

# TYPE APPROVAL CERTIFICATE

**This is to certify:****That the Circuit Breaker**with type designation(s)  
**MS 116**

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****Application :****For installations inside switchboards / enclosures onboard ships and offshore units****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.****Rated voltage (V) 600 (690) AC**  
**Rated current (A) 0.1 - 32**Issued at **Hamburg** on **2018-03-15**for **DNV GL**This Certificate is valid until **2023-03-14**.DNV GL local station: **Augsburg**Approval Engineer: **Thomas Hartmann**.....  
**Arne Schaarmann**  
**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.



Job Id: **262.1-012289-3**  
Certificate No: **TAE00002D1**

## Name and place of manufacturer

ABB Stotz-Kontakt GmbH  
HEIDELBERG, Germany

ABB Xinhui Low Voltage Switchgear Company Ltd  
529100, JiangMen, GuangDong, China

## Product description

Motor protection circuit breaker type: MS 116

Rated Voltage  $U_e$ : 600 (690)\* V AC / 440 V DC

$U_{imp}$  = 6 kV

Rated frequency: 40 - 60 Hz

Utilisation category: AC3

Tripping values, rated switching capacity:

Thermal tripping, setting ranges (A)	Instataneous tripping range (A)	Rated short circuit apacity I <sub>cs</sub> at $U_e=380/400V$ (kA)	Rated short circuit capacity I <sub>cs</sub> at $U_e=440V$ (kA)	Rated short circuit capacity I <sub>cs</sub> at $U_e=500V$ (kA)	Rated short circuit capacity I <sub>cs</sub> at $e=690V^*$ (kA)
0,1 - 0,16	1,25 - 1,87	50	50	30	30
0,16 - 0,25	1,95 - 2,93	50	50	30	30
0,25 - 0,4	3,12 - 4,68	50	50	30	30
0,4 - 0,63	4,91 - 7,37	50	50	30	30
0,63 - 1	9,20 -13,80	50	50	30	30
1 - 1,6	14,72 - 22,08	50	50	30	30
1,6 - 2,5	23,00 - 34,50	50	10 / 25**	10 / 25**	5 / 25**
2,5 - 4	40,00 - 60,00	50	6 / 25**	6 / 25**	2 / 25**
4 - 6,3	63,00 - 94,50	50	6 / 63**	6 / 63**	2 / 40**
6,3 - 10	120,0 -180,0	50	6 / 63**	6 / 63**	2 / 50**
8 - 12	144,0 - 126,0	25	6 / 63**	6 / 63**	2 / 50**
10 - 16	192,0 - 288,0	16 / 80**	4 / 63**	4 / 63**	2 / 63**
16 - 20	240,0 - 360,0	10	3	3	2
20 - 25	300,0 - 450,0	10	3	3	2
25 - 32	384,0 - 576,0	10	3	3	2

\* See use of 690 V under Application

\*\* In combination with upstream fuse.

Rated voltage auxilliary contacts  $U_e$ : 400 V AC

## Application/Limitation

With  $U_{imp}$  = 6 kV the max. rated voltage is 600 V when used in a IT-grid (ship's mains). It can be used in applications with directly earthed systems with rated voltage of 400/690 V.

Suitable for use in an IT-grid (ship's mains) system with a capacity of 1.2 times the maximum trip current up to ind including 600 V AC.

## Type Approval documentation

Technical info:

ABB datasheet "Manual motor starter MS116", doc no. 8-2CDC131025D0201

ABB-Technical Catalogue "Manual Motor Starter MS 116.

Test reports / Test Certificates:

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CQC CB Test Certificate no. CN32892 dated 2015-01-09.  
SGS CB Test Certificate No. BE-2937, issued 2011-05-20  
Paconsult Nr. 90/02 dated 2002-11-11. KEMA reports 2024892.50 issued 2002-12-01, 2024892.51  
issued 2002-11-15 & 2024892.52 issued 2003-06-18. ABB Stotz report no. 4483/08 issued 2008-07-02.

### **Tests carried out**

Type tests according to IEC 60947-2 Sequence I and II and Annex H. IEC 60947-4-1 Sequence I, II, III and V. Vibration test, Humidity, Dry heat test, Low temperature test, High voltage test and Insulation resistance test.

### **Marking of product**

ABB Stotz – Type designation – Voltage – Current – Breaking capacity – Manufacturing Place.

### **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