C Series

Retail / Volume displays
Dispenser / Suction
Range of speeds:
- 50, 70, 90, 180 lpm

W&M, MID, OIML approved
Spirit (ATEX) Petroleum, Adblue®
Stainless Steel construction

Commercial Diesel 50 lpm

Retail Adblue® Dispenser 50 lpm
Connection to payment terminals
Standalone
Prepay option, with keypad
Programmable via handset

Double sided option
High hose & Hose Reels options
**C Series**

Operators Manual

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Issue No.: 2

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LPG Dispenser

Mono Commercial Diesel 180 lpm

De-bowser

**C Series**

Many specialist applications

Marinas / Airports / Bus Depots

Forecourts / Commercial yards
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1. Product Description

Pumptronics range of Series C Pumps & Dispensers are equipped for use at Filling Stations / Fuel Bunkering sites for the delivery of liquid fuels and Adblue® into the tanks of automobiles, commercial vehicles, boats, light aircraft and portable containers at flow rates of up to 180 l/min. Within each model range there are versions for standard delivery up to 50 l/min (e.g. car refuelling) and high Speed up to 180 l/min (e.g. truck refuelling). Combinations of both are available.

Approved and certified for accuracy and safety our Pumps & Dispensers can be used for public retail and so the measuring devices meet the requirements based on the European Union’s Measuring Instruments Directive (MID), OIML R 117 the International Organization of Legal Metrology and are approved under UK National Weights and Measures. Our C-series products are certified to British Standard BS7117, ATEX EN 13617-1 and, while Weights & Measures approval for the re-sale of fuel is included wherever applicable. All petroleum and gasoline units are approved for use in hazardous areas, making our pumps the ideal choice for safety and accuracy.

Because of alternative delivery of fuels with hazardous class AI or AIII, Pumps & Dispensers are designed with Explosive Protection in accordance to directive 94/9/EC (note Hazardous Class for Adblue® is an option).

For meeting environmental protection requirements, Pumps & Dispensers can be equipped with vapour recovery systems and vapour recovery monitoring systems.

All Pumps & Dispensers are equipped with pumping and measuring systems controlled by an electronic processing system.

For the delivery of fuels, Pumps have a suction pump located within the unit whereas Dispensers generally have submerged pumps located within the feed / storage tanks.

Explosion protected single phase or 3 phase Exe motors drive the fuel pumps.

Pipes and flexible hoses connect the nozzle to the hydraulic output of each measuring device. A sight glass may be fitted between the nozzle and hose or between the hose and the meter outlet. For applications with special requirements, Pumps & Dispensers can be equipped with vapour recovery systems and vapour recovery monitoring systems where special nozzles and hoses, as well as vacuum pumps and control units are used.

Pumps & Dispensers are equipped with Safety Break coupling mounted within the nozzle. If the vehicle drives away leaving the nozzle in the tank, a built in safety valve stops the flow of fuel at the hose.
The force required to operate the Safety Break is such that during normal use a break will not occur. Excessive force for example, a vehicle driving away, the Safety break will detach without spillage of fuel and prevent greater damage to the Pump & Dispenser and to the environment. However, damage to the pump enclosure, hoses etc. cannot be completely prevented in some cases when a vehicle is driven away the hose still connected.

In certain circumstances additional in line Safety Breaks can added between the pump outlet fitting and the hose. This is a requirement for all MOD installations to comply with DMG14.

With the exception of Adblue® all pumps / dispensers meet EN 13617-1

Adblue units can be supplied to meet the requirements of EN13617-1 but requires a specific upgrade.

2. Operating Instructions

Pumptronics range of Series C Pumps & Dispensers are equipped for use at Filling Stations / Fuel Bunkering sites for the delivery of liquid fuel as into tanks of automobiles, commercial vehicles, boats, light aircraft and portable containers.

The delivery process starts after the removal of the nozzle. A nozzle switch operates to indicate the removal of the nozzle to the computer control unit. The control computer checks for an authorisation signal and if approved sets the displays to show all 888888 s, then after a short delay resets the figures to zero and starts the required pump motor (or submerged pump). Solenoid valves (if fitted) will then operate shortly after and also the vapour recovery system (again if fitted).

Suction pumps are fitted with by-pass valves, adjusted to zero flow pressure, to return the undelivered fuel back to the suction side of the pump whilst the nozzle is closed. After opening the nozzle, fuel flows through the filter, through the non-return valve and into the gas/air separator. Here any gas or air is removed and released to atmosphere through the protected air vent on the side of the unit’s body.

The flowing fuel rotates the measuring device which in turn rotates the double pulser, whose pulses are then transmitted to the control computer. During verification tests, the actual pulse value is determined and saved. The two phase shifted pulses enable pulse monitoring and hence fault free impulse transmission.
The incremental volume is indicated on the display. Simultaneously, the total sale price is calculated from the memorised price. (Retail models)
The measured fuel is flowing through the pipes to the connection point of the hose (in this position a sight glass may be fitted). The fuel flows through the flexible hose into the nozzle. A hand operated lever by which the flow rate can be controlled opens the nozzle. The nozzle stops automatically when the fuel touches the end of the spout. The nozzle will also only operate if its spout is tilted downwards.

Fuel delivery measurement stops by closing the nozzle and returning it back into its holster. The control computer then stops the pump motor, closes the solenoid valve and stops the vapour recovery systems, if fitted.

If the Pump & Dispensers is fitted with vapour recovery system, a nozzle with a vapour suction inlet is used. The vapour canal is linked to the coaxial coupling in the vapour hosed inside the fuel hose. The end of the coaxial hose is fastened to a connector linking the vapour line to a separate pipe, which then connects to the vapour pump that returns the vapour back to the fuel storage tank

The vapour pump is driven by a motor in combination with a proportional solenoid valve with the specialised nozzle. By this means the, the vapour flow is controlled proportional to the fuel flow.

Vapour recovery systems may also be equipped with automatic monitoring systems to analyse the actual vapour to fuel flow ratio and stop the Pump or Dispenser in case of a system fault

3. Use as Directed

General Safety Information / Danger Warnings.

- **Deviations from stated use may cause risk to individuals and/or the equipment.**

- **Any changes made to this equipment could invalidate the equipment’s type Approval certificate.**

All Pumps & Dispensers are only to be used for the delivery of motor fuels in accordance with BSEN 590 specification for Diesel Fuels, BSEN 228 specification for unleaded Petrol (Gasoline), BS EN 7800 for High Octane super unleaded, JETA & A1 DEF STAN 91-91 & Avgas DEF STAN 91-90 or equivalent, Adblue® in accordance with ISO 22241 and Biodiesel in accordance with EN 14214
These fuels contain dangerous substances. When using such fuels, always refer to the relevant Data Instruction Sheets.

Always adhere to National and/or Local Safety/Security regulations.

The site operator has to ensure that the following instructions are displayed within the operating range of the Pump or Dispenser, namely as a Graphic or Written signs, e.g.:

- No smoking, fire or naked flames
- Turn off engine
- Fill only authorised containers.

The Site Operator must ensure that the area around the Pump or Dispenser is adequately illuminated to enable its safe use.

It is also recommended that appropriate chemical spill kits are readily available to contain any accidental spillage.

4. Operating Instructions for the User (driver or refuelling operator)

The use of these fuel pumps is only permitted with completely closed and secured display housing, panels and doors.

Pre-Conditions of use:

- Turn off engine and ancillary heating equipment.
- Turn off electrical equipment.

Refuelling Process:

a. Remove nozzle from its holder.

   For retail pumps the unit price is shown at the display

b. Check display shows “888888” and then zeros

c. Insert the nozzle spout fully into the tank filler neck.

   The pistol has an integral safety tilt device, which stops the delivery of fuel when the spout is positioned horizontally or higher.

d. Pull the nozzle trigger

   The trigger regulates the fuel flow.
In order to minimise static where possible it is recommended that the operator keeps the hand on the nozzle during refuelling, where this is not possible operator should touch the metallic part of the vehicle frame at least 1m away from the tank filler neck before re touch the nozzle.

The delivery volume (for Commercial) and price to pay (for Retail) are updated continuously in the Pump or Dispenser display, the nozzle is fitted with an automatic shut off, stopping the fuel delivery when the vehicle tank is full. Before removing the nozzle from the tank filler, ensure that remaining fuel is allowed to drip into the vehicle tank.

When removing the nozzle from the fuel filler try to ensure that no remaining fuel can drip from the nozzle spout onto shoes, clothing, the vehicle or the ground.

e. Replace the nozzle in its holster.

Delivered volume (commercial) price to pay (retail) are still shown on the Pump or Dispensers display.

Attention! Ensure that the hose is returned to its intended position and it is not left lying on the ground.
5. Operating Instructions for Site Manager.

Settings and information is available to the Site Manager by means of either a Key operated switch (located on the site of the head enclosure) or by an Infra-red remote handset.

**Before using the Infra-red handset OR Key switch, ensure that all nozzles are stowed in the holsters.**

5.1 Access to the volume & Weights and Measures function is via a hand held Remote controller. Standard on ALL Retail models, and as an option for Commercial models

**Key Switch Operation (when fitted)**

This Management control device is only suited to Commercial model pumps and dispensers. A single key is used to select three functions.

1. **W+ M = Weights & Measures mode** (used for calibration testing)
2. **RUN = This position is for normal “running” mode** (The key can only be withdrawn in this position)
3. **TOTE = causes the display to reveal the units volume totaliser.**

**Infra-red Remote Handset Operation (when fitted)**

Care should be taken when programming pumps located close together that only the pump required is receiving the IR signal.
The Infra-red menu operation is divided into two menus:

**Operator Menu** – used for reading the Volume & Cash totalisers

**Manager Menu** – used for accessing and changing stored details and settings

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<th>Description</th>
<th>Operator Level</th>
<th>Manager Level</th>
</tr>
</thead>
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<td>1</td>
<td>Weights &amp; Measures dispensing mode</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>2</td>
<td>Standalone or Self-Service operation</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>3</td>
<td>Change Manager password</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>4</td>
<td>Side 1 or mono Volume Totaliser</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Side 2 (twin) Volume Totaliser</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Side 1 or mono Cash Totaliser</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Side 2 (Twin) Cash Totaliser</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>8</td>
<td>Standalone price setting (PPL)</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>9</td>
<td>Pump Number (Gilbarco comms only)</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>#</td>
<td>ERS (Error Reporting)</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

**Operator PIN:** - fixed to 111111.

**Managers PIN:** - default setting 123456.

We would strongly advise that you change the managers PIN following the instructions in 5.33 – Menu 3.

*(The new PIN number must be secure and not divulged to those who do not need to know. A forgotten PIN numbers can be costly to retrieve)*
5.2 Operator Menu.
Enter the menu by using the IR controller, entering * then the PIN. On correct entry the pump will enter the Operators Menu, which is indicated by 00.00 reading on the Master Display. To exit this menu press the * KEY to return to normal pump operation.

5.21 Menu 4 – Side 1 Volume Totaliser
To select volume totes for side 1, press KEY 4. The Sales display will show 04.01 indicating that Menu 4 has been selected and that the information on the pump relates to grade 1 (left side). The tote will appear as a 10 digit display with the first 6 (most significant) figures being shown in the Volume display and in the price display to two decimal places. To exit this menu press the * KEY to return to normal operation.

5.22 Menu 5 – Side Two (Twin) Volume Totaliser
To select volume totes for side 2, press KEY 5. The Sales display will show 05.02 indicating that Menu 5 has been selected and that the information on the pump relates to grade 2 (right side). The tote will appear as a 10 digit display with the first 6 (most significant) figures being shown in the Volume display and in the price display to two decimal places. To exit this menu press the * KEY to return to normal operation.

5.23 Menu 6 – Side 1 Cash Totaliser
To select cash totes for side 1, press KEY 6. The Sales display will show 06.01 indicating that Menu 6 has been selected and that the information on the pump relates to grade 1 (left side). The tote will appear as a 10 digit display with the first 6 (most significant) figures being shown in the Volume display and in the price display to two decimal places. To exit this menu press the * KEY to return to normal operation.

5.24 Menu 7 – Side 2 Cash Totaliser
To select cash totes for side 2, press KEY 7. The Sales display will show 07.02 indicating that Menu 7 has been selected and that the information on the pump relates to grade 2 (right side). The tote will appear as a 10 digit display with the first 6 (most significant) figures being shown in the Volume display and in the price display to two decimal places. To exit this menu press the * KEY to return to normal operation.
5.3 Managers Menu.
The managers menu is designed for manager’s use only, it is used to change passwords, prices and to put pump in and out of manual operation.

5.31 Menu 1 – Weights and Measures Test Setting
From the Managers menu select KEY 1, Display reads 01.00 to indicate Weights and Measures mode. Entering this menu puts the pump into test mode where an additional decimal place is displayed on the volume display. On selection of this menu, IR functions are automatically exited after 15 seconds and the pump will operate in weights and measures mode. To restore normal operation the same menu can either be re-entered OR by switching the pump power off and back on. The pump will revert back to normal operation.

5.32 Menu 2 – Manual Operation/Self Service Operation. (Revised 2014)
From the Managers menu select KEY2 on the infra-red remote handset. The Display reads either 02.00 (automatic / comms mode) or 02.88 (Standalone or Manual mode) Pressing the “#” key will toggle between to two modes. When pressing the “#” the mode will begin to flash, indicating that the pump will change to that mode ONLY IF the power to the pump is removed and restored within the next 30 seconds. Failure to cycle the power within this time period will resulting the mode change request being ignored.

Manual, Standalone Mode …
- Green LED on display is dark
- Price (Retail model) is set by infra-red handset (menu 8)

Automatic, Self Service Mode…
- Green LED is lit (or flashing)
- Price (Retail model) is set by 3rd party console equipment

5.33 Menu 3 – Change Managers Password.
From the Managers menu select KEY 3, Display reads 03.00 indicating managers password change menu. Enter the new 6 digit number, this will be displayed in the litres display position and the display will flash. To confirm the new code, you must re-enter it and the display will flash. To store the new code press the # KEY. To exit this menu press the * KEY twice to return to normal operation.
5.34 Menu 8 – Manual Price Setting in Manual Operation

When in manual mode the dispenser will display the grade prices set in their computer memory. The grade prices can be set via the hand held Infra-red (I/R) handset using the following procedure

a) Enter the managers menu by using the IR controller, entering the Managers password. On correct entry the pump will enter the Managers Menu, which is indicated by 00.00 reading on the Master Display.

b) To select manual price set, press KEY 8 to activate the manual price set menu. The display will show 08.01 indicating that Menu 8 has been selected and the information relates to Grade 1 (left side of dispenser).

c) Select the number of the grade to be altered by pressing the appropriate number on the IR controller keypad. Side 1 (left), side 2 (right).

d) When the required grade has been selected, the # KEY should be pressed to edit the price. The menu display will flash to indicate that the price displayed is open for editing and the price display will clear to show 00.00.

e) Enter 4 digits for the new price required (the decimal place is fixed and does not require entering). Press the # KEY to save the new price. The menu display will the stop flashing and another grade can be selected if required.

f) To exit the manual price setting mode press the * KEY to exit back to the menu, press * key again to exit the IR control operation. The price will only change on the displays once the relevant nozzle(s) have been removed from the holsters.

Note

The grade price must be in excess of the minimum price per litre, (fixed to 20 pence or cents per litre, otherwise the pump is disabled as a security measure.)
5.35 Menu 9 – Pump Number Set –Up DOMS Box / T24 Interface (Gilbarco protocol)
Pumps which are connected to a kiosk system using the Gilbarco protocol (4800 Baud UK) (ie. DOMS / T24 /TS1000 etc…) utilises an addressable pump interface. This requires each hose to be uniquely numbered. The hose number is stored at the pump and is repeated at the kiosk system. If the hose numbers are not set-up at the pump, the kiosk system will be unable to communicate the pump. 
**Note** the pump number must be set-up with the kiosk system. No two pumps can have the same number

5.36 Mono units

Pump Number...

a) From the Managers menu select KEY 9. The display will read 09.XX where XX is the current number setting on the pump.

b) Press # key to change the pump number, XX on the display will flash to acknowledge.

c) Enter the new two digit pump number, e.g. if the pump number required is 9 then press the 0 key followed by the 9 key. The valid range of pump number entry is 01 – 16; all other numbers will cause a default to pump number 16.

d) To store the new pump numbers press # key. At this point the old pump number will stop flashing. The new number is now stored.

e) If a mistake is made press * to abort menu 9, then repeat the above steps.

   Pump Mode...
   f) Press “3” key to change the Pump Emulation mode

   g) Press # key to toggle between “1”=Highline2 (4800) and “2”=Euroline (5787)

   h) Press * key twice to EXIT menu.

   i) Power the pump OFF and wait for 10 seconds. Power the pump back up, and the new pump number should be activated
5.37 Twin units

a) From the Managers menu select KEY 9. The display will read “09.01”. The 01 indicates the pump left-side is currently selected.

b) The SALE display will read 09.01 where 01 is the side. The PRICE display will read XX should match the pump number programmed into the console.

c) For Side 1 – Display reads 09.01

d) Press # key to change the pump number, XX on the display will flash to acknowledge.

e) Enter the new two digit pump number, e.g. if the pump number required is 9 then press the 0 key followed by the 9 key. The valid range of pump number entry is 01 – 16; all other numbers will cause a default pump number 16.

f) To store the new pump numbers press # key. At this point the side number e.g. 09.01 will stop flashing. The new number is now stored.

g) If a mistake is made press * to abort menu 9, then repeat the above steps.

h) For Side 2 – Display reads 09.01. Press button 2. Menu now reads 09.02

i) Enter the new two digit pump number as described in section e above. (Ensure that each side is set to different numbers so not to cause contention in the console communications.

j) To store the new pump numbers press # key. At this point the side number will stop flashing e.g. 09.02 (Menu 9 side 2) old pump number will be replaced with the new pump number will be shown. The new number is now stored.

Pump Mode...

j) Press “3” key to change the Pump Emulation mode

k) Press # key to toggle between “1”=Highline2 (4800) and “2”=Euroline (5787)

k) If a mistake is made press * to abort menu 9, then repeat the above steps.

l) Press * key twice to EXIT menu.

m) Power the pump OFF and wait for 10 seconds. Power the pump back up, and the new pump number should be activated
5.34 Menu # – E.R.S. (Error Recording System) Menu operation.

The ERS records and stores any events or errors that have been detected by the internal verification system. By using the “#” (hash) menu, the last eight recorded errors can be viewed. This function is intended for use by visiting service engineers.

From the 00.00 menu screen, press the # KEY and the display will initially display the number 31 (menu 31). After a short delay the screen will then scroll a 6 digit number that represents the last error recorded.

The Infra-red remote Handset has legends on the buttons indicating that KEY 2 also functions as and “UP” and KEY 8 also functions as a “DOWN”

By pressing “DOWN” (KEY 8) the menu will change to number 32 and then scroll to show the previous error. This can be repeated (pressing DOWN… or UP) to see the last eight errors. 31- 38. Menu 31 being the most resent and 38 the oldest.

Stored Error code display
So each menu scrolls a 6 digit code. The code provides the following information...
1st digit = side number (1 = left, 2 = right, 3 = Board)
2nd digit = error code (same as codes flashed on the LEDs)
Remaining 4 digits = the number of successful fuelings since the error was recorded

For example...

140025  =  left side, encoder error, 25 fuelings ago.
210000  =  right side, price error, last fuelling.

Board errors...

360012  =  CPU reset unexpectedly

For a full list of errors and codes please see the chapter on “Trouble Shooting”
6. Trouble Shooting

The unit includes a number of self-diagnosing features. The electronic register is able to detect and interrupt fuelling processes if it detects the pump is not working or recording correctly.

A small cluster of LEDs are visible on the “Master” display.

**Yellow LED** indicates pump status

- Flashing once per second – normal CPP operation
- Flashing twice per second – Replace nozzle in holster
- Permanently on / off – Power supply / Board Fault

**Green LED** indicates Comms activity

- Dark indicates Standalone mode*
- Light or flashing indicates connection to 3rd party Console or Kiosk.

*In pulse mode the green light will flash when sending pulses to a 3rd party monitor, and will return to dark state when in idle.
6.1 Error codes

Unexpected interruption to fuelling will result in a code being both flashed on the LEDs on the Master display and the code being stored in the internal memory that can be accessed via the “#” menu in the Infra-red manager menus.

If the pump cuts out unexpectedly during a fuelling, look in the bottom right corner of the display and observe the following. The Amber and green light will flash together and will flash a number of times followed by a pause and then repeat.

The number that is flashes corresponds to the error or condition detected whilst fuelling is in progress.

<table>
<thead>
<tr>
<th>Flash Sequences</th>
<th>Fault Description</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 FLASHERS (pause) 1 FLASHERS</td>
<td>Price under minimum allowable (&lt;20p)</td>
<td>Set price to 20p or above</td>
</tr>
<tr>
<td>2 FLASHERS (pause) 2 FLASHERS</td>
<td>Error on MASTER display unit</td>
<td>Check connections / replace display</td>
</tr>
<tr>
<td>3 FLASHERS (pause) 3 FLASHERS</td>
<td>Error on SLAVE display unit</td>
<td>Check connections / replace display</td>
</tr>
<tr>
<td>4 FLASHERS (pause) 4 FLASHERS</td>
<td>Encoder Error</td>
<td>Check connections / replace encoder</td>
</tr>
<tr>
<td>5 FLASHERS (pause) 5 FLASHERS</td>
<td>Timeout</td>
<td>Internal timeout activated</td>
</tr>
<tr>
<td>6 FLASHERS (pause) 6 FLASHERS</td>
<td>Third party comms timeout</td>
<td>Timeout activated</td>
</tr>
<tr>
<td>7 FLASHERS (pause) 7 FLASHERS</td>
<td>LPG safety cut-out</td>
<td>Check flow rate, and check for leaks</td>
</tr>
<tr>
<td>8 FLASHERS (pause) 8 FLASHERS</td>
<td>De-bowser storage tank full or... LPG creepage</td>
<td>Overfill prevention switch activated, LPG Losing Prime</td>
</tr>
</tbody>
</table>

Multiple error codes can be displayed concurrently, flashing the each code one after another, then followed by a 3 second pause. The sequence will repeat until the nozzle is returned to its holster.
7. Care and Maintenance by Site Operator

Care and maintenance by the site operator is limited to the following actions... Further servicing functions may only be carried out by qualified maintenance staff.

7.1 Fuel Leaks

Check daily that no fuel is leaking from the base of the Pump or Dispenser. All leaks are to be repaired immediately and if necessary the Pump or Dispenser removed from service.

7.2 Hoses & Nozzles

Check daily that the nozzles, hoses and sight glasses (if fitted) are undamaged and that the hoses are free from kinks or blisters. Damaged nozzles and hoses must be replaced immediately by maintenance personnel.

In the case of fuel leaks the pump/dispenser should be removed from service until the fault is rectified. Adblue® nozzles should be washed in warm water on a weekly basis to remove signs of crystallisation.

7.3 Checking the Pump or Dispenser prior to daily use

- Unlock the nozzle
- Switch on mains supply
- Check operation by removing and replacing nozzle

7.4 Removal from Service

- Disconnect the mains supply
- Lock nozzles in the nozzle holster using the integral lock mechanism.

7.5 Pump and Dispenser Cleaning

To prevent the build-up of Static Electricity, use only damp cloths for cleaning the outer surfaces of the Pump or Dispenser.

Display surfaces (plastic) are easily scratched and damaged and should only be cleaned with light, non-abrasive detergents e.g. washing up liquid, soap and water.
8. Maintenance and Repair by Authorised Service Personnel

The maintenance and repair of Pumps & Dispensers is only to be carried out by the manufacturer (Pumptronics) or trained personnel of professionally certified companies.

- Always adhere to National Health and Safety regulations as well as important safety information contained in the maintenance documents provided.

- When working in Hazardous Areas always isolate and secure all power supplies.

- Any electrical test equipment or tools must be approved for use in the Hazardous Areas concerned.

- When working on Pumps or Dispensers a danger of explosion exists.

  - Remove both front and rear doors. Ensure the Pump or Dispenser is well ventilated.
  - Before commencing work visually check for leaks and remove any existing fuel residues
  - Avoid generating sparks whilst working
  - When working on vapour recovery systems, ensure there are no vapour leaks and that whilst working no open pipe work is exposed to sources of ignition.

- Any changes made to this equipment could invalidate the equipment Type Approval Certificate.
When changing Explosive Protected Equipment (e.g., motors, solenoids, encoders, magnetic switches, junction boxes, glands & pumping & metering units) only similar certified equipment shall be used. If explosion protected junctions are opened or cable glands are loosened during work, ensure that junction boxes are correctly sealed and that cable glands are correctly fitted. For the retrofitting and use of vapour recovery system monitoring systems, adhere to all National Regulations and Manufacturers Instruction Manuals.

8.1 Maintenance intervals and visual inspections

Display and Head assembly
During the annual maintenance, check that the foam seal on the fascia are fitted and functioning correctly. A visual check must be undertaken and any defective seals must be replaced before the Pump or Dispenser may be brought back into use. Additionally, the cable glands should be checked for correct fitting and serviceability. Loose fittings should be retightened and defective fittings replaced.

Filters
Fuel filters should be changed 1 week after the initial installation to remove any debris from the installation process. And thereafter not later that once a year. Earlier filter replacement may be necessary if the fuel flow rate is unacceptable.
To prevent skin contact with fuels protective gloves must be worn!

Drive Belts - V Belts
Drive belt tension must be periodically checked and adjusted as necessary. Visibly damaged drive belts must be replaced. Only anti-static approved replacement drive belts shall be used.

Safety Breaks
After an accident involving the operation of a Safety Break assembly, the equipment is to be inspected for damage and all damaged parts must be replaced. Safety Breaks may be reused after re-assembling according to the manufactures manual by an authorised person and prescribed test. After repairs, functional and leakage tests must be carried out.
9. Technical Data

EC Declaration of Conformity as defined by the ATEX directive 94/9/EC

Herewith we declare that the following Pumptronics Pumps and Dispensers of type:-  II2G

- Series C Retail & Commercial Pumps & Dispensers
- Series C De-bowser unit
- Mechanical Pumps

Are in conformity with the provisions of the ATEX Directive 94/9/EC - Equipment and protective systems intended for use in potentially explosive atmospheres. And in accordance with

STANDARD

- EN 13617-1

EC TYPE EXAMINATION CERTIFICATE NUMBER:
- Sira 05ATEX9095

PRODUCT QUALITY ASSURANCE NOTIFICATION:
- Sira 0518

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A. Olive, MCMI IEng MIE
Quality Manager Feb 2011
### Technical Document

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<th>Date:</th>
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### Explosion Protection
- Ex II 2G

### Certificate of conformity
- Sira 05ATEX9095

### Temperature range
- -20°C to +55°C (other temperature ranges according to agreement)

### Operating voltage
- 230 / 415v AC @ 50-60 Hz +/- 10%

### Flow Rate
- 40 l/min
- 70 l/min
- 90 l/min
- > 160 l/min

### Maximum running current (load)*
- 5A (mono) 5A (mono) 5A (mono) 11A (mono)
- 11A (twin) 11A (twin) 11A (twin)

### Pump Motor (single phase)
- 1.1kW (mono) 1.1kW (mono) 1.1kW (mono) 2.2kW (mono)
- 2.2kW (twin) 2.2kW (twin) 2.2kW (twin)

### Pump Motor (three phase)
- 0.75kW (mono) 0.75kW (mono) 0.75kW (mono) 1.5kW (mono)
- 1.5kW (twin) 1.5kW (twin) 1.5kW (twin)

### Vapour Recovery Motor*
- 0.4kW (add 1.7A to running current (load))

### Trace Heating (Adblue) *
- 0.2kw (add 1A to running current (load))

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When disposing of the equipment or parts of it (e.g. filter, hose etc...) You must take into account the National Directives regarding disposal of waste containing hazardous materials.
10. Parts details and descriptions

<table>
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<tr>
<td>HF000007</td>
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<td>Int Motion</td>
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<td>Proximity Switch</td>
<td>SECATEC</td>
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<tr>
<td>HF000301</td>
<td>Std Encoder</td>
<td>ELTOMATIC</td>
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<tr>
<td>HF000303</td>
<td>Encoder with mechanical Totaliser</td>
<td>ELTOMATIC</td>
<td>DEMKO 01ATEX130644X</td>
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<td>HF000304</td>
<td>Encoder with remote mech Totaliser</td>
<td>ELTOMATIC</td>
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<td>Hummel</td>
<td>KEMA 06ATEX0024</td>
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<tr>
<td>EL000006</td>
<td>20mm Cable Gland</td>
<td>Hummel</td>
<td>KEMA 06ATEX0024</td>
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<tr>
<td>EL000007</td>
<td>16mm Back Nut</td>
<td>Hummel</td>
<td>KEMA 06ATEX0024</td>
</tr>
<tr>
<td>EL000014</td>
<td>20mm Back Nut</td>
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<td>EL000024</td>
<td>Junction Box type CA</td>
<td>EBERSTEIN</td>
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<td>2VA Nozzles</td>
<td>FLARFLEX</td>
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<td>Various</td>
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<tr>
<td>HE000502</td>
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<td>Husky</td>
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<tr>
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<td>MTE Mini Thermostat</td>
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<td>VRPUMP-1</td>
<td>Single Head Vacuum Pump</td>
<td>Durr Technik</td>
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<tr>
<td>VRPUMP-2</td>
<td>Double Head Vacuum Pump</td>
<td>Durr Technik</td>
<td>PTB 01ATEX5004</td>
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</tbody>
</table>

All safety requirements from the listed operating instructions were taken into consideration during the manufacturing of the Pumps & Dispensers. If the sign X is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule of the certificates.

For your assistance, the necessary checks for each of the relevant special conditions are quoted from the EC Type Examination Certificates as follows.

**ISSeP09ATEX014X - Single & Three Phase motors type BAV series (Elnor)**

An appropriate connection of the free end of the cable shall be foreseen when the motor is provided with a supply cable which is permanently connected to it.
BAS98ATEX2168X Solenoid Valve (Asco)
The solenoid shall be connected to a supply by fuses capable of interrupting a prospective short circuit current of 3A. Solenoids will normally be supplied with an electrostatic warning label. However, for operators specifically used for within petrol pump dispenses enclosure no labels are fitted. For solenoid operators fitted to valves used in vapour recovery systems where a Zone 0 exists within the valve and pipe work, the solenoid operates valves fitted with solenoid operators must be subject to the routine test in accordance with PAS 022 1997 Clause 4.8 Annex 1 using air as a test media and a test pressure of 15 bar (+0.1 -0). The pipe work is limited to a maximum dia. of 15mm with pipe run not exceeding 3m in length. The integral cable shall be suitably terminated when installed.

Baseefa06ATEX0302X Solenoid Valve Coil operated (International Motion Control Ltd)
The flying lead must be suitably protected against impact. The flying lead must be terminated in a suitably certified enclosure or in a safe area. The supply circuit must be protected by a fuse capable of withstanding a prospective short circuit current of 3A.

KEMA02ATEX1248X Magnetic switch type MKF series (Secatec)
The magnetic switches shall be installed such, that danger of mechanical impact is avoided. The electrical specification of the magnetic switch should be met, to secure the type of explosion protection Ex M. If a supplementary non-resetting device is used for protection of the switch or the circuit to which the sensor is connected against overload, this device should have a breaking capacity that is in compliance with the prospective short circuit current of the power supply. The integral connection cable of the magnetic switch shall be connected outside the potentially explosive atmosphere or in a terminal box in a type of protection in accordance with Clause 1.2 of EN50014.

KEMA02ATEX1288X Magnetic switch type MKR series (Secatec)
The magnetic switches shall be installed such, that danger of mechanical impact is avoided. The electrical specification of the magnetic switch should be met, to secure the type of explosion protection Ex M. If a supplementary non-resetting device is used for protection of the switch or the circuit to which the sensor is connected against overload, this device should have a breaking capacity that is in compliance with the prospective short circuit current of the power supply. The integral connection cable of the magnetic switch shall be connected outside the potentially explosive atmosphere or in a terminal box in a type of protection in accordance with Clause 1.2 of EN50014.

DEMKO 01ATEX130641X Electronic pulse generator Type 01-09 (Eltomatic)
Ambient temperature -30°C to 70°C. The encoder is constructed with a permanently connected un-terminated cable, which must be connected in a safe area or a suitable certified junction box.

DEMKO 01ATEX130644X Electronic pulse generator Type 01-09 mechanical Totaliser (Eltomatic)
Ambient temperature range is -20°C to +70°C. Ambient temperature range is -30°C to +70°C when cable type LiYCY-Grey 7001 manufactured by For.EL.IND srl is mounted. The encoder is constructed with a permanently connected un-terminated cable, which must be connected in safe area or suitable certified junction box.
TUV 03 ATEX 2136 Connection and junction box type CA. Ex (Bernstein)
The metal enclosure has an insulated lacquer coat with a thickness of max 0.2mm. The different parts of the enclosures shall be bonded together. The enclosure shall be grounded if dangerous electrostatic charges are possible. For the connection and junction boxes cable and conduit entries and sealing plugs must be used which meet the requirements of directive 94/9/EC, EN50014 and EN 50019 at least. They shall be certified separated. The EC type examination certificates of these components have to be taken into account. All holes in the enclosures have to be closed; the achieved degree of protection must be at least IP54. The rated current depending on the conductor cross section and the number of conductors specified in the data sheets must not exceeded in service.

PTB00ATEX3114U Switch Actuator Type 05-0003 (BARTEC)
When the components are installed in the electrical apparatus, care must be taken that the temperatures at the mounting place are within the temperature range of use.

PTB 00ATEX1092X Contact block type 07-3323-3 (BARTEC)
The circuit module shall be installed so as to provide for mechanical protection against impact energy in accordance with EN50014. The quality of the connecting cable shall satisfy the thermal and mechanical requirements with the functional range. This EC type-examination certificate as well as any future supplements thereto shall at the same time be regarded as supplements to Certificate of Conformity PTB No Ex-95.D.1054 X

SSePO3ATEX105X Nozzle recognition System (ORPAC Industries)
Temp Range -40C to +70C. During the transceiver coil installation and use, all precautions shall be taken to avoid all electrostatic hazards. Conductors inside the enclosures shall be suitable for a temperature of 80 C. For mounting and installation of the connection and junction boxes the requirements of EN 600079-14 shall be met.

TUV99ATEX1508X VAPORIX Control (FAFNIR)
2. Extension to EC Type Examination Certificate Number TUV99ATEX 1508X; Subsequent to galvanic separation of the sensor circuits to the PA or PE connection, the special conditions are not applicable.
11. Main Parts Spares List

For any queries on spares contact our sales team on 01692 500640 with your pump serial number. Many spares will vary to the age of the pump.  

**Motors**

EL000002 + EL000009

*Part needed identified by Serial Number*

**Nozzle Magnet Switch**

2 Core C Series  
EL000015
12. Breakdown kits
At Pumptronics we offer a Breakdown kit containing all major and minor components of a pump at a discounted price. This allows first visit fixes and eliminates the need to attend site unnecessarily. This stock can be replenished quickly.

Contact our dedicated sales team on 01692 500640 to discuss getting a breakdown kit.
13. Contacts

Sales (Pumps & Spares) Email: sales@pumptronics.co.uk
Phone: 01692 500640

Technical Support Phone: 01692 500640

13. Company contact details.

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