EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MEDB000074B

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 Water level detectors

with type designation(s)
Levelmaster® H8, Levelmaster® H8 C and Levelmaster® H8 WIM MKII

Issued to
Kockum Sonics AB
Malmö, Skåne Län, Sweden

is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2021/1158,**
item No. MED/8.1. SOLAS 74 as amended, Regulation II-1/22-1, II-1/25 & XII/12, IMO Res. MSC.188(79) and IMO MSC.1/Circ.1572, Rev 1.

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

This Certificate is valid until **2025-08-15**.

Issued at **Høvik** on **2022-11-18**

DNV local station:
Sweden CMC

Approval Engineer:
Frode Nygård

Notified Body
No.: **0575**

for **DNV AS**

Digitally Signed By:
Steinar Kristensen
Location: DNV Høvik, Norway
on behalf of

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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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

Flexible Level gauging systems: Levelmaster® H8, Levelmaster® H8 C and Levelmaster® H8 WIM MKII.
For installation as water level detector in hold, ballast and dry spaces according to SOLAS XII Reg.12 and SOLAS II-1 Reg.25.

The Levelmaster® H8 comprises the following units:

Description	Maker	Art. No.
Sensor and Control Unit	Kockum Sonics	2700 0004
Power Supply	Kockum Sonics	2472 1205
Solenoid Valve	Alt.1: CAMOZZI Alt.2: GEVA	2088 2489 2472 1085
Valve Control Board	Kockum Sonics	2063 3041

Display units:

Level monitoring:	Alarm display unit [1)]
Draft monitoring:	Draft Alarm display unit [1)]
Water ingress monitoring:	WIM MKII alarm display unit [1)]

[1)] Hardware is covered by separate type approval certificate TAA00000N8 (Beijer X2 motion 7 - B2).

Control HMI software version at the time of testing V1.02.
Software number and versions are described in “Software Quality Plan”.

Application/Limitation

The system is designed to follow the regulations given in SOLAS XII/12 and SOLAS II-1/25, and is implemented according to the description in resolution MSC.188(79).

According to IMO regulations the main alarm panel is to be placed on the bridge. Optional panels (slaves) may be placed in other locations on the vessel.

Ex installations 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 is found to comply with following location/application dependent requirements
(for definition of each of the location classes, see below the table):

EQUIPMENT	TEMPERATURE	VIBRATION	EMC	ENCLOSURE
Sensor and Control Unit	TEM-A	VIB-A	EMC-B	ENC-B (IP54)
WIM alarm display	TEM-B	VIB-A	EMC-B	ENC-B (IP65 Front)

Definition of the location classes with reference to relevant standards:

- Temperature:	TEM-A	– Location (+5°C to +55°C)	(ref. IEC 60092-504:2016 table 1 item 6-7)
	TEM-B	– Location (+5°C to +70°C)	(ref. IEC 60092-504:2016 table 1 item 6-7)
- Vibration:	VIB-A	– For general applications	(ref. IEC 60092-504:2016 table 1 item 10)
- EMC:	EMC-B	– Bridge and deck zone (any location)	(ref. IEC 60092-504:2016 table 1 item 13-20)
- Enclosure:	ENC-B	– Engine room (IP54, IP65)	(ref. IEC 60529 Edition 2.2:2013)

Type Examination documentation

Title	Drw. No.	Rev. / Date
Manual Levelmaster® H8, Kockum Sonics	KSM 657_2028	- / -
Manual Levelmaster ® H8, APPENDIX B-D, WIM Manual	KSM 657_2028 WIM	- / -
Manual Levelmaster ® H8-C, Cargo tank level gauging	KSM 738_1726	- / -
Description data sheet Levelmaster ® H8	KSM 638EN-1433	- / -
User's guide: Levelmaster WIM MKII	KSM-931_2037	2 / 2020-09-09
Software Quality Plan	-	- / -
Levelmaster® WIM MKII witnessed test protocol BV	UTV2002	- / 2020-06-16
Test Report: ENV & EMC test of Levelmaster H8, DELTA	DANAK-198427	- / 2006-07-13
Test Report: Supplementary EMC, IACS E10 testing of Levelmaster H8, Force Technology	119-32982-1	- / 2019-11-25
Test Report: Supplementary test for marine type approval of Levemaster H8C WIM MK II and SRtP, Force Technology	120-24658-1	- / 2020-05-26
Test Report: DNV Laboratory	98-1195	1 / 1998-05-05

SP Swedish National Testing and Research Institute	F326327	- / 2004-01-12
Water Ingress Monitoring by Calm, Protocol according to procedure	-	- / 2003-12-02

The hardware is separately type approved. Type Examination documentation can be found in the respective TA-folders:

- TAA00001D3 – 262.1-005101
- TAA00000N8 – 262.1-022992

Tests carried out

The system was tested according to the following standards:
- IEC 60092-504:2016,
- IEC 60529 Ed. 2.2:2013 incl. Corr1:2013, and Corr2:2015,
- IMO Res. MSC.188(79).
- IMO MSC.1/Circ.1291.

Testing according to IMO Res. MSC.188(79) is not considered relevant as this system is not intended to be used for water ingress detection in cargo spaces.

Testing according to IMO Res. MSC.188(79) is not considered relevant as this system is not intended to be used for water ingress detection in cargo spaces.

Marking of product

For identification to this type examination certificate the products shall be marked with:

- Manufacturer's name or trade mark
- 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: 0575/2022