

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED), issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Authority. This Certificate is issued by DNV GL AS under the authority of the Government of Norway.

This is to certify:

That the Oil-content meters

with type designation(s)
15ppm Bilge Alarm, Type BilgMon 488

Issued to

Brannstrom Sweden AB
GOTHENBURG, Sweden

is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2019/1397**,
item No. MED/2.3. Marpol 73/78 as amended, Annex I Regulation 14, IMO Res. MEPC.107(49), IMO MEPC.1/Circ. 643

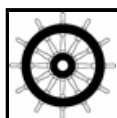
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2025-04-29**.

Issued at **Høvik** on **2020-04-30**

DNV GL local station:
Sweden CMC

Approval Engineer:
Thomas Grafton



Notified Body
No.: **0575**

for **DNV GL AS**

Roald Vårheim
Head of Notified Body



The mark of conformity may only be affixed to the above type approved equipment and a Manufacturer's Declaration of Conformity issued when the production-surveillance module (D, E or F) of Annex B of the MED is fully complied with and controlled by a written inspection agreement with a Notified Body. The product liability rests with the manufacturer or his representative in accordance with Directive 2014/90/EU.

This certificate is valid for equipment, which is conform to the approved type. The manufacturer shall inform DNV GL AS of any changes to the approved equipment. This certificate remains valid unless suspended, withdrawn, recalled or cancelled.

Should the specified regulations or standards be amended during the validity of this certificate, the product is to be re-approved before being placed on board a vessel to which the amended regulations or standards apply.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV GL AS, its parent companies and subsidiaries as well as their officers, directors and employees ("DNV GL") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Product description

The BilgMon 488 Bilge Alarm is intended for installation on-board ships for monitoring the oil content of bilge water. The unit monitors the effluent from an approved Bilge Water Separator and sends an alarm signal that facilitates the activation of discharge control devices when the oil content exceeds 15ppm.

The BilgMon 488 is equipped with two adjustable alarms that are triggered when the oil content of the processed sample exceeds the set limit (15ppm). Alarm outputs consist of relays and indicator LEDs. Additionally, a 0(4) – 20 mA current output signal or a digital signal is available to enable remote surveillance and recording of oil contents.

The BilgMon 488 uses the principle of scattered light for real time detection and measurement of oil content.

The 15ppm Bilge Alarm is designed and tested to meet the requirements of IMO Resolution MEPC.107(49).

Application/Limitation

The equipment is not permitted to be installed in spaces subject to explosion hazards.

A copy of the Operating and Maintenance Manuals shall be on board the vessel at all times.

The onboard arrangement of the 15ppm Oil-content Meter (Bilge Alarm), 15ppm Bilge Separator and the discharge control device (automatic stopping device) shall function automatically. The following shall be verified during installation :

- The alarm is always activated whenever clean water is used for cleaning or zeroing purposes.
- The alarm is always activated if the Bilge Alarm fails to function, requires a warm-up period or otherwise be de-energized.
- Any alarm will activate the automatic stopping device preventing overboard discharge and lead to recirculation.
- The overall response time (including the response time of the alarm) between the effluent discharge exceeding 15 ppm oil and the operation of the automatic stopping device preventing overboard discharge is not more than 20 seconds.

Type Examination documentation

Job Id: **344.1-002589-3**
Certificate No: **MEDB00006MV**

Tests carried out

Performance Test:

- Tested in accordance with the requirements of the specification contained in Part 2 of the Annex to the Guidelines and Specification contained in IMO Resolution MEPC.107(49), witnessed by DNV Malmø, December 2004.

Environmental Test:

- DNV Technical Report No.2005-3044, Rev.01 dated 2005-01-21, Environmental testing of 15 ppm Bilge Alarm BilgMon 488.

Marking of product

For traceability to this EC Type-Examination, each unit to be marked with;

- Manufacturer's name and trade mark
- Type designation
- Serial No.
- Mark of Conformity

APPENDIX – BILGMON 488

Test data and results of tests conducted on a 15 ppm Bilge Alarm in accordance with Part 2 of the Annex to the Guidelines and Specifications contained in IMO Resolution MEPC.107(49)

15 ppm Bilge Alarm submitted by:

Test location:

Organisation conducting the test:

Method of sample analysis:

Test rig according to drawing:

Samples analysed by:

Environmental testing of the electronic sections of the 15 ppm Bilge Alarm has been carried out in accordance with part 3 of the annex to the guidelines and specifications contained in IMO Resolution MEPC.107(49). The equipment functioned satisfactorily on completion of each test specified on the environmental test protocol.

Environmental Test(s) carried out at Test report No issued at on

Remarks:

Calibration Test and Response Time

	Test Fluid					
	A		B		C	
	Oil Content Meter Reading	Grab sample	Oil Content Meter Reading	Grab sample	Oil Content Meter Reading	Grab sample
0 ppm						
15 ppm						
Full scale (ppm)						
Water Temperature						
Re-zero	☐ X		☐ X		☐ X	
Recalibrate	☐ X		☐ X		☐ X	
Response Time						

Contaminant(s) and Colour Test

Non-oil particulate matter.

Meter reading shift with ppm non-oil particulate contaminants and with very salt water.

	Expected Reading	Oil Content Meter Reading
Clean water and 10 ppm Test Fluid "B"		
Very salty water (6% common salt with clean water)		

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Fluid B and Iron Oxide in a concentration of	10 ppm		
Fluid B and Iron Oxide in a concentration of	50 ppm		
Fluid B and Iron Oxide in a concentration of	100 ppm		

15 ppm Bilge Alarm reading shift at 50 % of normal:

15 ppm Bilge Alarm reading shift at 200 % of normal:

Deviations from this test should be stated if necessary:

Shut-Off Test

15 ppm Bilge Alarm before shut-off

15 ppm Bilge Alarm reading after start-up
(minimum dry period 8 hours)

Damage to meter as follows:

Utilities Supply Variation Test

110 % voltage effects:

90 % voltage effects:

110 % air pressure effects:

90 % air pressure effects:

110 % hydraulic pressure effects:

90 % hydraulic pressure effects:

Other Comments:

Calibration and Zero Drift Test

Calibration drift:

Zero drift: