参考資料

TEST DATA OF MODULE L

(AME series)

Regulated DC Power Supply
October 28, 2020

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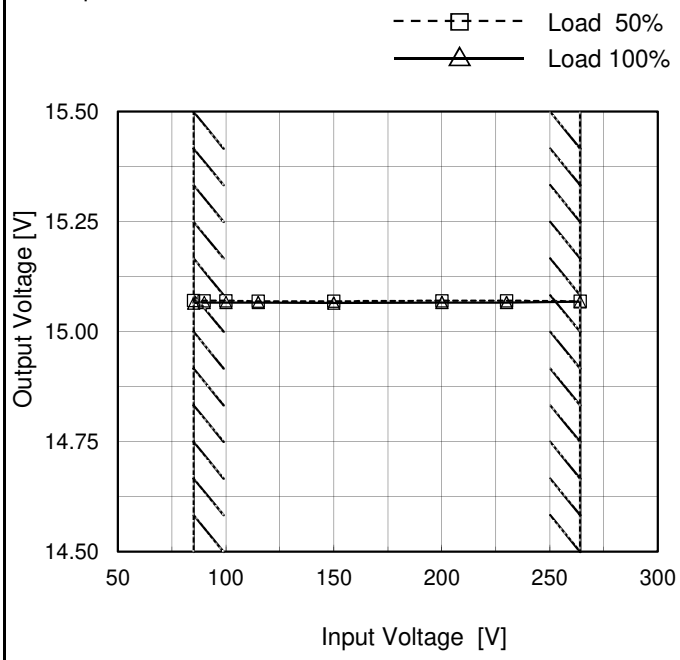

Note:
Hatched line shows the input voltage range.

2. Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
85	15.071	15.065
90	15.070	15.066
100	15.070	15.066
115	15.069	15.066
150	15.069	15.065
200	15.070	15.066
230	15.070	15.066
264	15.069	15.068
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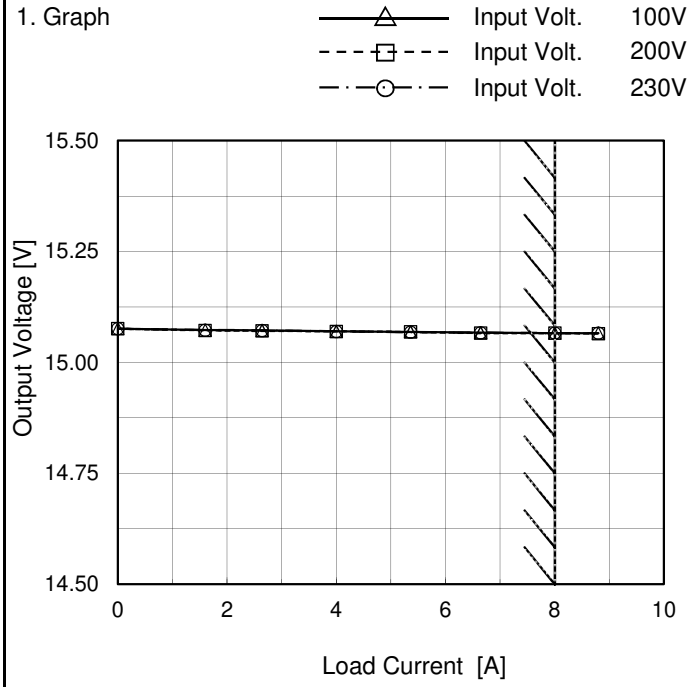
Model	MODULE L
Item	Load Regulation
Object	+15V8A

Temperature 25°C
Testing Circuitry Figure A

1. Graph



Note: Hatched 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	15.076	15.076	15.076
1.60	15.073	15.072	15.073
2.64	15.072	15.071	15.072
4.00	15.070	15.070	15.070
5.36	15.069	15.069	15.068
6.64	15.067	15.066	15.067
8.00	15.066	15.066	15.066
8.80	15.066	15.065	15.066
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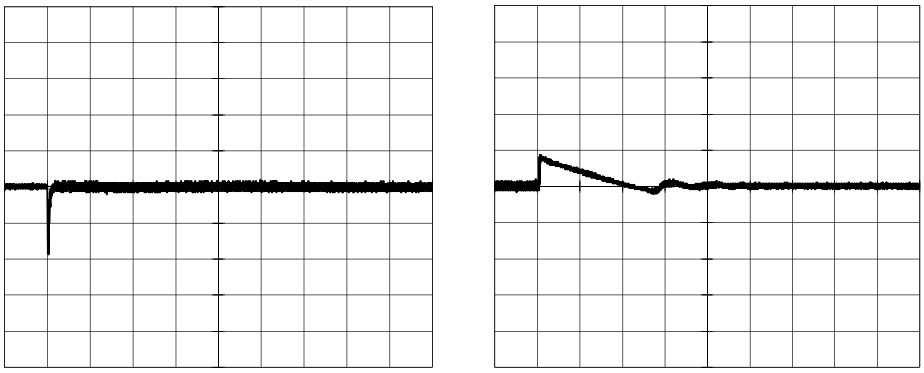
Model	MODULE L		
Item	Dynamic Load Response	Temperature Testing Circuitry	25° C Figure A
Object	+15V8A		

Input Volt. 100 V
Cycle 1000 ms

Response t1=t2=50us. Typ

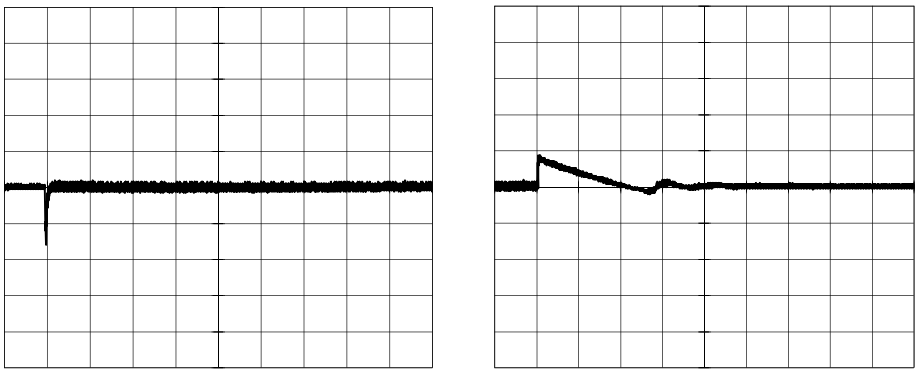
Min. Load (0A) ←→
Load 100% (8A)



200 mV/div

2 ms/div 2 ms/div

Min. Load (0A) ←→
Load 50% (4A)



200 mV/div

2 ms/div 2 ms/div

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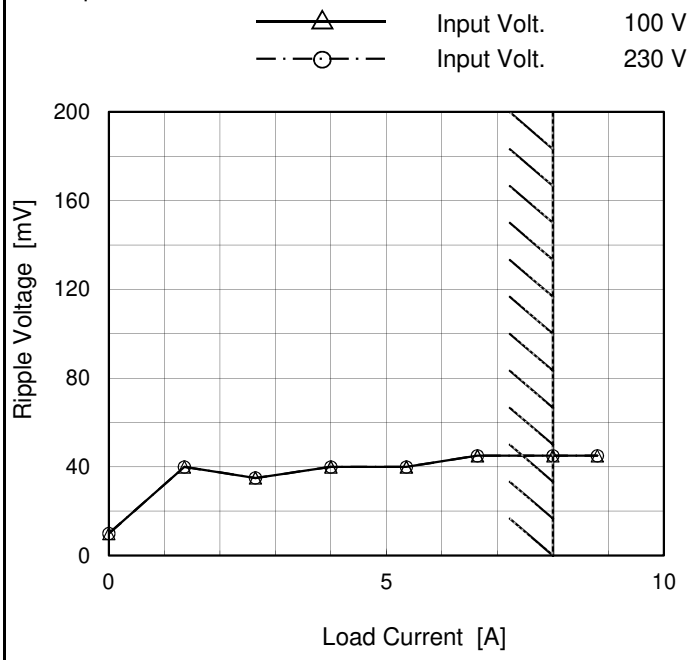
Model	MODULE L
Item	Ripple Voltage (by Load Current)
Object	+15V8A

Temperature 25°C
Testing Circuitry Figure B

1. Graph



2. Values

Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 100[V]	Input Volt. 230[V]
0.00	10	10
1.36	40	40
2.64	35	35
4.00	40	40
5.36	40	40
6.64	45	45
8.00	45	45
8.80	45	45
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Note:
Measured by 20MHz Oscilloscope.

Ripple Voltage is shown as p-p in the figure below.

Hatched line shows the range of the rated load current.

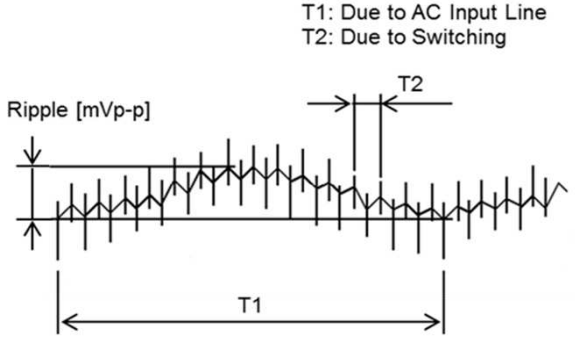

Fig. Complex Ripple Wave Form

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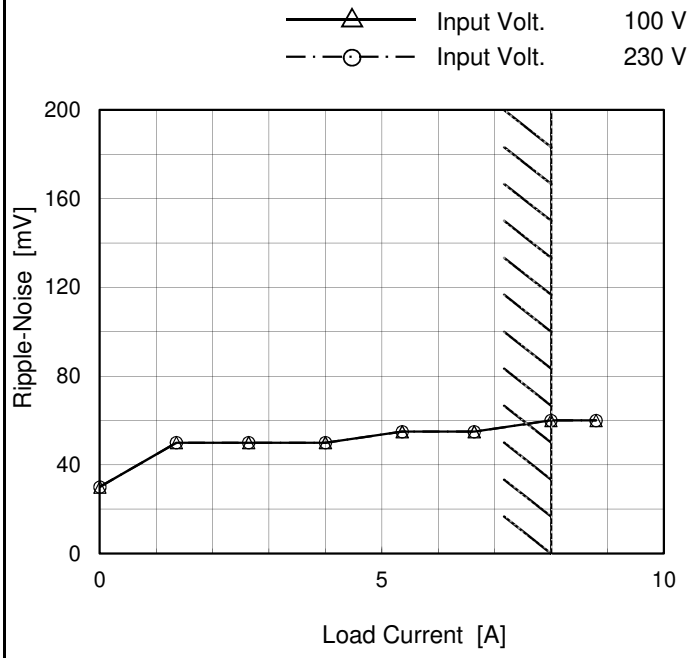
Model	MODULE L
Item	Ripple Noise
Object	+15V8A

Temperature 25°C
Testing Circuitry Figure B

1. Graph



2. Values

Load Current [A]	Ripple Noise [mV]	
	Input Volt. 100[V]	Input Volt. 230[V]
0.00	30	30
1.36	50	50
2.64	50	50
4.00	50	50
5.36	55	55
6.64	55	55
8.00	60	60
8.80	60	60
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Note:
Measured by 20MHz Oscilloscope.

Ripple Noise is shown as p-p in the figure below.

Hatched line shows the range of the rated load current.

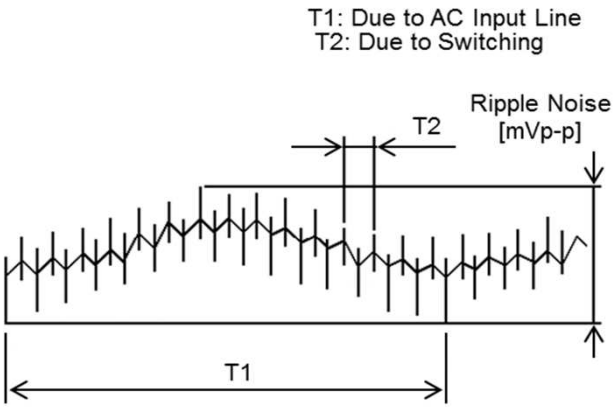

Fig. Complex Ripple Wave Form

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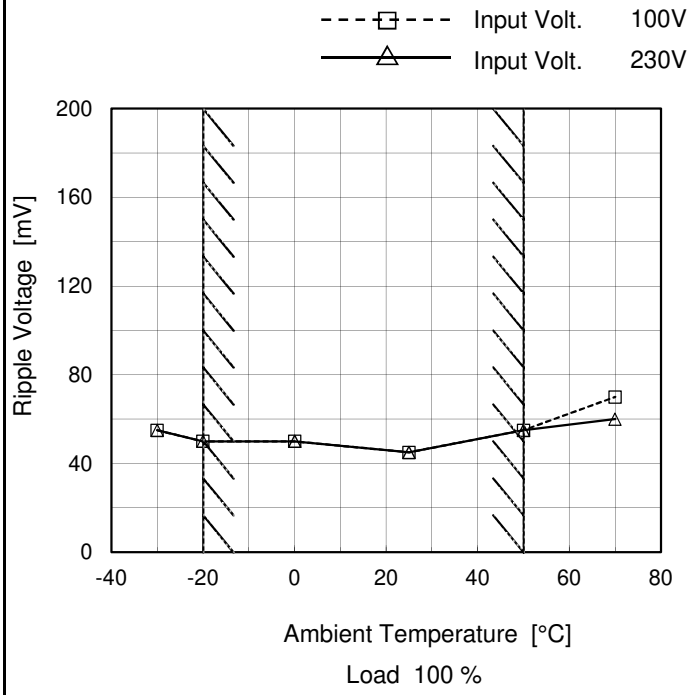
Model	MODULE L
Item	Ripple Voltage (by Ambient Temp.)
Object	+15V8A

Testing Circuitry Figure B

1. Graph



Load 100 %

Note:
Measured by 20MHz Oscilloscope.

Hatched line shows the range of the rated operating temperature.

2. Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Input Volt. 100 [V]	Input Volt. 230 [V]
-30	55	55
-20	50	50
0	50	50
25	45	45
50	55	55
70	70	60
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

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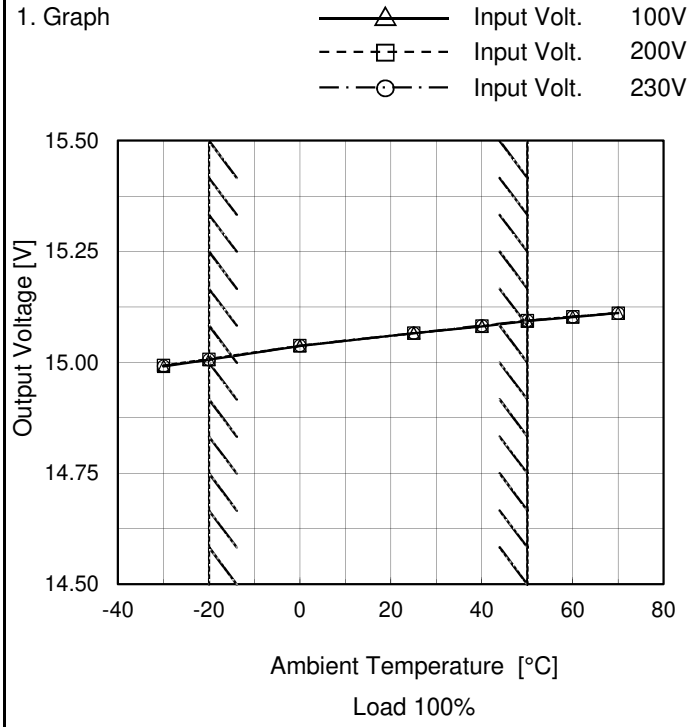
Model	MODULE L
Item	Ambient Temperature Drift
Object	+15V8A

Testing Circuitry Figure A

1. Graph



Note:
Hatched line shows the range of the rated operating temperature.

2. Values

Ambient Temperature [°C]	Output Voltage [V]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
-30	14.991	14.993	14.992
-20	15.006	15.007	15.006
0	15.037	15.038	15.038
25	15.066	15.066	15.066
40	15.081	15.082	15.083
50	15.093	15.094	15.094
60	15.102	15.103	15.103
70	15.111	15.111	15.111
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	MODULE L	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+15V8A	

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 - 8A

* 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	230	0	15.103	±49	±0.3
Minimum Voltage	-20	100	8	15.006		

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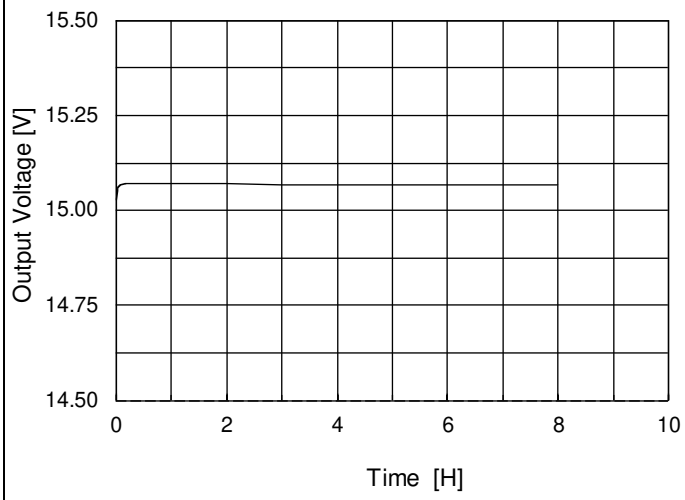
Model	MODULE L
Item	Time Lapse Drift
Object	+15V8A

Temperature 25°C
Testing Circuitry Figure A

1. Graph



Input Volt. 100V
Load 100%

2. Values

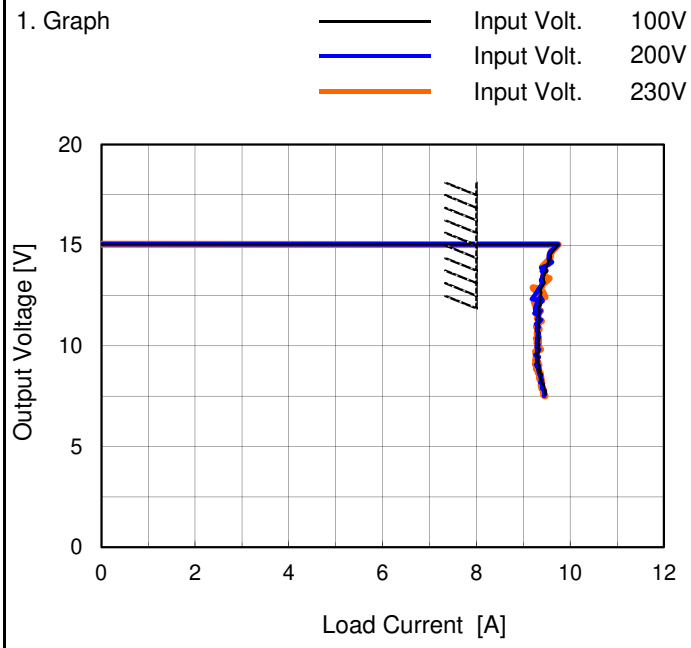
Time since start [H]	Output Voltage [V]
0.0	15.030
0.5	15.070
1.0	15.069
2.0	15.069
3.0	15.069
4.0	15.069
5.0	15.068
6.0	15.068
7.0	15.068
8.0	15.068

COSEL

Model	MODULE L
Item	Overcurrent Protection
Object	+15V8A

Temperature 25°C
Testing Circuitry Figure A

1. Graph



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

Hiccup mode activates when the output voltage is below 7.5V.

2. Values

Output Voltage [V]	Load Current [A]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
14.3	9.57	9.55	9.55
13.5	9.46	9.45	9.45
12.0	9.35	9.37	9.23
10.5	9.32	9.31	9.30
9.0	9.32	9.28	9.34
7.5	9.47	9.44	9.46
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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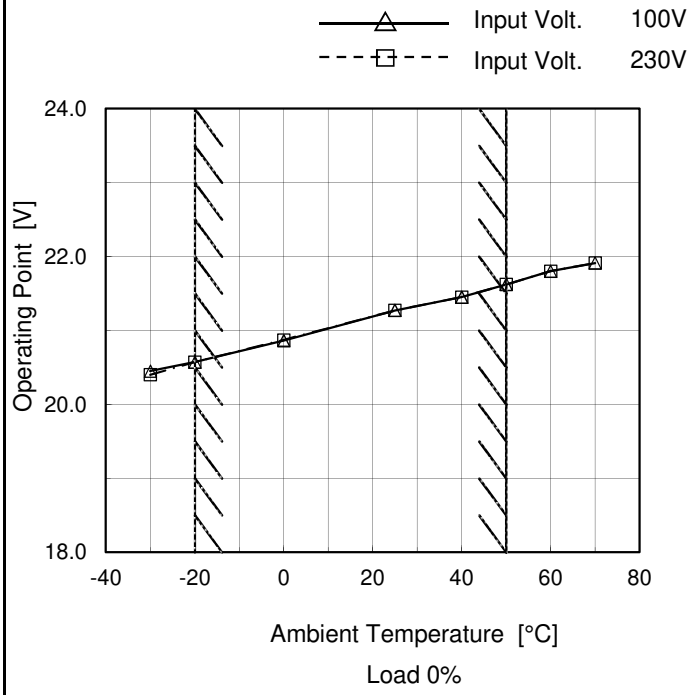
Model	MODULE L
Item	Overvoltage Protection
Object	+15V8A

Testing Circuitry Figure A

1. Graph



Load 0%

Note:
Hatched line shows the range of the rated operating temperature.

2. Values

Ambient Temperature [°C]	Operating Point [V]	
	Input Volt. 100[V]	Input Volt. 230[V]
-30	20.45	20.40
-20	20.57	20.57
0	20.86	20.87
25	21.27	21.27
40	21.45	21.45
50	21.62	21.62
60	21.80	21.80
70	21.91	21.91
--	-	-
--	-	-
--	-	-

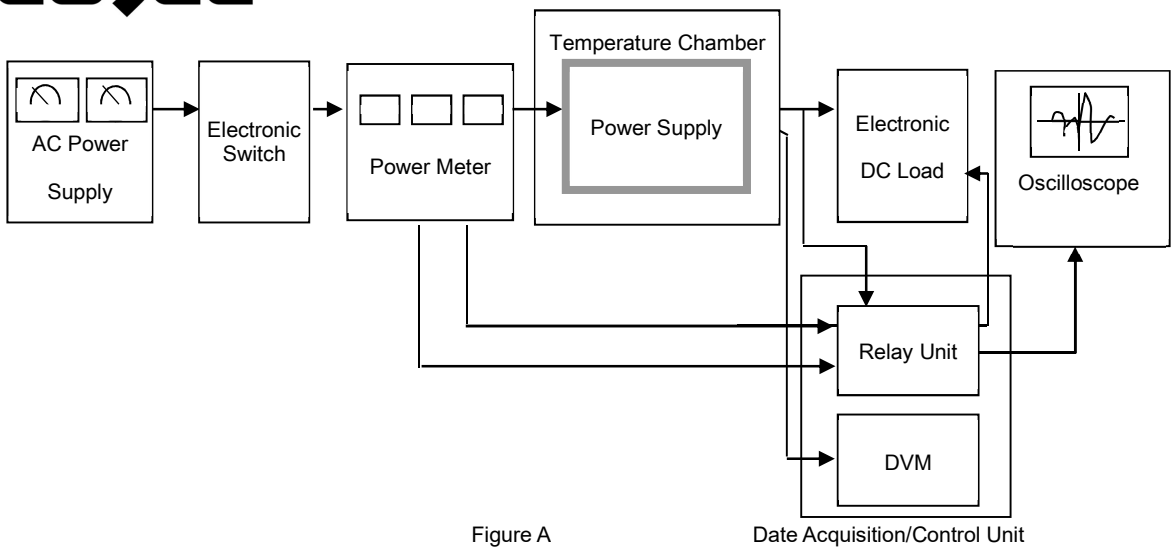


Figure A

Date Acquisition/Control Unit

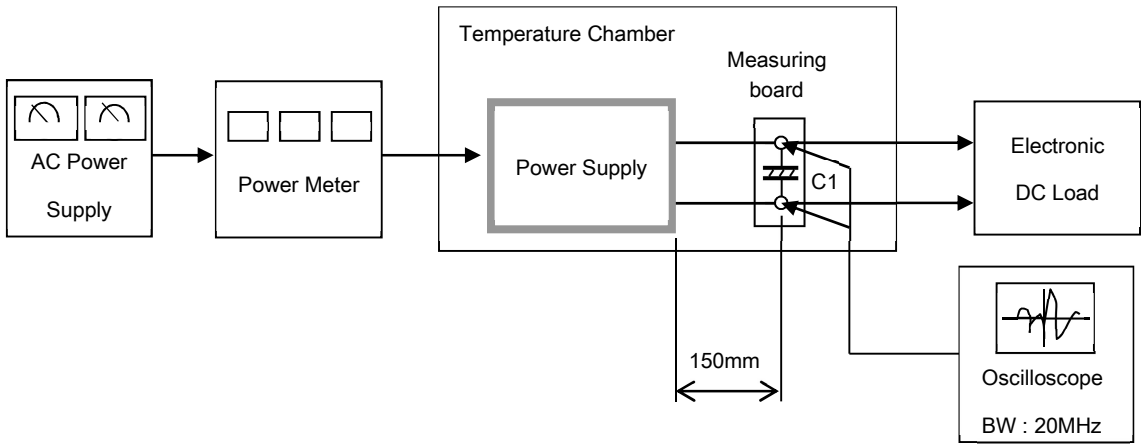


Figure B

C1 = 22 μF
(Electrolytic capacitor)