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Issued by NMI Certin B.V.

In accordance with The "Metrologiewet" (Stb. 2006, 137) and the "Regeling nationaal autonoom geregelde meetinstrumenten" (Staatscourant 55682 from 28 October 2016)

Producer Rosemount Tank Radar AB
Layoutvägen 1
SE 43523 Mölnlycke
Sweden

Part An **indicating device** for use as part of an automatic level gauge

Make : Rosemount Tank Radar AB
Type : Rosemount 2230 Graphical Field Display

Further properties and test results are described in the annexes:
– Description TC7983 revision 1;
– Documentation folder TC7983-1.

Remarks This revision replaces the previous revision.
The documentation folder is not changed.

Issuing Authority **The Designated Body, NMI Certin B.V.**
4 September 2017



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1 General information concerning the indicating device

Properties of the indicating device, whether mentioned or not, shall not conflict with the legislation, in particular the “Regeling nationaal autonoom geregelde meetinstrumenten” (Staatscourant 55682 from 28 October 2016).

The Rosemount 2230 Graphical Field Display (colours are example) presents inventory tank gauging data such as level, temperature, and pressure. The 2230 communicates with the Rosemount 2410 Tank Hub via the intrinsically safe 2-wire **Tankbus**.

A 2230 connected to the multiple tank version of the 2410 allows to view data from several tanks. It is possible to configure presentation of measurement variables for each tank individually. The four softkeys at the front of the 2230 allow navigation through the different menus and provides all tank data, directly on the field. The Rosemount 2230 supports up to 10 tanks. Up to three 2230 displays can be used on the Tankbus.

Data from a group of tanks is buffered by a 2160 Field Communication Unit (FCU), and is distributed via the Group Bus to a TankMaster PC, or a host system, whenever the FCU receives a request for data. In case no FCU is included in the system, the 2410 Tank Hub can communicate directly with the host computer.

The Rosemount 2230 Graphical Field Display is powered by the Tankbus.



1.1 Essential parts

Part	Type	Documentation number
Electronics board	PCB TDU_TB	7983/0-02, -03
Electronics board	PCB TDU_CB	7983/0-04, -05, -06
Display	Make Display Tech, type 128*64 pixels graphical display	

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1.2 Essential characteristics

1.2.1 Software specification (refer to WELMEC guide 7.2):

- Software type P;
- Risk Class C;
- Extension T, while extensions L, D and S are not applicable.
 - Software download is possible only after removing the Weights & Measures seal.

The following software versions may be applied:

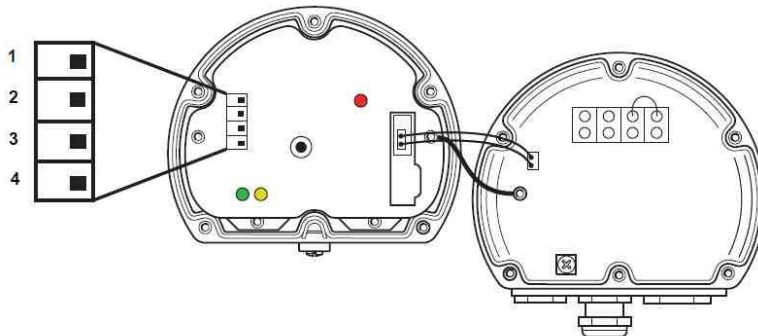
Software version	Checksum	Remarks
1.A4	2612FA03	-
1.B1	C9B95FF0	-

1.2.2 Level indication in mm or m.

1.2.3 Temperature indication (if applicable) in °C or K.

1.2.4 Unique device address.

1.2.5 Legal parameter sealing.



The switches control the following settings:

Number	Name	Description
1	Simulate	Enables simulation for test of 2230 in open FF systems.
2	Write Protect	Enables write protection of configuration data.
3	Spare	Not used
4	Spare	Not used



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1.3 Conditional characteristics

1.3.1 Weights & Measures register settings

The following list contains registers that affect Weights & Measures performance.

For each application, the manufacturer shall supply a written specification with motivation of all register settings that demand this.

On request of the verifying body the manufacturer shall motivate as well other registers than the ones that are specified below.

The Weights & Measures switch protects all of the following registers.

Register name	Register number	Register function
Prior to verification, the parameters 2300 up to and including 2310 shall be set and motivated by the manufacturer and / or the user.		
ToggleTime	202	One TMV will be displayed during this time
ToggleVar1	204	Configuration of TMVs to show.
ToggleVar2	206	Configuration of TMVs to show.
Tanks	208	Configuration of connected tanks.
Language	210	Language of the display
Units shall be set to metric values.		
UnitLength	212	Length units.
UnitVolume	214	Volume units
UnitTemperature	216	Temperature units
UnitLevelRate	218	Level rate units
UnitFlowRate	220	Flow rate units
UnitPressure	222	Pressure units
UnitDensity	224	Density units
Prior to verification, the parameters 6002 up to and including 6076 shall be set and motivated by the manufacturer and / or the user.		
VarPreset	226	Type of variables preset
TankPreset	228	Type of tanks preset
ViewMode	230	Type of tanks preset
View Switch Back time	232	Time before 2230 switch back to showing TMVs if it left in other state



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2 Seals

The following seals are applied:

- After parameter setting, the Weights & Measures switch must be sealed with a seal. In the sealed position ("write protection") parameter change is impossible. See paragraph 1.2.5 of this description.
- The enclosure must be sealed against opening with a seal.
- The inscription plate must be sealed with a seal.

3 Conditions for Conformity Assessment

- The indicating device shall be constructed in conformity with the description and documentation folder that belong to this approval document;
- The seals shall be applied as described in chapter 2.
- Third parties are not allowed to use this document without written permission of the owner of this document

4 Reports

An overview of performed tests is given in the reports:

- No. SP-P905645;
- TT2011-0037.