

(1828, 1918, 1940, 1958, 1967,  
2017, 2162, 2176, 2286, 2461,  
2486, 2536, 2616, 2619, 2650,  
2780)

## SUPPLEMENT TO CERTIFICATE

Series S020

Certificate No.	Supplement No.	Certificate No.	Supplement No.
1828/40*	51	2286	65
1918	81	2461/26*	31
1940	83	2486	62
1958/53*	65	2536	69
1967/66*	72	2616	12
2017	85	2619	52
2162	100	2650	63
2176	88	2780	18

(\*) Refers to the dispenser only, the self service device described in these certificates is not part of this approval.

*Submitted by:* **Merit Solutions**  
**Claregalway**  
**Galway**  
**Ireland**

Authorisation is hereby given by the Secretary of State for Innovation, Universities and Skills for the following Certificate of approval relating to a pattern of a liquid flowmeter to be modified as described below.

As described in the following Certificates but modified to have an alternative self service device, as detailed in the descriptive annex, and having the following characteristics:-

DISPENSER(s):                      Dispensers described in above certification numbers.

FORECOURT                              DOMS PSS 5000 as described in the descriptive annex.  
CONTROL UNIT:

COMBINED KIOSK                      MeritPos – as described in the descriptive annex.  
CONTROL & POINT  
OF SALE SYSTEM:



*Signatory:* M A Bokota  
for Chief Executive  
National Weights & Measures Laboratory  
Department for Innovation, Universities & Skills  
Stanton Avenue  
Teddington  
Middlesex TW11 0JZ  
United Kingdom

Reference No: T1118/0035

Date: 29 August 2008

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# Descriptive Annex

## 1 INTRODUCTION

This certificate describes the Merit Solution's MeritPos self serve device system incorporating a DOMS site controller connected to fuel dispensers.

MERITPOS is a computerised point of sale system designed to control and process sales transactions of both fuel and shop goods in a retail environment. The system can be configured on any number of POS tills, each with integrated pump control, barcode scanning, and electronic funds transfer (EFT) card swipe capability, and can link to the MERITPOS back office management system for sales reconciliation, stock control, and accounting purposes. The schematic in Figure 1 shows how the main elements of system hardware are connected together.

All POS tills are connected to the local area network (LAN) by means of category 5 or 6 cabling to the main LAN switch. Also connected to the LAN switch is the Forecourt Controller. This provides pump control and tank gauge access to all POS tills on the LAN. The back office PC connected to the LAN switch is used to send product and price updates to the POS tills and collect sales transaction data from them.

Any weighing instrument having a test certificate in accordance with The Council Directive 90/384/EEC on Non-Automatic Weighing Instruments may be connected to the POS till. The software controlling the operation of the weighing instrument is described in NWML Test Certificate GB-1202.

## 2 CONSTRUCTION

### 2.1 Forecourt controller DOMS PSS 5000

The DOMS PSS5000 forecourt controller comprises a metal rectangular box (Figure 2) housing the following main components. The general arrangement is shown in Figure 3.

- A power supply
- A Central Processing Board (CPU) with 8 serial ports (CPB508): this has an LCD 16x2 character alphanumeric display and a keyboard comprising 5 keys for navigating the menu options. An adjacent legend describes the key functions, as shown in Figure 4.
- Hardware interface modules: dispensers are connected to the CPU board via an appropriate hardware interface module compatible with the communication protocol of the dispenser.

#### 2.1.1 Software

The DOMS PSS5000 has a legal authority module (LAM) for the UK containing specific parameter values and functions. Reference to the PSS 5000 software version number is not normally required, but may be accessed as follows: typical LAM version number is 498-06-100 and 0D6C for the checksum number. These can be viewed by selecting the appropriate menu heading using the operator keys on the CPU. The LAM version number and checksum are accessed as follows:

When the PSS is powered on, the first line displays the application software version and the current time. The second line displays the W&M Service menu. Pressing the Down Arrow once, displays the W & M menu, which comprises 7 sub-menus, W.1 to W.7. Press the right

button once to obtain W.1 – LAM INFO and press again to display Version and Checksum information.

## 2.2 PC based Point of Sale (POS) units

The POS tills are PC devices that are equipped with a touch-screen monitor (with optional built-in card swipe) that has a set of standard device connections.

This POS terminal is connected to an external printer (Epson TMT-88III), a Customer line display (DigiPos DM-D105), and a Cash Drawer. All cable connections are made at the rear of the unit (figure 12) with the exception of the Cash Drawer, which is connected to the Printer. Along with four serial ports, there are two USB ports available to connect to additional external devices. The hard power switch is located in the front panel of the unit under a plastic cover (figure 13). There is also a floppy drive located within this front panel.

The equipment is identified as follows:

Equipment	Manufacturer	Model No
EPOS PC Unit	DigiPos	PowerPos
Printer	Epson	TMT-88III
Line Display	DigiPos	DM-D105

## 2.3 Software

### 2.3.1 Operating System

MERITPOS may run any of the following Microsoft 32 bit operating systems:

- Windows 2000
- Windows XP

### 2.3.2 Controlled software version number and checksum number

The software version information is displayed in two parts in a window (Figure 5) that is accessed in the Hardware Admin menu under ‘About’ button. The first line displays the non-legally relevant software version number (1.2.12.2). The lower section lists the legally relevant pump controller version number (172.16.16.11).

The ForecourtMetrologic checksum number is: CWDE5HPmuNxxxyO3rc739WA==

## 3 OPERATION

### 3.1 Application start up

The installed applications on the POS tills have been configured to automatically launch from the MERITPOS Shell program whenever the POS tills are switched on. The first screen from which a user can enter data is the user login screen. The application is displayed full screen. The Windows Explorer shell is not used, so the Windows Start button, taskbar, task manager and all other Explorer-related Windows functions are not accessible to the normal user.

### 3.1.1 Password Access

Access to the MERITPOS application is only allowed by entry of a valid user key code (Figure 6). Access rights are allocated to users authorised for engineering and/or management functions. Keycodes for normal users, managers and engineers and their associated access rights can only be configured from the MERITPOS back office application.

### 3.2 Sales Functions

Figure 7 shows the main sales screen. The pumps appear individually in grouped buttons at the base of the screen. Each pump area is subdivided into 3 buttons (Status/Sale Slot1/Sale Slot2).

- Status – the status of a pump is displayed using a colour coded button. Authorisation of pumps is also performed by pressing this control (While pump is in ‘Calling’ state).
- Trx 1 – Any fuel transaction stored by a pump in sale slot #1. The lower right quadrant of this button also displays the Sequence number of the fuel transaction. Pressing this button transfers this transaction to the EPOS saleline. While the transaction is within an Epos saleline, the transaction is locked, and button is colour coded to indicate locked state.
- Trx 2 – Any fuel transaction stored by a pump in sale slot #2. The lower right quadrant of this button also displays the Sequence number of the fuel transaction. Pressing this button transfers this transaction to the EPOS saleline. While the transaction is within an Epos saleline, the transaction is locked, and button is colour coded to indicate locked state.

Detailed information on a pump’s transactions can viewed on the right-hand quadrant of screen. The pump number and state is clearly labelled along with transaction details for both sale slots. The details displayed will apply to the currently selected pump (selected with pump status buttons at base of screen).

- Sale #1 – Detailed information on any fuel transaction stored by a pump in sale slot #1. Details include
  - Trx Sequence number.
  - Product Name/description
  - Litres dispensed
  - Sale value
  - Date and Time (a trx starts at the point when the nozzle is lifted).
- Sale #2 – Detailed information on any fuel transaction stored by a pump in sale slot #2 (Details as above).

Depress the button in the top right quadrant of the screen labelled ‘Fuel Pump Command’ to access additional pump functions. Two functions are then displayed in front of the pump box. These include the ability to Emergency stop the pump, or review and clear any forecourt errors generated by the DOMS hardware. These functions will only apply to the currently selected pump (selected with pump status buttons at base of screen).

#### 3.2.1 Starting a Pump

When a customer on the forecourt pulls a pump’s nozzle out of its holster, the POS till operator is advised of the customer’s request for authorisation to fuel by means of an audible warning. The associated pump status button is colour coded Red the Status area.

The pump is authorised by pressing the status button. The customer can then draw fuel. The POS till's Status button then changes to a Blue colour code indicating the 'Starting' state. When the customer starts to dispense fuel, the status button then changes to a Yellow colour code indicating the 'Fuelling' state.

### **3.2.2 Stopping a Pump**

An operator may at any time during the fuelling process temporarily stop a dispenser by initially selecting pump with pump status buttons and then entering the 'Fuel Pump Command' area. The selected pump is clearly labelled in this area. Pressing the 'Emergency Stop' button that appears on the lower right hand side will temporarily stop a dispenser. Pressing the button once again will cancel the emergency stop state.

### **3.2.3 Completing a fuel transaction**

When the customer has finished fuelling, and placed the nozzle back in the pump's holster, the POS till will advise the operator that the transaction is complete by displaying the transaction sale value on one of a pump's transaction buttons

Note that a maximum of only two fuel transactions can be outstanding against any particular pump, and until one or both of them are cleared, no further fuelling can commence on that pump. When a Pump has two fuel transactions outstanding, the pumps goes into an 'Unavailable' state.

A fuel transaction can be moved to the sales area of the Epos by pressing the relevant transaction button. The fuel transaction will then move to the Epos sale line. This effectively locks the sale and prevents it from being sold on two tills simultaneously. The transaction button is colour coded dark red indicating the locked state. Additional sales operations can continue on the till. When the fuel transaction is accepted in this way, the till and all other tills will have the till's terminal number appear along side the fuel transaction on the right-hand fuel pump transaction details area.

When payment is completed, the transaction will disappear from the pump controller and the associated transaction button text is cleared.

### **3.2.4 Voiding a Selected Fuel Transaction**

If a fuel transaction item has been mistakenly passed across to the sales transaction, pressing the 'Void Saleline' function button permits the fuel transaction to be passed back to the pump controller.

Voiding a fuel transaction item clears it from the sales display, and removes the terminal number lock from the fuel transaction on the pump controllers of all POS tills on the system. This enables the transaction to be selected by any other POS till.

### 3.2.5 Printing a Receipt

A sale receipt is printed after the completion of each sale. If the sale lines contain a fuel item, the format of the printed line will contain the following

- Pump Number
- Product name
- Sale value
- Litre Amount
- Price (per litre)
- Transaction Sequence Identifier  
This is code that consists of pump number and DOMS forecourt sequence number.  
e.g. P5S234 is pump#5 and sequence#234.

A sample forecourt sale receipt (with 33.6Litres of Supper Unleaded sold on pump 9) is shown in figure 15.

### 3.2.6 Customer Display unit

For the benefit of the customer, a customer display unit (CDU) must be visible to the customer. The CDU is configured to display fuel transaction data. With respect to Fuel sales, the display will show the following details:

- Litres dispensed
- Price per Litre
- Pump No.
- Product Description.
- Sale Value ( in € ).

A typical display for a fuel sale is shown in Figure 14.

## 3.3 Transaction locking features

**3.3.1** With both current and stored sales for a pump in the **not paid** status, no further Sales may be authorised on that pump until either of the sales for that pump has been paid.

**3.3.2** Prices changes are communicated to the DOMS, which ensures that dispenser prices changes cannot be implemented until all current deliveries are completed.

**3.3.3** Any single transaction can only be processed by one POS unit. Upon selection, other POS units are precluded from opening the transaction.

**3.3.4** A maximum of only two outstanding fuel transactions is permitted against any particular pump, and until one or both of them are cleared, no further fuelling can commence on that pump.

## 4 AUTHORISED ALTERNATIVES

### 4.1 Printer

Any compatible CE marked printer may be connected to the POS till.

### 4.2 Barcode scanner

Any compatible CE marked scanner may be used.

### **4.3 Cash drawer**

This may be any CE marked simple cash drawer with a solenoid release. It is triggered from the back of the Epson external printer.

## **5 RECOMMENDED TESTS**

**5.1** Check that the legally relevant software version numbers and ForecourtMetrologic checksum number are correct for the system configuration (see 2.3.2).

**5.2** Check that the UPS maintains power to the system allowing uncompleted fuel trans-actions to be completed for at least 15 minutes after the power is switched off.

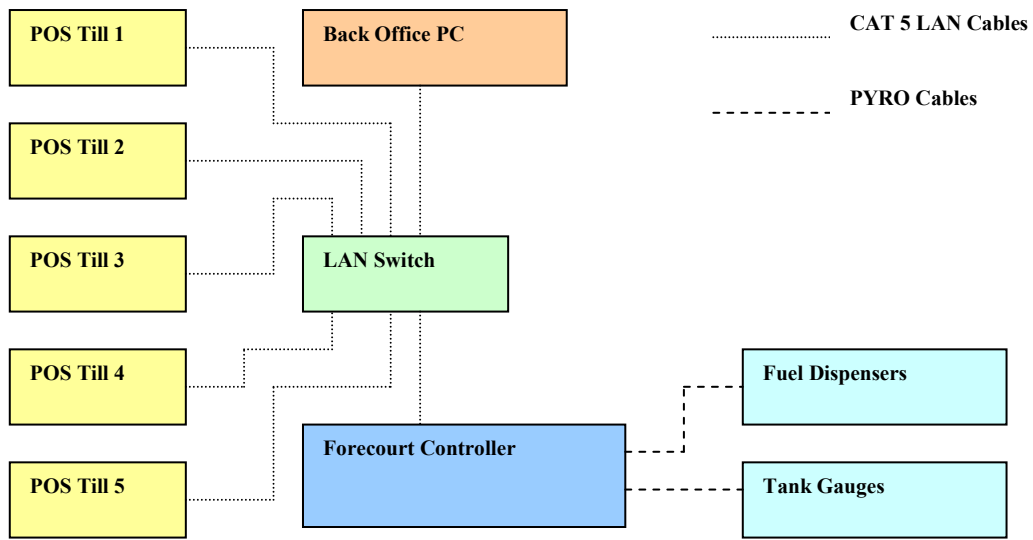
**5.3** Check that the volume and calculated price shown on the dispenser(s) correspond with the customer display and point of sale receipt. For installations with more than one dispenser, the dispenser number must accompany the volume and calculated price.

**5.4** Check that no more than one additional transaction can be stored for each dispenser. Each transaction must be accompanied by a clear indicator representing the current or stored transaction.

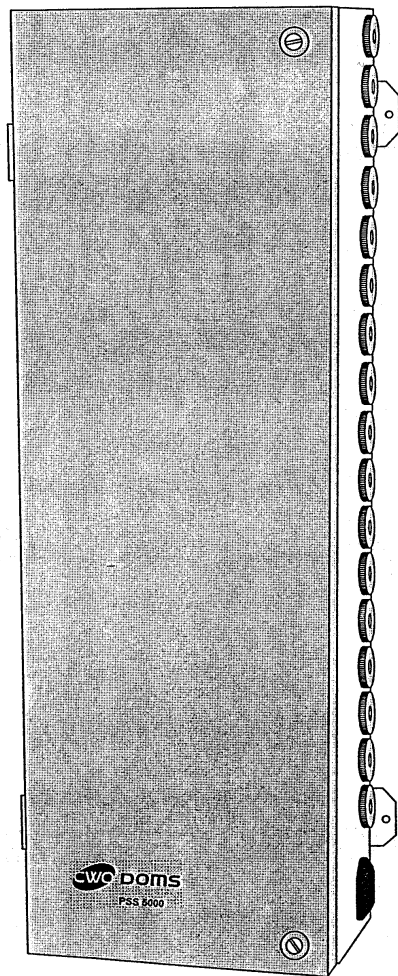
## **6 CERTIFICATE HISTORY**

ISSUE NO.	DATE	DESCRIPTION
Series S020	29 August 2008	Certificate first issued as a supplement.

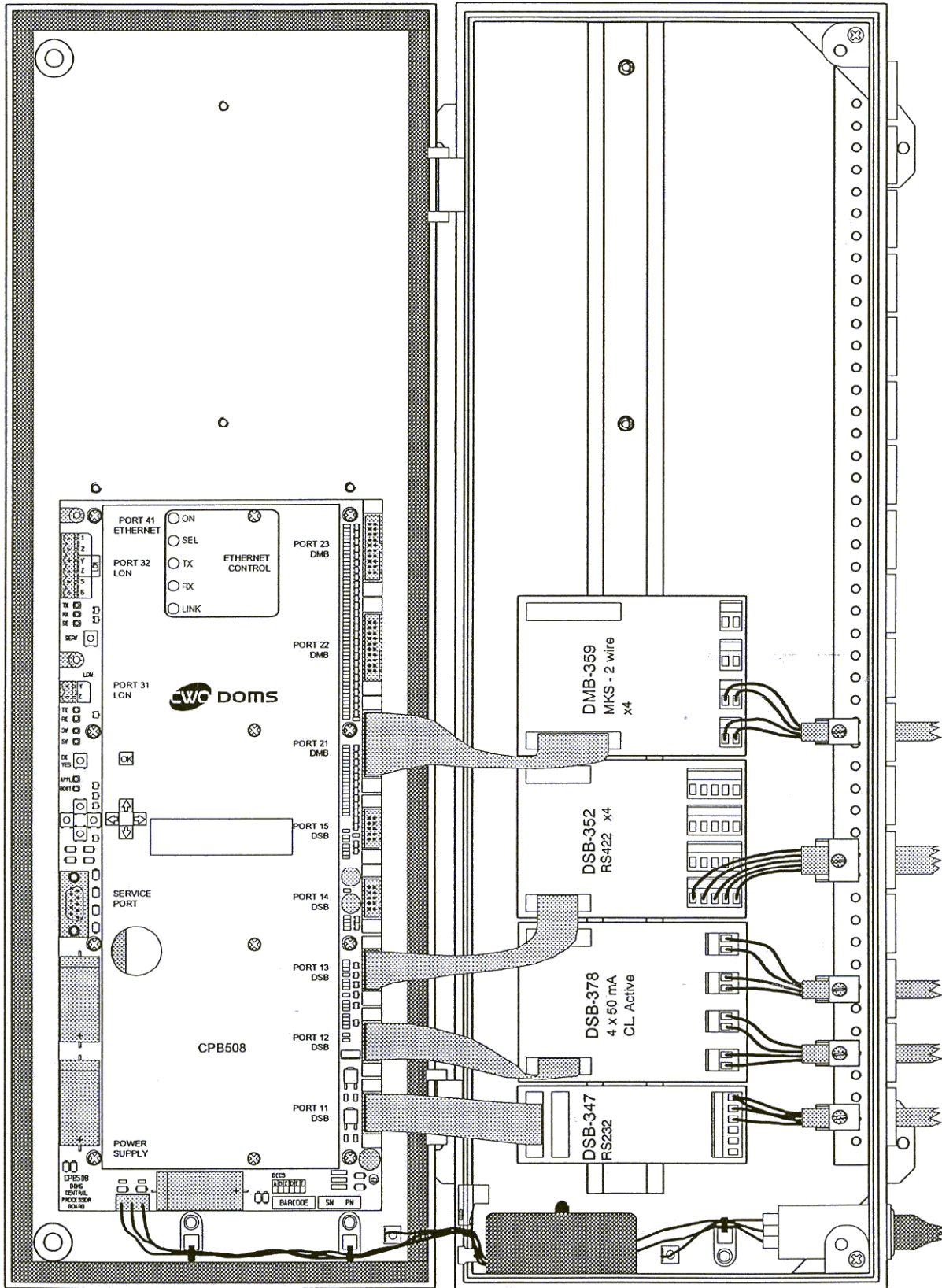




**Figure 1** MERITPOS System Schematic



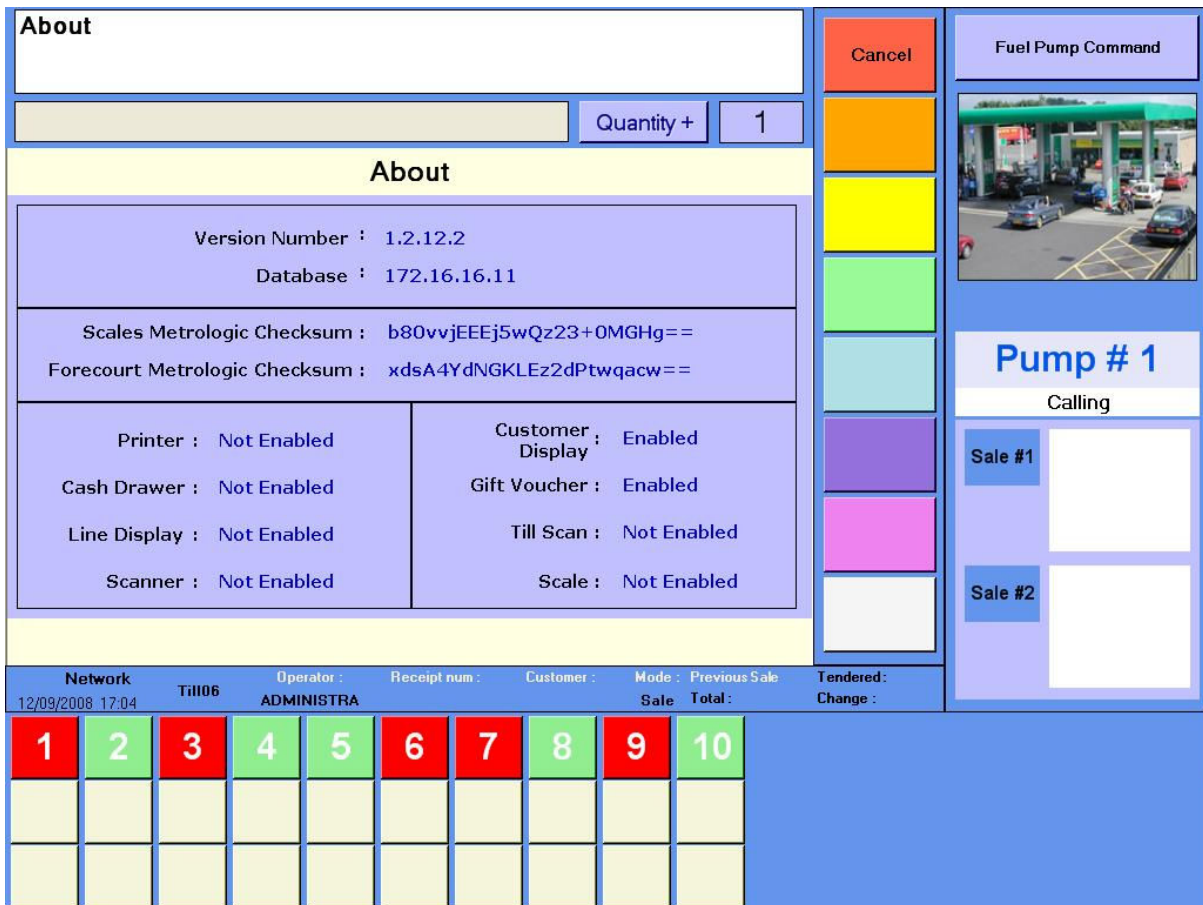
**Figure 2** DOMS PSS 5000 enclosure



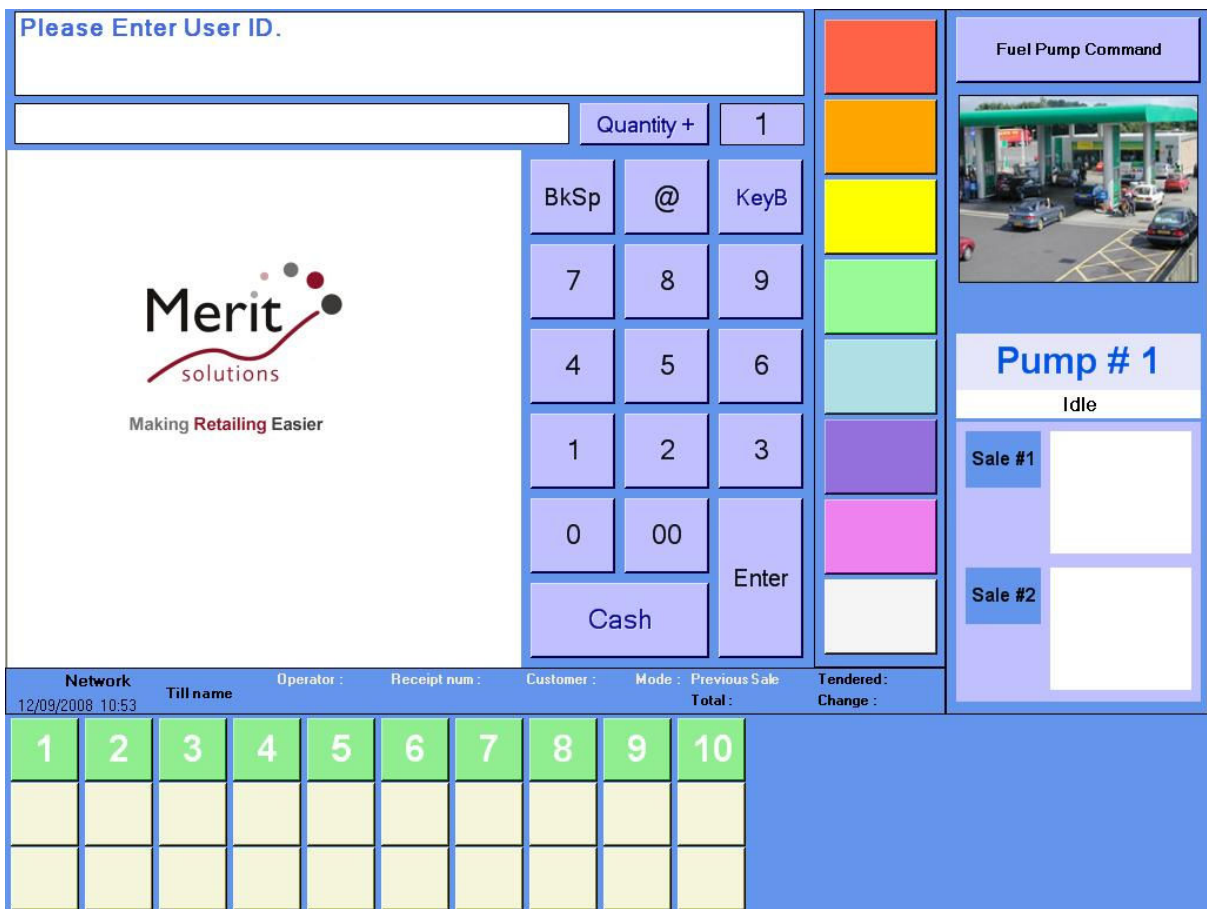
**Figure 3 DOMS PSS 5000 typical electronic component layout**



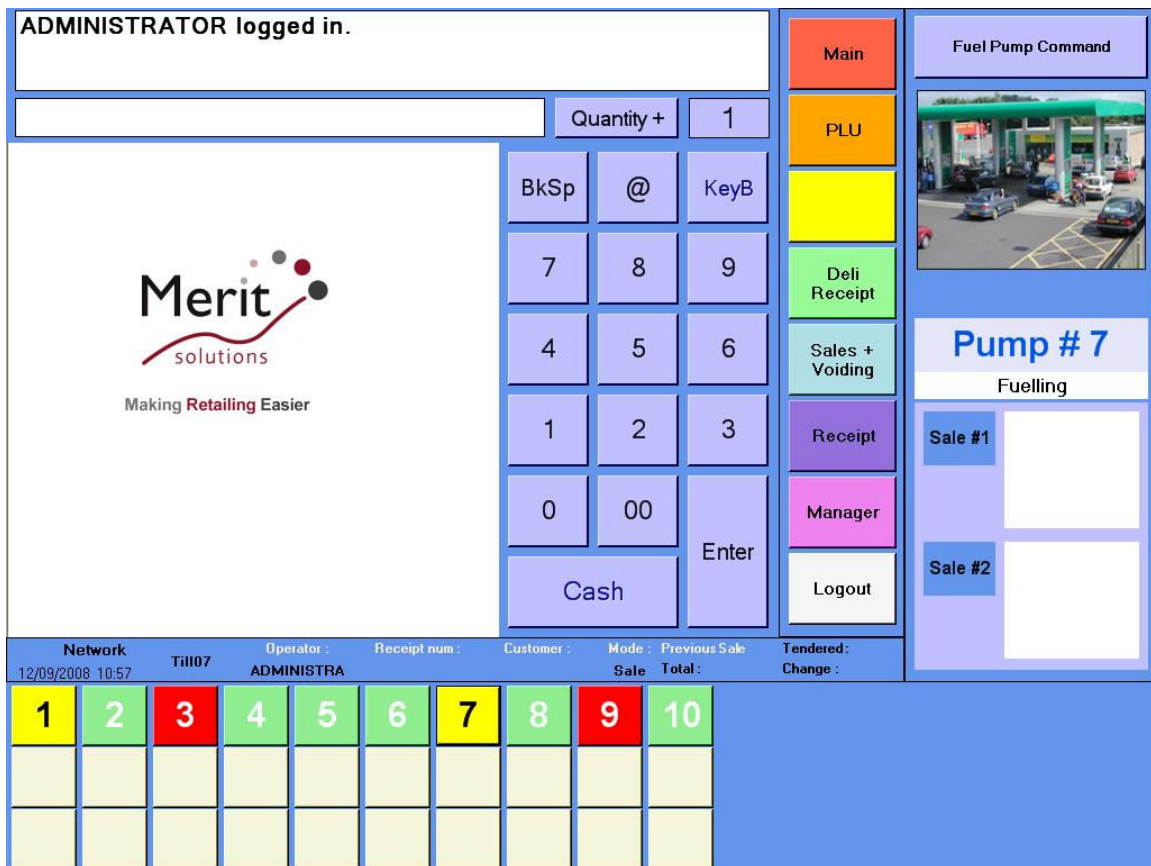
**Figure 4 Central Processing Board (CPB508) display and menu navigation keys**



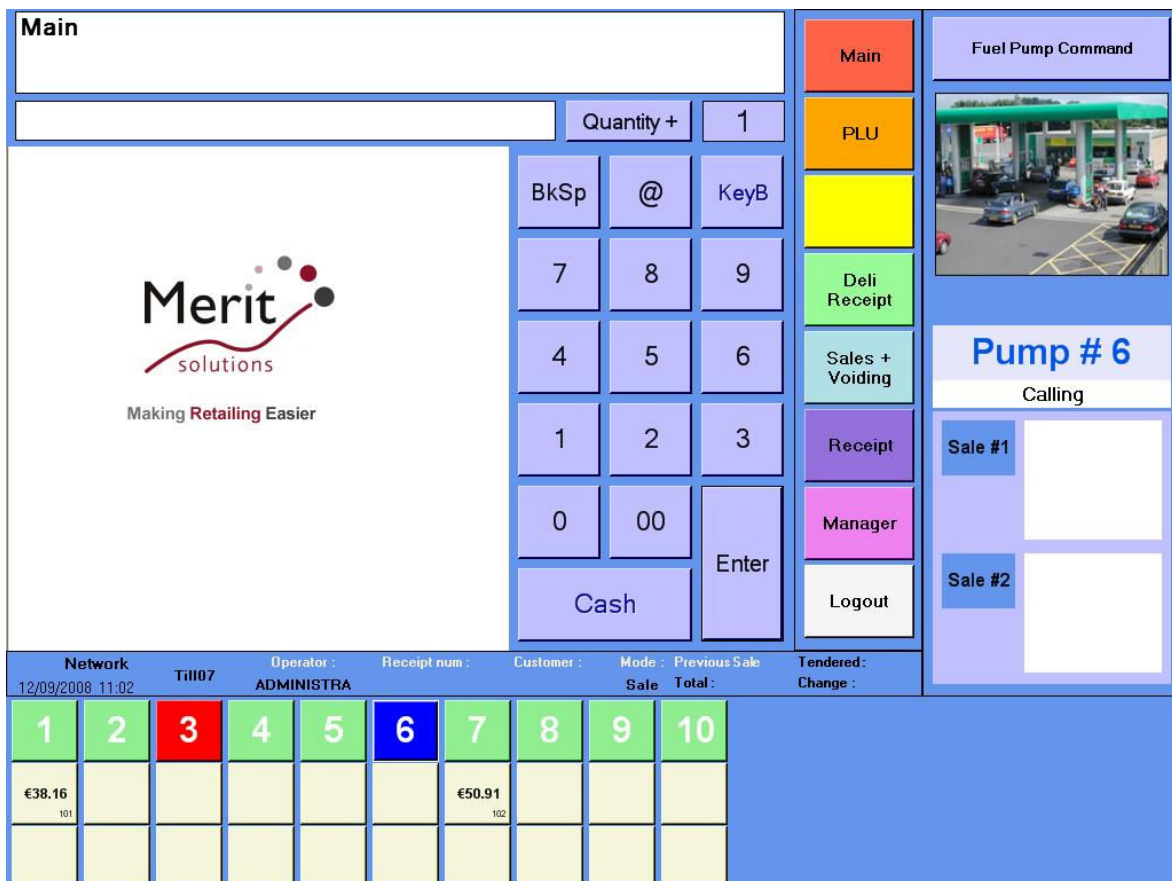
**Figure 5 Software version number**



**Figure 6 Operator Screen**  
 Main login screen, with ten available pumps visible in bottom pane.

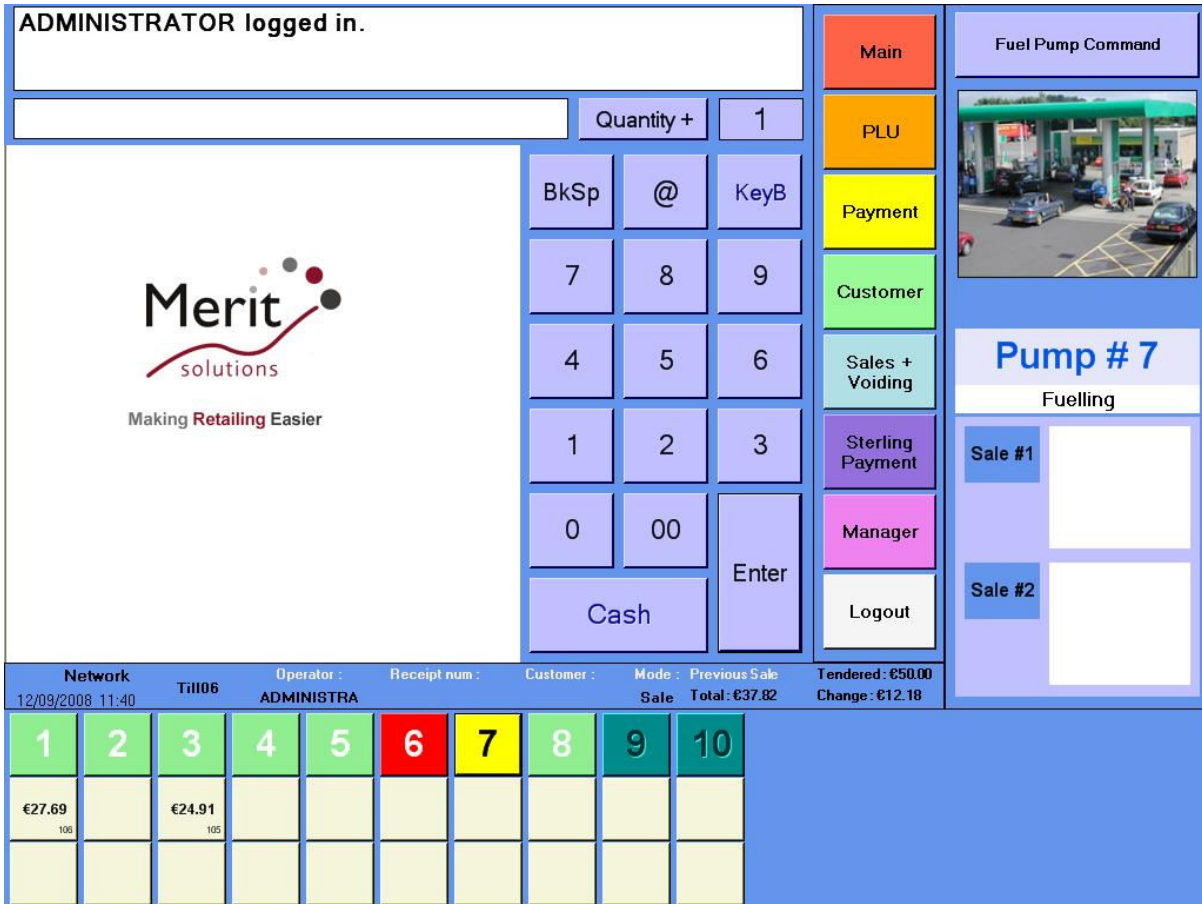


**Figure 7 Operator Screen**  
Pumps 1 and 7 are in fuelling state. Pump 3 and 9 are calling. Operator logged in.




**Figure 8 Operator Screen**

Pump 1 and 7 have a completed transaction, pump 6 is authorised and about to start fuelling, pump 3 is awaiting authorisation.



**Figure 9 Operator Screen**

Pump 7 has been authorised and is currently dispensing fuel. Pump 6 is awaiting authorisation. There is a completed transaction on pump 1, and 3. Pumps 9 and 10 are closed (“Unavailable”).

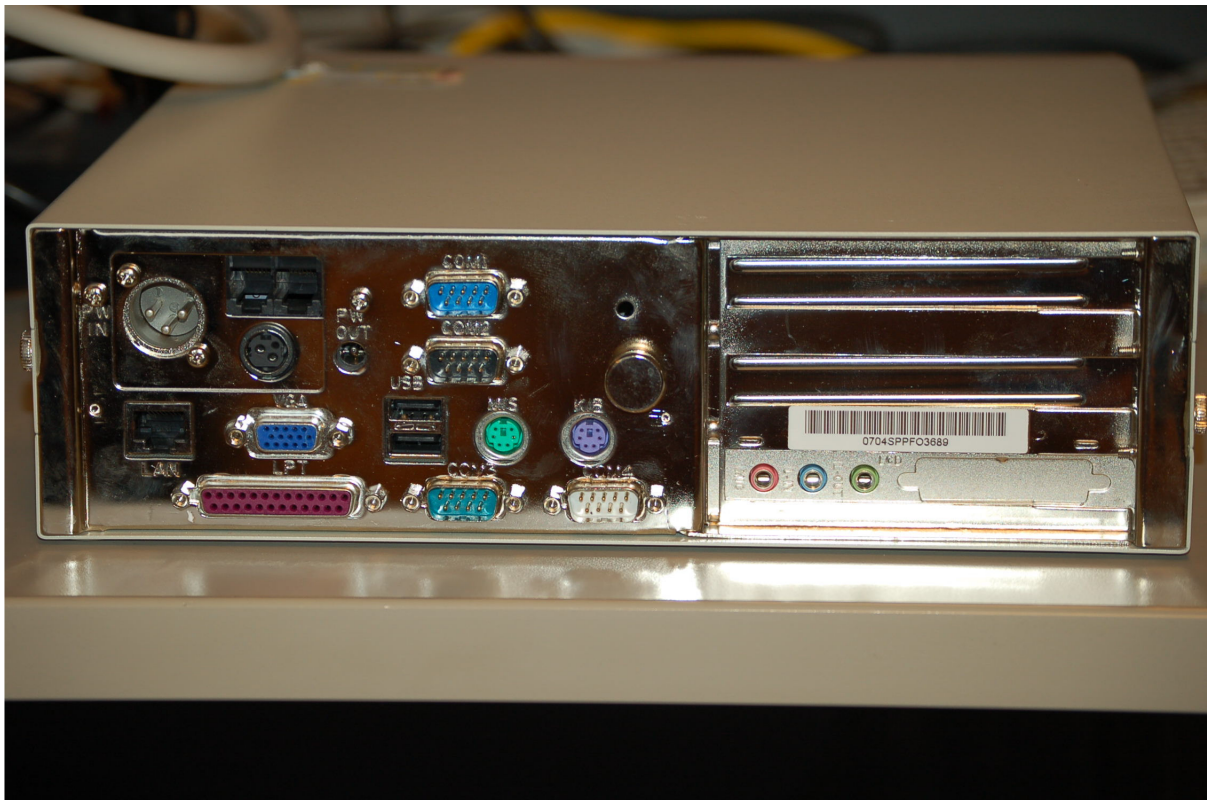
<b>Main</b>				<b>Main</b>			<b>Fuel Pump Command</b>										
				Quantity +		1											
1	P#3 * SUPER UNLEADED,		1	€30.55		BkSp @ KeyB		<b>Payment</b>									
						7 8 9		<b>Customer</b>									
						4 5 6		<b>Sales + Voiding</b>									
						1 2 3		<b>Sterling Payment</b>									
						0 00		<b>Manager</b>									
						Cash		<b>Enter</b>									
						Total Due		€30.55					<b>Logout</b>				
<b>Network</b> 12/09/2008 14:56		<b>Till06</b>		<b>Operator :</b> ADMINISTRA		<b>Receipt num :</b> 1060006000026		<b>Customer :</b> General		<b>Mode :</b> Sale		<b>Previous Sale Total :</b> €30.55		<b>Tendered :</b> €0.00		<b>Change :</b> €0.00	
1	2	3	4	5	6	7	8	9	10								
		€30.55 102			€29.93 101	€25.83 103											
		€43.64 104															

**Figure 10 Operator Screen**

Two sales pending on pump 3, with the current sale taken by till #6. Pump #3 is now in Unavailable state. Pumps 6 and 7 have a single sale on each. Pump 7 is awaiting authorisation. Pumps 4 and 5 are closed.



**Figure 11** DigiPos PowerPos machine with line display, cash drawer and printer



**Figure 12** DigiPos PowerPos, rear view with four serial ports and two USB ports.





**Figure 13** Digipos PowerPos, Front view with Power switch and Floppy



**Figure 14** Customer display layout



**Figure 15      Sample customer receipt**