



TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MERB0000894
Revision No:
0

This Certificate is issued by DNV UK Limited based on authorisation of the Maritime & Coast Guard Agency (MCA) as an UK Approved Body to undertake conformity assessments on marine equipment in accordance with the requirements of the Merchant Shipping (Marine Equipment) Regulations 2016 as amended.

This is to certify:

That the Inmarsat-C SES

with type designation(s)
FELCOM18

Issued to

Furuno Electric Co., Ltd.
Nishinomiya, Japan

is found to comply with the requirements in the following Regulations/Standards:

Regulation **MSN 1874 Amendment 6,**

item No. UK/5.13. SOLAS 74 as amended, Regulations IV/10, IV/14 & X/ 3, IMO Res. A.570(14), IMO Res. A.664(16), IMO Res. A.694(17), IMO Res. A.807(19), IMO Res. MSC.36(63), IMO Res. MSC.97(73), IMO Res. MSC.302(87), IMO Res. MSC.306(87), IMO MSC/Circ.862, IMO COMSAR Circ.32

In addition:

IMO Res. MSC.147(77) Revised performance standards for a ship security alert system (SSAS)
IMO Res. MSC.263(84) Revised performance standard and functional requirements for the long range identification and tracking of ships (LRIT)

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

This Certificate is valid until **2028-01-16**.

Issued at **London** on **2023-01-17**

DNV local unit:
Kobe



for **DNV UK Ltd.**

Approval Engineer:
Steinar Kristensen

Approved Body No.: **0097**

Christine Mydlak-Röder
MER Service Responsible



**Maritime &
Coastguard
Agency**

UK Approved Body Authorised
by the MCA

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-control phase module (D, E or F) of Schedule 2 of the Merchant Shipping (Marine Equipment) Regulations 2016, as amended is fully complied with and controlled by a written inspection agreement with an approved body. The product liability rests with the manufacturer or his representative in accordance with the Merchant Shipping (Marine Equipment) Regulations 2016.

This certificate is valid for equipment, which is conform to the approved type. The manufacturer shall inform DNV UK Ltd. of any changes to the approved equipment. 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. This certificate remains valid unless suspended, withdrawn, re-called, or cancelled.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") 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.



Form code: MER 201.GBR

Revision: 2022-12

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Product description

The FELCOM18 Inmarsat-C SES provides Global Maritime Distress and Safety System (GMDSS) services through the Inmarsat Satellite System, and consists of the following units:

Unit	Type/Part no.	Comment/ Description	Location
Communication unit	IC-218	Terminal unit with display and bracket mount. Interfaces: <ul style="list-style-type: none"> • 12 or 24V DC input power • Antenna Unit • Keyboard • Junction box for connection of <ul style="list-style-type: none"> ○ Alarm Unit ○ Distress Alert/Received Call unit/Alarm unit ○ SSAS Alert Unit ○ RS422 NMEA in/out 	Protected
Antenna Unit	IC-118		Exposed
Junction box	IC-318		Protected
Alert buttons	IC-305	Distress alert/ received call unit	Protected
Keyboards	5139U or SKB-E3U or SKB-E3UN or TK-HG01UMBK or TK-HG01UMBK-P	Mini Keyboard Keyboard Keyboard Keyboard without conversion connector Keyboard with conversion connector	Protected
Accessories			
Power Supply	PR-240 or PR-241	AC/DC Power Supply Unit	Protected
Alarm Unit	IC-306		Protected
Alarm Unit	IC-350		Protected
SSAS Alert unit	IC-307	SSAS Alert Button	Protected
Printer	PP-510 or PP-520	Adapter for connection to GMDSS printer, 36 pin connector	Protected

Location specifies the location for the units according to IEC 60945 (2002).

Software modules	Version
PCTerminal	1650240-01
IC-218	1650247-01

Application/Limitation

The following applies to the FELCOM18 Inmarsat-C SES:

- Shall be installed according to manufacturer's User & Installation Manual.
- Is classified as SES Class 2 with shared Inmarsat-C and EGC receiver.
- Includes, as an option, an integrated Global Positioning System (GPS) receiver for position fixing.
- Has been tested as Ship Security Alert System, as an option, in accordance with the requirements specified in IMO Res. MSC.147(77)- Revised performance standards for Ship Security Alert System (SSAS).
Coverage area will be as defined by Inmarsat-C service coverage area, approximately corresponding to between 70° North and 70° South.
- Has been tested for Long-Range Identification and Tracking (LRIT), as an option, in accordance with the relevant requirements for shipborne equipment in IMO Res. MSC.263(84)- Revised performance standards and functional requirements for the Long-Range Identification and Tracking of ships, using Inmarsat as Communication Service Provider (CSP).
- Operating frequency range: Rx: 1537.0-1533.2 MHz, TX: 1626.5-1646.5 MHz
- Modulation method: BPSK.
- Maximum output power: 12 to 16 dBW EIRP rated.

Type Examination documentation

DNV No	Document ID	Rev.	Description
26	N 12.12	2012-04-26	Report: RES Laboratory Ltd, Ship Security Alert System (SSAS) for Inmarsat-C MES FELCOM18 (26-04-2012)
25	N 13.12	2012-04-26	Report: RES Laboratory Ltd, LRIT test report for Inmarsat-C MES, Model FELCOM18
24	N 10.19	2019-11-12	Report: RES Laboratory Ltd, Bridge Alert Management test report for FELCOM18 Inmarsat EGC equipment
23	LIC 12-20-194	2021-01-12	Report: Labotech, IEC 60945 temperature and vibration test report for TK-HG01UMBK Keyboard
22	LIC 12-20-193	2021-01-12	Report: Labotech, IEC 60945 Compass safe distance test report for TK-HG01UMBK Keyboard
21	LIC 12-20-192	2021-01-12	Report: Labotech, IEC 60945 EMC test report for TK-HG01UMBK Keyboard
20	LIC 12-20-122	2020-10-22	Report: Labotech, IEC 60945 Excessive conditions, acoustic noise, dangerous voltage test report for PR-241 Power supply unit
19	LIC 12-20-121	2020-10-22	Report: Labotech, IEC 60945 temperature and vibration test report for PR-241 Power supply unit
18	LIC 12-20-120	2020-10-22	Report: Labotech, IEC 60945 EMC test report for PR-241 Power supply unit
17	LIC 12-20-119	2020-10-22	Report: Labotech, IEC 60945 Compass safe distance test report for PR-241 Power supply unit
16	LIC 12-20-053	2020-05-07	Report: Labotech, IEC 60945 temperature and vibration test report for SKB-E3U Keyboard
15	LIC 12-20-052	2020-05-07	Report: Labotech, IEC 60945 EMC test report for SKB-E3U Keyboard
14	LIC 12-20-051	2020-05-07	Report: Labotech, IEC 60945 Compass safe distance test report for SKB-E3U Keyboard
13	LIC 12-19-085	2019-05-29	Report: Labotech, IEC 61162-1 (2016) test report for Inmarsat C-MES, Type FELCOM18
12	LIC 12-18-087	2018-09-14	Report: Labotech, IEC 61162-450 (2018) test report for Inmarsat C-MES, Type FELCOM18
11	K16-18-381	2012-09-04	Report: Furuno, IEC 62729 Ed.3 (LRIT) test report for Inmarsat C-MES, Type FELCOM18
10	K16-18-365	2012-04-20	Report: Furuno, IEC 61097-4 Ed.3 test report for Inmarsat C-MES, Type FELCOM18
9	K16-17-840	2019-11-07	Report: Furuno, IEC 62923 test report for Inmarsat C-MES, Type FELCOM18
8	K16-17-706-1	2014-10-15	Report: Furuno, MSC.302(87) test report for Inmarsat C-MES, Type FELCOM18
7	FLI 12-14-115	2015-01-23	Report: Labotech, IEC 61162-450 (2011) test report for Inmarsat C-MES, Type FELCOM18
6	FLI 12-12-081	2012-09-05	Report: Labotech, IEC 60945 test report for PP-520 Printer
5	FLI 12-12-038	2012-04-13	Report: Labotech, IEC 61162-1 (2010) test report for Inmarsat C-MES, Type FELCOM18
4	FLI 12-12-037	2012-04-13	Report: Labotech, IEC 61097-4 Spurious Emission test report for Inmarsat C-MES, Type FELCOM18
3	FLI 12-12-035	2012-04-05	Report: Labotech, IEC 60945 test report Inmarsat-C MES, Type FELCOM18
2	OME-56740-M1	2022-09-01	Manual: Furuno, Operator's Manual, Inmarsat-C MES, Model FELCOM18
1	IME-56740-N	2021-04-12	Manual: Furuno, Installation Manual, Inmarsat-C MES, Model FELCOM18

Tests carried out

- Performance tests: IEC 61097-4 (2012) incl. Amd.1 (2016) and Amd.2 (2019)
- Environmental tests: IEC 60945 (2002) incl. Corr.1 (2008)
- Interface tests: IEC 61162-1 (2016) and IEC 61162-450 (2018)
- Bridge Alert Management: IEC 62923-1 (2018) and IEC 62923-2 (2018)
- Long-Range Identification and Tracking (LRIT): IEC 62729 (2012)



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Marking of product

The type designation and name and contact address of the manufacturer shall be affixed visibly, legibly and indelibly to the product. In addition the product shall be marked with serial number, safe distance to magnetic compass, power consumption and/or supply voltage.