



Test Report issued under the responsibility of:



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

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CB/CCA Testing Laboratory: Shanghai Testing & Inspection Institute for Electrical Equipment (STIEE)
Address.....: 505 Wu Ning Rd. Shanghai 200063, P.R. CHINA

Applicant's name.....: Zhejiang Tengen Electrics Co., Ltd.
Address.....: TENGEN Industry Zone, Liushi, Yueqing, Zhejiang Province, P.R. China

Test specification:

Standard: ☐ IEC 60947-2:2006 (4th Edition) and/or
☒ EN 60947-2:2006 (4th Edition)
Test procedure: CCA
Non-standard test method.....: N/A

Test Report Form No......: IECEN60947_2B
Test Report Form(s) Originator: KEMA
Master TRF.....: Dated 2008-10

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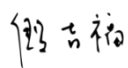

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Test item description.....: Moulded Case Circuit-breaker
Trade Mark: TENGEN
Manufacturer.....: Zhejiang Tengen Electrics Co., Ltd.
Model/Type reference.....: TGM1-125
Ratings.....: Ue: AC415V(2P),3P/4P(AC415/690V)
In: 16A,20A,25A,32A, 40A,50A,63A,80A,100A,125A

Testing procedure and testing location:	
<input checked="" type="checkbox"/> CB/CCA Testing Laboratory: Testing location/ address:	Shanghai Testing & Inspection Institute for Electrical Equipment (STIEE) 505 Wu Ning Rd. Shanghai 200063, P.R. CHINA
<input type="checkbox"/> Associated CB Laboratory: Testing location/ address:	N/A N/A
Tested by (name + signature) : Approved by (+ signature) :	Yin Jifu Wei Qingyuan  
<input type="checkbox"/> Testing procedure: TMP Tested by (name + signature) : Approved by (+ signature) : Testing location/ address:	N/A N/A N/A N/A
<input type="checkbox"/> Testing procedure: WMT Tested by (name + signature) : Witnessed by (+ signature) : Approved by (+ signature) : Testing location/ address:	N/A N/A N/A N/A N/A
<input type="checkbox"/> Testing procedure: SMT Tested by (name + signature) : Approved by (+ signature) : Supervised by (+ signature) : Testing location/ address :	N/A N/A N/A N/A N/A
<input type="checkbox"/> Testing procedure: RMT Tested by (name + signature) : Approved by (+ signature) : Supervised by (+ signature) : Testing location/ address:	N/A N/A N/A N/A N/A

Particulars: test item vs. test requirements

3. Classification

3.1. Utilization category: (A or B).....	: A
3.2. Interruption medium: (air, vacuum, gas Break).....	: Air
3.3. Design: (open construction, moulded case).....	: moulded case
3.4. Method of controlling the operation mechanism: (dependent manual, independent manual, dependent power, independent power)	Independent manual
3.5. Suitability for insulation: (suitable, not -suitable)	: Suitable
3.6. Provision for maintenance: (maintainable, non maintainable)	Non maintainable
3.7. Method of installation: (fixed, plug in, withdrawable) ...	: Fixed, plug in
3.8. Degree of protection: (IP code).....	: IP20
4.8. Integral fuses (integrally fused circuit-breakers) Type and characteristics of SCPD.....	N/A
4.9. Switching overvoltages: (when Uimp. is declared)	: N/A
7.3 Electromagnetic compatibility (EMC) Environment A or B	: A
Circuit-breaker for use on phase-earthed systems	: N/A
Circuit-breaker for use in IT systems	: No
Rated and limiting values, main circuit	:
- rated operational voltage: Ue (V).....	: AC415V(2P),3P/4P(AC415/690V)
- rated insulation voltage: Ui (V).....	: 800V
- rated impulse withstand voltage: Uimp (kV).....	: 8kV
- rated operational current: Ie (A).....	: 16A,20A,25A,32A,40A,50A,63A,80A,100A,125A
- kind of current.....	: AC
- conventional free air thermal current: Ith (A).....	: 16A,20A,25A,32A,40A,50A,63A,80A,100A,125A
- conventional enclosed thermal current: Ithe (A)	: N/A
- current rating for four-pole circuit-breakers: (A)	: 16A,20A,25A,32A,40A,50A,63A,80A,100A,125A
- number of poles.....	: 2P, 3P, 4P
- rated frequency: (Hz)	: 50Hz
- integral fuses (rated values)	: N/A

Rated duty :

- eight-hour duty	: N/A
- uninterrupted duty: Iu (A)	: 16A,20A,25A,32A,40A,50A,63A,80A,100A,125A

Short-circuit characteristic :

rated short-time making capacity: Icm (kA)	2P: 73,5kA(415V/L type), 105kA(415V/M type); 3/4P: 73,5kA(415V/L type), 7,65kA(690V/L type); 105kA(415V/M type), 17kA(690V/M type);
rated ultimate short-circuit breaking capacity: Icu (kA)	2P: 35kA(415V/L type), 50kA(415V/M type); 3/4P: 35kA(415V/L type), 5kA(690V/L type); 50kA(415V/M type), 10kA(690V/M type);
rated service short-circuit breaking capacity: Ics (kA).....	2P: 22kA(415V/L type), 35kA(415V/M type); 3/4P: 22kA(415V/L type), 4kA(690V/L type); 35kA(415V/M type), 5kA(690V/M type);
rated short-time withstand current: Icw (kA/s)	N/A
Control circuits :	
Electrical control circuits :	
- kind of current: (AC, DC).....	AC
- rated frequency: (Hz)	50Hz
- rated control circuit voltage: Uc (nature, frequency, V) ...	AC240V, AC415V
- rated control supply voltage: Us (nature, frequency V) ..	AC240V, AC415V
Air supply control circuits: (pneumatic or electro-pneumatic) :	
- rated pressure and its limit.....	N/A
- volumes of air, at atmospheric pressure, required for each closing and each opening operation.....	N/A
Auxiliary circuits :	
Rated and limiting values, auxiliary circuits	
- rated operational voltage Ue (V).....	AC-15: AC415V/0,3A DC-13: DC220V/0,15A
- rated insulation voltage: Ui (V).....	690V
- rated operational current: Ie (A).....	AC-15: AC415V/0,3A DC-13: DC220V/0,15A
- kind of current.....	AC, DC
- rated frequency: (Hz)	50Hz
- number of circuits.....	N/A
- number and kind of contact elements	N/A
- rated uninterrupted current: Iu (A)	3A
- utilization category: (AC, DC, current and voltage).....	AC-15, DC-13
Short-circuit characteristic :	
- Rated conditional short-circuit current (kA)	1kA
- Co-ordination of short-circuit protective devices	RL6-25/6
- kind of protective device	Fuse

Releases :

1) shunt release..... : Yes

2) Over-current release : Yes

a) instantaneous : Yes

b) definite time delay : N/A

c) inverse time delay : Yes

- independent of previous load..... : N/A

- dependent on previous load; (for example thermal type release) : Yes

3) Undervoltage release (for opening) : Yes

4) Other releases..... : N/A

Characteristics :

1) Shunt release and undervoltage release (for opening) .. :

- rated control circuit voltage: U_c (nature, frequency, V) ... : Shunt release :
AC240V, AC415V(50/60Hz); DC24V, DC110V
Undervoltage release:
AC240V, AC415V(50/60Hz);

- kind of current..... : AC/DC

- rated frequency: (if AC) : 50Hz

2) Over-current release :

- rated current : 16A, 20A, 25A, 32A, 40A, 50A, 63A, 80A, 100A, 125A

- kind of current..... : AC

- rated frequency: (if AC) : 50Hz

- current setting (or range of settings)..... : Instantaneous(Ir3):
10 In (for distribution protection):
12 In (for motor protection, AC-3):
Inverse time delay(Ir1): In

- time settings (or range of settings) : N/A