



EU-TYPE EXAMINATION CERTIFICATE

Number: TCM 141/25 - 6066

Page 1 from 11 pages

In accordance: with Directive 2014/32/EU of the European Parliament and of the Council on the harmonisation of laws of the Member States relating to the making available on the market of measuring instruments (implemented in Czech Republic by Government Order No. 120/2016 Coll.).

Manufacturer: TATSUNO EUROPE a.s.
Pražská 2325/68
678 01 Blansko
Czech Republic

For: LNG dispenser
type OCEAN 4xxx.Oxx/LNG
Accuracy class 1.5
Mechanical environment class: M2
Electromagnetic environment class: E2

Valid until: 27 May 2036

Document No: 0511-CS-A004-26

Description: Essential characteristics, approved conditions and special conditions, if any, are described in this certificate.

Date of issue: 27 May 2026

Certificate approved by:



Ing. František Staněk, PhD.

1 Measuring device description

The OCEAN 4xxx.Oxx/LNG LNG dispenser is intended for measurement the mass of liquefied natural gas (LNG) as a legal measuring device in the sense of the Directive of the European Parliament and of the Council no. 2014/32/EU of measuring instruments, as amended. It is used for the refuelling of motor vehicles.

The dispenser consists of non-return valves, a measurement transducer, an electronic calculator with electronic or electromechanical totalizing indicating device, electromagnetic valves, break-away couplings, hose with filling nozzle and hose with venting nozzle.

During first putting the LNG dispenser into the operation, electronic calculator is paired with measurement sensor. Electronic calculator downloaded metrological important parameters/registers of connected measurement sensor to calculator's memory before each delivery and then dispenser compare the values from calculator's memory against parameters downloaded from the measurement sensor. If there is any difference dispenser shows an error on the display. Due to the comparison of the parameters is not necessary to seal Modbus communication between calculator and measurement sensor and dismantling of the measurement sensor from LNG dispenser.

Under the metrological seal could be directly set up zero flow rate and calibration factor through the PDEX5 electronic calculator.

The OCEAN 4xxx.Oxx/LNG LNG dispenser could be connected into independent Point of Sale or Paying terminal, which does not influence metrology parameters of the dispenser.

The LNG dispenser is compatible with and may be connected to all self-service devices with proprietary protocols PDE, TATSUNO or other protocols notified in their evaluation / parts certificates as mentioned in chapter 1.3.

The basic design of the OCEAN 4xxx.Oxx/LNG series business branding is:

1	2	3	4	5	6	7
BMP	4	0	2	2	.O W D	/LNG

A stand-alone dispenser always starts with a BMP abbreviation followed by a clarification of the dispenser configuration and design.

Field	Values	Description
1	----->	Device type
	BMP	Dispenser. Standalone dispenser.
2	----->	Series of dispensers
	40	OCEAN dispenser series
3	1, 2	Number of products. Number of fuel inputs.
4	1, 2	Number of delivery hoses. It corresponds to the number of measuring systems.
5	----->	Dispenser design.
	OW	OCEAN TOWER dispenser series
6	----->	Dispenser orientation
	D	Double-sided dispenser.
	L	Single-sided dispenser – left.
	R	Single-sided dispenser – right.
7	----->	Specifying abbreviation
	/LNG	The LNG (liquefied natural gas) dispenser or module.

1.1 Measurement transducer

The Endress + Hauser measurement device type LNGmass was separately certified by NMI in the Evaluation Certificate no. TC8502 rev. 4. Basic technical data of LNGmass measurement device:

Type of flow sensor:	LNGmass
Diameter [mm]:	25
Flow rate [kg/min]:	15 – 300
Minimum measured quantity [kg]:	20
Maximum pressure [bar(g)]:	100
Temperature range liquid [°C]:	-200 to +55
Temperature range ambient [°C]:	-40 to +55
Environment classes:	M3 / E2 / H3
SW version:	V1.03.03 / CRC 0x87DFCB30

1.2 Electronic calculator

The Tatsuno Europe electronic calculator type PDEX5 was separately certified by CMI in the Evaluation certificate no. ZR 141/18 – 0175. Basic technical data of PDEX5 electronic calculator:

Type of electronic calculator:	PDEX5
Display type:	Electronic LCD
Scale interval:	0,01 or 0,001
Minimum measured quantity [kg]:	2
Temperature range ambient [°C]:	-40 to +70
Environment classes:	M2 /E2 /H3
SW version (LNG dispenser):	2.0 / CRC-32: C29EA05C

1.3 Self-service device

The measuring systems may be connected to a Self service device provided that:

- a) the Self-service device is described in:
 - one of the Evaluation Certificates as mentioned below; or
 - any Parts Certificate issued by a Notified Body that acts under module B of the MID for ANNEX VII (MI -005);
- b) the following applies:
 - the connection is made in such a way that the presentation of the results meets the essential requirements of the MID; and
 - the connection is made through the interfaces with the specified protocols as mentioned in the TEC, and/or the EC/PC.

1.3.1 Hectronic GmbH HECSTAR and HECFLEET NT self-service devices for fuel dispensers for the unattended service mode were separately certified in the Evaluation certificate and No. A0445/2056/2016 EC issued by BEV, Notified body 0445.

1.3.2 NPS A/S, PAY SYS payment terminal was separately certified in the Evaluation certificate No. SC311-12 issued by SP, Notified body 0402.

1.3.3 ALX TECHNOLOGIES, EUROPILE and EUROPOLE self-service devices were separately certified in the Evaluation certificates No. LNE-17492 and No. LNE-28279 issued by LNE, Notified body 0071.

1.3.4 MADIC INDUSTRIES, MADIC industries ELYS post-payment self-service device equipped with a data display and secured storage system was separately certified in the Evaluation Certificate No. LNE-22484 issued by LNE, Notified body 0071.

1.3.5 Doms ApS, PSS5000 forecourt controller and memory device, a purely digital self-service device was separately certified in the Parts Certificate No. SC0257-15 issued by RISE Research Institute of Sweden, Notified body 0402.

1.3.6 Knowtronic ApS, KT-OPT outdoor payment terminal including models “KT-Retail” and “KT-Account”, a purely digital self-service device was separately certified in the Parts Certificate No. SC0099-18 issued by RISE Research Institute of Sweden, Notified body 0402.

1.3.7 Tokheim, Fuel POS self-service device for use as a part of fuel dispenser, LPG dispenser and/or other liquid dispensers (e.g. AdBlue) was separately certified in the Evaluation Certificate No. TC7346 issued by NMi Certin B.V., Notified body 0122.

1.3.8 DBA Lab S.p.A., GL+POS and GL+OPT self-service device for use as a part of fuel dispenser, LPG dispenser and/or other liquids dispensers (e.g. AdBlue) were separately certified in the Evaluation Certificate No. GB-1624 issued by NMO, Notified body 0126.

1.3.9 Ratio Elektronik GmbH, Ratio TDC 2 self-service device for fuel dispensers for the attended and unattended service mode was separately certified in the Evaluation Certificate No. A0445/2186/2015 issued by BEV, Notified body 0445.

1.3.10 Ciemme S.r.l., GL+ POS, Emme+ POS, GL+ OPT, Emme+ OPT self-service devices were separately certified in the Evaluation certificate No. TC12626 issued by NMi Certin B.V., notified body 0122.

1.3.11 Fortech S.r.l, Smart POS self-service device was separately certified in the Evaluation certificate No. TC8419 and Part Certificate number TC8329 issued by NMi Certin B.V., Notified Body number 0122.

1.3.12 UNICODE SYSTEMS s.r.o., CardManager self-service device was separately certified in the Evaluation certificate No. ZR 141-22-0232 issued by CMI, Notified Body number 1383.

1.3.13 Hectronic GmbH HecVision self-service device was separately certified in the Evaluation certificate No. A0445/BEV-13.414/0025-NB/2018 EC and Part certificate No. A0445/BEV-13.414/0024-NB/2018 PC and issued by BEV, Notified body 0445.

1.3.14 Hectronic GmbH Forecourt Interface FCI 2040 – hardware component/controller for self-service device for fuel dispensers was separately certified in the Part certificate No. A0445/BEV-13.414/0022-NB/2018 PC and issued by BEV, Notified body 0445.

1.3.15 Hectronic GmbH HecVision: HecVision Fleet/Retail self-service device for fuel dispensers for the unattended service-mode was separately certified in the Evaluation certificate No. A0445/BEV-13.414/0025-NB/2018 EC issued by BEV, Notified body 0445.

1.3.16 Hectronic GmbH Heconomy self-service device for fuel dispensers for the unattended service-mode was separately certified in the Evaluation certificate No. A0445/2023-0.045.161/2023 EC issued by BEV, Notified body 0445.

1.3.17 UNIDATAZ s.r.o., ARDU self-service device was separately certified in the Evaluation certificate No. ZR 141/21 - 0220 issued by CMI, Notified body 1383.

1.4 Hose

- Filling hose Imbema Cleton B.V., INOFLEX NP-1F 316/304, DN25, length 5.0 m or 3.6 m;
- Venting hose Imbema Cleton B.V., INOFLEX NP-1F 316/304, DN13, length 5.0 m or 3.6 m.

1.5 Nozzle

- Filling nozzle Parker LG-10602-16FP
- Venting nozzle Rego FQD100602N

2 Basic technical data

Maximum flowrate $Q_{\max}$ [kg/min]:	80
Minimum flowrate $Q_{\min}$ [kg/min]:	15
Min. measured quantity MMQ [kg]:	20
Maximum quantity indication (number of digits):	19900.00 (7)
Maximum unit price (number of digits):	99999 (5)
Maximum price to pay (number of digits):	9999999 (7)
Type of display:	Electronic
Type of liquids:	LNG

Temperature range liquid:	-170 to -110
Maximum pressure [MPa]:	2.4
Accuracy class:	1.5
Temperature range ambient [°C]:	-40 to +55
Mechanical class	M2
Electromagnetic class	E2
Humidity	Condensing
Location	Open

3 Test

Technical tests of the OCEAN 4xxx.Oxx/LNG LNG dispenser were performed in conformity with International Recommendation OIML R 117:2019 *Dynamic measuring systems for liquids other than water*.

Evaluation report No. 0511-ER-F073-24 issued by CMI on 25 May 2026.

4 The measuring device data

There are at least a following data on the measurement sensor and the electronic calculator:

- Manufacturer's name, mark or trademark
- Type designation
- Serial number
- Alternatively other relevant characteristics (e.g. $Q_{\max}$, $Q_{\min}$, $P_{\max}$, liquids to be measured, MMQ, temperature range etc.)

There are following data on each measuring system:

- The "CE" marking and supplementary metrology marking
- Number of EU-type examination certificate
- Manufacturer's name, mark or trademark and post address
- Type designation
- Serial number and year of manufacture
- Accuracy class
- Minimum measured quantity (MMQ)
- Maximum flowrate ($Q_{\max}$)
- Minimum flowrate ($Q_{\min}$)
- Maximum pressure ($P_{\max}$)
- Liquids to be measured
- Liquid temperature range
- Ambient temperature range
- Mechanical class
- Electromagnetic class

The name plate must be inseparably fixed to the construction and clearly visible in normal conditions of use.

There are following data on each face of indicating device visible to user during the operation:

- Unit of national currency (e.g. €), near price indication
- Unit of mass (kg or word kilogram), near mass indication
- Unit price per kilogram (e.g. € / kg or € / kilogram), near unit price indication
- Information regarding the minimum measured quantity (MMQ)

All data are in an official language of country where the dispenser is put into operation.

5 Conditions for approval and sealing

Before putting into use it has to be verified that the fuel dispenser is in conformity with this certificate and meets its requirements.

It is recommended to perform the accuracy test at three flow rates:

- $Q_{\max}$ or maximum attainable,
- 25% of $Q_{\max}$ and
- $Q_{\min}$.

All measured errors have to be in range of tolerance $\pm 1.5\%$.

The DIP switch SW1-1 has to be set to position "ON" (up) at PDEX5 electronic calculator.

LNG dispenser has to be sealed after the conformity assessment with positive result according to the following description and pictures:

On the PDEX5 electronic calculator:

- | | |
|---|----|
| a) Connection of calculator cover with calculator console and SW1 switch cover, if separate | 1× |
| b) Connection of cover of display (with electromechanical totalizer) with display mask | 1× |
| c) The type plate of calculator | 1× |

On the dispenser:

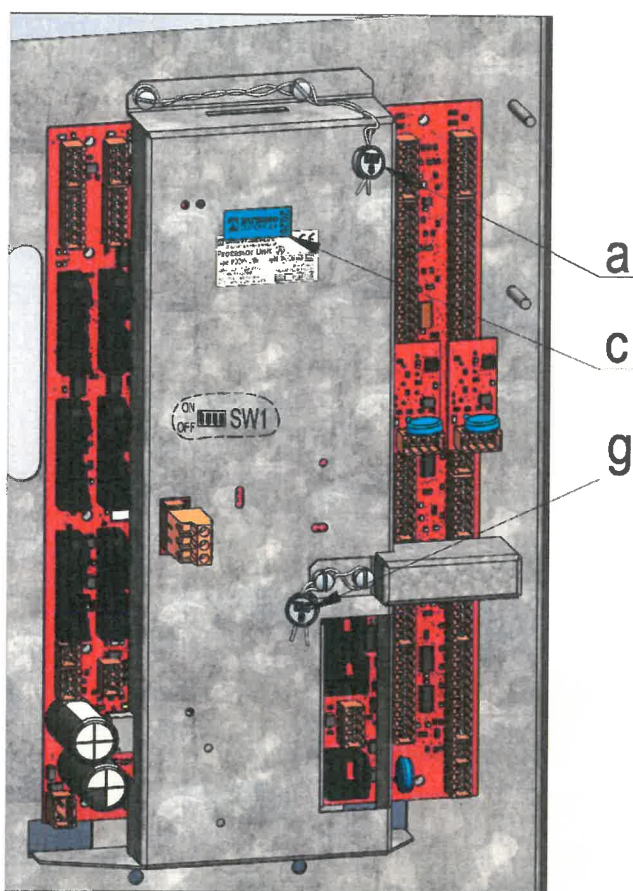
- | | |
|---|----|
| d) Connection of dispenser name plate with fuel dispenser frame | 1× |
| e) The symbol of relevant measuring system on the name plate | 1× |
| f) The fuel dispenser data sheet (identification of data on document) | 1× |
| g) Limit switch placed on valve no. HV5x44NG and its electrical connection to electronic calculator PDEX5 | 4× |

On the self-service device:

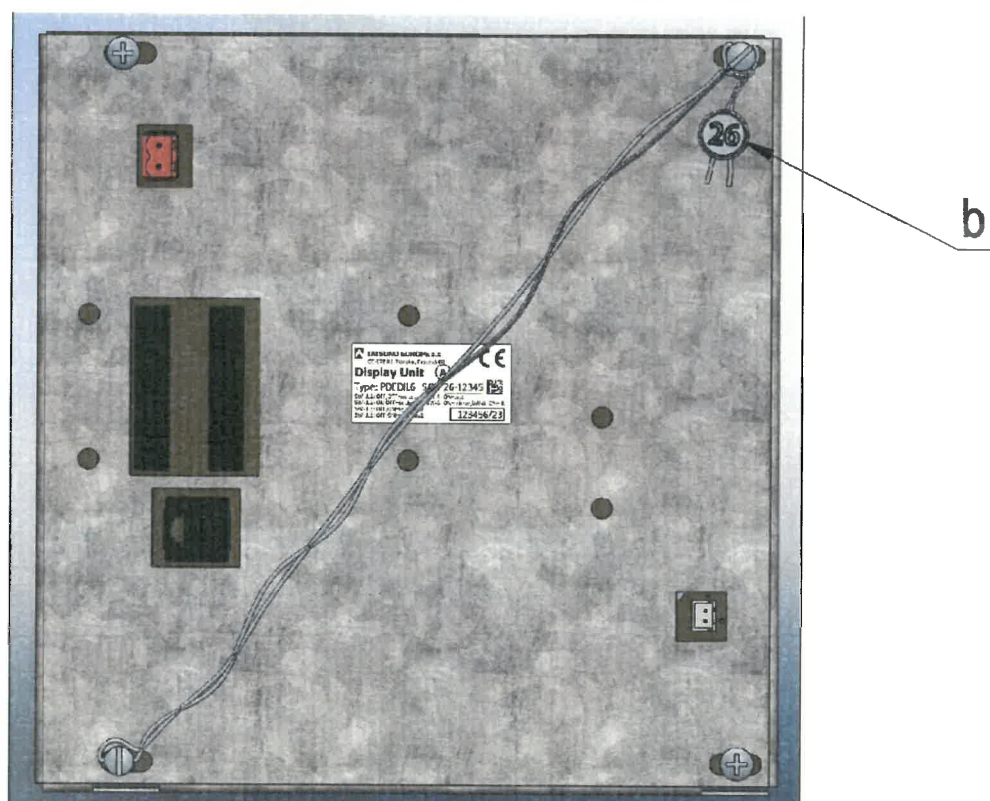
- h) According to its Evaluation / Parts Certificate

Additional sealing points beyond the requirements of OIML R 117-1 and WELMEC 10.6 can be used on special request of the local W&M authority.

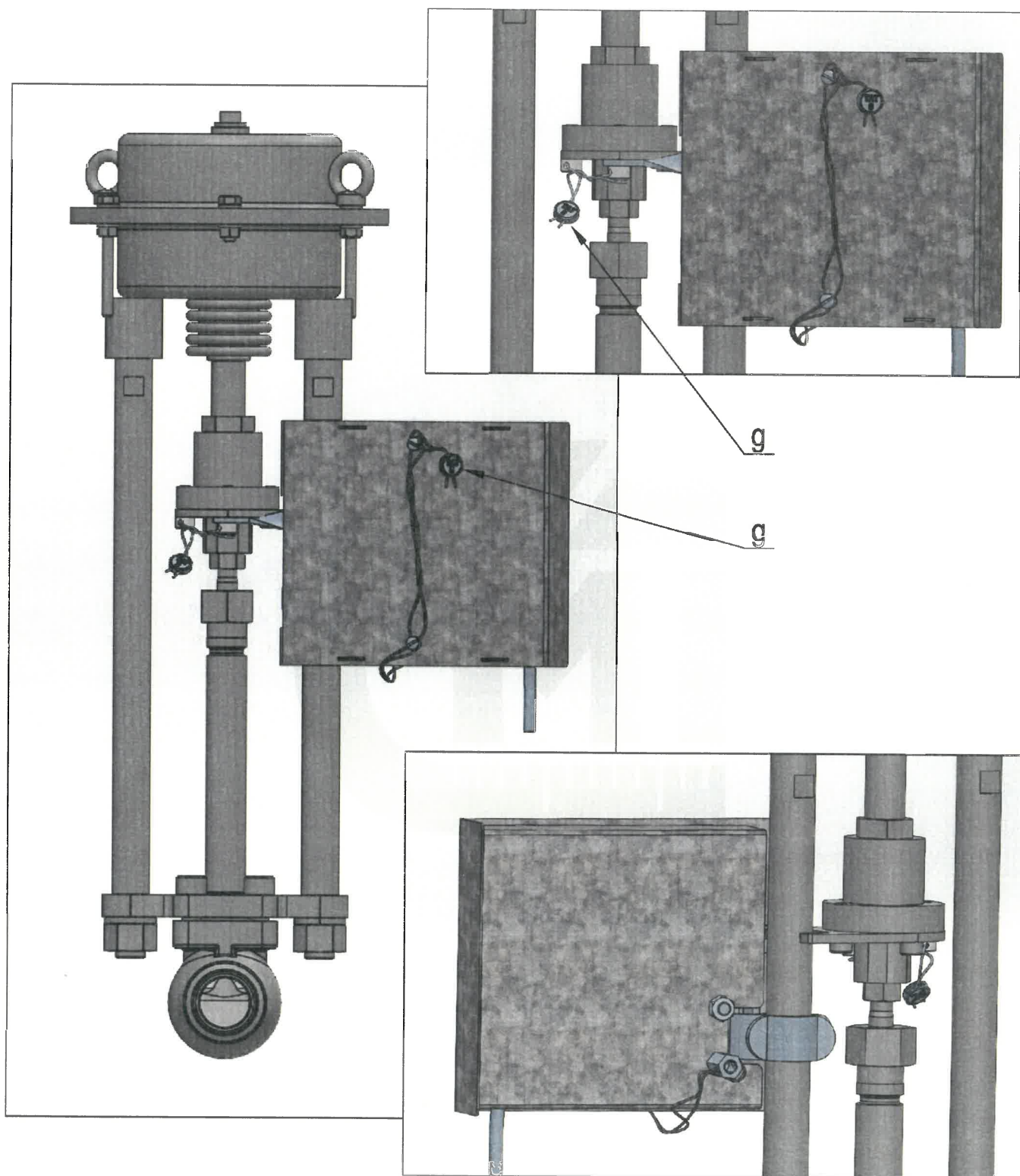
Picture No. 1: The sealing of PDEX5 electronic calculator and limit switch input



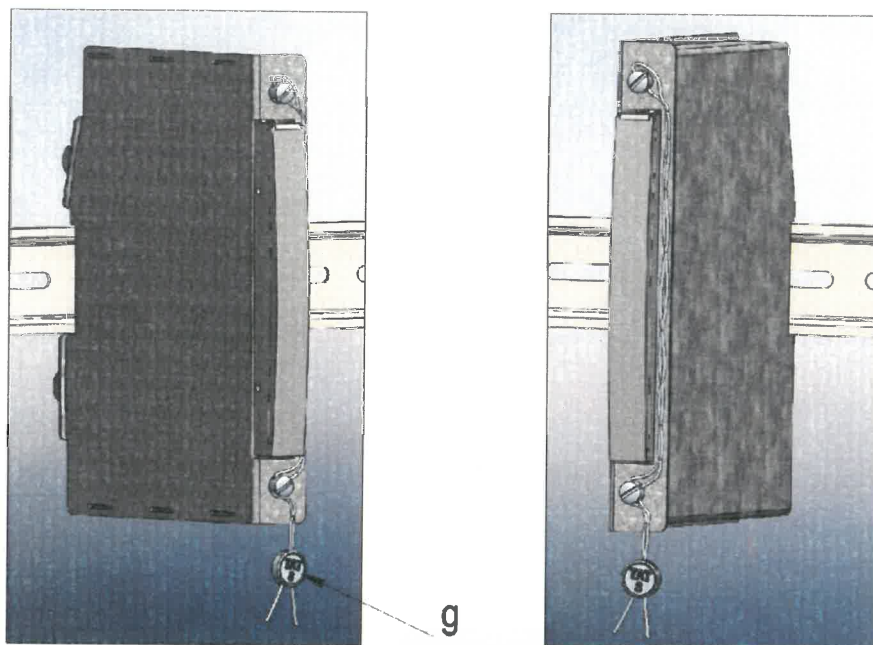
Picture No. 2: The sealing of totalizing indicating device placed on display



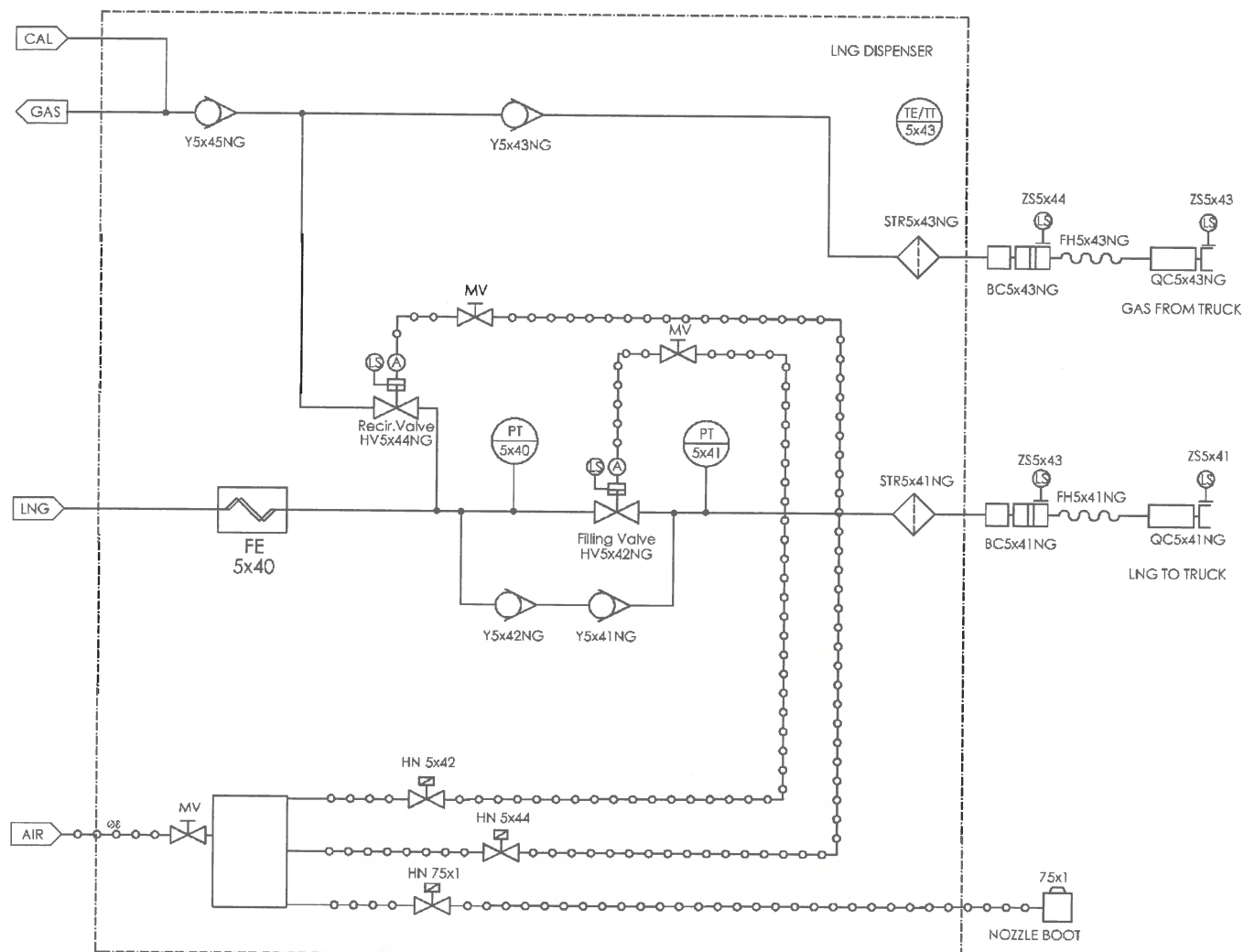
Picture No. 3: The sealing limit switch



Picture No. 4: The sealing of the limit switch Ex i barrier



Picture No. 5: Simplified P&ID scheme of LNG dispenser



Značka (Symbol)	Popis (Description)				
	Manuální ventil (Manual valve)		Výdejní hadice (Delivery hose)		Koncový spínač (Limit switch)
	Zpětný ventil (Check valve)		Trhací spojka (Break Away couplings)		Filtr - F (Strainer)
	Elektromagnetický ventil (Electromagnetic valve)		Snímač tlaku - PT (Pressure transducer)		Snímač teploty - TE (Temperature transducer)
	Plnicí koncovka (Delivery nozzle)		Vzduchem ovládaný ventil (Air control valve)		Hmotnostní měřič (Mass meter)

Table 1: Metrological parameters/registers of mass meter Endress Hauser LNGmass:

Register	Address	Value	Value description
Totalizer 1 - Assign process variable	2601	1	Mass flow
Totalizer 1 - Mass unit	2602	1	kg
Totalizer 1 - Operation mode	2605	0	Net flow total
Totalizer 1 -Control	2608	0	Totalize
Totalizer 2 - Assign process variable	2801	2	Volume flow
Totalizer 2 - Volume unit	2803	1	dm3
Totalizer 2 - Operation mode	2805	0	Net flow total
Totalizer 2 -Control	2808	0	Totalize
Mass flow unit	2101	5	kg/min
Mass unit	2102	1	kg
Volume flow unit	2103	17	L/min
Volume unit	2104	4	L
Density unit	2107	4	kg/m3
Temperature unit	2109	0	°C
Mass flow factor	5519		according parameter M6-P11
Mass flow offset	5521	0	
Volume flow factor	5523		according parameter M6-P11
Volume flow offset	5525	0	
Density factor	5527		according parameter M13-P02
Density offset	5529	0	
Temperature factor	5531	1	
Temperature offset	5533	0	
Low flow cut off - Assign process variable	5101	1	Mass flow
Low flow cut off - On value	5138	0,055	0,055 kg/min
Low value partial filled pipe detection	5110	0	
Scan list register 0	5001	2007 2009 2013 2017 2610 2612 2810 2812	Addresses registers in order: - Mass flow - Volume flow - Density - Temperature - Totalizer value 1 - Totalizer overflow 1 - Totalizer value 2 - Totalizer overflow 2
Zero point	7527		Value stored after Zero point adjustment procedure
Serial number	7003		Number stored during Serial number storage procedure