

# TEST REPORT



Report No. : 22-033782-01-2

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## 1. Client

Name : POWER-GENEX Ltd.

Address : 99 Eunbong-ro, Namdong-gu, Incheon, Republic of Korea

Date of Receipt : 2022. 05. 30

2. Use of Report : To verify IP grade to IEC 60529

## 3. Test Sample

Description : Smart valve positioner

Manufacturer : POWER-GENEX Ltd.

Model Name : ASD-7

Serial Number : -

Remark : Please refer to the clause 1.4 regarding the test sample and results.

4. Date of Test : 2022. 06. 14. ~ 2022. 06. 15.

## 5. Location of Test :

KTL Permanent Test Lab (Address : 87, Digital-ro 26-gil, Guro-gu, Seoul, KOREA)

On Site Testing

6. Test Standard/Method : IEC 60529:1989 +AMD1:1999+AMD2:2013 CSV/COR2:2015

7. Test Results : Pass (IP66)

### Note :

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4. The results marked as '※' are out of KOLAS accreditation scope.

Affirmation	Tested by	Technical Manager
	Name : Min Jae Sik (Signature)	Name : Choi Yong-won (Signature)

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

2022. 06. 22

## Korea Testing Laboratory

Accredited by KOLAS, Republic of KOREA

87, Digital-ro 26-gil, Guro-gu, Seoul, KOREA Tel.+82-2-860-1514 Fax. +82-2-860-1549

FP104-03-00



※ 위 마크는 추후 전자확인증 대조 프로그램에서 원본대조시 사용되는 2D코드입니다.

## Test Results

### 1. Summary of Test

#### 1.1. Test Standard

This test was conducted in accordance with "IEC 60529:1989 +AMD1:1999+AMD2:2013 CSV/COR2:2015".

#### 1.2. Test Sample

- Description : Smart valve positioner
- Model Name : ASD-7
- Dimensions : 242 mm × 146.44 mm × 126 mm



[Fig. 1: Sample]



[Fig. 2: Sample]

#### 1.3. Test Environment

- Temperature : (24 ± 2.0) °C
- Humidity : (45 ± 2) % R.H.
- Atmospheric Pressure : (101.3 ± 2.0) kPa

#### 1.4. Remark

The test was conducted with a blind plug applied on the entry of the sample (Refer to Fig.2).





2. Results

Code Letters	IP	Conditions & Results
<p><b>1st Characteristic numerals</b> Against ingress of solid foreign objects</p>	6	<p><b>2.1 Dust Test Conditions</b></p> <ul style="list-style-type: none"> <li>• Talcum powder(mesh) wire diameter: 50 <math>\mu\text{m}</math></li> <li>• Talcum powder(mesh) wire width: 75 <math>\mu\text{m}</math></li> <li>• Amount of talcum powder of the test chamber: 2 <math>\text{kg}/\text{m}^3</math></li> </ul> <p><b>2.2 Dust Test Contents</b></p> <ul style="list-style-type: none"> <li>• Volume of the enclosures: About 600 <math>\text{cm}^3</math></li> <li>• Reduction air pressure: - 2.00 kPa(- 200 mmH<sub>2</sub>O)</li> <li>• Flow Rate: About 0.01 L/min</li> <li>• Extraction rate per hour: About 1.0 volumes/h</li> <li>• Test duration: 8 h</li> </ul>
		<p><b>2.3 Dust Test Result</b></p> <ul style="list-style-type: none"> <li>• Pass</li> </ul>
<p><b>2nd Characteristic numerals</b> Against ingress of water with harmful effects</p>	6	<p><b>2.4 Water Test Conditions</b></p> <ul style="list-style-type: none"> <li>• Internal diameter of the nozzle: 12.5 mm</li> <li>• Delivery rate: (100 <math>\pm</math> 0.5) L/min</li> <li>• Core of the substantial stream: Circle of 120 mm diameter at 2.5 m distance from the nozzle</li> <li>• Distance from nozzle to enclosure surface: (2.5 ~ 2.8) m</li> </ul> <p><b>2.5 Water Test Contents</b></p> <ul style="list-style-type: none"> <li>• Test duration: 3 min</li> </ul>
		<p><b>2.6 Water Test Result</b></p> <ul style="list-style-type: none"> <li>• Pass</li> </ul>

FP104-04-00



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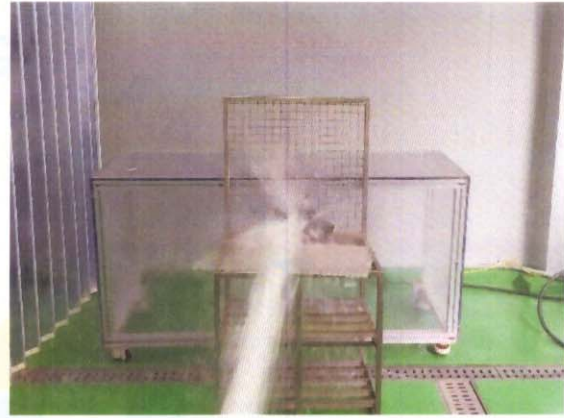
### 3. List of Testing Equipments

Equipment	Model	Manufacturer	Date of Calibration	Date of next Calibration
Thermo-hygrometer	Testo 622	Testo	2022-04-28	2023-04-28
Timer	HS-30W	CASIO	2021-08-17	2023-08-17
Vernier Calipers	CD-20APX	Mitutoyo Corp.	2021-06-28	2022-06-28
Flowmeter(IP5X, IP6X)	RMA-13-SSV	DWYER	2021-09-10	2022-09-10
Flowmeter(IPX5,X6)	GA-101	KOMETER	2022-04-27	2023-04-27
Pressure Meter	PM-80	Digitron	2021-12-21	2022-12-21
Nozzle	NONE	SCM	2022-01-13	2023-01-13

### 4. Test Figures



[Fig. 3: IP6X]

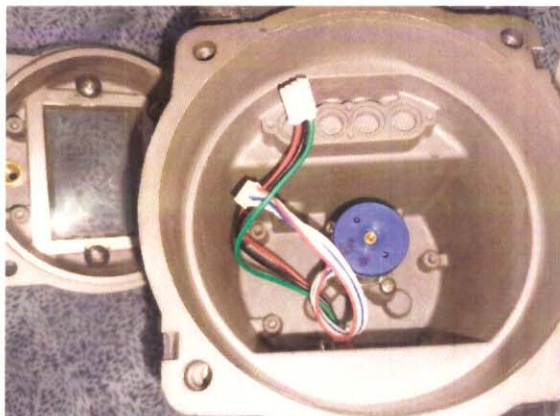


[Fig. 4: IPX6]





5. Dust Test Result Figures

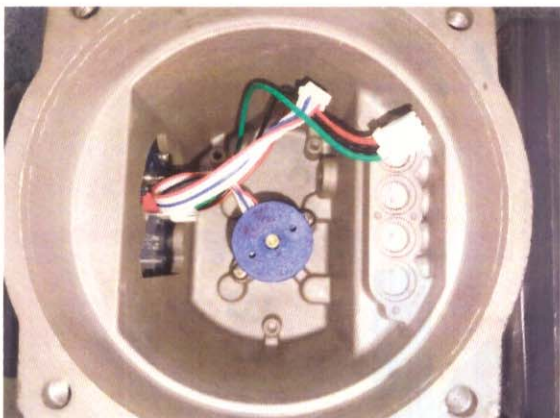


[Fig. 5: IP6X]



[Fig. 6: IP6X]

6. Water Test Result Figures



[Fig. 7: IPX6]



[Fig. 8: IPX6]

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