DNV·GL

Certificate No:
TAE00002KE

TYPE APPROVAL CERTIFICATE

This is to certify:

That the High Voltage Switchgear and Control Gear Assemblies

with type designation(s)
BE-PHM series

Issued to
Uzushio Electric Co., Ltd.
Imabari, Ehime Pref., Japan

is found to comply with
DNV GL rules for classification – Ships, offshore units, and high speed and light craft

Application :

Type approval covers system design principle

Product approved by this certificate is accepted for installation on all vessels classed by DNV GL.

Rated voltage (V)	**7.2 kV**
Rated current (A)	**1250**
Rated frequency (Hz)	**50 / 60**
Degree of protection	**IP44**

Issued at **Høvik** on **2018-04-26**
This Certificate is valid until **2023-04-25**.
DNV GL local station: **Hiroshima**

Approval Engineer: **Nicolay Horn**

for **DNV GL**

Andreas Kristoffersen
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

Medium voltage switchboard of partitioned type with 3 separate compartments for high voltage (main bus bar, cable inlet & circuit breaker) and 1 separate compartment for control/ auxiliary devices. Equipped with pressure reliefe panels.

Technical data for BE-PHM-12G & BE-PHM-12E:

Rated voltage [kV]			7.2
Rated Insulation level [kV]	Lighting impulse	Common value	60
		Across the isolating distance	60*
	Power frequency	Common value	20
		Across the isolating distance	20*
Rated current [A]			1250
Rated short-time withstand current 1 s. [kA]			25
Rated peak withstand current 1 s. [kA]			63
Arc test 0.2 s. [kA]			25
IP rating:			44

* An earthed metallic shutter is interposed between the disengaged contacts.

Cubicle dimensions:

Height: 2400 mm
Depth: 1680 mm
Width: 650 mm

Application/Limitation

Medium voltage switchboard systems of partly partitioned type for use onboard ships and mobile offshore units.

Type approval regards system design principle.

The switchboard system shall be divided into two independent and autonomous installations.

Final design and selection of equipment and components to be made in accordance with the applicable Rules for the actual case.

This type approval certificate does not replace the requirement for a DNV GL product certificate. Documents and drawings for the actual application as stated in our Rules Pt.4, Ch.8. Sec.1, Table 2 except Short circuit strenght calculation & Internal arc withstanding report shall be submitted for approval in each case by the end manufacturer.

Type Approval documentation

Tests carried out

Type Testing according to IEC 62271-1 and IEC 62271-200: Temperature rise test, internal arc test, dielectric test, short time withstand test, short circuit test, mechanical operation test and IP testing.

Marking of product

Makers name plate with type and key data in accordance with the DNV GL Rules Pt.4, Ch.8, Sec.4, item 1.1.7.

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the Type approval is complied with and that no alterations are made to the product design or choice of materials.

The main elements of the assessment are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Results from Routines (RT) checked (if not available tests according to RT to be carried out)
- Review of type approval documentation
- Review of possible change in design, materials and performance
- Ensuring traceability between manufacturer's product type marking and Type Approval Certificate.

Assessment to be performed at 2 and 3.5 year and at renewal.

END OF CERTIFICATE