DNV·GL

Certificate No:
TAE00000V6

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Disconnection Switch

with type designation(s)
UFES

Issued to
ABB AG
Ratingen Nordrhein-Westfalen, Germany

is found to comply with
DNV GL rules for classification – Ships and offshore units

Application :

Ultra fast earthing switch (arc eleminator) for installation inside switchboards / enclosures Onboard Ships and Mobile Offshore units.

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

This Certificate is valid until **2019-12-31**.

Issued at **Høvik** on **2015-12-28**

for **DNV GL**

DNV GL local station: **Essen**

Approval Engineer: **Nicolay Horn**

Marit Laumann
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: **262.1-011936-3**
Certificate No: **TAE00000V6**

Product description

Ultra fast earthing switch to prevent arc inside a medium voltage switchboard. To be installed as a part of the switchboard.

	Type				
	U1 -175-25	U1 -175-40	U1 -175-50	U1 -175-63	U1 -270-25
Rated voltage (kV)	17.5	17.5	17.5	17.5	27
Rated short duration power frequency withstand voltage (kV)	42	42	42	42	60
Rated lightning impulse voltage (kV)	95	95	95	95	150
Rated short-time withstand current (kA)	25	40	50	63	25
Rated short circuit duration (s)	3	3	3	1	3
Rated peak withstand current (kA)	65	104	130	170	65
Rated frequency (Hz)	50/60	50/60	50/60	50/60	50/60
Ingress protection (IP)	2X, 4X	2X, 4X	2X, 4X	2X, 4X	2X, 4X
Dimension (mm)	137x210	137x210	137x210	137x210	137x210

	Type				
	U1 -270-40	U1 -360-25	U1 -360-40	U2-405-25	U2-405-40
Rated voltage (kV)	27	36	36	40.5	40.5
Rated short duration power frequency withstand voltage (kV)	60	70	70	95	95
Rated lightning impulse voltage (kV)	150	170	170	200	200
Rated short-time withstand current (kA)	40	25	40	25	40
Rated short circuit duration (s)	3	3	3	3	3
Rated peak withstand current (kA)	104	65	104	65	104
Rated frequency (Hz)	50/60	50/60	50/60	50/60	50/60
Ingress protection (IP)	2X, 4X	2X, 4X	2X, 4X	2X, 4X	2X, 4X
Dimension (mm)	137x210	137x210	137x210	*	*

*On request

Application/Limitation

To be installed as a part of the switchboard. Only to be used on board ships with two independent and autonomous installations and full discrimination between bus-tie breaker and generator breakers. Deviations may be accepted by a case by case evaluation.

For installation details see: "UFES™ Ultra-Fast Earthing Switch", Installation manual (BA540) from ABB.

Type Approval documentation.

Tests carried out

Type tests in accordance with IEC 62271-1, IEC 62271-102 (where applicable), IEC 62271-200 (when integrated in a switchgear system), IEC 60255-1 (for the electronic detection and tripping unit), Environmental tests in accordance with DNV SfC No 2.4 including vibration, damp heat, dry heat, cold and EMC.

Marking of product

ABB AG – UFES – Technical data – Type – Serial number

Periodical assessment

The scope of the periodical 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 assessment 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.

Assessment to be performed at least every second year.

END OF CERTIFICATE