

OIML Member State
The Netherlands

Number R117/2019-A-NL1-20.02
Project number 2428030
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Issuing authority
Person responsible: NMi Certin B.V.
M. Boudewijns

Applicant and
Manufacturer: Tatsuno India Pvt. Ltd.
B-31 & B-32 MIDC Industrial area, Taloja
Dist.- Raigad 410208, Maharashtra,
India

Identification of the
certified type: A **fuel dispenser** (liquids other than water)
Type: Sunny NexG series S** ***** [1]

Characteristics: See page 2 and further

This OIML Certificate is issued under scheme A.

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

R 117:2019 "Dynamic measuring systems for liquids other than water"

Accuracy class: 0,5

This Certificate relates only to the metrological and technical characteristics of the type of measuring instrument covered by the relevant OIML International Recommendation identified above. This Certificate does not bestow any form of legal international approval.

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[1] Where "*" can be a number or a letter for representing different configurations of the dispenser.

Issuing Authority: **NMi Certin B.V., OIML Issuing Authority NL1**
1 December 2020

Certification Board

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The conformity was established by the results of tests and examinations provided in the associated report:

- No. NMI-2428030-01 dated 01 December 2020 that includes 143 pages.

Characteristics of the dispenser

In Table 1 the general characteristics of the dispenser are presented.

The construction of the dispenser is recorded in the documentation folder no. 2428030-1.

Table 1 General characteristics

Manufacturer's trademark	Tatsuno India Pvt. Ltd.
Type designation	Sunny NexG series S** *****
Accuracy class	0,5
Instrument Type	Fuel dispenser (liquid other than water)
Essential parts of the dispenser	<p>Electronic calculating and indicating device</p> <ul style="list-style-type: none"> - Jisedai-1 - Pulsar EK-1117 <p>Measurement transducer</p> <ul style="list-style-type: none"> - Piston meter FF-1025 (for fuel and AdBlue) - Lobe meter FF-1006 (for fuel) <p>Gas Separator in combination with the pumping unit</p> <ul style="list-style-type: none"> - Integral suction pump FP1001 - Modular suction pump FP1022
Approved for liquid products	<p>Piston meter: Gasoline; Blended Gasoline with up to 85% ethanol or 20% methanol or 20% MTBE; Gasoline with Oil mix (Fixed/Variable) up to 9%; Diesel, Biodiesel (up to 100%); Kerosene; AdBlue/DEF & Additive.</p> <p>Lobe meter: Gasoline; Diesel.</p>
Maximum number of nozzles	8
Environment classes	M2 / E1 / H3
Ambient temperature range	- 10 °C ... + 55 °C
Liquid temperature range	- 5 °C ... + 35 °C
Density range	<p>Piston meter: 725 ... 1200 kg/m³</p> <p>Lobe meter: 725 ... 925 kg/m³</p>
Maximum pressure	4 bar(g)
Electrical power calculator	230 VAC / 50 Hz

Identification of software	refer table 6 and 7 for details.
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Table 2 Flow characteristics

Flow rate Range	Qmin [L/min]	Qmax [L/min]	MMQ [L]
Fuel Dispenser with Piston Meter (FF-1025) (Standard and heavy-duty application)	3	80	2
Fuel Dispenser with Lobe meter (FF-1006) (Ultra-heavy-duty application)	14	180	10

Each dispenser consists at least of:

- One combined pump and gas eliminator device (gas separator (Integral suction pump FP-1006 or modular suction pump FP-1022)).
A gas separator is not essential if submersible pump is used, in this case measures should be taken on the supply tank to make sure that air or gas is not introduced in the system.
- One measurement transducer (lobe meter (FF1006) or piston meter (FF-1025));
- One electronic calculating/indicating device (Jisedai-1 calculator).

Optionally, a printer can be connected to the dispenser as follows:

- Printer mounted on the dispenser door, powered and communication through the dispenser;
- Printer mounted on the side of the dispenser, powered and communication through the dispenser;
- Remote printer connected via the POS communication cable.

The fuel dispenser has an option for vapour recovery and additive injection.

Optionally, an electro-magnetic totaliser (maximum volume indication 9999999 L) is also present on the dispenser.

The same housing of the dispenser can comprise of one or more measuring systems. When more than one measuring systems are in one housing, one calculating/indicating device may be a common part of the measuring systems.

The calculating/indicating device can have a maximum of 4 main displays, allowing it to configure and control 8 nozzles (meters), out of which 4 nozzles (meters) can be simultaneously operated. A maximum of two nozzles (meters) can be connected to each calculating/indicating device's main display, these two nozzles cannot be simultaneously operated.

Approved input – Pulser communication cable via RS-485

Approved output – POS communication cable via RS-485.

All communication cables (POS and Pulser) should be shielded cables and less than 10 meters in length.

A single meter is used to deliver fluid through the hydraulic path for each nozzle (no parallel or series meter combination).

The characteristics of the essential parts of the fuel dispenser are presented at table 3 and higher.

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Essential parts of the dispenser

The conformity of the following parts was established by the results of tests and examinations provided in the associated report(s):

Part: Measurement transducer – Piston Meter
 Producer: Tatsuno
 Type: FF-1025
 Documentation folder: 2428030-1
 Reports: No. NMI-2428030-01 dated 01 December 2020 that includes 142 pages.

Table 3 General characteristics of the measurement transducer type FF-1025

Flow rate range [L/min]	3 – 80 L/min
MMQ	2 L
Maximum pressure	4 bars
Product temperature range	-5 °C / +35 °C
Intended for the measurement of	Gasoline; Blended Gasoline with up to 85% ethanol or 20% methanol or 20% MTBE; Gasoline with Oil mix (Fixed/Variable) up to 9%; Diesel, Biodiesel (up to 100%); Kerosene; AdBlue/DEF & Additive.
Density range	725 to 1200 kg/m ³
Impulse encoder or pulser	Magnetic Pulser EK-1117

Part: Measurement transducer – Lobe (Positive displacement) meter
 Producer: Tatsuno
 Type: FF-1006
 Documentation folder: 2428030-1
 Reports: No. NMI-2428030-01 dated 01 December 2020 that includes 142 pages.

Table 4 General characteristics of the measurement transducer type FF-1006

Flow rate range [L/min]	14 – 180 L/min
MMQ	10 L
Maximum pressure	4 bars
Product temperature range	-5 °C / +35 °C
Intended for the measurement of	Gasoline and Diesel
Density range	725 to 925 kg/m ³
Impulse encoder or pulser	Magnetic Pulser EK-1117

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Part: Calculating/indicating device
 Producer: Tatsuno
 Type: Jisedai-1
 Documentation folder: 2428030-1
 Reports: No. NMI-2428030-01 dated 01 December 2020 that includes 142 pages.

Table 5 General characteristics of the calculating/indicating device type Jisedai-1

Maximum volume indication	10 digits
Maximum unit price	7 digits
Environmental classes	M2 / E1 / H3 (Condensing Humidity)
Ambient temperature range	-10 °C / +55 °C
Power supply	230 VAC 50 Hz
Maximum number of nozzles	8
Maximum number of main displays	4
Approved input	Pulser communication cable via RS-485
Approved output	POS communication cable via RS-485
Pulser	Magnetic Pulser EK-1117 RS-485 communication protocol Output signal 2 × 50 pulse/revolution

Table 6 Software identification

Part	Firmware version	Hash code
Mother board	MB_1.1.0	f4f9ccefc566e201d5dd5dd286d92020 bff3cfd3c621a6dd5dd53e636ab1ae1f
Main display board	MD_1.1.0	7f1a64fe7b369543190b31f2ac1ee3cd e6885dfc335ae43b86f4c5866eef4cec
Sub display board	SD_1.1.0	ba60536000f058fa0834204603b0bde8 f08f2344e1685a68a56842f00102e960
Pulsar board	PB_1.1.0	18744262df949f491d31c85e9c050d03 050c746cf4da3b213a892fb1517b27da

The software versions and checksums can be displayed by following the below procedure:
 On the alphanumeric keypad on the dispenser press E → E → C → E → C → select the 'OEM' or "RO"
 operator mode → enter the OEM/RO password → press "Enter Code" → enter the code "99" → select
 the board for which the software version needs to be checked and press "ok".

Table 7 Legally relevant parameter list

Process code	Process code name	Value / range
13	Unit Price	7 digits
20	Product Code and Grade Selection	1 to 15
21	Rounding-Up Digit Position Setting	1 to 7
32	First Indication	1 to 500 ml
33	Preset Volume Overshoot	1 ml to 50 ml
34	Amount round Up	0 to 9 digit
36	Volume Round Up	0 to 9 digit
37	Decimal Set in Volume, Amount, Unit Price, Density And Totalizer Display	0 to 3 digits
38	Monetary Unit Ratio	1 to 100
44	Slowdown Time For Pulse Stop	1 to 99 sec
45	Pump Lock Time After Change Of Displayed Unit Price	1 to 60 sec
46	Pulse Stop Motor Timeout	1 to 600 sec
47	Dispenser Fueling Mode	should always be set to 1 during normal operation
70	Log View and Print	Parameter 70 (1 to 29) logs. Range of storing data is 0 to 999
79	Calibration Mode	K factor range 95 to 100
81	Reset Registration Data	
95	Date and Time Change	
125	Preset Timeout Setting	0 to 30 sec at 5 sec intervals
134	Automatic Pump Lock Time	1 to 600 sec

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Part: Gas elimination device in combination with integral pump
 Producer: Tatsuno
 Type: FP-1001
 Documentation folder: 2428030-1
 Reports: No. NMI-2428030-01 dated 01 December 2020 that includes 142 pages.

Table 8 General characteristics of the gas elimination device type FP-1001

The gas separator is in combination with the pumping unit.
 The pump type FP-1001 is an Integral suction pump.
 The attached gas separator to the pumping unit is a float type mechanical device.
 The gas separator is identical to the gas separator attached to FP-1022 pump.

Maximum flow rate	180 L/min
Maximum pressure	4,0 bars
Product temperature range	-5 °C / +35 °C

Part: Gas elimination device in combination with modular pump
 Producer: Tatsuno
 Type: FP-1022
 Documentation folder: 2428030-1
 Reports: No. NMI-2428030-01 dated 01 December 2020 that includes 142 pages.

Table 9 General characteristics of the gas elimination device type FP-1022

The gas separator is in combination with the pumping unit.
 The pump type FP-1022 is a Modular suction pump.
 The attached gas separator to the pumping unit is a float type mechanical device.
 The gas separator is identical to the gas separator attached to FP-1001 pump.

Maximum flow rate	180 L/min
Maximum pressure	4,0 bars
Product temperature range	-5 °C / +35 °C

Production location

The fuel dispenser is produced at one of the following production locations:

- Tatsuno India Pvt. Ltd., B-31 & B-32 MIDC Industrial area, Taloja, Dist.- Raigad 410208, Maharashtra, India.
- Tatsuno Corporation, Yokohama Plant: 1-1, Kasama 4-chome, Sakae-ku, Yokohama, Japan.
- Tatsuno Engineering & Service Co. Ltd, 19/79 Mu 18 Kukot Iamlukka Pathumthani, 12130 Thailand.