

CERTIFICATE

Issued to:

Applicant:

BTB Electric Vina Co., Ltd

**No.85 Quoc Bao, Van Dien Town, Thanh Tri Dist
10000 Hanoi, Vietnam**

Product : Air Circuit-Breaker
Trade name(s) : BTB Electric
Type(s)/model(s) : MA2-20B and MA3-20B

The product and any acceptable variation thereof as specified in the Annex to this certificate and the documents referred to therein.

DEKRA hereby declares that the above-mentioned product has been certified based on:

- a type test according to EN 60947-2:2017, EN 60947-2:2017/A1:2020, IEC 60947-2:2016 and IEC 60947-2:2016/AMD1:2019
- an inspection of the factory location according to CENELEC Operational Document CIG 021
- a DEKRA certification agreement with the number 2175961
- the licensee is registered with the number 708

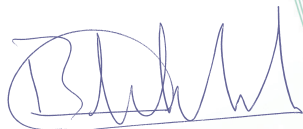
DEKRA hereby grants the right to use the KEMA-KEUR certification mark.

The KEMA-KEUR certification mark may be applied to the product as specified in this certificate for the duration and under the conditions of the KEMA-KEUR certification agreement.

This certificate is issued on 25 September 2024 and expires upon withdrawal of one of the above mentioned standards.

Certificate number: 33-146990

DEKRA Certification B.V.



B.T.M. Holtus
Managing Director



Miranda Zhou
Certification Manager

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SPECIFICATION OF THE CERTIFIED PRODUCT

Product data

Product	: Air Circuit-Breaker
Trade name(s)	: BTB Electric
Type(s)/model(s)	: MA2-20B and MA3-20B
Number of poles	: 3P or 4P (N pole with overcurrent protection)
Rated operational voltage (U _e)	: 380/400/415 Vac, 690 Vac
Rated insulation voltage (U _i)	: 1000 V for main circuit 500 V for control circuit
Rated impulse withstand voltage (U _{imp})	: 12 kV for main circuit 4 kV for control circuit
Rated frequency	: 50 / 60 Hz
Rated current (I _n)	: 630 A, 800 A, 1000 A, 1250 A, 1600 A, 2000 A
Conventional thermal current (I _{th})	: Equal to I _n
Current rating for four-pole circuit-breakers	: Equal to I _n
Suitable for isolation	: Suitable
Selectivity category	: B
Safety distance (screen-circuit breaker)	: All sides: 0 mm
Reference temperature	: Independent
Ambient temperature	: - 5 °C to 40 °C
Method of mounting	: Withdrawable or fixed
EMC Environment	: B
Tightening torque for terminals	: M12 / 30 Nm
Line/load terminal	: Immaterial
Connection	: Minimum cross-sectional area of conductor: Prepared copper conductor with cable lug, 185 mm ² x 2 or copper busbars, (40 x 5) mm ² x 2 Maximum cross-sectional area of conductor: copper busbars, (100 x 5) mm ² x 3
Inverse time delay release	: Ir: off or (0,4 - 1,0) x I _n , step 1 A
Time setting of the inverse time delay release	: tr: off or 15 s - 480 s (15 s, 30 s, 60 s, 120 s, 240 s, 480 s) with tolerance of ± 10% (at 1,5 Ir) tripping time at 2 Ir: 7,65 s - 9,35 s (tr = 15 s) 252 s - 308 s (tr = 480 s)
Short time delay release	: Isd: off or (1,5 - 15) x Ir, step 1 A
Time setting of the short time delay release	: tsd: I ² t off or 0,1 s - 1 s, step 0,1 s, with tolerance of ± 15% non-tripping duration: tsd with -15%
Instantaneous release	: li: off or (2 - 20) x I _n , step 1 A
Making current release (MCR)	: 45 kA
Ground fault release	: Ig: (0,2 - 1) x I _n , OFF, step 1 A tg: I ² t off or 0,1 s - 1,0 s, step 0,1 s with tolerance of ± 15%
Shunt release	: AC 220 / 230 V, AC 380 / 480 V, 50/60 Hz DC 110 V, DC 220 V
Under-voltage release	: AC 220 / 230 V, AC 380 / 480 V, 50/60 Hz
Closing release	: AC 220 / 230 V, AC 380 / 480 V, 50/60 Hz DC 110 V, DC 220 V
Stored energy motor	: AC 220 / 230 V, AC 380 / 480 V, 50/60 Hz DC 110 V, DC 220 V

Product data – type MA2-20B

Rated ultimate short-circuit breaking capacity (I _{cu})	: 65 / 50 kA at 380 / 400 / 415 Vac 50 / 40 kA at 690 Vac
Rated service short-circuit breaking capacity (I _{cs})	: 50 kA at 380 / 400 / 415 Vac 40 kA at 690 Vac

Rated short-time withstand current : 50 kA / 1 s at 380 / 400 / 415 Vac
(Icw) 40 kA / 1 s at 690 Vac

Product data – type MA3-20B

Rated ultimate short-circuit breaking capacity (Icu) : 80 / 65 kA at 380 / 400 / 415 Vac
65 / 50 kA at 690 Vac
Rated service short-circuit breaking capacity (Ics) : 65 kA at 380 / 400 / 415 Vac
50 kA at 690 Vac
Rated short-time withstand current : 65 kA / 1 s at 380 / 400 / 415 Vac
(Icw) 50 kA / 1 s at 690 Vac

TESTS**Test requirements**

EN 60947-2:2017
EN 60947-2:2017/A1:2020
IEC 60947-2:2016
IEC 60947-2:2016/AMD1:2019

Test result

The test results are documented in DEKRA test file 333265300.

Additional information

Nomenclature breakdown:

MA 3 20 B 3 3H
a b c d e f

a - Code denoting the series name: 'MA'

b - Code denoting the short-circuit capacity: '3' or '2'

c - Rated current: '06' = 630 A, '08' = 800 A, '10' = 1000 A, '12' = 1250 A, '16' = 1600 A, '20' = 2000 A

d - Frame size: 'B' = 2000

e - Code denoting number poles: '4' means 4 poles, '3' means 3 poles

f - Intelligent trip unit code: '3H' Intelligent trip unit LCD display

The referred test report no. is 3332653.50.

This certificate is based on certificate no. 33-134114 issued on 3 February 2024.

Conclusion

The examination has confirmed that all requirements were met.

Factory location

The factory location is registered with the number 708.