

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Starter Panel**

with type designation(s)
BE-PHS

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 :

Medium voltage starterpanel for use onboard ships and offshore units.

Type approval covers system design principle

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Rated voltage (V) 3.6 & 7.2 kV

Rated current (A) 175 to 400

Rated freq. (Hz) 50 / 60

This Certificate is valid until **2022-05-18**.

Issued at **Høvik** on **2017-05-19**

DNV GL local station: **Hiroshima**

for **DNV GL**

Approval Engineer: **Nicolay Horn**

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.

Product description

Medium voltage starter panel of partitioned type with 1 separate compartments for high voltage equipped with pressure relief panels and 1 separate compartment for control/ auxiliary devices.

Technical data for BE-PHS

	BE-PHS-314	BE-PHS-318	BE-PHS-614
Rated voltage [kV]	3.6	3.6	7.2
Rated power frequency withstand voltage [kV]	20	20	20
Rated current [A]	350	400	175
Rated short-time withstand current 0.3 s. [kA]	20	20	20
Rated peak withstand current. [kA]	52	52	52
Arc test 0.1 s. [kA]	20	20	20
IP rating	44	44	44
Accessibility Type	A	A	A
Classified Sides	FLR	FLR	FLR

	BE-PHS-618	BE-PHS-624	BE-PHS-633
Rated voltage [kV]	7.2	7.2	7.2
Rated power frequency withstand voltage [kV]	20	20	20
Rated current [A]	230	300	400
Rated short-time withstand current 0.3 s. [kA]	20	20	20
Rated peak withstand current. [kA]	52	52	52
Arc test 0.1 s. [kA]	20	20	20
IP rating	44	44	44
Accessibility Type	A	A	A
Classified Sides	FLR	FLR	FLR

-Cubicle dimensions:

Height	2400 mm + 125 mm top frame
Width	1700 mm
Dybth	1750 mm

Application/Limitation

Medium voltage starter panel systems for use onboard ships and mobile offshore units.

The type approval covers system design principle in accordance with IEC 62271-200.

Equipments as circuit breakers etc. are not covered by this type approval.

A DNV GL product certificate for the specific switchboard is required in each case.

Documents and drawings for the actual application as stated in the DNV GL Rules Pt.4, Ch.8, Sec. 1, Table 2 except E150, shall be submitted for approval in each case by the end manufacturer.

Type Approval documentation

Tests carried out

Type Testing according to IEC 62271-200 and IEC 62271-1: Temperature rise test, internal arc test, dielectric test, short time withstanding test, measurements of the resistant test of circuits, general 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 1.1.7.



Job Id:
Certificate No: **TAE00001W7**

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the Type examination are 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 Routine tests (RT) checked (if not available tests according to RT to be carried out)
- Review of type examination documentation
- Review of possible change in design, materials and performance
- Ensuring traceability between manufacturer's product type marking and Type Examination Certificate.

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

END OF CERTIFICATE