

TEST / CALIBRATION REPORT

Type Test Report

for

MECO AC Voltage Transducer

Testing as per IEC 60688 (Edition 2.2)



ELECTRONICS REGIONAL TEST LABORATORY (WEST) MINISTRY OF COMMUNICATIONS & INFORMATION TECHNOLOGY, (STQC Dte.)

Government of India

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ELECTRONICS REGIONAL TEST LABORATORY (WEST) DEPARTMENT OF INFORMATION TECHNOLOGY	REPORT NO. ERTL (W)/2003 E&	\$26
SUBJECT: TESTING OF AC VOLTAGE TRANSDUCER	DATE	PAGE	OF
	. 9 MAY 2003	1	7

1. SCOPE

1.1	Service Request No		: ERTL(W)/2003	30563 DATED	21 st March 2003
1.1	.1 Service Request finalised	on	: 21 st March 2003	i	
1.2	Requested by (Name and address of org	anisation)	: MECO INSTRU 301, BHARAT I T.J. ROAD, SE MUMBAI – 400	INDUSTRIAL WREE (W),	
1.3	Description	Qty	Manufacturer	Type No.	Serial Nos.
	AC VOLTAGE TRANSDUCER, INPUT : 0 – 132 VAC, OUTPUT : 0 – 10 mA & 4 – 20 mA Accuracy: 0.2 %	01 No.	MECO	VMT	030932
1.4	Test specifications		Testing as per IEC	C 60688 (Editio	on 2.2)
1.5	Lab Ambient		Temperature: (25 RH : (5	<u>+</u> 2) ° C 55 <u>+</u> 5) %	
1.6	Test Equipment used :		 Calibration Sy Energy Meter System DMM Vibration Ma Shock Test M Over Voltage HF Test Gene Coupling Net Programmable Chamber 	Calibrator chine lachine Test Generator rator work	S&C/138 E&S/126 EM!/006 ENV/008 ENV/018 EMI/002 EMI/019 EMI/021 ENV/042
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Part Date Part Condition Requirement Observation Test Condition Requirement O/p 1 O/p 2 Test Condition Requirement 0/0 1% 0.03 % Outgage = 0 V AC (0.2 %) -0.05 % -0.05 % Ontage = 132 V AC 0.01 % 0.01 % 0.03 % Se varied from 38.4 V to 50 % of class 0.01 % 0.03 % Se varied from 0 deg. C to index 1.56 % 2.49 % Test supply: 48 V DC 100 % of class 0.01 % 0.2 % Sower supply: 48 V DC index 0.01 % 0.2 % Sower supply: 48 V DC 100 % of class 0.01 % 0.2 % Sower supply: 48 V DC 50 % of class 0.01 % 0.2 % Sower supply: 48 V DC 50 % of class 0.01 % 0.2 % Sower supply: 48 V DC 50 % of class 0.01 % 0.01 % Sower supply: 48 V DC 50 % of class 0.01 % 0.01 %	Participation Date Test Condition Requirement Observation Test Condition Requirement Observation Test Condition Requirement Op1 Op2 % ower supply : 48 V DC. Class index 0.01 % 0.03 % oltage = 0 V AC 0.02 %) -0.05 % -0.05 % oltage = 66 V AC 0.01 % 0.01 % 0.03 % oltage = 132 V AC 0.01 % 0.03 % -0.03 % wer supply : 48 V DC 100 % of class 0.01 % 0.03 % ower supply : 48 V DC 100 % of class 0.01 % 0.2 % ower supply : 48 V DC 100 % of class 0.01 % 0.2 % ower supply : 48 V DC index 0.01 % 0.2 % ower supply : 48 V DC index 0.01 % 0.2 % ower supply : 48 V DC findex 0.01 % 0.2 % ower supply : 48 V DC 50 % of class 0.01 % 0.2 % ower supply : 48 V DC findex 0.01 % 0.01 % ower supply : 48 V DC findex 0.01 % 0.01 % ower supply : 48 V DC findex 0.01 % 0.01 % ower supply : 48 V DC findex 0.01 % 0.01 % ower supply	Y PAGE PAGE Test Condition Requirement Observation Remark Ower supply: 48 V DC. Class index Op1 Op2 Othage = 0 V AC 0.03 % 0.02 % 0.03 % Othage = 132 V AC 0.03 % 0.03 % 0.03 % Ontage = 132 V AC 0.01 % 0.03 % 0.03 % Ontage = 132 V AC 0.03 % 0.03 % 0.01 % Ower supply: 48 V DC 100 % of class 1.56 % 2.49 % Complied Ower supply: 48 V DC 100 % of class 0.01 % 0.03 % Complied Ower supply: 48 V DC 100 % of class 0.01 % 0.02 % Solder at one joint which was rectific ndex 0.01 % 0.2 % Complied Ower supply: 48 V DC 50 % of class 0.01 % 0.2 % Complied Ower supply: 48 V DC 50 % of class 0.01 % 0.2 % Complied Ower supply: 48 V DC 50 % of class 0.01 % 0.02 % Complied Ower supply: 48 V DC 50 % of class 0.01 % 0.01 % Complied Ower supply: 48 V DC 50 % of class 0.01 % 0.01 % Complied Ower supply: 48 V DC 50 % of class 0.01 %	NFOR	ELECTRONICS REGIONAL TEST LABORATORY (DEPARTMENT OF INFORMATION TECHNOLOGY	TORY (WEST) OLOGY	KE	PORT NO. E	(W)/	
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Test ConditionRequirementObservationxiliary power supply: 48 V DC.Class index $0/p \ 1$ $0/p \ 2$ input voltage = 0 V AC 0.2% 0.05% 0.02% Input voltage = 0 V AC 0.02% 0.05% 0.05% Input voltage = 66 V AC 0.00% 0.01% 0.03% input voltage = 132 V AC 50% of class 0.01% 0.03% $.6 V$ index 0.01% 0.03% 0.03% $.6 V$ index 1.56% 2.49% index 1.56% 0.09% 0.2% $.6 V$ index 1.00% of class 0.09% 0.2% index 1.00% of class 0.17% 0.2% index. C 100% of class 0.17% 0.2% index. C 100% of class 0.01% 0.02% index. C 100% of class 0.01% 0.2% index. C 100% of class 0.17% 0.2% inferency varied from 0 deg. C toindex 0.17% 0.2% inferency varied from 0 deg. C toindex 0.01% 0.01% if form 0 ohm to 1000 ohm.index 0.01% 0.01% if of from 0 ohm to 500 ohm.index 0.01% 0.01%	Test Condition Requirement Observation xiliary power supply: 48 V DC. Class index 0/p 1 0/p 2 Input voltage = 0 V AC 0.02 % 0.02 % 0.02 % Input voltage = 0 V AC 0.01 % 0.03 % 0.03 % Input voltage = 66 V AC 0.01 % 0.03 % 0.03 % 6 V input voltage = 132 V AC 0.01 % 0.03 % 6 V index 0.01 % 0.2 % 7 S Hiary power supply: 48 V DC 50 % of class 0.17 % 0.2 % 8 Kiliary power supply: 48 V DC 50 % of class 0.17 % 0.2 % 7 S Hiary power supply: 48 V DC 50 % of class 0.17 % 0.2 % 8 Kiliary power supply: 48 V DC 50 % of class 0.17 % 0.2 % 7 S Hiary power supply: 48 V DC 50	Test Condition Requirement Observation Natiary power supply: 48 V DC. Class index 0/p 1 0/p 2 Input voltage = 0 V AC 0.02 % -0.05 % -0.05 % Input voltage = 0 V AC 0.01 % -0.03 % -0.03 % Input voltage = 132 V AC 0.01 % 0.03 % -0.03 % 6 V input voltage = 132 V AC 0.01 % 0.03 % 6 V index 0.01 % 0.2 % 7 S Hz index 0.01 % 0.2 % 7 S Hz index 0.01 % 0.2 % 7 S Hz index 0.01 % 0.2 % 8 S Hz Si Hz 0.01 % 0.2 % 8 S Hz Si Hz 0.01 % 0.01 % 9 of form 0 ohm to 1000 ohm. 0.01 % 0.01 % 9 of form 0 ohm to 500 ohm. 0.01 % 0.01 % </th <th></th> <th></th> <th></th> <th>· · ·</th> <th></th> <th></th> <th></th>				· · ·			
xiliary power supply: 48 V DC.Class indexInput voltage = 0 V AC(0.2 %)-0.05 %-0.05 %Input voltage = 0 V AC-0.06 %-0.05 %-0.05 %Input voltage = 66 V AC-0.06 %-0.05 %-0.05 %Input voltage = 132 V AC50 % of class0.01 %0.03 %.6 Vindex0.01 %0.03 %.6.6 Vindex0.09 % of class0.09 %0.2 %mp. varied from 0 deg. C toindex0.01 %0.2 %mp. varied from 0 deg. C toindex0.17 %0.2 %mp. varied from 0 deg. C toindex0.01 %0.10 %mp. varied from 0 deg. C toindex0.01 %0.01 %mp. varied from 0 deg. C toindex0.01 %0.01 %mp. varied from 0 deg. C50 % of class0.01 %0.01 %iffequency varied from 45 Hzindex0.01 %0.01 %xiliary power supply: 48 V DC50 % of class0.01 %0.01 %iffort 1: Output load resistanceindex0.01 %0.01 %iffort 2: Output load resistanceindex0.01 %0.01 %iffort 0: ohm to 500 ohm.index0.01 %0.01 %	xxiliary power supply: 48 V DC. Class index -0.05 % 0.02 % Input voltage = 0 V AC 0.02 % -0.05 % -0.05 % -0.05 % Input voltage = 66 V AC 0.01 % 0.03 % -0.05 % -0.05 % -0.05 % Input voltage = 132 V AC 0.01 % 0.03 % -0.05 % -0.05 % -0.05 % -0.05 % xx. Voltage varied from 38.4 V to 50 % of class 0.01 % 0.03 % -0.05 % -0.05 % -0.05 % .6 V index index 0.01 % 0.03 % -0.05 % -0.05 % -0.05 % -0.05 % .6 V index index 0.01 % 0.03 % -0.05 % -0.05 % -0.05 % .6 V index index 0.01 % 0.03 % -0.02 % -0.05 % -0.02 % -0.05 %	xiliary power supply: 48 V DC. Class index Input voltage = 0 V AC (0.2 %) Input voltage = 0 V AC 0.05 % Input voltage = 132 V AC 0.01 % not voltage = 66 V AC 0.01 % Input voltage = 132 V AC 0.01 % of C 0.03 % .6 V index .6 V 0.03 % .6 V 0.03 % .6 V index .6 V index .6 V 0.03 % .6 V index .6 V 0.03 % .6 V 0.09 % of class .7 % 0.17 % .8 % DC 50 % of cla	Test/Parameter		Test Condition	Requirement	Observ O/p 1	ation O/p 2	Remark
Input voltage = 0 V AC-0.05 %0.02 %Input voltage = 66 V ACInput voltage = 66 V AC-0.05 %-0.05 %Input voltage = 132 V AC50 % of class0.01 %0.03 %.s. Voltage varied from 38.4 V to50 % of class0.01 %0.03 %.6 Vindex0.01 %0.03 %0.03 %.6 Vindex0.01 %0.03 %0.03 %.6 Vindex0.01 %0.03 %0.03 %.6 Vindex0.00 % of class1.56 %2.49 %mp. varied from 0 deg. C toindex0.09 %0.2 %mp. varied from 0 deg. C toindex0.09 %0.2 %mp. varied from 0 deg. C toindex0.01 %0.2 %mp. varied from 0 deg. C toindex0.01 %0.2 %mp. varied from 0 deg. C toindex0.01 %0.01 %mp. varied from 0 deg. C toindex0.01 %0.01 %index0.01 %index0.01 %stiliary power supply : 48 V DC50 % of class0.01 %stiliary power supply : 48 V DC50 % of class0.01 %stiliary power supply : 48 V DC50 % of class0.01 %stiliary power supply : 48 V DC50 % of class0.01 %stiliary power supply : 48 V DC50 % of class0.01 %stiliary power supply : 48 V DC50 % of class0.01 %stiliary power supply : 48 V DC50 % of class0.01 %stiliary power supply : 48 V DC50 % of class0.01 %	Input voltage = 0 V AC-0.05 %0.02 %Input voltage = 66 V ACInput voltage = 66 V AC-0.05 %-0.05 %Input voltage = 132 V AC50 % of class0.01 %0.03 % 6 Vindex1.56 %2.49 % 6 Vmp. varied from 38.4 V to50 % of class0.01 %0.03 % 6 Vindex1.56 %2.49 % 6 Vmp. varied from 0 deg. C toindex0.09 %0.2 % 6 Vmp. varied from 0 deg. C toindex0.017 %0.2 % 6 S Yindex0.017 %0.2 %0.01 % 6 S Yindex0.017 %0.2 % 6 S Yindex0.017 %0.2 % 6 S Yindex0.017 %0.2 % 6 S Hzindex0.017 %0.2 % 6 S Hzxiliary power supply: 48 V DC50 % of class0.01 % 6 S Hzxiliary power supply: 48 V DC50 % of class0.01 % 6 S Hzxiliary power supply: 48 V DC50 % of class0.01 % 6 S Hzxiliary power supply: 48 V DC50 % of class0.01 % 6 S Hzxiliary power supply: 48 V DC50 % of class0.01 % 6 S Hzxiliary power supply: 48 V DC50 % of class0.01 % 6 S Hzxiliary power supply: 48 V DC50 % of class0.01 % 6 S Hzxiliary power supply: 48 V DC50 % of class0.01 % 6 S Hzxiliary power supply: 48 V DC50 % of class0.01 % 6 S Hzxiliary power supply: 48	Input voltage = 0 V AC -0.05 % 0.02 % Input voltage = 66 V AC -0.05 % -0.05 % Input voltage = 66 V AC -0.05 % -0.05 % input voltage = 56 V AC -0.05 % -0.05 % .6 V index 0.01 % 0.03 % .6 V index 0.09 % 0.2 % .6 V index 0.17 % 0.2 % .6 V index 0.01 % 0.17 % .6 V index 0.17 % 0.2 % .6 V index 0.01 % 0.10 % .6 V index 0.01 % 0.10 % .6 V index 0.01 % 0.2 % .6 V index 0.01 % 0.2 % .7 Matter 50 % of class 0.10 % 0.10 % .6 Matter 0.01 % 0.01 % 0.2 % <	Intrinsic error	1	Auxiliary power supply : 48 V DC.	Class index (0.2 %)			Complied
50 % of class 0.01 % 0.03 % index 100 % of class 1.56 % 2.49 % index 100 % of class 0.09 % 0.2 % index 0.01 % 0.2 % 50 % of class 0.17 % 0.2 % index 0.01 % 0.01 %	50 % of class 0.01 % 0.03 % index 100 % of class 1.56 % 2.49 % index 100 % of class 0.09 % 0.2 % index 0.01 % 0.2 % index 0.01 % 0.2 % index 0.01 % 0.01 % index 0.01 % 0.01 %	50 % of class 0.01 % 0.03 % index 100 % of class 1.56 % 2.49 % index 0.09 % 0.2 % index 0.01 % 0.01 %					-0.05 % -0.06 % -0.05 %	0.02 % -0.05 % -0.05 %	
100 % of class 1.56 % 2.49 % index 1.56 % 2.49 % index 0.09 % 0.2 % index 0.17 % 0.2 % 50 % of class 0.17 % 0.2 % index 0.01 % 0.01 %	100 % of class 1.56 % 2.49 % index 1.56 % 2.49 % index 0.09 % 0.2 % index 0.17 % 0.2 % 50 % of class 0.17 % 0.2 % index 0.01 % 0.01 %	100 % of class 1.56 % 2.49 % index 1.56 % 2.49 % index 0.09 % 0.2 % 50 % of class 0.17 % 0.2 % index 0.17 % 0.2 % index 0.01 % 0.01 % index 0.01 % 0.01 %	Variation due to auxiliary supply voltage	1	Aux. Voltage varied from 38.4 V to 57.6 V	50 % of class index	0.01 %	0.03 %	Complied
100 % of class 0.09 % 0.2 % index 0.17 % 0.2 % 50 % of class 0.17 % 0.2 % index 0.01 % 0.01 %	100 % of class 0.09 % 0.2 % index 0.17 % 0.2 % 50 % of class 0.17 % 0.2 % index 0.01 % 0.01 %	100 % of class 0.09 % 0.2 % index 0.17 % 0.2 % 50 % of class 0.17 % 0.2 % index 0.01 % 0.01 %	Variation due to ambient temp.	1	Auxiliary power supply : 48 V DC	100 % of class index	1.56%	2.49 %	Called customer, Dry solder at one joint found
100 % of class 0.09 % 0.2 % index 0.17 % 0.2 % 50 % of class 0.17 % 0.2 % index 0.01 % 0.01 %	100 % of class 0.09 % 0.2 % index 0.17 % 0.2 % 50 % of class 0.17 % 0.2 % index 0.01 % 0.01 %	100 % of class 0.09 % 0.2 % index 0.17 % 0.2 % 50 % of class 0.17 % 0.2 % index 0.01 % 0.01 %			Temp. varied from 0 deg. C to 45 deg. C				which was rectified and test repeated. The result
50 % of class 0.17 % 0.2 % index 0.01 % 0.01 %	50 % of class 0.17 % 0.2 % index 0.01 % 0.01 % 0.01 %	50 % of class 0.17 % 0.2 % index 50 % of class 0.01 % 0.01 % 0.01 % 0.01 % 0.01 % 0.01 %	Retesting of Variation due to ambient temp.		Auxiliary power supply : 48 V DC Temp. varied from 0 deg. C to 45 deg. C	100 % of class index	% 60.0	0.2 %	of retest reported at Sr No. 2.3.1
50 % of class 0.01 % 0.01 % 0.01 %	50 % of class 0.01 % 0.01 % 0.01 %	50 % of class 0.01 % 0.01 %	Variation due to frequency of input quantities		Auxiliary power supply : 48 V DC Input frequency varied from 45 Hz to 55 Hz.	50 % of class index	0.17 %	0.2 %	Complied
			Variation due to output load		Auxiliary power supply : 48 V DC Output 1: Output load resistance varied from 0 ohm to 1000 ohm.	50 % of class index	0.01 %		Complied
	A Descent of the second of the	A CORV (N)			Output 2: Output load resistance varied from 0 ohm to 500 ohm.			0.01 %	

Complied Complied Complied Remark Complied Complied ٩ PAGE 3 REPORT NO. ERTL (W)/2003 E&S 26 <u>0/p 2</u> 0.17 % 0.03 % 0.14 % 0.02 % 0.19 % Observation E.9 MAY 2003 DATE 0.17% 0.02 % 0.18% 0.0 1% 0.2 % 0/p 1 200 % of Class accuracy class Class index Requirement Continue to Class index Class index comply the index Auxiliary power supply : 48 V DC Auxiliary power supply : 48 V DC Auxiliary power supply: 48 V DC Auxiliary power supply: 48 V DC Auxiliary power supply : 48 V DC Wih 100 Vrms at 45 Hz to 65 Hz applied between either output terminal and earth. I/p with 20 % 3rd harmonics Magnetic field of 0.4 kA/m Test Condition Test duration: 35 min. Test duration: 6 h ELECTRONICS REGIONAL TEST LABORATORY (WEST) DEPARTMENT OF INFORMATION TECHNOLOGY SUBJECT: TESTING OF AC VOLTAGE TRANSDUCER Variation due to self heating continuous operation Test/Parameter Variation due to magnetic field of distortion of input Variation due to Variation due to Variation due to common mode interference external origin quantities Reference Clause No. 6.10 6.16 6.14 6.15 6.11 Sr.No 2.6 2.8 2.9 2.5 2.7

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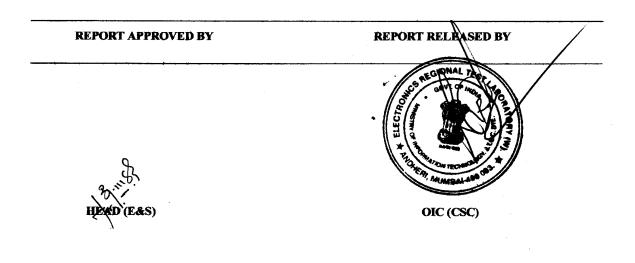
	E OF 7	Remark	Complied		Complied	Complied	Complied
W)/2003 E&S 20	PAGE 4	Observation O/p 2	0.01 %		Complied	Complied	
KEPOKT NO. ERTL (W//2003 E&S 26	9 MAY 2003	Obse 0/p 1	0.03 %		Complied	Complied	No breakdown et
<u> </u>		Requirement	Class index		Continue to comply the accuracy class after test	Continue to comply the accuracy class after test	No breakdown
TORY (WEST) OLOGY	NSDUCER	Test Condition	Auxiliary power supply : 48 V DC With 1 V rms at 45 Hz to 65 Hz applied in series with output signal		Auxiliary power supply : 48 V DC Apply 120 % of nominal upper value on aux. Supply, voltage inputs and current inputs.	 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 	At 3 kV AC for 1 min. between a) Input & output b) Aux. & output c) Aux. & input
ELECTRONICS REGIONAL LEST LABORATORY (WEST) DEPARTMENT OF INFORMATION TECHNOLOGY	SUBJECT: TESTING OF AC VOLTAGE TRANSDUCER	Test/Parameter	Variation due to series mode interference	Permissive excessive inputs	Continuous excessive inputs	Excessive inputs of short duration	Voltage test,
KONICS KEG	CT: TESTING	Reference Clause No.	6.17	6.18	6.18.1	6.18.2	6.20
DEPAR	SUBJEC	Sr.No.	2.10	2.11	2.11.1	2.11.2	2.12

ELECT DEPAR	RONICS REG	ELECTRONICS REGIONAL TEST LABORATORY (WEST) DEPARTMENT OF INFORMATION TECHNOLOGY	DRATORY (WEST) CHNOLOGY	RE	REPORT NO. ERTL (W)/2003 E&S 26	V)/2003 E&S 26	
SUBJE	CT: TESTING	SUBJECT: TESTING OF AC VOLTAGE TRANSDUCER	TRANSDUCER		DATE	PAGE	, OF
					9 MAY 2003	с ———	<u>_</u>
Sr.No.	Reference	Test/Parameter	Test Condition	Requirement	Observation	/ation	Remark
	Clause No.				Output 1	Output 2	ľ
2.13	6.20	Impulse voltage tests	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.	After completion of the test the DUT shall comply with the requirement appropriate to its class index.			Complied
2.13.1	4.2	Intrinsic error	Auxiliary power supply : 48 V DC a) Input voltage = 0 V AC b) Input voltage = 66 V AC c) Input voltage = 132 V AC	Class index (0.2 %)	-0.02 % -0.02 % 0.05 %	-0.01 % 0.06 % 0.02 %	Complied
2.14	6.21	High frequency disturbance test	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.	Complied	Complied	Complied
2.14.1	4.2	Intrinsic error	Auxiliary power supply : 48 V DC c) Input voltage = 0 V AC d) Input voltage = 66 V AC c) Input voltage = 132 V AC	Class index (0.2 %)	-0.03 % 0.01 % 0.03 %	-0.01 % 0.01 % 0.02 %	Complied
2.15	6.22	Test for temp. rise	Current circuit loaded at 110 % for 2 h Voltage circuit loaded at 120 % for 2 h	For input circuits: 60 k For exterior surface: 25 k	Not discernible	Not discernible	Complied
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BUBECT: TESTING OF AC VOLTAGE TRANSDUCER DATE OF SUBJECT: TESTING OF AC VOLTAGE TRANSDUCER Test Candition Test Condition PAGE OF SNo. Reference Test/Parameter Test Candition Requirement Observation Remark 2.16 6.23 Vibration 5 systes: 10 - 53 vibration Conditioned On part 1 2.16 4.2 Intrinsic error 9 ingui vigue = 0V AC (0.2%) 0.03 % -0.01 % Compliad 2.17.1 4.2 Intrinsic error 9 ingui vigue = 0V AC (0.2%) 0.03 % -0.01 % Compliad 2.17.1 4.2 Intrinsic error 9 ingui vigue = 6V AC (0.2%) 0.03 % -0.01 % Compliad 2.17.1 4.2 Intrinsic error 9 ingui vigue = 6V AC (0.2%) 0.03 % -0.01 % Compliad 2.17.1 4.2 Intrinsic error 9 ingui vigue = 6V AC (0.2%) 0.03 % -0.01 % Compliad 2.17.1 4.2 Intrinsic error 9 ingui vigue = 6V AC (0.2%) 0.03 % -0.01 % Compliad 2.17.1 4.2 Intrinsic error 9 ingui vigue = 6V AC (0.2%) 0.03 % -0.01 % Compliad 2.18.1 4.2	ELECT	RONICS REG TMENT OF I	ELECTRONICS REGIONAL TEST LABORAT DEPARTMENT OF INFORMATION TECHNO	ELECTRONICS REGIONAL TEST LABORATORY (WEST) DEPARTMENT OF INFORMATION TECHNOLOGY	REPOR	REPORT NO. ERTL (W)/2003 E&S 26	03 E&S 26	
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42 b) input voltage = 56 V AC (0.2 %) 0.06 % 0.06 % 0.00 % 6.23 Shock 1% sinc, III 3.3 shocks on each sense. Conditioned 0.00 % 0.00 % 6.23 Bhock 1% sinc, III 3.3 shocks on each sense. Conditioned 0.00 % 0.00 % 4.2 Intrinsic error b) Input voltage = 66 V AC (0.2 %) 0.01 % 0.01 % 0.01 % 5.3 Drop & toppic b) Input voltage = 66 V AC (0.2 %) 0.01 % 0.01 % 0.01 % 6.1 b) Input voltage = 66 V AC (0.2 %) 0.01 % 0.01 % 0.01 % 6.23 Drop & toppic Drop & toppic 0.01 % 0.01 % 0.01 % 6.23 Drop & toppic Drop of toppic 0.01 % 0.01 % 0.01 % 6.3 Drop & toppic Drop of toppic 0.01 % 0.01 % 0.01 % 7.3 Open circuit Auntilary power supply : 48 V DC 0.12 %) 0.01 % 0.31 % 0.33 % 5.4 Ripple Input voltage = 132 V AC 5.13 V AC 0.12 %) 0.34 % 0.33 % 1.14 3 V 5.3 Noben circuit Auntiliary power supply : 48 V DC Not eaceel twice of class index 0.34 % 0.33 % <td< td=""><td>2.16.1</td><td>4.2</td><td>Intrinsic error</td><td>a) Input voltage = 0 V AC</td><td>Class index</td><td>-0.03 %</td><td>-0.01 %</td><td>Complied</td></td<>	2.16.1	4.2	Intrinsic error	a) Input voltage = 0 V AC	Class index	-0.03 %	-0.01 %	Complied
6.23 Shock 15g. ¼ sine, 11 ms, 3 shocks on each sense. Conditioned 4.1 Intrinsic entry a) Input voltage = 0 V AC -0.04 % -0.03 % -0.03 % 4.2 Intrinsic entry b) Input voltage = 60 V AC (0.2 %) -0.01 % -0.01 % 6.23 Drop & topple Drop k topple Drop k topple -0.01 % -0.01 % 6.13 Drop & topple Drop k topple Drop k topple -0.01 % -0.01 % 6.13 Drop & topple Drop k topple Drop k topple -0.01 % -0.01 % 6.13 Drop & topple Drop k topple Drop k topple -0.01 % -0.01 % 6.13 Drop & topple Drop k topple Drop k topple -0.01 % -0.01 % 6.13 Drop & topple Drop net supply 48 V DC -0.2 % -0.01 % 5.1 Ripple Input voltage = 132 V AC -0.12 % 0.13 % 0.03 % 5.3 Ripple Input voltage = 132 V AC -0.12 % 0.34 % 0.33 % 5.3 Ripple Input voltage = 132 V AC -0.13 % 0.33 % 0.33 % 5.4 Ripple Input voltage = 132 V AC -0.13 % 0.34 % 0.33 % 5.3 Rosponse time <td></td> <td></td> <td></td> <td>b) input voltage = 66 V AC c) Input voltage = 132 V AC</td> <td>(0.2 %)</td> <td>-0.08 % 0.02 %</td> <td>-0.04 % 0.02 %</td> <td>~~~~</td>				b) input voltage = 66 V AC c) Input voltage = 132 V AC	(0.2 %)	-0.08 % 0.02 %	-0.04 % 0.02 %	~~~~
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6.23 Drop & topple b) Input voltage = 6.5 VAC (0.2 %) -0.03 % -0.01 % 6.13 Drop & topple Drop input voltage = 1.32 VAC 0.013 % -0.01 % 7 Drop & topple Drop input voltage = 1.32 VAC Conditioned -0.01 % 7 Drop & topple Drop input voltage = 1.32 VAC -0.01 % -0.01 % 7 Drop & topple Drop input voltage = 0.7 AC (0.2 %) -0.01 % 6.13 Not bottom cacho Diput voltage = 1.32 VAC 0.09 % -0.01 % 5.3 Notage Diput voltage = 1.32 VAC 0.12 %) 0.09 % -0.01 % 5.4 Ripple Input voltage = 1.32 VAC -0.13 % KOC 0.34 % 0.35 % 5.4 Ripple Input voltage = 1.32 VAC -0.13 % KOC 0.34 % 0.35 % 5.5 Response time Auxiliary power supply : 48 VDC Inmut voltage = 1.32 VAC 0.34 % 0.33 % 5.5 Response time Input voltage = 1.32 VAC 0.134 % 0.34 % 0.35 % 5.5 Response time Auxiliary power supply : 48 VDC 0.132 VAC 0.34 % 0.35 % 5.5 Response time Input voltage = 1.32 VAC 0.01 % of tope tofe 0.34 % 0.35 %	2.17.1	4.2	Intrinsic error	a) Input voltage = 0 V AC	Class index	-0.04 %	-0.02 %	Complied
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0.23 Ltop & topple Drop act top	0.0	~~~~					2 222	
4.2 Intrinsic error a) Input voltage = 0 V AC Class index -0.02 % -0.01 % 5.1 0) Input voltage = 6 V AC (0.2 %) -0.04 % -0.04 % -0.04 % 5.2.3 Open circuit Auxiliary power supply : 8 V DC - - - - 5.2.3 Open circuit Auxiliary power supply : 48 V DC - - - - - 5.4 Ripple Auxiliary power supply : 48 V DC - - - - - - 5.3 Response time Auxiliary power supply : 48 V DC - - - - - - 5.5 Response time Auxiliary power supply : 48 V DC Intervoltage = 132 V AC 0.34 % 0.34 % 0.35 % 5.5 Response time Auxiliary power supply : 48 V DC Intervoltage = 132 V AC 0.14 % 0.34 % 0.35 % 5.5 Response time Auxiliary power supply : 48 V DC Intervoltage = 132 V AC 0.14 % 0.34 % 0.35 % 5.5 Response time Auxiliary power supply : 48 V DC Intervoltage = 132 V AC 0.14 % 0.34 % 0.35 % 5.5 Response time Auxiliary power supply : 48 V DC Intervoltage = 132 V AC Intervoltage = 132 V AC 0.01 %	2.18	0.23	Lirop & topple	Drop height: 25 minn, one drop about each of four bottom edges. One topple about each of four bottom edges.		Conditioned		I
5.2.3 Open circuit b) Input voltage = 65 V AC (0.2 %) -0.04 % -0.04 % -0.04 % 5.2.3 Open circuit Auxiliary power supply: 48 V DC - 13.47 V 14.43 V 5.4 Ripple Auxiliary power supply: 48 V DC - 0.03 % 0.03 % 0.05 % 5.5 Response time Auxiliary power supply: 48 V DC Imput voltage = 132 V AC 0.31 % 0.33 % 5.5 Response time Auxiliary power supply: 48 V DC Imput voltage = 132 V AC 0.31 % 0.33 % 5.5 Response time Auxiliary power supply: 48 V DC Imput voltage = 132 V AC 0.132 V AC 0.34 % 0.33 % 5.5 Response time Auxiliary power supply: 48 V DC Imput voltage = 132 V AC 0.132 V AC 0.34 % 6 Input voltage switched from 0 to 132 V AC Imput voltage switched from 0 to 132 V AC 0.04 % 0.34 % 6 Input voltage switched from 0 to 132 V AC Imput voltage switched from 0 to 132 V AC 0.04 % 0.05 % 6 Input voltage switched from 0 to 132 V AC Imput voltage switched from 0 to 132 V AC 0.04 % 0.04 %	2.18.1	4.2	Intrinsic error	a) Input voltage = 0 V AC	Class index	-0.02 %	-0.01 %	Complied
5.2.3 Open circuit Auxiliary power supply: 48 V DC 13.47 V 14.43 V 5.4 Ripple Input voltage 132 V AC Not exceed twice of class index 0.34 % 0.35 % 5.5 Risponse time Auxiliary power supply: 48 V DC Time required for output signal 137 ms 135 ms 5.5 Response time Auxiliary power supply: 48 V DC Time required for output signal 137 ms 135 ms 5.5 Response time Auxiliary power supply: 48 V DC Inducid transle 60 of fiducid transle 0.34 % 0.35 % 5.5 Response time Auxiliary power supply: 48 V DC Inducid transle 137 ms 135 ms 5.5 Response time Auxiliary power supply: 48 V DC Inducid transle 0.34 % 0.35 % 5.5 Response time Auxiliary power supply: 48 V DC Inducid transle 137 ms 135 ms 6 Input voltage switched from 0 to 132 V AC Inducid transle Inducid transle 137 ms 135 ms 6 Input voltage switched from 0 to 132 V AC Inducid transle Inducid transle Inducid transle 137 ms 6 Input voltage switched from 0 to 132 V AC Inducid transle Interested Interested Interested				b) Input voltage = 66 V AC c) Input voltage = 132 V AC	(0.2 %)	-0.04 % 0.09 %	-0.04 % 0.06 %	
5.4 Ripple Auxiliary power supply: 48 V DC Not exceed twice of class index 0.34 % 0.35 % 5.5 Response time Input voltage = 132 V AC Time required for output signal 137 ms 135 ms 5.5 Response time Auxiliary power supply: 48 V DC Input voltage switched from 0 to 132 V AC Time required for output signal 137 ms 135 ms pproved by Input voltage switched from 0 to 132 V AC Addwint Feetometed Imput voltage switched from 0 to 132 V AC Addwint Feetometed 137 ms 135 ms endum version of Page No. 06 of 07 of Report No. ERTL (W)/2003E&S26 is the man and the momented Imput voltage scicled from 0 to ERTL (W)/2003E&S26 is the man and the momented Imput voltage scicled from 0 to ERTL (W)/2003E&S26 is the man and the momented Imput voltage voltage scicled from 0 to ERTL (W)/2003E&S26 is the man and the momented Imput voltage voltage voltage voltage Imput voltage voltage voltage voltage Imput voltage vol	2.19	5.2.3	Open circuit voltage	Auxiliary power supply : 48 V DC Input voltage = 132 V AC		13.47 V	14.43 V	1
5.5 Response time Auxiliary power supply: 48 V DC Time required for output signal 137 ms input voltage switched from 0 to 132 V AC to reach 99 % from 0 % of fiducial usine required for output signal 137 ms opproved by fiducial usine required for output signal 137 ms endum version of Page No. 06 of 07 of Report No. ERTL (W)2003E&S26 is the main and the reported main and the restored main and the restored main and the report No. ERTL (W)2003E&S26 is the main and the main an	2.20	5.4	Ripple	Auxiliary power supply : 48 V DC Input voltage = 132 V AC	Not exceed twice of class ind		0.35 %	Complie
pproved by Adda Sec. 2014 For the second by Contract of the second secon	2.21	5.5	Response time	power supply : 48 V DC age switched from 0 to 132 V AC	Time required for output sign to reach 99 % from 0 % of fiducial value shall be report		135 ms	1
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ELECTRONICS REGIONAL TEST LABORATORY (WEST) MINISTRY OF INFORMATION TECHNOLOGY	REPORT NO. ERTL (W)/2003 E&	:S 26
SUBJECT: TESTING OF AC VOLTAGE TRANSDUCER	DATE	PAGE	OF
	9 MAY 2003	7	7

3.0 General Remarks : Nil.



OUR ACCREDITATION STATUS

ERTL (W) set up under the STQC Directorate, Ministry of Communications & Information Technology, Govt. of India has been accreditated 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 (Fixed)	Accreditated as ITL (Independent Test Laboratory)
NABL (C), India National Accreditational Board for Test & Calibration laboratories (Calibration System)	Calibration • Electro-technical discipline • Thermal discipline • Mechanical discipline	Accreditated Calibration Laboratory
NABL(T), India National Accreditational Board for Test & Calibration laboratories (Testing System)	Electronic & Electrical Testing	Accreditated Test Laboratory
IECEE-CE-Scheme	 Mains Operated Electronic Consumer Products 	Approved as a CB test Laboratory
Other recognisation		Recognised by CSPO of State Govt., DOT, Naval Docyard, LCSO etc.