



TEST REPORT
EN 60947-2
Low-voltage switchgear and controlgear - Part 2: Circuit-breakers

Report Number. : 03601-A-21D0102-S

Date of issue : 2022-01-10

Total number of pages : 253 pages

Name of Testing Laboratory preparing the Report : Suzhou Electrical Apparatus Science Research Institute Co., Ltd. (EETI)

Applicant's name : Zhejiang Tengen Smart Electrics Co., Ltd.

Address : No.2777 West Zhongshan Road, Xiuzhou District, Jiaxing, Zhejiang Province, P.R.China.

Test specification:

Standard : EN 60947-2:2017/A1:2020

Test procedure : CCA Scheme

Non-standard test method : N/A

Test Report Form No. : EN60947_2J

Test Report Form(s) Originator : DEKRA Certification B.V.

Master TRF : Dated 2020-03-31

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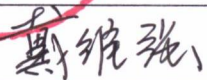
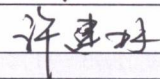
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The test results presented in this report relate only to the object tested.

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Test item description	Moulded Case Circuit-Breaker	
Trade Mark(s)	Tengen	
Manufacturer	Zhejiang Tengen Smart Electrics Co., Ltd. No.2777 West Zhongshan Road, Xiuzhou District, Jiaxing, Zhejiang Province, P.R.China.	
Model/Type reference	See page 14	
Ratings	See page 14	
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
<input checked="" type="checkbox"/>	CB Testing Laboratory:	Suzhou Electrical Apparatus Science Research Institute Co., Ltd.(EETI)
Testing location/ address		No.7 Yonghe Street, Binhe Road, New District, Suzhou, China
Tested by (name, function, signature)		Dai Weiqiang(Team leader) 
Approved by (name, function, signature) ..		Xu Jianlin(Supervisor) 
<input type="checkbox"/>	Testing procedure: CTF Stage 1:	
Testing location/ address		
Tested by (name, function, signature):		
Approved by (name, function, signature) ..		
<input type="checkbox"/>	Testing procedure: CTF Stage 2:	
Testing location/ address		
Tested by (name + signature).....		
Witnessed by (name, function, signature) . :		
Approved by (name, function, signature) .. :		
<input type="checkbox"/>	Testing procedure: CTF Stage 3:	
<input type="checkbox"/>	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) :		

List of Attachments (including a total number of pages in each attachment): Attachment 1: photos of the product (4 pages- 250 to 253)	
Summary of testing: In case of alternative test programs for circuit breakers with a different number of poles, the following program is used: <input type="checkbox"/> Programme 1 (three pole fully tested) <input checked="" type="checkbox"/> Programme 2 (four pole fully tested) <input type="checkbox"/> Alternative program not applicable	
Tests performed (name of test and test clause): TEST SEQUENCE I Sample No.:#01#02#03#04 8.3.3 General performance characteristics TEST SEQUENCE II (Ics) Sample No.:#05-#08 #15-#17 #21-#24 #31-#34 #46 8.3.4 Rated service short-circuit breaking capacity TEST SEQUENCE III (Icu) Sample No.:#09-#11 #13#18 #25-#27 #29#35 8.3.5 Rated ultimate short-circuit breaking capacity TEST SEQUENCE III (phase+N test) Sample No.:#19#36 TEST SEQUENCE IV (Icw): Sample No.:#12#14#28#30 8.3.6 Rated short-time withstand current TEST SEQUENCE IV (phase+N test): Sample No.:#20#37 Annex C- Individual pole short-circuit test sequence Sample No.:#43#44#45 Annex F –Additional tests for circuit-breakers with electronic over-current protection Sample No.:#39 Annex N- Electromagnetic compatibility (EMC) Sample No.:#41#42	Sample No.:#40 Mechanical properties of terminals 8.2.4 Sample No.:#39 Clearances and creepage distances 7.1.4 Insulating material: Comparative tracking index 7.1.4 Resistance to abnormal heat and fire 8.2.1.1.1 Sample specifications: TGM1NE-400M/4320CFE1 400A, 4P: #01 with AC240V auxiliary, shunt release with prepayment and power distribution protection, TGM1NE-400M/3350 400A, 3P:#02 with AC240V under voltage release, AC240V shunt release and power distribution protection TGM1NE-630MP/43002CIIIIE1F 630A 4P: #03 motor operators AC240V, with AC240V overload alarm no trip accessory, motor protection and plug-in TGM1NE-630M/3300 630A 3P:#04 TGMHE-400M/3300 400A 3P:#05#06#07 TGMHE-400M/3300 300A 3P:#08 TGMKE-400M/3300 400A 3P:#09-#12 TGMKE-400M/3300 300A 3P:#13-#14 TGMGE-400M/3300 400A 3P:#15-#17 TGMKE-400M/4300CE1 400A 4P : #18-#20 TGMHE-630M/3300 630A 3P: #21-#23 TGMHE-630M/3300 400A 3P :#24 TGMKE-630M/3300 630A 3P :#25-#28 TGMKE-630M/3300 400A 3P:#29-#30 TGMGE-630H/3300 630A 3P :#31-#33 TGMGE-630H/3300 400A 3P:#34 TGMKE-630M/4300CE1 630A 4P #35-#40 TGM1NE-400 #41-#42 (one sample with AC240V communication module (shunt release + alarm contact) and with AC240V overload alarm no trip accessory): TGMHE-400M/3300 300A 3P:#43 TGMHE-400M/3300 300A 3P:#44 TGMKE-630M/3300 630A 3P:#45 TGMGE-400H/3300 300A 3P:#46

	<p>Remark:</p> <p>This test report is based on test report 03601-A-21B0978-S issued on 2021-09-30, all the test results are copied from the test report (except CTI test).</p>
<p>Testing location:</p> <p>No.7 Yonghe Street, Binhe Road, New District, Suzhou, China</p>	
<p>Summary of compliance with National Differences (List of countries addressed):</p> <p>N/A</p>	
<p>Statement concerning the uncertainty of the measurement systems used for the tests (may be required by the product standard or client)</p> <p><input type="checkbox"/> Internal procedure used for type testing through which traceability of the measuring uncertainty has been established: Procedure number, issue date and title:</p> <p>Calculations leading to the reported values are on file with the NCB and testing laboratory that conducted the testing.</p> <p><input checked="" type="checkbox"/> Statement not required by the standard used for type testing</p>	