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TEST REPORT
IEC 60898-1
Circuit-breakers for over current protection for household and similar installations
Part 1 - Circuit-breakers for a.c. operation

Report Number. ..... :	180801235SHA-003
Date of issue ..... :	2018-08-27
Total number of pages	10
Applicant's name ..... :	Wenzhou Huajia Electrical Equipment Co., Ltd.
Address ..... :	No. 311, LATITUDE FIFTEEN ROAD, YUEQING ECONOMIC DEVELOPMENT ZONE, ZHEJIANG, CHINA.
Test specification:	
Standard ..... :	IEC 60898-1: 2015
Test procedure ..... :	CB scheme
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	IEC60898_1D
Test Report Form(s) Originator .... :	DEKRA Certification B.V.
Master TRF ..... :	Dated 2015-09

If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

General disclaimer:

The test results presented in this report relate only to the object tested.
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Test item description ..... :	Circuit-breakers with overcurrent protection
Trade Mark ..... :	TEXENERGO
Manufacturer ..... :	Wenzhou Huajia Electrical Equipment Co., Ltd. No. 311, LATITUDE FIFTEEN ROAD, YUEQING ECONOMIC DEVELOPMENT ZONE, ZHEJIANG, CHINA.
Model/Type reference ..... :	SGP
Ratings ..... :	Ue=400V~ (3P) I_n= 6, 10, 16, 20, 25, 32, 40, 50, 63A

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):			
☒	**CB Testing Laboratory:**	Intertek Testing Services Shanghai	
Testing location/ address .....:		Building No.86, 1198 Qinzhou Road (North), Shanghai 200233, China	
☒	**Associated CB Testing Laboratory:**	Inspection Center of Products' Quality of Low Voltage Electric Apparatus in Zhejiang Province	
Testing location/ address .....:		No. 400 Guangqiong Rd., Jiaxing, Zhejiang, China	
Tested by (name, function, signature) .....:		Mark He	Mark He
Approved by (name, function, signature)..:		Quiet Lin	
☐	**Testing procedure: CTF Stage 1:**		
Testing location/ address .....:			
Tested by (name, function, signature) .....:			
Approved by (name, function, signature)..:			
☐	**Testing procedure: CTF Stage 2:**		
Testing location/ address .....:			
Tested by (name + signature).....:			
Witnessed by (name, function, signature).:			
Approved by (name, function, signature)..:			
☐	**Testing procedure: CTF Stage 3:**		
☐	**Testing procedure: CTF Stage 4:**		
Testing location/ address .....:			
Tested by (name, function, signature) .....:			
Witnessed by (name, function, signature).:			
Approved by (name, function, signature)..:			
Supervised by (name, function, signature):			

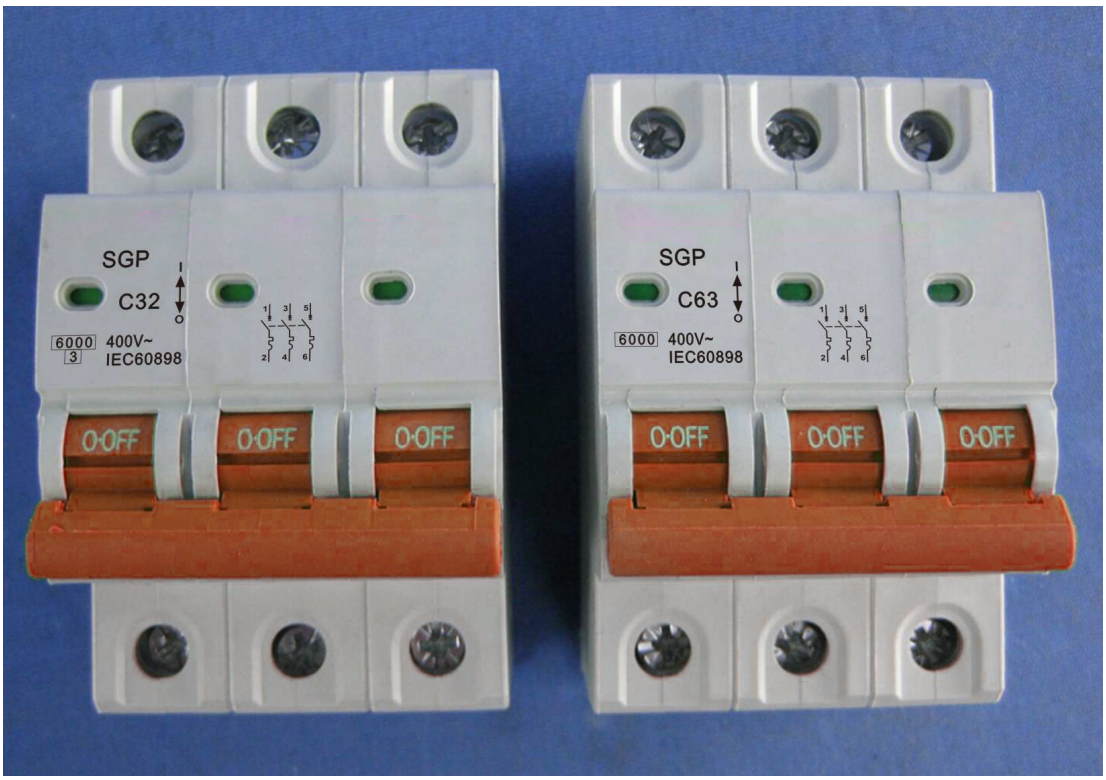
Summary of testing:
The products mentioned in this test report comply with IEC 60 898-1:2015.

Clause	Testing items	Testing location
6	Marking and other product information	CBTL
8.1.1	General	CBTL
8.1.2	Mechanism	CBTL
8.1.3	Clearances and creepage distances	CBTL
8.1.6	Non-interchangeability	CBTL
9.3	Test of Indelibility of marking	CBTL
9.4	Test of reliability of screws, current-carrying parts and connections.	CBTL
9.5	Reliability of terminals for external conductors	CBTL
9.6	Test of protection against electric shock	CBTL
9.7	Test of dielectric properties	
9.7.1	Resistance to humidity	CBTL
9.7.2	Insulation resistance of the main circuit	CBTL
9.7.3~9.7.6	Dielectric strength	CBTL
9.8	Test of temperature-rise	CBTL
9.9	28-days test	ACTL
9.10	Tripping characteristic	ACTL
9.11	Mechanical and electrical endurance	ACTL
9.12	short circuit	ACTL
9.13	Resistance to mechanical shock and impact	CBTL
9.14	Resistance to heat	CBTL
9.15	Resistance to abnormal heat and to fire	CBTL
9.16	Resistance to rust	CBTL

Summary of compliance with National Differences:

☒ **The product fulfils the requirements of EN 60898-1:2003 + A1:2004 + A11:2006 + A12:2008 + A13:2012**.

Copy of marking plate:



Test item particulars	
Type of circuit-breaker .....:	SGP
Number of poles .....:	☐ 1-P ☐ 1-P+N ☐ 2-P ☒ 3-P ☐ 3-P+N ☐ 4-P
Protection against external influences .....:	☐enclosed ☒ unenclosed
Method of mounting .....:	☐surface ☒ flush ☒ panel board
Method of connection .....:	☒.not associated with the mechanical mounting ☐ associated with the mechanical mounting
Type of terminal .....:	☐ screw [a) b)] ☒ pillar [a) b)] ☐ cage [a) b)] ☐ lug ☐ screw less[a)] ☐ flat quick connect [a)] ☐ plug-in ☐ screw-in [a)] copper conductors [b)] aluminium conductors
Instantaneous tripping current .....:	☒B ☒ C ☐ D
I^2t characteristic .....:	Energy limiting class 3 (In≤32A)
Value of rated operational voltage (Ue).....:	☐ 120 V ☐ 230 V ☐ 240 V ☐ 120/240 V ☐ 230/400 V ☒ 400 V ☐ 240/415 V ☐ 415 V
Value of rated current (In).....:	6, 10, 16, 20, 25, 32, 40, 50, 63A
Value of rated frequency .....:	☒ 50 Hz ☒ 60 Hz
Ambient air temperature (°C) .....:	☒ 30°C ☐ 40°C ☐ Other _____°C
Rated short-circuit capacity (Icn) .....:	☐ 1,5 kA ☐ 3 kA ☐ 4,5 kA ☒ 6 kA ☐ 10 kA ☐ 15 kA ☐ 20 kA ☐ 25 kA
Rated impulse withstand voltage (Uimp)	☐ 2,5 kV ☒ 4 kV ☐ declared ___kV
Material group and CTI declared by manufacturer…:	☐ Group I, (600 V ≤ CTI) ☐ Group II, (400 V ≤ CTI < 600 V) ☒ Group IIIa, (175 V ≤ CTI < 400 V)
Classification of installation and use	Rail installed
Supply Connection.....	Cable connected
Possible test case verdicts:	
- test case does not apply to the test object.....	N/A
- test object does meet the requirement	P (Pass)
- test object does not meet the requirement	F (Fail)
Testing	
Date of receipt of test item.....	2016-02-23
Date (s) of performance of tests.....	From 2016-02-25 to 2016-04-12

General remarks:

"(See Enclosure #)" refers to additional information appended to the report.
"(See appended table)" refers to a table appended to the report.

Throughout this report a ☒ comma / ☐ point is used as the decimal separator.

This test report is valid only being read together with the test reports of 180801235SHA-001, -002, -004.

Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided ..... :	☐ **Yes** ☒ **Not applicable**

When differences exist; they shall be identified in the General product information section.

Name and address of factory (ies) ..... :	Wenzhou Huajia Electrical Equipment Co., Ltd. No. 311, LATITUDE FIFTEEN ROAD, YUEQING ECONOMIC DEVELOPMENT ZONE, ZHEJIANG, CHINA.

General product information:

U_e= 230/400V~(1P), 400V~(230V~)(2P), 400V~(3P, 4P)

I_n= 6, 10, 16, 20, 25, 32, 40, 50, 63A

I_{cs}= I_{cn}= 6000A, B- and C-type

Energy limiting class 3 (6~32A, B- and C-type)

Number of tests for simplified test procedure, according to table C.3 and C.4

Report ref.No	No. of poles	I_n(A)	Type	Test sequence and number of samples								
				A	B	C_1	C_2	D_0+D_1	D_0	E_1	E_2	E_3 [b)]
180801235SHA-001	**1P**	**63**	**C**	**x**	**x**	**x**	**x**	**x**	**-**	**x**	**-**	**-**
	1P	**63**	**B**	**-**	**x[d)]**	**-**	**-**	**-**	**x [a)]**	**-**	**-**	**-**
	1P	**50**	**B,C**	**-**	**-**	**-**	**-**	**-**	**x [a)]**	**-**	**-**	**-**
	1P	**40**	**B,C**	**-**	**-**	**-**	**-**	**-**	**x [a)]**	**-**	**-**	**-**
	1P	**32**	**B,C**	**-**	**-**	**-**	**-**	**-**	**x [a)]**	**-**	**x**	**-**
	1P	**25**	**B,C**	**-**	**-**	**-**	**-**	**-**	**x [a)]**	**-**	**-**	**-**
	1P	**20**	**B,C**	**-**	**-**	**-**	**-**	**-**	**x [a)]**	**-**	**-**	**-**
	1P	**16**	**B,C**	**-**	**-**	**-**	**-**	**-**	**x [a)]**	**-**	**x**	**-**
	1P	**10**	**B,C**	**-**	**-**	**-**	**-**	**-**	**x [a)]**	**-**	**-**	**-**
	1P	**6**	**B,C**	**-**	**-**	**-**	**-**	**-**	**x [a)]**	**x**	**-**	**-**
180801235SHA-002	**2P**	**63**	**C**	**x[e)]**	**-**	**-**	**x**	**-**	**-**	**x**	**-**	**-**
	2P	**32**	**B,C**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**x**	**-**
	2P	**16**	**B,C**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**x**	**-**
	2P	**6**	**C**	**-**	**-**	**-**	**-**	**-**	**-**	**x**	**-**	**-**
180801235SHA-003[c)]	**3P**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
180801235SHA-004	**4P**	**63**	**C**	**x**	**x**	**x**	**x**	**x**	**-**	**x**	**-**	**-**
	4P	**63**	**B**	**-**	**x[d)]**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
	4P	**32**	**B,C**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**x**	**-**
	4P	**16**	**B,C**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**x**	**-**
	4P	**6**	**C**	**-**	**-**	**-**	**-**	**-**	**-**	**x**	**-**	**-**

Note:

a): For this test sequence only test of clause 9.10.2 (only for B type) is required according to the table C.4.

b): Test sequence in EN 60898-1, due to I_{cn1}=I_{cn}, the test sequence is omitted.

c): The tests of three-pole circuit-breakers are omitted when four-pole circuit-breakers have been tested according to IEC60 898-1 Annex C;

d): For this test sequence only test of clause 9.8 is required according to the table C.4

e): Only 8.11 and 9.15 of test sequence A2 is performed.

Photos of samples:

Photos of samples:

Photos of samples: