TYPE APPROVAL CERTIFICATE

Certificate No:
TAA0000042
Revision No:
2

This is to certify:

That the Microdata Fire Detection Systems

with type designation(s)
Fire Alarm Control Panels MD9800, MD9800-LC, MD2010-CU

Issued to
Microdata Due S.r.l.
Follo SP, Italy

is found to comply with
DNV GL 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 GL.

DNV GL Location classes [1)]			
Temperature	**Humidity**	**Vibration**	**EMC**
B	B	A	B

[1)](IP) Required protection according to the Rules shall be provided upon installation on board

Issued at **Hamburg** on **2019-12-11**

This Certificate is valid until **2024-12-10**.
DNV GL local station: **Genoa**

Approval Engineer: **Didier Girardin**

for **DNV GL**
Digitally Signed By:
Papanuskas, Joannis

Joannis Papanuskas
Head of Section

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.

Job Id: **262.1-020360-4**
Certificate No: **TAA0000042**
Revision No: **2**

Product description

The system may use a Centralized or Distributed Control System, according to one or more Fire detection controller(s) in combination (s. type MD 9800, MD9800-LC, MD2010-CU)

Centralized Control System (CCS)
(All loops are connected to one controller)
- Maximum of loops is16 loops together with expansion rack.

Distributed Control System (DCS)
(Combined fire detection controllers distributed over Fire Zones (FZ) (s. e.g. Save Return to Port)
- Maximum number of combined controllers: 12 (twelve), 18 (Eighteen) in SRtP configuration
- Fibre optic ring communicating with 100Mbps connecting the controllers distributed in FZ.
- DNV GL Type approved ethernet switch and cable
- Switch diagnostic signals to the Fire detection controllers by means of the SNMP protocol

HW Type,	P/N	HW	SW	HW description
Fire detection controller / repeater				
MD9800 MD9800-LC MD2010-CU	25934 26935 27663	25934 26935 27663	SW26678.1.[2)] DBnnnnn.[3)] SW27686.0. [4)]	Fire Alarm Control Panels (Loops: 8, 4, 16 /or 20 branches)
MD9800-EXP MD9800-2L MD2010-BR	26607 27324 27684	26607 27324 27684	- - -	Expansion Modules 8 loops Expansion Modules 2 loops Branch Expansion Module
UPS MD9815-40AH MD2010-PS	25935 27677	25935 27677	- -	Uninterruptible Power Supply Power Supply
MD9860 MD9860-I	26152 26152-I	26152	-	Alarm Repeater (wall mounting) Alarm Repeater (flushing mounting)
MD9870	26938	26938	-	Timer Unit
TRACO 60124	60124	60124	-	AC/DC Converter

I/O Module				
MD9840	25938	25938	SW26723	Interface modules for External Systems/devices connected on detector Loops: 4 digital in/ 4 digital out
MD9840B	25938B	25938	SW26723	Interface I/F modules for External Systems/devices (interface Ex devices) connected on detector Loops: 4 Digital IN
MD2208	28407	28407	SW26723	Loop Interface I/O COB module (DIN-Rail
COB	27933	28407	SW26723	Loop Interface I/O Control Board (Standard and Stand Alone version)
MD9842	27932	27932	-	Loop Interface I/O Control Box for FIRE DOOR (Version for 8 and for 16 Fire Door)

Application/Limitation

- Ex-certification is not covered by this certificate. Application in hazardous area 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.
- IP class shall be in accordance with installed area on board.
- MD 2010 safe compass distance is 2.6 m

Approval conditions

The Type Approval covers hardware and basic software listed under Product description.
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 describing also if applicable integrated configuration of controllers, connected loops, bus and signal connections
- Power supply arrangement (may be part of the System block diagram)
- Revision numbers of hardware and software including description of changes if different from type approved versions
- Functional description (applicable only in case of Distributed Control System (DCS)**)**
- Test program for certification (applicable only in case of Distributed Control System (DCS))

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

Product certificate

Each delivery of the application provided as Distributed Control **System (DCS) is to be certified by product certificate**. The certification test is to be performed at the manufacturer of the application system, based on approved test specification and before the system is shipped to the yard.

Deliveries of the application provided as Centralized Control **System (CCS) don't require product certificates** as long as the units are covered by present type approval. Correct configuration and set up for each delivery to be tested during commissioning after installation.

Clause for application software control
All changes in software are to be recorded as long as the system is in use on board. The records of all changes are to be forwarded to DNV GL for evaluation and approval. Major changes in the software are to be approved before being installed. A Certification of Application Functions may be required for the particular vessel.

Type Approval documentation

Renewal documentation. September 2015 (by taking in account former TA GL 58 620-08 HH Certificates)

Remark: Rules of present certificate is referring to S, OS and H. Has H rules not published by present day reference is made to DNV-H

MD9800 Central Unit

MD9800 Datasheet	D24722_D
MD9800 Datasheet	D24723_D
MD9800-EXP Datasheet	D24732_D
MD9860 Datasheet	D24727_D
MD9840 Datasheet	D24726_D
MD9800 Technical specification	D24745 - Part 1 and Part 2
MD9840 Technical specification	ST23514_A_ENG
MD9800 SW requirements	D24746C Eng
MD9800 SW Architectural Design	D24747B Eng
MD9800 Test Report	TESLAB 051014F-1
MD9800 Test Report	TESTLAB 155103 A-a
MD9800 Test Report	TESTLAB 08C189F-1
MD9815 Test Report	TESLAB 051014F-5
MD9860 Test Report	TESLAB 051014F-2
MD9840 Test Report	TESLAB 051014F-7
MD9840-B Test Report	TESLAB 051014F-6
MD9840 H.V. Test Report	TESLAB 07A153F
MD9800 Compass safe distance	TESLAB 07B188E

MD9815 Compass safe distance	TESLAB 07B189E
MD9800 Noise measurement	1818
Functional Test GL Report	IS28948_0
GL SW Requirement Class 3	08C189F-2
MD9800-LC Central Unit and MD9800 2L Expansion & AC/DC module	
MD9800-LC Datasheet	D27933_C
MD9800-2L Datasheet	D27936_0
AC/DC Datasheet	AC-DC TCL Series
MD9800-LC Technical specification	D25813_A
MD9800-LC Functional Test Rule	IS28961_B
Functional Test IS28961_B	Report 474_08
System Test Block Diagram	IM27375-14_B
MD9800-LC MED Functional Test	IS31241_0
MD9800-LC MED Functional Test	Report 107_12
MD9800-LC Test Report	TESTLAB 08C189F-1
MD9800-LC Test Report	TESTLAB 155103 A-a
MD9870 Timer for loop isolation	
MD9870 Datasheet	D27931_D
MD9870 Test Report	TESTLAB 155103 A-d
MD9870 Test Report	TESTLAB 08C189F-2
MD2010-CU Central Unit	
MD2010-CU Datasheet	D29061_B
MD2010-PS Datasheet	D29065_B
MD2010-BR Datasheet	D30091_A
BCU Datasheet	D30093_A
MD2010 Technical specification	ST29060_0
MD2010 Functional Test Rule	IS29064_0
MD2010 SW requirements	D29055_0
MD2010 SW Architectural Design	D29056_0
SW MD2010 Quality Plan	PDQ29059_0
Functional Test IS29064_0	Test Report N° 981_10
MD2010 FMEA	D30099_0
MD2010 Test Report	TESLAB 10a167F
MD2010 Test Report	TESLAB 155107F-a
COB I/O MODULE	
COB Datasheet	D30137_A
MD2208 COB DIN RAIL Datasheet	D32305_B
MD9842 F.D. I/O BOX Datasheet	D32307_A
MD2208 Test Report	TESLAB 12C243F-D
MD2208 Test Report	TESLAB 155107F-d
COB Test Report	TESLAB 12C243F-C
COB Test Report	TESLAB 155107F-c
MD9842 Test Report	TESLAB 12C243F-B
MD9842 Test Report	TESLAB 155107F-b

Tests carried out

Applicable tests according to class guideline DNVGL-CG-0339, November 2016

Marking of product

The products to be marked with:
- Model name
- Manufacturer name
- Serial number

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