

SELF SERVICE / CUBE / MC BOX

2.0

Electronic Control Unit

Use and Maintenance Manual



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1. Use limits

-  The SelfService 2.0 device CAN'T be installed inside areas where there is the danger of explosions.
-  The SelfService 2.0 device should be installed and kept distance from inflammable surfaces and distances
-  The SelfService 2.0 device should be only interfaced with devices compatible from an electric view point

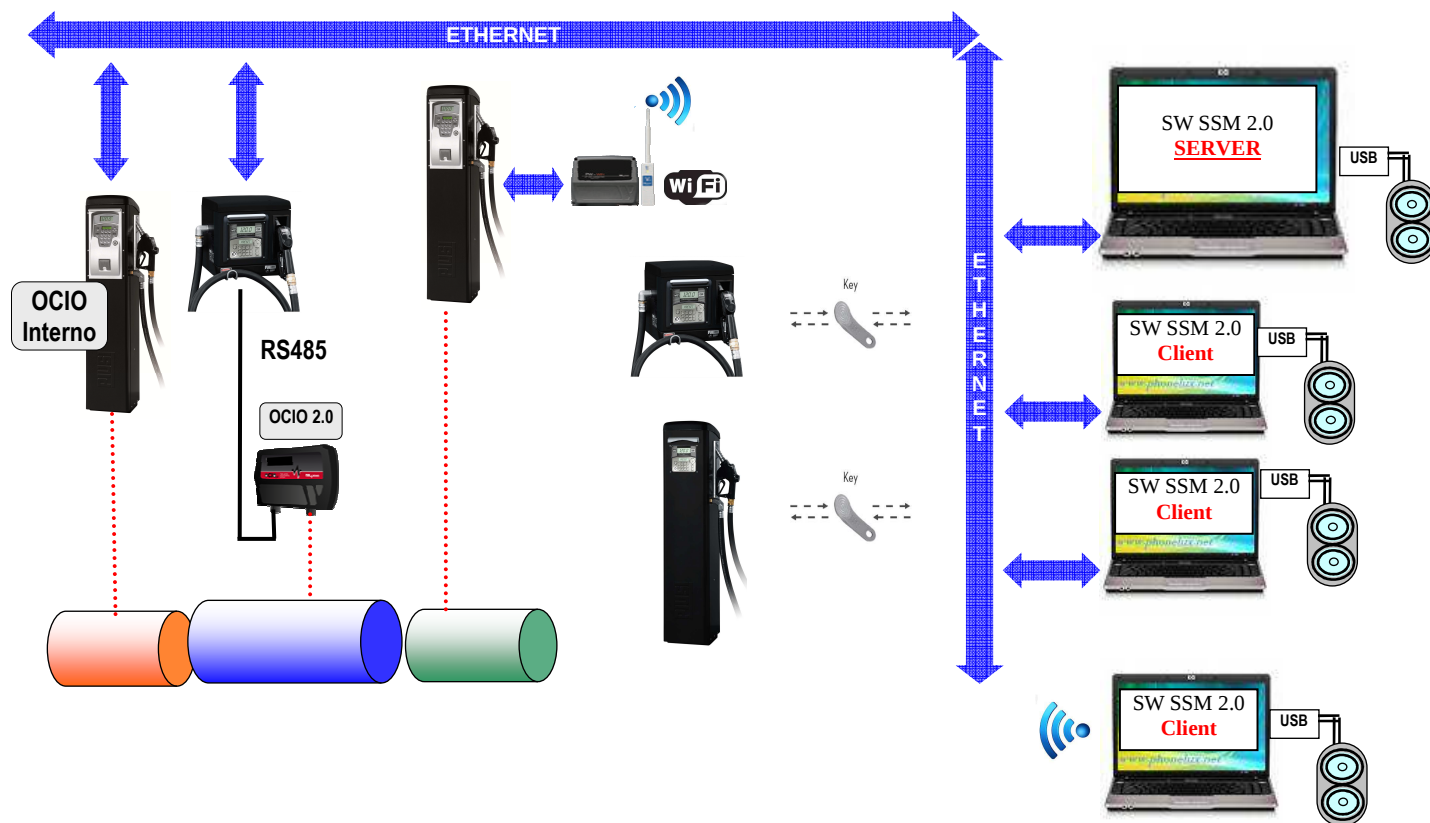
2. General information: what is a Self Service 2.0 (SELF2.0)

Self Service 2.0 (later SELF_2.0) is an electronic integrated system to deliver fuel, designed for whoever intends to control one or more local delivery units through a PC software.

The integrated system allows :

- The complete configuration and ordinary manage of the supply unit by LAN-WiFi connection or with Manager Key
- controlling the inlet to the supply units through a PIN code and/or electronic keys and/or Smartphone;
- getting data on the PC on the enforced deliveries by LAN-WiFi connection or with Manager Key;
- monitoring the tank levels as well (ONLY WITH LAN-WiFi CONNECTION);
- managing drivers and vehichels;
- getting detailed repors on delivery.

2.1 Block system with a local unit only



The Self_2.0 electronic system consists of the following devices:

- Delivery electronic control unit fitted with:
 - o 2 displays;
 - o One keyboard;
 - o One port to read/write electronic Key such as Manager Key, Driver Key or Vehicle Key;
 - o Optionally a printer;
 - o A tank level measuring device (Ocio 2.0). The OCIO level measuring device can be fitted inside the fuel station or outside (ONLY WITH LAN-WiFi CONNECTION).
- Electronic keys for the manager (**Manager Key**) to config and download data, user (**User Key**), vehicles (**Vehicle Key**) to inlet deliveries
- A series of state sensors (one of the delivery nozzle or an alarm on the level sensor on the tank)
- Litre counter-pulsar, emitting counting pulses which are processed by the control unit SELF_2.0
- The pump which on/off procedure is controlled
- A Client-Server type software to configure and monitor the unit
- A Client-Viewer software to simply display remote units
- A RS485 (PW-LAN) converter → LAN Ethernet to connect the unit to the company Ethernet net
- A wireless WiFi (optional)(PW-WIFI 2.0) converter to connect the pc to the control units when it is difficult to lay a connection cable ((RS485 o Ethernet)
- A key reader connected to the PC through an USB port

SELF_2.0 should be correctly configured before any delivery. The number and the type of consents is defined by the system administrator through a software configuration.

Possible parameters to be configured are:

- Operation in a Key Manager Mode or LAN-WiFi mode for transfer data (FM can work only with LAN-WiFi connection);
- Recognition request of the User key or the PIN CODE
- Recognition request of the Vehicle key
- Introduction of the odometer (Km, miles or working hours) of the vehicle
- Introduction request of km or miles and operating times (Odometer)
- Request to intention to do a delivery or not to the tank

Such parameters can be all or partially requested, according to the Administrator decisions. The Administrator through the CONFIGURATION software screen (refer to the Self Service Management 2.0 operating instructions) enforces the specific settings of the different parameters:

The deliverable quantity is configured through the Software and can be:

- Free with no preset;
- With preset (PRESET).

Selecting the preset mode it is possible to:

- o DELIVER WITH PRE-SELECTION (KEY VEHICLES DISABLED): when the # key is pressed for two seconds, you enter the preset "On-Demand" which proposes a number of default (definable by the manager), modifiable by the user wish.
- o DELIVER WITH PRE-SELECTION (KEY VEHICLES ENABLED): If you do not select full, it leads automatically to the preset "On-Demand" which proposes an amount equal to the vehicle tank capacity authenticated, modifiable by the user wish.

In case of LAN-WiFi connection, through the Ethernet bus or through the WiFi communication (with PW-WIFI 2.0), SELF2.0 informs about its operating conditions the management software on the PC (the operating conditions of the single units are displayed and explained on the Software PC manuals's).

3. Technical information

From an electric and electronic view point, the SELF_2.0 exhibits standard operating conditions and set functional limits

Signal	Standard conditions	Limits	Notes
Power supply inlet	Vin_power: 85 ~ 260VAC Freq: 47 ~ 440Hz	Absorbed power in stand-by on the branch 230Vac = 18.5 mA (if the power is 110Vac the current on the branch at 110Vac will be about 40 mA) Power in stand-by on the branch 24 Vdc circa 70 mA. Average operating current accounting for 130 mA on 24Vdc.	The electronic card on the power supplier fitted with switching technology supports a wide range of supply tensions and frequencies and then allows the unit standing high tension or frequency changes on many nets all over the world
Motor piloting outlet	Vmot= Vin_power supply	1) I Max 8 A for standard models 2) I _{max} =15 A for version 2HP with external power rele'	1) Models without power contactor. The motor is powered at the same voltage that is input from the Line. The maximum current is limited at 8 A by fuse 8 A (T - Time Delayed) 2) Models with power contactor. In versions MCBOX-RELAY 'is mounted contactor power to drive motors up to 2Hp. The maximum current is limited by a fuse of 16 A (T-Time Delayed.)
Electronic key interface	Grey Key (Manager Key): Interface for read and write PIUSI electronic key	In caso di utilizzo dei dispositivi in stand alone (senza connessione LAN), la chiave è utilizzata per esportare tutte le configurazioni e il database autisti e veicoli verso la colonnina e importare da essa le erogazioni.	It is possible to configure or not the presence of such a key

	YELLOW key (User) : inlet activation with a PIUSI electronic key	Through a software procedure, the yellow user keys are recorded don the PC and then they users are enabled on one or more delivery stations	It is possible to configure or not the presence of such a key
	BLUE key (Vehicle) : inlet activation with a PIUSI electronic key	Through a software procedure, the blue vehicle keys are recorded don the PC and then they users are enabled on one or more delivery stations	It is possible to configure or not the presence of such a key
Inlet Nozzle contact (Optoisolated) <i>(only for the versions fitted with it)</i>	Clean contact or Open Collector (NPN) electronic signal	On the clean contact (or on the open Collector) about 12 mA at 24 Vdc are delivered	It is possible to configure or not the presence of such a consent. It is possible to configure the type of signal (table level or impulse or normally open or normally closed)
Inlet Pulser IN (Optoisolated)	Clean contact or Open Collector (NPN) electronic signal	On the clean contact (or on the open Collector) about 1 mA at 24 Vdc are delivered. The inlet signal frequency will account for 300 Hz with an half-period (Hi or LOW) and a minimum period accounting for 0,3 ms	The inlet signal can exhibit a maximum frequency accounting for 300 Hz with an half-period (Hi or LOW) and a minimum period accounting for 0,3 ms
Inlet level 1 contact (Optoisolated) <i>(only for the versions fitted with it)</i>	Clean contact or Open Collector (NPN) electronic signal On the terminal, +24Vdc are available as well should it be necessary to supply the level sensor. The maximum available current to the sensor for its supply accounts for 30 mA	On the clean contact (or on the Open Collector) about 10 mA at 24 Vdc are delivered Imax sensor power supply= 100mA (a 24Vdc)	It is possible to configure or not the presence of such a signal. It is possible to configure the type of signal (table level or impulse or normally open or normally closed) It is possible to select the action that the control unit should enforce when it receives the signal: it can send an alarm to the display and on to the outlet ALARM OUT or it can totally inhibit other deliveries if "Pump cutout" is set
Inlet level 2 contact (Optoisolated) <i>(only for the versions fitted with it)</i>	Clean contact or Open Collector (NPN) electronic signal On the terminal, +24Vdc are available as well should it be necessary to supply the level sensor. The maximum available current to the sensor for its supply accounts for 30 mA	On the clean contact (or on the Open Collector) about 10 mA at 24 Vdc are delivered Imax sensor power supply= 100mA (a 24Vdc)	It is possible to configure or not the presence of such a signal. It is possible to configure the type of signal (table level or impulse or normally open or normally closed) It is possible to select the action that the control unit should enforce when receiving the present signal: it can trigger an alarm with a display or it can totally inhibit other deliveries if the Pump cutout is set No alarm signal is forwarded on the alarm outlet as the alarm outlet is connected to contact level 1
Outlet Auxiliary power supply 24 Vdc	Auxiliary outlet at 24Vdc to supply possible remote displays	Imax = 200 mA limited by self-recovering fuses	The tool to be fed should not absorb more than 200 mA with a 24Vdc power supply. Typically it can be an electronic level sensor to be supplied at 24Vdc

Alarm outlet (Optoisolated)	The alarm outlet copies the level 1 contact state and in general of many other failures	Maximum current that the Open Collector 25 mA outlet can stand	It is possible to configure the presence or not of such a signal. It is possible to configure the type of signal, Normally Open or Normally Closed
Fuses	Standard Models without Power Rele' FU1 (power supply) 1A T (time delayed) FU2 (motor) 8A T (time delayed) FU3 (general) 8A (time delayed)		Models with Power Rele' FU1 (alim) 1A T (time delayed) FU2 (motore) 1A T (time delayed) FU3 (generale) 1A (time delayed) Fuse on wire 16A T (time delayed)
IP protection degree	IP 55		
Operating temperature	-10 + 40 °C		
Storage temperature	-20 +60 °C		
Humidity	< 90%		
Cabling distance	Max pulser distance – SELF_2.0	15 m	
	Max sensor level distance – SELF_2.0 <i>(whenever applicable)</i>	100 m	
	Maximum distance between PC and distance control unit on the Bus RS485	1200 m	
	Maximum delivery quantity, then it is reset. Sequence of the mobile dot: 0.00 --> 99.99 --> 999.9 --> 9999 --> 9999x10 (99.990) -->9999x100 (999.900)-->0		
	0.00 999.9 9999 9999 9999 It stops when reaching the maximum accepted value		
	Maximum resettable TOTAL		10,000,000 measure units (then it is reset and it restarts)
	Maximum non resettable TOTAL		10,000,000 measure units (then it is reset and it restarts)
	PRESET : Maximum quantity to be reset		99,999.99 measure units
Memories	The Electronic Control Unit can memorize : - Up to 1000 Users (depending on Software License) - Up to 1000 Vehicles (depending on Software License) - Up to 500 Refuel To be able to be used even in periods when the data connection LAN or WiFi is not available		

4. Installation and assembling

4.1 Mechanical installation

Refer to the operating instructions referring to the Mechanical installation

o Electric Installation

	Electric connections are set by qualified operators on the power supply risks.
	Before inletting any part live, cut the power supply and section the installations
	The device is to be interfaced only to compatible devices from an electric view point

	<u>WARNING !</u> Switch OFF all the power supplies before opening the box.
	<u>DANGER :</u> Electric Shock

To inlet the electric connection terminals, loosen the protection boxes on the back of the panel.

	ATTENTION !
	The distributor is NOT fitted with protection switches. It is important to fit upstream the distributor a power supply cabinet with a <u>differential switch</u> (Residual Current Device) suitable to the electric load.
	<u>MAXIMUM ELECTRIC PARAMETER CHANGES :</u> The electric motors inside the distributors stand maximum power supply tension changes accounting for +/- 5% and maximum frequency changes accounting for +/- 2%

Cube 2.0 model



Box with electronic card
RS485-Ethernet Converter

Model MCBOX 2.0 LAN



RS 485

Model MCBOX 2.0 WiFi

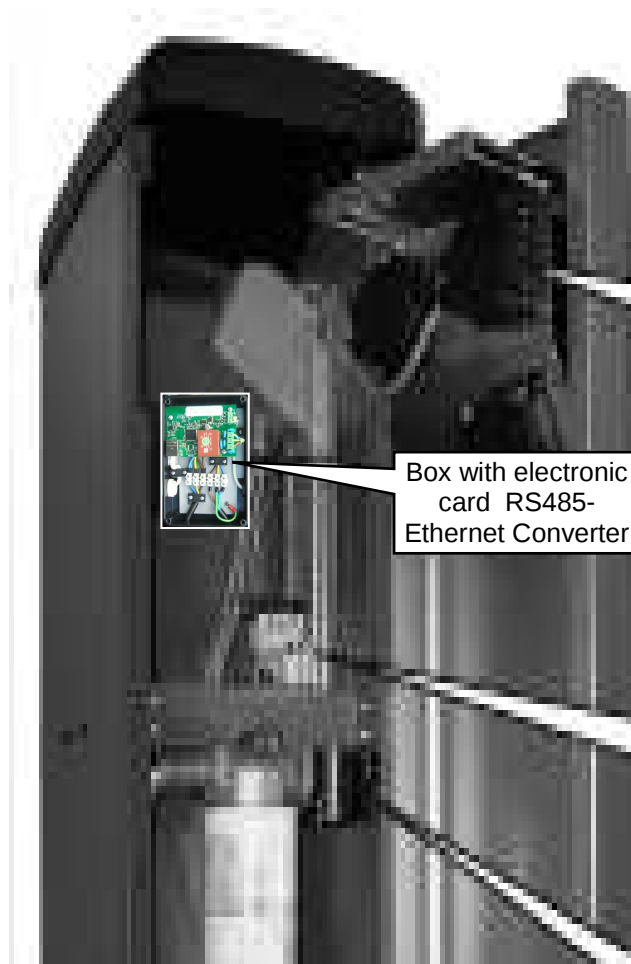


RS 485

Model Self Service FM 2.0

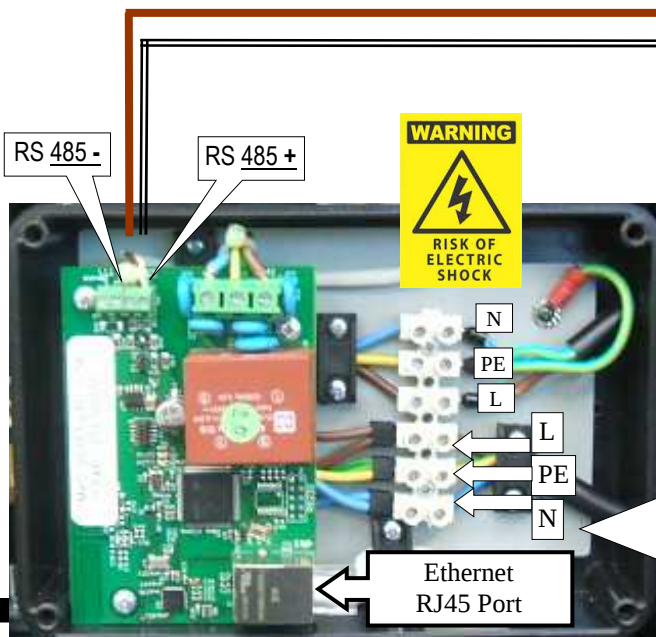
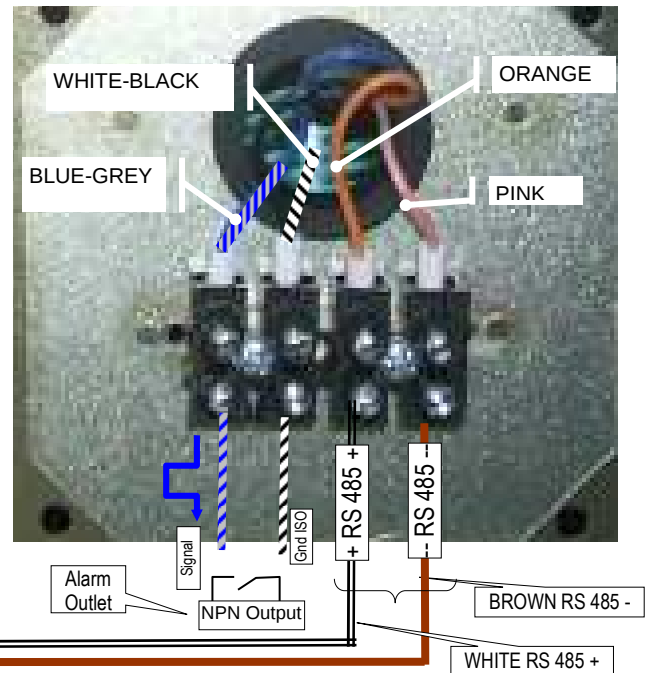
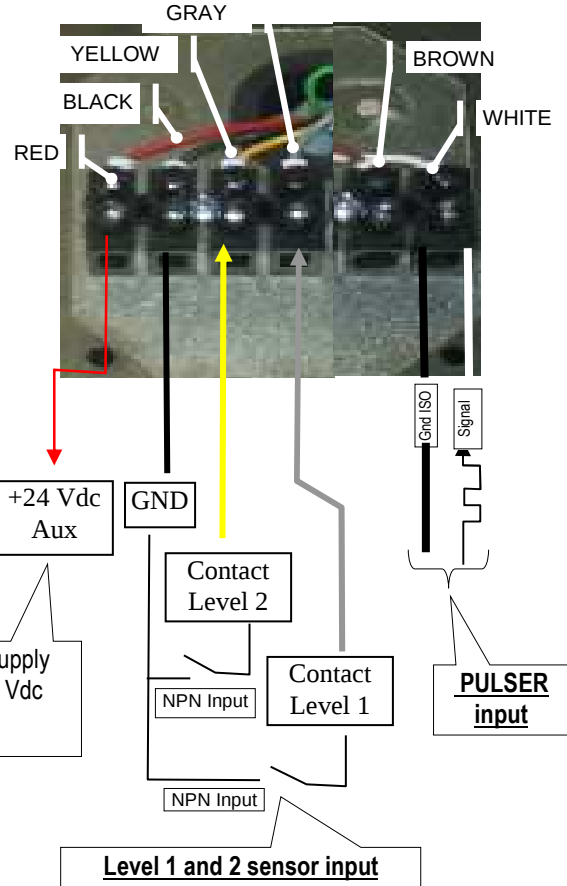
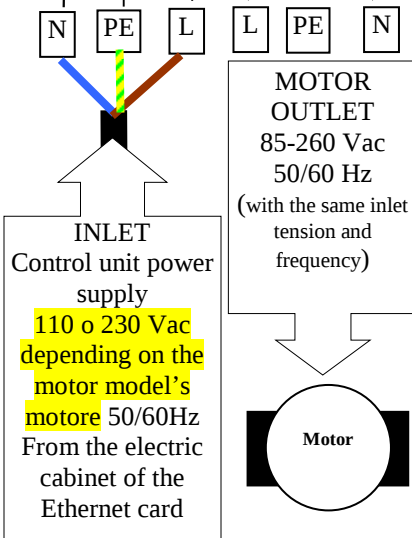
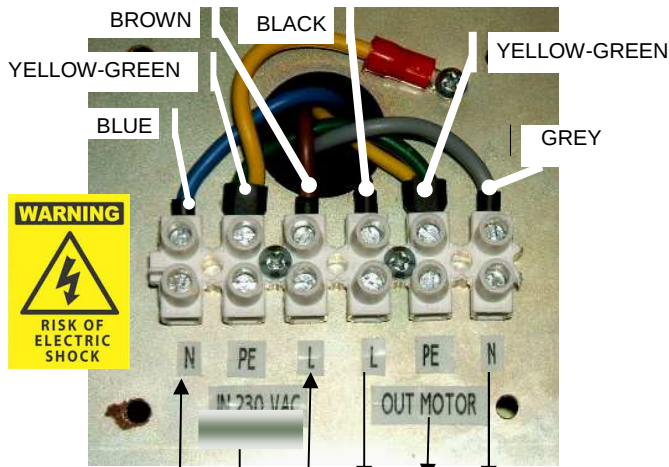


Model Self Service MC 2.0



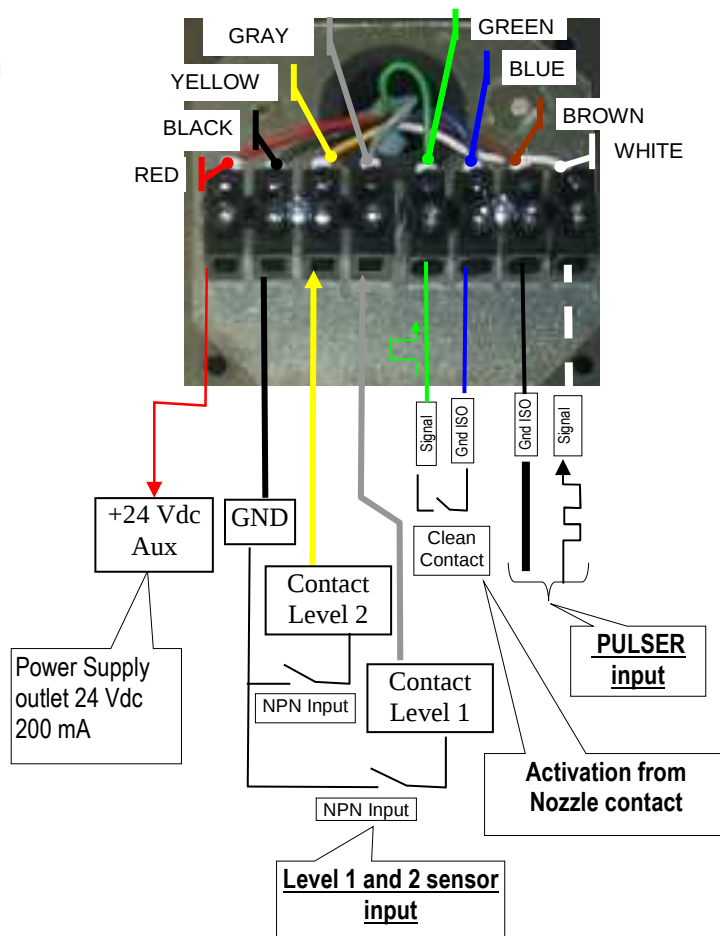
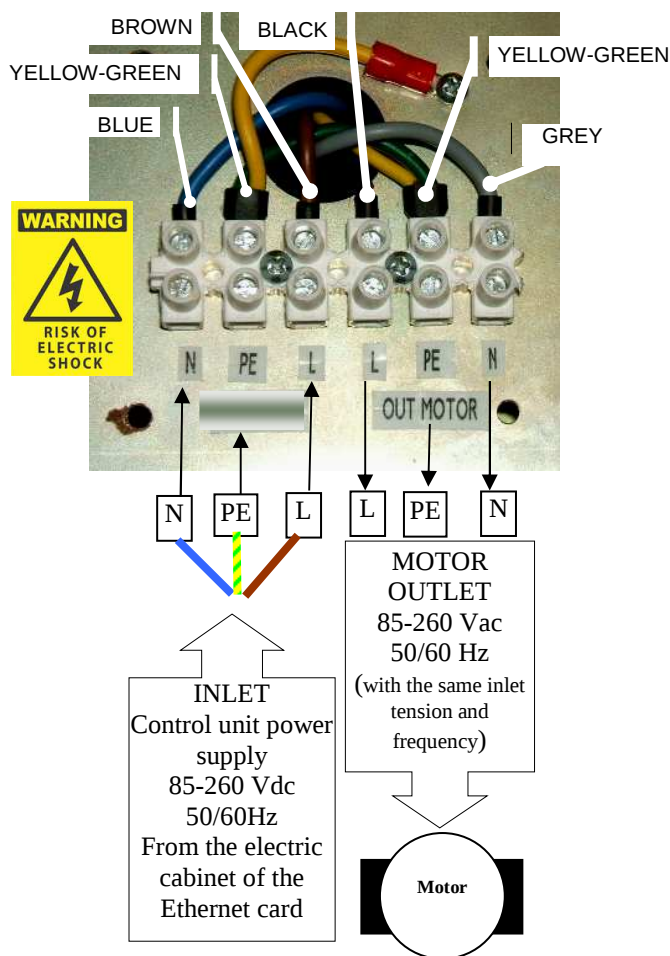
Terminals are similar to what represented in the following image and the cable colour and meaning are specified.

Model Cube 2.0

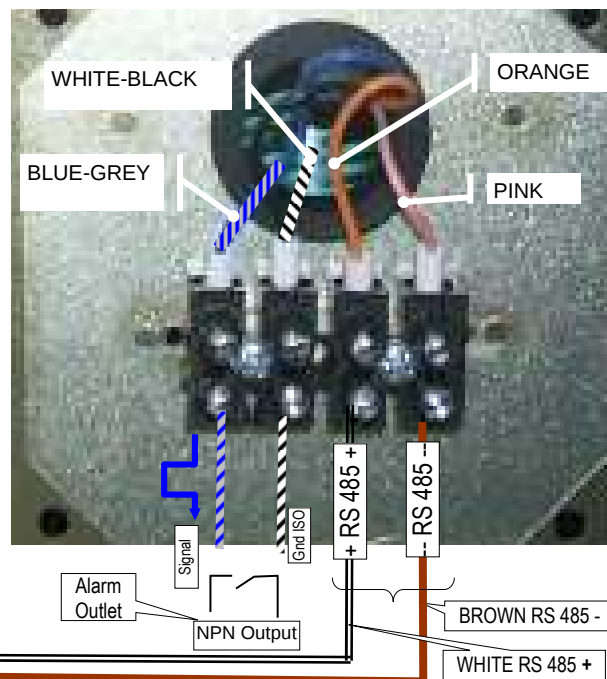
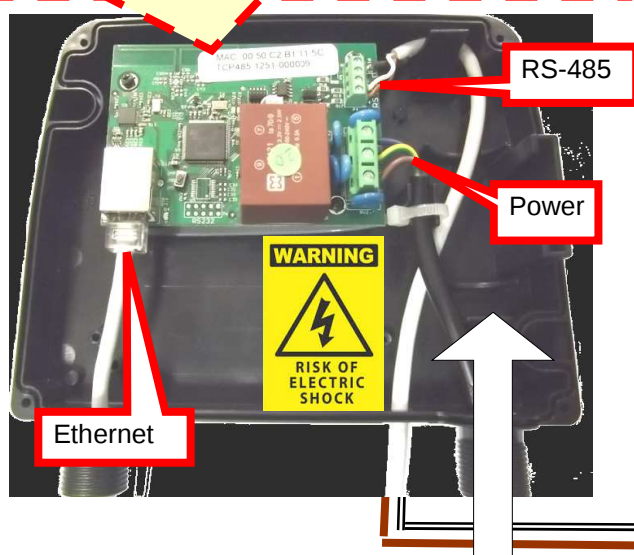


INLET Power supply
110 o 230 Vac depending on the motor model's motore 50/60Hz
Sectioned from an electric cabinet or from a socket-plug
(Note: Only the Electronic parts have wide range voltage and frequency input. BUT motors have only one voltage and only one frequency input)

Model : MCBOX 2.0 LAN e WiFi



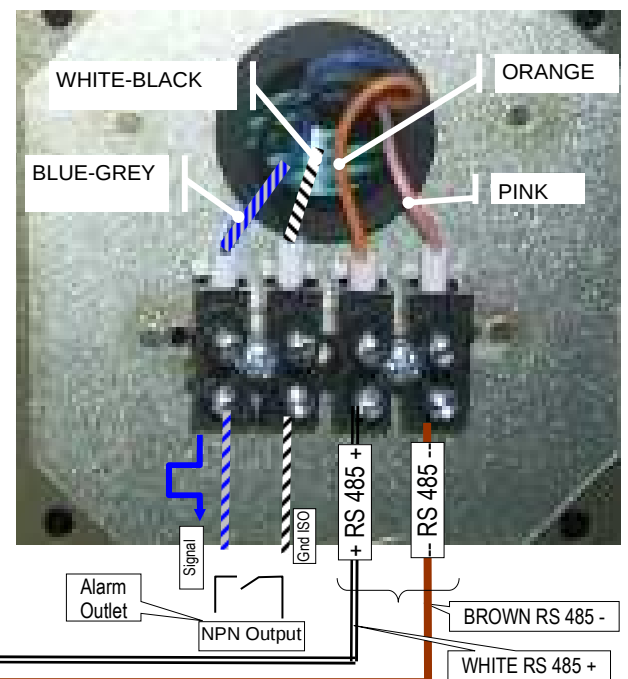
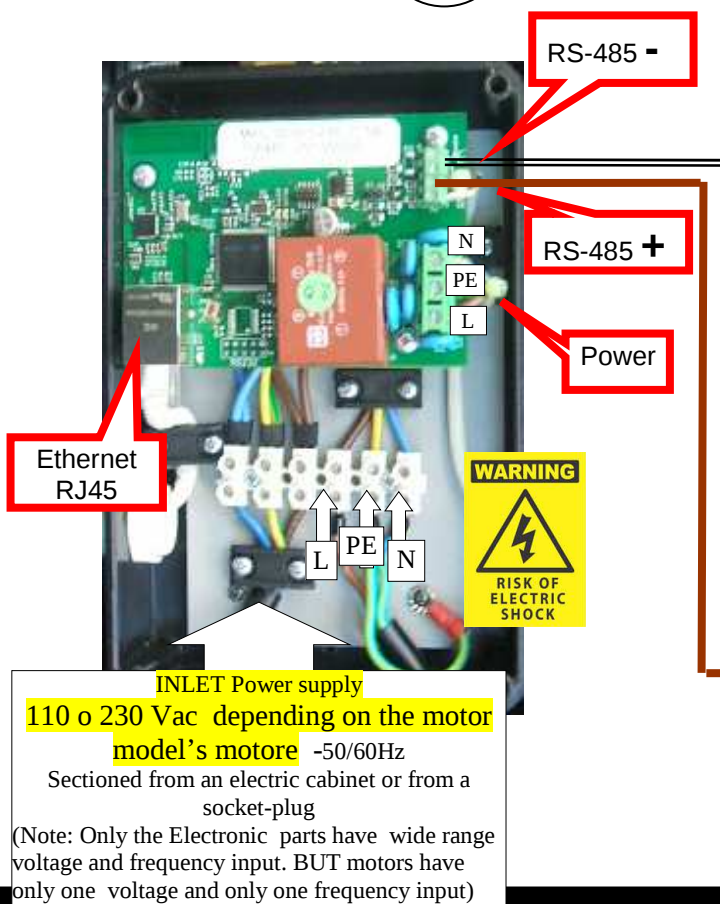
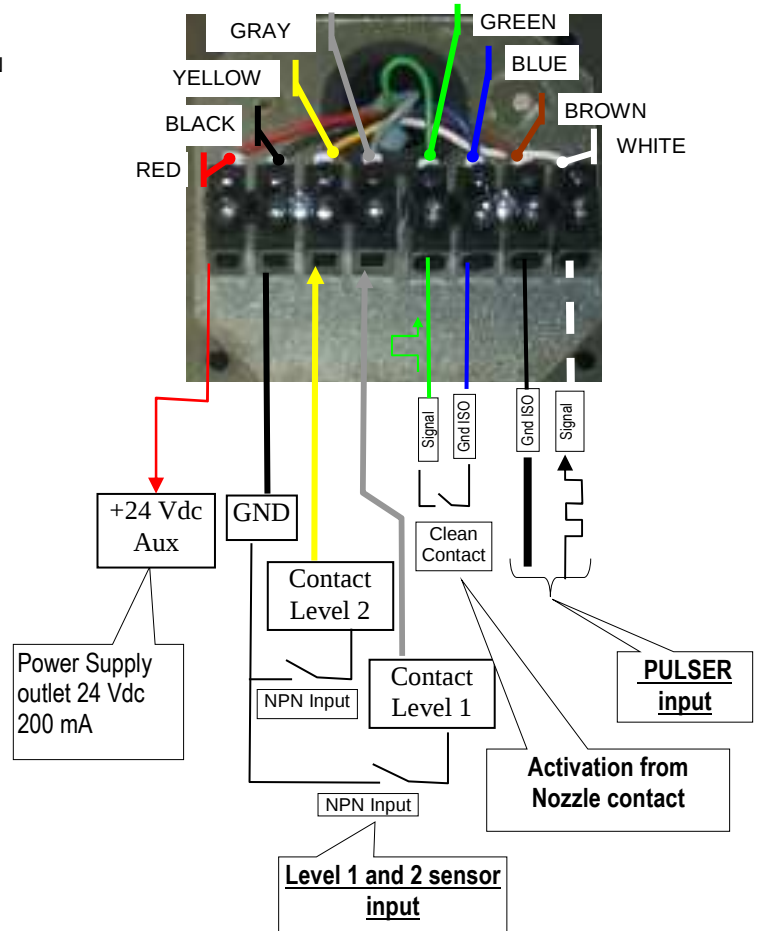
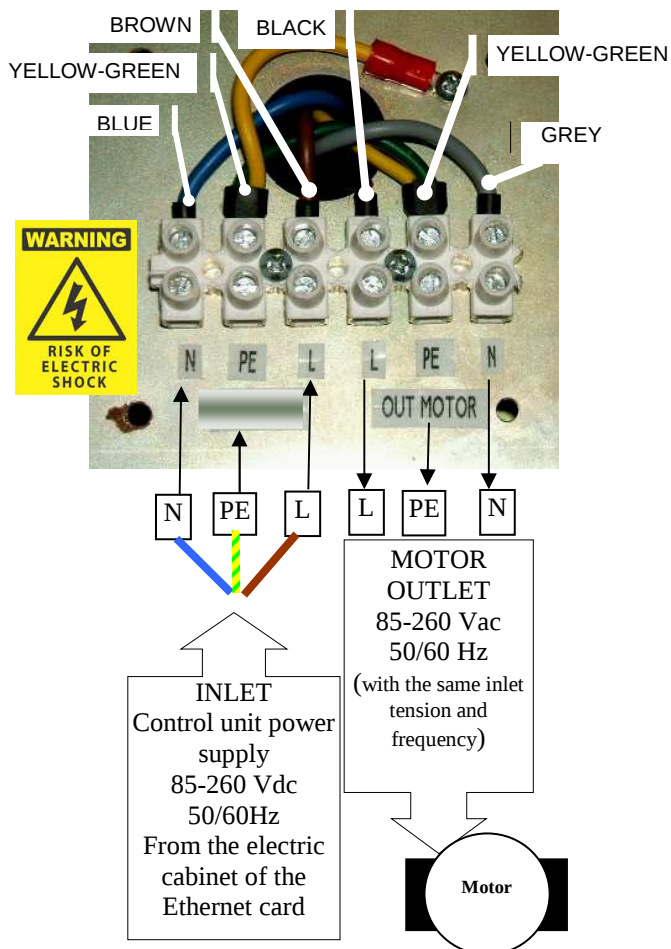
For Connection Details **PW-LAN / PW-WiFi** see specific manual of the product



INLET Power supply
85-260 Vac 50/60Hz

Sectioned from an electric cabinet or from a socket-plug
(Note: Only the Electronic parts have wide range voltage and frequency input. BUT motors have only one voltage and only one frequency input)

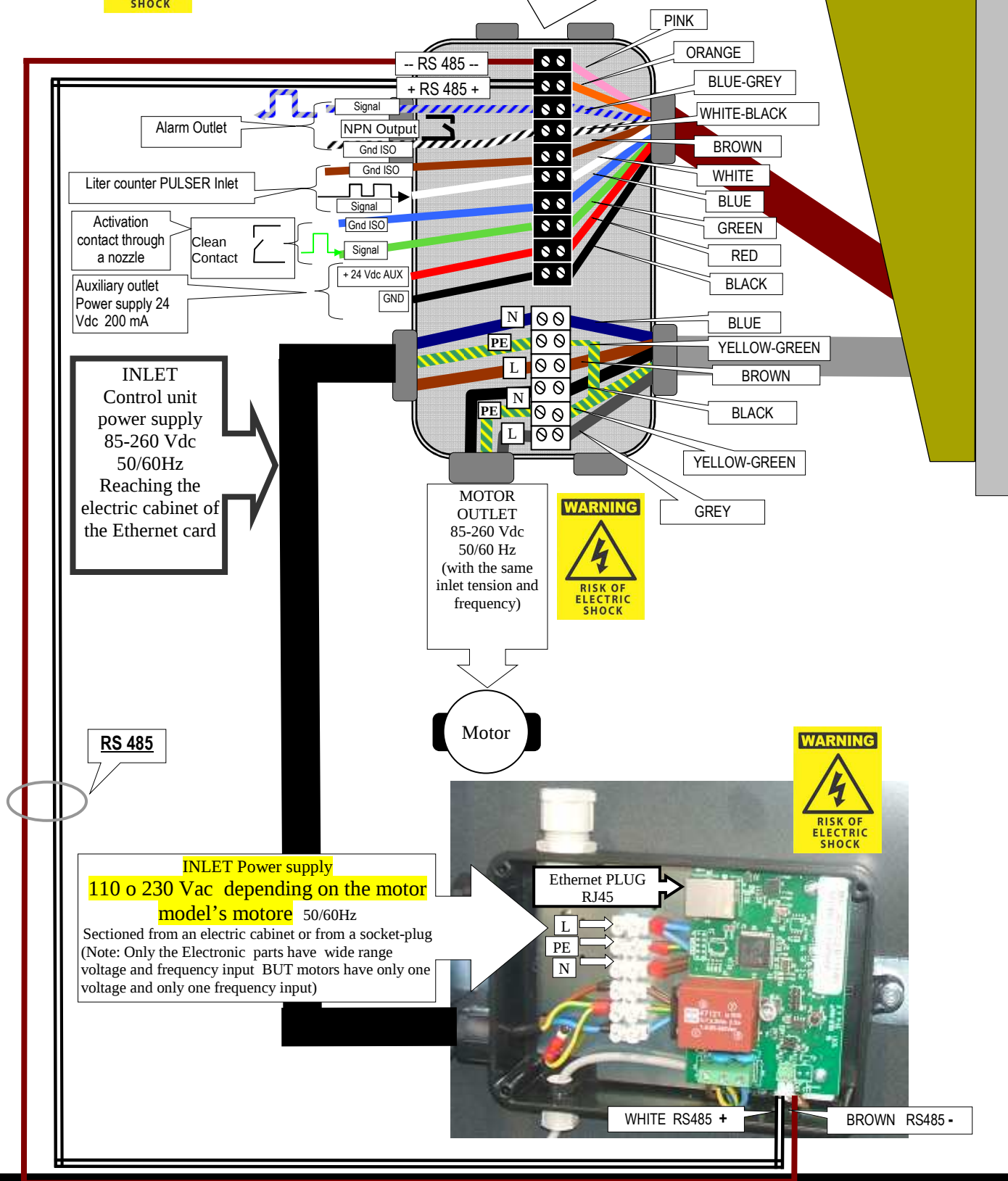
Model : : Self Service MC 2.0



Model : Self Service FM 2.0



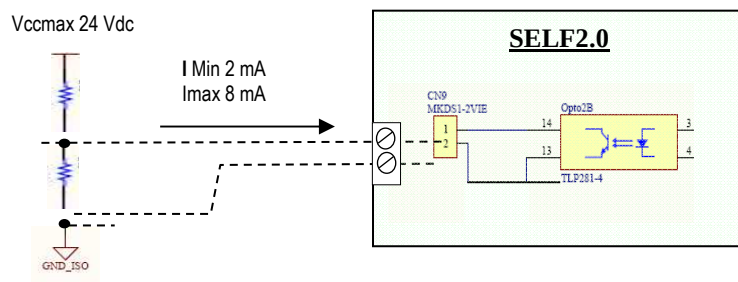
Electric branching box connected to inside the column. It can be accessed opening the column.



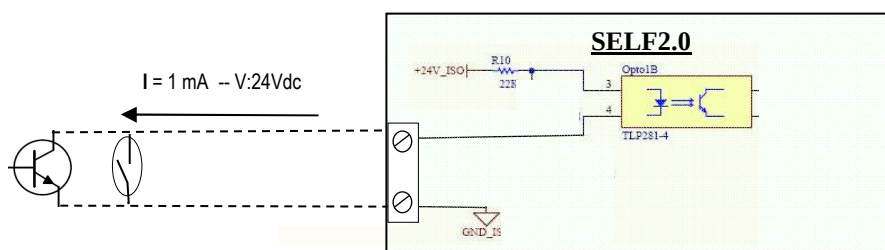
INLET Power supply
110 o 230 Vac depending on the motor model's motore 50/60Hz
Sectioned from an electric cabinet or from a socket-plug
(Note: Only the Electronic parts have wide range voltage and frequency input BUT motors have only one voltage and only one frequency input)

4.2 Input / Output electric interface

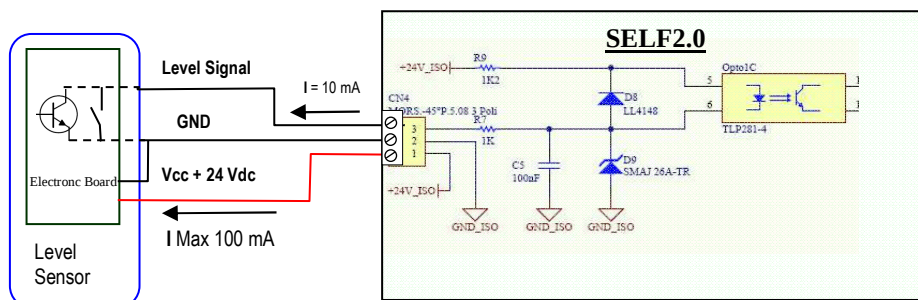
Optoisolated outlet: Interface with external units



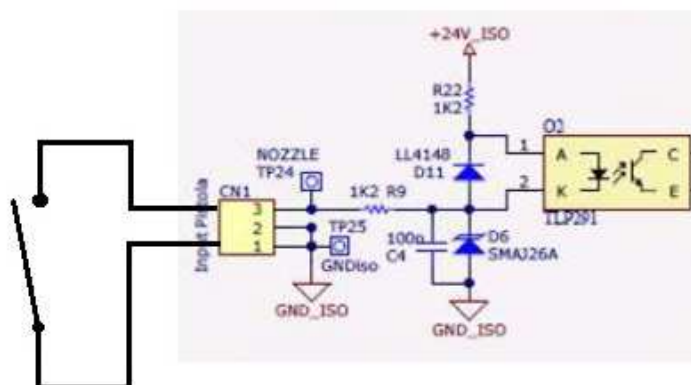
Optoisolated Inlet: Interface with external units



Level sensor or contact : Interface with sensor feed by Direct Current (DC)

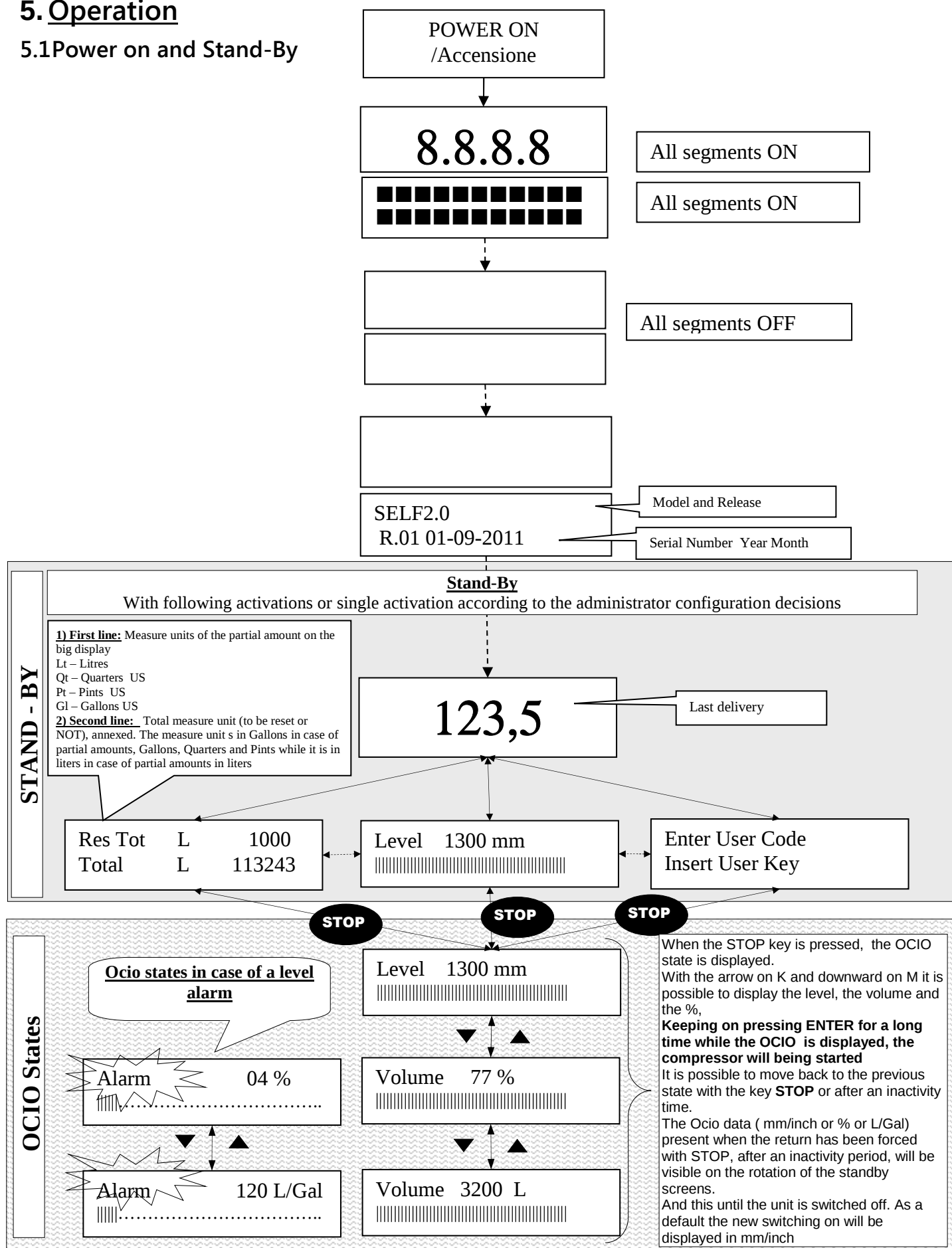


Nozzle inlet OPTOISOLATED: Interface with nozzle contact



5. Operation

5.1 Power on and Stand-By



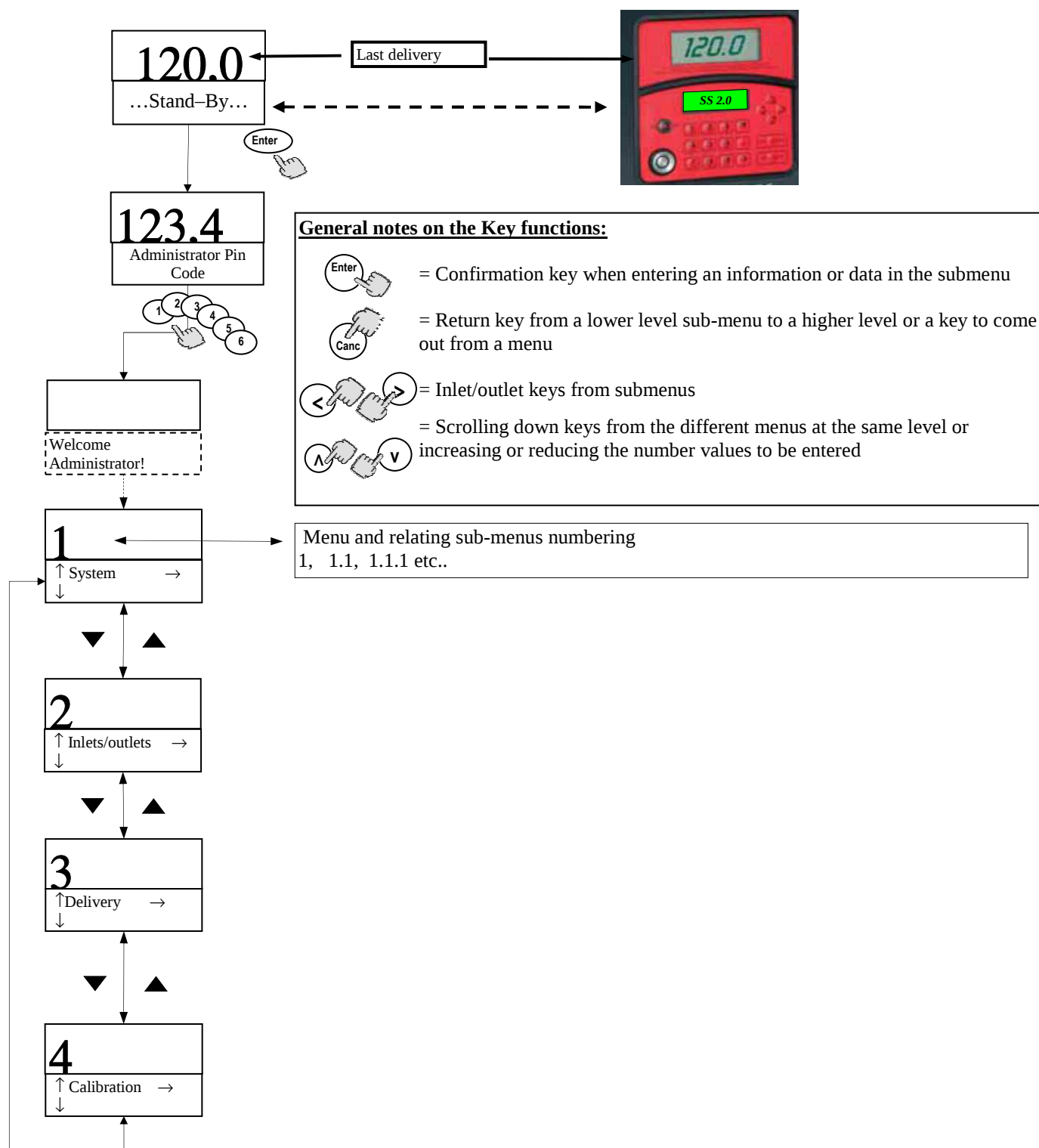
5.2 Control unit configuration in a LAN - WiFi setup

The system was designed to be highly flexible and configurable.

The functions and configuration parameters are all present on the PC software. Refer to the software manual for more details.

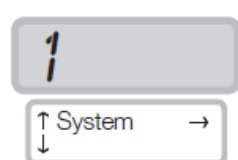
On the control unit, visible through the display user interface, there is a limited number of information and configuration possible.

To access the **MANAGER** menu, a 6 figure Pin Code is required. The set factory pin code is **123456**. The administrator can change the inlet code at will through the relating menu.

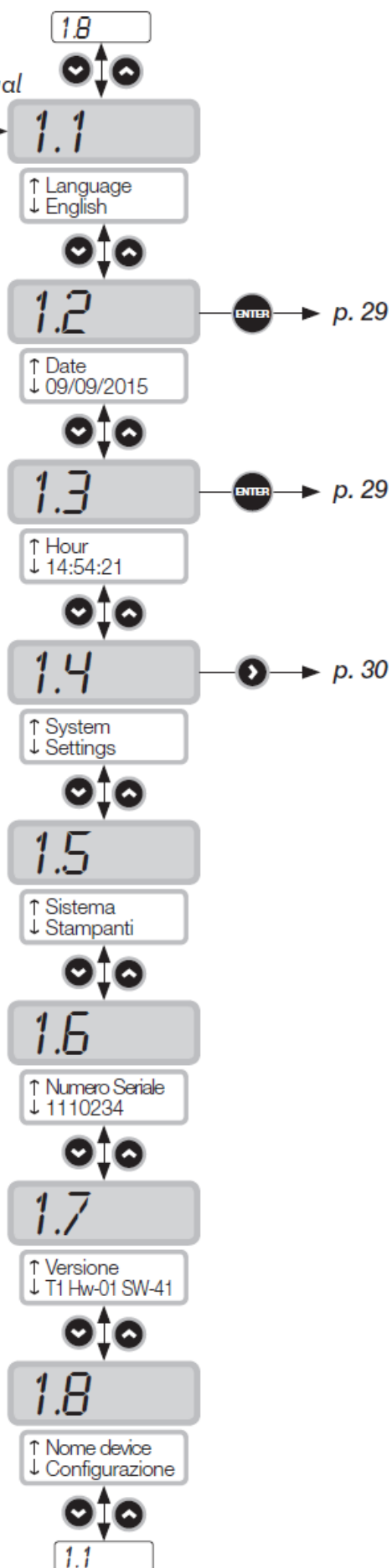


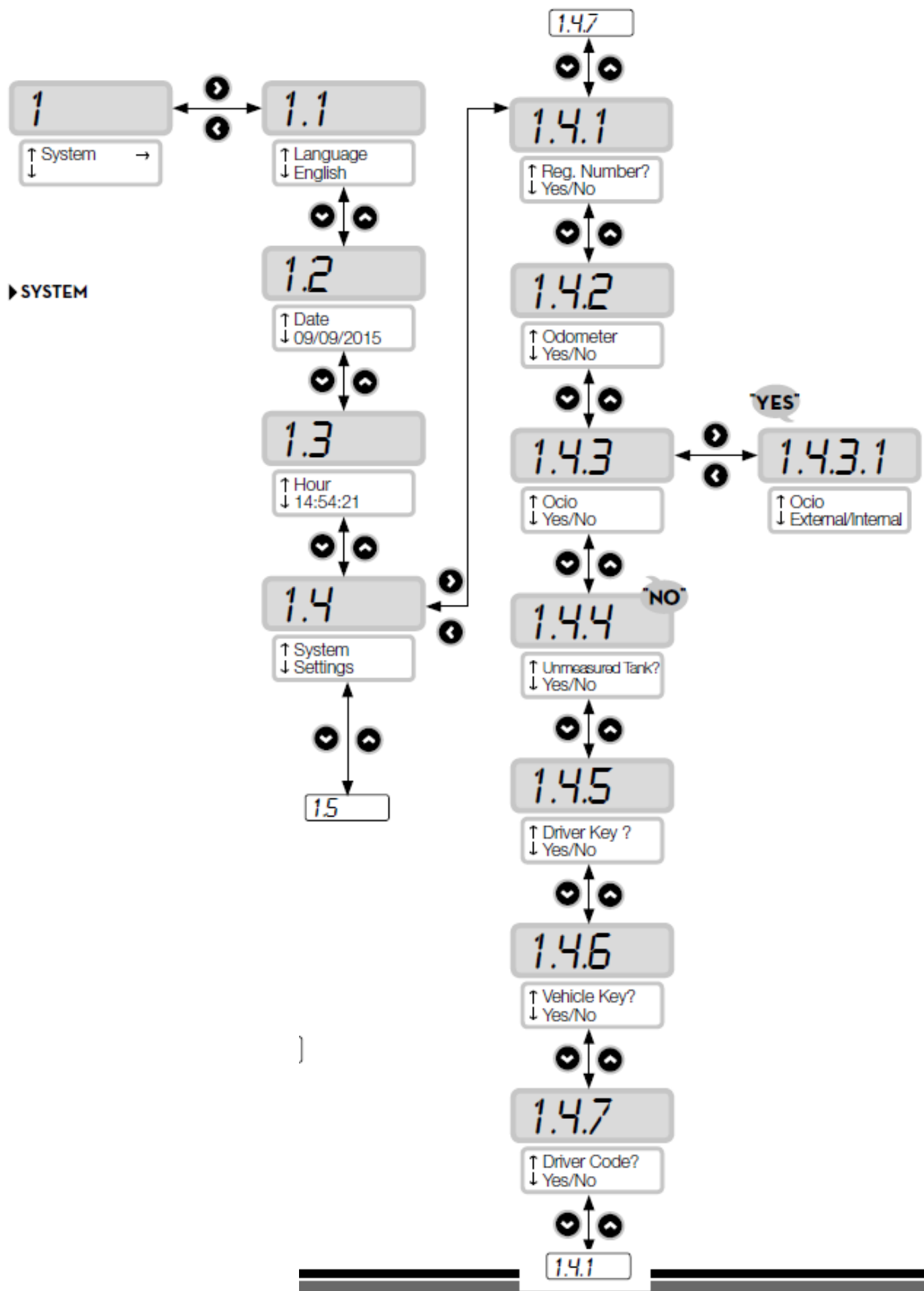


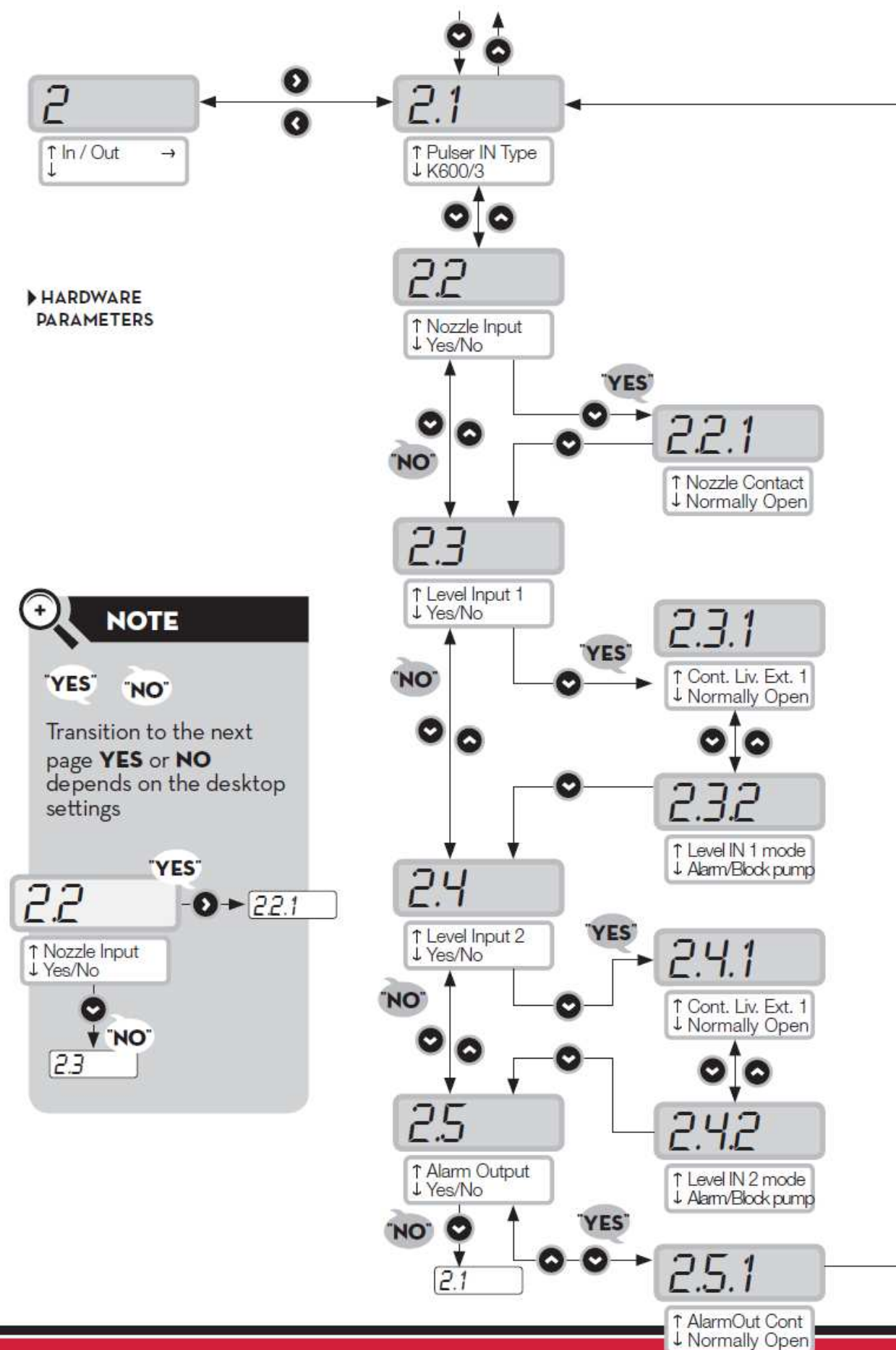
Use and maintenance manual

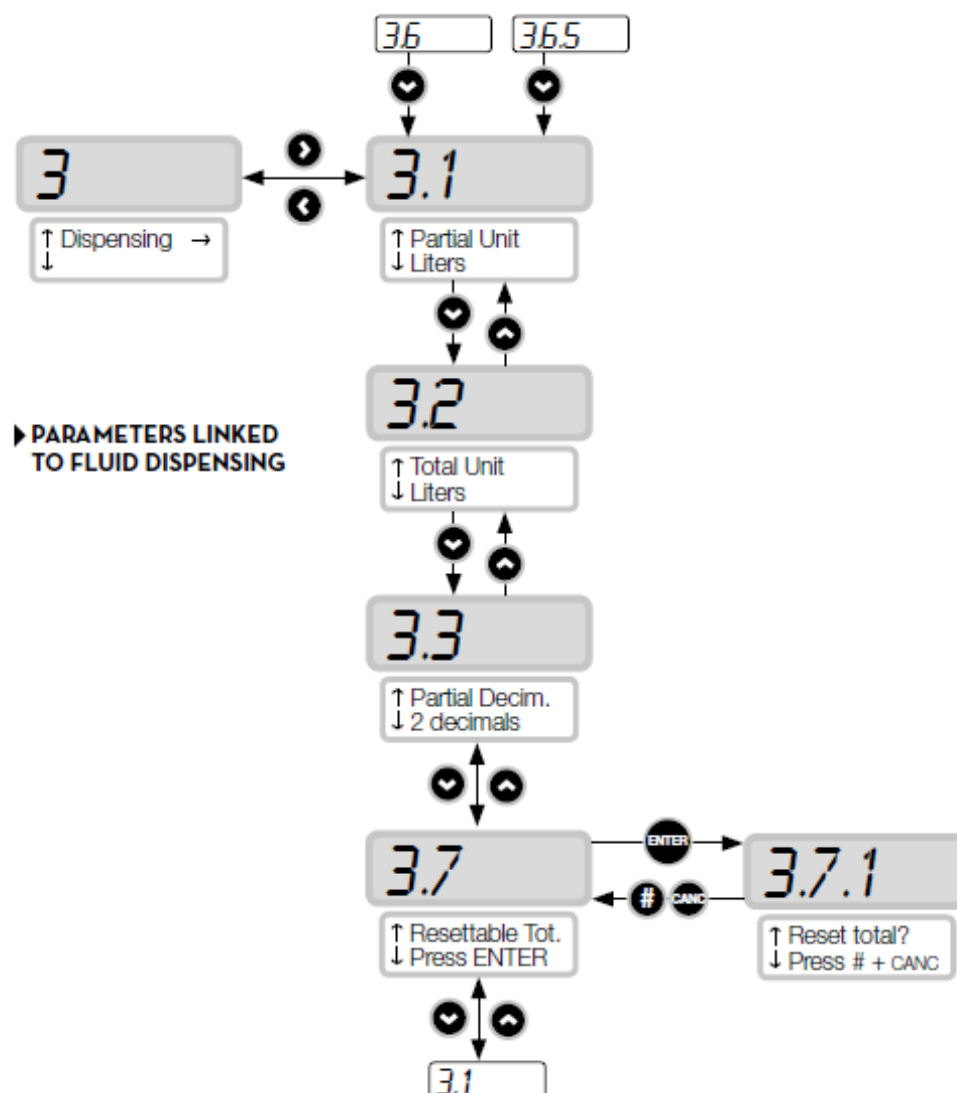


► SYSTEM









5.3 Control unit configuration in a Manager Key setup

Il sistema è stato progettato per essere altamente flessibile e configurabile.

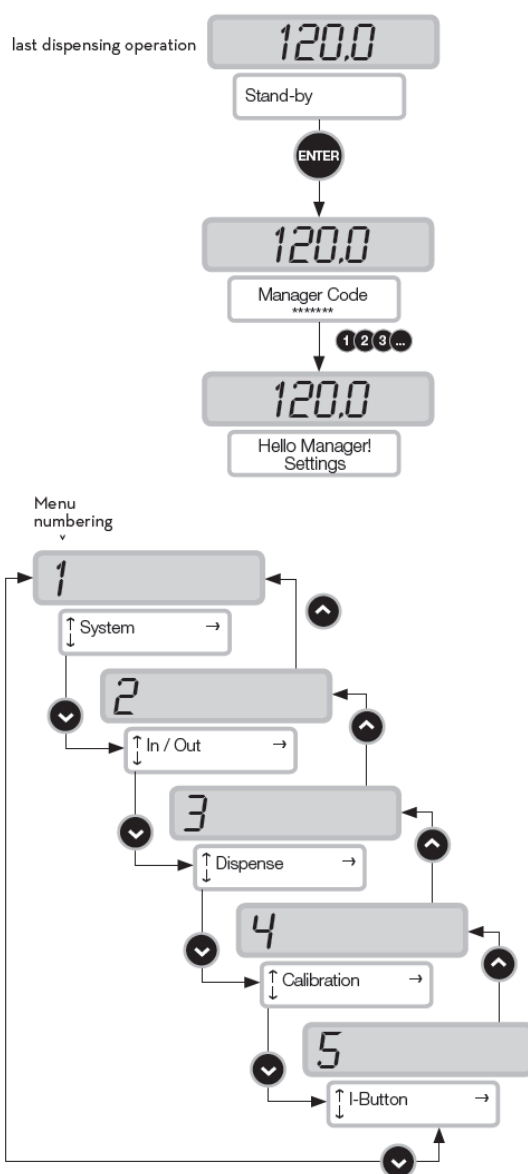
Le funzioni e i parametri di configurazione sono tutti presenti sul software PC. Si rimanda al manuale del software per maggiori dettagli.

Sulla centralina, visibili attraverso l'interfaccia utente a display permangono un numero ridotto di informazioni e di configurazioni possibili.

Per accedere al menu del **MANAGER** occorre un Pin Code da 6 cifre, di fabbrica è **123456** ma il gestore può cambiarlo tramite software quando lo desidera.

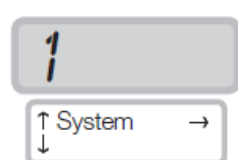
Per il corretto funzionamento del dispositivo è necessario configurare data e ora della centralina elettronica, accedendo ai menu 1.2.X e 1.3.X, successivamente effettuare un "Export Config".

In seguito connettendo la chiave manager al computer, il pannello verrà riconosciuto dal software, importato nell'impianto e disponibile ad essere configurato.

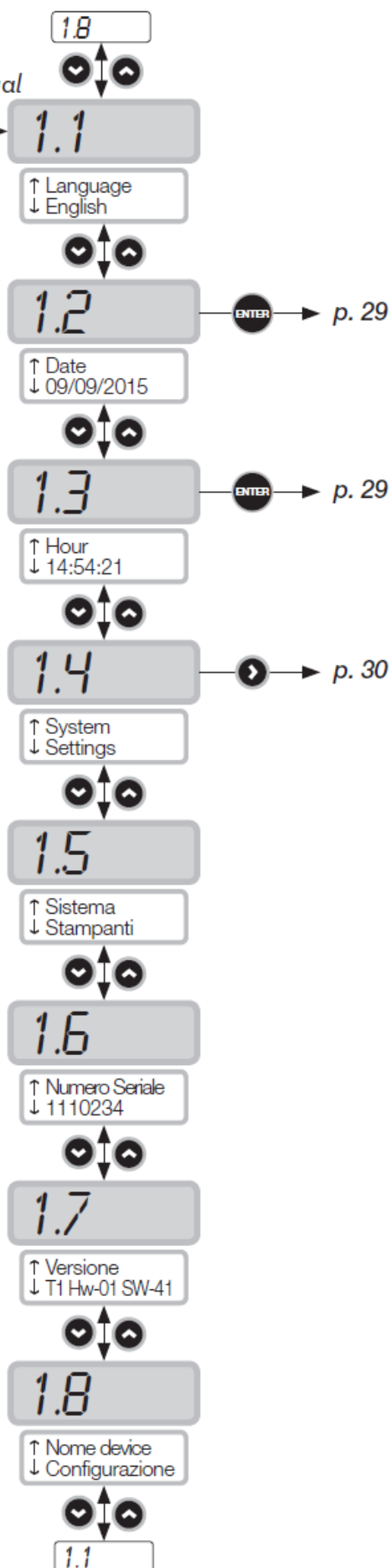


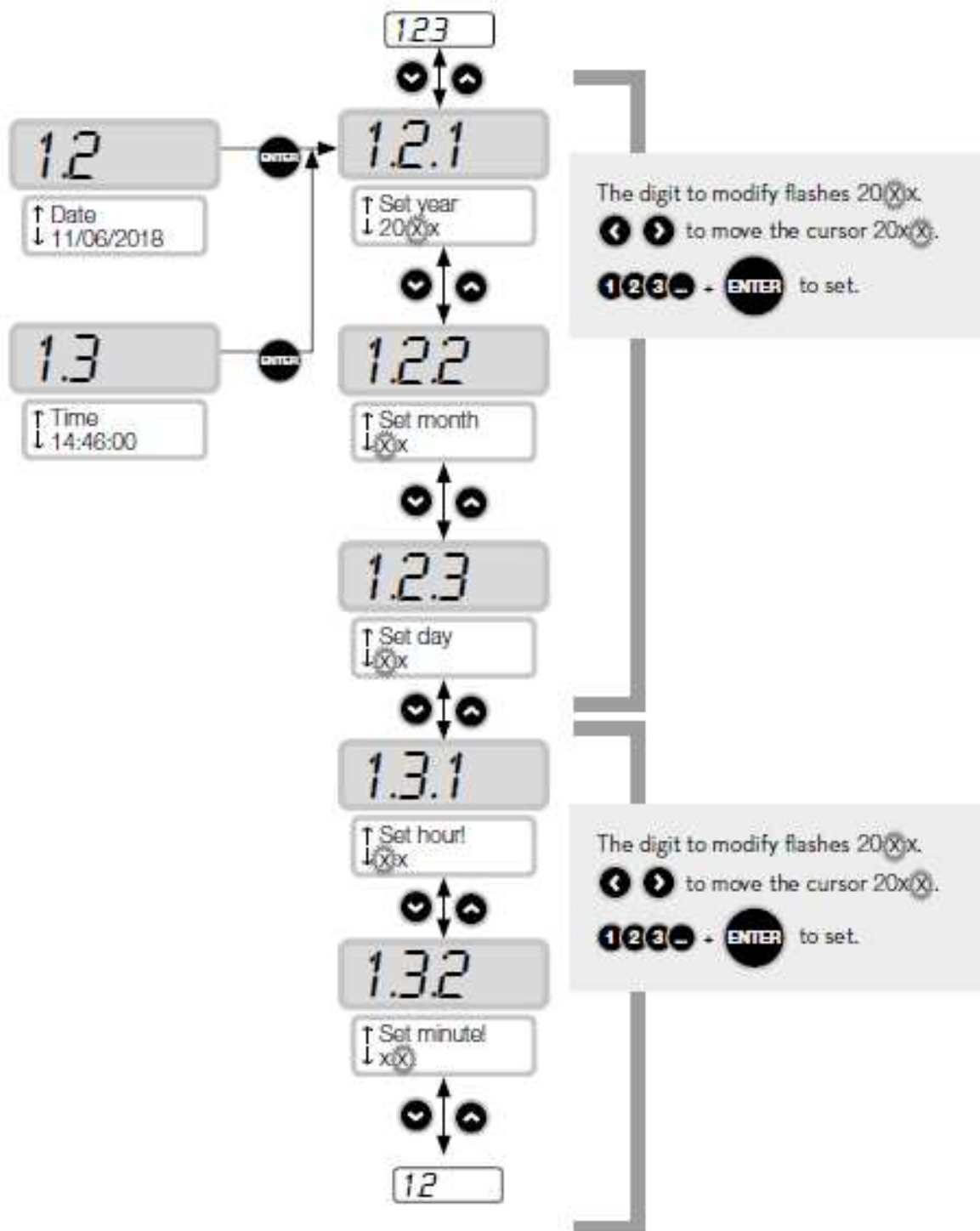


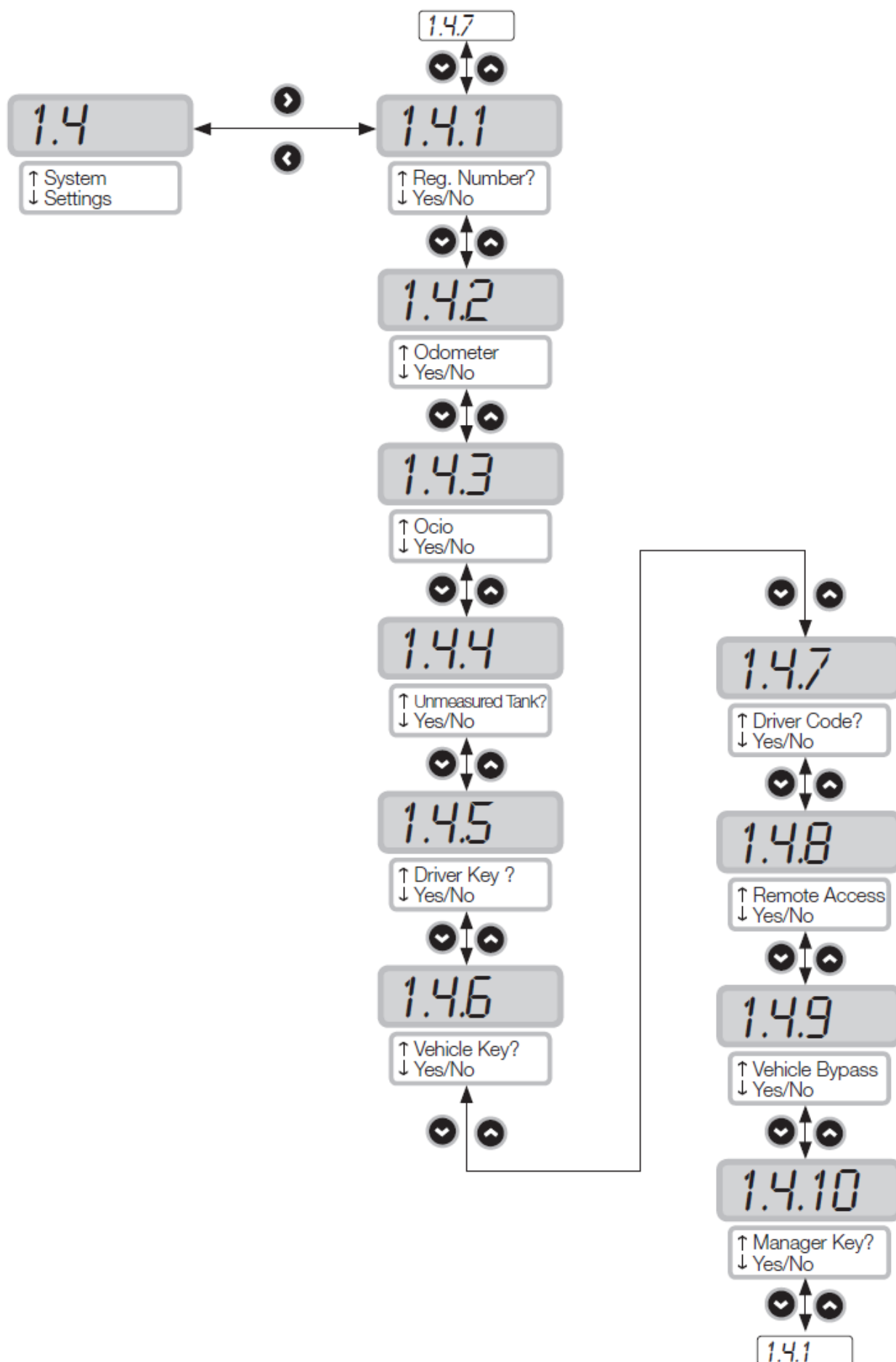
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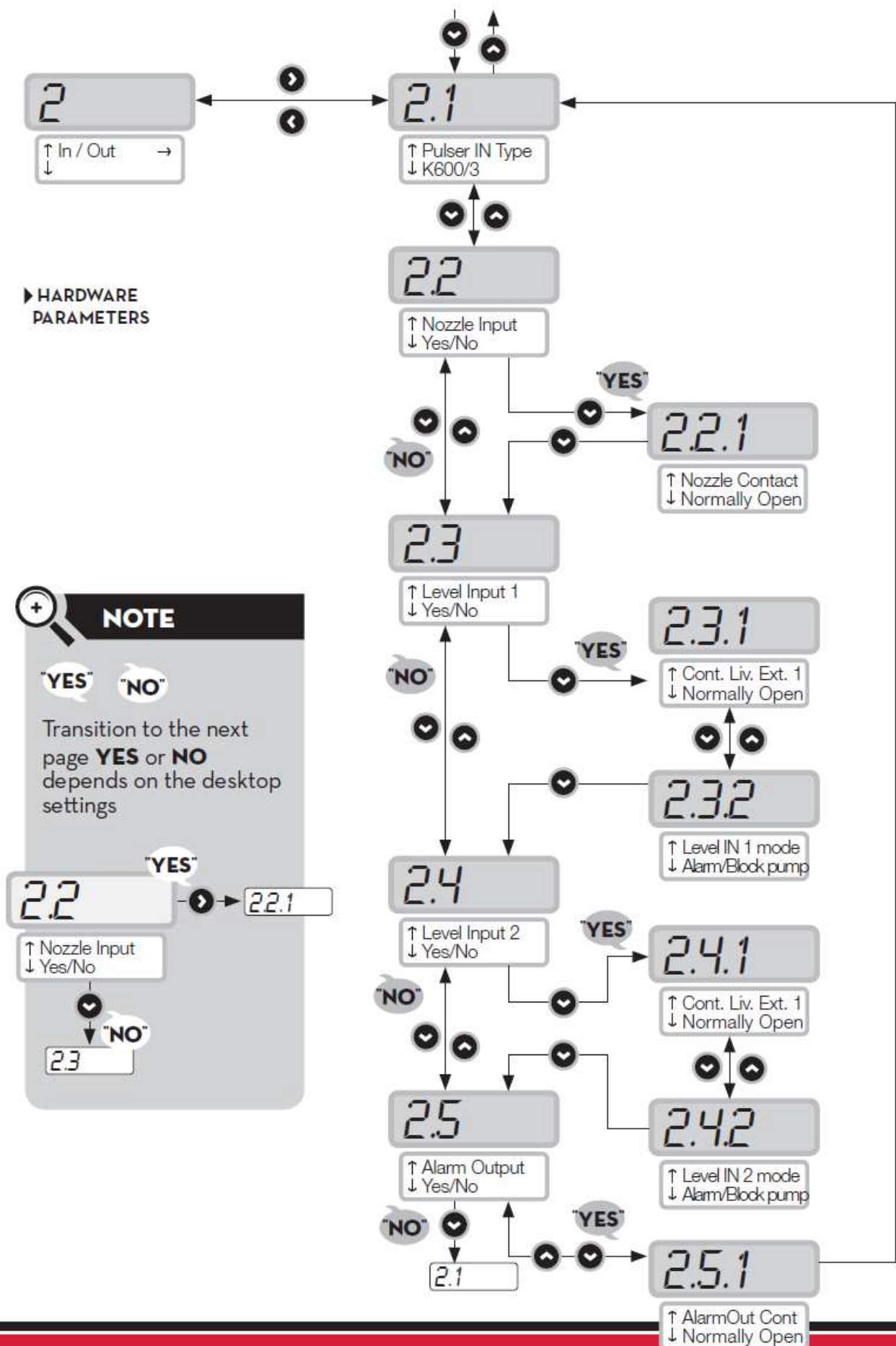


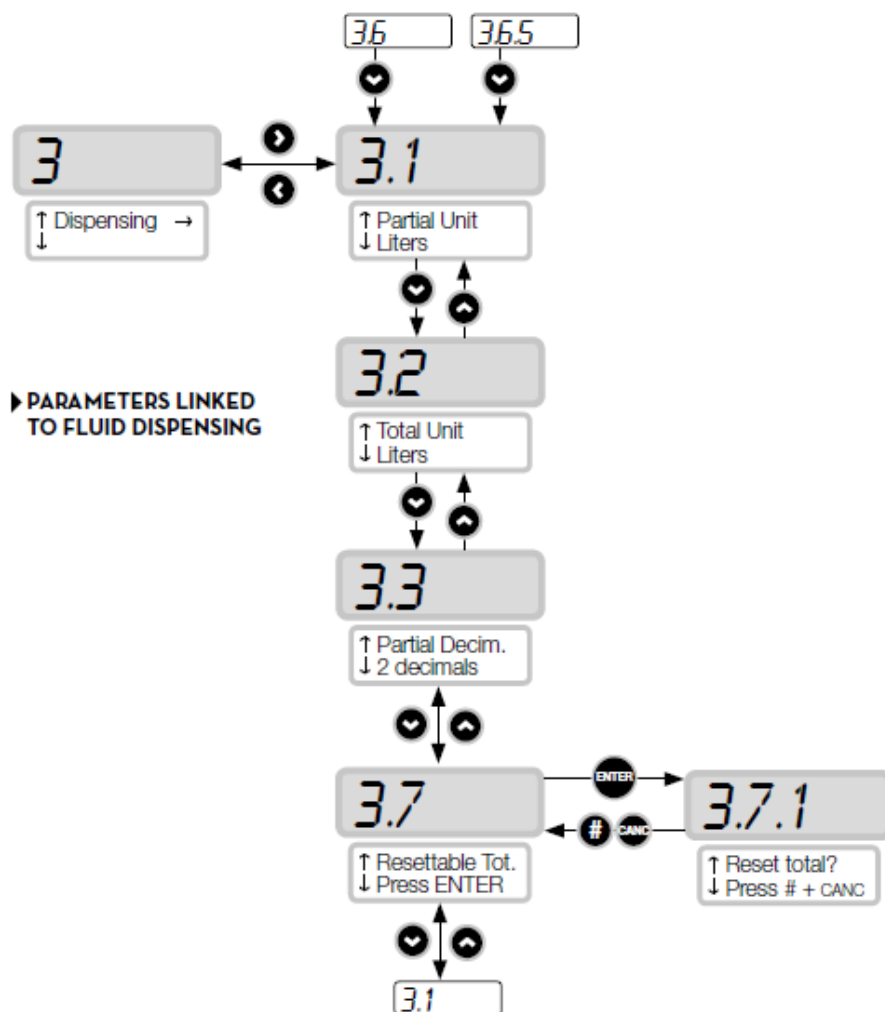
► SYSTEM

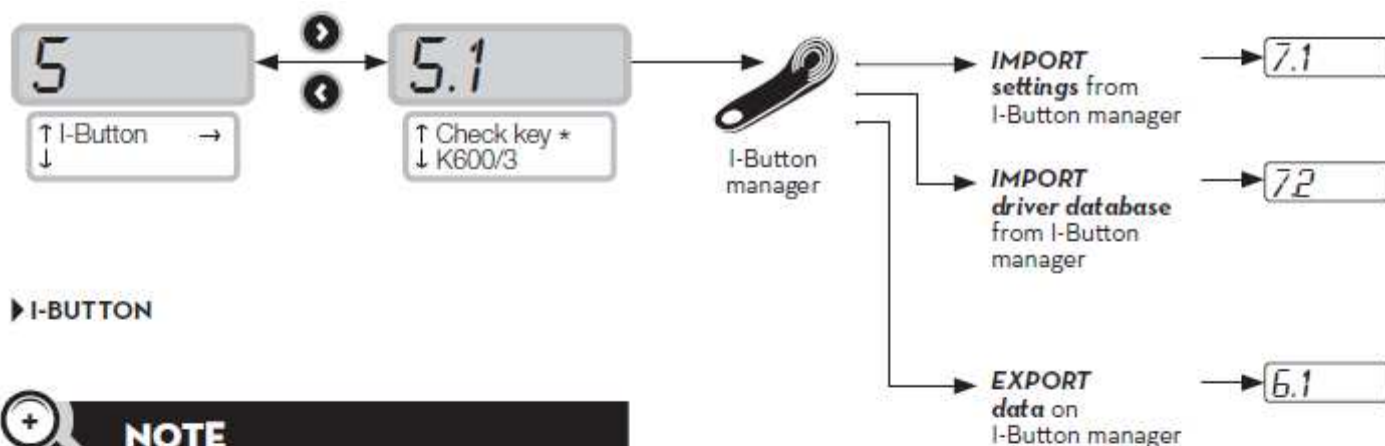










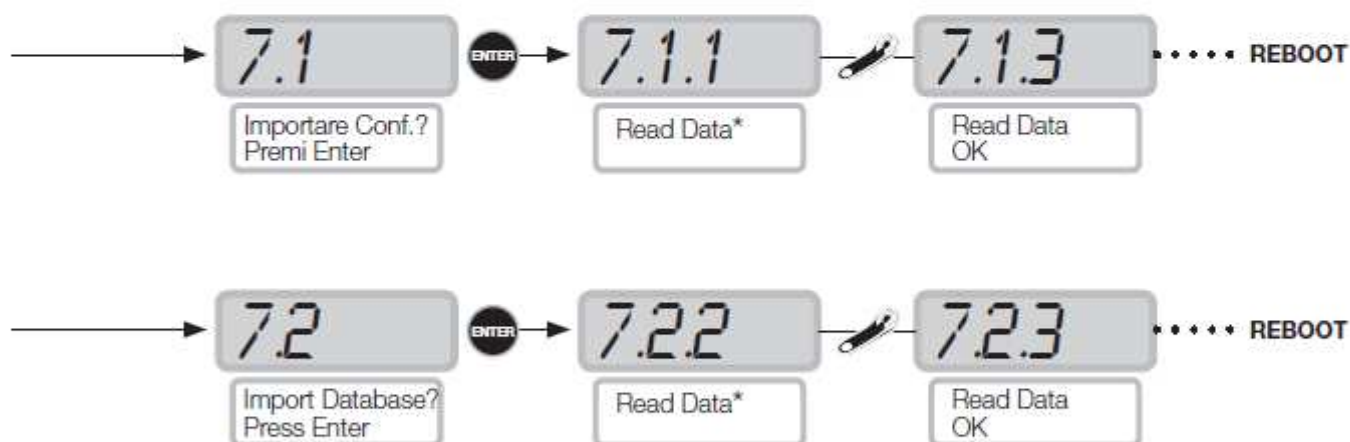


► I-BUTTON



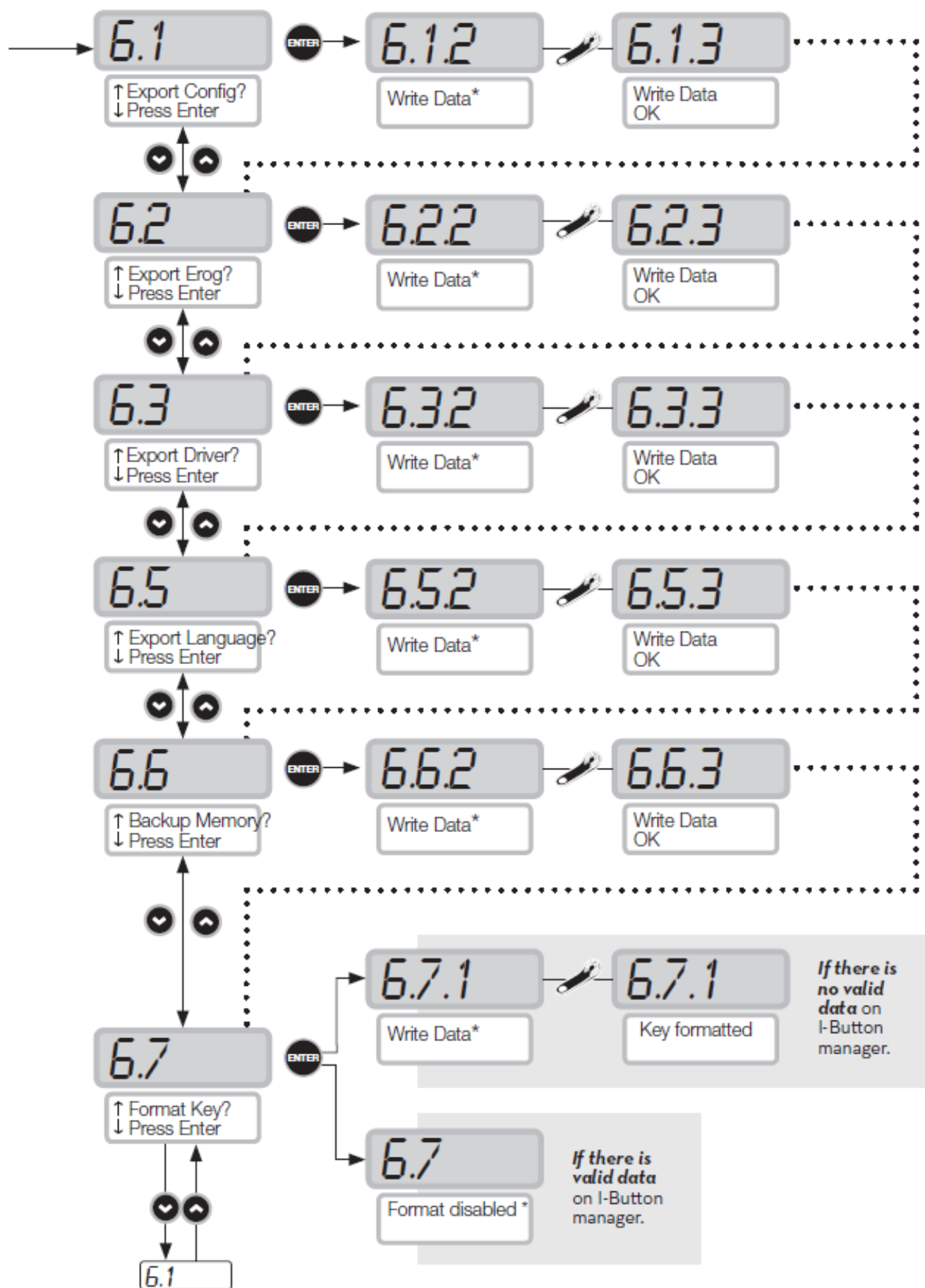
NOTE

Some functions could be available depending on the free memory space in the manager key and on the dimensions of the drivers and supplies databases.



The presence of the asterisk on the display means that the key is not connected; check that positioning of the i-Button on the player is correct.

.....
The hatched line shows an automatic movement from one screen to the other.



5.4 Calibration

Opens a submenu where you can check or edit CALIBRATION settings and the FLOW METER/PULSER settings.

Sub Menu CALIBRATION VIEW

Displays the CALIBRATION FACTOR in use. All flow meters/pulsers are factory-calibrated for the use with the liquid in which it is intended the distributor, and will display "K Fact 1.000" as the calibration factor. Calibration changes the K Fact from 1.000 to another value.

WARNING

Calibration is performed to optimize flow meter accuracy.

After calibration, the K FAC will be different from 1.0000 by no more than 5% (higher or lower), i.e. it should remain between 0.9500 and 1.0500. If the difference is larger than 5%, calibration may have been done improperly.

Sub Menu CALIBRATION MODIFY

Opens a submenu providing two alternative means of calibrating the flow meter.

DIRECT MODIFY

DIRECT calibration changes the calibration factor (K FACTOR) directly.

This is useful when you want to change the calibration factor by a known amount to compensate errors observed in one or more refuellings

WARNING

Any correction to the K FACT must always be based on the current value.

For example, if the current calibration factor is 1.0120 (which is itself the result of a previous calibration, since the factory-set value is 1.000), and the following conditions are observed:

– Flow meter readings are "on average" 1.5% higher than the "true" reading. The new K Fact should be calculated to compensate the mean error observed, as follows:

$$(\text{new}) \text{ K FACT} = 1.0120 * (1 - (1.5/100)) = 0.9968$$

– Flow meter readings are "on average" 0.8% lower than the "true" reading. The new K Fact should be calculated to compensate the mean error observed, as follows:

$$(\text{new}) \text{ K FACT} = 1.0120 * (1 + (0.8/100)) = 1.020$$

CALIBRATION BY DISPENSING

CALIBRATION BY DISPENSING calibrates the flow meter by dispensing fuel into a GRADUATED CONTAINER of known capacity.

This is the quickest and easiest way of calibrating the flow meter and requires no calculations.

Calibration by dispensing can be suspended and restarted at will, and is considered complete when the fuel level can be seen in the container's graduated section.

WARNING

To calibrate the flow meter properly you should use an accurately graduated container with a capacity of no less than 20 litres. In particular, you should:

- Remove all air from the pump, hoses, tubes and flow meter by pumping until the flow is full and regular.
- Stop the flow by switching off the nozzle but not the pump.
- Do not reduce flow when nearing the container's graduated section.

The correct procedure is to start and stop dispensing at a constant rate until reaching the desired limit, if possible with no interruptions.

If the quantity displayed by display is different from the quantity observed in the graduated container (the "TRUE READING"), the quantity displayed will have to be changed to the TRUE READING.

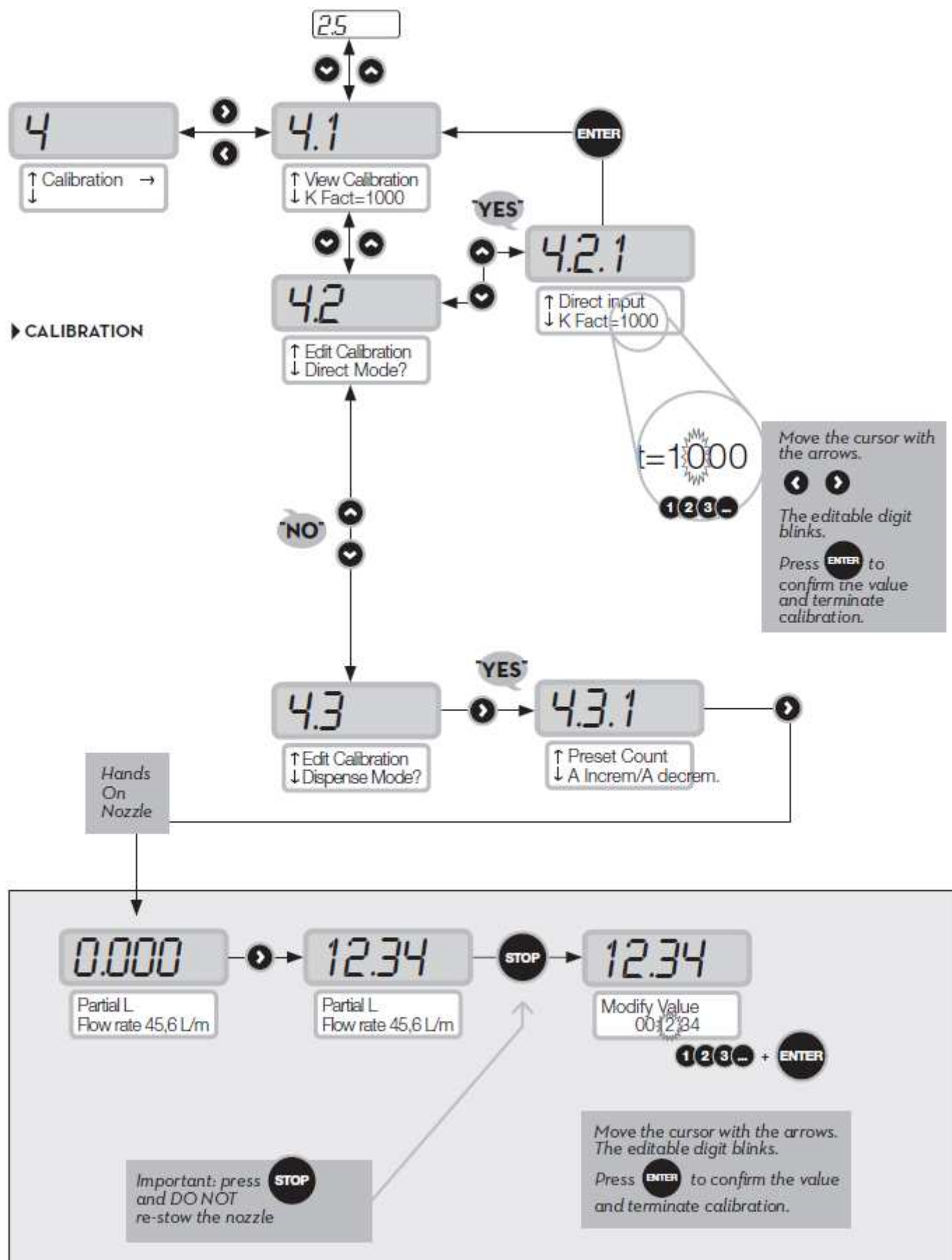
Press "ENTER" to confirm the correction; the system will recalculate the calibration factor.

The new calibration factor will remain effective until a new changed.

WARNING

A single dispensing is enough to calibrate the flow meter properly.

After calibrating the flow meter, always check the results to make sure the instrument's accuracy has is within acceptable limits.



5.5 Modification of the date and time

The possibility of setting the time and date manually by the manager has been introduced if the control unit does not have the time/date reference anymore.

At the same time, a driver will be able to set the time and date, which will be used as a reference for the dispensing operation to be made, but will not set the main time and date of the control unit. In addition to introducing a procedure for faults, the Date and Time Setting menu was also changed. In the old versions, the two menus were divided and operated in a separate way, while with this update they now operate in a shared way.

Both if you access from menu 1.2 (Date) and menu 1.3 (Time), you will enter the submenu for the configuration of the year.

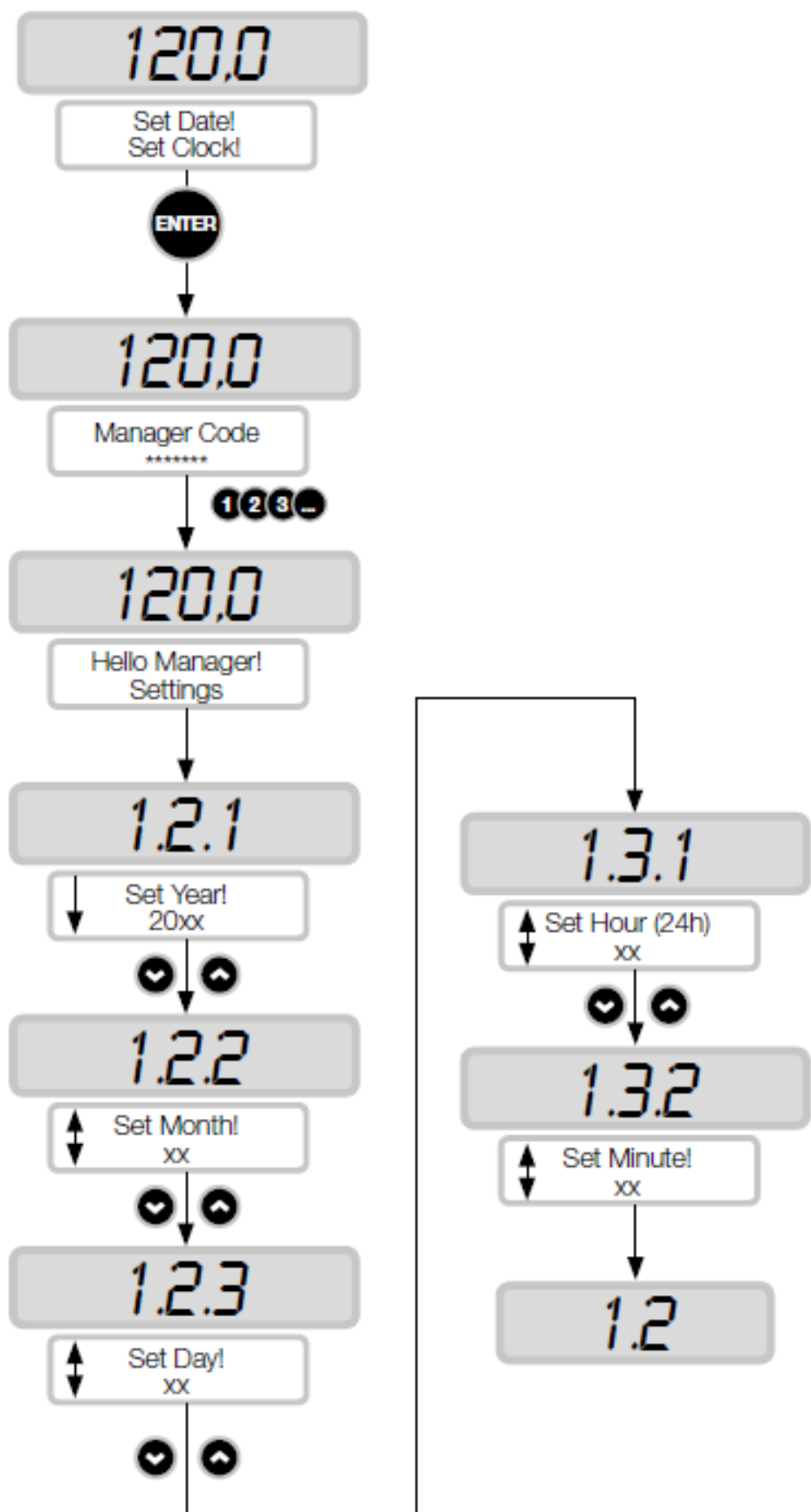
Except for this, the operation remains the same, unless you remove the seconds configuration submenu (1.3.3).

PROCEDURE FOR DATE/TIME FAULT

- When logging in, the manager is forced by the control unit to set date and time, first calling up the date setting 1.2 and then the time setting 1.3.
- There is no more the possibility of setting seconds (1.3.3)
- After this setting step, the control unit restarts from menu 1.2 "Date".
- From this moment on, the manager can scroll the "System" menu or return to the general settings menu of the Manager.

As a result of these changes, the resulting flowcharts are now shown, with references to screens that have been replaced, modified or added.

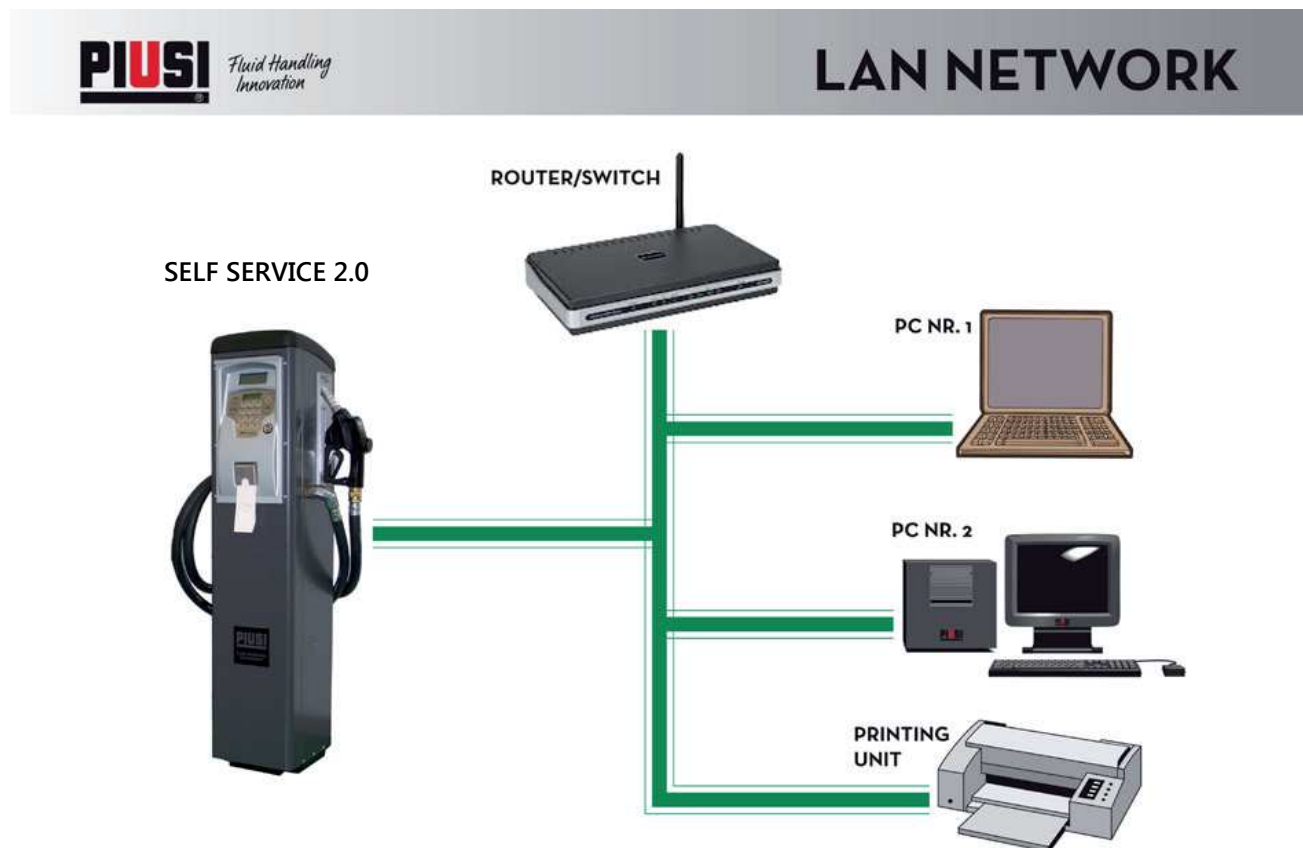
last refill



5.6 Ethernet converter configuration

Possible setup:

- Questo è un possibile schema di una tipica rete LAN.

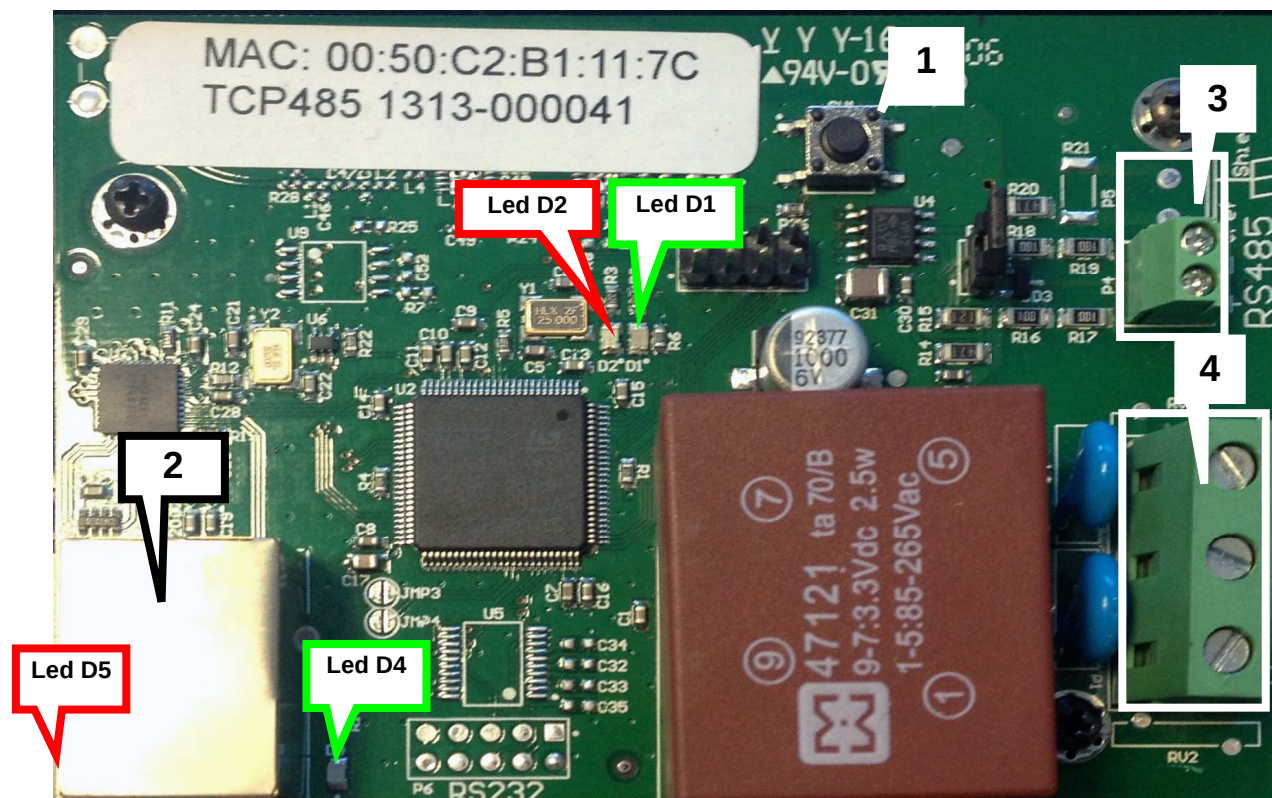


- Questo è un possibile schema di una tipica rete LAN-WIFI. Con adattatore WIRELESS PW-WIFI 2.0 (opzionale).



PW-LAN - LEDS AND CONNECTORS

Opening the box holding the electronic card, it is possible to inlet the Ethernet RJ45 connectors, the connectors and the diagnostic LED



- 1 RESET key to recover the factory parameters
- 2 Ethernet connector
- 3 Connector for RS485
- 4 Power supply connector 100/240Vdc 50/60 Hz 2.5W

LED BLINKING and MEANING

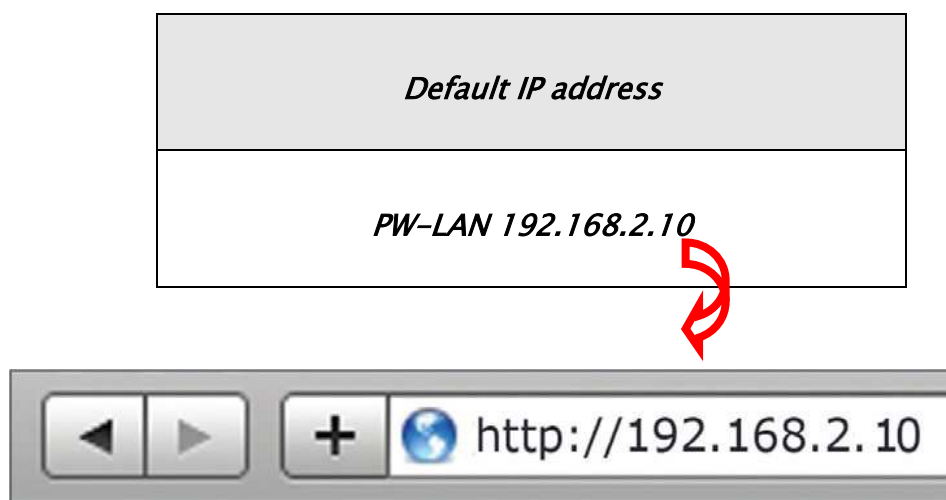
LED	Blinking type	Meaning
Led D1	Fixed and off	NO traffic data between RS485 and the LAN net
	Slow blinking	Traffic data between RS485 and the LAN net
Led D2	Fixed and off	DHCP client mode which is NOT active, it responds to the set IP by the USER different from the factory IP 192.168.2.10
	Fixed and on	DHCP client mode which is active, IP address received from the DHCP server

	Slow blinking 	DHCP client mode which is active, waiting for an IP (it responds to the fallback IP set by the user or to the factory IP 192.168.2.10)
	Rapid blinking 	DHCP client mode which is NOT active, it responds to the factory IP 192.168.2.10
Led D4	Fixed and on 	Presence of a supporting signal on the LAN
Led D5	Fixed and on 	Board Powered ON

ACCESS to the integrated web-server

To access the PW-LAN configuration, follow the hereinafter described procedure:

- 1 Check that the PC is connected through the LAN to the Piusi device
- 2 Configure the Ethernet PC card with a static subnet IP 192.168.2.x (es. IP address: 192.168.2.150 and subnet template: 255.255.255.0).
- 3 Launch the Web Browser on the PC. Add the default IP address to the address bar. Press Enter.



1. Add **admin** as *user name* and **piusipass** as *Password* , click on Login..



- If the LOGIN was successful the PW-LAN configuration screen will be displayed, otherwise check that the previous operations were correctly enforced.

CONFIGURATION SCREEN

The configuration interface of PW-LAN includes three main screens, each allowing configuring different functions on the Piusi device



PW-LAN-2.0

NETWORK | SYSTEM | RS485

Item	Setting
Device Name	PW-LAN-2.0-1169
Management IP Address	☒ DHCP Client ☐ Static
Current IP	192.168.2.10
Fallback IP	192.168.2.10
Netmask	255.255.255.0
Gateway IP	192.168.2.1
Primary DNS IP	1.1.1.1
Secondary DNS IP	1.1.1.1

[Change](#) [Undo](#)

FW REV. 4.08 PIUSI_PWLAN-2.0
MAC 00:50:C2:B1:11:69

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NETWORK	The "Network" screen allows configuring the network operating mode; Hostname; IP address; DHCP; sub-net template; IP Gateway ; Primary and secondary DNS
SYSTEM	The "System" screens controls the firmware update from the account administration as well as the configuration backup
RS485	The "RS485" screen allows configuring the RS485 conversion system. It is possible to select a Piusi product and then manually set the specific parameters.

NETWORK

The Network screen allows configuring the TCP/IPv4 parameters.

PW-LAN-2.0

NETWORK | SYSTEM | RS485

Item	Setting
Device Name	PW-LAN-2.0- 1169
Management IP Address	☒ DHCP Client ☐ Static
Current IP	192.168.2.10
Fallback IP	192.168.2.10
Netmask	255.255.255.0
Gateway IP	192.168.2.1
Primary DNS IP	1.1.1.1
Secondary DNS IP	1.1.1.1

Change Undo

DEVICE NAME	It specifies the device hostname
DHCP	The local DHCP server assigns a dynamic IP, a Gateway IP address and a DNS address to the device
CURRENT IP	It specifies the device IP address. The IP address will be used to inlet to the management, it corresponds so the Fallback address used by the device if no DCHP server is present
FALLBACK IP	It defines the di Fallback address used from the device should no DCHP server be present
NETMASK	It defines the belonging range of a internal device to a sub-network. The template 255.255.255.0 (or "/24") is generally used on many class C devices.
GATEWAY IP	Generally this is the host IP address offering an internet connection, It can be an ADSL router, a modem or a WISP router
PRIMARY DNS IP	It specified the server primary DNS (Domain name system) address.
SECONDARY DNS IP	It specifies the secondary server DNS address. The field is optional and it is used only when the primary DNS does not respond

SYSTEM

The System screen allows changing the password for the account administrator.

PW-LAN-2.0

NETWORK | SYSTEM | RS485

New password	
Verify new password	

Change Undo

NEW PASSWORD	Enter the new password for the account administrator
VERIFY NEW PASSWORD	Re-enter the password for the account administrator

RS485

The RS485 allows configuring the conversion system RS485

PW-LAN-2.0

NETWORK | SYSTEM | RS485

- ☒ Piusi product
☐ Custom product

Self Service 2.0 ▼

Change Undo

PW-LAN-2.0

NETWORK | SYSTEM | RS485

- ☐ Piusi product
☒ Custom product

Item	Setting
Baudrate	230400 ▼
Databit	7 ▼
Parity	NONE ▼
Stop	1 ▼

Change Undo

PIUSI PRODUCT	Automated configuration of Piusi product Select a product from the list.
CUSTOM PRODUCT	Manually enter the parameters RS485 Four step procedures: 1 Select the Baudrate 2 Select Databit 3 Select parity 4 Select the stop bits

6 Daily use

During the daily use, considering the high number of configuration to be set by the installation administrator, it is impossible to specify all the cases. However, simplifying, the following cases can be identified:

6.1 Type of delivery:

5 different types of deliveries possible: 1 free and 4 with quantity pre-selection.

- Free delivery with no possibility to preselect the quantity (disabled preset)
- Delivery WITH Selection (Preset) divided in 2 cases:
 - o Preset on customer request (pre-selection on specific request – On demand), pressing the key # for 2 seconds) on its turn divided in :
 - Fixed quantity preset by the manager (which can't be modified by the user)
 - Quantity which can be modified by the user.e
 - o Automated preset divided in :
 - Fixed quantity preset by the manager (which can't be modified by the user)
 - Quantity which can be modified by the user

6.2 Configuration parameters types:

- Delivery enabled through an Electronic user key (yellow) or through a user PIN CODE or with no recognition.
- Delivery enabled through an Electronic vehicle key (blue) or with nothing
- Delivery enabled through the nozzle contact or not.

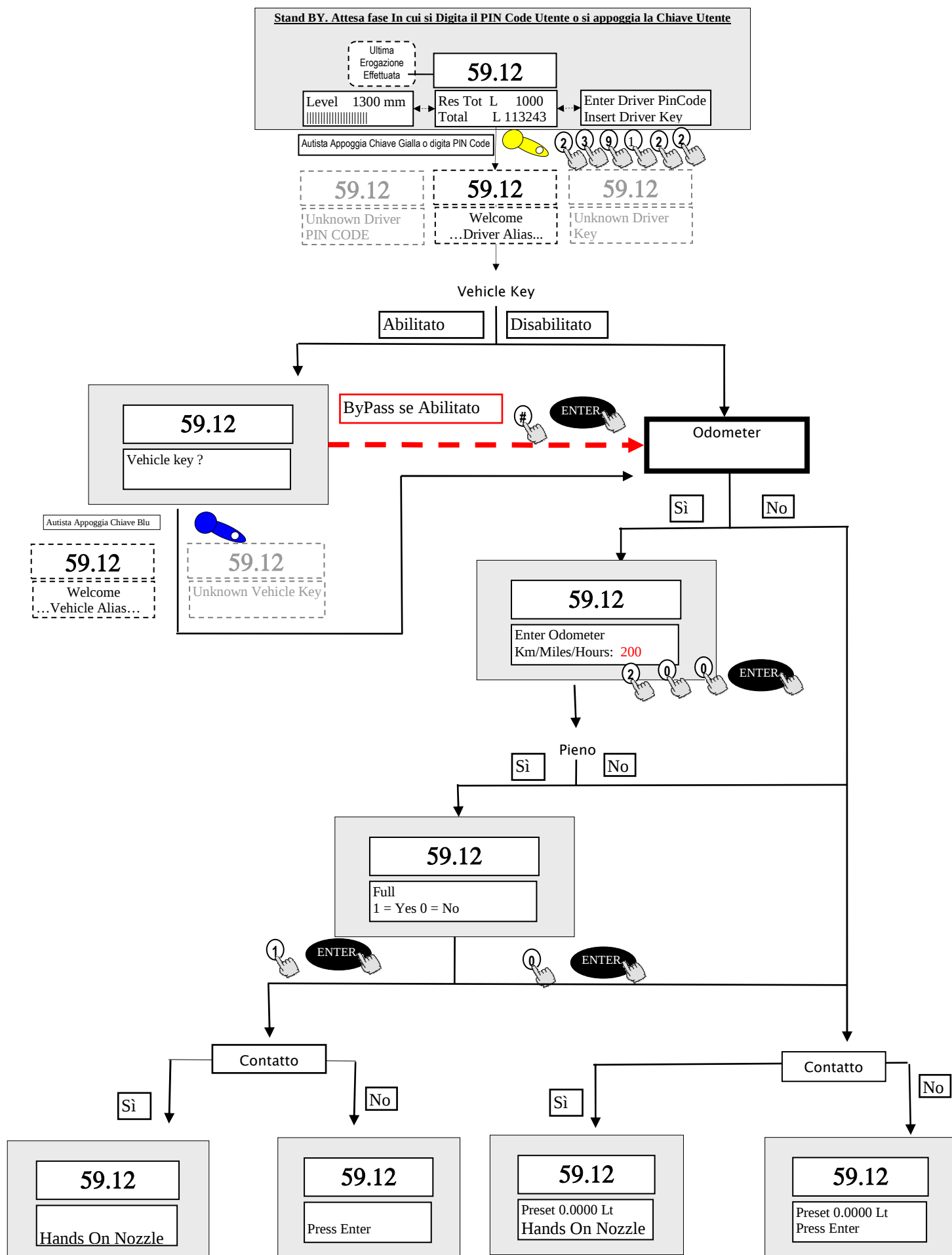
6.3 Information which can be asked before delivery

Before delivery, it is possible to ask further information to the user. The decision to ask for all or part of the information depends on the configuration enforced by the manager to the electronic control units. For example

- **Odometer.** It asked to add information on km and vehicle working time at the time of delivery
- **Full? Yes/No:** The user is asked if it does want to entirely refuel its vehicle. Such an information is very important to accurately calculate the vehicle consumption between one refuel and the following.
- **(if not full), Preset:** The user is asked to specify the accurate number of liters to deliver.dd

6.4 Delivery memory full:

When the Manager Key function is activated, the delivery are preserved in the internal memory. After reaching the threshold of 500 delivery, a warning message notifies you that the memory is almost full and you need to download the delivery. Reached the number of 650 delivery, the control unit prevents new delivery, and to resume the service is necessary to the discharge of deliveryents through the Key Manager. (see procedures at pag. 30).

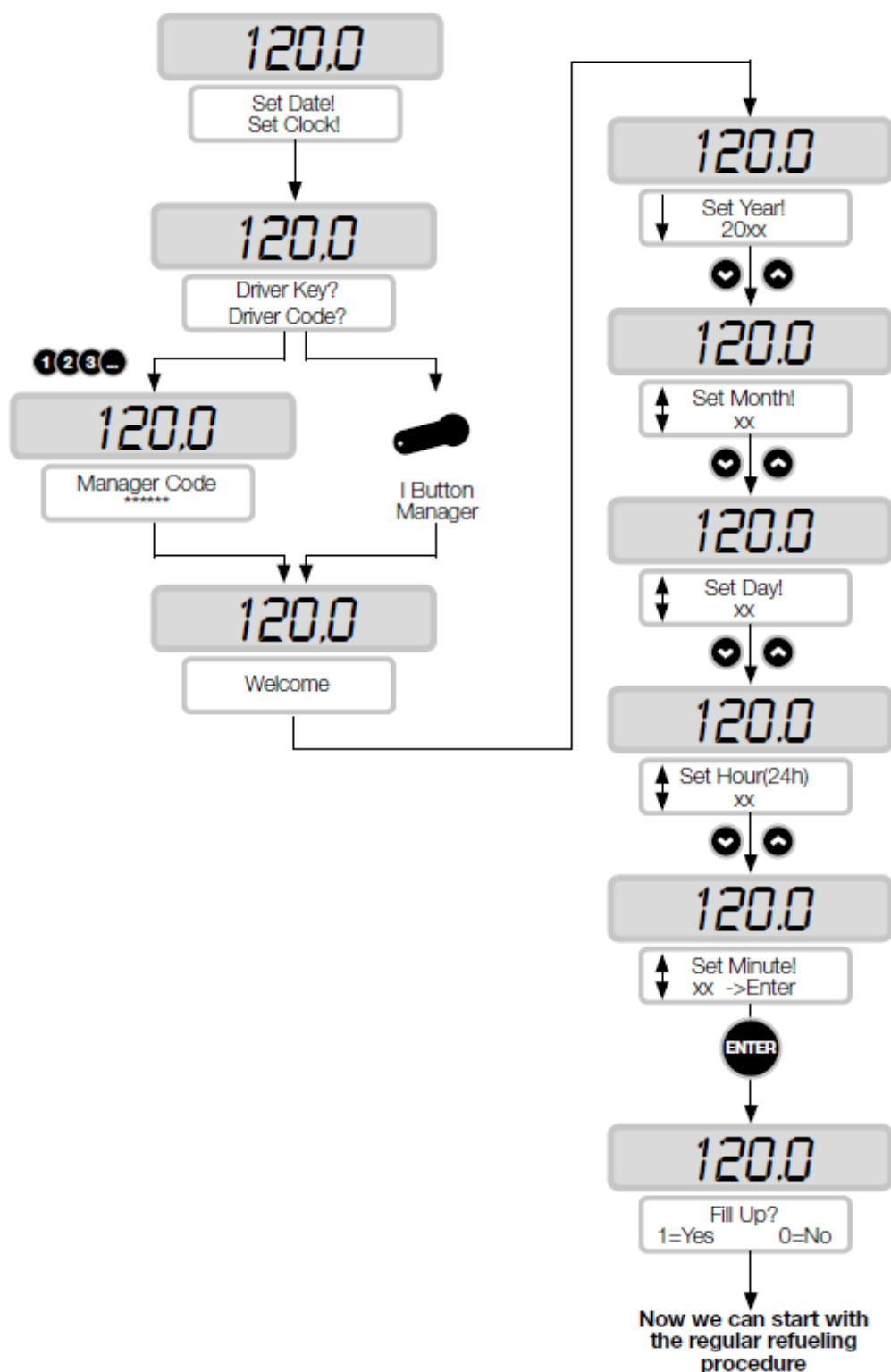


7 Procedure for entering date and time by the driver

If there is a date and time fault, with the control unit not yet set by the manager with the procedure described in paragraph 11.7, the driver can dispense manually entering Date and Time at each dispensing operation.

At each authentication, the driver is not enabled to dispense until he has entered the Date and Time.

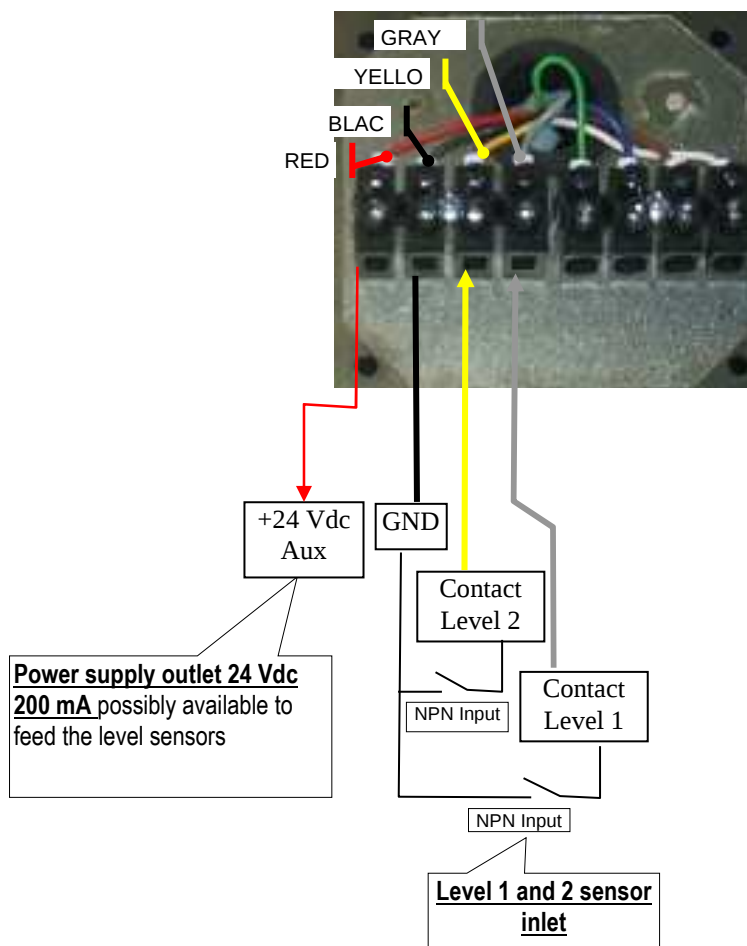
These settings will be considered only for the dispensing operation made when the new parameters are entered, without affecting the actual time and date of the control unit (such data can be changed only by the manager).



8 Tank level alarm states

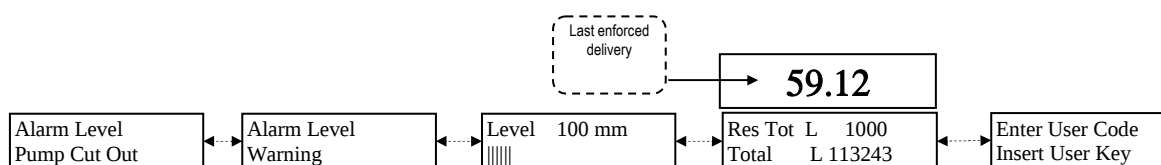
There can be 2 hardware alarms reaching contact levels which can be filled and connected to the control unit terminals (on the CUBE2.0 or MCBOX2.0 version as on the FM version the 2 Ocio alarms are connected inside the panel). Hereinafter annexed the connection diagram of level contacts (in case of clean contact) on such versions

MCBOX 2.0 e CUBE 2.0



According to the Software enforced configuration to the 1 and 2 level alarms, the unit, in the case of an alarm, will display the following messages:

- Alarm 1 or 2: PUMP CUT OUT (blinking message on the unit)
- Alarm 1 o 2: WARNING



In case of an alarm with Pump Cut Out signalling the unit will be OUT OF SERVICE (no delivery). If you want to deliver anyhow, the MANAGER should inlet through the PC and re-configure the control unit removing the "Pump cut out". In case of an alarm with a Warning signaling, it is still possible to deliver.

8. ByPass Vehicle Key

In case the driver vehicle Ibutton can't no longer used and the unit is set to always ask for the vehicle ibutton, on the unit it is possible to set a series of key combination to bypass the vehicle ibutton request. The combination consists of simultaneously pressing the keys **#** and **ENTER**.

From the factory, such an option si **DISABLES** on the unit. It is possible to enable it through the software (refer to the software operating instructions).

9. Service

9.1 Ordinary service

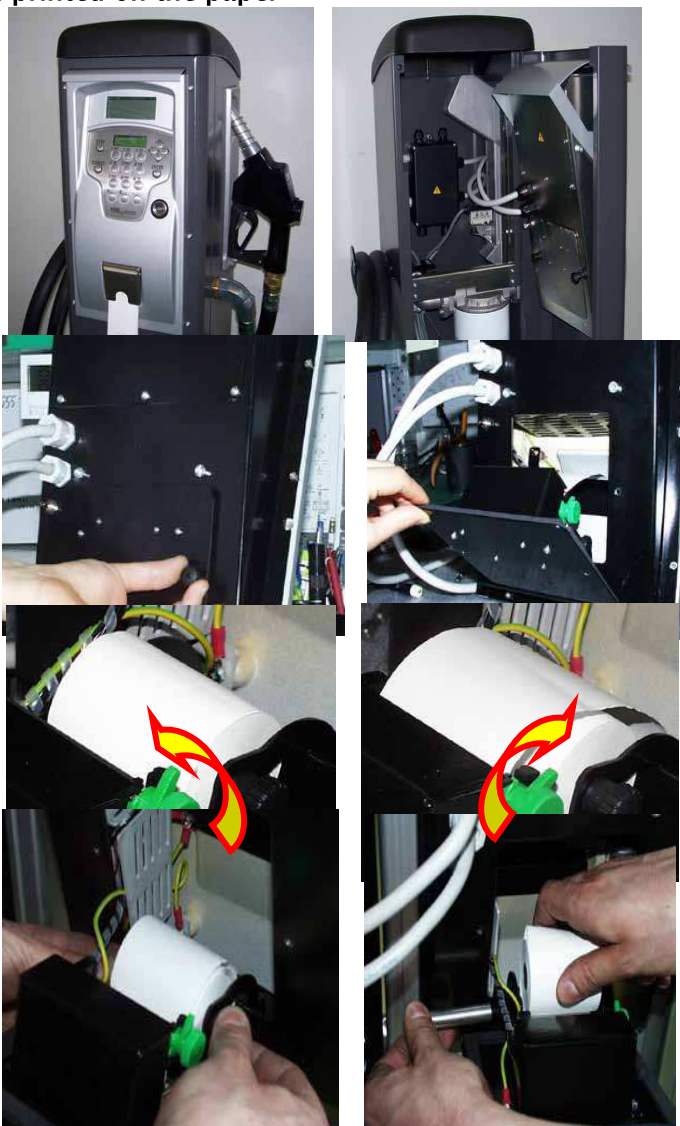
The FM version fitted with a printer needs to be service to REPLACE THE PRINTER PAPER . The printer inside the FM BOX is fitted with thermal paper. The roller sizes are the following:

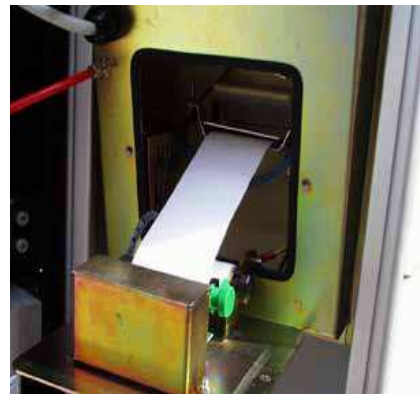
- External diameter: 50 mm
- Internal diameter: 13 mm
- Width: 57 mm

Paper is to be replaced when there is a longitudinal red band printed on the paper.

To replace the paper roller follow the instructions:

- 1) Open the front panel of the SELF SERVICE to inlet the back of the FM BOX, paying attention to remove the oscillating protection mask (follow the arrow direction).
- 2) Loosen the stop pin and open the printer doors
- 3) Open the door
- 4) Lift the paper carrier, through the green levers
- 5) Handle the paper roller support pin with the left hand, Loosen the stop handle on the right of the pin. Remove it
- 6) Remove the finished roller, position the new roller, fit the support pin and screw the stop handle





7) Add the paper to the printing head, paying attention that it is correctly fed. Close the blocking lever and using the knurled roller, remove the paper length enough to come out from the cutter (on the FM BOX front).

8) Enter paper through the guide.

9) Close the printer door and screw the stop handles.

10) Close the Self Service door paying attention that paper correctly comes out

! ATTENTION !

Check that paper does not roll on under the cutter protection door.



11) Remove the printed ticket, lift the cutter door and press and remove the paper with a movement upward.



9.2 Extraordinary Service

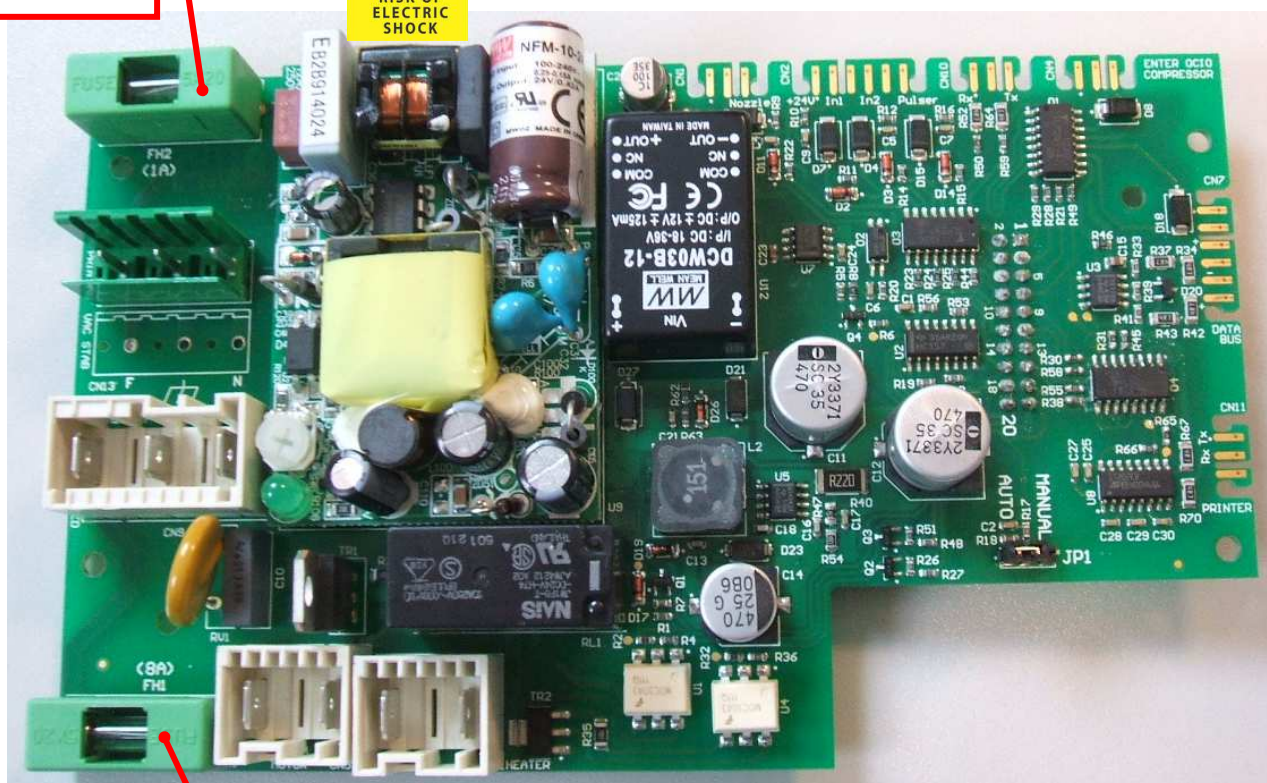
To access the fuses, open the unit and inlet to the part that during operation are live.

To work **safely**, follow the hereinafter described procedure:

- 1) Cut the unit power supply
- 2) Open the metal back loosening the screws to inlet the electronic card unit
- 3) Check that 3 fuses and possibly replace them

1 - All Models Excluding versions MCBOX 2.0 with Power RELAY

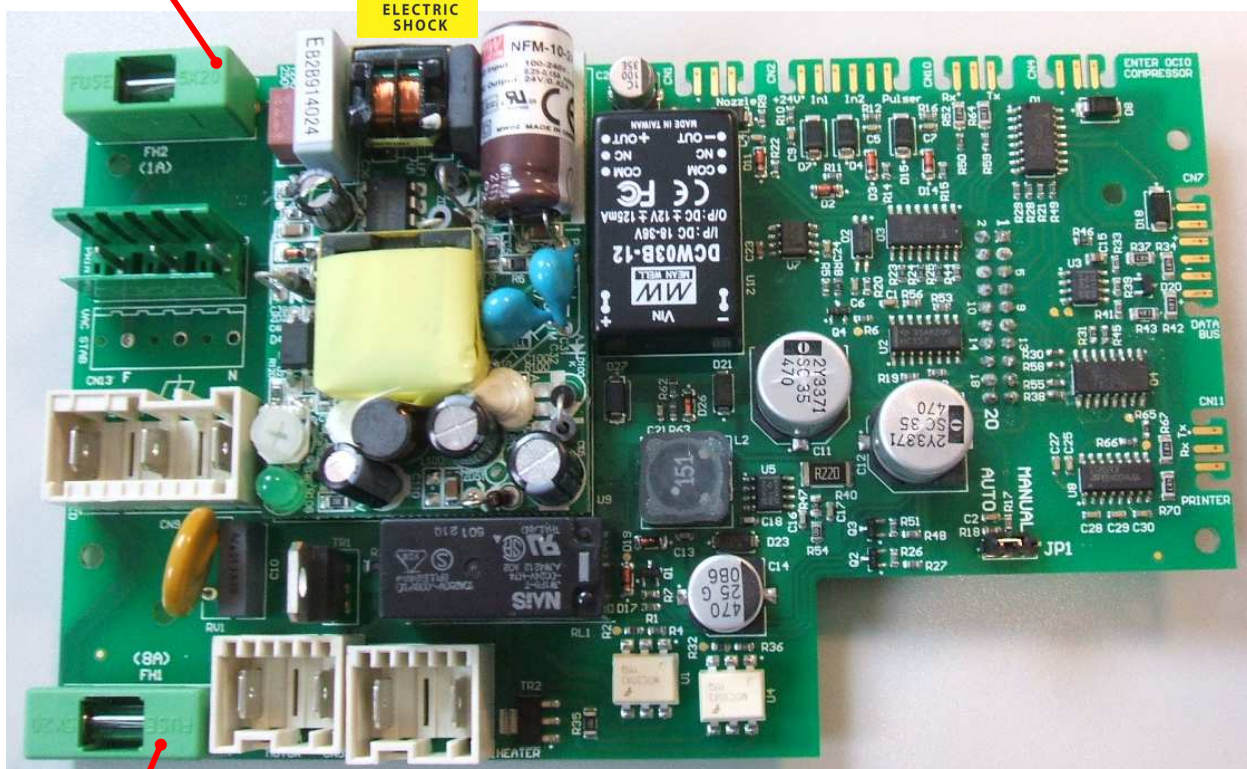
Fuse Power supplier
5x20 mm glass :
1 A T (Timed)
250 V



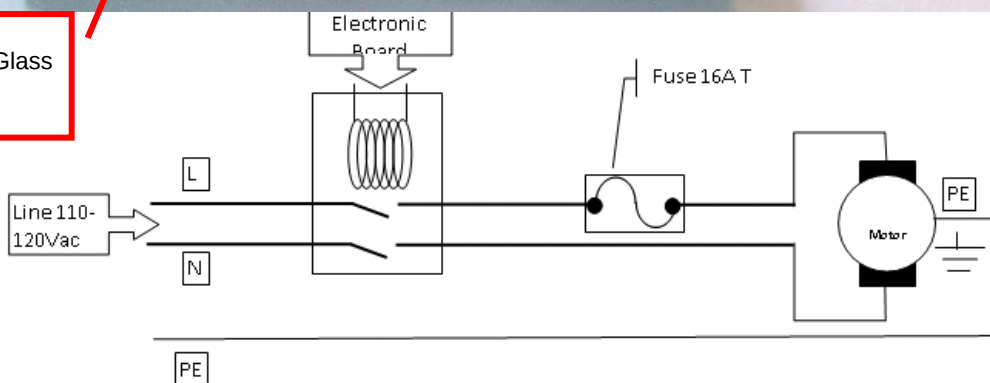
Fuse Motor
5x20 mm glass :
8 A T (Timed)
250 V

2 - Model MCBOX 2.0 with Power RELAY

Fuse Power supplier
5x20 mm glass :
1 A T (Timed)
250 V

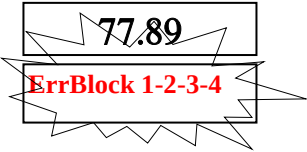


Fuse Line Coil
Relay x20 mm Glass
: 1 A T (Rit)
250 V



10. Problems and solutions

PROBLEM	POSSIBLE CAUSES	SOLUTIONS
- The displays do not light up - The back lighting does not light up	- Unit not correctly fed - Incorrect power supply connections - Fuse Power Supply interrupted	- Check the mains tension - Check the electric connections - Check the power supply fuse on the electronic card
The motor does not start	- Incorrect power supply connections - Motor switch on OFF - One of the motor fuses interrupted	- Check connections - Move the switch on ON - Check the condition of the 2 motor fuse on the electronic card
The card strangely behaves or does not allow the motor to start	- Incorrect software configurations - Electronic card problems	- Accurately check the unit software settings. Check the number and the type of consents required for delivery - Check that all the electric connection connected to consents are correct - If everything works by the unit does not correctly work and it is necessary to refuel through the simple nozzle contact, act on the jumper bypassing all the electric consent controls through the nozzle contact. Follow the described procedure: - Cut the unit power supply - Open the metal back loosening the screws to inlet the electronic card unit - Move the jumper as specified on the picture Disabled electronics (Manual) (forcing in case of failures)

On the display the following message is displayed: "ErrBlock" 	The operating parameters are corrupted. The problem can't be recovered from data in the memory. It is possible to reload the factory data entering 1234546 Enter. The control unit returns back to the default sale state.	ATTENTION!!! After such a procedure, completely re-configure the unit as to allow it to comply with the unit technical specifications and to the manager desired functions. The manager should inlet the configuration menu.
On the display the following message is displayed: "Download delivery" Blinking	The delivery internal memory is full	Connect a PC to download the delivery and free the control unit memory
Smarrimento Pincode Manager	Operation with Manager Key active of the device and need to change the Pincode manager in case of loss.	Switch the device on a LAN operation and connect it to the network or, if not possible, contact your service representative and request the Super Master Code.



Fluid Handling Innovation

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