



CMCL Co., Ltd.
25, Jubuk-ro 235beon-gil, Yangji-myeon, Cheoin-gu, Yongin-si, Gyeonggi-do,
Republic of Korea
Tel: +82-31-322-2923 Fax: +82-50-8090-2923 www.cmcl.co.kr



Test Report

1. Applicant

Name : Kun Hung Electric Co., Ltd.
Address : 183, Hancheon-ro, Dongdaemun-gu, Seoul, 02534 Republic of Korea
Date of receipt : 2024. 06. 28



2. Test sample

Product : Mode Key Selector Switch
Model No. : NS22-MKP-2B02A RL
Manufacturer /Address : Kun Hung Electric Co., Ltd. / 183, Hancheon-ro, Dongdaemun-gu, Seoul, 02534 Republic of Korea

3. Date of test : 2024. 07. 04 ~ 25

4. Test standard (method) used : IEC 60068-2-6: 2008, IEC 60068-2-27: 2008,
IEC 60529: 1989+A1:1999+A2:2013
Requested test standard by applicant (Section * 5.2)

5. Test result : Refer to the test result

6. Test location : ☒ Permanent testing Lab ☐ On Site Testing
(Address : 25, Jubuk-ro 235beon-gil, Yangji-myeon, Cheoin-gu, Yongin-si, Gyeonggi-do, Republic of Korea)

- The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
- Please call us, if you need to verify the test report.
- * mark indicates that the test result is out of accredited scope.
- ◇ mark indicates that the test result is the result of the commissioned testing agency.

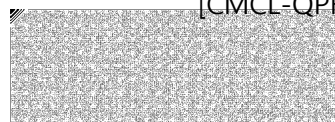
Affirmation	Tested by: SeongHwa, Lee (signature)	Technical manager: Wonhyeon, Choi (signature)
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2024. 08. 01

CMCL Co., Ltd.



The above testing certificate is the accredited test result by Korea Laboratory Accreditation Scheme, which signed the ILAC-MRA.



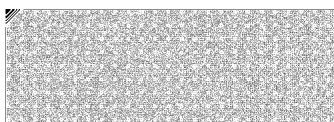


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1. Test report history

Date	Issue history	Use of report
2024. 08. 01	Test report issued	Submit institution

This test report only can be changed and modified by CMCL Co., Ltd. and issue date shall be recorded.

2. Test sample

Item	Description
Product	Mode Key Selector Switch
Model No.	NS22-MKP-2B02A RL
Sample quantity	2 EA
Specification	Input : 1) 3 A, AC 250 V, AC-15 2) 0.27 A, DC 250 V, DC-13

3. Test Location

Item	Address
<input checked="" type="checkbox"/> Permanent Testing Lab	25, Jubuk-ro 235beon-gil, Yangji-myeon, Cheoin-gu, Yongin-si, Gyeonggi-do, Republic of Korea
<input type="checkbox"/> On Site Testing	-

4. Peripheral equipment

Test equipment	Model no.	Manufacturer	Serial no.	The due date of next calibration
PRESET COUNTER	KPC.GD	Koino	-	-





5. Test method and result

5.1. Degrees of protection provided by enclosures (IP Code)

5.1.1. Test equipment

Test equipment	Model no.	Manufacturer	Serial no.	The due date of next calibration
Measuring Tape	5.5 m	KOMELON	215247	2026.02.23
Stop Watch	HS-3	CASIO	604Q26R	2026.02.28
IP 4X, 5X, 6X Probe	BND-CF	BONAD	BND20220512-16	2025.07.10
FORCE MEASUREMENT	DS2-50N	OPTECH	304573	2025.02.23
DUST TESTING APPARATUS	JFMS-004	JFM Technology	YCA23003	-
DUST TESTING APPARATUS (Dry gas meter)	G4L	Dae Seong	233422001376	2025.06.21
DUST TESTING APPARATUS (Pressure gauge)	PSCH-0.05BAIG	Sensys	X4IL19	2025.06.13
Flow Meter	M-25	LZT	22-B0742	2024.10.06
IP X6 Nozzle	BND-IPX6P	BONAD	BND20220803-21	-

5.1.2. Testing Environment

- Temperature : (21.9 ± 3.0) °C, Humidity : (55.6 ± 7.0) % R.H., Air Pressure : (987.9 ± 4.0) hPa

5.1.3. Test condition and Test standard(method)

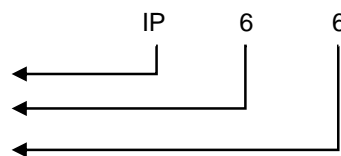
- Test standards: IEC 60529
- Sample quantity: 1 EA

5.1.4. Arrangement of the IP code

Code letters (International protection)

First characteristic numeral (numerals 0 to 6, for letter X)

Second characteristic numeral (numerals 0 to 8, for letter X)





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- Degree of protection against access to hazardous parts indicated by the first characteristic numeral

First characteristic numeral	Degree of protection	Remarks
6	Protected against access to hazardous parts with a wire. The access probe of 1.0 mmØ, shall not penetrate. Test force: 1 N ± 10 %	(Test conditions, see 5.1.7)

- Degree of protection against solid foreign objects indicated by the first characteristic numeral

First characteristic numeral	Degree of protection	Remarks
6	<p>In Dust Testing Equipment, the test sample has to have no ingress of dust after testing atmospheric pressure present condition for 8 hr. (Talcum powder have to go through the measured sieve by Φ 50 um wire that are spacing 75 um in squared, per volume and union Talcum powder have to be 2 kg/m³)</p> <p>Products in volume : 1 000 cm³ → 1 L</p> <p>Target intake volume (Products in volume : 80) : 80 L</p> <p>Suction volume (Max product in volume 60) : 60 LPH → 1 LPM</p> <p>Actual Suction volume : 1 L</p> <p>Suction pressure (Up to 2 kPa) : 1.8 kPa</p> <p>Test time (Up to 8 time) ; 8 hr</p>	(Test conditions, see 5.1.7)

- Degree of protection against water indicated by the second characteristic numeral

Second characteristic numeral	Degree of protection	Remarks
6	<p>The product must not be harmed in any direction even strong jet water. Inside diameter of Nozzle: 12.5 mm Water flow rate: 100 l/min Distance: 2.5 m to 3 m Duration of test: 1 min/m² at least 3 min</p>	(Test conditions, see 5.1.7)



5.1.5. Test photo

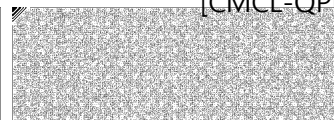
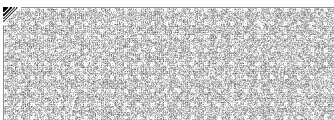
[First characteristic numeral]



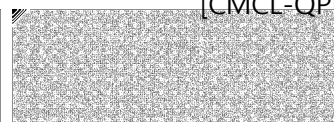
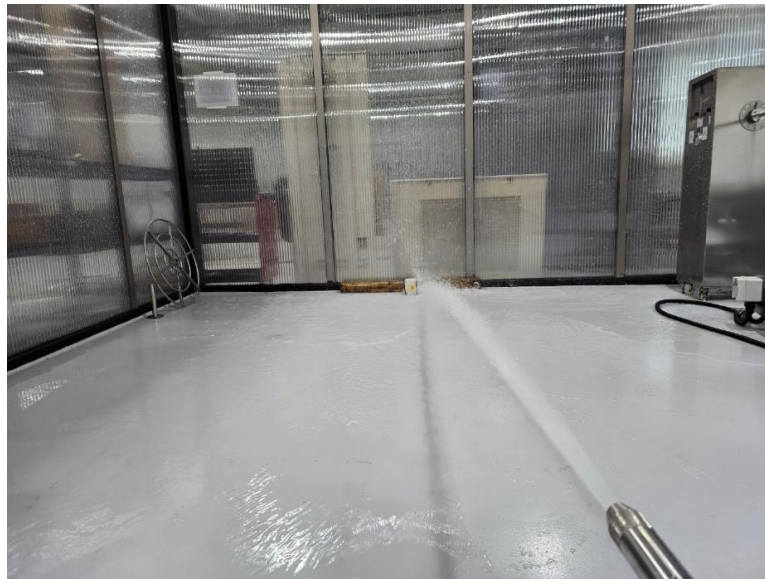
[Against access to hazardous parts with protected]



[Against ingress of solid foreign objects protected]

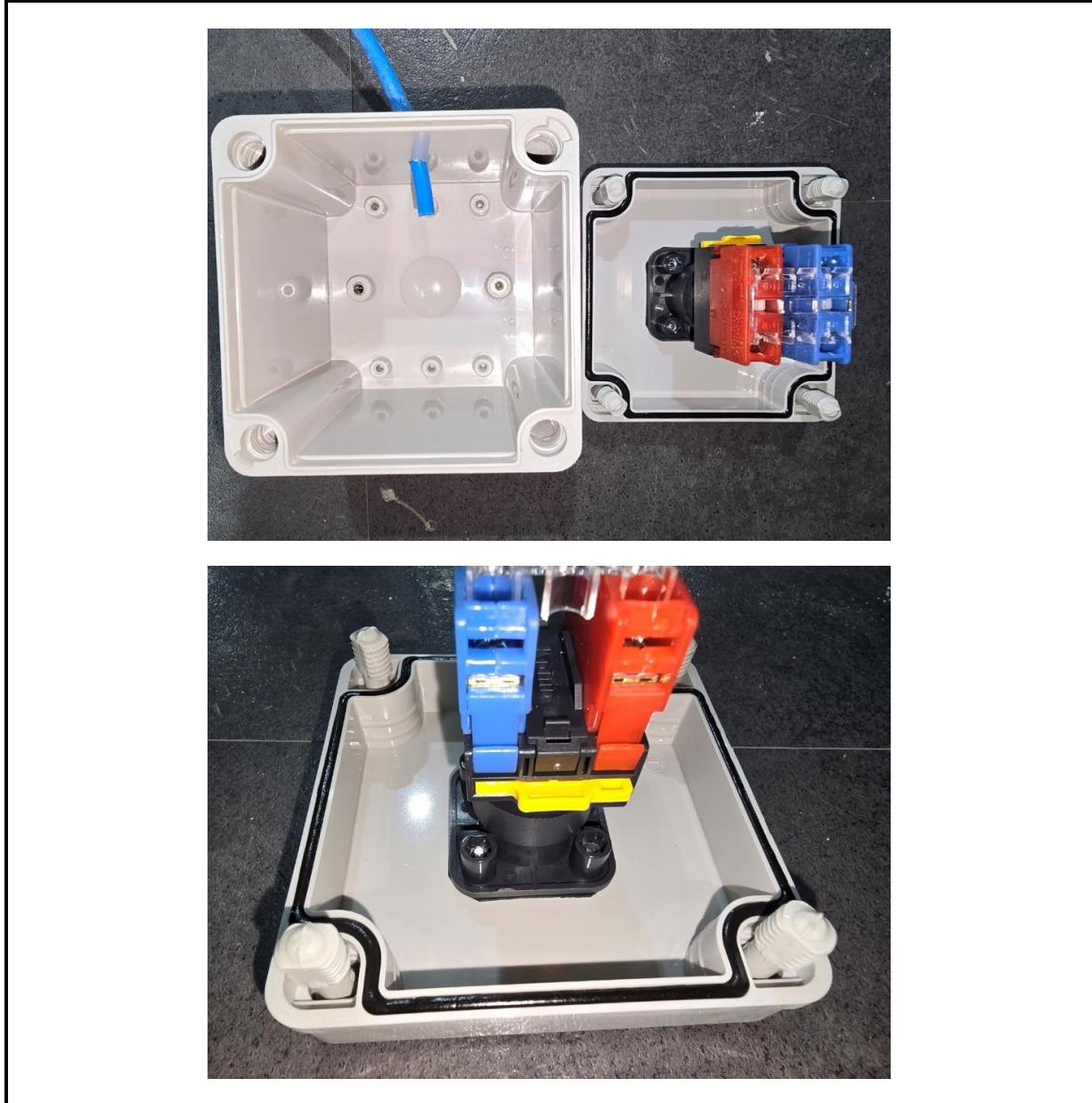


[Second characteristic numeral]

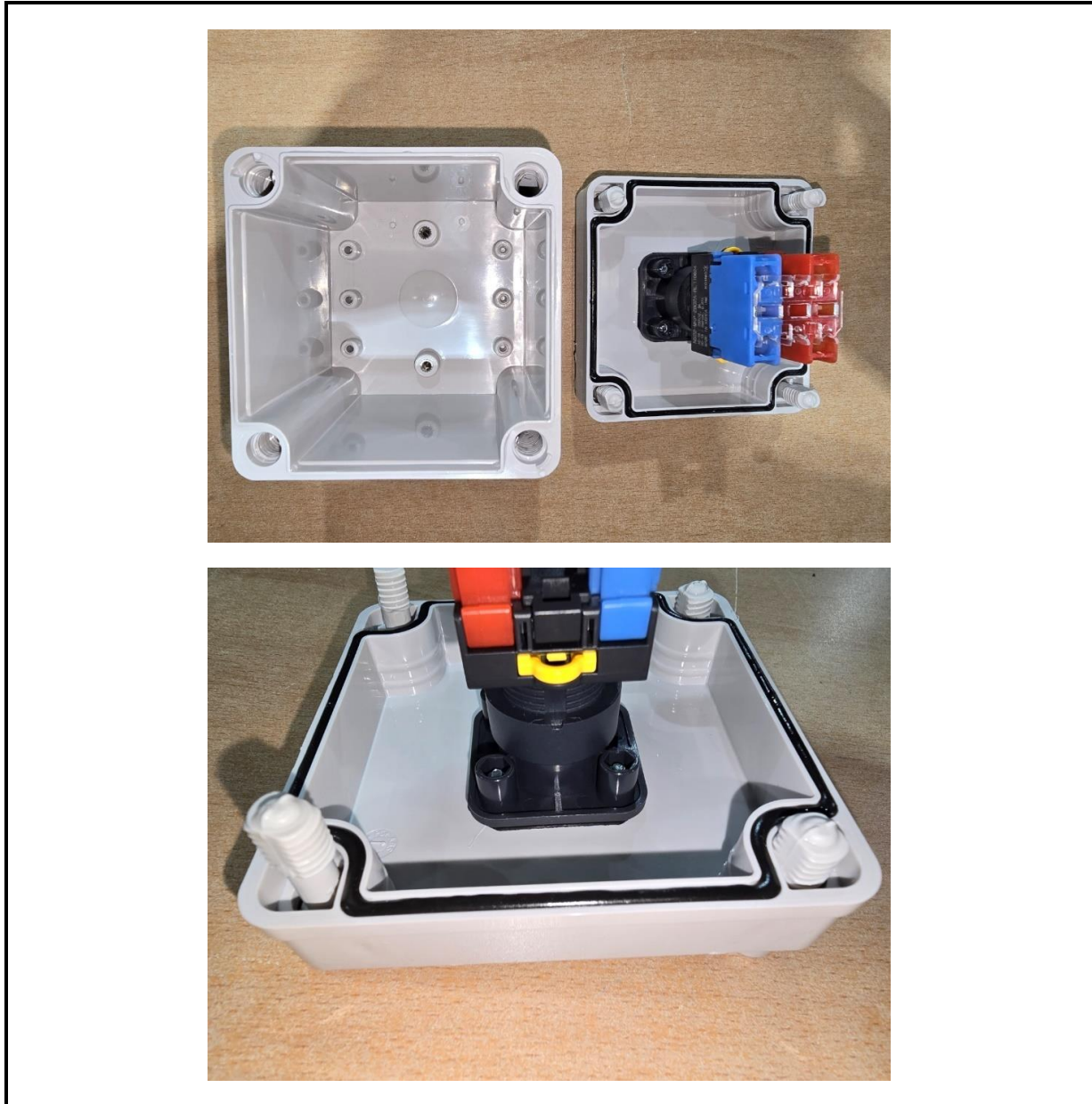


5.1.6. Photo after the test

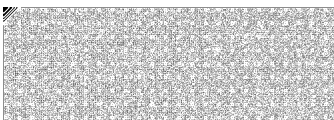
[First characteristic numeral]



[Second characteristic numeral]

**5.1.7. Test result**

IP code	Separation	Result
IP 6X	Access	There was a not penetration of probe.
	Foreign objects	There was a not ingress of dust.
IP X6	water	There was a not ingress of water.



* 5.2. Withstanding voltage test

5.2.1. Test equipment

Test equipment	Model no.	Manufacturer	Serial no.	The due date of next calibration
AC/DC Withstanding Voltage/Insulation Resistance Tester	TOS9201	KIKUSUI	JL002954	2024.08.29

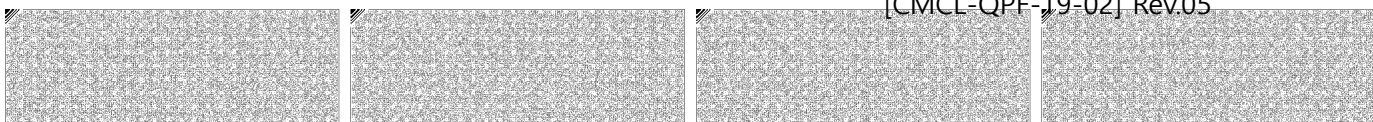
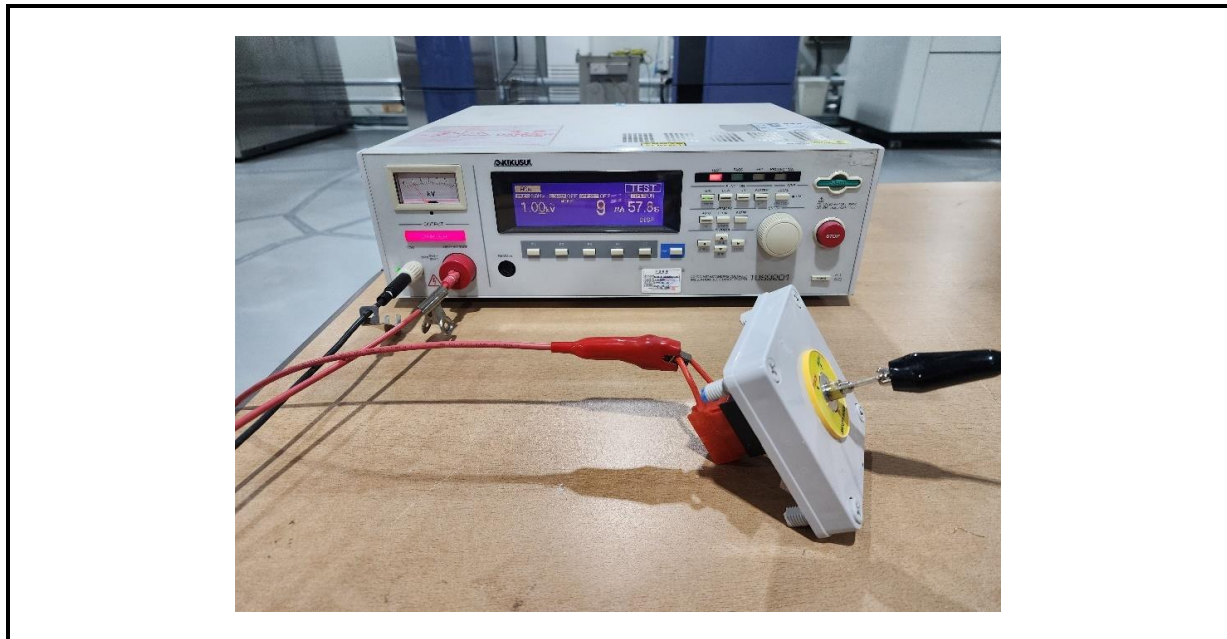
5.2.2. Testing Environment

- Temperature : $(21.9 \pm 3.0) ^\circ\text{C}$, Humidity : $(55.6 \pm 7.0) \% \text{ R.H.}$, Air Pressure : $(987.9 \pm 4.0) \text{ hPa}$

5.2.3. Test condition and Test standard(method)

Authorized location	applied voltage [V a.c.]	Authorization time [s]	Test standards
Conductive part and frame	1 000	60	If applied at 1,000 V, 60 Hz for 60 s, there shall be no defects in insulation breakdown or use. (Cut off Current : 100 mA)

5.2.4. Test photo



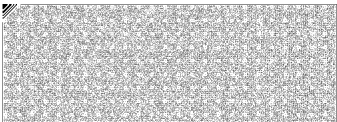
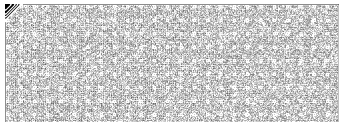


5.2.5. Test data



5.2.6. Test result

Test voltage [V a.c]	Test time [s]	Test result
1 000	60	No abnormality was found





5.3. Shock

5.3.1. Test equipment

Test equipment	Model no.	Manufacturer	Serial no.	The due date of next calibration
Vibration Tester	VE-1031	IMV	450183	-
Vibration Transducer	VP-32	IMV	0820V	2024.08.25

5.3.2. Testing Environment

- Temperature : (23.8 ± 2.0) °C, Humidity : (69.8 ± 4.0) % R.H., Air Pressure : (989.7 ± 3.0) hPa

5.3.3. Test condition and Test standard(method)

- Test standard: IEC 60068-2-27: 2008
- No count during the test.

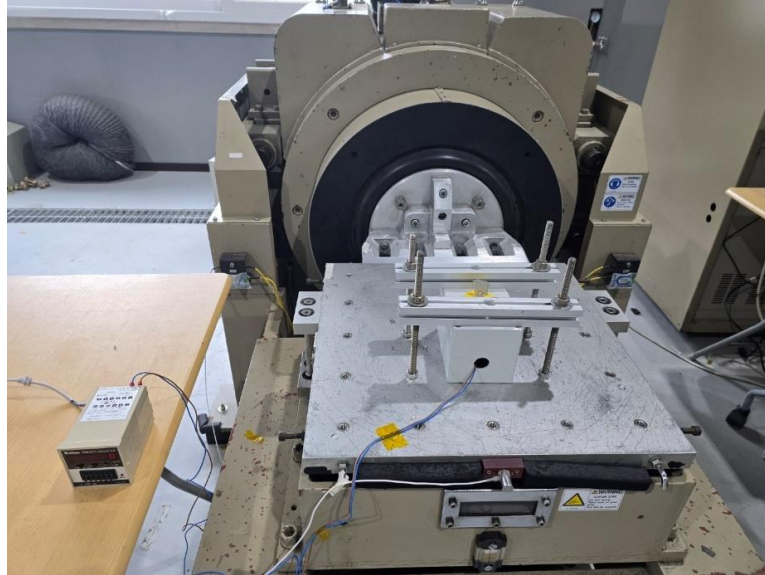
Item	Test Condition
Acceleration (m/s^2 , g)	15 g
Duration (ms)	11 ms
Number of shocks	6 shocks applied in each direction along three mutually perpendicular axes (a total of 36 shocks)
Test type	$\pm X$, $\pm Y$, $\pm Z$ axis
Number of samples	1 EA

5.3.4. Check item

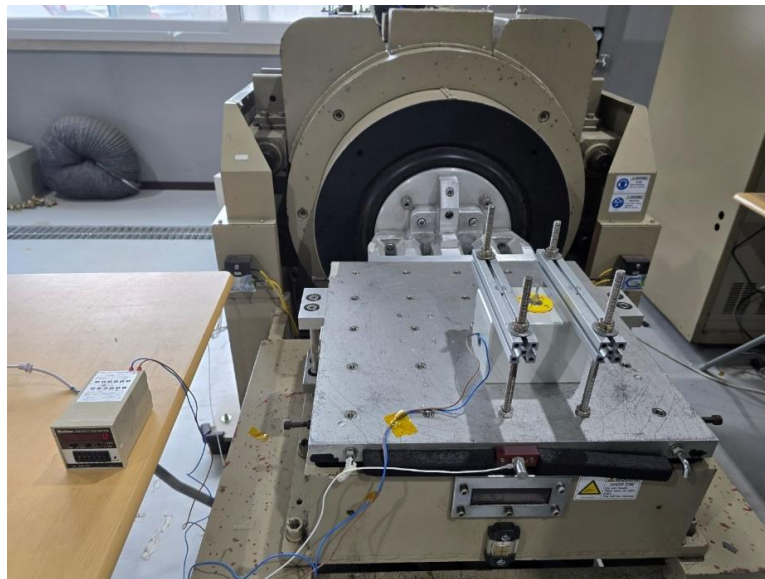
- After the test, appearance and breakdown of parts checked.
- After the test, check performance.
- During the test, check the counter operated.



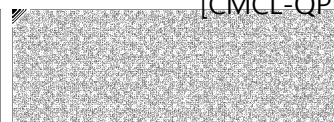
5.3.5. Test photo



[X axis]



[Y axis]

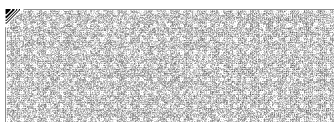
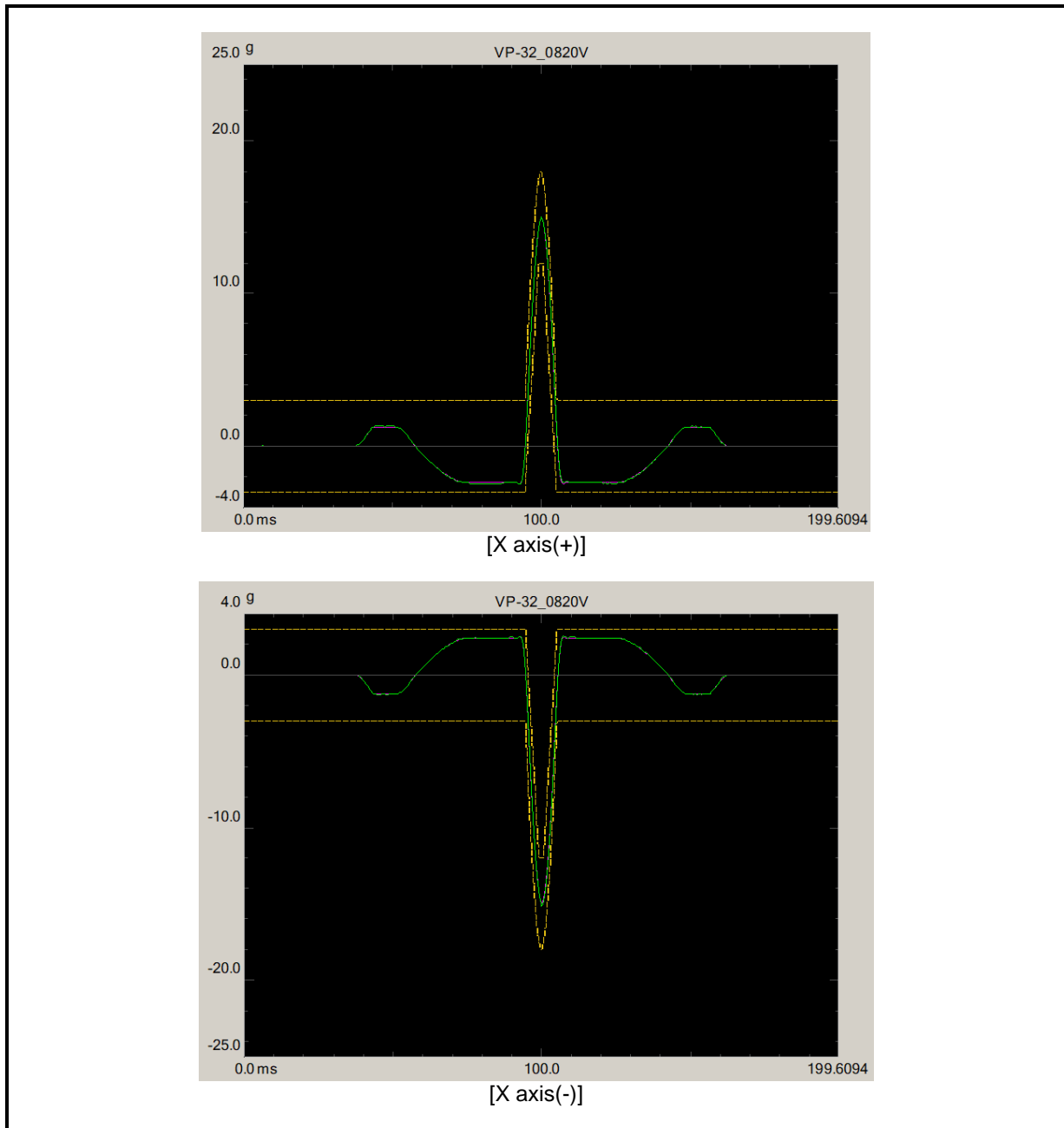




[Z axis]

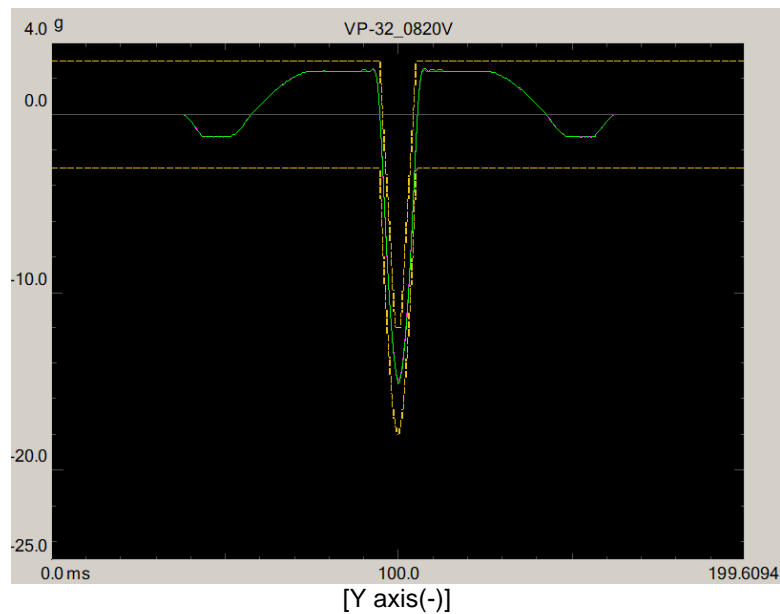
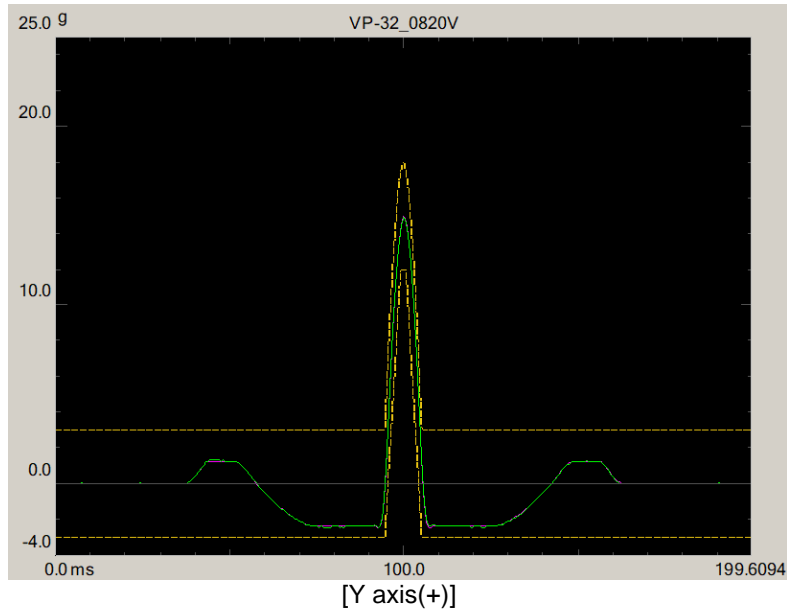


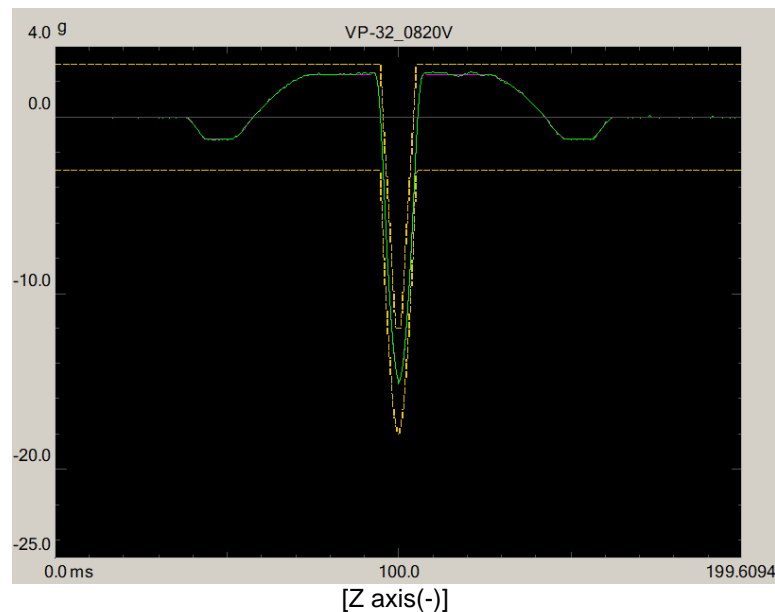
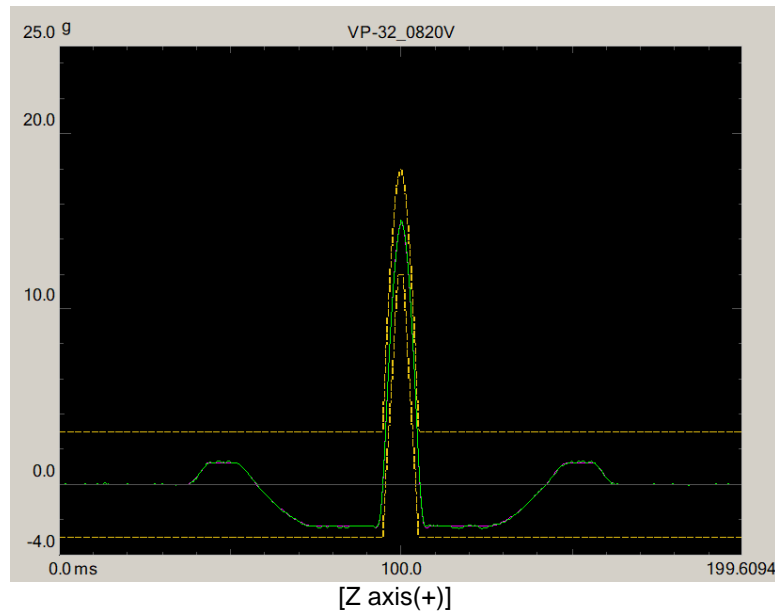
5.3.6. Test data



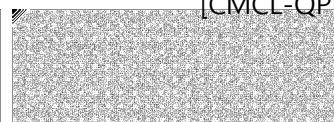


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**5.3.7. Test result**

Test item	Test result
1. Visual inspection / Visual examination - Check damage, breakdown.	No abnormality was found
2. Performance check	No abnormality was found





5.4. Vibration (sinusoidal)

5.4.1. Test equipment

Test equipment	Model no.	Manufacturer	Serial no.	The due date of next calibration
Vibration Tester	VE-1031	IMV	450183	-
Vibration Transducer	VP-32	IMV	0820V	2024.08.25

5.4.2. Testing Environment

- Temperature : (23.8 ± 2.0) °C, Humidity : (69.8 ± 4.0) % R.H., Air Pressure : (989.7 ± 3.0) hPa

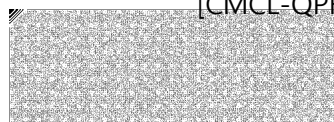
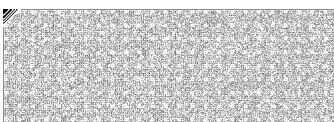
5.4.3. Test condition and Test standard(method)

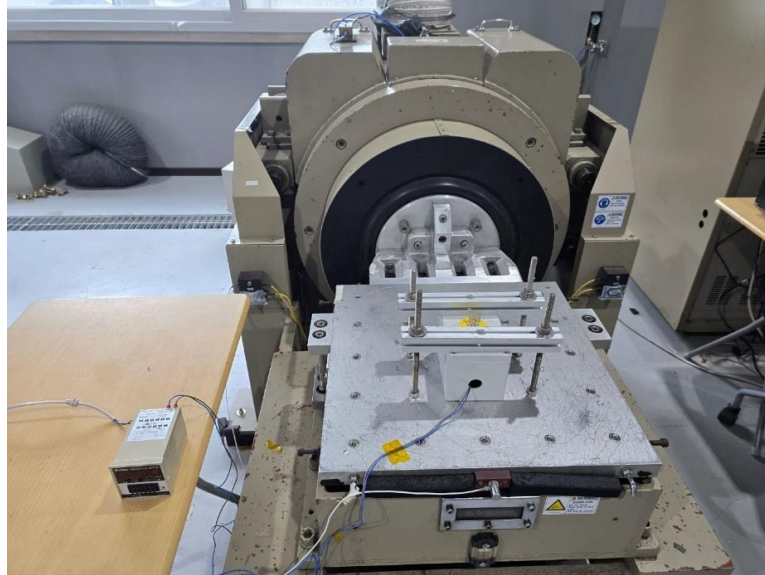
- Test standard: IEC 60068-2-6: 2007
- No count during the test.

Item	Test Condition
Frequency	(10 ~ 55) Hz
Displacement(p-p)	0.5 mm
Sweep rate	5 min per single-sweep
Test time	30 min per axis
Test type	X, Y, Z axis
Number of samples	1 EA

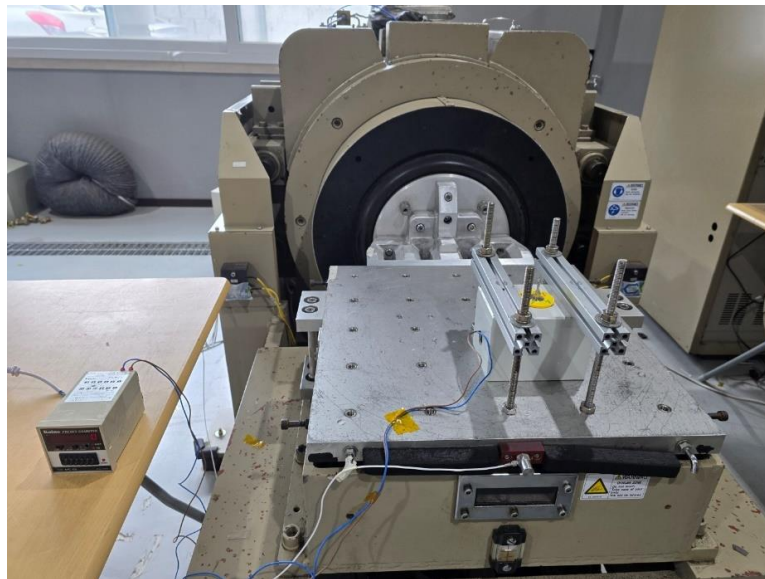
5.4.4. Check item

- After the test, appearance and breakdown of parts checked.
- After the test, check performance.
- During the test, check the counter operated.

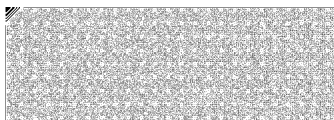
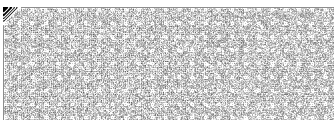


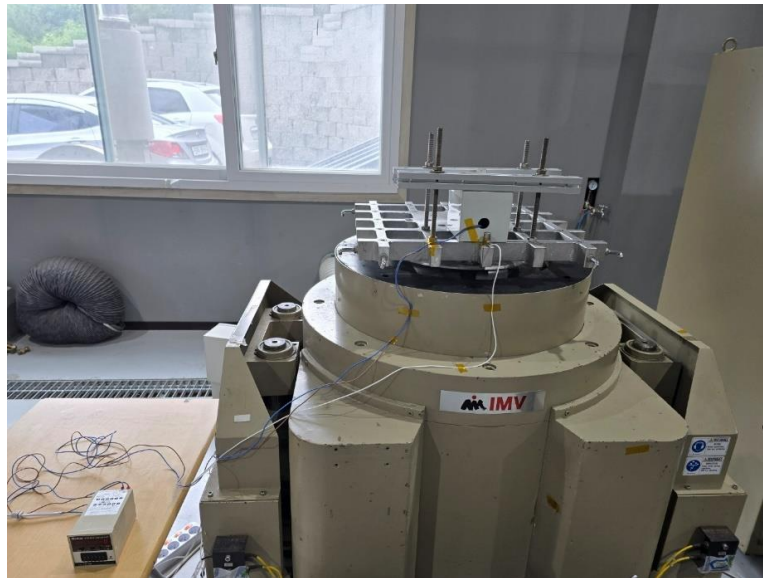
5.4.5. Test photo

[X axis]

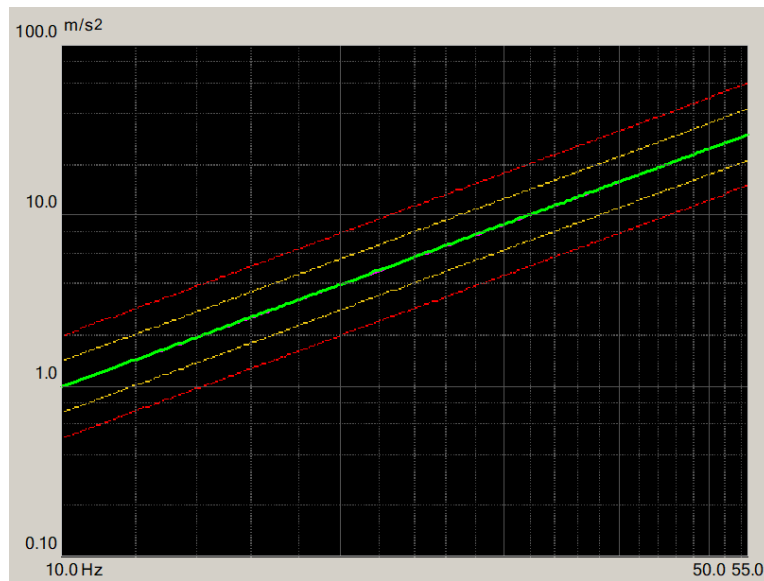


[Y axis]

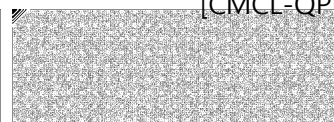


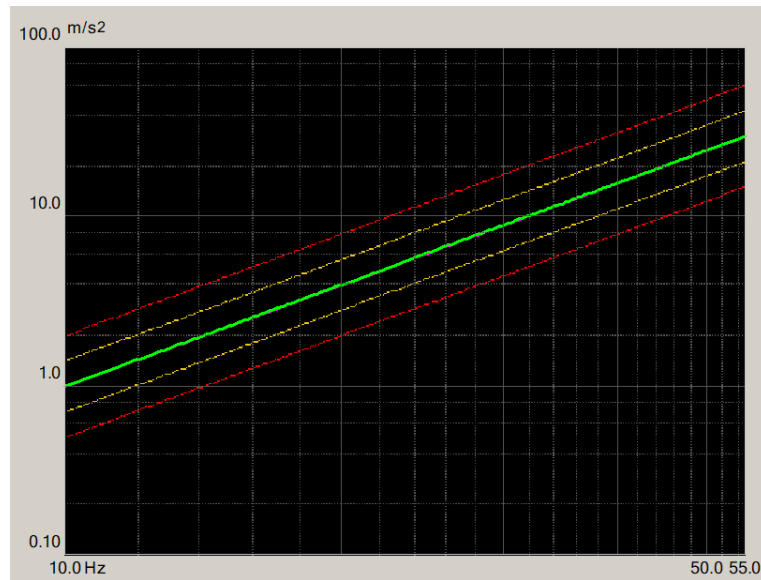


[Z axis]

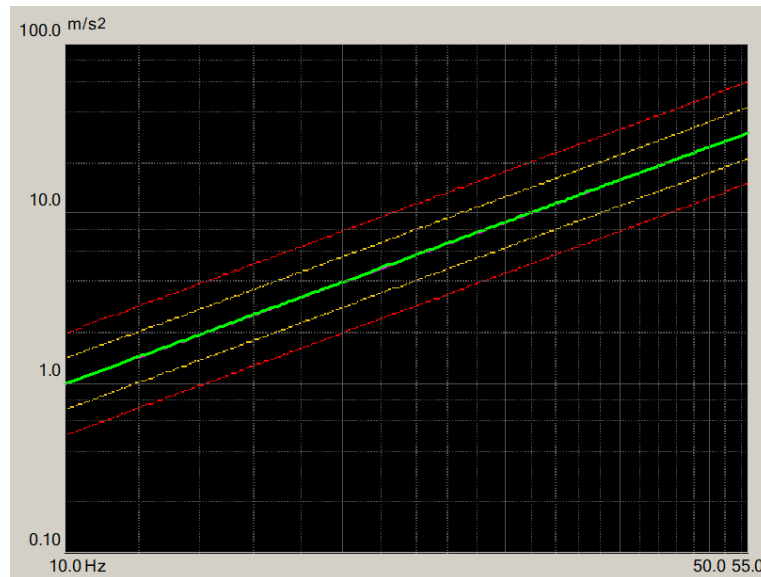
5.4.6. Test data

[X axis]





[Y axis]



[Z axis]

5.4.7. Test result

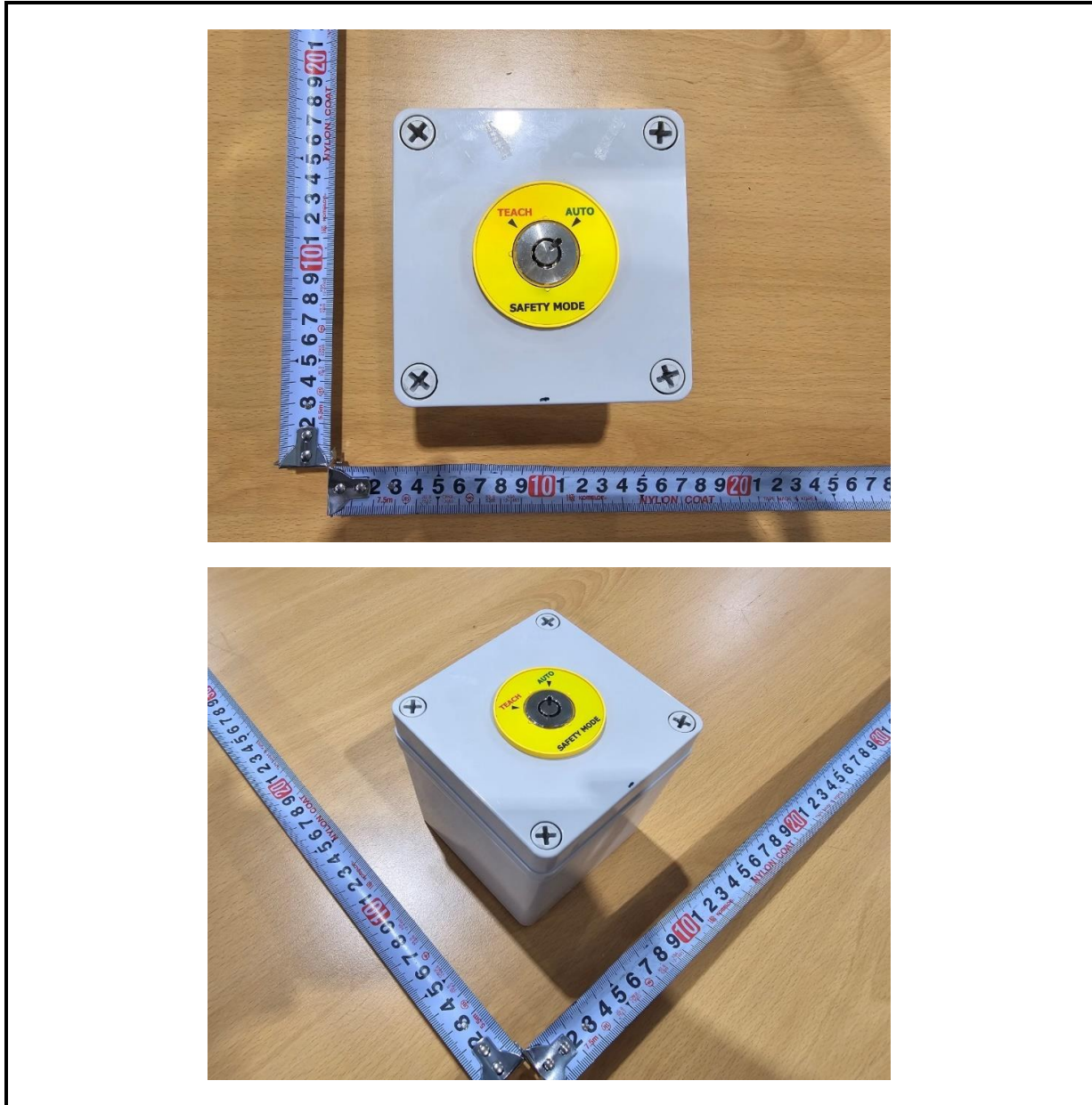
Test item	Test result
1. Visual inspection / Visual examination - Check damage, breakdown.	No abnormality was found
2. Performance check	No abnormality was found



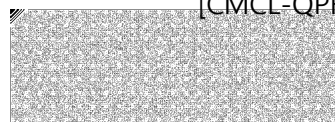
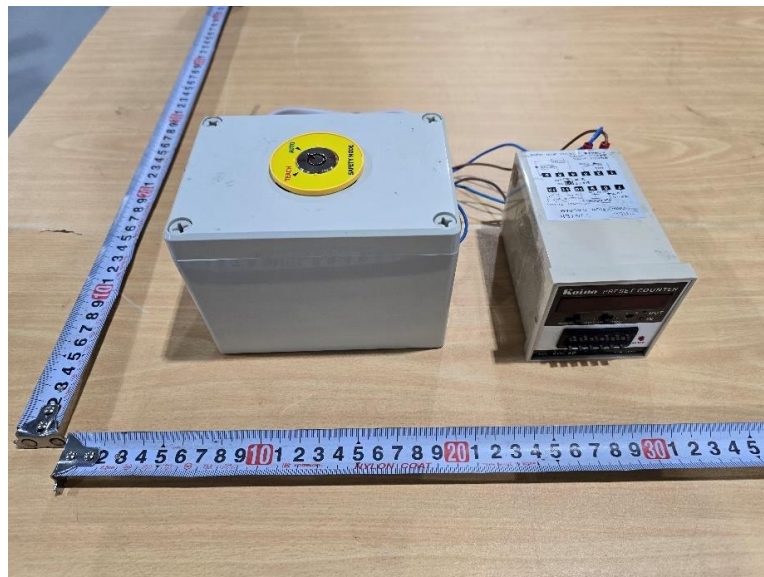
6. Product Photo

6.1. Product appearance

[IP, Withstanding voltage test]



[Shock, Vibration]

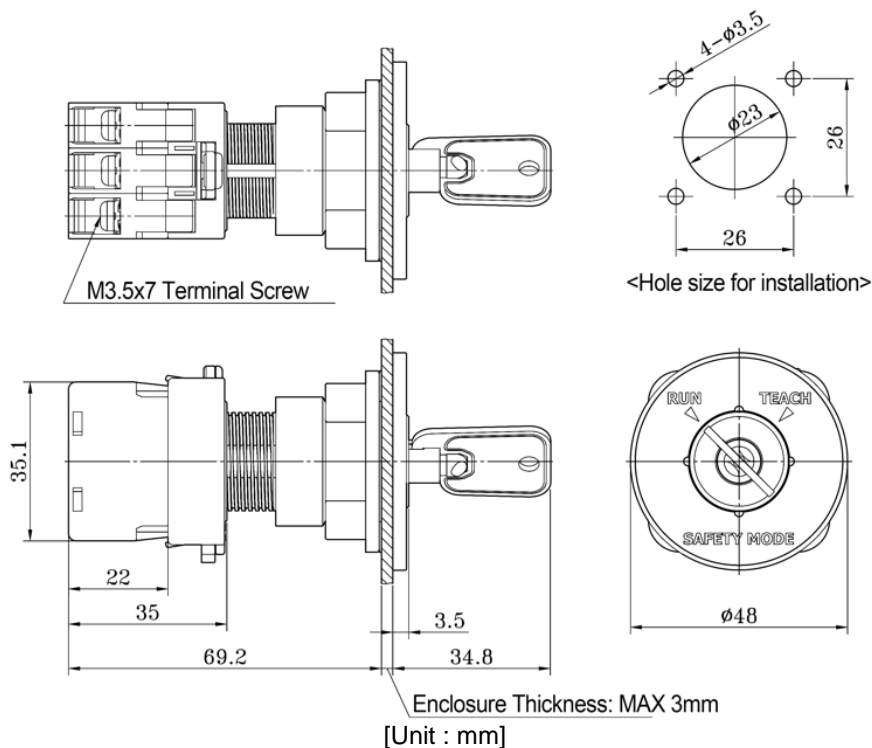




[Operating Photo]



6.2. Product floor plan



- END -

