参考資料

TEST DATA OF MODULE D

(AME series)

Regulated DC Power Supply
August 30, 2019

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COSEL CO.,LTD.

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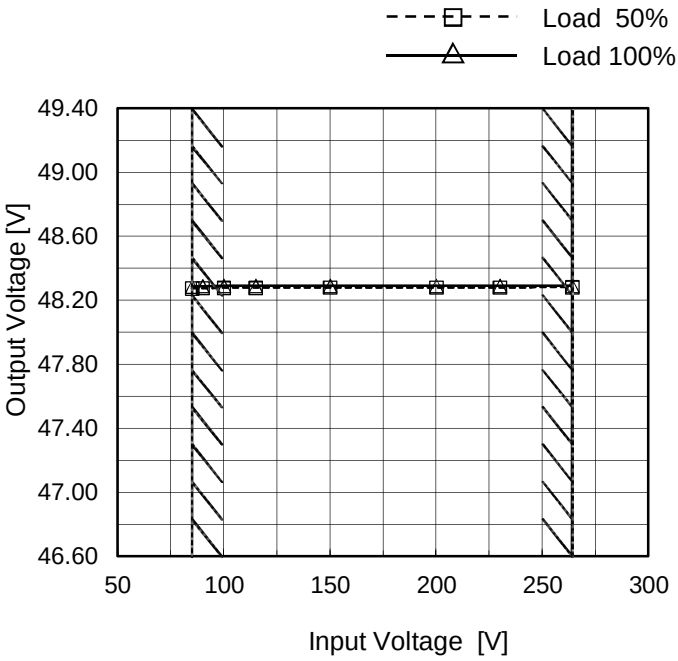

Note:
Hatched line shows the input voltage range.

2. Value

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
85	48.276	48.288
90	48.277	48.289
100	48.278	48.291
115	48.278	48.291
150	48.281	48.291
200	48.281	48.292
230	48.281	48.292
264	48.282	48.292
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BC-11334

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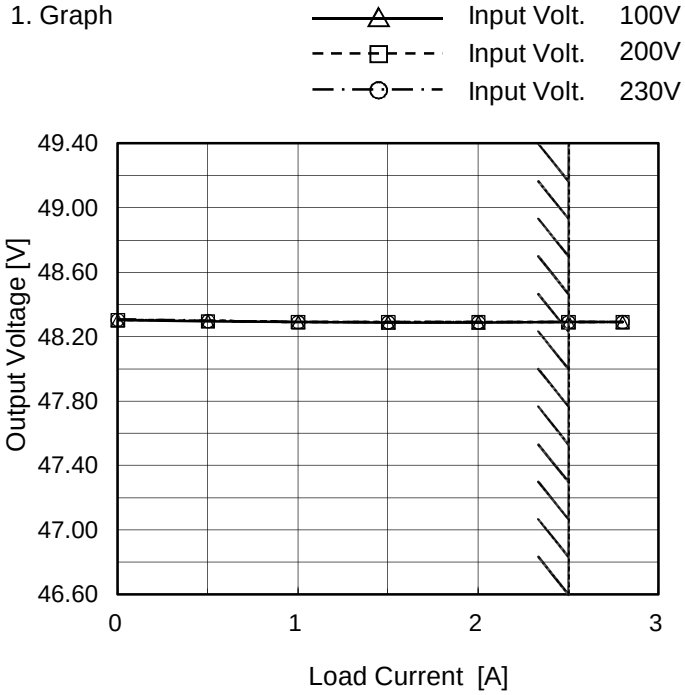
Model	MODULE D
Item	Load Regulation
Object	+48V2.5A

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	48.303	48.304	48.305
0.5	48.296	48.297	48.298
1.0	48.291	48.292	48.292
1.5	48.288	48.290	48.290
2.0	48.288	48.290	48.290
2.5	48.290	48.292	48.292
2.8	48.291	48.292	48.292
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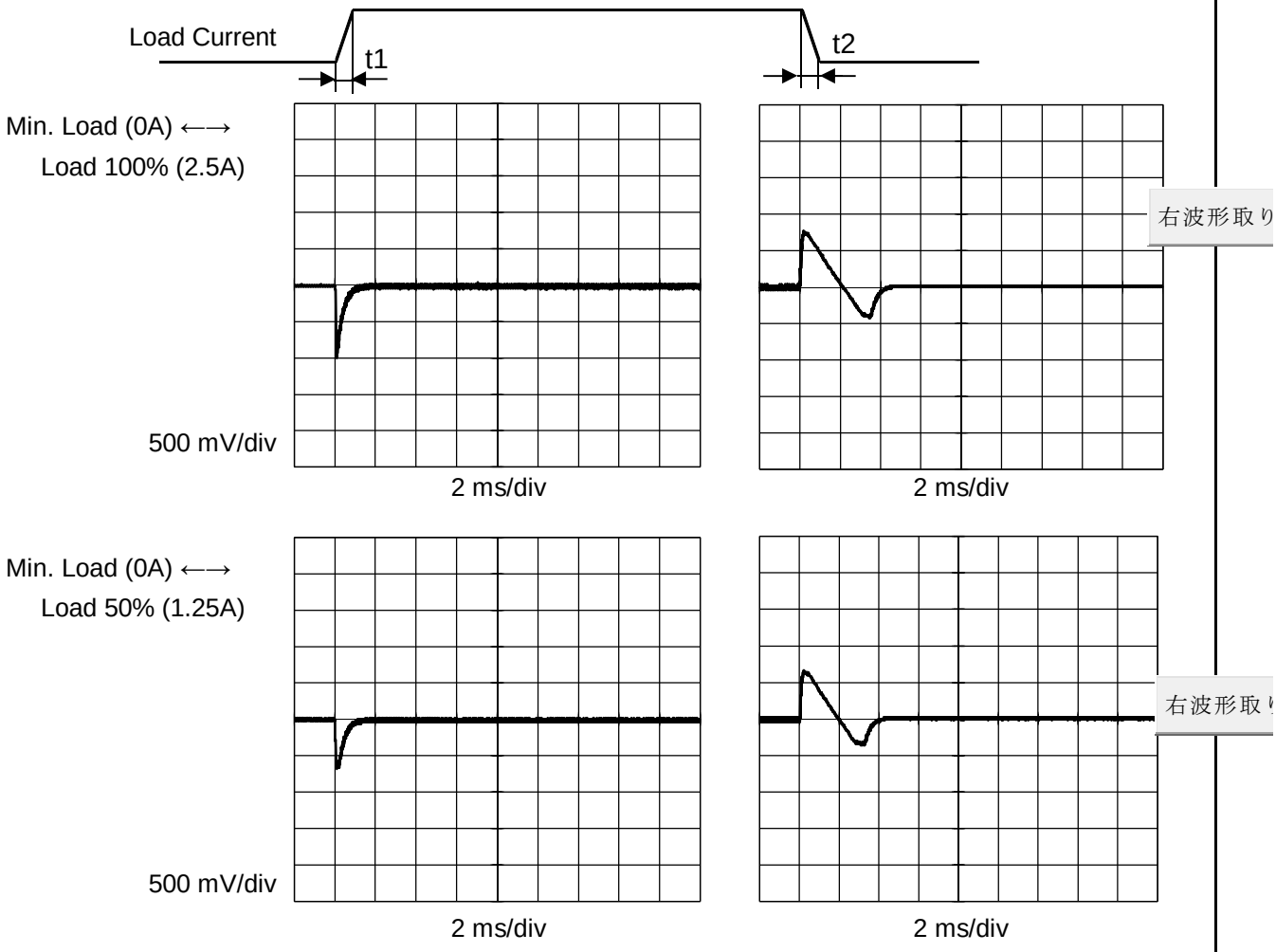
COSEL

Model	MODULE D		
Item	Dynamic Load Response	Temperature Testing Circuitry	25°C Figure A
Object	+48V2.5A		

Input Volt. 100 V
Cycle 1000 ms

Response t1=t2=50us. Typ



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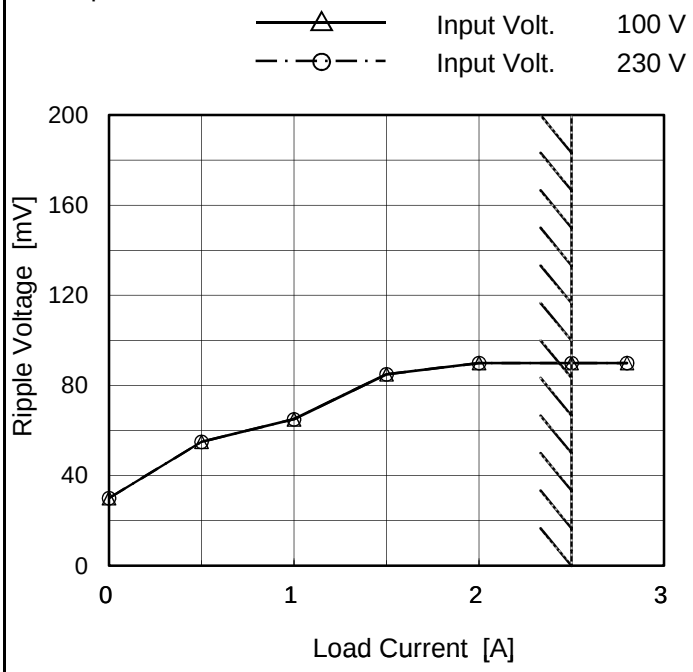
Model	MODULE D
Item	Ripple Voltage (by Load Current)
Object	+48V2.5A

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	30	30
0.5	55	55
1.0	65	65
1.5	85	85
2.0	90	90
2.5	90	90
2.8	90	90
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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

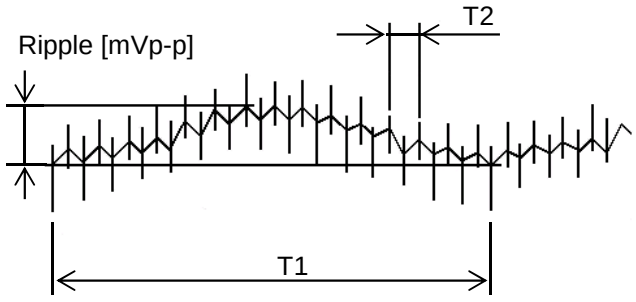

Fig. Complex Ripple Wave Form

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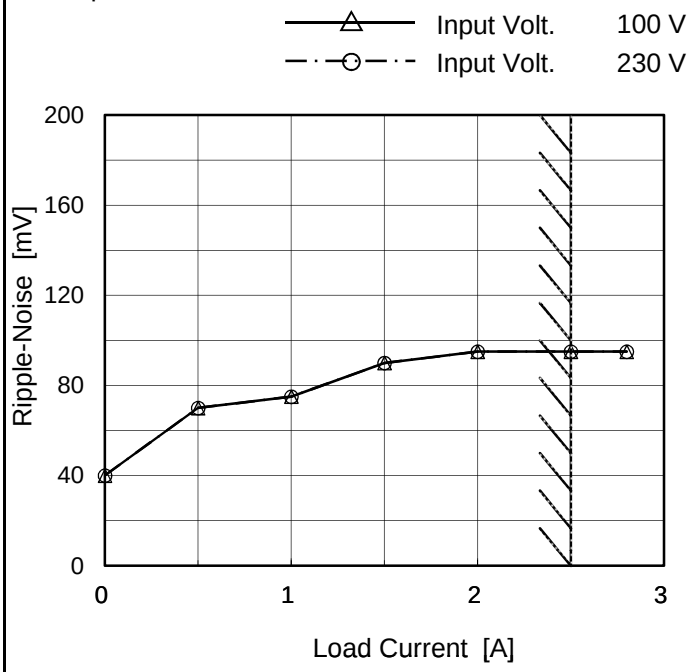
Model	MODULE D
Item	Ripple Noise
Object	+48V2.5A

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	40	40
0.5	70	70
1.0	75	75
1.5	90	90
2.0	95	95
2.5	95	95
2.8	95	95
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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

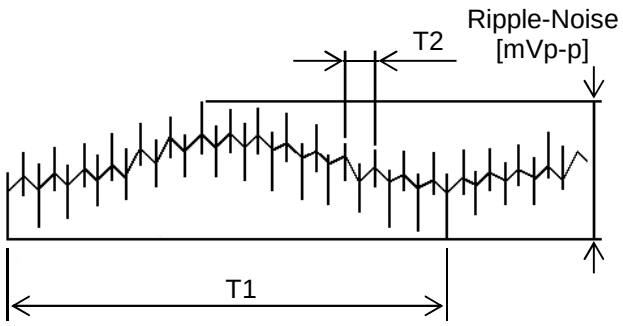

Fig. Complex Ripple Wave Form

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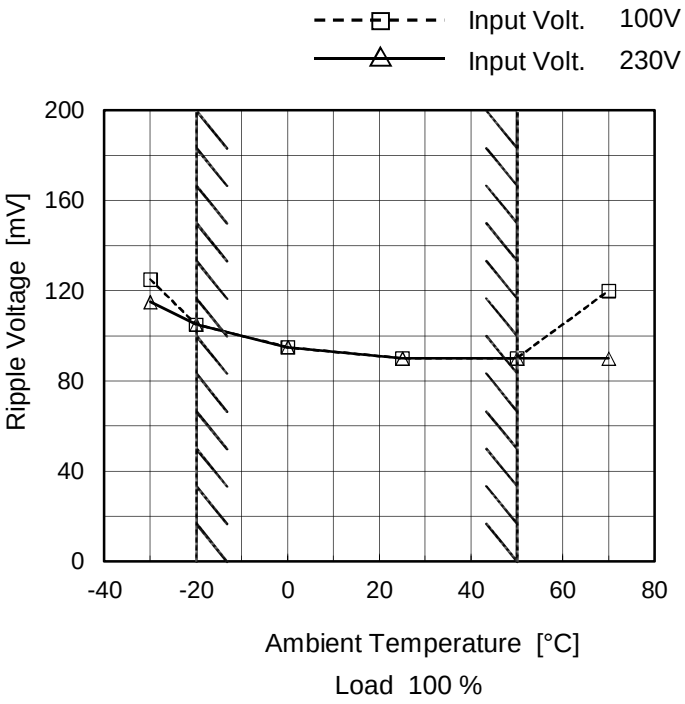
Model	MODULE D
Item	Ripple Voltage (by Ambient Temp.)
Object	+48V2.5A

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	125	115
-20	105	105
0	95	95
25	90	90
50	90	90
70	120	90
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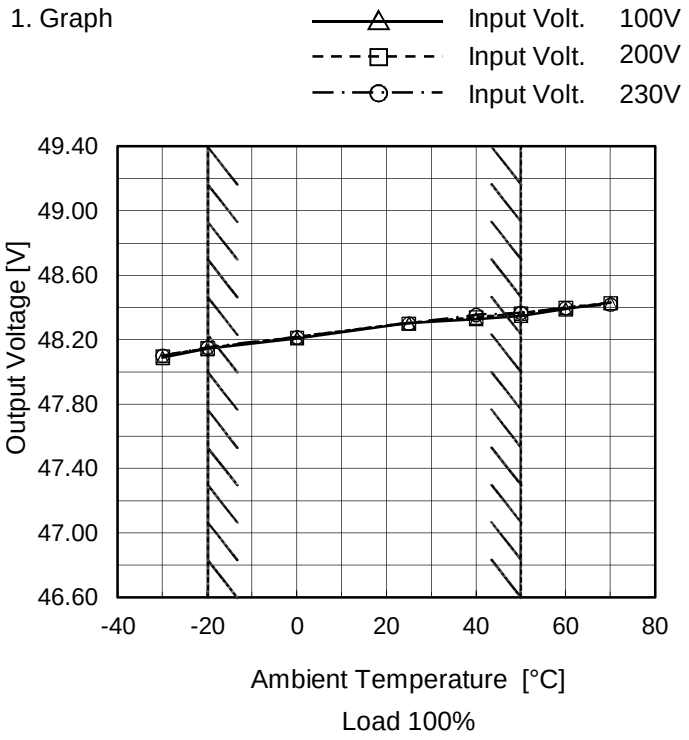
Model	MODULE D
Item	Ambient Temperature Drift
Object	+48V2.5A

Testing Circuitry Figure A

1. Graph



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	48.088	48.098	48.101
-20	48.142	48.147	48.152
0	48.209	48.213	48.215
25	48.301	48.301	48.301
40	48.328	48.339	48.354
50	48.348	48.362	48.367
60	48.389	48.397	48.397
70	48.429	48.428	48.419
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Model	MODULE D	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+48V2.5A	

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 - 2.5A

* 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	230	2.5	48.367	±113	±0.2
Minimum Voltage	-20	100	2.5	48.142		

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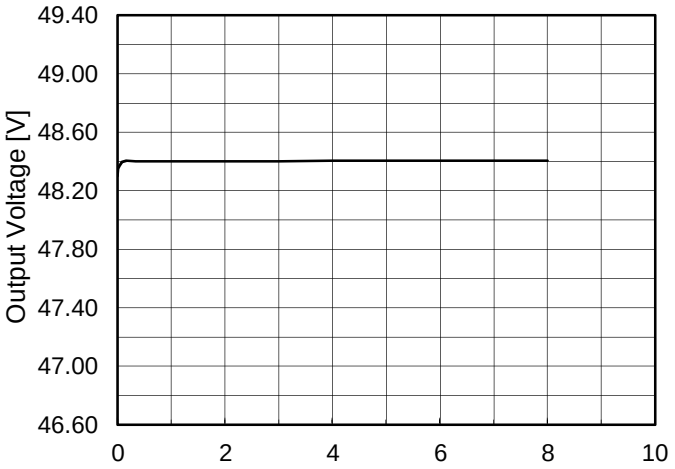
Model	MODULE D
Item	Time Lapse Drift
Object	+48V2.5A

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	48.301
0.5	48.402
1.0	48.402
2.0	48.402
3.0	48.403
4.0	48.405
5.0	48.406
6.0	48.407
7.0	48.407
8.0	48.408

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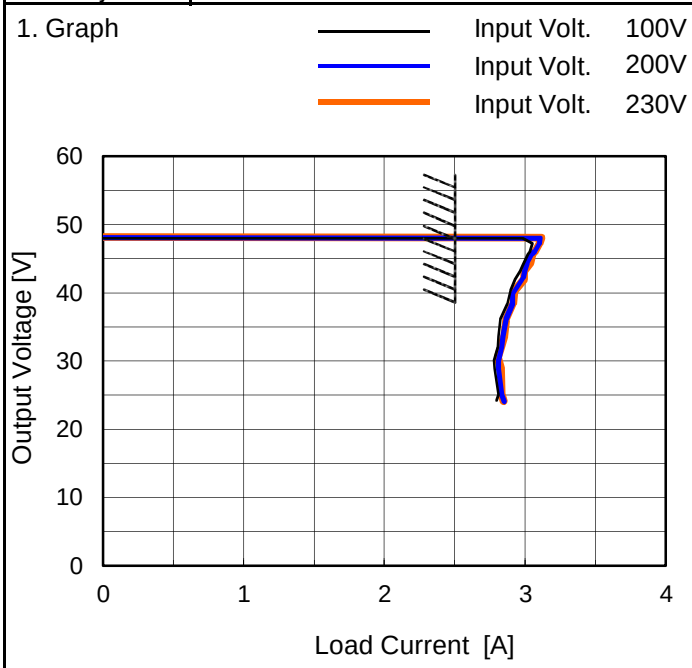
Model	MODULE D
Item	Overcurrent Protection
Object	+48V2.5A

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 24.0V.

2. Value

Output Voltage [V]	Load Current [A]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
45.6	3.02	3.05	3.05
43.2	2.96	3.00	2.99
38.4	2.88	2.91	2.91
33.6	2.81	2.84	2.85
28.8	2.78	2.81	2.83
24.0	2.80	2.85	2.85
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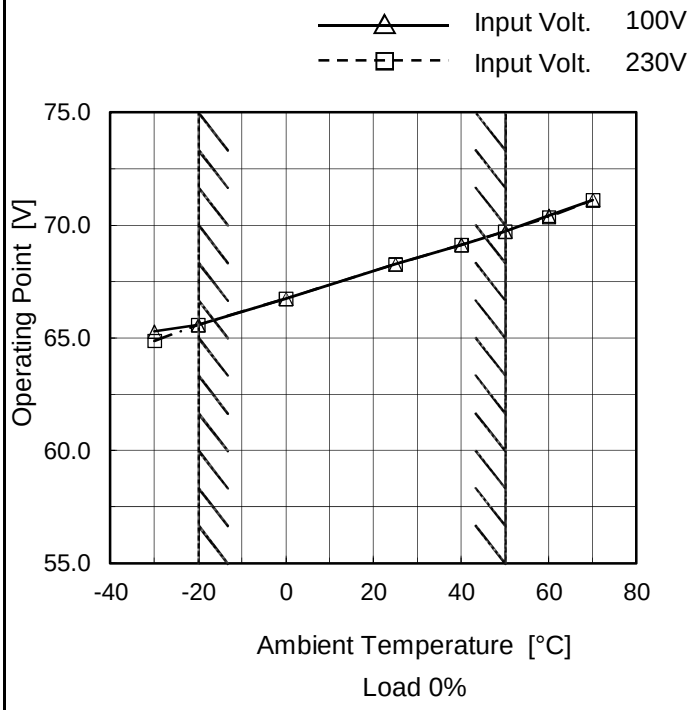
Model	MODULE D
Item	Overvoltage Protection
Object	+48V2.5A

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	65.28	64.87
-20	65.57	65.57
0	66.74	66.74
25	68.26	68.26
40	69.13	69.13
50	69.72	69.72
60	70.42	70.36
70	71.12	71.12
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--	-	-

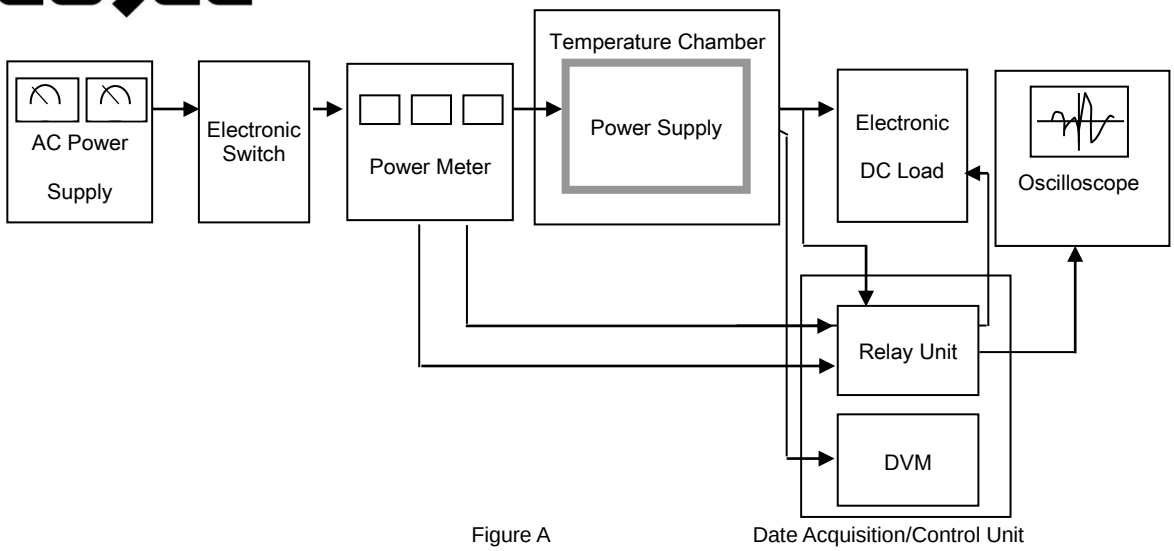

Figure A

Date Acquisition/Control Unit

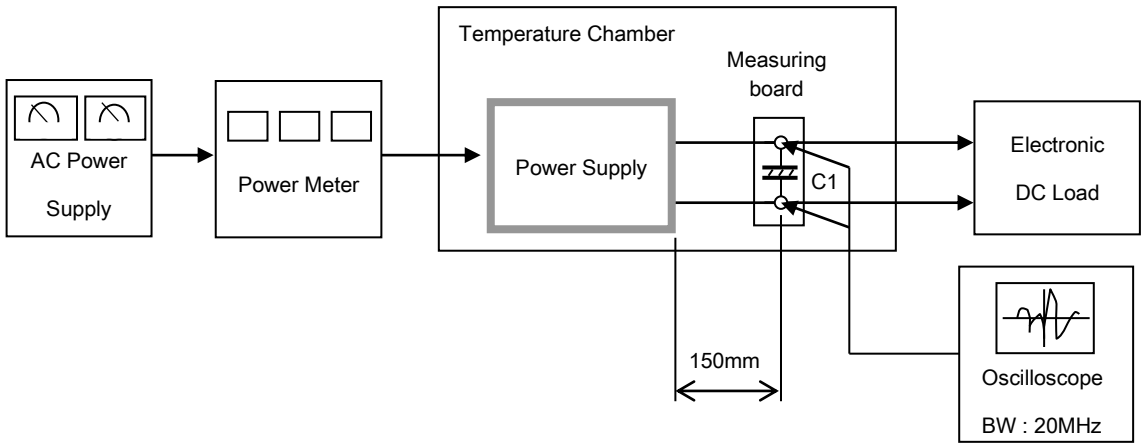

Figure B

C1 = 22 μF
(Electrolytic capacitor)