DNV·GL

Certificate No:
TAA00000X4

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Monitoring System

with type designation(s)
Oil Mist Detector MOT/SMN

Issued to
Meiyo Electric Co. Ltd.
Shizuoka City, Shizuoka, Japan

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	**B**
Humidity	**B**
Vibration	**B**
EMC	**A**
Enclosure	**B / IP54**

This Certificate is valid until **2021-12-31**.

Issued at **Høvik** on **2016-12-09**

for **DNV GL**

DNV GL local station: **Yokohama**

Approval Engineer: **Andreas Torp Karlsen**

Odd Magne Nesvåg
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

Oil Mist Transmitter:
Type designation: MOT - a M b _

Screw-in type, infrared optical dispersion system, suction mechanism.
Accuracy: less than +/-5% at FS.
Measuring range, e.g. a=5, 0…5mg/litre.
Mist pipe size, from b=7R5: 75mm through b=15R5: 155mm.

Oil Mist Monitor:
Type designation: SMN – O M x y z _

x=style of monitor (0:Unit type, 1:Box type)
y=number of monitored engines (max.1)
z=number of cylinders of engine

Accuracy: +/-1% at FS.

Input:
- Measurement range: 0…5 mg/litre (4-20mA)

Outputs:
- Oil mist value (4-20mA)
- Pre-alarm contact
- High alarm contact
- Sensor malfunction contact

Application/Limitation

1. One monitor is required per engine.

Approval conditions

The following documentation of the actual application is to be submitted for approval in each case, typically by the vendor of the engine control, monitoring and safety system:
- Reference to this Type Approval Certificate
- System block diagram
- Power supply arrangement (may be part of the System block diagram)

The Type Approval covers hardware listed under Product description.

As long as the units are covered by the Type Approval, a product certificate according to Pt.4 Ch.9 Sec.1 [1.2.3] will **not** be required. 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 class guideline DNVGL-CG-0339, November 2016.
Functional test required by IACS UR M67: Performed on Crankcase Monitoring System.

Marking of product

Each product to be marked with:
- manufacturer’s name
- type designation
- all technical data necessary for the application

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