



Fluid Handling
Innovation

DELPHIN PRO_X

QUICK GUIDE



**MADE
IN
ITALY**

Delphin PRO_X _ quick guide

EN

BULLETIN MO495A EN _00

ENGLISH

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BULLETIN MO495A

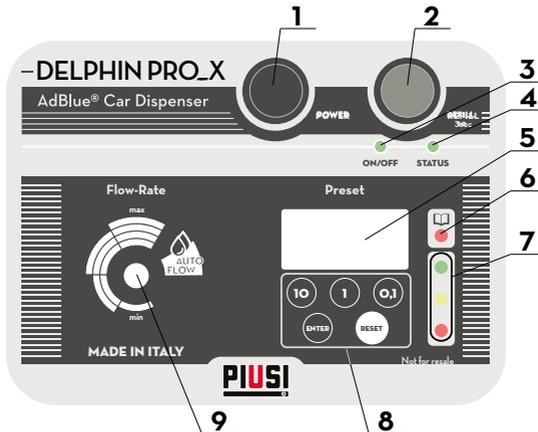
1 KNOW THE MANAGEMENT SYSTEM

1.1 THE KEYBOARD

Dispensing management system with Delphin PRO_X.

The SYSTEM also allows the user to PRESELECT the quantity to be supplied and automatically stops dispensing when the preset amount has been reached.

The interface of the management system is represented by the plate / keypad which includes the function keys, the LCD screen and the communication LEDs

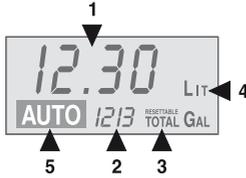


- | | |
|---|--|
| 1 | POWER button: used to power the system. |
| 2 | REFILL button: press for at least 3 seconds to start dispensing |
| 3 | ON/OFF LED |
| 4 | STATUS LED |
| 5 | LCD Display |
| 6 | LED alarm messages |
| 7 | LEDS battery status indicators (GREEN / YELLOW / RED) |
| 8 | Function and pre-selection keys |
| 9 | Variator / flow setting |

1.2 DISPLAY

The liquid-crystal display “LCD”

The SYSTEM uses an LCD with the following numeric registers and indications:



1. **Batch total** (4 digits, floating point)
2. **Totals** (7 digits).
3. **Indication** of the Total type (TOTAL / Resettable TOTAL).
4. **Indication** of the Unit of Measurement: LIT = Liters
GAL = Gallons
QTS = Quarts
5. **Indication** of operation in AUTO mode.

1.3 LEGENDS

FUNCTION KEYS



Numeric keys
to be used **to set the PRESET value** (automatic dispense stop value).



ENTER key
to be used to **select and confirm the PRESET value**.



RESET key
to be used to reset the Batch Total and to display the Resettable TOTAL.

LEDS COMMUNICATION

Representation pulses	Description
	LED always on
	Flashing: 1 IMPULSE TO REGULAR INTERVALS
	Flashing: 2 IMPULSES TO REGULAR INTERVALS
	Flashing: 3 IMPULSES TO REGULAR INTERVALS

2 USE

ATTENTION



The METER has been designed for professional use and must be utilized by adult personnel properly trained for the intended purpose.

2.1 SETTING THE PRESET FUNCTIONS

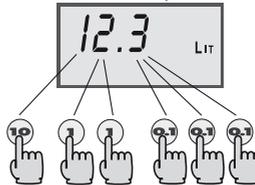
The SYSTEM allows to select the value (expressed in Liters or Gallons) to which automatically stop the delivery: **“PRESET value”**. You can set the preset value in more ways:

1 - Direct setting of a new PRESET value



Non-resettable Total

To select a new PRESET value (for example 12.3) use the numeric keys.



The DISPLAY will display:

Selected value



To confirm the PRESET value, press and keep pressed the AUTO key until the DISPLAY displays:

Resettable Batch total



Selected value



Dispensing

Proceed with the dispensing as described in the following paragraphs. The preset functions do not vary whether you choose a manual or automatic dispensing.

2.2 MANUAL DISPENSING



If the system is off, press the power button to turn on.

The SYSTEM can be used manually if you do not want to set an automatic stop value. In this case, proceed as follows:

The DISPLAY displays:

Last amount dispensed



Non-resettable Total

The SYSTEM can be programmed to display the last amount dispensed until the RESET button is pressed or to automatically reset the Batch Total a few minutes after a dispensing operation in MANUAL mode

To reset the batch total, press RESET. The DISPLAY will display:

Resetting the Batch Total



Resettable Batch total



Resettable General Total

Resetting the Total

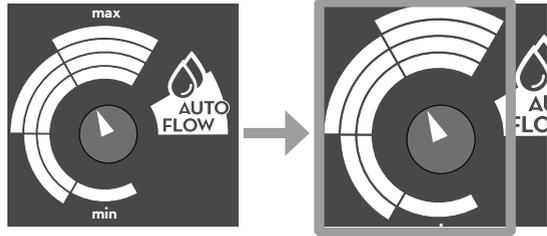
To reset the resettable Total, press and keep pressed the RESET key. The DISPLAY will display:



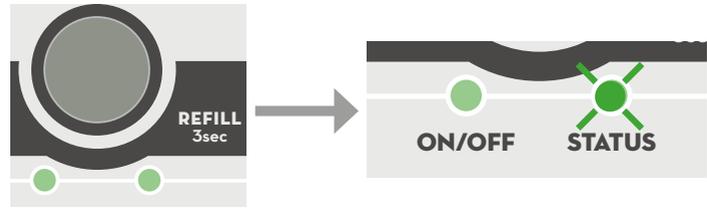
Reset General Total

Dispensing

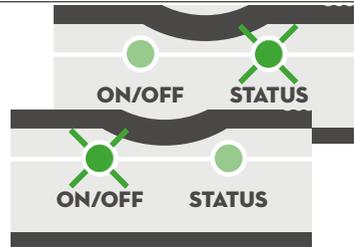
- 1 Proceed with the dispensing as described.
- 2 Insert the connector to your tank and screw it in;
Select the desired flow rate using the knob (area included "min" and "max");



- 3 Press the REFILL button for 3 seconds, a top LED flashes and dispensing starts.



During dispensing, the upper LEDs will flash alternately



- 4 Finished dispensing
LED ON/OFF remains on fixed while flashing the total displayed displayed
THIS COMMUNICATION IS SAME FOR ANY KIND OF ARREST OF THE DISPENSING.

NOTE



- 5 Once dispensed, unscrew the connector and place it in the appropriate support.

NOTE



Once the delivery has been completed, the system automatically prepares a new dispensing.

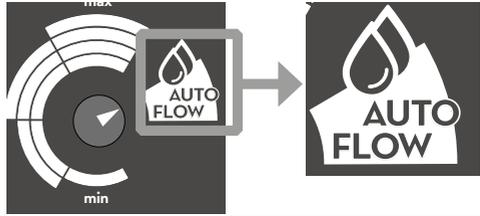
2.3 DISPENSING WITH AUTOMATIC FLOW

The system performs the supply by looking for the flow that is most suitable for the type of tank up to filling or when the pre-selected quantity is reached.

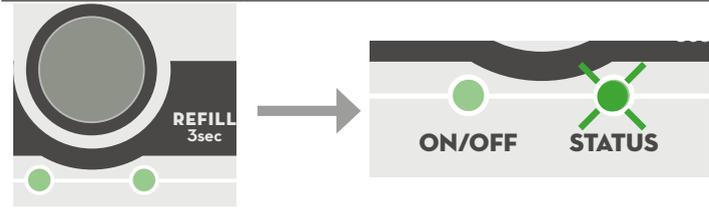
Dispensing

Proceed to the dispensing as described.

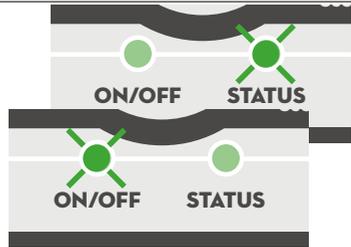
- 1 Insert the connector to your tank and screw it in;
- 2 Use the knob to select the delivery flow in «**AUTO FLOW**» position



- 3 Set the quantity in direct or pre-set mode as described;
- 4 Press the REFILL button for 3 seconds, a top LED flashes and dispensing starts.



During dispensing, the upper LEDs will flash alternately

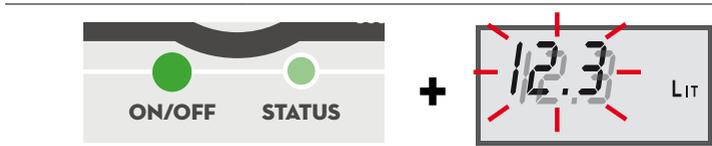


- 5 Terminated dispensing:
Led ON / OFF remains on fixed while flashing the total displayed on display

NOTE



THIS COMMUNICATION IS THE SAME TIME IN FRONT OF ANY KIND OF ARREST OF DISPENSING.



- 6 Once dispensed, unscrew the connector and place it in the appropriate support.

- ATTENTION**  **If dispensing starts in AUTOMATIC mode it will not be possible, during dispensing, to switch to manual mode.**
- NOTE**  **Once the delivery has been completed, THE SYSTEM AUTOMATICALLY PREPARES A NEW DISPENSING.**

2.4 SHUTDOWN OF THE SYSTEM

- ATTENTION**  **The dc models are equipped with a battery saving system that automatically turns off the system after 10 minutes of unused. The system turns off completely if not used for at least 10 minutes, but keeps the power switch inserted.**
- RESTART** To turn the system back on, follow the steps below:
- 1 Press the «power» switch to turn it off
 - 2 Press the power switch again to turn the system back on

3 SYSTEM COMMUNICATIONS

3.1 REGULAR OPERATION



1 - STAND-BY -

[green «ON / OFF» LED lit steady]
the system is ready for a new dispensing



2 - DISPENSING IN PROGRESS

[green LEDs «ON / OFF» and «STATUS» flash alternately]
The system is dispensing



3 - FULL TANK FOR REACHING THE LEVEL

[LED «ON / OFF REMAINS ON FIXED WHILE FLASHING THE TOTAL SUPPLIED DISPLAYED ON THE DISPLAY]
The system has dispensed until reaching the maximum tank level.

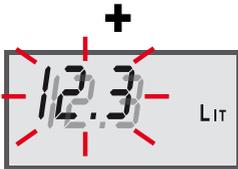


+

4 - IN PRESET MODE:

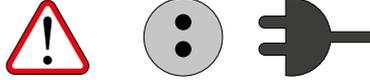
PRE-SET QUANTITY REACHED

[LED «ON / OFF REMAINS ON FIXED WHILE FLASHING THE TOTAL SUPPLIED DISPLAYED ON THE DISPLAY]
The system has dispensed until the pre-selected quantity of liquid is reached.



3.2 BATTERY INDICATIONS FOR DC VERSIONS

To recharge the battery, connect the plug of the power cord to the wall socket.



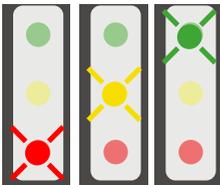
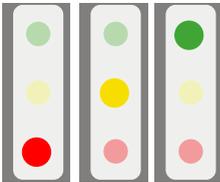
The charger automatically starts charging, as follows:

After charging (green LED on steady), unplug the power cord from the wall socket.

Dispensing operations are possible even when the battery is charging. It is recommended not to disconnect the plug while simultaneously dispensing and charging.

Wait for the dispensing to finish.

ATTENTION



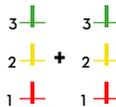
1 - INDICATIONS BATTERY STATUS

[LEDs for battery on steady in charge status color]

- If the battery is charged, only the GREEN LED will be on steady. Permitted supply.

- If the battery is half charged, only the YELLOW LED will be steady. Allowed delivery, better recharge the battery.

- If the battery is low, only the RED LED will be on. Delivery not allowed.



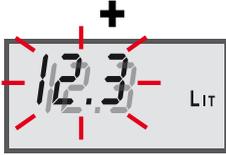
2 - BATTERY IN RECHARGE

[LEDs for alternating flashing battery - 1-RED / 2-YELLOW / 3-GREEN]

The battery is charging

3.3 ALARM SIGNALS THAT DO NOT BLOCK THE SYSTEM

Alarms that are reported to be resolved, but allow dispensing



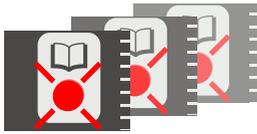
1-IN PRESET MODE:

Pre-set quantity not reached

[flashing with 1 pulse PER SECOND OF STATUS LED WHILE FLASHING THE TOTAL SUPPLIED DISPLAYED ON THE DISPLAY]

The tank has filled before reaching the pre-set quantity.

The system hears it and stops the dispensing signaling the anomaly.



2 - METER MALFUNCTIONING:

The meter is faulty and does not count, but the pump delivers anyway

[3-pulse flashing red alarm LED]

It is possible to dispense without being able to count. Repair the liter counter.



3 - BATTERY CHARGER MALFUNCTION/BATTERY DISCONNECTED/BATTERY DAMAGED

[Fixed alarm red LED]

Dispensing is possible but check that the battery is connected. If the problem persists, contact the Piusi Service. If the battery is damaged, replace it.

3.4 ALARM SIGNALS THAT BLOCK THE SYSTEM

Alarms reported to be resolved that prevent dispensing.



1 - IN MANUAL MODE: SELECTED MINIMUM CAPACITY TOO HIGH

[flashing A 2 STATUS LED IMPULSE]

At 5 sec. from the beginning of the delivery, the system signals if the selected flow rate is excessive compared to the tank configuration and stops the delivery.



2 - IN MANUAL MODE: MAXIMUM DELIVERY TIME REACHED (20 MIN.)

[1 - pulse flashing red LED]

In accordance with the conditions of use of the pump, the system allows continuous dispensing for a maximum of 20 minutes. After 20 minutes the system stops the pump.



3 - MALFUNCTION OF THE OVERCURRENT PUMP

[2 - pulse flashing red alarm LED]

The system blocks the pump in case of overcurrents in the power supply.

4 CUSTOMIZE THE SYSTEM

Customizing the SYSTEM means using the OFFERS options to make its use easier, more convenient and more precise.

ACCESS TO THE CUSTOMIZATION MENU, OFFERS THE POSSIBILITY OF:

- SELECT THE UNIT OF MEASUREMENT.
- MODIFY the calibration factor (K Factor).
- MAKE CALIBRATIONS IN THE FIELD WITH RECIPIENT GRADUATED
- MAKE A DIRECT MODIFICATION OF THE CALIBRATION FACTOR.



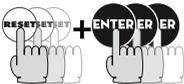
To access the various customizing functions and select the desired options, two different actions are possible on the keys:



This symbol indicates the necessity to **press the key briefly** with consequent release.



This symbol indicates the necessity to **press and keep pressed the key** for a few seconds.



TO ACCESS THE MENU, PRESS AND SET THE «RESET» AND «ENTER» BUTTONS LONG AS THE DISPLAY SHOWS THE «TOTAL» WRITING ON THE DISPLAY.



The SYSTEM displays:

To exit the personalization menu, whatever the activity you are in, press RESET. The settings displayed at that moment become immediately operational.



SELECTING THE UNIT OF MEASUREMENT

The SYSTEM allows the user to select one of the following Units of Measurement:

LIT = LITERS

GAL = GALLONS (U.S. Gallon).

QTS = QUARTS



The above-mentioned Units of Measurements refer to the Batch total indication.

When the DISPLAY displays:



Press ENTER to go to the next Unit of Measurement.

Keep on pressing ENTER until the desired Unit of Measurement is displayed.





Press ENTER and keep it pressed to **go** to the next activity.



Press RESET to **exit** the customization menu.



The modification of the unit of measurement does NOT require a new Calibration.

If the TOTAL register indicates a non-zero value, this value is automatically converted by LITERS into GALLONS or vice-versa, if necessary, when the Unit of Measure is changed.

To access the subsequent activity:

Press and keep the ENTER key pressed until The DISPLAY displays:



Blinking



In this way, the activity of changing the calibration factor has been entered

MODIFICATION OF CALIBRATION FACTOR (K FACTOR)

Why calibrate

The SYSTEM is pre-calibrated at the factory.

If the SYSTEM is used in extreme conditions of flow (close to the minimum or maximum values of the admitted field) it may be appropriate to carry out a calibration in the field, carried out under the actual conditions of use.

The SYSTEM allows the user to carry out a fast and accurate electronic calibration by modifying the **Calibration factor (K Factor)**.

How to calibrate



At delivery, all SYSTEMS are given the same calibration factor:

K Factor = 1,000

This calibration factor guarantees the best accuracy in the following conditions:

Fluid: motor oil type 10W 30.

Temperature: 20°C.

Flow-rate: 7 liter/min.

The calibration can be done either as:

1 - An on-site calibration, by dispensing into a calibrated container;

2 - A direct modification of the calibration factor.

1- ON-SITE CALIBRATION BY DISPENSING INTO A CALIBRATED CONTAINER

When the DISPLAY displays:

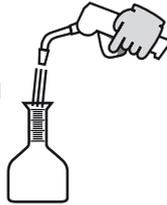
Blinking



Press the ENTER key; it is possible to start the calibration by dispensing the fluid into a calibrated container.

During dispensing the DISPLAY displays:

Batch total dispensed



Blinking



The dispensing operation may be freely interrupted and resumed. The Calibration dispensing is finished when the fluid level reaches the graduated area in the calibrated container.

Indicated value



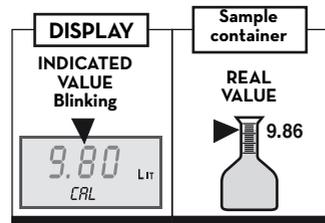
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To obtain a correct METER calibration, it is necessary:

- To use an accurate sample container having a capacity not less than 5 liters.
- Completely purge all air from the unit before performing the calibration.
- Make the calibration delivery at constant flow rate to be set with the potentiometer
- During the final dispensing phase, do not reduce the flow-rate to reach the graduated area in the calibrated container.

Press ENTER to confirm the end of the calibration dispensing.



After dispensing, wait for a few minutes to allow any possible air bubble to be bled from the sample container. Read the Real value only at the end of this phase as the level may decrease in the container.

Do not exceed 15 minutes of waiting because the system exits the menu without completing the calibration.

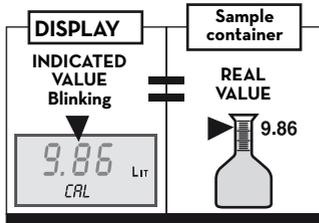
The SYSTEM is ready to accept the modification of the indicated value to be matched with the real value.



Press the "10" key to increase the indicated value.

Press the "0.1" key to decrease the indicated value.

Each time a key is pressed, the last digit on the right is modified by one unit. By keeping the keys pressed, the value changes, slowly at first and then rapidly.



Press ENTER to confirm the end of the indicated value correction; The SYSTEM now calculates the new Calibration factor (K Factor) and displays:



CAL-End
Blinking alternately



New K Factor

After a few seconds the SYSTEM automatically exits the customization mode and starts using the new Calibration Factor.



A single dispensing is sufficient to perform the calibration in the field. If you want to check the result, make a normal dispensing in the same Sample container, without going back into the Calibration activity.

2 - DIRECT MODIFICATION OF THE CALIBRATION FACTOR

The direct correction of the Calibration Factor is useful when:
- **the K Factor in use must be corrected by a known percentage;**
- **a K Factor already known must be added.**

When the DISPLAY displays:

Blinking



Press the ENTER key, release it and press the ENTER key again.
The DISPLAY displays:



Blinking

The SYSTEM is ready to accept the direct modification of the K Factor.

- Press the "10" key to increase the indicated value.
- Press the "0.1" key to decrease the indicated value.



Each time a key is pressed, the last digit on the right is modified by one unit. By keeping the keys pressed, the value changes, slowly at first and then rapidly.

Press the ENTER key to confirm that the correction of the indicated value is over.

The SYSTEM stores the new Calibration Factor (K Factor) and displays:

CAL-End

Blinking alternately



New K Factor



After a few seconds the SYSTEM automatically exits the customization mode and starts using the new Calibration Factor.



To exit the customization mode, independently from the activity in progress, press RESET. The currently displayed settings become immediately operational.



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