div> <div>+10</div> <div>+1</div> </div>		


- 8 Press  to enter a percentage change on the total unloaded, the system will automatically update the total value to be loaded according to the changes made.

03/12/2018	08:14:36	12.2V
Program N.	1 - prog.1	
Points	2	Print Nr. 1
Customer ID	All Customers	
Suggested weight to unl.:	Tot loaded	
Program prepared by cows		
Programmed Total:	14873	kg
Total to unload:	1520	kg
Variation:	-89.77	%
Number of cows:	43	
<div> <div>+100</div> <div>+10</div> <div>+1</div> <div>+0,1</div> <div>+0,01</div> </div>		

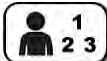


This mode of execution requires first-rate accuracy of unloading otherwise you may run out of materials before reaching the last unloading point, so when you use this function you should set a negative percentage variation in order to reduce the degree of accuracy to be kept.


- 9 Press the  key in order to set the weight actually loaded on the wagon. The system will automatically update the total weight to be unloaded with the value actually loaded at the moment.

- 10 Press the  key in order to set the number of prints you want to have at the end of the unloading program (the system will print automatically).

03/12/2018	08:18:24	12.1V
Program N.	1 - prog.1	
Points	2	Print Nr. <input type="text" value="1"/>
Customer ID	All Customers	
Suggested weight to unl.:	Tot loaded	
Program prepared by cows		
Programmed Total:	14873	kg
Total to unload:	1526	kg
Variation:	-89.73	%
Number of cows:	43	
<input type="button" value="+100'000"/> <input type="button" value="+10'000"/> <input type="button" value="+1'000"/> <input type="button" value="+100"/> <input type="button" value="+10"/> <input type="button" value="+1"/>		

- 11 Press  to select the desired customer associating him to this unloading execution.
Press ENTER to confirm the choice.

18/07/2018	10:11:09	12.0V
CUSTOMER CODE		
0	All Customers	
1	Customer ID	
2	Customer ID	
3	Customer ID	
4	Customer ID	
5	Customer ID	
6	Customer ID	
7	Customer ID	
8	Customer ID	
9	Customer ID	

- 12 After checking and, if necessary, modified the values, press the  key to enter and start the execution. The system will automatically place on the first unloading point.



The screens, during the whole phase of the execution, will provide several pieces of useful information as shown below.





At the top you can find the name of unloading program.


The left column shows the state of unloading on the feeding of the relative group, the right column shows the unloading state of the whole program.

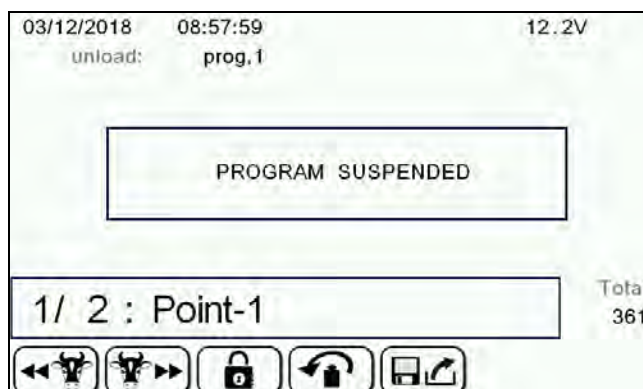
At the bottom you can find the number and the name of the group, the value of the total unloaded up to that moment.

Choice of the group

- 1 By pressing the   keys you can select which group to discharge. You may also disable this function by setting the value of base parameter 15 "Manual Comp.Selection" equal to "Unload" or "None"
- 2 If you do not want to discharge a pen, press ENTER. The "Save Quantity?" dialog box appears and then press ENTER again.


Block function

- 1 If you press the  key you can suspend the program during the movements of the wagon so that the soil conditions and mechanical tensions do not alter the weight, on the display you will see the "program suspended" message.

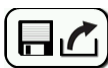


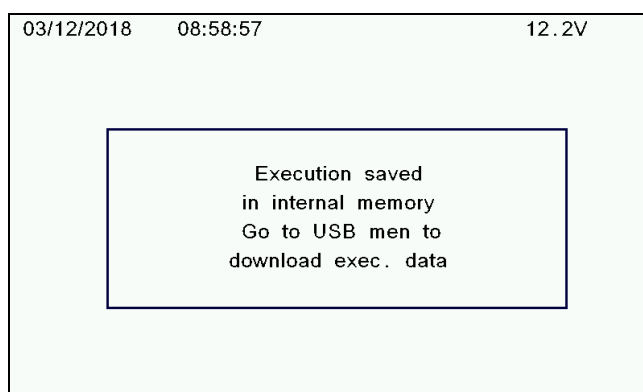
- 2 Press the same key to re-start the program and resume working, the system will show the weight that was on the display before suspension.

Restart function

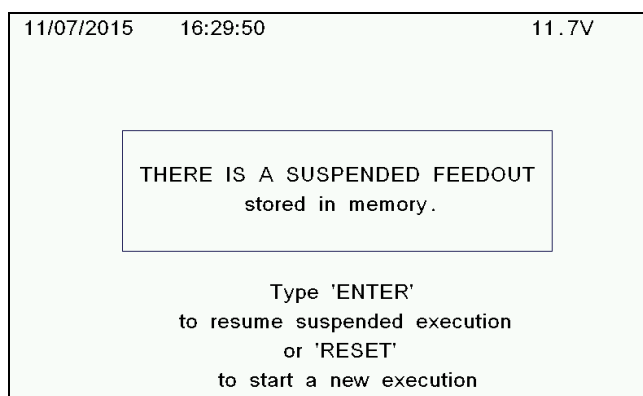
- 1 If you press the  key you can recall the programmed value of a Component. This function is used in case of mistakes by the operator or in case the program is not suspended during the movements and a variation in the weight of the Component to be loaded occurs. You must keep it pressed for 2 seconds (as indicated on screen).

Storage of the execution function

- 1 If you press the  key you can store the execution up to that moment and resume it later. This function can be used, for example, in case you must make manual weighings during the execution of a Recipe, in case you must change some parameters during the execution of the Recipe, etc.

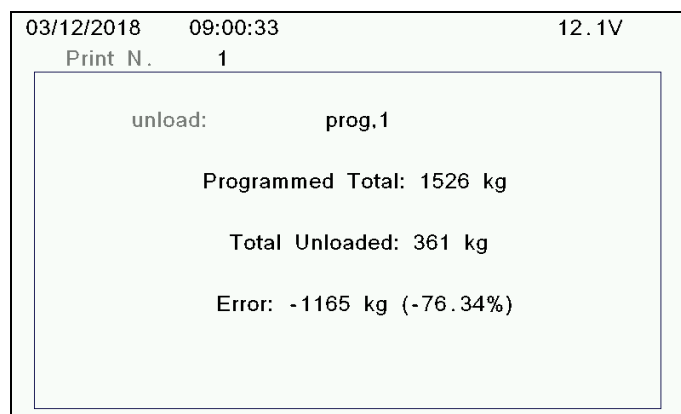


- 2 The state of the execution will be stored in memory and when the operator resumes the execution of a Recipe the system will show the following message and you must choose if you want to complete the stored Recipe or start a new execution.



End of the execution

At the end of the execution, the system shows the programmed total to be unloaded, the total actually unloaded, the error in Kgs and in percentage obtained.




SUSPENDED EXECUTION




If during loading or unloading phase the power of the microcomputer suddenly was turned off the execution is suspended and you may resume it.



If there was suspended program in the memory, enter the recipe selection menu

pressing the  key and then select the name of the interrupted recipe. It is possible to see the message about the suspended program. Press ENTER to resume load program or RESET to start a new one.

If there was suspended unload in the memory, enter the unload selection menu

pressing the  key and then select the name of the interrupted unload. It is possible to see the message about the suspended program. Press ENTER to resume unload program or RESET to start a new one.

REFUSED MANAGEMENT



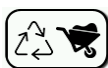
The refused management allows the user to associate, to a particular pen, selected by a list, the weight of the feed refused by the animals from a previous recipe. Using this new feature, it is possible to load the refused feed and then insert it into a new recipe.

How to save the refused weight related to a group

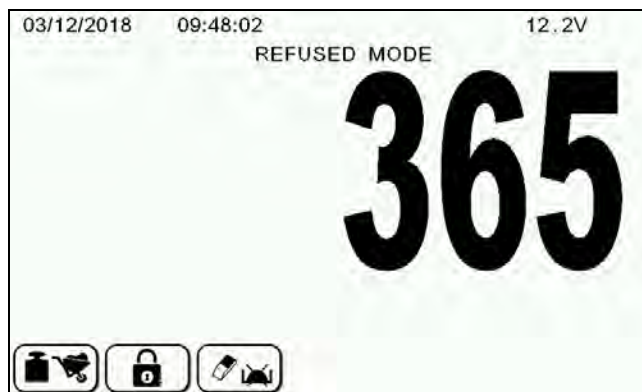
- 1 To enter refused weight mode, from the total weight screen open the submenu of partial weighing




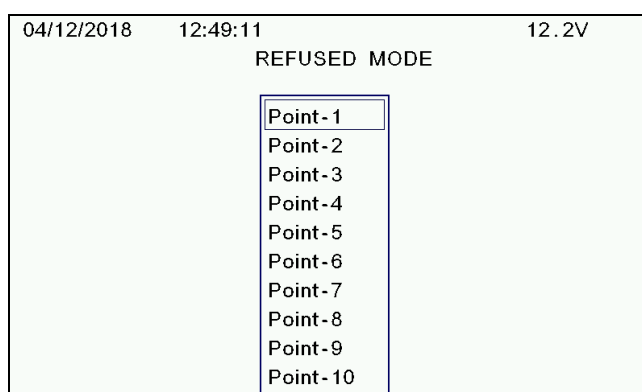
so select



- 2 Load the refused on the feed mixer.



- 3 Press  and select the group using ↑ and ↓ keys.



- 4 Press ENTER to confirm the operation.


- 5 Once the previous steps have been carried out the message of execution saved will be visualized.

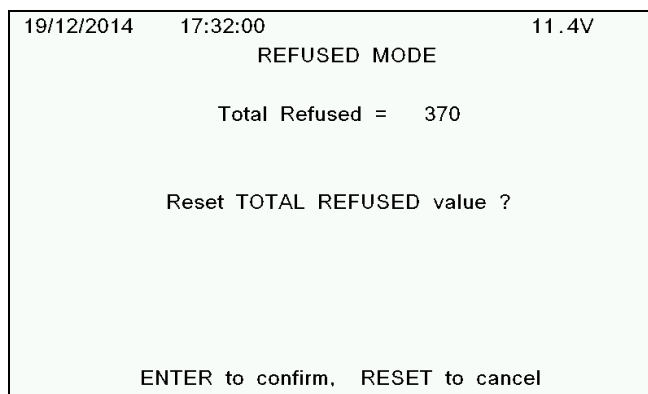
- 6 Repeat this operation for each unloading point that has a corresponding refused feed



The refused value will remain in the internal memory until it is cancelled manually with the following operation or until the loading of the recipe where the refused is to be used is concluded.

How to reset the refused weight

- 1 In the refused mode window , press the key .



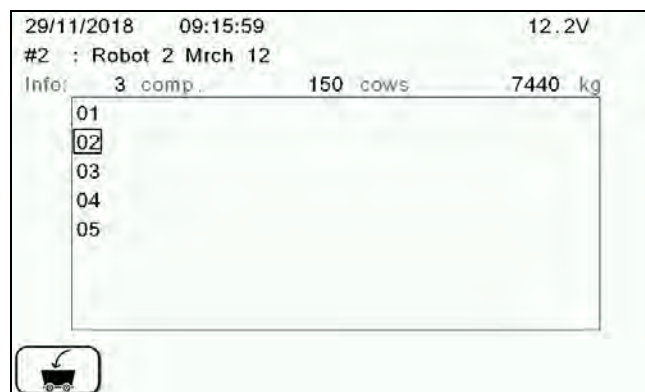
- 2 Press ENTER in order to reset the value stored in the Internal memory of the DG8000 or RESET in order to cancel the operation.

How to use the refused weight before the execution of the recipe










After loading the refused feed on the feed mixer you can select the recipe where the refused feed will be used.

- 1 Press  to enter in the recipe execution mode.



- 2 Select the recipe you want to execute using the ↑ or ↓ and → or ← keys (on the display you will only see active programs).

- 3 Press the  key or the ENTER key to enter the chosen program.

29/11/2018 09:16:58		12.2V
Name: Robot 2 Mrch 12		
Recipe N. 2	Print Nr. 1	
Components: 3	Mix time 6	
Customer ID	All Customers	
Total for 1 cow:		49.60 kg
Number of cows:		150
Total to load:		7440 kg
Variation:		0.00 %
      		

- 4 On the second page , press  to add the refused weight to the recipe.

- 5 At this point the DG8000 shows the quantity of refused feed that is actually stored in the internal memory.

29/11/2018 10:01:06		12.2V
Name: Robot 2 Mrch 12		
Recipe N. 2	Print Nr. 1	
Components: 3	Mix time 6	
Customer ID	All Customers	
Programmed Total:		7440 kg
Refuse:		365 kg
Refuse Current Date & Time		
22/11/2018	12:19:10	
Total to load:		7440 kg
ENTER to confirm, RESET to cancel		



Press ENTER in order to add the refused feed to this recipe. In this case, DG8000 updates the new quantity to load:

TOTAL LOAD = PROGRAMMED
TOTAL – REFUSED

Now, according to the new quantity to load, DG8000 automatically updates the new amount to load for each component.

Press RESET in order to not use the refused feed in this recipe.




If you decide to use the refused feed, DG8000 resets automatically the value of the Total Refused stored in the internal memory.

Auto link between an Unloading Program and a Recipe









This functionality allows the user to have the recalculation of the loading if the linked Unloading Program has been changed previously.

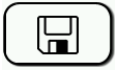
This functionality works if :

- The base parameter “ Load Update by Unload “ is set to “ YES “ (see the paragraph)
- The loading program and the Unloading Program has been linked together by the DTM).

- 1 Go inside one of the unloading program, pressing the button , and make a modification inside of it.

22/11/2018	13:13:52	12.2V
Program N.	1 - Unload 1	
Points	2	Print Nr. 0
Customer ID	All Customers	
Suggested weight to unl.:	Tot loaded	
Program prepared by totals		
Programmed Total:	900	kg
Total to unload:	1650	kg
Variation:	83.33	%

- 2 Pressing the  button to save the modification, the indicator will show a warning message and it will update the linked Recipe In terms of number of cows, total quantity and quantity for each ingredient.

06/10/2016	16:18:34	12.3V 3G
<p>The modifications on the Unload Program and to the linked Recipe will be saved!</p>		


- 3 Check the linked Recipe and verify that the Recipe and the Unloading Program have the same Total quantity and the same number of cows.

IMPORTANT NOTE: To use correctly this way of working, we suggest to have the base parameter 167 “Save Total Unload “ to NO.

DATA TRANSFER BY MODEM

- 1 First, to manage the synchronization and to transfer data between the indicator and the DTM software on your PC, the connection between the GPRS and the indicator must be enable.

From the configuration system, press

the  key to enter the setups protected by a password. Enter the password "1290" by using the quick incrementing keys and press ENTER.

By using the ↑ and ↓ keys, select YES to activate the function. After pressing ENTER, you need to turn OFF/ ON the indicator.









It is also necessary, if not done, to connect the indicator with the software by inserting the company code using the password "1203".

19/07/2018 15:41:35 11.9V

SYSTEM CONFIGURATION

1 - To display working data
2 - To set base parameters
3 - To request technical assistance
4 - To check in details HW modules
5 - To set/modify the strings
6 - Setup protected by password







Press RESET for 1 sec to exit

19/07/2018 15:42:11 11.9V

ADVANCED SETUP

Set the password:










19/07/2018 15:42:37 11.9V

SET OPTION

GPRS Communicat. Enabled

Press UP/DOWN to modify the value
ENTER to confirm, RESET to cancel

- 2 Two new functions will appear on the TOTAL WEIGHT mode. On the first page, you can find the  key, and on the second page the  key.



In the TOTAL WEIGHT mode, the WiFi synch. key  is not enable anymore.



For these two functions to be manageable, it is necessary to set the number 89 of the basic parameters (Data Transfer enabled) at "YES". This will occur the impossibility to

manage the programming function .

3

By pressing on the  key, you can find these two other functions:



and . The first one permits you to check the GPRS network information and the signal level of it.


20/07/2018	08:00:29	12.0V
Gprs Check		
HW Connection	OK	
ICCID Number	89314404000035531392	
Temperature	OK	
IMEI	356496042267096	
TagID	yyyyyyyyyyyyyy	
Press enter for Network Info		

20/07/2018	08:04:02	12.0V
Gprs Signal Level		
1) 2G vodafone IT	Signal Error	
2) 2G I TIM	10	
Press ENTER or RESET to exit		

The second one is used to initialize the connection with a network. This function needs to be done in order to permit the communication between the software and the indicator.

20/07/2018	08:05:52	12.0V
GPRS Init		
Search Completed Netw. Found:		
2G vodafone IT 2G I TIM		
ENTER to set default or RESET to exit		

4

By pressing on  the synchronization between the modem and the indicator can be done.



Synchronization after having sent data from the software

13/12/2018	17:26:41	12.1V
<div style="border: 1px solid black; padding: 5px; text-align: center;"> System Connected Please DO NOT switch off </div>		
Last Prog. Date: 17:20:04 23/07/2018 New Programs Received: Yes Executions Data Sent: No		
Press ENTER or RESET to continue		

Synchronization after having saved data in the internal memory of the indicator

13/12/2018	17:30:18	12.1V
<div style="border: 1px solid black; padding: 5px; text-align: center;"> System Connected Please DO NOT switch off </div>		
Last Prog. Date: 17:20:04 23/07/2018 New Programs Received: No Executions Data Sent: Yes		
Press ENTER or RESET to continue		



When receiving data, the internal memory of the indicator overwrites the data with the new one. When sending data, the indicator clear its internal memory.

SCHEDULER MANAGEMENT



DG8000, by means of the Scheduler, can start working processes in automatic on the basis of times associated to the relative programs. This way of work is commonly used on stationary applications for full automation of the feed preparation processes (for example, stationary mixer using the Motor Control Box).

The programming of the Scheduler, in other words the process start times related to each singular programs, can be made on the PC by means of the DTM and transferred afterwards to the indicator by means of the memory card. The scheduled time, or the mode of connection, can also be programmed directly on the indicator.





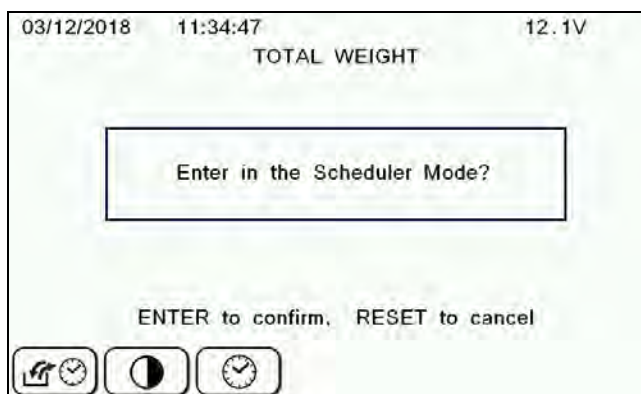
You need to have DTM i software installed on the PC if you want to set the reference date and time for programs by the scheduler (please refer to the software help online for the instructions).

TO ENABLE THE SCHEDULER ON THE INDICATOR




Enable the password 166 in order to manage the scheduling.

- 1 With DG8000 in Total Weight, open the menu  then press  in order to enter in the SCHEDULER MODE.



- 2 Confirm the activation of scheduling with the ENTER key.

- 3 The  icon on the upper right hand side of the screen indicates that the function is enabled.




TO DISABLE THE SCHEDULER



Disable the password 166.

SCHEDULER MANAGEMENT FROM THE INDICATOR

- 1 First, make sure that the GPRS communication is enabled (password "1290" explained in the section USE OF THE MICROCOMPUTER/ DATA TRANSFER BY MODEM)
- 2 To manage the GPRS connection mode, from the configuration system, go into the setups protected by a password mode by pressing on the  key and enter the password "1289".

You then have the possibility to choose a GPRS connection mode between "DAILY", "MANUAL", "AUTOMATIC", "DISABLED", "SCHED. TIME" and "ENDBATCH". Select the desired mode by using the ↑ and ↓ keys and press ENTER.

- 3 If the "SCHED. TIME" is the chosen connection mode, it is then possible to set the schedules time by using the ↑ ↓ and → ← keys.

This selected time will be the daily synchronization start time.

NOTE: The synchronization time can be shifted if, at the expiry of the set time, the control unit is carrying out a loading or unloading.

17/07/2018	12:57:49	12.2V
Gprs Connection Mode		
Connection mode	SCHED.TIME	
ENTER to confirm, RESET to cancel		

17/07/2018	12:58:15	12.2V
Gprs Connection Mode		
Connection mode:	SCHEDULED TIME	
Time:	02:01	
RIGHT/LEFT to move ENTER to confirm UP/DOWN to modify RESET to cancel		

MANAGEMENT OF DATA

The data is always saved in the internal memory for both, universal and slim boxes. Regardless of whether USB or card is connected, the import of new programs or the export of execution data is done through a special menu.


- 1 This special menu is accessed from the TOTAL WEIGHT mode by the  key.



The basic parameter 89 (Data Transfer Enabled) must be set to "YES".

2



Press on the  key.
A window asking you if you want to copy (import) the data will appear.
Press ENTER to confirm or RESET to cancel.

13/12/2018	12:46:56	12.0V
<div style="border: 1px solid black; padding: 10px; margin: 10px auto; width: 80%;"> <p>New Programming Available COPY NEW DATA ?</p> </div>		
Last Prog. Date: internal		Information not available
Last Prog. Date: USB		12:44:13 23/07/2018
<p>ENTER to confirm, RESET to cancel</p>		

3

The transfer of data will next start.
Remove the card / USB key and close the connector after the transfer if you must not use it again.

13/12/2018	12:47:24	12.0V
<div style="border: 1px solid black; padding: 10px; margin: 10px auto; width: 80%;"> <p>Downloading new programming</p> </div>		
<p>ENTER to confirm, RESET to cancel</p>		

13/12/2018	12:47:57	12.0V
<div style="border: 1px solid black; padding: 10px; margin: 10px auto; width: 80%;"> <p>Please, remove USB key and close the connector.</p> </div>		

Hardware Checkup of IRM System

1

Turn on the NIR system and check the correct communication with the indicator in order to execute the scanner hardware check.

2

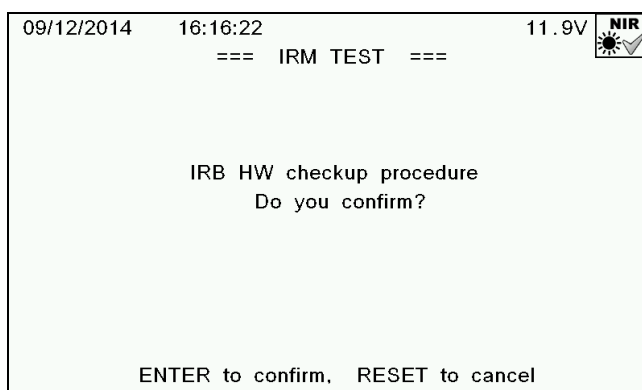


From total weight mode, press the  key in order to go in the second page of main menu.

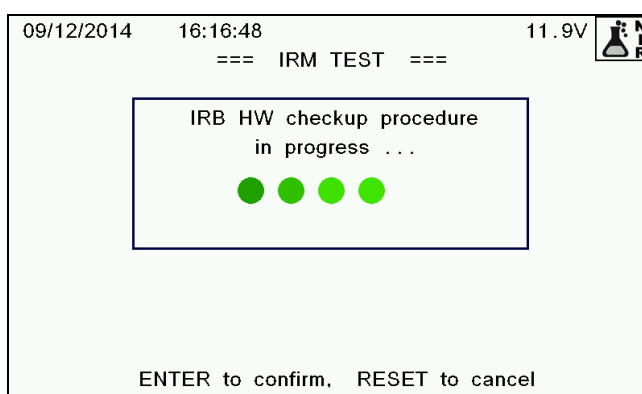
- 3 Press the  key.



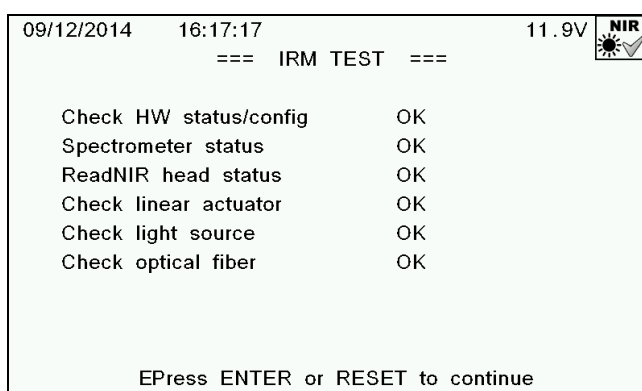
- 4 The message "System HW checkup procedure. Do you confirm?" is shown.



- 5 Press the ENTER key in order to confirm and wait the execution of system HW checkup for 10-15 seconds.



- 6 Press the ENTER key in order to visualize the final report.



-
- 7** In the table below, you can see the possible errors that you could visualize on the report.



Attention, if it is visualized “Err.2” in the parameter “Check linear actuator” is OK.

Check HW status / config

Error code	Error type	Description
Err.1	IRB system initialization error	error during the start up of the IRB board
Err. 2	IRB memory 1 error	error on the memory #1 of the IRB board
Err. 4	IRB memory 2 error	error on the memory #2 of the IRB board
Err. 8	IRB clock error #1	error on the clock chip of the IRB board
Err. 16	IRB clock error #2	error on the date and time set on the clock chip of the IRB board
Err. 32	IRB internal error	error of the microprocessor of the IRB board

Spectrometer status

Error code	Error type	Description
Err.1	Spectrometer system initialization error	error during the start up of the spectrometer
Err. 2	Spectrometer memory error	error on the memory of the spectrometer board
Err. 4	Spectrometer comm. error #1	Error on the communication with Spectrometer when it's analyzing
Err. 8	Spectrometer comm. error #2	Error on the communication with Spectrometer during the IRM test

ReadNIR head status

Error code	Error type	Description
Err.1	ReadNIR system initialization error	error during the start up of the ReadNIR board
Err. 2	ReadNIR configuration error	error on the ReadNIR memory configuration
Err. 4	ReadNIR comm. error	Error on the communication with ReadNIR board

Check linear actuator

Error code	Error type	Description
Err.1	Home position error	error on the end-switch sensor on the HOME position
Err. 2	5 th window position error	error on the end-switch sensor on the 5 th window position

Check light source

Error code	Error type	Description
Err.1	Bulb brightness error	error on the brightness of the bulb

Check optical fiber


Error code	Error type	Description
Err.1	Fiber cord error	error on the light through the fiber cord

WiFi MANAGEMENT



WiFi synchronization is an easy and effective way to obtain execution data from DG8000 microcomputer and load it on new programs to be executed. DG8000 can acquire and transfer data on executions by the means of WiFi directly to DTM software installed on the PC. To have this option you need to have IPcom™ module connected to DG8000.

TO START THE WiFi SYNCRONIZATION

- 1 Once the DG8000 is in Total Weight, press the key  in order to start the WiFi synchronization with DTM software.
- 2 You will see the message that the microcomputer is searching for WiFi connection.
- 3 Once the WiFi connection between DG8000 and DTM is established you will see on the bottom part of the screen the operations currently executed.
- 4 After WiFi communication is over you will see the screen with the summary of data transfer. You can see if the new progammation have been acquired by the microcomputer and data on the executions transferred to DTM.
- 5 Press ENTER to return to the Total Weight mode.

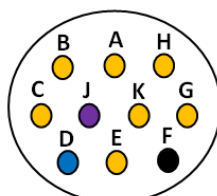


If you have several DG8000 microcomputers working with the same DTM software DO NOT execute the WiFi synchronization on them simultaneously. In this case the microcomputer will show error message and synchronization won't be executed. At any moment of time DTM software can communicate via WiFi with only one DG8000 microcomputer.

OPTIONAL ACCESSORIES

CAN BUS Connector

The J1939 protocol available on the CAN BUS output is deeply described in a specific document, not part of this manual. Please contact the Dinamica Generale Customer Service or R&D office for more information.



Cable color	Signal	HI-TECH Connector
Blue	CAN H	D
Purple	CAN L	J
Black	GND	F

Without CAN BUS terminator.

Activation of communication protocol J1939

You can enable this protocol through the password 689 but it is available only for some part number. It offers the possibility to send the strings relating to the Recipe name, Components, Unloading Programs and Unloading Points.

Below the parameters that you can manage:

- CANBus ADDRESS (0-255):
value relating to the protocol address that corresponds to the device connected.
- TRANSMISSION FREQUENCY / ENABLE (Disabled-100ms-200ms...1000ms):
value of transmission frequency.
- BROADCAST TYPE:
 - 0 - All PGNs in order to send all the data
 - 1 - Weight Status in order to send only the weight value
 - 2 - Exec. Data in order to send the Components name, Recipe etc..

CAN BUS CABLE CONNECTIONS:





BLUE : CAN H









VIOLET : CAN L

BLACK : GROUND

Inside the indicator there isn't the CAN BUS termination 120 ohm resistance.

SEARCHING FOR FAULTS

ALLARME MOTION		
DISPLAY	CAUSE	SOLUTION
DG400 	Cause1 The signal coming from the sensors shows sudden and important weight change. Cause2 A connection cable or a load cell does not work correctly.	Solution1: do the TARE.
DG500 		Solution2: do the calibration with password 12 and then do the TARE
DG600 		Solution3: do the check described as follows
DG8000 		
IT DOES NOT SWITCH ON		
DISPLAY	CAUSE	SOLUTION
OFF	The power supply does not reach the microcomputer.	Soluzione1: check very carefully the power connection cable.
		Soluzione2: check the efficiency of the power supply system (minimum 9,5 Volts / 0.5 A).
		Soluzione3: contact the service department

OVERRANGE ALARM		
DISPLAY	CAUSE	SOLUTION
DG400  DG500  DG600  DG8000 	Cause1 <p>The microcomputer can not read the signal of the load cells: the load cell connection cable does not work correctly.</p> Cause2 <p>A connection cable or a load cell does not work correctly.</p> Cause3 <p>The signal coming from the sensors is out of the valid "RANGE" (see the password 99).</p>	Solution1: <p>do the TARE.</p> Solution2: <p>do the calibration with password 12 and then do the TARE.</p> Solution3: <p>do the check described as follows.</p>
LOW BATTERY ALARM		
DISPLAY	CAUSE	SOLUTION
DG400  DG500  DG600  DG8000 	<p>The microcomputer power is lower than the fixed value.</p>	Solution1: <p>check the efficiency of the battery.</p> Solution2: <p>check the CABLES that supply the power from the BATTERY to the MICROCOMPUTER.</p>
UNSTABLE WEIGHT		
DISPLAY	CAUSE	SOLUTION
<p>The weight continues to oscillate between tens or hundreds kg</p>	<p>The signal coming from the sensors is jammed: a cable or a load cell does not work correctly.</p>	<p>Do the check described as follows.</p>

MESSAGES OF CLOCK ERROR

- 1** If the battery is completely discharged, the following messages appears for 3 seconds: "Date and Time not valid! Please check the Internal Battery".

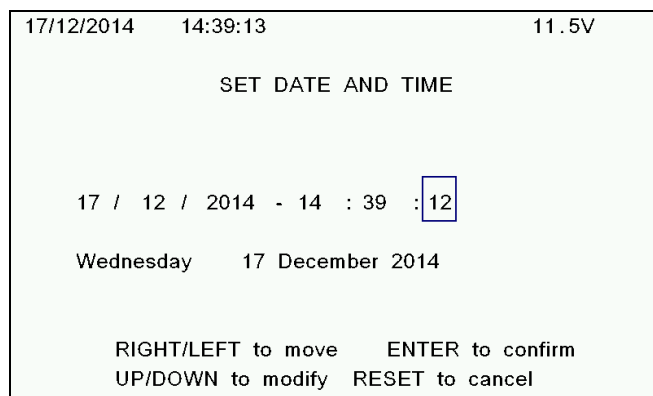
Date and Time not valid !
Please check the Internal Battery

- 2** If the date and time is not setted, the following messages appears for 3 seconds: "Date and Time not valid! Please set the correct Date and Time" and it is necessary reset it.

This message is blocker, it is possible execute loading and unloading only after setting the date and time.

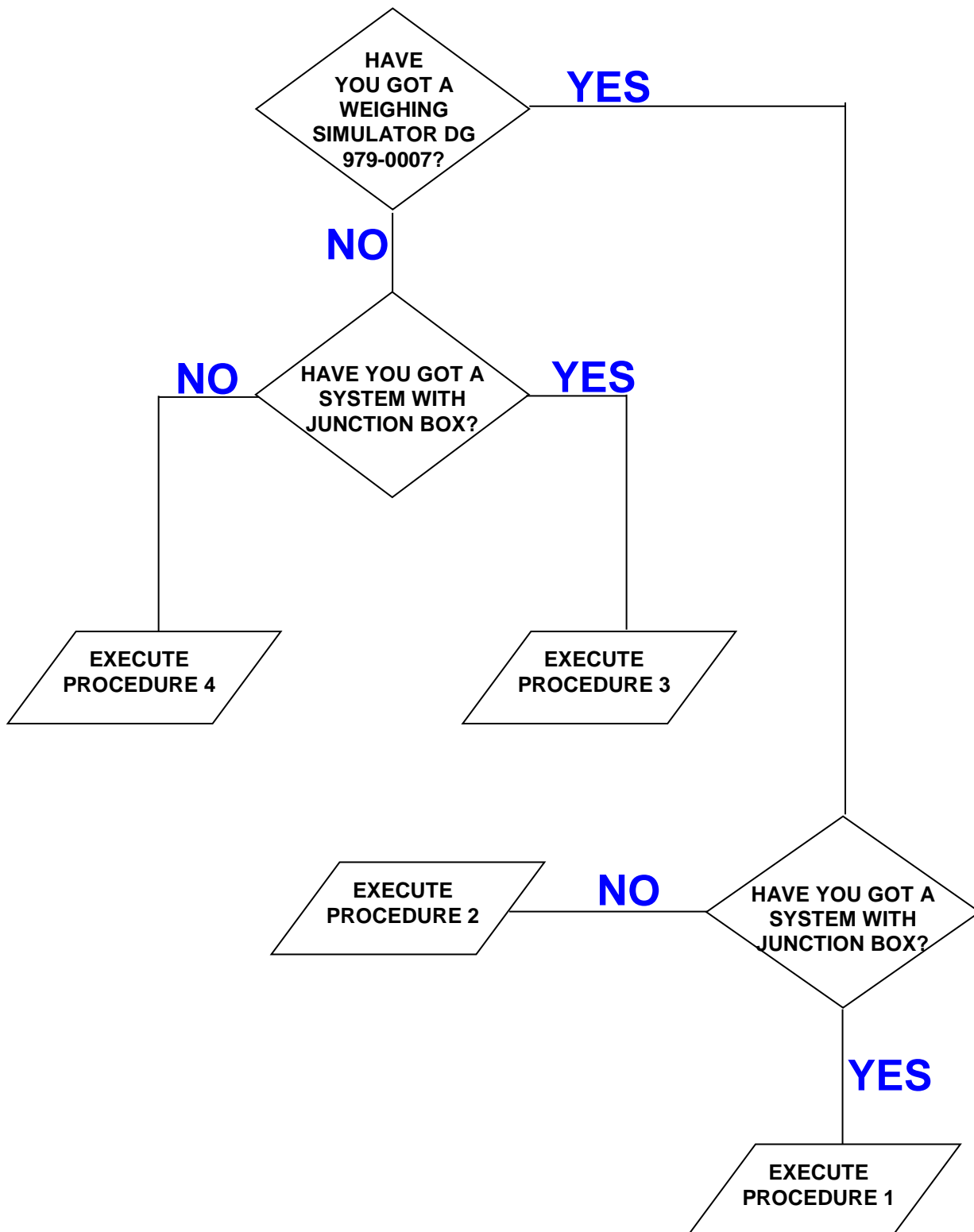


Date and Time not valid !
Please set the correct Date and Time



CHECK THE DAMAGED COMPONENTS

DEFINE THE TEST PROCEDURE:



PROCEDURE 1**Ref. YES / YES****ENGLISH**Check the working of the scale

- a) Switch off the microcomputer.
- b) Disconnect the sensor cable between the scale and the junction box.
- c) Connect the WEIGHT SIMULATOR (calibrator 979-0007) with the lever in position "Var" (varying) to the SENSORS connector of the scale.
- d) Switch on the microcomputer.
- e) Do the TARE (for the execution see the microcomputer manual).
- f) The scale has to become stable displaying "0" kg.
- g) Verify the correct functioning of the scale by turning the WEIGHT SIMULATOR knob (turning clockwise increases the weight, counter-clockwise decreases the weight).

RESULT	CAUSE	ACTION
Zero stable and correct functioning	The microcomputer is NOT damaged	Proceed with the other tests
Zero NOT stable or NOT correct functioning	The microcomputer is damaged	Contact the service department

Check the functioning of the SENSOR CABLES and of the JUNCTION BOX

- a) Switch off the microcomputer.
- b) Open the JUNCTION BOX.
- c) Disconnect the sensors, leaving only the cable that reaches the weight system (SENSOR CABLES).
- d) Connect the WEIGHT SIMULATOR (979-0007) in place of one of the sensors using the proper adapter.
- e) Switch on the microcomputer.
- f) Do the TARE (use the microcomputer's manuals for instructions).
- g) The scale has to become stable displaying "0" kg.
- h) Check the correct functioning by turning the knob of the WEIGHT SIMULATOR (turning clockwise, the weight increases, counter clockwise, the weight decreases).

REPEAT THE TEST CONNECTING THE WEIGHT SIMULATOR IN PLACE OF EACH SENSOR.

RESULT	CAUSE	ACTION
Zero stable and correct functioning	The sensor cable and the junction box are NOT damaged	Proceed with the other tests
Functioning not correct only in some junction box connectors.	The junction is damaged or wet	Try to dry the junction box and repeat the test; in case you do not have success, replace the junction box.
Zero NOT stable or NOT correct functioning in all the box's connectors	The sensor cable is damaged	Replace the sensors' cable

Check the working of the SENSORS

- Open the JUNCTION BOX
- Leave one sensor and the cable connected the scale
- Do the TARE (use the microcomputer's for instructions)
- The scale must steady, viewing "0" Kg.
- Verify the right working, trying to load weight on the connected sensor (the displayed weight is not important, but it must be steady).

REPEAT THE TEST CONNECTING ONE AT EACH THE SENSORS.

RESULT	CAUSE	ACTION
Zero and weight stable.	The sensor is NOT damaged	Go on with the other sensors
Zero and weight not stable.	The sensor is damaged	Contact the assistance service

PROCEDURE 2**Ref. YES/ NO**Check the functioning of the scale

- a) Switch off the microcomputer
- b) Disconnect all the sensors
- c) Connect the WEIGHT SIMULATOR (calibrator) with the lever in "Var" (varying) position to one of the sensor connectors of the weighing system
- d) Switch on the microcomputer
- e) Do the TARE (use the microcomputer's manuals for instructions)
- f) The scale must steady, viewing "0" Kg.
- g) Verify the correct functioning, turning the knob of the WEIGHT SIMULATOR (clockwise, the weight increase, anti-clockwise, the weight decreases).

REPEAT THE TEST CONNECTING THE WEIGHT SIMULATOR AT THE PLACE OF EACH SENSOR.

RESULT	CAUSE	ACTION
Zero stable and correct working of all the connectors	The sensor is NOT damaged	Go on with the other tests.
Zero not stable and incorrect working of all the connectors	The sensor is damaged	Contact the assistance service

Check the working of the SENSORS

SWITCH OFF THE MICROCOMPUTER

- i) Just leave one sensor connected to the scale connector.
- j) Switch-on the microcomputer.
- k) Do the TARE (use the microcomputer's manuals for instructions).
- l) The scale has to be stable, displaying "0" Kg.
- m) Check the correct functioning, by trying to load weight on the connected sensor (the displayed weight is not important, but it must be steady).

REPEAT THE TEST CONNECTING THE SENSORS ONE AT A TIME.

RESULT	CAUSE	ACTION
Zero and weight stable.	The sensor is NOT damaged	Proceed with the other sensors.
Zero and weight not stable.	The sensor is damaged	Proceed with the other sensors. Contact the assistance service.

PROCEDURE 3**Ref. NO / YES****Check the functioning of the SYSTEM and of the SENSORS**

SWITCH OFF THE MICROCOMPUTER.

- n) Open the JUNCTION BOX.
- o) Just leave one sensor and the cable connected to the scale (SENSORS' CABLE).
- p) Switch on the microcomputer.
- q) Do the TARE (use the microcomputer manuals for instructions).
- r) The scale has to be stable, displaying "0" Kg.
- s) Verify the correct functioning, trying to load weight on the connected sensor (the displayed weight is not important, but it must be steady).

REPEAT THE TEST CONNECTING ONE AT ONCE EACH SENSOR IN ITS FIRST POSITION

RESULT	CAUSE	ACTION
Zero and weight stable in all the connectors	The system works correctly.	Connect everything and try again with normal use.
Zero and weight NOT stable only in some connectors of the junction box	The box and the sensors connected to those connectors are damaged	Connect a working sensor to the "critical" connector; repeat the test and check the two following lines.
With a new sensor: zero and weight NOT stable.	The junction box is damaged.	Replace the junction box and repeat the tests.
With a new sensor: zero and weight stable.	The sensor previously connected is damaged.	Contact the assistance service
Zero and weight NOT stable in all the connectors of the junction box	The sensor cable or the microcomputer is damaged	Replace the sensor cable, repeat the tests and check the following line.
Zero and weight NOT stable yet	The microcomputer is damaged	Contact the assistance service

PROCEDURE 4**Ref. NO / NO****Check the functioning of the SYSTEM and of the SENSORS**

SWITCH OFF THE MICROCOMPUTER.

- t) Just leave one sensor connected to the scale.
- u) Switch on the microcomputer.
- v) Do the TARE (use the microcomputer's manuals for instructions).
- w) The scale has to be stable, displaying "0" Kg.
- x) Check the correct functioning trying to load weight on the connected sensor (the displayed weight is not important, but it must be steady).

REPEAT THE TEST CONNECTING EACH SENSOR, ONE AT A TIME, IN THE ORIGINAL CONNECTOR .

RESULT	CAUSE	ACTION
Zero and weight of a sensor NON stable.	The sensor is damaged	Contact the assistance service
Zero and weight of all the sensors on the same connector NOT stable	The microcomputer is damaged	Contact the assistance service
Zero and weight stable with all the sensors in the same connector	None	Repeat the test with another scale connector.
Zero and weight stable with all the sensors in all the connectors	The system works correctly.	Connect everything and try again in normal use

DICHIARAZIONE DI CONFORMITA' UE - EU DECLARATION OF CONFORMITY - EU KONFORMITÄTSERKLÄRUNG - DÉCLARATION UE DE CONFORMITÉ - DECLARACION UE DE CONFORMIDAD - EU ДЕКЛАРАЦИЯ О СООТВЕТСТВИИ

Nr 25/16

- IT** Il sottoscritto, designato a legale rappresentante della Dinamica Generale s.p.a. , via Mondadori 15, Poggio Rusco (MN) - Italy, dichiara che i prodotti sottoelencati:
- EN** The undersigned, an authorised officer of Dinamica Generale s.p.a. , via Mondadori 15, Poggio Rusco (MN) - Italy, hereby declares that the products listed hereunder:
- D** Der Unterzeichner, rechtlicher Vertreter der Dinamica Generale s.p.a. , via Mondadori 15, Poggio Rusco (MN) – Italy, erklärt, daß die nachstehend beschriebenen Produkte:
- FR** Je soussigné, représentant légal désigné de Dinamica Generale s.p.a. , via Mondadori 15, Poggio Rusco (MN) - Italy, déclare que les produits énumérés ci-après:
- ES** El suscrito, nombrado representante legal de la Dinamica Generale s.p.a. , via Mondadori 15, Poggio Rusco (MN) - Italy, declara que los productos indicatos a continuación:
- RU** Нижеподписавшийся, являющийся законным представителем компании Dinamica Generale s.p.a., расположенной по адресу via Mondadori 15, Poggio Rusco (MN) – Italy, заявляет, что продукция ниже

DG8000

- IT** Sono conformi a quanto prescritto dalle seguenti direttive:
- EN** Are in compliance with the following directives:
- D** Mit den Vorschriften konform sind, die in den folgenden Richtlinien:
- FR** Sont conformes aux prescriptions des directives suivantes:
- ES** Respetan las prescripciones contenidas en las siguientes directivas:
- RU** Соответствует требованиям следующих директив:

2014/30/EU

- IT** E dalle seguenti norme:
- EN** And with the following standards:
- D** Und Normen stehen:
- FR** Et aux normes ci-apres:
- ES** Y en las siguientes normas:
- RU** И следующих стандартов:

EN ISO 14982 Agricultural and forestry machinery --
Electromagnetic compatibility -- Test methods and
acceptance criteria

- IT** E, in applicazione a quanto previsto dalle direttive citate, sono stati dotati di marcatura CE ed é stato predisposto un adeguato fascicolo tecnico presso la ns. sede.
- EN** And, pursuant of the above-mentioned directives, the CE mark has been applied. Furthermore, adequate technical file has been prepared and is available from our offices.
- D** Und daß sie in Übereinstimmung mit den Vorschriften der obengenannten Richtlinien mit dem CE-Zeichen versehen sind und daß dafür ein angemessenes technisches Heft erstellt wurde, das bei uns in der Firma zur Verfügung steht.
- FR** En application des directives citées, ils portent la marque CE et un dossier technique est déposé auprès de notre siège.
- ES** Y, conforme con lo previsto en las citadas directivas, han recibido la marca CE. Existe asimismo un específico prospecto técnico relativo disponible en nuestra sede.
- RU** И, в исполнении данных директив, был нанесен знак CE и соответствующее техническое досье было заведено в нашем офисе.

Poggio Rusco, 20/04/2016

Andrea GHIRALDI

WARNING



The power cable has to be connected directly to the battery or to a regulated power source.

If this is not the case DG does not respond to any eventual damage to the microcomputer.



Disconnect the power cable from the microcomputer when the battery of the machine is being charged.

If this is not the case DG does not respond to any eventual damage to the microcomputer.



Disconnect all the cables from the microcomputer before performing welding operations on the machine.

If this is not the case DG does not respond to any eventual damage to the microcomputer.



In order to have a correct functioning, check that the battery always has a tension level above 10,5 Volt.



Before clearing the mixer with a high pressure washer protect the device from possible water seepage. Furthermore be very careful to not expose the sensors, junction box, acoustic alarm, cables and other eventual optional accessories to direct water jets.



If the equipment needs to be cleaned, use a soft, damp, lint-free cloth. Never use sprays, solvents, abrasives, or sharp or pointed objects that could damage the indicator.

ENVIRONMENT: Disposal Rules



This marking on the product or on its packaging means that this product can not be disposed with normal household waste. You are responsible for disposal of this equipment in a correct way and in according to local regulations.

Electronic equipment, which has become useless, must be collected separately and sent an eco-rensé.

It is forbidden to abandon in the environment device components or spare parts.

The manufacturer declines any responsibility for possible damage to environment, resulting from non-compliance with the existing legislation regarding disposal / recovery.



GUARANTEE

The supplier guarantees, for 24 months from the delivery date, the good quality of materials used, the excellent construction and the steady functioning of the instrument they have manufactured and that bears the trademark or the production serial number. During the guarantee period the supplier undertakes to repair or replace, free supplier's head office, faulty parts due to poor materials or faulty construction, provided that such parts are delivered free port supplier's head office.

Shortcomings and defects due to incorrect use of instruments, inadequate maintenance, changes carried out without the supplier's approval, normal wear are not included in this guarantee.

Liability and compensations by the supplier due to direct or indirect damages to persons, objects or production, even as a consequence of faulty functioning of the supplied instruments or of material or construction defects, are not included in this guarantee.

NOTES:

dinamica generale® has the faculty to modify the content of this handbook due to hardware and software implementations in order to improve their products and thus to guarantee the best service to their users.

Congratulations Dear User!

You have chosen a product by **dinamica generale®**, a leading company in the development and production of electronic weighing systems, automation systems and NIR solutions. These systems bring a highly technological level in every field of application such as zootechnical, feeding, industrial and biomedical. Year by year the international market recognizes our quality, experience, reliability and most of all our innovative technology, as a part of a highly developed and innovative know how. These are the pillars of our work and according to these beliefs we are at your service, providing you with a simple as well as new, precise and professional product, which is going to make your job easier for many years. This user's manual intends to take you through the different performances of the weighing system in the easiest way and to show you some new functions as well. **dinamica generale®** did not forget to provide you even with the basic information: the configuration, the use of different accessories at your disposal, the service of "searching for faults" and the equipment's safety rules, in order to guarantee our customers always more and more support and technical assistance for years to come.

Now there is nothing left for us to do but wish you a work well done!

The team of **dinamica generale®**

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