DNV·GL

Certificate No:
TAA000018R

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Test and Calibration Equipment

with type designation(s)
Gas sampling system SS-M05

Issued to
M&C Techgroup Germany GmbH
Ratingen Nordrhein-Westfalen, 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.

Location classes:

Temperature	**A**
Humidity	**B**
Vibration	**A**
EMC	**A**
Enclosure	**B**

Issued at **Hamburg** on **2017-06-28**
This Certificate is valid until **2022-06-27**.
DNV GL local station: **Essen**

Approval Engineer: **Klaus-Peter Schröder**

for **DNV GL**

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.

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Product description

The gas treatment device is used for gas preparation of continuous measurement of emissions in Marine applications. The system consists of a stainless steel housing which accommodates the main components such as cooler, peristaltic pump, bellow valve pump, flowmeter with sensor and components for auto cal of the Analyzer.

Electrical performance data

Power supply	AC 230V, 50Hz
Power consumption	220VA up to max. 1600VA (depending on heated tube length)

Physical setting data

Peltier coller	Setpoint +5°C
Flow rate sample gas	Approx..: 1.2 … 1.6Nl/min (72 … 100Nl/h)

Gas inlet conditions

Sample gas pressure Sample gas pump	Pressureless suction operation Adjustable via regulating valve in the pump head to 72 … 100Nl/h)
Sample gas temperature	Max. 70°C, saturated

Application/Limitation

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 RU SHIP Pt.4 Ch.9 Sec. 1.

Type Approval documentation

Tests carried out

Applicable tests according to Class Guideline DNVGL-CG-0339, Edition November 2015.

Marking of product

The products to be marked with:
- manufacturer name
- type
- 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 at least every second year and at renewal of this certificate.
END OF CERTIFICATE