Evaluation Certificate

SC0414-14 Certificate for a part of a measuring system for LOTW

Forecourt controller, FuelNet Manager

Issued to
CODAB AB
Höjdrodergatan 24, SE-212 39 Malmö, Sweden

In respect of (part of instrument)
Forecourt controller and memory device, a purely digital self-service device (SSD) intended for use with fuel dispensers for motor vehicles and point of sales systems.

Characteristics/rated operating conditions
The evaluated part of a measuring system for LOTW is a self service device for direct sales, interruptible, attended pre-payment and post-payment including sale stacking, unattended delayed payment and pre-payment. It includes a memory device.

Accuracy class:	0,5
Ambient temperature limits:	+5°C to +40°C
Humidity:	condensing
Location:	closed

In accordance with

- WELMEC Guide 8.8, Issue 2 "General and Administrative Aspects of the Voluntary System of Modular Evaluation of Measuring instruments under the MID",
- WELMEC Guide 10.7, Issue 1 "Guide on evaluating purely digital self-service devices (PDSSD) for sales to the public" and
- WELMEC Guide 7.2, Issue 5 "Software Guide".

This Evaluation Certificate is the positive result of the applied modular approach under these WELMEC Guides, for a part of a measuring system for the continuous and dynamic measurement of quantities of liquids other than water.

This is not a MID Certificate (EU-type examination certificate according to 2014/32/EU), but the MID requirements have been applied. The complete measuring system shall be subject to a conformity assessment procedure as described in MID.

This Evaluation Certificate may only be used in combination with fuel dispensers and other SSD's (Self Service Devices) after permission of CODAB AB.

Applicable essential requirements of MID 2014/32/EU

-	MID, Annex I	Essential requirements
-	MID, Annex MI-005	Measuring systems for the continuous and dynamic measurement of quantities of liquids other than water (LOTW)

Harmonised standards and normative documents used
Applicable parts of the following normative documents referred to in the Official Journal of the European Union 2011/C33/01:

- OIML R 117-1 Edition 2007 (E), Dynamic measuring systems for liquids other than water

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Further applied documents
- The Measuring Instruments Regulation, STAFS 2016:1
- Regulations and Guidelines concerning Measuring Systems for the Continuous and Dynamic Measurement of Quantities other than Water, STAFS 2016:6
- RISE Certification Rules SPCR 181

Validity
Valid until June 5, 2024.

Miscellaneous
This issue of the certificate is the 8th, extended, edition, and replaces earlier issues. The first edition was issued on June 5, 2014.

The principal characteristics, approval conditions are set out in the appendix hereto, which forms part of the approval document. All the plans, schematic diagrams and documentations are recorded under reference files 4P01647, 5P03642, 7P01468, 7P04642, 8P05259, 2P02839 and 2P06744. The evaluation report 4P01647-1 has been issued in accordance with WELMEC Guide 8.8, Voluntary system of Modular Evaluation.

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0 Conditions

The use of this Evaluation Certificate is limited to:
Combination with other parts of a measuring system (e.g. fuel dispenser and POS) under the following conditions:

- One of the communication protocols defined in this certificate is used
- The other parts of the measuring system having an EC-type examination certificate, Evaluation Certificate or Parts Certificate covering compatibility with the communication protocol used or
- The other parts of the measuring system having a National Type approval covering compatibility with the communication protocol used

Other parties may use this EC only with written permission of CODAB AB, Höjdrodergatan 24, SE-212 39 Malmö, Sweden.

The device must correspond with the following specifications:

1. Design of the device

1.1 Construction

Forecourt controller description
FuelNet Manager (FNM)is a part of a self service arrangement. FuelNet Manager is a forecourt controller and is controlled by an external POS for the payment type. Therefore FuelNet Manager can also support an external POS system running the following service mode and type of payment:

	Attended post-payment	Attended pre-payment	Unattended delayed-payment	Unattended pre-payment
FuelNet Manager	yes	yes	yes	yes

The forecourt controller is a self service device for direct sales, in an interruptible measuring system. It includes a memory device, also used for sales stacking.

The forecourt controller is connected to a Point of Sales (POS) system for handling authorization and settling of transactions from fuel dispensers. It also handles authorization for a pre-set volume/price, sales stacking and stores transaction for long term storage. It is connected to an external head office system, called TapNet, for configuration, monitoring and diagnosis. Transaction data to the POS is protected by a checksum. The POS has to check that the checksum for the transaction is valid before further processing for payment, including printing a receipt. FuelNet Manager(up to FNM SW version 1.18) has no display but can be accessed via its Web interface from a PC connected to the same TCP/IP network as the FuelNet Manager. From FNM version 1.19 and onwards a SW version for the legal software is added and legal readout can also be done via connecting the FuelNet display module, Hardware Interface Device module to the system.

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FuelNet Manager

1.2 Components included

The hardware of the self-service device should comply with the EMC-directive and other applicable directives as specified in the Declaration of Conformity of the self-service device.

The components included in chapter 1.2 have passed temperature and humidity tests, see chapter 7.4 (except parts marked with**).

Main computer	CODAB FuelNet Server 570
Operating system	RDOS
Application software	FN-1.1.0
Legally relevant modules checksum	see table below
Pump hardware interface module	CODAB 571*
Power supply, 230VAC	Mean Well DR-100-24*
Power entry EMC filter	Schaffner FN 9260-1-06*
Cabinet	CODAB, Drawing number M10760, Rev B (including M10761, Rev B)
HW Interface module, FuelNet display module (temporarily used for readout)	CODAB 604**

* *or equivalent with CE-marking and suitable climate specification and tested by CODAB*

Software specification according to WG 7.2:

Software type	P
Risk class	C
Extension	L, T, S, D

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List of legally relevant software modules (the checksum is for all legally relevant modules together)

Legally relevant software modules
TMIDCustomer
TMIDTransactionPOSDevice
TMIDNotifyGilbarcoFill
TMIDNotifyDartFill
TMIDNotifyMKSFill
TMIDNotifyTatsunoFill
TMIDNotifyWayneFill
TMIDNotifyCompacFill
TMIDNotifyATCLFill
TMIDNotifyKoppensFill
TMIDNotifyIFSFFill
TMIDNotifySBFill
TMIDNotifyNPFill
TMIDNotifyPumaLANFill
TMIDNotifyZSRFill

The legal relevant software DLL has a specific signature (check sum and for later FuelNet Manager SW releases than 1.19 as well a software version) while the FuelNet Manager SW version still can change.

FuelNet Manager SW, and later	MID DLL Checksum Signature and SW Version	Comment
1.1.6	94F0	
1.1.11	BF48	Include support of Koppens (EPS3 and EPS5) and IFSF for pumps
1.1.14	E570	Include support of S&B pump protocol
1.1.15	4D08	Include support of Nuovo Pignone pump protocol
1.1.15 r4003	3830	Include support of PumaLAN pump protocol
1.17.22	5F48	Include support of ZSR pump protocol
1.18.3	BFC0	Include support of ZSR pump protocol
1.19.0	2FD0 Ver. 1.1.1	Include SW version for MID DLL and support of FuelNet display module for reading out legal relevant data at the site

1.3 Optional equipment and functions subject to MID requirements

Not applicable

1.4 Technical documentation

For market surveillance the construction and included components are described in 1.1 and 1.2. The metrological software is identified by the checksum, which can be accessed according to 5.3.

1.5 Integrated equipment and functions not subject to MID

The following equipment may be connected to FuelNet Manager (without change of this certificate):

- price signs
- alarms
- tank level gauges

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2. Technical data

2.1 Rated operating conditions

Forecourt controller intended for use with fuel dispensers for motor vehicles and point of sales systems. Self service device for direct sales, interruptible, attended pre-payment and post-payment including sale stacking, unattended delayed payment and pre-payment. It includes a memory device.

Measurement range

Scale interval, memorized volume: same as dispenser, but not smaller than 0,01 l
Scale interval, memorized price: same as dispenser, but not smaller than 0,01 "PRICE"

Accuracy class of measuring system

0,5 or 1,0

Environments classes / influence quantities

The components included in chapter 1.2 have passed temperature and humidity tests, see chapter 7.4.

Mechanic: class M1
Ambient temperature limits: +5°C to +40°C
Humidity: condensing
Location: closed

2.2 Other operating conditions

Not applicable.

3. Interfaces and compatibility conditions

The SSD with the following interface protocols as stated in the table below was examined and found in compliance with WGs 8.8, 10.7 and 7.2.

Serial interface for communication with dispensers. Communication with TapNet via GPRS, communication with POS via TCP/IP (IFSF FDC protocol).

Communication with other parts of a measuring system (fuel dispenser) using one of the following protocols:

SW protocol
Wayne current-loop
Wayne Dart
Tatsuno
Auto Tank, ATCL
Compac
Gilbarco
MKS

SW protocol
IFSF
Koppens
Scheidt & Bachmann
Nuovo Pignone
PumaLAN
ZSR

The forecourt controller may only be used in a measuring system with:

- all volume and price indicating and printing devices having the same scale interval as FuelNet Manager

4. Requirements on production, putting into use and utilisation

4.1 Requirements on production

No special requirements identified.

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4.2 Requirements on putting into use

The following functional tests are performed in the factory.

CPU module:

- Power circuit
- All external interfaces
- Verify display is OK
- CPU can boot

Interface modules:

- Power circuit
- All interface channels
- Verify display is OK

Complete FuelNet Manager:

- Power on/off test whole system and all sub modules
- Verify legal menu is according to specification
- Interface to TapNet

4.3 Requirements for consistent utilisations

No special requirements identified.

5. Control of the measuring tasks of the device in use

5.1 Documentation of the procedure

No special requirements identified.

5.2 Special equipment or software, if applicable

A computer with internet browser connected to the same TCP/IP network as the FuelNet Manager to read the CRC, see 5.3. From FNM version 1.19 and onwards legal readout can also be done via connecting the FuelNet display module, Hardware Interface Device module to the system.

5.3 Identification of

- Hardware

The construction and included components are described in 1.1 and 1.2.

- Software

The legally software of FuelNet Manager is identified by a unique CRC-16 checksum, see chapter 1.2. FuelNet Manager (up to FNM SW version 1.18) has no display but can be accessed via its Web interface from a PC connected to the same TCP/IP network as the FuelNet Manager. Open an Internet browser and enter the IP address of the FuelNet Manager in the address field. The CRC (calculated in real time) is found under page “LEGAL”.

From FNM SW version 1.19 and onwards a SW version for the legal software is added and legal readout can also be done via connecting the FuelNet display module, Hardware Interface Device module to the system. Picture below shows the FuelNet display module when just connected to the system and the SW version of the module is indicated shortly. After a short while the FuelNet display module will show a menu from where the user can get access to the different log’s related to legal information. See menu display below. In general, are the buttons below the display used to enter and step through the information available. The button to the right “BACK” is for getting back one menu.

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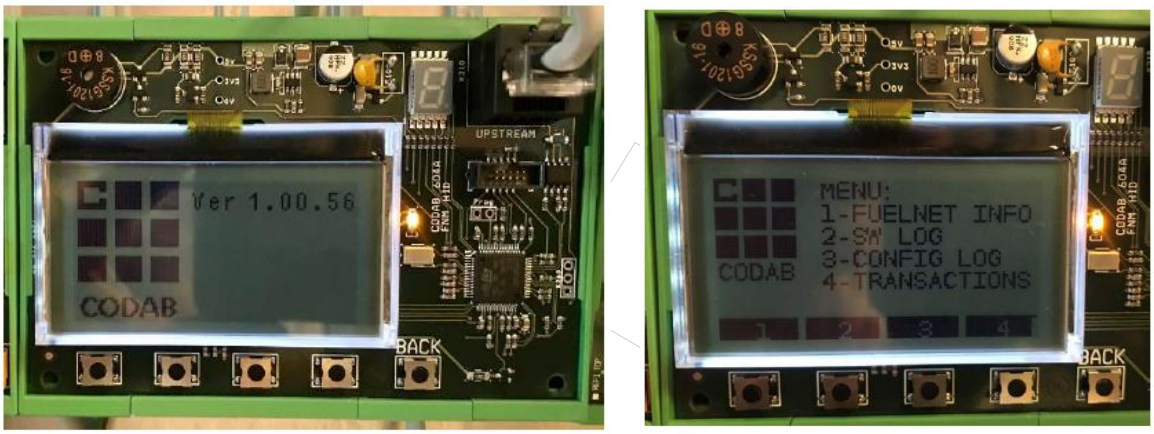

FuelNet display module connected (temporarily) to FuelNet Manager

5.4 Calibration-/adjustment procedure

Not applicable

6. Security measures

6.1 Sealing

The forecourt controller is not sealed.

6.2 Data logger

FuelNet Manager acts as memory device for unattended delayed payment with cards. It is also used for temporary storage (sale stacking).

7. Labelling and inscriptions

7.1 Information to be borne by and to accompany the device

The marking plate/label mounted on the device shall contain the following information:

- the name and address of the manufacturer
- the serial number of the forecourt controller and year of manufacture
- the designation or type name
- the Evaluation Certificate number, **SC0414-14**, of the forecourt controller
- the ambient temperature range
- mechanical class
- electromagnetic class
- place for identification of the connected fuel dispenser(s)
- place for the verification sticker

7.2 Conformity marking in accordance to MID article 17

This Evaluation Certificate is not an EU-type examination Certificate. Therefore the forecourt controller must **not** be marked with the supplementary metrology marking “M xx”, following the CE marking.

7.3 Further inscriptions, if necessary

No special requirements identified.

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7.4 Evaluations carried out for this Evaluation Certificate

The evaluation under this certificate is recorded in Evaluation Report 4P01647-1 (referring to test and examinations in test report 4P00761-1, 4P00761-2rev1, and 4P00761-01-1rev1).

A summary of the evaluation under this certificate is given below.

Description	+	-	Remarks
Relevant parts of the checklist OIML R117-1	*		4P00761-1

Extension	Description	+	-	Remarks
Type P	Requirements on basic configuration	*		4P00761-01-1rev1
Type U	Requirements on basic configuration	/	/	
Extension L	Requirements on data storage	*		4P00761-01-1rev1
Extension T	Requirements on interfaces	*		4P00761-01-1rev1
Extension S	Requirements on software separation	*		4P00761-01-1rev1
Extension D	Requirements on software download	*		4P00761-01-1rev1
Extension I	Specific software requirements	/	/	

Description	+	-	Remarks
Dry heat (non-condensing) (+40°C)	*		4P00761-2rev1
Cold (+5°C)	*		4P00761-2rev1
Damp heat, cyclic (condensing), severity level 2	*		4P00761-2rev1

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