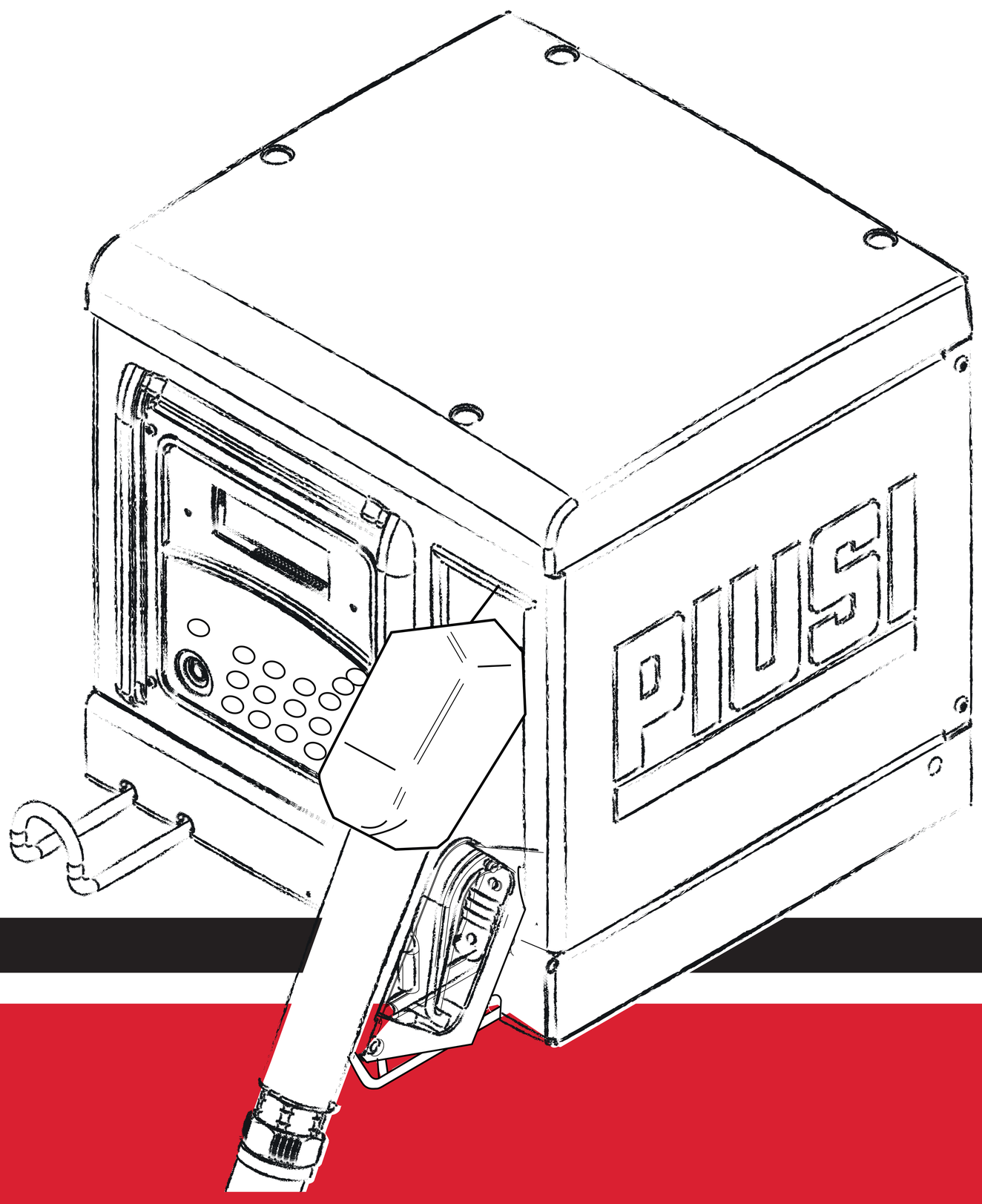
PIUSI

Fluid Handling Innovation

CUBE KEYPAD

B.SMART



MADE IN ITALY

Installation, use and maintenance EN

BULLETIN M0705 EN_00

ENGLISH

Bulletin M0705

CONTENTS

1 GENERAL PRECAUTIONS 5
1.1 SYMBOLS USED IN THE MANUAL 5
1.2 MANUAL STORAGE 5
1.3 RIGHTS FOR REPRODUCTION 5
1.4 EU DECLARATION OF CONFORMITY 6
1.4.1 FACSIMILE OF THE EU DECLARATION OF CONFORMITY 6
2 INSTRUCTIONS AND SAFETY NORMS 7
3 FIRST AID MEASURES 10
4 TRANSPORT, HANDLING AND UNPACKING 10
4.1 DIMENSIONS AND WEIGHTS 11
4.2 PACKAGE CONTENTS/PRELIMINARY INSPECTION 12
5 MACHINE AND MANUFACTURER IDENTIFICATION 13
5.1 PLATES POSITIONS 14
6 DESCRIPTION OF MAIN PARTS 16
6.1 BODY 16
6.2 PUMPING UNIT 16
6.3 PULSER FLOW METER 17
6.4 DISPENSING NOZZLE 17
6.5 LEVEL INDICATOR 17
6.6 DISPLAY COVER 17
6.7 DISPENSING MANAGEMENT SYSTEM 18
7 TECHNICAL CHARACTERISTICS 21
8 USE 24
8.1 INTENDED USE 24
8.2 IMPROPER USE 24
8.3 REASONABLY FORESEEABLE MISUSE 24
9 INSTALLATION 25
9.1 DISPENSER POSITIONING 26
9.2 DISPENSER FIXING 26
9.3 HYDRAULIC CONNECTIONS 29
9.4 ELECTRICAL CONNECTIONS 30
9.4.1 Power supply cable 32
9.4.2 SIGNAL connector: 33
9.4.3 Tank Level Management with Ocio 2.0 via RS485 serial port 36
9.4.4 CANBUS connection 37
9.4.5 Closing the rear cover of the controller. 38
10 INITIAL CONFIGURATION 38
10.1 START-UP 38
10.2 FIRST PRIMING 39
11 START-UP 40
11.1 CONFIGURATION VIA APP 41
11.2 CONFIGURATION VIA WEB-APP 44
12 DRIVER ACCESS 45
12.1 FIRST DRIVER ACCESS FROM APP AND FIRST FILLING 45
12.2 DISPENSING VIA USER KEY (I-BUTTON) 49
12.3 DISPENSING BY PIN CODE ENTERED ON THE KEYPAD 55
13 METER CALIBRATION 60

This manual is the property of PIUSI S.p.A. Whole or partial reproduction of this manual is forbidden.

14 TANK LEVELS MONITORING 61
15 DISPLAY CONFIGURATION in STAND-BY 65
16 ALARM AND WARNING STATES 66
17 KEYPAD SPECIAL KEYS 71
18 MAINTENANCE 71
18.1 ROUTINE MAINTENANCE 71
18.2 DISPENSER MAINTENANCE 71
18.3 OPENING AND CLOSING OF CUBE B.SMART 71
18.4 PUMP AND PIPES 72
18.5 PIPE AND DELIVERY NOZZLE 72
18.6 FILTERS 73
18.7 PUMP FILTER (ONLY FOR AC VERSIONS) 73
18.8 PULSER FILTER 74
18.9 PULSER 74
18.10 EXTRAORDINARY MAINTENANCE 74
18.11 CHECK AND REPLACEMENT OF FUSES 75
19 TROUBLESHOOTING 77
19.1 MECHANICAL AND HYDRAULIC PROBLEMS 77
19.2 ELECTRICAL/ELECTRONIC PROBLEMS 78
19.3 PROBLEMS WITH THE SMARTPHONE APP 79
20 FAQ 79
21 SCRAPPING AND DISPOSAL 82
22 REPLACEMENT PARTS TABLE 83

1 GENERAL PRECAUTIONS

In order to protect workers' safety and to avoid the risk of any damage, before performing any operation, please read and become familiar with the contents of the instruction manual.

1.1 SYMBOLS USED IN THE MANUAL

In order to signal particularly important instructions or warnings, the following symbols are used:

	ELECTRICAL HAZARD This symbol identifies the risk of electric shock from equipment powered by voltages potentially dangerous for humans.
	CAUTION This symbol indicates accident prevention regulations addressed to operators and/or other people concerned.
	WARNING This symbol indicates that there is a possibility of damaging the units and/or their components.
	NOTE This symbol indicates useful information.
	Read the instruction manual carefully.

1.2 MANUAL STORAGE

This manual must be intact and completely readable. The final users, as well as the qualified technicians authorised to installation and maintenance must be able to view it at any time.

1.3 RIGHTS FOR REPRODUCTION

THIS MANUAL BELONGS TO PIUSI S.p.A.
All rights for reproduction are reserved for PIUSI S.p.A.
The text cannot be used in other printed documents unless expressly authorised in written form by PIUSI S.p.A. © PIUSI S.p.A. WHOLE OR PARTIAL REPRODUCTION OF THIS MANUAL IS FORBIDDEN.
PIUSI S.p.A. is the exclusive owner of all rights envisaged by applicable laws, including the rules concerning copyrights. All the rights deriving from such norms belong to PIUSI S.p.A.
Reproduction, publication, editing, transcription, public disclosure, distribution, sale in any form, translation and/or processing, loan, and any other activity concerning this manual, also partial, are reserved by law to PIUSI S.p.A.

1.4 EU DECLARATION OF CONFORMITY

1.4.1 FACSIMILE OF THE EU DECLARATION OF CONFORMITY

The undersigned: PIUSI S.p.A
Via Pacinotti 16/A z.i. Rangavino
46029 Suzzara – Mantua – Italy

DECLARES on its own responsibility, that the equipment described below:

Description:	Dispenser for diesel fuel
Model:	CUBE B.SMART KEYPAD
Serial number:	see the Lot Number on the plate affixed to the product
Year of construction:	see the production year on the plate stamped on the product.

Complies with the following legislation:

- **Machinery Directive 2006/42/EC**
-
- **- Electromagnetic Compatibility Directive 2014/30/EU**
-
- **- Restriction of Hazardous Substances Directive (RoHS) 2011/65/EU**
- - Radio Equipment Directive (RED) 2014/53/EU

The technical file is at the disposal of the competent authorities in response to a motivated request made to PIUSI S.p.A. PRODUCT or further to a request sent by e-mail to: **doc_tec@piusi.com.**

THE ORIGINAL DECLARATION OF CONFORMITY IS SUPPLIED SEPARATELY IN CONJUNCTION WITH THE

FAC SIMILE

2 INSTRUCTIONS AND SAFETY NORMS

ELECTRIC SHOCK: RISK OF ELECTRIC SHOCK OR FATAL ELECTROCUTION
Risk of Electric shock or Fatal Electrocution due to electrical equipment with voltage of more than 50Vac.
DISCONNECT THE POWER SUPPLY BEFORE CARRYING OUT ANY CHECKS OR MAINTENANCE WORK
Installation operations are carried out with open junction boxes and accessible electrical contacts.
All these operations must be carried out with the unit isolated from the mains in order to avoid hazards of electrocution

As a general rule of electrical safety it is always recommended to power the device by protecting the line with:
- circuit breaker/disconnector with a current rating suitable for the power line and the supplied devices;
- 30 mA residual current device (ground fault circuit interrupter, or GFCI).
- Connect only to sockets with a protective earth connection using conductors of adequate cross-section and characteristics based on the installation type and on statutory legislation.

In outdoor use, use only extensions suitable for the specific use, according to the regulations in force. Unsuitable extension cables can be dangerous.
The electrical connection between the plug and socket must be kept well away from water.
Before each use, check that the mains connection cable and the plug are not damaged. If damaged, have the cable and plug replaced by qualified personnel.
Never touch the plug or the socket with wet hands.

FIRE HAZARD
If there are flammable liquids in the working area, flammable vapours may be present and may cause fire or explosion during use.

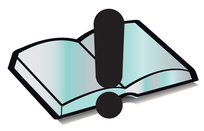
EXPLOSION HAZARDS
To eliminate fire and explosion hazards use the dispenser only in well ventilated places. Keep work area free of debris, including rags and spilled or open containers of solvent and gasoline. Do not plug or unplug power cords or turn lights on or off when flammable fumes are present. Keep a working fire extinguisher in the work area.

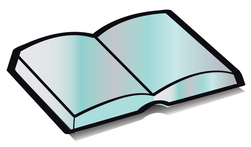
RISK OF FIRE AND EXPLOSION
This product is NOT SUITABLE for use in Classified Areas subject to the presence of potentially explosive atmospheres.
The PIUSI B.SMART product is designed for use with the user's mobile phone only and exclusively for connection and authentication operations and to link the user's device to the dispenser in order to perform certain operations in remote mode as described in this manual.
Mobile phone use when refilling vehicles, also with other non-flammable liquids is in any case strongly discouraged as it can cause distractions that may prove hazardous. PIUSI shall not be held liable in the event of damage to persons or property of the user or third parties resulting from failure to comply with the above warnings and / or any other negligent, reckless or inept behaviour of the user.

This equipment must have a protective earth connection between metal masses and for electrical components that require grounding. Improper installation or use of the equipment may result in danger of electric shock. All electrical equipment in the work area must have a protective earth connection. Stop operation immediately if static sparking occurs or if you feel a shock. Do not use the dispenser until you identify and correct the problem.

This manual is the property of PIUSI S.p.A. Whole or partial reproduction of this manual is forbidden.

	You must avoid any contact between the electrical power supply and the fluid to be pumped Install the equipment in a sheltered location. Do not expose to rain. Do not switch on the fluid dispensing equipment with damaged electrical parts, such as cables, or damaged hydraulic parts, such as the suction/delivery pipe or the delivery nozzle. Call the maintenance technicians immediately and replace all damaged parts before using the equipment.
	DANGER OF BURNS To avoid severe burns, do not touch liquids or equipment.
	NO SMOKING Do not smoke near the fuel transfer pump and do not use the pump near naked flames.

PRECAUTIONS FOR USE	
	**PERSONAL PROTECTION EQUIPMENT FEATURES** Wear personal protection equipment that is: - suitable to the operations to be performed; - resistant to the various cleaning products used.
PERSONAL PROTECTIVE EQUIPMENT TO BE WORN	
	Safety shoes
	Close-fitting clothes
	Protective gloves
	Safety glasses

OTHER SAFETY DEVICES	
	**INSTRUCTION MANUAL** - Do not operate the unit when fatigued or under the influence of drugs or alcohol. - Do not leave the work area while equipment is energised or in operation. - Turn off the equipment when not in use. - Do not alter or modify the equipment. Alterations or modifications may void agency approvals and create safety hazards. - Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces. - Do not twist the hose or use a stronger hose. - Keep children and animals away from the working area. - Respect all safety norms in force. - Do not exceed the maximum working pressure or temperature of the component with the lowest system rating. - See the technical specifications in all machine manuals. - Use liquids and solvents that are compatible with the wet parts of the unit. See the technical specifications in all machine manuals. Read the manufacturer's warnings for liquids and solvents. To obtain more information about the material, request the Safety Data Sheet (MSDS) from your MC distributor or dealer. - Check the unit every day. Repair or replace worn or damaged parts immediately with original manufacturer's spare parts only. - Make sure that the unit is classified and approved in accordance with the regulations for the environment in which it is used. - Use only the unit for its intended purpose. Contact your dealer for more information. - Keep hoses and cables away from transit areas, edges, moving parts and hot surfaces. - Do not bend hoses excessively or use them to pull the unit.
	TOXIC FLUID OR FUMES HAZARD For issues arising from the treated product with eyes, skin, inhalation and ingestion refer to the safety data sheet of the fluid used Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines. Prolonged contact with the product may cause skin irritation; during delivery phases, always wear protective gloves.
	EQUIPMENT MISUSE Do not use the equipment for uses other than those for which it is designed and built. All different uses may be hazardous for property, animals, or persons.

This manual is the property of PIUSI S.p.A. Whole or partial reproduction of this manual is forbidden.

3 FIRST AID MEASURES

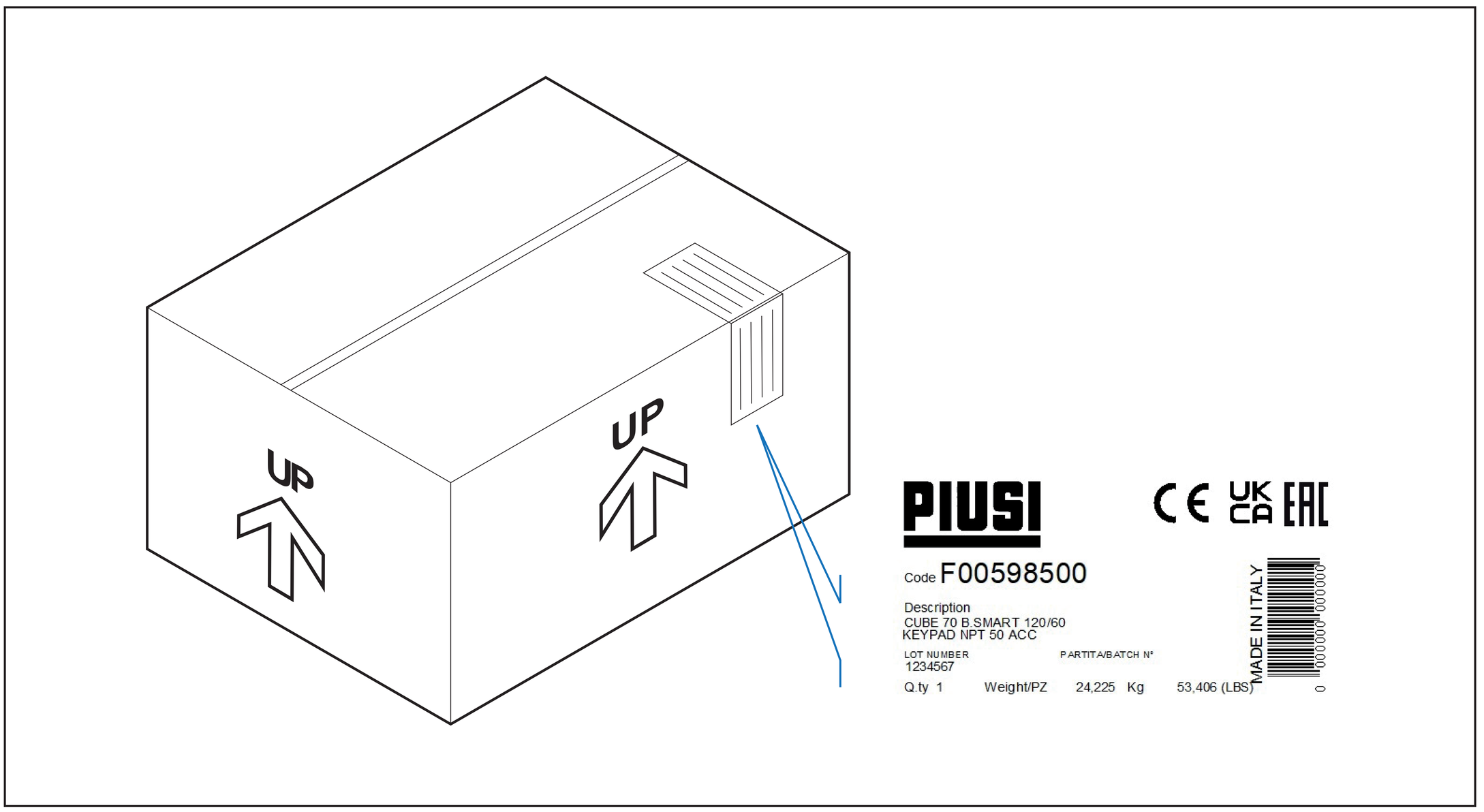
PERSONS WHO HAVE SUFFERED ELECTRIC SHOCK

Disconnect the power source, or use a dry insulator to protect yourself while you move the injured person away from any electrical conductor. Avoid touching the injured person with your bare hands until he is far away from any conductor. Immediately call for help from qualified and trained personnel. Do not operate switches with wet hands.

4 TRANSPORT, HANDLING AND UNPACKING

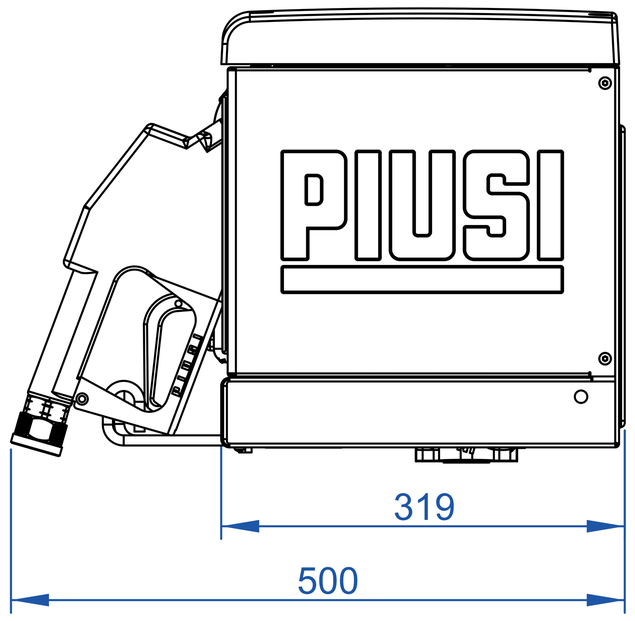
The CUBE B.SMART is shipped packaged in a stackable cardboard box.
During storage the machine must be kept in an upright position as indicated by the graphic symbols printed on the box showing the direction of handling. Whenever the machine needs lifting, make sure all the hoisting gear and accessories (such as the rigging belts) have an adequate load bearing capacity. Mechanical handling and lifting gear must only be used by authorised and suitably trained staff.
During periods of non-use, the machine, be it packed or unpacked, must be stored in an area protected against the elements (e.g. rain, humidity, direct sunlight, etc.) and dust.
Use scissors or a cutter to open the cardboard box, taking care not to damage the contents.
Two people must open the box completely and move the CUBE B.SMART unit into a vertical position to facilitate subsequent definitive positioning.
Once unpacked, the dispenser should always be kept in a vertical position. Put all packing elements (cardboard, wood, cellophane, polystyrene etc.) into the corresponding containers. Do not leave them in the environment or within children's reach as they are potentially dangerous. They should be disposed of according to the regulations in force in the country where the unit will be used.
The packaging carries the following indications:

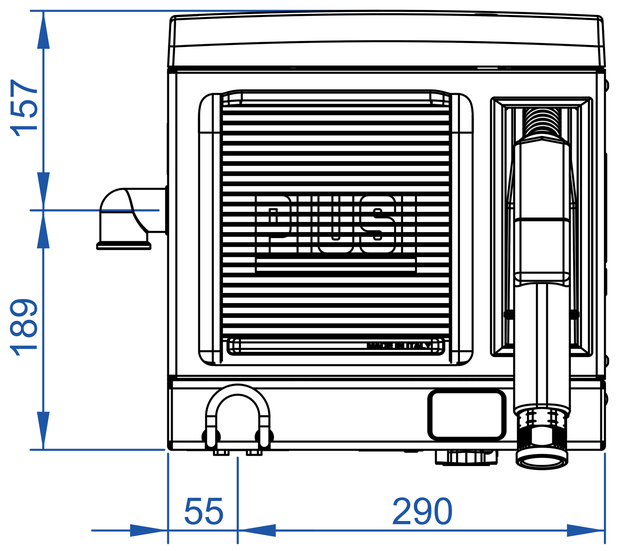
- 'THIS WAY UP' arrow;
- a label with all the information relating to the equipment (model, weight, etc..).

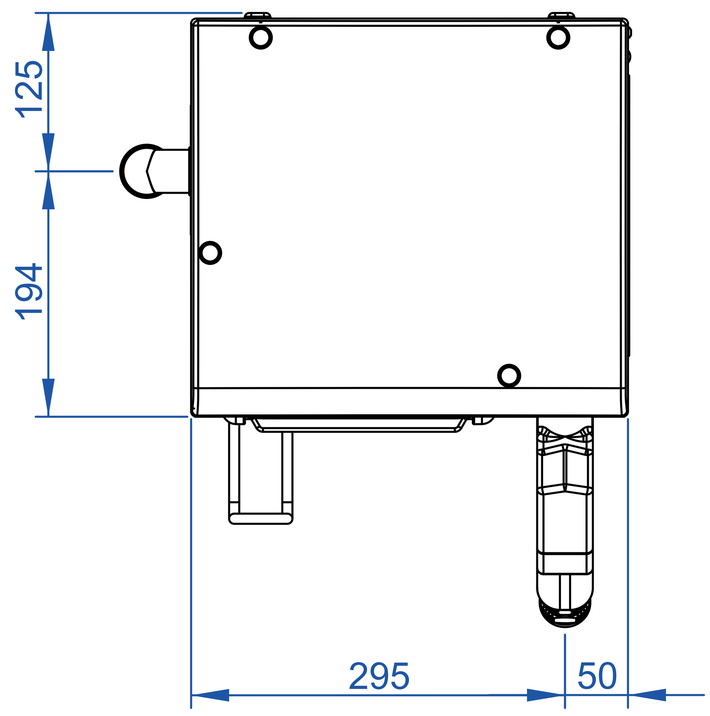


4.1 DIMENSIONS AND WEIGHTS

MODEL	WEIGHT (Kg)	PACKAGING DIMENSIONS (mm)
CUBE B.SMART	25	400 x 400 x 460
PEDESTAL KIT	15	-







4.2 PACKAGE CONTENTS/PRELIMINARY INSPECTION

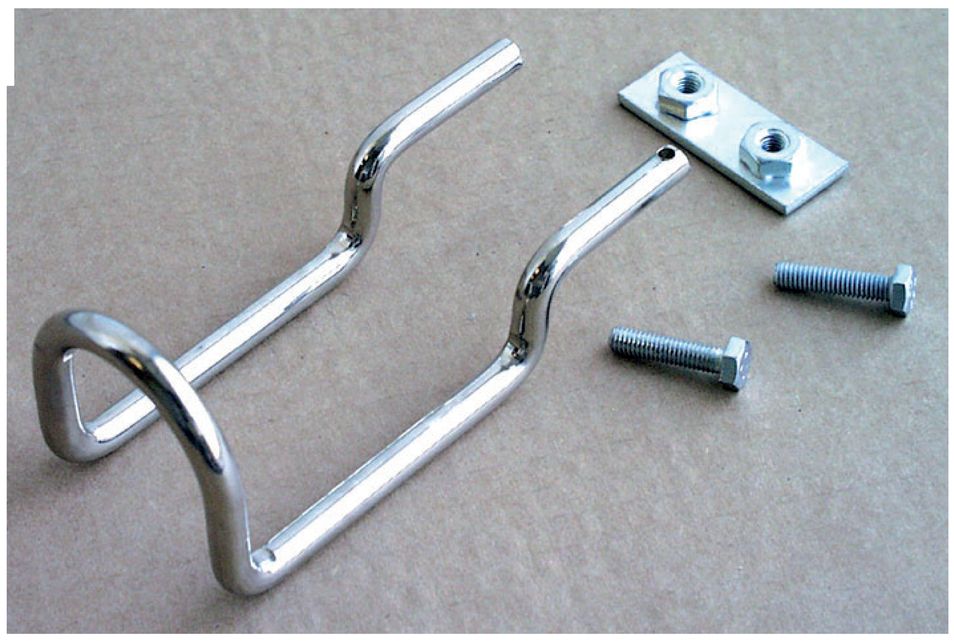
FOREWORD

Before proceeding with assembly, check the condition of the machine making sure that the delivered parts show no damage which could compromise safety and operation.
In case of doubt, do not start up and contact the manufacturer's technical service.
Check if the accessory set is complete.
At the end of inspection, assemble the CUBE B.SMART:

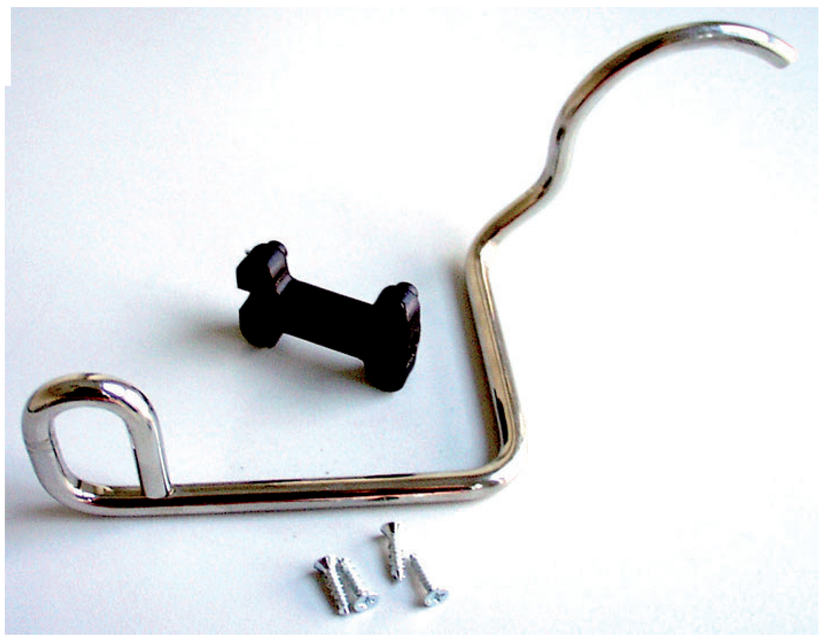
1. INSTALL THE HOSE BRACKET

2. INSTALL THE ROCKER LEVER

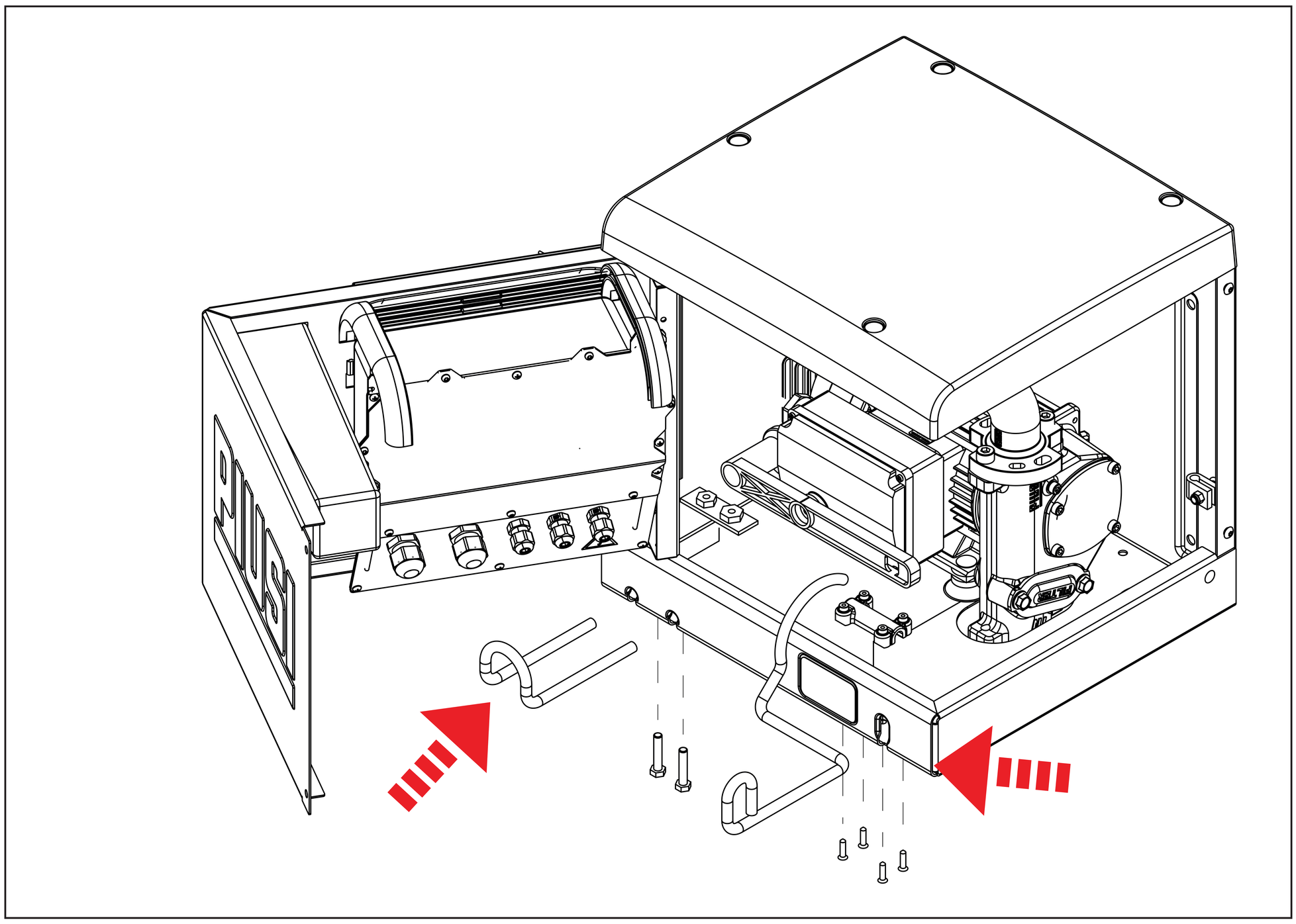
1



2

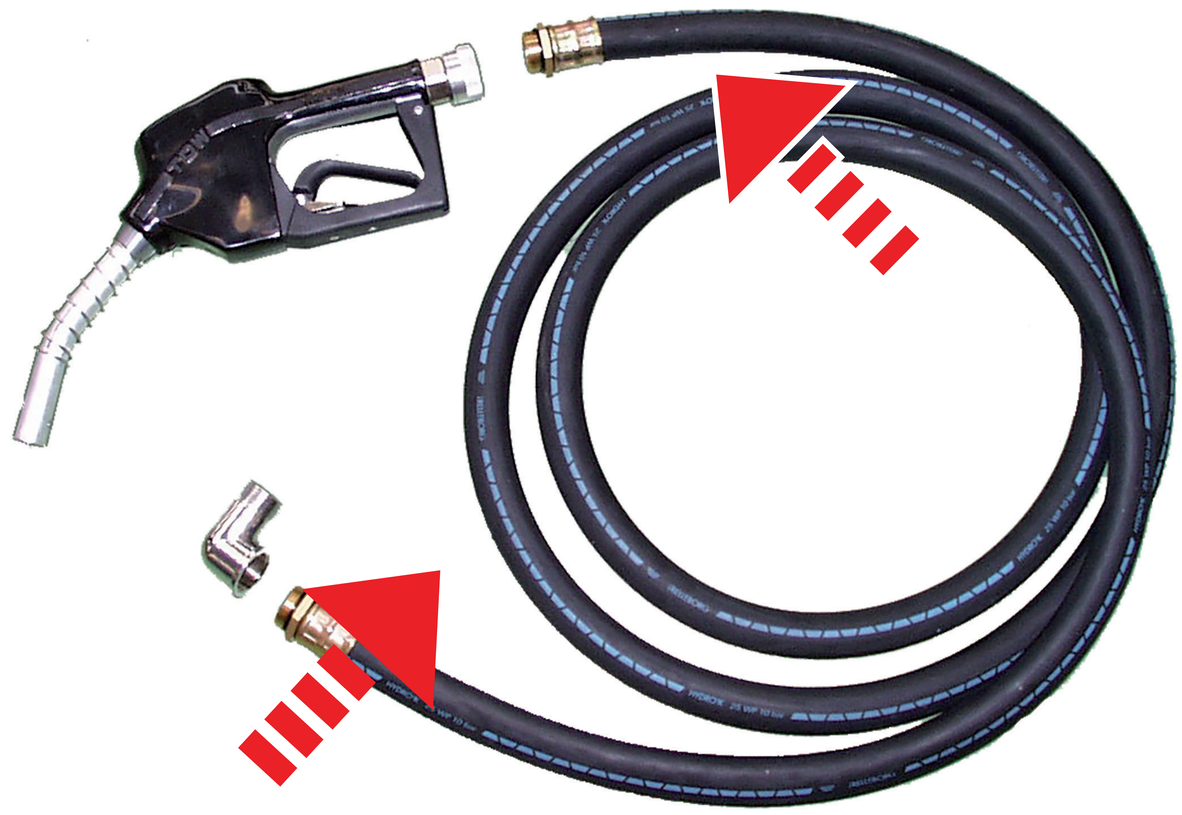


EXAMPLE OF ASSEMBLY



3. APPLY THREAD LOCK TO THE CONNECTORS BEFORE PROCEEDING WITH FINAL ASSEMBLY

3



5 MACHINE AND MANUFACTURER IDENTIFICATION

The CUBE B.SMART stations are equipped with an identification plate attached to the frame:

- Model.
- Serial number / year of manufacture.
- Technical data.
- CE marking.
- Manual code.

CAUTION: before installing, always make sure the type of dispensing system is correct and suitable for the available power supply (Voltage/Frequency).

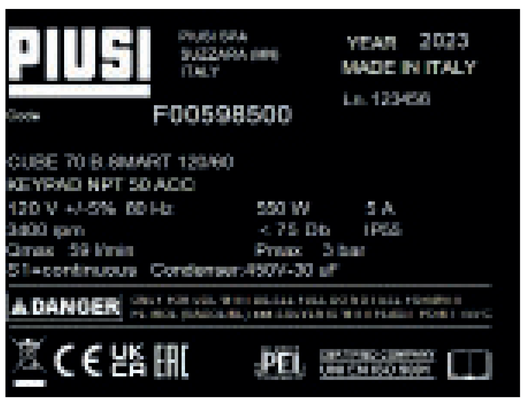
This manual is the property of PIUSI S.p.A. Whole or partial reproduction of this manual is forbidden.

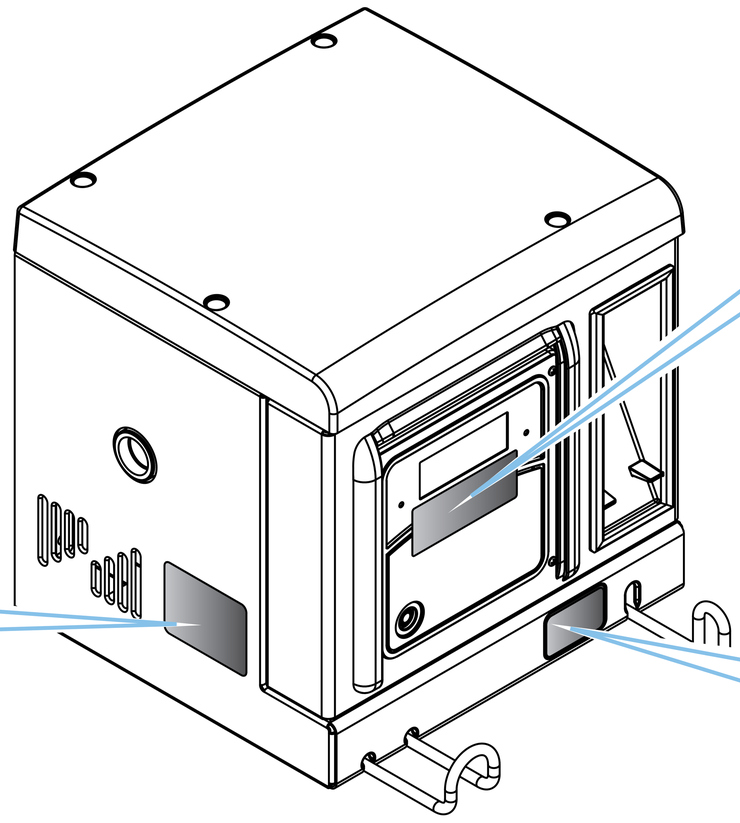
5.1 PLATES POSITIONS

The dispensing system is equipped with adhesive decals containing key information for the operator. Make sure the decals do not deteriorate or become detached from the equipment over time.

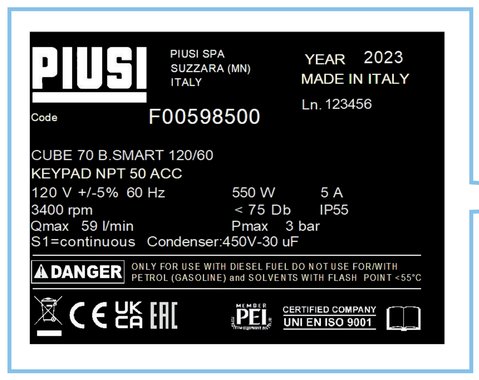
NOTE: should this occur, please contact customer service and request replacements for any damaged or missing decals, then affix the new decals in their designated positions.

Decals are the following ones:

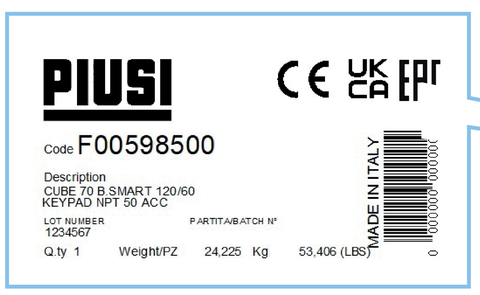
	Pump drive nameplate
	**CE plate with technical data:**
	Attention plate **Affixed to the CUBE display**
	Corner label plate applied on the box
	Product warranty label

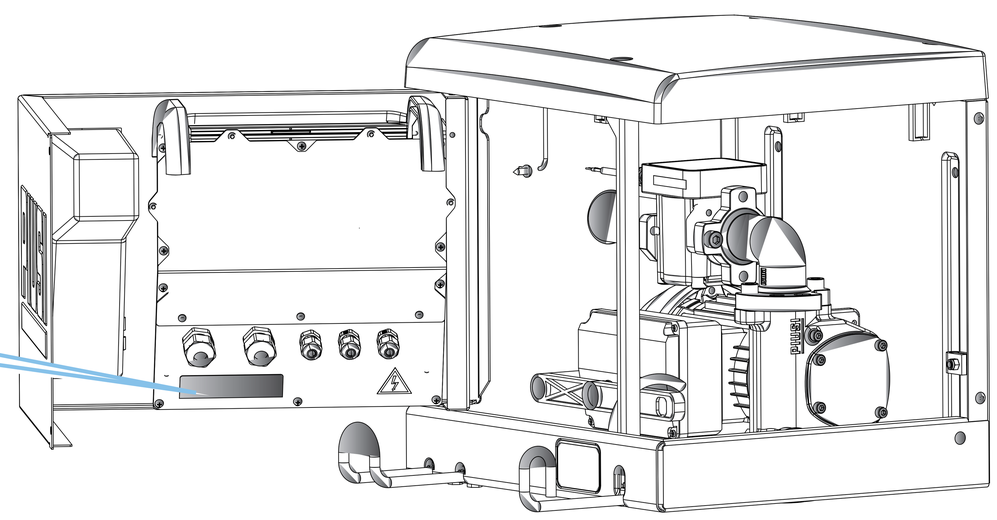


ATTENTION!
IT LEGGERE ATTENTAMENTE LE ISTRUZIONI PRIMA DELLA MESSA IN SERVIZIO
UK READ ISTRUCTION BEFORE TO START-UP
FR LIRE ATTENTIVEMENT LES INSTRUCTIONS AVANT DE LA MISE EN SERVICE
DE VOR DER INBETRIEBNAHME AUFMERKSAM DIE ANWEISUNGEN LESEN
ES LEER ATENTAMENTE LAS INSTRUCCIONES ANTES DE LA PUESTA EN SERVICIO
DA LÆS BRUGERVEJLEDNINGEN GRUNDIGT FØR IGANGSÆTNING


PIUSI
PIUSI SPA
SUZZARA (MN)
ITALY
YEAR 2023
MADE IN ITALY
Ln. 123456
Code F00598500
CUBE 70 B.SMART 120/60
KEYPAD NPT 50 ACC
120 V +/-5% 60 Hz 550 W 5 A
3400 rpm < 75 Db IP55
Qmax 59 l/min Pmax 3 bar
S1=continuous Condenser:450V-30 uF
DANGER ONLY FOR USE WITH DIESEL FUEL DO NOT USE FORWITH PETROL (GASOLINE) and SOLVENTS WITH FLASH POINT <55°C
CERTIFIED COMPANY
UNI EN ISO 9001

ON
OFF


PIUSI
Code F00598500
Description
CUBE 70 B.SMART 120/60
KEYPAD NPT 50 ACC
LOT NUMBER
1234567
PARTITA/BATCH N°
Q.ty 1 Weight/PZ 24,225 Kg 53,406 (LBS)
MADE IN ITALY

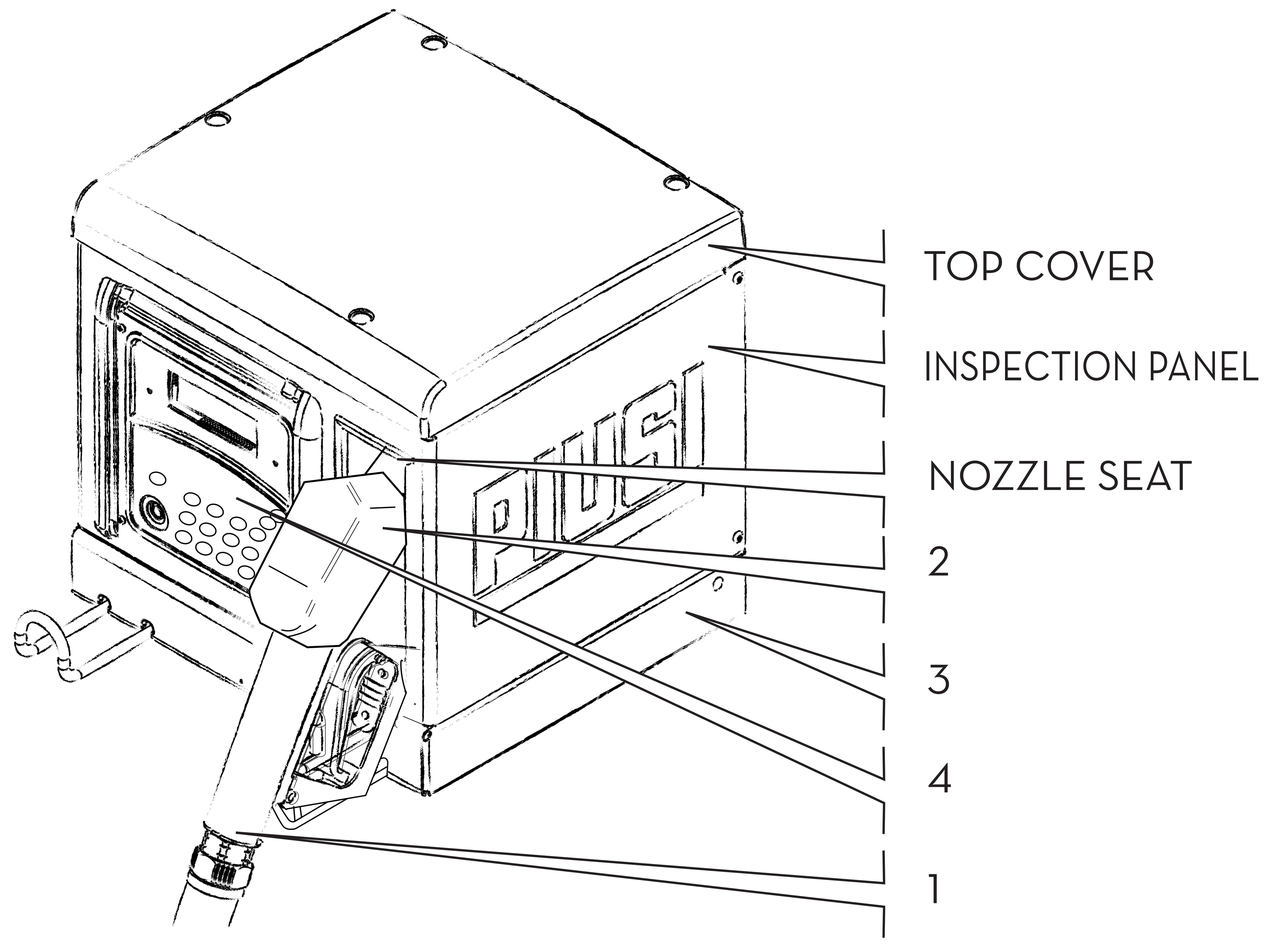


6 DESCRIPTION OF MAIN PARTS

6.1 BODY

CUBE B.SMART transfer pumps are designed to dispense diesel for private use. Featuring maximum safety and easy use, CUBE transfer pumps are a reliable piece of high-performance equipment, quick to install and ready to use. Equipment and characteristics:

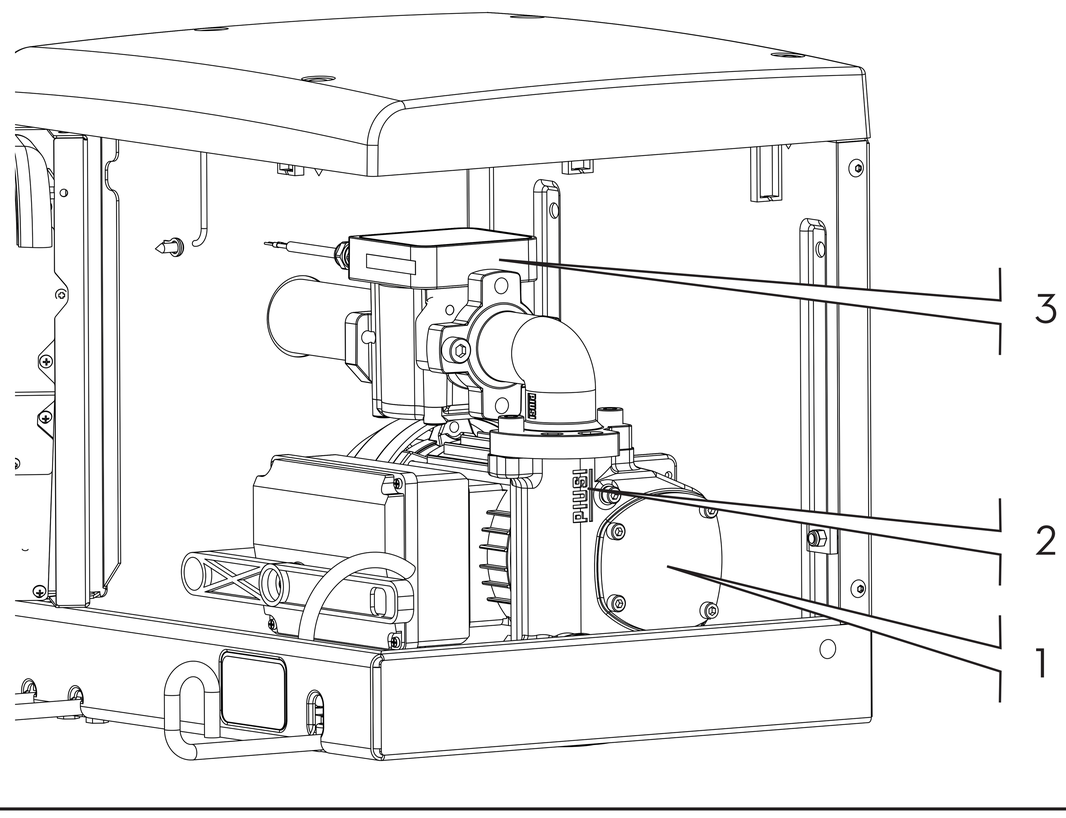
1. Four metres of antistatic rubber fuel hose.
2. Automatic dispensing nozzle with integrated ON/OFF switch in the nozzle support.
3. Steel casing with anti-corrosion treatment and painted finish.
4. Managing system.



6.2 PUMPING UNIT

Unit with self-priming vane electric pump, equipped with by-pass valve. This valve allows operation for short periods even with the dispensing nozzle closed. The motor, directly coupled to the pump casing, is asynchronous, enclosed type (IP55 protection class according to the EN 60034-5-86 norm), self-ventilated, single-phase. For further information, consult the individual component manuals.
Equipment and characteristics:

1. Self-priming rotary vane pump with incorporated by-pass valve.
2. Single phase motor (230 VAC) with IP55 protection rating and thermal protection.
3. Liter counter.



6.3 PULSER FLOW METER

The Pulser K600/3 flow meter has a high-precision oval gear measuring system designed to allow accurate fuel measurement. They consist of a sturdy die-cast aluminium structure, complete with inlet filter and are easy to maintain and reliable. For further information, please refer to the dedicated manual

6.4 DISPENSING NOZZLE

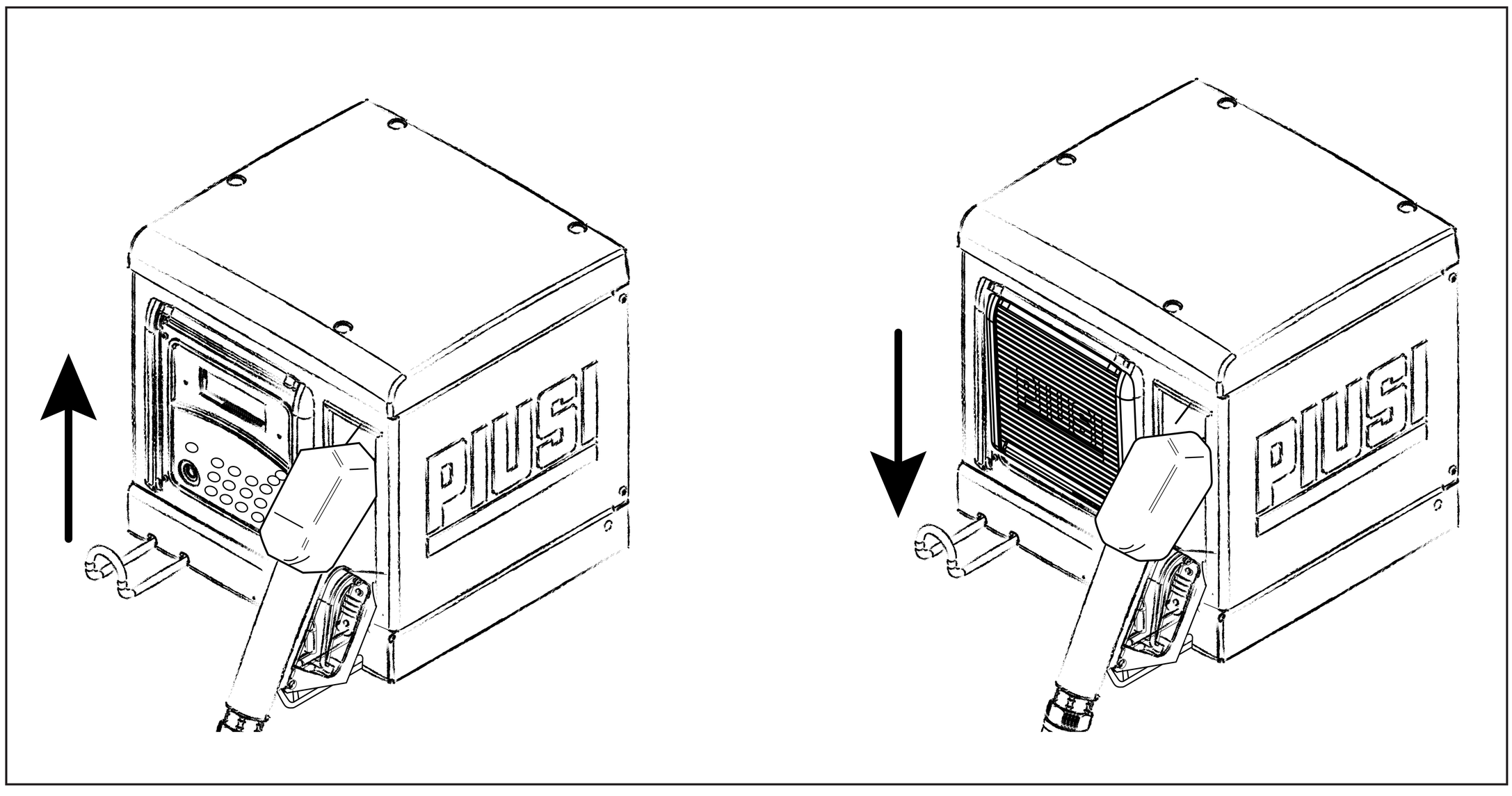
The dispensing nozzle supplied with CUBE B.SMART is an automatic type, with a full-tank stop device.

6.5 LEVEL INDICATOR

The level indicators to which the dispenser can be connected are only clean contacts, which are configured from the WEBAPP.

6.6 DISPLAY COVER

To ensure adequate protection to the panel, a damper display cover has been designed which can be lowered if necessary.
It is advisable, in very strong sunlight conditions, to keep the display cover always lowered.



This manual is the property of PIUSI S.p.A. Whole or partial reproduction of this manual is forbidden.

6.7 DISPENSING MANAGEMENT SYSTEM

B.SMART is an electronic system for controlling the dispensing of fluids via smartphone.
The control system consists of:

1. An electronic controller
Equipped with Bluetooth interface (BLE 4.0 and later), 2 displays, a keypad, and 2 interface LEDs, controlling 1 dispensing pump and capable of receiving level readings for 1 tank via RS485 digital communications or 0-10 V or 4-20 mA analog communications thanks to the optional Tank Watchdog package.

2. A smartphone app
Installed on a smartphone equipped with an Android operating system or Apple iOS.

3. A WEBAPP
namely an internet portal accessible from any PC or Tablet connected to the internet from which the entire site can be monitored.

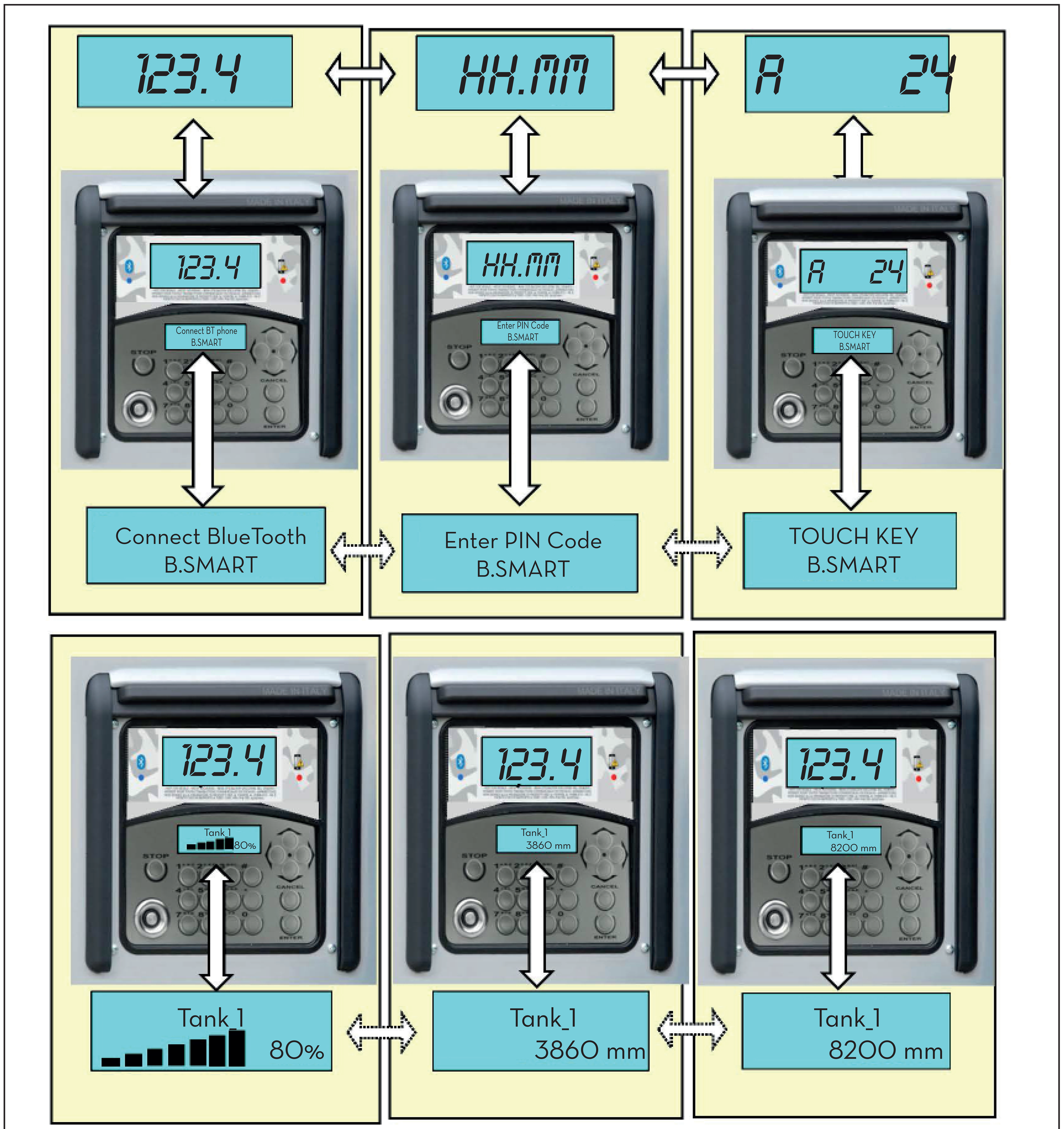
ELECTRONIC CONTROLLER – USER INTERFACE

The electronic controller user interface has the following components:

2 displays, of which:

- one 4-digit numerical display showing:
  - dispensing value:
  - hour HH . MM (optional parameter settable via web app);
  - warning and alarm codes.
- One 16x2 character alphanumeric display for various user interface messages.
  - 2 LEDs, one Blue for Bluetooth and one Red to show the presence of warnings or alarms.
  - A numerical/alphanumeric keypad and several function keys.
  - i-Button reader

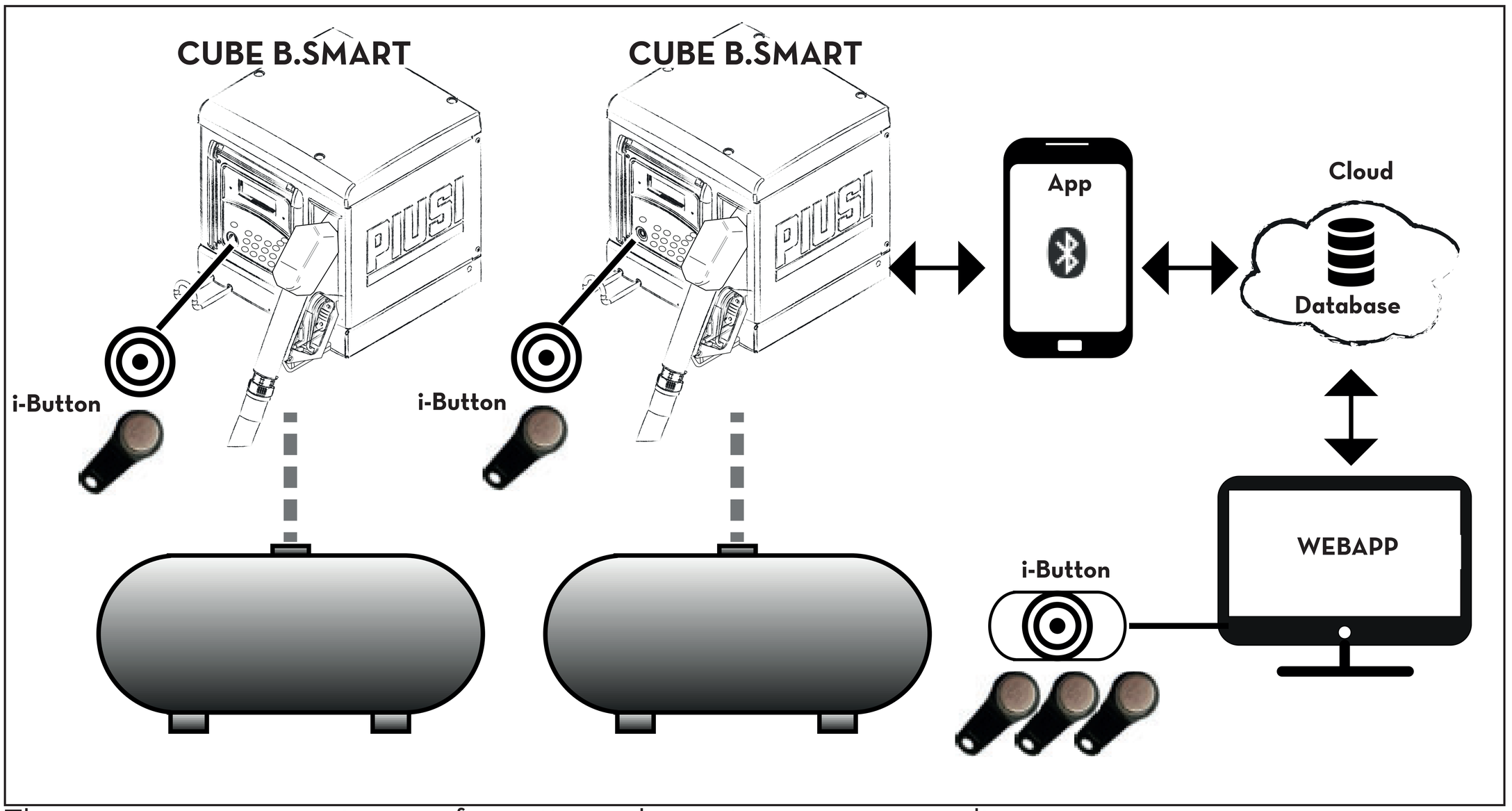
DISPLAY MODE IN STAND-BY



This manual is the property of PIUSI S.p.A. Whole or partial reproduction of this manual is forbidden.

"TYPICAL SITE" LAYOUT

The figure shows an example of one of the most complex site layouts that can be managed by the system



There are numerous system configurations when using one or more dispensers.

An example of the basic system structure is provided showing the possibility to:

- Monitor the level in tanks, also when a tank is shared by several pumps connected to different controllers.
- Manage multiple dispensers on the same site.

For more specific details on modes of connection and communication between dispensers, refer to the site management manual available in the WEBAPP.

SYSTEM FUNCTIONS

- Site configuration, acquisition and management of filling operations, management of filling dispensers, management of drivers, vehicles and detailed reporting of dispensing operations on the WEBAPP accessible from any PC/Tablet, using your credentials
- Fuel dispensing using the dedicated app: PIUSI app, downloadable for smartphones only from the Play Store and App Store, which connects to the dispenser / controller via a BLE (Bluetooth Low Energy) link.
- Fuel dispensing using the dedicated app also in areas without 3/4G coverage and Wi-Fi.
- Dispensing via i-Button associated with the individual driver.
- Dispensing by means of a pin code entered via the keypad.
- Facility for interface with systems for tank level measurement in digital mode via RS485 port with PIUSI Ocio 2.0 with 0-10V or 4-20 mA analog interfaces.
- Possibility to remotely manage sites far from the company headquarters.

COMPATIBILITY WITH SMARTPHONE OPERATING SYSTEMS

- The system is compatible with the following iOS versions:
- iOS10
- iOS11
- iOS12 and subsequent versions
- The system is compatible with the following Android versions:
- 5.0 - 5.1
- 6.0
- 7.0 - 7.1
- 8.0
- 9.0 and subsequent versions

CLOUD

Space on dedicated Servers that hold the database for storing the configurations of the site and the dispenser, drivers, vehicle license plates and all dispensed fuel data.

Web app

WEB interface used by the site manager. It has various functions: it monitors the dispensing cycles (who carried them out, when, from which controller), creates/deletes users from the site, adds/removes controllers/dispensers from the site. The only external device the WEBAPP connects to is a USB reader for i-Button.

APP

It makes several operations:

- It manages two types of users: driver and manager.
- It sends commands to the controller and receives responses. The commands are used to perform: dispensing, calibration, updating of the controller firmware, downloading of updates to controller configuration, management of drivers or uploading to the CLOUD of the dispensing cycles performed by the controller.

7 TECHNICAL CHARACTERISTICS

INTENDED USE

Implementation of a fluid delivery and control system for private use and not subject to special regulations such as ATEX standards for potentially explosive atmospheres.

CAUTION: do not install CUBE B.SMART in potentially explosive locations according to Atex directive.

MAXIMUM ELECTRICAL PARAMETER VARIATIONS

The electrical motors installed in the dispensers can handle the following maximum variations:
- power supply voltage +/- 5%,

and
- Frequency +/- 2%.

SEE THE TECHNICAL DATA TABLE BELOW

CAUTION: before installing, always make sure the type of dispensing system is correct and suitable for the available power supply (voltage/frequency).

This manual is the property of PIUSI S.p.A. Whole or partial reproduction of this manual is forbidden.

Signal	Standard conditions	Limits	Note
Power supply input	1. Models with Panther 56 electric pump, 230 AC 50 Hz 2. Models with Panther 56 electric pump, 120 AC 50/ 60 Hz	1. 500W - 4 A 2. 600 W - 7.5 A	The power supply voltage and frequency depends on the electric motors driving the pumps. The switching technology circuit board is compatible with a wide range of voltage and frequency values but, in the case of dispensers complete with electric pump, power supply voltage and frequency are determined by the pumps. **Always check to ensure the voltage and frequency of the mains network are compatible with the data on the product rating plate.**
Electronic Key Interface	YELLOW key (i-Button): Enabling input from PIUSI electronic key.	The yellow drivers' keys are registered on the PC via a software procedure so that the drivers are enabled to use one or more refuelling stations.	It is possible to configure the presence or not of said key.
Level 1 contact input (only for versions where available)	Clean contact or Open Collector electronic signal (NPN). Should it be necessary to power a level sensor, 24Vdc are also available on the terminal. The maximum current available to power the sensor is 25 mA.	Approximately 1 mA to 5 Vdc will be supplied to the clean contact (or open collector).	It is possible to configure the presence or not of this signal, furthermore it is possible to configure the type of signal (normally open or normally closed for those versions where envisaged). Finally, it is possible to select the action which the main controller must perform when it receives this signal: it may simply generate an alarm on the display or completely inhibit further dispensing if Block Pump is set.
Level 2 contact input (only for versions where available)	Clean contact or Open Collector electronic signal (NPN). Should it be necessary to power a level sensor, 24Vdc are also available on the terminal. The maximum current available to power the sensor is 25 mA.	Approximately 1 mA to 5 Vdc will be supplied to the clean contact (or open collector).	It is possible to configure the presence or not of this signal, furthermore it is possible to configure the type of signal (normally open or normally closed for those versions where envisaged). Finally, it is possible to select the action which the main controller must perform when it receives this signal: it may simply generate an alarm on the display or completely inhibit further dispensing if Block Pump is set.

Signal	Standard conditions	Limits	Note
Auxiliary power supply output 24 Vdc	Auxiliary 24 Vdc power supply output to power external electronic devices.	Imax = 25 mA.	The device being powered must not absorb more than 25 mA with a 24 Vdc power supply. Typically it could be a level sensor.
Fuses	F1 (Vac power supply input) 800 mA T (delayed). F2 (motor output) 20 A T (delayed). F3 (AC/DC output) 800 mA T (delayed).		
IP Protection Rating	IP 55		
Working temperature	From -10° C to +40°C		
Storage temperature	From -20° C to +60°C		
Humidity	< 90%		
Wiring distances	Max pulser distance	15 mt	
	Max level sensors distance	100 m	
Display and counting limits	Floating decimal point sequence: 0.00 -> 99.99 -> 999.9 -> 9999. The maximum quantity which can be dispensed is 9999 units, regardless of the unit of measure set, be it litres, gallons or pints. 		
	PRESET: Maximum preset quantity	9999 litres/gallons/ pints	
Memory storage	The Electronic Controller can store: - Up to 500 drivers - Up to 500 dispensing operations		

8 USE

8.1 INTENDED USE

The B.SMART CUBE dispenser is designed as a diesel filling station for private use.
A dedicated smartphone APP and WEBAPP make it easy to use, returning a summary of all dispensing operations.

CAUTION: **ambient conditions for use**

The B.SMART CUBE dispenser is designed as a diesel filling station for private use.

Dedicated app and web services make it easy to use, returning a summary of all dispensing operations.

Ambient temperature: min -20°C / max +40°C.

Relative humidity: max 90%.

The temperature limits indicated apply to the pump components and must be observed to avoid any damage or malfunctions.

8.2 IMPROPER USE

CAUTION: **flammable liquids and explosive atmospheres**

CUBE B.SMART has not been designed to comply with the ATEX directive or to operate in potentially explosive atmospheres.

Do not installa the CUBE B.SMART in a potentially explosive location.

The system was not designed for dispensing of diesel, petrol, flammable liquids with flash point <55°C/131°F, or for operation in environments with potentially explosive atmosphere.

The use in the above mentioned conditions is forbidden.

CAUTION - **improper use**

It is strictly forbidden to use the system for purposes other than the ones indicated. Any other use different from the one for which the system has been conceived and described in this manual is considered “MISUSE”. Therefore, PIUSI S.p.A. shall not be held responsible for any damage caused to people, animals or to the system itself.

8.3 REASONABLY FORESEEABLE MISUSE

The smartphone is an indispensable tool for CUBE B.SMART to set up and record the dispensing cycles managed by the system, but it is forbidden to use your mobile phone near the transfer pump when refuelling operations are under way.

CAUTION: Use your smartphone only and exclusively to connect, authenticate and link your device to the dispenser. When refilling the vehicle, even with non-flammable liquids, the use of the telephone is in any case strongly discouraged as it can cause distractions that can be dangerous.

9 INSTALLATION

FOREWORD

CUBE B.SMART can be installed outdoors.
However, it is advisable to shelter it under a canopy to ensure a longer life and provide more comfort when refilling in bad weather. Installation of the transfer pump must be carried out by specialised personnel and carried out according to the instructions provided in this chapter.
If CUBE B.SMART is not sheltered under a canopy, a “display cover” is provided as protection for the display and keypad.

WARNING: **Personnel authorised to install the device**

All installation procedures must be performed exclusively by qualified and authorised staff. They must:

Install the system in a dry and well ventilated place;

Properly install all the components necessary for the equipment to function properly;

Only use accessories that have been supplied with the system.

CAUTION: use of unsuitable accessories not supplied with the system is strictly prohibited. PIUSI S.p.A. shall not be held responsible for damages caused to people, things or to the environment deriving from failure to meet such instructions.

THE UNIT IS FOR PROFESSIONAL USE ONLY.

The equipment must be installed in a well lit place, in compliance with the norms in force.

The equipment has been designed to be used in a dry environment. If it is installed outdoors, provide adequate protective covering.

The motors are not explosion-proof. Do NOT install in places with explosion hazard.

DANGEROUS AREA

Any fuel dispenser is considered a danger zone as defined in the National Electrical Code. Installation must be performed in compliance with the following standards:

- National Electrical Code (NFPA No. 70).
- Code for motor fuel dispensing facilities and repair garages (NFPA No. 30A).

WARNING: the installer is responsible for gaining familiarity with and observing all the relevant local codes.

The Product is designed for use in unclassified areas.

All the equipment must be installed outside the danger zones.

NOTE: local codes may impose specific installation requirements. Installation is subject to approval of the local authorities having jurisdiction for the site.

This manual is the property of PIUSI S.p.A. Whole or partial reproduction of this manual is forbidden.

9.1 DISPENSER POSITIONING

CUBE B.SMART should be positioned to ensure:
- Easy removal of detachable panels when access to internal components is required.
- Compliance with max. distances and difference in height between fuel transfer pump and tank.
- Correct and safe fixing of the body to the ground on a horizontal plane.

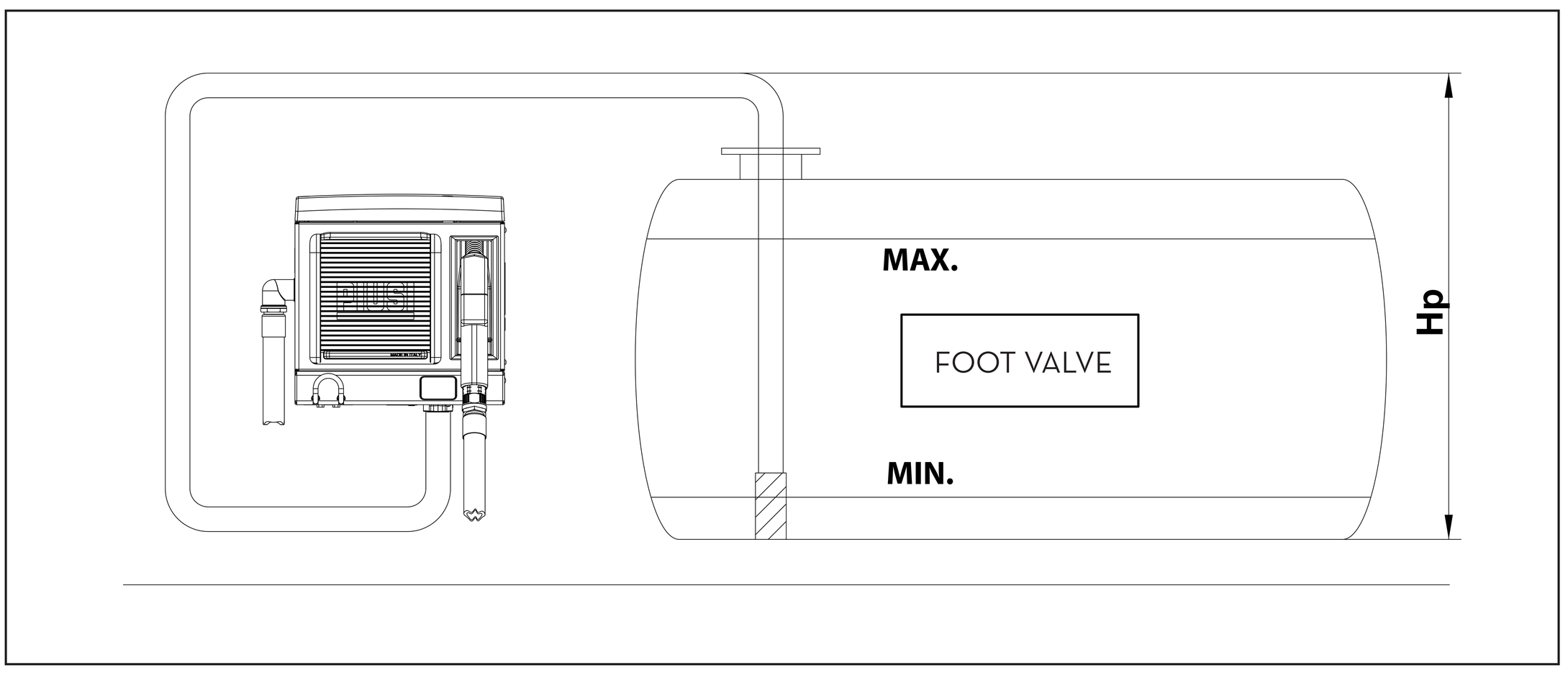
Dispenser positioning establishes the following parameters, which characterise each installation:
- **Hp: Priming height.**
- **Ls: total length of suction piping – from foot valve to distributor (in meters).**

Correct operation of the units requires full respect of the following limits:
- **Hp max: not exceeding 3 metres.**
- **Ls max: not exceeding 15 meters**

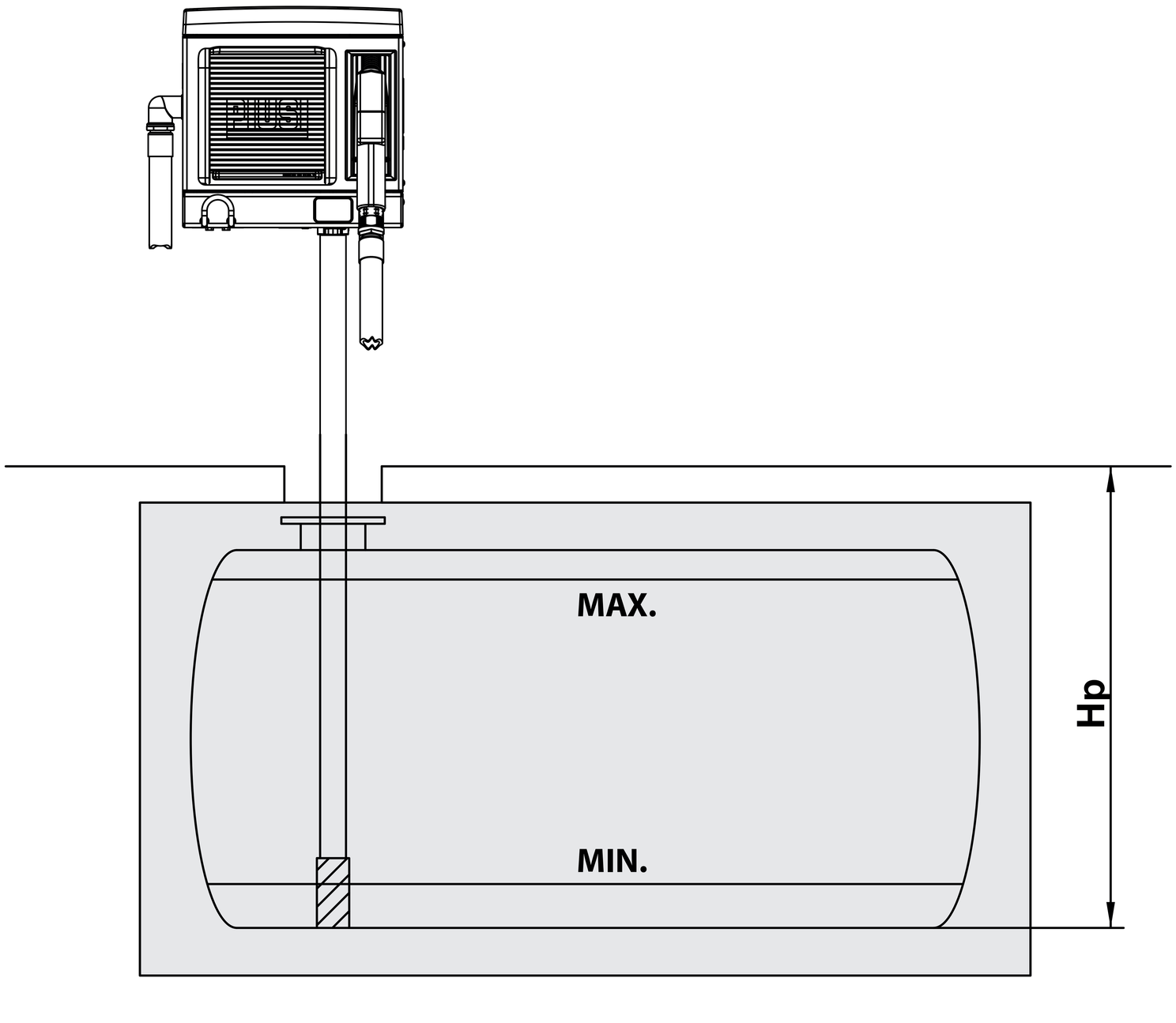
9.2 DISPENSER FIXING

Before starting installation, make sure that no packing material is trapped in the piping. Prepare adequate support clamps or fixing brackets depending on where you want to install your CUBE B.SMART. The pipe from the tank must be aligned with the threaded inlet on the pump filter located under the CUBE B.SMART unit.

ABOVE GROUND TANK



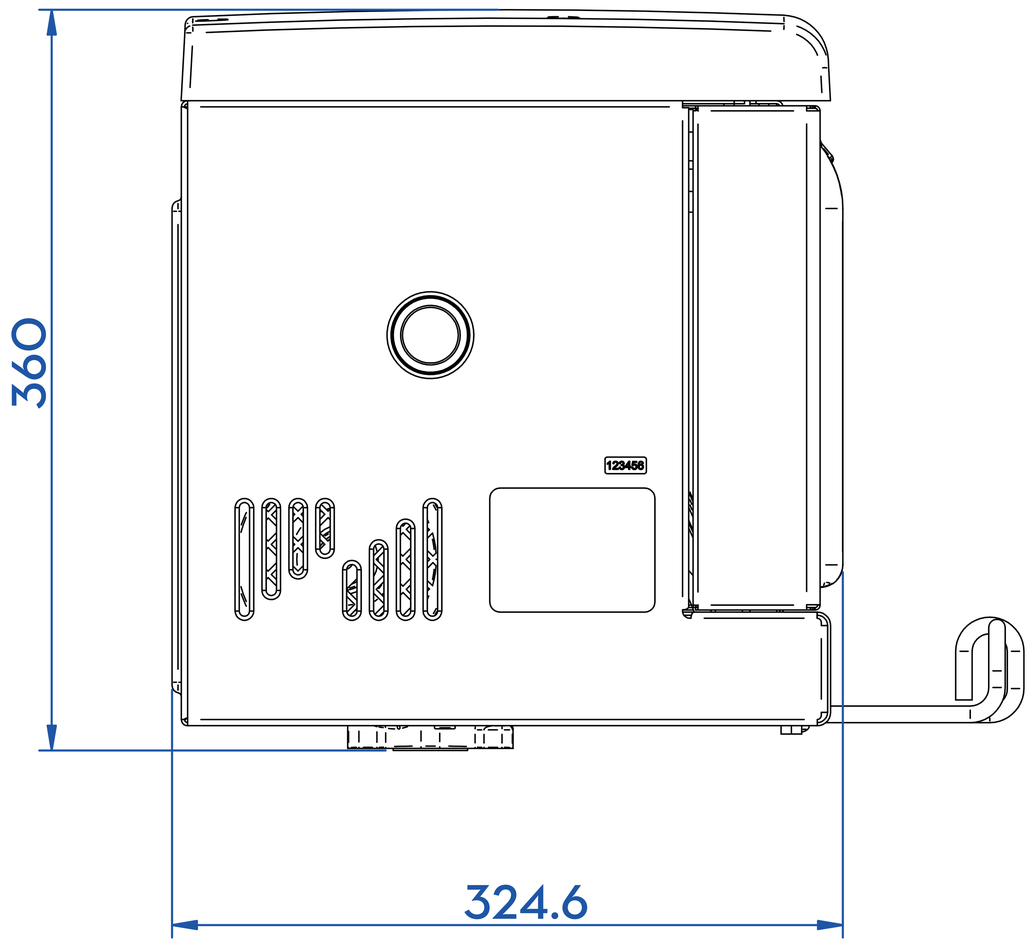
UNDERGROUND TANK

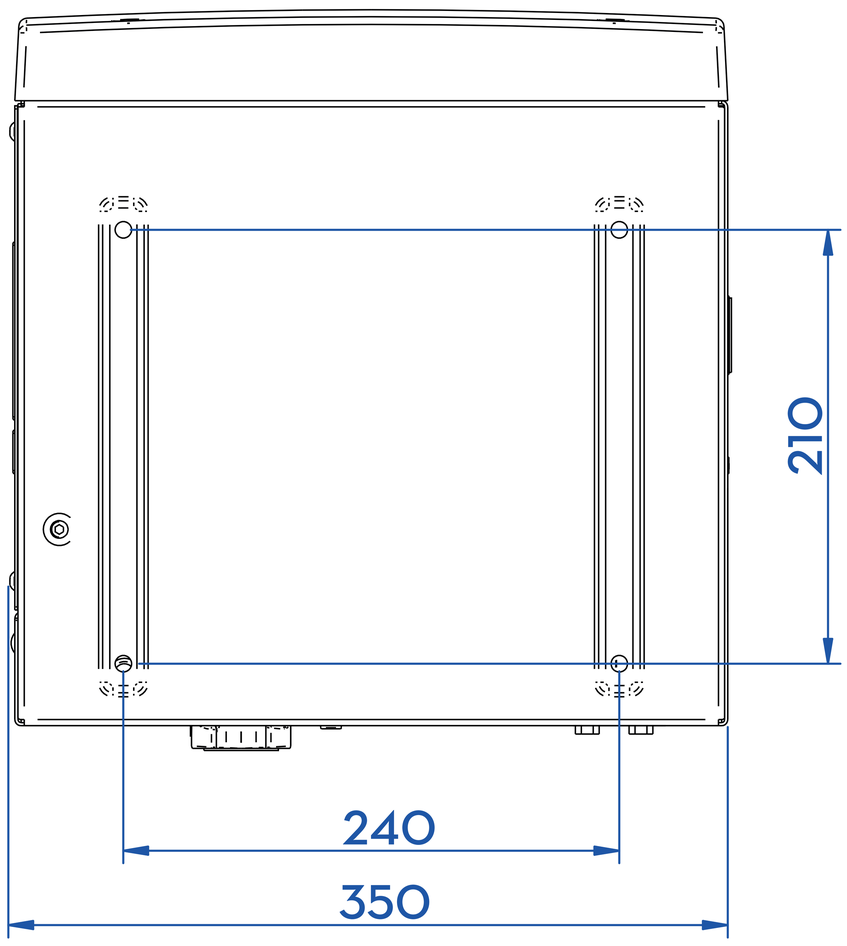


CUBE B-SMART can be wall- or pedestal mounted.
To install the equipment on a wall you will need 4 x M8 screws.
To install it on a pedestal you will need 4 x M6 screws.
Diagrams showing the distance between holes for precise installation are provided below.
The pedestal is a Piusi accessory, supplied separately from the CUBE B.SMART unit itself.

This manual is the property of PIUSI S.p.A. Whole or partial reproduction of this manual is forbidden.

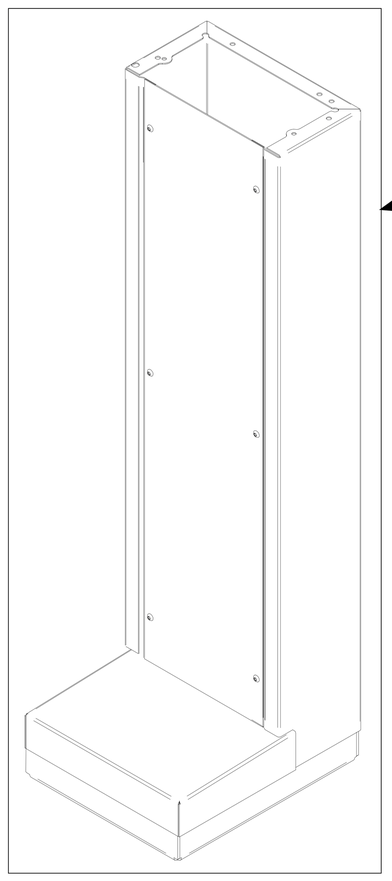
WALL MOUNTING

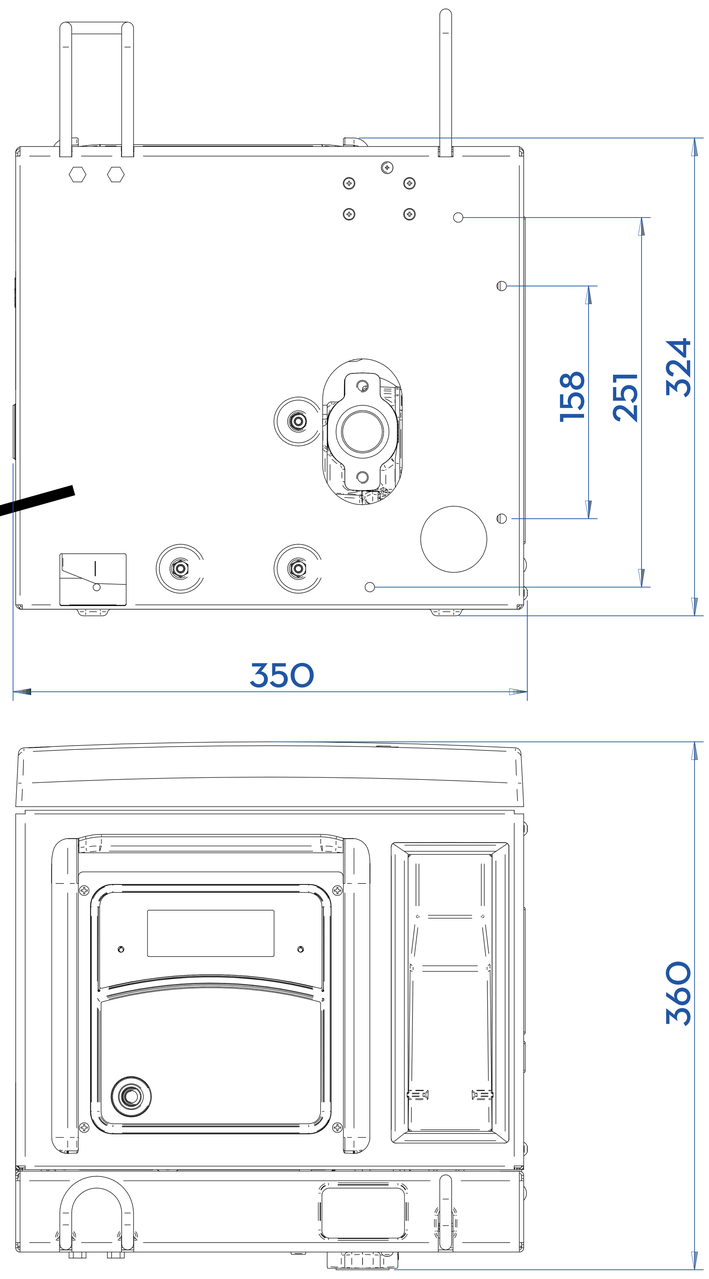




PEDESTAL MOUNTING

Optional





9.3 HYDRAULIC CONNECTIONS

Always follow the below-listed WARNINGS:
- Use pipes and joints suitable for operation in vacuum conditions.
- Use pipes and accessories suitable for treated fluid. Unsuitable materials can result in serious damage to the pump; they can also cause pollution.
- Do not use conical threaded connectors that could cause damage to the threaded connector on the pump filter if tightened excessively.
- Use wide-radius bends so that pressure losses are reduced to minimum levels.
- Check that suction pipe is perfectly clean and free from debris.
- Install a foot valve equipped with filter at suction pipe end. Place the foot valve on tank bottom. Foot valve and pipe must have the same diameter.
- Before starting installation, make sure that no packing material is trapped in the piping.

SUCTION LINE

The diameter of the suction line “Ds” must be selected based on the model of fuel transfer pump and depending on its positioning in relation to the tank. With reference to the “Hp” and “Ls” values defined in point 12.1, the following MINIMUM DIAMETERS for suction piping MUST be observed.

MAXIMUM LENGTH OF SUCTION PIPING

The maximum length of the piping, the piping diameter and the height difference “Ho”, are parameters strictly linked to creating the conditions for suction. The latter must not be such as to create a negative pressure of over 0.6 bar. It follows that, after having observed the minimum piping diameter, set out in the “Recommendations and Warnings” section below, the maximum piping length is shorter the greater the height difference “Ho” the diesel must overcome and vice versa: in fact, negative pressure increases progressively by 0.08 bar per metre of increase in static pump height in relation to the liquid surface of the diesel fuel in the tank.

RECOMMENDATIONS AND WARNINGS

NOTE:
- The suction piping must be able to resist a pressure of at least 10 bar and must have an internal diameter of NO LESS THAN 1”1/4.
- The piping must also be suitable for working at negative pressure.
- Use piping and accessories suitable for handling diesel. Use of materials not suitable for handling diesel may result in damage to the pump, harm to people and can represent a pollution hazard.
- Any bends in the suction piping must have as large a radius as possible to limit friction loss to a minimum.
- Check that suction piping is clean and free from debris.

This manual is the property of PIUSI S.p.A. Whole or partial reproduction of this manual is forbidden.

9.4 ELECTRICAL CONNECTIONS

The electrical connections must be carried out in a workmanlike manner by specialised personnel, in full compliance with the regulations in force in the country of installation and with the instructions in the electrical diagrams in this manual.

CAUTION: the CUBE B.SMART SELF Panel is NOT equipped with circuit breakers; it is therefore essential to install an electrical power supply panel upstream from CUBE B.SMART, equipped with a circuit breaker / disconnector with a current rating suitable for the power feeding line and a suitable RCD for the type of electrical load.

Otherwise, provide for a quick disconnection system such as a socket/plug connection to be used in the event of faults.

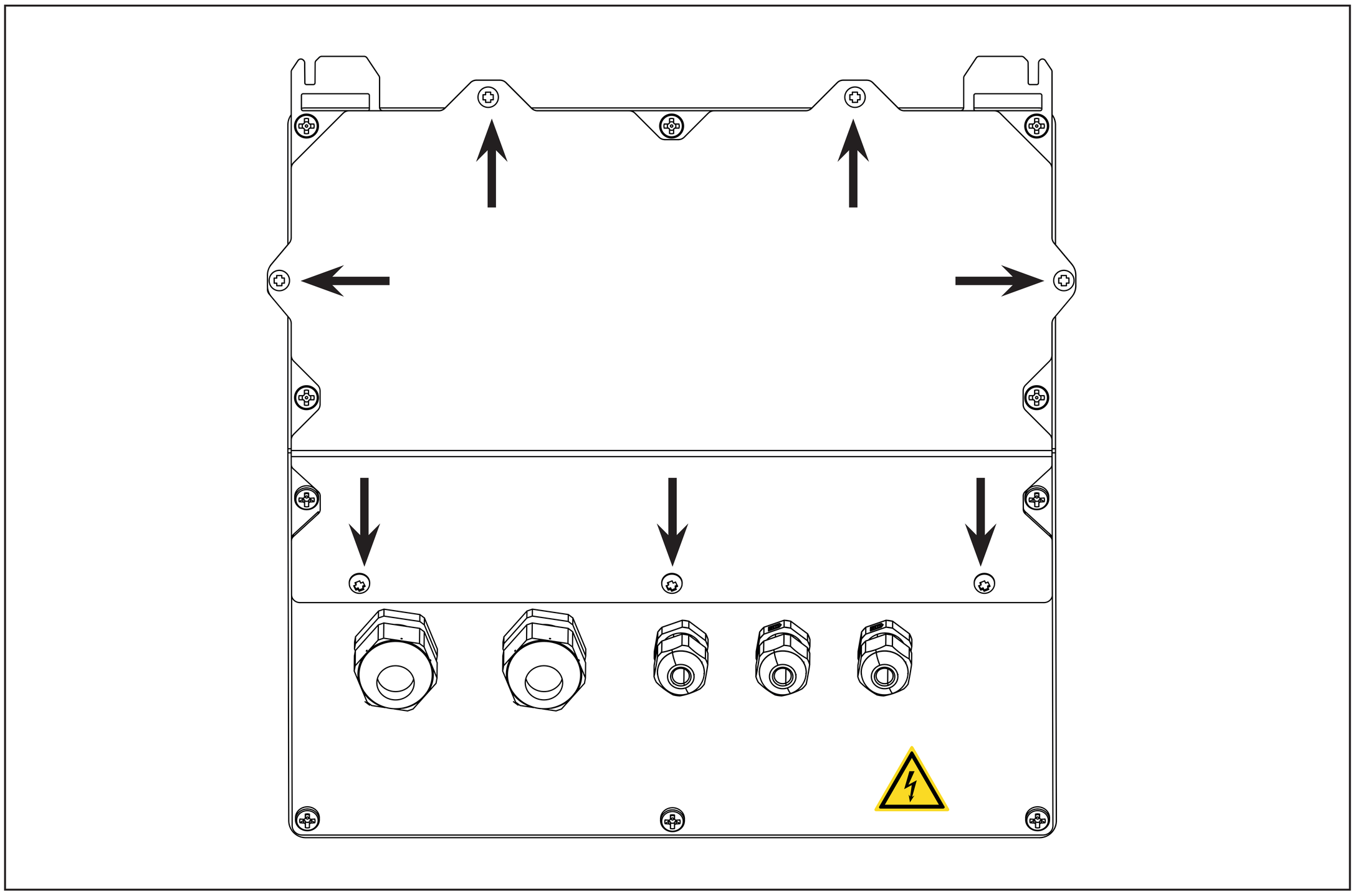
CAUTION: before accessing the electrical parts, make sure that you have disconnected all the main switches that energise the unit.

The operations required for correct wiring are described below:

- CUBE opening.
- Opening the rear cover of the controller.
- Closing the rear cover of the controller.
- CUBE closure.

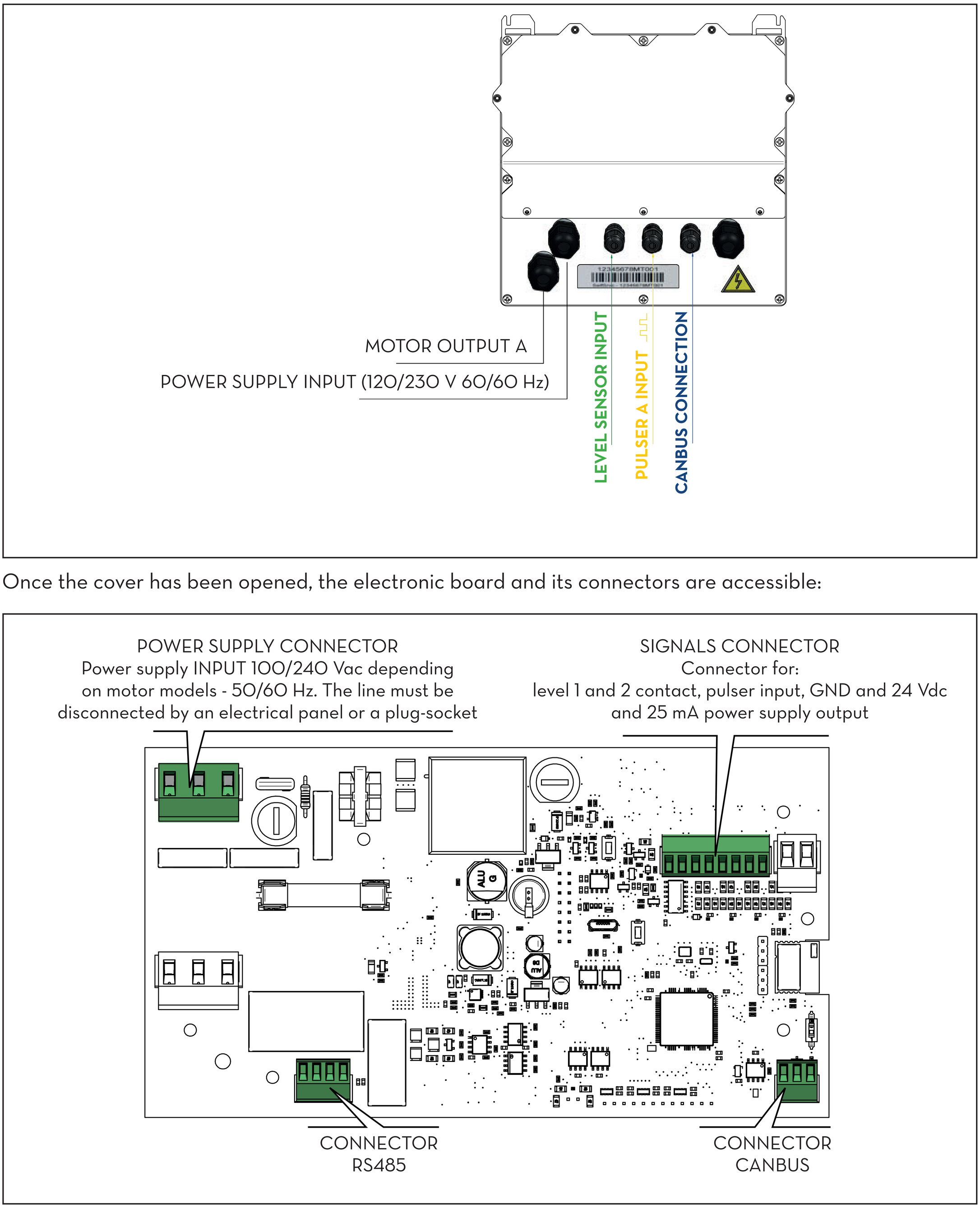
OPENING CUBE OPENING THE REAR COVER OF THE CONTROLLER

Loosen all 7 screws of the controller rear cover to access the electronic boards compartment.



CABLE GLAND CONNECTION

Cable gland connection: the cable glands to be used for the various signals are indicated in order to obtain an optimised cable route inside the controller. Pulser input and motor output are already wired.



Once the cover has been opened, the electronic board and its connectors are accessible:

9.4.1 Power supply cable

Insert the grounding wire (yellow/green sheath) into the central hole of the terminal, then phase and neutral respectively on the right and left and tighten the wire fixing screws.

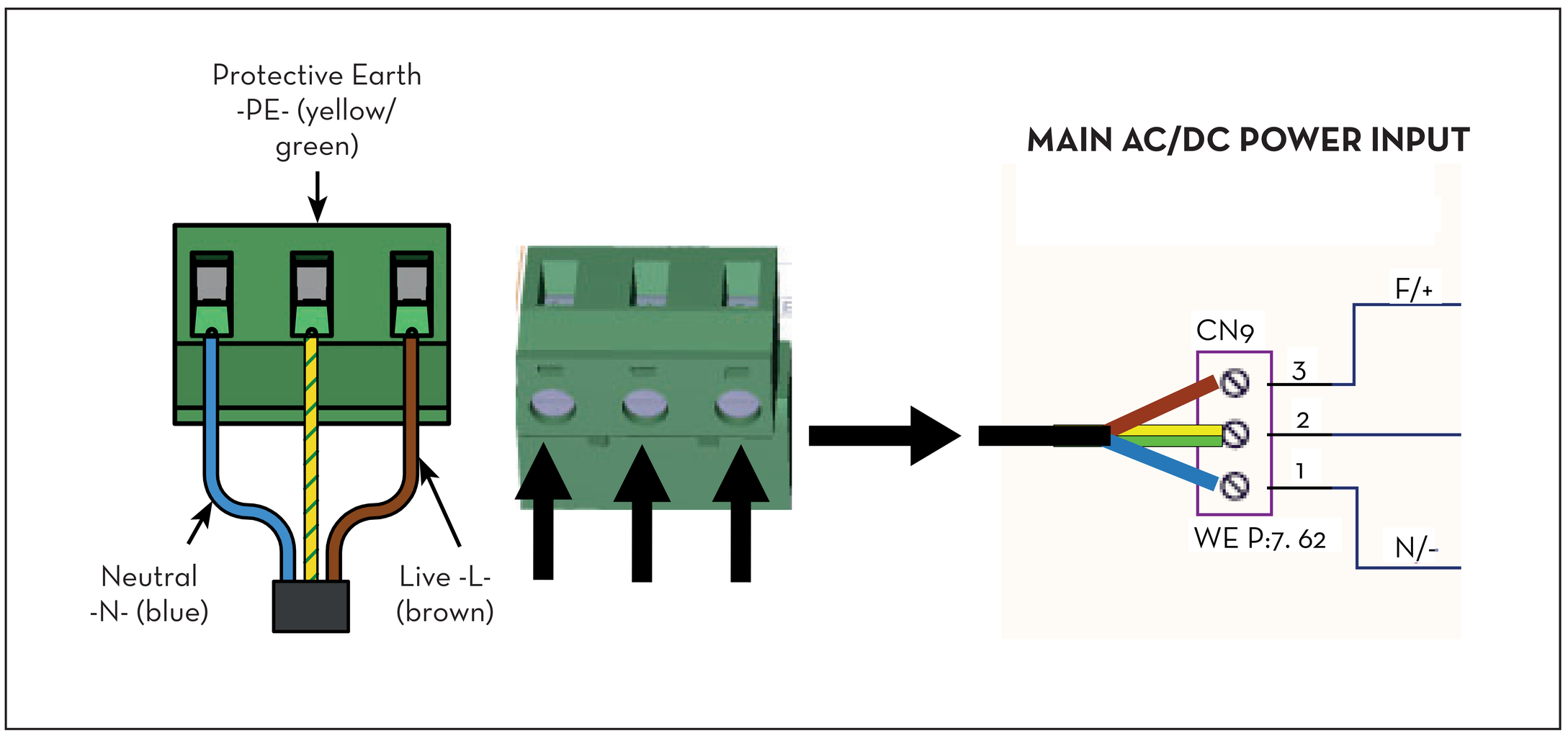
Voltage values:
The electronic controller must be supplied with voltages and frequencies compatible with the motor to be driven:

- If the motor is 230 V ac at 50 Hz, the controller must be supplied at the same voltage and frequency (220 V ac – 240 V ac at 50 Hz).

CAUTION: the CABLE CROSS-SECTION must be chosen according to the electrical current absorbed by the motor, which is the device in which almost all the current flows.
Pay attention to the cable specifications:

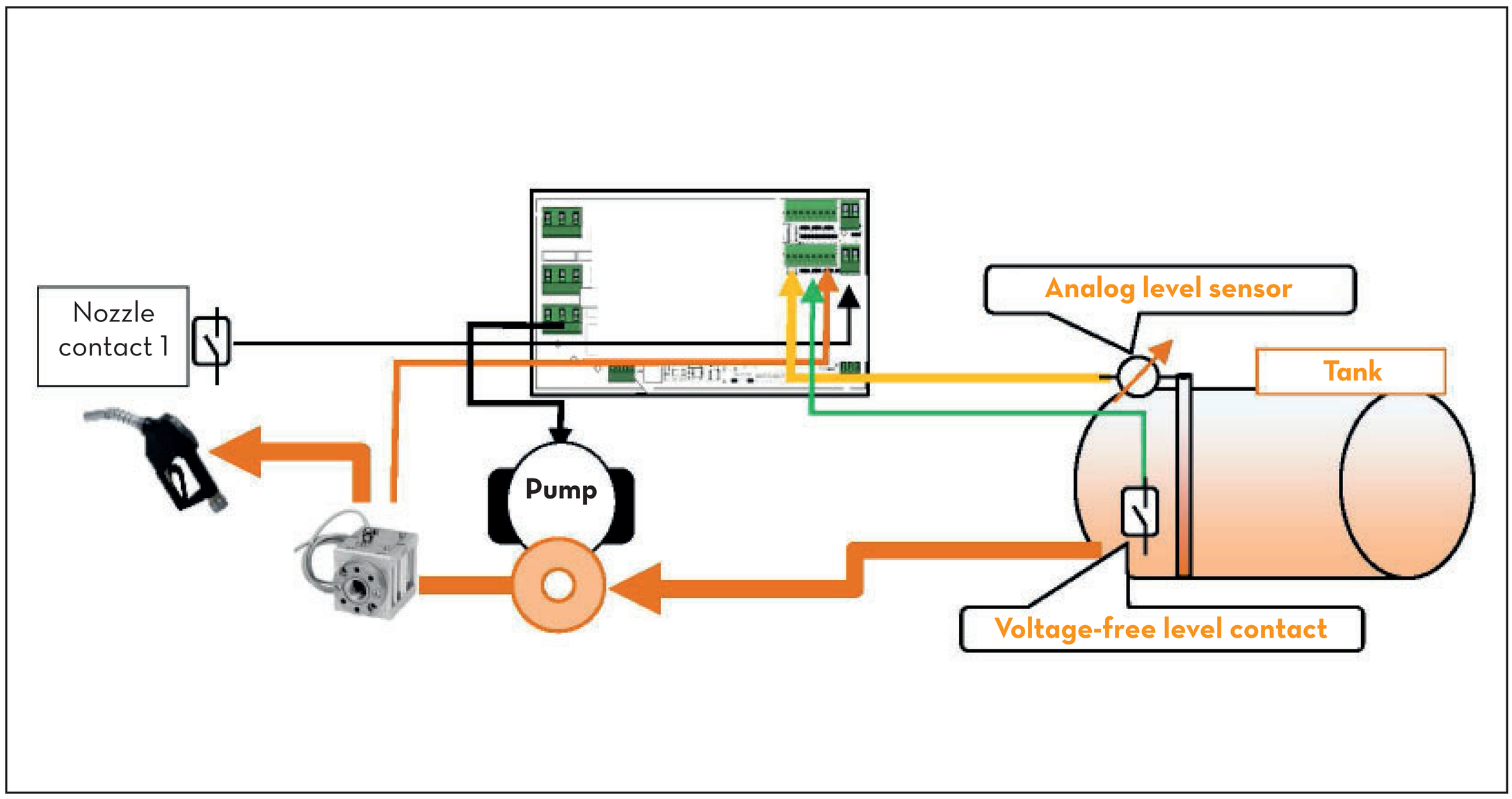
- The signal cables and power cables used in this product must have an insulation rating of 300V or more.
- The power cable must have a cross section of AWG 16 or more.

NOTE: The maximum current absorbed by the 230 V motor is 4.2 A.

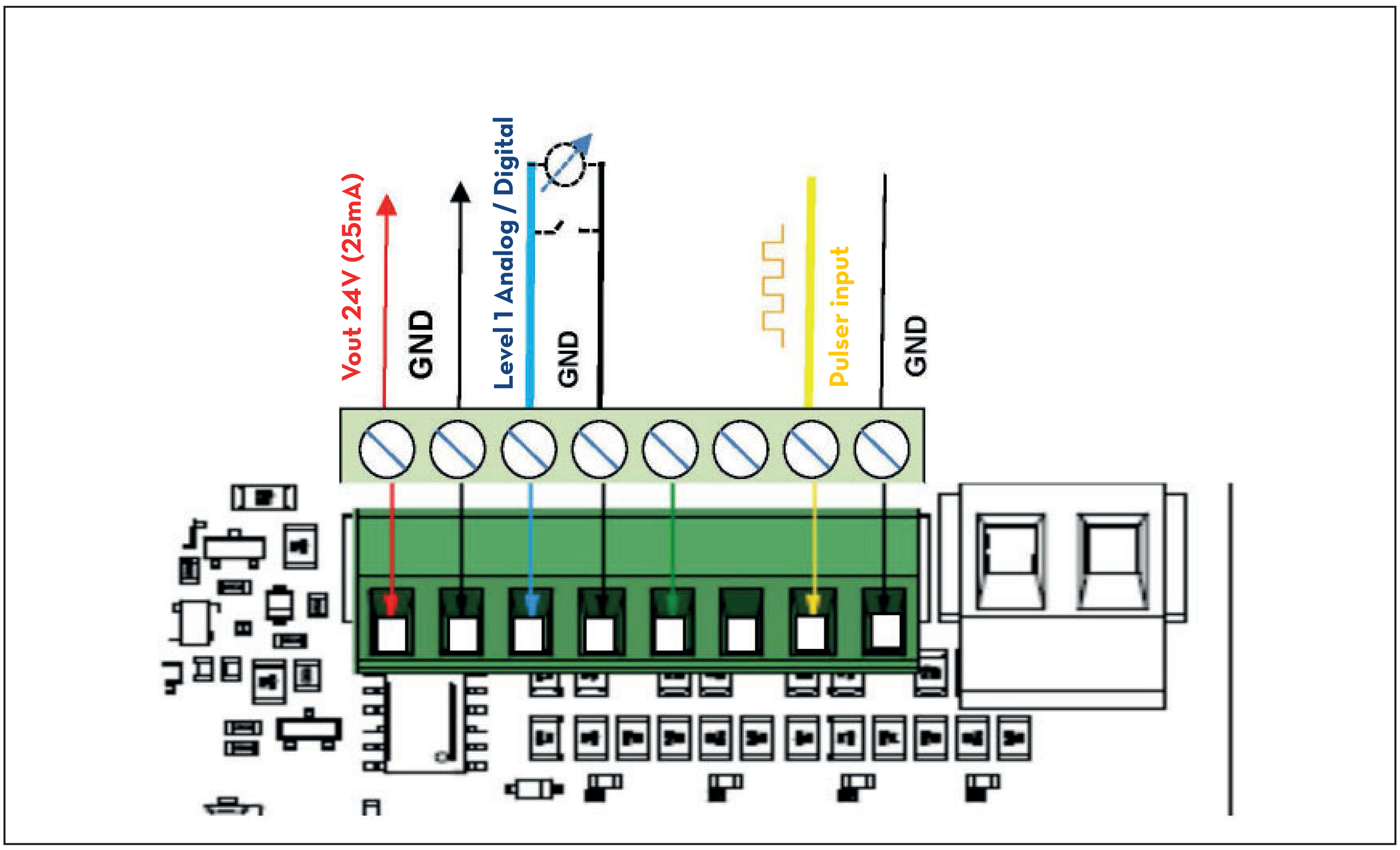


9.4.2 SIGNAL connector:

The signal connector has a large number of Input or Output functions.
When controlling 1 single pump the circuit board will be equipped with only 1 signal connector to handle the electrical signals associated with hydraulic circuit number 1.



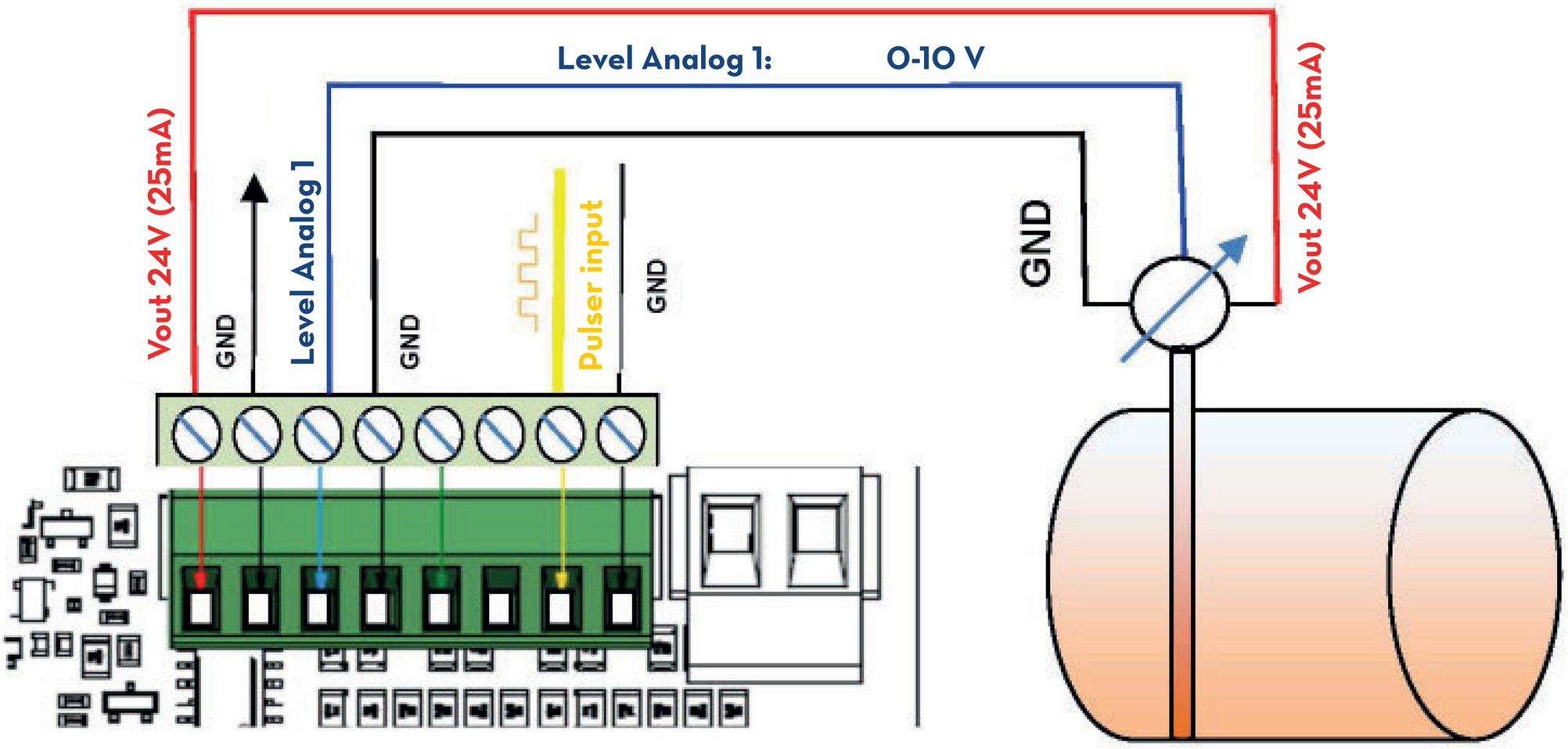
DETAIL:



With reference to the Level 1 and 2 inputs, note that they are different from one another
The Level input can be used as an analog input (0-10V or 4-20 mA level sensor) or as a voltage free contact (e.g. float switch) .

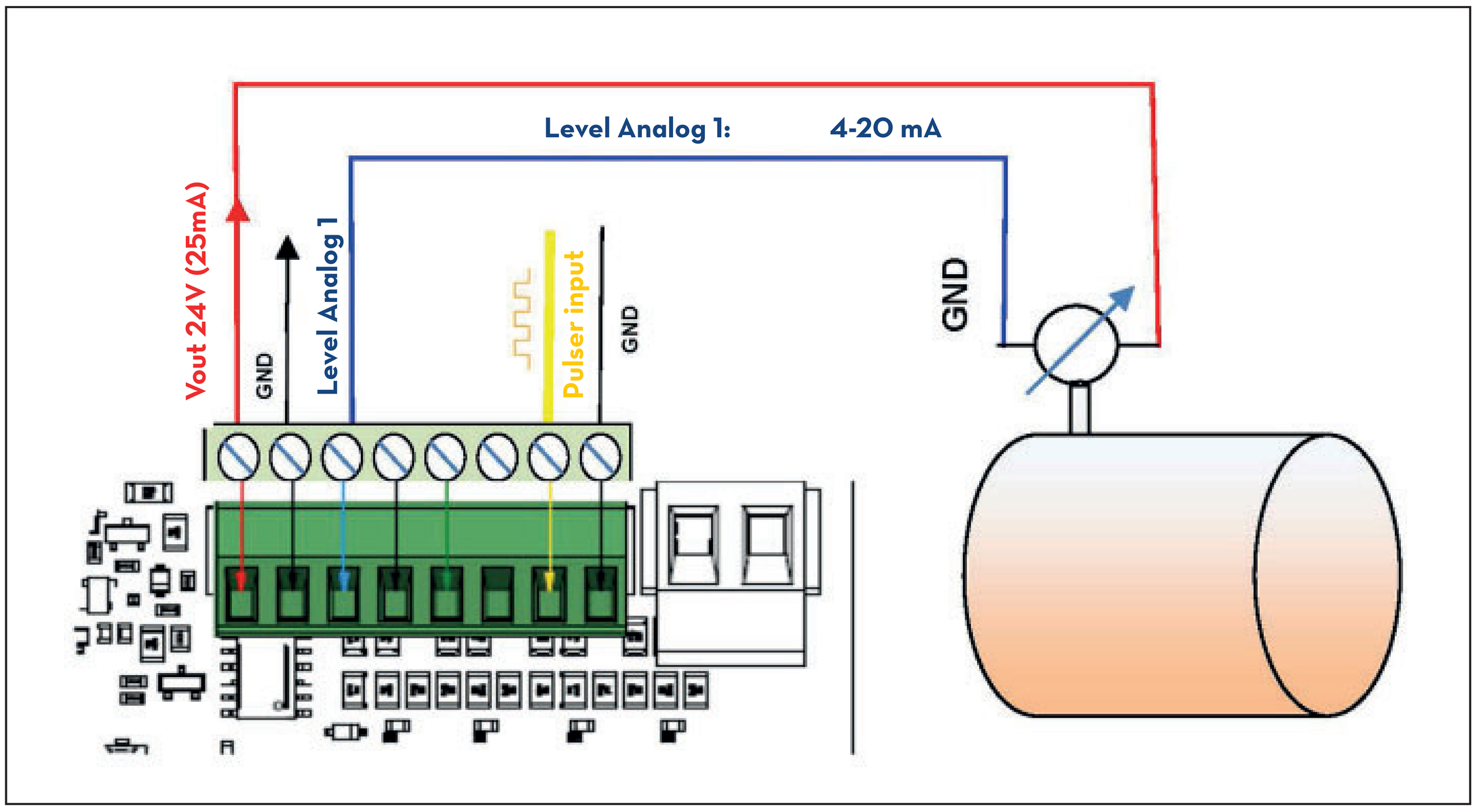
A) CONNECTION OF ANALOG LEVEL SENSORS

0-10 V Analog Sensor

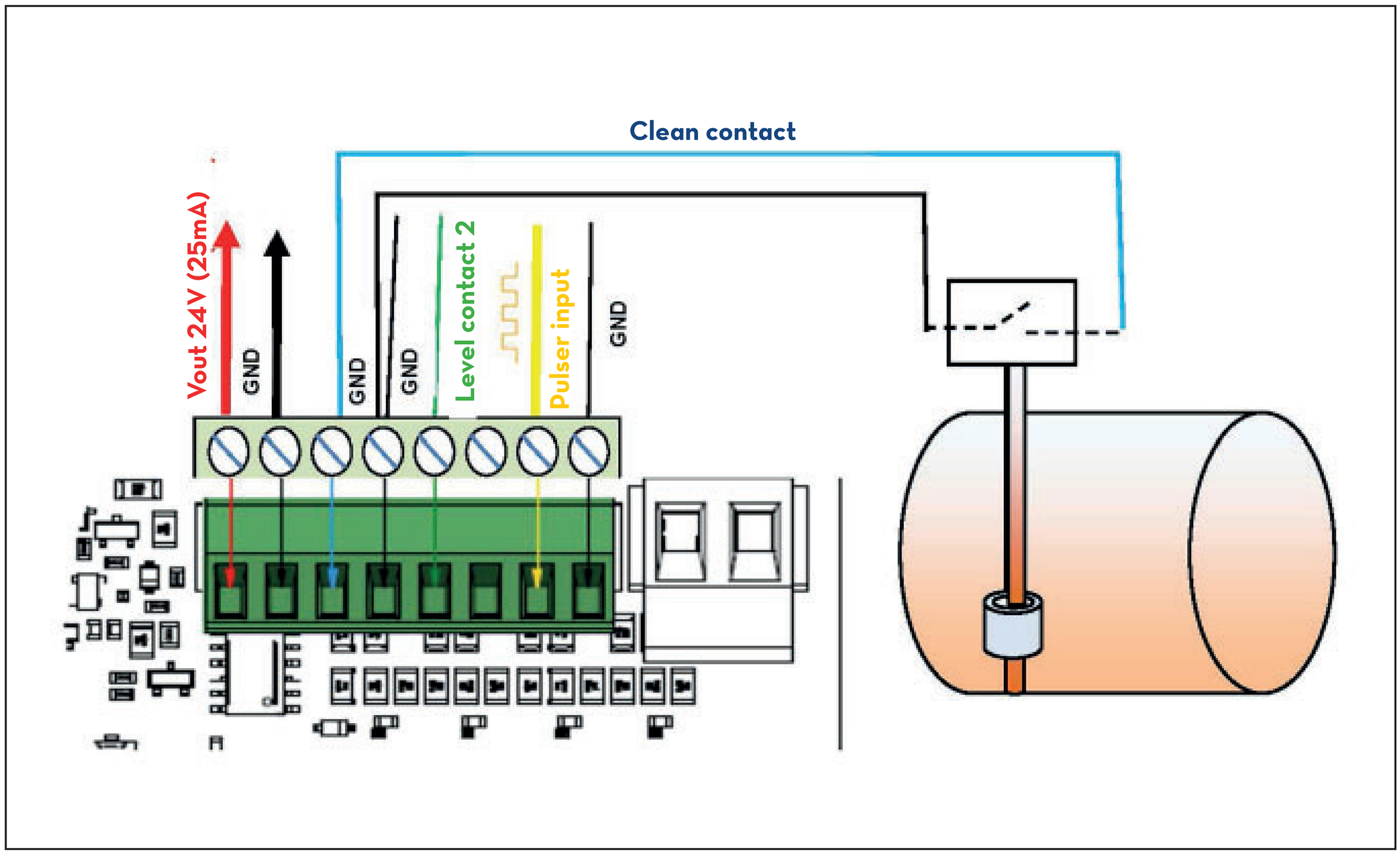


EN

4-20 mA Analog Sensor

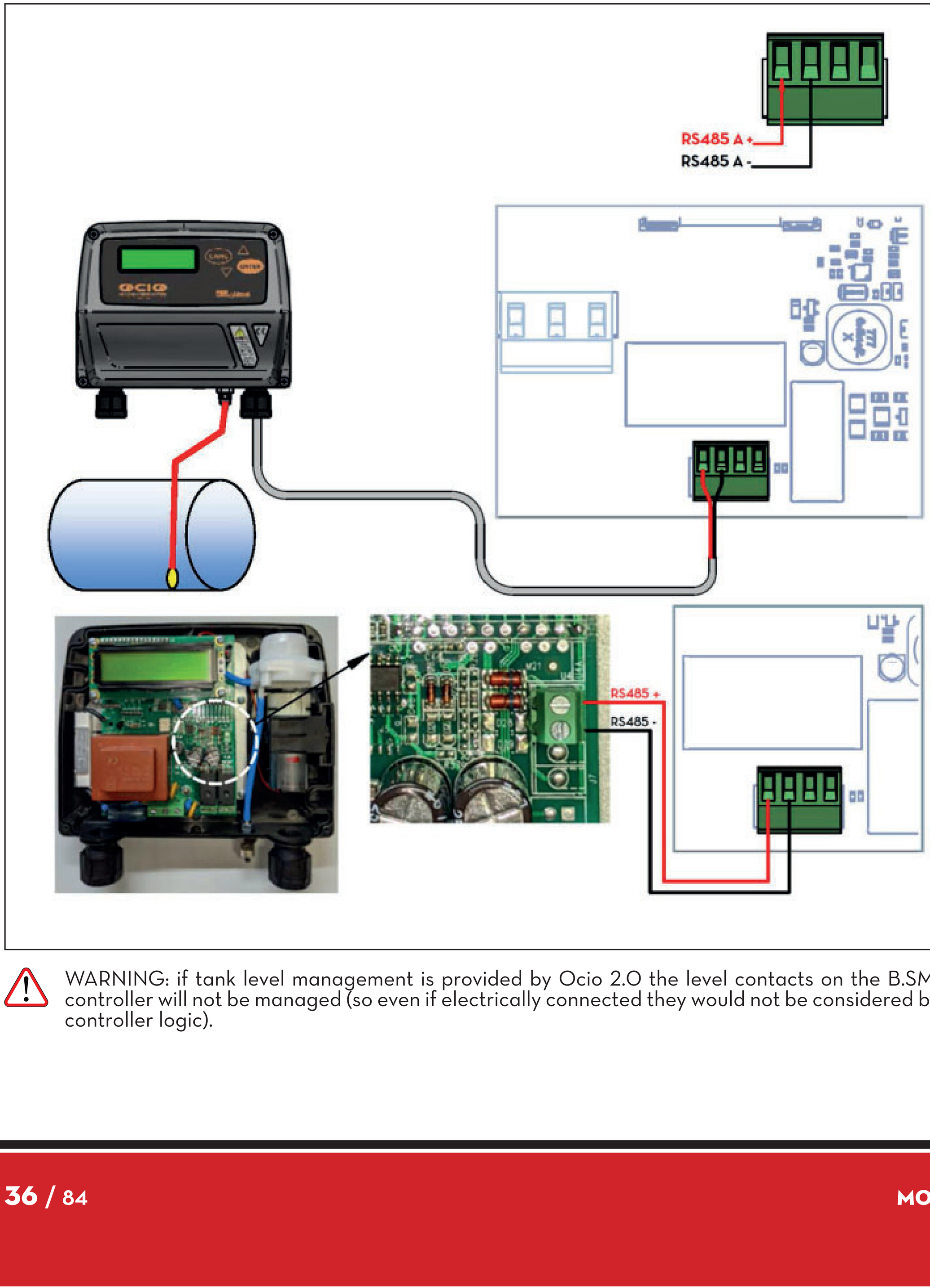


B) CONNECTION OF LEVEL CONTACTS (E.G. FLOAT SWITCH)



9.4.3 Tank Level Management with Ocio 2.0 via RS485 serial port

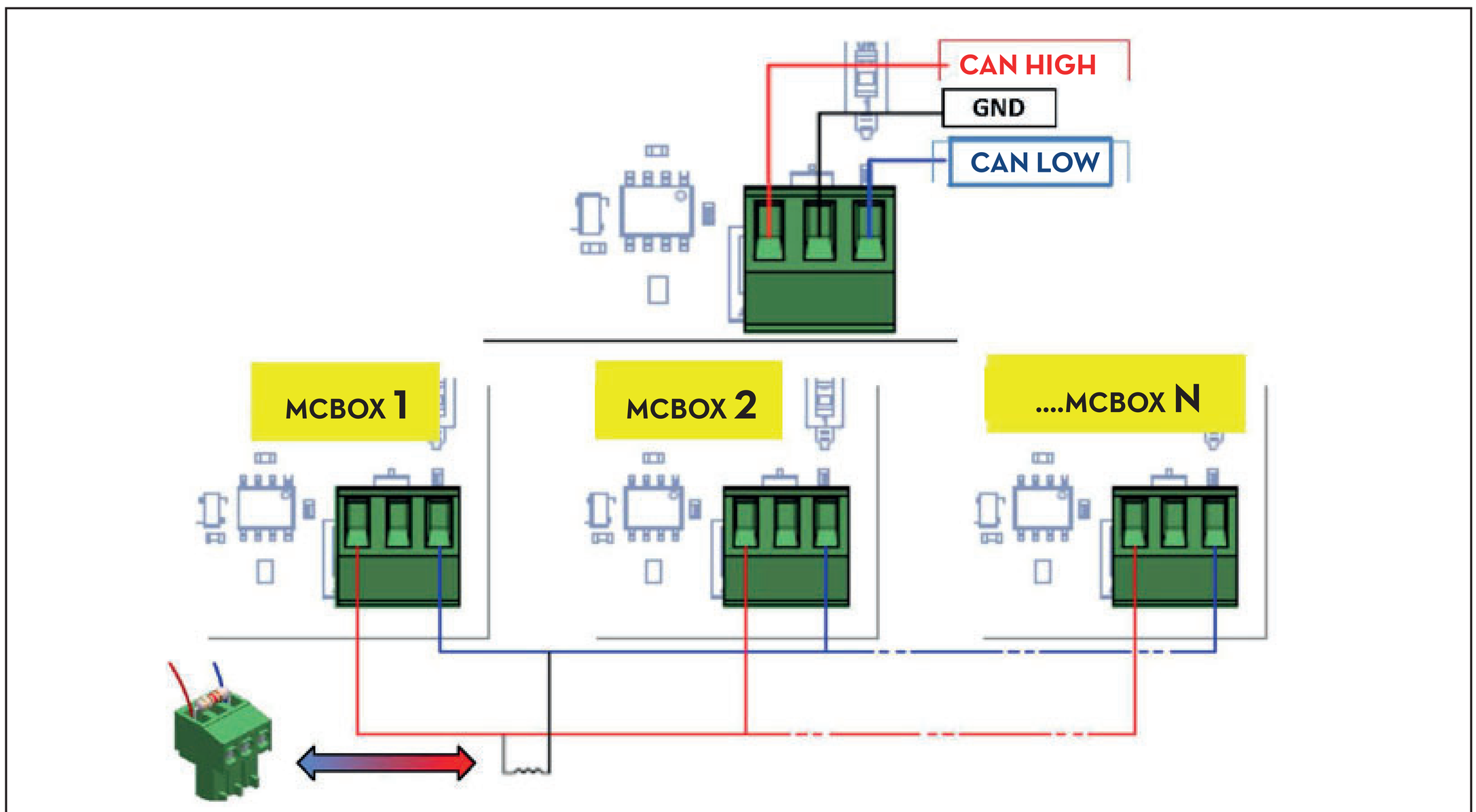
The B.SMART board has two RS485 serial communication channels.
As well as the level contacts on the signals terminal board, it is possible to connect the OCIO 2.0 detection system to the B.SMART board.



WARNING: if tank level management is provided by Ocio 2.0 the level contacts on the B.SMART controller will not be managed (so even if electrically connected they would not be considered by the controller logic).

9.4.4 CANBUS connection

The controllers can be connected to each other, via CANBUS connection. The figure shows the connector on each individual board and a small diagram showing the connection between x number of controllers. Insert the 120 ohm resistor provided between CAN HIGH - CAN LOW and connect the resistor output wires to the terminal boards, as shown in the figure.



CAUTION: the 120 ohm resistor must be inserted in the CANBUS line ONCE ONLY, as shown in the connection diagram.

NOTE: for CANBUS connection we recommend to:

- Use a cable with a characteristic impedance of 120 ohms.
- The length of the connection between the various CUBE B.SMARTs must not exceed 100 m.

This manual is the property of PIUSI S.p.A. Whole or partial reproduction of this manual is forbidden.

9.4.5 Closing the rear cover of the controller.

Replace the cover and tighten the 7 screws.

CUBE CLOSURE:
Close the dispenser door.

10 INITIAL CONFIGURATION

Before use, you must set up your system by connecting your CUBE B.SMART to the smartphone APP and the dedicated WEBAPP. This section explains all the steps required for a correct configuration.
To configure the system you need to:

- Switch on the controller.
- Configure the controller via the app.
- Configure the controller via the WEBAPP.

10.1 START-UP

FOREWORD
For correct start-up of the CUBE B.SMART, as well as APP and WEBAPP activation, it is necessary to perform some very simple operations.

ELECTRIC CONNECTIONS
After completing the electrical connections, CUBE B.SMART can be energized by means of the main switch which the fitter must install on the upstream line.
When the system is turned on, the backlit LCD screen on the front panel comes on. Extracting the nozzle from its holder will NOT start the pump because it has not been enabled by the B.SMART system.

INITIAL STARTING CONDITIONS
CUBE B.SMART is equipped with self-priming pump, which makes initial starting easier.
In fact the suction pipe does not need to be filled completely with Diesel fuel.
However quick priming can only be achieved if the pump is wet, that is if a minimum quantity of Diesel fuel is available inside the rotor chamber (this is particularly true when the difference in height between station and tank is remarkable). The pump is supplied with this minimum quantity, ready for use.
If the installer believes the pump to be completely dry for any reason (long storage, for example), he shall wet the pump following a procedure at his choice.

10.2 FIRST PRIMING

To prime the pump:
- Extract the nozzle from its seat.
- ACTIVATE THE DELIVERY (VIA APP, WEBAPP OR I-BUTTON KEY).
- Raise the control lever.
- The pump will start immediately and continue running indefinitely until the control lever is turned to the OFF position.
- Activate the lever of the automatic nozzle, holding the SPOUT inside a suitable container or the suction tank itself. Initially only air will come out of the nozzle before DIESEL starts to flow.

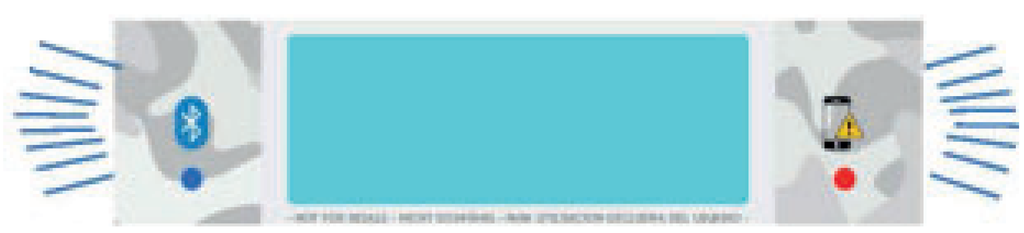
CAUTION: Initial priming shall be carried out by qualified personnel, who will be present at all operations involved. If air comes out for over 2 minutes, STOP THE PUMP and make sure that:
- Pump is not operating in dry conditions, but that a minimum quantity of Diesel fuel is available (“wet conditions”).
- The suction pipe does not let any air in and that it is completely submersed.
- Filters are not clogged.
- Suction and/or delivery lines are unclogged.
- Installation has been carried out respecting the set limits (difference in height, pipe diameter and length).
- The release valve is closed.

Continue dispensing fuel until a steady air-free flow is obtained. Place the control lever in the OFF position: The pump stops. Put the nozzle back in the holder.

This manual is the property of PIUSI S.p.A. Whole or partial reproduction of this manual is forbidden.

11 START-UP

The following is the sequence of messages given by the system during the switching-on phase.

1		**Display, BLUE and RED LEDs light up**
2		**All segments ON**
		**All segments OFF**
3		**The first part of the firmware revision index is shown (in this example r.1.00)**
4		**The last part of the firmware revision index (i = internal) is shown: i.00**
5		**The display backlighting and LEDs turn off and 0.00 appears on the display**

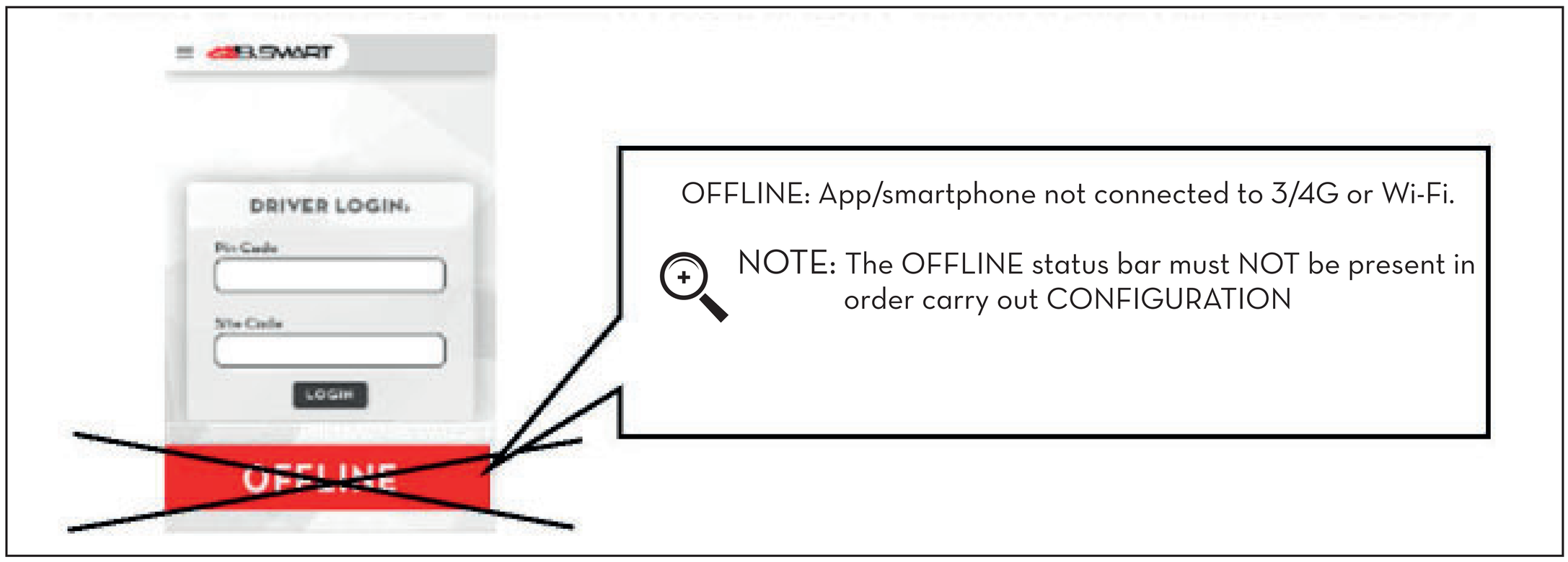
11.1 CONFIGURATION VIA APP

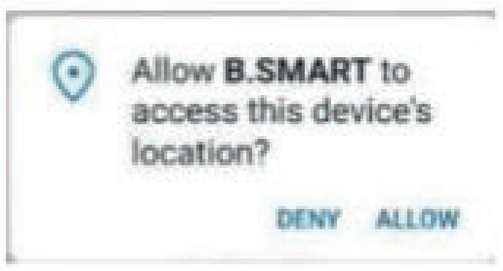
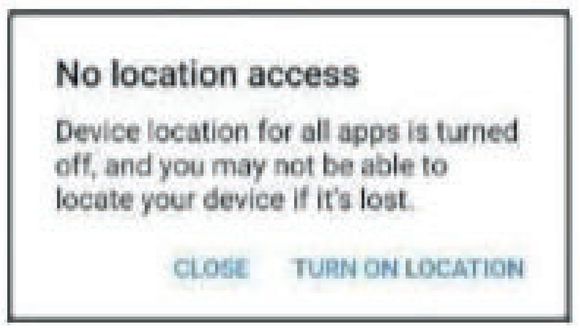
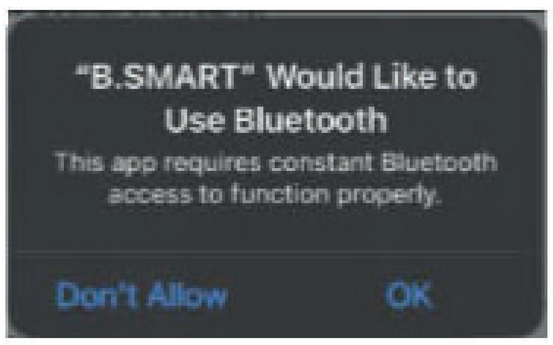
FOREWORD
Initially it is necessary to assign the purchased SYSTEM CODE to the controller.
From your smartphone, go to the Play Store or APP Store and search for PIUSI APP.

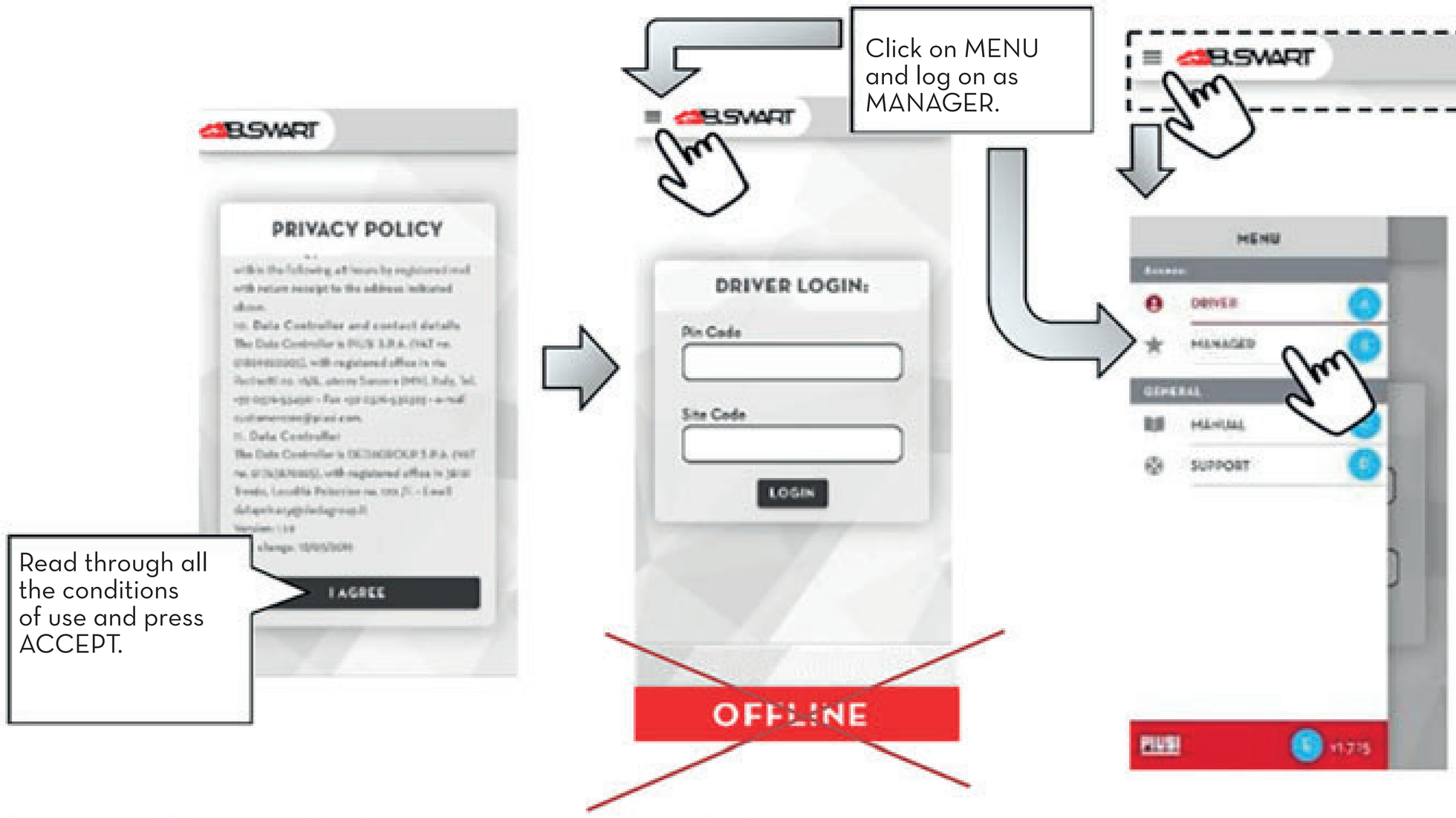
The icon is:
Download and install the application

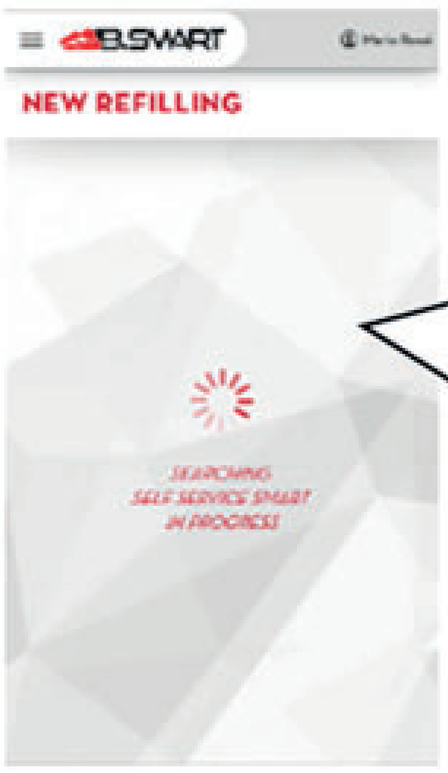
For CONFIGURATION purposes the smartphone must be ONLINE or connected to the 3/4/5 G or Wi-Fi network,

To check connection status refer to the icon at the bottom left on the app screen.



Activate Bluetooth on the smartphone	
(Android Only) Allow access to the position	
(Android Only) Activate geolocation service	
(IOS Only) Allow the application to use the phone Bluetooth functions	

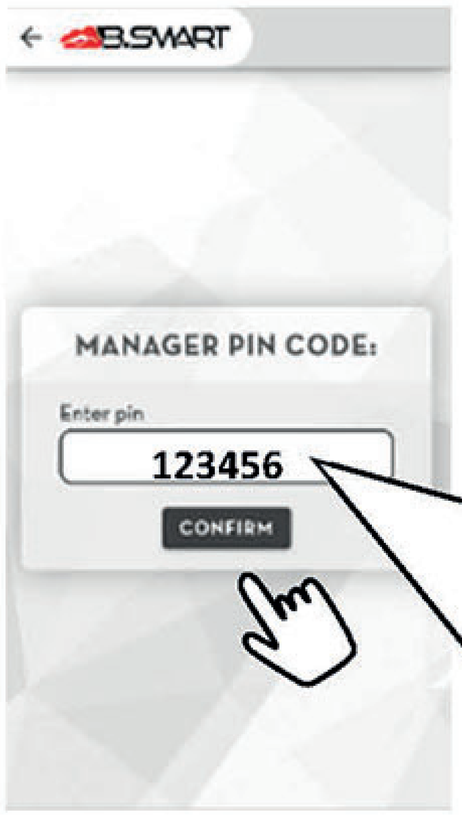




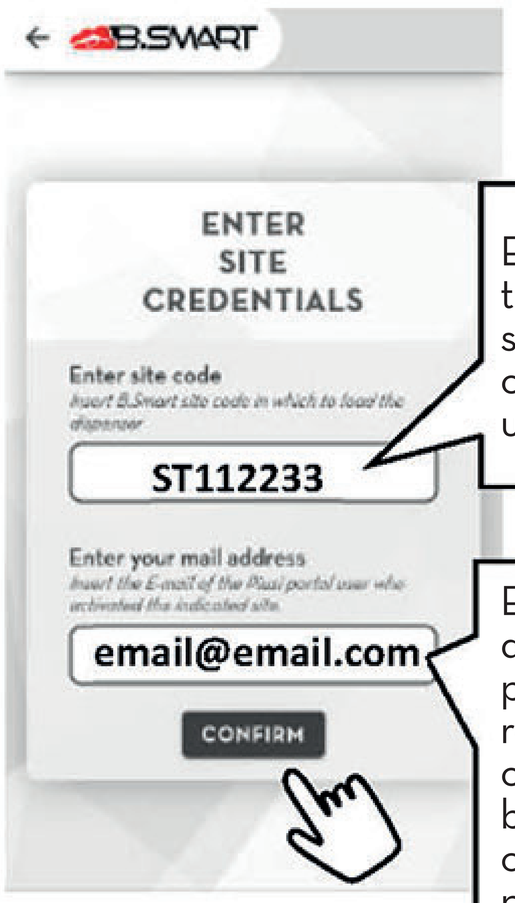
...scanning.
If scanning continues for several minutes, this means there is no controller in the vicinity.

The controllers detected during scanning are added to the list and appear as shown below:
A. Controller name.
B. Signal quality.

NOTE
• a dispenser cannot be detected if it is already connected to a smartphone at the time.



The site manager connects to the controllers using a special pin code for authentication (can be different for each controller and is configured from web app; default code is 123456) and by means of advanced privileges he/she can carry out site management operations.



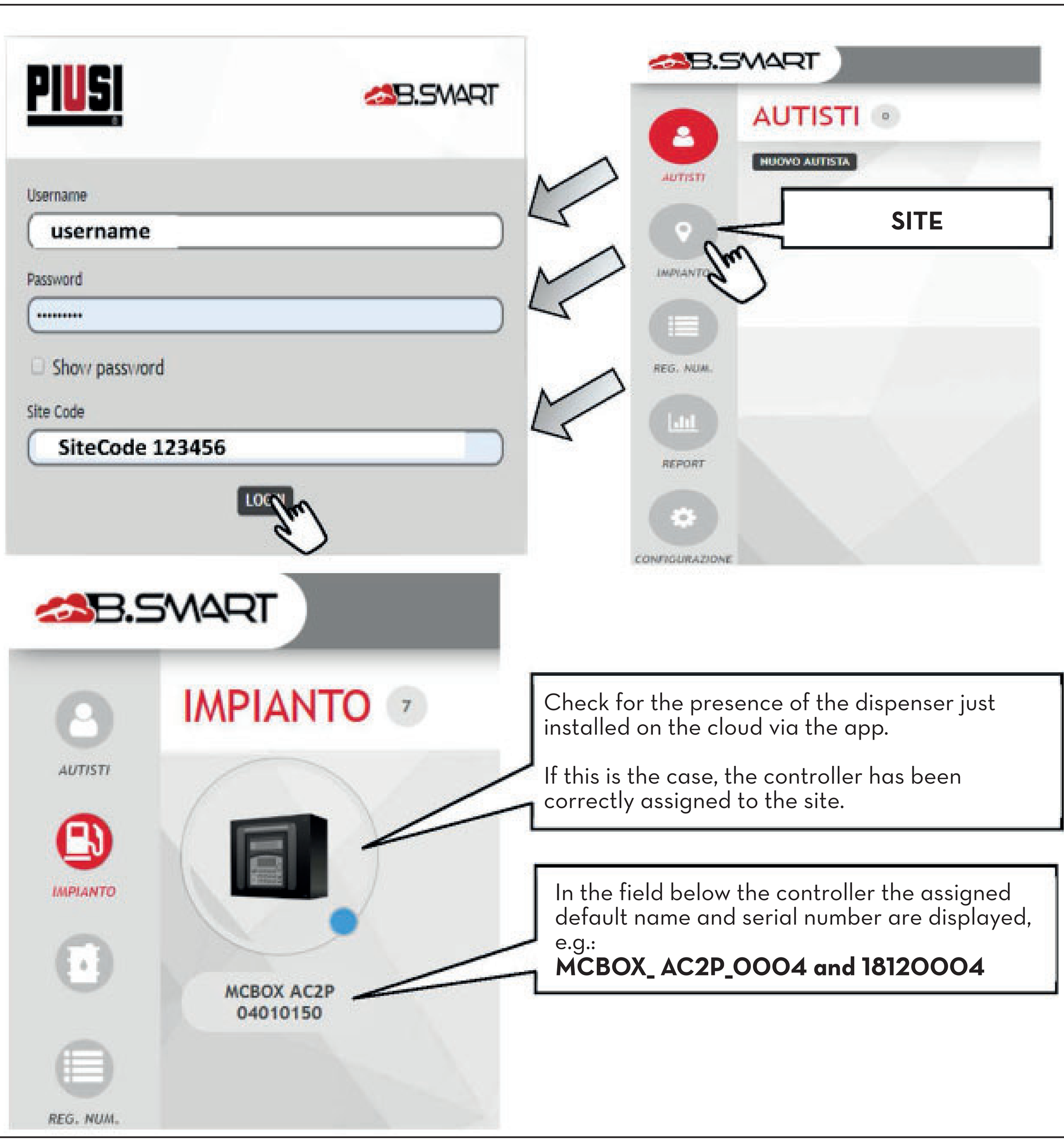
Enter the code of the destination site in which the controller will be used.

Enter the e-mail address of the portal user who recorded the code produced by the controller on the PIUSI portal.

11.2 CONFIGURATION VIA WEB-APP

FOREWORD

For detailed account registration instructions, see the Registration Guide (MO548)
After assigning the SITE CODE to the controller, you must check if the controller is present in the CLOUD.
Then connect by pointing your browser: Google Chrome, Microsoft Edge or Mozilla Firefox to the following link: https://B.SMART.piusi.com/
The WEBAPP login screen opens:
Full details of the WEBAPP functions (such as managing drivers, registration numbers, dispensing reports



and configurations) can be found in the dedicated manual, which can be found in the dedicated area of the WEBAPP.

12 DRIVER ACCESS

12.1 FIRST DRIVER ACCESS FROM APP AND FIRST FILLING

FOREWORD

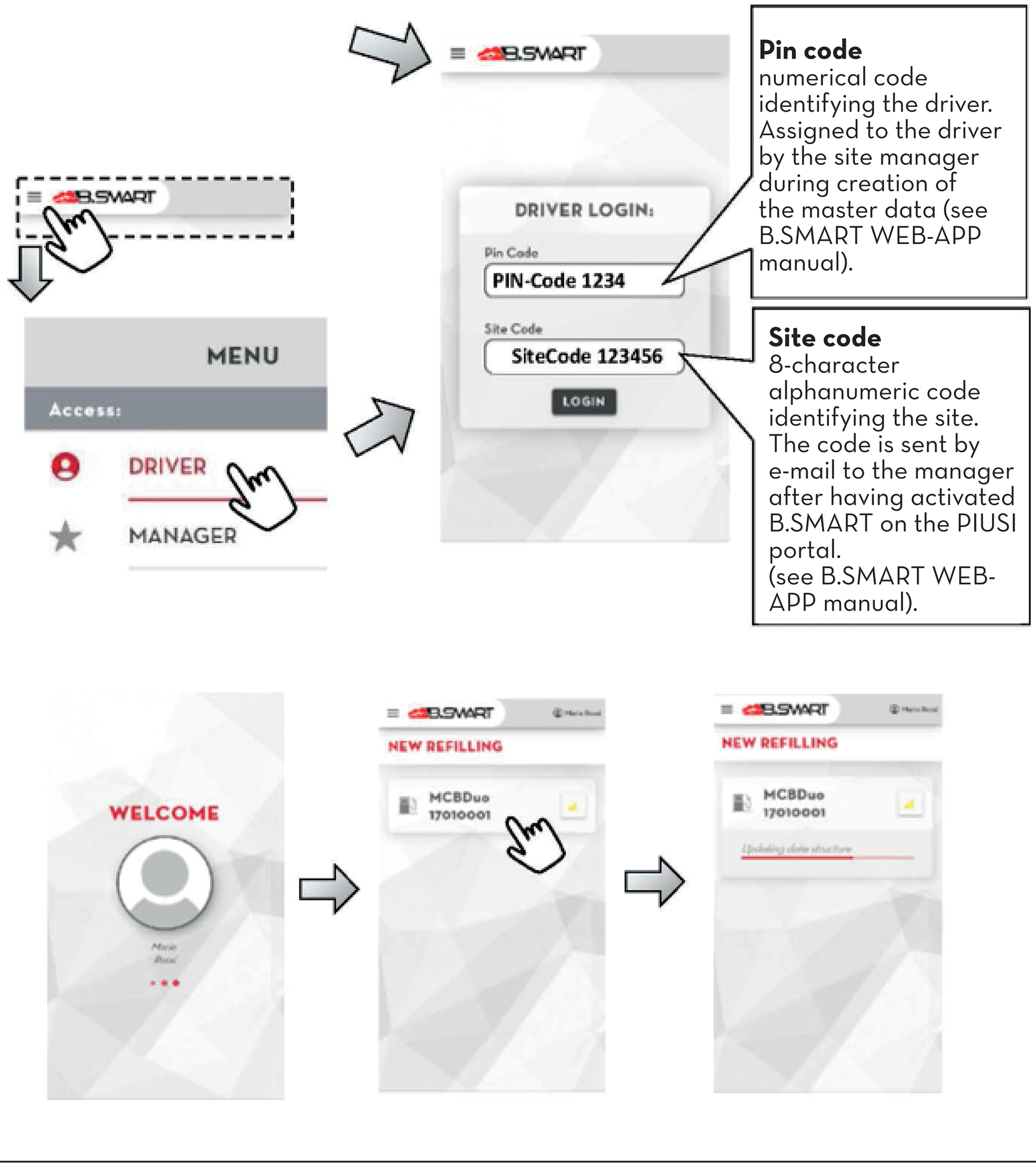
To use the APP as a driver, the manager must have created the driver profile via web app (see WEBAPP manual, section – ADD NEW DRIVER).

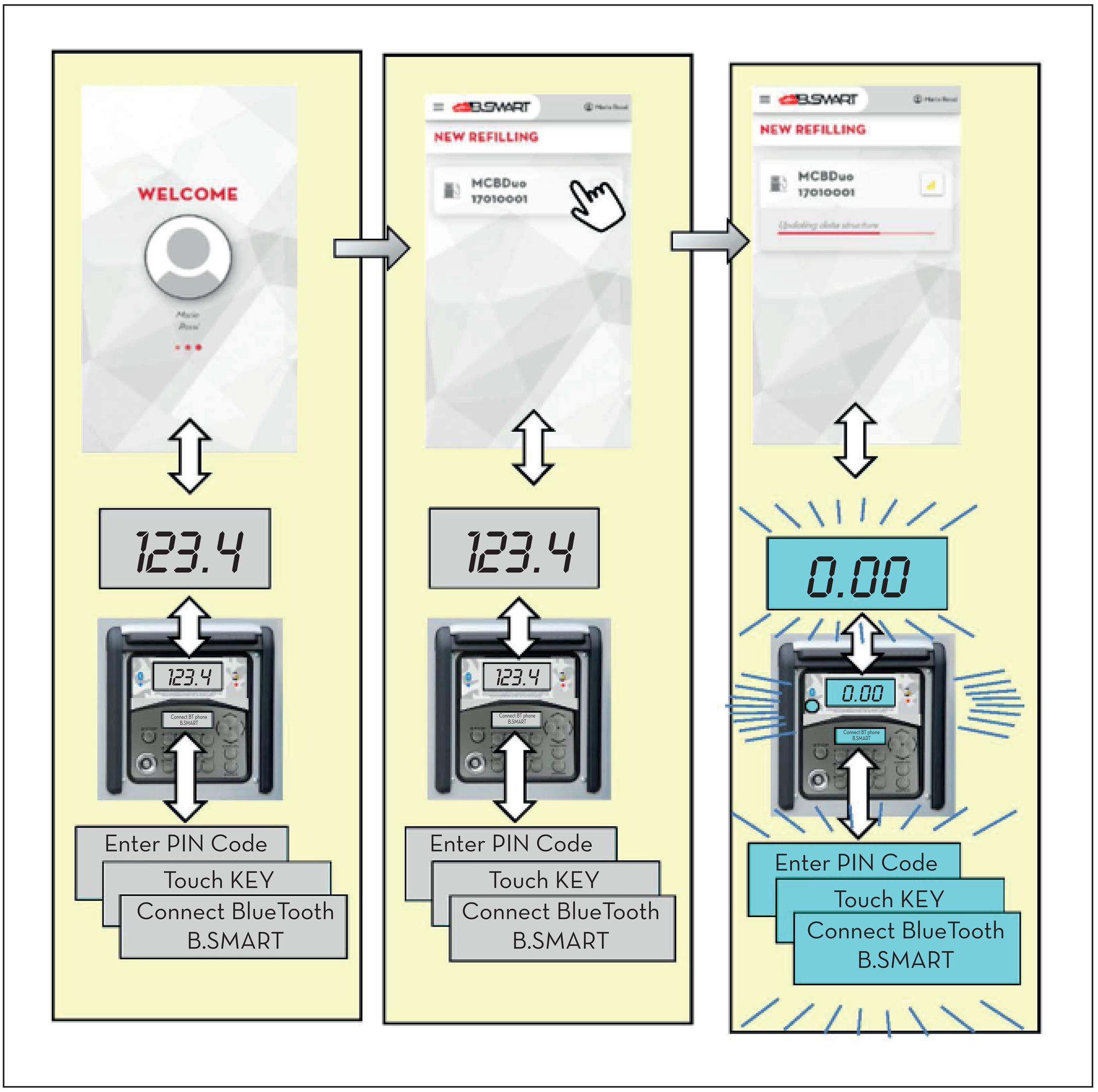
The DRIVER section of the app is accessed:

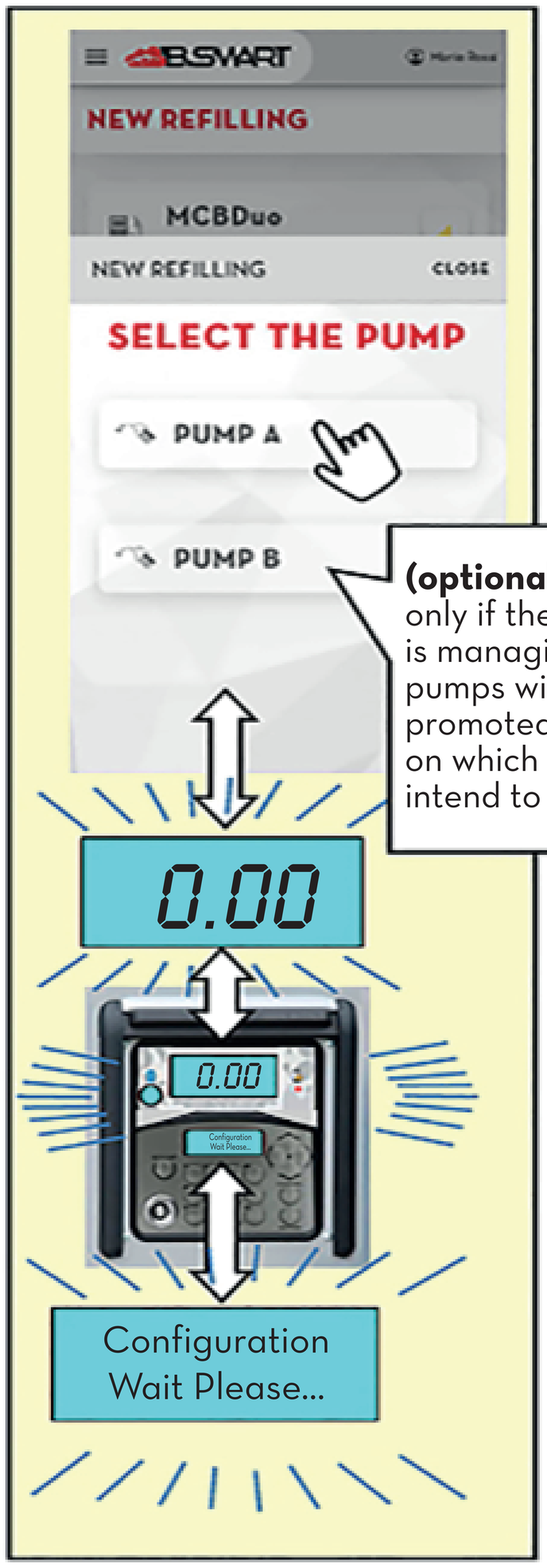
- automatically when the app is opened,

or

- from the main MENU.




WELCOME
B.SMART
NEW REFILLING
MCBDuo
17010001
Updating data structure
123.4
0.00
Connect BT phone
B.SMART
Enter PIN Code
Touch KEY
Connect BlueTooth
B.SMART



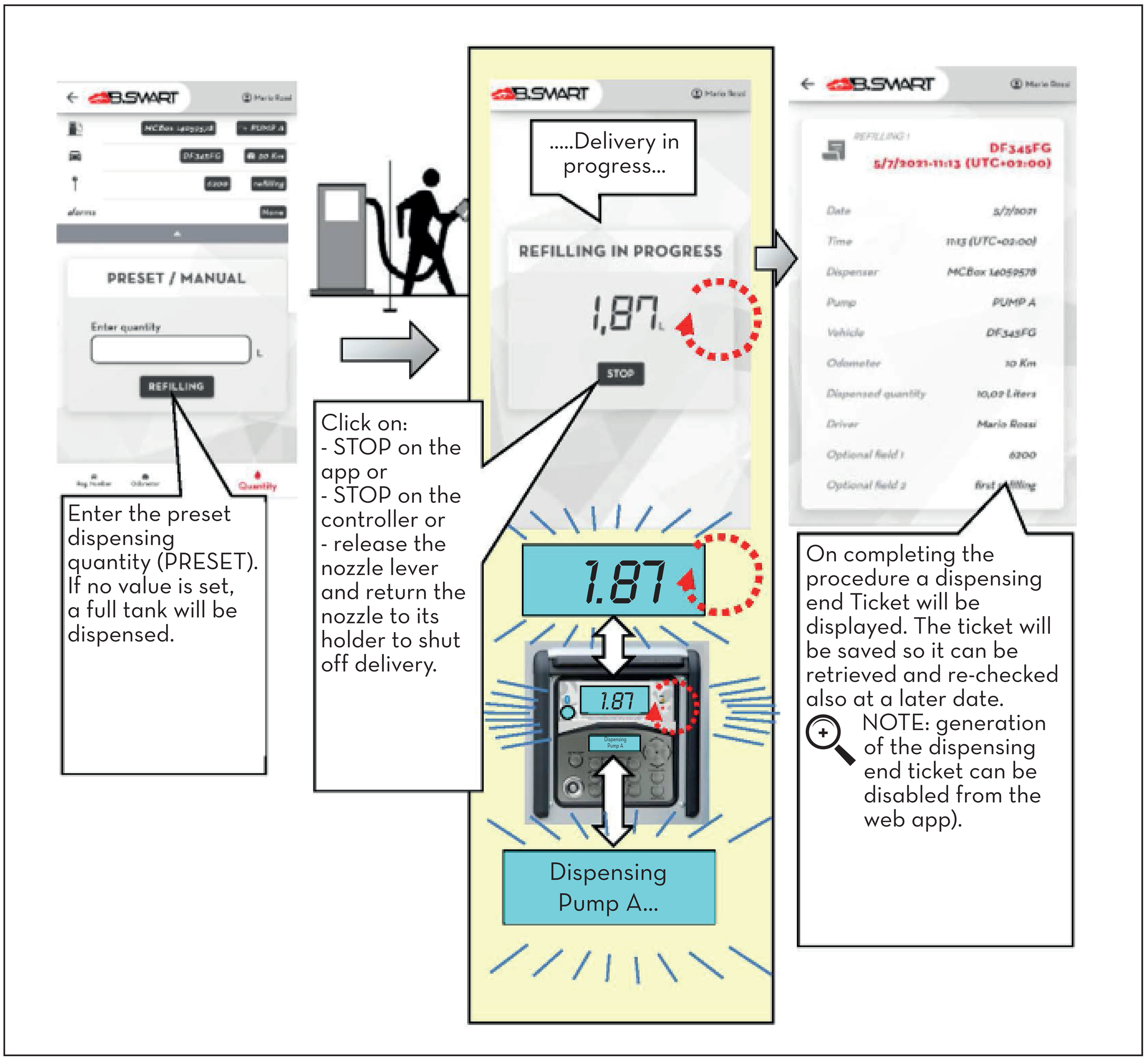
(optional)
only if the controller is managing 2 pumps will you be promoted to specify on which pump you intend to dispense.

OPTIONAL request
This page is displayed if the manager has enabled the 'Use registration number' option on the controller. You must select a reg. number from the list to continue.

The new filling cycle creation page opens.

OPTIONAL request
Odometer input, this page appears only if the manager has enabled use of the odometer in the WEBAPP.

OPTIONAL request
This page is shown if the site manager has enabled the "Optional fields" option from the web app. Two additional optional fields are activated in which to enter further information concerning the dispensing operation.



CAUTION

- Do not move away from the controller during the new filling creation procedure to avoid losing the Bluetooth connection
- If the smartphone loses Bluetooth connectivity and disconnects from the controller before the end of the delivery the ticket will not be generated, but the value is normally recorded and will be sent to the cloud at the time of the next connection
- To unload and use the 'registration numbers' uploaded to the system, the telephone must be connected to the Internet while it is connected to the controller.

12.2 DISPENSING VIA USER KEY (I-BUTTON)

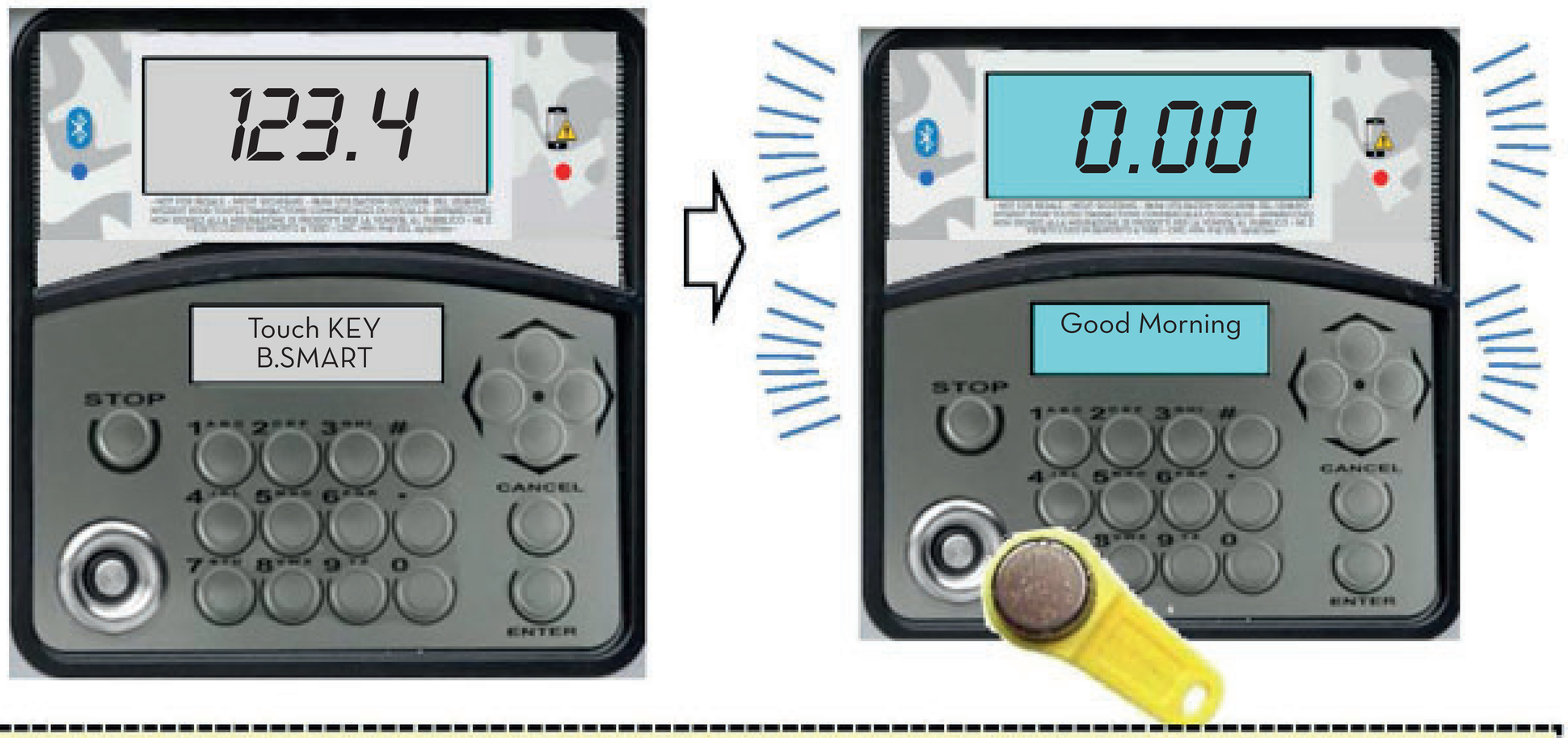
When the manager creates the driver he/she can add an electronic key (i-Button) which is used to perform the access.
To do this, just add the last 7 digits of the hexadecimal code associated with the key to the driver file in the WEBAPP
(see WEBAPP manual, “ADDING A NEW DRIVER” chapter).

The I-Button is used as a means of authentication in place of a smartphone or PIN CODE entered via the keypad. To proceed with dispensing:
- place the i-Button on the reader on the controller;
- authentication will take place;
- at this point, dispensing can begin.

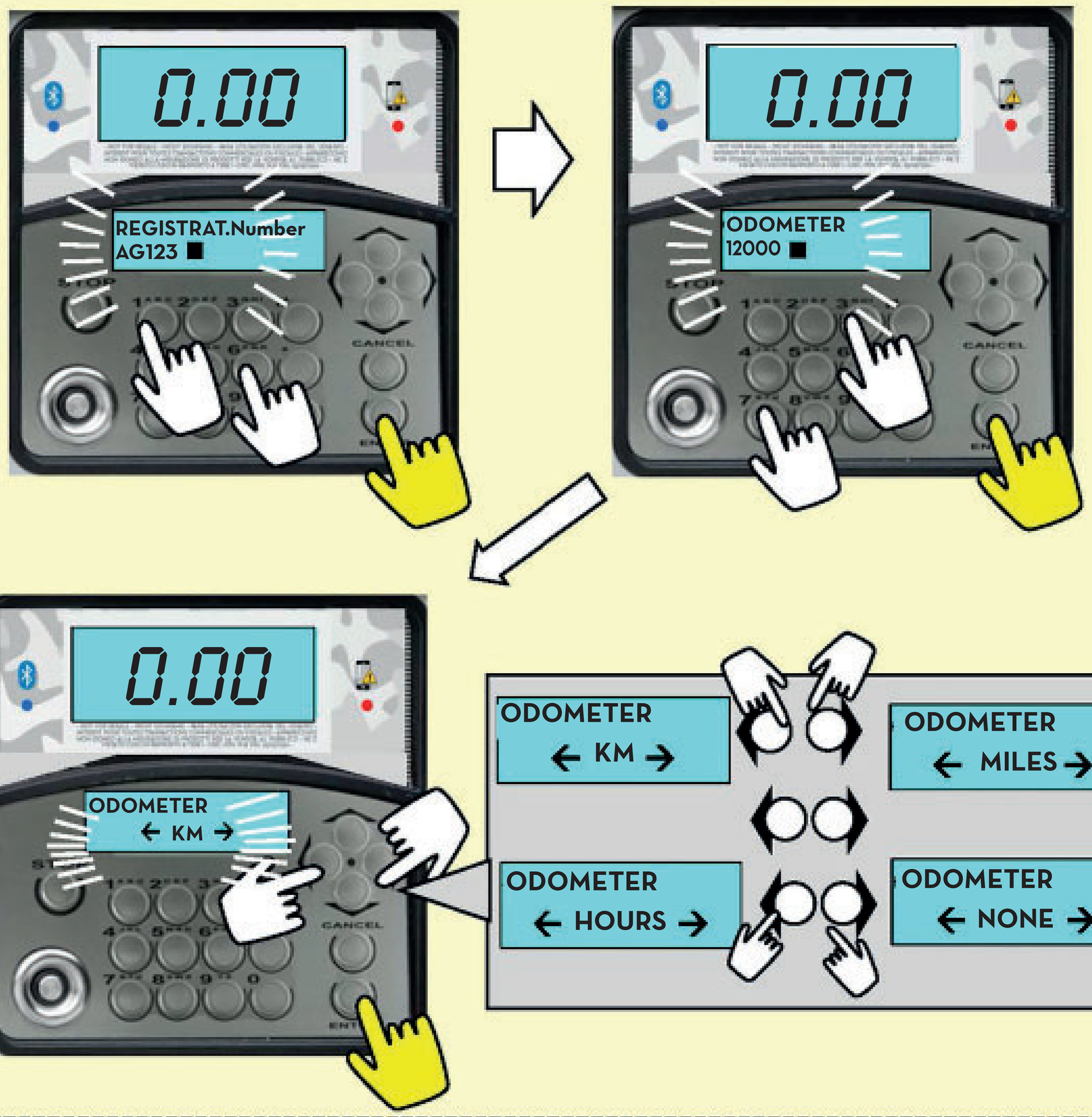
Dispensing operations are uploaded to the cloud as soon as a smartphone with an active data connection connects to the controller.

WARNING: dispensing via the i-Button is allowed only when the system configuration procedures have been completed successfully using a smartphone and the web app.
These procedures are fundamental, as they allow the Manager to configure the system and manage its controllers while at the same time ENABLING THE DRIVER TO DISPENSE VIA A SPECIFIC CONTROLLER.

NOTE: Dispensing via i-Button is recommended only when strictly necessary in cases when it is impossible to dispense via a smartphone.
This is because dispensing with the i-Button does not allow for direct cloud updating, thus limiting the potential of the system.

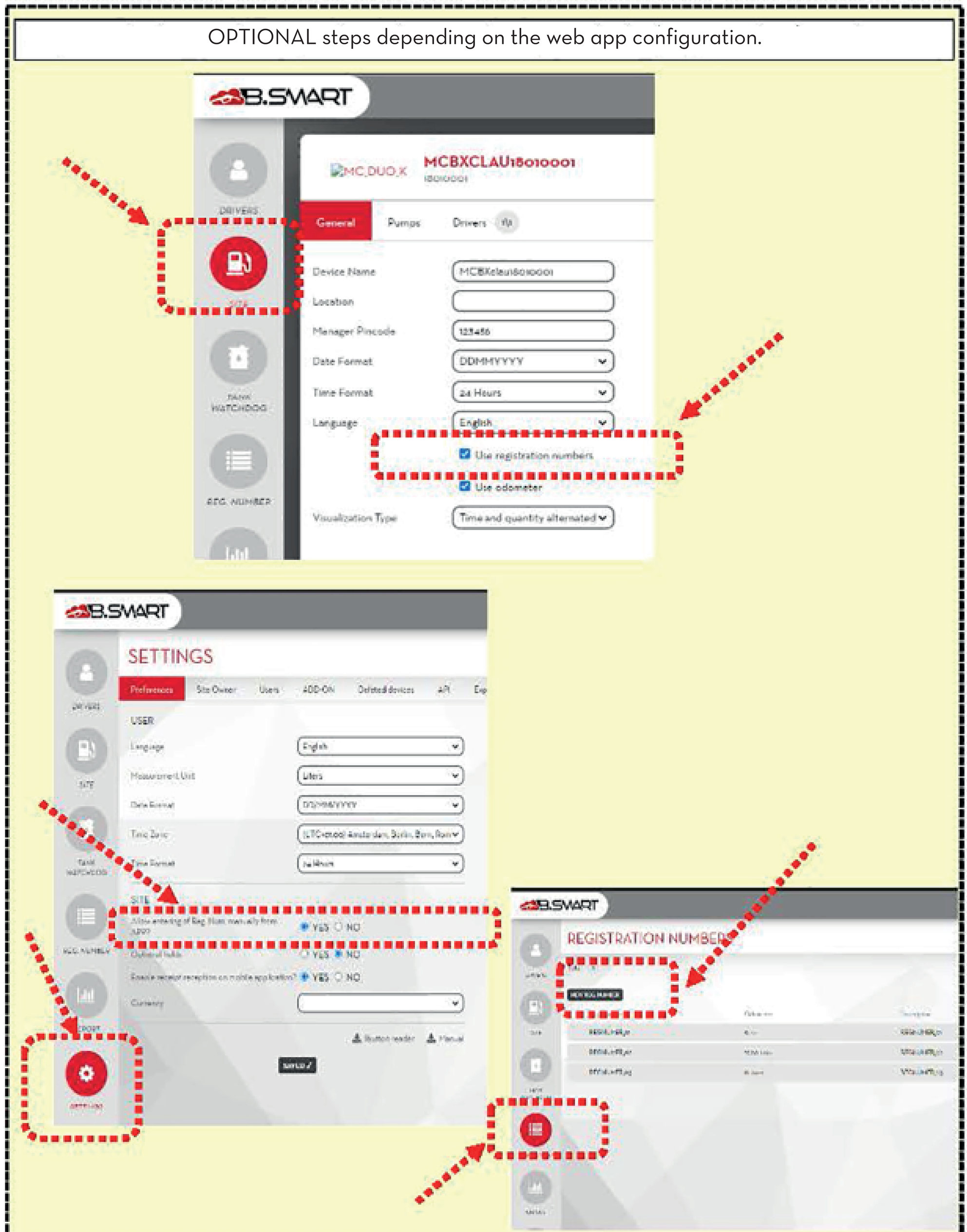


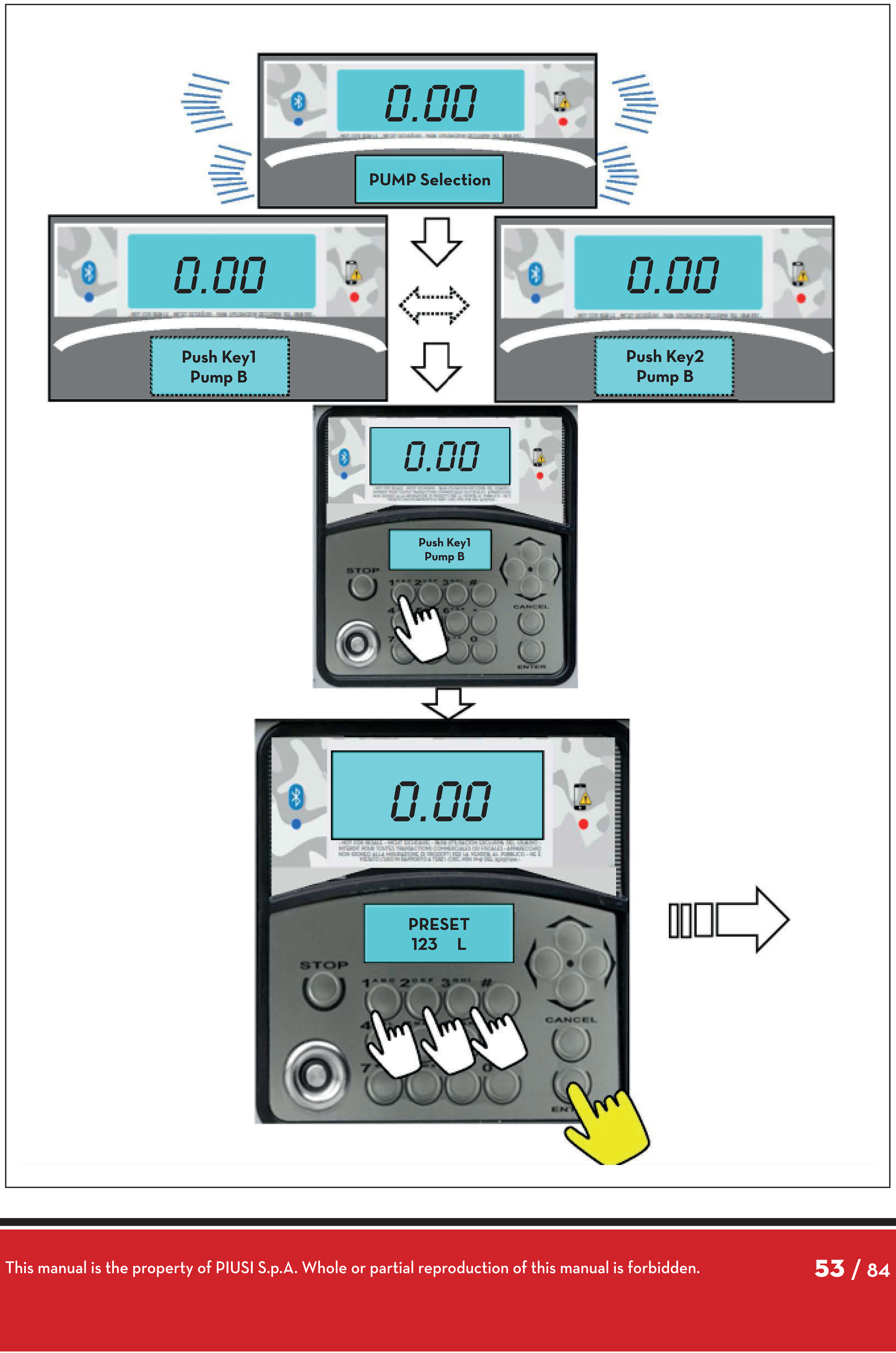
OPTIONAL passages that depend on the configuration set in web app.

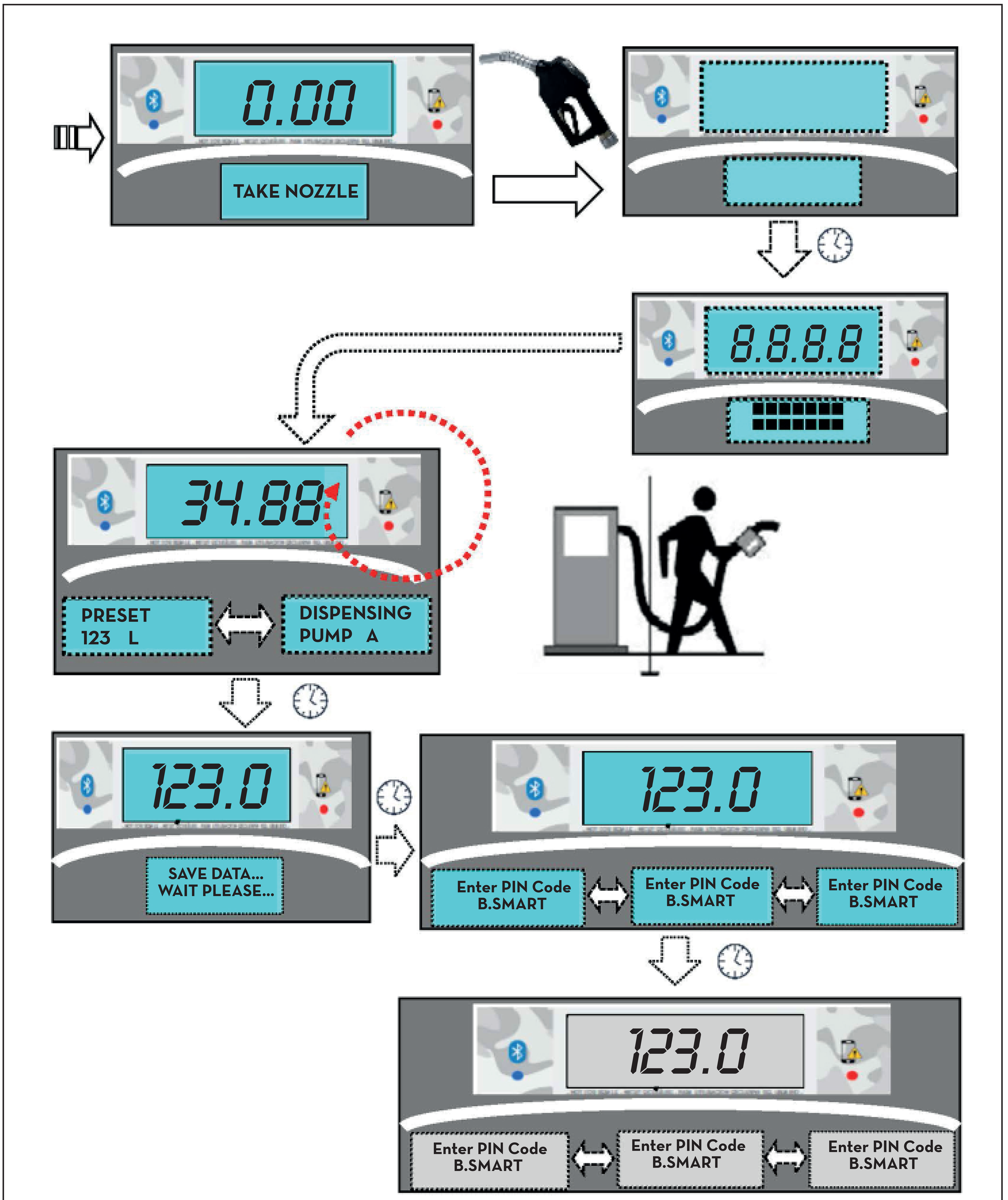


This manual is the property of PIUSI S.p.A. Whole or partial reproduction of this manual is forbidden.

OPTIONAL steps depending on the web app configuration.




0.00
PUMP Selection
0.00
Push Key1
Pump B
0.00
Push Key2
Pump B
0.00
Push Key1
Pump B
STOP
CANCEL
ENTER
0.00
PRESET
123 L
STOP
CANCEL


0.00
TAKE NOZZLE
8.8.8.8
34.88
PRESET
123 L
DISPENSING
PUMP A
123.0
SAVE DATA...
WAIT PLEASE...
123.0
Enter PIN Code
B.SMART
Enter PIN Code
B.SMART
Enter PIN Code
B.SMART
123.0
Enter PIN Code
B.SMART
Enter PIN Code
B.SMART
Enter PIN Code
B.SMART

12.3 DISPENSING BY PIN CODE ENTERED ON THE KEYPAD

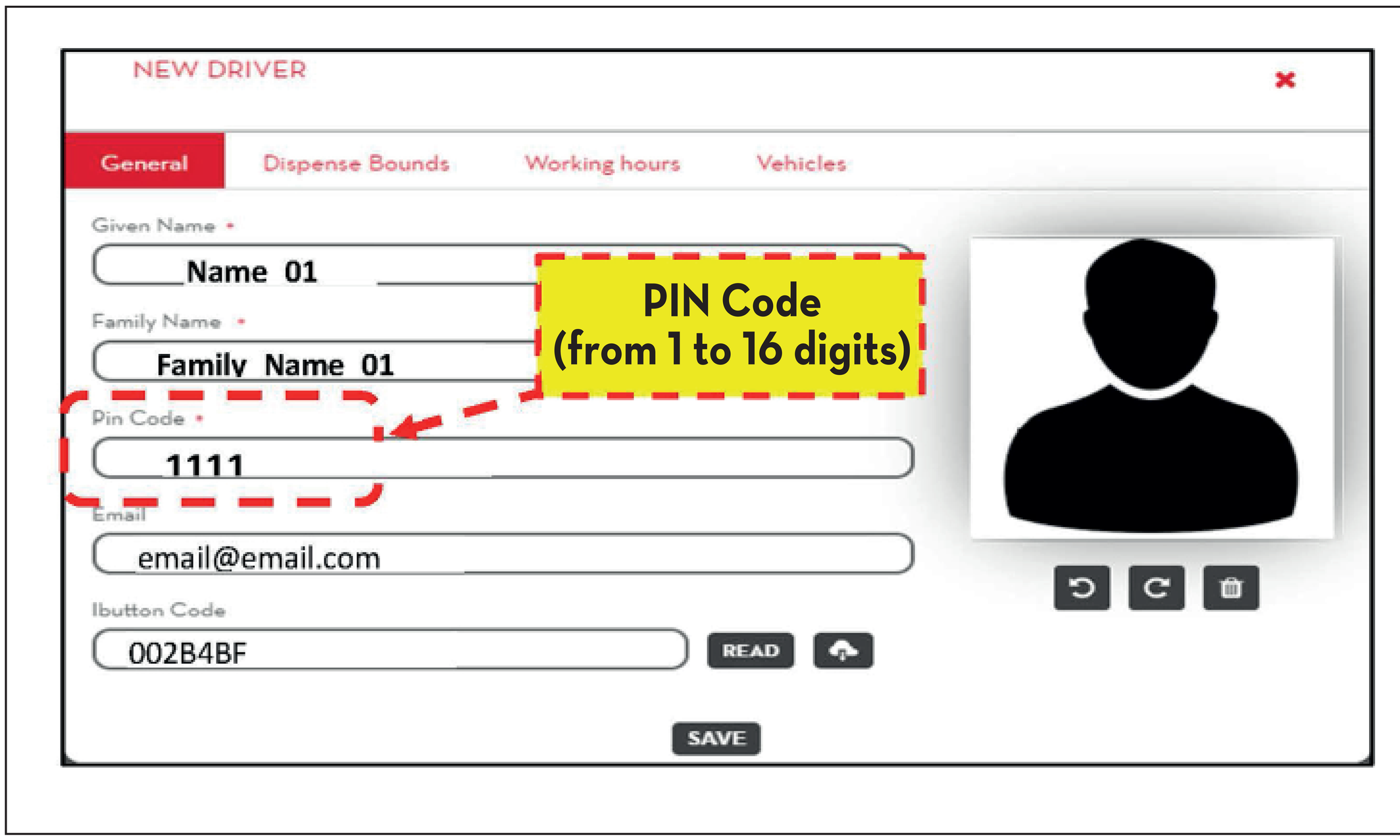
When the manager creates a driver he/she can add a personal PIN CODE as the third alternative to allow the driver to access the unit.
The personal PIN CODE can be a variable number with from 1 to 16 digits chosen by the Manager and, if required, of a different number of digits for each driver
When the Manager creates the driver master data on in the cloud on the web app, (see "ADD NEW DRIVER") he/she must assign a PIN code (which can be from 1 to 16 digits)
This Pin CODE, after appropriate synchronisations between the cloud and the electronic controller can be entered by the driver on the electronic controller, alternatively on the smartphone app or on the i-Button to access the dispenser and perform the dispensing cycle

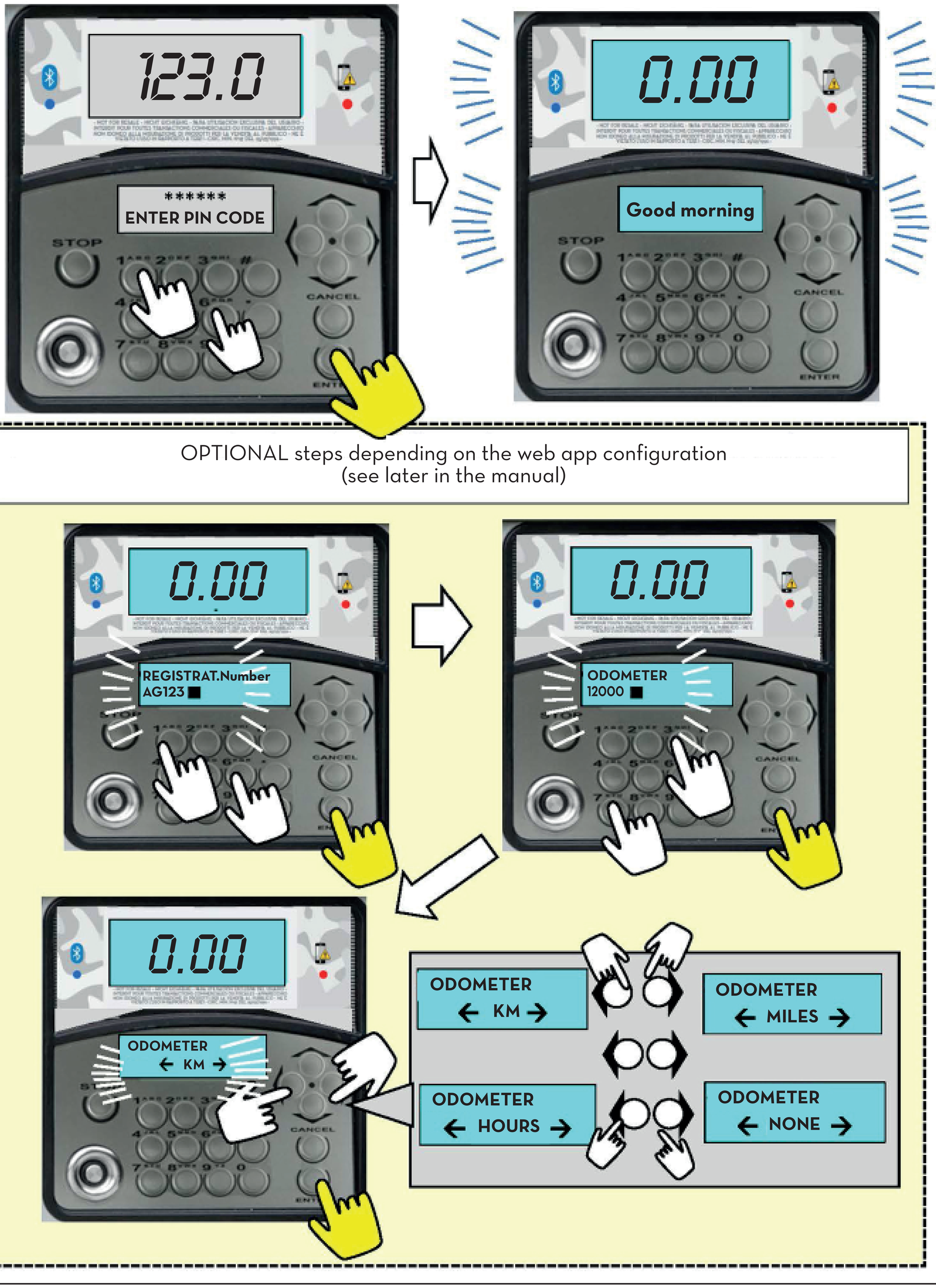
WARNING: dispensing via PIN CODE is allowed only when the system configuration procedures have been completed successfully using a smartphone and the web app.

These procedures are fundamental, as they allow the Manager to configure the system and manage its controllers while at the same time ENABLING THE DRIVER TO DISPENSE VIA A SPECIFIC CONTROLLER.

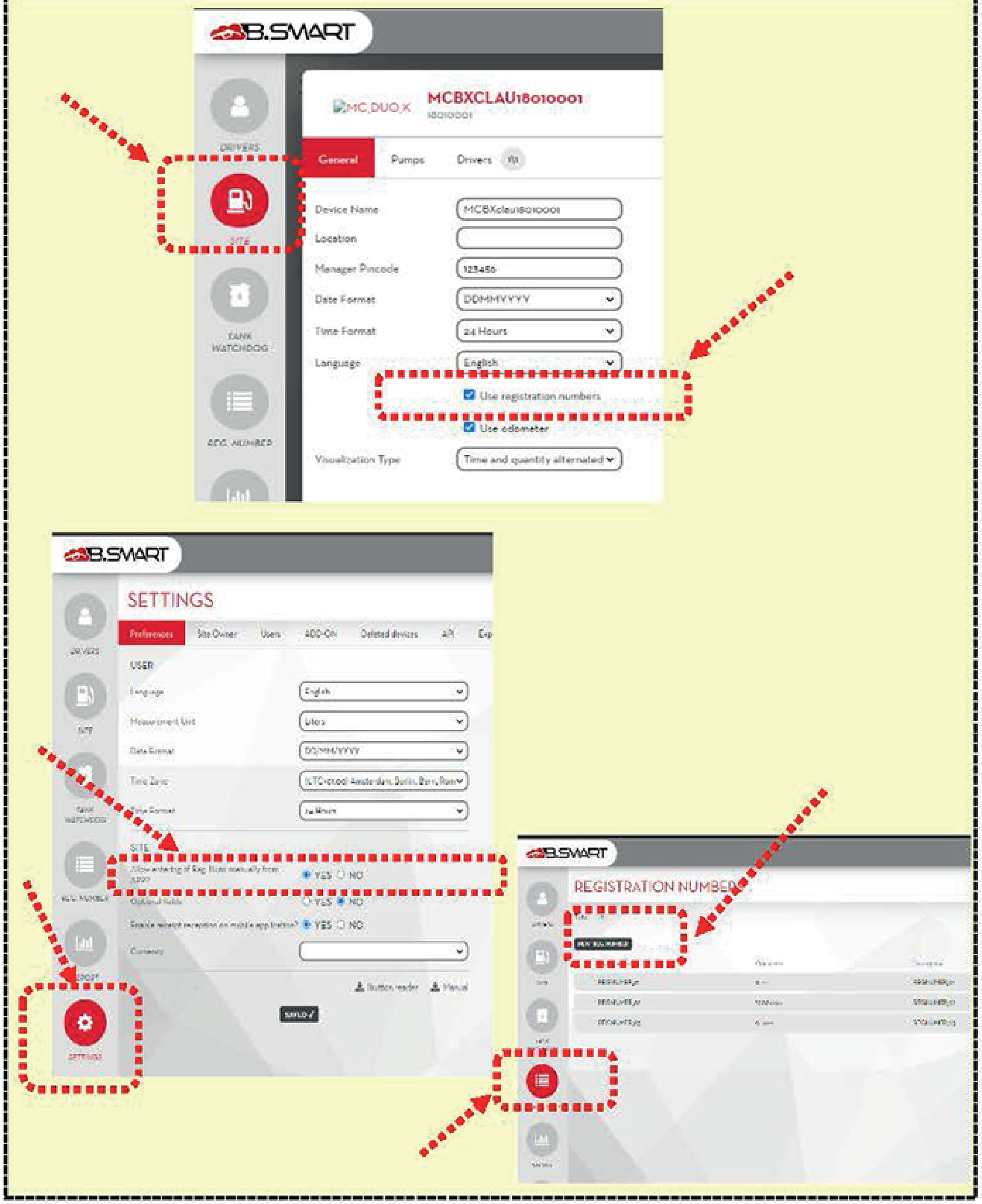
NOTE: dispensing via PIN CODE is recommended only when strictly necessary in those case where it is impossible to dispense via a smartphone.

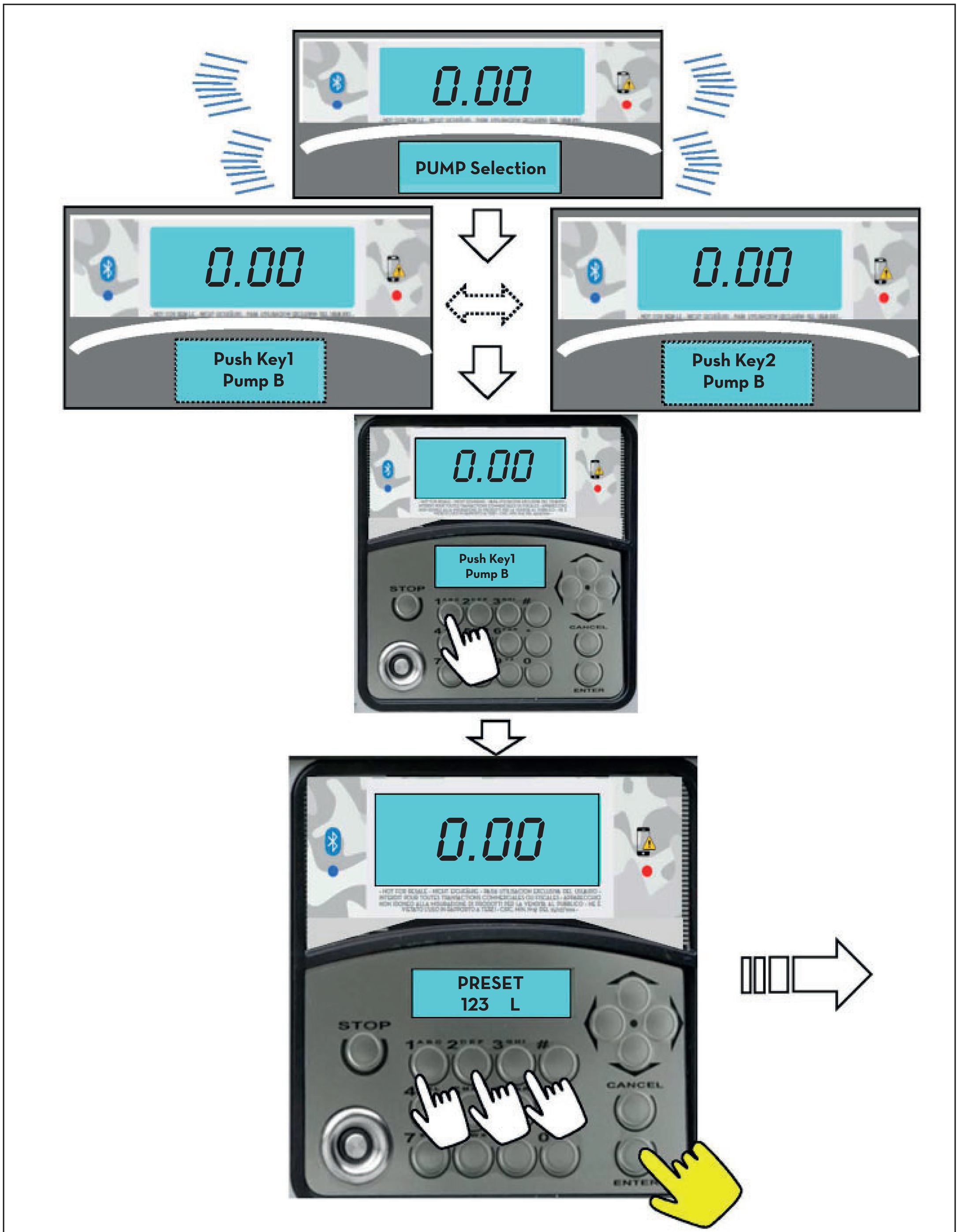
This is because dispensing with the PIN CODE does not allow for direct updating on the cloud, thus limiting the potential of the system.

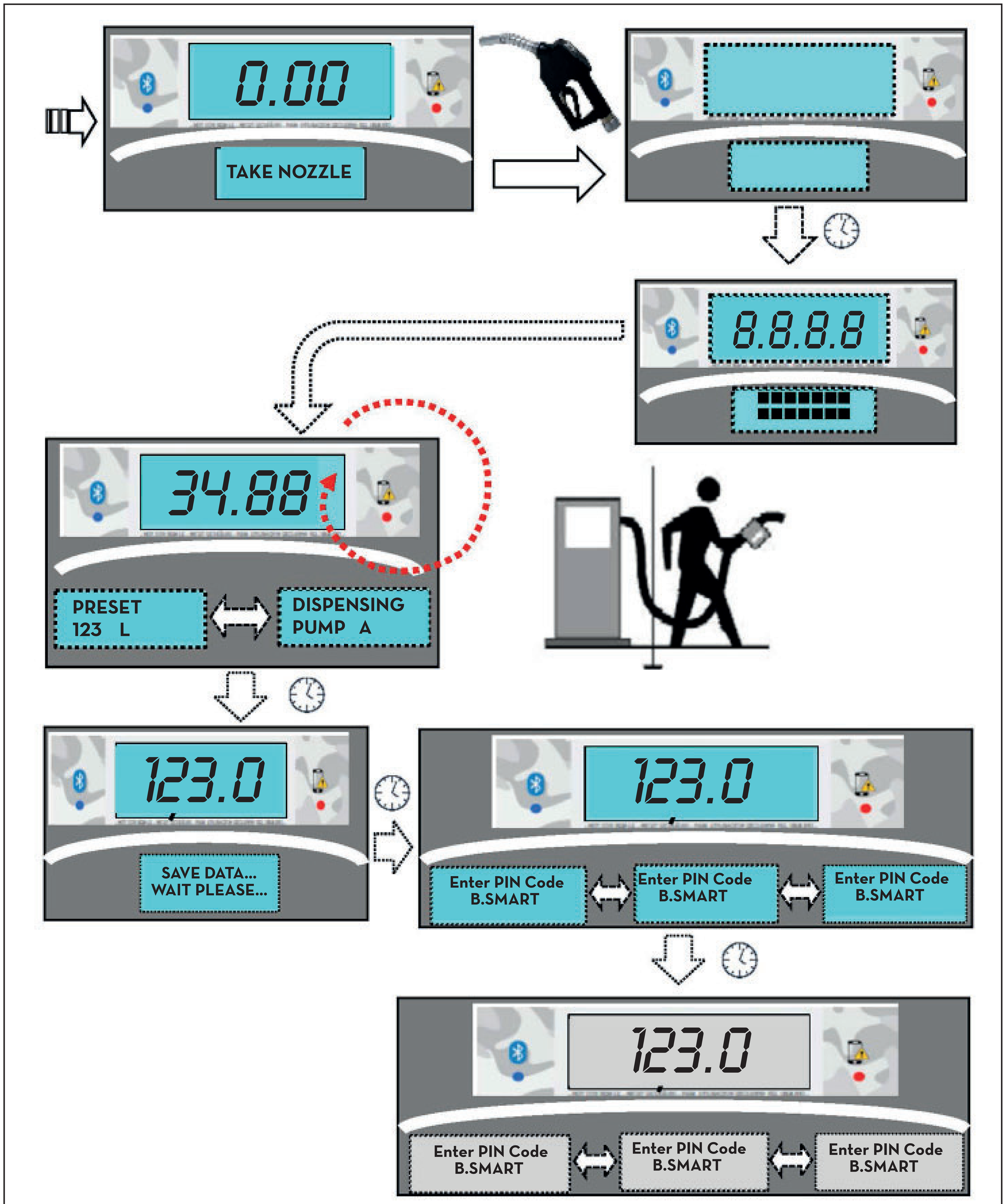



123.0
******
ENTER PIN CODE
STOP
CANCEL
ENTER
0.00
Good morning
OPTIONAL steps depending on the web app configuration
(see later in the manual)
REGISTRAT.Number
AG123 ■
ODOMETER
12000 ■
ODOMETER
← KM →
ODOMETER
← MILES →
ODOMETER
← HOURS →
ODOMETER
← NONE →

Settings on web app for entry of Vehicle Reg.Number and Odometer reading




0.00
PUMP Selection
0.00
Push Key1
Pump B
0.00
Push Key2
Pump B
0.00
Push Key1
Pump B
STOP
CANCEL
ENTER
0.00
PRESET
123 L
STOP
CANCEL
ENTER


0.00
TAKE NOZZLE
8.8.8.8
34.88
PRESET
123 L
DISPENSING
PUMP A
123.0
SAVE DATA...
WAIT PLEASE...
123.0
Enter PIN Code
B.SMART
Enter PIN Code
B.SMART
Enter PIN Code
B.SMART
123.0
Enter PIN Code
B.SMART
Enter PIN Code
B.SMART
Enter PIN Code
B.SMART

13 METER CALIBRATION

Before using the B.SMART CUBE station, check the unit's METERING ACCURACY.
Proceed as follows:

- Enter a previously enabled USER PIN.
- Dispense in a calibrated container.
- Compare the quantity of diesel delivered with a calibrated container.

CAUTION: For a correct accuracy it is essential to observe the following indications:

- Use a precision sample vessel with a graduated scale with capacity indication of not less than 20 litres.
- Before checking, be sure to remove all air from the system, dispensing until a full and regular flow is obtained.
- Continuously dispense at the maximum flow rate of CUBE B.SMART.
- Stop the flow by quickly closing the dispensing nozzle.
- Reach the graduated area of the sample vessel avoiding prolonged low flow rate deliveries, rather making short dispensings at maximum flow rate.
- Compare the indication provided by the container with the indication provided by CUBE B.SMART, after waiting for any foam to disappear.

If the accuracy is NOT satisfactory, proceed with a CALIBRATION OF THE FUEL METER as indicated in the specific manual.

CAUTION: Differences of up to 1/10 litre on a 20-litre dispensing cycle are within the guaranteed accuracy of +/- 0.5%.

CAUTION: For dispensing cycles of 2 litres or less, the manufacturer does not guarantee the same metering accuracy.

14 TANK LEVELS MONITORING

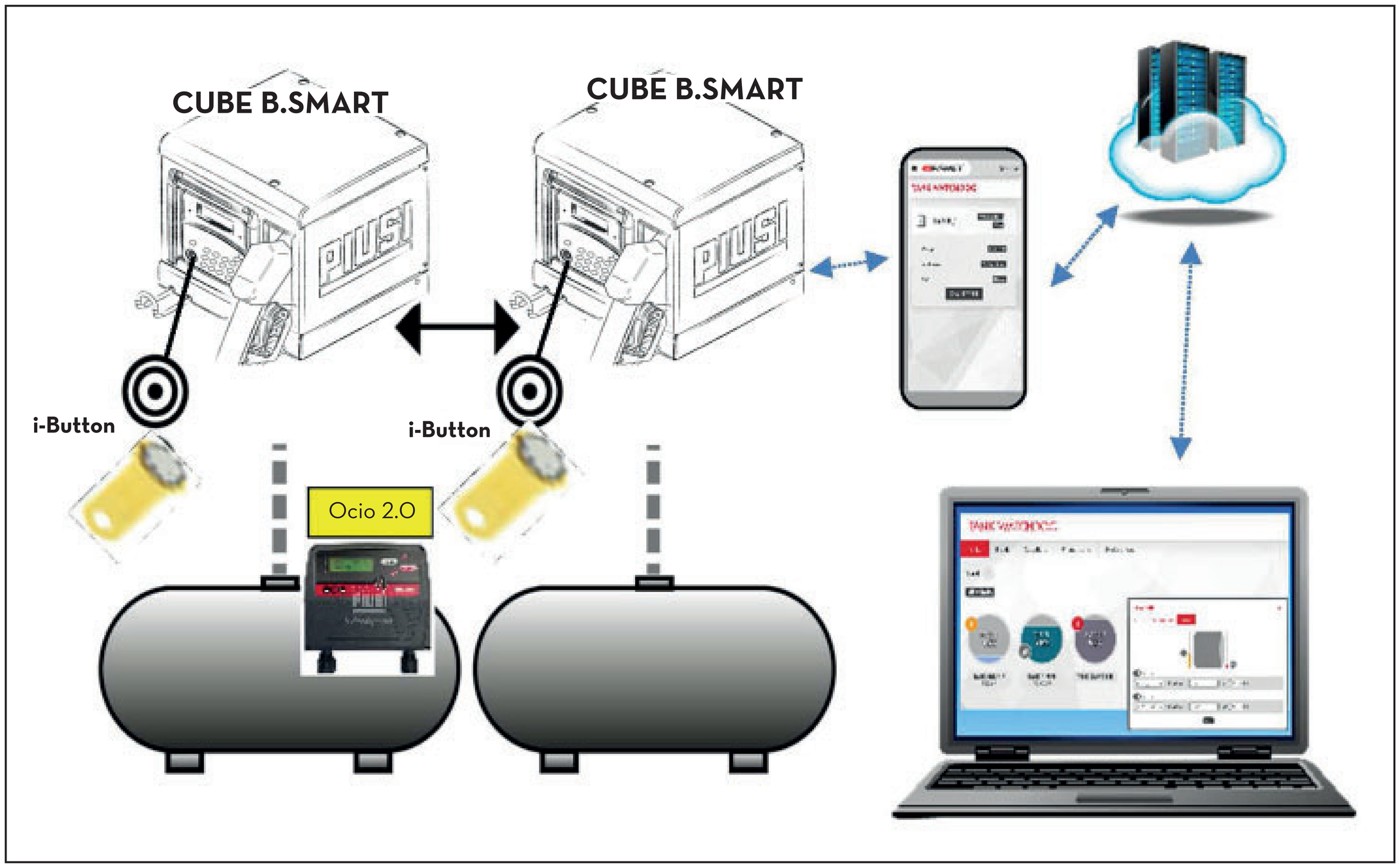
B.SMART allows the tanks to be monitored after activating the TANK WATCHDOG add-on in the WEB application.
This integration makes it possible to monitor the liquid level in the tanks and manage different types of level probe connected to the controller.
The tank types and shapes that can be monitored are:

- Parallelepiped.
- Horizontal cylinder.
- Vertical cylinder.
- Customised.

If you have selected a custom shape, you can define the geometrical representation of the tank by filling in a SCALING TABLE.

The operations required for system installation and configuration are as follows:

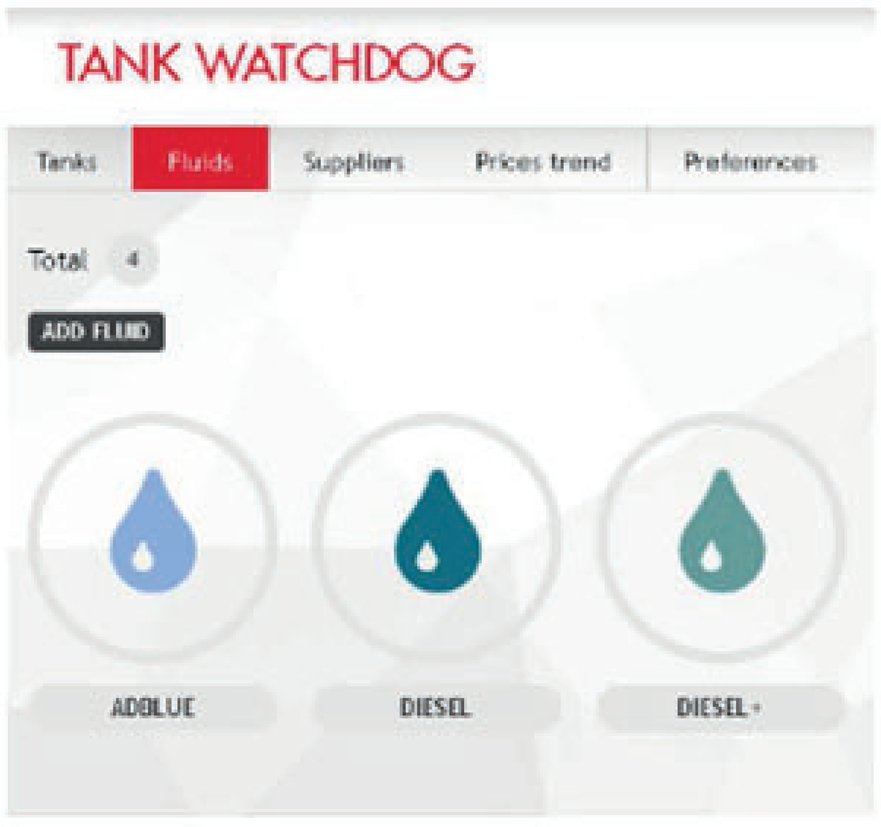
1. Choose the level sensors, which may be of different types:
   - OCIO 2.0.
   - 4-20mA analog sensor.
   - 0-10V analog sensor.
   - None (mathematically calculated tank monitoring).
2. Connect the sensors in accordance with the electrical schematics.
3. Connect the CAN BUS if there are level sensors to be shared among several B.SMART controllers.
4. In the web app, configure and assign the tanks to their respective pumps (see web app manual).
5. Connect to the site controller and check you are connected to the Internet to download and apply the new configurations from the web app.

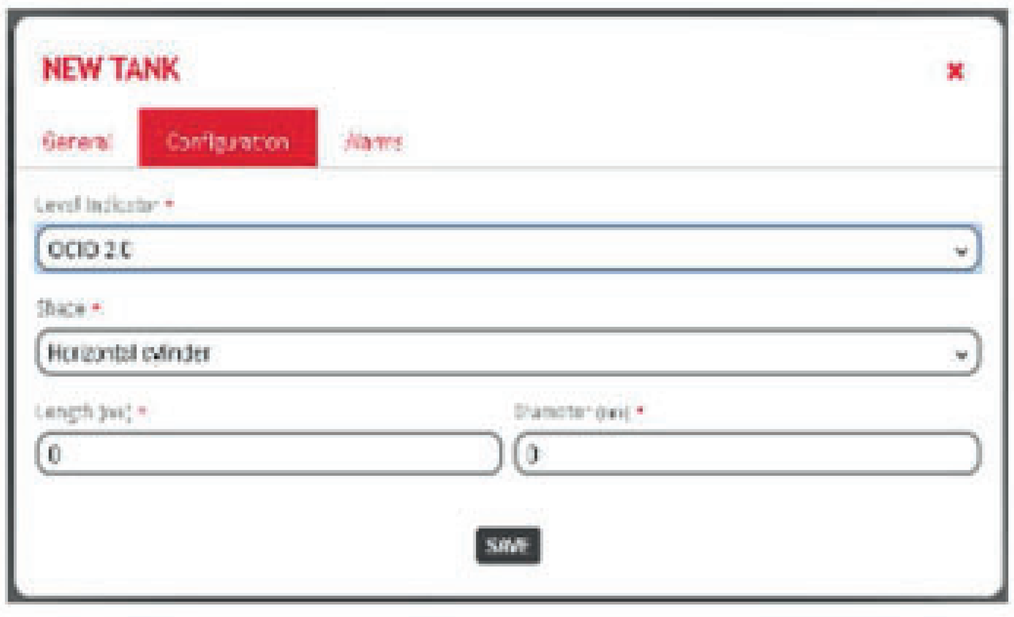


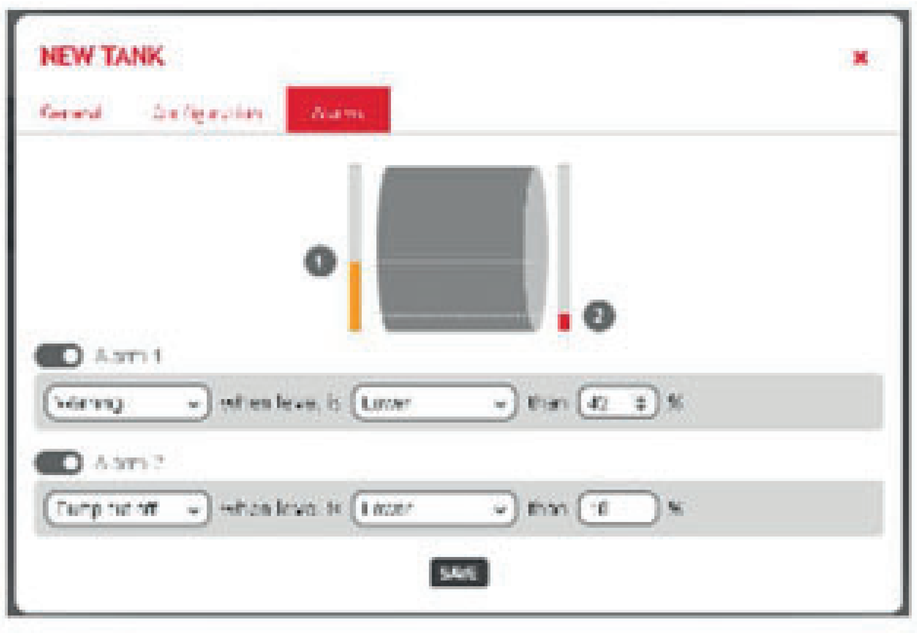
CAUTION:

- The data concerning product levels and alarms for the monitored tanks are synchronised in the cloud only when a telephone connects to the controller (driver or manager user). Given that synchronisation in real time cannot be guaranteed, the data shown on the web app may not correspond to the real situation.
- It is not possible to configure the tank parameters or perform product loading and unloading transactions via a phone connection (system configurations are centralised and managed from the web app).

Some web app screenshots are shown here by way of example.
Refer to the specific manual for further details.

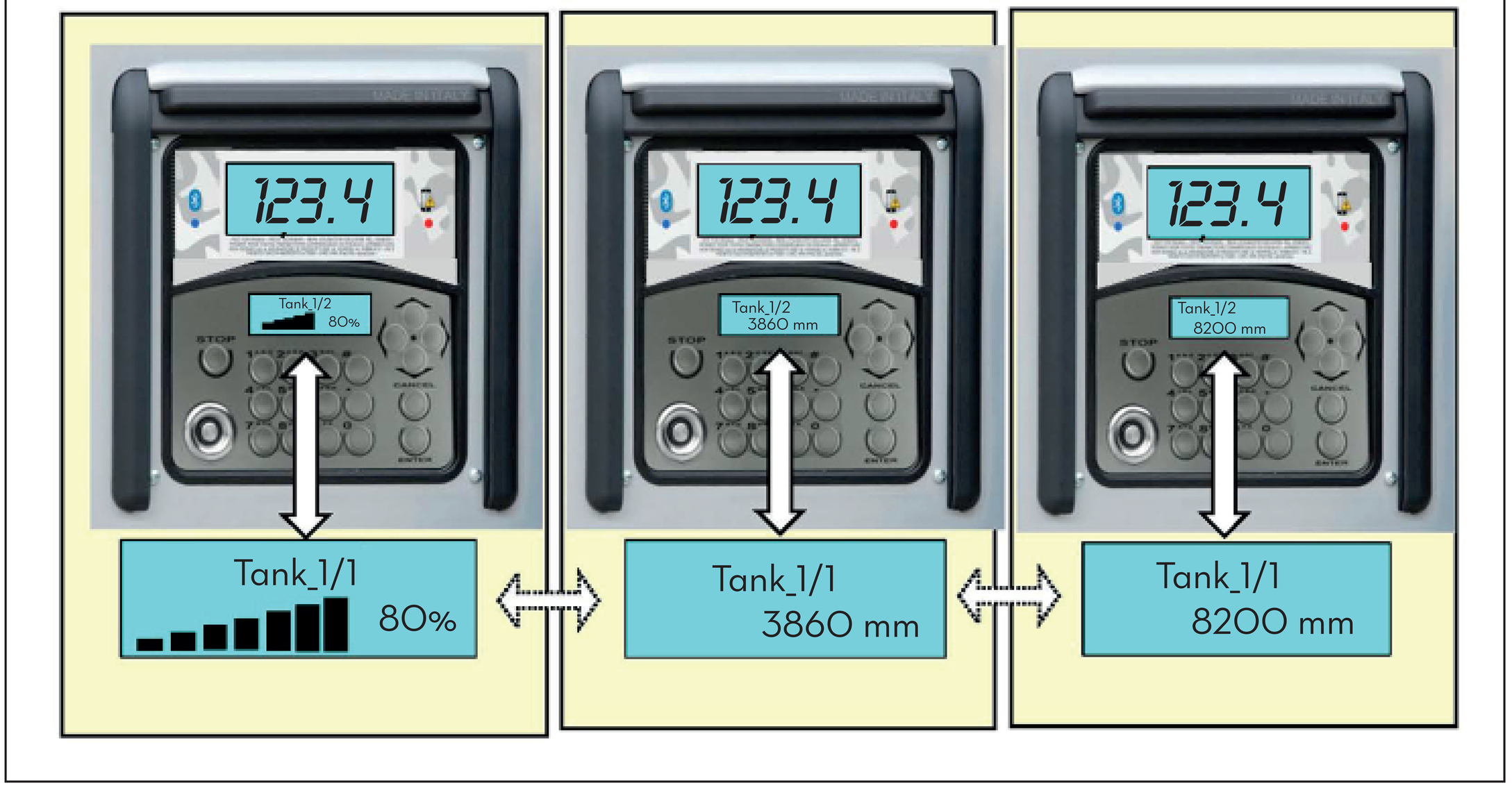






FLUID UNIT PRICES TREND

The status of the tanks is shown concisely also on the electronic controller 2x16 display as shown below.



CAUTION:

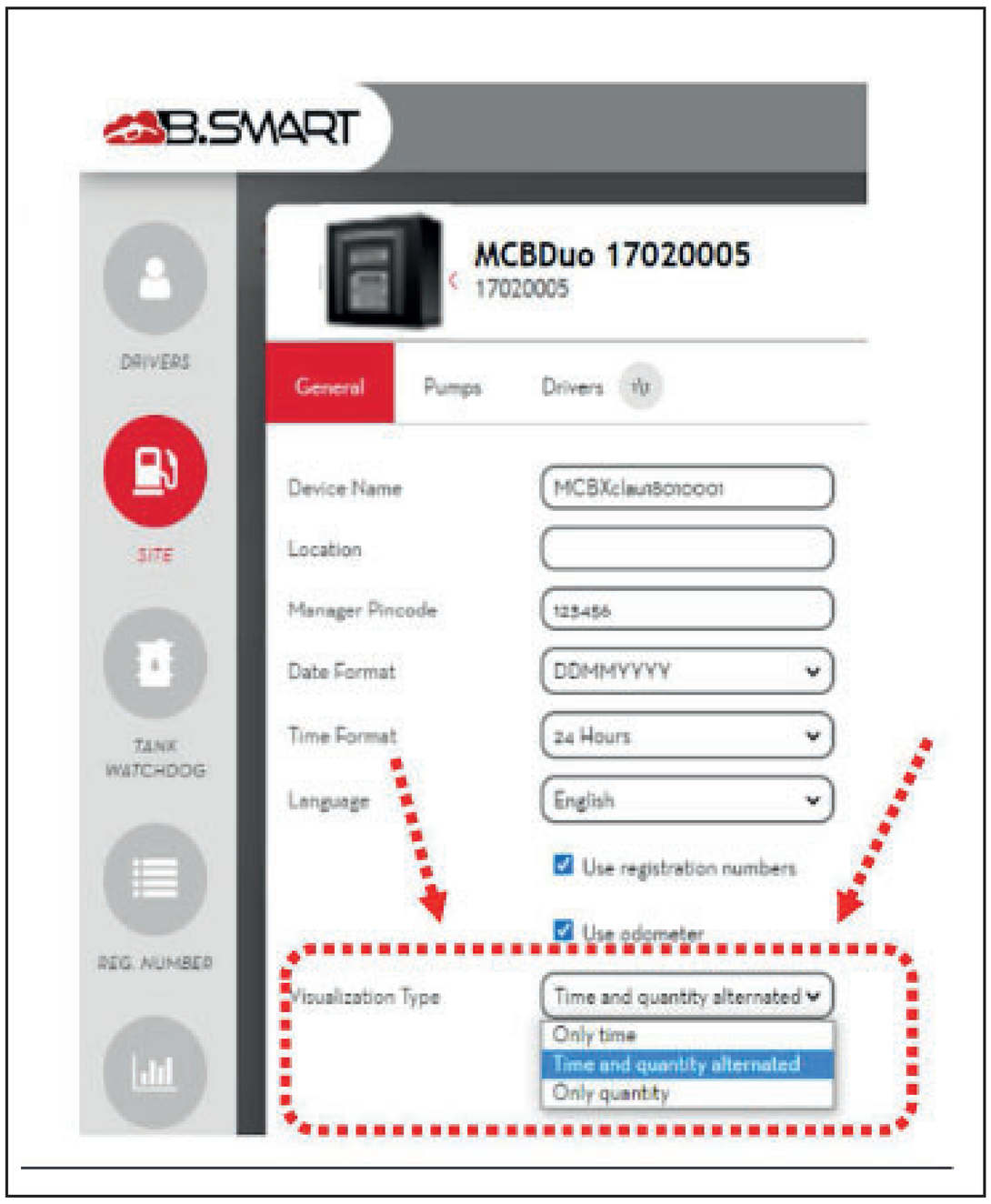
- For correct operation, it is good practice to repeat sensor calibration or tanks correction periodically;
- It is not possible to calibrate the sensors or perform corrections if, in a network of dispensers the current dispenser is pumping fuel from a tank under the management of another dispenser on the site (the sensor is not physically connected to a pump of the current dispenser but the measurement is managed and transmitted over the CANBUS network by another dispenser on the site).
- Whenever changing the configuration of a tank shared by multiple dispensers in the same network, go to each dispenser to apply the new configuration.

15 DISPLAY CONFIGURATION in STAND-BY

B.SMART makes it possible to configure the electronic controller display in stand-by mode
In Stand-By the large display may show:

- Only the last dispensing operation.
- Only the time in HH:MM format.
- Latest dispensing operation alternating with current time.

Configuration is carried out on the web app in the section dedicated to the controller in question, as indicated alongside, and then sent to the controller by means of a smartphone and the B.SMART app.



This manual is the property of PIUSI S.p.A. Whole or partial reproduction of this manual is forbidden.

16 ALARM AND WARNING STATES

Flashing or steady on of the RED LED is due to various factors.
Whenever the LED switches on the display presents a code indicated by a letter A (Alarm) or C (Caution), and a number.
Whenever the LED lights steady on, dispensing is NOT possible.
Examples:

Coding	Description	Explanation/Solution	RED LED status
WARNING STATES (CAUTION / WARNING)			
C1	**WARNING_MASTER_PUMP_ GROUPA_LEVEL1_CONTACT**	Contact 1 associated with pump A of the main controller is active.	Blinking
C2	**WARNING_MASTER_PUMP_ GROUPA_LEVEL2_CONTACT**	Contact 2 associated with pump A of the main controller is active.	Blinking
C3	**WARNING_MASTER_PUMP_ GROUPA_THR1**	The tank associated with pump A of the main controller has reached the level 1 threshold.	Blinking
C4	**WARNING_MASTER_PUMP_ GROUPA_THR2**	The tank associated with pump A of the main controller has reached the level 2 threshold.	Blinking
C5	**WARNING_MASTER_PUMP_ GROUPB_LEVEL1_CONTACT**	Contact 1 associated with pump B of the main controller is active.	Blinking

Coding	Description	Explanation/Solution	RED LED status
C6	**WARNING_MASTER_PUMP_ GROUPB_LEVEL2_CONTACT**	Contact 2 associated with pump B of the main controller is active.	Blinking
C7	**WARNING_MASTER_PUMP_ GROUPB_THR1**	The tank associated with pump B of the main controller has reached the level 1 threshold.	Blinking
C8	**WARNING_MASTER_PUMP_ GROUPB_THR2**	The tank associated with pump B of the main controller has reached the level 2 threshold.	Blinking
C9	**WARNING_SLAVE_PUMP_ GROUPA_LEVEL1_CONTACT**	Contact 1 associated with pump A of the secondary controller is active: red LED flashing.	Blinking
C10	**WARNING_SLAVE_PUMP_ GROUPA_LEVEL2_CONTACT**	Contact 2 associated with pump A of the secondary controller is active: red LED flashing.	Blinking
C11	**WARNING_SLAVE_PUMP_ GROUPA_THR1**	The tank associated with pump A of the main controller has reached the level 1 threshold: red LED flashing.	Blinking
C12	**WARNING_SLAVE_PUMP_ GROUPA_THR2**	The tank associated with pump A of the secondary controller has reached the level 2 threshold.	Blinking
C13	**WARNING_SLAVE_PUMP_ GROUPB_LEVEL1_CONTACT**	Contact 1 associated with pump B of the secondary controller is active.	Blinking
C14	**WARNING_SLAVE_PUMP_ GROUPB_LEVEL2_CONTACT**	Contact 2 associated with pump B of the secondary controller is active.	Blinking
C15	**WARNING_SLAVE_PUMP_ GROUPB_THR1**	The tank associated with pump B of the secondary controller has reached the level 1 threshold.	Blinking
C16	**WARNING_SLAVE_PUMP_ GROUPB_THR2**	The tank associated with pump B of the secondary controller has reached the level 2 threshold.	Blinking
C17	**WARNING_MASTER_PUMP_ GROUPA_PROBE_OCIO**	Fault detected on the level sensors connection line. (The system allows manual dispensing).	Blinking

EN

This manual is the property of PIUSI S.p.A. Whole or partial reproduction of this manual is forbidden.

Coding	Description	Explanation/Solution	RED LED status
C18	**WARNING_MASTER_PUMP_ GROUPB_PROBE_OCIO**	Fault detected on the level sensors connection line. (The system allows manual dispensing).	Blinking
C19	**WARNING_MASTER_SLAVE_ GROUPA_PROBE_OCIO**	Fault detected on the level sensors connection line. (The system allows manual dispensing).	Blinking
C20	**WARNING_MASTER_SLAVE_ GROUPB_PROBE_OCIO**	Fault detected on the level sensors connection line. (The system allows manual dispensing).	Blinking
C25	**WARNING_CANBUS_COM**	Fault detected on the connection line between controllers. The system behaves as for probe alarms, allowing manual dispensing.	Blinking
ALARM STATES			
A1	**ALARM_MASTER_PUMP_ GROUPA_LEVEL1_CONTACT**	Contact 1 associated with pump A of the main controller is active. Dispensing not possible.	Fixed
A2	**ALARM_MASTER_PUMP_ GROUPA_LEVEL2_CONTACT**	Contact 2 associated with pump A of the main controller is active. Dispensing not possible.	Fixed
A3	**ALARM_MASTER_PUMP_ GROUPA_THR1**	The tank associated with pump A of the main controller has reached the level 1 threshold. Dispensing not possible.	Fixed
A4	**ALARM_MASTER_PUMP_ GROUPA_THR2**	The tank associated with pump A of the main controller has reached the level 2 threshold. Dispensing not possible.	Fixed
A5	**ALARM_MASTER_PUMP_ GROUPB_LEVEL1_CONTACT**	Contact 1 associated with pump B of the main controller is active. Dispensing not possible.	Fixed
A6	**ALARM_MASTER_PUMP_ GROUPB_LEVEL2_CONTACT**	Contact 2 associated with pump B of the main controller is active. Dispensing not possible.	Fixed
A7	**ALARM_MASTER_PUMP_ GROUPB_THR1**	The tank associated with pump B of the main controller has reached the level 1 threshold. Dispensing not possible.	Fixed

Coding	Description	Explanation/Solution	RED LED status
A8	**ALARM_MASTER_PUMP_ GROUPB_THR2**	The tank associated with pump B of the main controller has reached the level 2 threshold. Dispensing not possible.	Fixed
A9	**ALARM_SLAVE_PUMP_ GROUPA_LEVEL1_CONTACT**	Contact 1 associated with pump A of the secondary controller is active. Dispensing not possible.	Fixed
A10	**ALARM_SLAVE_PUMP_ GROUPA_LEVEL2_CONTACT**	Contact 2 associated with pump A of the secondary controller is active. Dispensing not possible.	Fixed
A11	**ALARM_SLAVE_PUMP_ GROUPA_LEVEL1_THR1**	The tank associated with pump A of the main controller has reached the level 1 threshold. Dispensing not possible.	Fixed
A12	**ALARM_SLAVE_PUMP_ GROUPA_LEVEL1_THR2**	The tank associated with pump A of the secondary controller has reached the level 2 threshold. Dispensing not possible.	Fixed
A13	**ALARM_SLAVE_PUMP_ GROUPB_LEVEL1_CONTACT**	Contact 1 associated with pump B of the secondary controller is active. Dispensing not possible.	Fixed
A14	**ALARM_SLAVE_PUMP_ GROUPB_LEVEL2_CONTACT**	Contact 2 associated with pump B of the secondary controller is active. Dispensing not possible.	Fixed
A15	**ALARM_SLAVE_PUMP_ GROUPB_LEVEL1_THR1**	The tank associated with pump B of the secondary controller has reached the level 1 threshold. Dispensing not possible.	Fixed
A16	**ALARM_SLAVE_PUMP_ GROUPB_LEVEL1_THR2**	The tank associated with pump B of the secondary controller has reached the level 2 threshold, impossible to dispense.	Fixed
A28	**ALARM_BUFFER_FULL**	The dispensing buffer is full. All dispensing operations stored in the controller must be uploaded to the cloud.	Fixed
A29	**ALARM_INACTIVE_PUMP**	No pumps are active. (Check system configuration from the web app).	Fixed

This manual is the property of PIUSI S.p.A. Whole or partial reproduction of this manual is forbidden.

Coding	Description	Explanation/Solution	RED LED status
A30	**ALARM_RTC_RESET**	The time has been lost. The current time must be uploaded to the controller via a smartphone.	Fixed
A31	**ALARM_RTC_FAULT**	Time synchronisation not possible. (Contact the Service Department).	Fixed
A32	**ALARM_SOFT_MEMORY_DATA_FAULT(Cumulative)**	Corrupted memory (data can be reset from the backup in the web app).	Fixed
A33	**ALARM_HARD_MEMORY_DATA_FAULT(Cumulative)**	Corrupted memory (data can be reset from the backup in the web app).	Fixed
A34	**ALARM_VERY_HARD_MEMORY_DATA_FAULT(Cumulative)**	Damaged memory (contact the Service Department).	Fixed

NOTE: one or more pump units can be connected to the same tank, or share common level contacts as outlined in the paragraph describing the system.

In these situations, warnings and alarms from one controller will be propagated to the other controllers sharing the same resource.

For more specific details on modes of connection and communication between controllers, refer to the manual found in the site management web app.

17 KEYPAD SPECIAL KEYS

Pressing a combination of keys provides access to certain information:

# + 7	**Board Code 123456789**	**Circuit Board Code**
# + 8	**FW Release 1.2.3**	**Firmware Release**
# + 9	**Serial Number 87654321**	**Electronic Board Serial Number**

18 MAINTENANCE

18.1 ROUTINE MAINTENANCE

CUBE B.SMART has been designed so as to require minimum maintenance.
However the following routine inspections and maintenance operations should be carried out regularly in order to ensure dispenser safety and efficiency.

18.2 DISPENSER MAINTENANCE

SAFETY WARNINGS

The distribution system has been designed and built to require minimum maintenance.
Before carrying out any maintenance work, disconnect the dispensing system from any electrical and hydraulic power source.
During maintenance procedures, using personal protection equipment (PPE) is mandatory.
Always consider the following recommendations to use the system correctly.

Personnel authorised to perform maintenance procedures

Maintenance procedures must be performed exclusively by qualified personnel.
Any misuse may lead to a decline in performance, danger for people and/or things, besides voiding the warranty.

CAUTION: maintenance of electrical parts can be carried out only by a qualified electrician or electronics engineer.

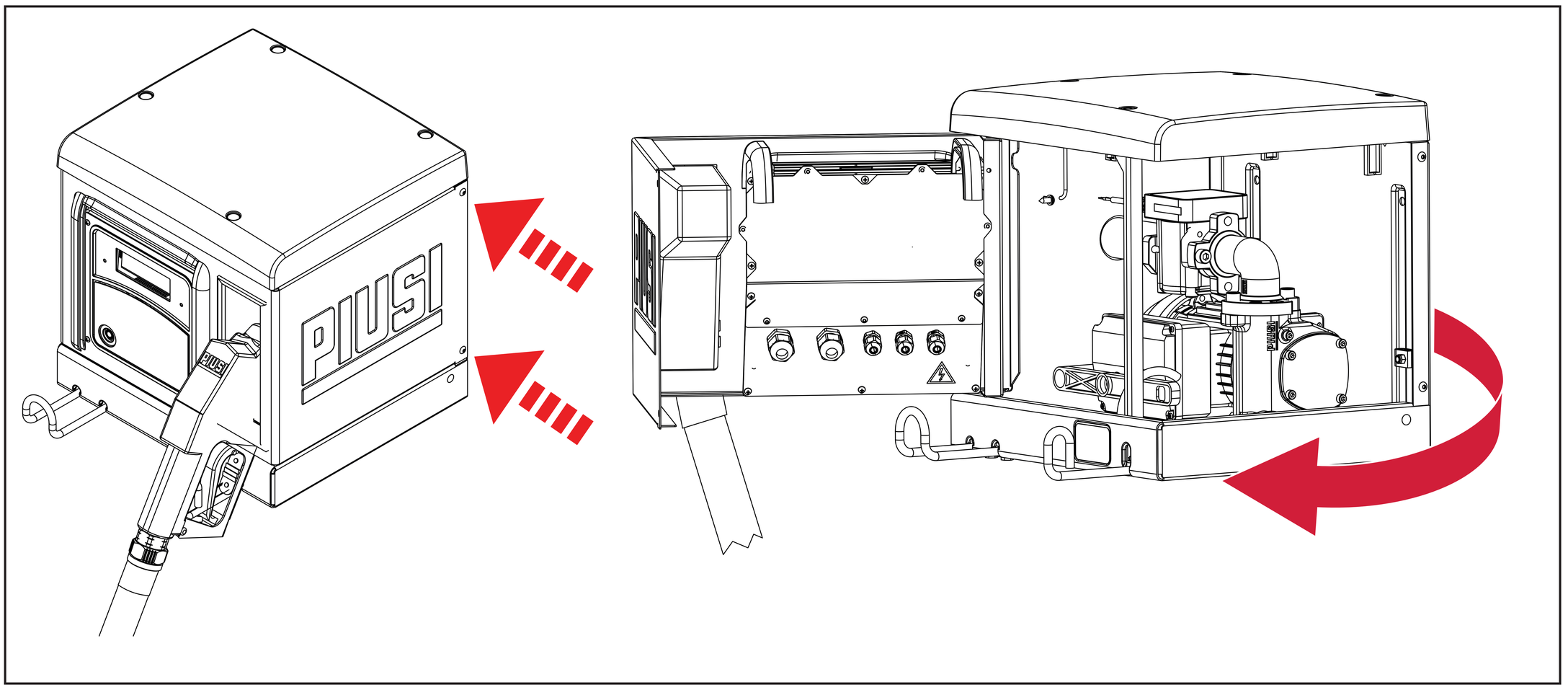
Before performing any maintenance make sure to unplug the device from the power supply to turn it off and isolate it from the mains.

If the device is sold without cable to provide periodic verification of the circuit grounding in accordance with current regulations.

18.3 OPENING AND CLOSING OF CUBE B.SMART

Check the pump, pipes and the other internal components (filter and pulser) and keep them clean.
Check that no leakage is visible on the flanged or threaded connections and that the flexible hoses do not show any damage.

This manual is the property of PIUSI S.p.A. Whole or partial reproduction of this manual is forbidden.

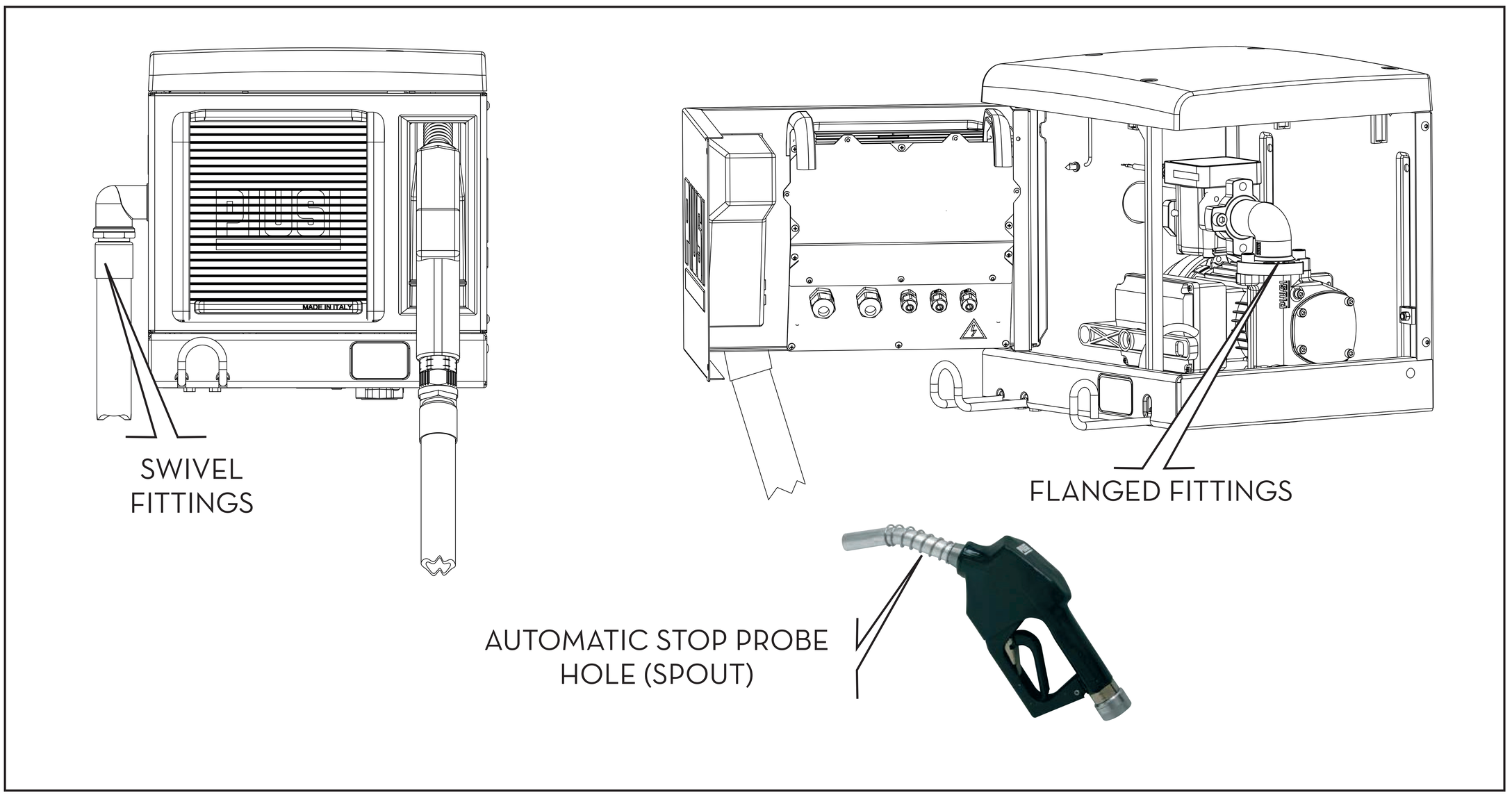


18.4 PUMP AND PIPES

Keep delivery hose and nozzle clean. Make sure that:
- The hose is intact with no damage caused by vehicle transit.
- The threaded connections are tight and leak-free.
- The swivel fittings (at the dispenser outlet and on the nozzle) turn freely and are leak-free.

18.5 PIPE AND DELIVERY NOZZLE

Keep delivery hose and nozzle clean. Make sure that:
- Hose does not show any damage caused by vehicle transit
- Threaded connections are tightened and without any leakage
- Banjo unions (at transfer pump outlet and on nozzle) turn smoothly and are not leaking
- The hole in the automatic stop probe at the end of the nozzle hose (spout) is always clean.



18.6 FILTERS

CUBE B.SMART is equipped with different filters performing different functions. Inspection and cleaning (or replacement) of each filter is extremely important to ensure:

- Protection of the various components of the dispenser (pulser, pump, nozzle).
- Lasting performance of the dispenser (max flow rate).
- Protection of the engines using the supplied diesel fuel.

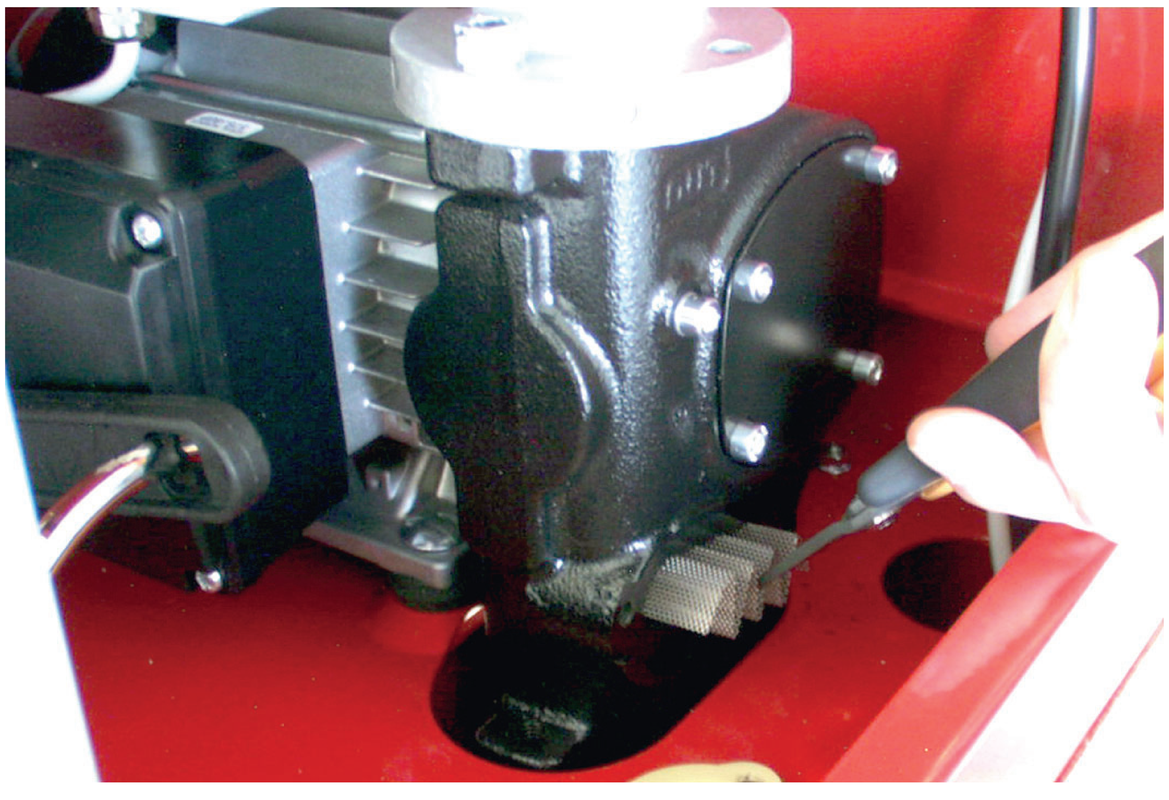
CAUTION: Dirty or partially obstructed filters can increase pressure drops in such a way as to cause a significant reduction of the max. flow rate of the pump.

Dirty or partially obstructed filters in the pump suction line can cause a strong increase in suction vacuum which, in turn, can result in higher noise levels of the pump.

18.7 PUMP FILTER (ONLY FOR AC VERSIONS)

It is installed in pump body, as a standard accessory of PANTHER pump. To inspect and clean it act as follows:

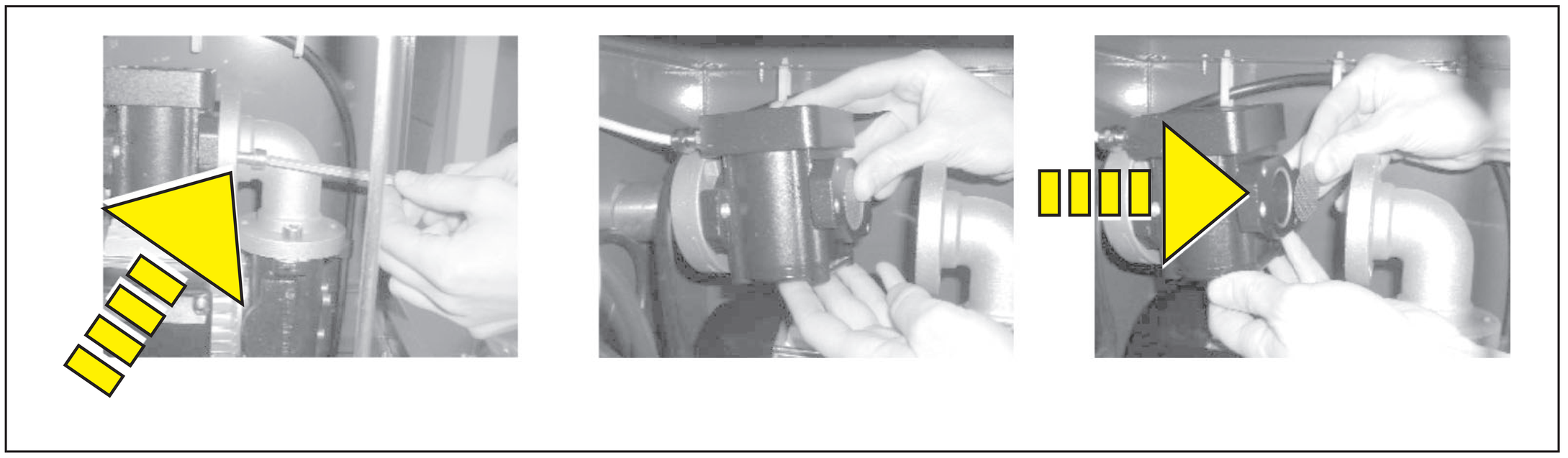
1. Undo the two filter cover screws and remove the cover from the body.
2. Use pliers to extract the mesh filter.
3. If necessary: wash the filter and blow compressed air through it.
4. Refit the filter in its seat in the pump body, making sure it does not protrude beyond the cover seat.
5. Inspect and clean the flat gasket, refit the cover and tighten the screws.



This manual is the property of PIUSI S.p.A. Whole or partial reproduction of this manual is forbidden.

18.8 PULSER FILTER

The pulser filter is an additional protection which prevents foreign bodies from entering the oval gear pulser.
Being as it is installed downstream from the pump suction filters, it does not require any regular inspection and cleaning.
However, should the filter need cleaning for any reason and/or in the event of special maintenance operations, proceed as described in the PULSER MANUAL after removing the top of the CUBE B.SMART by unscrewing the screws on in (see explosion diagram).



18.9 PULSER

The pulser flow meter is a high-precision measuring instrument guaranteed by the accuracy of the workmanship and assembly.
No routine maintenance is usually required. Calibration, normally carried out during installation, can be repeated if precision checks (to be carried out every 3/6 months) indicate the need to do so. Calibration is performed electronically through the management system, and does not require any intervention on the pulser.
For any further information, refer to the K600 flow meter manual.

18.10 EXTRAORDINARY MAINTENANCE

CAUTION: maintenance of the electrical parts can be performed only by a qualified electrician or electronics engineer.

Before performing any maintenance make sure to unplug the device from the power supply to turn it off and isolate it from the mains.

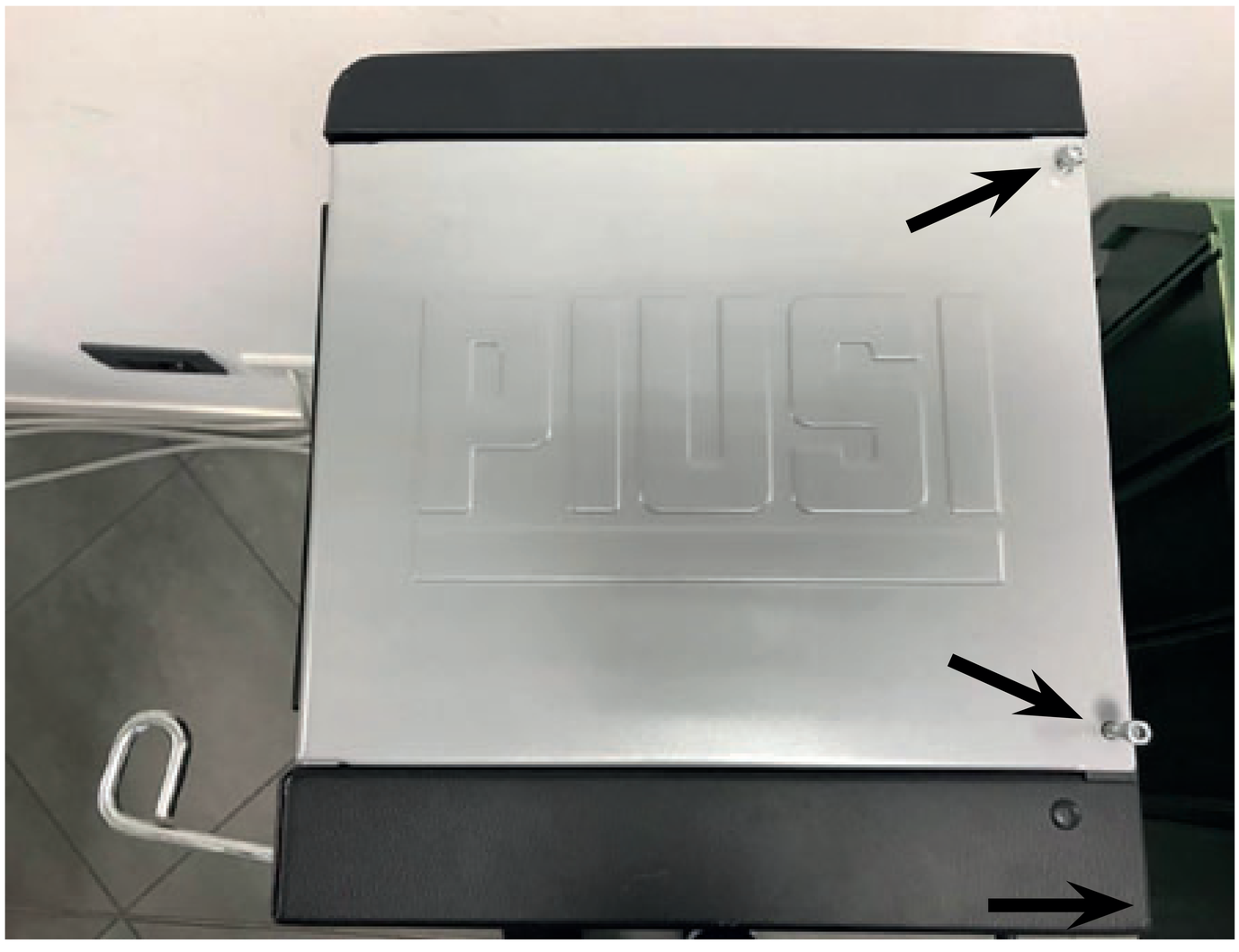
If the device is sold without cable to provide periodic verification of the circuit grounding in accordance with current regulations.

- Firmware update via smartphone, see dedicated section in the APP manual.
- Fuse checking: to access the fuses it is necessary to open the unit and access the parts that are live during normal use, to operate safely disconnect the general power supply from the unit.
- Firmware update via smartphone, see dedicated section in the APP manual.

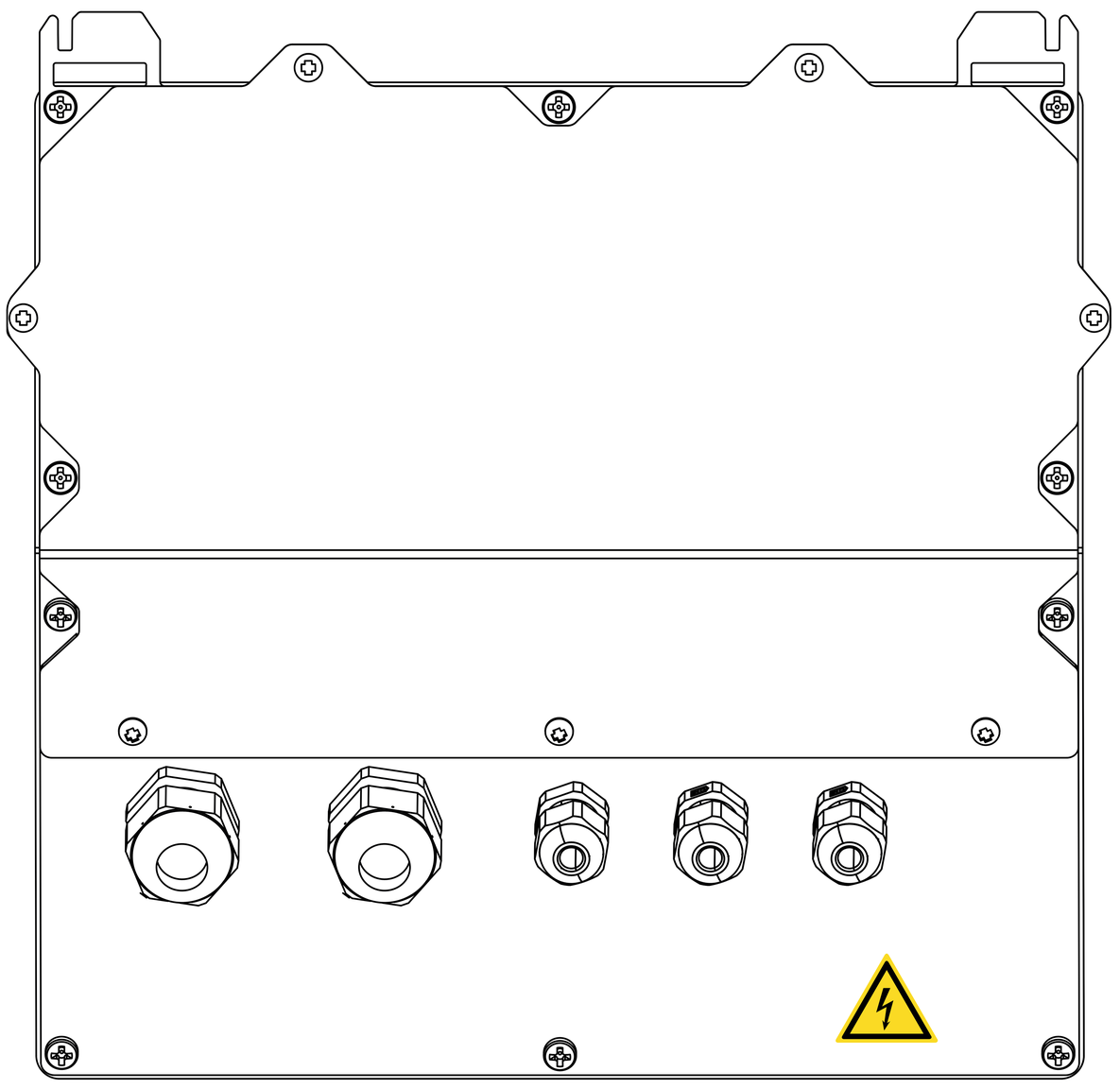
18.11 CHECK AND REPLACEMENT OF FUSES

For checking and replacing fuses on electronic boards:

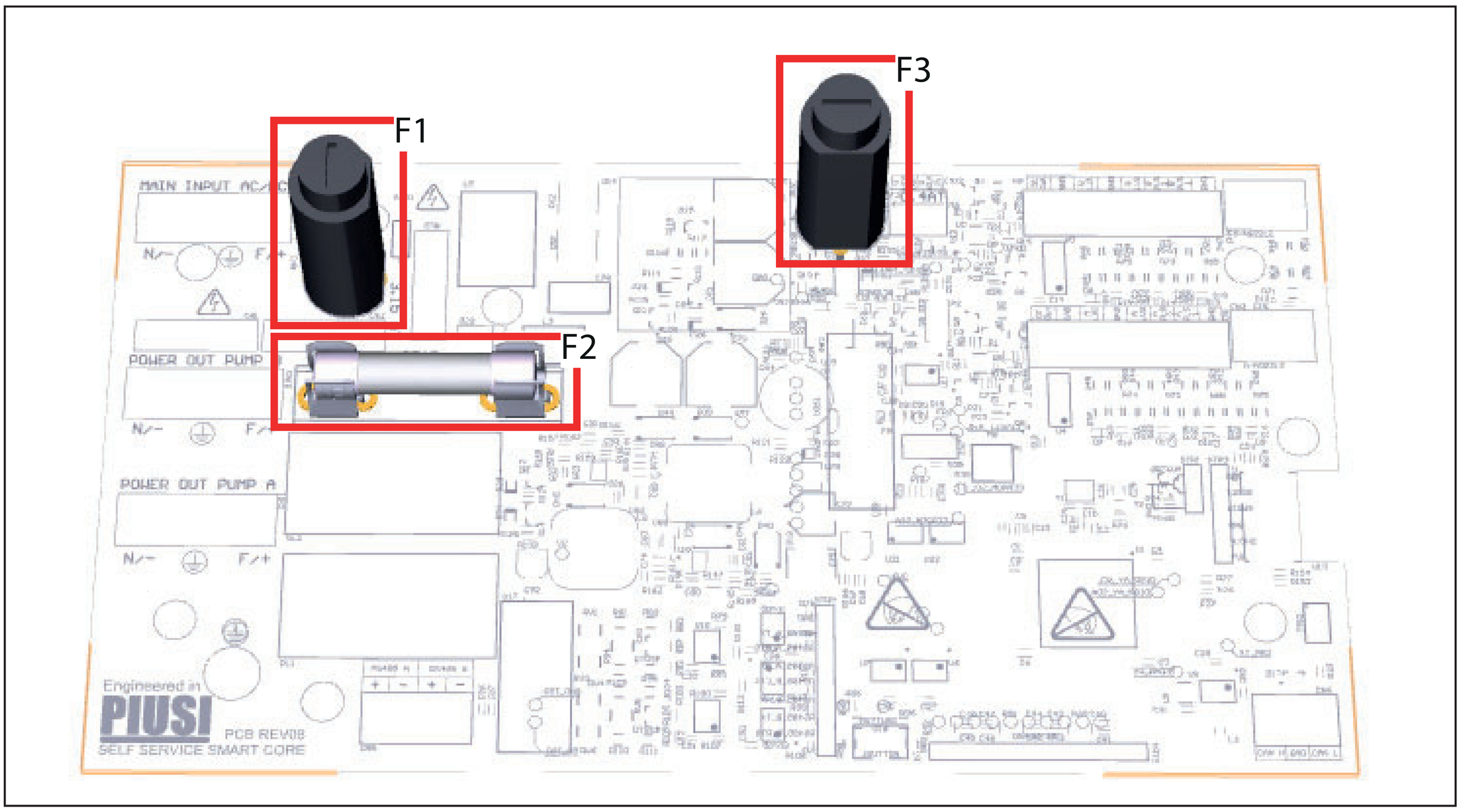
1. Disconnect the unit's main power supply.
2. Open the CUBE B.SMART door to access the controller.



3. Loosen the screws of the metal rear panel to access the circuit boards compartment.



4. Check the condition of the 3 fuses and replace them if necessary



F1 800 mA T (time delay) power supply fuse on AC supply input.
F2 20 A T (time delay) motor fuse.
F3 800 mA T (time delay) power supply fuse on the AC/DC converter output.

5. Tighten the screws of the metal rear panel to close the circuit boards compartment and reconnect the power supply.

19 TROUBLESHOOTING

19.1 MECHANICAL AND HYDRAULIC PROBLEMS

PROBLEM	POSSIBLE CAUSES	POSSIBLE SOLUTIONS
THE MOTOR IS NOT TURNING	Lack of electric power	Set the ON/OFF switch on the pump to the ON position. Reset the external differential switch Check the electrical connections.
	Fuses blown	Replace fuses in the electric panel
	Motor problems	If the rotor is blocked, disassemble and check for damage or obstruction and reassemble. Contact the customer service.
THE MOTOR DOES NOT START AGAIN WITH THE NOZZLE CLOSED	Supply voltage too low	Check that the supply voltage is not 5% lower than the normal V.
LOW OR NO FLOW RATE	Excessive suction vacuum	Lower CUBE B.SMART in relation to the level of the tank or increase the section of the pipes.
	High pressure drops in the circuit	Use shorter or larger diameter pipes.
	Suction pipe resting on the bottom of the tank	Raise the suction pipe
	Low suction tank level	Fill the tank.
	Air entering the suction pipe or the pump	Check tightness of the connections and the diesel level in the tank.
	Low motor rotation speed	Check the motor feeding voltage: adjust the voltage or/and use larger cross section cables.
	Check valve blocked	Clean or replace.
	Tank filter clogged	Clean the filter.
	Pump filter clogged	Clean the filter.
	Fluid loss	Check tightness of the connections and the condition of the rubber hoses.
	Flow meter chamber obstructed	Clean the flow meter chamber.
INSUFFICIENT FLOW METER ACCURACY	Presence of air in suction	Check tightness of the connections.
	Calibration insufficient	Calibrate the flow meter.
THE NOZZLE TRIPS TOO OFTEN	Automatic stop probe hole blocked	Clean the automatic stop probe hole to remove dirt and/or obstructions.

This manual is the property of PIUSI S.p.A. Whole or partial reproduction of this manual is forbidden.

19.2 ELECTRICAL/ELECTRONIC PROBLEMS

PROBLEM	POSSIBLE CAUSES	POSSIBLE SOLUTIONS
CUBE B.SMART does not switch on	Lack of power due to: • Incorrect connections. • Upstream circuit breaker set to OFF. • Power supply fuse blown.	• Check connections • Set the circuit breaker to ON • Check fuse
A driver with an electronic key is not recognised	The electronic key has not been associated by the MANAGER.	The system MANAGER associates the key to the driver
	The electronic key has been damaged and is no longer recognised by the system.	Change the electronic key, the system MANAGER will also have to delete the code of the old key and link the new key to the driver via the web app.
The motor does not start	Has not been connected correctly to the terminals.	Check connections, or (if present) check that the motor switch is set to the ON position.
Does not count during dispensing	The Pulser that emits the counting signals is incorrectly connected.	Check connections
	The Pulser that emits the counting signals is NOT compatible with the electronics.	The electronics are designed to receive a “voltage free contact” or “Open Collector” signal at input. If the input signal is an incompatible voltage signal, in addition to the malfunction the electronic board is likely to be damaged.
	Pulser board damaged.	Replace Pulser board.
The counting is not accurate	System is NOT calibrated.	Calibrate the system according to the procedure
The counting is not accurate even after calibration or is only accurate at low flow rates	The signal coming from the Pulser is outside the ranges compatible with the electronics.	The pulser signal must have a frequency of at most 300 Hz and Duty Cycle from 10% to 90%. Beyond these ranges, the system does not process the received data correctly. The system must be set within the correct ranges, interposing appropriate electronic interfacing equipment if needed (contact the Technical Assistance service for these options).

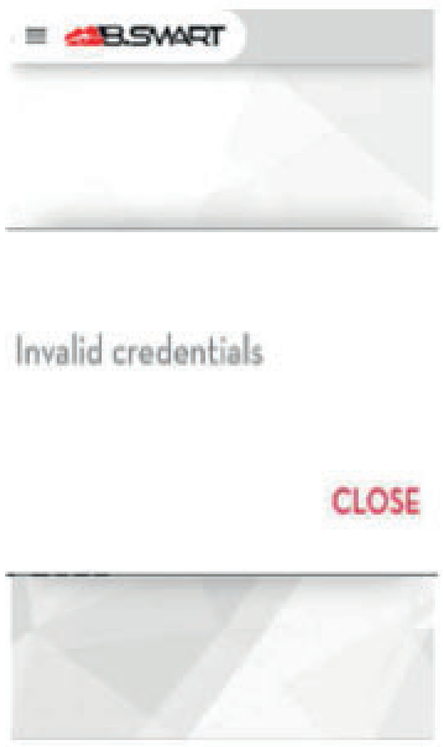
19.3 PROBLEMS WITH THE SMARTPHONE APP

PROBLEM	POSSIBLE CAUSES	POSSIBLE SOLUTIONS
APP indicates that the driver is not enabled	The manager has not enabled the driver to use the dispenser.	The manager must enable the driver to use the dispenser via the web app in the section dedicated to drivers.
Dispensing cycle from smartphone is not present in the cloud	Dispensing carried out with the smartphone with data connection disabled or in an area with poor 2G/3G/4G coverage.	The dispensing operation will be present on the cloud as soon as the app is opened in an area with 2G/3G/4G coverage. In the meantime it will be stored in the smartphone memory and also in the dispenser memory.
App unable to find the controller even though Bluetooth is active	Bluetooth module on the smartphone is not compatible with the Bluetooth module in the dispenser.	The dispenser Bluetooth module is compatible with all smartphones equipped with Bluetooth version 4.0 or later (smartphones from 2011 onwards).
	Dispenser is being used by another driver.	The dispenser will become visible on the smartphone only when the driver currently using it has finished operations.

20 FAQ

1	**If a driver changes smartphone, is it necessary to create a new account for that driver or can he continue to use what he already had?**	If the driver changes smartphone, he/she must disclose this information. CAUTION: after the manager has deleted the smartphone - driver association, the driver is obliged to access with a smartphone other than the previous one, because access with his credentials is prevented on the old device. To gain access with the old smartphone, you must first access using a new smartphone, then have the account reset and finally enter with the initial smartphone.
2	**What if a driver loses his/her smartphone?**	If the driver loses his/her smartphone, notify the site manager, who will immediately remove the smartphone - driver association. The procedure to be followed is the same as that indicated in question 1.

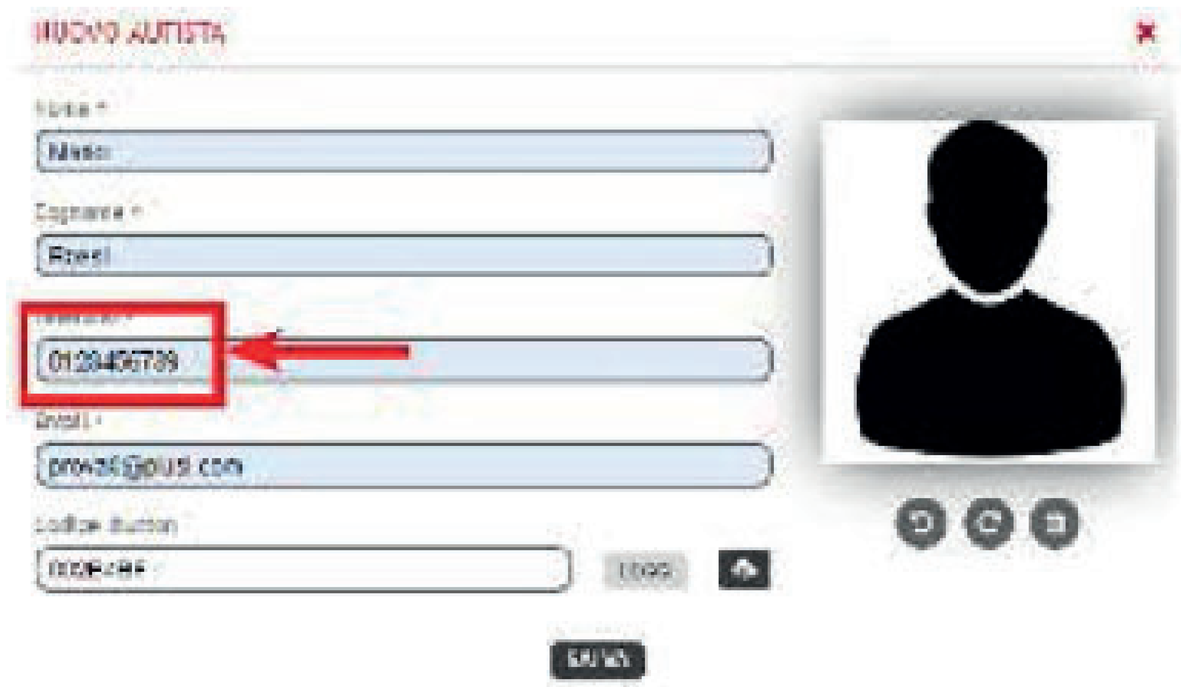
This manual is the property of PIUSI S.p.A. Whole or partial reproduction of this manual is forbidden.

<table>
<tr><td>3</td><td>What to do when the APP reports that the smartphone is not recognized?</td><td> 

Generally it is an error shown when the driver has changed smartphone but has kept the same phone number and the site manager has not reset the account.
In this case the driver must contact the manager and inform him/her of the error shown by the APP.
The manager will remove the smartphone - driver association to allow the driver to login from the new smartphone.
The procedure to be followed by the manager is the same as that indicated in question 1 (see also the web app manual, “DRIVER DETAILS” chapter).</td></tr>
<tr><td>4</td><td>When will dispensing cycles carried out via i-Button or a smartphone without an internet connection be uploaded to the cloud?</td><td>There are 4 cases in which dispensing cycles are uploaded to the cloud:
Each time the app is opened, if the data connection is active.
App open in background and data connection active.
Data synchronisation by the manager by pressing the SYNC key.
Every time a driver connects to the controller and the internet connection of the smartphone is active.
As can be seen from the list, dispensing operations can be uploaded to the cloud even if the smartphone is not connected to the controller.</td></tr>
<tr><td rowspan="3">5</td><td rowspan="3">What to do if I can’t dispense with authentication carried out with the i-Button?</td><td>There are a few possible cases:
Dispensing memory full.
Tank empty.
Button not associated with any drivers.
In detail:</td></tr>
<tr><td>Dispensing memory full and tank empty

The red LED to the right of the controller display is on.
This may indicate problems in the memory (dispensing memory full) or tank empty.
To clear the dispensing memory, perform a cloud synchronisation operation.
If this fails to solve the problem, reset the controller.</td></tr>
<tr><td>i-Button not associated with any drivers

When the i-Button is placed on the reader the display does not light up.</td></tr>
</table>

6	**What if a driver changes his phone number and keeps the same smartphone?**	If a driver changes number this must be disclosed to the manager, who will change it from the driver's file in the web app (see also the web app manual, "DRIVER DETAILS" chapter).  In the app, the number is automatically updated the first time you connect to the cloud. From now on the mobile phone number will be the one to be used to access the app. In addition, in the case of mobile number portability between different mobile operators, it is likely that for a few days the mobile number will be the temporary one, and then the mobile number will be the same again as soon as portability is complete. In this case, during the transition period, there is no need to notify the site manager of the temporary number, you can continue to use your original telephone number.

This manual is the property of PIUSI S.p.A. Whole or partial reproduction of this manual is forbidden.

21 SCRAPPING AND DISPOSAL

FOREWORD

In case the system should be demolished, its parts must be given to companies specialised in industrial waste disposal and recycling; in particular:

PACKAGING DISPOSAL

The package is made of biodegradable cardboard that can be consigned for sorted waste collection.

DISPOSAL OF METAL PARTS

The metal components, both painted and in stainless steel, are usually recycled by companies that are specialised in the metal-scrapping industry.

DISPOSAL OF ELECTRICAL AND ELECTRONIC EQUIPMENT

Disposal of waste electrical and electronic equipment must be handled by specialised recycling and disposal companies in compliance with the provisions of directive 2012/19/EU.
It is strictly prohibited to discard waste electrical and electronic equipment (WEEE) as household waste. Such wastes must be disposed of separately.
Any hazardous substances in the electrical and electronic appliances and/or the misuse of such appliances can have potentially serious consequences for the environment and human health.
Unlawful disposal of WEEE may result in application of the penalties provided for in law.

ENVIRONMENTAL INFORMATION FOR CUSTOMERS RESIDENT IN THE EUROPEAN UNION

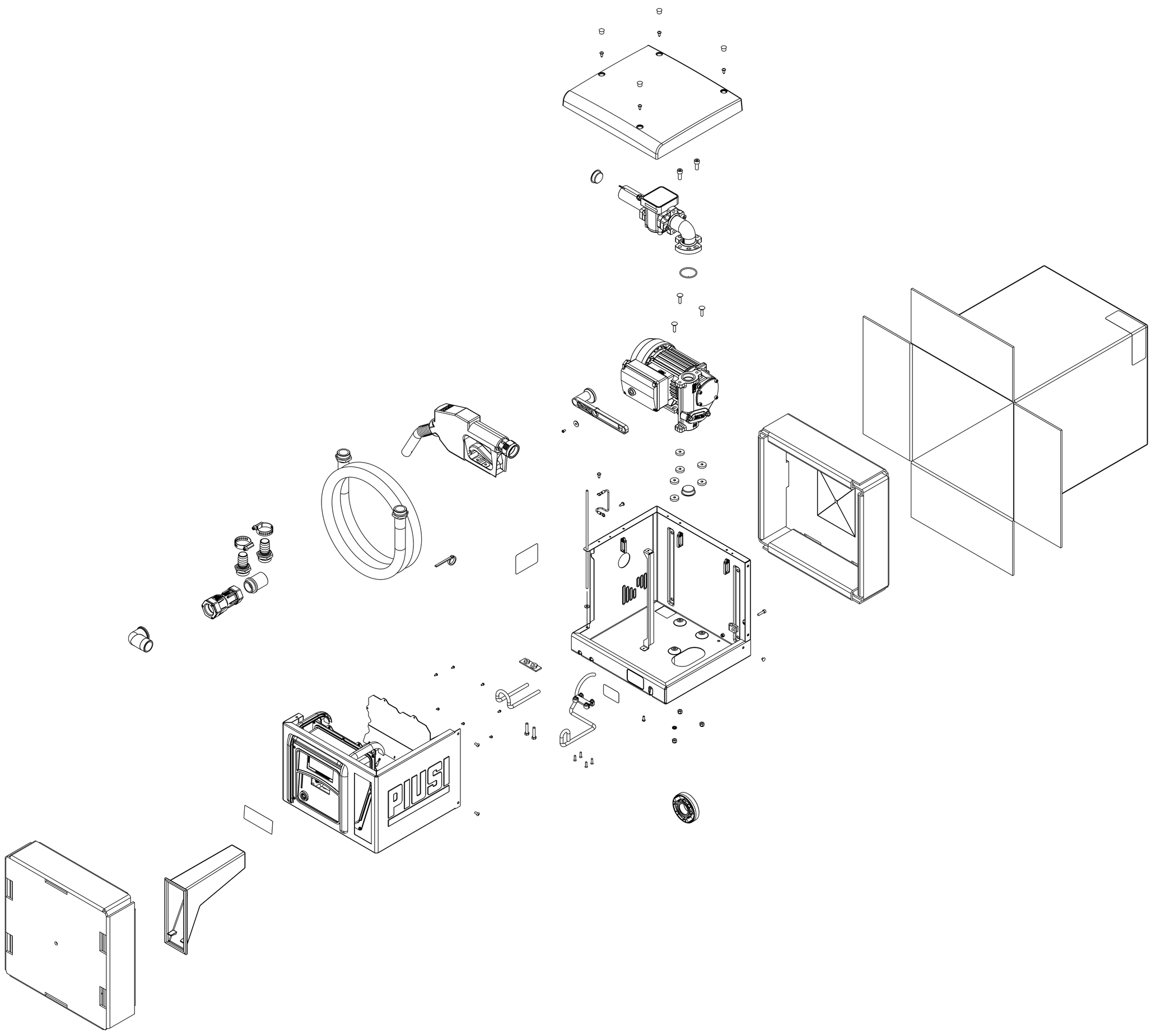
European Directive 2012/19/EU requires that equipment bearing this symbol on the product and/or its packaging must not be disposed of with unsorted municipal waste.

The symbol indicates that this product must not be disposed of as household waste. It is your responsibility to dispose of this and other electric and electronic equipment via designated collection facilities appointed by the government or local authorities.

DISPOSAL OF OTHER PARTS

The disposal of other parts such as pipes, rubber seals, plastic components and cables should be entrusted to companies specialised in the disposal of industrial wastes.

22 REPLACEMENT PARTS TABLE



© PIUSI S.p.A.

EN This document has been drawn up with great care devoted to the accuracy of the data it contains. However, PIUSI S.p.A. rejects all liability for any mistakes and omissions.

PIUSI *Fluid Handling Innovation*

IT Scarica il manuale nella tua lingua!
EN Download the manual in your language!
CS Stáhnout příručku ve vašem jazyce!
DA Download manualen på dit sprog!
DE Laden Sie das Handbuch in Ihrer Sprache herunter!
ES ¡Descarga el manual en tu idioma!
FI Lataa käsikirja omalla kielelläsi!
FR Téléchargez le manuel dans votre langue!
NL Download de handleiding in uw taal!
PL Pobierz instrukcję w swoim języku!
PT Baixe o manual em seu idioma!
RU Загрузите руководство на вашем языке

https://www.piusi.com/support/search-manuals

piusi.com
PIUSI SpA • Suzzara MN Italy

BULLETIN M0705 EN_00

03.2023