参考資料

COSEL

TEST DATA OF MODULE G

(RB series)

Regulated DC Power Supply
November 5, 2018

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COSEL CO.,LTD.

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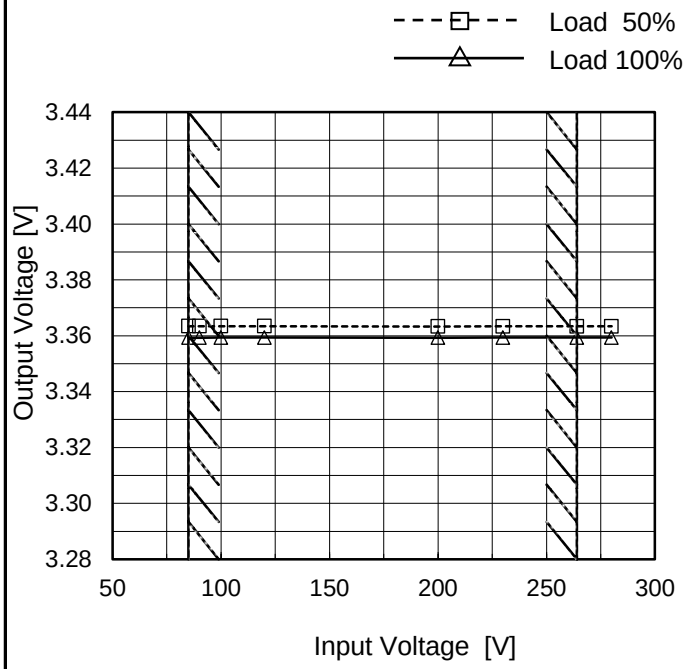

Note: Slanted line shows the range of the rated input voltage.

2.Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
85	3.363	3.359
90	3.363	3.359
100	3.363	3.359
120	3.363	3.359
200	3.363	3.359
230	3.363	3.359
264	3.363	3.359
280	3.363	3.359
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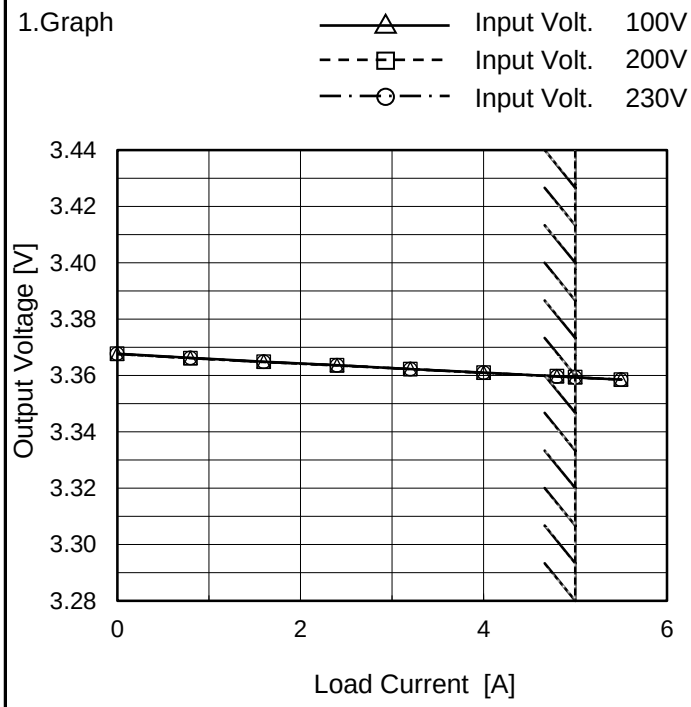
Model	MODULE G
Item	Load Regulation
Object	+3.3V5A

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]
0.0	3.368	3.368	3.368
0.8	3.366	3.366	3.366
1.6	3.365	3.365	3.365
2.4	3.364	3.364	3.364
3.2	3.362	3.362	3.362
4.0	3.361	3.361	3.361
4.8	3.360	3.360	3.360
5.0	3.359	3.359	3.359
5.5	3.359	3.359	3.358
--	-	-	-
--	-	-	-

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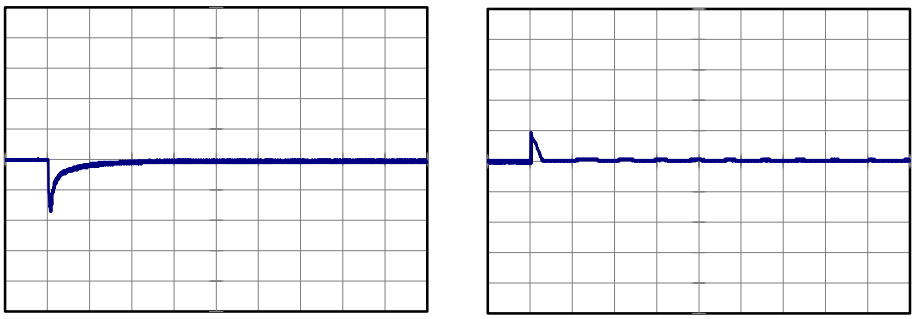
Model	MODULE G	
Item	Dynamic Load Response	Temperature 25°C Testing Circuitry Figure A
Object	+3.3V5A	

Input Volt. 100 V
Cycle 1000 ms

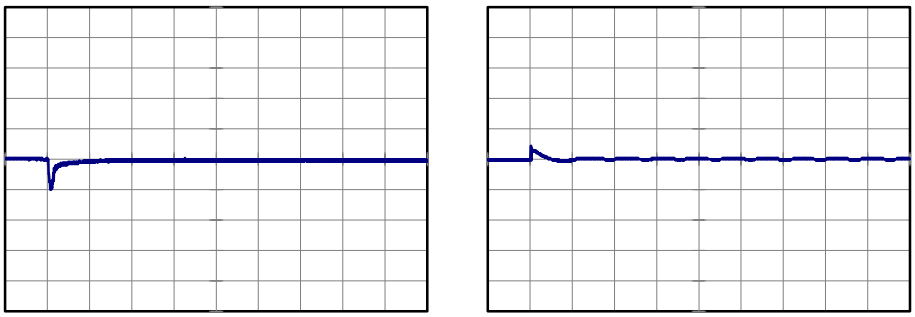
Min.Load (0A)←→
Load 100% (5A)



200 mV/div

2 ms/div 10 ms/div

Min.Load (0A)←→
Load 50% (2.5A)



200 mV/div

2 ms/div 10 ms/div

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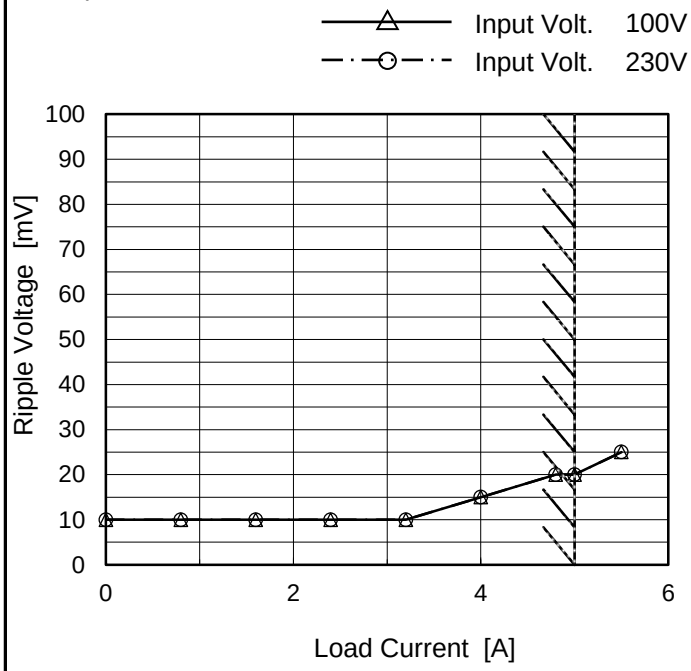
Model	MODULE G
Item	Ripple Voltage (by Load Current)
Object	+3.3V5A

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

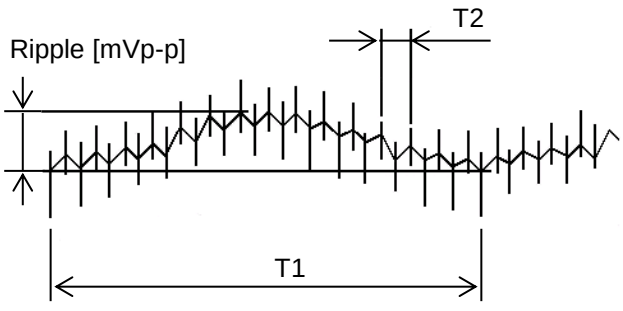


Fig. Complex Ripple Wave Form

2.Values

Load Current [A]	Ripple Voltage [mV] Input Volt. 100 [V]	Ripple Voltage [mV] Input Volt. 230 [V]
0.0	10	10
0.8	10	10
1.6	10	10
2.4	10	10
3.2	10	10
4.0	15	15
4.8	20	20
5.0	20	20
5.5	25	25
--	-	-
--	-	-

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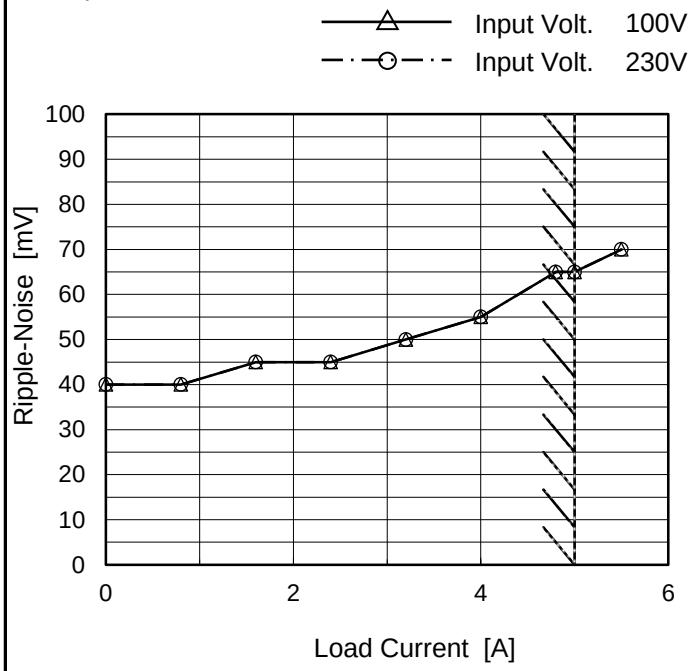
Model	MODULE G
Item	Ripple-Noise
Object	+3.3V5A

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.

2.Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 100 [V]	Input Volt. 230 [V]
0.0	40	40
0.8	40	40
1.6	45	45
2.4	45	45
3.2	50	50
4.0	55	55
4.8	65	65
5.0	65	65
5.5	70	70
--	-	-
--	-	-

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

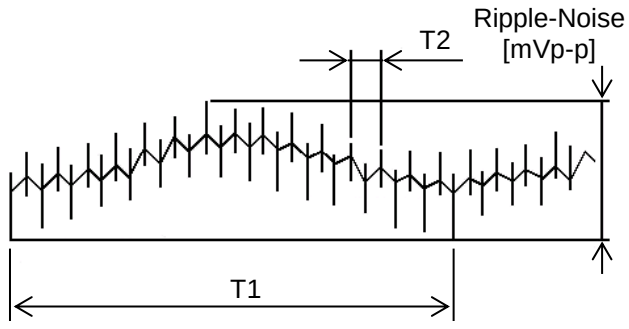


Fig. Complex Ripple Wave Form

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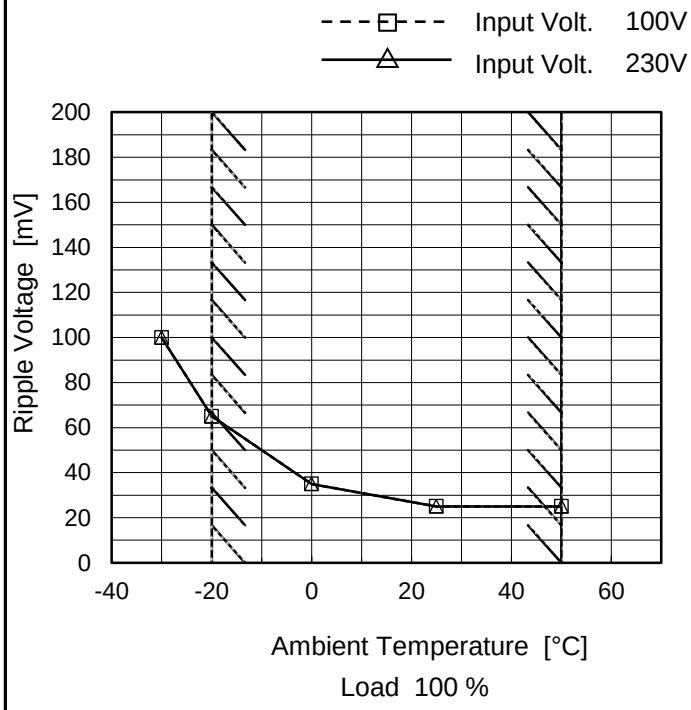
Model	MODULE G
Item	Ripple Voltage (by Ambient Temp.)
Object	+3.3V5A

Testing Circuitry Figure B

1.Graph



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	100	100
-20	65	65
0	35	35
25	25	25
50	25	25
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

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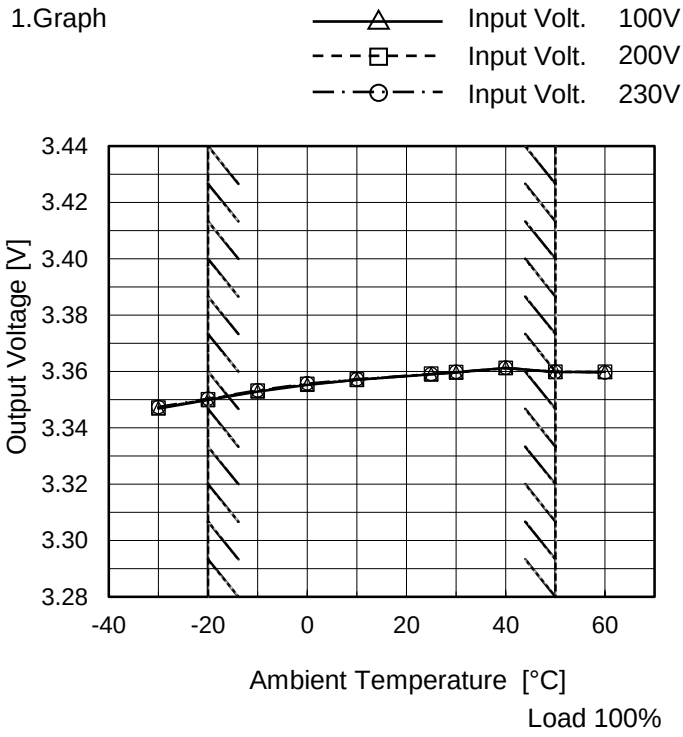
Model	MODULE G
Item	Ambient Temperature Drift
Object	+3.3V5A

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	3.347	3.347	3.347
-20	3.350	3.350	3.350
-10	3.353	3.353	3.353
0	3.355	3.355	3.356
10	3.357	3.357	3.357
25	3.359	3.359	3.359
30	3.360	3.360	3.360
40	3.361	3.361	3.361
50	3.360	3.360	3.360
60	3.360	3.360	3.360
--	-	-	-

Model	MODULE G	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+3.3V5A	

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 - 5A

* 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	264	0	3.373	±11	±0.3
Minimum Voltage	-20	85	5	3.352		

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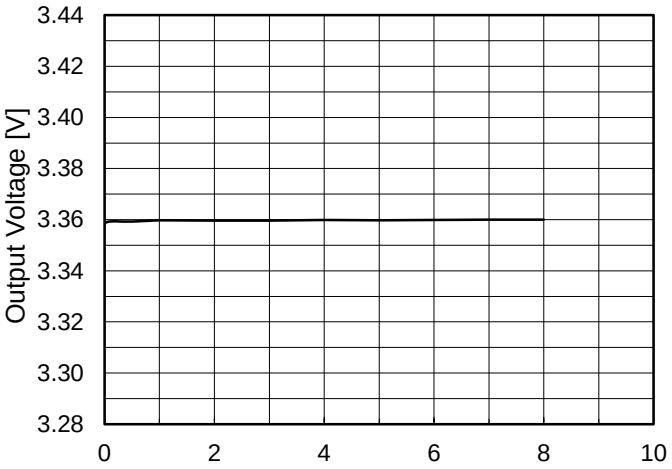
Model	MODULE G
Item	Time Lapse Drift
Object	+3.3V5A

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	3.358
0.5	3.359
1.0	3.360
2.0	3.360
3.0	3.360
4.0	3.360
5.0	3.360
6.0	3.360
7.0	3.360
8.0	3.360

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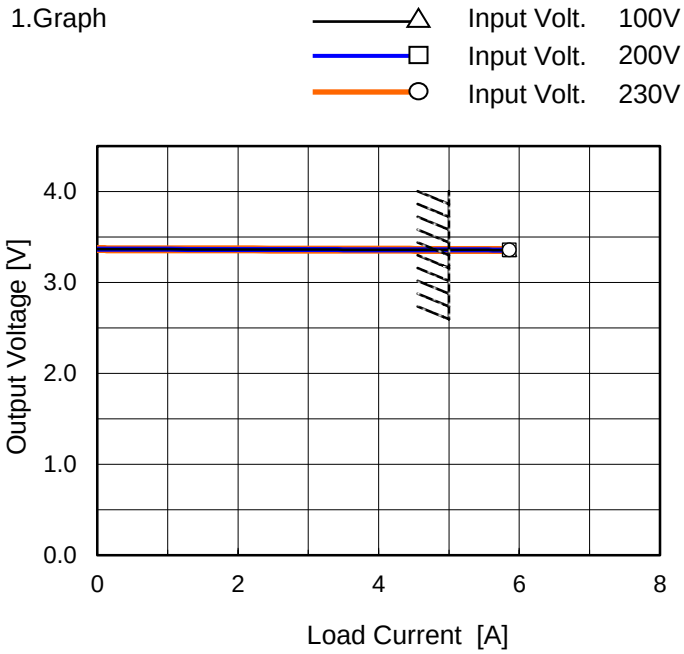
Model	MODULE G
Item	Overcurrent Protection
Object	+3.3V5A

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.

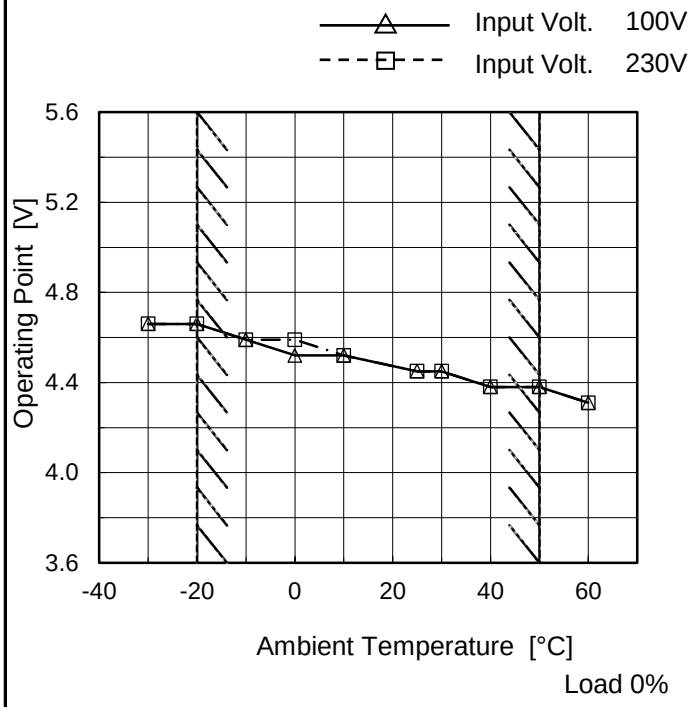
2.Values

Output Voltage [V]	Load Current [A]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
3.3	5.87	5.86	5.86
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

Model	MODULE G
Item	Overvoltage Protection
Object	+3.3V5A

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	4.66	4.66
-20	4.66	4.66
-10	4.59	4.59
0	4.52	4.59
10	4.52	4.52
25	4.45	4.45
30	4.45	4.45
40	4.38	4.38
50	4.38	4.38
60	4.31	4.31
--	-	-

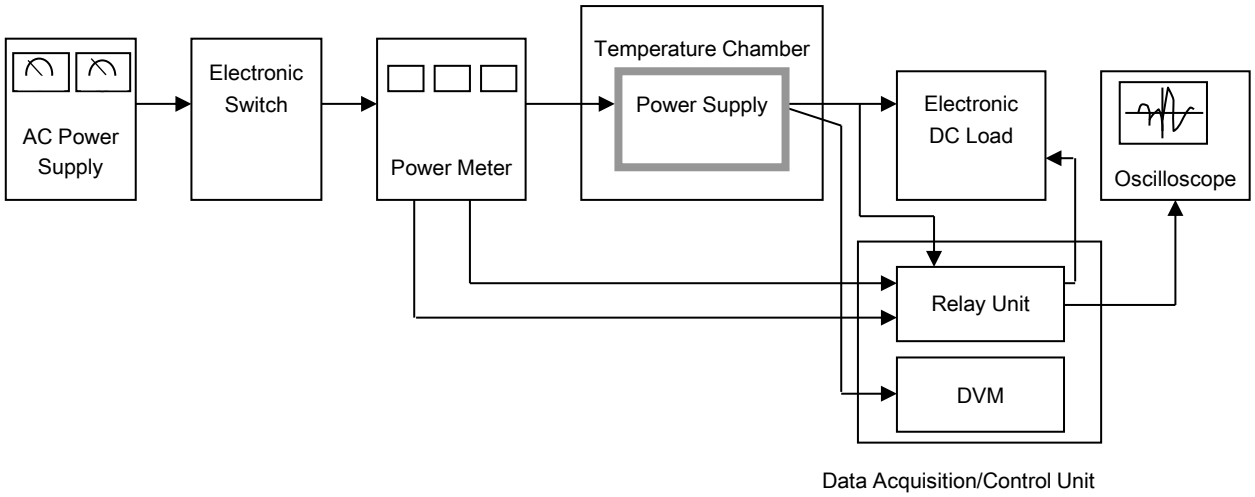
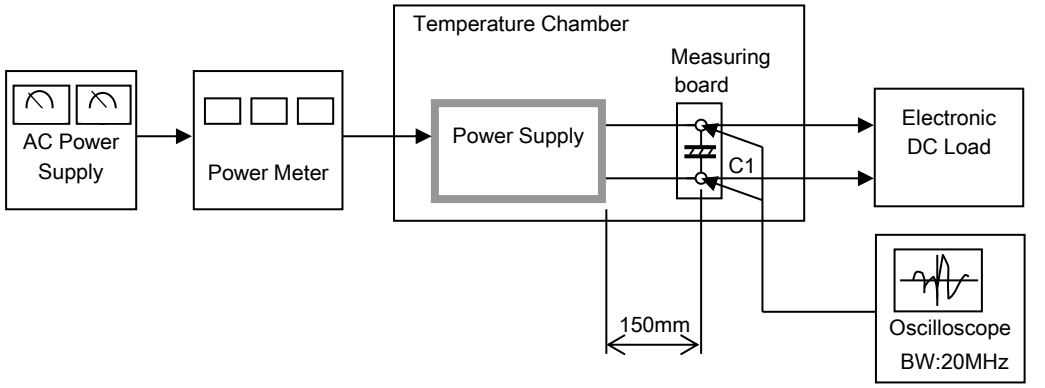


Figure A



C1= 22 μF
(Electrolytic capacitor)

Figure B