

# CERTIFICATE

Issued to:  
Applicant:  
**DELIXI ELECTRIC LTD**  
Delixi High-Tech Industrial Park  
Liushi Town, Yueqing City  
325604 Zhejiang Province, China

Licensee:  
**DELIXI ELECTRIC LTD**  
Delixi High-Tech Industrial Park  
Liushi Town, Yueqing City  
325604 Zhejiang Province, China

Product : Air Circuit-Breaker  
Trade name(s) : HIMEL  
Type(s)/model(s) : HDW3-1600M and HDW3-1600S

The product and any acceptable variation thereto is 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 the standard EN 60947-2:2017
- an inspection of the production location according to CENELEC Operational Document CIG 021
- a certification agreement with the number 2028558

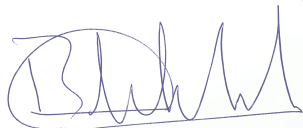
DEKRA hereby grants the right to use the KEMA-KEUR certification mark.

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

This certificate is issued on 21 March 2019 and expires upon withdrawal of one of the above mentioned standards.

Certificate number: 33-107809

DEKRA Certification B.V.



B.T.M. Holtus  
Managing Director



H.R.M. Barends  
Certification Manager

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**SPECIFICATION OF THE CERTIFIED PRODUCT**
**Product data**

Product	: Air Circuit-Breaker
Trade name(s)	: HIMEL
Type(s)/model(s)	: HDW3-1600M and HDW3-1600S
Number of poles	: 3P and 4P (protected N pole)
Protected poles	: 3 or 4
Rated operational voltage (Ue)	: 400 / 415 Vac, 660 / 690 Vac
Rated insulation voltage (Ui)	: 1000 V for main circuit 690 V for control circuit
Rated impulse withstand voltage (Uimp)	: 12 kV for main circuit 4 kV for control circuit
Rated frequency	: 50 / 60 Hz
Rated current (In)	: 400 A, 630 A, 800 A, 1000 A, 1250 A, 1600 A
Conventional thermal current (Ith)	: Equal to In
Current rating for four-pole circuit-breakers	: Equal to In
Suitable for isolation	: Suitable
Selectivity category	: B
Safety distance (screen-circuit breaker)	: Front / back: 0 mm Left / right: 0 mm Up / down: 0 mm
Reference temperature	: Independent
Method of mounting	: Withdrawable or fixed
EMC Environment	: A
Tightening torque for terminals	: 50 Nm for M10
Line/load terminal	: Immaterial
Connection	: Minimum cross-sectional area of conductor: 240 mm <sup>2</sup> (copper conductor with cable lug) Maximum cross-sectional area of conductor: (100 mm x 5 mm) x 2 (copper busbars)
Inverse time delay release	: Ir (inverse time delay tripping setting): For trip unit: iTR326H and iTR326: Ir: (0,4 / 0,5 / 0,6 / 0,7 / 0,8 / 0,9 / 0,95 / 0,98 / 1) x In For trip unit: iTR326A: Ir: (0,4 - 1) x In, in steps of 1 A
Time setting of the inverse time delay release	: tr (inverse time delay tripping setting): 1 s / 2 s / 4 s / 8 s / 12 s / 16 s / 20 s / 24 s / 30 s, with tolerance of ± 10% (at 6 Ir) tripping time at 2 Ir: 8,1 s ≤ t ≤ 9,9 s (tr = 1 s) 243 s ≤ t ≤ 297 s (tr = 30 s)
Short time delay release	: Isd (short time delay tripping setting): For trip unit: iTR326H and iTR326: Isd: (1,5 / 2,0 / 3,0 / 4,0 / 5,0 / 6,0 / 8,0 / 10) x Ir, OFF For trip unit: iTR326A: Isd: (1,5 - 10) x Ir, OFF in steps of 1 A for Isd < 10 kA, in steps of 0,01 kA for Isd ≥ 10 kA



Time setting of the short time delay release	: tsd (short time delay tripping setting): I <sup>2</sup> t off: 0,1 s / 0,2 s / 0,3 s / 0,4 s 0,1 s, with tolerance of 80 ms - 140 ms 0,2 s, with tolerance of 140 ms - 200 ms 0,3 s, with tolerance of 230 ms - 320 ms 0,4 s, with tolerance of 350 ms - 500 ms Non-tripping duration: 0,1 s: 80 ms 0,2 s: 140 ms 0,3 s: 230 ms 0,4 s: 350 ms
Instantaneous release	: li (instantaneous tripping setting): For trip unit: iTR326H and iTR326: li: (2 / 3 / 4 / 6 / 8 / 10 / 12 / 15) x I <sub>n</sub> , OFF For trip unit: iTR326A: li: (2 - 15) x I <sub>n</sub> , OFF in steps of 1 A for li < 10 kA, in steps of 0,01 kA for li ≥ 10 kA
Making current release (MCR)	: 16 kA
Ground fault release	: I <sub>g</sub> (ground fault release tripping setting): For trip unit: iTR326H and iTR326: I <sub>n</sub> < 1250 A: I <sub>g</sub> : (0,2 / 0,3 / 0,4 / 0,5 / 0,6 / 0,8 / 0,9 / 1,0) x I <sub>n</sub> , OFF I <sub>n</sub> ≥ 1250 A: I <sub>g</sub> : 500 A / 600 A / 700 A / 800 A / 900 A / 1000 A / 1100 A / 1200 A, OFF For trip unit: iTR326A: I <sub>n</sub> < 1250 A: I <sub>g</sub> : (0,2 - 1,0) x I <sub>n</sub> , in steps of 1 A, OFF I <sub>n</sub> ≥ 1250 A: I <sub>g</sub> : 500 A - 1200 A, in steps of 1 A, OFF t <sub>g</sub> (ground fault release tripping setting): I <sup>2</sup> t off: 0,1 s / 0,2 s / 0,3 s / 0,4 s 0,1 s, with tolerance of 80 ms - 140 ms 0,2 s, with tolerance of 140 ms - 200 ms 0,3 s, with tolerance of 230 ms - 320 ms 0,4 s, with tolerance of 350 ms - 500 ms
Shunt release	: AC: 220 / 230 V, 380 / 400 V, 50 / 60 Hz DC: 110 V, 220 V
Under-voltage release	: AC: 220 / 230 V, 380 / 400 V, 50 / 60 Hz
Closing coil	: AC: 220 / 230 V, 380 / 400 V, 50 / 60 Hz DC: 110 V, 220 V
Stored energy motor	: AC: 220 / 230 V, 380 / 400 V, 50 / 60 Hz DC: 110 V, 220 V
External supply for trip unit	: AC: 220 / 230 V, 380 / 400 V, 50 / 60 Hz DC: 110 V, 220 V

**Product data – type HDW3-1600M**

Rated ultimate short-circuit breaking capacity (I <sub>cu</sub> )	: 50 kA at 400 / 415 Vac 35 kA at 660 / 690 Vac
Rated service short-circuit breaking capacity (I <sub>cs</sub> )	: 42 kA at 400 / 415 Vac 35 kA at 660 / 690 Vac
Rated short-time withstand current (I <sub>cw</sub> )	: 42 kA - 1 s at 400 / 415 Vac 35 kA - 1 s at 660 / 690 Vac

**Product data – type HDW3-1600S**

Rated ultimate short-circuit breaking capacity (Icu)	: 42 kA at 400 / 415 Vac 35 kA at 660 / 690 Vac
Rated service short-circuit breaking capacity (Ics)	: 42 kA at 400 / 415 Vac 35 kA at 660 / 690 Vac
Rated short-time withstand current (Icw)	: 42 kA - 1 s at 400 / 415 Vac 35 kA - 1 s at 660 / 690 Vac

**TESTS****Test requirements**

EN 60947-2:2017

**Test result**

The test results are laid down in DEKRA test file 331490600.

**Additional information**

Nomenclature breakdown:

HDW3 - 1600 M / 4

a b c d

a = Model name: HDW3

b = Frame size: 1600

c = short-circuit capacity: 'M' or 'S'

d = pole numbers, '4' means 4P ACBs, 'blank' means 3P ACBs

This certificate is based on certificate no. 33-107152 issued on 2019-03-14.

The referred test reports is no.331906.50

The product also complies with IEC60947-2:2016.

**Conclusion**

The examination proved that all requirements were met.

**Factory locations**

DELIXI ELECTRIC (WUHU) LTD  
Wuhu Machinery Industrial Park,  
Wuhu City,  
241100 Anhui Province, China

DELIXI ELECTRIC LTD  
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