DNV·GL

Certificate No:
TAE00002CU

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Low Voltage Switchgear and Control Gear Assemblies

with type designation(s)
TDP - HS7A Marine Version

Issued to
Taiyo Electric Co., Ltd., Gunma Plants Controller Factory
Isesaki-city Gunma, Japan

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

Application :

Medium voltage switchbard system of partly partitioned type for use onboard ships and mobile offshore units.

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)	**up to 1250**
Rated frequency (Hz)	**50 / 60**
Degree of protection	**22 / 32 (see application / limitation)**

Issued at **Høvik** on **2017-11-06**
This Certificate is valid until **2022-12-31**.
DNV GL local station: **Yokohama**

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.

© DNV GL 2014. DNV GL and the Horizon Graphic are trademarks of DNV GL AS.

Product description

Medium voltage switchboard of partitioned type with 2 separate compartments for high voltage (bus bar & outgoing circuit) and 1 separate compartment for control/ auxiliary devices. Equipped with pressure reliefe panels.

Technical data for TDP-HS7A:

Rated voltage [kV]			7,2
Rated Insulation level [kV]	Lighting impulse	Common value	60
		Across the isolating distance	70
	Power frequency	Common value	20
		Across the isolating distance	23
Rated current [A]			650 & 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:			22 / 32*

* See "Application limitation"

Cubicle dimensions:

Height: 2200 mm
Depth: 1600 mm
Width: 750 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.

The rule requirements for IP 32 to be checked / verified in each case.

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, vibration 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, 3.5 year and at renewal.

END OF CERTIFICATE