



**HI PHYSIX**  
testing & calibration laboratory

**HI PHYSIX LABORATORY INDIA PVT. LTD.**

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## TEST REPORT

TEST REPORT AS PER: IS/IEC 60529:2001

SRF No.: 24070276

<div><div>Name &amp; Contact Information of Customer:</div><div>M/s.Duncan Engineering Limited</div><div>F33,MIDC, Ranjangaon, Karegaon, Tal-Shirur, Pune-412220, Maharashtra, India.</div><div>Contact Person: Mr. Sukdeo Mahajan</div><div>Contact No: 9137248060</div></div>	<div>ULR- TC1351824000000485F</div> <div>Discipline: Electrical Testing</div> <div>Group: Environmental Test Facility</div> <div>Test Report No: HPLI/Test/2407027604</div> <div>Date of Issue: 30/07/2024</div> <div>Test Performed: At Lab</div> <div>Customer Ref. &amp; Date: 22/07/2024</div>				
	<div>Date of Sample Receipt: 22/07/2024</div>	<div>Start of Test Date: 24/07/2024</div>	<div>End of Test Date: 24/07/2024</div>		

### PART A - PARTICULARS OF THE SAMPLE SUBMITTED

<b>Sample description</b>	<b>Pneumatic Rotary Actuator</b>
<b>Grade/ variety/ type/ class/ size etc.</b>	<b>Size. : (295x160x160)mm (L x W x H)</b>
<b>Declared values, if any</b>	<b>Nil</b>
<b>Code no., BIS seal and IO's sign. if any</b>	<b>Nil</b>
<b>Batch no., date of manufacture and Brand name</b>	<b>Brand Name: "Duncan"</b> <b>Model No. : "MD100/MS100"</b>
<b>Quantity</b>	<b>01 No.</b>
<b>Condition of the sample</b>	<b>OK</b>
<b>Reference specification (s)</b>	<b>IS/IEC 60529:2001</b>
<b>Environmental conditions</b>	<b>Temperature (25±4) °C &amp; Relative Humidity&lt;70%</b>

<b>Statement of Conformity</b>	<b>Sample conforms to the requirement of IP 65 tests as per the standard</b>
<b>Decision Rule</b>	<b>Qualitative Test</b>

### PART B - SUPPLEMENTARY INFORMATION

- a) Deviations from the test methods as per relevant specification/ work instructions, if any: Nil.
- b) Details of the drawings, graphs, tables, sketches or Photographs as referred in the test report, if any: Photograph Attached.
- c) Testing procedure according to work instructions: HPLI 03/Test-App/WI-807.
- d) The Management System is maintained in accordance with ISO/IEC 17025:2017 and testing Standards/Instruments are traceable to National/International Standards.

- Notes:**
- This report is not to be reproduced wholly or in part without our special permission in writing.
  - This report refers only to the particular sample detailed above.
  - The results reported in this certificate are valid at the time of and under the stipulated conditions of measurement.
  - Remnants of the sample will be disposed off after 30 days of issue of test report, if no any further information is received.

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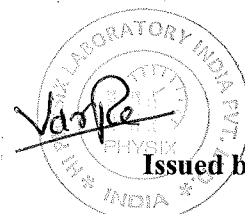
Tested by



Checked by

  
Ashutosh Pathak  
(Chief Technical Manager)

Approved by



Issued by

Format No. HPLI 04 F31-00

www.hiphysix.com

Registered Office : B-9/51, Sector-18, Rohini, Delhi - 110089.



TC-13518

**PART C- TEST RESULT**

ULR- TC1351824000000485F  
TEST REPORT NO.: HPLI/Test/2407027604  
IS/IEC 60529:2001

S. No.	TESTS WITH CLAUSE REFERENCE		SPECIFIED REQUIREMENTS	Covered under our NABL Scope (Yes/No)	RESULTS	Verdict
1.	IP6X Test (As per cl. No. 5 & 13.4, 13.6 IS/IEC 60529:2001)	i)	<p>Tests for protection against access to hazardous parts indicated by the first characteristic numeral. (Test for first characteristic numeral 6X):</p> <p>The access probe of 1.0 mm is pushed against or inserted through any openings of the enclosure with the force <math>1.0N \pm 10\%</math>. The test wire of 1.0mm shall not penetrate and adequate clearance shall be kept between the access probe and hazardous parts. (Cl. 12.2 of IS/IEC 60529:2001)</p> <p>The protection is satisfactory if adequate clearance is kept between the access probe and hazardous parts</p>	Yes	Satisfactory	Pass
			<p>Tests for protection against solid foreign objects indicated by the first characteristic numeral. (Test for first characteristic numeral 6X Dust-tight):</p> <p>The test is made using a dust chamber incorporating the basic principles. The talcum powder used shall be able to pass through a square-meshed sieve the nominal wire diameter of which is <math>50 \mu m</math> and the nominal width of a gap between wires <math>75 \mu m</math>. The amount of talcum powder to be used is 2 kg per cubic meter of the test chamber volume. (Cl. 13.4 of IS/IEC 60529:2001)</p> <p>The protection is satisfactory if no deposit of dust is observable inside the enclosure at the end of the test.</p>		Satisfactory (No ingress of dust observed inside the enclosure)	Pass

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ULR- TC1351824000000485F  
TEST REPORT NO.: HPLI/Test/2407027604  
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S. No.	TESTS WITH CLAUSE REFERENCE		SPECIFIED REQUIREMENTS	Covered under our NABL Scope (Yes/No)	RESULTS	Verdict
2.	IPX5 Test (As per Clause No.6 & Cl.14.2.5 of IS/IEC 60529:2001)	ii)	<p>Test for second characteristic numeral X5:</p> <p>The test is made by spraying the enclosure from all practicable directions with a stream of water from a standard test nozzle.</p> <ul style="list-style-type: none"> <li>- internal diameter of the nozzle: 6.3 mm.</li> <li>-delivery rate: 12.5 l/min <math>\pm</math> 5 %.</li> <li>-water pressure.: to be adjusted to achieve the specified delivery rate.</li> <li>- core of the substantial stream circle of area likely to be sprayed 1 min. approximately 40 mm diameter at 2.5 m distance from nozzle.</li> <li>-Test duration per square metre of enclosure surface area likely to be sprayed: 1 min.</li> <li>-minimum test duration 3 min.</li> <li>-distance from nozzle to enclosure surface between 2.5 m and 3 m.</li> </ul> <p>(Cl. 14.2.6 of IS/IEC 60529:2001)</p> <p>After testing, if any water has entered, it shall not-</p> <ul style="list-style-type: none"> <li>- be sufficient to interfere with the correct operation of the equipment or impair safety.</li> <li>- deposit on insulation parts where it could lead to tracking along the creepage distances.</li> <li>- reach live parts or windings not designed to operate when wet.</li> <li>- accumulate near the cable end or enter the cable if Any.</li> </ul>	Yes	Satisfactory (No water observed inside the enclosure.)	Pass

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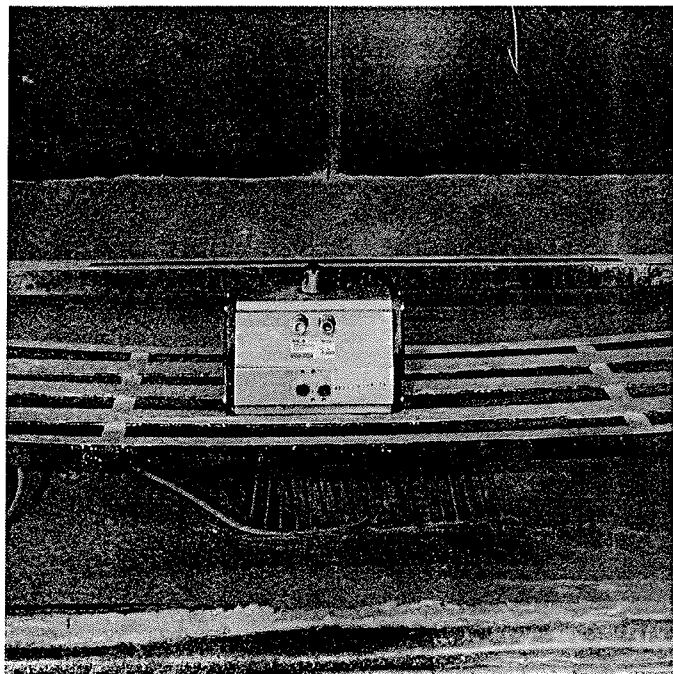
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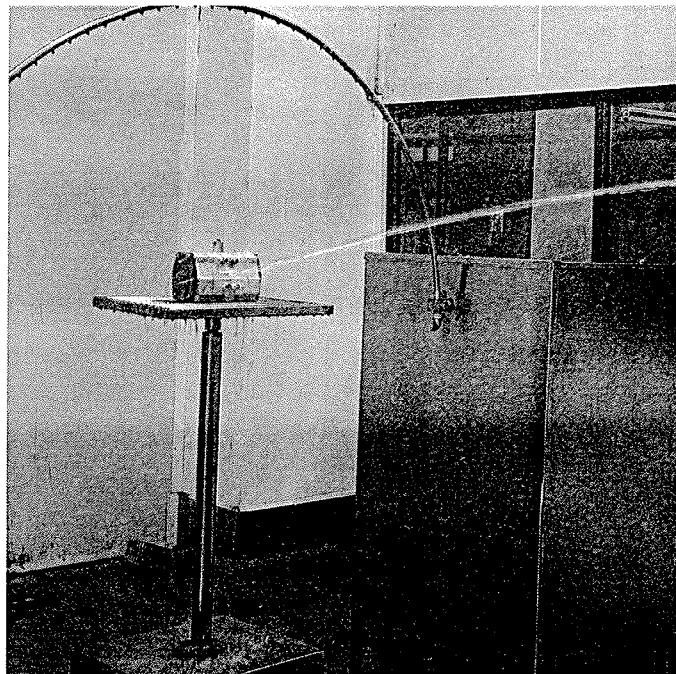
TC-13518

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**SAMPLE UNDER TEST (IP6X)**



**SAMPLE UNDER TEST (IPX5)**

**PART-D:**

**Remarks:** 1. The Information given in part A of the cover page of the test report are taken from the specification given by the customer.

\*\*\*\* END OF THE TEST REPORT \*\*\*\*

**Tested by**

**Checked by**

HI PHYSIX LABORATORY INDIA PVT. LTD.

  
Ashutosh Rathak  
(Chief Technical Manager)  
**Approved by**  
**Issued By**