



TEST DATA OF LDA100W-5

(200V INPUT)

Regulated DC Power Supply

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Design Manager

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コーワセル株式会社
COSEL CO., LTD.



C O N T E N T S

1. Line Regulation	1
静的入力変動	
2. Input Current (by Load Current)	2
入力電流 (負荷特性)	
3. Input Power (by Load Current)	3
入力電力 (負荷特性)	
4. Efficiency (by Input Voltage)	4
効率 (入力電圧特性)	
5. Efficiency (by Load Current)	5
効率 (負荷特性)	
6. Hold-Up Time	6
出力保持時間	
7. Instantaneous Interruption Compensation	7
瞬時停電保障	
8. Load Regulation	8
静的負荷変動	
9. Ripple Voltage (by Load Current)	9
リップル電圧 (負荷特性)	
10. Ripple-Noise	10
リップルノイズ	
11. Overcurrent Protection	11
過電流保護	
12. Overvoltage Protection	12
過電圧保護	
13. Inrush Current	13
突入電流	
14. Dynamic Load Responce	14
動的負荷変動	
15. Rise and Fall Time	15
立上り、立下がり時間	
16. Ambient Temperature Drift	16
周囲温度変動	
17. Minimum Input Voltage for Regulated Output Voltage .	17
最低レギュレーション電圧	
18. Ripple Voltage (by Ambient Temperature)	18
リップル電圧 (周囲温度特性)	
19. Time Lapse Drift	19
経時ドリフト	
20. Output Voltage Accuracy	20
定電圧精度	
21. Condensation	21
結露特性	
22. Leakage Current	22
漏洩電流	
23. Line Noise Tolerance	23
入力雑音耐量	
24. Conducted Emission	24
雑音端子電圧	
25. Figure of Testing Circuitry	25
測定回路図	

(Final Page 26)

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Model	LDA100W-5		Temperature Testing Circuitry 25°C Figure A																																
Item	Line Regulation 静的入力変動																																		
Object	+5.0V 20A																																		
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Note: Slanted line shows the range of the rated input voltage.

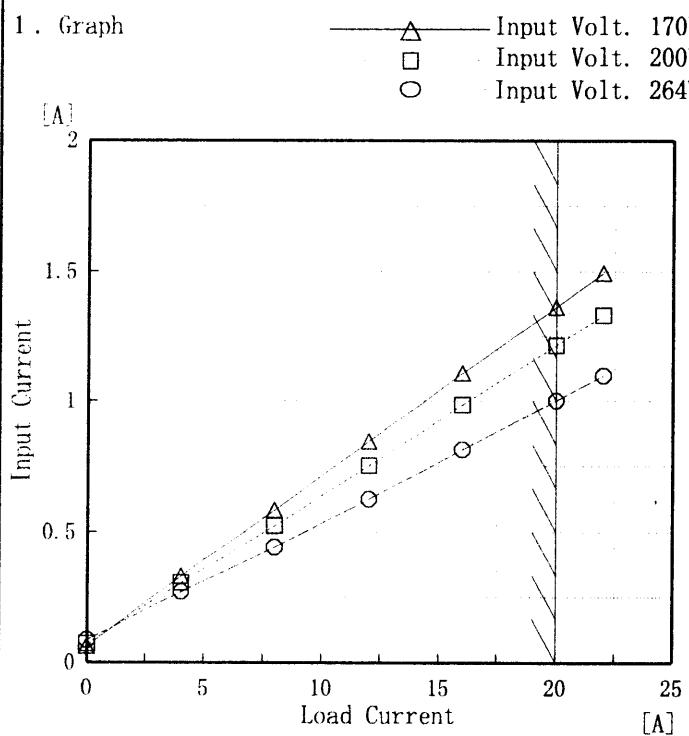
(注)斜線は定格入力電圧範囲を示す。

COSEL

Model	LDA100W-5
Item	Input Current (by Load Current) 入力電流 (負荷特性)
Output	_____

Temperature 25°C
Testing Circuitry Figure A

1. Graph



2. Values

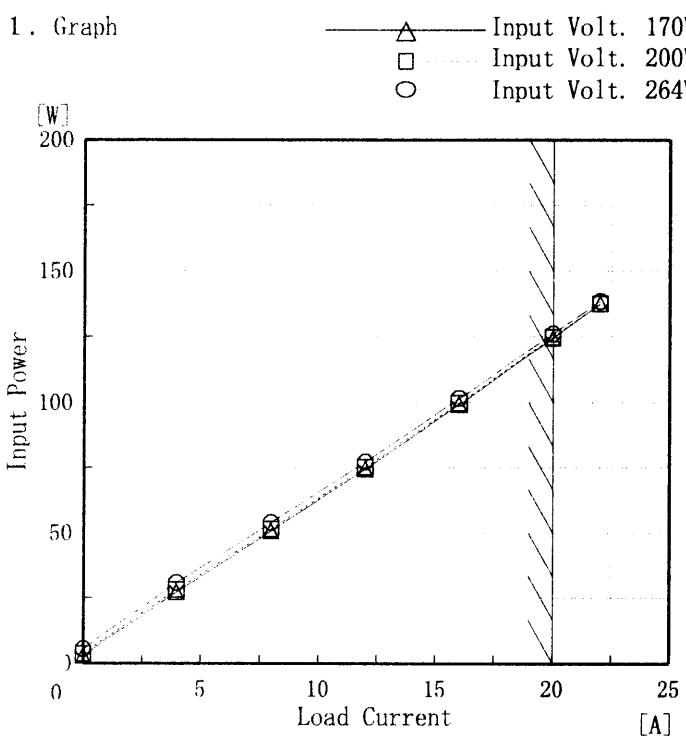
Load Current [A]	Input Current [A]		
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
0	0.062	0.070	0.085
4	0.331	0.304	0.271
8	0.583	0.523	0.442
12	0.845	0.752	0.626
16	1.108	0.986	0.815
20	1.363	1.215	1.002
22	1.493	1.331	1.099
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

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

(注)斜線は定格負荷電流範囲を示す。

COSSEL

Model	LDA100W-5
Item	Input Power (by Load Current) 入力電力 (負荷特性)
Output	_____

Temperature 25°C
Testing Circuitry Figure A

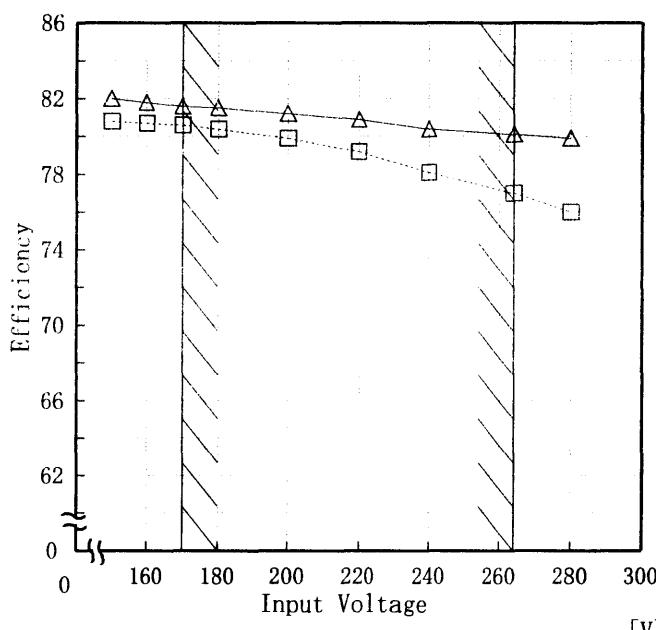
2. Values

Load Current [A]	Input Power [W]		
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
0	2.80	3.60	5.30
4	27.30	28.20	30.80
8	50.70	51.50	53.90
12	74.60	75.20	77.30
16	99.30	99.80	101.70
20	124.50	124.70	126.10
22	137.50	137.50	138.40
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

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

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Model	LDA100W-5	Temperature Testing Circuitry	25°C Figure A																																
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Object	—																																		
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1. Graph	<p>Efficiency [%]</p> <p>Load Current [A]</p> <p>Legend: ▲ Input Volt. 170V, □ Input Volt. 200V, ○ Input Volt. 264V</p>																																																								
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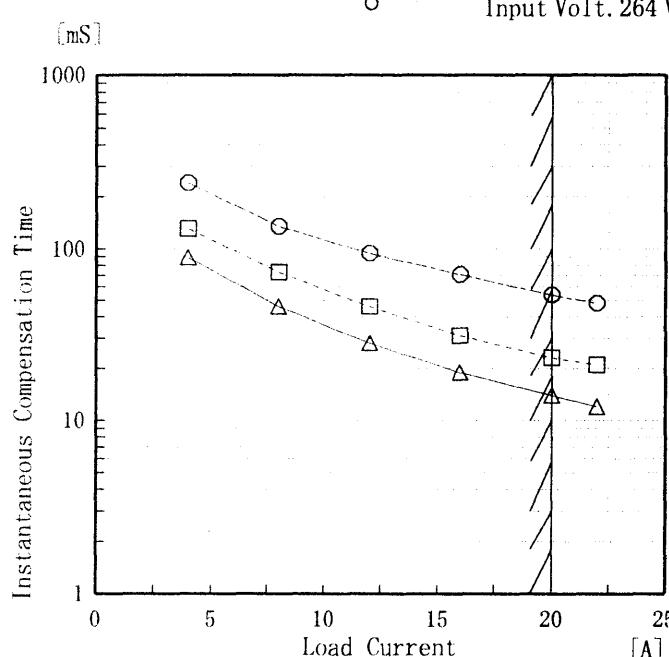
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Note: Slanted line shows the range of the rated load current.

瞬時停電保障時間とは、出力電圧が定電圧精度の規格範囲を保持している瞬時停電時間をいう。

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Item	Load Regulation 静的負荷変動	Temperature Testing Circuitry	25°C Figure A																																															
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Item	Ripple Voltage(by Load Current) リップル電圧(負荷電流特性)	Temperature Testing Circuitry 25°C Figure A																																				
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Load Current [A]	Input Volt. 170 [V] Ripple Output Volt. [mV]	Input Volt. 264 [V] Ripple Output Volt. [mV]																																				
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<p>Ripple Voltage is shown as p-p in the figure below.</p> <p>Note: Slanted line shows the range of the rated load current.</p> <p>リップル電圧は、下図 p - p 値で示される。</p> <p>(注)斜線は定格負荷電流範囲を示す。</p> <p>T1: Due to AC Input Line T2: Due to Switching</p>																																						
<p>Fig. Complex Ripple Wave Form 図 リップル波形詳細図</p>																																						

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Item	Ripple-Noise リップルノイズ																																						
Object	+5.0V20A																																						
1. Graph	<p style="text-align: center;">□ Input Volt. 170V △ Input Volt. 264V</p>	2. Values																																					
<table border="1"> <thead> <tr> <th rowspan="2">Load current [A]</th> <th>Input Volt. 170 [V]</th> <th>Input Volt. 264 [V]</th> </tr> <tr> <th>Ripple-Noise [mV]</th> <th>Ripple-Noise [mV]</th> </tr> </thead> <tbody> <tr><td>0.00</td><td>20</td><td>25</td></tr> <tr><td>3.00</td><td>40</td><td>50</td></tr> <tr><td>6.00</td><td>45</td><td>50</td></tr> <tr><td>9.00</td><td>50</td><td>55</td></tr> <tr><td>12.00</td><td>50</td><td>60</td></tr> <tr><td>15.00</td><td>50</td><td>60</td></tr> <tr><td>18.00</td><td>55</td><td>65</td></tr> <tr><td>20.00</td><td>60</td><td>65</td></tr> <tr><td>22.00</td><td>60</td><td>70</td></tr> <tr><td>—</td><td>—</td><td>—</td></tr> <tr><td>—</td><td>—</td><td>—</td></tr> </tbody> </table>		Load current [A]	Input Volt. 170 [V]	Input Volt. 264 [V]	Ripple-Noise [mV]	Ripple-Noise [mV]	0.00	20	25	3.00	40	50	6.00	45	50	9.00	50	55	12.00	50	60	15.00	50	60	18.00	55	65	20.00	60	65	22.00	60	70	—	—	—	—	—	—
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18.00	55	65																																					
20.00	60	65																																					
22.00	60	70																																					
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<p>Ripple-Noise is shown as p-p in the figure below.</p> <p>Note: Slanted line shows the range of the rated load current.</p> <p>リップルノイズは、下図 p - p 値で示される。</p> <p>(注)斜線は定格負荷電流範囲を示す。</p> <p>T1: Due to AC Input Line T2: Due to Switching</p> <p>Fig. Complex Ripple Wave Form 図 リップル波形詳細図</p>																																							

COSEL

Model	LDA100W-5																																																									
Item	Overcurrent Protection 過電流保護																																																									
Object	+5.0V 20A																																																									
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Note: Slanted line shows the range of the rated load current.

(注) 斜線は定格負荷電流範囲を示す。

COSSEL

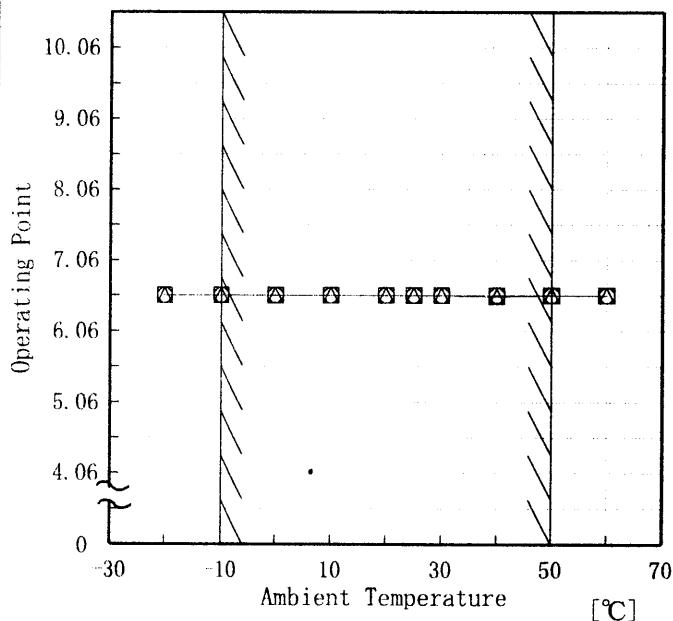
Model	LDA100W-5
Item	Overvoltage Protection 過電圧保護
Object	+5.0V 20A

Testing Circuitry Figure A

1. Graph

—△— Input Volt. 170 V
 —□— Input Volt. 200 V
 —○— Input Volt. 264 V

[V]



Load 0%

Note: Slanted line shows the range of the rated ambient temperature.

(注)斜線は定格周囲温度範囲を示す。

2. Values

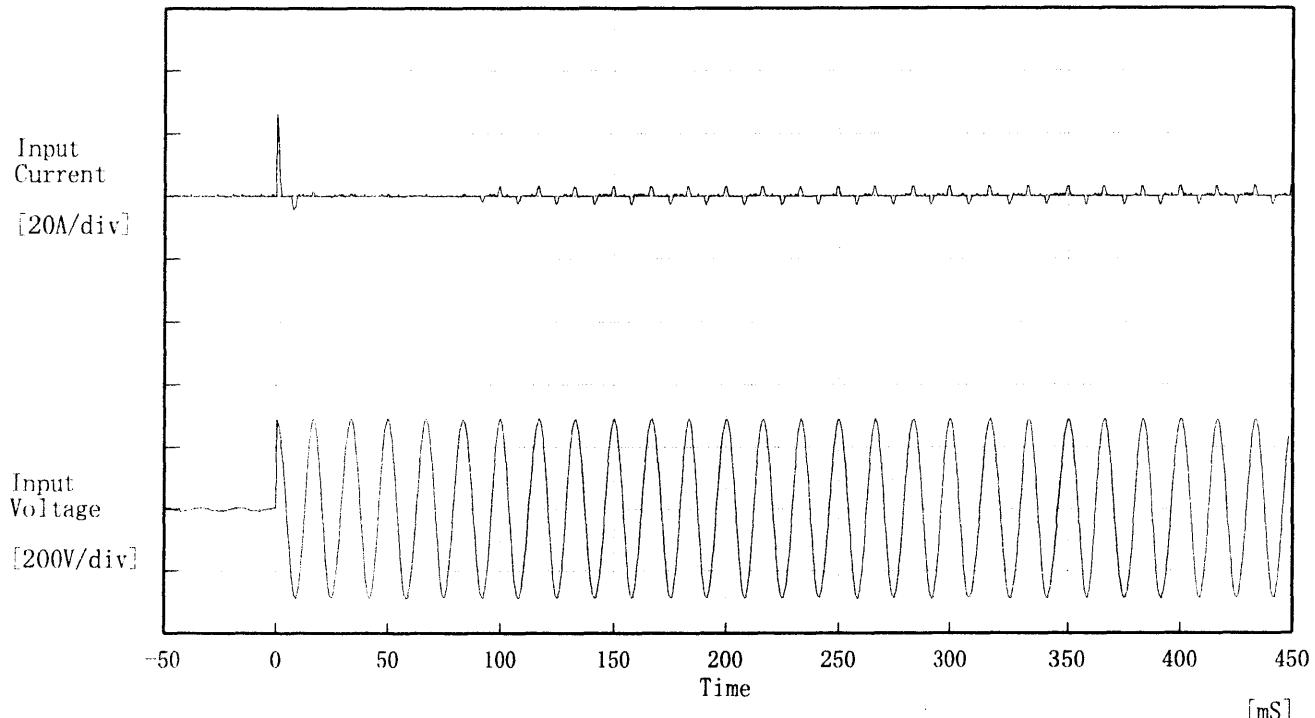
Ambient Temperature [°C]	Operating Point [V]		
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
-20	6.56	6.56	6.56
-10	6.56	6.56	6.56
0	6.56	6.56	6.56
10	6.56	6.56	6.56
20	6.56	6.56	6.56
25	6.56	6.56	6.56
30	6.56	6.56	6.56
40	6.55	6.56	6.56
50	6.56	6.56	6.56
60	6.56	6.56	6.56
—	—	—	—

COSEL

Model LDA100W-5

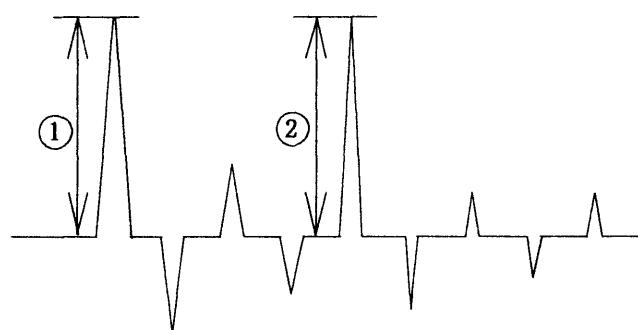
Temperature 25°C
Testing Circuitry Figure A

Object



Input Voltage 200 V
 Frequency 60 Hz
 Load 100 %
 Inrush Current

- ① 26.28 [A]
- ② 3.48 [A]



COSEL

Model	LDA100W-5	Temperature	25°C
Item	Dynamic Load Response 動的負荷変動	Testing Circuitry	Figure A
Object	+5.0V 20A		

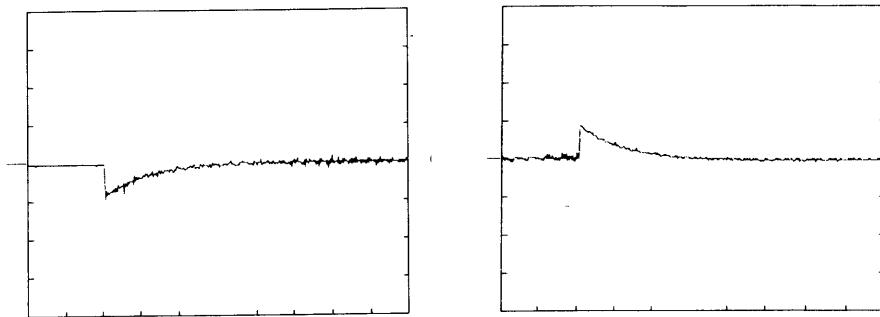
Input Volt. 200 V

Cycle 1000 mS



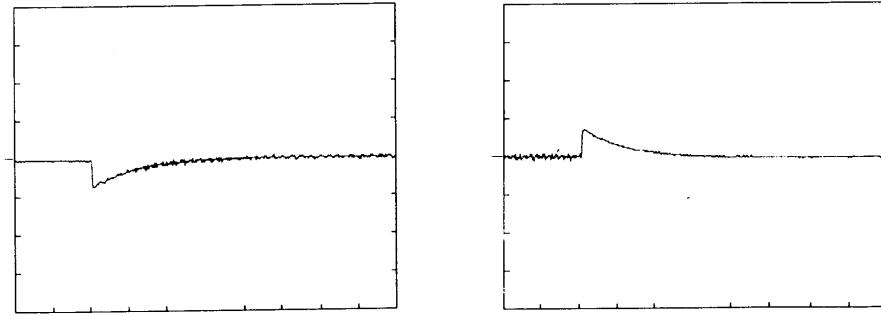
Load 0% ↔

Load 100 %



Load 0% ↔

Load 50 %



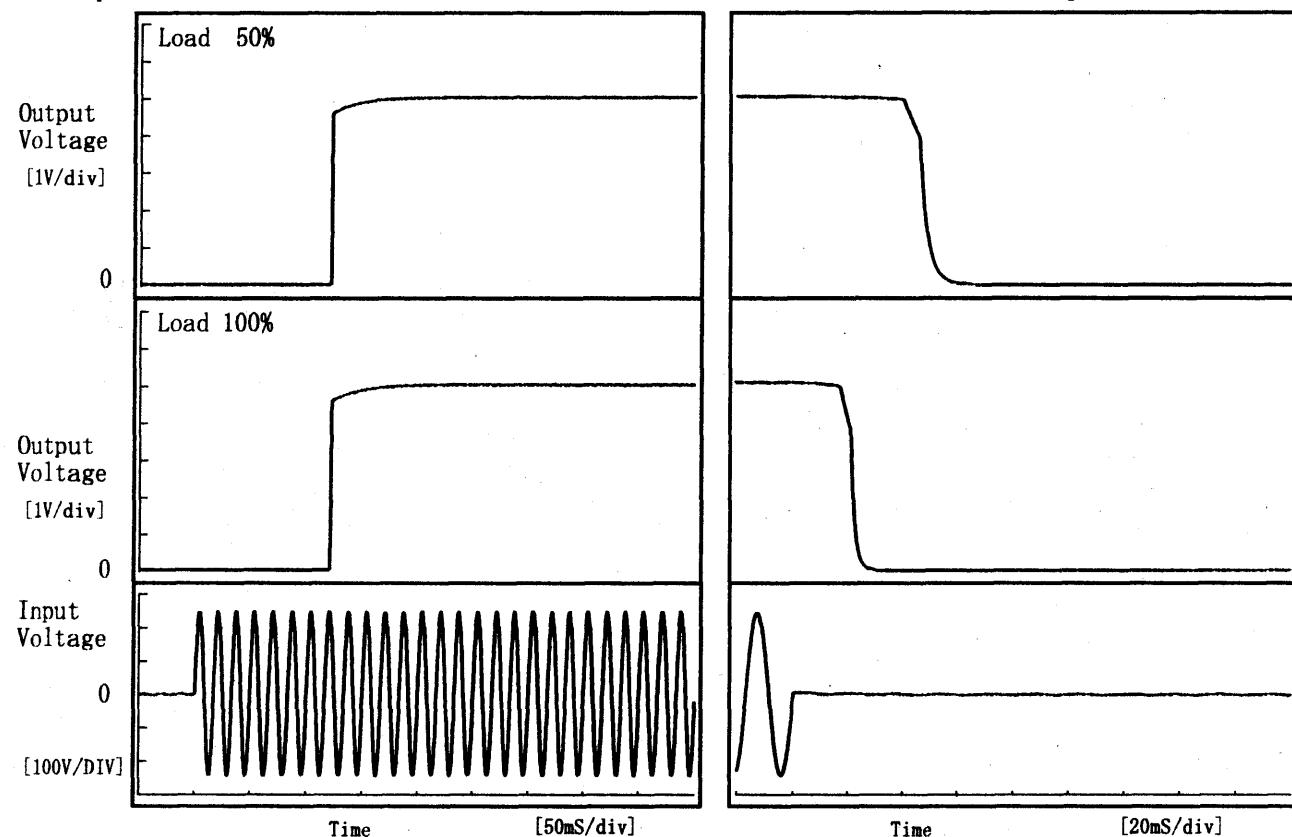
100 mV/div

10 mS/div

COSEL

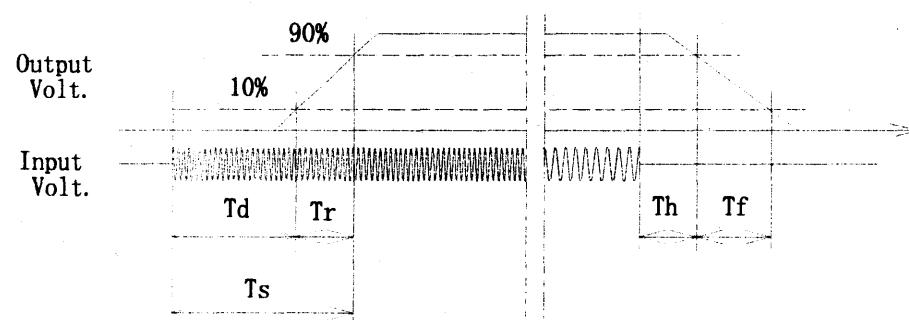
Model	LDA100W-5	Temperature	25°C
Item	Rise and Fall Time 立上り、立下り時間	Testing Circuitry	Figure A
Object	+5.0V 20A		

1. Graph



2. Values

Load	Time	T _d	T _r	T _s	T _h	T _f	[mS]
50 %		121.0	1.3	122.3	42.6	9.6	
100 %		121.0	1.5	122.5	19.0	5.4	

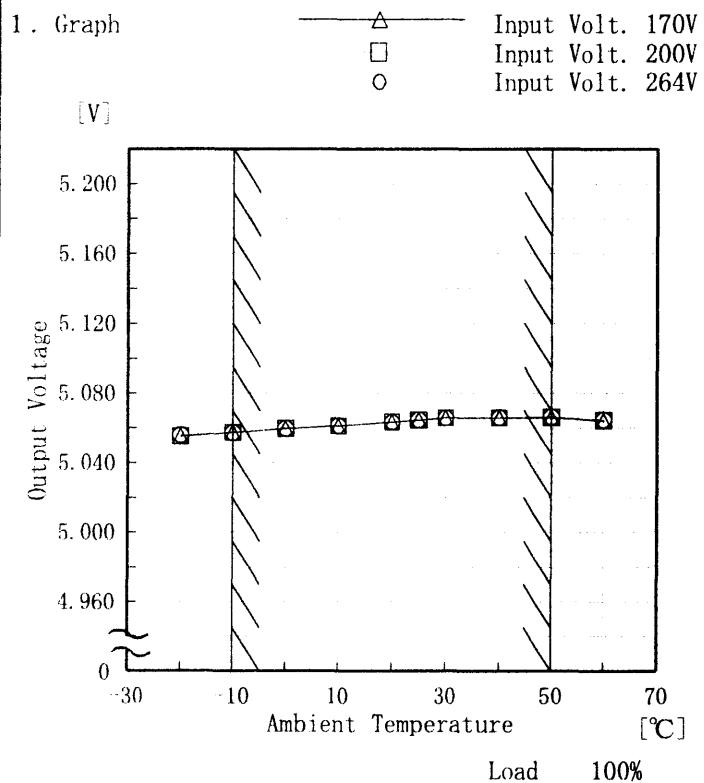


COSSEL

Model LDA100W-5

Item Ambient Temperature Drift
周囲温度変動

Object +5.0V 20A



Testing Circuitry Figure A

2. Values

Temperature [°C]	Output Voltage [V]		
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
-20	5.055	5.055	5.056
-10	5.057	5.057	5.057
0	5.059	5.060	5.060
10	5.061	5.061	5.062
20	5.063	5.064	5.063
25	5.064	5.065	5.065
30	5.066	5.066	5.066
40	5.066	5.066	5.066
50	5.066	5.066	5.066
60	5.064	5.065	5.065
—	—	—	—

Note: Slanted line shows the range of the rated ambient temperature.

(注)斜線は定格周囲温度範囲を示す。

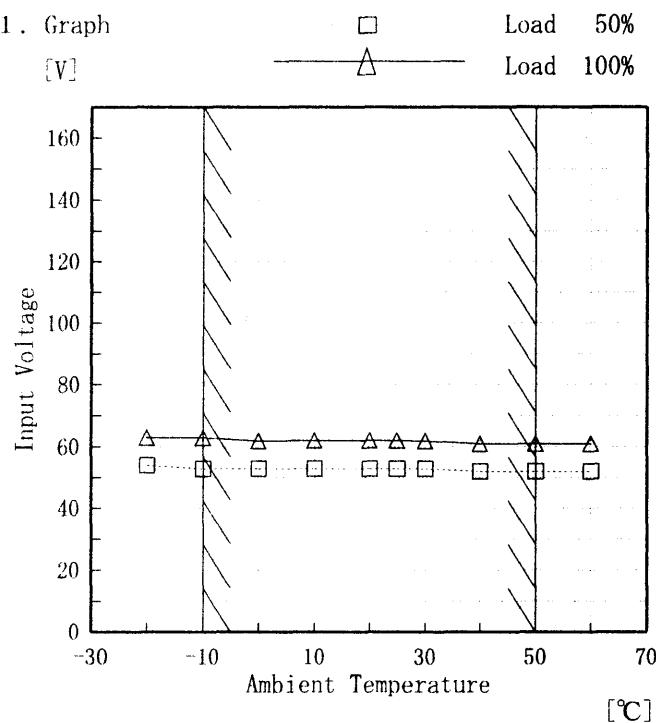
COSSEL

Model LDA100W-5

Item Minimum Input Voltage for Regulated Output Voltage
最低レギュレーション電圧

Object +5.0V20A

1. Graph



Note: Slanted line shows the range of the rated ambient temperature.

(注) 斜線は定格周囲温度範囲を示す。

Testing Circuitry Figure A

2. Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-20	54	63
-10	53	63
0	53	62
10	53	62
20	53	62
25	53	62
30	53	62
40	52	61
50	52	61
60	52	61
—	—	—

COSSEL

Model	LDA100W-5																																							
Item	Ripple Voltage (by Ambient Temp.) リップル電圧 (周囲温度特性)	Testing Circuitry Figure A																																						
Object	+5.0V 20A																																							
1. Graph																																								
<p style="text-align: center;">□ Load 50% —△— Load 100%</p>		2. Values																																						
<table border="1"> <thead> <tr> <th rowspan="2">Ambient Temp. [°C]</th> <th>Load 50%</th> <th>Load 100%</th> </tr> <tr> <th>Ripple Output Volt. [mV]</th> <th>Ripple Output Volt. [mV]</th> </tr> </thead> <tbody> <tr><td>-20</td><td>60</td><td>80</td></tr> <tr><td>-10</td><td>45</td><td>60</td></tr> <tr><td>0</td><td>40</td><td>55</td></tr> <tr><td>10</td><td>40</td><td>50</td></tr> <tr><td>20</td><td>30</td><td>40</td></tr> <tr><td>25</td><td>30</td><td>40</td></tr> <tr><td>30</td><td>30</td><td>40</td></tr> <tr><td>40</td><td>30</td><td>40</td></tr> <tr><td>50</td><td>25</td><td>35</td></tr> <tr><td>60</td><td>25</td><td>35</td></tr> <tr><td>—</td><td>—</td><td>—</td></tr> </tbody> </table>			Ambient Temp. [°C]	Load 50%	Load 100%	Ripple Output Volt. [mV]	Ripple Output Volt. [mV]	-20	60	80	-10	45	60	0	40	55	10	40	50	20	30	40	25	30	40	30	30	40	40	30	40	50	25	35	60	25	35	—	—	—
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50	25	35																																						
60	25	35																																						
—	—	—																																						

Input Volt. 200 V

Note: Slanted line shows the range of the rated ambient temperature.

(注)斜線は定格周囲温度範囲を示す。

COSEL

Model	LDA100W-5	Temperature Testing Circuitry Figure A	25°C																						
Item	Time Lapse Drift 経時ドリフト																								
Object	+5.0V 20A																								
1. Graph		2. Values																							
<p>[V]</p> <p>Output Voltage [V]</p> <p>Time [H]</p> <p>Input Volt. 200V Load 100%</p>		<table border="1"> <thead> <tr> <th>Time since start [H]</th> <th>Output Voltage [V]</th> </tr> </thead> <tbody> <tr><td>0.0</td><td>5.063</td></tr> <tr><td>0.5</td><td>5.063</td></tr> <tr><td>1.0</td><td>5.063</td></tr> <tr><td>2.0</td><td>5.063</td></tr> <tr><td>3.0</td><td>5.063</td></tr> <tr><td>4.0</td><td>5.063</td></tr> <tr><td>5.0</td><td>5.063</td></tr> <tr><td>6.0</td><td>5.063</td></tr> <tr><td>7.0</td><td>5.063</td></tr> <tr><td>8.0</td><td>5.063</td></tr> </tbody> </table>		Time since start [H]	Output Voltage [V]	0.0	5.063	0.5	5.063	1.0	5.063	2.0	5.063	3.0	5.063	4.0	5.063	5.0	5.063	6.0	5.063	7.0	5.063	8.0	5.063
Time since start [H]	Output Voltage [V]																								
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4.0	5.063																								
5.0	5.063																								
6.0	5.063																								
7.0	5.063																								
8.0	5.063																								

COSEL

Model	LDA100W-5
Item	Output Voltage Accuracy 定電圧精度
Object	+5.0V 20A

Testing Circuitry Figure A

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 : -10~50 °C

Input Voltage : 170~264 V

Load Current : 0~20 A

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

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

定電圧精度

周囲温度、入力電圧、負荷電流を下記仕様内で、任意に変動させたときの出力電圧の変動をいう。

周囲温度 -10~50 °C

入力電圧 170~264 V

負荷電流 0~20 A

* 定電圧精度(変動値) = ±(出力電圧の最高値-出力電圧の最低値) / 2

$$* \text{ 定電圧精度(変動率)} = \frac{\text{変動値}}{\text{定格出力電圧}} \times 100$$

Item	Temperature [°C]	Input Voltage [V]	Output Current [A]	Output Voltage [V]	Output Voltage Accuracy [mV]	Output Voltage Accuracy(Ration) [%]
Maximum Voltage	50	264	0	5.066		
Minimum Voltage	-10	170	20	5.058	±5	±0.1



Model	LDA100W-5		
Item	Condensation 結露特性	Testing Circuitry	Figure A
Object	+5.0V 20A		

1. Condensation test

Testing procedure is as follows.

- ① Keeping and cooling the unit in a tank at -10°C for an hour with the input off.
- ② Taking it out of the tank and dewing itself in a room where the temperature is 25°C and the humidity is 40%RH.
- ③ Testing electrical characteristics of the unit to confirm there be no fault.

1. 結露特性試験

入力を切った状態で、恒温槽で-10℃に冷却しておき、約1時間後に恒温槽から取り出し、室温25℃、湿度40%RHの状態におき結露させ、その電気的特性の測定を行い、異常のないことを確認する。

2. Values

Item	Data	Testing Conditions
Output Voltage [V]	5.066	Input Volt.: 200V, Load Current:20A
Line Regulation [mV]	2	Input Volt.: 170~264V, Load Current:20A
Load Regulation [mV]	3	Input Volt.: 200V, Load Current:0~20A



Model	LDA100W-5	Temperature Testing Circuitry	25°C Figure B
Item	Leakage Current 漏洩電流		
Object	<hr/>		

1. Results

Standards	Leakage Current [mA]		
	Input Volt. 85 [V]	Input Volt. 100 [V]	Input Volt. 132 [V]
(A) DENTORI	—	—	—
(B) IEC60950	—	—	—

2. Condition

Leakage current value is concluded after measuring both phases of AC input and by choosing the larger one.

交流入力の両相について測定し、その大きい方を漏洩電流測定値とする。

Standards	Leakage Current [mA]		
	Input Volt. 170 [V]	Input Volt. 230 [V]	Input Volt. 264 [V]
(B) IEC60950	0.41	0.55	0.65



Model	LDA100W-5	Temperature Testing Circuitry	25°C Figure C
Item	Line Noise Tolerance 入力雑音耐量		
Object	+5.0V 20A		

1. Results

Pulse Width [nS]	MODE	No protection failure should occur 保護回路の誤動作がない	DC-like Regulation of Output Voltage 出力電圧の直流的変動
50	COMMON	OK	no fluctuation
	NORMAL	OK	no fluctuation
1000	COMMON	OK	no fluctuation
	NORMAL	OK	no fluctuation

2. Conditions

Input Voltage : 200 V
 Pulse Voltage : 2000 V
 Pulse Cycle : 10 mS
 Pulse Input Duration : 1 min. or more
 Load : 100 %

COSEL

Model	LDA100W-5	Temperature Testing Circuitry Figure D
Item	Conducted Emission 雜音端子電壓	
Object	_____	

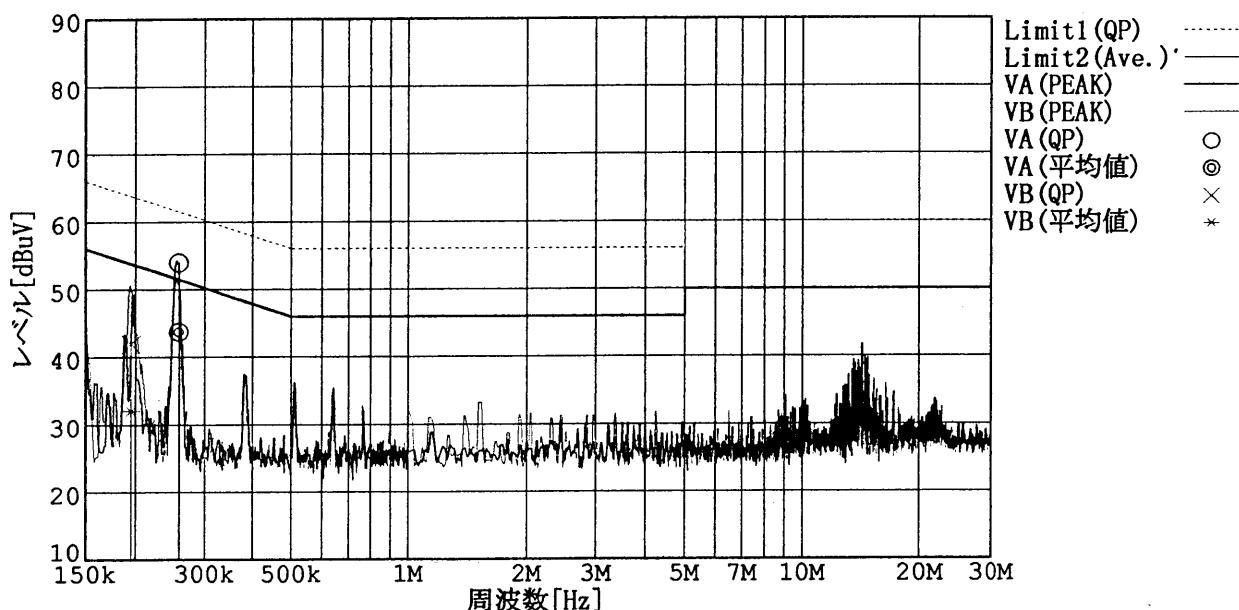
1. Graph

Remarks

Input Volt. 230 V

Load 100 %

規格 1 : [EN 55022] Class B(QP)
 規格 2 : [EN 55022] Class B(平均値)



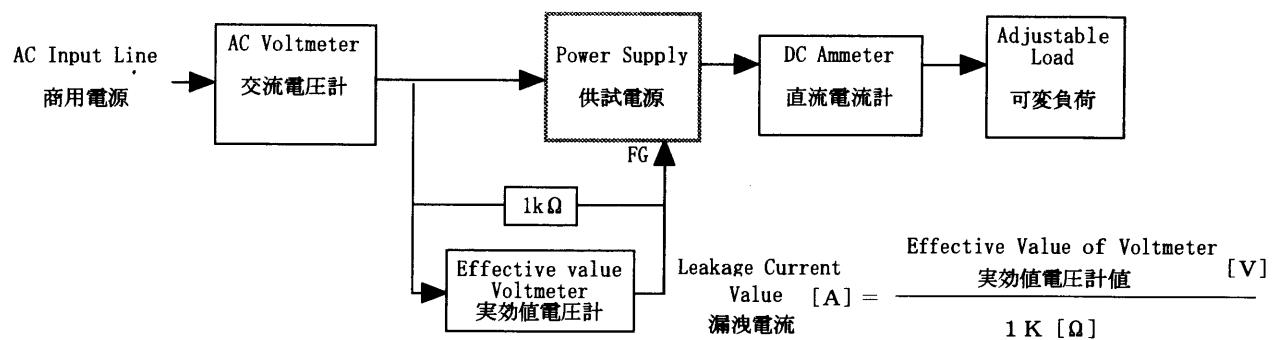
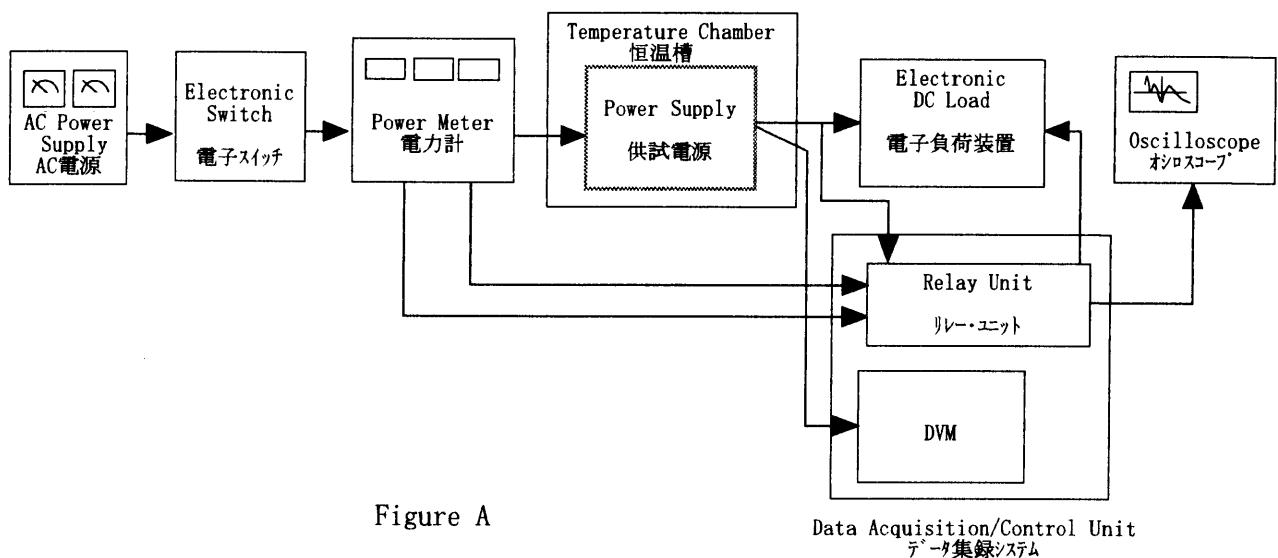


Figure B (DENTORI)

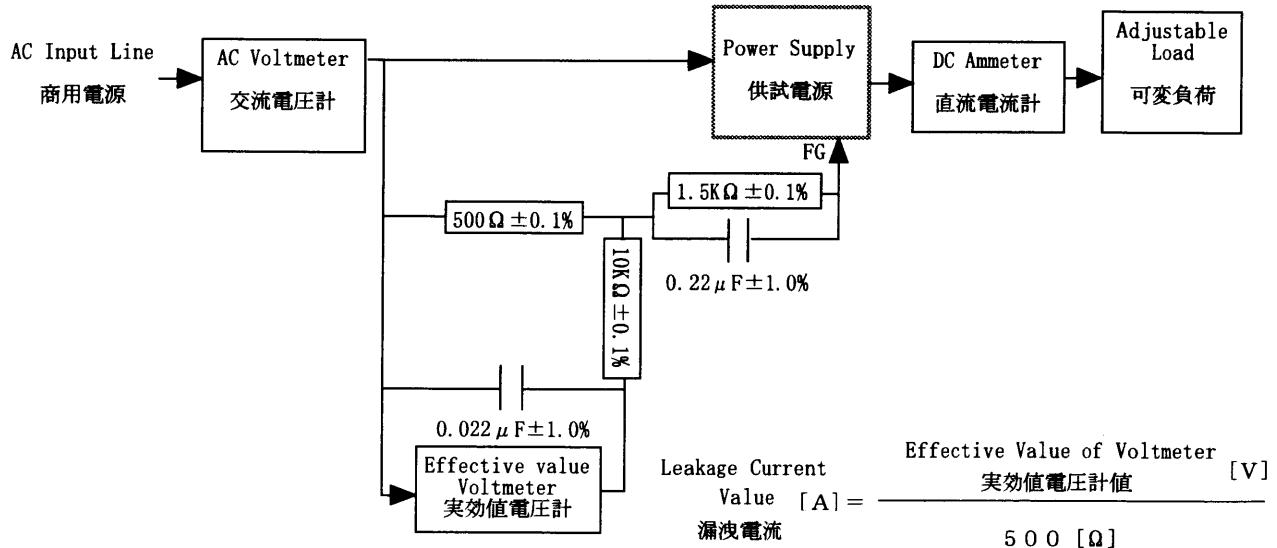


Figure B (IEC 60950)

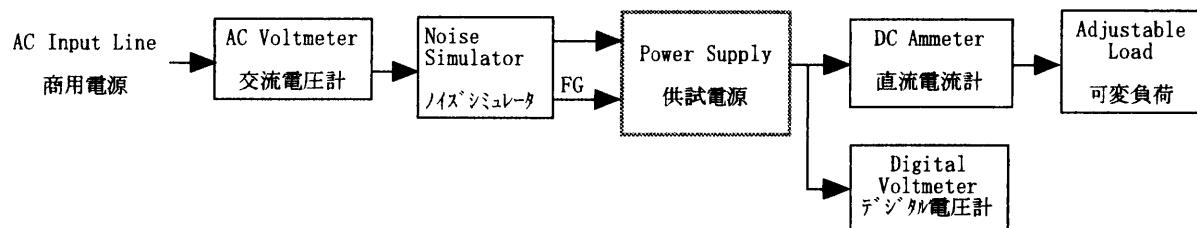


Figure C

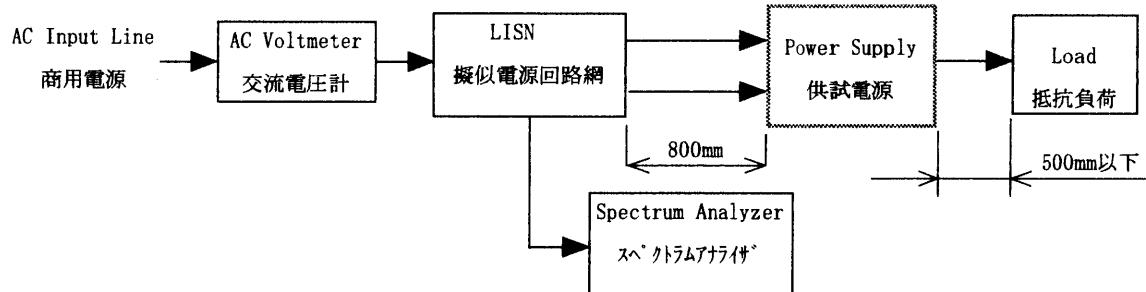


Figure D

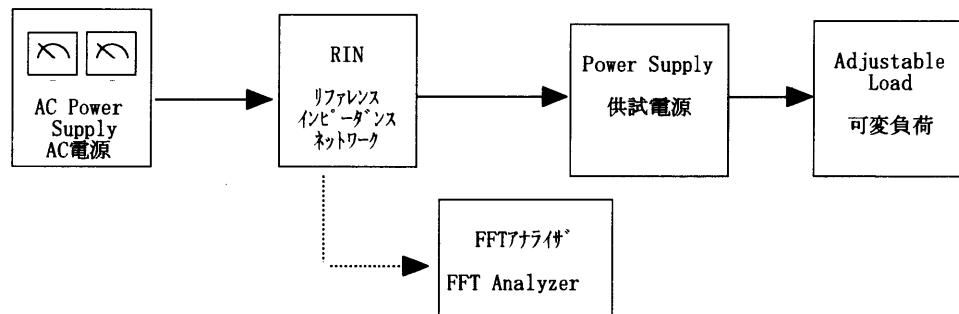


Figure E