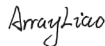



TEST REPORT IEC 60669-2-1 Switches for household and similar fixed electrical installations – Part 2-1: Particular requirements – Electronic control devices	
Report Number.	220125218GZU-001
Date of issue	15 Apr, 2022
Total number of pages	100
Name of Testing Laboratory preparing the Report	Intertek Testing Services Shenzhen Ltd. Guangzhou Branch
Applicant's name	ABB LV Installation Materials Co., Ltd. Beijing
Address	No.17 Kangding Street, Beijing Economic-Technological Development Area 100176, P.R. China
Test specification:	
Standard	IEC 60669-2-1:2021 used in conjunction with IEC 60669-1:2017
Test procedure	Test report
Non-standard test method	N/A
TRF template used	IECEE OD-2020-F1:2020, Ed.1.3
Test Report Form No.	IEC60669_2_1J
Test Report Form(s) Originator	IMQ S.p.A.
Master TRF	Dated 2021-06-24
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General disclaimer: 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 NCB. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.	

Test item description	1) Rotary Dimmer 2) Fan regulator		
Trade Mark(s).....	ABB		
Manufacturer	Same as applicant		
Model/Type reference	1) BL412, BL412-PG, BL412-G, BL412-885 2) BL422, BL422-PG, BL422-G, BL422-885		
Ratings	1) 25-500VA for incandescent lamps load, 220-250V~ 50/60Hz 2) 500-25VA for fan load, 220-250V~ 50/60Hz		
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):			
<input checked="" type="checkbox"/>	Testing Laboratory:	Intertek Testing Services Shenzhen Ltd. Guangzhou Branch	
Testing location/ address.....		Room 02, & 101/E201/E301/E401/E501/E601/E701/E801 of Room 01 1-8/F., No. 7-2. Caipin Road, Science City, GETDD, Guangzhou, Guangdong, China	
Tested by (name, function, signature)		Array Liao Engineer	
Approved by (name, function, signature)...		Hunter Chu Reviewer	
<input type="checkbox"/>	Testing procedure: CTF Stage 1:	N/A	
Testing location/ address.....			
Tested by (name, function, signature)			
Approved by (name, function, signature)...			
<input type="checkbox"/>	Testing procedure: CTF Stage 2:	N/A	
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:	N/A
<input type="checkbox"/>	Testing procedure: CTF Stage 4:	N/A
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):

N/A

Summary of testing:

The submitted samples were tested and found to compliance with requirements of IEC 60669-2-1:2021 and IEC 60669-1:2017 except EMC requirements of clause 26.

Tests performed (name of test and test clause):

Model BL412 is selected as representative for full tests.
Model BL422 subject to test clause 18, 19.
Other model subject to construction check.
Clause 26 EMC requirements were not evaluated in this report.

Testing location:

Intertek Testing Services Shenzhen Ltd.
Guangzhou Branch
Room 02, &
101/E201/E301/E401/E501/E601/E701/E801 of
Room 01 1-8/F., No. 7-2. Caipin Road, Science
City, GETDD, Guangzhou, Guangdong, China

Summary of compliance with National Differences (List of countries addressed):

N/A

☐ The product fulfils the requirements of _____ (insert standard number and edition and delete the text in parenthesis, leave it blank or delete the whole sentence, if not applicable)

Statement concerning the uncertainty of the measurement systems used for the tests

(may be required by the product standard or client)

☒ **Internal procedure used for type testing through which traceability of the measuring uncertainty has been established:**

Procedure number, issue date and title:

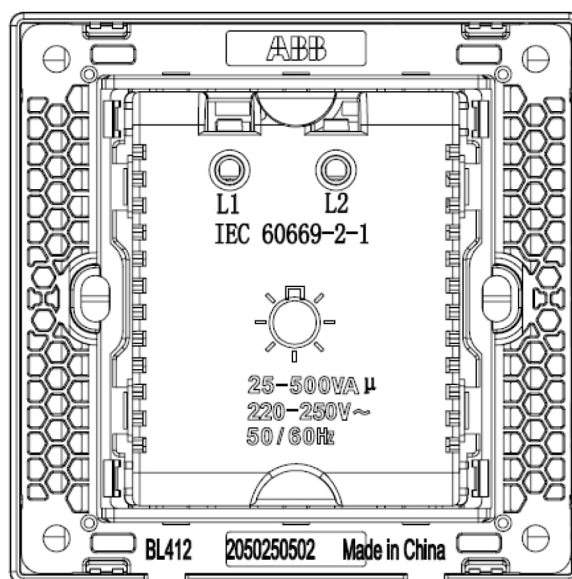
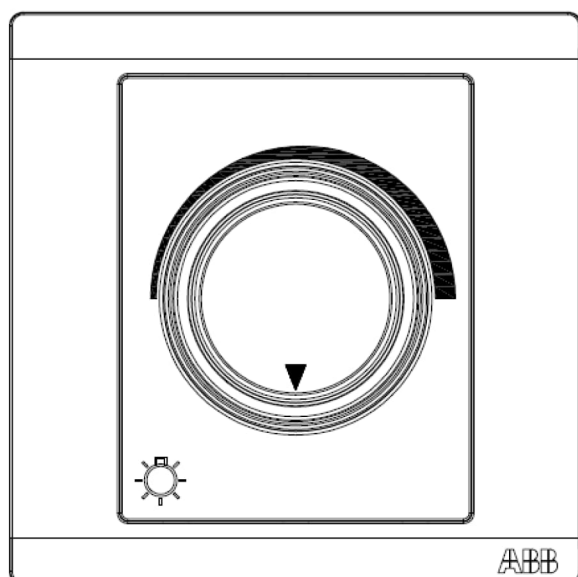
Calculations leading to the reported values are on file with the NCB and testing laboratory that conducted the testing.

☐ **Statement not required by the standard used for type testing**

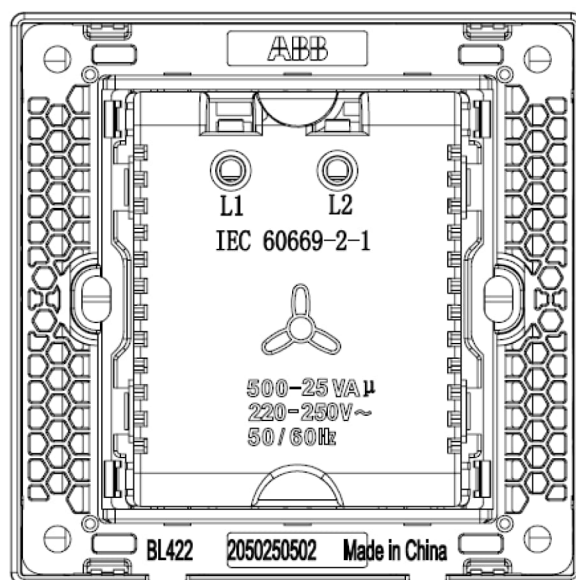
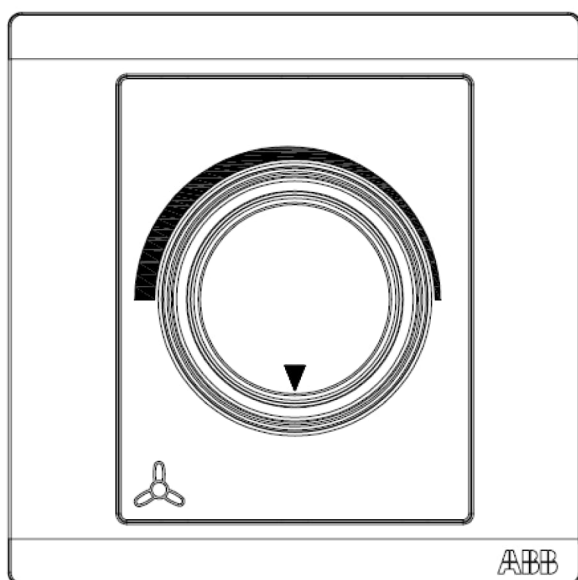
(Note: When IEC or ISO standard requires a statement concerning the uncertainty of the measurement systems used for tests, this should be reported above. The informative text in parenthesis should be delete in both cases after selecting the applicable option)

Copy of marking plate:

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.



Marking of model BL412



Marking of model BL422

Remark: Marking of other models are the same except the model name.

Test item particulars	1) Rotary dimmer, 2) Fan regulator	
Type of electronic switch and its function (examples given in Annex AA)	1) Rotary dimmer for incandescent lamps 2) Fan regulator for fans	
Pattern number	1	
Contact opening (gap) and switch performance	<input type="checkbox"/> normal gap / <input type="checkbox"/> mini-gap / <input checked="" type="checkbox"/> micro-gap / <input type="checkbox"/> without contact gap (semiconductor switching device)	
Degree of protection against access to hazardous parts and against harmful effects due to the ingress of solid foreign objects as described in IEC 60529.: IP2X Degree of protection against harmful effects due to the ingress of water as described in IEC 60529.....: IPX0		
Method of actuating the switch:	<input checked="" type="checkbox"/> rotary <input type="checkbox"/> touch <input type="checkbox"/> tumbler <input type="checkbox"/> proximity <input type="checkbox"/> rocker <input type="checkbox"/> optical <input type="checkbox"/> push-button <input type="checkbox"/> acoustic <input type="checkbox"/> cord-operated <input type="checkbox"/> other external influences:	
Method of mounting	<input type="checkbox"/> surface-type <input type="checkbox"/> architrave-type. <input checked="" type="checkbox"/> flush-type <input type="checkbox"/> to be mounted at a height greater than 1,7 m. <input type="checkbox"/> semi flush-type <input type="checkbox"/> panel-type	
Method of installation	<input checked="" type="checkbox"/> design A <input type="checkbox"/> design B	
Type of terminals	<input checked="" type="checkbox"/> screw-type <input type="checkbox"/> screwless-type <input type="checkbox"/> for rigid conductors only <input type="checkbox"/> for rigid and flexible conductors <input type="checkbox"/> electronic control devices without terminals equipped with connecting leads.	
Flexible cable outlet	<input checked="" type="checkbox"/> without <input type="checkbox"/> with	
Rated current (A) / Rated load (VA or W)	1) 25VA-500VA, 2) 500VA-25VA	
Minimum current (A) / Minimum load (VA or W)	25VA	
Type of electronic control devices.....	<input checked="" type="checkbox"/> classified as an electronic switch <input type="checkbox"/> classified as an HBES/BACS switch <input type="checkbox"/> classified as an electronic extension unit	
kind of load controlled by the electronic switch or HBES/BACS switch:	<input type="checkbox"/> for general purpose use according to Part 1 up to and including 16 A <input checked="" type="checkbox"/> incandescent lamps for model BL412 series <input type="checkbox"/> externally ballasted light sources (fluorescent lamps, CFL, LED lamps, LED modules) <input type="checkbox"/> motors <input type="checkbox"/> self-ballasted lamps (CFLi, LEDi) <input type="checkbox"/> load for heating installations <input checked="" type="checkbox"/> declared load: Fan for model BL422 series	

Test item particulars : 1) Rotary dimmer, 2) Fan regulator	
Presence of SELV, PELV or FELV parts in the electronic control devices	<input type="checkbox"/> with SELV, PELV or FELV parts only <input checked="" type="checkbox"/> without SELV, PELV or FELV parts <input type="checkbox"/> having a combination of parts connected to the mains and SELV, PELV or FELV parts.
Electronic control devices installation environment:	N/A
Kind of connection to the network port based on SELV/PELV	N/A
Kind of energization of the control circuit	N/A
Type of control mechanism	mechanical
Rated voltage (V)	220-250V~
Rated frequency (Hz)	50/60Hz
Characteristic of fuses	T
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 : 20 Feb, 2022	
Date (s) of performance of tests : 20 Feb, 2022 to 25 Mar, 2022	
General remarks:	
<p>"(See Enclosure #)" refers to additional information appended to the report.</p> <p>"(See appended table)" refers to a table appended to the report.</p> <p>Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.</p> <p>When determining of test conclusion, measurement uncertainty of test has been considered.</p> <p>This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to permit copying or distribution of this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.</p> <p>The test report only allows to be revised only within the report defined retention period unless standard or regulation was withdrawn or invalid.</p>	
Manufacturer's Declaration per sub-clause 4.2.5 of IECIE 02:	

Test item particulars : 1) Rotary dimmer, 2) Fan regulator	
<p>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</p>	<p><input type="checkbox"/> Yes</p> <p><input checked="" type="checkbox"/> Not applicable</p>
When differences exist; they shall be identified in the General product information section.	
<p>Name and address of factory (ies).....: Zhejiang Tao's Electric Co., Ltd. No.458, Jinhai 2nd Avenue, Jinhai Economic and Technical Development Zone, Wenzhou, China</p>	

General product information and other remarks:			
<p>These products are electronic switch intended for household and similar fixed electrical installations. They are with screw type terminal.</p> <p>Model BL412 has similar construction with BL422. The difference is the load controlled by the electronic switch. Model BL412 is rotary dimmer for incandescent lamps with rating 25-500VA, 220-250V~ while Model BL422 is Fan regulator for fans with rating 500-25VA, 220-250V~.</p> <p>Detail model difference see below table:</p>			
Item	Model	Description	Color
1	BL412	Rotary dimmer	White
2	BL412-PG	Rotary Dimmer	Royal gold
3	BL412-885	Rotary Dimmer	Starry black
4	BL412-G	Rotary Dimmer	Classic grey
5	BL422	Fan regulator	White
6	BL422-PG	Fan regulator	Royal gold
7	BL422-885	Fan regulator	Starry black
8	BL422-G	Fan regulator	Classic grey