CERTIFICATE

Issued to:
Applicant:
BTB Electric Vina Co., Ltd
No.85 Quoc Bao,Van Dien Town,Thanh Tri Dist
10000 Hanoi, Vietnam

Product	:	Moulded-Case Circuit-Breaker
Trade name(s)	:	BTB Electric
Type(s)/model(s)	:	MF-160E, MF-160H, MF-160S, MT-160E, MT-160H, MT-160S, MTm-160E, MTm-160H and MTm-160S

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

DEKRA hereby declares that the above-mentioned product has been certified on the basis of:
- 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 2165673
- the licensee is registered with the number 2926

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 28 November 2023 and expires upon withdrawal of one of the above mentioned standards.

Certificate number: 33-132427

DEKRA Certification B.V.

B.T.M. Holtus
Managing Director

H.R.M. Barends
Certification Manager

ACCREDITED BY THE DUTCH ACCREDITATION COUNCIL

PRODUCTS RvA C 001

KEMA KEUR

SPECIFICATION OF THE CERTIFIED PRODUCT

Product data

Product	:	Moulded-Case Circuit-Breaker
Trade name(s)	:	BTB Electric
Type(s)/model(s)	:	MF-160E, MF-160H, MF-160S, MT-160E, MT-160H, MT-160S, MTm-160E, MTm-160H and MTm-160S
Number of poles	:	3P and 4P (N pole without overcurrent protection)
Rated operational voltage (Ue)	:	380 Vac / 400 Vac / 415 Vac
Rated insulation voltage (Ui)	:	1000 V
Rated impulse withstand voltage (Uimp)	:	8 kV
Rated frequency	:	50 / 60 Hz
Rated current (In)	:	30 A, 32 A, 40 A, 50 A, 63 A, 70 A, 75 A, 80 A, 100 A, 125 A, 140 A, 150 A, 160 A
Conventional thermal current (Ith)	:	Equal to In
Current rating for four-pole circuit-breakers	:	Equal to In
Individual pole short-circuit (Iit)	:	12 In
Suitable for isolation	:	Suitable
Selectivity category	:	A
Safety distance (screen-circuit breaker)	:	Front / Back: 0 mm, Left / Right: 50 mm, Up / Down: 50 mm
Reference temperature	:	40 °C or 55 °C
Ambient temperature	:	- 5 °C to 40 °C for reference temperature 40 °C - 5 °C to 40 °C and 55 °C for reference temperature 55 °C
Method of mounting	:	Fixed
EMC environment	:	A and B
Tightening torque for terminals	:	M8 / 6 Nm

Product data – type MF-160E

Rated service short-circuit breaking capacity (Ics)	:	25 kA
Rated ultimate short-circuit breaking capacity (Icu)	:	36 kA / 25 kA
Line/load terminal	:	Marked
Connection	:	Prepared copper conductor with cable lug
Inverse time delay release	:	Fixed
Time setting of the inverse time delay release	:	Fixed, tripping time at 2 In: 120 s - 900 s
Instantaneous release	:	Ii: 10 In

Product data – type MF-160H

Rated service short-circuit breaking capacity (Ics)	:	50 kA
Rated ultimate short-circuit breaking capacity (Icu)	:	65 kA / 50 kA
Line/load terminal	:	Marked
Connection	:	Prepared copper conductor with cable lug
Inverse time delay release	:	Fixed
Time setting of the inverse time delay release	:	Fixed, tripping time at 2 In: 120 s - 900 s
Instantaneous release	:	Ii: 10 In

Product data – type MF-160S

Rated service short-circuit breaking capacity (Ics)	:	36 kA
Rated ultimate short-circuit breaking capacity (Icu)	:	50 kA / 36 kA
Line/load terminal	:	Marked
Connection	:	Prepared copper conductor with cable lug
Inverse time delay release	:	Fixed
Time setting of the inverse time delay release	:	Fixed, tripping time at 2 In: 120 s - 900 s
Instantaneous release	:	Ii: 10 In

Product data – type MT-160E

Rated service short-circuit breaking capacity (Ics)	:	25 kA
Rated ultimate short-circuit breaking capacity (Icu)	:	36 kA / 25 kA
Line/load terminal	:	Marked
Connection	:	Prepared copper conductor with cable lug
Inverse time delay release	:	Ir: (0,8, 0,9, 1,0) x In or (0,7, 0,85, 1,0) x In
Time setting of the inverse time delay release	:	Fixed, tripping time at 2 Ir: 120 s - 900 s
Instantaneous release	:	Ii: 10 In

Product data – type MT-160H

Rated service short-circuit breaking capacity (Ics)	:	50 kA
Rated ultimate short-circuit breaking capacity (Icu)	:	65 kA / 50 kA
Line/load terminal	:	Marked
Connection	:	Prepared copper conductor with cable lug
Inverse time delay release	:	Ir: (0,8, 0,9, 1,0) x In or (0,7, 0,85, 1,0) x In
Time setting of the inverse time delay release	:	Fixed, tripping time at 2 Ir: 120 s - 900 s
Instantaneous release	:	Ii: 10 In

Product data – type MT-160S

Rated service short-circuit breaking capacity (Ics)	:	36 kA
Rated ultimate short-circuit breaking capacity (Icu)	:	50 kA / 36 kA
Line/load terminal	:	Marked
Connection	:	Prepared copper conductor with cable lug
Inverse time delay release	:	Ir: (0,8, 0,9, 1,0) x In or (0,7, 0,85, 1,0) x In
Time setting of the inverse time delay release	:	Fixed, tripping time at 2 Ir: 120 s - 900 s
Instantaneous release	:	Ii: 10 In

Product data – type MTm-160E

Rated service short-circuit breaking capacity (Ics)	:	25 kA
Rated ultimate short-circuit breaking capacity (Icu)	:	36 kA / 25 kA
Line/load terminal	:	Marked

Connection	:	Prepared copper conductor with cable lug
Inverse time delay release	:	Ir: (0,8, 0,9, 1,0) x In or (0,7, 0,85, 1,0) x In
Time setting of the inverse time delay release	:	Fixed, tripping time at 2 Ir: 120 s - 900 s
Instantaneous release	:	Ii: (5, 6, 7, 8, 9, 10) x In

Product data – type MTm-160H

Rated service short-circuit breaking capacity (Ics)	:	50 kA
Rated ultimate short-circuit breaking capacity (Icu)	:	65 kA / 50 kA
Line/load terminal	:	Marked
Connection	:	Prepared copper conductor with cable lug
Inverse time delay release	:	Ir: (0,8, 0,9, 1,0) x In or (0,7, 0,85, 1,0) x In
Time setting of the inverse time delay release	:	Fixed, tripping time at 2 Ir: 120 s - 900 s
Instantaneous release	:	Ii: (5, 6, 7, 8, 9, 10) x In

Product data – type MTm-160S

Rated service short-circuit breaking capacity (Ics)	:	36 kA
Rated ultimate short-circuit breaking capacity (Icu)	:	50 kA / 36 kA
Line/load terminal	:	Marked
Connection	:	Prepared copper conductor with cable lug
Inverse time delay release	:	Ir: (0,8, 0,9, 1,0) x In or (0,7, 0,85, 1,0) x In
Time setting of the inverse time delay release	:	Fixed, tripping time at 2 Ir: 120 s - 900 s
Instantaneous release	:	Ii: (5, 6, 7, 8, 9, 10) x In

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 laid down in DEKRA test file 332961600.

Additional information

Nomenclature breakdown:
MTm-160H
a b c d
a = Model name: M
b = Type of release: ‘Tm’ means thermo-magnetic adjustable, ‘T’ means thermo adjustable, magnetic fixed and ‘F’ means thermo-magnetic fixed
c = Frame size: 160
d = short-circuit capacity: ‘H’, ‘S’ or ‘E’

The referred test report is 3329616.50.

This certificate is based on KEMA-KEUR certificate 33-130577 REV.1.

Conclusion

The examination proved that all requirements were met.

Factory location

The factory location is registered with the number 2926.