DNV·GL

Certificate No:
TAE00001Z8

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Overcurrent- and Short-Circuit Relay

with type designation(s)
EF19, EF45, EF65, EF96, EF146, EF205, EF370, EF460 and EF750

Issued to
ABB Stotz-Kontakt GmbH
HEIDELBERG, Germany

is found to comply with
DNV GL rules for classification – Ships, offshore units, and high speed and light craft
IEC 60947-4-1

Application :

For installations inside switchboard/enclosures.

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

Issued at **Hamburg** on **2017-05-30**
This Certificate is valid until **2022-05-29**.
DNV GL local station: **Augsburg**

Approval Engineer: **Thomas Hartmann**

for **DNV GL**

Duy Nam Le
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.

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Job Id: **262.1-005786-6**
Certificate No: **TAE00001Z8**

Product description

Type: Electronic Overload Relay EF19, EF45, EF65, EF96, EF146, EF205, EF370, EF460 and EF750.

Type Designation	Current range [A]	Order code	Trip class
EF 19 0.32	0.10 - 0.32	1SAX121001R1101	10/20/30
EF 19 1.0	0.30 - 1.00	1SAX121001R1102	10/20/30
EF 19 2.7	0.80 - 2.70	1SAX121001R1103	10/20/30
EF 19 6.3	1.90 - 6.30	1SAX121001R1104	10/20/30
EF 19 18.9	5.70 - 18.9	1SAX121001R1105	10/20/30
EF 45 30	9.00 - 30.0	1SAX221001R1101	10/20/30
EF 45 45	15.0 - 45.0	1SAX221001R1102	10/20/30
EF 65 70 [1)]	25 - 70	1SAX331001R1101	10/20/30
EF 65 56 [1)]	20 - 56	1SAX331001R1102	10/20/30
EF 96 100 [1)]	36 - 100	1SAX341001R1101	10/20/30
EF 96 56 [1)]	20 - 56	1SAX341001R1102	10/20/30
EF 146 150 [1)]	54 - 150	1SAX351001R1101	10/20/30
EF 205 210 [1)]	63 - 210	1SAX531001R1101	10/20/30
EF 370 380 [1)]	115 - 380	1SAX611001R1101	10/20/30
EF 460 500 [1)]	150 - 500	1SAX821001R1101	10/20/30
EF 750 800 [1)]	250 - 800	1SAX611001R1101	10/20/30

Max. insulation voltage U_i : 690 V* / 1000 V [1)]
Max impulse voltage U_{imp} : 6 kV* / 8 kV [1)]
Max. operating voltage U_e: 690V AC* / 1000 V [1)]
* See application / limitation

Application/Limitation

Temperature class: D (-25 to 70 °C) **
Humidity class: A (up to 96% humidity)
Vibration class: A (5-50 Hz)

For products with Uimp = 6 kV the max. rated voltage is 600 V when used in a IT (ship) net. It can be used in applications with directly earthed systems with rated voltage of 400/690 V.

** Dry heat test: +70 °C for 16h

Type Approval documentation

Tests carried out

Type tested according to IEC 60947-4-1 & IEC 60947-5-1.

Marking of product

ABB STOTZ-KONTAKT - Type designation.

Name and place of manufacturer

ABB Stotz-Kontact GmbH Heidelberg Germany	ABB Xinhui Low Voltage Switchgear Company Ltd. Jinguzhou Industrial Development Zone Xinhui Region, Juangmen City, Guangdong Province China

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.

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.
END OF CERTIFICATE