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designated and notified by the Netherlands to perform tasks with respect to  
conformity assessment procedures mentioned in article 17 of Directive  
2014/32/EU, after having established that the Measuring instrument meets  
the applicable requirements of Directive 2014/32/EU, to:

Manufacturer HAM Criogénica SL  
Poligono Industrial Sant Ermengol Parcela 11  
08630 Abrera (Barcelona)  
Spain

Measuring instrument An **LNG dispenser**  
Manufacturer's mark or name : HAM  
Type designation : SH\*\*\*\*\*  
Accuracy class : 1,5  
Destined for the measurement of : Liquefied Natural Gas (LNG)

Further properties are described in the annexes:

- Description T10698 revision 13;
- Documentation folder T10698-6.

Valid until 12 May 2025

Remarks

- This revision replaces the previous revisions;
- The documentation folder replaces the previous documentation folder;
- The LNG dispenser may be combined with the self-service devices as mentioned in § 1.1 of the description.

Issuing Authority

**NMI Certin B.V., Notified Body number 0122**  
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Certification Board

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## 1 General information about the LNG dispenser

Properties of this LNG dispenser, whether mentioned or not, shall not conflict with the legislation.

### 1.1 Essential parts

Producer	Type	Evaluation / Parts Certificate	Remarks
<b>Measurement sensor</b>			
Emerson Process management Flow B.V.	CMF100; CMF050	TC7056	-
<b>Measurement transmitter</b>			
Emerson Process management Flow B.V.	MVD series	TC7057	-
<b>Electronic calculating/indicating device</b>			
ESIWELMA SRL	TW1nA	LNE-15272	With Logitron Puma Lan communication protocol
CETIL DISPENSING TECHNOLOGY, S.L.	EAS2	TC8491	-

The LNG dispenser may be connected to a Self-Service Device which is described in:

- one of the Evaluation Certificates as mentioned in the table below; or
- any Parts Certificate issued under WELMEC 8.8 by a Notified Body that acts under module B of the Directive 2014/32/EU for ANNEX VII (MI-005);

and under the condition that the applied communication protocol is stated in the Evaluation or Parts Certificates of both the applied electronic calculating/indicating device and self-service device.

Producer	Type	Evaluation Certificate	Remarks
<b>Self-service device</b>			
Lafon	ELYS	LNE-22484	With IFSF communication protocol
ALX TECHNOLOGIES	EUROPOLE	LNE-17492	-
	EUROPILE	LNE-28279	-
Gilbarco Veeder-Root	Passport Europe; PBox	TC7581	-
OPEN POS Finland Oy	FDC OPT	FIT.16.A.01	Gesytec Easylon USB Interface with FTT-10 transceiver and MIP/P50 firmware.
Fortech S.r.l.	SmartPOS	TC8329	-
MASER ITALIA SRL	MAC SP – MAC DUO	N. 2166-17-001	-
MASER ITALIA SRL	MAC SP versione 4	N. 2166-19-001	-
Dover Fueling Solutions UK Limited Filial	Wayne IXpay	No. 107027	-
Dover Fueling Solutions UK Limited Filial	Wayne Fusion V2	No. 107029	-

## 1.2 Essential characteristics

In addition to the characteristics as is stated on page 1 of this EU-type examination certificate the following characteristics apply to the LNG dispenser:

### 1.2.1 Flow rate range ( $Q_{min}$ – $Q_{max}$ )

- 342 – 6000 kg/h

The flow rate range can be freely chosen if the following conditions are fulfilled:

- The ratio  $Q_{max}/Q_{min}$  shall be at least 5:1.

### 1.2.2 Minimum measured quantity (MMQ)

- 20 or 50 kg

### 1.2.3 Initial hose quantity

- Between batches the hose will be empty or filled with gas.  
If the amount of undelivered product exceeds one third of the Maximum Permissible Error, then this amount must be corrected for.
- See the applicable electronic calculating/indicating device for programming the correction value of the hose quantity.

### 1.2.4 Maximum operating pressure ( $P_{max}$ )

- The maximum operating pressure of the measuring system shall not exceed the  $P_{max}$  of its components.
- Before operating the system will check if the pressure in the receiving tank is low enough to start the LNG delivery.

### 1.2.5 Temperature range liquid

- See the applicable Evaluation Certificate of the measurement sensor for the approved temperature ranges.
- Before operating the system will check if the temperature in the filling line is low enough to start the LNG delivery, if not the system will circulate the LNG through the system.

### 1.2.6 Temperature range ambient

- Depend on the used parts forming the measurement instrument. See the Evaluation Certificates of each component for the approved ambient temperature ranges.

### 1.2.7 Environment classes

- For trailer mounted configuration the device is powered by AC mains, therefore Class E2 is applicable for this configuration.
- Depend on the used parts forming the measurement instrument. See the Evaluation Certificates of each component for the approved environment classes.

### 1.2.8 Power supply

- 230 V AC 50-60 Hz

## 1.3 Essential shapes

### 1.3.1 Configuration

Accuracy class	Type of measuring system	Schematic drawing	Remarks
1,5	LNG Dispenser	10698/0-01	-
		10698/6-01	Double dispenser
		10698/9-01	Trailer mounted
		10698/13-01	P&ID with multiple transfer points

- A correction device is optional and can be used to correct the liquid mass for the measurement of the mass of gas through the vapour return line with a separate measurement sensor. The schematic drawing in documentation number 10698/6-02 shows the installation of such correction device.
- During a delivery only a single transfer point is used. The control valve(s) in the other transfer lines are closed and monitored. The delivery is terminated as soon as the valve in other transfer lines are detected open.  
 The schematic drawing in documentation number 10698/13-01 shows the allowed valve sequencing.

### 1.3.2 Inscriptions

- The following information is clearly visible on the nameplate:

- CE marking including the supplementary metrological marking (M + last 2 digits of the year in which the instrument has been put into use);
- Notified Body identification number, following the supplementary metrological marking;
- EU-type examination certificate number T10698;
- Manufacturer's name, registered trade name and/or registered trade mark;
- Manufacturer's postal address;
- Type designation;
- Year of manufacture and serial number;
- Accuracy class;
- Minimum and maximum flow rate;
- Maximum pressure;
- Name(s) or nature(s) of the product(s) to be measured;
- Mechanical and electromagnetic environment class;
- Ambient temperature range;
- Liquid temperature range;
- Serial numbers of all essential parts stated in paragraph 1.1 (optional, see chapter 2).

Remarks:

The nameplate must be clearly visible without removing the covers.

An example of the name plate is given in documentation no. 10698/6-03 and 10698/6-04.

- Further inscriptions:
  - The inscription "Minimum Measured Quantity ... kg" or " $M_{\min}$  ... kg" on the indicator face of the calculating/indicating device (on both sides if applicable);
  - The inscriptions on the essential parts as mentioned in the applicable Evaluation Certificates or Parts Certificates.

## 1.4 Conditional parts

### 1.4.1 Block valves

- The block valve (pneumatic valve) is fitted in the liquid line before the meter to facilitate the cooling down of the piping;
- The block valve (pneumatic valve) is fitted in the liquid line after the meter to stop the delivery.

### 1.4.2 Break connection.

The break connection is fitted in the hose/line after the measurement transducer. After the break connection is broken, the disconnected hose and the line after the measurement transducer shall remain filled with liquid.

### 1.4.3 Correction device

A correction device is optional and can be used for the measurement of the amount of gas through the vapour return line with a separate measurement sensor, which is subtracted by the flow computer from the batch delivered;

The meter in the vapour return line is of the same brand and type as the meter in the liquid line or the mentioned correction device in the applicable Evaluation Certificate.

The diameter of the applied meter may be different from the meter in the liquid line.

The installation of such a correction device is shown in the documentation number 10698/6-01.

## 1.5 Conditional characteristics

### 1.5.1 Vapour return(optional)

- The correction device is optional and can be used for the measurement of the amount of gas through the vapour return line, which is subtracted by the flow computer from the batch delivered;
- The correction device is a flow sensor placed vapour return line as shown in the documentation number 10698/6-01;
- The vapour recovery flow can fluctuate greatly, and so the sensor size selected should be based upon the  $Q_{max}$  vapour that is expected in normal operation;
- The delivered corrected amount shall be calculated and presented in the amounts of mass;
- The calculation of the correction shall be covered by the approval of the flow computer mentioned in paragraph 1.1;
- The accuracy of the correction device shall be such that the residual effect after the correction is smaller than one third of the applicable Maximum Permissible Error (MPE) of the measuring system.

## 1.6 Non-essential parts

- Housing of the dispenser;  
Optionally, the LNG dispenser may share a common housing with a CNG dispenser. In this case, the CNG dispenser shall be regarded as a separate measuring system, which is not covered by this EU-type examination certificate.
- Supply system;  
For each dispenser a single supply system or a common supply system for several dispensers;  
The supply system consists of:
  - an over- or underground storage tank;
  - for each LNG dispenser a separate external return line or for more than one dispensers a common external return line.
- Mano meters (not for legal metrology);
- Hose(s);
- Nozzle(s);
- The dispensers may optionally be provided with several safety provisions, which shall not influence the metrological properties.

## 2 Seals

The following items of the LNG dispenser are sealed:

- Nameplate to the frame of the LNG dispenser or in trailer mounted applications as close as possible to the transfer point. Removal of the nameplate without destroying it or without breaking a seal shall not be possible;
- If the serial numbers of the essential parts stated in paragraph 1.1 are not mentioned on the nameplate, the essential parts have to be sealed against removal;
- For sealing of the essential parts, see the applicable Evaluation Certificates or Parts Certificates.

## 3 Conditions for conformity assessment

The initial verification of the measuring instrument can include the following steps:

1. Examination for conformity of the LNG dispenser according to this EU-type examination certificate.
2. Essential parts covered by an Evaluation Certificate or Parts Certificate shall be constructed and set-up according the applicable Evaluation/Parts certificate.
3. Verification of the correct parameter settings of the flow transmitter.
4. Ensure that the flow sensor is filled with one of the measured liquids at a temperature representative of measurement conditions, and that there is no movement of the liquid.
5. The measurement accuracy of the measuring instrument is verified at least two times:  
This is done:

Directly on site of installation by comparing the measurement result with a calibrated master (such as but not limited to master meter, weighing bridge and weigh-scale).

- a. If the proving means uncertainty meets the 1/3 of MPE requirement, the MPE applies.
- b. If the proving means uncertainty exceeds 1/3 of the MPE requirement, the applicable MPE for the EUT = 4/3 times the accuracy class MPE minus proving means uncertainty. This is only valid when there is mutual agreement between the manufacturer and the test facility

or

Either in a test lab or directly on site of installation on a liquid with similar properties (density, viscosity and temperature) as the liquid to be measured.

As an authorized alternative for LNG applications: a verification on Liquid Nitrogen can be accepted provided the parameters of the meter during these verifications are the same (excepted for zero adjustment) and provided the verification on Liquid Nitrogen is done in the final installation mounting.

Note: Steps 2, 3 and 4 can also be used for subsequent verifications.

See procedure NMI-HAM-01 "Procedure NMI-HAM-01 for the MID Conformity assessment for LNG dispensers produced by HAM Criogénica when used for Custody Transfer in liquid applications (MID, annex VII)" for guidance and more information regarding the conformity assessment procedure.