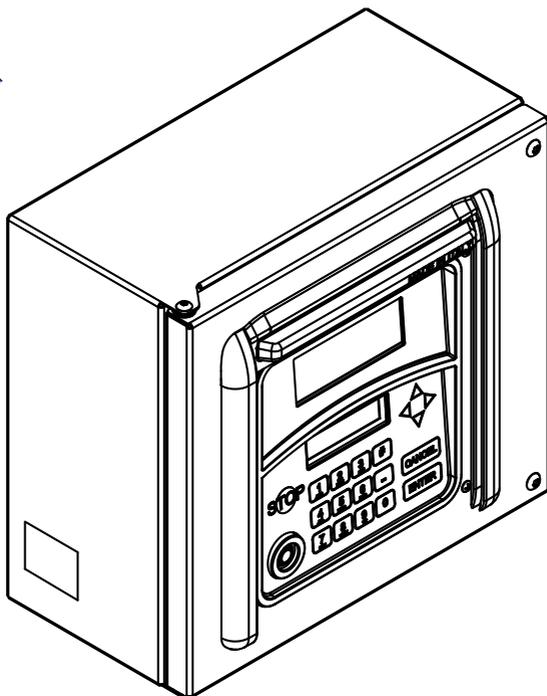


PIUSI

*Fluid Handling
Innovation*

MC BOX



**MADE
IN
ITALY**

Manuale di Installazione, uso e manutenzione

IT

Installation, use and maintenance manual

EN

BULLETIN MO188 D ITEN_00

ENGLISH

Z
E



BULLETIN MO188 D

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2 DECLARATION OF CONFORMITY

The undersigned: PIUSI S.p.A
Via Pacinotti 16/A z.i. Rangavino
46029 Suzzara - (MN) - Italy

HEREBY STATES

under its own responsibility that the equipment described below:

Description : **FLUID CONTROL MANAGEMENT SYSTEM**

Model: **MC BOX**

Serial number: refer to Lot Number shown on CE plate affixed to product

Year of manufacture: refer to the year of production shown on the CE plate affixed to the product

complies with the following legislation:

- Electromagnetic compatibility Regulations
- Low-Voltage Regulations
- Electrical and Electronic Equipment Regulations

The technical file is at the disposal of the competent authority following motivated request at PIUSI S.p.A. or following request sent to the e-mail address: doc_tec@piusi.com.

THE ORIGINAL DECLARATION OF CONFORMITY IS PROVIDED SEPARATELY WITH THE PRODUCT

3 GENERAL WARNINGS

Important precautions

To ensure operator safety and to protect the pump from potential damage, workers must be fully acquainted with this instruction manual before performing any operation.

Symbols used in the manual

The following symbols will be used throughout the manual to highlight safety information and precautions of particular importance:



ATTENTION

This symbol indicates safe working practices for operators and/or potentially exposed persons.



WARNING

This symbol indicates that there is risk of damage to the equipment and/or its components.



NOTE

This symbol indicates useful information.

Manual preservation

This manual should be complete and legible throughout. It should remain available to end users and specialist installation and maintenance technicians for consultation at any time.

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4 SAFETY INSTRUCTIONS

Mains - preliminary checks before installation



ATTENTION

You must avoid any contact between the electrical power supply and the fluid that needs to be FILTERED.

Maintenance control
FIRE AND

Before any checks or maintenance work are carried out, disconnect the power source. To help prevent fire and explosion:

EXPLOSION

When flammable fluids are present in the work area, such as gasoline and windshield wiper fluid, be aware that flammable fumes can ignite or explode.



Use equipment only in well ventilated area.

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.

Ground all equipment in the work area.

Stop operation immediately if static sparking occurs or if you feel a shock. Do not use equipment until you identify and correct the problem.

Keep a working fire extinguisher in the work area.

ELECTRIC SHOCK



This equipment must be grounded. Improper grounding, setup or usage of the system can cause electric shock.

Turn off and disconnect power cord before servicing equipment.

Connect only to a grounded electrical outlets.

Electrocution or death



Use only 3 wire extension cords in accordance with local electrical codes. Extension cords should have a ground lead.

Ensure ground prongs are intact on power and extension cords.

Do not expose to rain. Store indoors.

Never touch the electric plug of socket with wet hands.

Do not turn the dispensing system on if the power connection cord or other important parts of the apparatus are damaged, such as the inlet outlet plumbing, dispensing nozzle or safety devices. Replace damaged components before operation.

Before each use check that the power connection cord and power plug are not damaged. If damaged, have power connection cord replaced before use by a qualified electrician.

The electrical connection between the plug and socket must be kept well away from water.

Unsuitable extension leads can be hazardous, in accordance with current regulations. Only extension cords that are labelled for outdoor use and have a sufficient conduction path should be used outdoors.

For safety reasons, we recommend that, in principle, the equipment be used only with a earth-leakage circuit breaker (max 30 mA).

Electrical connections must use ground fault circuit interrupter (GFCI).

Installation operations are carried out with the box open and accessible electrical contacts. All these operations have to be done with the unit isolated from the power supply to prevent electrical shock!



EQUIPMENT MISUSE
Misuse can cause death or serious injury



Do not operate the unit when fatigued or under the influence of drugs or alcohol.
 Do not leave the work area while equipment is energized or under pressure.
 Turn off all equipment when equipment is not in use.
 Do not alter or modify 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 kink or over bend hoses or use hoses to pull equipment.
 Keep children and animals away from work area.
 Comply with all applicable safety regulations.
 Do not exceed the maximum operating pressure or the temperature of the part with lower nominal value of the system. See Technical Data in all equipment manuals.
 Use fluids and solvents that are compatible with the wetted part of the system. See Technical Data in all equipment manuals. Read the manufacturer's instructions of the fluids and solvents. For more information on the material, request the safety data sheet (MSDS) from the distributor or dealer.
 Check the equipment every day. Immediately repair or replace worn or damaged parts only with original spare parts of the manufacturer.
 Make sure the equipment is classified and approved compliant with the standards of the environment where it is used.
 Use the equipment only for the intended use. Contact your distributor for more information.
 Keep hoses and cables far from traffic areas, sharp edges, moving parts and hot surfaces.

BURN HAZARD



Do not bend or overbend the hoses or use the hose to pull the equipment.
 To avoid severe burns do not touch hot fluid or equipment.

TOXIC FLUID OR FUMES HAZARD



Read MSDS's to know the specific hazards of the fluids you are using.
 Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines.
 Prolonged contact with the treated product may cause skin irritation: always wear protective gloves during dispensing.

5 FIRST AID RULES

Electrocution

disconnect the unit from the mains, or use a dry insulator as protection while moving the electrocuted person far from any conductor. Do not touch the electrocuted person with bare hands until he/she is far from any conductor. Ask qualified and trained people for help immediately

SMOKING PROHIBITED



When operating the dispensing system and in particular during refuelling, do not smoke and do not use open flame.

6 GENERAL SAFETY RULES

ESSENTIAL PROTECTIVE EQUIPMENT CHARACTERISTICS

Wear protective equipment that is:
 - suited to the operations that need to be performed;
 - resistant to cleaning products.

PERSONAL PROTECTIVE EQUIPMENT THAT MUST BE WORK



safety shoes;



close-fitting clothing;



protective gloves;



safety goggles;

OTHER EQUIPMENT



Instruction manual

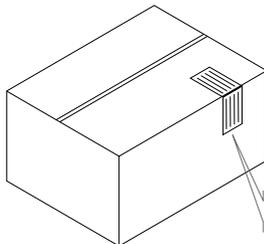
7 TRANSPORT, HANDLING AND UNPACKING

When the machine is not used, whether it is packed or unpacked, it must be stored in a place protected from the weather (rain, damp, sun, etc.) and from dust. To remove the cardboard packaging, use a pair of scissors or cutters, being careful not to damage the appliance. Fully open the packaging and take out the MC BOX so that it can be taken to the place of final installation. Packaging parts (cardboard, wood, cellophane, etc...) must be placed in specific containers and not left lying around or within reach of children, as these represent a potential risk hazard.

They must be disposed of according to the regulations applicable in the country of use. Check the integrity of the machine by making sure the shipped parts are not damaged in any way that could affect safety and operation. In case of any doubts, do not start the appliance but contact the manufacturer's after-sales service.

The following indications are specified on the package:

- a label containing all the information relating to the equipment (model, weight, etc.).



7.1 DIMENSIONS AND WEIGHTS

MODEL	TOTAL WEIGHT (Kg)	PACKAGE DIMENSIONS (mm)
MC BOX	5,3	480 x 370 x 265

8 MACHINE AND MANUFACTURER IDENTIFICATION

The SELF SERVICE stations feature an identification plate that is attached to the shell showing

- Model
- Serial number / Year of manufacture
- Technical data
- EC mark
- Instruction manual code

ATTENTION



Before installing the unit, check that the model is right and suitable for currently available supply voltage and frequency

8.1 PLATES POSITIONS

The dispensing system is equipped with decals and/or plates to provide operators with the necessary important information. Make sure that these do not deteriorate or become detached over time.

NOTE



Should this situation arise, please contact our support department and arrange to have the damaged or missing plates sent back and replaced where necessary.

The decals present are as follows:



1 - CE plate with technical data



2 - "ATTENTION" plate applied to the DISPLAY

PIUSI

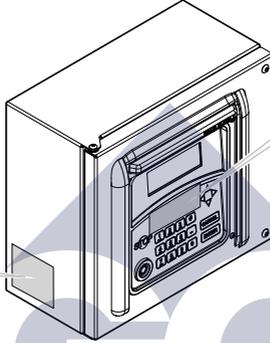
Code F0057201B
Description MC BOX

LOT NUMBER
1234567



**3 corner label
to be applied on the box**

Qty GTA Weight (Kg)



⚠ ATTENTION!

DE
 EN
 FR
 IT
 NL
 PT
 RO
 RU
 SK
 SL
 TR
 UK
 US

LEGGERE ATTENTAMENTE LE ISTRUZIONI PRIMA DELLA MESSA IN SERVIZIO
 READ INSTRUCTION BEFORE TO START-UP
 LIRE ATTENTIVEMENT LES INSTRUCTIONS AVANT DE LA MISE EN SERVICE
 VOR DER INBETRIEBNAHME AUFMERKSAM DIE ANWEISUNGEN LEBEN
 LES STRIKTIVMENT LA INSTRUCCIONES ANTES DE LA PUESTA EN SERVICIO
 LÆS BRUGERVEJLEDNINGEN GRUNDIGT FØR IGANGSÆTTING

PIUSI PIUSI S.p.A. - ITALY YEAR 2021

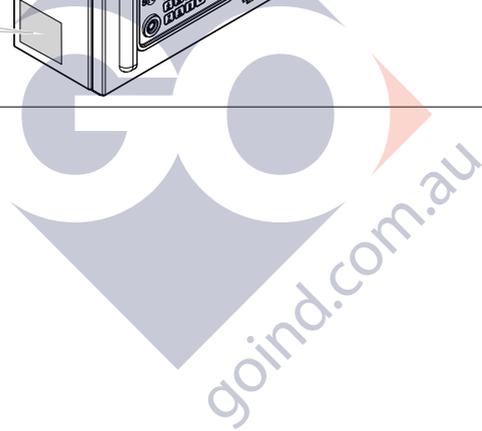
MADE IN ITALY

F0057201B Lr. 1234567

MC BOX

Volt 230V Freq. 50/60 Hz
 In stand-by 40 mA Pulser Max freq: 60 Hz
 Pulse Rate Cycle 20% - 10%
 Max. Altaz. 6.5 A IP55

CE UK
 PEL
 GREEN ALLIANCE
 CERTIFIED



9 DESCRIPTION OF MAIN COMPONENTS

FOREWORD

The mc box is designed for managing and multi-using systems for fueling (or other liquids) filtration for personal use. Recognised for their ease of use and maximum safety, mc box dispensers are reliable, high-performing, quick to install and ready-to-use.

EQUIPMENT AND CHARACTERISTICS

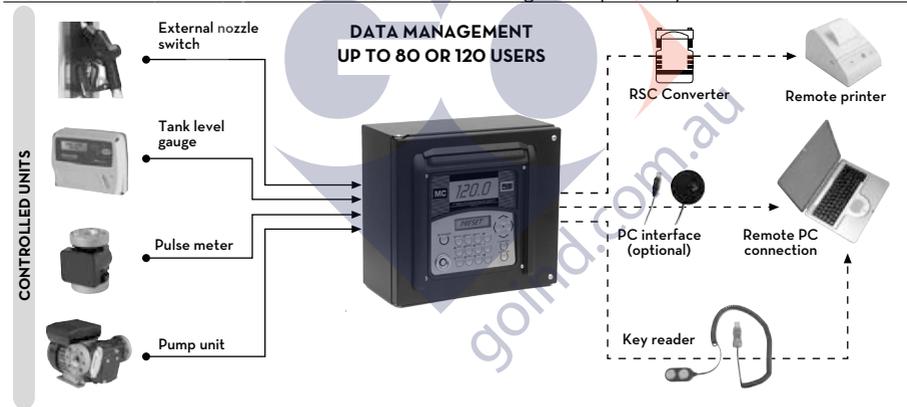
- Sturdy, lockable metal box with hinged door;
- Electronic Control Panel with:
 - Dual display
 - Membrane keyboard
 - Recognition and access control system with electronic key, allowing for a simple man-machine interface.

The electronic panel is also equipped with other out-facing interfaces, such as:

- Pump ignition control
- Nozzle contact input command
- Level contact input command
- RS485 output for PC connection (subject to software installation and available drivers)

This electronic panel allows you to control and monitor private use fuel consumption via a fuel dispenser with pump and flow meter.

The MC system consists of a multi-user panel, dedicated software and the option To Connect To A Pc. Following The Explanatory Scheme:



THE MC BOX SYSTEM HAS THE ABILITY TO

- Switch the pump on;
- Recognise authorised users;
- Preset the dispense quantity;
- Manage the pulse meter;
- Manage an external level switch that turns off the pump in the event of minimum flow level;
- Operate an external nozzle switch;
- Connect directly to a PC;
- Connect to an external printer

The panel is easy to install and is adequately protected. The wiring connections can be easily accessed. The group can also be supplied with a meter, to be installed together with the pump.



10 CONSTRUCTION FEATURES

FOREWORD	Panel with dual display, keyboard and i-button reader. The electric box can be opened, allowing easy access to the wiring. Maximum power supply: 6.5 amps.
OPTIONAL	<ul style="list-style-type: none">• PC Software with dedicated RS converter or i-button reader to export data.• I-button keys for users.• High-accuracy oval gear flow meters.
PERFORMANCE	<ul style="list-style-type: none">• 80 or 120-user capacity (depending on model), managed via password or i-button key.• Total consumption calculation for defined periods for each user.• Local memory that can store data until the last 255 dispenses.• Vehicle identification and mileage tracking option.• Dispensing date and time control.• Dedicated software that allows you to print dispense data for each user.• Ability to manage up to 16 control panels with one single software.• Key reader with USB plug for exporting data.• RS converter with USB plug for direct connection to the PC via cable (up to 1000 m).



11 TECHNICAL FEATURES**INTENDED USE ATTENTION**

Implementation of a fluid dispensing system, intended for private use, not subject to special regulations (e.g. ATEX) for potentially explosive environments. **DO NOT INSTALL MC BOX IN ENVIRONMENTS CLASSIFIED AS POTENTIAL-LY EXPLOSIVE IN ACCORDANCE WITH ATEX REGULATIONS.**

ELECTRICAL ABSORPTIONS:

The maximum acceptable variations from the electrical parameters are:

- Voltage +/-10 % for AC versions
- Voltage +/-15 % for battery-operated DC versions
- Frequency +/-1% (+/-2% for short periods) (for AC versions)

See following the technical data sheet:

ATTENTION

BEFORE INSTALLATION, ALWAYS CHECK THAT THE STATION MODEL IS CORRECT AND SUITABLE FOR THE SUPPLY EFFECTIVELY AVAILABLE (VOLTAGE / FREQUENCY).

	MC BOX80-120 USER MC BOX LITE 20 USER 230Vac/50-60Hz	MC BOX80-120 USER MC BOX LITE 20 USER 110Vac/50-60Hz	MC BOX MC BOX LITE 12v	MC BOX MC BOX LITE 24v
Nominal Power Voltage	230 Vac	110 / 120 Vac	12 Vdc	24 Vdc
Nominal (Hz) Frequency	50/60 Hz	50/60 Hz		
Nominal Current absorbed in standby at room T 25°C	40 mA	80 mA	150 mA	75 mA
Board fuse on power Line	100 mA (Rit.)	200 mA (Rit.)	1 A T (Rit)	1 A T (Rit.)
Max current on Motor (A)	6,5 A	13 A	50 A	25 A
Fuse on line Motor	8 A T (Rit.)	2 fuses 1 A T (Rit.) on board to drive the contactor 1 fuse 16 A T (Rit.) along the cable of contactor	Size according to the power of the connected DC 12V motor, but must NOT exceed 60 A (automotive)	Size according to the power of the connected DC 24V motor, but must NOT exceed 30 A (automotive)

12 INTENDED USE

THE SYSTEM IS DESIGNED TO MANAGE DISPENSING FOR SEVERAL REFILLING STATIONS FOR PRIVATE USE.

USE FOR MANAGING SYSTEMS OTHER THAN THOSE ENVISAGED IS NEITHER ENVISAGED NOR PERMITTED.

MC BOX HAS NOT BEEN DESIGNED IN ACCORDANCE WITH ATEX REGULATIONS OR TO OPERATE IN ENVIRONMENTS WITH A POTENTIALLY EXPLOSIVE ATMOSPHERE.

DO NOT INSTALL MC BOX IN POTENTIALLY EXPLOSIVE LOCATIONS.

WARNING
Flammable
liquids and
explosive
atmosphere
ATTENTION



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.



The use of the system for purposes different from those specified in section «Intended use» is strictly forbidden. Do not operate the system for any purpose other than the purpose described within this manual; all other use is considered «IMPROPER» and will result in Piusi S.p.A. disclaiming any responsibility for damage to property, people, animals or to the system itself.

ATTENTION
Environmental
conditions



TEMPERATURE: min. -20° C / max +60° C

RELATIVE HUMIDITY: max. 90%

The temperature limits shown apply to the pump components and must be respected to avoid possible damage or malfunction.

13 INSTALLATION

FOREWORD

The MC BOX can be installed outdoors. Nevertheless, it is advisable to locate it under the shelter of a roof to ensure the dispenser's longevity and provide greater comfort during refueling in the event of bad weather. The installation of the dispenser must be carried out by skilled personnel and performed according to the instructions provided in this chapter.

WARNING Authorised installation per- sonnel



All installations must be carried out by authorised and competent personnel only. Authorised persons must

- install the system in dry and well-ventilated place;
- ensure the correct installation of equipment required for the correct functioning of the pump;
- only use accessories that have been supplied with the system.

ATTENTION



The use of accessories that are unsuitable and were not provided with the system is strictly prohibited. Piusi S.p.A. accepts no responsibility for damage to persons, property or the environment caused by failure to comply with this requirement.

THE DISPENSING SYSTEM IS FOR PROFESSIONAL USE ONLY.

As per the current legislation, the system must be used in premises that are sufficiently well-lit.

The system has been specifically designed for use in a dry place. If installed outside, an adequate protective covering must be provided.

ELECTRICAL CONNEC- TIONS

ATTENTION



The MC BOX Electronic Panel does NOT come with protective switches; it is therefore mandatory that the MC BOX be installed with an electrical panel that is suitable to the individual MC BOX and has a differential power switch or, at the very least, a fast-access device such as a socket/plug, to be used in the event of anomalies;

All the electronic components found within the MC BOX container have been pre-wired and tested at the factory; as such, it is NEVER necessary to have the MC BOX opened by the person who installed it or the plant operator, unless the fuse protection on the I/O card needs to be replaced;

The installer should carry out a plug/socket connection for a quick sectioning of the electric system in case of failures.

The MC BOX is equipped with 3 junction boxes. These can easily be accessed by opening the door to where the screw terminals for the external cable connections are located.

ATTENTION



Before accessing the electrical parts, be sure that you have disconnected all of the general switches that power the device.

The connections that need to be made vary according to the model (AC or DC):

MC BOX AC:

INPUTS

AC mains supply

OUTPUTS

AC motor power the same voltage as the mains

NOTE

Voltage: 230Vac or 110Vac, depending on the maximum power of the pluggable motors:

- 230Vac version = 1400 W
- 110Vac version = 750 W

Nozzle contact:

clean contact: Open with nozzle replaced and Closed when nozzle dispensing

Level contact:

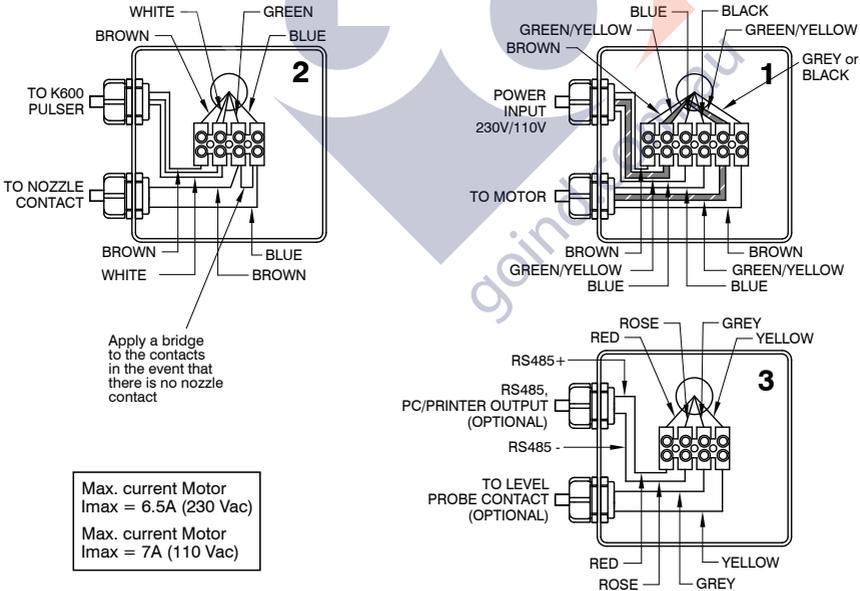
clean contact: Open with nozzle in normal conditions and Closed below the minimum flow level

Pulse meter input:

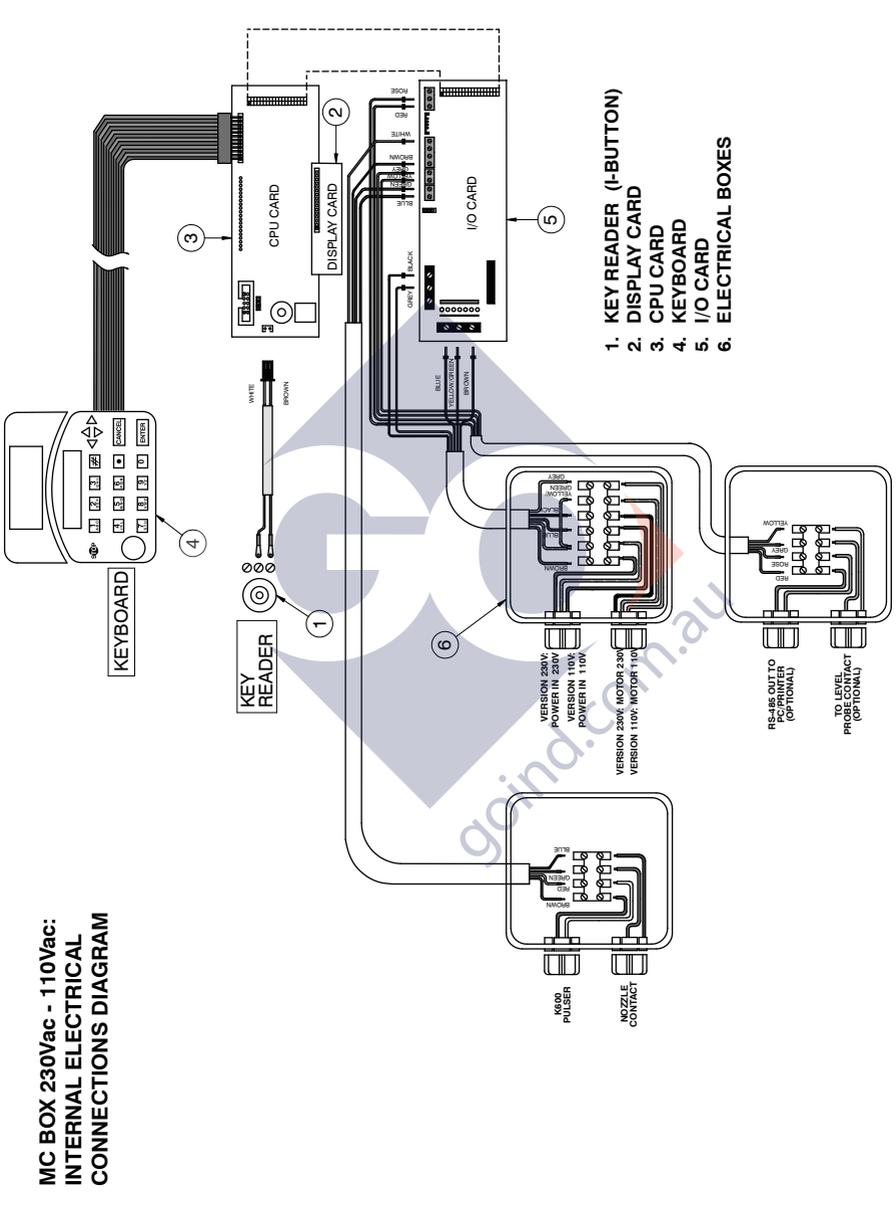
clean contact or Open Collector output signal, with 60 Hz maximum frequency and between 20% and 80% duty cycle

The RS 485 data line to the PC (optional)

MC BOX 230Vac - 110Vac: EXTERNAL ELECTRICAL CONNECTIONS DIAGRAM



**MC BOX 230Vac - 110Vac:
INTERNAL ELECTRICAL
CONNECTIONS DIAGRAM**



MC BOX DC:

INPUTS

DC Power Supply

OUTPUTS

DC motor power is the same as the supply voltage

NOTE

Voltage: 12Vdc or 24Vac, depending on the maximum power of the pluggable motors:
 • 12Vdc version = 600 W
 • 24Vdc version = 600 W

Power input WITH IGNITION ON. Given the DC systems' high power absorption, the motor should be powered while the battery is being recharged

By removing a jumper and inserting the "in ignition" contact in its place, the electronics can be powered only when the vehicle is switched on

Nozzle contact:

clean contact: Open with nozzle replaced and Closed when nozzle dispensing

Level contact:

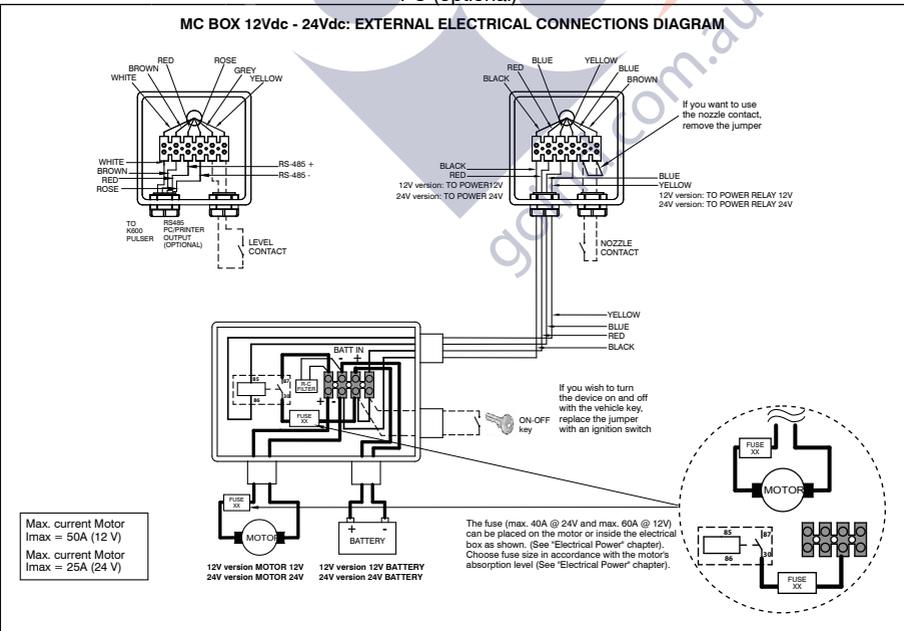
clean contact: Open with nozzle in normal conditions and Closed below the minimum flow level

Pulse meter input:

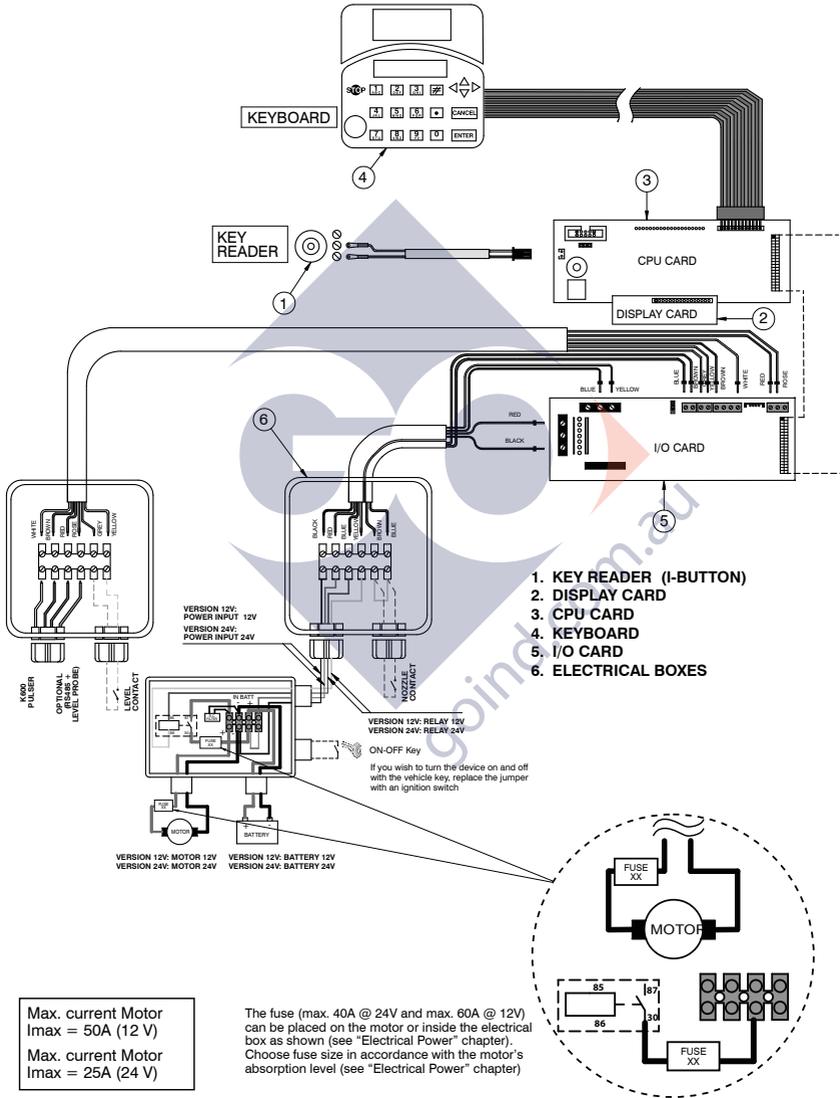
clean contact or Open Collector output signal, with 60 Hz maximum frequency and between 20% and 80% duty cycle

The RS 485 data line to the PC (optional)

MC BOX 12Vdc - 24Vdc: EXTERNAL ELECTRICAL CONNECTIONS DIAGRAM



MC BOX 12Vdc / 24Vdc: INTERNAL ELECTRICAL CONNECTIONS DIAGRAM



Z E

14 COMMISSIONING

FOREWORD

To correctly commission the MC BOX the sequence of operations indicated below must be followed and the MC control system functions must be known (see attached manual).

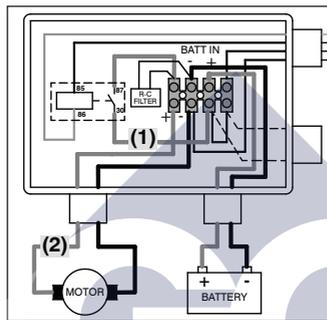
ELECTRICAL POWER SUPPLY

Once the power connections have been made, the MC BOX can be energised by means of the master switch to be fitted by the installer on the upstream line. Switching on of the MC system will be indicated by the lighting up of the two backlit LCDs fitted on the front.

NOTE



In the event of continuous current power supply (DC), a fuse size that is appropriate to the DC motor's absorption level should be introduced to the motor power line. For example:



- If the connected motor is one that absorbs 10A max then a 12A delay fuse should be inserted.
- If, however, the motor absorbs 50A max, then a 60A delay fuse should be inserted.
- If the fuse is small, it can be fitted along the cable inside the junction box, in position (1) (see illustration)
- If, however, the fuse is very big (e.g. 60A) and cannot physically fit inside the box, then it can be inserted along the motor's power supply cable in position (2) (see illustration)

STATION CONFIGURATION ATTENTION



Every MC BOX station can be adapted to the specific requirements of the station manager. To do this the MC control system must be CONFIGURED.

MC configuration is crucial and must be done by skilled personnel. To perform this operation, the MC manual must be carefully and thoroughly read.

After completing configuration, user PIN CODES can be assigned to the persons charged with using MC BOX (USER PIN), in accordance with the detailed information in the MC manual

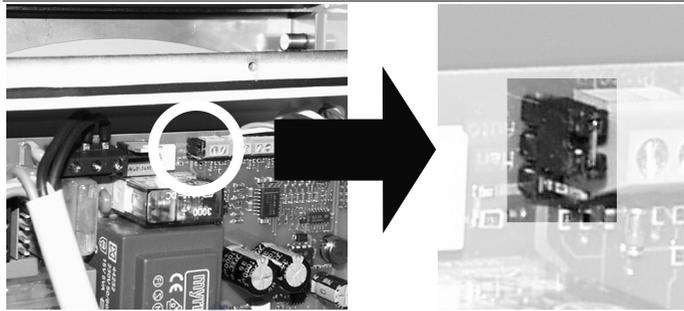
DISENGAGING THE "MC" SYSTEM

All the MC BOX functions are controlled by the MC control system. The MC system can never the less be disengaged for any startup or maintenance activities requiring repeated pump starting. In these case, it is often convenient to simplify pump startup by not having to enter any code and record any dispensing data. To do this, a JUMPER has been fitted on the card that permits switching from AUTOMATIC mode (code request to access dispensing) to MANUAL mode (no code request).

ATTENTION



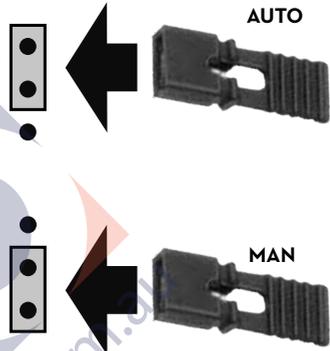
The jumper is only accessible by opening the front panel and is positioned as shown in the photo. In this operating mode, MC does not record any data relating to performed dispensing operations. BEFORE ACCESSING THIS JUMPER, ALWAYS INTERRUPT THE POWER SUPPLY



2

In MANUAL mode:

- The MC LCDs could be off or continue to display whatever was showing at the time of switch over from AUTO to MAN.
- To start the pump, no PIN CODE is required; the pump will start as soon as the nozzle is taken off its seat and will stop when the nozzle is put back.
- The quantity dispensed by MC BOX is not indicated in any way.



15 METER CALIBRATION

Before using the MC BOX station, check the METER ACCURACY.

For this purpose, proceed as follows:

- Enter a previously enabled USER PIN code.
- Run the fuel into a calibrated container.
- Compare the quantity of dispensed diesel fuel using a calibrated container.

ATTENTION



To correctly check accuracy, always keep to the following instructions:

- **Use a precision sample container, featuring a graduated scale, with a capacity of at least 20 litres.**
- **Before making the check, always make sure you have eliminated all the air from the system and then run the fuel until a full and regular flow is achieved.**
- **Dispense continuously at MC BOX maximum flow rate**
- **Stop the flow by quickly closing the nozzle.**
- **Reach the graduated area of the sample container, avoiding prolonged dispensing at low flow rate, but rather performing short dispensing operations at maximum flow rate.**
- **Compare the reading provided by the container, with that provided by MC BOX, after waiting for all the froth to disappear.**

Should accuracy NOT be satisfactory, CALIBRATE the FUEL METER following the instructions supplied in specific manual.

ATTENTION



Differences of up to 1/10 of a litre affecting the dispensing of 20 litres of fluid fall within the guaranteed accuracy of +/- 0.5%.

ATTENTION



For dispensing equal to or less than 2 liters, the manufacturer does not guarantee the same precision of counting.

16 DAILY USE

Thanks to the MC control system, all the MC BOX models provide access to authorised users only. MC acknowledges User authorisation by means of two alternative systems:-The entering of a 4- figure SECRET CODE (PIN CODE).- The fitting of an electronic key (OPTIONAL).

ATTENTION



All the users to whom a PIN CODE is assigned must be adequately instructed and be at least acquainted with the contents of this chapter.

The configuration of the MC system permits requiring the User to enter further optional data(vehicle licence plate, mileage, quantity to be dispensed). See MC manual for details. If these options are not set, MC recognises an authorised PIN CODE and immediately enables the pump to dispense fuel.

ATTENTION



Such enabling does not result in immediate pump startup. The pump is in fact controlled by a switch (positioned in the nozzle seat) operated by the user.

The pump will start (if previously enabled) just as soon as the control lever is moved to ON position, while it switches off as soon as the control lever is moved to OFF position. No further manual operation is required to start or stop the pump.



16.1 FUEL DISPENSING

ATTENTION



Fuel shall be ABSOLUTELY dispensed under the User's strict supervision.

In case of simple configuration (no optional data to be entered), dispensing takes place as follows:

•Insert PIN CODE

(or apply the electronic key) If the MC recognises the activated PIN (or key), a "GOOD MORNING MANAGER / USER" message is displayed and the pump enabled. For details on dispensing options, please refer to the M0187 manual.



17 MAINTENANCE

17.1 ROUTINE MAINTENANCE

The MC system is maintenance free. To control it however, refer to the dedicated MO187 manual provided.

17.2 SPECIAL MAINTENANCE

CHECKING AND REPLACING FUSES

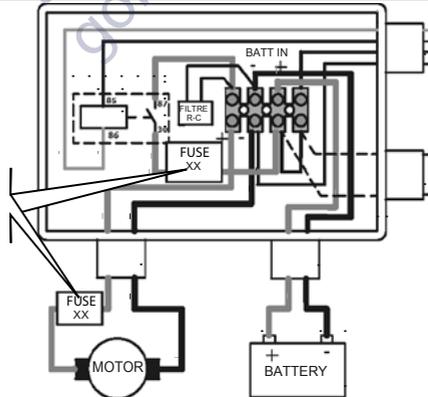
- To check and replace contained fuses
- on the electronic boards and/or
 - in the junction box (for DC versions):
- 1 - Remove voltage from the device;
 - 2 - Open the door to the MC BOX with the special key;
 - 3 - Open the junction box that contains the motor fuse (DC only) for verification and possibly replacement;
 - 4 - Unscrew the metal back panel to access the electrical boards compartment;
 - 5 - Check the condition of the fuses and replace if necessary

MOTOR FUSES (AC Motors)
• 8 A T (Rit)

POWER FUSE
• 100 mA T (Rit) for the 230V / 50 Hz version
• 200 mA T (Rit) for the 110V / 60 Hz version
• 1 A T (Rit) for versions DC 12 Vdc and 24 Vdc



MOTOR FUSES (DC Motors)
• The fuse (max. 40A @ 24V and max. 60A @ 12V) can be placed on the motor or inside the electrical switch box (see "Electrical Power" chapter) Choose fuse size in accordance with the motor's absorption level (see "Electrical Power" chapter).



6 - Shut down everything and restore power

18 TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSES	POSSIBLE SOLUTIONS
The MC BOX does not switch on	Power supply has failed due to: <ul style="list-style-type: none"> • The power leads being connected incorrectly • The upstream circuit switch being in the OFF position • The power supply fuse being interrupted • For DC versions: vehicle key in the OFF position (if the “ignition on” power supply option has been adopted) 	<ul style="list-style-type: none"> • Check connections • Ensure disconnect switch is in the ON position • Check fuse • Turn the vehicle key to the ON position
The MC BOX turns on and the displays light up but no words appear. The MC BOX turns on and the displays light up but the words that appear are irregular and the system does not respond to any commands	AUTO/MAN jumper in the MAN. position	Put the jumper to the AUTO position
The system does not recognise the “USER” with PIN CODE or Electronic key	<p>The user has not yet been configured by the system MANAGER</p> <p>The key has not been linked to the User by the system MANAGER</p> <p>The keyboard is damaged and does not insert the data properly</p> <p>The electronic key is damaged and is no longer recognised by the system</p>	<p>The system MANAGER sets up a New User</p> <p>The system MANAGER links the key to the User</p> <p>Change keyboard (contact technical support)</p> <p>Change electronic key (contact technical support)</p>
The MOTOR will NOT START	<p>It has not been connected properly to the set terminals</p> <p>Action not permitted by nozzle contact</p>	<p>Check connections</p> <p>Check how the nozzle contact option has been set (YES/NO) and the status of the relevant jumper</p>
DOES NOT COUNT when dispensing	<p>The Pulsar that emits the count signals has not been connected properly</p> <p>The Pulsar that emits the count signals is NOT compatible with the electronics</p>	<p>Check pulser connections</p> <p>An incoming electronic signal, namely “clean contact” or “OpenCollector”, should be received. If the input signal is an incompatible voltage signal, the electronic board is likely to be damaged, in addition to the malfunction</p>
The count is INACCURATE	The system is NOT calibrated	Calibrate the system according to the procedure



<p>The count remains INACCURATE even after calibration, or it is accurate but only for low flow rates</p>	<p>The signal sent by the Pulser is outside the acceptable electronic ranges</p>	<p>The maximum pulsation frequency must be 70 Hz and between 20% and 80% duty cycle. The system does not process received data correctly outside the acceptable electronic ranges. The system must be adapted to fit within the correct ranges, possibly by interposing other electronic interface devices (please contact Technical Support for options)</p>
<p>It DOES NOT COMMUNICATE with the PC</p>	<p>The RS485 connection is not correct The driver on the PC is not installed properly or the version is not compatible with the PC's Operating System The RS232 or USB converter is damaged The PC's USB or RS232 port is damaged</p>	<p>Check the connections Check the versions of the drivers and the Operating System. Contact Technical Assistance Try with a different converter: if the problem disappears, replace the converter Try a different port or try it on a different PC to check the rest of the device: if it works on another PC, then the problem is with the PC</p>



19 DEMOLITION AND DISPOSAL

Foreword

If the system needs to be disposed, the parts which make it up must be delivered to companies that specialize in the recycling and disposal of industrial waste and, in particular:

Disposing of packing materials

The packaging consists of biodegradable cardboard which can be delivered to companies for normal recycling of cellulose.

Metal Parts Disposal

Metal parts, whether paint-finished or in stainless steel, can be consigned to scrap metal collectors.

Disposal of electric and electronic components

These must be disposed of by companies that specialize in the disposal of electronic components, in accordance with the indications of directive 2012/19/UE (see text of directive below).

Information regarding the environment for clients residing within the European Union



European Directive 2012/19/UE requires that all equipment marked with this symbol on the product and/or packaging not be disposed of together with non-differentiated urban waste. The symbol indicates that this product must not be disposed of together with normal household waste. It is the responsibility of the owner to dispose of these products as well as other electric or electronic equipment by means of the specific refuse collection structures indicated by the government or the local governing authorities.

Disposing of RAEE equipment as household wastes is strictly forbidden. Such wastes must be disposed of separately.

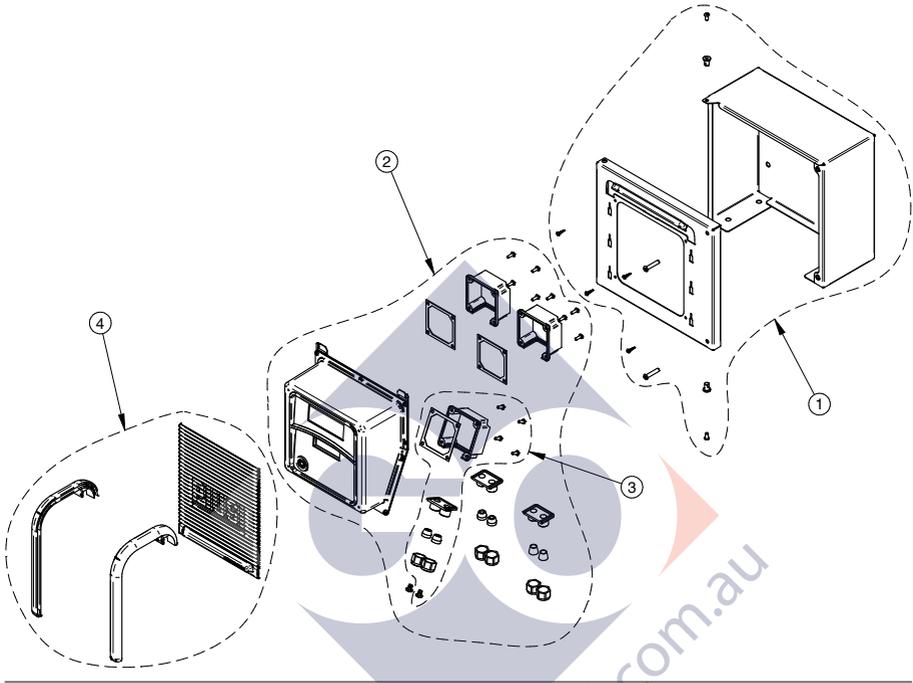
Any hazardous substances in the electrical and electronic appliances and/or the misuse of such appliances can have potentially serious consequences for the environment and human health.

In case of the unlawful disposal of said wastes, fines will be applicable as defined by the laws in force.

Miscellaneous parts disposal

Other components, such as pipes, rubber gaskets, plastic parts and wires, must be disposed of by companies specialising in the disposal of industrial waste.

20 SPARE PARTS EXPLODED VIEWS





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