参考資料

TEST DATA OF MODULE F4

(AME series)

Regulated DC Power Supply
October 30, 2020

Approved by : Satoshi Uetani
Design Manager

Prepared by : Yuta Watanabe
Design Engineer

COSEL CO.,LTD.

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CONTENTS

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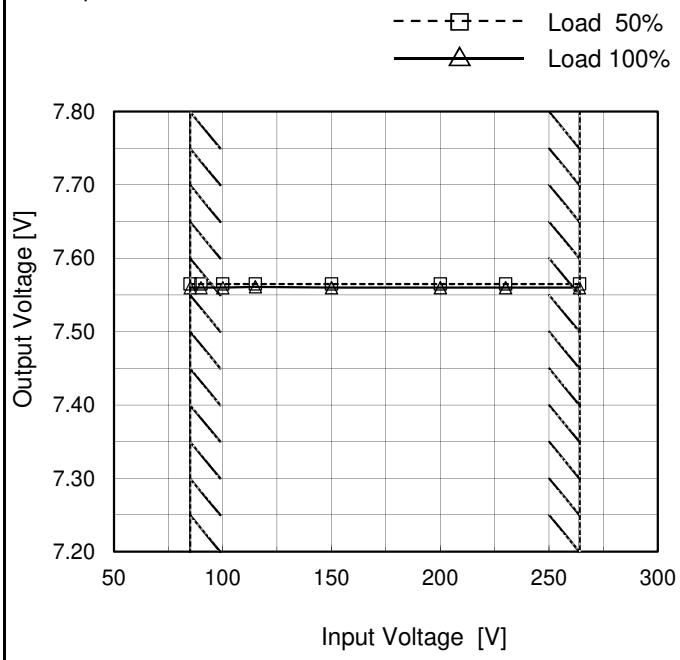
Model	MODULE F4
Item	Line Regulation
Object	+7.5V20A

Temperature 25°C
Testing Circuitry Figure A

1. Graph



Note:
Hatched line shows the input voltage range.

2. Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
85	7.565	7.560
90	7.565	7.560
100	7.565	7.560
115	7.565	7.561
150	7.565	7.560
200	7.565	7.560
230	7.565	7.560
264	7.565	7.560
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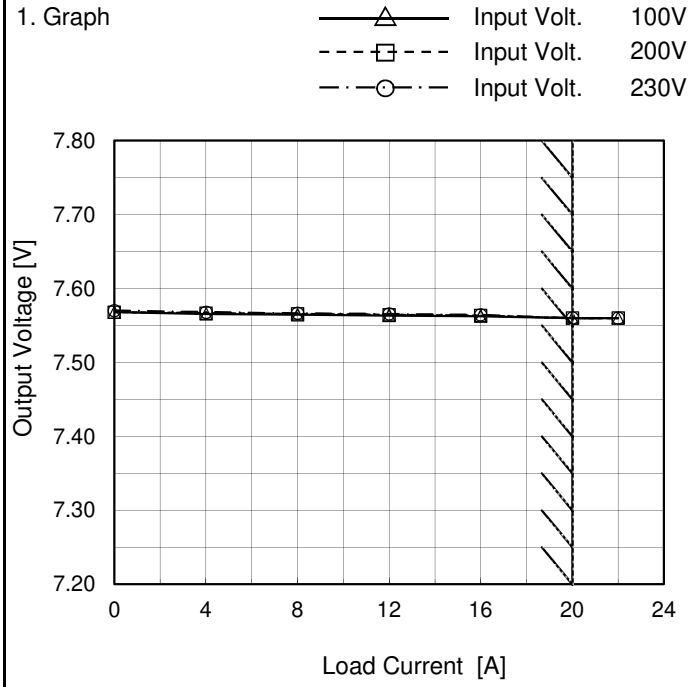
Model	MODULE F4
Item	Load Regulation
Object	+7.5V20A

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	7.568	7.568	7.570
4	7.566	7.567	7.568
8	7.565	7.566	7.567
12	7.564	7.565	7.566
16	7.563	7.564	7.564
20	7.560	7.560	7.560
22	7.560	7.560	7.560
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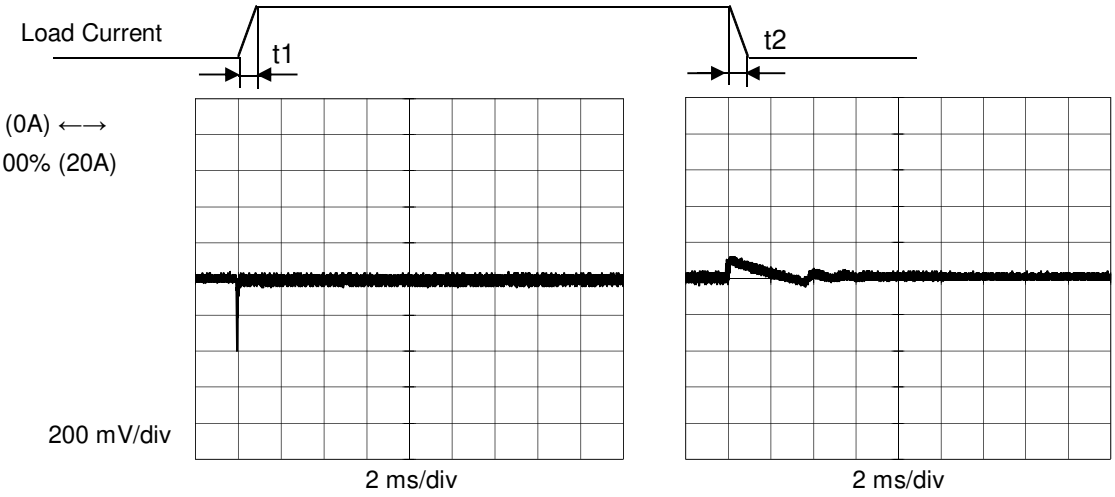
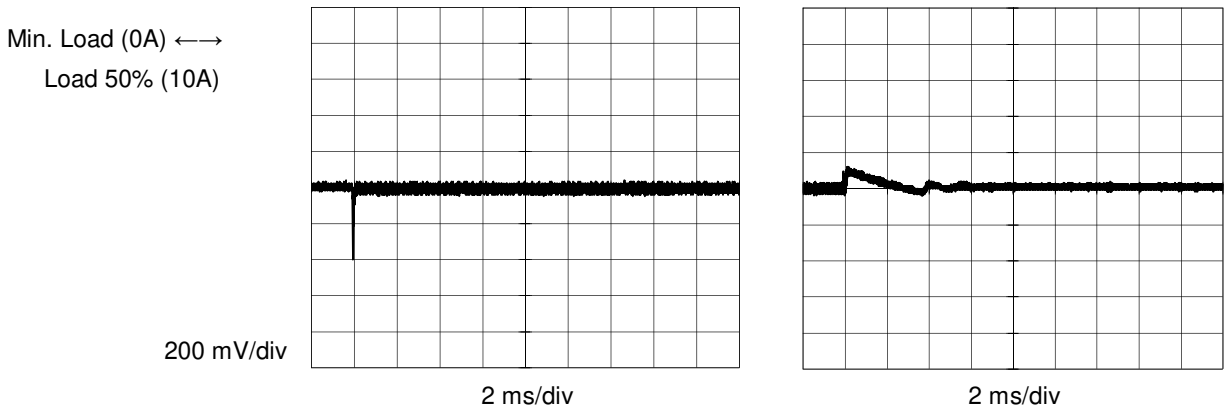
Model	MODULE K		
Item	Dynamic Load Response	Temperature Testing Circuitry	25° C Figure A
Object	+7.5V20A		

Input Volt. 100 V
Cycle 1000 ms

Response t1=t2=50us. Typ





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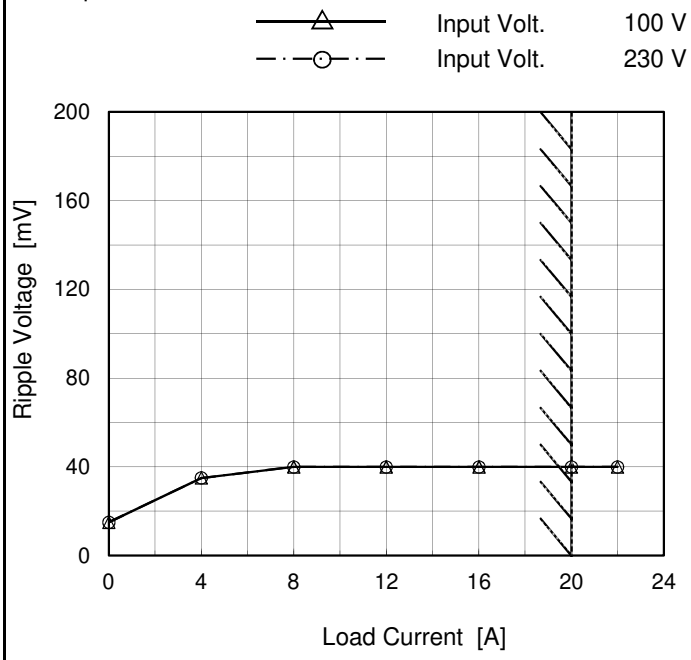
Model	MODULE F4
Item	Ripple Voltage (by Load Current)
Object	+7.5V20A

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	15	15
4	35	35
8	40	40
12	40	40
16	40	40
20	40	40
22	40	40
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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.

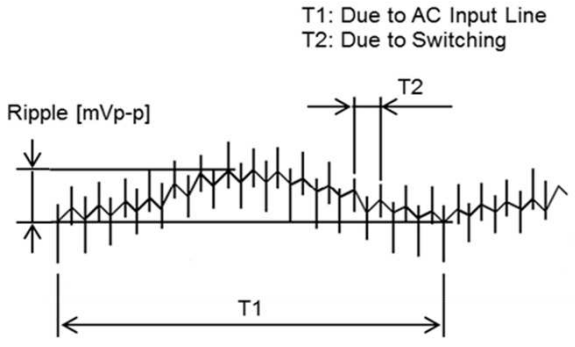

Fig. Complex Ripple Wave Form

BC-11642

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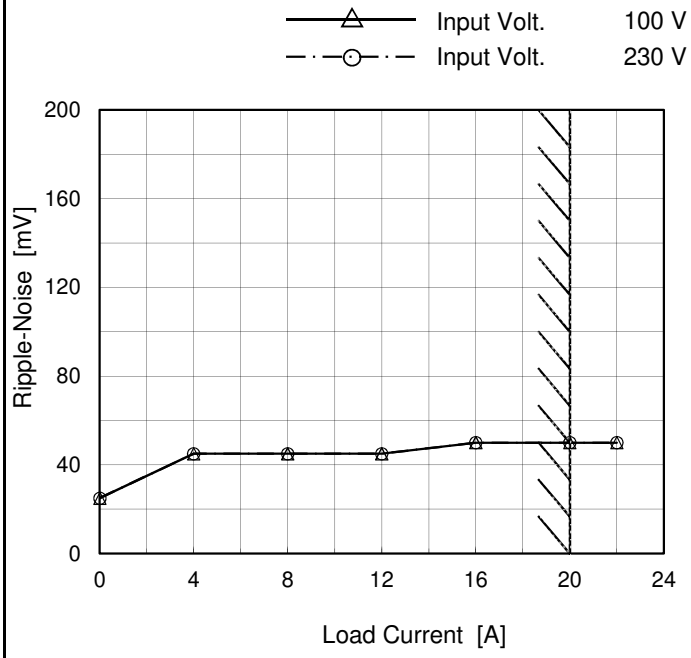
Model	MODULE F4
Item	Ripple Noise
Object	+7.5V20A

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	25	25
4	45	45
8	45	45
12	45	45
16	50	50
20	50	50
22	50	50
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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.

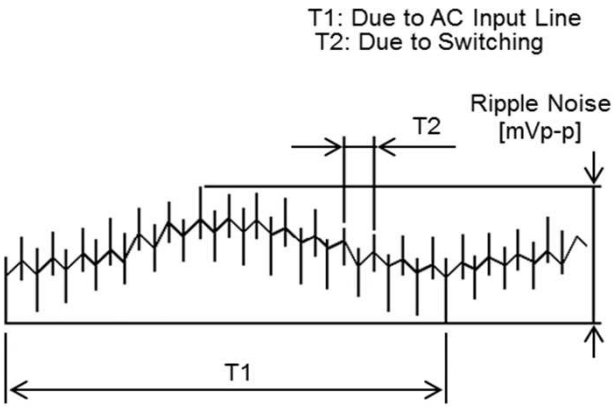

Fig. Complex Ripple Wave Form

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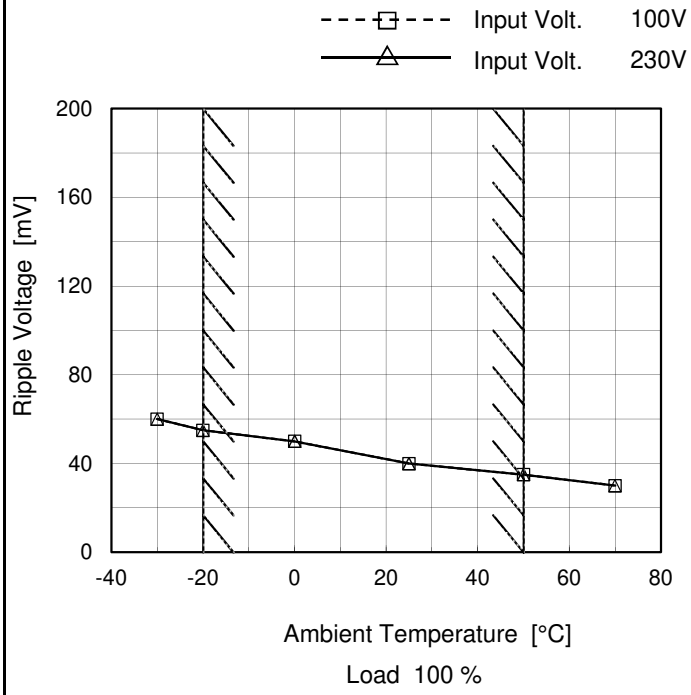
Model	MODULE F4
Item	Ripple Voltage (by Ambient Temp.)
Object	+7.5V20A

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	60	60
-20	55	55
0	50	50
25	40	40
50	35	35
70	30	30
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

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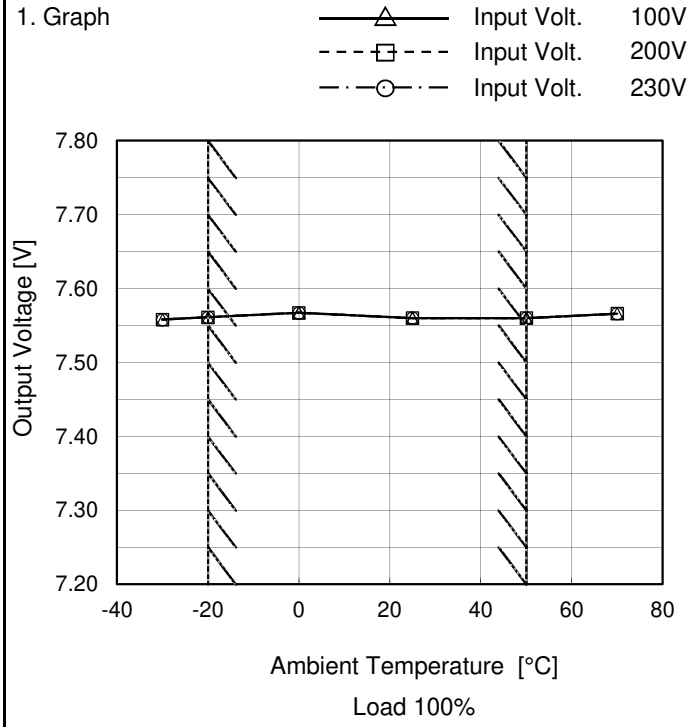
Model	MODULE F4
Item	Ambient Temperature Drift
Object	+7.5V20A

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	7.558	7.558	7.558
-20	7.561	7.561	7.561
0	7.567	7.567	7.567
25	7.560	7.560	7.560
50	7.560	7.560	7.560
70	7.566	7.566	7.566
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	MODULE F4	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+7.5V20A	

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 - 20A

* 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	0	264	0	7.572	±6	±0.1
Minimum Voltage	25	100	20	7.560		

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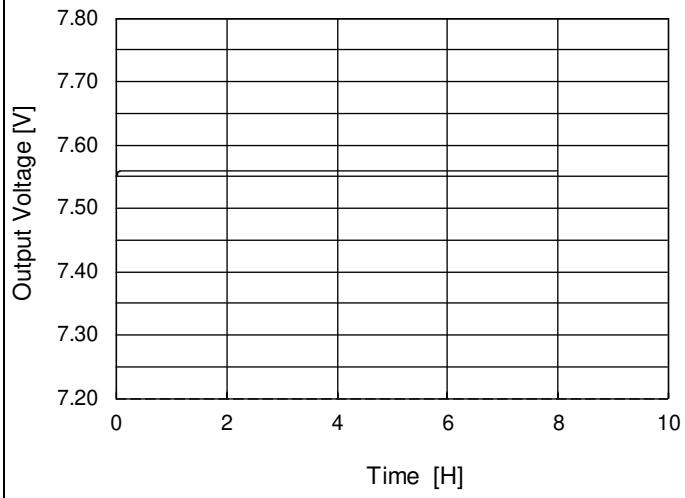
Model	MODULE F4
Item	Time Lapse Drift
Object	+7.5V20A

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	7.551
0.5	7.560
1.0	7.560
2.0	7.560
3.0	7.560
4.0	7.560
5.0	7.560
6.0	7.560
7.0	7.560
8.0	7.560

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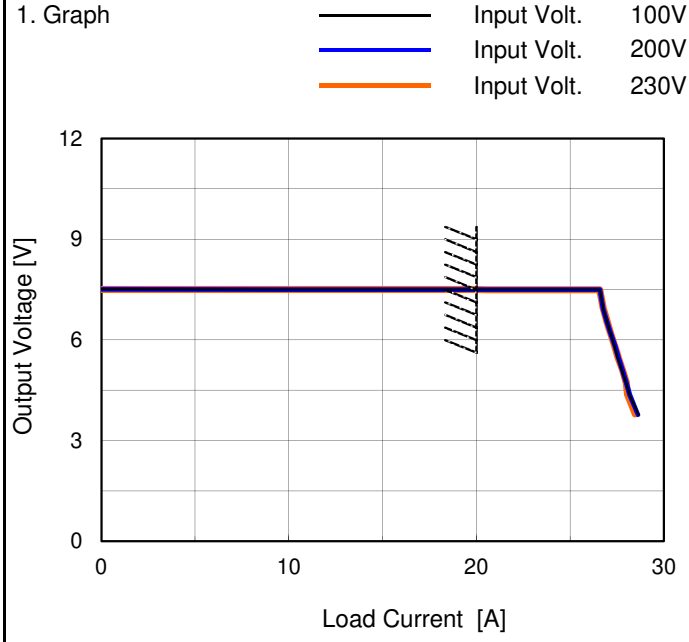
Model	MODULE F4
Item	Overcurrent Protection
Object	+7.5V20A

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 3.75V.

2. Values

Output Voltage [V]	Load Current [A]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
7.13	26.58	26.59	26.58
6.75	26.77	26.76	26.76
6.00	27.17	27.15	27.15
5.25	27.55	27.57	27.55
4.50	27.97	27.98	28.00
3.75	28.66	28.62	28.47
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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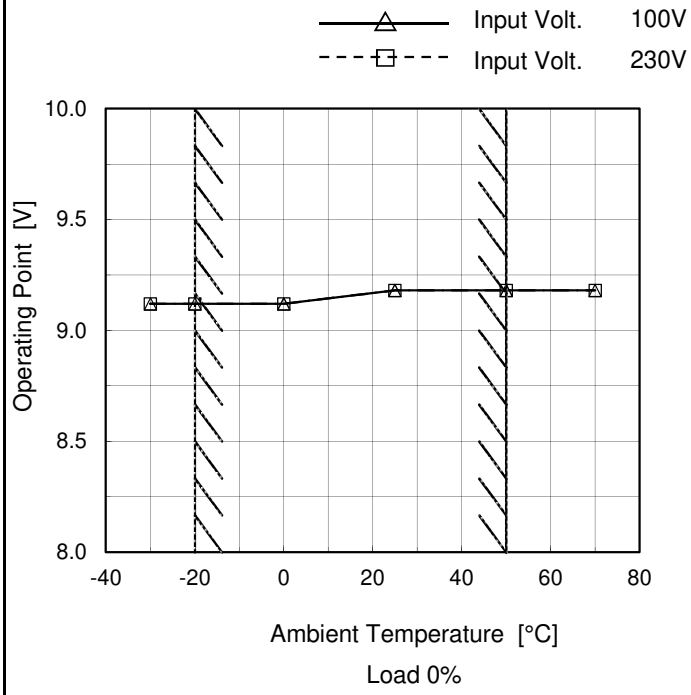
Model	MODULE F4
Item	Overvoltage Protection
Object	+7.5V20A

Testing Circuitry Figure A

1. Graph



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	9.12	9.12
-20	9.12	9.12
0	9.12	9.12
25	9.18	9.18
50	9.18	9.18
70	9.18	9.18
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

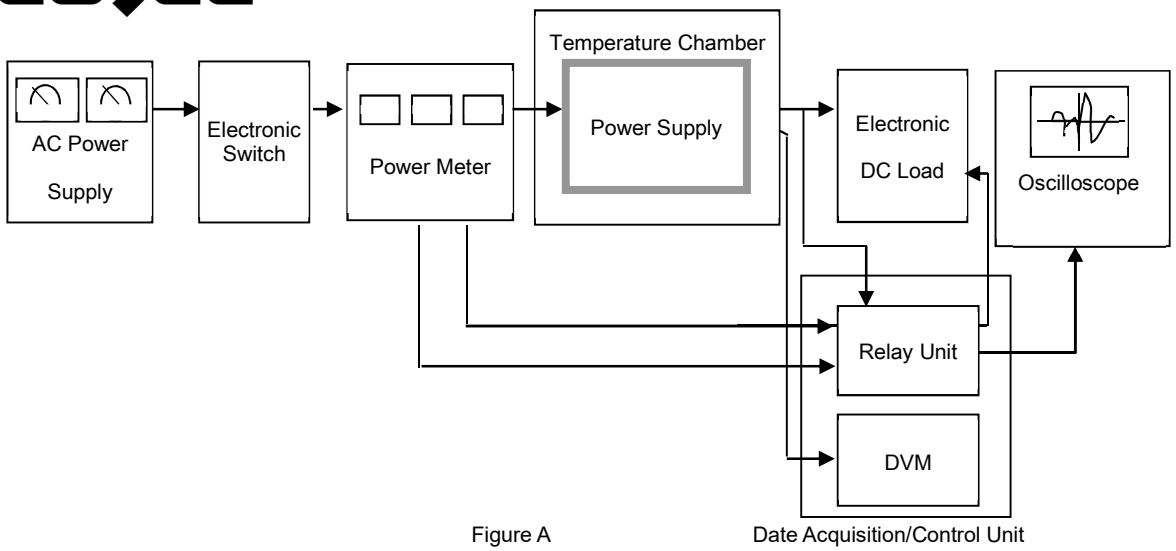


Figure A

Date Acquisition/Control Unit

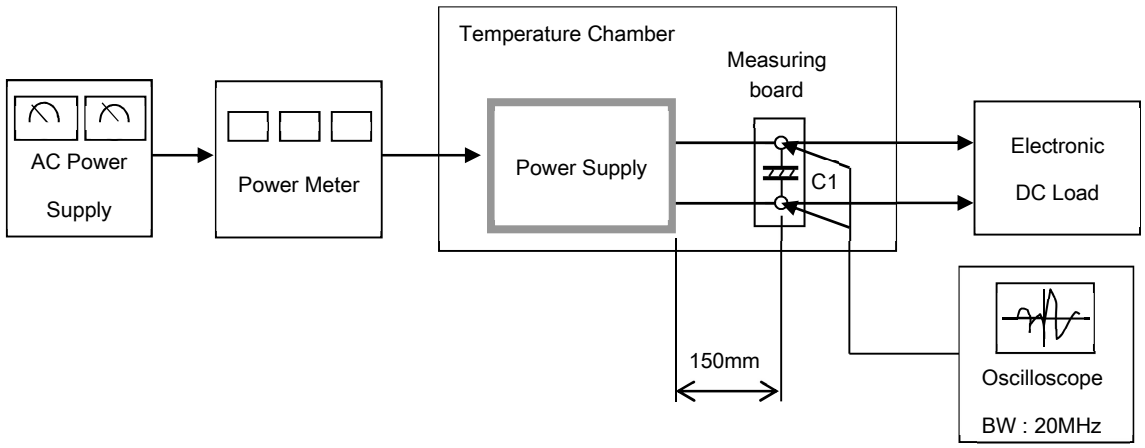


Figure B

C1 = 22 μF
(Electrolytic capacitor)