

TYPE APPROVAL CERTIFICATE**This is to certify:****That the Miscellaneous**

with type designation(s)

Electromechanical relay interface modules ABR-1, ABR-2 and solid state relays ABS-2

Issued to

**Schneider Electric South East Asia (HQ) Pte Ltd
10 Ang Mo Kio Street 65, #02-01/06 TechPoint Singapore 569059,
Singapore**

is found to comply with

DNV GL rules for classification – Ships and offshore units**Application :****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.****Location classes:**

Temperature	D
Humidity	A
Vibration	A
EMC	A
Enclosure	Required protection according to Rules shall be provided upon installation onboard

This Certificate is valid until **2019-06-30**.Issued at **Høvik** on **2016-07-20**DNV GL local station: **Singapore**Approval Engineer: **Nils Jarem**for **DNV GL**

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.

Product description

Electromechanical relay interface modules.
ABR-1E/1S, ABR-2E/2*/2S.

Solid state relay interface modules.
ABS-2E/2S.

Place of manufacture

ABR-2 & ABS-2:

Schneider Electric – Z.I. les Agriers – 16021 Angoulême Cedex, France

ABR-1:

Schneider Electric – Boulevard de l'Europe – B.P.3 – 14540 Bourguébus, France

Approval conditions

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV GL, 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 DNV GL rules for classification of ships Pt.4 Ch.9 Control and monitoring systems.

Type Approval documentation

Booklet No. ART.99673 dated October 1993, No. ART. 44006 dated 93-09-09,
test report No. ABR1.00410-15 dated 93-06-03, No. ABS2.00110 page 1-15 dated 93-07-30,
No. ABR2.001.03 page 1-8 dated 93-06-24, No. ABR2.001.04 page 1-7 dated 93-06-24,
No. ABS2.001.11 page 1-14 dated 93-07-30, No. ABS2.001.13 page 1-14 dated 93-07-30,
No. ABS2.001.17 page 1-6 dated 93-09-06, report No. 93090443 dated 93-10-20.

Type approval periodical assessment report for products ABR-2/ABS-2 and A-11845,
DNV GL Marseille 2016-01-06.

Type approval periodical assessment report for products ABR-1S/ABR-1E and A-11845,
DNV GL Marseille 2016-01-12.

Marking of product

The products to be marked with:

- manufacturer name
- model 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 at least every second year and at renewal of this certificate.

END OF CERTIFICATE