



MARINE DIVISION

Certificate number: 26671/A0 BV

File number: ACE 02/10/23

Product code: 2633H

*This certificate is not valid when presented without the full attached schedule composed of 7 sections*

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## TYPE APPROVAL CERTIFICATE

*This certificate is issued to*

**ABB SPA - ABB Sace DIVISION**  
BERGAMO - ITALY

*for the type of product*

**CIRCUIT BREAKERS (LOW VOLTAGE)**

Tmax XT1, XT2, XT3 and XT4

**Requirements:**

Bureau Veritas Rules for the Classification of Steel Ships.  
IEC 60947-2 (2006)

*This certificate is issued to attest that BUREAU VERITAS did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.*

**This certificate will expire on: 27 Jun 2017**

**For BUREAU VERITAS,**

At BV GENOA, on 27 Jun 2012,

Gianni Pirovano



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with BUREAU VERITAS. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of BUREAU VERITAS Marine Division available on the internet site [www.veristar.com](http://www.veristar.com). Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against BUREAU VERITAS for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

## THE SCHEDULE OF APPROVAL

### 1. PRODUCT DESCRIPTION :

Tmax XT is low voltage moulded-case circuit-breakers up to 250A.

XT1 and XT3 only equipped with thermal-magnetic release

XT2 and XT4 are equipped with both Electronic and thermal-magnetic release.

Rated insulation voltage <b>Ui</b> (V):	1000V
Rated impulse withstand voltage <b>Uimp</b> (kV):	8 kV
Rated current <b>Iu</b> (A) at 40°C (see application/limitation):	160-250
Rated service voltage <b>Ue</b> (V):	690V
Rated frequency AC (Hz):	50-60 Hz

Tmax XT1					
	B	C	N	S	H
Rated ultimate short-circuit breaking capacity (kA) <b>Icu</b>					
230V AC (kA)	25	40	65	85	100
440V AC (kA)	15	25	36	50	65
690V AC (kA)	3	4	6	8	10
Rated service short-circuit breaking capacity <b>Ics</b> (%Icu) <b>Icu</b>					
230V AC (kA)	100%	100%	75(50)%	75%	75%
440V AC (kA)	75%	50%	50%	50%	50%
690V AC (kA)	100%	100%	75%	50%	50%
Utilisation category	A	A	A	A	A
Rated short-circuit making capacity <b>Icm</b>					
230V AC (kA)	52.5	84	143	187	220
440V AC (kA)	30	52.5	75.6	105	143
690V AC (kA)	4.5	6	9	13.6	17

Tmax XT2					
	N	S	H	L	V
Rated ultimate short-circuit breaking capacity (kA) <b>Icu</b>					
230V AC (kA)	65	85	100	150	200
440V AC (kA)	36	50	65	100	150
690V AC (kA)	10	12	15	18	20
Rated service short-circuit breaking capacity <b>Ics</b> (%Icu) <b>Icu</b>					
230V AC (kA)	100%	100%	100%	100%	100%
440V AC (kA)	100%	100%	100%	100%	100%
690V AC (kA)	100%	100%	100%	100%	75%
Utilisation category	A	A	A	A	A
Rated short-circuit making capacity <b>Icm</b>					
230V AC (kA)	143	187	220	330	440
440V AC (kA)	75.6	105	143	220	440
690V AC (kA)	17	24	30	36	40

Tmax XT3		
	N	S
Rated ultimate short-circuit breaking capacity (kA) <b>Icu</b>		
230V AC (kA)	50	85
440V AC (kA)	25	40
690V AC (kA)	5	8
Rated service short-circuit breaking capacity <b>Ics</b> (%Icu) <b>Icu</b>		
230V AC (kA)	75%	50%
440V AC (kA)	75%	50%
690V AC (kA)	75%	50%
Utilisation category	A	A
Rated short-circuit making capacity <b>Icm</b>		
230V AC (kA)	105	187
440V AC (kA)	52.5	84
690V AC (kA)	8.5	13.6

<b>Tmax XT4</b>					
	<b>N</b>	<b>S</b>	<b>H</b>	<b>L</b>	<b>V</b>
<b>Rated ultimate short-circuit breaking capacity (kA) Icu</b>					
230V AC (kA)	65	85	100	150	200
440V AC (kA)	36	50	65	100	150
690V AC (kA)	10	12	15	20	25
<b>Rated service short-circuit breaking capacity Ics (%Icu) Icu</b>					
230V AC (kA)	100%	100%	100%	100%	100%
440V AC (kA)	100%	100%	100%	100%	100%
690V AC (kA)	100%	100%	100%	100%	75%
Utilisation category	A	A	A	A	A
<b>Rated short-circuit making capacity Icm</b>					
230V AC (kA)	143	187	220	330	440
440V AC (kA)	75.6	105	143	220	330
690V AC (kA)	17	24	30	40	52.5

## 2. DOCUMENTS AND DRAWINGS :

According to ABB document 1SDC210033B0201 - 2010.03 - 8.000 - CAL.

## 3. TEST REPORTS :

According to the document filed in ACE 02/10/23.

## 4. APPLICATION / LIMITATION :

4.1 - According to BV Rules for the Classification of Steel Ships and IEC 60947 specifications.

4.2 - Approval also valid for ships to be granted with the notations: **AUT-UMS, AUT-CCS, AUT-PORT and AUT-IMS.**

4.3 - Tripping datas are given for 40 °C.

For ship application thermal magnetic releases to be derated in accordance with following table:

<b>XT1</b>		<b>XT2</b>		<b>XT3</b>		<b>XT4</b>	
<b>40 °C</b>	<b>45 °C</b>	<b>40 °C</b>	<b>45 °C</b>	<b>40 °C</b>	<b>45 °C</b>	<b>40 °C</b>	<b>45 °C</b>
In max	In max	In max	In max	In max	In max	In max	In max
160	154	160	154	160	154	160	154
-	-	-	-	250	240	250	240

Electronic releases doesn't need any deration.

## 5. PRODUCTION SURVEY REQUIREMENTS :

5.1 - The products are to be manufactured, examined and tested by **ABB SPA - ABB Sace DIVISION, 24123 BERGAMO - ITALY** in accordance with the type described in this certificate and Bureau Veritas Rules for the Classification of Steel Ships.

5.2 - Production sites are to be recognized by Bureau Veritas as per NR320 for HBV products. To this end **ABB SPA - ABB Sace DIVISION, 24123 BERGAMO - ITALY** has to make the necessary arrangements for a Society's Surveyor to perform visits and product audits at the production sites.

5.3 - **ABB SPA - ABB Sace DIVISION, 24123 BERGAMO - ITALY** has declared to Bureau Veritas that the type of product described in this certificate may be manufactured at the following production site:

**ABB SPA - ABB Sace DIVISION**  
**Via Baioni 35**  
**24123 BERGAMO**  
**ITALY**

## 6. MARKING OF PRODUCT :

According to IEC 60947 specifications.

**7. OTHERS:**

This approval is given on the understanding that the Society reserves the right to require check tests to be carried out on the units at any time, and that **ABB SPA - ABB Sace DIVISION, 24123 BERGAMO - ITALY** will accept full responsibility for informing shipbuilders, shipowners or their sub-contractors of the proper methods of use and general maintenance of the units and the conditions of this approval.

\*\*\* END OF CERTIFICATE \*\*\*