सूक्ष्म, लघु एवं मध्यम उद्यम
MICRO, SMALL & MEDIUM ENTERPRISES
MSME - TECHNOLOGY DEVELOPMENT CENTRE,
MUMBAI

वैद्युतिक मापन उपयंत्र अभिकल्प संस्थान, मुंबई
INSTITUTE FOR DESIGN OF ELECTRICAL MEASURING INSTRUMENTS, MUMBAI
भारत सरकार की सोसाईटी
सूक्ष्म, लघु एवं मध्यम उद्यम मंत्रालय
Government of India Society
Ministry of Micro, Small & Medium Enterprises

IDEMI

संदर्भ सं. / Ref. No. WO/ETL/107/17-18

दिनांक :
Date : 12.01.2018

M/s. ASHIDA ELECTRONICS PVT. LTD.
PLOT NO. A-308, ROAD NO.21,
WAGLE INDUSTRIAL ESTATE,
THANE - 400 604
MAHARASHTRA, INDIA

Kind Attn: Mr. Prashant Patil

विषय : परिक्षण रिपोर्ट
Sub : **Test Report**

महोदय,

आपके उपकरणों / अवयवों पर किये हुये परिक्षण रिपोर्ट संख्या (TR/ETL/183/17-18) आपको जानकारी के लिए पत्र के साथ भेंज रहे हैं। यदि आपको परिक्षीत मदों पर स्पष्टीकरण की कोई आवश्यकता हो तो, कृपया परिक्षण रिपोर्ट जारी करने वाले प्राधिकारी को हमारे संदर्भ संख्या और तारीख का उल्लेख करते हुए, रिपोर्ट प्राप्त होने पर चार सप्ताह के अन्दर सम्पर्क करें अथवा लिखें। हम इस पत्र के साथ फीड बॅक फॉर्म भेज रहे हैं। कृपया उसे भरके प्रधाननिदेशक, वैमाउअसं को भेजे।

धन्यवाद!

भवदीय

संलग्न पत्रानुसार

प्रधान निदेशक

Dear Sir,

Test Report No. (TR/ETL/183/17-18) / on your instruments/ Components/ Equipments are / is enclosed herewith for your information. If you need any clarification on Test Report, please write/contact Test Report issuing officer quoting our reference and date within 4 weeks from the date of receipt of this report. We are also enclosing here with feed back form. Kindly fill up and send to the Principal Director of IDEMI

Thanking you,

Yours faithfully

Sanjeev Kher

Encl. As above

PRINCIPAL DIRECTOR

सूक्ष्म, लघु एवं मध्यम उद्यम
MICRO, SMALL & MEDIUM ENTERPRISES
MSME - TECHNOLOGY DEVELOPMENT CENTRE, MUMBAI

TEST REPORT

Cert. No. TC-5538

Accreditation Field: Electrical Testing
Accreditation Valid upto : 01.01.2017
Work Order No. : WO/ETL/107/17-18
Date : 16.09.2017

NABL Accreditation No.: TC-5538
Test Report No. :TR/ETL/183/17-18
Date of Testing : 01.01.2018 to 03.01.2018

Test Item : Feeder Protection Relay

Tested for : M/s. Ashida Electronics Pvt. Ltd.
Plot No. A-308, Road No.: 21, Wagle Industrial estate, Thane - 400 604, Maharashtra, India

Tested at : IDEMI MUMBAI

Specification of Items under test	Specification of Standards Used
Manufacturer : M/s. Ashida Electronics Pvt. Ltd. Thane Condition of Item on Reciept : Good Range /Rating : 24 - 230V AC / DC Sr No : 17H241B0189 Model No. : ADR 241B-B-0-0-2-0-1-1-0-2-1-E	1) Vibration Test System i. Digital Vibration Controller Model : SPARK USB Calibration Validity : July 2017 ii. Charge Accelerometer Model : March 2018 Calibration Validity : March 2018 2) Relay Test Kit Model: DRTS 64 Calibration Validity : Oct. 2018 Traceability: Standard used are traceable to National / International Standards

Ambient Conditions :

Temperature : 15°C ± 35°C Relative Humidity : < 75%

Remarks : Please refer page 2 to 10 for Test Results.

1) Procedure of Test : Please refer page 2 for tests carried out and their standards.

C. M. PATIL
ASSISTANT DIRECTOR
AUTHORISED SIGNATORY

IDEMI
A GOVERNMENT OF INDIA SOCIETY
MINISTRY OF MICRO, SMALL & MEDIUM ENTERPRISES
वैधुतिक मापन उपयंत्र अभिकल्प संस्थान
Institute for Design of Electrical Measuring Instruments
SWATANTRYAVEER TATYA TOPE MARG, CHUNABHATTI, SION P.O. MUMBAI - 400 022.
स्वातंत्र्यवीर तात्या टोपे मार्ग, चुनाभट्टी, सायन डाकघर, मुंबई - 400 022.

ELECTRICAL TESTING LABORATORY

Sr. No.: 17H241B0189
Date of Testing : 01.01.2018 to 03.01.2018

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SUMMARY OF TESTS

TEST	STANDARDS
Vibration Response Test	IEC 60255-21-1 : 1988
Vibration Endurance	IEC 60255-21-1 : 1988
Shock Response Test	IEC 60255-21-2 : 1988
Shock Withstand Test	IEC 60255-21-2 : 1988
Seismic Test	IEC 60255-21-1 : 1988 IEC 60255-21-3 : 1993 IEC 60068 – 2-6 : 2007
& as per customer's requirement.	

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1. EQUIPMENT UNDER TEST (EUT)

1.1 Brief Description

The EUT is a high performance Aditya V2 protection relay platform, designed for highly electrical noisy substation environment. Following are some of the feature of this platform:

- Design using High-Performance Digital Signal Controller capable of executing DSP and Microcontroller functions
- 4 Analog input design for CT.
- The ADR241B Relay is provided with 8 digital outputs.
- 8 opto-isolated inputs and 8 general purpose LEDs.
- Programmable Digital output & Digital Opto isolated inputs for tripping and monitoring

1.2 Operating condition during test

- EUT Energized with 110 V DC
- During testing keep Current value less than trip value (<90%)

1.3 Visual and functional/performance test before, during and after tests

Pick up value Test:

- Connect current source at 1A current input terminal.
- Set current setting value to 100% i.e. 1A, TMS at Minimum (x0.02) value
- Start current injector to & increase current value till relay get pick up and trip. The operating value should be within 1 to 1.1 times of set pickup value.

Operating Time Test :

- Set current to 2N i.e. 2A and connect trip contact to timer.
- Change the TMS setting at 1.00.
- Start the current injector and measure the operating time. The trip time value should be within ±12.5% of actual value. (Actual time 10.029 Sec.)

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2. VIBRATION RESPONSE TEST

a. Test Specifications

Test method	:	IEC 60255-21-1: 1988 (Class 1)
Waveform	:	Sinusoidal
Frequency	:	10 – 150 Hz
Cross Over Frequency	:	58 to 60 Hz
Amplitude	:	0.035 mm
Acceleration	:	0.5 gn
Sweep rate	:	1 octave per minute
Direction	:	X, Y, Z axis
Cycle	:	1
EUT condition	:	EUT operating condition as per Sr. no. 1.2

b. Requirement :

The EUT shall not get any mechanical damage or any degradation. Performance of the EUT shall be normal as per sr. no. 1.3

c. Observation :

No mechanical weakness or any degradation was observed. The performance was found to be normal

Measurement before Test

	R Phase	Y Phase	B Phase	Tolerance
Pick up (Amp)	1.06	1.06	1.05	1 – 1.1 Amp.
Operating Time @ 2N (Sec)	10.0004	9.9970	10.0460	8.77 – 11.29 Sec

Measurement After Test

	R Phase	Y Phase	B Phase	Tolerance
Pick up (Amp)	1.06	1.05	1.06	1 – 1.1 Amp.
Operating Time @ 2N (Sec)	9.9584	10.0160	10.0458	8.77 – 11.29 Sec

d. Result :

Complied

TESTED BY CHECKED BY

ELECTRICAL TESTING LABORATORY

Sr. No.: 17H241B0189 | Test Report No: TR/ETL/183/17-18
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3. VIBRATION ENDURANCE TEST

a. Test Specifications:

Test method	:	IEC 60255-21-1: 1988 (Class 1)
Waveform	:	Sinusoidal
Frequency	:	10 – 250 Hz
Acceleration	:	1 gn
Sweep rate	:	1 octave per minute
Direction	:	X, Y, Z axis
Cycle	:	20
EUT condition	:	EUT in Non-energized condition

b. Requirements:

The EUT shall not get any mechanical damage or any degradation. Performance of the EUT shall be normal as per sr. no. 1.3

c. Observation:

No mechanical damage or any degradation was observed during test. The performance was found to be normal after the test.

Measurement before Test

	R Phase	Y Phase	B Phase	Tolerance
Pick up (Amp)	1.06	1.05	1.06	1 – 1.1 Amp.
Operating Time @ 2N (Sec)	9.9584	10.0160	10.0458	8.77 – 11.29 Sec

Measurement After Test

	R Phase	Y Phase	B Phase	Tolerance
Pick up (Amp)	1.05	1.05	1.06	1 – 1.1 Amp.
Operating Time @ 2N (Sec)	9.9623	10.0220	10.0386	8.77 – 11.29 Sec

d. Result:

Complied

TESTED BY

CHECKED BY

4. SHOCK RESPONSE TEST

a. Test Specifications:

Test method	:	IEC 60255-21-2: 1988 (Class 1)
Waveform	:	Half Sine
Acceleration	:	5 gn
Pulse Width	:	11ms
No of Shock	:	3 per Axis
Direction	:	X, Y, Z axis
EUT condition	:	EUT operating condition as per Sr. no. 1.2

b. Acceptance criteria:

The EUT shall not get any mechanical damage or any degradation. Performance of the EUT shall be normal as per sr. no. 1.3

c. Observation:

No malfunctioning or any mechanical damage was observed during & after the test. The performance was found to be normal as per Sr. No.1.3

Measurement before Test

	R Phase	Y Phase	B Phase	Tolerance
Pick up (Amp)	1.05	1.05	1.06	1 – 1.1 Amp.
Operating Time @ 2N (Sec)	9.9623	10.0220	10.0386	8.77 – 11.29 Sec

Measurement After Test

	R Phase	Y Phase	B Phase	Tolerance
Pick up (Amp)	1.06	1.06	1.06	1 – 1.1 Amp.
Operating Time @ 2N (Sec)	10.0059	10.0105	10.0086	8.77 – 11.29 Sec

d. Result:
Complied

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ELECTRICAL TESTING LABORATORY

Sr. No.: 17H241B0189 | Test Report No: TR/ETL/183/17-18
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5. SHOCK WITHSTAND TEST

a. Test Specifications:

Test method	:	IEC 60255-21-2: 1988 (Class 1)
Waveform	:	Half Sine
Acceleration	:	15 g
Pulse Width	:	11ms
No of Shock	:	3 per Axis
Direction	:	X, Y, Z axis
EUT condition	:	EUT in Non - energized condition

b. Acceptance criteria:

The EUT shall not get any mechanical damage or any degradation. Performance of the EUT shall be normal as per sr. no. 1.3

c. Observation:

No malfunctioning or any mechanical damage was observed during & after the test. The performance was found to be normal as per Sr. No.1.3

Measurement before Test

	R Phase	Y Phase	B Phase	Tolerance
Pick up (Amp)	1.06	1.06	1.06	1 – 1.1 Amp.
Operating Time @ 2N (Sec)	10.0059	10.0105	10.0086	8.77 – 11.29 Sec

Measurement After Test

	R Phase	Y Phase	B Phase	Tolerance
Pick up (Amp)	1.05	1.06	1.06	1 – 1.1 Amp.
Operating Time @ 2N (Sec)	10.0258	10.0186	10.0246	8.77 – 11.29 Sec

d. Result:
Complied

TESTED BY

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ELECTRICAL TESTING LABORATORY

Sr. No.: 17H241B0189 | Test Report No: TR/ETL/183/17-18
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6. SEISMIC TEST

a. Test Specifications

Test method	:	IEC 60255-21-3 : 1993 (Class 1)
Frequency	:	5 – 35 Hz
Cross Over Frequency	:	8 Hz to 9Hz
Peak Displacement on X, Y Axis	:	3.5 mm up to cross over frequency
Peak Displacement on Z Axis	:	1.5 mm up to cross over frequency
Acceleration (X,Y Axis)	:	1gn above cross over frequency
Acceleration (Z Axis)	:	0.5gn above cross over frequency
No of Cycle per axis	:	1
EUT operating condition	:	EUT operating condition as per Sr. no. 1.2

b. Requirement

The EUT shall not get any mechanical damage or any degradation. Performance of the EUT shall be normal as per sr. no. 1.3

c. Observation

No malfunctioning or any mechanical damage was observed during & after the test. The performance was found to be normal as per Sr. No.1.3

Measurement before Test

	R Phase	Y Phase	B Phase	Tolerance
Pick up (Amp)	1.05	1.06	1.06	1 – 1.1 Amp.
Operating Time @ 2N (Sec)	10.0258	10.0186	10.0246	8.77 – 11.29 Sec

Measurement After Test

	R Phase	Y Phase	B Phase	Tolerance
Pick up (Amp)	1.06	1.06	1.05	1 – 1.1 Amp.
Operating Time @ 2N (Sec)	10.0128	10.0312	10.0088	8.77 – 11.29 Sec

d. Result

Complied

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ELECTRICAL TESTING LABORATORY

Sr. No.: 17H241B0189
Date of Testing : 01.01.2018 to 03.01.2018

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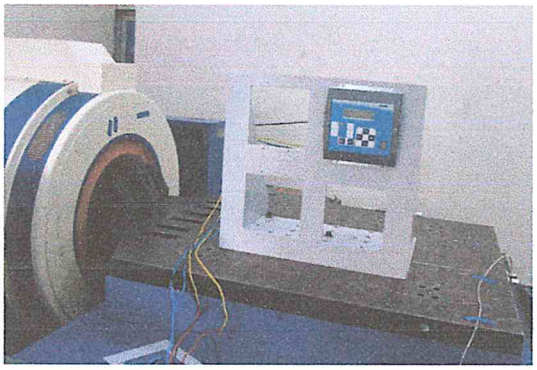
Test setup Photograph

X – Axis

Y – Axis



Z – Axis

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Sr. No.: 17H241B0189
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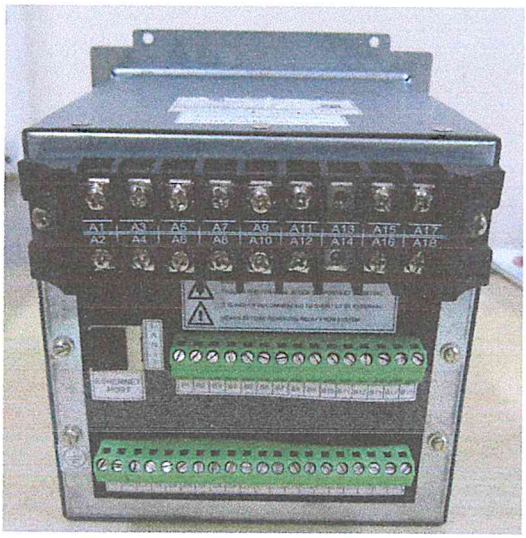
Test Report No: TR/ETL/183/17-18

EUT Photographs

Front View

Rear View



Marking Plate

*** END OF TEST REPORT ***

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