



Nederlands Meetinstituut

Test certificate

Number : **TC3551** revision 1
Project number : 506399
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Issued by NMI Certin B.V.
Hugo de Grootplein 1
3314 EG Dordrecht
Nederland

In virtue of The demands in the "Ijkgeregeling vloeistofhoogtemeters"

Applicant Varec, Inc.
5834 Peachtree Corners East
Norcross, GA
U.S.A.

Submitted **A central system for calculation and indication, intended for use as part of a tank level gauge, and equipped with a field interface unit**

Characteristics Make : Varec, Inc.
Type : System for calculation and indication:
FuelsManager Oil & Gas version 6.0.x or
version 7.0.X
Field interface unit: RTU/8130

Other characteristics are represented in the Description TC3551 revision 1.

Description and Documentation The system is described in the description nr. TC3551 revision 1, belonging to this Test certificate, and documented in the Documentation folder TC3551-2.

Remark This Test certificate TC3551 revision 1 is extend with the software version 7.0.X, and a new tank detail screen, and replaces the previous revision 0. The Documentation folder TC3551-2 replaces the precious Documentation folder TC3551-1.

Dordrecht, July 26th, 2005
NMI Certin B.V.


Ing C. Oesterman
Manager Productcertification

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1 General information concerning the central system for calculation and indication

All properties of this system, whether mentioned or not shall not conflict with the "IJKwet", (the Dutch Weights and Measures Law), the "IJKreglement" (the Dutch Weights and Measures general regulations) and the "IJKregeling vloeistofhoogtemeters" (the Dutch Weights and Measures tank level gauge regulations).

The system comes with either the software version 6.0.X or the software version 7.0.X.

- The FuelsManager Oil & Gas version 6.0.x User Interface program works in combination with the FuelsManager Oil & Gas version 6.0.x Operator Interface program.
- The FuelsManager Oil & Gas version 7.0.x User Interface program works in combination with the FuelsManager Oil & Gas version 7.0.x Operator Interface program.

1.1 Essential parts

1.1.1 FuelsManager Oil & Gas version 6.0.x or version 7.0.X User Interface program.

1.1.2 FuelsManager Oil & Gas version 6.0.x or version 7.0.X Operator Interface program.

These programs are run from within a Windows XP platform. The platform software versions and / or service packs, as well as the interfaces between these platforms and the FuelsManager programme shall not be in violation with the Weights and Measures demands. For a detailed user description refer to the manual.

Unauthorized alterations in the basic programme result in a non-functioning of the program.

1.2 Essential characteristics

1.2.1 FuelsManager Oil & Gas version 6.0.x or version 7.0.X User Interface program.

1.2.1.1 FuelsManager Oil & Gas version 6.0.x or version 7.0.X password for article 11 accredited person. Via [System], [Security], [W&M], [Password] the is set by the article 11 accredited person. Each change in legal parameters for both the FuelsManager Oil & Gas version 6.0.x or version 7.0.X system and the RTU/8130 is confirmed with article 11 accredited person's password. For a detailed description refer to the FuelsManager Oil & Gas and RTU/8130 manuals (from this last one particularly chapter 6; "Using ViewRTU").

1.2.2 FuelsManager Oil & Gas version 6.0.x or version 7.0.X Operator Interface program.

1.3 Essential shapes

1.3.1 Inscriptions;

1.3.1.1 name or logo of the manufacturer;

1.3.1.2 the number of this test certificate TC3551

1.3.2 Legal screen and legal print-out

1.3.2.1 The "Tank detail screen, presented by the FuelsManager Oil & Gas version 6.0.x or version 7.0.X system as "Tank Point NNNN" (where NNNN is the tank-identification), basically is the only legal screen. For each tank this screen contains all information about level, temperature, volume and mass (refer to TC3551-2 and to TC3551-5).

This screen also may be printed; the contents and shape are identical to the screen presentation.



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1.3.2.2 The "1] Current Tank Inventory Report.rpt" also may be considered as a legal screen and print-out, with the restriction that this screen and print-out must contain all information with regard to level-, temperature, volume- and mass-indications, as well as corrections and conversions, that is also presented on the "Tank detail screen".

1.3.3 The indication "Seal ID Sum:", with a number, in the System\Security\W&M\Tag Seals screen (refer to TC3551-3).
In this screen for each tank a "Seal ID" is presented. Each time the status of a tank's legal parameter changes (from non-legal to legal; from legal to non-legal) this number is increased by one.
The "Seal ID Sum" is the arithmetic total of the tank Seal ID's.

1.3.4 The inscription of the "Seal ID Sum" number on a seal sticker on the front of the computer or on the belonging monitor.
The "Seal ID Sum" number can be read via a shortcut on the screen.

1.4 Conditional parts

1.4.1 Personal computer with operating system Windows XP.
The computer must have a CE-mark.

1.4.2 Printing device.
The printing device is connected to the personal computer and must have a CE-mark. Preferably, the printer is connected to the computer using a serial link with parity check.

1.4.3 Field interface device, type RTU/8130, mounted in an enclosure, or equipped with sealed protections of cable connections and parameter setting switches.
Remark:
Angled metal strips covering the connectors may realize Protections of cable connections.
A seal, against opening, on the RTU/8130's cover, may protect the parameter setting switches. For the functions of this parameter setting switches refer to the RTU/8130's manual.

1.5 Conditional characteristics

1.5.1 Conditional characteristics of the FuelsManager Oil & Gas version 6.0.x or version 7.0.X User Interface program.

1.5.1.1 Via [System], [Security], [W&M], [Module seals] is set which programme parts are secured by the W&M password. At least these are:

- Program Files\FuelsManager\ cmdc8130.dll
- Program Files\FuelsManager\ cmds8130.dll
- Program Files\FuelsManager\ DCSCOMM.dll
- Program Files\FuelsManager\ ArchiveManager.exe
- Program Files\FuelsManager\ FMCommManager.exe
- Program Files\FuelsManager\ FMDataManager.exe
- Program Files\FuelsManager\ FMSystem.dll
- Program Files\FuelsManager\ OperNT.exe
- Program Files\FuelsManager\ RMClient.dll
- Program Files\FuelsManager\ FMProject\Detail\DetailWM.GRT
- Program Files\Common Files\FuelsManager Shared\VolumeCorrection.dll



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- Program Files\Common Files\FuelsManager Shared\Report.dll

- 1.5.1.2 Via [System], [Security], [W&M], [Tag seals] a "Tag" can be secured by the W&M password (in general this is a tank with he belonging parameters).
- 1.5.1.3 Via [System], [Security], [W&M], [Security seals] the "Archive " database can be secured by the W&M password. Also the "Seal-ID" is presented.
The function of the "Archive database" is making snapshots of tank information, and storing this snapshot information in a historical database. The interval and the storage time of this snapshot information are user settable. From this historical database historical printouts may be made. These historical printouts are identified as such.
- 1.5.1.4 Via [Database], [Point], the parameters belonging to a tank may be accessed. A number of tabs are accessible now.
- 1.5.1.4.1 In the "W&M"-tab is specified which items are legal. Each time a change is confirmed with the W&M password the Seal-ID in the bottom left of the page is increased by one. So, within this tab the W&M seals are laid down. At least TANK, LEVEL en TEMPERATURE should be set to legal.
- 1.5.1.4.2 The parameters in the tab "General" only can be changed when in the W&M-tab the level and the tank are set to non-legal.
- 1.5.1.4.3 The parameters in the "Vessel 1" and "Vessel 2" tabs only can be changed when in the W&M-tab the tank is set to non-legal.
- 1.5.1.4.4 The parameters in the tab "Strapping" only can be changed when in the W&M-tab the tank is set to non-legal.
- 1.5.1.4.5 Selection of a product in the tab "Volume" automatically selects the correct conversion.
- 1.5.1.4.6 The parameters in the tab "Process date" only can be changed when in the W&M-tab the belonging items are set to non-legal.
- 1.5.2 Print of the "Tank detail screen"
If no print can be generated, the computer stores at least 10 print requests.
- 1.5.3 Software sealing of the RTU/8130 parameters, for each connected level gauge; for information refer to the document MIS-100100-01, version 1.1 in the FuelsManager Administrator Manual's Weights & Measures Chapter.
- 1.5.4 Sealing of the enclosure, the RTU/8130 is mounted in, or the protection of connectors and parameter setting switches.
- 1.6 Conditional shapes**
- 1.6.1 Using the "Crystal report" program legal prints may be generated. If so, these prints must contain all information with regard to level-, temperature, volume- and mass-indications, as well as corrections and conversions that are also indicated on the "Tank detail screen".
- 1.7 Non conditional characteristics**
- The personal computer may be part of a network. This does not affect the legal performance.
- 2. Conditions for legal granting**
- 2.1 The calculating and indicating system shall be constructed in conformity with the description of this test certificate. The seals shall be attached as described in chapter 3.



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3. Legal stamps and sealing stamps

- 3.1 Sealing of the legal program parts. Refer to the previous paragraphs 1.5.1 and 1.5.2.
- 3.2 Software-seal of the FuelsManager Oil & Gas version 6.0.x or version 7.0.X parameters and the RTU/8130's parameters.
- 3.3 Sealing of the RTU/8130's enclosure, or the enclosure it is mounted in.
- 3.4 Inscription of the "Seal ID Sum" number on the sealing sticker on the front of the computer or the belonging monitor.



Appendix

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Tests carried out within the scope of this test certificate.

TEST	PART	TYPE	TEST REPORT	INSTITUTE
Dutch Weights and Measures regulations for tank level gauges. Functional tests.	Electronic calculating and indicating device make Endress+Hauser Systems and Gauging.	FuelsManager Oil & Gas version 6.0.X	Refer to the file belonging to the Test certificate nr. TC3436 (revision 0); project number: 410146.	Nederlands Meetinstituut N.V.
Dutch Weights and Measures regulations for tank level gauges. Functional tests.	Electronic calculating and indicating device make Endress+Hauser Systems and Gauging.	FuelsManager Oil & Gas version 6.0.x or version 7.0.X	Refer to the file belonging to the Test certificate nr. TC3436 (revision 1); project number: 506399.	Nederlands Meetinstituut N.V.

File: Tc3551r1_english.doc



Nederlands Meetinstituut

Documentation folder

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number	description
page 2	"Tank detail screen" picture, in version 6.0.X
page 3	Picture of the "Tag seal" screen with the "Seal ID Sum"
page 4	RTU/8130 picture
page 5	"Tank detail screen" picture, in version 7.0.X

Display Alarm Point Tools Movement Trend Winch Help

FuelManager Tank Detail FAVORITEZATES Tank Table23 241 01x

FuelsManager

OIL & GAS

Tank Point

Product <No Product>

Level 12-06-04 ft in 16th

Temperature -23.3330 °C

Water Level 0-00-00 ft in 16th

Density 0.245730 sp gr

Density Temperature 87.7778 °C

Standard Density 0.488932 sp gr

Calculated Values

Total Observed Volume - TOV 3,130.21 gal (US)

Water Volume - FW 0.00 gal (US)

Gross Volume - GOV 3,130.21 gal (US)

Tank Shell Correction (CTSh) 1.00000

Volume Correction Factor (VCF) 0.50261

Net Standard Volume - NSV 1,573.27 gal (US)

Available Product 819.36 gal (US)

Remaining Capacity 2,698.91 gal (US)

Mass 6,412.0 lb

Tank Command Mode **Stop**

Transfer Mode **Inactive**

Transfer Status

Current Tank Status **Stopped**

Current Transfer Status **Inactive**

Transfer Shutdown 0.00 min

Advisory Setpoint 15.00 gal (US)

Transferred Volume 0.00 gal (US)

Time Remaining 0.00 min

Flow Rate 0.00 gpm (US)

Tank Parameters

HIHi 38-00-00

High 34-00-00

Correction Method **Table 24E / Table**

Low 6-00-00

LoLo 2-00-00

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9/20/2004 9:06:59 AM
 User: Sutcliffe
 UnAck Alarms: 0
 Newest UnAck
 No UnAcknowledged Alarms

Full Management - Overview

Display View Alarm Movements Tools Detail Help

Tanks

- USOCLPE2
- TankFarm
- Tank 1
- Tank 2
- Tank 3
- Tank 4
- Tank 5
- Tank 6
- Tank 7
- Tank 8
- Tank 9
- Tank 10
- Tank 11
- Tank 12
- Tank 13
- Tank 14
- Tank 15
- Tank 16
- Tank 17
- Tank 18
- Tank 19
- Tank 20
- TankTP-200
- TankTP-201
- TankTP-202
- TankCD-100
- TankCD-101
- TankCD-102
- TankCD-103
- Laps
- Test

Tank 1

GAS

Measured Values

Level	4/7/2005 2:26:54 PM	Rh-10h	24-04-13
Temperature	3/3/2005 4:12:35 AM	°F	200.1
Water Level	3/7/2004 6:00:09 PM	Rh-10h	0-00-00
Density	3/2/2005 4:15:15 AM	*API	29.4
Standard Density	3/13/2004 6:00:09 PM	*API	20.0

Calculated Values

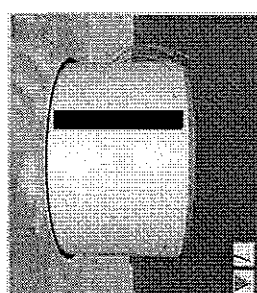
Total Observed Volume - TOV	gal (US)	732,034.25
Water Volume - RW	gal (US)	0.00
Gross Volume - GOV	gal (US)	732,034.55
Tank Shell Correction (CTSh)		1.00000
Volume Correction Factor (MCF)		0.94186
Net Standard Volume - NSV	gal (US)	689,471.23
Available Product	gal (US)	415,007.06
Remaining Capacity	gal (US)	271,226.25
Mass	lb	5,368,979.9

Tank Status

Tank Command Mode	Empty
Transfer Needs	Inactive
Current Tank Status	Emptying
Current Transfer Status	Inactive
Transfer Shutdown	0.00
Advisory Setpoint	16.00
Transferred Volume	0.00
Time Remaining	
Flow Rate	-235,998.23

Tank Parameters

HHi	38-00-00
High	34-00-00
Correction Method	Table 60/53
Low	9-08-00
LoLo	3-00-00



4/7/2005 2:26:54 PM TankFarm Tank 2 Tank 2 Digital Alarms

4/7/2005 2:29:11 PM

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