



IP68 HIGH PERFORMANCE WATERPROOF ENCLOSURE

IP68 TEST CERTIFICATE

Test certification: Remark

1. This certificate is the IP68 test certificate for model WG23-25-11W.

Since the largest size enclosure, WG23-25-11W has passed the IP68 test, we consider that the test results shall apply to all other models in the WG series.

2. The waterproof performance will be lost by drilling/milling holes or cutouts for buttons or switches on the enclosures.

Please note that this certificate is only applicable to standard enclosures as-is without any customization, and does not apply to enclosures which have been drilled/milled, or from the installation of connectors/switches and other components.

3. This certificate should be shown, used, or reference to, in its entirety, and is not to be done so in a partial format.

If you wish to upload this certificate on your website, please contact our R&D department stating the reasons for intended usage.

(Unauthorized uploading or partial reproduction, such as on a website, or in other mediums such as print, is strictly prohibited.)

April 15, 2024

TAKACHI ELECTRONICS ENCLOSURE CO., LTD.

R&D department

E-mail : sales@takachi-el.co.jp

TEST CERTIFICATE

We, hereby, verify that the under mentioned electrical product submitted to test at our laboratory dated February 27,2024 (Reception No. D23Y0469) is in compliance with the requirement of the test standard to be applied, as shown in the attached TEST REPORT (Ref. No. 23TR-Y1090)

Applicant (name & address): TAKACHI ELECTRONICS ENCLOSURE CO., LTD.

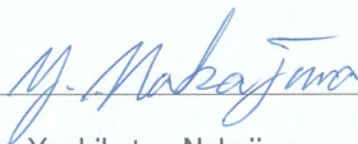
3-21-16, HIGASHI-RYOKE, KAWAGUCHI-SHI, SAITAMA,
JAPAN(332-0003)

Name of product: IP68 HIGH PERFORMANCE WATERPROOF ENCLOSURE

Model/Type Ref.: WG23-25-11W

Rating and principal characteristics: -

Date of issue: March 28,2024



Yoshikatsu Nakajima
Director, Yokohama Laboratories
Japan Electrical Safety &
Environment
Technology Laboratories (JET)

TEST REPORT

Report reference No. 23TR-Y1090

Date & No. of reception February 27, 2024 (D23Y0469)

Applicant (Name&address)

TAKACHI ELECTRONICS ENCLOSURE CO., LTD.

3-21-16, HIGASHI-RYOKE, KAWAGUCHI-SHI, SAITAMA,
JAPAN (332-0003)

Name of product IP68 HIGH PERFORMANCE WATERPROOF ENCLOSURE

Model/type Ref. WG23-25-11W

Rating and principal characteristics

-

Test Standard

JISC0920:2003

Degrees of protection provided by enclosures
(IP Code) are followings:

- Test for first characteristic numeral 6
- Test for second characteristic numeral 8
(Immersion:1m, Duration:24h)

Test Result

Pass

Date of issue

March 28, 2024



Yoshikatsu Nakajima

Director, Yokohama Laboratory

Japan Electrical Safety & Environment
Technology Laboratories (JET)

Testing laboratory

Japan Electrical Safety & Environment Technology Laboratories

- ☐ JET Tokyo Laboratory
5-14-12 Yoyogi, Shibuya-ku, Tokyo, 151-8545, Japan
- ☒ JET Yokohama Laboratory
1-12-30 Motomiya, Tsurumi-ku, Yokohama, Kanagawa, 230-0004, Japan
- ☐ JET Kansai Laboratory
4-1 Koyo-cho Nishi, Higashinada-ku, Kobe, Hyogo, 658-0033, Japan
- ☐ JET Power Technology Testing Laboratory
1-12-28 Motomiya, Tsurumi-ku, Yokohama, Kanagawa, 230-0004, Japan
- ☐ Other Location ()
Address :

Date of Sample received February 27, 2024

Date of test February 28, 2024 until March 25, 2024

Tested by (+ signature) Kazuo Hasegawa
Kazuo Hasegawa

Approved by (+ signature) Yuki Honda
Yuki Honda

Test case verdicts

N (A.) : Test case does not apply to the test object.

P (ass) : Test item does meet the requirement.

F (ail) : Test item does not meet the requirement.

— Test item not applied. (according to request from the applicant)

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 JET.

JIS C 0920 (2003)			
Clause	Requirement – Test	Result - Remark	Verdict
11	General requirements for the tests		<i>P</i>
11.1	Atmospheric conditions for water or dust tests:		—
	Temperature range: 15~35 °C	For water tests 18 °C For dust test 16 °C	—
	Relative humidity: 25~75 %	For water tests 45 % For dust test 64 %	—
	Air pressure: 86~106 kPa	For water tests 99.9 kPa For dust test 99.8 kPa	—
11.2	Test samples for each test		—
	- in a clean and new condition	New condition	—
	- the complete equipment	Complete equipment	—
	- representative parts		—
	- smaller equipment having the same full-scale design		—
	Number of samples to be tested	2sets Test for protection against solid foreign object First characteristic numeral 6 1set Test for protection against water Second characteristic numeral 8 1set	—
	Conditions for mounting, assembling and positioning of samples		—
	Pre-conditioning	None	—
	Whether to be tested energized or not	Not energized	—
	Whether to be tested with its parts in motion or not	Not in motion	—
11.3	Application of test requirements and interpretation of test results	The equipment contained no ventilation openings and no drain-holes	<i>P</i>
	Standard applied for the general requirements for tests and the acceptance conditions for equipment containing drain-holes or ventilation openings		<i>N</i>
	Standard applied for the interpretation of test results	This standard	<i>P</i>
11.4	Combination of test conditions for the first characteristic numeral: Table V applied	The first characteristic numeral: 6	<i>P</i>
11.5	Whether the enclosure to be tested is with or without equipment inside		<i>N</i>

JIS C 0920 (2003)			
Clause	Requirement – Test	Result - Remark	Verdict

12	Tests for protection against access to hazardous parts indicated by the first characteristic numeral		<i>N</i>
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13	Tests for protection against solid foreign objects indicated by the first characteristic numeral		<i>P</i>
13.1	Test means		<i>P</i>
	The test means and the main test conditions applied as in Table VII	<i>Dust chamber With underpressure</i>	<i>P</i>
13.2	Test conditions for first characteristic numerals 1, 2, 3, 4		<i>N</i>
13.3	Acceptance conditions for first characteristic numerals 1, 2, 3, 4		<i>N</i>
13.4	Dust test for characteristic numerals 5 and 6	<i>First characteristic numeral 6</i>	<i>P</i>
	Use of dust chamber in Fig. 2	<i>Fig.2(Dust chamber)</i>	<i>P</i>
13.4A	Category 1 enclosures		<i>P</i>
	- 2 hours (extraction rate: 40~60 volumes per hour)		<i>N</i>
	- until 80 volumes have been through or continued for a period of 8 hours	<i>8 hours</i>	<i>P</i>
13.4B	Category 2 enclosures		<i>N</i>
13.4C	Category 1 enclosures and Category 2 enclosures		<i>N</i>
	If it is impracticable to test the complete enclosure in the test chamber, one of the following procedures shall be applied:		<i>N</i>
13.5	Special conditions for first characteristic numeral 5		<i>N</i>
13.6	Special conditions for first characteristic numeral 6		<i>P</i>
13.6.1	Test conditions		<i>P</i>
	Category 1 applied	<i>(Refer to sub-clause 13.4A)</i>	<i>P</i>
13.6.2	Acceptance conditions		<i>P</i>
	No deposit of dust is observable inside the enclosure at the end of the test	<i>No talcum powder entered the sample</i>	<i>P</i>

14	Tests for protection against water indicated by the second characteristic numeral		<i>P</i>
14.1	Test means		<i>P</i>
	The test means and the main test conditions applied as in Table VIII	<i>The second characteristic numeral:8 Immersion tank</i>	<i>P</i>
14.2	Test conditions		<i>P</i>
	Tests performed according to sub-cl. 14.2, the test method and main test which was given in Table VIII	<i>Test conditions are given in Table VIII (Refer to sub-cl 14.2.8)</i>	<i>P</i>

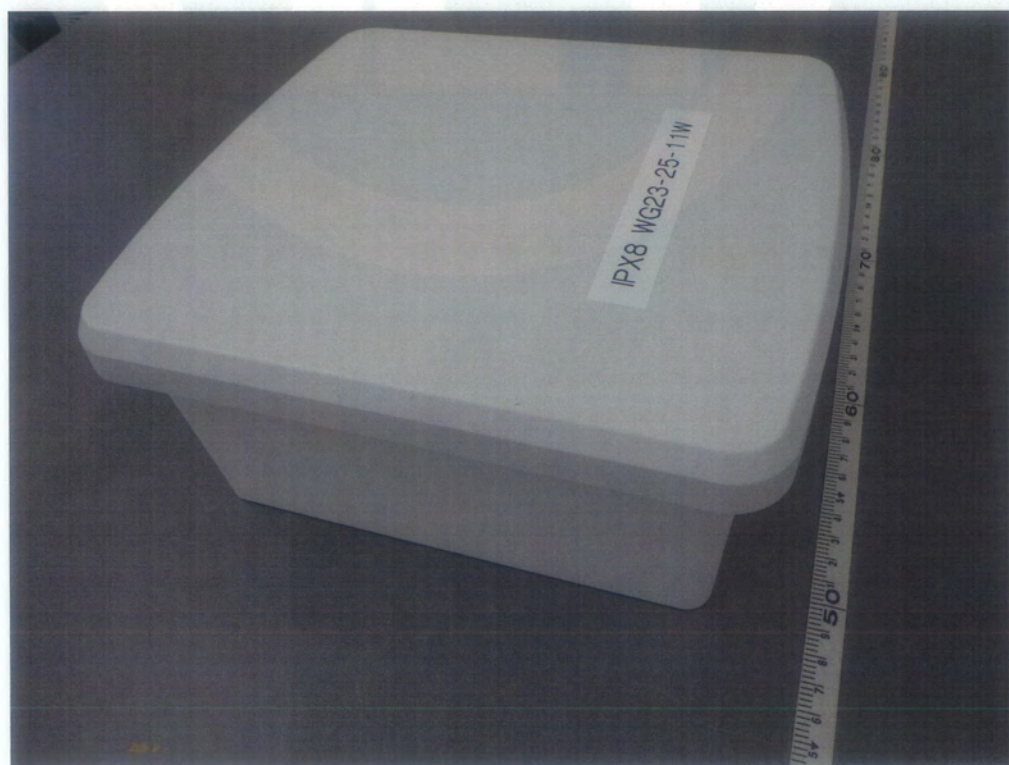
JIS C 0920 (2003)			
Clause	Requirement – Test	Result - Remark	Verdict
	Difference between water temperature and temperature of the specimen (the maximum 5 K)	<i>Test for second characteristic numeral 8</i> <i>Difference: 5 K</i> <i>Water temperature: 13 °C</i> <i>Sample temperature: 18 °C</i>	<i>P</i>
	Calculation of the enclosure surface area	<i>Not more than 1.0 m²</i>	<i>P</i>
14.2.1	Test for second characteristic numeral 1 with the drip box		<i>N</i>
14.2.2	Test for second characteristic numeral 2 with drip box		<i>N</i>
14.2.3	Test for second characteristic numeral 3 with oscillating tube or spray nozzle		<i>N</i>
14.2.4	Test for second characteristic numeral 4 with oscillating tube or spray nozzle		<i>N</i>
14.2.5	Test for second characteristic numeral 5 with 6.3 mm nozzle		<i>N</i>
14.2.6	Test for second characteristic numeral 6 with 12.5 mm nozzle		<i>N</i>
14.2.7	Test for second characteristic numeral 7: temporary immersion between 0.15 m and 1 m		<i>N</i>
14.2.8	Test for second characteristic numeral 8: continuous immersion subject to agreement		<i>P</i>
	Test condition:		<i>P</i>
	- depends on the relevant product standard		<i>N</i>
	- depends on agreement between manufacturer and user	<i>Water depth: the lowest point of the sample was 1 m below the surface of water</i> <i>Immersed term: 24 hours</i>	<i>P</i>
14.3	Acceptance conditions		<i>P</i>
	Acceptance conditions applied as specified in :		<i>P</i>
	- sub-clause 14.3	<i>sub-clause 14.3</i>	<i>P</i>
	- the relevant product standard		<i>N</i>
	Whether or not any water has entered		<i>P</i>
	If any water has entered, it is proved by inspection that any water which enters:		<i>N</i>
15	Tests for protection against access to hazardous parts indicated by the additional letter		<i>N</i>

Photo of the appliance

The external view of the test samples, for dust test

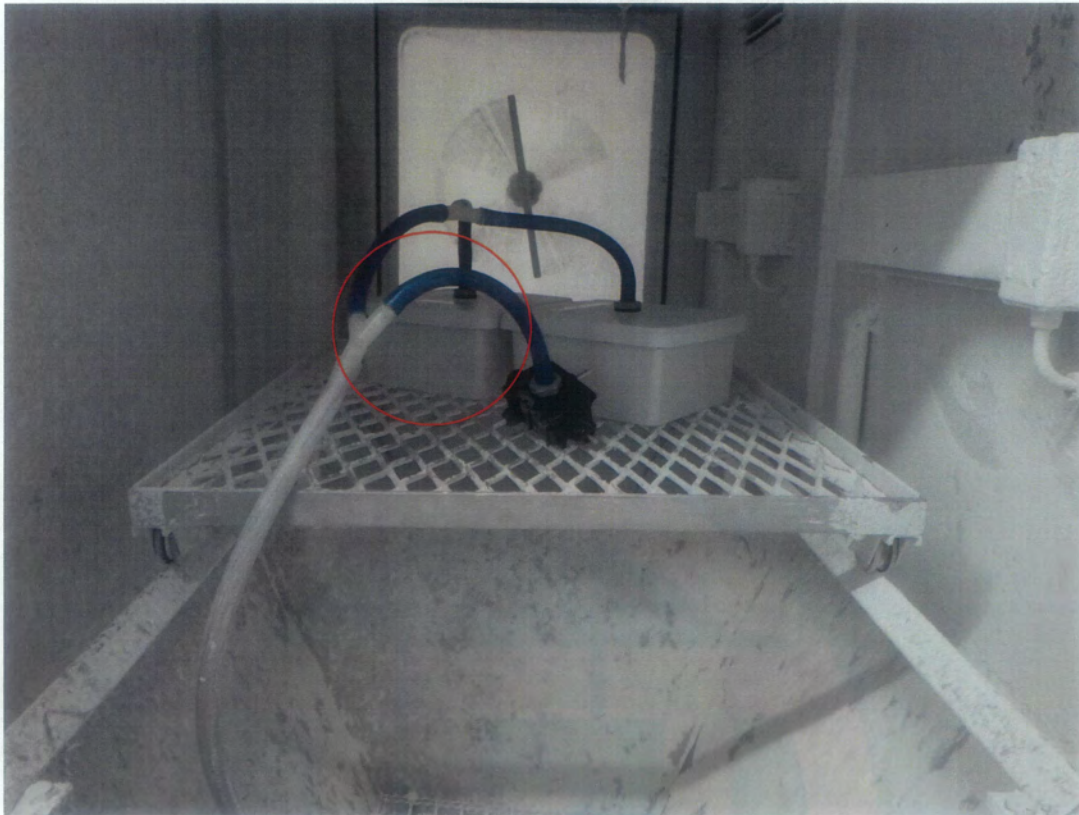


The external view of the test samples, for water test

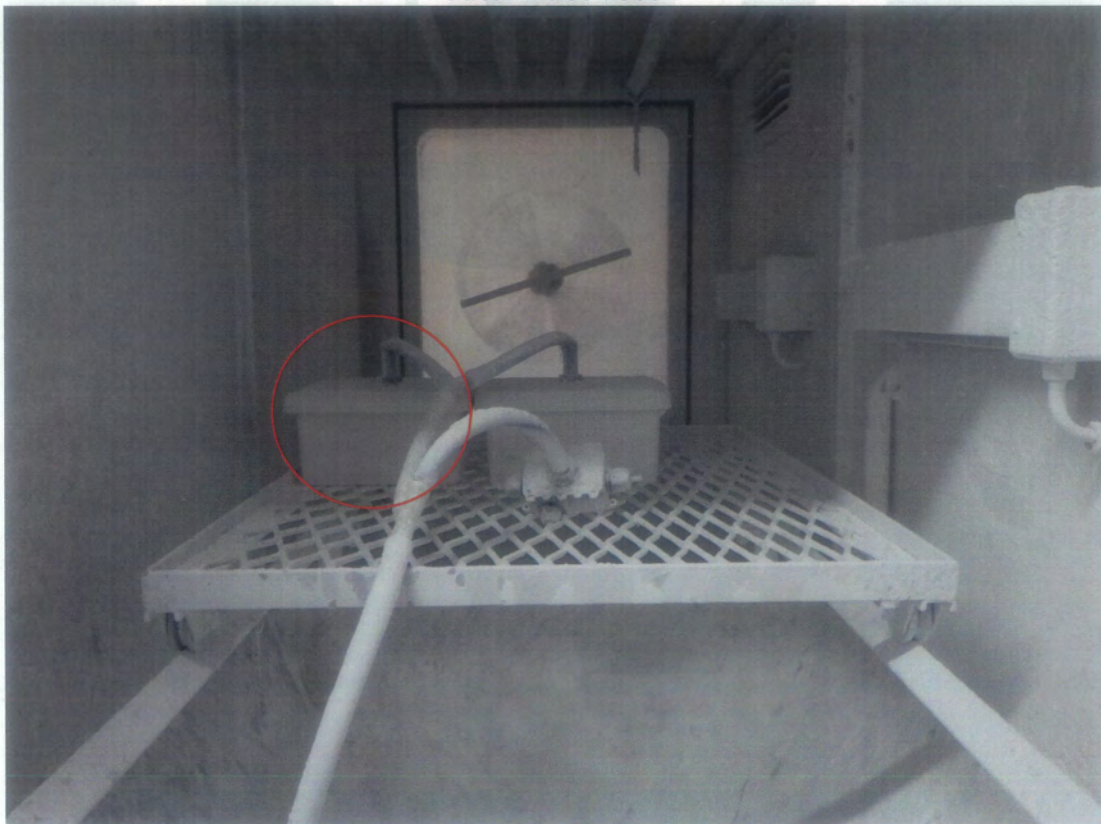


Test for First Characteristic Numeral 6

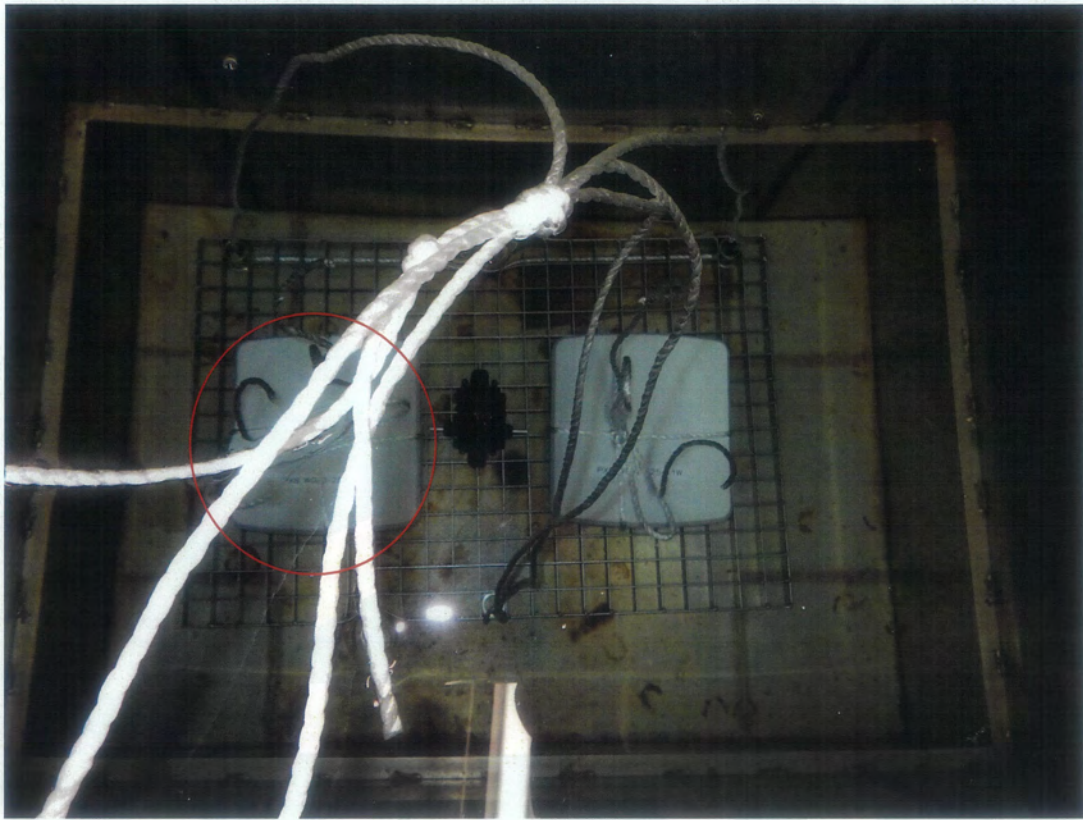
Before Dust Test



After Dust Test



Test for Second Characteristic Numeral 8



—— End of Report ——