



Certificate no.:
TAA00003E7

TYPE APPROVAL CERTIFICATE

This is to certify:

that the **Fire Alarm Central Unit**

with type designation(s)
BDS-4000

issued to

B-I INDUSTRIAL CO., LTD.
Busan, Korea, Republic of

is found to comply with

DNV rules for classification – Ships, offshore units, and high speed and light craft

Application:

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV.

Location classes:

Temperature B

Humidity B

Vibration A

EMC A

Enclosure Required protection according to DNV Rules shall be provided upon installation onboard

Issued at **Høvik** on **2025-03-27**

This Certificate is valid until **2030-03-26**.

for **DNV**

DNV local unit: **Busan, CMC Korea**

Approval Engineer: **Frode Nygård**

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

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: TA 251

Revision: 2023-09

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Product description

BDS-4000 is an analogue addressable and conventional fire detection system consisting of Main Control Panel, Repeater Panel and Interface Panel.

Main Control Panel and Repeater Panel

- 7.0" Touch & Colour active matrix TFT display
- Power Supply: 24 V DC
- Ambient Temperature: - 5°C to 55°C
- Mounting Type: Wall or Console mounted
- 4 channel serial communication port for external units (RS485)
- 1 channel serial communication port for VDR (RS485)
- Ingress Protection: IP23

Interface Panel

- Power Supply: 110/220 V AC, 50/60 Hz
- Battery: 12 V DC, 9 Ah×2
- Ambient Temperature: - 5°C to 55°C
- 4 analogue addressable loops (Max. 12 loops)
- 32 conventional loops (Option)
- 8 channel standard/programmable relay output
- Max. 127 detectors per loop
- Mounting Type: Wall mounted
- Ingress Protection: IP44

Software Version 3.20

Approval conditions

The Type Approval covers hardware and software listed under Product description.

Reference is made to DNV rules for classification of ships Pt.4 Ch.9 Control and monitoring systems.

When the hardware is used in applications to be classed by DNV the following documentation of the actual application is to be submitted for approval in each case:

- Reference to this Type Approval Certificate
- System block diagram including location of loop equipment.
- Power supply arrangement (may be part of the System block diagram)

Correct configuration and setup for each delivery to be tested during commissioning after installation.

When the type approved software is revised (affecting all future deliveries) DNV is to be informed by forwarding updated software version documentation. If the changes are judged to affect functionality for which rule requirements apply a new functional type test may be required and the certificate may have to be renewed to identify the new software version.

Application software control

All changes in software are to be recorded as long as the system is in use on board. Documentation of major changes is to be forwarded to DNV for evaluation and approval before implemented on board.

Type Approval documentation

Tests carried out

Applicable tests according to:

- Class guideline DNV-CG-0339, August 2021
- EN 54-2:1997 incl. AC:1999 and A1:2006
- EN 54-4:1997 incl. AC:1999, A1:2002 and A2:2006

Marking of product

The products to be marked with:

- manufacturer name
- model name
- serial number
- power supply ratings

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval certificate

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

Manufactured by:

B-I INDUSTRIAL CO., LTD

32, Gonghang-ro 767beaonda-gil, Gangseo-gu Busan 46720 Korea

END OF CERTIFICATE