COSEL

参考資料

TEST DATA OF MODULE P

(ACE series)

Regulated DC Power Supply
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COSEL CO.,LTD.

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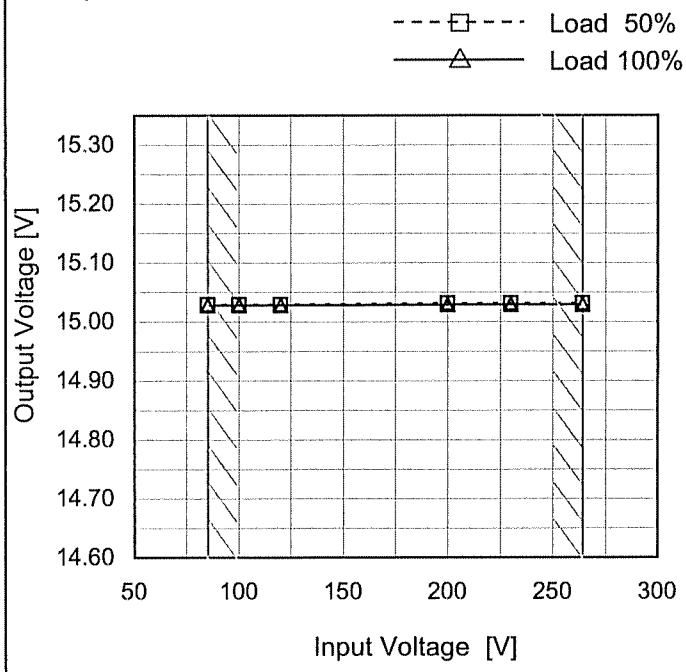

Note: Slanted line shows the range of the rated input voltage.

2.Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
85	15.029	15.028
100	15.029	15.028
120	15.029	15.028
200	15.031	15.029
230	15.031	15.029
264	15.031	15.029
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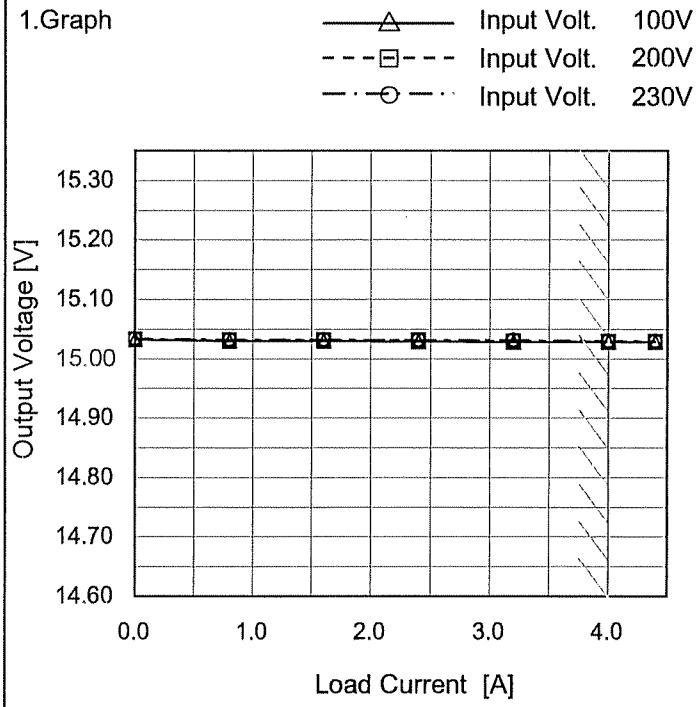
Model	MODULE P
Item	Load Regulation
Object	+15V4A

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	15.032	15.033	15.034
0.8	15.030	15.031	15.032
1.6	15.030	15.031	15.032
2.4	15.029	15.031	15.031
3.2	15.028	15.030	15.031
4.0	15.028	15.029	15.030
4.4	15.028	15.029	15.030
--	-	-	-
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--	-	-	-

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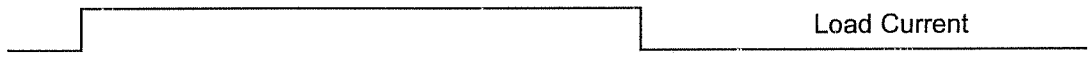
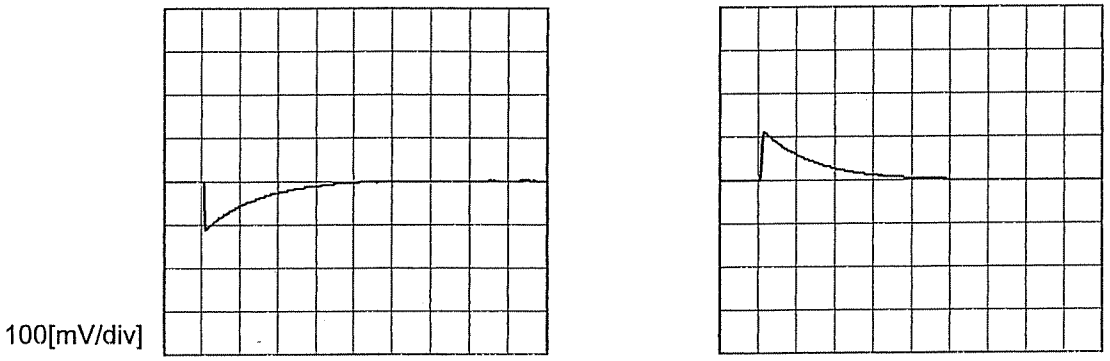
Model	MODULE P		
Item	Dynamic Load Response	Temperature	25°C
Object	+15V4A	Testing Circuitry	Figure A

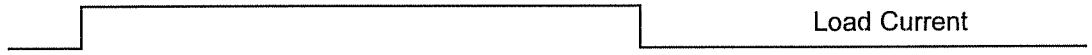
Input Volt. 100 V
Cycle 1000 ms

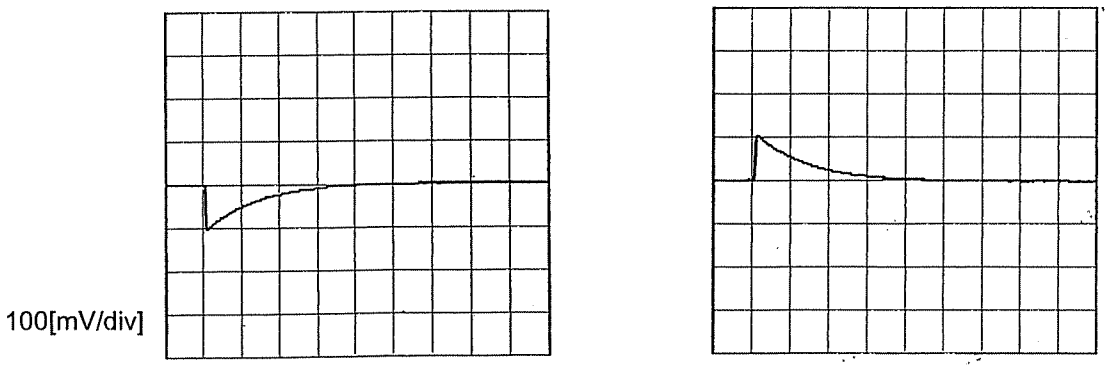
Min. Load (0 A) -- Load 100% (4 A)





Min. Load (0 A) -- Load 50% (2 A)





* The characteristic of AC200V is equal.

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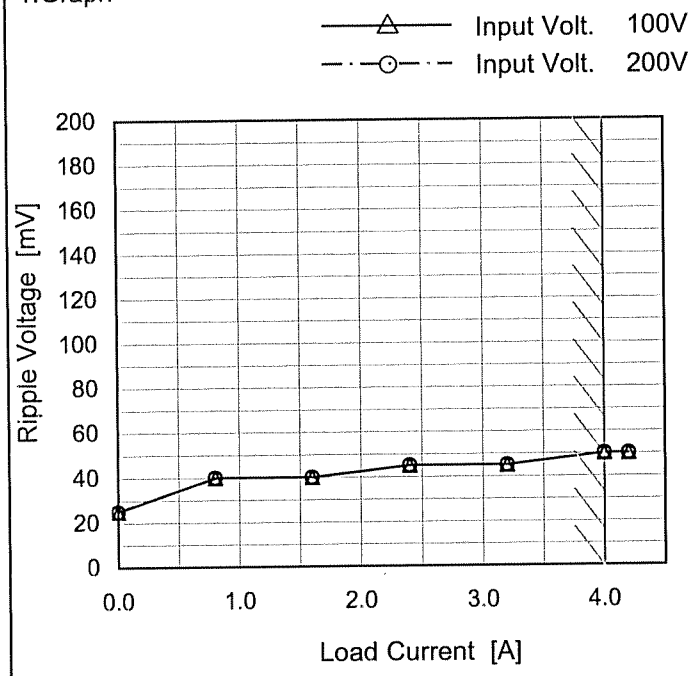
Model	MODULE P
Item	Ripple Voltage (by Load Current)
Object	+15V4A

Temperature 25°C
Testing Circuitry Figure A

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.

2.Values

Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 100 [V]	Input Volt. 200 [V]
0.0	25	25
0.8	40	40
1.6	40	40
2.4	45	45
3.2	45	45
4.0	50	50
4.2	50	50
--	-	-
--	-	-
--	-	-
--	-	-

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

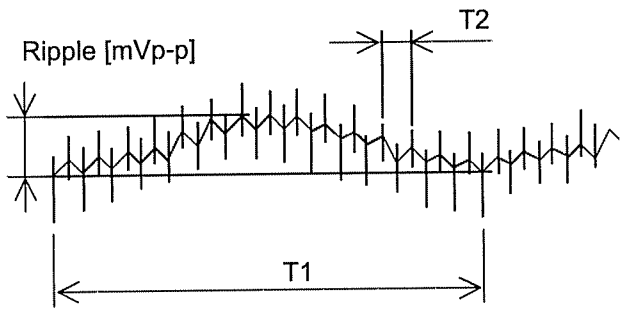


Fig. Complex Ripple Wave Form

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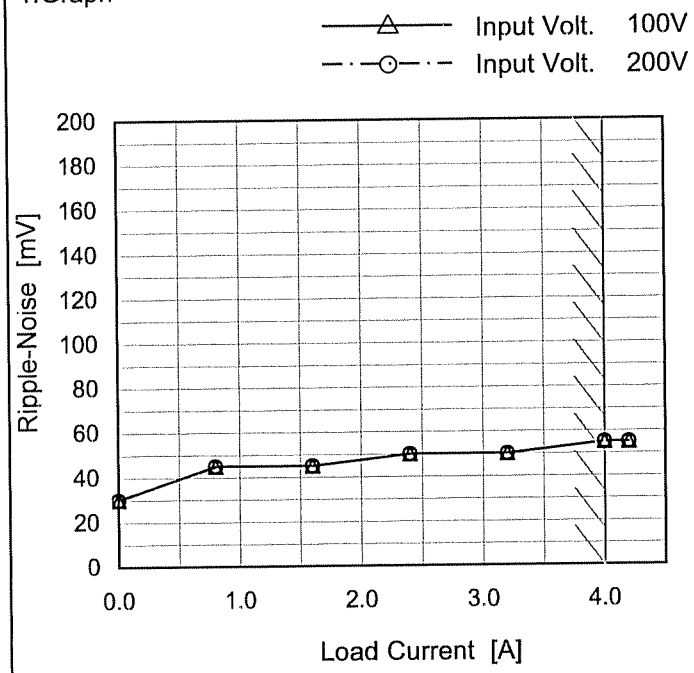
Model	MODULE P
Item	Ripple-Noise
Object	+15V4A

Temperature 25°C
Testing Circuitry Figure A

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]	Ripple-Noise [mV] Input Volt. 200 [V]
0.0	30	30
0.8	45	45
1.6	45	45
2.4	50	50
3.2	50	50
4.0	55	55
4.2	55	55
--	-	-
--	-	-
--	-	-
--	-	-

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

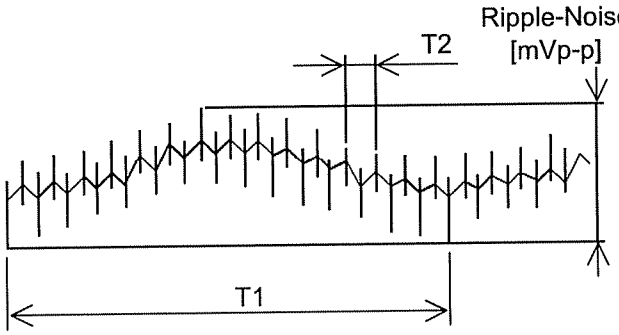


Fig. Complex Ripple Wave Form

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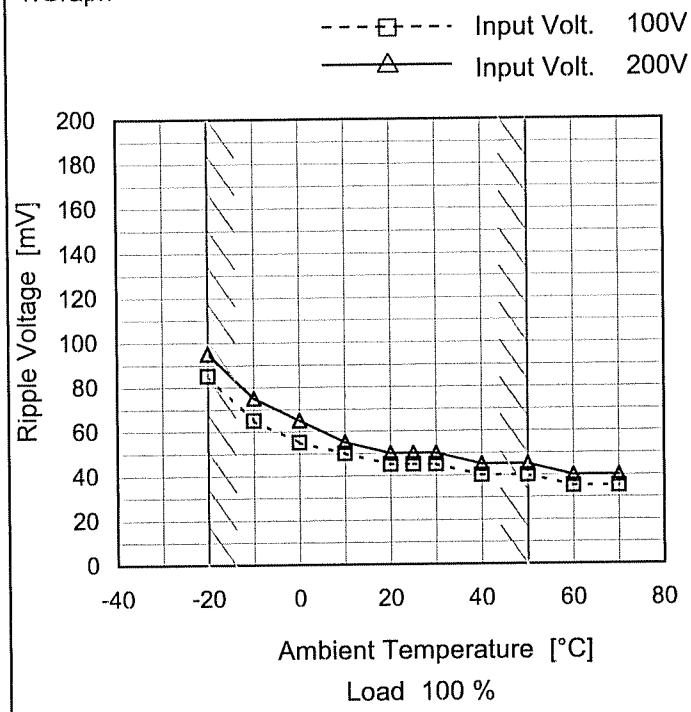
Model	MODULE P
Item	Ripple Voltage (by Ambient Temp.)
Object	+15V4A

Testing Circuitry Figure A

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. 200 [V]
-20	85	95
-10	65	75
0	55	65
10	50	55
20	45	50
25	45	50
30	45	50
40	40	45
50	40	45
60	35	40
70	35	40

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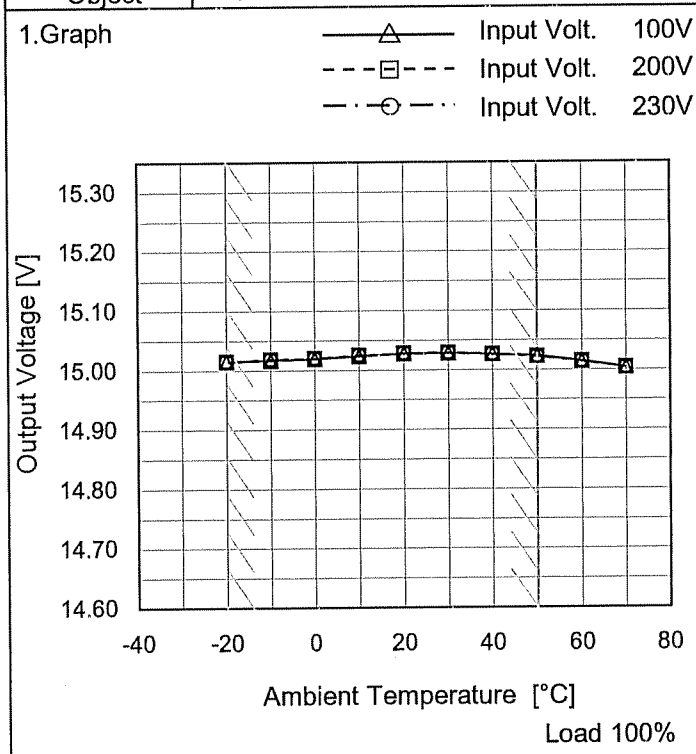
Model	MODULE P
Item	Ambient Temperature Drift
Object	+15V4A

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]
-20	15.015	15.015	15.015
-10	15.017	15.018	15.018
0	15.019	15.020	15.020
10	15.023	15.025	15.025
20	15.027	15.028	15.028
30	15.028	15.029	15.029
40	15.026	15.026	15.026
50	15.023	15.022	15.022
60	15.014	15.014	15.014
70	15.004	15.004	15.004
--	-	-	-

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Model	MODULE P
Item	Output Voltage Accuracy
Object	+15V4A

Testing Circuitry Figure A

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 - 4A

* Output Voltage Accuracy = ±(Maximum of Output Voltage - Minimum of Output Voltage) / 2

$$\text{* Output Voltage Accuracy (Ration)} = \frac{\text{Output Voltage Accuracy}}{\text{Rated Output Voltage}} \times 100$$

2.Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	25	85	0	15.030	±8	±0.1
Minimum Voltage	-20	100	4	15.015		

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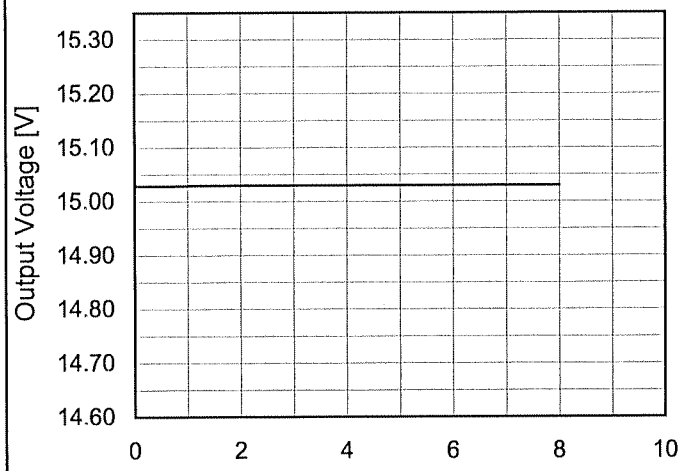
Model	MODULE P
Item	Time Lapse Drift
Object	+15V4A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Input Volt. 100V
Load 100%

* The characteristic of AC200V is equal.

2.Values

Time since start [H]	Output Voltage [V]
0.0	15.035
0.5	15.028
1.0	15.029
2.0	15.029
3.0	15.029
4.0	15.029
5.0	15.029
6.0	15.029
7.0	15.029
8.0	15.029

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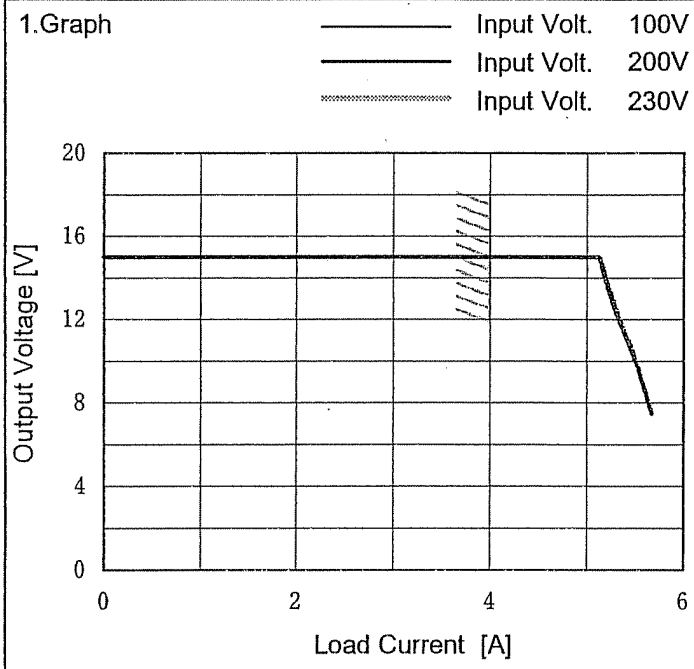
Model	MODULE P
Item	Overcurrent Protection
Object	+15V4A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

Intermittent operation occurs when the output voltage is from 7.5V to 0V.

2.Values

Output Voltage [V]	Load Current [A]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
15.00	5.11	5.13	5.14
14.25	5.17	5.19	5.19
13.50	5.21	5.23	5.24
12.00	5.32	5.34	5.35
10.50	5.45	5.47	5.48
9.00	5.57	5.58	5.58
7.50	5.66	5.67	5.67
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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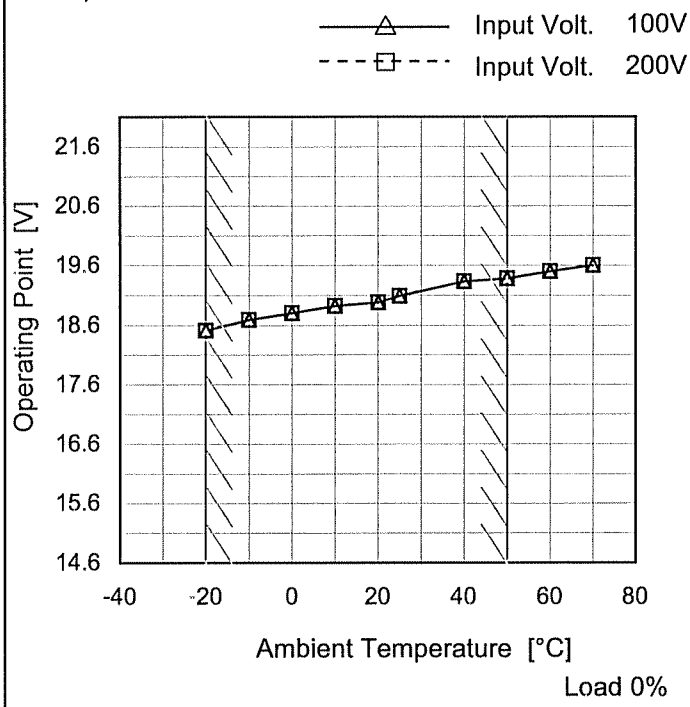
Model	MODULE P
Item	Overvoltage Protection
Object	+15V4A

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. 200[V]
-20	18.56	18.56
-10	18.74	18.74
0	18.85	18.85
10	18.97	18.97
20	19.03	19.03
25	19.14	19.14
40	19.38	19.38
50	19.43	19.43
60	19.55	19.55
70	19.65	19.65
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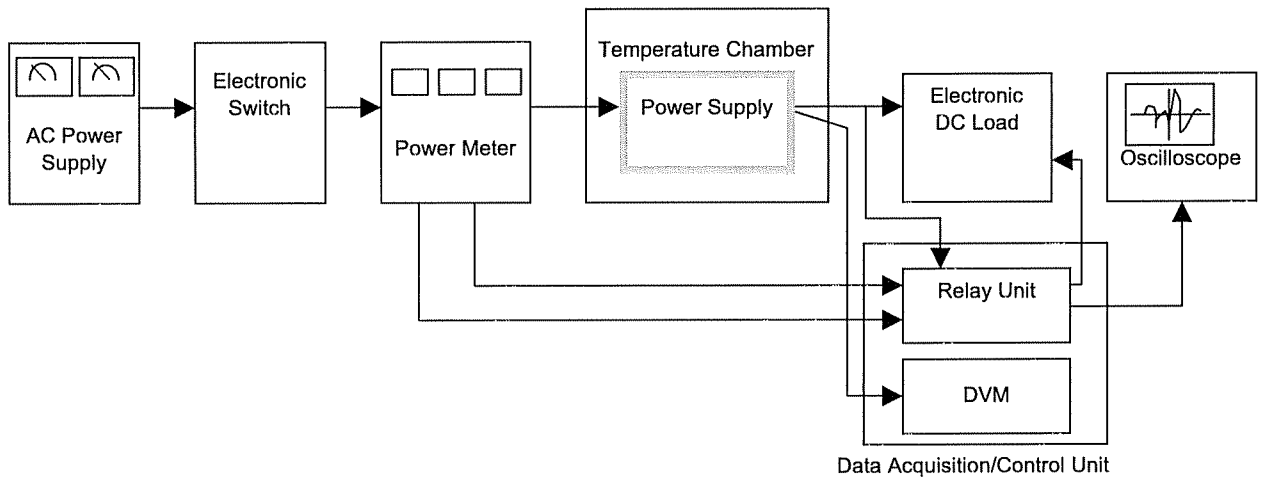

Figure A

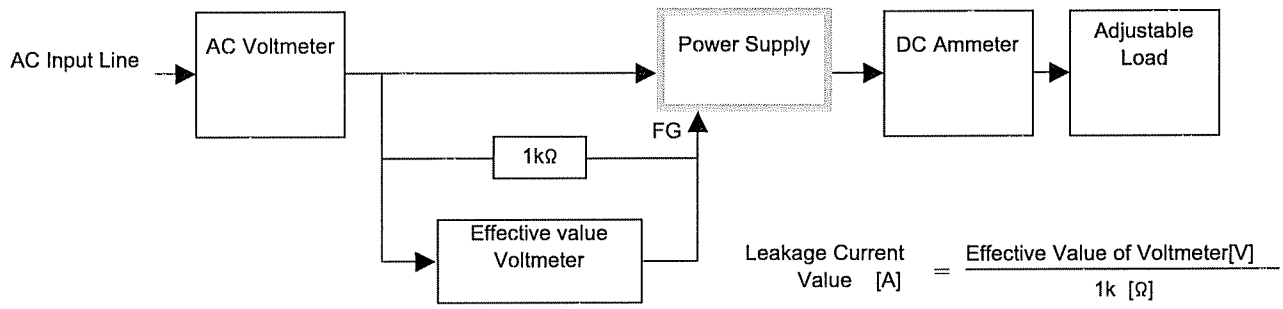

Figure B (DEN-AN)

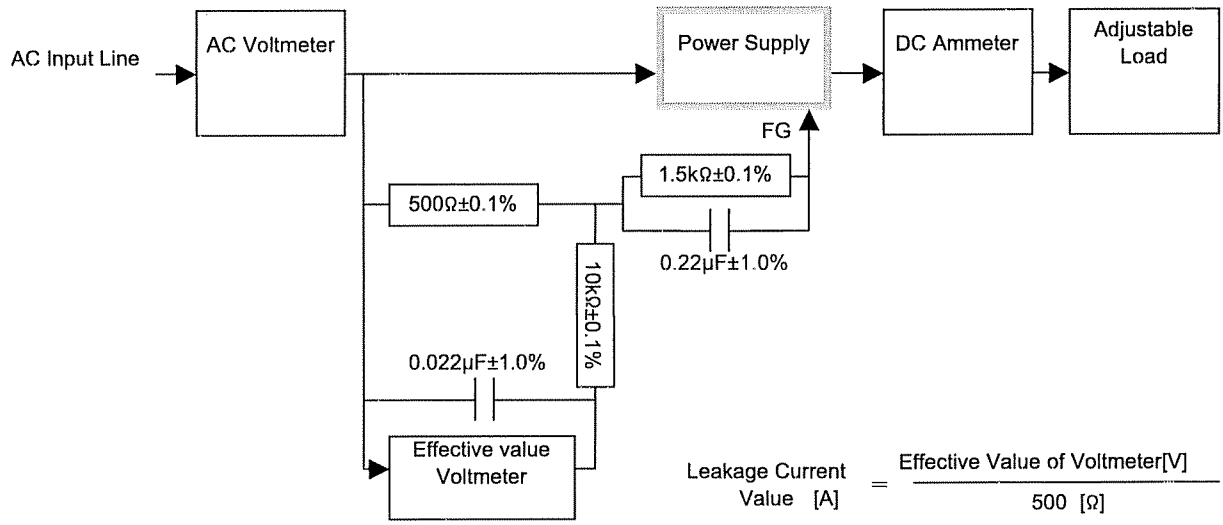

Figure B (IEC60950)