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# DET NORSKE VERITAS

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## TYPE APPROVAL CERTIFICATE

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**CERTIFICATE NO. E-10500**

This Certificate consists of 3 pages

*This is to certify that the*

**Circuit Breaker**

*with type designation(s)*

**Tmax T7 S/H/L/V/X**

*Holder of certificate*

**ABB S.P.A. - ABB Sace Division**

Bergamo BG, Italy

*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 (2009-05)

*Application*

Rated Voltage (V)	230 - 690 (AC)
Rated Current (A)	800 - 1600
Frequency (Hz)	50 - 60

*Place and date*

Høvik, 2010-10-21

for DET NORSKE VERITAS AS

*This Certificate is valid until*

2012-12-31

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Marit Laumann  
*Head of Section*

*Local Office*  
DNV Milan

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Nicolay Horn  
*Surveyor*

**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.

**Name and place of manufacturer**

ABB SpA – ABB Sace Division  
 Frosinone, ITALY

**Product description**

Circuit breakers type TmaxT7. To be delivered with electronic trip units. Technical data:

	<b>T max T7</b>				
	<b>S</b>	<b>H</b>	<b>L</b>	<b>V</b>	<b>X</b>
Rated insulation voltage <b>Ui</b> (V)	1000	1000	1000	1000	1000
Rated impulse withstand voltage <b>Uimp</b> (kV)	8	8	8	8	8
Rated current <b>Iu</b> (A) at 40 °C (See application/ limitation)	800-1600	800-1600	800-1600	800-1250	800
Rated service voltage <b>Ue</b> (V)	690 AC	690 AC	690 AC	690 AC	690 AC
Rated frequency AC (Hz)	50-60	50-60	50-60	50-60	50-60
Rated ultimate short-circuit breaking capacity (kA) <b>Icu</b>					
440 V AC (kA)	50	65	100	130	170
690 V AC (kA)	30	42	50	60	75
Rated service short-circuit breaking capacity <b>Ics</b> (% <b>Icu</b> )	100 %	100 % *	100% *	100%*	100%
Utilisation category	B	B	B	B	B
Rated short-circuit making capacity <b>Icm</b>					
440 V AC (kA)	105	143	220	286	374
690 V AC (kA)	63	88.2	105	132	165

\* 75 % for 690 V and for 500 V L edition.

**Application/Limitation**

Suitable for use in an IT system with a capacity of 1.2 times the maximum trip current at 690 V AC.

Equipped with electronic releases which need no deration from 40 °C to 45 °C ambient temperature.

**Type Approval documentation**

**Tests carried out**

Type tests according to IEC 60947-2 sequence I, II, III & IV and Annex H. Vibration, inclination, EMC, dry heat, damp heat and low temperature test.

**Marking of product**

ABB SACE – Type designation – Electrical data

Cert. No.: E-10500  
File No.: 823.10  
Job Id: 262.1-003584-2

### **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