

# Certificate

## Pursuant to section 12 of the Weights and Measures Act 1985

*Certification No 2798/11 Revision 1*

*Valid Until 30 September 2016*

*In accordance with the provisions of section 12 of the Weights and Measures Act 1985, the Secretary of State for Trade and Industry hereby certifies as suitable for use for trade a pattern of a road tanker meter measuring system, as described in the descriptive annex to this Certificate, and having the following characteristics:-*

*A vehicle-mounted meter measuring system with a wet-line delivery system and a dry-line delivery system system, based on EC standard scheme 7. System control and headgear is, electronic and has the option of price calculation.*

<i>Model designation:</i>		<i>80/50 mm system</i>
<i>the maximum rate of flow:</i>		<i>800 litres/minute</i>
<i>the minimum rate of flow:</i>		<i>150 litres/minute</i>
<i>the minimum delivery:</i>	<i>50 mm wet line</i>	<i>350 litres</i>
	<i>80 mm dry line</i>	<i>2000 litres</i>
<i>the liquids measured:</i>		<i>gas oil, derv, kerosene</i>

*Note: This certificate relates to the suitability of the equipment for use for trade only in respect of its metrological characteristics. It does not constitute or imply any guarantee as to the safety of the equipment in use for trade or otherwise.*

*Submitted by:      **Emco Wheaton UK Ltd**  
**Channel Road Westwood Ind. Est.**  
**Margate**  
**Kent CT9 4JR***



*Signatory:      **M A Bokota**  
*for:*            **Chief Executive**  
**National Weights & Measures Laboratory**  
**Department of Trade and Industry**  
**Stanton Avenue**  
**Teddington**  
**Middlesex TW11 0JZ**  
**United Kingdom***

Reference No:      T1121/0012  
                             STD 6230

Date: 23 February 2009

# **CONTENTS**

## **CERTIFICATION NO 2798/11 Revision 1**

### **1 INTRODUCTION**

### **2 CONSTRUCTION**

2.1 Mechanical

2.2 Electronics

### **3 OPERATION**

3.1 Description

3.2 Interlocks and security features

### **4 SEALING**

### **5 SOFTWARE VERSION NUMBER**

### **6 RECOMMENDED TESTS**

### **7 CERTIFICATE HISTORY**

## **ILLUSTRATIONS**

Figure 1 Display panel of LC-98 litre counter

Figure 2 iMeter data monitoring device

# **Descriptive Annex**

As described in Certification Nos 2798, 2798/2 and 2798/4 but having a modified litre counter (model no LC-98) as described below.

## **1 INTRODUCTION**

The pattern is a vehicle mounted electronic liquid fuel meter measuring system fitted with a wet- and dry-hose hydraulic system. The meter is fitted with a pulser, the output of which increments a litre counter/control box, model LC-98. The LC-98 controls the flow of liquid, has a real time volume display, and has menu driven functions. The modifications of the litre counter comprise of a redesigned front panel and container, the user interface and the location of the legally relevant data, which is now stored on the pulser electronics board.

## **2 CONSTRUCTION**

### **2.1 Mechanical**

The LC-98 litre counter is housed in a steel box with a hinged lid. The redesigned front panel, which is a membrane keypad, is shown in Figure 1. The upper window displays the volume count in litres and the lower, smaller display is a menu navigation window.

### **2.2 Electronics**

The delivery menu appears on power-up and allows the user to select and deliver a product and preset quantity. Pressing MENU/RESET enters the support menu, which shows the time, date, details of the last delivery, and allows access to the 'Setup' menu or to details of the last 10 deliveries. The 'Setup' menu in turn allows access to other menus entitled Manager Setup, Technical Setup, W&M Setup and -Print Setup. Each menu is hierarchical in Organisation. A lower level is reached by pressing the ENTER key and a higher level by pressing the CLEAR key. Each setup menu is protected by a password. The setup menus are exited by selecting the appropriate exit function within that menu. The support menu is exited by pressing MENU/RESET to return to the delivery menu.

The LC-98 controls discharge via a 2-stage control valve. Data controlling the ramp-up and ramp-down of the 2-stage valve are accessed through the Setup menu. The LED lamps on the START and STOP buttons on the front panel indicate the state of the 2-stage control valve:

- (i) Start button lit - valve fully open
- (ii) Stop button lit - valve fully closed
- (iii) Both blinking - valve half-open

To amend the technical data, stored in the setup menus, a password must be entered, the data amended, "Save on exit" selected and then the power must be switched off and on twice.

The calibration data is stored on the pulser electronics board, which is co-located with the pulser in a housing bolted to the meter. Calibration data may only be amended by entering a password

and pressing a button on the pulser board. Access to the purser board is protected by a wire-sealed bolt.

### **2.3 Connection of OutTrak iMeter, data monitoring device**

The OutTrak iMeter box (Figure 2) may be connected between the electronic register and the printer. The OutTrak iMeter System is designed to obtain transaction data generated by the electronic register and then passed onto an onboard computer for invoicing purposes. The legal data is not affected and passes through the iMeter box to the printer and prints receipts as described in the certificate, the extra invoicing data is printed on the end of the legal receipt.

Further invoice information generated by the on board computer can be printed on the onboard printer via Port 2.

**Note:** This invoice information is not intended to replace the legal printed transaction data.

There are three serial ports on the iMeter box:

- Port 0 is the input port from the meter, this requires the purple cable.
- Port 1 is the output port from the box to the printer, use the white cable for this.
- Port 2 is the control port, this can either be connected directly to the on-board computer or to a Bluetooth adapter.

The software version loaded on to the iMeter box can be checked by a switch located in a small opening on the side of the box. Turn **ON** switch 3 and power up the iMeter, a message will then be sent to the printer with the version details. Once the information is printed, switch 3 is switched **OFF** and the iMeter box can be reset ready for use.

A message similar to the following will print on the meter printer:

```
OutTrak Software Services Ltd.  
RS232 Multiplexer 3-Port  
Electronic Meter Interface Module  
Build Version 1.2.0  
Operating Mode: A
```

The unit is sealed with tamper evident seals on two sides of the box and should be removed from the system if found to be damaged.

## **3 OPERATION**

### **3.1 Description**

On power-up, the user is asked to select a product and enter a value for the preset quantity. When START is pressed the system automatically discharges the product, ramping the flow rate up and down as determined by the values stored in the calibration area. On completion of the delivery, the user is prompted to print a ticket or to type in another preset value for the same product. If the latter is done, this volume is automatically discharged and the above message is repeated. On hitting PRINT, the ticket is printed. The ticket shows the ticket sequence number, the quantity delivered, the nature of the product, the date, the discharge start and finish times, the print time and the totaliser values at the start and end of discharge. When the ticket has been printed, the menu reverts back to the prompt to select a product.

### **3.2 Interlocks and security features**

- (i) A different type of product cannot be selected until the ticket for the previous product has been printed.
- (ii) If the printer malfunctions, the current delivery can be completed but a new one cannot be started until the problem is rectified.
- (iii) It will not be possible to print an original ticket once a delivery has ceased for more than 25 minutes. Only 4 duplicates may be printed thereafter.
- (iv) The calibration data is protected by a password and a special device. The password is required to access the calibration menu; values cannot be amended unless a push-button on the pulser board has been pressed first. The push-button is accessed by breaking a sealed wire and removing the large bolt head on the pulser housing (attached to the meter).

## **4 SEALING**

The calibration push-button is protected behind a bolt, the head of which has been drilled. A wire is passed through this hole and that of another bolt securing the pulser housing. The wire is drawn tight and a lead seal applied.

## **5 SOFTWARE VERSION NUMBER**

The version number of that part of the software controlled by NWML is 1.00. It may not be changed without the prior consent of NWML.

The version number may be viewed by accessing the support menu and selecting 'Software Version'. This displays the version number of the software on the pulser board, the user interface version number ("U/I") and the legally relevant data version number ("WIIM")

## **6 RECOMMENDED TESTS**

- (i) Check that it is not possible to make more than one delivery with no ticket in the printer.
- (ii) Check the software version number.

## **7 CERTIFICATE HISTORY**

<b>ISSUE NO.</b>	<b>DATE</b>	<b>DESCRIPTION</b>
2798/11	1 <sup>st</sup> October 2006	Certificate first issued.
2798/11 revision 1	23 <sup>rd</sup> February 2009	Addition of Section 7 and section 2.3



**Figure 1** Display panel of LC-98 litre counter



**Figure 2** iMeter data monitoring device