参考資料

COSEL

TEST DATA OF MODULE L

(RB series)

Regulated DC Power Supply
November 5, 2018

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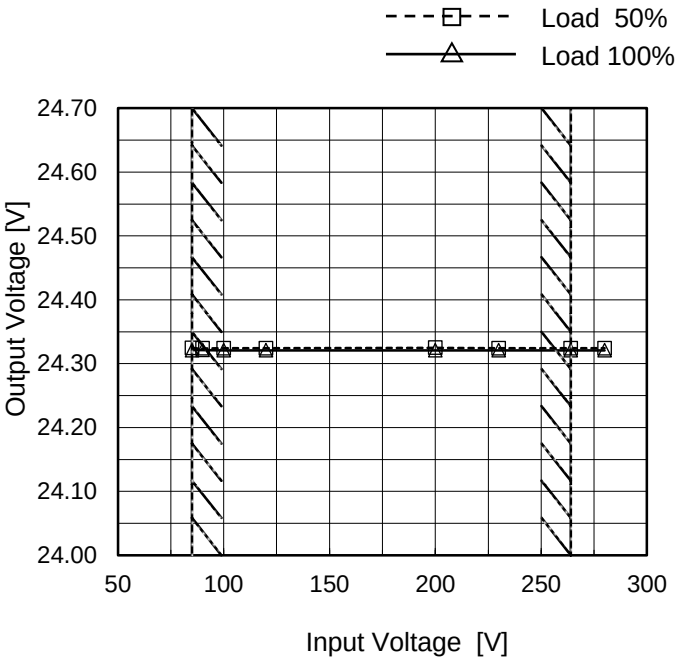

Note: Slanted line shows the range of the rated input voltage.

2.Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
85	24.324	24.321
90	24.324	24.321
100	24.324	24.321
120	24.324	24.321
200	24.325	24.321
230	24.324	24.321
264	24.324	24.321
280	24.324	24.321
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BC-11297

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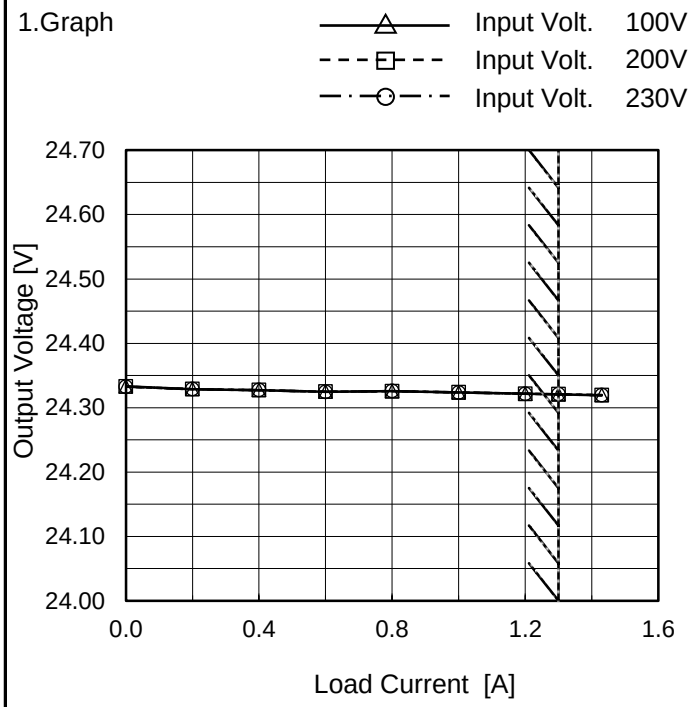
Model	MODULE L
Item	Load Regulation
Object	+24V1.3A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated load current.

2.Values

Load Current [A]	Output Voltage [V]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.00	24.333	24.333	24.333
0.20	24.329	24.329	24.329
0.40	24.327	24.327	24.327
0.60	24.325	24.325	24.325
0.80	24.326	24.326	24.326
1.00	24.323	24.324	24.324
1.20	24.322	24.322	24.322
1.30	24.321	24.321	24.321
1.43	24.319	24.320	24.319
--	-	-	-
--	-	-	-

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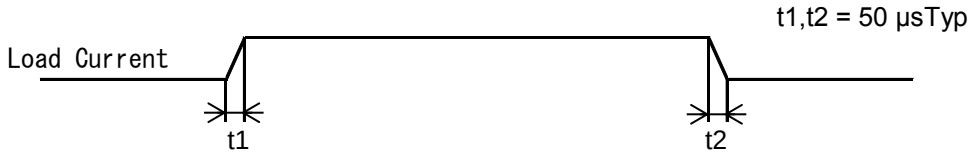
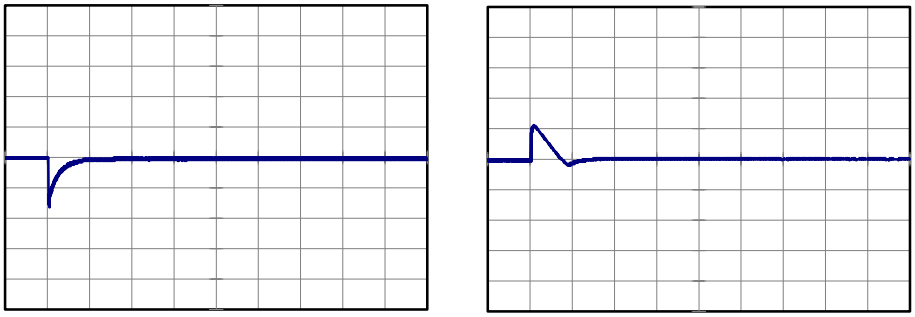
Model	MODULE L	
Item	Dynamic Load Response	Temperature 25°C Testing Circuitry Figure A
Object	+24V1.3A	

Input Volt. 100 V
Cycle 1000 ms



Min.Load (0A)←→
Load 100% (1.3A)

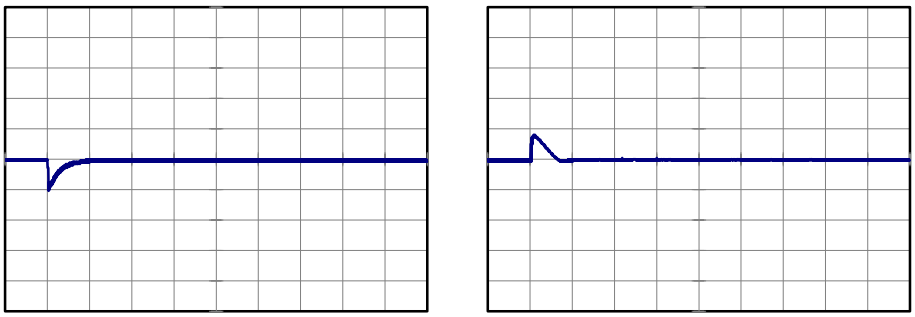


200 mV/div

10 ms/div

10 ms/div

Min.Load (0A)←→
Load 50% (0.65A)



200 mV/div

10 ms/div

10 ms/div

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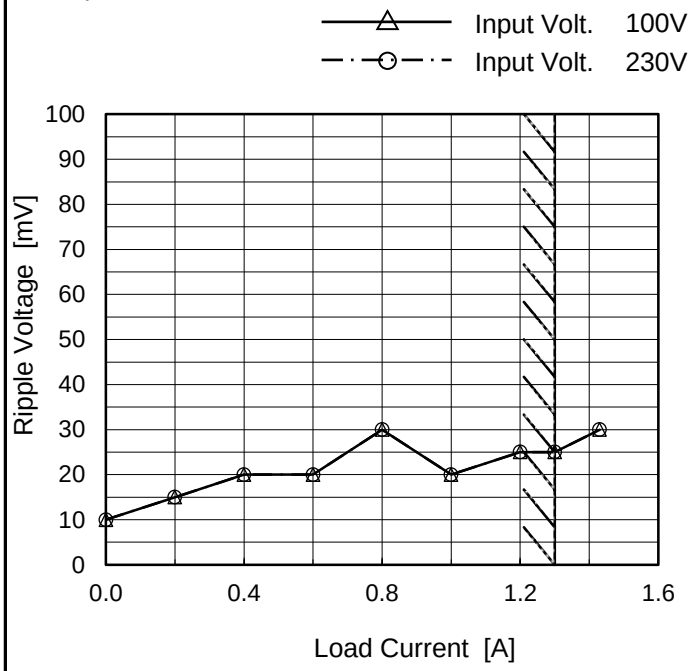
Model	MODULE L
Item	Ripple Voltage (by Load Current)
Object	+24V1.3A

Temperature 25°C
Testing Circuitry Figure B

1.Graph



Measured by 20 MHz Oscilloscope.
Ripple Voltage is shown as p-p in the figure below.
Note: Slanted line shows the range of the rated load current.

T1: Due to AC Input Line
T2: Due to Switching

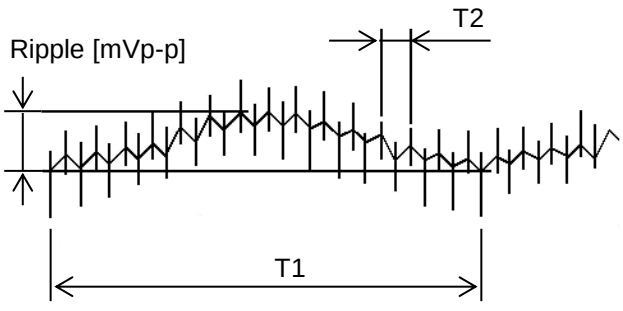


Fig. Complex Ripple Wave Form

2.Values

Load Current [A]	Ripple Voltage [mV] Input Volt. 100 [V]	Input Volt. 230 [V]
0.00	10	10
0.20	15	15
0.40	20	20
0.60	20	20
0.80	30	30
1.00	20	20
1.20	25	25
1.30	25	25
1.43	30	30
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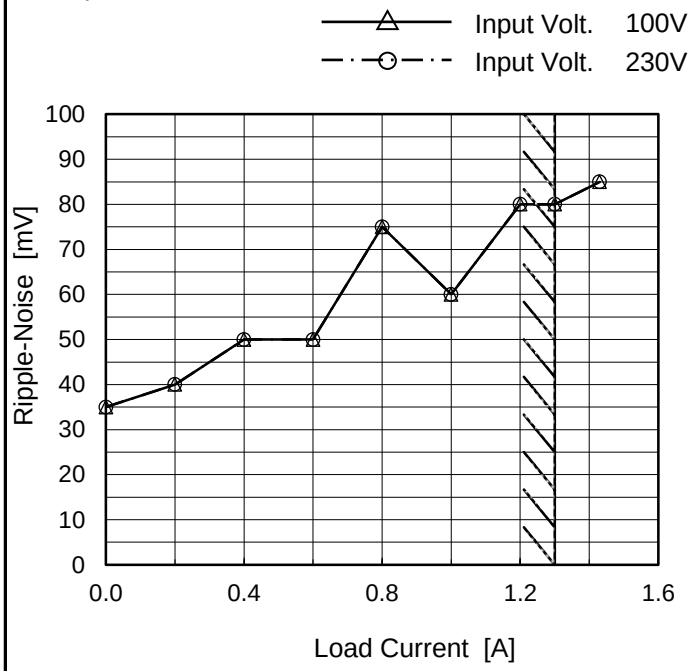
Model	MODULE L
Item	Ripple-Noise
Object	+24V1.3A

Temperature 25°C
Testing Circuitry Figure B

1.Graph



Measured by 20 MHz Oscilloscope.
Ripple-Noise is shown as p-p in the figure below.
Note: Slanted line shows the range of the rated load current.

T1: Due to AC Input Line
T2: Due to Switching

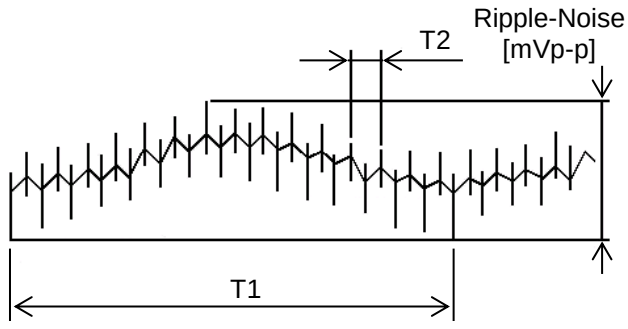


Fig. Complex Ripple Wave Form

2.Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 100 [V]	Input Volt. 230 [V]
0.00	35	35
0.20	40	40
0.40	50	50
0.60	50	50
0.80	75	75
1.00	60	60
1.20	80	80
1.30	80	80
1.43	85	85
--	-	-
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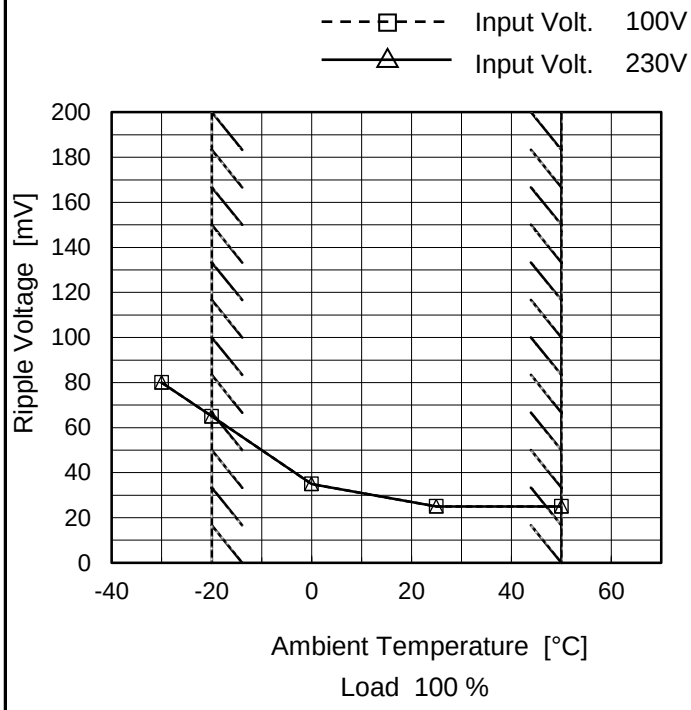
Model	MODULE L
Item	Ripple Voltage (by Ambient Temp.)
Object	+24V1.3A

Testing Circuitry Figure B

1.Graph



Load 100 %

Measured by 20 MHz Oscilloscope.

Note: Slanted line shows the range of the rated ambient temperature.

2.Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Input Volt. 100 [V]	Input Volt. 230 [V]
-30	80	80
-20	65	65
0	35	35
25	25	25
50	25	25
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

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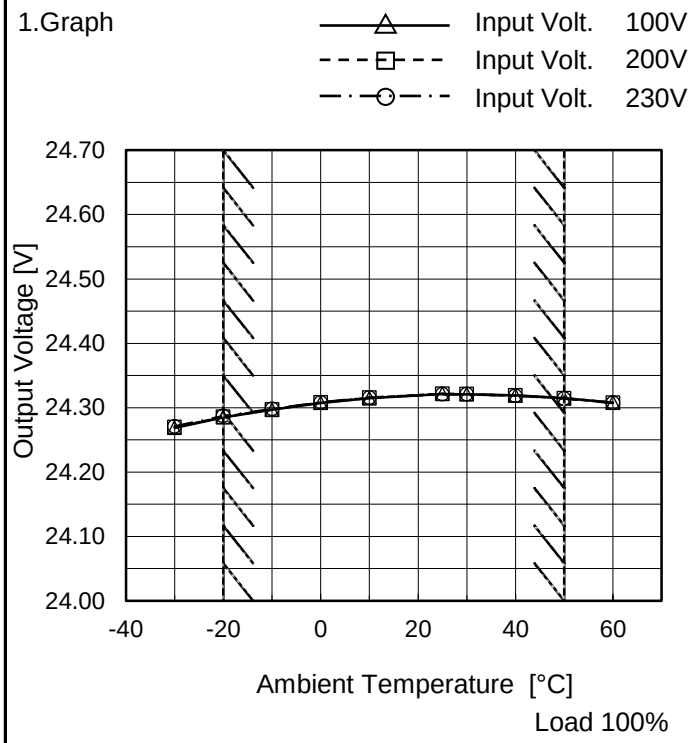
Model	MODULE L
Item	Ambient Temperature Drift
Object	+24V1.3A

Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated ambient temperature.

2.Values

Ambient Temperature [°C]	Output Voltage [V]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
-30	24.269	24.270	24.271
-20	24.285	24.286	24.287
-10	24.297	24.297	24.298
0	24.307	24.308	24.308
10	24.315	24.315	24.316
25	24.321	24.321	24.321
30	24.321	24.321	24.321
40	24.319	24.319	24.319
50	24.315	24.315	24.314
60	24.308	24.308	24.307
--	-	-	-

Model	MODULE L	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+24V1.3A	

1.Output Voltage Accuracy

This is defined as the value of the output voltage, regulation load, ambient temperature and input voltage varied at random in the range as specified below.

Temperature : -20 - 50°C
Input Voltage : 85 - 264V
Load Current : 0 - 1.3A

* Output Voltage Accuracy = ±(Maximum of Output Voltage - Minimum of Output Voltage) / 2

$$\text{* Output Voltage Accuracy (Ratio)} = \frac{\text{Output Voltage Accuracy}}{\text{Rated Output Voltage}} \times 100$$

2.Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ratio [%]
Maximum Voltage	50	85	0	24.329	±22	±0.1
Minimum Voltage	-20	85	1.3	24.285		

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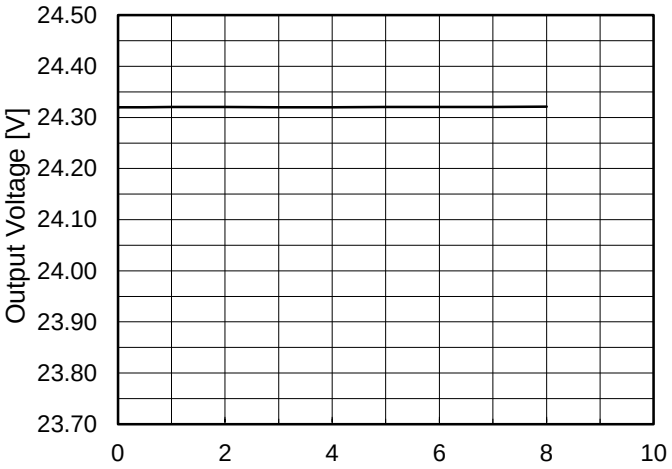
Model	MODULE L
Item	Time Lapse Drift
Object	+24V1.3A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Input Volt. 100V
Load 100%

* The characteristic of AC230V is equal.

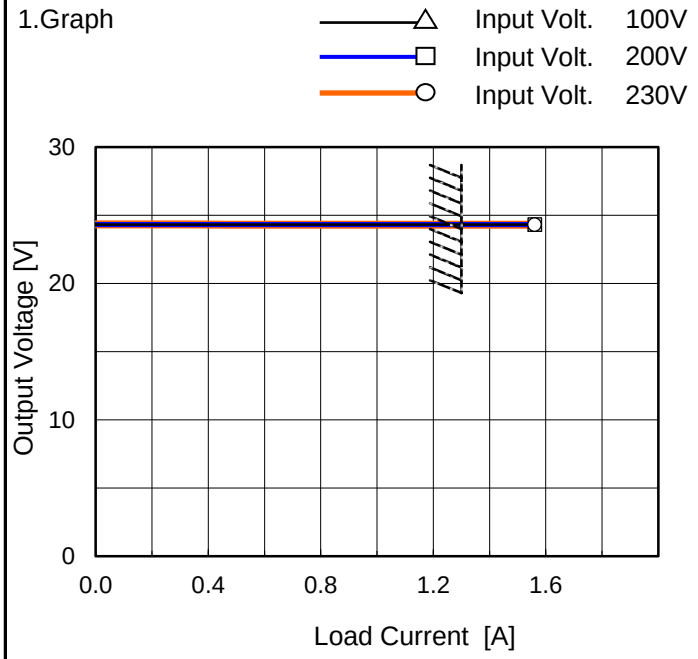
2.Values

Time since start [H]	Output Voltage [V]
0.0	24.319
0.5	24.320
1.0	24.320
2.0	24.320
3.0	24.320
4.0	24.320
5.0	24.320
6.0	24.321
7.0	24.321
8.0	24.321

Model	MODULE L
Item	Overcurrent Protection
Object	+24V1.3A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated load current.

Intermittent operation occurs when overcurrent protection is activated.

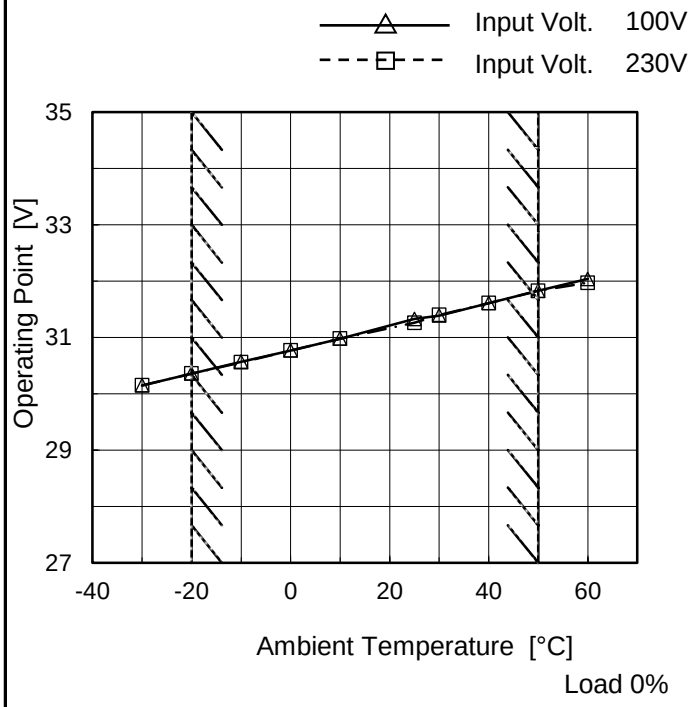
2.Values

Output Voltage [V]	Load Current [A]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
24	1.56	1.56	1.56
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

Model	MODULE L
Item	Overvoltage Protection
Object	+24V1.3A

Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated ambient temperature.

2.Values

Ambient Temperature [°C]	Operating Point [V]	
	Input Volt. 100[V]	Input Volt. 230[V]
-30	30.15	30.15
-20	30.36	30.36
-10	30.57	30.56
0	30.77	30.77
10	30.98	30.98
25	31.33	31.26
30	31.39	31.40
40	31.61	31.61
50	31.83	31.83
60	32.04	31.97
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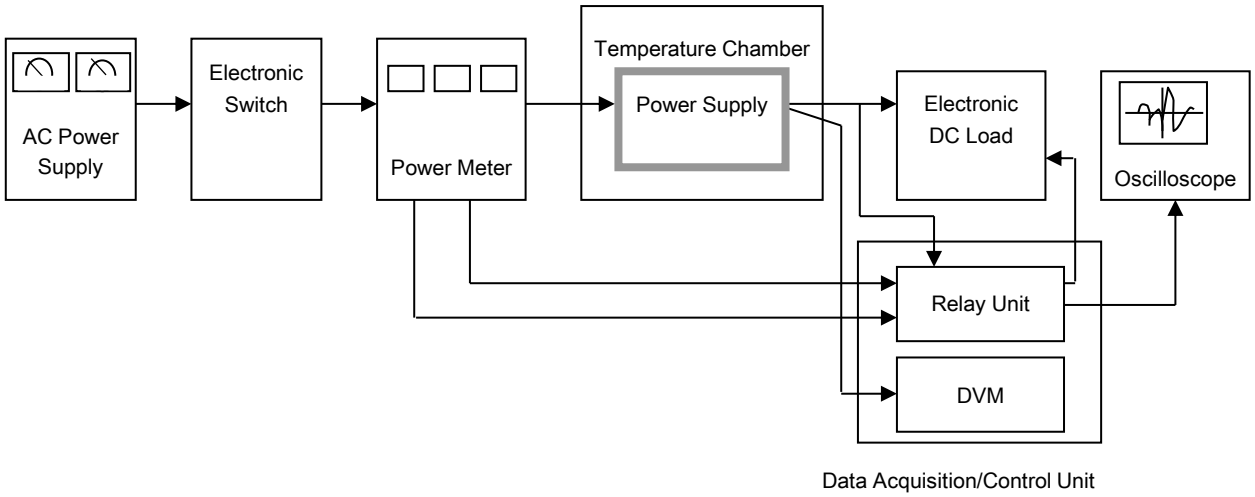
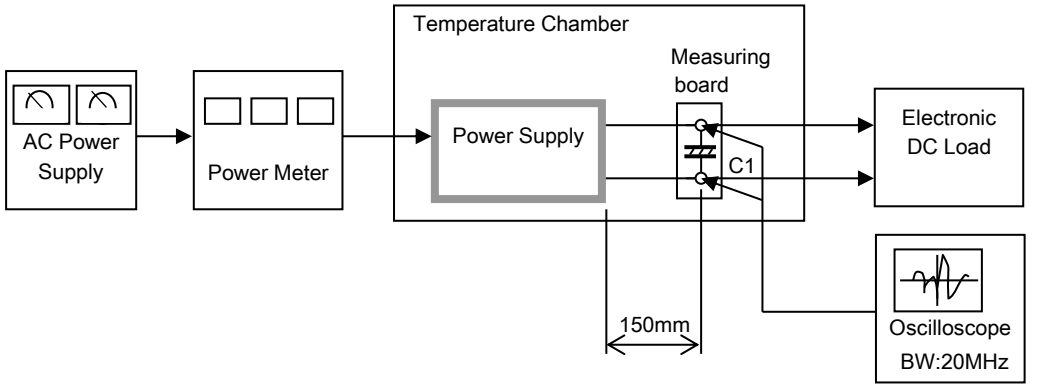


Figure A



C1= 22 μF
(Electrolytic capacitor)

Figure B