参考資料

TEST DATA OF MODULE B

(AME series)

Regulated DC Power Supply
August 30, 2019

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COSEL CO.,LTD.

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Object	+12V8.5A

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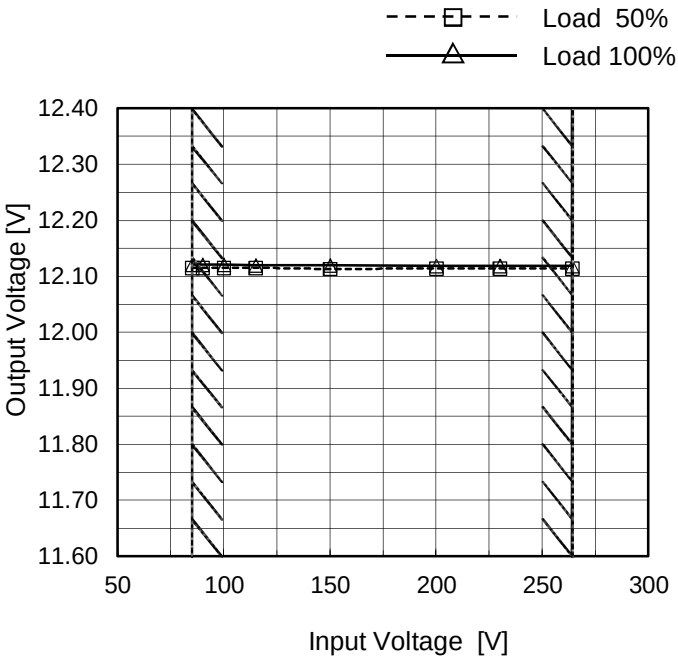

Note:
Hatched line shows the input voltage range.

2. Value

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
85	12.115	12.121
90	12.115	12.121
100	12.115	12.121
115	12.115	12.120
150	12.114	12.120
200	12.114	12.119
230	12.114	12.119
264	12.114	12.119
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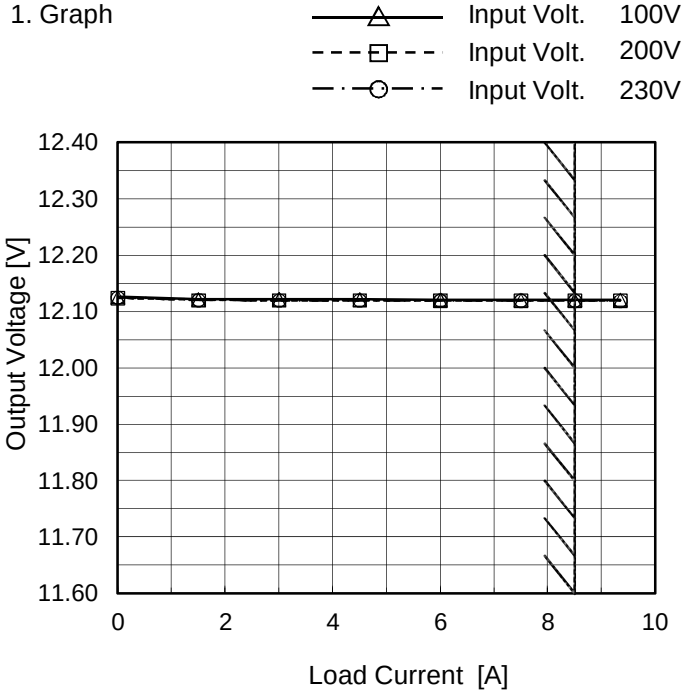
Model	MODULE B
Item	Load Regulation
Object	+12V8.5A

Temperature 25°C
Testing Circuitry Figure A

1. Graph



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

2. Value

Load Current [A]	Output Voltage [V]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.0	12.126	12.124	12.125
1.5	12.122	12.120	12.120
3.0	12.122	12.120	12.120
4.5	12.122	12.120	12.120
6.0	12.121	12.120	12.120
7.5	12.121	12.119	12.119
8.5	12.121	12.119	12.119
9.4	12.121	12.119	12.119
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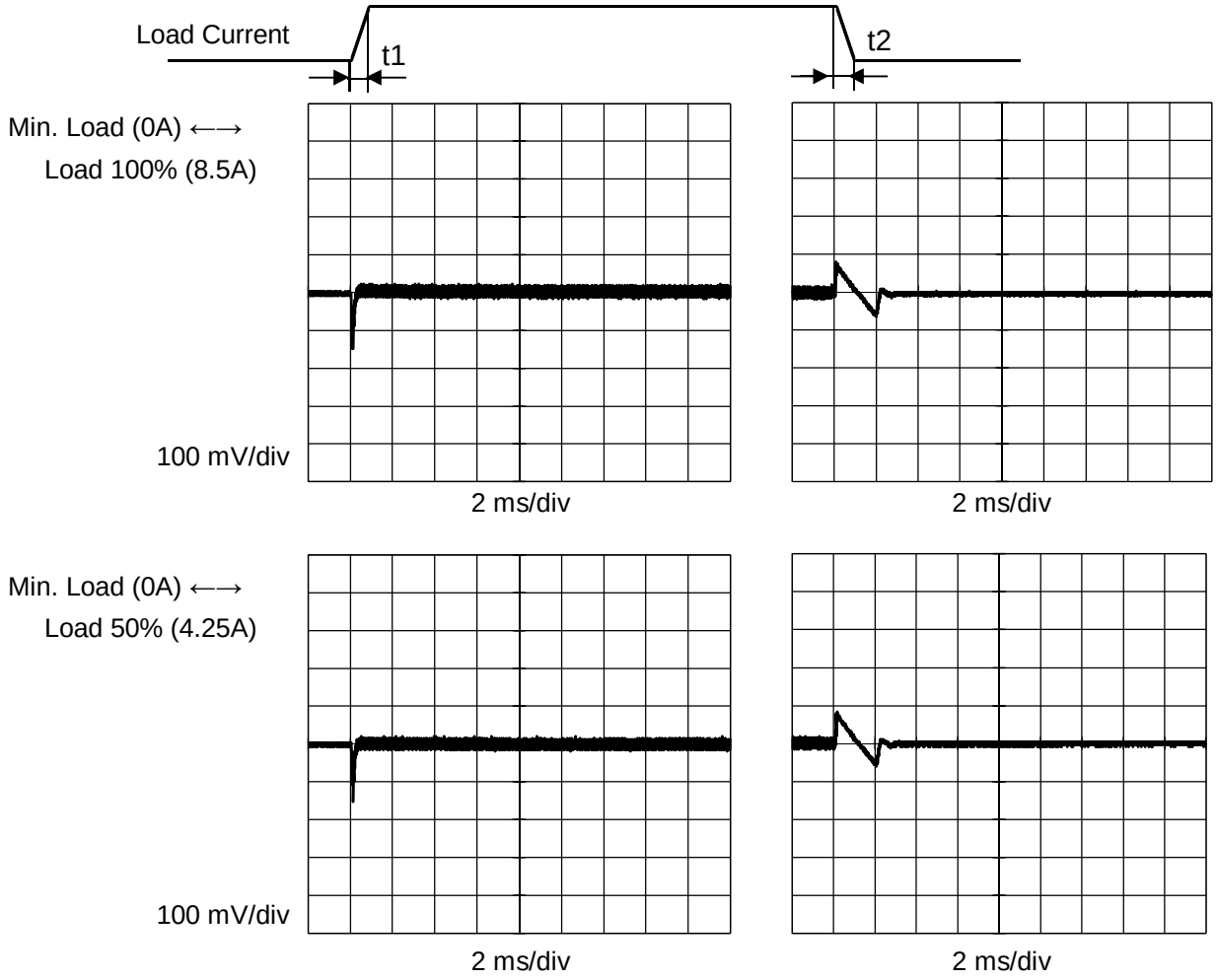
Model	MODULE B		
Item	Dynamic Load Response	Temperature Testing Circuitry	25° C Figure A
Object	+12V8.5A		

Input Volt. 100 V
Cycle 1000 ms

Response t1=t2=50us. Typ



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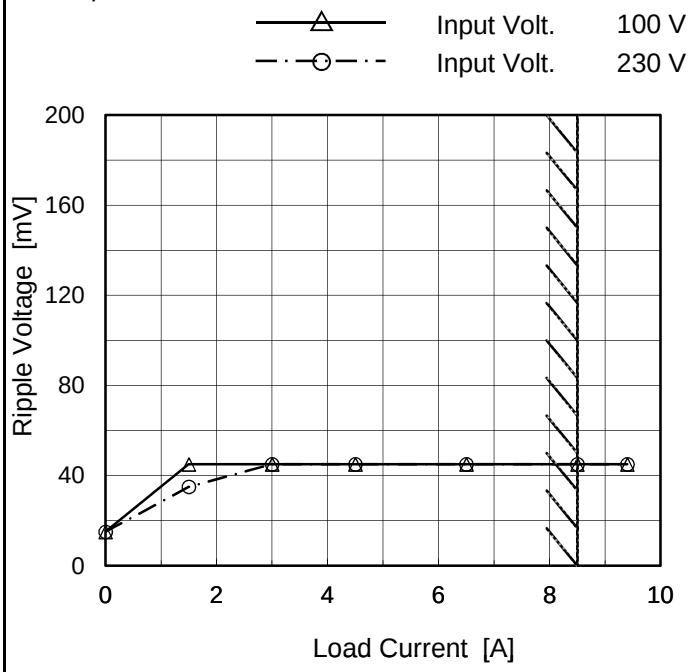
Model	MODULE B
Item	Ripple Voltage (by Load Current)
Object	+12V8.5A

Temperature 25°C
Testing Circuitry Figure B

1. Graph



2. Value

Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 100[V]	Input Volt. 230[V]
0.0	15	15
1.5	45	35
3.0	45	45
4.5	45	45
6.5	45	45
8.5	45	45
9.4	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.

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

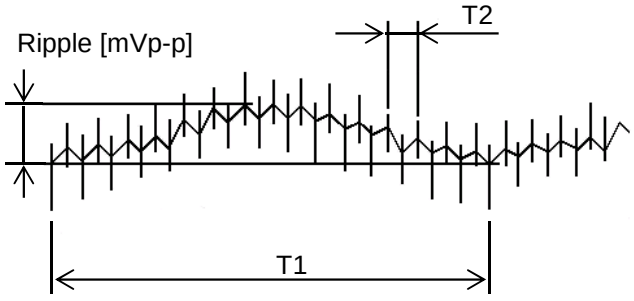

Fig. Complex Ripple Wave Form

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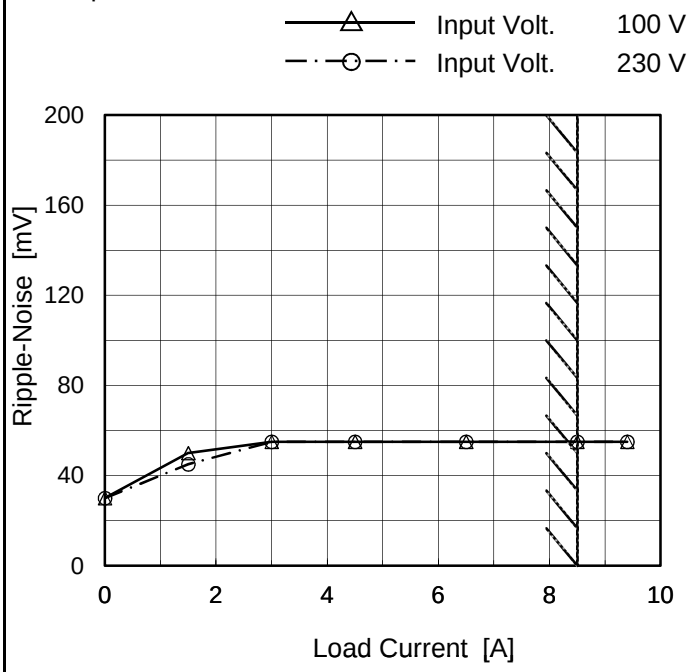
Model	MODULE B
Item	Ripple Noise
Object	+12V8.5A

Temperature 25°C
Testing Circuitry Figure B

1. Graph



2. Value

Load Current [A]	Ripple Noise [mV]	
	Input Volt. 100[V]	Input Volt. 230[V]
0.0	30	30
1.5	50	45
3.0	55	55
4.5	55	55
6.5	55	55
8.5	55	55
9.4	55	55
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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.

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

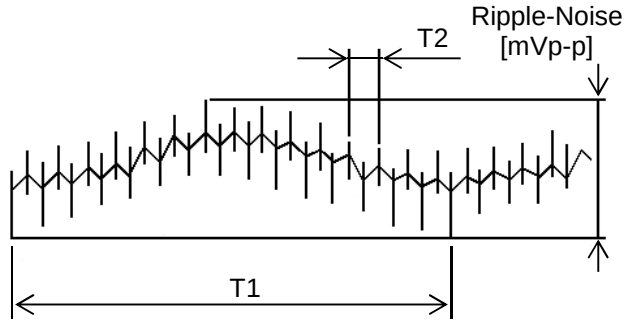

Fig. Complex Ripple Wave Form

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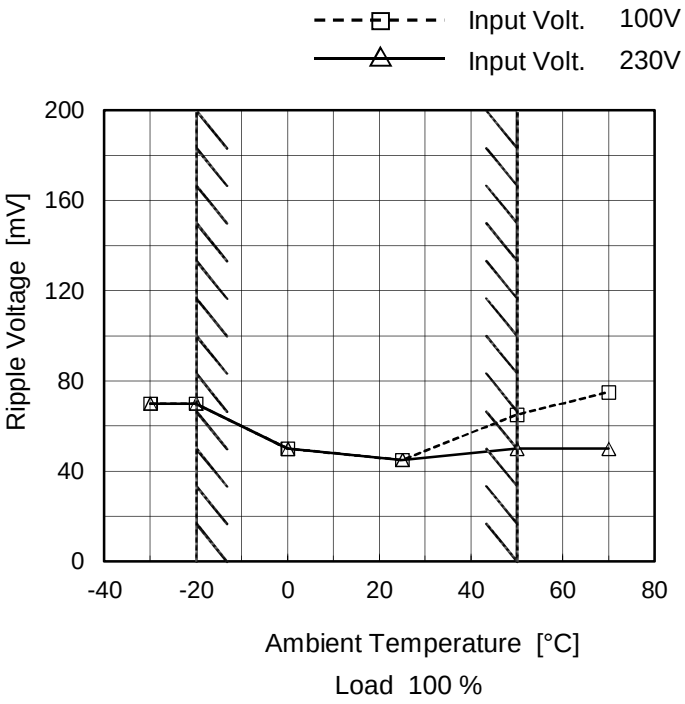
Model	MODULE B
Item	Ripple Voltage (by Ambient Temp.)
Object	+12V8.5A

Testing Circuitry Figure B

1. Graph



Note:
Measured by 20MHz Oscilloscope.

Hatched line shows the range of the rated operating temperature.

2. Value

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Input Volt. 100 [V]	Input Volt. 230 [V]
-30	70	70
-20	70	70
0	50	50
25	45	45
50	65	50
70	75	50
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--	-	-
--	-	-
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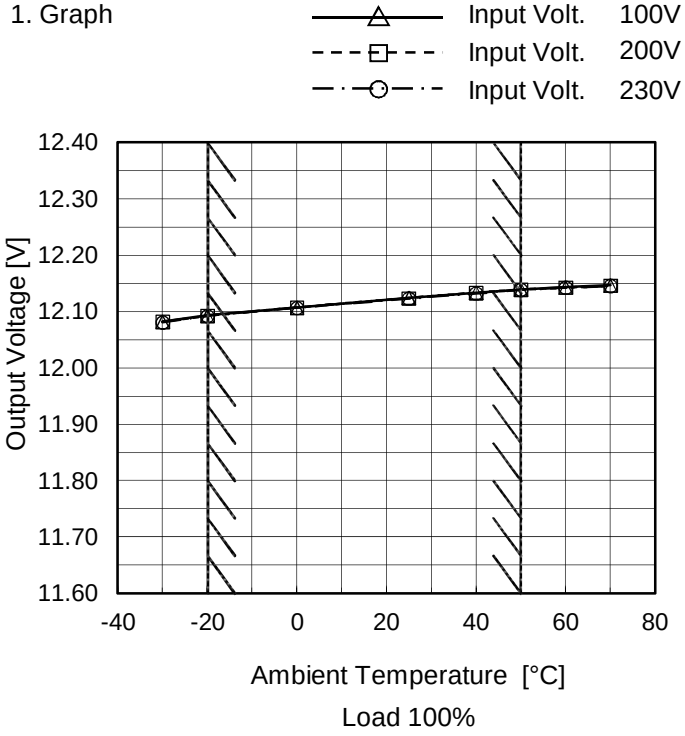
Model	MODULE B
Item	Ambient Temperature Drift
Object	+12V8.5A

Testing Circuitry Figure A

1. Graph



Load 100%

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

2. Value

Ambient Temperature [°C]	Output Voltage [V]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
-30	12.082	12.082	12.081
-20	12.093	12.092	12.092
0	12.107	12.107	12.106
25	12.124	12.124	12.123
40	12.133	12.133	12.132
50	12.139	12.139	12.139
60	12.143	12.143	12.143
70	12.146	12.146	12.146
--	-	-	-
--	-	-	-
--	-	-	-

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Model	MODULE B	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+12V8.5A	

1. Output Voltage Accuracy

This means the output voltage fluctuation of the time the ambient temperature, the input voltage and/or the load current are varied arbitrarily in the range below.

Temperature : -20 - 50°C
Input Voltage : 85 - 264V
Load Current : 0 - 8.5A

* 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. Value

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ratio [%]
Maximum Voltage	50	100	0.0	12.151	±30	±0.3
Minimum Voltage	-20	230	8.5	12.092		

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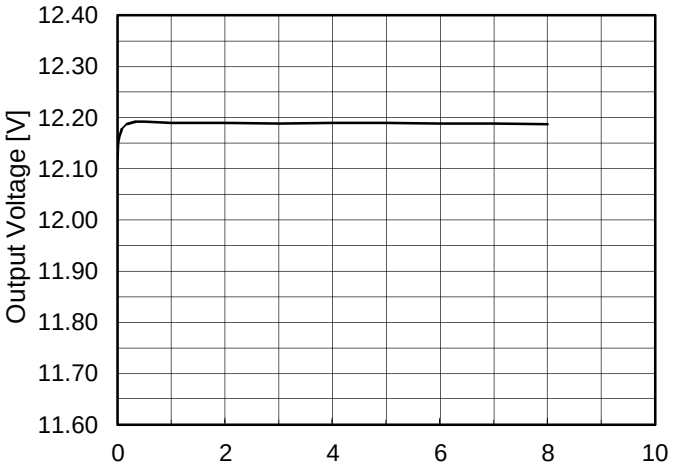
Model	MODULE B
Item	Time Lapse Drift
Object	+12V8.5A

Temperature 25°C
Testing Circuitry Figure A

1. Graph



Input Voltage 100V
Load 100%

2. Value

Time since start [H]	Output Voltage [V]
0.0	12.120
0.5	12.192
1.0	12.190
2.0	12.190
3.0	12.189
4.0	12.190
5.0	12.189
6.0	12.189
7.0	12.188
8.0	12.188

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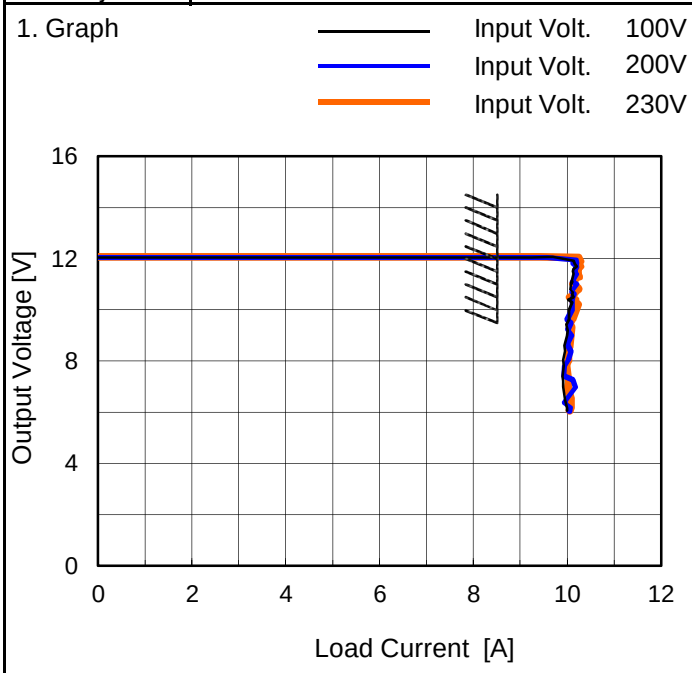
Model	MODULE B
Item	Overcurrent Protection
Object	+12V8.5A

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 6.0V.

2. Value

Output Voltage [V]	Load Current [A] Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
11.4	10.13	10.21	10.22
10.8	10.07	10.12	10.25
9.6	10.04	10.00	10.10
8.4	9.95	10.08	10.03
7.2	9.91	10.13	10.04
6.0	10.00	10.00	10.06
--	-	-	-
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--	-	-	-
--	-	-	-
--	-	-	-
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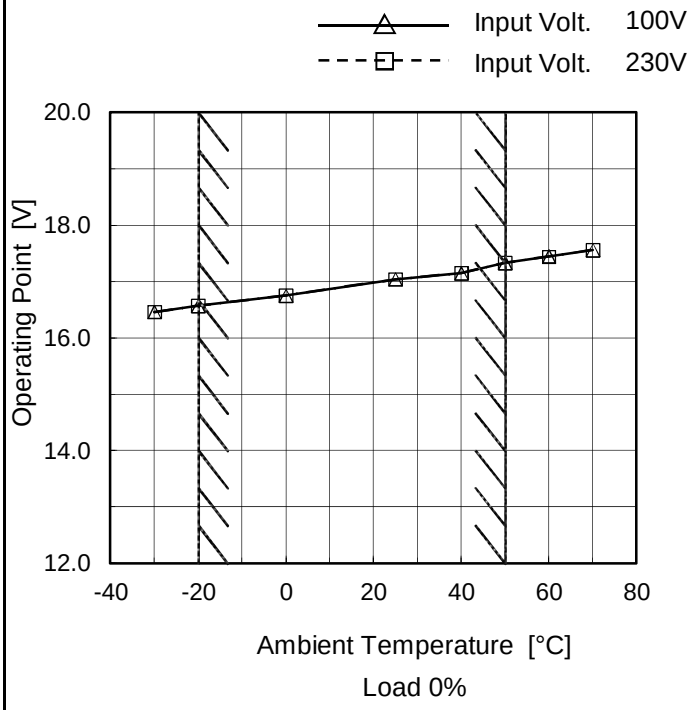
Model	MODULE B
Item	Overvoltage Protection
Object	+12V8.5A

Testing Circuitry Figure A

1. Graph



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

2. Value

Ambient Temperature [°C]	Operating Point [V]	
	Input Volt. 100[V]	Input Volt. 230[V]
-30	16.46	16.46
-20	16.57	16.57
0	16.75	16.75
25	17.04	17.04
40	17.15	17.15
50	17.33	17.33
60	17.45	17.44
70	17.56	17.56
--	-	-
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--	-	-

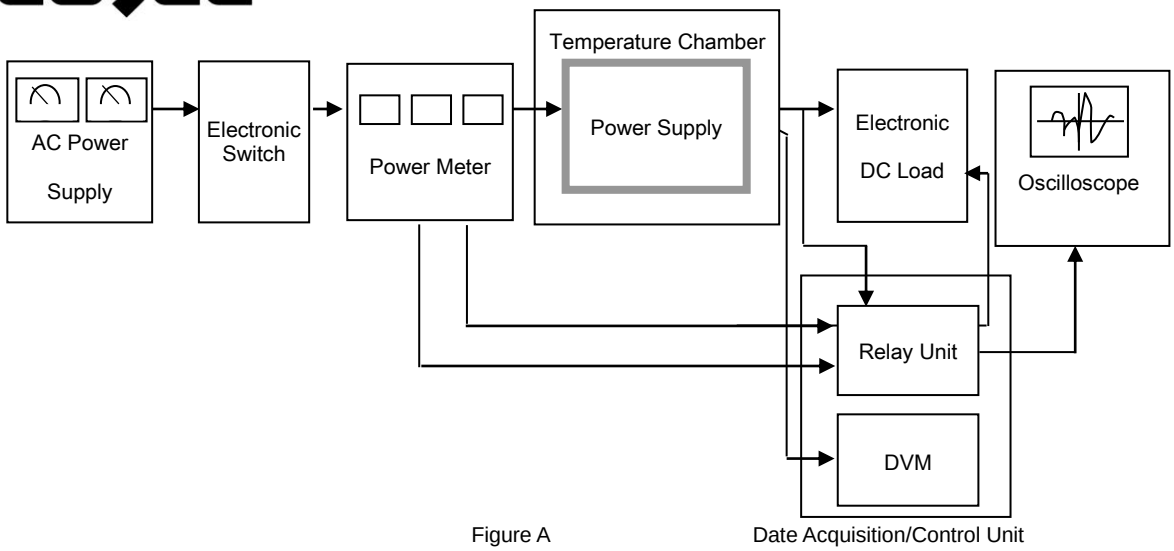

Figure A

Date Acquisition/Control Unit

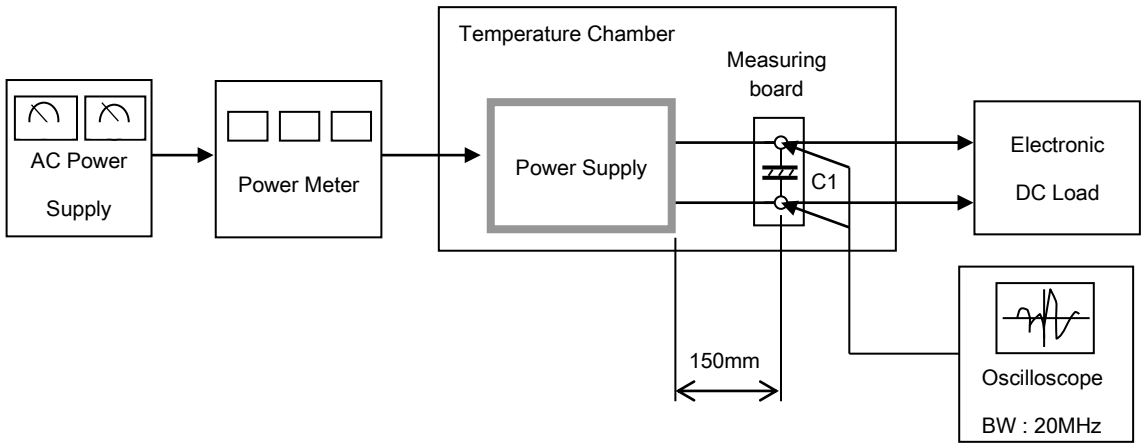

Figure B

C1 = 22 μF
(Electrolytic capacitor)