DNV·GL

Certificate No:
TAE00001FE

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Contactor

with type designation(s)
V-contact VSC-SRC

Issued to
ABB S.p.A.
Dalmine BG, Italy

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.

Rated Voltage (V)	**7200 & 12000**
Rated Current (A)	**400**
Frequency (Hz)	**50 - 60**

This Certificate is valid until **2021-10-11**.

Issued at **Hamburg** on **2016-10-12**

for **DNV GL**

DNV GL local station: **Milan**

Approval Engineer: **Harald Amberger**

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:
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Product description

VSC7-SRC and VSC12-SRC medium voltage vacuum contactors with models as listed below:

Type:	**Description**
V-contact VSC-SRC	Withdrawable vacuum contactor with permanent magnets for CB1

Electrical characteristics:

		VSC7-SRC	**VSC12-SRC**
Rated voltage, U_r	[kV]	7,2	12
Rated current, I_e	[A]	400	400
Impulse withstand voltage, U_i	[kV]	60	75
Rated frequency,	[Hz]	50 - 60	50 - 60
Short-time current for 1s	[A]	6000	6000
Short-time current for 30s	[A]	2500	2500
Rated breaking capacity	[A]	4000	4000
Rated making capacity	[A]	15000	15000
- opening operations	[No.]	25	25
- closing operations	[No.]	100	100
Utilisation category		AC-4	AC-4
Coupled fuses	[A]	63 - 315	63 - 200

Application/Limitation

Medium Voltage Vacuum Contactor for installation inside switchboards / enclosures onboard ships and mobile offshore units.

Type Approval documentation

Tests carried out

Electrical tests according to IEC 60470 and IEC 60694:
Temperature tests, mechanical endurance, rated making and braking capabilities, three-phase single and back-to-back capacitor bank breaking tests.

Environmental tests:
Insulation resistance, power supply variation, power supply failure, high voltage, static inclination, dynamic inclination, humidity test, dry heat test, vibration test.

Marking of product

ABB Power Product Division – V-Contact VSC-SRC series – Type designation

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 of 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 every second year.

END OF CERTIFICATE