TEST REPORT – Digital Multimeter 610

Applicant Name & Address: Rishabh Instruments Ltd F-31,MIDC,Satpur,Nashik 422007,Maharashtra ,India	**TEST REPORT NO : VA/TST/610/2024/01**	
	DATE OF ISSUE : 12th AUG,2024	**PAGE : 1 of 22**

DESCRIPTION OF SAMPLE :

Name : Digital Multimeter
Model : Rish 610
Function and Ranges :

AC Current : 10A ,	DC Current : 10A
AC Voltage : 1000V,	DC Voltage : 1000V
Resistance : 60MΩ,	Frequency : 999.9 kHz
Temperature : 1200°C,	Capacitance : 6mF
Duty cycle : 2…98.0%,	Diode function

No. of Samples : 02
Sr.No: S1 & S2
PCB version : VAR410A 20240112
Sample Received on : 25/03/2024

Equipments used for testing:

Sr. No.	Instrument	Make / Model	Sr. No.
1	Multifunction calibrator	Fluke : 5500A	9120026
2	Temperature- humidity chamber	YLINST HSG-100C	20231130007
3	HV Tester	Changsheng: CS2671A	0001

COMPLIANCE SPECIFICATION:

Terms, Definitions & Test methods as per IS 13875: 1993 (Reaffirmed 2006)
Digital Measuring Instruments for measurement & control.
Specification & requirements as per product datasheet : Rev- 002

REMARKS: The Samples has passed the specification tested to

Testing Laboratory: SHANGHAI VA INSTRUMENT CO.LTD

PREPARED BY : KRA	CHECKED BY : VSC	APPROVED BY : VSC
		

Table – A: Summary of tests Conducted:

Sr. No.	Test procedures	Requirement	Observation	Remark
1. PERFORMANCE TESTS				
1.	**Intrinsic Error Test :** (As per IS 13875-1, cl 4.2) The measuring instrument being under reference conditions, measurements shall be taken at constant intervals. Measurements shall be taken in all measurement ranges. Error shall be calculated for all measurements taken.	Error should be within limits as specified by manufacturer.	For results see table 1	Conforms
2.	**Influence Error resulting from Change in Ambient Temperature.** (As per IS 13875-1, cl 4.4) Record the readings at ref. temperature 23˚C (Br) then readings at 0˚C and 50˚C after 2 hrs of conditioning period in each temperature (Bx). Compute Variation (Bx – Br) at both the Temperatures for all ranges in each function.	Variation should be within limits as specified by manufacturer. (i.e. 0.1 x Intrinsic error / k)	For results see table 2	Conforms
3.	**Frequency influence error in the case of a.c. voltage measurement.** (As per IS 13875-2, cl 3.13) 1. The display value shall be determined at reference frequency under reference conditions (Br), for ac voltage and current ranges. 2. The frequency shall then be varied within rated range of use at constant input value. (Bx) 3. The variation Bx - Br is calculated.	Variation should be within limits as specified by manufacturer. (i.e. 2% of reading +3 digits)	For results see table 3	Conforms
4.	**Influence due to Storage temperature.** (As per **data specified**) Keep the meter de-energized for 2hr each at -25 °C and 70°C without batteries. Take readings after recovery period of at least 2hr at reference condition. Calculate intrinsic error.	Observed Error should be within specified accuracy limits.	For test results See table 4	Conforms
5.	**Measurement of battery Consumption.** Measure the battery Consumption.	--	For test results See table 5	---
6.	**Influence due to overloads** (As per IS 13875-2, cl 3.15) a. Intrinsic error shall be determined initially. b. Overload shall be applied for specified period to the measuring instrument (Br). c. Measuring instrument shall be kept in switched ON condition for at least 2 hrs at reference temperature. d. The intrinsic error shall be determined at reference conditions (Bx). e. The overload influence error is calculated from Bx – Br.	Test shall not cause damage to the instrument and intrinsic error / influence shall remain within limits after test	No damage is occurred to the samples. For test results See table 6.	Conforms

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6.	**High Voltage test :** Test is to be conducted as follow : 3.5 kV AC, 50Hz for 1 min between input Vs housing.	No breakdown should occur.	No Breakdown occurred.	Conforms

Sr. No.	Test procedures	Requirement	Observation	Remark
	7. Verification of features			
7.1	Auto power off function : keep meter ON with constant input for >15 min.	After 15 min meter shall turn OFF automatically.	Meter turns off after 15min.	Conforms
7.2	Hold function: when pressing “HOLD” key, display gets hold irrespective of input change.	The display reading shall get hold till change of function or pressing of any key.	As specified	Conforms
7.3	Relative measurement: Except for Hz & % duty Function	Zeroing shall be possible	As specified	Conforms
7.4	Auto / manual readings modes:	Auto / manual range selection shall possible.	As specified.	Conforms
7.5	NCV	Start audiable signal approx from 50V ,50/60Hz and symbol"--" bar will be display.	As specified.	Conforms
7.6	Continuity testing	Resistance of approx 50Ω is indicated with an acoustic signal.	As specified.	Conforms
7.7	Verification of automatic blocking system.	ABS system shall prevent incorrect connection of test leads	As specified.	Conforms
7.8	Verification of negative value of input.	Meter shall display “-ve” sign when “-ve” input is applied	As specified.	Conforms
7.9	Low battery indication	Meter shall indicate the low battery indication at 2.4±0.2V	Sr.No.S1 2.44V,Sr.No.S2: 2.34V	Conforms
7.10	Min/Max and Min-Max Function: Press this key and observe reading with changing input	Display shall register and show min/max and min-max value	As specified.	Conforms
7.11	Verfication of TRMS measurement	Meter shall display the trms values for different shapes of waveform.	As specified.	Conforms

Table 1. Intrinsic Error test

1.1 Function : VDC

	Sr.No.	S1	S2	S1	S2		
Range	**Input**	**Observed Reading**	**Observed Reading**	**Observed Error**	**Observed Error**	**Allowed Error**	
(mV)	(mV)	(mV)	(mV)	(mV)	(mV)	(mV)	
60.00	2.00	2.00	2.03	0.00	0.03	0.07	1% of reading + 5digits
	4.00	4.00	4.01	0.00	0.01	0.09	
	16.00	15.97	15.96	-0.03	-0.04	0.21	
	36.00	35.94	35.90	-0.06	-0.10	0.41	
	40.00	39.94	39.88	-0.06	-0.12	0.45	
	60.00	59.90	59.79	-0.10	-0.21	0.65	
600.0	20.0	19.9	19.9	-0.1	-0.1	0.6	0.5% of reading + 5digits
	40.0	39.9	39.9	-0.1	-0.1	0.7	
	160.0	159.9	159.9	-0.1	-0.1	1.3	
	360.0	360.0	359.9	0.0	-0.1	2.3	
	400.0	400.0	399.9	0.0	-0.1	2.5	
	600.0	600.0	599.8	0.0	-0.2	3.5	
(V)	(V)	(V)	(V)	(V)	(V)	(V)	
6.000	0.600	0.600	0.602	0.000	0.002	0.006	0.5% of reading + 3digits
	1.000	1.000	1.002	0.000	0.002	0.008	
	2.000	2.002	2.003	0.002	0.003	0.013	
	4.600	4.605	4.604	0.005	0.004	0.026	
	6.000	6.007	6.005	0.007	0.005	0.033	
60.00	6.00	6.00	5.99	0.00	-0.01	0.06	
	10.00	10.00	9.99	0.00	-0.01	0.08	
	20.00	20.01	19.99	0.01	-0.01	0.13	
	46.00	46.03	45.98	0.03	-0.02	0.26	
	60.00	60.04	59.98	0.04	-0.02	0.33	
600.0	60.0	59.9	59.9	-0.1	-0.1	0.6	
	100.0	100.0	100.0	0.0	0.0	0.8	
	200.0	200.0	200.0	0.0	0.0	1.3	
	460.0	460.0	460.0	0.0	0.0	2.6	
	600.0	600.1	600.1	0.1	0.1	3.3	
1000	400	399	400	-1	0	5	
	500	499	500	-1	0	6	
	600	600	600	0	0	6	
	700	700	700	0	0	7	
	900	900	900	0	0	8	
	1000	999	1000	-1	0	8	

1.2 Function : VAC

	Sr.No.	S1	S2	S1	S2		
Range	**Input**	**Observed Reading**	**Observed Reading**	**Observed Error**	**Observed Error**	**Allowed Error**	
(mV)	(mV)	(mV)	(mV)	(mV)	(mV)	(mV)	
60.00	2.00	1.99	1.98	-0.01	-0.02	0.11	3% of reading + 5digits
	4.00	3.98	3.97	-0.02	-0.03	0.17	
	16.00	15.93	15.91	-0.07	-0.09	0.53	
	36.00	35.87	35.80	-0.13	-0.20	1.13	
	40.00	39.86	39.79	-0.14	-0.21	1.25	
	60.00	59.80	59.69	-0.20	-0.31	1.85	
600.0	20.0	19.9	19.9	-0.1	-0.1	0.8	1.5% of reading + 5digits
	40.0	39.9	39.9	-0.1	-0.1	1.1	
	160.0	159.6	159.6	-0.4	-0.4	2.9	
	360.0	359.3	359.2	-0.7	-0.8	5.9	
	400.0	399.2	399.1	-0.8	-0.9	6.5	
	600.0	598.8	598.6	-1.2	-1.4	9.5	
(V)	(V)	(V)	(V)	(V)	(V)	(V)	
6.000	0.600	0.598	0.596	-0.002	-0.004	0.010	0.8% of reading + 5digits
	1.000	0.999	0.999	-0.001	-0.001	0.013	
	2.000	1.998	1.996	-0.002	-0.004	0.021	
	4.600	4.597	4.594	-0.003	-0.006	0.042	
	6.000	5.996	5.992	-0.004	-0.008	0.053	
60.00	6.00	5.99	5.98	-0.01	-0.02	0.10	
	10.00	9.98	9.97	-0.02	-0.03	0.13	
	20.00	19.98	19.95	-0.02	-0.05	0.21	
	46.00	45.95	45.90	-0.05	-0.10	0.42	
	60.00	59.93	59.87	-0.07	-0.13	0.53	
600.0	60.0	59.8	59.8	-0.2	-0.2	0.98	
	100.0	99.8	99.8	-0.2	-0.2	1.30	
	200.0	199.6	199.6	-0.4	-0.4	2.10	
	460.0	459.1	459.1	-0.9	-0.9	4.18	
	600.0	598.9	598.9	-1.1	-1.1	5.30	
1000	400	399	399	-1	-1	14	1% of reading + 10digits
	500	498	498	-2	-2	15	
	600	598	599	-2	-1	16	
	700	698	699	-2	-1	17	
	900	898	898	-2	-2	19	
	1000	998	998	-2	-2	20	

Prepared by:__

Checked by:_____

1.3 Function : ADC

	Sr.No.	S1	S2	S1	S2		
Range	**Input**	**Observed Reading**	**Observed Reading**	**Observed Error**	**Observed Error**	**Allowed Error**	
(mA)	(mA)	(mA)	(mA)	(mA)	(mA)	(mA)	
60.00	0.10	0.09	0.09	-0.01	-0.01	0.03	1.5% of reading + 3digits
	4.00	3.99	3.98	-0.01	-0.02	0.09	
	8.00	7.98	7.98	-0.02	-0.02	0.15	
	16.00	15.98	15.97	-0.02	-0.03	0.27	
	24.00	23.98	23.95	-0.02	-0.05	0.39	
	32.00	31.96	31.95	-0.04	-0.05	0.51	
	36.00	35.96	35.94	-0.04	-0.06	0.57	
	40.00	39.96	39.93	-0.04	-0.07	0.63	
	60.00	59.94	59.90	-0.06	-0.10	0.93	
600.0	40.0	40.0	40.0	0.0	0.0	0.9	
	160.0	160.0	160.2	0.0	0.2	2.7	
	240.0	240.1	240.3	0.1	0.3	3.9	
	360.0	360.4	360.8	0.4	0.8	5.7	
	400.0	400.6	401.0	0.6	1.0	6.3	
	600.0	602.5	603.1	2.5	3.1	9.3	
(A)	(A)	(A)	(A)	(A)	(A)	(A)	
6.000	0.100	0.100	0.099	0.000	-0.001	0.005	1.5% of reading + 3digits
	0.500	0.502	0.501	0.002	0.001	0.011	
	1.000	1.005	1.002	0.005	0.002	0.018	
	4.000	4.026	4.012	0.026	0.012	0.063	
	6.000	6.031	6.013	0.031	0.013	0.093	
10.00	2.00	2.01	2.01	0.01	0.01	0.06	1.5% of reading + 3digits
	4.00	4.02	4.02	0.02	0.02	0.09	
	6.00	6.04	6.03	0.04	0.03	0.12	
	8.00	8.05	8.04	0.05	0.04	0.15	
	10.00	10.07	10.06	0.07	0.06	0.18	

1.4 Function : AAC

	Sr.No.	S1	S2	S1	S2		
Range	**Input**	**Observed Reading**	**Observed Reading**	**Observed Error**	**Observed Error**	**Allowed Error**	
(mA)	(mA)	(mA)	(mA)	(mA)	(mA)	(mA)	
60.00	0.10	0.09	0.09	-0.01	-0.01	0.05	1.8% of reading + 5digits
	4.00	3.99	3.98	-0.01	-0.02	0.12	
	8.00	7.98	7.97	-0.02	-0.03	0.19	
	16.00	15.96	15.95	-0.04	-0.05	0.34	
	24.00	23.93	23.92	-0.07	-0.08	0.48	
	32.00	31.92	31.90	-0.08	-0.10	0.63	
	36.00	35.91	35.88	-0.09	-0.12	0.70	
	40.00	39.90	39.87	-0.10	-0.13	0.77	
	60.00	59.82	59.81	-0.18	-0.19	1.13	
600.0	40.0	39.9	39.9	-0.1	-0.1	1.2	
	160.0	159.8	160.0	-0.2	0.0	3.4	
	240.0	239.8	240.0	-0.2	0.0	4.8	
	360.0	359.6	360.2	-0.4	0.2	7.0	
	400.0	399.8	400.3	-0.2	0.3	7.7	
	600.0	601.8	602.3	1.8	2.3	11.3	
(A)	(A)	(A)	(A)	(A)	(A)	(A)	
6.000	0.100	0.099	0.099	-0.001	-0.001	0.007	2% of reading + 5digits
	0.500	0.501	0.500	0.001	0.000	0.015	
	1.000	1.003	0.999	0.003	-0.001	0.025	
	4.000	4.014	4.003	0.014	0.003	0.085	
	6.000	6.024	6.007	0.024	0.007	0.125	
10.00	2.00	2.01	2.00	0.01	0.00	0.09	
	4.00	4.02	4.01	0.02	0.01	0.13	
	6.00	6.03	6.02	0.03	0.02	0.17	
	8.00	8.03	8.04	0.03	0.04	0.21	
	10.00	10.06	10.04	0.06	0.04	0.25	

Prepared by:_____

Checked by:_____

1.5 Function : Ω

	Sr.No.	S1	S2	S1	S2		
Range	**Input**	**Observed Reading**	**Observed Reading**	**Observed Error**	**Observed Error**	**Allowed Error**	
(Ω)	(Ω)	(Ω)	(Ω)	(Ω)	(Ω)	(Ω)	
600.0	1.0	0.9	0.9	-0.1	-0.1	0.3	0.5% of reading + 3digits
	40.0	40.1	40.2	0.1	0.2	0.5	
	120.0	120.1	120.3	0.1	0.3	0.9	
	360.0	360.8	361.6	0.8	1.6	2.1	
	400.0	400.7	401.8	0.7	1.8	2.3	
	600.0	601.4	602.8	1.4	2.8	3.3	
(kΩ)	(kΩ)	(kΩ)	(kΩ)	(kΩ)	(kΩ)	(kΩ)	
6.000	0.600	0.600	0.601	0.000	0.001	0.005	0.5% of reading + 2digits
	1.800	1.801	1.805	0.001	0.005	0.011	
	3.600	3.603	3.611	0.003	0.011	0.020	
	5.400	5.406	5.419	0.006	0.019	0.029	
	6.000	6.004	6.021	0.004	0.021	0.032	
60.00	6.00	5.99	6.00	-0.01	0.00	0.05	
	18.00	17.99	18.02	-0.01	0.02	0.11	
	36.00	35.98	36.04	-0.02	0.04	0.20	
	54.00	53.97	54.08	-0.03	0.08	0.29	
	60.00	59.99	60.08	-0.01	0.08	0.32	
600.0	60.0	59.9	60.1	-0.1	0.1	0.5	
	180.0	180.0	180.3	0.0	0.3	1.1	
	360.0	359.9	360.8	-0.1	0.8	2.0	
	540.0	540.1	541.1	0.1	1.1	2.9	
	600.0	600.1	601.2	0.1	1.2	3.2	
(MΩ)	(MΩ)	(MΩ)	(MΩ)	(MΩ)	(MΩ)	(MΩ)	
6.000	0.600	0.600	0.601	0.000	0.001	0.005	0.5% of reading + 2digits
	1.800	1.800	1.805	0.000	0.005	0.011	
	3.600	3.599	3.605	-0.001	0.005	0.020	
	5.400	5.402	5.406	0.002	0.006	0.029	
	6.000	5.998	6.003	-0.002	0.003	0.032	
60.00	6.00	6.01	6.01	0.01	0.01	0.17	2% of reading + 5digits
	18.00	17.95	17.96	-0.05	-0.04	0.41	
	36.00	35.62	35.76	-0.38	-0.24	0.77	
	54.00	53.07	53.38	-0.93	-0.62	1.13	
	60.00	58.82	59.26	-1.18	-0.74	1.25	

1.6 Function : Farad

	Sr.No.	S1	S2	S1	S2		
Range	**Input**	**Observed Reading**	**Observed Reading**	**Observed Error**	**Observed Error**	**Allowed Error**	
(nF)	(nF)	(nF)	(nF)	(nF)	(nF)	(nF)	
6.000	0.500	0.456	0.457	-0.044	-0.043	0.055	5% of reading+ 30digits
	1.500	1.465	1.484	-0.035	-0.016	0.095	5.0% of reading + 20digits
	3.000	2.983	3.011	-0.017	0.011	0.170	
	4.500	4.509	4.546	0.009	0.046	0.245	
	6.000	6.033	6.078	0.033	0.078	0.320	
60.00	7.00	7.04	7.09	0.04	0.09	0.55	5.0% of reading + 20digits
	15.00	15.11	15.26	0.11	0.26	0.95	
	30.00	30.39	30.54	0.39	0.54	1.70	
	45.00	45.32	45.39	0.32	0.39	2.45	
	60.00	60.44	60.42	0.44	0.42	3.20	
600.0	70.0	70.3	69.3	0.3	-0.7	3.6	5% of reading + 10digits
	150.0	150.8	151.2	0.8	1.2	7.6	
	300.0	301.6	301.6	1.6	1.6	15.1	
	450.0	452.6	453.5	2.6	3.5	22.6	
	600.0	603.5	604.5	3.5	4.5	30.1	
(µF)	(µF)	(µF)	(µF)	(µF)	(µF)	(µF)	
6.000	0.700	0.704	0.705	0.004	0.005	0.045	
	1.500	1.507	1.509	0.007	0.009	0.085	
	3.000	3.015	3.019	0.015	0.019	0.160	
	4.500	4.522	4.529	0.022	0.029	0.235	
	6.000	6.030	6.039	0.030	0.039	0.310	
60.00	7.00	7.03	7.04	0.03	0.04	0.45	
	15.00	15.48	15.34	0.48	0.34	0.85	
	30.00	30.66	30.68	0.66	0.68	1.60	
	45.00	46.24	46.08	1.24	1.08	2.35	
	60.00	Range change	Range change	-	-	3.10	
600.0	70.0	72.0	71.7	2.0	1.7	4.5	
	150.0	154.3	154.0	4.3	4.0	8.5	
	300.0	301.9	302.5	1.9	2.5	16.0	
	450.0	451.8	452.7	1.8	2.7	23.5	
	600.0	602.1	603.3	2.1	3.3	31.0	
(mF)	(mF)	(mF)	(mF)	(mF)	(mF)	(mF)	
6.000	0.700	0.704	0.703	0.004	0.003	0.045	5% of reading + 10digits
	1.500	1.512	1.519	0.012	0.019	0.085	
	3.000	3.025	3.038	0.025	0.038	0.160	
	4.500	4.545	4.566	0.045	0.066	0.235	
	6.000	6.058	6.083	0.058	0.083	0.310	

Prepared by:_

Checked by:_____

1.7 Function : % Duty Cycle

At ± 5V

	Sr.No.	S1	S2	S1	S2		
Frequency	**Input**	**Observed Reading**	**Observed Reading**	**Observed Error**	**Observed Error**	**Allowed Error**	
	(%)	(%)	(%)	(%)	(%)	(%)	
10 Hz	2.0	1.9	1.9	-0.1	-0.1	0.5	± 5 Digits
	50.0	49.9	49.9	-0.1	-0.1	0.5	
	98.0	97.9	97.9	-0.1	-0.1	0.5	
1kHz	2.0	2.0	2.0	0.0	0.0	0.5	
	50.0	49.9	49.9	-0.1	-0.1	0.5	
	98.0	97.9	97.9	-0.1	-0.1	0.5	
5kHz	2.0	2.0	2.0	0.0	0.0	2.5	± 5 Digits per kHz
	50.0	49.9	49.9	-0.1	-0.1	2.5	
	98.0	97.9	97.9	-0.1	-0.1	2.5	
10kHz	2.0	2.0	2.0	0.0	0.0	5.0	
	50.0	50.0	50.0	0.0	0.0	5.0	
	98.0	98.1	97.3	0.1	-0.7	5.0	

1.8 Function :°C

	Sr.No.	S1	S2	S1	S2		
Type	**Input**	**Observed Reading**	**Observed Reading**	**Observed Error**	**Observed Error**	**Allowed Error**	
	(°C)	(°C)	(°C)	(°C)	(°C)	(°C)	
"K" Type Thermocouple	-200	-206	-204	-6	-4	-14	5.0% of reading +
	-100	-103	-102	-3	-2	-9	
	0	-2	-1	-2	-1	3	2.0% of reading + 3digits
	200	197	197	-3	-3	7	
	400	397	397	-3	-3	11	
	800	796	795	-4	-5	18	2.0% of reading +
	1200	1195	1194	-5	-6	26	

1.9 Function : Hz (At ± 5V)

	Sr.No.	S1	S2	S1	S2		
Range	**Input**	**Observed Reading**	**Observed Reading**	**Observed Error**	**Observed Error**	**Allowed Error**	
(Hz)	(Hz)	(Hz)	(Hz)	(Hz)	(Hz)	(Hz)	0.1% of reading + 3digits
99.99	10.00	10.00	10.00	0.00	0.00	0.04	
	20.00	20.00	20.00	0.00	0.00	0.05	
	50.00	50.03	50.03	0.03	0.03	0.08	
	90.00	90.02	90.02	0.02	0.02	0.12	
	99.00	99.03	99.03	0.03	0.03	0.13	
999.9	101.0	101.0	101.0	0.0	0.0	0.4	
	200.0	200.1	200.1	0.1	0.1	0.5	
	500.0	500.0	500.0	0.0	0.0	0.8	
	900.0	900.2	900.2	0.2	0.2	1.2	
	990.0	990.3	990.4	0.3	0.4	1.3	
(kHz)	(kHz)	(kHz)	(kHz)	(kHz)	(kHz)	(kHz)	
9.999	1.001	1.000	1.000	-0.001	-0.001	0.004	
	2.000	1.999	1.999	-0.001	-0.001	0.005	
	5.000	5.001	5.001	0.001	0.001	0.008	
	9.000	9.004	9.004	0.004	0.004	0.012	
	9.900	9.905	9.905	0.005	0.005	0.013	
99.99	10.01	10.00	10.00	-0.01	-0.01	0.04	
	20.00	20.00	20.00	0.00	0.00	0.05	
	50.00	50.01	50.01	0.01	0.01	0.08	
	90.00	90.05	90.05	0.05	0.05	0.12	
	99.00	99.06	99.06	0.06	0.06	0.13	

1.10 Function : Diode

	Sr.No.	S1	S2	S1	S2		
Range	**Input**	**Observed Reading**	**Observed Reading**	**Observed Error**	**Observed Error**	**Allowed Error**	
(V)	(V)	(V)	(V)	(V)	(V)	(V)	2.0% of reading + 10digits
3.000	1.000	1.002	1.002	0.002	0.002	0.030	
	3.000	3.015	3.014	0.015	0.014	0.070	

Prepared by:_____

Checked by:_____

Table 2: Influence Error resulting from change in ambient temperature

2.1 Function : VDC

		S1			S2			
Range	**Input**	**at 23°C**	**at 0°C**	**Observed Variation**	**at 23°C**	**at 0°C**	**Observed Variation**	**Allowed Variation**
(mV)	(mV)	(mV)	(mV)	(mV)	(mV)	(mV)	(mV)	
60.00	16.00	15.99	15.99	0.0	15.95	15.95	0.00	0.48
	36.00	35.96	35.98	0.0	35.88	35.88	0.00	0.94
	40.00	39.94	39.98	0.0	39.87	39.87	0.00	1.04
	60.00	59.92	59.96	0.0	59.79	59.80	0.01	1.50
600.0	160.0	159.9	160.0	0.1	159.9	159.9	0.0	3.0
	360.0	359.9	360.2	0.3	359.9	360.0	0.1	5.3
	400.0	399.9	400.2	0.3	399.9	400.0	0.1	5.8
	600.0	599.9	600.3	0.4	599.8	600.0	0.2	8.1
(V)	(V)	(V)	(V)	(V)	(V)	(V)	(V)	(V)
6.000	2.000	2.002	2.002	0.000	2.000	1.995	-0.005	0.030
	4.600	4.605	4.606	0.001	4.602	4.596	-0.006	0.060
	6.000	6.006	6.011	0.005	6.002	6.004	0.002	0.076
60.00	10.00	10.00	10.01	0.01	9.99	9.99	0.00	0.18
	50.00	50.02	50.06	0.04	49.98	49.98	0.00	0.64
600.0	100.0	100.0	100.1	0.1	100.0	100.0	0.0	1.8
	500.0	500.2	500.5	0.3	500.0	500.1	0.1	6.4
1000	700	700	700	0	700	700	0	15
	900	900	901	1	900	900	0	17
	1000	1000	1000	0	1000	1000	0	18

		S1			S2			
Range	**Input**	**at 23°C**	**at 50°C**	**Observed Variation**	**at 23°C**	**at 50°C**	**Observed Variation**	**Allowed Variation**
(mV)	(mV)	(mV)	(mV)	(mV)	(mV)	(mV)	(mV)	(mV)
60.00	16.00	15.99	15.98	-0.01	15.95	15.96	0.01	0.57
	36.00	35.96	35.94	-0.02	35.88	35.90	0.02	1.11
	40.00	39.94	39.93	-0.01	39.87	39.88	0.01	1.22
	60.00	59.92	59.89	-0.03	59.79	59.81	0.02	1.76
600.0	160.0	159.9	159.8	-0.1	159.9	160.0	0.1	3.5
	360.0	359.9	359.8	-0.1	359.9	360.0	0.1	6.2
	400.0	399.9	399.8	-0.1	399.9	400.0	0.1	6.8
	600.0	599.9	599.7	-0.2	599.8	600.0	0.2	9.5
(V)	(V)	(V)	(V)	(V)	(V)	(V)	(V)	(V)
6.000	2.000	2.002	2.002	0.000	2.000	2.002	0.002	0.035
	4.600	4.605	4.607	0.002	4.602	4.606	0.004	0.070
	6.000	6.006	6.009	0.003	6.002	6.008	0.006	0.089
60.00	10.00	10.00	10.01	0.01	9.99	10.01	0.02	0.22
	50.00	50.02	50.06	0.04	49.98	50.05	0.07	0.76
600.0	100.0	100.0	100.1	0.1	100.0	100.1	0.1	2.2
	500.0	500.2	500.6	0.4	500.0	500.6	0.6	7.6
1000V	700	700	701	1	700	701	1	18
	900	900	901	1	900	901	1	20
	1000	1000	1001	1	1000	1001	1	22

Prepared by:_____

Checked by:_____

2.2 Function : VAC 60 Hz

		S1			S2			
Range	**Input**	**at 23°C**	**at 0°C**	**Observed Variation**	**at 23°C**	**at 0°C**	**Observed Variation**	**Allowed Variation**
(mV)	(mV)	(mV)	(mV)	(mV)	(mV)	(mV)	(mV)	(mV)
60.00	16.00	15.96	15.97	0.01	15.92	15.97	0.05	0.48
	36.00	35.91	35.94	0.03	35.83	35.84	0.01	0.94
	40.00	39.90	39.93	0.03	39.81	39.83	0.02	1.04
	60.00	59.85	59.90	0.05	59.72	59.74	0.02	1.50
600.0	160.0	159.7	159.9	0.2	159.7	159.8	0.1	3.0
	360.0	359.5	359.8	0.3	359.5	359.6	0.1	5.3
	400.0	399.5	399.8	0.3	399.4	399.5	0.1	5.8
	600.0	599.2	599.7	0.5	599.2	599.3	0.1	8.1
(V)	(V)	(V)	(V)	(V)	(V)	(V)	(V)	(V)
6.000	2.000	1.999	2.000	0.001	1.998	1.998	0.000	0.048
	4.600	4.600	4.603	0.003	4.596	4.597	0.001	0.096
	6.000	6.000	6.004	0.004	5.995	5.996	0.001	0.122
60.00	20.00	19.99	20.00	0.01	19.97	19.97	0.00	0.48
	46.00	45.98	46.01	0.03	45.93	45.94	0.01	0.96
600.0	200.0	199.8	200.0	0.2	199.8	199.8	0.0	4.8
	460.0	459.7	460.0	0.3	459.4	459.5	0.1	9.6
1000	700	699	700	1	699	699	0	39
	900	899	899	0	899	899	0	44
	1000	999	999	0	999	999	0	46

		S1			S2			
Range	**Input**	**at 23°C**	**at 50°C**	**Observed Variation**	**at 23°C**	**at 50°C**	**Observed Variation**	**Allowed Variation**
(mV)	(mV)	(mV)	(mV)	(mV)	(mV)	(mV)	(mV)	(mV)
60.00	16.00	15.96	15.95	-0.01	15.92	15.93	0.01	0.57
	36.00	35.91	35.89	-0.02	35.83	35.83	0.00	1.11
	40.00	39.90	39.87	-0.03	39.81	39.82	0.01	1.22
	60.00	59.85	59.81	-0.04	59.72	59.73	0.01	1.76
600.0	160.0	159.7	159.7	0.0	159.7	159.8	0.1	3.5
	360.0	359.5	359.4	-0.1	359.5	359.6	0.1	6.2
	400.0	399.5	399.3	-0.2	399.4	399.5	0.1	6.8
	600.0	599.2	599.0	-0.2	599.2	599.3	0.1	9.5
(V)	(V)	(V)	(V)	(V)	(V)	(V)	(V)	(V)
6.000	2.000	1.999	2.000	0.001	1.998	1.999	0.001	0.057
	4.600	4.600	4.601	0.001	4.596	4.601	0.005	0.113
	6.000	6.000	6.002	0.002	5.995	6.001	0.006	0.143
60.00	20.00	19.99	20.00	0.01	19.97	20.00	0.03	0.57
	46.00	45.98	46.01	0.03	45.93	45.99	0.06	1.13
600.0	200.0	199.8	200.0	0.2	199.8	200.0	0.2	5.7
	460.0	459.7	460.1	0.4	459.4	460.0	0.6	11.3
1000V	700	699	700	1	699	700	1	46
	900	899	900	1	899	900	1	51
	1000	999	1000	1	999	1000	1	54

Prepared by:_____

Checked by:_____

2.3 Function : ADC

		S1			S2			
Range	**Input**	**at 23°C**	**at 0°C**	**Observed Variation**	**at 23°C**	**at 0°C**	**Observed Variation**	**Allowed Variation**
(mA)	(mA)	(mA)	(mA)	(mA)	(mA)	(mA)	(mA)	(mA)
60.00	32.00	31.95	31.99	0.04	31.90	31.91	0.01	1.17
	36.00	35.95	35.99	0.04	35.88	35.90	0.02	1.31
	40.00	39.94	39.98	0.04	39.88	39.88	0.00	1.45
	60.00	59.91	59.96	0.05	59.81	59.84	0.03	2.14
600.0	360.0	359.9	360.3	0.4	359.9	360.1	0.2	13.1
	400.0	399.9	400.3	0.4	399.9	400.1	0.2	14.5
	600.0	599.8	600.6	0.8	599.9	600.2	0.3	21.4
(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)
6.000	4.000	4.006	3.987	-0.019	4.005	3.985	-0.020	0.145
	6.000	6.013	5.992	-0.021	6.011	5.990	-0.021	0.214
10.00	8.00	8.02	8.00	-0.02	8.04	8.01	-0.03	0.35
	10.00	10.04	10.01	-0.03	10.05	10.02	-0.03	0.41

		S1			S2			
Range	**Input**	**at 23°C**	**at 50°C**	**Observed Variation**	**at 23°C**	**at 50°C**	**Observed Variation**	**Allowed Variation**
(mA)	(mA)	(mA)	(mA)	(mA)	(mA)	(mA)	(mA)	(mA)
60.00	32.00	31.95	31.92	-0.03	31.90	31.89	-0.01	1.38
	36.00	35.95	35.90	-0.05	35.88	35.88	0.00	1.54
	40.00	39.94	39.90	-0.04	39.88	39.86	-0.02	1.70
	60.00	59.9	59.9	-0.1	59.8	59.8	0.0	2.5
600.0	360.0	359.9	359.6	-0.3	359.9	359.9	0.0	15.4
	400.0	399.9	399.6	-0.3	399.9	400.0	0.1	17.0
	600.0	599.8	599.4	-0.4	599.9	599.9	0.0	25.11
(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)
6.000	4.000	4.006	4.019	0.013	4.005	4.029	0.024	0.170
	6.000	6.013	6.035	0.022	6.011	6.044	0.033	0.251
10.00	8.00	8.02	8.06	0.04	8.04	8.08	0.04	0.41
	10.00	10.04	10.08	0.04	10.05	10.10	0.05	0.49

2.4 Function : A AC

		S1			S2			
Range	**Input**	**at 23°C**	**at 0°C**	**Observed Variation**	**at 23°C**	**at 0°C**	**Observed Variation**	**Allowed Variation**
(mA)	(mA)	(mA)	(mA)	(mA)	(mA)	(mA)	(mA)	(mA)
60.00	32.00	31.89	31.95	0.06	31.84	31.87	0.03	1.44
	36.00	35.89	35.94	0.05	35.84	35.86	0.02	1.61
	40.00	39.88	39.94	0.06	39.82	39.85	0.03	1.77
	60.00	59.82	59.92	0.10	59.74	59.78	0.04	2.60
600.0	360.0	359.4	360.0	0.6	359.6	359.7	0.1	16.1
	400.0	399.4	400.0	0.6	399.5	399.8	0.3	17.7
	600.0	598.9	599.8	0.9	599.2	599.5	0.3	26.0
(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)
6.000	4.000	4.008	3.994	0.008	4.006	3.993	-0.013	0.196
	6.000	6.011	5.993	0.011	6.009	5.989	-0.020	0.288
10.00	8.00	8.02	8.00	0.02	8.03	8.01	-0.02	0.48
	10.00	10.03	10.00	0.03	10.04	9.99	-0.05	0.58

		S1			S2			
Range	**Input**	**at 23°C**	**at 50°C**	**Observed Variation**	**at 23°C**	**at 50°C**	**Observed Variation**	**Allowed Variation**
(mA)	(mA)	(mA)	(mA)	(mA)	(mA)	(mA)	(mA)	(mA)
60.00	32.00	31.89	31.90	0.01	31.84	31.82	-0.02	1.69
	36.00	35.89	35.90	0.01	35.84	35.83	-0.01	1.88
	40.00	39.88	39.88	0.00	39.82	39.80	-0.02	2.08
	60.00	59.82	59.83	0.01	59.74	59.73	-0.01	3.05
600.0	360.0	359.4	359.5	0.1	359.6	359.6	0.0	18.8
	400.0	399.4	399.5	0.1	399.5	399.4	-0.1	20.8
	600.0	598.9	599.1	0.2	599.2	599.1	-0.1	30.5
(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)
6.000	4.000	4.008	4.024	0.016	4.006	4.021	0.015	0.230
	6.000	6.011	6.040	0.029	6.009	6.032	0.023	0.338
10.00	8.00	8.02	8.06	0.04	8.03	8.06	0.03	0.57
	10.00	10.03	10.08	0.05	10.04	10.09	0.05	0.68

Prepared by:_____

Checked by:_____

2.5 Function : Ohm Ω

		S1			S2			
Range	**Input**	**at 23°C**	**at 0°C**	**Observed Variation**	**at 23°C**	**at 0°C**	**Observed Variation**	**Allowed Variation**
(Ω)	(Ω)	(Ω)	(Ω)	(Ω)	(Ω)	(Ω)	(Ω)	(Ω)
600.00	40.0	39.9	40.2	0.3	39.8	40.0	0.2	1.2
	120.0	120.1	120.7	0.6	119.8	120.2	0.4	2.1
	400.0	401.1	402.5	1.4	401.6	401.3	-0.3	5.3
(kΩ)	(kΩ)	(kΩ)	(kΩ)	(kΩ)	(kΩ)	(kΩ)	(kΩ)	(kΩ)
6.000	1.800	1.802	1.808	0.006	1.801	1.803	0.002	0.025
	5.400	5.412	5.428	0.016	5.404	5.414	0.010	0.067
60.00	18.00	18.01	18.05	0.04	17.98	18.01	0.03	0.25
	54.00	54.05	54.16	0.11	53.92	54.06	0.14	0.67
600.0	180.0	180.7	180.6	-0.1	179.9	180.4	0.5	2.5
	540.0	541.2	541.8	0.6	539.8	541.1	1.3	6.7
Range	**Input**	**at 23°C**	**at 0°C**	**Observed Variation**	**at 23°C**	**at 0°C**	**Observed Variation**	**Allowed Variation**
(MΩ)	(MΩ)	(MΩ)	(MΩ)	(MΩ)	(MΩ)	(MΩ)	(MΩ)	(MΩ)
6.000	1.800	1.802	1.806	0.004	1.800	1.804	0.004	0.025
	5.400	5.397	5.408	0.011	5.396	5.405	0.009	0.067
60.00	18.00	17.96	17.94	-0.02	17.95	17.90	-0.05	0.94
	54.00	53.39	52.82	-0.57	53.35	53.29	-0.06	2.60
	60.00	59.24	58.55	-0.69	59.20	59.02	-0.18	2.88

		S1			S2			
Range	**Input**	**at 23°C**	**at 50°C**	**Observed Variation**	**at 23°C**	**at 50°C**	**Observed Variation**	**Allowed Variation**
(Ω)	(Ω)	(Ω)	(Ω)	(Ω)	(Ω)	(Ω)	(Ω)	(Ω)
600.00	40.0	39.9	39.1	-0.8	39.8	39.0	-0.8	1.4
	120.0	120.1	118.8	-1.3	119.8	118.3	-1.5	2.4
	400.0	401.1	399.8	-1.3	401.6	399.1	-2.5	6.2
(kΩ)	(kΩ)	(kΩ)	(kΩ)	(kΩ)	(kΩ)	(kΩ)	(kΩ)	(kΩ)
6.000	1.800	1.802	1.796	-0.006	1.801	1.793	-0.008	0.030
	5.400	5.412	5.391	-0.021	5.404	5.382	-0.022	0.078
60.00	18.00	18.01	17.93	-0.08	17.98	17.91	-0.07	0.30
	54.00	54.05	53.81	-0.24	53.92	53.75	-0.17	0.78
600.0	180.0	180.7	179.4	-1.3	179.9	179.1	-0.8	3.0
	540.0	541.2	538.1	-3.1	539.8	537.3	-2.5	7.8
Range	**Input**	**at 23°C**	**at 50°C**	**Observed Variation**	**at 23°C**	**at 50°C**	**Observed Variation**	**Allowed Variation**
(MΩ)	(MΩ)	(MΩ)	(MΩ)	(MΩ)	(MΩ)	(MΩ)	(MΩ)	(MΩ)
6.000	1.800	1.802	1.787	-0.015	1.800	1.830	0.030	0.030
	5.400	5.397	5.337	-0.060	5.396	5.389	-0.007	0.078
60.00	18.00	17.96	17.56	-0.40	17.95	17.76	-0.19	1.11
	54.00	53.39	51.00	-2.39	53.35	51.37	-1.98	3.05
	60.00	59.24	56.77	-2.47	59.20	56.76	-2.44	3.38

Prepared by:_____

Checked by:_____

2.6 Function : Farad

		S1			S2			
Range	**Input**	**at 23°C**	**at 0°C**	**Observed Variation**	**at 23°C**	**at 0°C**	**Observed Variation**	**Allowed Variation**
(nF)	(nF)	(nF)	(nF)	(nF)	(nF)	(nF)	(nF)	(nF)
6.000	1.500	1.469	1.490	0.021	1.507	1.494	-0.013	0.219
	3.000	2.983	3.061	0.078	3.049	2.928	-0.121	0.391
	4.500	4.504	4.621	0.117	4.604	4.456	-0.148	0.564
60.000	15.00	15.02	15.46	0.44	15.38	15.50	0.12	2.19
	30.00	30.20	30.87	0.67	30.59	30.52	-0.07	3.91
	45.00	44.60	45.36	0.76	45.21	45.33	0.12	5.64
	150.0	148.2	150.2	2.0	150.9	150.6	-0.3	17.5
600.00	300.0	296.7	300.8	4.1	301.6	301.2	-0.4	34.7
	450.0	444.7	451.3	6.6	453.1	452.0	-1.1	52.0
(µF)	(µF)	(µF)	(µF)	(µF)	(µF)	(µF)	(µF)	(µF)
6.000	1.500	1.501	1.502	0.001	1.509	1.506	-0.003	0.196
	3.000	3.015	3.008	-0.007	3.016	3.013	-0.003	0.368
	4.500	4.521	4.512	-0.009	4.531	4.518	-0.013	0.541
60.000	15.00	15.56	15.46	-0.10	15.38	15.29	-0.09	1.75
	30.00	30.71	30.84	0.13	30.63	30.62	-0.01	3.47
	45.00	46.41	46.34	-0.07	46.28	46.24	-0.04	5.20
	150.0	155.7	154.6	-1.1	153.8	152.9	-0.9	19.6
600.00	300.0	302.3	300.6	-1.7	302.7	301.1	-1.6	36.8
	450.0	452.3	449.9	-2.4	452.9	450.4	-2.5	54.1
(mF)	(mF)	(mF)	(mF)	(mF)	(mF)	(mF)	(mF)	(mF)
6.000	1.000	1.011	0.997	-0.014	1.007	0.999	-0.008	0.138

		S1			S2			
Range	**Input**	**at 23°C**	**at 50°C**	**Observed Variation**	**at 23°C**	**at 50°C**	**Observed Variation**	**Allowed Variation**
(nF)	(nF)	(nF)	(nF)	(nF)	(nF)	(nF)	(nF)	(nF)
6.000	1.500	1.469	1.467	-0.002	1.507	1.476	-0.031	0.257
	3.000	2.983	2.988	0.005	3.049	3.004	-0.045	0.459
	4.500	4.504	4.513	0.009	4.604	4.545	-0.059	0.662
60.000	15.00	15.02	15.15	0.13	15.38	15.25	-0.13	2.57
	30.00	30.20	30.19	-0.01	30.59	30.37	-0.22	4.59
	45.00	44.60	45.58	0.98	45.21	45.63	0.42	6.62
	150.0	148.2	151.6	3.4	150.9	151.8	0.9	20.5
600.00	300.0	296.7	303.1	6.4	301.6	304.0	2.4	40.8
	450.0	444.7	455.1	10.4	453.1	455.6	2.5	61.0
(µF)	(µF)	(µF)	(µF)	(µF)	(µF)	(µF)	(µF)	(µF)
6.000	1.500	1.501	1.516	0.015	1.509	1.518	0.009	0.230
	3.000	3.015	3.032	0.017	3.016	3.036	0.020	0.432
	4.500	4.521	4.550	0.029	4.531	4.556	0.025	0.635
60.000	15.00	15.56	15.89	0.33	15.38	15.74	0.36	2.05
	30.00	30.71	30.95	0.24	30.63	31.06	0.43	4.08
	45.00	46.41	47.00	0.59	46.28	46.75	0.47	6.10
	150.0	155.7	156.2	0.5	153.8	154.7	0.9	23.0
600.00	300.0	302.3	304.6	2.3	302.7	305.0	2.3	43.2
	450.0	452.3	455.9	3.6	452.9	456.6	3.7	63.5
(mF)	(mF)	(mF)	(mF)	(mF)	(mF)	(mF)	(mF)	(mF)
6.000	1.000	1.011	1.038	0.027	1.007	1.035	0.028	0.162

2.7 Function : % Duty Cycle

At ± 5V

		S1			S2			
Range	**Input**	**at 23°C**	**at 0°C**	**Observed Variation**	**at 23°C**	**at 0°C**	**Observed Variation**	**Allowed Variation**
	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
1kHz	2.0	2.0	2.0	0.0	2.0	2.0	0.0	1.2
	50.0	49.9	49.9	0.0	49.9	49.9	0.0	1.2
	98.0	97.9	97.9	0.0	97.9	97.9	0.0	1.2

		S1			S2			
Range	**Input**	**at 23°C**	**at 50°C**	**Observed Variation**	**at 23°C**	**at 50°C**	**Observed Variation**	**Allowed Variation**
	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
1kHz	2.0	2.0	1.800	-0.2	2.0	1.800	-0.2	1.4
	50.0	49.9	49.800	-0.1	49.9	49.800	-0.1	1.4
	98.0	97.9	97.900	0.0	97.9	97.900	0.0	1.4

Prepared by:_____

Checked by:_____

2.8 Function :Temprature °C

		S1			S2			
Range	**Input**	**at 23°C**	**at 0°C**	**Observed Variation**	**at 23°C**	**at 0°C**	**Observed Variation**	**Allowed Variation**
	(°C)	(°C)	(°C)	(°C)	(°C)	(°C)	(°C)	(°C)
"K" Type Thermocouple	-200	-206	-200	6	-204	-199	5	-32.2
	-100	-103	-99	4	-102	-99	3	-20.7
	0	-2	1	3	-1	0	1	6.9
	200	197	200	3	197	200	3	16.1
	400	397	400	3	397	399	2	25.3
	800	796	800	4	795	798	3	41.4
	1190	1195	1190	-5	1194	1186	-8	59.34

		S1			S2			
Range	**Input**	**at 23°C**	**at 50°C**	**Observed Variation**	**at 23°C**	**at 50°C**	**Observed Variation**	**Allowed Variation**
	(°C)	(°C)	(°C)	(°C)	(°C)	(°C)	(°C)	(°C)
"K" Type Thermocouple	-200	-206	-201	5	-204	-199	5	-37.8
	-100	-103	-100	3	-102	-99	3	-24.3
	0	-2	0	2	-1	1	2	8.1
	200	197	199	2	197	200	3	18.9
	400	397	399	2	397	400	3	29.7
	800	796	798	2	795	800	5	48.6
	1200	1195	1197	2	1194	1199	5	70.2

2.9 Function : Hz (At ± 5V)

		S1			S2			
Range	**Input**	**at 23°C**	**at 0°C**	**Observed Variation**	**at 23°C**	**at 0°C**	**Observed Variation**	**Allowed Variation**
(Hz)	(Hz)	(Hz)	(Hz)	(Hz)	(Hz)	(Hz)	(Hz)	0.1% of reading + 3digits
99.99	10.00	10	10.00	0.00	10.00	10.00	0.00	0.09
	20.00	20	20.00	0.00	20.00	20.00	0.00	0.12
	50.00	50.03	50.03	0.00	50.03	50.03	0.00	0.18
	90.00	90.02	90.02	0.00	90.02	90.02	0.00	0.28
	99.00	99.03	99.02	-0.01	99.03	99.03	0.00	0.30
999.9	101.0	101.0	101.0	0.0	101.0	100.5	-0.5	0.9
	200.0	200.1	200.1	0.0	200.1	200.1	0.0	1.2
	500.0	500.0	500.0	0.0	500.0	500.0	0.0	1.8
	900.0	900.2	900.2	0.0	900.2	900.2	0.0	2.8
	990.0	990.3	990.4	0.1	990.4	990.4	0.0	3.0
(kHz)	(kHz)	(kHz)	(kHz)	(kHz)	(kHz)	(kHz)	(kHz)	(kHz)
9.999	1.000	1.000	1.000	0.000	1.000	1.000	0.000	0.009
	2.000	1.999	1.999	0.000	1.999	1.999	0.000	0.012
	5.000	5.001	5.001	0.000	5.001	5.001	0.000	0.018
	9.000	9.004	9.004	0.000	9.004	9.004	0.000	0.028
	9.900	9.905	9.913	0.008	9.905	9.905	0.000	0.030
99.99	10.00	10.00	10.01	0.01	10.00	10.00	0.00	0.09
	20.00	20	20.00	0.00	20.00	20.00	0.00	0.12
	50.00	50.01	50.01	0.00	50.01	50.01	0.00	0.18
	90.00	90.05	90.00	-0.05	90.05	90.05	0.00	0.28
	99.00	99.06	90.05	-9.01	99.06	99.06	0.00	0.30

		S1			S2			
Range	**Input**	**at 23°C**	**at 50°C**	**Observed Variation**	**at 23°C**	**at 50°C**	**Observed Variation**	**Allowed Variation**
(Hz)	(Hz)	(Hz)	(Hz)	(Hz)	(Hz)	(Hz)	(Hz)	(Hz)
99.99	10.00	10.00	10.00	0.00	10.00	10.00	0.00	0.11
	20.00	20.00	20.00	0.00	20.00	20.00	0.00	0.14
	50.00	50.03	50.03	0.00	50.03	50.30	0.27	0.22
	90.00	90.02	90.02	0.00	90.02	90.02	0.00	0.32
	99.00	99.03	99.03	0.00	99.03	99.03	0.00	0.35
999.9	101.0	101.0	101.0	0.0	101.0	101.0	0.0	1.1
	200.0	200.1	200.1	0.0	200.1	200.1	0.0	1.4
	500.0	500.0	500.0	0.0	500.0	500.0	0.0	2.2
	900.0	900.2	900.3	0.1	900.2	900.2	0.0	3.2
	990.0	990.3	990.3	0.0	990.4	990.4	0.0	3.5
(kHz)	(kHz)	(kHz)	(kHz)	(kHz)	(kHz)	(kHz)	(kHz)	(kHz)
9.999	1.001	1.000	1.000	0.000	1.000	1.000	0.000	0.011
	2.000	1.999	1.999	0.000	1.999	1.999	0.000	0.014
	5.000	5.001	5.001	0.000	5.001	5.001	0.000	0.022
	9.000	9.004	9.004	0.000	9.004	9.004	0.000	0.032
	9.900	9.905	9.905	0.000	9.905	9.905	0.000	0.035
99.99	10.01	10.00	10.00	0.00	10.00	10.00	0.00	0.11
	20.00	20.00	20.00	0.00	20.00	20.00	0.00	0.14
	50.00	50.01	50.01	0.00	50.01	50.01	0.00	0.22
	90.00	90.05	90.05	0.00	90.05	90.05	0.00	0.32
	99.00	99.06	99.06	0.00	99.06	99.06	0.00	0.35

2.10 Function : Diode

		S1			S2			
Range	**Input**	**at 23°C**	**at 0°C**	**Observed Variation**	**at 23°C**	**at 0°C**	**Observed Variation**	**Allowed Variation**
(V)	(V)	(V)	(V)	(V)	(V)	(V)	(V)	(V)
3.000	1.000	1.002	1.008	0.006	1.002	1.003	0.001	0.069
	3.000	3.015	3.020	0.005	3.014	3.017	0.003	0.162

Prepared by:_____

Checked by:_____

Table 3: Influence due to frequency of input quantity

3.1.1 Function : VAC

		S1			S2			
Range	**Input**	**at 50Hz**	**at 40Hz**	**Observed Variation**	**at 50Hz**	**at 40Hz**	**Observed Variation**	**Allowed Variation**
(mV)	(mV)	(mV)	(mV)	(mV)	(mV)	(mV)	(mV)	(mV)
60.00	4.00	3.99	3.97	-0.02	3.98	3.96	-0.02	0.11
	16.00	15.96	15.92	-0.04	15.91	15.89	-0.02	0.35
	36.00	35.86	35.82	-0.04	35.80	35.75	-0.05	0.75
	40.00	39.88	39.80	-0.08	39.80	39.72	-0.08	0.83
	60.00	59.79	59.71	-0.08	59.67	59.59	-0.08	1.23
600.0	40.0	39.9	39.8	-0.1	39.9	39.8	-0.1	1.1
	160.0	159.6	159.4	-0.2	159.6	159.4	-0.2	3.5
	360.0	359.2	358.6	-0.6	359.2	358.6	-0.6	7.5
	400.0	399.1	398.5	-0.6	399.1	398.5	-0.6	8.3
	600.0	598.7	597.8	-0.9	598.7	597.8	-0.9	12.3
(V)	(V)	(V)	(V)	(V)	(V)	(V)	(V)	(V)
6.000	0.600	0.599	0.597	-0.002	0.599	0.597	-0.002	0.015
	1.000	0.997	0.996	-0.001	0.996	0.996	0.000	0.023
	2.000	1.996	1.994	-0.002	1.996	1.993	-0.003	0.043
	4.600	4.594	4.587	-0.007	4.593	4.586	-0.007	0.095
	6.000	5.993	5.984	-0.009	5.992	5.982	-0.010	0.123
60.00	6.00	5.98	5.97	-0.01	5.98	5.97	-0.01	0.15
	10.00	9.98	9.96	-0.02	9.98	9.96	-0.02	0.23
	20.00	19.96	19.93	-0.03	19.96	19.93	-0.03	0.43

3.1.2 Function : VAC

		S1			S2			
Range	**Input**	**at 50Hz**	**at 1000Hz**	**Observed Variation**	**at 50Hz**	**at 1000Hz**	**Observed Variation**	**Allowed Variation**
(mV)	(mV)	(mV)	(mV)	(mV)	(mV)	(mV)	(mV)	(mV)
60.00	4.00	3.99	4.00	0.01	3.98	4.00	0.02	0.11
	16.00	15.96	16.03	0.07	15.91	16.00	0.09	0.35
	36.00	35.86	36.06	0.20	35.80	35.98	0.18	0.75
	40.00	39.88	40.07	0.19	39.80	39.98	0.18	0.83
	60.00	59.79	60.10	0.31	59.67	59.98	0.31	1.23
600.0	40.0	39.9	40.1	0.2	39.9	40.0	0.1	1.1
	160.0	159.6	160.4	0.8	159.6	160.4	0.8	3.5
	360.0	359.2	361.1	1.9	359.2	361.0	1.8	7.5
	400.0	399.1	401.2	2.1	399.1	401.1	2.0	8.3
	600.0	598.7	601.8	3.1	598.7	601.7	3.0	12.3
(V)	(V)	(V)	(V)	(V)	(V)	(V)	(V)	(V)
6.000	0.600	0.599	0.596	-0.003	0.599	0.596	-0.003	0.015
	1.000	0.997	0.995	-0.002	0.996	0.994	-0.002	0.023
	2.000	1.996	1.991	-0.005	1.996	1.990	-0.006	0.043
	4.600	4.594	4.579	-0.015	4.593	5.578	0.985	0.095
	6.000	5.993	5.973	-0.020	5.992	5.972	-0.020	0.123
60.00	6.00	5.98	6.01	0.03	5.98	6.01	0.03	0.15
	10.00	9.98	10.03	0.05	9.98	10.02	0.04	0.23
	20.00	19.96	20.06	0.10	19.96	20.05	0.09	0.43
	46.00	45.92	46.14	0.22	45.90	46.12	0.22	0.95
	60.00	59.90	60.18	0.28	59.87	60.16	0.29	1.23
600.0	60.0	59.8	60.1	0.3	59.8	60.1	0.3	1.5
1000	800	798	802	4	798	802	4	19

Prepared by:_____

Checked by:_____

3.2.1 Function : A AC

		S1			S2			
Range	**Input**	**at 50Hz**	**at 40Hz**	**Observed Variation**	**at 50Hz**	**at 40Hz**	**Observed Variation**	**Allowed Variation**
(mA)	(mA)	(mA)	(mA)	(mA)	(mA)	(mA)	(mA)	(mA)
60.00	0.10	0.09	0.09	0.000	0.09	0.09	0.00	0.03
	4.00	3.97	3.97	0.000	3.97	3.96	-0.01	0.11
	8.00	7.96	7.94	-0.020	7.95	7.94	-0.01	0.19
	16.00	15.92	15.91	-0.010	15.90	15.88	-0.02	0.35
	36.00	35.86	35.80	-0.060	35.81	35.75	-0.06	0.75
	40.00	39.84	39.78	-0.060	39.79	39.72	-0.07	0.83
	60.00	59.77	59.67	-0.100	59.68	59.59	-0.09	1.23
600.0	160.0	159.5	159.3	-0.200	159.6	159.3	-0.3	3.50
	360.0	359.1	358.5	-0.600	359.3	358.7	-0.6	7.50
	400.0	398.9	398.3	-0.600	399.1	398.6	-0.5	8.30
	600.0	598.2	597.5	-0.700	598.6	597.7	-0.9	12.30
(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)
6.000	0.100	0.099	0.099	0.000	0.099	0.099	0.000	0.01
	0.500	0.499	0.499	0.000	0.499	0.499	0.000	0.01
	1.000	0.999	0.998	-0.001	0.999	0.998	-0.001	0.02

3.2.2 Function : A AC

		S1			S2			
Range	**Input**	**at 50Hz**	**at 1000Hz**	**Observed Variation**	**at 50Hz**	**at 1000Hz**	**Observed Variation**	**Allowed Variation**
(mA)	(mA)	(mA)	(mA)	(mA)	(mA)	(mA)	(mA)	(mA)
60.00	0.10	0.09	0.09	0.000	0.09	0.09	0.00	0.03
	4.00	3.97	4.00	0.030	3.97	3.99	0.02	0.11
	8.00	7.96	8.00	0.040	7.95	7.99	0.04	0.19
	16.00	15.92	16.01	0.090	15.90	15.99	0.09	0.35
	36.00	35.86	36.04	0.180	35.81	35.99	0.18	0.75
	40.00	39.84	40.04	0.200	39.79	39.99	0.20	0.83
	60.00	59.77	60.07	0.300	59.68	59.99	0.31	1.23
600.0	160.0	159.5	160.3	0.800	159.6	160.4	0.8	3.23
	360.0	359.1	360.9	1.800	359.3	361.1	1.8	7.23
	400.0	398.9	401.0	2.100	399.1	401.2	2.1	8.03
	600.0	598.2	601.5	3.300	598.6	601.8	3.2	12.03
(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)
6.000	0.100	0.099	0.100	0.001	0.099	0.100	0.001	0.005
	0.500	0.499	0.502	0.003	0.499	0.501	0.002	0.013
	1.000	0.999	1.005	0.006	0.999	1.004	0.005	0.023
	4.000	4.002	4.025	0.023	4.000	4.021	0.021	0.083
	6.000	6.005	6.038	0.033	6.001	6.034	0.033	0.123
10A	8.00	8.02	8.04	0.020	8.03	8.03	0.00	0.19
	10.00	10.04	10.08	0.040	10.02	10.10	0.08	0.23

Prepared by:_____

Checked by:_____

Table 4 : Influence due to storage temperature

Table 4.1 at 70℃

4.1.1 Function : VDC

	Sr.No.	S1	S2	S1	S2		
Range	Input	Observed Reading	Observed Reading	Observed Error	Observed Error	Allowed Error	
(mV)	(mV)	(mV)	(mV)	(mV)	(mV)	(mV)	
60.00	6.00	6.01	6.00	0.01	0.00	0.11	1% of reading + 5digits
	54.00	53.93	53.81	-0.07	-0.19	0.59	
	60.00	59.92	59.79	-0.08	-0.21	0.65	
600.0	60.0	59.9	59.9	-0.1	-0.1	0.8	0.5% of reading + 5digits
	540.0	539.8	539.7	-0.2	-0.3	3.2	
	600.0	599.8	599.6	-0.2	-0.4	3.5	
(V)	(V)	(V)	(V)	(V)	(V)	(V)	
6.000	0.600	0.599	0.599	-0.001	-0.001	0.006	
	5.400	5.398	5.392	-0.002	-0.008	0.030	
	6.000	5.998	5.991	-0.002	-0.009	0.033	
60.00	6.00	5.99	5.98	-0.01	-0.02	0.06	0.5% of reading + 3digits
	54.00	53.95	53.87	-0.05	-0.13	0.30	
	60.00	59.93	59.86	-0.07	-0.14	0.33	
600.0	60.0	59.9	59.8	-0.1	-0.2	0.6	
	540.0	539.5	538.9	-0.5	-1.1	3.0	
	600.0	599.4	598.8	-0.6	-1.2	3.3	
1000	500	499	498	-1	-2	6	0.5% of reading + 3digits
	900	899	898	-1	-2	8	
	1000	999	998	-1	-2	8	

4.1.2 Function : VAC

	Sr.No.	S1	S2	S1	S2		
Range	Input	Observed Reading	Observed Reading	Observed Error	Observed Error	Allowed Error	
(mV)	(mV)	(mV)	(mV)	(mV)	(mV)	(mV)	
60.00	6.00	5.98	5.96	-0.02	-0.04	0.23	3% of reading + 5digits
	54.00	53.81	53.69	-0.19	-0.31	1.67	
	60.00	59.78	59.65	-0.22	-0.35	1.85	
600.0	60.0	59.8	59.8	-0.2	-0.2	1.4	1.5% of reading + 5digits
	540.0	538.7	538.6	-1.3	-1.4	8.6	
	600.0	598.6	598.4	-1.4	-1.6	9.5	
(V)	(V)	(V)	(V)	(V)	(V)	(V)	
6.000	0.600	0.598	0.598	-0.002	-0.002	0.010	
	5.400	5.387	5.381	-0.013	-0.019	0.048	
	6.000	5.986	5.979	-0.014	-0.021	0.053	
60.00	6.00	5.98	5.97	-0.02	-0.03	0.10	0.8% of reading + 5digits
	54.00	53.85	53.78	-0.15	-0.22	0.48	
	60.00	59.84	59.75	-0.16	-0.25	0.53	
600.0	60.0	59.8	59.7	-0.2	-0.3	1.0	
	540.0	538.4	537.9	-1.6	-2.1	4.8	
	600.0	598.1	597.6	-1.9	-2.4	5.3	
1000	600	597	597	-3	-3	16	1% of reading + 10digits
	900	897	897	-3	-3	19	
	1000	997	996	-3	-4	20	

4.1.3 Function : ADC

	Sr.No.	S1	S2	S1	S2		
Range	Input	Observed Reading	Observed Reading	Observed Error	Observed Error	Allowed Error	
(mA)	(mA)	(mA)	(mA)	(mA)	(mA)	(mA)	
60.00	1.00	0.99	0.99	-0.01	-0.01	0.05	1.5% of reading + 3digits
	54.00	54.05	53.81	0.05	-0.19	0.84	
	60.00	60.06	59.79	0.06	-0.21	0.93	
600.0	10.0	10.0	9.9	0.0	-0.1	0.5	
	540.0	541.2	539.8	1.2	-0.2	8.4	
	600.0	601.3	599.6	1.3	-0.4	9.3	
(A)	(A)	(A)	(A)	(A)	(A)	(A)	
6.000	0.100	0.097	0.097	-0.003	-0.003	0.005	1.5% of reading + 3digits
	5.400	5.410	5.410	0.010	0.010	0.084	
	6.000	6.013	6.013	0.013	0.013	0.093	
10.00	8.00	8.04	8.04	0.04	0.04	0.15	1.5% of reading + 3digits
	9.00	9.03	9.05	0.03	0.05	0.17	
	10.00	10.04	10.06	0.04	0.06	0.18	

Prepared by:_____

Checked by:_____

4.1.4 Function : AAC

	Sr.No.	S1	S2	S1	S2		
Range	Input	Observed Reading	Observed Reading	Observed Error	Observed Error	Allowed Error	
(mA)	(mA)	(mA)	(mA)	(mA)	(mA)	(mA)	
60.00	1.00	0.99	0.99	-0.01	-0.01	0.07	1.8% of reading + 5digits
	54.00	53.95	53.70	-0.05	-0.30	1.02	
	60.00	59.92	59.67	-0.08	-0.33	1.13	
600.0	10.0	10.0	9.9	0.0	-0.1	0.7	
	54.0	53.8	53.8	-0.2	-0.2	1.5	
	600.0	600.0	598.2	0.0	-1.8	11.3	
(A)	(A)	(A)	(A)	(A)	(A)	(A)	
6.000	0.100	0.099	0.100	-0.001	0.000	0.007	2% of reading + 5digits
	5.400	5.409	5.408	0.009	0.008	0.113	
	6.000	6.012	6.010	0.012	0.010	0.125	
10.00	8.00	8.02	8.02	0.02	0.02	0.21	2% of reading + 5digits
	9.00	9.03	9.04	0.03	0.04	0.23	
	10.00	10.04	10.05	0.04	0.05	0.25	

4.1.5 Function : Ω

	Sr.No.	S1	S2	S1	S2		
Range	Input	Observed Reading	Observed Reading	Observed Error	Observed Error	Allowed Error	
(Ω)	(Ω)	(Ω)	(Ω)	(Ω)	(Ω)	(Ω)	
600.0	1.0	1.0	0.9	0.0	-0.1	0.3	0.5% of reading + 3digits
	40.0	40.3	40.1	0.3	0.1	0.5	
	540.0	543.0	541.5	3.0	1.5	3.0	
	600.0	603.3	602.0	3.3	2.0	3.3	
(kΩ)	(kΩ)	(kΩ)	(kΩ)	(kΩ)	(kΩ)	(kΩ)	
6.000	0.600	0.601	0.600	0.001	0.000	0.005	0.5% of reading + 2digits
	5.400	5.420	5.410	0.020	0.010	0.029	
	6.000	6.023	6.012	0.023	0.012	0.032	
60.00	6.00	6.01	6.00	0.01	0.00	0.05	
	54.00	54.11	54.04	0.11	0.04	0.29	
	60.00	60.12	60.04	0.12	0.04	0.32	
600.0	60.0	60.1	60.0	0.1	0.0	0.5	
	540.0	541.5	540.5	1.5	0.5	2.9	
	600.0	601.6	600.7	1.6	0.7	3.2	
(MΩ)	(MΩ)	(MΩ)	(MΩ)	(MΩ)	(MΩ)	(MΩ)	
6.000	0.600	0.601	0.601	0.001	0.001	0.005	0.5% of reading + 2digits
	5.400	5.407	5.404	0.007	0.004	0.029	
	6.000	6.007	6.005	0.007	0.005	0.032	
60.00	6.00	6.01	6.01	0.01	0.01	0.17	2% of reading + 5digits
	54.00	53.19	53.42	-0.81	-0.58	1.13	
	60.00	58.96	59.30	-1.04	-0.70	1.25	

4.1.6 Function : Farad

	Sr.No.	S1	S2	S1	S2		
Range	Input	Observed Reading	Observed Reading	Observed Error	Observed Error	Allowed Error	
(nF)	(nF)	(nF)	(nF)	(nF)	(nF)	(nF)	
6.000	1.500	1.460	1.472	-0.040	-0.028	0.095	5.0% of reading + 20digits
	5.400	5.415	5.440	0.015	0.040	0.290	
	6.000	6.011	6.054	0.011	0.054	0.320	
60.000	15.00	15.15	15.23	0.15	0.23	0.95	
	54.00	54.33	54.35	0.33	0.35	2.90	
	60.00	60.37	60.40	0.37	0.40	3.20	
600.00	150.0	150.7	150.9	0.7	0.9	7.6	5.0% of reading + 10digits
	540.0	543.1	543.5	3.1	3.5	27.1	
	600.0	603.6	603.8	3.6	3.8	30.1	
(µF)	(µF)	(µF)	(µF)	(µF)	(µF)	(µF)	
6.000	1.500	1.507	1.508	0.007	0.008	0.085	
	5.400	5.426	5.432	0.026	0.032	0.280	
	6.000	6.027	6.034	0.027	0.034	0.310	
60.000	15.00	15.50	15.46	0.50	0.46	0.85	
	54.00	55.40	55.25	1.40	1.25	2.80	
	60.00	range change	range change	-	-	3.10	
600.00	150.0	154.3	153.4	4.3	3.4	8.5	
	540.0	541.6	542.4	1.6	2.4	28.0	
	600.0	601.8	602.5	1.8	2.5	31.0	

Prepared by:_____

Checked by:_____

4.1.7 Function : % Duty Cycle
At ± 5V

	Sr.No.	S1	S2	S1	S2		
Frequency	**Input**	**Observed Reading**	**Observed Reading**	**Observed Error**	**Observed Error**	**Allowed Error**	
	(%)	(%)	(%)	(%)	(%)	(%)	
10 Hz	2.0	1.9	1.9	-0.1	-0.1	0.5	± 5 Digits
	50.0	49.9	49.9	-0.1	-0.1	0.5	
	98.0	97.9	97.9	-0.1	-0.1	0.5	
1kHz	2.0	2.0	2.0	0.0	0.0	0.5	
	50.0	49.9	49.9	-0.1	-0.1	0.5	
	98.0	97.9	97.9	-0.1	-0.1	0.5	
5kHz	2.0	2.0	2.0	0.0	0.0	2.5	± 5 Digits per kHz
	50.0	49.9	49.9	-0.1	-0.1	2.5	
	98.0	97.9	97.9	-0.1	-0.1	2.5	
10kHz	2.0	2.0	2.0	0.0	0.0	5.0	
	50.0	50.0	50.0	0.0	0.0	5.0	
	98.0	97.9	98.1	-0.1	0.1	5.0	

4.1.8 Function :°C

	Sr.No.	S1	S2	S1	S2		
Type	**Input**	**Observed Reading**	**Observed Reading**	**Observed Error**	**Observed Error**	**Allowed Error**	
	(°C)	(°C)	(°C)	(°C)	(°C)	(°C)	
"K" Type Thermocouple	-200	-203	-203	-3	-3	-14	5.0% of reading + 4digits
	-100	-101	-101	-1	-1	-9	
	0	-1	-1	-1	-1	3	2.0% of reading + 3digits
	200	198	197	-2	-3	7	
	400	398	397	-2	-3	11	
	800	797	795	-3	-5	18	2.0% of reading + 2digits
	1200	1196	1193	-4	-7	26	

4.1.9 Function : Hz (At ± 5V)

	Sr.No.	S1	S2	S1	S2		
Range	**Input**	**Observed Reading**	**Observed Reading**	**Observed Error**	**Observed Error**	**Allowed Error**	
(Hz)	(Hz)	(Hz)	(Hz)	(Hz)	(Hz)	(Hz)	0.1% of reading + 3digits
99.99	10.00	10	10.00	0.00	0.00	0.04	
	20.00	20	20.00	0.00	0.00	0.05	
	90.00	90.02	90.02	0.02	0.02	0.12	
	99.00	99.03	99.03	0.03	0.03	0.13	
999.9	100.0	100.0	100.0	0.0	0.0	0.4	
	200.0	200.1	200.1	0.1	0.1	0.5	
	900.0	900.3	900.2	0.3	0.2	1.2	
	990.0	990.4	990.4	0.4	0.4	1.3	
(kHz)	(kHz)	(kHz)	(kHz)	(kHz)	(kHz)	(kHz)	
9.999	1.000	1.000	1.000	0.000	0.000	0.004	
	2.000	1.999	1.999	-0.001	-0.001	0.005	
	9.000	9.004	9.004	0.004	0.004	0.012	
	9.900	9.905	9.905	0.005	0.005	0.013	
99.99	10.00	10.00	10.00	0.00	0.00	0.04	
	20.00	20	20.00	0.00	0.00	0.05	
	90.00	90.05	90.05	0.05	0.05	0.12	
	99.00	99.06	99.06	0.06	0.06	0.13	

Prepared by:_____

Checked by:_____

Table 4.2 : at -25℃

4.2.1 Function : VDC

	Sr.No.	S1	S2	S1	S2		
Range	**Input**	**Observed Reading**	**Observed Reading**	**Observed Error**	**Observed Error**	**Allowed Error**	
(mV)	(mV)	(mV)	(mV)	(mV)	(mV)	(mV)	
60.00	6.00	6.02	6.01	0.02	0.01	0.11	0.1% of reading + 5digits
	54.00	53.94	53.82	-0.06	-0.18	0.59	
	60.00	59.93	59.80	-0.07	-0.20	0.65	
600.0	60.0	59.9	59.9	-0.1	-0.1	0.8	0.5% of reading + 5digits
	540.0	539.8	539.7	-0.2	-0.3	3.2	
	600.0	599.8	599.7	-0.2	-0.3	3.5	
(V)	(V)	(V)	(V)	(V)	(V)	(V)	
6.000	0.600	0.599	0.599	-0.001	-0.001	0.006	
	5.400	5.398	5.391	-0.002	-0.009	0.030	
	6.000	5.998	5.991	-0.002	-0.009	0.033	
60.00	6.00	5.99	5.98	-0.01	-0.02	0.06	0.5% of reading + 3digits
	54.00	53.94	53.86	-0.06	-0.14	0.30	
	60.00	59.94	59.85	-0.06	-0.15	0.33	
600.0	60.0	59.9	59.9	-0.1	-0.1	0.6	
	540.0	539.4	538.8	-0.6	-1.2	3.0	
	600.0	599.3	598.7	-0.7	-1.3	3.3	
1000	500	499	498	-1	-2	6	0.5% of reading + 3digits
	900	898	898	-2	-2	8	
	1000	998	998	-2	-2	8	

4.2.2 Function : VAC

	Sr.No.	S1	S2	S1	S2		
Range	**Input**	**Observed Reading**	**Observed Reading**	**Observed Error**	**Observed Error**	**Allowed Error**	
(mV)	(mV)	(mV)	(mV)	(mV)	(mV)	(mV)	
60.00	6.00	5.97	5.96	-0.03	-0.04	0.23	3% of reading + 5digits
	54.00	53.81	53.69	-0.19	-0.31	1.67	
	60.00	59.79	59.66	-0.21	-0.34	1.85	
600.0	60.0	59.8	59.8	-0.2	-0.2	1.4	1.5% of reading + 5digits
	540.0	538.7	538.6	-1.3	-1.4	8.6	
	600.0	598.6	598.4	-1.4	-1.6	9.5	
(V)	(V)	(V)	(V)	(V)	(V)	(V)	
6.000	0.600	0.598	0.597	-0.003	-0.003	0.010	
	5.400	5.387	5.381	-0.019	-0.019	0.048	
	6.000	5.986	5.979	-0.021	-0.021	0.053	
60.00	6.00	5.98	5.97	-0.03	-0.03	0.10	0.8% of reading + 5digits
	54.00	53.84	53.77	-0.23	-0.23	0.48	
	60.00	59.83	59.74	-0.26	-0.26	0.53	
600.0	60.0	59.8	59.7	-0.3	-0.3	1.0	
	540.0	538.3	537.8	-2.2	-2.2	4.8	
	600.0	598.1	597.5	-1.9	-2.5	5.3	
1000	600	597	597	-3	-3	16	1% of reading + 10digits
	900	897	896	-3	-4	19	
	1000	997	996	-3	-4	20	

4.2.3 Function : ADC

	Sr.No.	S1	S2	S1	S2		
Range	**Input**	**Observed Reading**	**Observed Reading**	**Observed Error**	**Observed Error**	**Allowed Error**	
(mA)	(mA)	(mA)	(mA)	(mA)	(mA)	(mA)	
60.00	1.00	0.99	0.99	-0.01	-0.01	0.05	1.5% of reading + 3digits
	54.00	53.93	53.81	-0.07	-0.19	0.84	
	60.00	59.93	59.80	-0.07	-0.20	0.93	
600.0	10.0	10.0	9.9	0.0	-0.1	0.5	
	540.0	540.0	539.8	0.0	-0.2	8.4	
	600.0	600.1	599.7	0.1	-0.3	9.3	
(A)	(A)	(A)	(A)	(A)	(A)	(A)	
6.000	0.100	0.100	0.100	0.000	0.000	0.005	1.5% of reading + 3digits
	5.400	5.425	5.414	0.025	0.014	0.084	
	6.000	6.028	6.017	0.028	0.017	0.093	
10.00	8.00	8.05	8.04	0.05	0.04	0.15	1.5% of reading + 3digits
	9.00	9.05	9.05	0.05	0.05	0.17	
	10.00	10.06	10.06	0.06	0.06	0.18	

Prepared by:_____

Checked by:_____

4.2.4 Function : AAC

	Sr.No.	S1	S2	S1	S2		
Range	Input	Observed Reading	Observed Reading	Observed Error	Observed Error	Allowed Error	
(mA)	(mA)	(mA)	(mA)	(mA)	(mA)	(mA)	
60.00	1.00	0.99	0.99	-0.01	-0.01	0.07	1.8% of reading + 5digits
	54.00	53.86	53.70	-0.14	-0.30	1.02	
	60.00	59.87	59.68	-0.13	-0.32	1.13	
600.0	10.0	10.0	9.9	0.0	-0.1	0.7	
	540.0	539.5	538.7	-0.5	-1.3	10.2	
	600.0	599.3	598.7	-0.7	-1.3	11.3	
(A)	(A)	(A)	(A)	(A)	(A)	(A)	
6.000	0.100	0.099	0.100	-0.001	0.000	0.007	2% of reading + 5digits
	5.400	5.405	5.405	0.005	0.005	0.113	
	6.000	6.009	6.007	0.009	0.007	0.125	
10.00	8.00	8.02	8.04	0.02	0.04	0.21	2% of reading + 5digits
	9.00	9.03	9.04	0.03	0.04	0.23	
	10.00	10.03	10.03	0.03	0.03	0.25	

4.2.5 Function : Ω

	Sr.No.	S1	S2	S1	S2		
Range	Input	Observed Reading	Observed Reading	Observed Error	Observed Error	Allowed Error	
(Ω)	(Ω)	(Ω)	(Ω)	(Ω)	(Ω)	(Ω)	
600.0	1.0	0.9	0.9	-0.1	-0.1	0.3	0.5% of reading + 3digits
	40.0	40.3	40.1	0.3	0.1	0.5	
	540.0	542.6	541.4	2.6	1.4	3.0	
	600.0	603.0	601.7	3.0	1.7	3.3	
(kΩ)	(kΩ)	(kΩ)	(kΩ)	(kΩ)	(kΩ)	(kΩ)	
6.000	0.600	0.601	0.600	0.001	0.000	0.005	0.5% of reading + 2digits
	5.400	5.421	5.411	0.021	0.011	0.029	
	6.000	6.023	6.011	0.023	0.011	0.032	
60.00	6.00	6.01	6.00	0.01	0.00	0.05	
	54.00	54.11	54.03	0.11	0.03	0.29	
	60.00	60.13	60.04	0.13	0.04	0.32	
600.0	60.0	60.1	60.0	0.1	0.0	0.5	
	540.0	541.5	540.7	1.5	0.7	2.9	
	600.0	601.6	600.8	1.6	0.8	3.2	
(MΩ)	(MΩ)	(MΩ)	(MΩ)	(MΩ)	(MΩ)	(MΩ)	
6.000	0.600	0.602	0.603	0.002	0.003	0.005	0.5% of reading + 2digits
	5.400	5.407	5.410	0.007	0.010	0.029	
	6.000	6.007	6.015	0.007	0.015	0.032	
60.00	6.00	6.01	6.16	0.01	0.16	0.17	2% of reading + 5digits
	54.00	53.28	54.26	-0.72	0.26	1.13	
	60.00	58.96	60.20	-1.04	0.20	1.25	

4.2.6 Function : Farad

	Sr.No.	S1	S2	S1	S2		
Range	Input	Observed Reading	Observed Reading	Observed Error	Observed Error	Allowed Error	
(nF)	(nF)	(nF)	(nF)	(nF)	(nF)	(nF)	
6.000	1.500	1.462	1.471	-0.038	-0.029	0.095	5.0% of reading + 20digits
	5.400	5.423	5.443	0.023	0.043	0.290	
	6.000	6.046	6.055	0.046	0.055	0.320	
60.000	15.00	15.17	15.24	0.17	0.24	0.95	
	54.00	54.35	54.41	0.35	0.41	2.90	
	60.00	60.37	60.52	0.37	0.52	3.20	
600.00	150.0	150.7	150.9	0.7	0.9	7.6	5.0% of reading + 10digits
	540.0	543.0	543.7	3.0	3.7	27.1	
	600.0	603.7	603.6	3.7	3.6	30.1	
(µF)	(µF)	(µF)	(µF)	(µF)	(µF)	(µF)	
6.000	1.500	1.506	1.507	0.006	0.007	0.085	5.0% of reading + 10digits
	5.400	5.426	5.431	0.026	0.031	0.280	
	6.000	6.029	6.031	0.029	0.031	0.310	
60.000	15.00	15.56	15.45	0.56	0.45	0.85	
	54.00	55.62	55.25	1.62	1.25	2.80	
	60.00	range change	range change	-	-	3.10	
600.00	150.0	154.6	153.6	4.6	3.6	8.5	
	540.0	541.7	542.4	1.7	2.4	28.0	
	600.0	601.7	602.4	1.7	2.4	31.0	

Prepared by:_____

Checked by:_____

4.2.7 Function : % Duty Cycle
At ± 5V

	Sr.No.	S1	S2	S1	S2		
Frequency	**Input**	**Observed Reading**	**Observed Reading**	**Observed Error**	**Observed Error**	**Allowed Error**	
	(%)	(%)	(%)	(%)	(%)	(%)	
10 Hz	2.0	1.9	1.9	-0.1	-0.1	0.5	± 5 Digits
	50.0	49.9	49.9	-0.1	-0.1	0.5	
	98.0	97.9	97.9	-0.1	-0.1	0.5	
1kHz	2.0	2.0	2.0	0.0	0.0	0.5	
	50.0	49.9	49.9	-0.1	-0.1	0.5	
	98.0	97.9	97.9	-0.1	-0.1	0.5	
5kHz	2.0	2.0	2.0	0.0	0.0	2.5	± 5 Digits per kHz
	50.0	49.9	49.9	-0.1	-0.1	2.5	
	98.0	97.9	97.9	-0.1	-0.1	2.5	
10kHz	2.0	2.0	2.0	0.0	0.0	5.0	
	50.0	50.0	50.0	0.0	0.0	5.0	
	98.0	97.8	97.9	-0.2	-0.1	5.0	

4.2.8 Function :°C

	Sr.No.	S1	S2	S1	S2		
Type	**Input**	**Observed Reading**	**Observed Reading**	**Observed Error**	**Observed Error**	**Allowed Error**	
	(°C)	(°C)	(°C)	(°C)	(°C)	(°C)	5.0% of reading + 4digits
"K" Type Thermocouple	-200	-204	-204	-4	-4	-14	
	-100	-101	-102	-1	-2	-9	
	0	-1	-1	-1	-1	3	2.0% of reading + 3digits
	200	198	197	-2	-3	7	
	400	398	397	-2	-3	11	
	800	797	795	-3	-5	18	2.0% of reading + 2digits
	1200	1196	1193	-4	-7	26	

4.2.9 Function : Hz (At ± 5V)

	Sr.No.	S1	S2	S1	S2		
Range	**Input**	**Observed Reading**	**Observed Reading**	**Observed Error**	**Observed Error**	**Allowed Error**	
(Hz)	(Hz)	(Hz)	(Hz)	(Hz)	(Hz)	(Hz)	0.1% of reading + 3digits
99.99	10.00	10	10.00	0.00	0.00	0.04	
	20.00	20	20.00	0.00	0.00	0.05	
	90.00	90.02	90.02	0.02	0.02	0.12	
	99.00	99.03	99.03	0.03	0.03	0.13	
999.9	100.0	100.0	100.0	0.0	0.0	0.4	
	200.0	200.1	200.1	0.1	0.1	0.5	
	900.0	900.2	900.2	0.2	0.2	1.2	
	990.0	990.4	990.4	0.4	0.4	1.3	
(kHz)	(kHz)	(kHz)	(kHz)	(kHz)	(kHz)	(kHz)	
9.999	1.000	1.000	1.000	0.000	0.000	0.004	
	2.000	1.999	1.999	-0.001	-0.001	0.005	
	9.000	9.004	9.004	0.004	0.004	0.012	
	9.900	9.905	9.905	0.005	0.005	0.013	
99.99	10.00	10.00	10.00	0.00	0.00	0.04	
	20.00	20	20.00	0.00	0.00	0.05	
	90.00	90.05	90.05	0.05	0.05	0.12	
	99.00	99.06	99.06	0.06	0.06	0.13	

Table 5 : Measurement of battery consumption

At 3V Battery voltage

Sr.No.	S1	S2
Function	**Observed Consumption (mA)**	
AC	1.551	1.63
DC	1.553	1.61
mVDC	1.77	1.87
Hz	1.146	1.21
Deg	1.67	1.74
Ohm	1.31	1.39
Cap	1.149	1.214
mA~	1.76	1.87
mA---	1.76	1.86
A~	1.77	1.88
A---	1.77	1.88
Buzzer	1.09	1.15
Diode	2.24	2.35

Prepared by:_____

Checked by:_____

Table 6 : Influence due to overload (Reading taken on sample S1)

Function VDC
Readings after test :Overlaod 1050VDC for 2 hours

Range	Input	Reading Before Test	Reading After Test	Observed Error	Allowed Error
600.0	500.0	499.3	499.3	0.0	2.8
	600.0	599.3	599.1	-0.2	3.3
1000	750	747	748	1.0	7
	950	947	948	1.0	8
	1000	998	998	0.0	8

Function VAC
Readings after test :Overlaod 1050VAC for 2 hours

Range	Input	Reading Before Test	Reading After Test	Observed Error	Allowed Error
600.0	500.0	498	498	0.0	2.8
	600.0	598	598	0.0	3.3
1000	750	747	747	0.0	7
	950	947	947	0.0	8
	1000	996	997	1.0	8

Function ADC
Readings after test :Overlaod 10A for 15 Secs

Range	Input	Reading Before Test	Reading After Test	Observed Error	Allowed Error
6.000	1.000	1.005	1.008	0.0	0.018
	5.000	5.03	5.048	0.0	0.078
10.00	10.00	10.02	10.04	0.0	0.18

Function AAC
Readings after test :Overlaod 10A for 15 Secs

Range	Input	Reading Before Test	Reading After Test	Observed Error	Allowed Error
6.000	1.000	1.005	1.009	0.0	0.025
	5.000	5.025	5.04	0.0	0.105
10.00	10.00	10	10.04	0.0	0.25

Function mADC
Readings after test :Overlaod 600mADC for 2 hours

Range	Input	Reading Before Test	Reading After Test	Observed Error	Allowed Error
60.00	40.00	40.21	40.31	0.10	0.63
600.0	200.0	200	200.3	0.3	3.3
	400.0	400.2	400.6	0.4	6.3

Function mAAC
Readings after test :Overlaod 600mAAC for 2 hours

Range	Input	Reading Before Test	Reading After Test	Observed Error	Allowed Error
60.00	40.00	40.16	40.21	0.05	0.77
600.0	200.0	199.7	199.8	0.1	4.1
	400.0	399.6	400	0.4	7.7

Prepared by:_____

Checked by:_____