



# CERTIFIKAT

No. SC311-12

## EVALUATION CERTIFICATE (certificate for a part of a measuring system for LOTW)

### Outdoor payment terminal for cards, PaySys

**Issued to**

NPS A/S (Nordic Petrol Systems)  
Landbrugsvej 6, DK-5260 Odense S, Denmark

**In respect of (part of instrument)**

Outdoor payment terminal device for cards, a purely digital self-service device (SSD) intended for use with fuel dispensers for motor vehicles at unattended fuel stations.

**Characteristics/rated operating conditions**

The evaluated part of an interruptible measuring system for liquids other than water (LOTW) is a self service device for direct sales, with unattended delayed payment. It includes a printer and a memory device and can be used for setting unit prices in fuel dispensers.

Accuracy class                    0,5  
Ambient temperature limits:   -40°C to +55°C  
Humidity:                            condensing  
Location:                            open

**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 (EC-type examination certificate according to 2004/22/EC), 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) et c manufactured by TATSUNO-BENČ EUROPE a.s., Dresser Wayne AB, Gilbarco Autotank AB or Tokheim Group S.A.S. or after permission of NPS A/S.



Certificate issued by an Accredited Certification Body - date of issue: February 10, 2012 - Page 1 (2)

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## Applicable essential requirements

- 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

## Further applied documents

- The Measuring Instruments Regulation, STAFS 2006:4
- Regulations and Guidelines concerning Measuring Systems for the Continuous and Dynamic Measurement of Quantities other than Water, STAFS 2006:9
- SP's Certification Rules SPCR 181

## Validity

Valid until February 10, 2022.

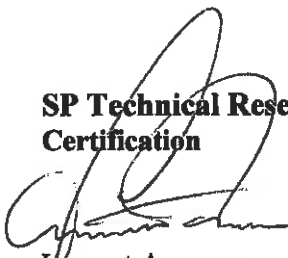
## Miscellaneous

This issue of the certificate is the 1<sup>st</sup> edition.

*The principal characteristics, approval conditions are set out in the appendix hereto, which forms part of the approval documents and consists of 8 pages. All the plans, schematic diagrams and documentations are recorded under reference files PX05987. The evaluation report PX05987-02 has been issued in accordance with WELMEC Guide 8.8, Voluntary system of Modular Evaluation and WELMEC Guide 10.7 Evaluation of PDSSD.*

Borås, February 10, 2012

**SP Technical Research Institute of Sweden  
Certification**



Iennart Aronsson  
Certification Manager



Kerstin Mattiasson  
Certification Officer



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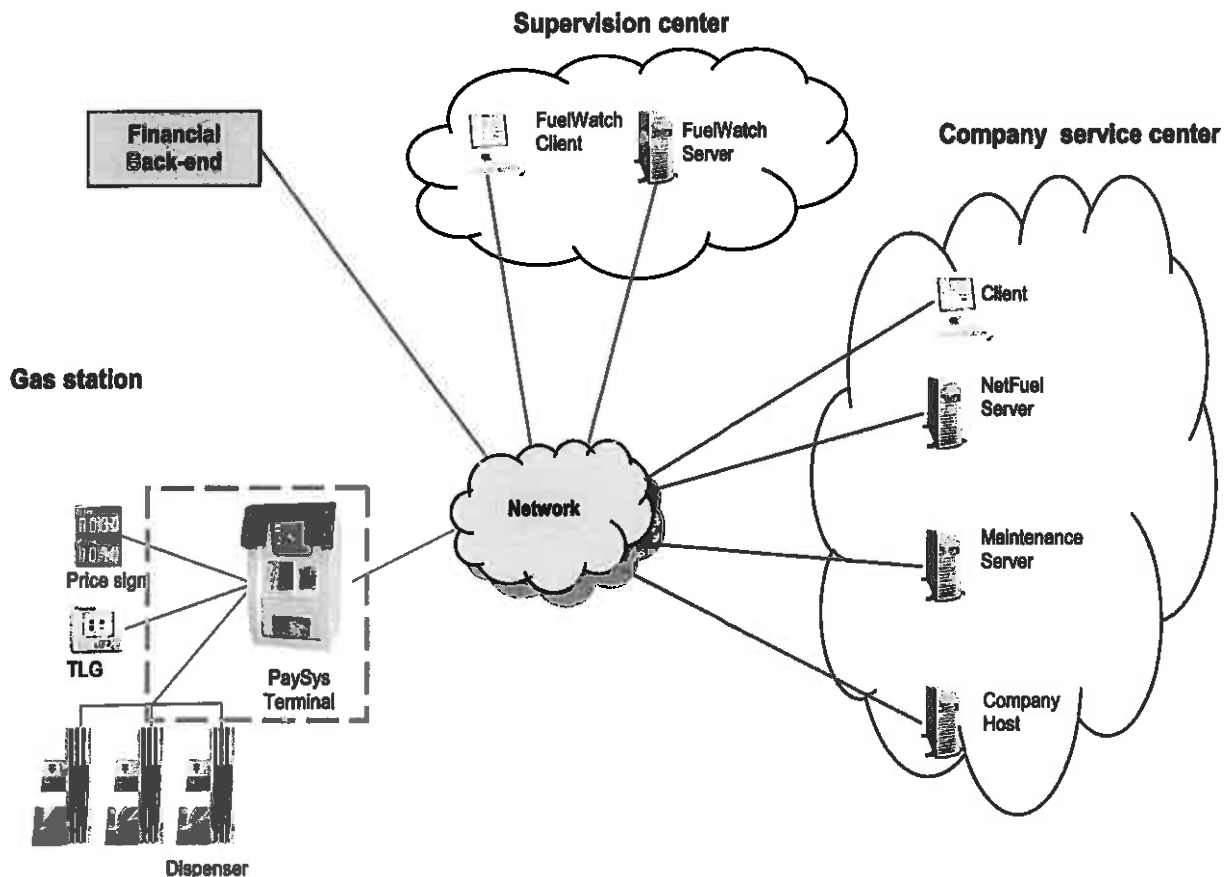
## 0 Conditions

The use of this Evaluation Certificate is limited to:

Combination with "any" fuel dispenser and other SSD's manufactured by TATSUNO-BENČ EUROPE a.s., Dresser Wayne AB, Gilbarco Autotank AB or Tokheim Group S.A.S. under the following conditions:

- The communication protocols defined in this certificate are used
- The fuel dispenser/SSD having an EC-type examination certificate covering compatibility with the communication protocol used
- The SSD having an Evaluation certificate covering compatibility with the communication protocol used
- The fuel dispenser/SSD having a National Type approval covering compatibility with the communication protocol used

Other parties may use this EC only with written permission of NPS A/S (Nordic Petrol Systems) Landbrugsvej 6, DK-5260 Odense S, Denmark.



Picture 1: System overview. Marked in red are the parts included in the certificate; payment terminal including communication with dispensers (UPI).

The device must correspond with the following specifications:

**1 Design of the device**

**1.1 Construction**

**Payment terminal description**

PaySys is a part of a self service arrangement. It supports the following service mode and type of payment:

	Attended post-payment	Attended pre-payment	Unattended delayed-payment	Unattended pre-payment
PaySys			X	

The payment terminal is a self service device for unattended delayed payment (including bank cards and credit cards), for direct sales, in an interruptible measuring system. It includes a printing device and a memory device and can be used for setting unit prices in fuel dispensers.

The PaySys terminal is produced in 3 various configurations regarding the method of interface to the acquirer/redeem (handling payment transaction) – one PSAM solution and two IPOS solutions (IPOS 1 and IPOS 2). The terminal can be configured as "standalone" or with a company host system for prices, verification of company cards, transactions, reports, etc.

The PaySys terminal is normally delivered with a standard pillar. Furthermore it is possible to mount the PaySys directly on a Pump (depending on the pump layout/design) or on a wall.



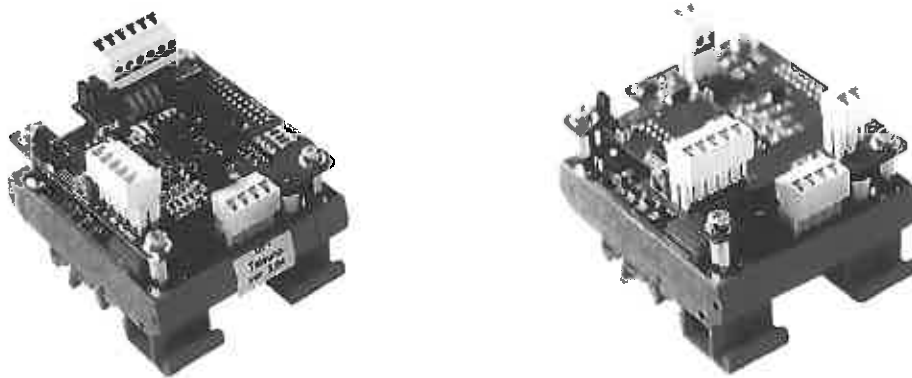
Picture 2: PaySys terminal, alone and on a standard pillar



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Picture 3: Universal Pump Interface UPI1 (802UPIM485V) and UPI4 (802UPIMODCL2)

PaySys does not modify nor perform any calculations on the measurement data. The system operates as a Point of sales System, POS, collecting measurement data using the dispenser protocols supported by the system. The Universal Pump Interface (UPI) acts as an interface protocol converter for fuelling information from the dispensers. The UPI-box is installed indoors, max 400 m from the payment terminal. After fuelling the customer receives a receipt and the transaction is stored in the memory device.

## 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 has passed temperature and humidity tests, see chapter 7.4.

### Legally relevant software

Interface	Filename	Checksum
K5- Interface	K5PumpInterface.dll	4CCE09AA
DummyPrinter	ReceiptPrinterDummyDriver.dll	914037A0
NP-215 Serial	ReceiptPrinterNP215Driver.dll	30A5E57B
NP-2511 Serial	ReceiptPrinterNP2511Driver.dll	8A8184FD
WELMEC Storage security module	WELMECMACModule.dll	C8AEF7C7
Tatsuno	UPI_Tatsuno_v402.bin	00007628
Dart	UPI_Dart_v401.bin	00001E79
ATCL	UPI_ATCL_v401.bin	0000D544
Ljungman	UPI_Ljungman_v401.bin	0000D473

Payment terminal  
Computer

Advantech ARK-3381\*

Operating system

Windows XP Embedded 1.0.0

Printer

Nippon NP-215D\*\*

Display

Advantech ES-2106\*



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Card reader	Magtek IntelliStripe 65*
PIN-pad	Cryptera EPP 1315*
PSAM smart card reader (only PSAM)	Athena ASEDrive IIIe USB V2 Smart Card Reader*
Heater	JEVI A/S 230 V, 100 W, 80x80 mm or equivalent
Thermostat for heater	Elmwood Sensors 2455R 100 081 or equivalent
Fan	Sunonwealth electric machine industry Co., LTD SF23080 AT, P/N 2082HBL or equivalent
Power supply	Mean Well RS-150-24*
AC mains inlet filter	Roxburgh EMC RID-0642-H*
Chassis	Hougaard & Koefoed 24180
<b>Universal Pump Interface (UPI)</b>	
UPI main board	NPS A/S 800UPIMODCPU
UPI physical interface	802UPIM485V or 802UPIMODCL2
Power supply (for UPI)	Mean Well RS-75-24*

\*or equivalent with CE-marking and suitable climate specification

\*\*or equivalent, with CE-marking and suitable climate specification, under the condition that the functionality of the checking facilities for power off, decoupling/no serial communication, end of paper, is the same.

**Software specification according to WG 7.2:**

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

**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 checksums for the legally relevant software in 1.2, 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 PaySys (without change of this certificate):

- price signs
- level measuring equipment
- external alarms



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## 2 Technical data

### 2.1 Rated operating conditions

Payment terminal device for bank cards and credit cards, intended for use with fuel dispensers for motor vehicles. Self service device for direct sales, interruptible, unattended delayed payment, including a printer and a memory device. It can be used for setting unit prices in fuel dispensers.

#### Measurement range

Scale interval, printed volume same as dispenser, but not smaller than 0,01 l  
Scale interval, printed 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 has passed temperature and humidity tests, see chapter 7.4.

Mechanic: class M1  
Ambient temperature limits: -40°C to +55°C  
Humidity: condensing  
Location: open

### 2.2 Other operating conditions

Not applicable

## 3 Interfaces and compatibility conditions

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

Serial interface for communication with dispensers, price signs, level measuring equipment etc.  
Network interface for communication with host system.

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

SW protocol	Interface board
Tatsuno	802UPIM485V, 802UPIMODCL2
Dart	802UPIM485V
ATCL	802UPIMODCL2
Ljungman	802UPIMODCL2

The payment terminal may only be used in a measuring system with:

- all volume indicating having the same scale interval as PaySys
- all price indicating having the same scale interval as PaySys

## 4 Requirements on production, putting into use and utilisation

### 4.1 Requirements on production

No special requirements identified.



**4.2 Requirements on putting into use**

Functional test of display, printer, pin pad, card reader and communication with simulated fuel dispenser using the UPI, is performed in the factory according to "Test PaySys".

**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**

No special requirements identified.

**5.3 Identification of**

- Hardware

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

- Software

The legally relevant software is identified by the checksums, see 1.2

**Presentation**

Visualization of MID relevant fixed software and the software identification of those modules can be displayed on demand using the SystemInfo feature of the PaySys FuelPOS software. The SystemInformation display is available to a technician either by use of the terminals http interface or via the terminals service menu accessed by a special service card and a PIN.

**A. Using terminals http interface.**

1. Connect a computer to the same network as the terminal.
2. Open a Web Browser.
3. Enter/connect to terminals IP Address.
4. Log in using the correct User and Password.
5. Select the menu item "System information".
6. Scroll to the "MID" section.
7. Checksums will be listed as shown in the example below.

**B. Using terminals service menu accessed by service card.**

1. Insert service card in terminals card reader.
2. Enter/Press PIN.
3. Select/Press the menu tab "Browser".
4. Select/Press the "System Info" button.
5. Scroll to the "MID" section.
6. Checksums will be listed as shown in the example below.

Example of visualization of the software versions as displayed at the SystemInfo page:

**MID**

Device	MID Software Version	Checksum
NP-2511 Serial 1.0.1.0	MID 1.00	8A8184FD
K5-Interface version 1.0.1.0	MID 1.00	4CCE09AA
WBLMEC Storage security module 1.0.0.0	MID 1.00	C8AEF7C7
UPI : Tatsuno 4,02	MID 1.00	00007628



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#### 5.4 Calibration-/adjustment procedure

Not applicable

#### 6 Security measures

##### 6.1 Sealing

The payment terminal is not sealed.

##### 6.2 Data logger

Data base in PaySys acts as memory device for unattended delayed payment with cards.

#### 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 producer
- the serial number of the payment terminal and year of manufacture
- the designation or type name
- the Evaluation Certificate number, **SC311-12**
- the ambient temperature range
- mechanical 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 EC-type examination Certificate. Therefore the payment terminal 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.



Appendix to  
EVALUATION CERTIFICATE - No. SC311-12  
dated February 10, 2012

**7.4 Evaluations carried out for this Evaluation Certificate**

The evaluation under this certificate is recorded in Evaluation Report PX05987-02 (referring to test and examinations in test report PX05987, PX05987-01 and PX05987-03).

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

Description	+	-	Remarks
Relevant parts of the checklist R117-1	*		PX05987

Extension	Description	+	-	Remarks
Type P	Requirements on basic configuration	/	/	
Type U	Requirements on basic configuration	*		PX05987-01
Extension L	Requirements on data storage	*		PX05987-01
Extension T	Requirements on interfaces	*		PX05987-01
Extension S	Requirements on software separation	*		PX05987-01
Extension D	Requirements on software download	*		PX05987-01
Extension I	Specific software requirements	/	/	

Description	+	-	Remarks
Dry heat (non-condensing) (+55°C)	*		PX05987-03
Cold (-40°C)	*		PX05987-03
Damp heat, cyclic (condensing), severity level 2	*		PX05987-03