



DET NORSKE VERITAS

TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. E-9672
This Certificate consists of 3 pages

This is to certify that the
Circuit Breaker
with type designation(s)
MS 325, MS 326, MO 325

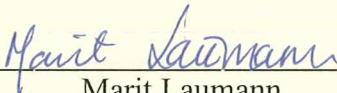
Manufactured by
ABB Stotz-Kontakt GmbH
HEIDELBERG, Germany

is found to comply with
Det Norske Veritas' Rules for Classification of Ships, High Speed & Light Craft and Det
Norske Veritas' Offshore Standards
IEC 60947-2
IEC 60947-4-1

Application
For installations inside switchboards / enclosures onboard ships and offshore units

Type	MS 325, MS 326, MO 325
Rated Voltage (V)	Up to 690 AC / 440 V DC
Rated Current (A)	0.1 - 25
Frequency (Hz)	40 - 60

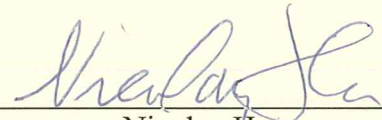
Place and date
Høvik, 2010-02-04
for DET NORSKE VERITAS AS


Marit Laumann
Head of Section



Local Office
DNV Essen

This Certificate is valid until
2011-12-31


Nicolay Horn
Surveyor *Sveeri*

Notice: 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.

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.



Cert. No.: E-9672
 File No.: 823.10
 Job Id: 262.1-005786

Product description

Motor protection circuit breaker type: MS 325, MS 326*, MO 325**

Rated Voltage U_e : 690 V AC / 440 V DC

Rated frequency: 40 - 60 Hz

Utilisation category: AC3

Tripping values, rated switching capacity:

Thermal tripping, setting ranges (A)	Magnetic trip-ing operating current (A)	Rated short circuit capacity Ics at $U_e=380/400V$ (kA)	Rated short circuit capacity Ics at $U_e=440V$ (kA)	Rated short circuit capacity Ics at $U_e=500V$ (kA)	Rated short circuit capacity Ics at $U_e=690V^{***}$ (kA)
0,1 - 0,16	1,6	100	100	100	100
0,16 - 0,25	2,5	100	100	100	100
0,25 - 0,4	4	100	100	100	100
0,4 - 0,63	6,3	100	100	100	100
0,63 - 1	12	100	100	100	100
1 - 1,6	19	100	100	100	100
1,6 - 2,5	30	100	100	100	40
2,5 - 4	48	100	100	60	10
4 - 6,3	75	100	70	40	7
6,3 - 9	108	100	50	30	5
9 - 12,5	150	75	45	27	4.5
12,5 - 16	192	60	40	25	4
16 - 20	240	55	35	22	3.5
20 - 25	300	50	30	20	2

* Optional without phase fault protection

** Optional without thermal overload protection

*** See Application / limitation

Rated insulation voltage U_i : 690 V

Rated impulse voltage U_{imp} : 6 kV

Rated voltage auxiliary 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 (ship) net. It can be used in applications with directly earthed systems with rated voltage of 400/690 V.

Tested for use in an IT net up to 600 V in accordance with IEC 60947-2 Annex H.



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Type Approval documentation

Test reports:

ABB test report no. 4499/09 dated 2008-07-02.

Certificates PTB 01 ATEX 3307, PTB 02 ATEX 3041, PTB 02 ATEX 3044, PTB 02 ATEX 3045 & PTB 04 ATEX 3012, Aqua signal qualification test report QTR F 17 dated 94-08-26, Alpha Prüfbericht Nr. M15-94.01, PTB Gesch. -Nr. 3.53 - 13537/94, Lovag Test Report No. M15-94.02, PTB test report no. PTB Ex 01-30071, dated 02-03-21, CB/Test Certificate KEMA NL6649.

Technical info:

ABB-Catalogue part "Motorschuttschalter Typenreihe MS bis 45 kW.." doc. number 1SAC 1001 02 L 0101, pages 4/1, 4/8 - 4/10, 4/14 - 4/18, 4/20 - 4/22.

Tests carried out

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

Marking of product

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

Certificate retention survey

The scope of the retention/renewal survey is to verify that the conditions stipulated for the type approval is complied with and that no alterations are made to the product design or choice of materials.

The main elements of the survey are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Results from Production Sample Tests (PST) and Routines (RT) checked (if not available tests according to PST and 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.

Survey to be performed at least every second year.

END OF CERTIFICATE