

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Electrical Measuring and Protection Relay**with type designation(s)
Tripping Relay (TPR2A, 3A & 3B)

Issued to

BMTECH
Busan, Republic of Koreais 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.**

Temperature	A
Humidity	B
Vibration	A
EMC	A
Enclosure	A

Issued at **Busan** on **2019-10-10**This Certificate is valid until **2024-10-09**.for **DNV GL**DNV GL local station: **Gimhae Station**Approval Engineer: **Baeg Soon Choi**

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

TPR(Tripping Relay):TPR2A, TPR3A and TPR3B

The TPR series consists of one common card and several channels and use for an emergency stop relay with line fault and short alarm with following specifications:

1. Rated Voltage: 90 to 254VAC
2. Rated Frequency: 50/60Hz
3. Power Consumption: maximum 10VA at 10 points load
4. P.B. Control Circuit: 12VDC/ Current Loop Control

Application/Limitation

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNVGL, 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 DNVGL Rules for Ships Pt.4 Ch.9 Control and Monitoring Systems.

As long as the units are covered by the Type Approval, a product certificate according to Pt.4 Ch.9 Sec.1[1.4] will not be required. Correct configuration and set up for each delivery to be tested as part of the equipment functional testing and during commissioning after installation.

Type Approval documentation

Tests carried out

Applicable tests according to Class Guidance DNVGL-CG-0339, November 2016.

Marking of product

The products to be marked with:

- model name
- manufacturer name
- serial number

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.

END OF CERTIFICATE