DNV·GL

Certificate No:
TAE000035T

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Circuit Breaker

with type designation(s)
VD4/R-SEC...

Issued to
ABB S.p.A. - Distribution Solutions
Dalmine, BG, Italy

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

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.
Rated voltage (V) 12 / 17,5 / 24 kV
Rated current (A) 630 / 800

Issued at **Hamburg** on **2018-09-06**
This Certificate is valid until **2023-07-21**.
DNV GL local station: **Milan**

Approval Engineer: **Harald Amberger**

for **DNV GL**

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.

© DNV GL 2014. DNV GL and the Horizon Graphic are trademarks of DNV GL AS.

Job Id: **262.1-028643-1**
Certificate No: **TAE000035T**

Product description

Vacuum Circuit-Breakers lateral operating mechanism, for UniSec switchgear
Type: VD4/R-SEC…

Ratings				
Rated voltage	U_r	12kV	17,5kV	24kV
Rated normal current (40°C)	I_r	630A, 800A	630A, 800A	630A
Rated lightning impulse withstands voltage	U_p	75kV	95kV	125kV
Rated power-frequency withstands voltage	U_d	28kV	38kV	50kV
Rated frequency		50/60Hz		
Rated short-circuit breaking capacity	I_{sc}	up to 25kA	up to 21kA	up to 20kA
Rated short time withstand current (3 s)	I_k	up to 25kA[1]	up to 21kA	up to 20kA
Rated short-circuit making current (at 60 Hz)	I_p	up to 63kA	up to 50kA	up to 50kA
Rated operating sequence		O - 0.3 s - CO – 15 s - CO		
Rated opening time		50 – 75 ms		
Rated closing time		30 – 60 ms		
Further ratings and auxiliary equipment acc. manufacturer documentation.				

Application/Limitation

Location Classes:
Temperature: B, Humidity: B, Vibration: A

[1]Rated short time withstands current 25kA (2s)

Operating instruction of the manufacturer to be observed

Type Approval documentation

Tests carried out

IEC 62271-100:2008, dry heat, damp heat, cold, vibration, EMC (Aux. and control acc. IEC 62271-100)

Marking of product

Acc. IEC 62271-100 subclause 5.10

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