สถาบันไฟฟ้าและอิเล็กทรอนิกส์
ELECTRICAL AND ELECTRONICS INSTITUTE

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FOUNDATION FOR INDUSTRIAL DEVELOPMENT

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NSC-TISI-TIS 17025
TESTING 0063

TEST REPORT

Report No.	L0600(E)/63
Operation No.	TC2020090031
Name and address of customer	LEEWATTANA PRODUCTS CO.,LTD. 110,112 PHANITCHAYAKARN THONBURI Rd., WATTHAPRA, BANGKOKYAI, BANGKOK 10600
Sample description	Sample was submitted and identified by/on behalf of the customer as following: Wall-Mounting Enclosure Model : CA 1212 1 set
Sample No.	TC2020090031
Sample characteristic and condition	Normal
Sample received date	September 14, 2020
Test date	September 21, 2020 – September 22, 2020
Issue date	September 23, 2020
Test standard	TIS. 513-2553 (IP54)
Test report	Details of the test report as shown on the following pages.

Summary of testing

The test results comply with standard.

Tested by (name + signature)	Mr. Nopparat Charoen	
Approved by (name + signature)	Mr. Rachen Muongon	
Certified by (name, function + signature)	Mr. Arthit Wussanamongkol Division manager, Operation division 1	สถาบันไฟฟ้าและอิเล็กทรอนิกส์ ELECTRICAL AND ELECTRONICS INSTITUTE

Sample photo

Possible test case verdicts :

P : test object does meet the requirement

F : test object does not meet the requirement

N : test case does not apply to the test object

Product description

Product name ..... : Wall-Mounting Enclosure

Model ..... : CA 1212

Clause	Requirement – Test	Remark	Result
1	SCOPE AND OBJECT		-
2	NORMATIVE REFERENCES		-
3	DEFINITIONS		-
4	DESIGNATIONS		-
5	DEGREES OF PROTECTION AGAINST ACCESS TO HAZARDOUS PARTS AND AGAINST SOLID FOREIGN OBJECTS INDICATED BY THE FIRST CHARACTERISTIC NUMERAL		-
6	DEGREES OF PROTECTION AGAINST INGRESS OF WATER INDICATED BY THE SECOND CHARACTERISTIC NUMERAL		-
7	DEGREES OF PROTECTION AGAINST ACCESS TO HAZARDOUS PARTS INDICATED BY THE ADDITIONAL LETTER		-
8	SUPPLEMENTARY LETTERS		-
9	EXAMPLES OF DESIGNATIONS WITH THE IP CODE		-
10	MARKING		-
11	GENERAL REQUIREMENTS FOR TESTS		-
12	TESTS FOR PROTECTION AGAINST ACCESS TO HAZARDOUS PARTS INDICATED BY THE FIRST CHARACTERISTIC NUMERAL		P
12.1	Access probes		P
12.2	Test conditions		P
	Access probe pushed against or inserted through any openings of the enclosure with a test force as specified in Table 6		-
	Access probe	1.0 mm (Ø) x 100 mm wire	-
	Test force	1 N	-
12.3	Acceptance conditions		P
	Adequate clearance was kept between the access probe and hazardous parts		-

Clause	Requirement – Test	Remark	Result
12.3.1	For low voltage equipment (rated voltages not exceeding 1000 Va.c. and 1500 Vd.c)		N
	The access probe did not touch hazardous live parts		-
12.3.2	For high voltage equipment (rated voltages exceeding 1000 Va.c. and 1500 Vd.c.)		N
12.3.3	For equipment with hazardous mechanical parts		P
	Access probe did not touch hazardous mechanical parts		-
13.	TESTS FOR PROTECTION AGAINST SOLID FOREIGN OBJECTS INDICATED BY THE FIRST CHARACTERISTIC NUMERAL		P
13.1	Test means		P
13.2	Test conditions for first characteristic numerals 1, 2, 3, 4		N
	Object probe pushed against any openings of the enclosure with a test force as specified in Table 7		-
	Object probe	1.0 mm (Ø) wire	-
	Test force	1 N	-
13.3	Acceptance conditions for first characteristic numerals 1, 2, 3, 4		N
	Full diameter of the object probe did not pass through any opening		-
13.4	Dust test for first characteristic numerals 5 and 6		P
	Category	2	-
	Duration	8 h	-
	The test is made using a dust chamber incorporating the basic principles show in figure 2 of IEC 60529:2001 whereby the powder circulation pump may be replaced by other means suitable to maintain the talcum powder in suspension in a closed test chamber. The talcum powder used shall be able to pass through a square-meshed sieve the nominal wire diameter of which is 50 µm and the nominal width of a gap between wires 75 µm. The amount of talcum powder to be used is 2 kg per cubic metre of the test chamber volume.		-
13.5	Special conditions for first characteristic numeral 5		P
13.5.1	Test conditions for first characteristic numeral 5		P

Clause	Requirement – Test	Remark	Result
13.5.2	Acceptance conditions for first characteristic numeral 5		P
	No deposit of dust was observable inside the any of the enclosures		-
13.6	Special conditions for first characteristic numeral 6		N
14	TESTS FOR PROTECTION AGAINST WATER INDICATED BY THE SECOND CHARACTERISTIC NUMERAL		P
14.1	Test means		P
14.2	Test conditions		P
	Test item temperature during test	Within ± 5°C of water temperature	-
14.2.1	Test for second characteristic numeral 1 with the drip box		N
14.2.2	Test for second characteristic numeral 2 with the drip box		N
14.2.3	Test for second characteristic numeral 3 with the oscillating tube or spray nozzle		N
14.2.4	Test for second characteristic numeral 4 with the oscillating tube or spray nozzle		P
	Test means	Oscillating tube	-
	Water flow rate	1.8 l/min	-
	Test duration	10 min	-
14.2.5	Test for second characteristic numeral 5 with the 6.3 mm spray nozzle		N
14.2.6	Test for second characteristic numeral 6 with the 12.5 mm spray nozzle		N
14.2.7	Test for second characteristic numeral 7: temporary immersion between 0.15 m and 1 m		N
14.2.8	Test for second characteristic numeral 8: continuous immersion subject to agreement		N
14.3	Acceptance condition		P
	No water was found inside any of the enclosures		-
15.	TESTS FOR PROTECTION AGAINST ACCESS TO HAZARDOUS PARTS INDICATED BY THE ADDITIONAL LETTER		N

Attached photo

Photo No.1 : Front View

Photo No.2 : Back View

Attached photo

Photo No.3 : Side View

Photo No.4 : IP5X Dust test

Attached photo

Photo No.5 : IPX4 Water test

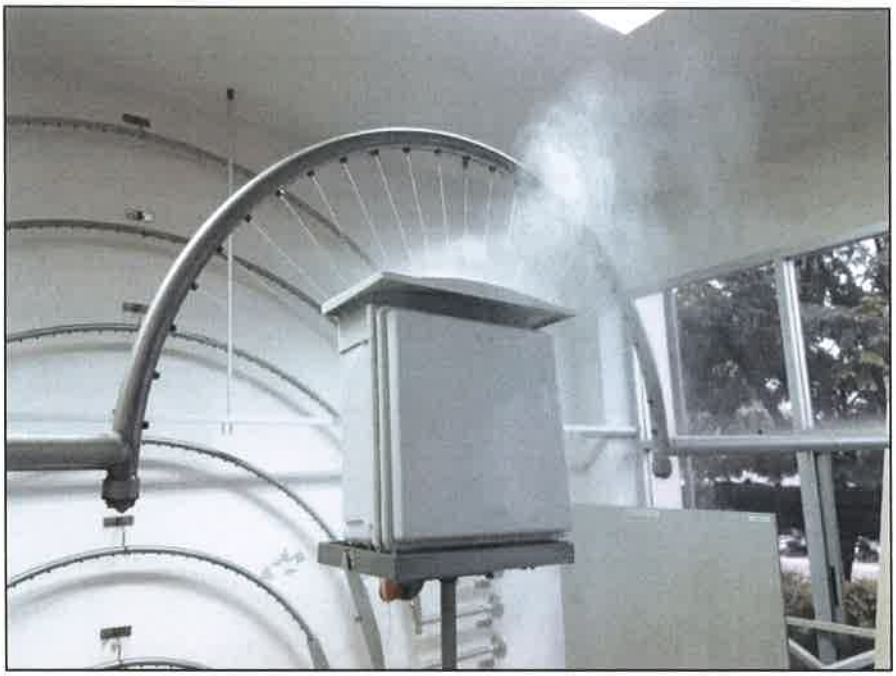
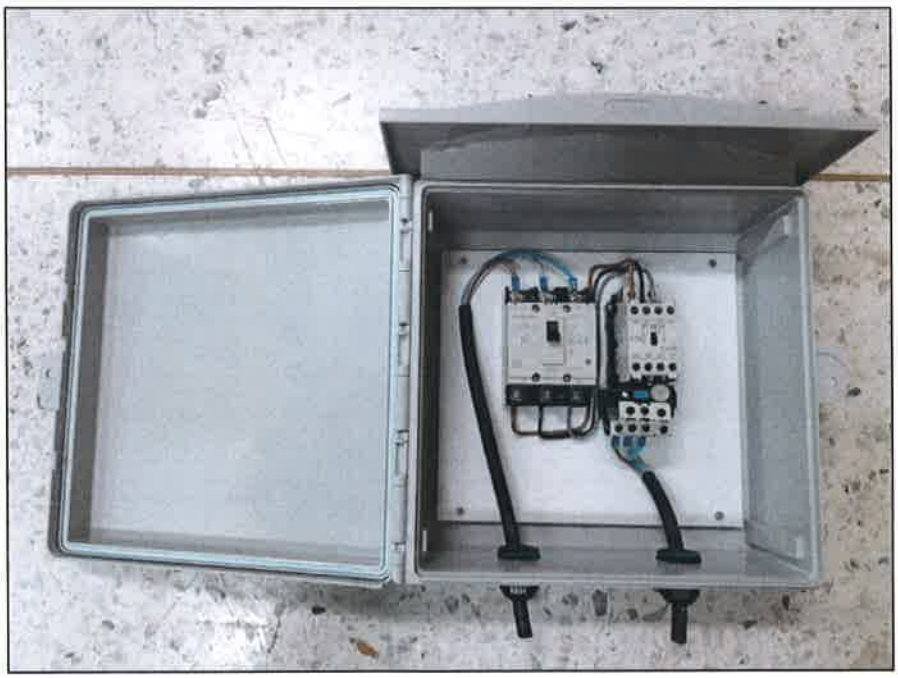


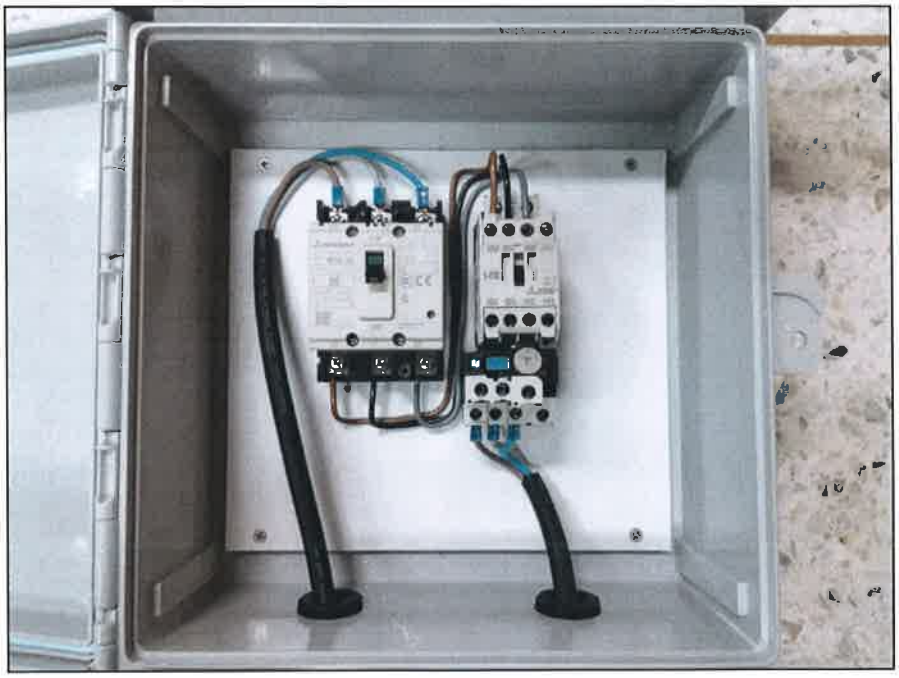
Photo No.6 : After test



Attached photo

Photo No.7 : After test

Photo No.8 : After test



Attached photo

Photo No.9 : After test

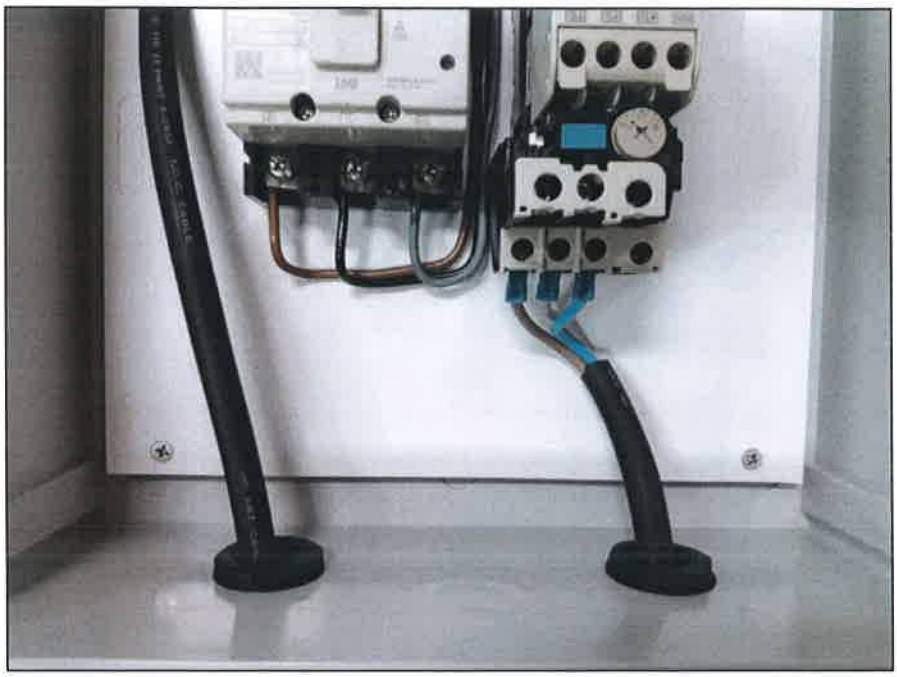
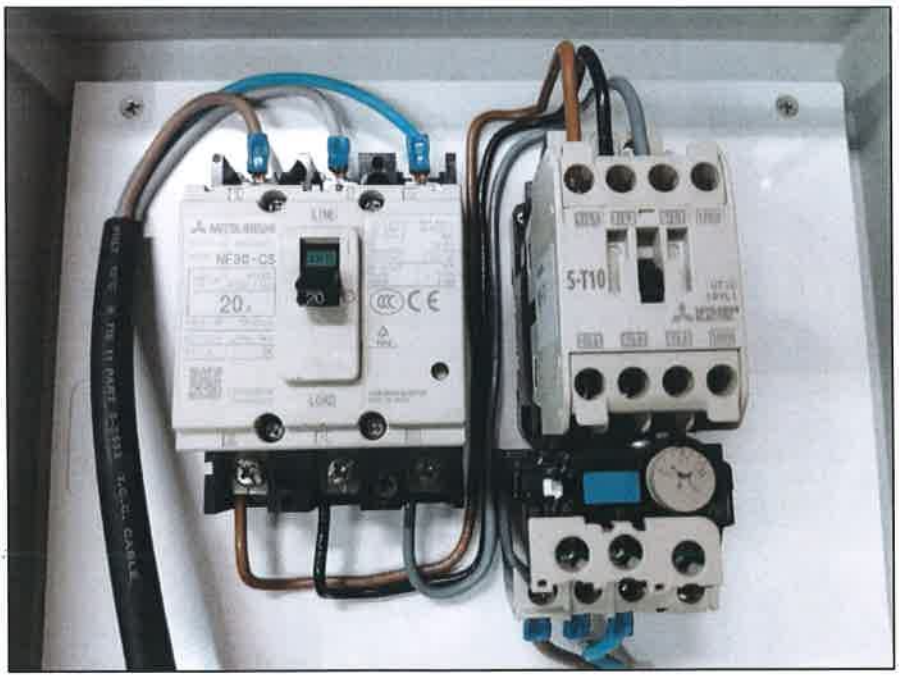


Photo No.10 : After test



- End of report -