Certificate No: LR2023178TA-01
Issue Date: 29/03/2022
Expiry Date: 18/10/2025

Type Approval Certificate

This is to certify that the undernoted product(s) has/have been tested with satisfactory results in accordance with the relevant requirements of the Lloyd's Register Type Approval System.

Manufacturer	**Microdata DUE SRL**
Address	Via Greti del Vara No 9 - 19020 FOLLO - (LA SPEZIA), Italy
Place of Production	Microdata DUE SRL Via Greti del Vara No 9 - 19020 FOLLO - (LA SPEZIA), Italy
Type	Component of Smoke Detection and Alarm Systems
Description	MD9910, including Bases MD9910-LP, MD9900-BS, MD9900-BSI, Analogue addressable optical smoke and heat detector including Short Circuit Isolator and Sounder. Detector main features: - provide fire alarm for smoke presence; - provide fire alarm for high temperature; - survey the temperature inside the room where it is installed; - transmit to Central Unit the analogue values of temperature and smoke that it measures; - perform, on demand, a test procedure name TOD (Test On Demand); - notify the alarm state by the activation of the built-in SOUNDER; - notify the alarm by activation of two high intensity LEDs visible at 360° by means of light guides; - detect the presence of an obstruction that inhibits the revealing of the smoke;

P.A. Huntley-Hawkins

Peter Huntley-Hawkins

Principal Specialist to Lloyd's Register EMEA
A member of the Lloyd's Register group

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- TOD (test on demand) that runs a test procedure on a command received by the Control Unit:
- Functionality of the IR detection chain: The functionality of the smoke measurement is fully tested. The test result is transmitted to the control panel;
- Functionality of the built in Sounder: The sound pressure level generated by the Sounder is monitored to verify the correct acoustic level. The test result is transmitted to the control panel;
- Functionality of the Alarm LEDs: The correct functionality of the alarm LEDs is verified. The test result is transmitted to the control panel;
- Functionality of the temperature detector: The temperature circuit is tested by forcing a thermal alarm. The test result is transmitted to the control panel;
- Functionality detecting obstructions in front of the detector: Sensor enclosure protection is detected as well as any obstacles nearby the sensor preventing the passage of smoke. The test result is transmitted to the control panel.

It can be assumed that the T.O.D. test procedure provides diagnostic results comparable with the ones obtained by manual test simulation performed locally by the operator.

MD9910 Combined Smoke & Heat Detector P/N 29655, D38823 Rev. H
MD 9910-LP, P/N 29685 Low Profile Detector Base D39924 Rev. B
MD9000-BSI, P/N 26398/2 Water tight base with short circuit isolator

Software/Firmware/Source Code Name: SW-29741
Software/Firmware/Source Code Version: V 1.0.0
Software/Firmware/Source Code Date: 03/06/2019

Firmware FW-29742 (Ref doc #5)
FW-29742_rev_1.0.0.hex 03/06/2019 1.0.0 Executable file for MD9910 (Ref doc #7)

Trade Name MD9910 Combined Smoke & Heat Detector

Application Marine, offshore and industrial use in environmental categories ENV1, ENV2 and ENV3 as detailed in Lloyd’s Register Test Specification No1, 2017

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Specified Standard	LR Rules for the Classification of Ships July 2020, Part 6, Chapters 1, Control Engineering Systems and Chapter 2, Electrical Engineering; EN54-3:2015 – Acoustic signalling device; EN54-5:2017 – Heat detectors - Class A1 Alarm threshold: 54°C ÷ 65°C; EN54-7:2018 – Smoke detectors; EN 54-17:2006 -Part 17: Short-circuit isolators; EN54-29:2015, clause 5.5 – Multi sensors fire detector (only for open wood fire (TF1), Low temperature black smoke (decalene) liquid fire (TF8)); EN 54-17:2005 – Short circuit Isolators; EN 60092-504:2016 - Electrical installations in ships - Part 504; EN 60529:1991 + A1:2000 + A2:2013.
Ratings	Power Supply 24Vdc Max Current 350 µA Max Current with Sounder on 550 µA Operating Temoperature -25oC to 75oC IP22 when used with base MD9910-LP IP 44 when used with base MD9900-BS/BSI Polycarbonate flame retardant cl. UL94V0 Weight 150g
Additional Tests	Enclosure protection: - IP22 Sensor MD9910 with base MD9910-LP - IP44 Sensor with Base M9900-BS
Other Conditions	In door installation

This certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify Lloyd's Register EMEA of any modification or changes to the equipment in order to obtain a valid Certificate.

Previous Version: LR2023178TA

The Design Appraisal Document LR2023178TA-01 and its supplementary Type Approval Terms and Conditions form part of this Certificate.

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