Type Approval Certificate

Certificate No: TAE00001BV
Revision No: 3

This is to certify:

That the Contactor Relay

with type designation(s)
NF and CAL4, CAT4 & CA4

Issued to

ABB France SAS
Chassieu, Rhone, France

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

Application:

Products approved by this certificate are accepted for installation on all vessels classed by DNV GL.

Issued at Høvik on 2018-11-09

This Certificate is valid until 2021-06-30.

DNV GL local station: Marseille

Approval Engineer: Nicolay Horn

for DNV GL
Digitally Signed By: Trond Sjøvåg
Location: DNV GL Høvik, Norway
on behalf of
Marta Alonso Pontes
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**

Contactor relay NF & auxiliary contact CAL4, CAT4 & CA4 with the following data (with screw, spring or push-in terminals):

- Free air continuous current $I_{th}$ ambient temperature $< 40 \, ^\circ C$: 16 A
- Rated operation voltage $U_e = 690 \, V$
- Rated insulation voltage $U_i = 690 \, V$
- $U_{imp} = 6 \, kV / 10.7 \, kV$
- Making capacity AC-15: 10 x $I_e$ AC-15
- Breaking capacity AC-15: 10 x $I_e$ AC-15
- Short circuit protection gG type fuse: 10 A
- Rated short circuit protection current $I_{cw}$: 100 A / 1.0 s 140 A / 0.1 s

Contact Utilization Characteristics according to IEC: Type contactor relay

<table>
<thead>
<tr>
<th>Type contactor relay</th>
<th>NF22E</th>
<th>NF31E</th>
<th>NF40E</th>
<th>NF44E</th>
<th>NF53E</th>
<th>NF62E</th>
<th>NF71E</th>
<th>NF80E</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2 NO+2 NC</td>
<td>3 NO+1 NC</td>
<td>4 NO</td>
<td>4 NO+4 NC</td>
<td>5 NO+3 NC</td>
<td>6 NO+2 NC</td>
<td>7 NO+1 NC</td>
<td>8 NO</td>
</tr>
<tr>
<td>AC-15</td>
<td>240 V</td>
<td>4 A</td>
<td></td>
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<tr>
<td></td>
<td>400 V</td>
<td>3 A</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>600 V</td>
<td>2 A</td>
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</tr>
<tr>
<td>DC-13</td>
<td>24 V</td>
<td>6 A / 144 W</td>
<td>2.8 A / 134 W</td>
<td>0.55 A / 60 W</td>
<td>0.27 A / 68 W</td>
<td>0.15 A / 60 W</td>
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<tr>
<td></td>
<td>48 V</td>
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<tr>
<td></td>
<td>110 V</td>
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</tr>
<tr>
<td></td>
<td>220 V</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>400 V</td>
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</tr>
</tbody>
</table>

Auxiliary contact: as listed in the catalogue

**Application/Limitation**

For installation inside switchboards/enclosures onboard ships and mobile offshore unit.

Data in the tables above is for an ambient temperature of 40 °C. For 45 °C ambient temperature the data must be derated with 5 %.

**Type Approval documentation**

Technical info:

Test reports:

**Tests carried out**

Type tests in accordance with IEC 60947-5-1. Environmental tests in accordance with DNV Standard for Certification No. 2.4 (Vibration, Dry heat, damp heat and cold)
Marking of product

ABB France – Type designation – Ratings

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the Type approval 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 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 least 2 and 3,5 year and at renewal.

END OF CERTIFICATE