(1828, 1918, 1940, 1958, 1967, 2017, 2162, 2176, 2286, 2437, 2461, 2486, 2533, 2536, 2609, 2616, 2619, 2650, 2739, 2780, 2805, 2806)

Department for **Innovation, Universities** & **Skills**

III(5)a

SUPPLEMENT TO CERTIFICATE

Series S026

Certificate No.	Supplement No.	Certificate No.	Supplement No.
1828/40*	56	2486/54*	67
1918	86	2533	1
1940	88	2536	74
1958/53*	70	2609	1
1967/66*	78	2616	14
2017	90	2619	56
2162	105	2650	68
2176	93	2739	1
2286	70	2780	21
2437/38*	43	2805	2
2461/26*	36	2806	2

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

Submitted by: Scheidt & Bachmann
7 Silverglade Business Park
Leatherhead Road
Chessington
Surrey KT9 2QL

Authorisation is hereby given by the Secretary Innovation, Universities & 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 Certificate but modified to have an alternative self service device, as detailed in the descriptive annex, and having the following characteristics:-

DISPENSER:	Dispensers described in above certification numbers.
SITE CONTROLLER:	DOMS PSS5000 as described in the descriptive annex. TMS30 Station Server as described in the descriptive annex.
KIOSK CONTROL UNIT AND POINT OF SALE:	TMS30 Cash Register POS and Station Server
CARD READER/ OUTSIDE PAYMENT TERMINAL:	Fuel Automat type CRID. (Card reader in Dispenser). Fuel Automat type OPT230 and type OPT230 Standalone. (Outside Payment Terminals).

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: T1118/0036

Date: 30 January 2009

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1 INTRODUCTION

The petrol station management system is a computerised system, which is divided into different working levels and is able to control many stations including the connection to the oil company itself. It is responsible for the collection, processing, storing and transferring of all station data. Furthermore, it controls all devices on the forecourt, including the dispensers, and is responsible for the goods sales and accounting processing (cash register function). The components of the system can include the following devices: (Schematics of the three configurations are shown in figures 1 to 3).

- TMS30 Cash Register POS and Station Server
- Fuel Automat type OPT230 and type OPT230 Standalone (Outdoor payment terminal)
- Fuel Automat type CRID (Card Reader in Dispenser)

2. Forecourt communication (Figure 4)

2.1 Protocols

The communication to dispenser is possible via IFSF protocol over LON/RS485/TCP/IP, via V11-PS protocol over RS485 or via DOMS controller PSS5000. The control software runs on POS-PC, to which all other devices are connected. Except in case of OPT230 standalone where it runs on OPT-PC. For V11-PS protocol, a KR20-Interface card is required. For LON, a LON-Interface card is required. The DOMS PSS5000 can be connected via LAN or RS485. See section X for DOMS PSS500 operation.

2.1.1 The following PC connection Boxes are required, depending on the communication protocol and dispenser type:

- SBC10 (AK10) for V11-PS
- LON connection box for IFSF
- Bridges for translating proprietary protocol to V11-PS :
- Bridge20 DW X2000 DART
- Bridge20 DW X2000 CL
- Bridge20 DW X2000 CL plus TLG
- Bridge20 DW X2000 DART plus TLG
- Bridge20 Mannesmann Kienzle
- Bridge20 Schw CL
- Bridge20 Tokheim / Schlumberger
- Pumalan Interface
- Nuovo Pignone Interface
- Gilbarco 2-Wire Interface

2.2 POS PC and OPT PC

The basic components of the TMS30 system are described in section 3.1. The computer is equipped with a hard disk, which stores the operating system; Windows NT or XP, and the application program TMS30. In the case of the Station Server the BOS functionality is added to the operating system and the POS functionality.

2.3 Uninterruptible power supply

In the event of a mains power failure the PC and other equipment are powered via an uninterruptible power supply capable of providing at least 15 minutes of continued operation to be able to finish the last sales operation before shut down.

2.4 Security measure

The transaction data stored in the journal files are protected by CRC checksum. The transaction data are transferred in the system together with CRC checksum. Each change of the legally relevant software is stored in a log file.

2.5 Forecourt controller DOMS PSS 5000

The DOMS PSS5000 forecourt controller comprises a metal rectangular box housing the following main components. The general arrangement is shown in figure 5.

- A power supply
- A Central Processing Board (CPU) with 8 serial ports (CPB508).
  This has an LCD 16x2 character alphanumerical display and a keyboard comprising 5 keys for navigating the menu options, an adjacent legend describes the key functions as shown in Figure 6.
  - Hardware interface modules.
    Dispensers are connected to the CPU board via an appropriate hardware interface module compatible with the communication protocol of the dispenser.

2.5.1 Software

The DOMS PSS5000 has a legal authority module (LAM) for the UK containing specific parameter values and functions. The LAM version number is 498-06-100 and the checksum number is 0D6C. 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.

3 TMS30 Cash Register POS, Station Server (Figure 7)

3.1 Component parts

TMS30 PC with operating system Windows NT or XP has the following specification:

- Housing Desktop housing incl. ATX Power pack 300W
- Mainboard Motherboard Core2Duo LGA775 Socket
- Onboard LAN 10/100, serial, parallel, USB interface
- Processor Intel Core2Duo E6400 2.13GHz (1066MHz)
- RAM 2GB PC667 DDR2 RAM
- Optical drive CD/DVD writer
- Floppy disk drive Floppy 3,5" 1,44 MB FDD
- Hard disk drive SATA HD min. 80GB 7200 rpm

The modular system for the measuring data processing consists of:

- Multi I/O – card
- KR20 interface card, LON interface card
- Network card for connection to other POS PCs or BOS systems
- LCD display for the cashier with optional touch function
- Customer display
- Keyboard, optional as touch screen
- Receipt printer (EPSON TM-T88xx)
- PINPad with card reader (optional)
- Barcode scanner (optional)
- UPS (uninterruptible power supply)
- Different interface converters for the connection of dispensers and other peripheral devices.

In special applications, where the POS/Station server is used to control the connected CRIDs, the printer and the customer display can be omitted.

3.2 Software version

The valid version of the software is “W&M Ver 1.66 and the checksum is “3c3E4C42”. (Figure 8). This data can be recalled using the following steps:

Press button MENU on POS keyboard (or SHIFT F3 on a standard keyboard)
Choose line SERVICE on POS screen
Press ENTER
Choose line SYSTEMINFO on POS screen
Press ENTER

3.3 Software Security

Each change of the legally relevant software is to be displayed on this screen. The global software version, which is displayed in the upper right corner, is not under legal control. The software version is to be checked during the commissioning (putting into use). The customer receipt is to be verified regarding correct volume and price etc. The device is required to be marked with type designation and serial number. The device should be marked with the examination certificate number

3.4 Operation

Initial situation – Pump free waiting for fuelling request is shown by the following symbol on the POS display screen (Figure 9):

After a nozzle at dispenser has been lifted corresponding pump icon will flash, additionally an audible signal is enabled – this shows that the "pump is calling" and requires authorisation.

The operator authorises the pump by touching the corresponding icon – if the pump is not delivering the icon will be as follows :

The fuel delivery will start and the following icon will be displayed throughout the delivery.

After the fuel delivery is finished the following icon will appear on the screen, this shows there is one stored transaction.

If the reconciliation for the first fuel delivery has not been processed and a second delivery has been finished at the same pump – the following icon will appear:

Clearing for payment (Figure 10*)*

Following a completed transaction the appropriate pump icon is selected and a payment sub screen will appear. If two sales are present on the selected dispenser then both amounts will be shown, the transactions will be designated as 'A' and 'B'. Selecting the appropriate transaction will accept the sale, the amount to pay and any other required data is be displayed on the customer display unit.

Other sales. (Figure 11)

Other items are normally sold by scanning them using the barcode reader. In addition, fast moving items or generic products may be sold using one of the "Preset" product keys.

Method of payment

Payment is accepted by inputting the value and pressing the appropriate Method of Payment button.

Sale Receipt

At the end of the transaction a sales receipt is printed. An example fuel receipt is shown in figure 12.

4 Fuel Automat type OPT230 and type OPT230 Standalone (Figure 13)

The automat is a computerized data collection and control system. It is responsible for the processing and transferring of measuring data und price information from the dispensers to the printer of the customer receipt. Furthermore, the communication to price setting devices, repeating indicating devices, memory devices and ISO card reader / PINPad is checked depending on the system design. The transaction data stored in the journal files are protected by CRC checksum. The transaction data are transferred in the system together with CRC checksum.

4.1 Component parts

The OPT230 consist of:

- housing with TFT-display
- Control-PC with dispenser and optional forecourt interface boxes
- receipt printer type M-T522AF (EPSON) or type PIXI (Hengstler)

4.2 Forecourt communication

The communication to dispenser is possible via IFSF protocol over LON/RS485/TCP/IP, via V11-PS protocol over RS485 or via DOMS controller PSS5000.
Alternatively, a connection to TMS30 POS or Station Server is also possible; in this case the dispensers are only connected to TMS30. The design without TMS30 is called OPT230 standalone.

4.3 Paper end handling

When the printer paper roll is nearly empty the customer is warned before the start of refuelling that the printing of a receipt is not possible.

4.4 Software version and Security

The software version is shown in the right upper part of the OPT230 display. Additionally to the software version, the accompanying CRC is calculated and is indicated after the version number. The current version is 1.66 checksum 3C3E3C42. (Figure 14). The software version is to be checked during commissioning. The customer receipt is to be verified regarding correct volume and price etc. The OPT230 is required to be marked with type designation and serial number. The OPT230 is required to be marked with the examination certificate number.

4.3.1 Operation

The refuelling of a vehicle is started by a successful customer authorisation. After the refuelling the OPT230, which controls also the refuelling process, prints out the customer receipt with the transaction data on the printer of the OPT230.

5. Fuel Automat type CRID (Card Reader in Dispenser) Figure 15

This additional device can be used for day and night operation in self-service mode on manned or unmanned stations. The CRID is meant to be connected to a certified petrol station management system (hereafter named POS). The connection to the dispenser calculator takes place through the connected POS.

5.1 Component parts

The terminal consists of the following main components:

- outdoor PINPad with connected card reader
- receipt printer type EPSON M-T522AF or another certified printer
- LANCOM converter or alternatively
- LCD display with Multimedia-PC (Cool-Monster) – for CRID Multimedia only.

These components are situated in a common housing nearly to the dispenser head.

5.2 Processing of measured values

Processing of measured values does not take place on CRID. These values are only processed by the connected POS. The POS sends the print data of the customer receipt as transparent print lines through a print server, which is a part of an EPS server. This EPS server is located on a PC delivered by S&B, to which one or more CRIDs can be connected. The POS is connected to the EPS server via a LAN TCP/IP. Alternatively, the EPS server can be located on a PC of the TMS of S&B (POS or back office). The print server has no information about the structure of the print lines. The communication is carried out over a secured data transfer via CRC protection or to the printer with "even" parity. There is neither transaction data processing on the EPS server or storing of transaction data. Therefore no legally relevant software is present. All devices inside the CRID are connected via LANCOM converter (LAN to COM), which executes the protocol transformation TCP/IP<-->RS232. All devices are connected via COM interfaces or via LAN directly. On the CRID there is no application software.

5.3 Paper end handling

When the printer paper roll is nearly empty the customer is warned before the start of refuelling that the printing of a receipt is not possible.

5.4 Software version

There is no legally relevant software is present on CRID. The software version on the POS is to be checked during commissioning. The customer receipt is to be verified regarding correct volume and price etc. The CRID is required to be marked with type designation and serial number. The CRID is required to be marked with the examination certificate number.

5.5 Operation

The refuelling of a vehicle is started by a successful customer authorisation. After the refuelling the connected POS, which controls the refuelling process, prints out the customer receipt with the transaction data on the printer of the CRID.

6 RECOMMENDED TESTS

6.1 Check that the legally relevant software version numbers and checksum number are correct for the TMS30 POS/Station Server (see 3.2), and if installed the OPT230 software version number and checksum number (see 4.4).

6.2 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.

6.3 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. If the OPT230 with optional Automat CRID their customer receipts should also be checked.

6.4 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.

6.5 If the OPT230 with optional automat CRID is installed, check when the printer paper roll is nearly empty that the customer is warned before the start of refuelling that the printing of a receipt is not possible.

7. ILLUSTRATIONS

Figure 1 POS / Station server configuration
Figure 2 OPT230 Configuration
Figure 3 CRID Lancom and CRID Multimedia configuration
Figure 4 Forecourt wiring
Figure 5 DOMS PSS 5000
Figure 6 Central Processing Board (CPB508) display and menu navigation keys
Figure 7 TMS30 Cash Register POS, Station Server
Figure 8 Software Version Number and checksum screen shot
Figure 9 POS Display Screen showing Pump 5 is free and Pump 6 is filling
Figure 10 Active window with two deliveries that can be selected independently
Figure 11 Sales of other products Figure 12 POS Sales Receipt
Figure 13 OPT230
Figure 14 OPT230 Software Version and CRC Display
Figure 15 Fuel Automat type CRID

8. CERTIFICATE HISTORY

ISSUE NO.	DATE	DESCRIPTION
Series S026	30 January 2008	Certificate first issued.

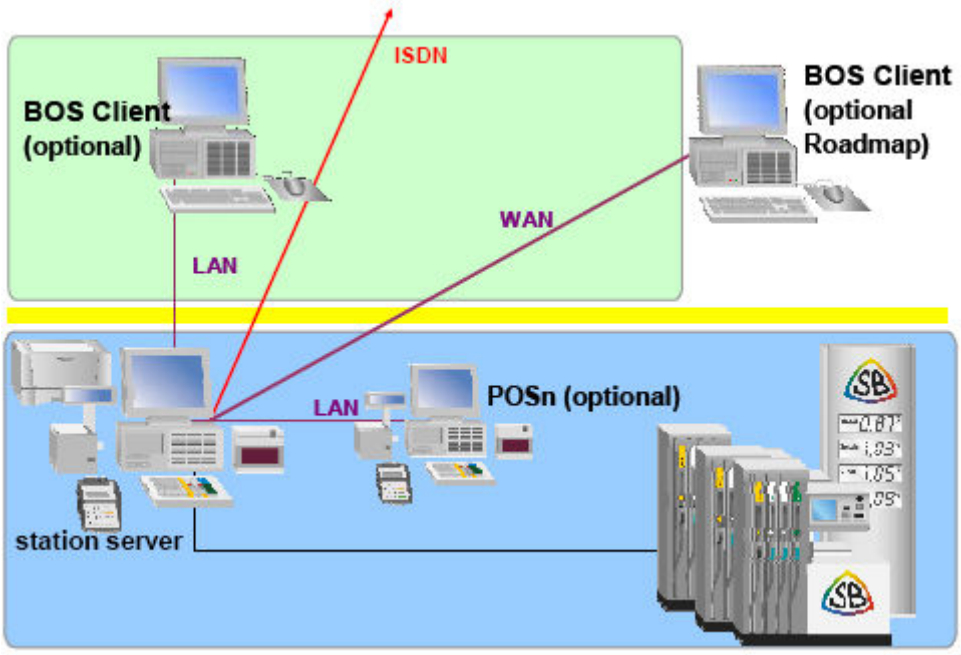

Figure 1 POS / Station server configuration

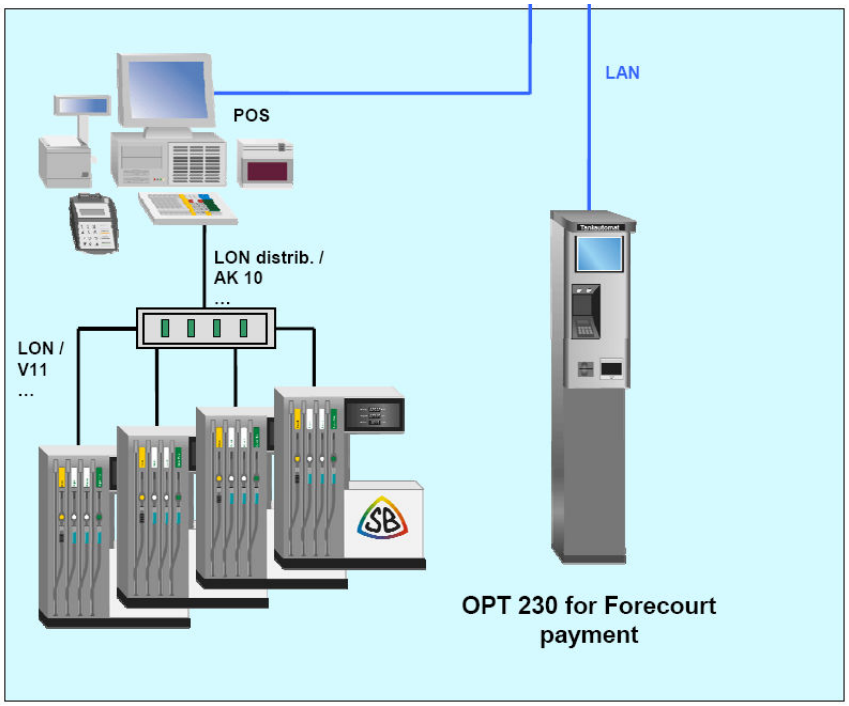

Figure 2 OPT230 configuration

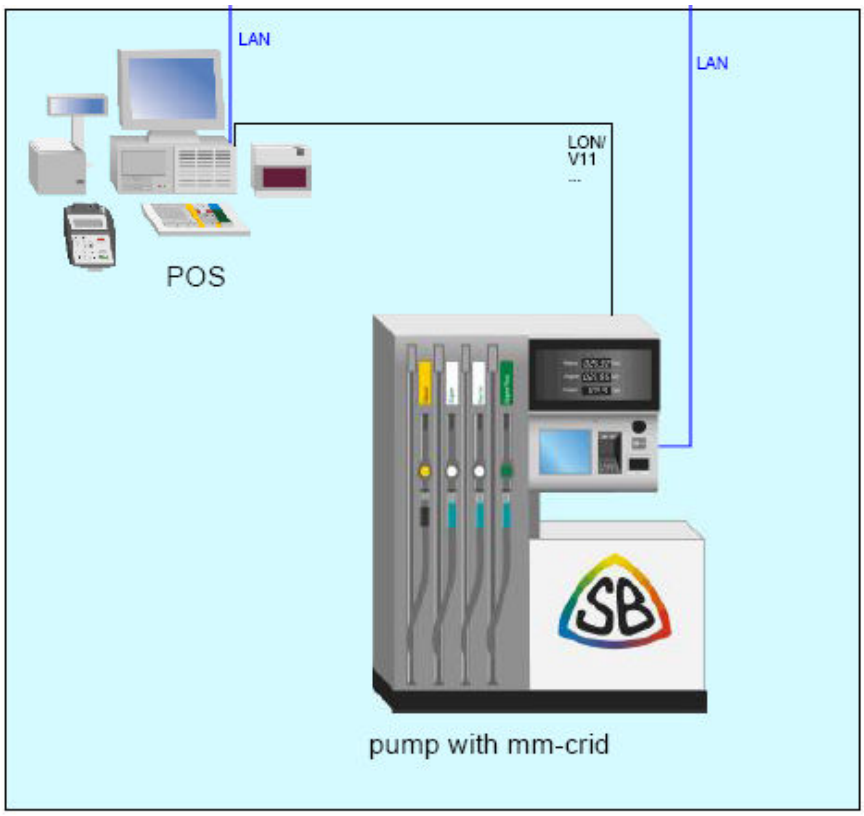

Figure 3 CRID Lancom and CRID Multimedia configuration

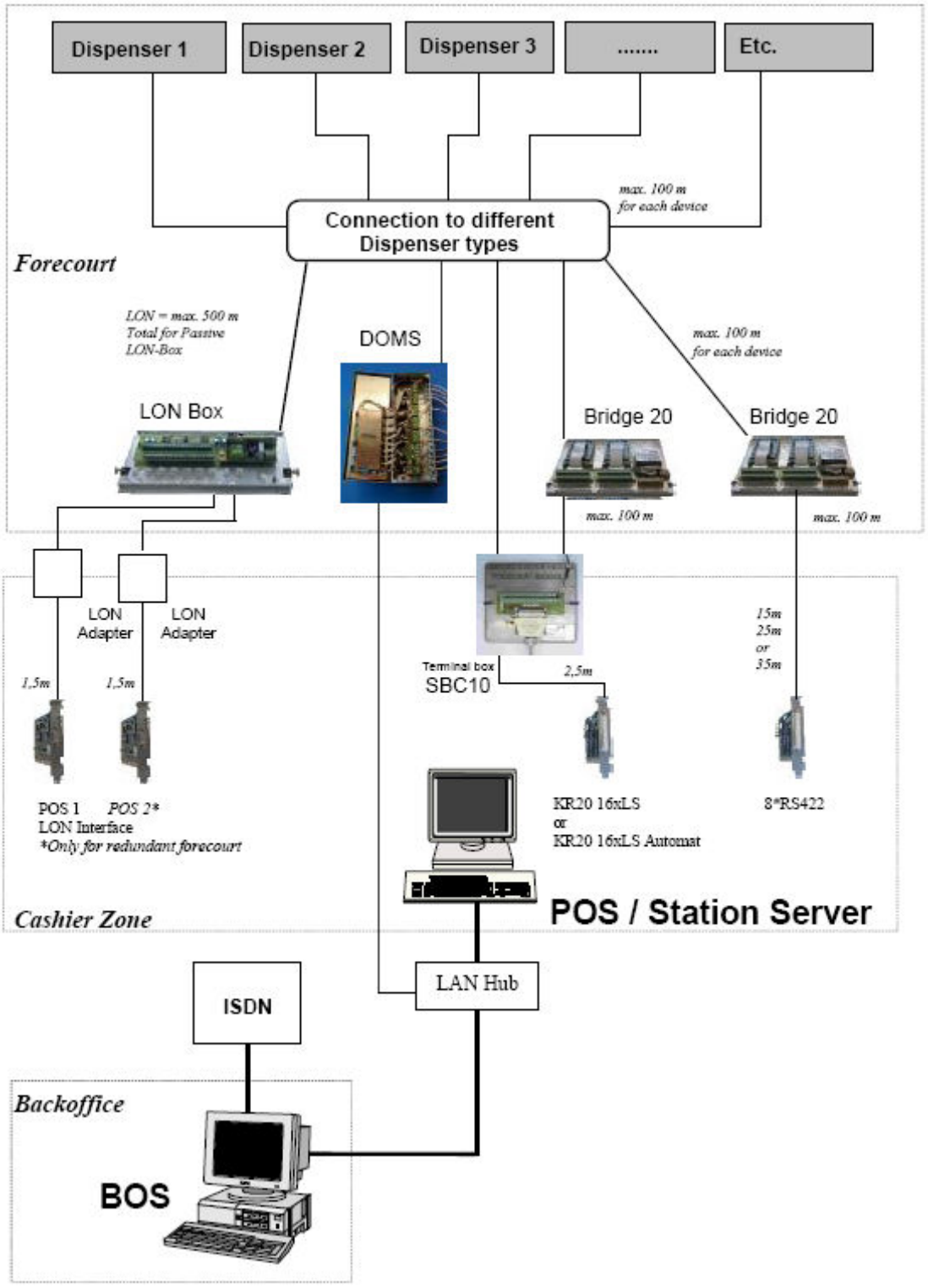

Figure 4 Forecourt wiring

Figure 5 DOMS PSS 5000

Figure 6 Central Processing Board (CPB508) display and menu navigation keys

Figure 7 TMS30 Cash Register POS, Station Server

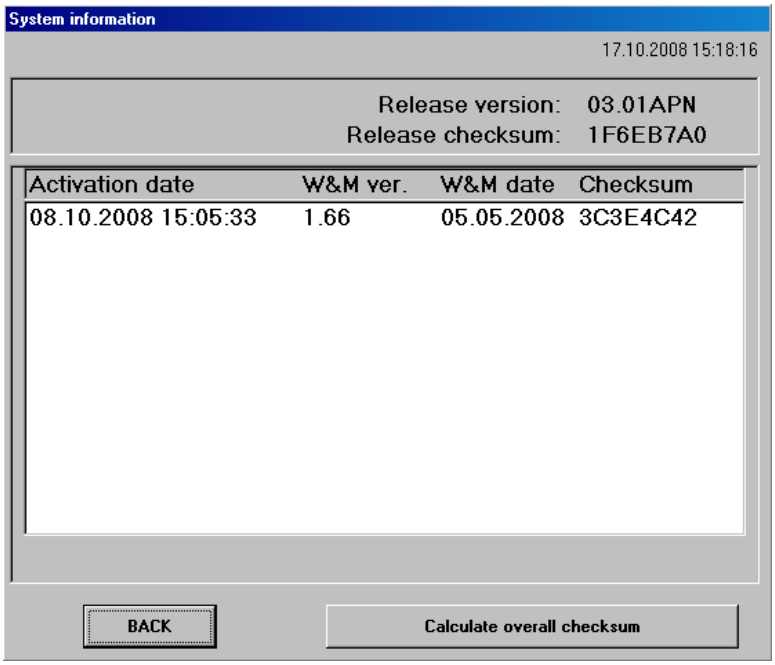

Figure 8 Software Version Number and checksum screen shot

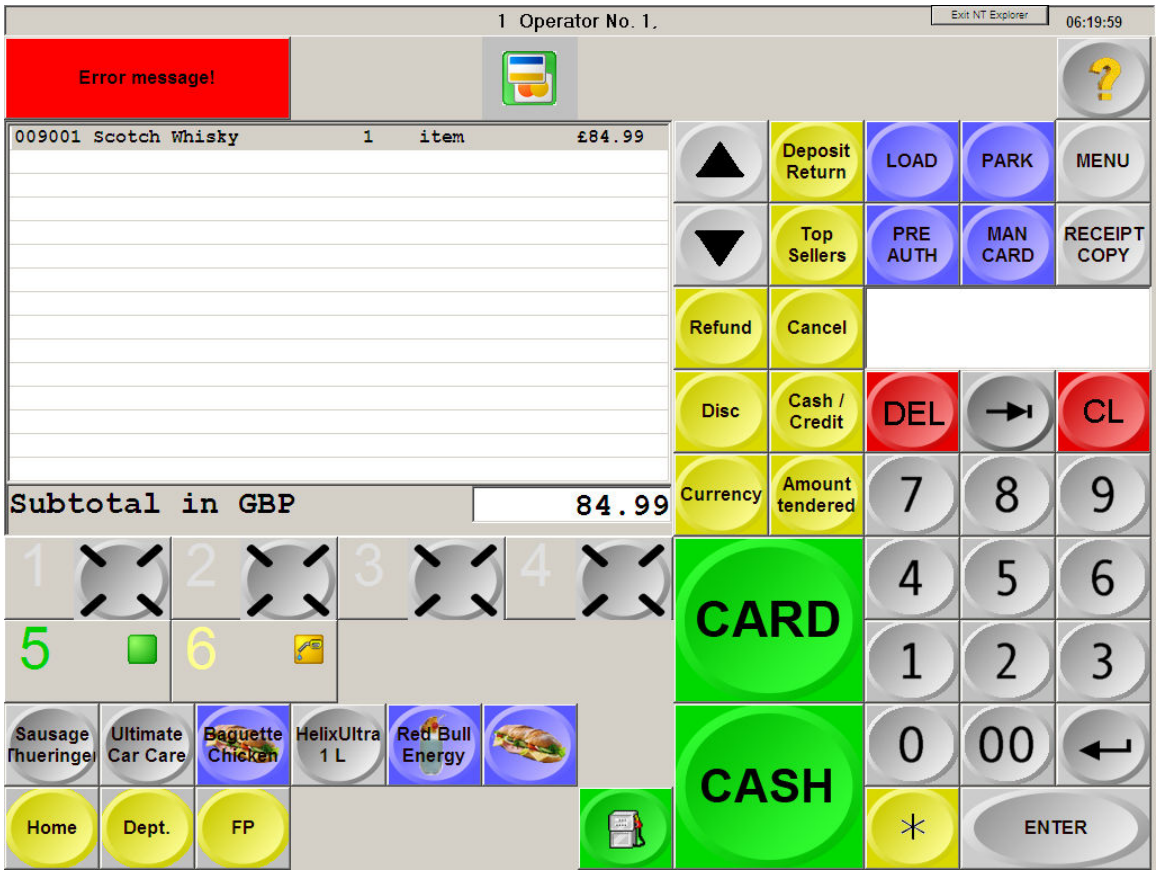

Figure 9 POS Display Screen showing Pump 5 is free and Pump 6 is filling

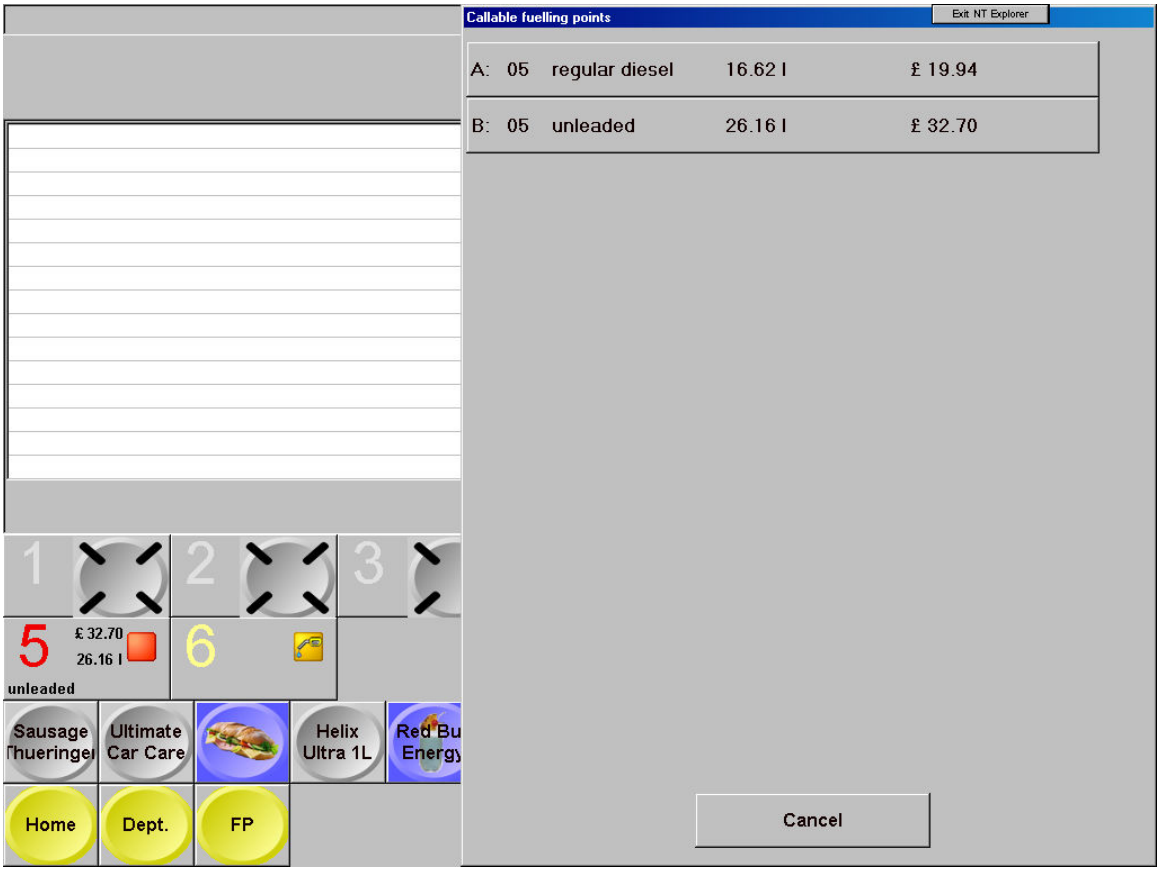

Figure 10 Active window with two deliveries that can be selected independently

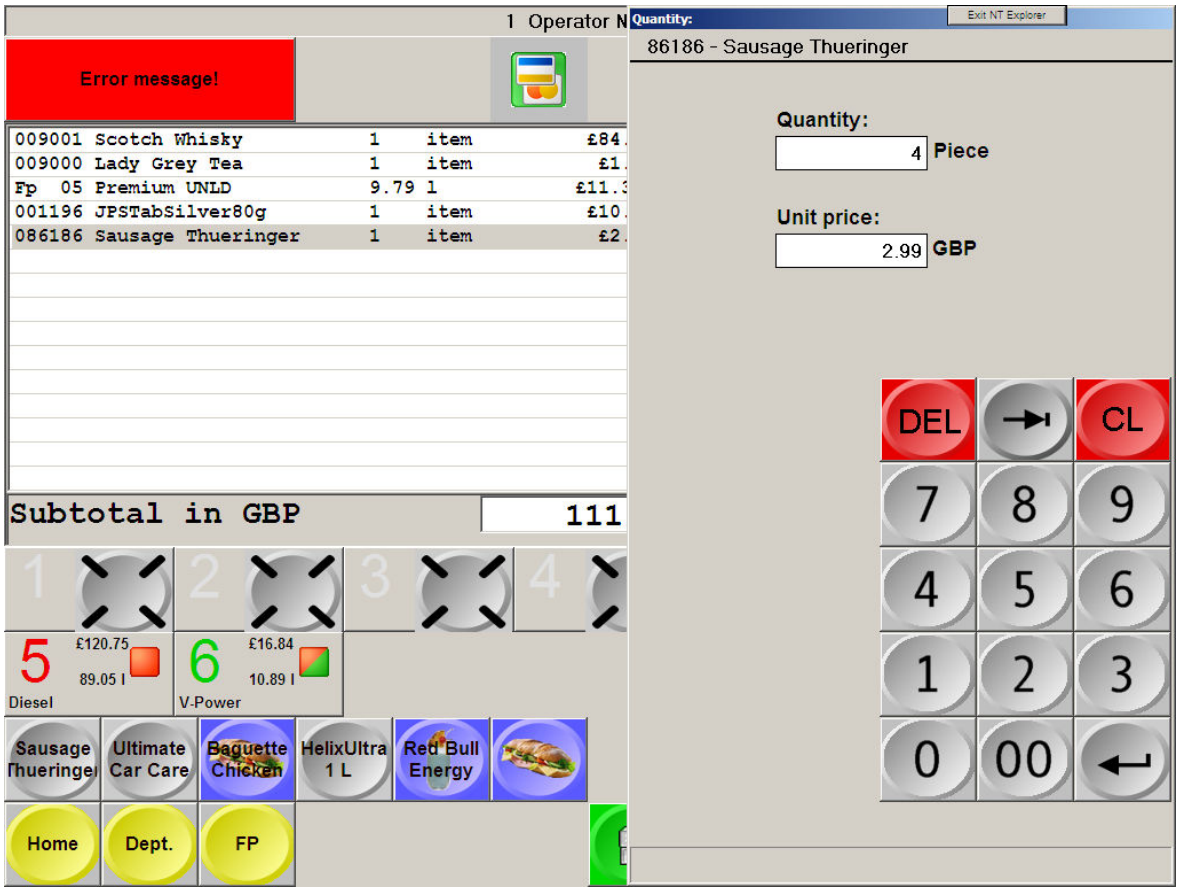

Figure 11 Sales of other products

S&B Chessington , UK
TMS30 demo version
Kimberley Road
2356 London
Petrol Station No.: 0000000732
Tel.: 0212345678
Fax.: 0223456789

Receipt No. 1272/001/00001 02.12.08 23:52

*000013 V-Power		£24.21 A #*
*Fp 05	15.66 l £1.546/l	#*
020024 Baguette (pork)		£2.70 B +
086186 Sausage Thueringer		£2.99 B +
009001 Scotch Whisky		£84.99 A +

Total Amount £114.89

paid £120.00
Change £5.11

Type	Net	VAT	Gross
A:15.00%	94.95	14.25	109.20
B: 5.00%	5.42	0.27	5.69
Sum	100.37	14.52	114.89

Legend of tax number(s)

+ Partner 252476679
# Agency GB 811127597

Today car wash £ 2.50 only !
Thank You
Drive Carefully

Figure 12 POS Sales Receipt

Figure 13 OPT230

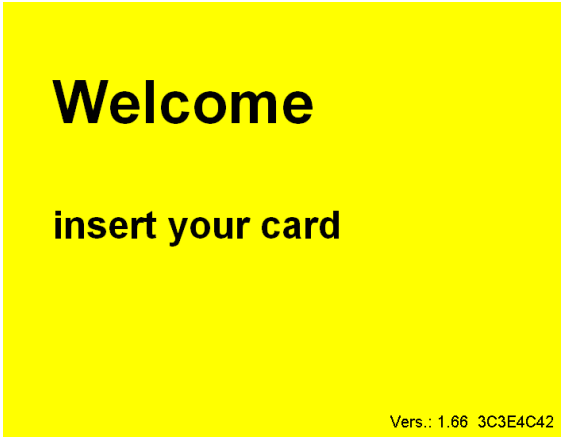

Figure 14 OPT230 Software Version and CRC Display

Figure 15 Fuel Automat type CRID

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