



Test Report issued under the responsibility of:



TEST REPORT
IEC 60947-4-1
Contactors and motor-starters
Electromechanical contactors and motor-starters

Report Number..... : 03601-A-18CB0064-S-B

Date of issue : 2018-12-28

Total number of pages 46



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

Applicant's name : Zhejiang Tengen Electric Co., Ltd.

Address..... : Sulv Industrial Area, Liushi Town, Yueqing City, Zhejiang Province, P.R.China

Test specification:

Standard : IEC 60947-4-1:2009 , AMD1:2012

Test procedure : CB Scheme

Non-standard test method..... : N/A

Test Report Form No. : IEC60947_4_1C

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

Master TRF : Dated 2017-06

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Test item description..... : Motor Circuit Breaker

Trade Mark..... : TENGEN

Manufacturer : Zhejiang Tengen Electric Co., Ltd.
Sulv Industrial Area, Liushi Town, Yueqing City, Zhejiang Province,
P.R.China

Model/Type reference..... : TGD1-32

Ratings..... : U_i: 690V; U_{imp}: 6kV
U_e: AC230V/240V, AC400V/415V, AC440V, AC500V, AC690V;
I_n: 0.1A~0.16A, 0.16A~0.25A, 0.25A~0.4A, 0.4A~0.63A, 0.63A~1A,
1A~1.6A, 1.6A~2.5A, 2.5A~4A, 4A~6.3A, 6A~10A, 9A~14A,
13A~18A, 17A~23A, 20A~25A, 24A~32A;
Over-current Release Type: Thermo-magnetic;
Rated short circuit breaking capacity: see annex;
50/60Hz;
Utilization Category: A;
3P;
Tripping class: 10A.

Annex:

0.1~0.16A, 0.16~0.25A, 0.25~0.4A, 0.4~0.63A, 0.63~1A, 1~1.6A:

I_{cs}=I_{cu}: 100kA(AC230V/240V, AC400V/415V, AC440V, AC500V, AC690V);

1.6~2.5A, 2.5~4A:

I_{cs}=I_{cu}: 100kA(AC230V/240V, AC400V/415V, AC440V, AC500V),

I_{cu}: 3kA(AC690V) I_{cs}: 2.25kA(AC690V);

4~6.3A:

I_{cs}=I_{cu}: 100kA(AC230V/240V, AC400V/415V), 50kA(AC440V, AC500V),

I_{cu}: 3kA(AC690V) I_{cs}: 2.25kA(AC690V);

6~10A:

I_{cs}=I_{cu}: 100kA(AC230V/240V, AC400V/415V), 15kA(AC440V), 10kA(AC500V),

I_{cu}: 3kA(AC690V) I_{cs}: 2.25kA(AC690V);

9~14A, 13~18A:

I_{cs}=I_{cu}: 100kA(AC230V/240V), I_{cu}: 15kA(AC400V/415V) I_{cs}: 7.5kA(AC400V/415V),

I_{cu}: 8kA(AC440V) I_{cs}: 4kA(AC440V), I_{cu}: 6kA(AC500V) I_{cs}: 4.5kA(AC500V),

I_{cu}: 3kA(AC690V) I_{cs}: 2.25kA(AC690V);

17~23A, 20~25A:

I_{cs}=I_{cu}: 50kA(AC230V/240V), I_{cu}: 15kA(AC400V/415V) I_{cs}: 6kA(AC400V/415V),

I_{cu}: 6kA(AC440V) I_{cs}: 3kA(AC440V), I_{cu}: 4kA(AC500V) I_{cs}: 3kA(AC500V),

I_{cu}: 3kA(AC690V) I_{cs}: 2.25kA(AC690V);

24~32A:

I_{cs}=I_{cu}: 50kA(AC230V/240V), I_{cu}: 10kA(AC400V/415V) I_{cs}: 5kA(AC400V/415V),

I_{cu}: 6kA(AC440V) I_{cs}: 3kA(AC440V), I_{cu}: 4kA(AC500V) I_{cs}: 3kA(AC500V),

I_{cu}: 3kA(AC690V) I_{cs}: 2.25kA(AC690V).

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, Jiangsu Province, China
Tested by (name, function, signature)		Lu Jianping (Team leader)
Approved by (name, function, signature) ...:		Zhang Jie (Supervisor)
<hr/>		
<input type="checkbox"/>	Testing procedure: CTF Stage 1:	
Testing location/ address.....:		
Tested by (name, function, signature):		
Approved by (name, function, signature) ...:		
<hr/>		
<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) ...:		
<hr/>		
<input type="checkbox"/>	Testing procedure: CTF Stage 3:	
<input type="checkbox"/>	Testing procedure: CTF Stage 4:	
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):
N/A

Summary of testing:

Tests performed (name of test and test clause):

IEC 60947-4-1:

Test sequence I :

- Operating limits (Clause 9.3.3.2) #01~#15

Test sequence II :

- Verification of rated making and breaking capacities, change-over ability and reversibility, where applicable (Clause 9.3.3.5.) #16#17

- verification of conventional operational performance (Clause 9.3.3.6) #16#17

For IEC 60947-2, please refer to report
03601-A-18CB0064-S-A

Testing location:

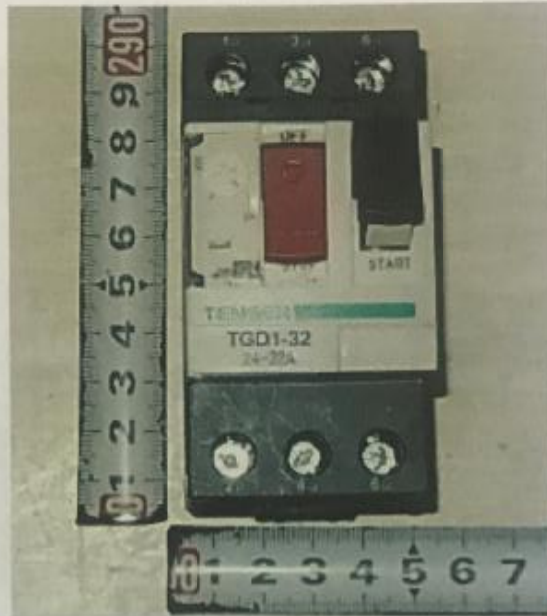
Suzhou Electrical Apparatus Science Research
Institute Co., Ltd.(EETI)

No.7 Yonghe Street, Binhe Road, New District,
Suzhou, Jiangsu Province, China

Summary of compliance with National Differences
List of countries addressed:N/A

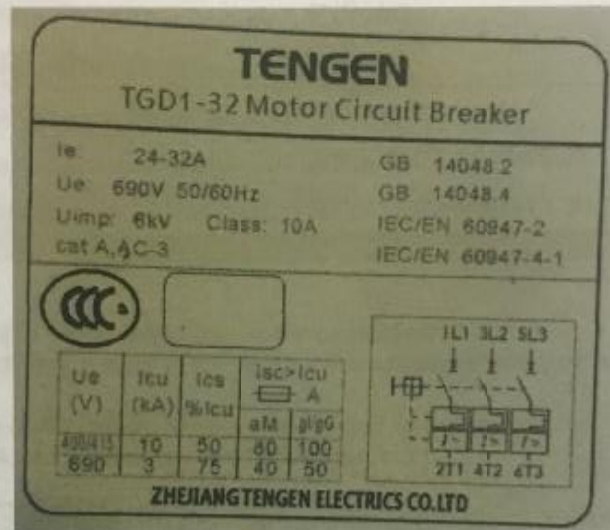
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Copy of marking plate

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Test item particulars :	
Classification of installation and use : Fixed or guide	
Supply Connection : Terminal cable	
..... :	
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 : 2015-12-07, 2018-11-27	
Date (s) of performance of tests : 2015-12-09~2015-12-30, 2018-11-30~2018-12-01	
General remarks:	
The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory. "(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 <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.	
Manufacturer's Declaration per Sub-clause 4.2.5 of IEC 60068-2-1:	
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.....:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> Not applicable
When differences exist; they shall be identified in the General Product Information section.	
Name and address of factory (ies) : Zhejiang Tengen Electric Co., Ltd. Sulv Industrial Area, Liushi Town, Yueqing City, Zhejiang Province, P.R.China	
General product information:	
Specification of samples see report 03601-A-18CB0064-S-A.	