



Member state
Czech Republic

OIML Certificate No.
R139/2014-CZ-16.02

OIML BASIC CERTIFICATE OF CONFORMITY

Issuing Authority

Name: Czech Metrology Institute
Address: Okružní 31,
638 00 Brno, CZ
Person responsible: Jan Kalandra

Applicant

Name: **NPS Service AB**
Address: **Södra Hildedalsgatan 9**
417 05 Göteborg
Sweden

Manufacturer of the certified type
Name: **NPS Service AB**
Address: **Södra Hildedalsgatan 9**
417 05 Göteborg
Sweden

Identification of the certified type

Dispenser for compressed natural gas
type STD11

Further characteristics see page 3

This certificate attests the conformity of above identified type (represented by the sample (s) identified in the OIML Basic Type Evaluation Report) with the requirements of the following Recommendation of the International Organization of Legal Metrology (OIML):

OIML R 139, Edition 2014

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R139/2014-CZ-16.02

This certificate relates only to the metrological and technical characteristics of the type of measuring instrument covered by the relevant OIML Recommendation identified above.

This certificate does not bestow any form of legal international approval.

The conformity was established by the results of tests and examinations provided in the associated OIML Basic Type Evaluation Report(s)
No. **6015-PT-P3016-16** dated 4th **July 2016** that includes **9 pages**.

Dispenser description:

CNG dispenser type STD11 is designed for measurement of quantities of the natural compressed gas. CNG dispenser may be designed for one to four sequential filling and consists of ball valves for shut off, check valves, solenoid valves, pressure relief valve, measuring device, pressure transducers, temperature transducer, hoses with break away couplings, delivery nozzles with three way valve, electronic calculator and indicating devices.

Certificate history:

Issue no.	Date	Description of the modification




The OIML Issuing Authority
Pavel Klenovský

5 September 2016

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1. Dispenser characteristic:

Model	N° of inlets	N° of sides	N° of nozzles	Max. flow rate [kg/min]
STD11 SL (R) 1 inlet; mass meter Siemens; hose Parker nozzle OPW NGV1 or NGV2; breakaway Staubli; mass counter with V.6 LCD, stainless steel pipes, with electromagnetic valves.	1	1	1	40
STD11 D 2 inlet; mass meter Siemens; hose Parker nozzle OPW NGV1 or NGV2; breakaway Staubli; mass counter with V.6 LCD, stainless steel pipes, with electromagnetic valves.	2	2	2	40
STD11 SLD 1 inlet; mass meter Siemens; hose Parker nozzle OPW NGV1 and NGV2; breakaway Staubli; mass counter with V.6 LCD, stainless steel pipes, with electromagnetic valves.	2	1	2	40

CNG dispenser may be designed for one to four sequential filling and consists of ball valves for shut off, check valves, solenoid valves, pressure relief valve, measuring device, pressure transducers, temperature transducer, hoses with break away couplings, delivery nozzles with three way valve, electronic calculator and indicating devices.

CNG dispenser is equipped by two calculators. First one is Siemens PLC Simatic S7-1200, second one Tatsuno Europe TBELT2. PLC Simatic S7-1200 controls filling process and there are connected measuring sensor(s) and all associated sensors (temperature, pressure). The two important parameters are stored in PLC Simatic S7-1200 – Q_{min} and Q_{max} . During initial verification these two parameters should be checked. TBELT2 receives pulses from flow transducer(s) and converts them to the data for the display. Details about connections and communication are shown on Figure 2.

CNG dispenser can be equipped up to two measurement systems. Each measurement system has to be connected to his own calculator TBELT2. CNG dispenser can fill up to two cars simultaneously.

CNG dispenser is equipped with an ambient temperature sensor to compensate maximum filling pressure (200 bars @ 15 °C), which doesn't affect the metrological characteristics of measuring system.

CNG dispenser can be connected to the Payment terminal for local and public credit card or independent point of sale system (POS), which doesn't affect the metrological characteristics of the measuring system. POS only read the displayed data from the dispenser, status of the dispenser and change the price per unit displayed on the dispenser.

1.1. Measuring device

The Siemens measuring sensor type Sitrans FCS200 and measuring transducer Siflow FC070 were separately certified by PTB in Type approval certificate under German law no. PTB-1.5-4050619. Basic technical data:

Type of measuring sensor:	Sitrans FCS200
Diameter [mm]:	10
Flow rate [kg/min]:	4,1 – 41,0
MMQ [kg]:	1
Maximum pressure [bar]:	350
Gas temperature range [°C]:	-40 to +125
Ambient temperature range [°C]:	-40 to +55
Environment classes:	B / C
Software versions:	2.0.1; 2.0.2

1.2. Calculator

The Tatsuno Europe electronic calculator type TBELTX was separately certified as a component of fuel dispensers. Details in Test report no. 6015-PT-P0002-10. Basic technical data of TBELTM electronic calculator:

Type of electronic calculator:	TBELTX
Display type:	Electronic LCD
Scale interval:	0,01
Minimum measured quantity [kg]:	2
Ambient temperature range [°C]:	-40 to +55
Environment classes:	M1 /E1 /H3
SW version:	1.01 / CRC 8CA4

1.3. Delivery hose

Delivery hose PARKER or other corresponding type with maximum length 6 m.

1.4. Delivery nozzle

OPW, types CT1000 (NGV1), CT5000 (NGV2),

2. Basic technical data

Max. flowrate: Q_{max} [kg/min]	40
Min. flowrate: Q_{min} [kg/min]	1
Gas temperature range [°C]:	-40 to +60
Ambient temperature range [°C]:	-40 to +55
Min. measured quantity: MMQ [kg]	2
Scale interval, mass display: [kg]	0,01
Max. storage pressure of the gas P_{st} [MPa]:	30,0
Max. pressure of the gas P_{max} [MPa]:	30,0
Min. pressure of gas P_{min} [MPa]:	0,3
Max. filling pressure of the gas P_v [MPa]:	20,0 @ 15 °C / 230
Environment classes:	M1 / E1
Accuracy class	1,5

Based on measurement's results made by CNG on whole CNG dispenser STD11 was decreased minimum flow rate to 1 kg/min.

3. The measuring device data

The measuring device and electronic calculator shall bear a permanent, non-transferable, and easily readable identification plate or label giving the following information:

- Manufacturer's trade mark / corporate name;
- Type designation / model number;
- Serial number and year of manufacture.

The measuring system shall bear a permanent, non-transferable, and easily readable identification plate or label giving the following information:

- Manufacturer's trade mark / corporate name;
- Type designation / model number;
- Serial number and year of manufacture;
- Type approval number and area allowed for verification marks;
- Measuring range ($Q_{min} - Q_{max}$);
- Maximum pressure of the gas in the refueling station gas storage P_{st} ;
- Maximum fast fill pressure of the gas-fuelled vehicle P_v ;

- Minimum and maximum pressure of the gas P_{\min} , P_{\max} ;
- Type of the measured gas;
- Temperature range of the gas;
- Ambient temperature range;
- Nominal mains voltage and frequency;
- Identification of software (shall be provided on demand on the indicating device);
- Presence of a sequential control device and operational mode;
- Environment class.

Each face indicating device shall bear by the following information:

- Indication of price to be paid;
- Near indication of mass either sign **kilogram** or unit **kg** (for other specific units of measurement check OIML R139-1 e14 in chapter 5.1.1);
- Indication of price per unit;
- Information about minimum measured quantity.

All information must be presented in national language where CNG dispenser operates or in English language.

4. Sealing

Basic sealing points:

- Communication cable and data plate of measuring sensor (Figure 3);
- Measuring transducer according to Figure 4;
- Calculator TBELTX according to Figure 5;
- The data plate of the calculator TBELTX (Figure5);
- PLC Simatic S7-1200 have to be protected by electronic password;
- The type plate of the CNG dispenser.

Additional sealing points beyond the requirements of OIML R 139 e14 and WELMEC 10.6 can be used on special request of the local W&M authority.

Figure 1: Hydraulic scheme for CNG dispenser

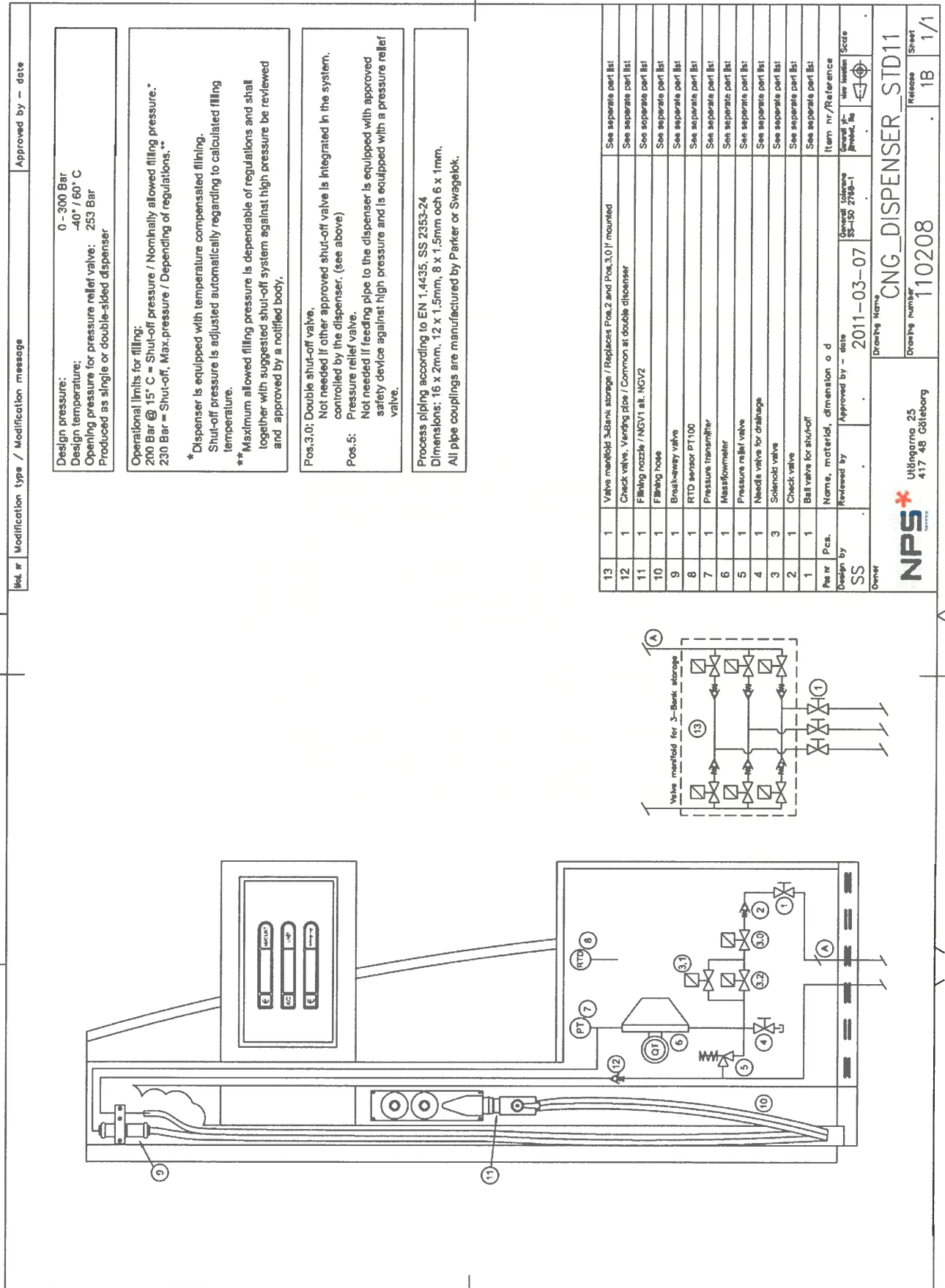
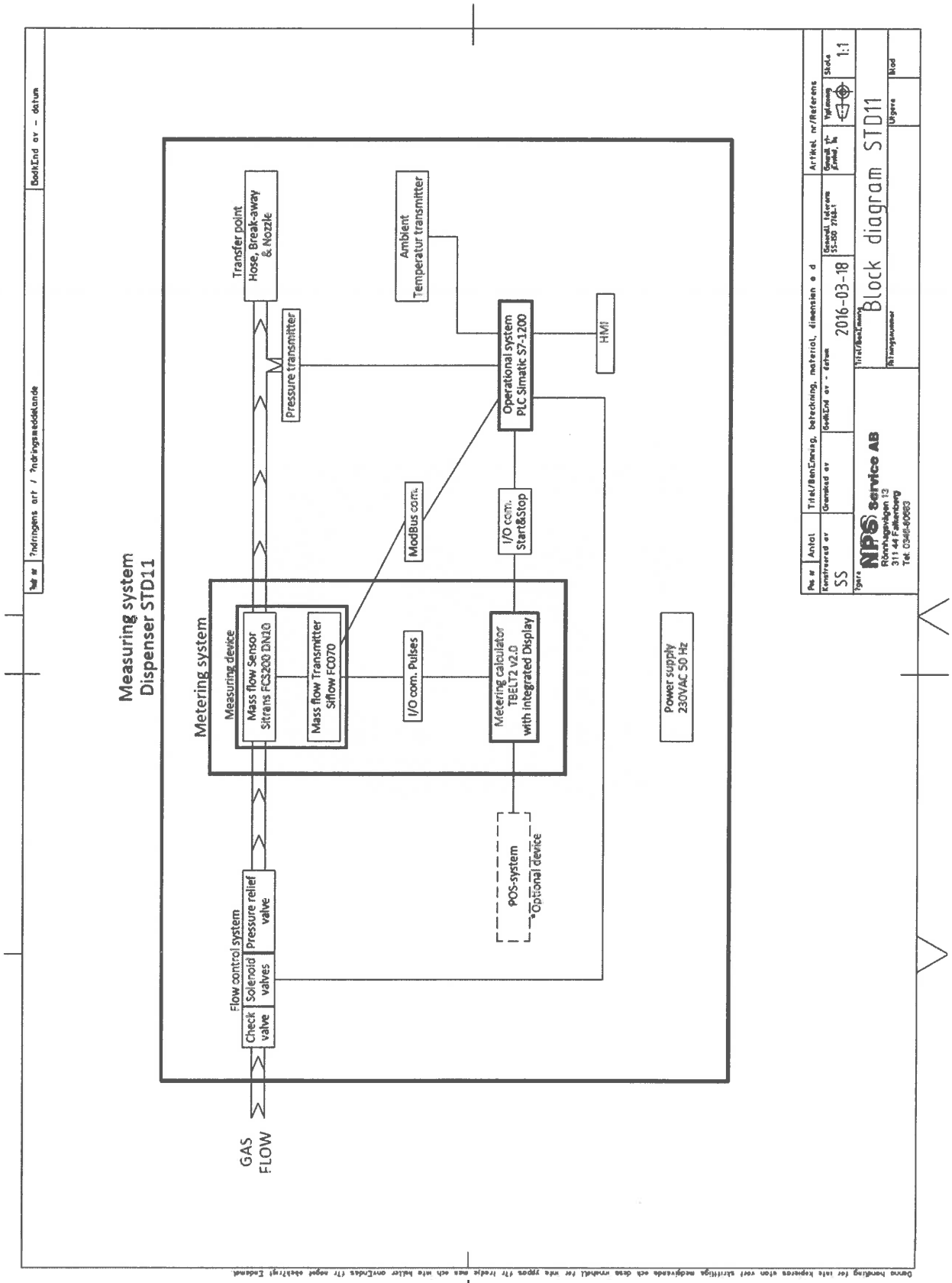


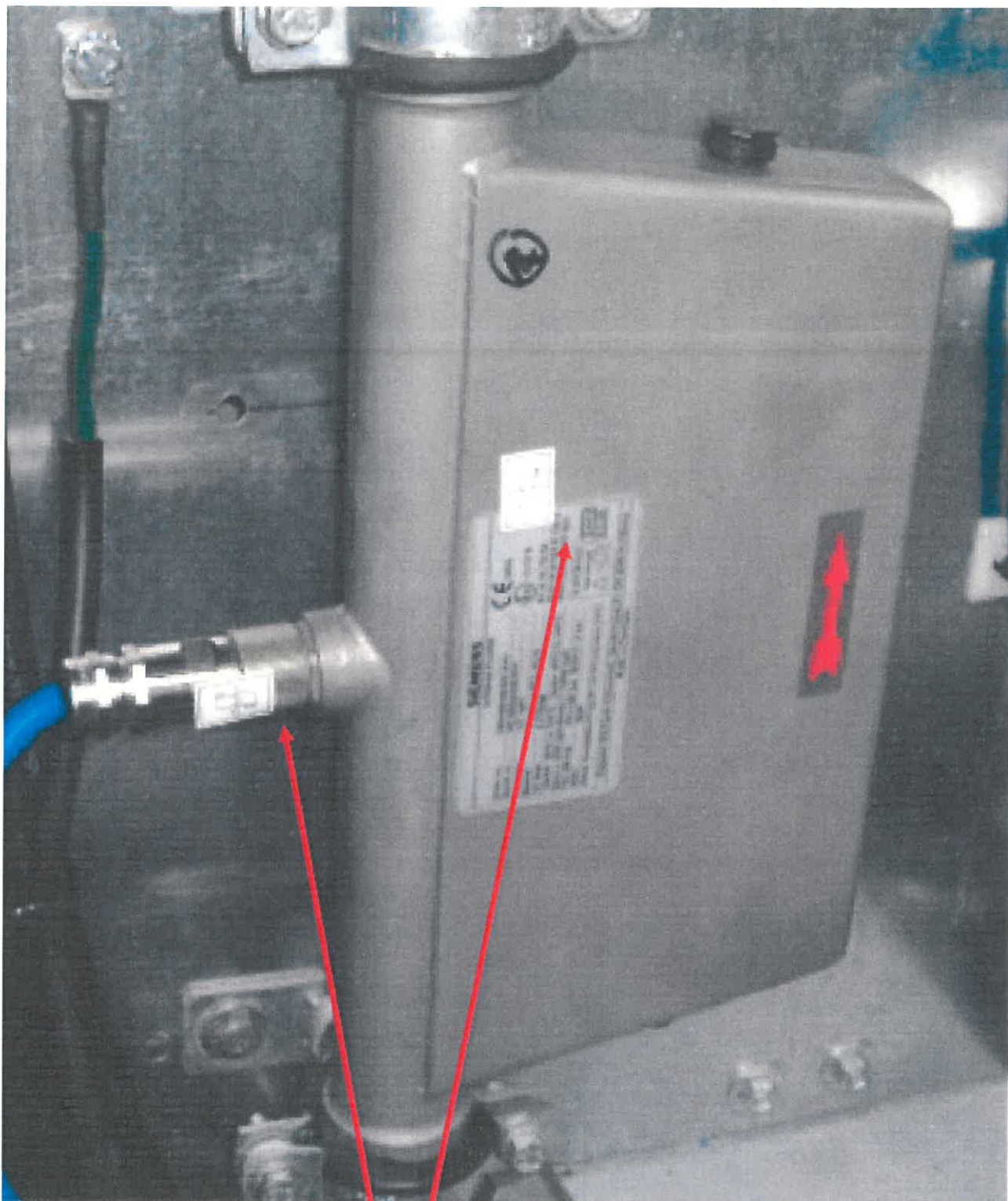
Figure 2: Block diagram



Artikl. nr/Referens	Skala	1:1
Serial. Idrottare	Skala	1:1
2016-03-18	2016-03-18	
Block diagram STD11		
NPS Service AB		
Rönnebyvägen 13		
311 44 Falkenberg		
Tel: 0340-40683		
Titel/Beställning		Utgåve
Ritningsnummer		Blod

Den här handlingen är inte kopierad utan är ett exemplar av den ursprungliga handlingen och ska användas för information och inte för att utvärdera eller på annat sätt påverka den ursprungliga handlingen. För mer information kontakta oss på telefon 0340-40683.

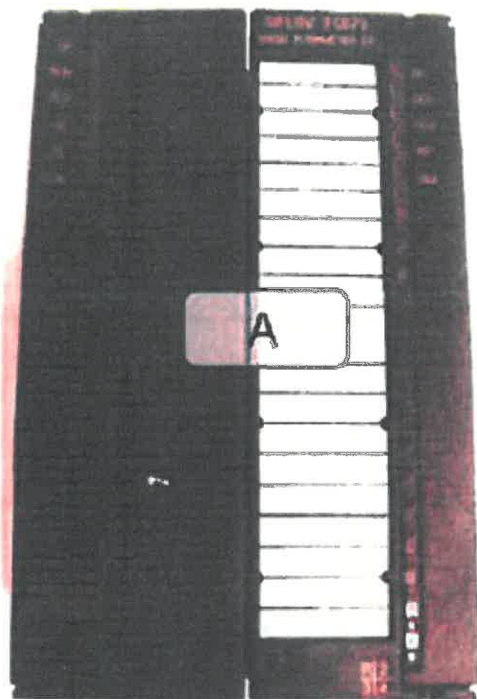
Figure 3: Sealing points of measuring sensor



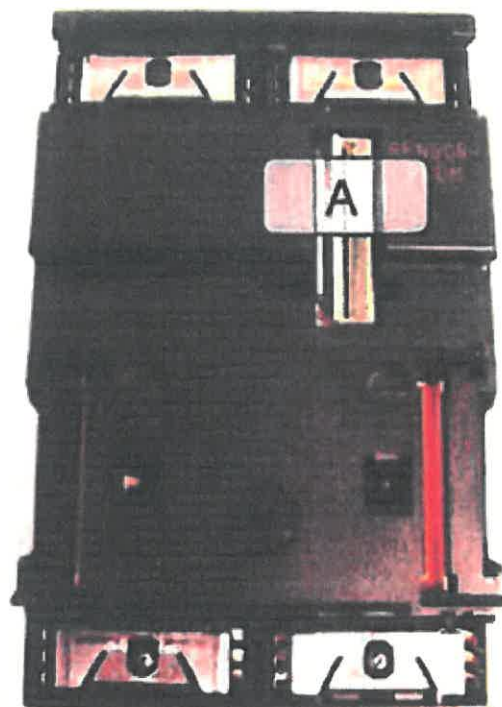
Sealing Labels (2 pcs.)

Figure 4: Sealing points of measuring transducer

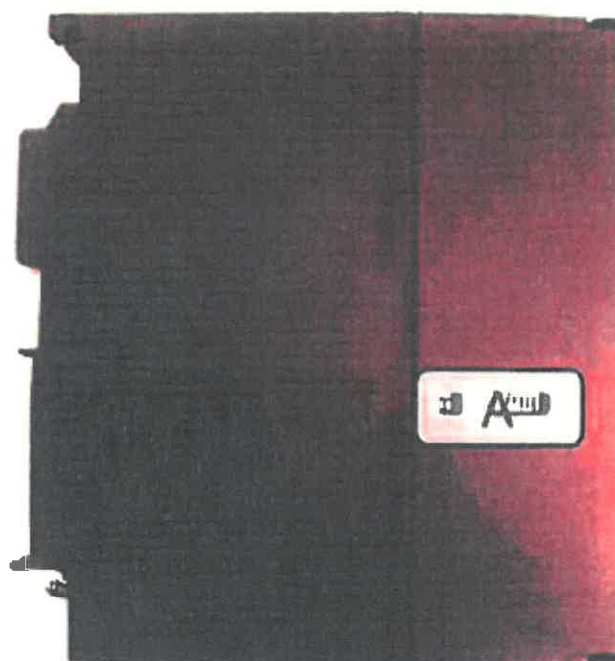
Front view
Vorderansicht



Back view
Rückansicht



Ansicht linke Seite



View from the left side

Figure 5: Sealing points of calculator TBELTX

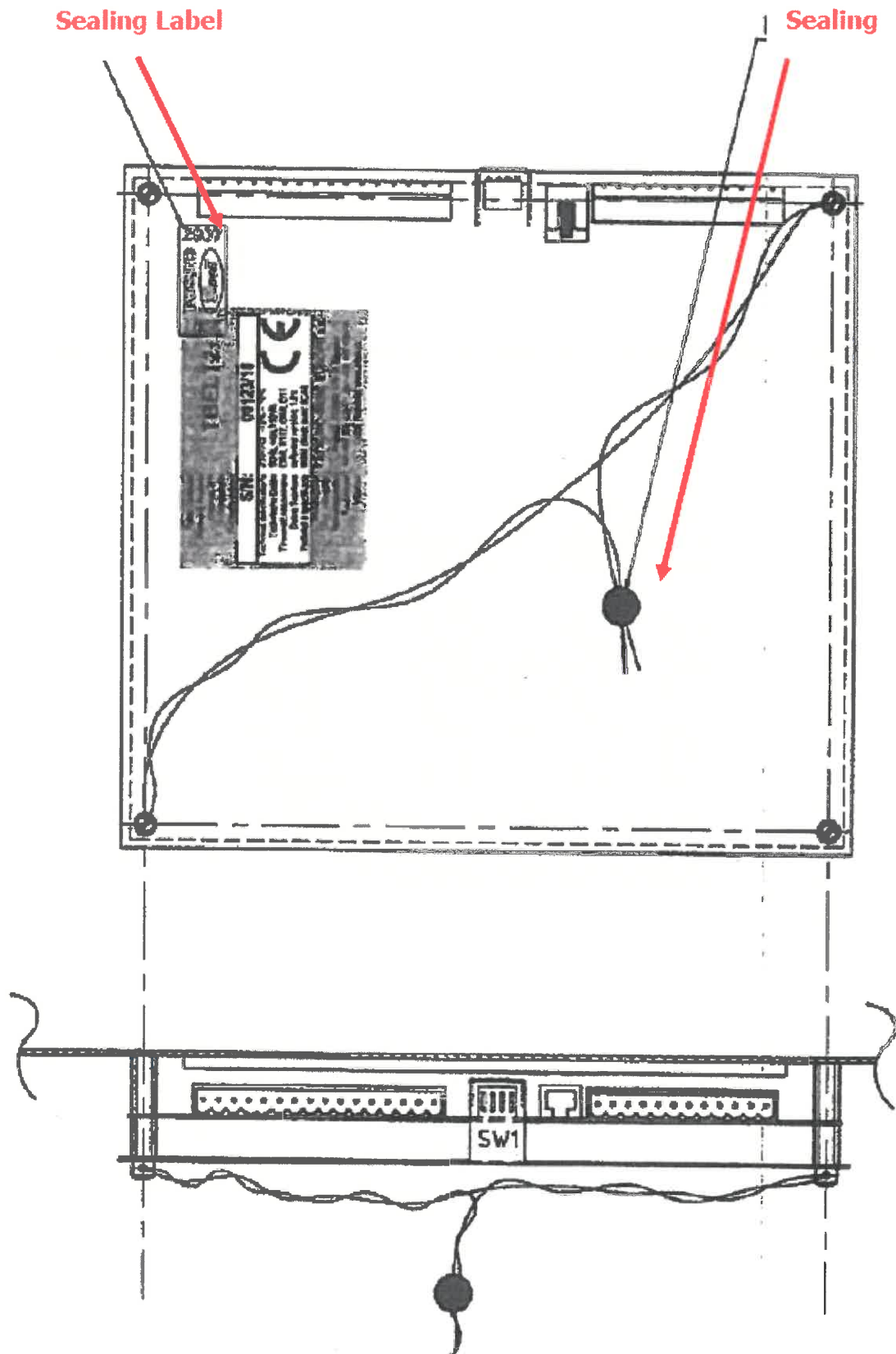




Figure 6: Type plate example of the CNG dispenser

NPS Service AB 
Box 8856, 402 72 Gothenburg, SWEDEN


CNG DISPENSER

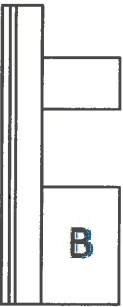
Type: STD11 D
Type certificate: XXX XXX/XX-XXXX
Serial number/Year: 254A, 254B / 2015
Ambient temp. range: -40°C ÷ +55°C
Gas temperature range: -40°C ÷ +60°C
Pmin/Pmax/Pst [bar]: 3 / 300 / 300
Pv / Pvmax [bar]: 200 (15°C) / 230
Accuracy/Mech./Elmg.class: 1.5/M1/E1
Type of gas / MMQ: Methane / 2kg
Qmin/Qmax [kg/min.]: 1 / 40
Power supply: 230VAC / 50Hz
Sequential control: 3 bank

 II 2G IIA T3

In compliance with:
94/9EG ATEX
97/23EG PED
TSA 2015

Placed in a non hazardous area


A


B

Place for W&M sticker

Place for W&M sticker