

TEST REPORT



Report No. : 23-074284-01-2

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1. Client

Name : Tissin Co., Ltd.

Address : 201-1105, No.397, Seokcheon-ro, Ojeong-gu, Bucheon-Si, Korea

Date of Receipt : 2023. 11. 15

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

3. Test Sample

Description : Pneumatic-Pneumatic Positioner

Manufacturer : Tissin Co., Ltd.

Model Name : TS610R

Serial Number : -

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

4. Date of Test : 2023. 11. 23. ~ 2023. 11. 24.

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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5. The results marked as ‘※’ are out of KOLAS accreditation scope.

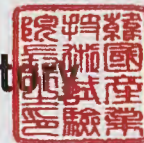
Affirmation	Tested by	Technical Manager
	Name : Min Jae Sik (Signature)	Name : Choi Yong-won (Signature)

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

2023. 11. 27

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

FP104-03-01



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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 : Pneumatic-Pneumatic positioner
- Model Name : TS610R
- Dimensions : 179.0 mm × 167.7 mm × 134.1 mm



[Fig. 1: Sample]



[Fig. 2: Sample]

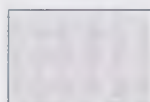
1.3. Test Environment

- Temperature : $(27.1 \pm 2.0) ^\circ\text{C}$
- Humidity : $(45.3 \pm 2.0) \% \text{ R.H.}$
- Atmospheric Pressure : $(101.32 \pm 2.00) \text{ kPa}$

1.4. Remark

The test was conducted with the blind plug assembled on the Supply, Out, and Signal connection (Refer to Fig. 1, 2).

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2. Results

Code Letters	IP	Conditions & Results
1st Characteristic numerals Against ingress of solid foreign objects	6	2.1 Dust Test Conditions (Category 1) - Amount of talcum powder in the test chamber: 2 kg/m³ * Talcum powder: Pass through a square-meshed sieve (wire diameter: 50 μm, gap of wire: 75 μm) - Internal free volume of the sample: 650 cm³ - Depression of sample: - 2.00 kPa - Extraction flow rate: About 0.10 L/min - Extraction rate of volume per hour: About 9.23 - Test duration: 8 h
		2.2 Dust Test Result Pass
2nd Characteristic numerals Against ingress of water with harmful effects	6	2.3 Water Test Conditions - Internal diameter of the nozzle: 12.5 mm - Delivery rate: (100 ± 5) L/min - Core of the substantial stream: Circle of 120 mm diameter at 2.5 m distance from the nozzle - Distance from nozzle to enclosure surface: (2.5 ~ 3.0) m - Test duration: 3 min
		2.4 Water Test Result Pass

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3. List of Testing Equipments

ICP No.	Equipment	Model	Manufacturer	Date of next Calibration	Calibration institution
ICP20140892	Thermo-hygrometer	Testo 622	Testo	2024-04-04	KTL
ICP20142326	Timer	HS-30W	CASIO	2025-07-10	KTL
ICP20160207	Vernier Calipers	CD-20APX	Mitutoyo Corp.	2024-02-16	KTL
ICP20230086	Flowmeter(IP5X, IP6X)	RMA-13-SSV	DWYER	2024-10-20	KTL
ICP20150325	Flowmeter(IPX5, X6)	GA-101	KOMETER	2024-05-04	KOMETER
ICP20230085	Pressure Meter	PM-80	Digitron	2024-10-16	KTL
ICP20190032	Nozzle(IPX6)	NONE	SCM	2024-01-05	KTL

4. Test Figures

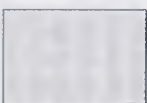


[Fig. 3: IP6X]



[Fig. 4: IPX6]

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5. Dust Test Result Figures



[Fig. 5: IP6X]



[Fig. 6: IP6X]

6. Water Test Result Figures



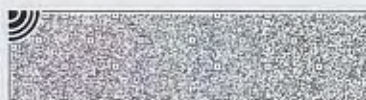
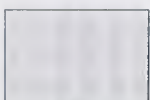
[Fig. 7: IPX6]



[Fig. 8: IPX6]

-End -

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