



सत्यमेव जयते

TEST/CALIBRATION REPORT



ELECTRONICS REGIONAL TEST LABORATORY (WEST)

MINISTRY OF COMMUNICATIONS & INFORMATION TECHNOLOGY, (STQC Dte.)

Government of India

Plot No, F 7 & 8, MIDC Area, Opp. SEEPZ,
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MEMORANDUM

The Test/Calibration Report issued by ERTL (W) is a record of the measurements conducted on the products submitted to it for testing / calibration and the results thereof. Unless otherwise specified in the report, the results are applicable only to those products which have been tested / calibrated and do not apply to other products even though declared to be identical.

This Report, if reproduced for any purpose-commercial or otherwise should be reproduced in full. Reproduction of a part of the report or an abstract thereof must be specifically approved from The ERTL (W).

LIABILITY CLAUSE

1. ERTL(W) shall not be liable for any change in test/calibration data and performance specification on account of malfunctioning of the standard / instrument / equipment due to any damage caused to it after the report, in respect of it has been issued.
2. The report shall not be regarded in any way diminishing the normal contractual responsibilities / obligations between the customer and ERTL (W).
3. The results reported in this report are valid only at the time of and under the stated conditions of the measurements.

ELECTRONICS REGIONAL TEST LABORATORY (WEST) DEPARTMENT OF INFORMATION TECHNOLOGY		REPORT NO. ERTL (W) / 2005 E&S 182	
SUBJECT: TESTING OF TRANSDUCER		DATE 28 OCT 2005	PAGE 1 OF 6

1. SCOPE

1.1 Service Request No : ERTL(W) / 2005 1345 Dated. 10th August, 2005

1.1.1 Service Request finalised on : 10th August, 2005

1.2 Requested by (Name and address of organisation) : SETO TEKNOLOG PVT LTD.
406, HILL VIEW INDL. ESTATE
OFF. LBS MARG, AMRUT NAGAR
GHATKOPAR(W), MUMBAI 400086

1.3	Description	Qty	Manufacturer	Type No.	Serial Nos.
	Frequency Transducer I/P: 110V AC, O/P: 4-20 mA DC, Range: 45-55 Hz, Aux. Supply: 48 V DC, Class:0. 2, User Category: II, Isolation: 4 kV	01 No.	SETO TEKNOLOG PVT LTD.	STE-A-5T	350986

1.4 Test specifications : IEC 60688 (Limited Parameters)

1.5 Lab Ambient : Temperature: (25 ±2) deg. C
RH : (55 ±5) % RH

1.6 Test Equipment used

1. Power Energy Calibrator (E&S/126)
2. High Voltage Tester (E&S/66)
3. Impulse Voltage Tester (COM/209)
4. Variac (E&S/99)
5. Clamp Meter (SAF/137)
6. DC Power Supply
7. Magnetic Influence Jig
8. Timer

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2.0 Test Results.

Sr.No	Test/Parameter (Clause No.)	Test Condition	Requirement	Observation	Remark
2.1	Intrinsic error (4.2)	Auxiliary power supply: 48 V DC. Input voltage = 110 V AC a) Input frequency = 45 Hz b) Input frequency = 50 Hz c) Input frequency = 55 Hz	Class index (0.2 %) ± 0.032 mA DC (max)	See Annexure -I	Complied
2.2	Variation due to ambient temp. (6.4)	Auxiliary power supply : 48 V DC Input voltage = 110 VAC Temp, varied from 0 deg. C to 45 deg. C	100% of class index \pm ± 0.032 mA DC (max)	See Annexure -I	Complied
2.3	Variation due to distortion of input quantities (6.10)	Auxiliary power supply : 48 V DC Input voltage = 110 VAC I/p with 20 % 3 rd harmonics	200% of Class index ± 0.064 mA DC (max)	See Annexure -I	Complied
2.4	Variation due to magnetic field of external origin (6.11)	Auxiliary power supply : 48 V DC Input voltage = 110 VAC Magnetic field of 0.4 kA/m	Class index (0.2%) ± 0.032 mA DC (max)	See Annexure -I	Complied

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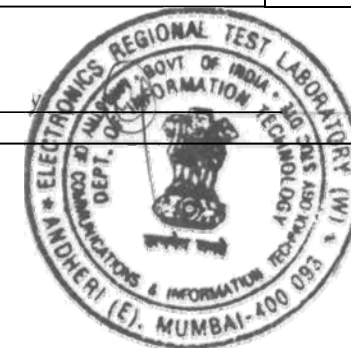


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2.0 Test Results. (continued)

Sr.No.	Test/Parameter (Clause No.)	Test Condition	Requirement	Observation	Remark
2.5	Permissive excessive inputs (6.18)				
2.5.1	Continuous excessive inputs (6.18.1)	Auxiliary power supply: 48 V DC Apply 120 % of nominal upper value on aux. Supply, voltage inputs and current inputs	Continue to comply the accuracy class after test	See Annexure -I	Complied
2.5.2	Excessive inputs of short duration (6.18.2)	a) For voltage inputs: 200 % of the nominal value of the measured voltage applied for 1 s and repeated 10 times at 10 s interval. b) For current inputs: 20 times the nominal value of the measured current applied for 1 s and repeated 5 times at 300 s interval	Continue to comply the accuracy class after test	See Annexure -I	Complied
2.6	Voltage test (6.19)	At 4kV AC for 1 min. between a) Input & output b) Aux. & output c) Aux. & input	No breakdown.	No breakdown or flashover observed.	Complied

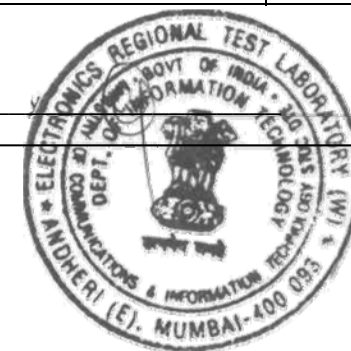
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Sr.No.	Test/Parameter (Clause No.)	Test Condition	Requirement	Observation	Remark
2.7	Impulse voltage tests (6.20)	At peak test voltage of 5 kV in both positive and negative senses having the standardized impulse waveform of 1.2/50 us, applied between terminals of each circuit in turn and all other circuit connected together.	There shall be no flashover or breakdown.	See Annexure -I	Complied
2.7.1	Intrinsic error (4.2)	As in 2.1 above	Class index (0.2 %) ± 0.032 mA DC (max)	See Annexure -I	Complied
2.8	High frequency disturbance test (6.21)	2.5 kV peak between independent circuits. 1kV peak between terminals of the same circuit.	The variation due to the effect of disturbance shall not be twice of class index.	See Annexure -I	Complied
2.8.1	Intrinsic error (4.2)	As in 2.1 above	Class index (0.2 %) ± 0.032 mA DC (max)	See Annexure -I	Complied

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3.0 General Remarks : - NIL -

REPORT APPROVED BY

REPORT RELEASED BY

Abdul Moideen
ABDUL MOID
HEAD (E&S)



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ANNEXURE –I

OUTPUT at Ref Temp (25 deg C)				Output after Impulse Test	
INPUT (Hz)	STD. (mA DC)	OBS. (mA DC)	Error	OBS. (mA DC)	Variation
45	4.000	3.992	0.008	3.988	0.004
50	12.000	11.994	0.006	11.983	0.011
55	20.000	19.994	0.006	19.984	0.010

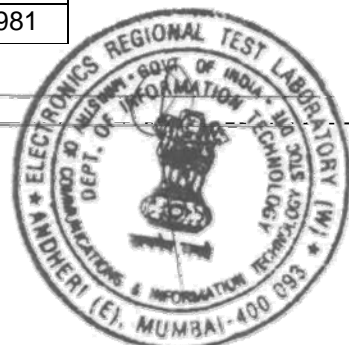
Output during 0 deg C				Output during 45 deg C	
INPUT (Hz)	STD. (mA DC)	OBS. (mA DC)	Error	OBS. (mA DC)	Variation
45	4.000	3.989	0.003	3.984	0.008
50	12.000	11.989	0.005	11.985	0.009
55	20.000	19.988	0.006	19.980	0.014

Output with Magnetic field				O/p during 3rd Harmonic Distortion	
INPUT (Hz)	STD. (mA DC)	OBS. (mA DC)	Error	OBS. (mA DC)	Variation
45	4.000	3.979	0.013	3.990	0.002
50	12.000	11.977	0.017	11.988	0.006
55	20.000	19.975	0.019	19.986	0.008

O/p after Cont. Excessive input				O/P after Excessive input Short Duration	
INPUT (Hz)	STD. (mA DC)	OBS. (mA DC)	Error	OBS. (mA DC)	Variation
45	4.000	3.993	0.001	3.992	0.000
50	12.000	11.987	0.007	11.984	0.010
55	20.000	19.989	0.005	19.981	0.013

Output after HF Disturbance.		
INPUT (Hz)	STD. (mA DC)	OBS. (mA DC)
45	4.000	4.028
50	12.000	11.985
55	20.000	19.981

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OUR ACCREDITATION STATUS

ERTL (WJ set tip under the STQC Directorate, Ministry of Communications & Information Technology, Govt of India has been accredited under number of national / international systems as follows :

SYSTEM	AREA	STATUS
IECQ [International Electro-technical Commission on Quality Assessment System for Electronic Components)	Component Testing • Resistors (Fixed) • Capacitors (Fined)	Accredited as ITL (Independent Test Laboratory)
NABL(C), India National Accreditation Board for Test & Calibration laboratories (Calibration System)	Calibration • Eteciro-technical discipline • Thermal discipline • Mechanical discipline	Accredited Calibration Laboratory
NABL (T). India National Accreditation Board for Test & Calibration laboratories (Testing System)	Electronic & Electrical Testing	Accredited Test Laboratory
IECEE-CB-Scheme	• Wains Operated Electronic Consumer Products • IT Products • Safely critical components	Approved as a CB Test Laboratory
SASO	Electronics & Electrical Testing	Recognised by Saudi Arabian Standard Organisation
Other recognitions	Electronics & Electrical Testing	Recognised by CSPO of State Govt., DOT. OGS & D, LCSO, RDSO. DRDO and BIS.