

ATTESTATION OF CONFORMITY

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

For the product: Air Circuit-Breaker

Trade name: HIMEL

Type/Model: HDW3-1600M and HDW3-1600S

Ratings: Ue: 400 / 415 Vac, 660 / 690 Vac, 50 / 60 Hz
Ui: 1000 V for main circuit, 690 V for control circuit
Uimp: 12 kV for main circuit, 4 kV for control circuit
In: 400 A, 630 A, 800 A, 1000 A, 1250 A, 1600 A
See annex for further ratings

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

Subject: Type test

Requirements: EN 60947-2:2017, IEC 60947-2:2016

Remark: This attestation is based on no. 3314515.01A issued on 2019-03-18.

This attestation is granted on account of an examination by DEKRA, the results of which are laid down in a test report no. 3314906.50 issued on 2019-03-20.

This Attestation implies that the examined types are in accordance with the standards designated under the Low voltage directive (LVD) 2014/35/EU.

The examination has been carried out on one single specimen or several specimens of the product, submitted by the manufacturer. The Attestation does not include an assessment of the manufacturer's production. Conformity of his production with the specimen tested by DEKRA is not the responsibility of DEKRA.

The CE marking may be affixed on the product if all relevant and effective EC directives are complied with.

Wenzhou, Zhejiang, 22 March 2019 Number: 3315373.01A

DEKRA Testing Services (Zhejiang) Co., Ltd.

Ms J Guo
Certification Manager

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Ratings

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 ² (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 $\pm 10\%$ (at 6 Ir) tripping time at 2 Ir: 8,1 s $\leq t \leq$ 9,9 s (tr = 1 s) 243 s $\leq t \leq$ 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 \geq 10 kA
Time setting of the short time delay release	: tsd (short time delay tripping setting): I ² 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 In, OFF For trip unit: iTR326A: li: (2 - 15) x In, 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	: Ig (ground fault release tripping setting): For trip unit: iTR326H and iTR326: In < 1250 A: Ig: (0,2 / 0,3 / 0,4 / 0,5 / 0,6 / 0,8 / 0,9 / 1,0) x In, OFF In ≥ 1250 A: Ig: 500 A / 600 A / 700 A / 800 A / 900 A / 1000 A / 1100 A / 1200 A, OFF For trip unit: iTR326A: In < 1250 A: Ig: (0,2 - 1,0) x In, in steps of 1 A, OFF In ≥ 1250 A: Ig: 500 A - 1200 A, in steps of 1 A, OFF tg (ground fault release tripping setting): I _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 rating - HDW3-1600M	
Rated ultimate short-circuit breaking capacity (I _{cu})	: 50 kA at 400 / 415 Vac 35 kA at 660 / 690 Vac
Rated service short-circuit breaking capacity (I _{cs})	: 42 kA at 400 / 415 Vac 35 kA at 660 / 690 Vac
Rated short-time withstand current (I _{cw})	: 42 kA - 1 s at 400 / 415 Vac 35 kA - 1 s at 660 / 690 Vac

Product rating - 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

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