



TYPE APPROVAL CERTIFICATE
N. ELE004812CS/001

This is to certify that the product below is found to be in compliance with the applicable requirements of the RINA type approval system.

<i>Description</i>	Circuit breaker
<i>Type</i>	Emax / ML equipped with electronic releases: X1/ML, E2/ML, E3/ML, E4/ML, E6/ML
<i>Applicant</i>	ABB SpA – ABB Sace Division Via Baioni , 35 24123 Bergamo Italy
<i>Manufacturer</i>	ABB SpA – ABB Sace Division Via Friuli, 4 24044 Dalmine (BG) Italy
<i>Testing Standards</i>	IEC 60947-2

Issued in **Genova** on **January 11, 2012**.

This certificate is valid until **January 10, 2017**

RINA

Valerio Bonanni

Genova, January 11, 2012

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TYPE APPROVAL CERTIFICATE N. ELE004812CS/001

Emax / ML equipped with electronic release

Product Description

Technical Data

Rated operational voltage (**Ue**); Rated current (**In**): from **400** to **1600A**; Number of poles: **3, 4**
Rated frequency: **50/60 Hz**; Utilization Category: **B**; Ambient air temperature: **45°C**.

Rated short-circuit capacity:

*Rated service short circuit breaking capacity (**Ics**); Rated ultimate short circuit breaking capacity (**Icu**)
Rated short circuit making capacity (**Icm**)*

X1B/ML with electronic releases type PR331/P and PR332/P

Ue (V)	Ics (kA)	Icu (kA)	Icm (kA)
415	42	42	88,2
440	42	42	88,2
525	42	42	88,2
690	42	42	88,2

X1N/ML with electronic releases type PR331/P and PR332/P

Ue (V)	Ics (kA)	Icu (kA)	Icm (kA)
415	50	65	143
440	50	65	143
525	42	50	105
690	42	50	105

Technical Data

Rated operational voltage (**Ue**); Rated current (**In**); Rated frequency: **50/60 Hz**;
Utilization Category: **B**; Ambient air temperature: **45°C**.

Rated short-circuit capacity:

E2B16/ML, E2B20/ML / In = 1600A, 2000A (*)

Ue (V)	Ics (kA)	Icu (kA)	Icm (kA)
440	45	45	94.5
690	45	45	94.5

E2N10/ML, E2N12/ML, E2N16/ML, E2N20/ML / In = 1000A, 1250A, 1600A, 2000A (*)

Ue (V)	Ics (kA)	Icu (kA)	Icm (kA)
440	65	65	143
690	55	55	121

E2S08/ML, E2S10/ML, E2S12/ML, E2S16/ML, E2S20/ML In = 800A, 1000A, 1250A, 1600A, 2000A (*)

Ue (V)	Ics (kA)	Icu (kA)	Icm (kA)
230	85	85	187
415	85	85	187
440	85	85	187
500-525	65	65	143
690	65	65	143

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Emax / ML equipped with electronic release

Technical Data

Rated operational voltage (**Ue**); Rated current (**In**); Rated frequency: **50/60 Hz**;
Utilization Category: **B**; Ambient air temperature: **45°C**.

Rated short-circuit capacity:

E3N25/ML, E3N32/ML / In = 2500A, 3200A (*)

Ue (V)	Ics (kA)	Icu (kA)	Icm (kA)
440	65	65	143
690	65	65	143

E3S10/ML, E3S12/ML, E3S16/ML, E3S20/ML, E3S25/ML, E3S32/ML

In = 1000A, 1250A, 1600A, 2000A, 2500A, 3200A (*)

Ue (V)	Ics (kA)	Icu (kA)	Icm (kA)
440	85	85	187
690	75	75	165

E3H08/ML, E3H10/ML, E3H12/ML, E3H16/ML, E3H20/ML, E3H25/ML, E3H32/ML

In = 800A, 1000A, 1250A, 1600A, 2000A, 2500A, 3200A (*)

Ue (V)	Ics (kA)	Icu (kA)	Icm (kA)
440	85	100	220
690	85	85	187

E3V08/ML, E3V12/ML, E3V16/ML, E3V20/ML, E3V25/ML, E3V32/ML

In = 800A, 1250A, 1600A, 2000A, 2500A, 3200A (*)

Ue (V)	Ics (kA)	Icu (kA)	Icm (kA)
230	100	130	286
415	100	130	286
440	100	130	286
500-525	85	100	220
690	85	100	220

Technical Data

Rated operational voltage (**Ue**); Rated current (**In**); Rated frequency: **50/60 Hz**;
Utilization Category: **B**; Ambient air temperature: **45°C**.

Rated short-circuit capacity:

E4S40/ML / In = 4000A (*)

Ue (V)	Ics (kA)	Icu (kA)	Icm (kA)
440	85	85	187
690	85	85	187

E4H32/ML, E4H40/ML / In = 3200A, 4000A (*)

Ue (V)	Ics (kA)	Icu (kA)	Icm (kA)
440	100	100	220
690	85	85	187

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E4V32/ML, E4V40/ML / In = 3200A, 4000A (*)

Ue (V)	Ics (kA)	(kA)	Icm (kA)
230	150	150	330
415	150	150	330
440	150	150	330
500	130	130	286
690	100	100	220

Technical Data

Rated operational voltage (Ue); Rated current (In); Rated frequency: 50/60 Hz;
Utilization Category: B; Ambient air temperature: 45°C.

Rated short-circuit capacity:

E6H40/ML, E6H50/ML, E6H63/ML / In = 4000A, 5000A, 6300A (*)

Ue (V)	Ics (kA)	Icu (kA)	Icm (kA)
440	100	100	220
690	100	100	220

E6V32/ML, E6V40/ML, E6V50/ML, E6V63/ML / In = 3200A, 4000A, 5000A, 6300A (*)

Ue (V)	Ics (kA)	Icu (kA)	Icm (kA)
440	125	150	330
690	100	100	220

NOTES:

(*) Circuit Breakers can be equipped with electronic releases type PR121, PR122 & PR123 (In min = 400A).

Rated service short circuit breaking capacity (Ics)

Rated ultimate short circuit breaking capacity (Icu)

Rated short circuit making capacity (Icm)

Remarks

Circuit Breakers with nominal current greater than 100A are subject to Final Inspection according to the RINA Rules for Testing and Certification of Marine Materials and Equipment, Chapter 7, Table N.

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