TYPE EXAMINATION CERTIFICATE – EC MODULE B

Certificate no.:
MEDB00008KA

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 AS under the authority of the Government of Norway.

This is to certify:

that the Fixed oxygen analysis and/or gas detection equipment: category 3: (explosive gas atmospheres)

with type designation(s)
MM502 Gas Sampling & Detection System

issued to
Martek Marine Ltd.
Rotherham, South Yorkshire, **United Kingdom**

is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2024/1975,**
item No. MED/3.54b. SOLAS 74 as amended, Regulation II-2/4 & VI/3 and FSS Code 15, IMO MSC.1/Circ.1370

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

This Certificate is valid until **2030-07-27**.

Issued at **Høvik** on **2025-07-28**

DNV local unit:
UK & Ireland CMC & VMC

Approval Engineer:
Frode Nygård

Notified Body
No.: **0575**

for **DNV AS**

Mydlak-Röder, Christine
Head of Notified Body

NORWEGIAN ACCREDITATION PROD 019

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 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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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.

Product description

The MM502 sequential gas sampling system has been designed to monitor presence of flammable gases, oxygen, carbon monoxide and hydrogen sulphide in water ballast tanks and void spaces.

The system can sample a maximum of 32 sample lines, detect up to 4 different gases and monitor up to 16 hard wired 4-20mA (direct) sensor inputs.

The following components included in this approval:

Item.	Product	Part No.	Description
2080-L70E-24QWB	PLC	106648	24 Point Programmable Controller
2080-IF4		102292	4 Point Analogue Input Module
2085-OB16		102232	16 Point Source 24V dc Output Module
2080-IF8		103921	8 Point Analogue Input Module
2711C-T7T	HMI-1, HMI-2	105246	PanelView 800 7Inch HMI Terminal
Relays Modules	MRM-1 (4068)	107512	8 Ch Relay Output Module (1A)
	MRM-2 (4069)	107513	8 Ch Relay output Module (5A)
Power Supply	PSU	107516	110/220 V ac 50/60Hz
Flow Sensing Relay	FSR-1, FSR-2	100330	
Ethernet Switch	LMS	107916	5-Way Ethernet Lightly Managed Switch
Solenoid Valve			
Sample Pump	SP-A, SP-B	107522	
Sample Flowmeter	FM-1	100884	
Flame Arrestor	SVFA, PSVFA, PVFA.	100958	Sample Lines 1-32
Searchpoint Optima*	GD-01	107942	Methane. 0-100% LEL
MM502 O_2 Sensor**	GD-02	107941	Oxygen. 0-25%vol
MM502 H_2S Sensor**	GD-03	107943	H2S – 0-50ppm
MM502 CO Sensor **	GD-03	107942	CO – 0-250ppm

Refer to separate approval certificate: *18830/D0 MED, **MEDB00007CE.

Application/Limitation

Ex-certification is not covered by this certificate. Application in hazardous area to be approved in each case according to the Rules and Ex-Certification/ Special Condition for Safe Use listed in valid Ex-certificate issued by a notified/recognized Certification Body.

The equipment are found to comply with following location/application dependent requirements (for definition of each of the location classes, see below the table):

Product	**Temperature**	**Vibration**	**EMC**	**Enclosure**
MM502	TEM-A	VIB-A	EMC-A	ENC-B

Temperature: TEM-A: Location (5°C to +55°C) (ref. IEC 60092-504:2016 table 1 item 6-7)
Vibration: VIB A: General applications (±1 mm / ±0.7 g) (ref. IEC 60092-504:2016 table 1 item 10)
EMC: EMC B: Bridge and deck zone (ref. IEC 60092-504:2016 table 1 item 13-20)
Enclosure: ENC-B: Engine room (IP55) (ref. IEC 60092-504:2016 table 1 item 9 and 12)

Complete system shut down will occur, when GD-01 detects a HC leak of above 30% LEL.

System components to be installed in a metal cabinet.

Type Examination documentation

Tests carried out

Applicable tests according to:
- IEC 60092-504:2016
- IEC 60533:2015
- EN IEC 60079-0:2018 incl. AC:2020
- EN 50104:2019 incl. EN 50104:2019/A1:2023
- EN 60079-29-1:2016 incl. EN 60079-29-1:2016/A1:2022 and EN 60079-29-1:2016/A11:2022
- IMO MSC.1/Circ.1370

Marking of product

For identification to this type examination certificate the products shall be marked with:
- Manufacturer's name or trademark
- Type designation
- Mark of Conformity (wheel mark), followed by
    - identification number of the NoBo involved in production control (MED D)
    - the year the mark is affixed
    - Example: 0575/2025