Certificate no.:
TAA00003ME

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Emission Monitoring System

with type designation(s)
Sample stream multiplexer

issued to
Norsk Analyse AS
Barkåker, **Norway**

is found to comply with
DNV 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.

Location classes:

Temperature	**A**
Humidity	**B**
Vibration	**A**
EMC	**A**
Enclosure	**B (IP 44)**

Issued at **Høvik** on **2025-07-30**

This Certificate is valid until **2030-07-29**.

for **DNV**

DNV local unit: **East & South Norway CMC**

Approval Engineer: **Frode Nygård**

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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to USD 300 000.

Product description

The Sample Stream Multiplexer (SSM) is an ancillary sampling cabinet(s) to be used with ShipCEMS Compact Exhaust gas continuous emission monitoring system (see separate type approval TAA0000378) to extend to four sample streams.
Several SSM's can be connected in series to increase the number of streams connected.

Communication Interface to ShipCEMS Compact: Modbus
Power supply: 110/230V, 2-phase, 50/60 Hz, 2100W (Multiplexer and Stream)

Application/Limitation

The Type Approval covers hardware listed under Product description. When the hardware is used in ships classed by DNV, 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 rules for classification of ships Pt.4 Ch.9 Control and monitoring systems.

The certificate TAA0000378 has to be observed with regard to the usage conditions and calibration of the equipment described therein.

This Type Approval certificate does not cover the exhaust gas sample lines.

Correct configuration and set up for each delivery to be tested during commissioning after installation.

Type Approval documentation

Tests carried out

Applicable tests according to DNV CG-0339, August 2021.
Functional testing according to factory acceptance test procedure FAT (Witnessed)

Marking of product

Maker, model/type, type designation (P/N), serial number (S/N), Power supply.

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 this certificate.

Manufactured by:

Norsk Analyse AB
Nyängsgatan 5, 66434 Grums,
Sweden

END OF CERTIFICATE