

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Fire Technical Ancillary Equipment**

with type designation(s)

Aspirating smoke detector AMX4004 / AMX4004 WEA

Issued to

Minimax GmbH & Co. KG
BAD OLDESLOE, Germany

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.**

Temperature	D
Humidity	A
Vibration	C
EMC	B
Enclosure	C

Issued at **Hamburg** on **2017-10-25**This Certificate is valid until **2022-10-24**.for **DNV GL**DNV GL local station: **Hamburg**Approval Engineer: **Heinz Scheffler**

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.



Product description

Product features

- Up to three combined sensors can be used for different application areas (scattered light smoke sensor, ionisation smoke sensor, gas emission detector)
- Scattered light smoke sensors for different sensitivity ranges, with pollution compensation for use in critical environments
- Ionisation smoke sensor for detecting very small and dark smoke particles
- Gas emission detector for earliest fire detection (40 ppm CO)
- Integrated LC display for indicating status information
- Configurable without accessories (menu-controlled)
- Interface to fire detection systems

General Data:

- Normal operating voltage: 24 V DC
- Operating voltage: 18 V bis 30 V DC
- Measuring principle: dependent on detector heads
- Max. current consumption: Detector ca. 400 mA ; Typ WEA Heating approx. 1,4 A
- Max. number of suction hole: 20
- Monitoring area per suction hole: max. 110 m²
- Monitoring area max. 1000 m² (depending on the pipe system and detector)
- Sampling pipe diameter: 25 mm
- Sampling pipe max. overall length: 130 m (60 m as single strand)
- Dimensions without cable glands: 280 x 170 x 90 mm (WxHxD)

Detector heads:

- Optical smoke detector OMX1002C 1HE
- Optical smoke detector OMX1002C HS 1HE
- Optical smoke detector OMX1002C VHS 1 HE
- Ionisation smoke detector IMX1002E 1HE
- Gas emission detector GMX1002CO 1HE

Interface:

- 3 conventional lines for three alarms and 1 conventional line for fault connection to the fire detection system with current increase and/or relay operation (potential-free contacts)
- Three floating output contacts for alarms and one fault output contact, max. contact load 60 V DC, 1 A
- External contact reset input

Application/Limitation

The Aspiring smoke detector is for special purpose where fixed fire detectors are not suitable or required.

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV GL, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV GL Rules for Ships Pt.4 Ch.9 Control and Monitoring Systems.

Clause for 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 GL for evaluation and approval before implemented on board.

Type Approval documentation

Test report : BMA 12027, BMA 12041, 100664-AU01+SW01, 100664-AU01+UCE01, Interface test
AMX4004/FMZ5000 dated 10.09.2012
Documents: Operation Manual: 909344-02-00, List VdS G 212001, dated 16.02.2016

Tests carried out

Applicable tests according to class guideline DNVGL-CG-0339, November 2016;
EN 54-20:2006 + AC:2008

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.