TEST REPORT

For

Miniature Circuit Breaker

Model No.: BA47-19, BA49-63, BA47-100, BH32-100, DZ47-63, C45N, LWD47-63N, LW219 LW419, DX-63, BA49-63DC,CT65N, STM6K/2, E90, NC100H, HT60036, HT60037, HT60038, BA49-29, THQL DG62, THQC, L7, SF219, SF419, SNB1-63.

Applicant : WENZHOU NAFEI ELECTRIC CO., LTD.

ADDRESS TO BE CONFIRMED BY TESTING LABORATORY

Manufacturer : WENZHOU NAFEI ELECTRIC CO., LTD.

ADDRESS TO BE CONFIRMED BY TESTING LABORATORY

Issued By : Shenzhen An-Teng Testing Service Co., Ltd.

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Report Number : ATJC2011170002700S

Test Date : November 17 - 23, 2026

Date of Report : November 23, 2026

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ATJC
AN TENG TESTING

Report No.: ATJC2011170002700S

TEST REPORT EN 61058-1:2018 Switches for appliances - Part 1: General requirements	
Report reference No. ……..……:	ATJC2011170002700S
Testing laboratory ……:	Shenzhen An-Teng Testing Service Co., Ltd.
Location……..:	Floor 5, No. 11, Hebei Industrial Zone, Hualian Community, Longhua Street, Longhua District, Shenzhen, China.
Applicant……..:	WENZHOU NAFEI ELECTRIC CO., LTD.
Address:……....:	ADDRESS TO BE CONFIRMED BY TESTING LABORATORY
Manufacturer……....:	WENZHOU NAFEI ELECTRIC CO., LTD.
Address:……....:	ADDRESS TO BE CONFIRMED BY TESTING LABORATORY
Standards……..:	EN 61058-1:2018
Procedure deviation……:	N/A
Non-standard test method……..:	N/A
Type of test equipment ……...:	Miniature Circuit Breaker
Trade mark……:	AZ POWER
Model/Type designation……..:	BA47-19, BA49-63, BA47-100, BH32-100, DZ47-63, C45N, LWD47-63N, LW219, LW419, DX-63, BA49-63DC,CT65N, STM6K/2, E90, NC100H, HT60036, HT60037, HT60038, BA49-29, THQL DG62, THQC, L7, SF219, SF419, SNB1-63.
Rating ……	Input:AC110-500V,1-125A Output:AC110-500V,1-125A
TRF originator……:	Shenzhen An-Teng Testing Service Co., Ltd.
Copyright blank test report:	Shenzhen An-Teng Testing Service Co., Ltd.
Test item particulars:	--
Operating Condition	N/A
Class of equipment	N/A
Protection against ingress of water	N/A

Possible test case verdicts :	
test case does not apply to the test object	N(Not Applicable)
test object does meet the requirement	P(ass)
test object does not meet the requirement	F(ail)

Name and address of the testing laboratory :

Shenzhen An-Teng Testing Service Co., Ltd.
Floor 5, No. 11, Hebei Industrial Zone, Hualian Community, Longhua Street, Longhua District, Shenzhen, China.

Tested by : Bussia Chen — Bussia Chen / Engineer — November 17, 2026 Date

Witnessed by : Henry Tian — Henry Tian / project Engineer — November 23, 2026 Date

Approved by : Alvin Nie / Manager — November 23, 2026 Date

General remarks:	
"(see remark #)" refers to a remark appended to the report. "(see appended table)" refers to a table appended to the report. Throughout this report a comma is used as the decimal separator. 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 testing laboratory. Until otherwise specified, all tests are done under normal ambient condition 25℃±10℃, Max RH: 75% and air pressure of 860 mbar to 1060 mbar.	Attached with: Attachment - A. Photo Documentation
Brief description of the test sample: The product is exactly the same except the mode. We chose Model SNB1-63 as the main test model, and all the tests were completed in Model SNB1-63.	

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Clause	**Requirement Test**	**Result – Remark**	**Verdict**
4.	Classification		P
4.1	General		P
4.1.1	mechanically operated locks and latches shall be classified according to the eleven character classification system described in 4.2.1 to 4.2.11.		P
	Locking plates intended to be sold separately from the lock or latch may be coded accordingly using the same classification system but with grades only in those categories that are relevant to locking plates.		P
4.1.2	All locks regardless of classification shall fulfil 5.1.1 and 5.1.2.		P
4.2	Classification for mechanically operated locks, latches and locking plates		P
4.2.1	Category of use (first digit)		N
	--grade 1: for use by people with a high incentive to exercise care and with a small chance of misuse, e.g. residential doors.		N
	--grade 2: for use by people with some incentive to exercise care but where there is some chance of misuse, e.g. office doors.		N
	--grade 3 : for use by the public where there is little incentive to exercise care and where there is a high chance of misuse, e.g. doors in public buildings.		N
4.2.2	Durability (second digit)		N
	--grade A: 50 000 test cycles; no load on latch bolt;		N
	--grade B: 100 000 test cycles; no load on latch bolt;		N
	--grade C: 200 000 test cycles; no load on latch bolt;		N
	--grade F: 50 000 test cycles; 10 N load on latch bolt;		N
	--grade G: 100 000 test cycles; 10 N load on latch bolt;		N

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Clause	**Requirement Test**	**Result – Remark**	**Verdict**
	--grade H: 200 000 test cycles; 10 N load on latch bolt;		N
	--grade L: 100 000 test cycles; 25 N load on latch bolt;		N
	--grade M: 200 000 test cycles; 25 N load on latch bolt;		N
	--grade R: 100 000 test cycles; 50 N load on latch bolt;		N
	--grade S: 200 000 test cycles; 50 N load on latch bolt;		N
	--grade W: 100 000 test cycles; 120 N load on latch bolt;		N
	--grade X: 200 000 test cycles; 120 N load on latch bolt.		N
4.2.3	Door mass and closing force (third digit)		N
	–grade 1: up to 100 kg door mass; 50 N maximum closing force;		N
	–grade 2: up to 200 kg door mass; 50 N maximum closing force;		N
	--grade 3: above 200 kg door mass or specified by the manufacturer; 50 N maximum closing force;		N
	--grade 4: up to 100 kg door mass; 25 N maximum closing force;		N
	grade 5: up to 200 kg door mass; 25 N maximum closing force;		N
	--grade 6: above 200 kg door mass or specified by the manufacturer; 25 N maximum closing force;		N
	--grade 7: up to 100 kg door mass; 15 N maximum closing force;		N
	--grade 8: up to 200 kg door mass; 15 N maximum closing force;		N
	--grade 9: above 200 kg door mass or specified by the manufacturer; 15 N maximum closing force.		N
4.2.4	Suitability for use on fire/smoke doors (fourth digit)		N

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Clause	**Requirement Test**	**Result – Remark**	**Verdict**
	--grade 0: not approved for use on fire/smoke resisting door assemblies;		N
	--grade 1: suitable for use on fire/smoke resisting door assemblies, subject to satisfactory assessment of the contribution of the lock or latch to the fire resistance of specified fire/smoke resisting door assemblies. Such assessment is beyond the scope of this European Standard.		N
4.2.5	Safety (fifth digit)		P
	--grade 0: no safety requirement.		P
4.2.6	Corrosion resistance and temperature (sixth digit)		P
	--grade 0: no defined corrosion resistance; no temperature requirement;		P
	--grade A: low corrosion resistance; no temperature requirement;		N
	--grade B: moderate corrosion resistance; no temperature requirement;		N
	--grade C: high corrosion resistance; no temperature requirement;		N
	--grade D: very high corrosion resistance; no temperature requirement;		N
	--grade E: moderate corrosion resistance; temperature requirement: from –20 °C to +80 °C;		N
	--grade F: high corrosion resistance; temperature requirement: from –20 °C to +80 °C;		N
	--grade G: very high corrosion resistance; temperature requirement: from –20 °C to +80 °C.		N
4.2.7	Security and drill resistance (seventh digit)		P
	--grade 1: Minimum security and no drill resistance;		N
	--grade 2: Low security and no drill resistance;		N
	--grade 3: Medium security and no drill resistance;		N
	--grade 4: High security and no drill resistance;		N
	--grade 5: High security with drill resistance;		N

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Clause	**Requirement Test**	**Result – Remark**	**Verdict**
	--grade 6: Very high security and no drill resistance;		P
	--grade 7: Very high security with drill resistance.		N
4.2.8	Field of door application (eighth digit)		N
	15 grades of door application are identified in Table 3.		N
4.2.9	Type of key operation and locking (ninth digit)		N
	--grade 0: Not applicable;		N
	--grade A: cylinder lock or latch ; manually locking;		N
	--grade B: cylinder lock or latch; automatically locking;		N
	--grade C: cylinder lock or latch; manually locking with intermediate locking;		N
	--grade D: lever lock or latch; manually locking;		N
	--grade E: lever lock or latch; automatically locking;		N
	--grade F: lever lock or latch; manually locking with intermediate locking;		P
	--grade G: lock or latch without key operation; manually locking;		N
	--grade H: lock without key operation; automatically locking.		N
4.2.10	Type of spindle operation (tenth digit)		N
	--grade 0: lock or latch without follower		N
	--grade 1: lock or latch for knob or sprung lever handle operation;		N
	--grade 2: lock or latch for unsprung lever handle operation;		N
	--grade 3: lock or latch for heavy duty unsprung lever handle operation;		N
	--grade 4: lock or latch for heavy duty unsprung lever handle operation specified by the manufacturer.		N
4.2.11	Key identification requirement (eleventh digit)		N

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Clause	**Requirement Test**	**Result – Remark**	**Verdict**
	--grade 0: No requirements;		N
	--grade A: Minimum three detaining elements;		N
	--grade B: Minimum five detaining elements;		N
	--grade C Minimum five detaining elements, extended number of effective differs;		N
	--grade D: Minimum six detaining elements;		N
	--grade E: Minimum six detaining elements, extended number of effective differs;		N
	--grade F: Minimum seven detaining elements;		N
	--grade G: Minimum seven detaining g elements, extended number of effective differs;		N
	grade H: Minimum eight detaining elements, extended number of effective differs.		N
4.2.12	Example for classification of locks, latches and their locking plates		N
5	Requirements		P
5.1	General		P
5.1.1	Dangerous substances		P
	Materials in products shall not release any dangerous substances in excess of the maximum levels specified in any relevant European Standard for the material and in any national regulations in the member state of destination.		P
5.1.2	Return force of latch bolt		P
	When tested in accordance with 6.1.2, the return force of the latch bolt shall not be less than F2 = 2,5 N		P
5.2	Category of use		N
	--grade 1: 2 kN		N
	--grade 2 3 kN		N
	--grade 3: 3 kN		N
5.2.2	When tested in accordance with 6.2.2: Torque to operate deadbolt		N

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Clause	**Requirement Test**	**Result – Remark**	**Verdict**
5.2.2.1	the torque on the key to operate the deadbolt shall not exceed M3 = 1,5 Nm		N
5.2.2.2	the torque on the handle to operate the deadbolt shall not exceed M4 = 3 Nm		N
5.2.3	Strength of normal latch action and stops		P
	--grade 1: 20 Nm		N
	--grade 2: 40 Nm		P
	--grade 3: 60 Nm		N
5.2.4	Torque resistance of Rim lock with lockable handle / knob		N
	When tested in accordance with 6.2.4 the locked handle or knob (where applicable) shall resist a torque of M10, where M10 (Nm) = 0,4 (kN) x maximum radius in mm of the handle / knob after which the lock or latch shall function normally.		N
5.3	Durability		P
5.3.1	Durability of latch action		N
	When tested in accordance with 6.3.1, the latch action shall complete the minimum number of cycles at the appropriate load according to the grade selected in 4.2.2.		N
	The latch action shall function correctly after this test fulfilling the requirements 5.4.2 and 5.11.1.		N
5.3.2	Durability of deadbolt mechanism		P
	When tested in accordance with 6.3.2, the deadbolt mechanism shall complete the minimum number of cycles according to the grade selected in Table 4.		N
	The deadbolt mechanism shall function correctly after this test fulfilling the requirements 5.2.2.		P
5.3.3	Durability of locking snib mechanism		N
	When tested in accordance with 6.3.3, the locking snib mechanism shall complete the minimumnumber of cycles specified in Table 4.		N
5.4	Door mass and closing force		N
5.4.1	Door mass		N

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Clause	**Requirement Test**	**Result – Remark**	**Verdict**
	The dimensions and mass of the test door are described in 4.2.3 and 6.1.		N
5.4.2	Closing force		P
	When tested in accordance with 6.4.2, a closing force of F10, according to 4.2.3 shall be sufficient to enable the latch bolt to correctly engage the locking plate every time.		N
5.5	Suitability for use on fire / smoke doors		N
	Grade 1 products shall conform to the requirements of annex A.		N
5.6	Safety		P
	Not applicable		N
5.7	Corrosion resistance and temperature		P
5.7.1	Corrosion resistance		P
	When tested in accordance with 6.7.1, the torque on key or follower to operate the deadbolt or latch bolt shall not exceed figures for 5.2.2 and 5.11.1 by more than 20 %.		N
5.7.2	Operation at extremes of temperature		P
	When tested in accordance with 6.7.2, the torque on the key to operate the deadbolt shall not exceed 2 Nm, neither shall the torque on the follower (where applicable) exceed requirements in 5.11.1, as appropriate, by more than 20 %.		N
5.8	Security		P
5.8.1	Torque resistance of knob		N
5.8.1.1	Torque resistance of knob or lever handle on bored lock and latch sets		N
	When tested in accordance with 6.8.1.1, the locked knob or lever handle shall not force the lock open with a torque of M9		N
5.8.1.2	Torque resistance of knob or lever handle on rim night latch		N
	When tested in accordance with 6.8.1.2, the locked knob or lever handle shall not force the lock open with a torque of M10 (Nm) = k (kN) x maximum radius (mm)		N

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Clause	**Requirement Test**	**Result – Remark**	**Verdict**
5.8.2	Requirements for side load		P
5.8.2.1	Resistance to side load on deadbolt		N
	When tested in accordance with 6.8.2.1, the deadbolt shall resist a side load of F4 (see Figure 1 and Table 5).		N
5.8.2.2	Resistance to drilling and side load on deadbolt		P
	When tested in accordance with 6.8.2.2, the deadbolt shall be subjected to drilling for a time t, and afterwards resist a side load of F4 (see Figure 1 and Table 5).		N
5.8.3	Deadbolt projection		N
	When measured in accordance with 6.8.3, the deadbolt when fully thrown in the locking direction anddetained, shall have a minimum projection, measured from the forend of L1 (see Figure B.4 and		N
5.8.4	Requirements for end load on deadbolt		N
5.8.4.1	Resistance to end load		P
	When tested in accordance with 6.8.4.1, the product shall resist an end load of F5. At no time during or after the test shall the bolt projection be less than L2 (see Figure B.4 and Table 5).		P
	Where the deadbolt is protected by a box locking plate, the end load requirement for grades 3, 4 and 6 shall be 2 kN.		P
5.8.4.2	Resistance to endload with drilling		P
	When tested in accordance with 6.8.4.2 the product shall be subjected to drilling for a time ”t”, and afterwards resist an end load of F5. At no time during or after the test shall the bolt projection be less than L2 (see Figure B.4 and Table 5).		P
	Where the deadbolt is protected by a box locking plate, the end load requirement for grades 5 and 7 shall be 2 kN.		P

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Clause	**Requirement Test**	**Result – Remark**	**Verdict**
5.8.5	Resistance to pulling of hook/claw bolt		N
	When tested in accordance with 6.8.5, the bolt shall resist a direct pull of F6 (see Figure B.5.a and Table 5).		N
5.8.6	Resistance to disengaging of hook/claw bolt		N
	When tested in accordance with 6.8.6, the bolt shall not force the lock open with a disengaging force of F7 (see Figure B.5.b and Table 5).		N
	Where the deadbolt is protected by a box locking plate, the end load requirement for grades 3, 4, 5, 6 and 7 shall be 2 kN.		N
5.8.7	Resistance to forcing of locating device in sliding door lock		N
	When tested in accordance with 6.8.7, the locating device(s) shall resist a force of F8 (see Figure B.5.c and Table 5).		N
5.8.8	Resistance to pulling off of knob on bored lock and latch set		N
	When tested in accordance with 6.8.8, the knobs shall resist a direct pull of F9 (see Figure B.6 and Table 5).		N
5.8.9	Security requirements of the component locking plate		P
5.8.9.1	Resistance to end load on box protected locking plate		N
	When tested in accordance with 6.8.9.1, the box protected locking plate shall resist an end load of F5,and shall maintain a minimum internal depth of L3 (see Figure B.8 and Table 5).		N
5.8.9.2	Resistance to side load on locking plate		N
	When tested in accordance with 6.8.9.2, the locking plate shall resist a side load of F4 (see Figure B.9 and Table 5).		N
5.8.9.3	Resistance to pulling on locking plate		P
	When tested in accordance with 6.8.9.3, the locking plate shall resist a pull load of F6 (see Figure B.10 and Table 5).		P

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Clause	**Requirement Test**	**Result – Remark**	**Verdict**
5.8.9.4	Resistance to lifting force on locking plate		P
	When tested in accordance with 6.8.9.4, the locking plate shall resist an upward force of F8 (see Figure B.10 and Table 5). Performance criteria A shall apply.		P
5.9	Field of door application		N
5.9.1	General		N
5.9.1.1	Unrestricted application		N
	Locks with no limitation of intended use.		N
5.9.1.2	Hinged door application		N
	Locks described by manufacturers instructions for use only on hinged doors.		N
5.9.1.3	Sliding door application		N
	Locks described by manufacturers instructions for use only on sliding doors.		N
5.9.1.4	Supported lock application		N
	The performance of the lock depends on lock dimension and door preparation according to manufacturers instructions. I.e. lockcases as well as forends are supported in test 6.8.2 and 6.8.4		N
5.9.1.5	Application for inwards operated doors		N
	Locks intended for use only on inwards operated doors according to manufacturers' instruction.		N
5.9.1.6	Application for locks locked from the inside		N
	Locks designed for egress control authorized by key operation or similar.		N
5.9.2	Protection against removal from door		N
	the inside of the door when door is closed and locked, except by special tools, if security is required from the inside.		N
5.10	Type of key operation and locking		P
5.10.1	Strength of key		P
	When tested in accordance with 6.10.1, the key shall resist a torque of M7 = 2,5 Nm		P
5.10.2	Deadlocking		N

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Clause	**Requirement Test**	**Result – Remark**	**Verdict**
5.10.2.1	Manual locking		N
	a) it shall not be possible to remove the key from the lock unless the deadbolt is in its unlocked or fully thrown and deadlocked position.		N
	Or, b) if the key can be removed in an intermediate position, there shall be an indicator or some other special arrangement to indicate that the lock is not fully secured		N
	5.10.2.2 Manual locking with intermediate locking positions		N
	it shall not be possible to remove the key from the lock before the bolt is properly deadlocked.		N
5.10.2.3	Automatic locking deadbolt		N
	--the deadbolt still has to be released automatically, when the distance between forend and locking plate is up to 5 mm;		N
	--when retracting the deadbolt of a lock by key or handle operation, the deadbolt shall reach its held back position before the latch bolt disengages from the locking plate, when the distance between forend and locking plate is up to 5 mm.		N
5.10.2.4	Automatic locking latch bolt		N
	--the latch bolt still has to be locked automatically (deadlocking function), when the distance between forend and locking plate is up to 5 mm;		N
	--it shall not be possible to release the dead locking function by manipulation of the elements which are accessible between the forend and the locking plate.		N
5.10.3	Torque to withdraw the latch bolt with key		N
	When tested in accordance with 6.10.3, the torque on the key shall not exceed M1 = 1,5 Nm		N
5.11	Type of spindle operation		N
5.11.1	Torque to withdraw the latch bolt		N

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Clause	**Requirement Test**	**Result – Remark**	**Verdict**
	When tested in accordance with 6.11.1, the torque M2 on the follower for operation the latch shall not exceed		N
	--grade 1 : 0,5 Nm;		N
	--grade 2 : 3 Nm;		N
	--grade 3 : 5 Nm;		N
	--grade 4 : in accordance with manufacturers specification.		N
5.11.2	Strength of bolt actions		N
	When tested in accordance with 6.11.2, the deadbolt components shall resist a torque of 30 Nm and the latch bolt components shall resist a torque of 20 Nm for all grades		N
5.11.3	Minimum follower restoring torque		N
	the restoring torque on the follower shall be at least M8 as appropriate.		N
	--grade 1 : 0 Nm;		N
	--grade 2 : 0,6 Nm;		N
	--grade 3 : 0,6 Nm;		N
	--grade 4 : 0,6 Nm.		N
5.12	Key identification requirement		P
5.12.1	Detaining elements		P
	The minimum number of detaining elements that form part of the deadbolt mechanism shall be as specified in Table 6.		N
5.12.2	Effective differs		N
	Assessed in accordance with 6.12.2, locks shall have the minimum number of effective differs that are indicated in Table 6.		N
5.12.3	Differing step heights on key		N
	Assessed as in 6.12.3,keys shall have the minimum number of different step heights that are indicated in Table 6.		N
5.12.4	Non-interpassing of keys with just one interval differ		P

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Clause	**Requirement Test**	**Result – Remark**	**Verdict**
	When tested in accordance with 6.12.4, it shall not be possible to open the lock with the next closest key (as defined by the manufacturer's coding system).		N
5.12.5	Coding protection		N
	Except for grade 1, direct coding on the key is not permitted.		N
6	Test methods		P
6.1	General		P
	working components of significantly different materials shall be considered one type and its performance separately tested.		P
	The lock or latch shall be fitted to the test door / apparatus in accordance with the manufacturer's instructions.		N
6.1.1	Dangerous substances		P
	The manufacturer´s statement concerning dangerous substances shall confirm compliance with 5.1.1.		P
6.1.2	Return force of latch bolt		N
	The lock or latch shall be held in a vice or similar fixture with the forend vertical. Using a suitable force gauge operating in the same plane of movement as the latch bolt, the latch bolt shall be depressed fully with the force gauge, then allowed to extend until the leading edge of the bolt head is 2 mm 0,5mm from the face of the forend, at which point the return force on the latch bolt shall not be less than F2.		N
6.2	Category of use		P
6.2.1	Resistance to side load on latch bolt		N
	A force F1 shall be applied to the securing face of the latch bolt, 3 mm 0,2 mm from the forend. The latch action shall not be affected as a result of this test.		N

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Clause	**Requirement Test**	**Result – Remark**	**Verdict**
6.2.2	Torque to operate deadbolt		N
	-- M3 via keyhole, or cylinder follower		N
	-- M4 via follower (when applicable).		N
6.2.3	Strength of normal latch action and stops		P
	A torque M5 shall then be applied without shock to the follower, using a suitable torque gauge and adapter(s), in both clockwise and anticlockwise directions, the torque to be applied gradually in a time of 5 s to 2 s.		P
6.2.4	Torque resistance of Rim lock with lockable handle / knob		P
	The lock or latch shall be mounted as for 6.1.2 and the torque M10 applied, without shock, to the locked handle / knob.		P
6.3	Durability		P
6.3.1	Durability of latch action		P
6.3.1.1	Durability of latch action without force applied		P
	Each complete test cycle shall be as follows:		P
	a) rotate lever handle to fully withdraw latch bolt with a maximum torque according to 5.11.1		N
	b) open door a distance of 200 ± 5 mm;		N
	c) allow handle to return to 'at rest' position;		P
	d) allow door to close under influence of Force F11 = 7 N, causing the latch bolt to strike and fully engage in the locking plate. If 7 N is insufficient to close the door and engage the latch bolt in the locking plate, a new F11 shall then be determined by measuring the force required and increasing the new force F11 by 20 %, up to a maximum of 50 N for the durability test, causing the latch bolt to strike and fully engage in the locking plate.		N
6.3.1.2	Durabilty of latch action with force applied		P
	Each complete test cycle shall consist of the following:		P

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Clause	**Requirement Test**	**Result – Remark**	**Verdict**
	a) apply force F3, to the test door, in the opening direction;		N
	b) rotate lever handle to fully withdraw latch bolt with a torque according to 5.11.1		N
	c) open door a distance of 200 mm ± 5 mm;		N
	d) allow handle to return to 'at rest' position;		N
	e) remove force F3;		N
	f) allow door to close under influence of Force F11 = 7 N, causing the latch bolt to strike and fully engage in the locking plate. If 7N is insufficient to close the door and engage the latch bolt in the locking plate, a new F11 shall then be determined by measuring the force required and increasing the new force F11 by 20 % up to a maximum of 50 N for the durability test, causing the latch bolt to strike and fully engage in the locking plate.		N
6.3.2	Durability of deadbolt mechanism		N
	a) insert key into lock;		N
	b) rotate key sufficiently to fully throw and detain deadbolt;		N
	c) withdraw the key from lock;		N
	d) re-insert key into lock, and rotate to fully withdraw deadbolt;		N
	e) withdraw key from lock.		N
	f) insert key into lock;		N
	g) rotate key sufficiently to fully withdraw spring bolt;		N
	h) rotate key in reverse direction, allowing bolt to return to 'at rest' position;		N
	i) withdraw key from lock.		N
	For operating the bolt (s) a maximum torque of 1,5 Nm is allowed.		N
	Operation speed shall be up to 15 cycles per minute. Each cycle should be within 2 s to 4 s.		N
6.3.3	Durability of locking snib mechanism		N

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Clause	**Requirement Test**	**Result – Remark**	**Verdict**
	One test cycle shall consist of moving the snib from unlocked to locked position and back to unlocked. Operation speed shall be up to 60 cycles per min.		N
6.4	Door mass and closing force		N
6.4.1	Door mass		N
6.4.2	Closing force		N
	The lock or latch and its correct locking plate as defined by the manufacturer shall be fitted to a test door and frame as shown in Figure B.2.		N
	The distance between the lock and the locking plate shall be 3 mm 1 mm. The door shall be opened so that the latch bolt is in contact with the locking plate and allowed to close under influence of F10.The test shall be conducted three times, during which the latch bolt shall correctly engage the locking plate every time.		N
6.5	Suitabilty for use on fire / smoke doors		N
6.6	Safety		N
6.7	Corrosion resistance and temperature		N
6.7.1	Corrosion resistance		N
	Only 5.1 and 5.6 in EN 1670:1998 are required to meet the requirements of this standard.The lock, or latch, shall be operated once every 24 h during the test.		N
6.7.2	Operation at extremes of temperature		N
	The lock shall be stabilised before test by subjecting it to constant temperature of 20 °C ± 5 °C and a relative humidity of 60 % ± 5 % for a period of at least 1 h. The key shall be kept separately at normal room temperature during the tests. The locks shall be heated / cooled at the minimum rate of 10 °C ± 10 % per hour until the required temperature of + 80 °C or – 20 °C is reached. Test temperature shall be maintained for minimum 2 h and at the end of this time each lock		N

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Clause	**Requirement Test**	**Result – Remark**	**Verdict**
6.8	Security		P
6.8.1	Torque resistance of knob		N
6.8.1.1	Torque resistance of knob or lever handle on bored lock and latch sets		N
6.8.1.2	Torque resistance of knob or lever handle on rim night latch		N
6.8.2	Resistance to side load		N
6.8.2.1	Resistance to side load on deadbolt		N
	The lock or latch shall be mounted in a test apparatus as shown in Figure B.1 and a side load F4 applied by using a tool according to Figure B.1c) to the deadbolt at a distance of 3 mm from the forend and be held for a period of 60 s		N
6.8.2.2	Resistance to drilling and side load on deadbolt		N
	The drilling machine shall have a power of 500 W to 700 W and a speed of 500 r/min to 800 r/min. A high-speed steel drill to ISO 10899 or equivalent shall be used, having a maximum diameter of 5 mm. A force of 300 N ± 25 N shall be applied without shock, axially to the drill. A maximum of three drills may be used for each test. No coolant or lubrication shall be applied to the drill during the test.		N
6.8.3	Deadbolt projection		N
	Measured perpendicular to the forend on the unloaded deadbolt.		N
6.8.4	Resistance to end load on deadbolt		N
6.8.4.1	Resistance to end load		N
	The product shall be mounted in a test apparatus, as shown in Figure B.4 or as defined by the manufacturer, see 5.9,		N
6.8.4.2	Resistance to end load with drilling		N
	The product shall be mounted in a 44 mm thick wooden block, which is mounted in a test apparatus suitable for use with a drilling machine as shown in Figure B.3.		N

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Clause	**Requirement Test**	**Result – Remark**	**Verdict**
6.8.5	Resistance to pulling of hook/claw bolt		P
	The lock or latch shall be mounted in a suitable fixture as shown in Figure B.5,		P
6.8.6	Resistance to disengaging of hook/claw bolt		N
	The lock or latch shall be mounted as for test 6.8.5 and a force F7 applied 3 mm from the forend in the unlocking direction of the bolt as shown in Figure B.5.b,		N
6.8.7	Resistance to forcing of locating device in sliding door locks		N
	The lock shall be mounted as for test 6.8.5 and a force F8 applied 3 mm from the forend in the locking direction of the bolt as shown in Figure B.5c),		N
6.8.8	Resistance to pulling off of knob on bored lock and latch set		P
6.8.9	Test for security requirements for the locking plate		N
6.8.9.1	Resistance to end load on box protected locking plate		N
	The locking plate shall be mounted in a test apparatus in which the internal depth of L3 can be measured as shown in Figure B.8 and an end load F5		N
6.8.9.2	Resistance to side load on locking plate		N
6.8.9.3	Resistance to pulling on locking plate		N
6.8.9.4	Resistance to lifting force on locking plate		N
6.9	Field of door application		N
6.9.1	Genera		N
	For appropriate requirements and tests see annex D.		N
6.9.2	Protection against removal from door		N

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Clause	**Requirement Test**	**Result – Remark**	**Verdict**
	Inspect all fixings to assess whether they are concealed and inaccessible when the door is closed.With the use of any of the tools for the screwheads listed in Figure B.7, attempt to remove any fixings that are exposed.		N
6.10	Type of key operation and locking		N
6.10.1	Strength of key		N
6.10.2	Deadlocking		N
6.10.2.1	Manual locking		N
	The deadbolt shall be operated from the fully unlocked to fully thrown and deadlocked position with a live end load on the deadbolt of 15 N.		N
6.10.2.2	Manual locking with intermediate locking positions		N
	The deadbolt shall be operated from the fully unlocked position to each key removable position with a live end load on the deadbolt of 15 N ensuring that the deadbolt is deadlocked in each position.		N
6.10.2.3	Automatically locking deadbolt		N
	With the test door open at 5°, apply a closing force of 50 N at right angles to the face of the test door, at a position of 1 000 mm from the centre line of the hinges of the test door and at between 800 mm and 1 200 mm from the bottom of the test door to re-engage the lock in the secured position.		N
6.10.2.4	Automatically locking latch bolt		N
	With the test door open at 5°, apply a closing force of 50 N at right angles to the face of the test door, at a position of 1 000 mm from the centre line of the hinges of the test door and at between 800 mm and 1 200 mm from the bottom of the test door to re-engage the lock or latch in the secured position.		N
6.10.3	Torque to withdraw the latch bolt with key		N

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Clause	**Requirement Test**	**Result – Remark**	**Verdict**
	Using a suitable torque gauge and adaptor(s), the latch bolt shall be withdrawn until the leading edge of the bolt head is flush with the forend, during which movement,		N
	-- M1 via key, or via the cylinder follower.		N
6.11	Spindle operation		N
6.11.1	Torque to withdraw latch bolt with handle		P
	Using a suitable torque gauge and adaptor(s), the latch bolt shall be withdrawn until the leading edge of the bolt head is flush with the forend 0 + 1 mm, during which movement, the torque M2 shall be measured.		P
6.11.2	Strength of bolt actions		N
	The deadbolt mechanism : The lock shall be mounted in a suitable test apparatus with means for preventing the deadbolt from moving more than 3 mm ± 1 mm from its withdrawn position. The torque shall then be applied, without shock to the follower in the bolt throwing direction. The torque is to be applied gradually, in a time of 5 s ± 2 s. The lock shall operate correctly after this test fulfilling the requirements of 5.2.2.		N
	The latch bolt action: The lock or latch shall be mounted in a suitable test apparatus with means for preventing the latch bolt from moving more than 3 mm ± 1 mm from its fully thrown position. The torque shall then be applied, without shock to the follower in the bolt withdrawing direction. The torque is to be applied gradually, in a time of 5 s ± 2 s. The lock shall operate correctly after this test fulfilling the requirements of 5.11.1.		N
6.11.3	Minimum follower restoring torque		N

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Clause	**Requirement Test**	**Result – Remark**	**Verdict**
	Using a suitable torque gauge and adapter(s), the latch bolt shall be withdrawn via the follower and allowed to return under its own spring force until the follower is within 5° of its back stop position, at which point the torque exerted by the spring force shall be measured and recorded.		N
6.12	Key identification		N
6.12.1	Detaining elements		P
	Visual check only.		P
6.12.2	Effective differs		P
	The number of effective differs shall be assessed with reference to the manufacturer's differs charts and/or to supporting documentation demonstrating the principle of calculation.		P
6.12.3	Differing step heights on key		N
	The differing step heights on keys shall be assessed with reference to the manufacturer's differs charts and/or to supporting documentation demonstrating the principle of calculation.		N
6.12.4	Non-interpassing of keys with just one interval differ		N
	Attempts shall be made to operate locks for all grades, with the next closest keys (i.e. those differing from the correct key by one interval up or down in any one step position), as specified by the manufacture using an applied torque on the key bow of 2,5 Nm, to establish whether interpassing can occur. For locks in class E, F, G and H, this test shall be conducted after durability test 6.3.2. （Not applicable to cylinder locks.）		N
6.12.5	Coding protection		P
	Check in accordance with 5.12.5, based on manufacturer’s information.		P
7	Marking		P

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Clause	**Requirement Test**	**Result – Remark**	**Verdict**
	a) manufacturer's name or trademark or other means of positive identification;		P
	b) clear product identification;		P
	c) classification according to clause 4 of this European Standard;		P
	d) number and year of this European Standard.		P
8	Evaluation of conformity		P
8.1	Initial type test		P
	For CE marking purposes only 6.1.2, 6.2.1, 6.3.1 and 6.4.2 and where relevant, requirements of annex A, shall be tested by certification body.		P
8.2	Factory production control		P
8.2.1	Documentation		P
	required product characteristics，production control system to be checked.		N
8.2.1.2	a) the preparation of documented procedures and instructions relating to factory production control operations;		N
	b) the effective implementation of these procedures and instructions;		N
	c) the recording of these procedures and their results;		N
	d) the use of these results to correct any deviations, repair the effects of such deviations, treat any resulting instances of non-conformity and, if necessary, revise the factory production control to rectify the cause of non-conformity.		P
8.2.2	Unit checks during manufacture		P
	a) check that the components meet the specifications;		P
	b) check the operation of the various mechanisms;		P
	c) check the marking.		P
8.2.3	Treatment of non-conforming parts		P
	a) isolate and identify non-conforming parts;		P

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Clause	**Requirement Test**	**Result – Remark**	**Verdict**
	b) undertake the necessary corrective actions;		P
	c) repeat tests as appropriate to prove that the product meets the specifications.		P
8.3	Further testing of samples		P
	At intervals of not more than six months, samples taken from finished product stock, selected in accordance with annex C, and representative of the series, shall be subjected to the full sequence of tests described in clause 6.		N
Annex A	Fire resistance requirement		P
	Products representative of their type shall have been subjected to a successful fire test from both sides, according to EN 1634-1, to prove the effect of the product on the fire resistance of the complete door assembly.		P
Annex B	Illustration of test apparatus for locks and latches		N
	Illustrations show typical examples of lock test-rig construction or design.		N
Annex C	Test sampling and sequencing for locks and latches		P
C.1	Visual check on documentation		P
C.2	Test sequence for locks, latches and locking plates		P
	As an example for locks and latches, between six and twelve test samples, depending on type, can be subjected to a sequence of tests as shown in Table C.1.		P
	As an example for locks and latches, between six and twelve test samples, depending on type, can be subjected to a sequence of tests as shown in Table C.1.		P
Annex D	Field of door application		P

Attachment – A
Photo Documentation

Photo 1
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[√] Overview

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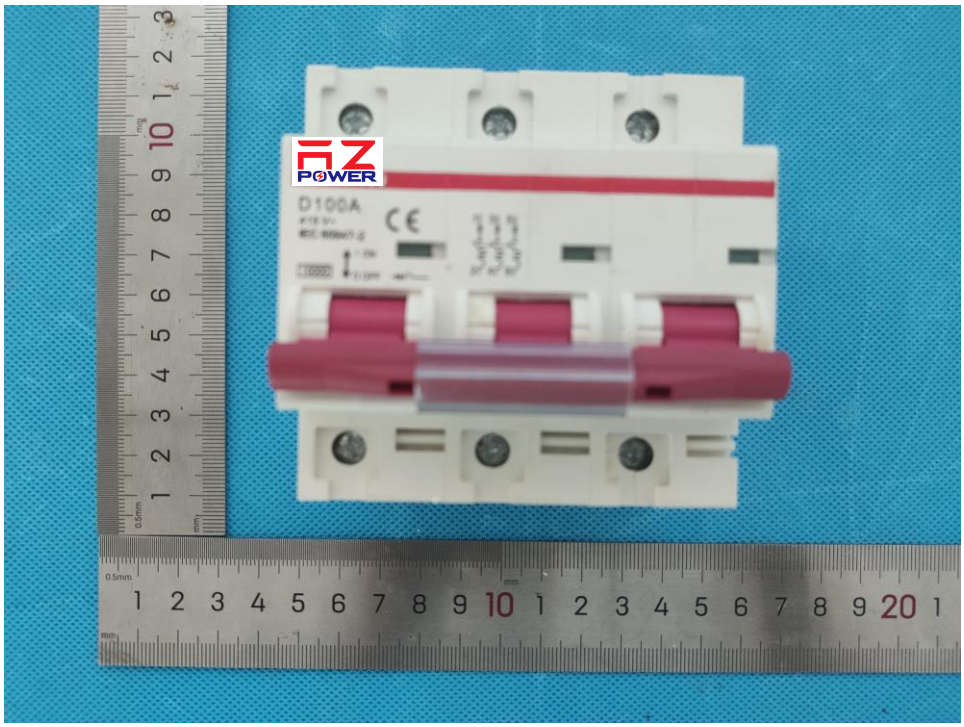

Photo 2
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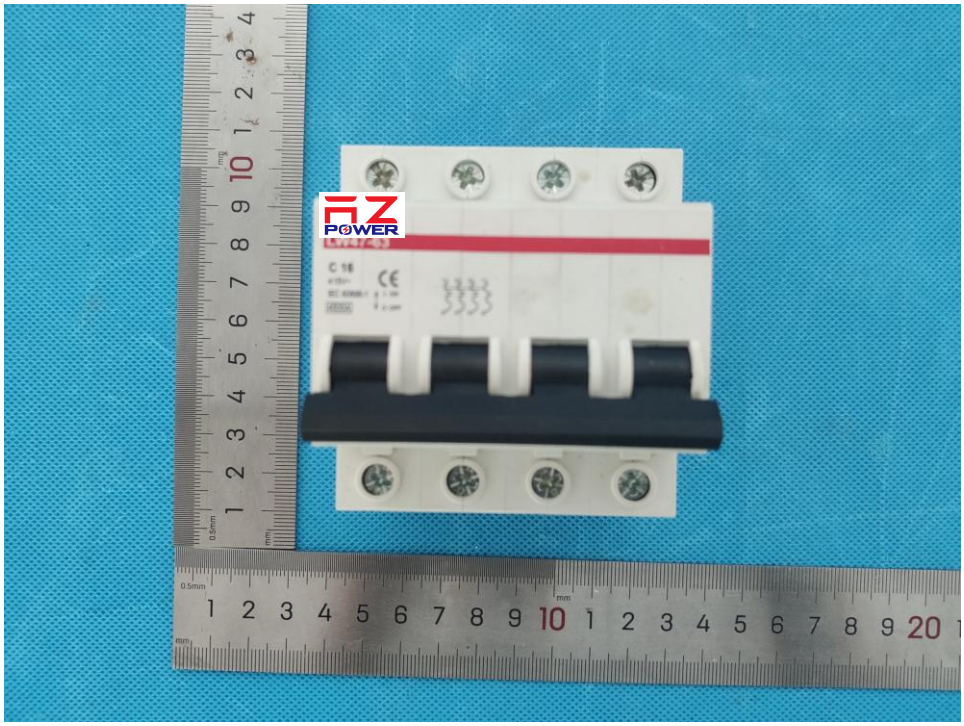

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Photo 3
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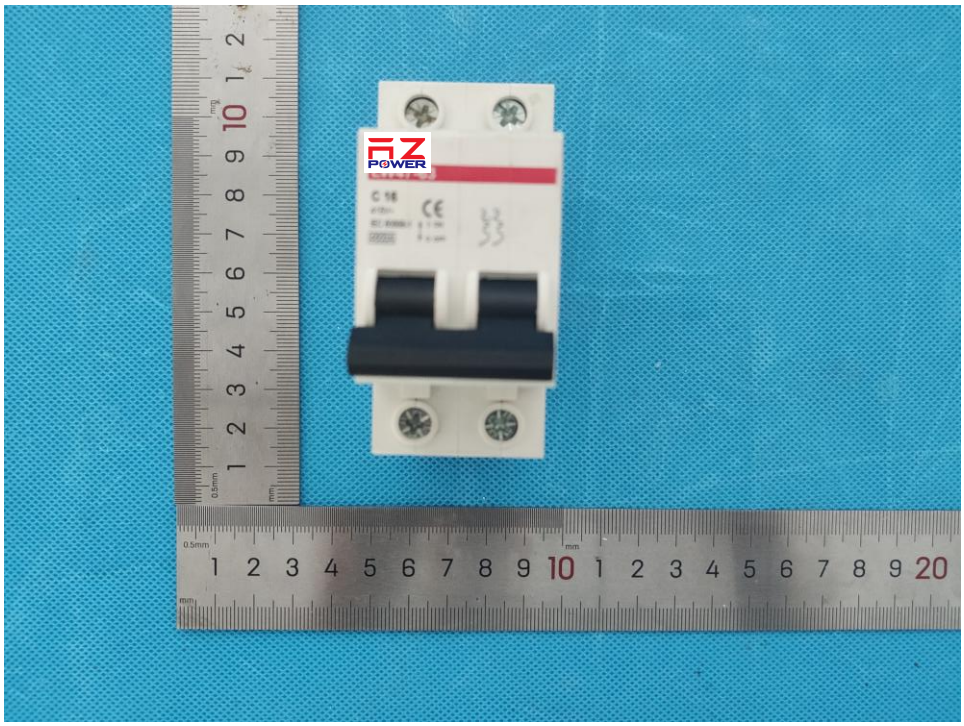

Photo 4
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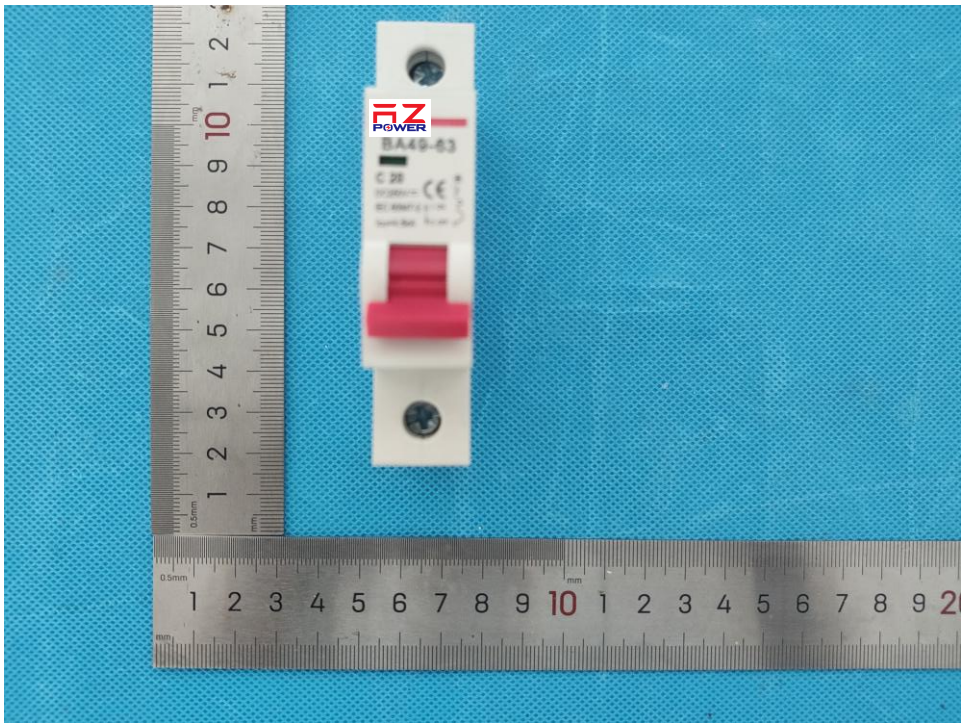

Photo 5
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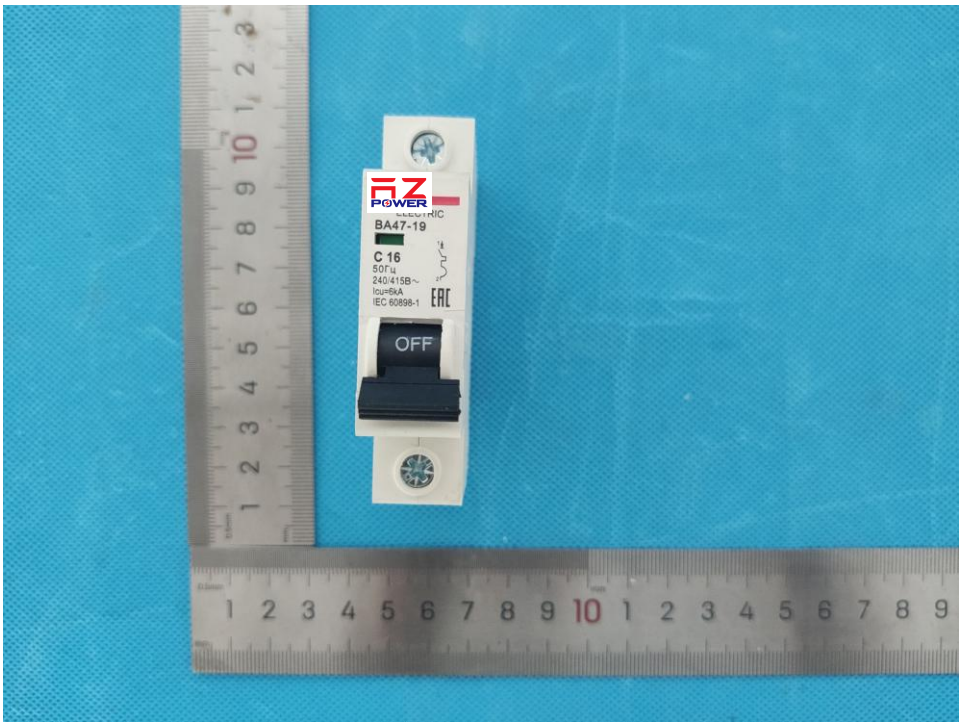

Photo 6
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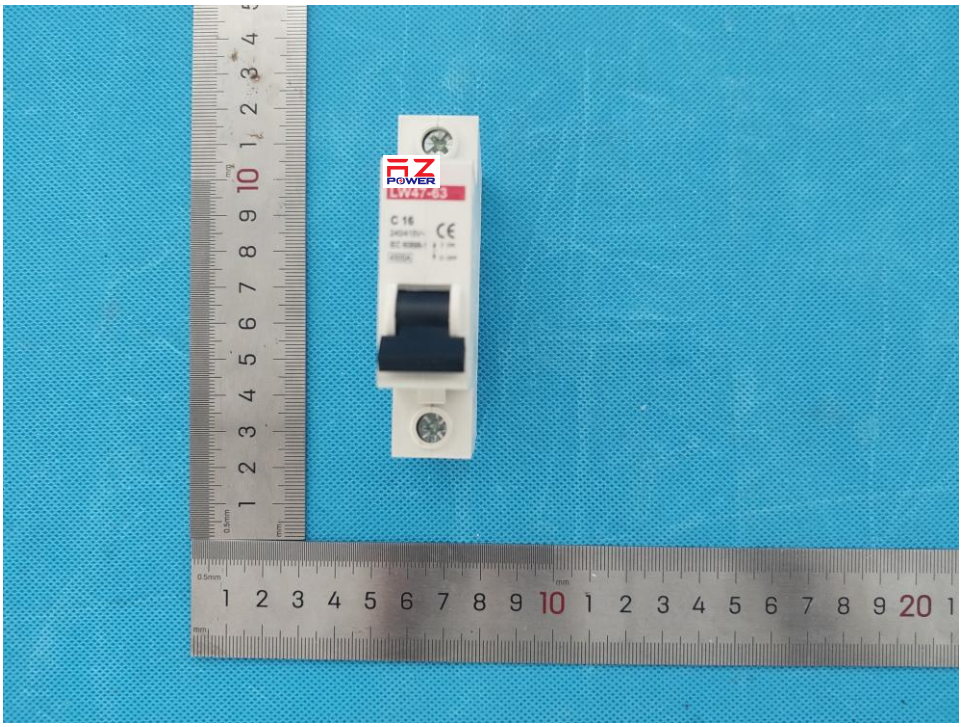

Photo 7
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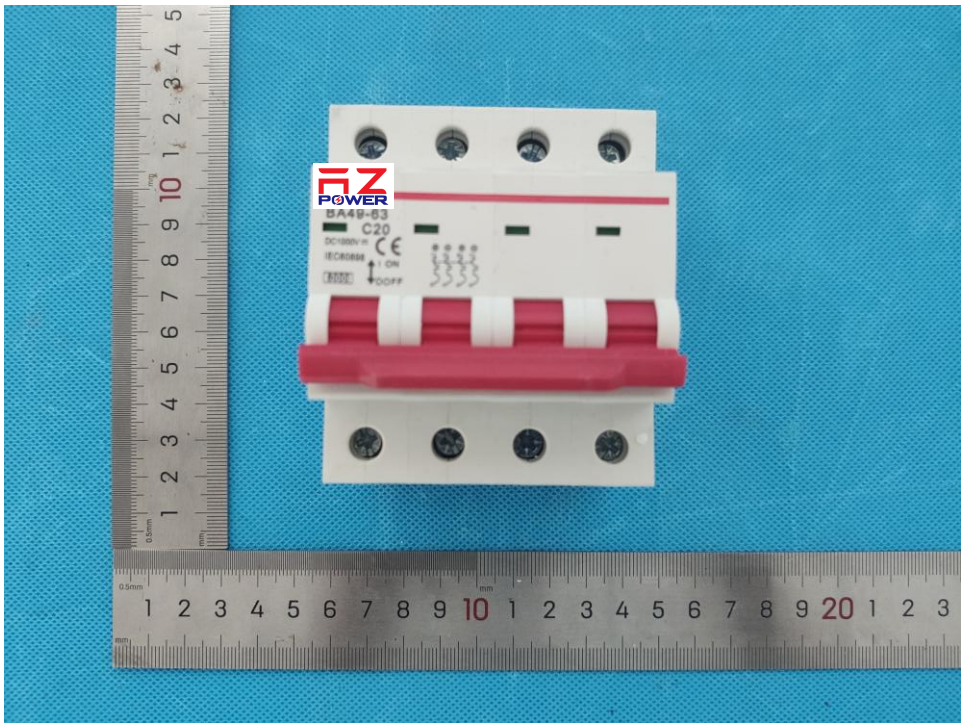

Photo 8
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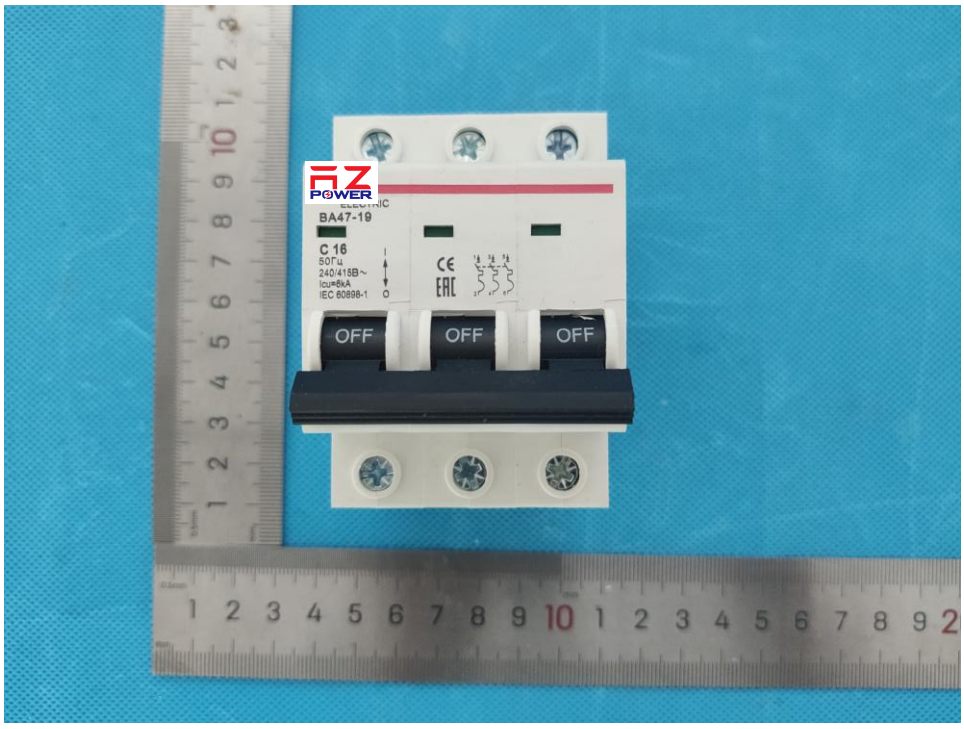

Photo 9
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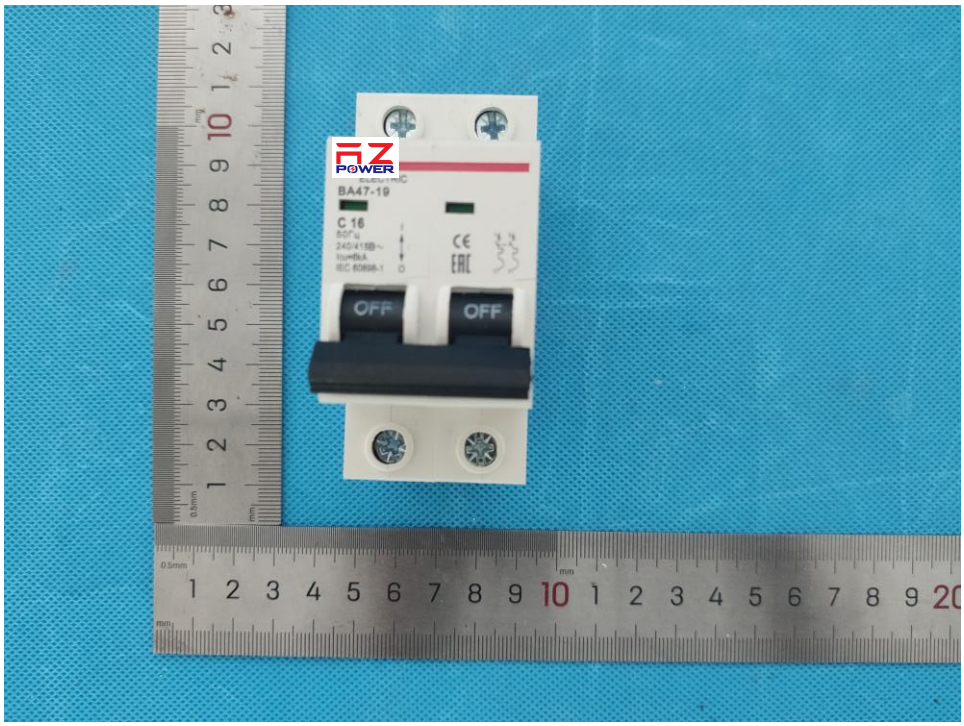

Photo 10
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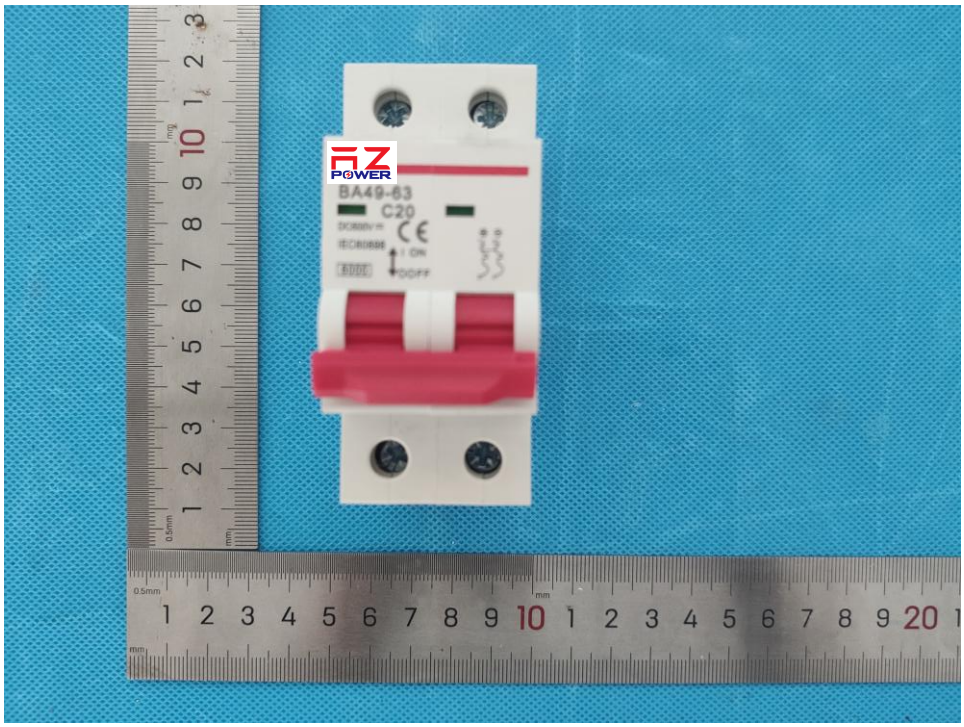

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Photo 11
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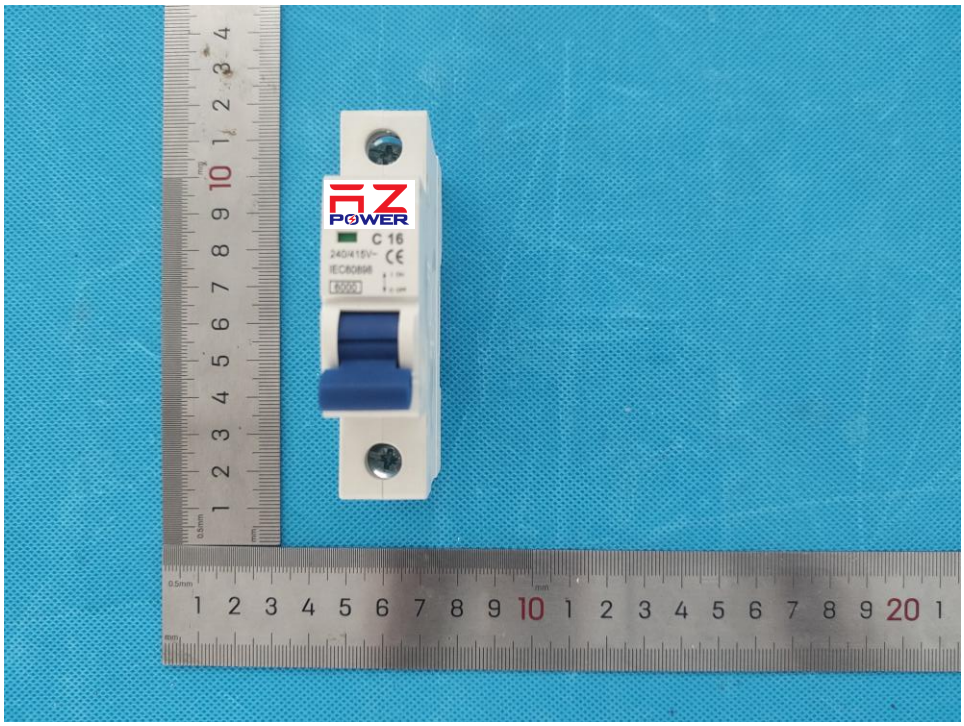

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