DNV·GL

Certificate No:
TAA00002RE

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Sample Gas Cooling Unit

with type designation(s)
CU-EMA+ Cooling Unit

Issued to
Bühler Technologies 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.

Temperature	**A**
Humidity	**B**
Vibration	**A**
EMC	**A**
Enclosure	**Required protection according to DNV GL Rules shall be provided upon installation on board**

Issued at **Hamburg** on **2020-04-02**
This Certificate is valid until **2025-04-01**.
DNV GL local station: **Essen**

for **DNV GL**

Approval Engineer: **Didier Girardin**

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

CU-EMA+ Cooling Unit
The sample gas cooling unit is intended for installation into gas analysis systems to comply with MEPC.259 and NOx technical code.
The cooling unit is equipped with a Peltier sample gas cooler TC-kit and with a peristaltic condensate pump CPdouble.

Technical Data:

Ambient temperature:	+5 to +50 °C
Normal cooling capacity:	110 kJ/h
Electrical data:	115/230 VAC, 50/60 Hz, 16 A

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 Rules for Ships Pt.4 Ch.9 Control and Monitoring Systems.

- Each product delivery is to be supplied with related manual for installation, maintenance and use

- The cooling unit "CU-EMA+" shall be installed, calibrated and operated in compliance with manufacturer's instructions.

Type Approval documentation

See annex

Tests carried out

Applicable tests according to DNV GL CG-0339, December 2019

Marking of product

The products to be marked with:
- manufacturer name
- model name
- serial number
- power supply ratings

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

ANNEX

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