Certificate no.:
TAA00003JY

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Fire Alarm Central Unit

with type designation(s)
MD2020

issued to
Microdata Due S.r.l.
Follo SP, **Italy**

is found to comply with
IMO International Code for Fire Safety Systems (FSS Code) Chapter 9
DNV rules for classification – Ships

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	**B**
Enclosure	**Required protection according to the Rules shall be provided upon installation on board.**

Issued at **Hamburg** on **2025-02-10**
This Certificate is valid until **2030-02-09**.
DNV local unit: **Italy/Malta CMC**

for **DNV**

Approval Engineer: **Heinz Scheffler**

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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 USD 300 000.

Product description

Analogue and addressable Fire detection and fire alarm system consisting of:

- Fire alarm control panel MD2020-CU (P/N-30103)
- Power supply module MD2020-PSU (P/N-30378)
- Interface Module MD2020-CTB (P/N-30377)
- Branch control unit MD2020-BCU (P/N-30287)
- Loop control unit MD2020-LCU (P/N-30284)
- Remote node MD2020-RN (P/N-30513)

Fire Alarm Central Unit is able to work in the following configurations:

- for the management of Centralized Systems (Only one Central Unit) or distributed system (several central unit net connected); detectors are connected in a Loop configuration.
- for the management of Distributed System, detectors are connected on open electric lines named Branch

Main features:

- Up to 40 detection Branches/Loops are managed through Branch control Unit BCU and Loop Control Unit LCU card.
- An additional 40 units can be added using MD2020-RN.
- Up to 127 devices may be connected to each Loop
- Up to 180 devices may be connected to each Branch
- The central units are able to detect any fault occurring on the system (eg. Loop/ Branch cable break, detector failure, etc.)

The central units provides the following additional functions:

- Alarm, Failure, Delayed alarm, System, Alarm sounder, Failure Sounder relay
- The MD2020-CU can be connected to the Alarm Repeater Unit MD9860
- The MD2020-CTB also implements additional Input/Output features. These extra I/O capabilities are managed by the CTB's internal microprocessor, which communicates with the CU via a dedicated serial line:
  - n 18 programmable outputs - 4 relay / 14 static
  - n 04 monitored inputs - 2 isolated / 2 non isolated
  - n 01 thermistor input - for connecting external thermistor

Application/Limitation

- IP class shall be in accordance with installed area on board.
- MD 2020 safe compass distance is 2.6 m
- DNV type approved cable is to be used
- If ethernet switches are needed for the DCS then DNV type approved is to be used

Approval conditions

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

Product certificate

Each delivery of the application system is to be certified according to Pt.4 Ch.9 Sec.1. After certification the clause for software control will be put into force.
Project-specific documentation shall be submitted for approval as mentioned below and a certification test shall be performed at the manufacturer of the application system before the system is shipped to the yard.

- Reference to this Type Approval Certificate
- System block diagram (topology) describing also if applicable integrated configuration of controllers, connected loops, bus, signal connections and their redundancy (DNV I030)
- Power supply arrangement (DNV I050), may be part of the System block diagram (DNV I030)
- User interface documentation including controlled and monitored points (DNV I110)
- Circuit diagrams, for essential hardwired circuits like Fire Alarm Output Signals
- Revision numbers of hardware and software including description of changes if different from type approved versions (DNV I320)
- Functional description (DNV I020)
- Test program for certification (DNV Z252)
- Arrangement plan (DNV Z030)

Clause for application software control
All changes in software are to be recorded as long as the system is in use on board. Records of major changes are to be forwarded to DNV for evaluation and approval and shall be approved before implemented on board.

Major changes to the type approved system affecting future deliveries shall be informed to DNV. If the changes are considered 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 version. Minor changes are covered by this type approval.

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
- IEC 60945 (2002) including IEC 60945 Corrigendum 1 (2008)
- IEC 60092-504:2016
- IEC60533:2015
- IACS UR E10

Manufactured by:

MICRODATA DUE SRL
Via Greti Del Vara 9, 19020 Follo, La Spezia
ITALY

Marking of product

The products to be marked with:

- Model name
- Manufacturer name
- Serial number
- firmware and software name and version
- power consumption and/or supply voltage.

Periodical assessment

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.

END OF CERTIFICATE