



TEST DATA OF LDA100W-24 (200V INPUT)

Regulated DC Power Supply

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コーセル株式会社
COSEL CO., LTD.

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Model		LDA100W-24	Temperature		25℃																																
Item		Line Regulation 静的入力変動	Testing Circuitry		Figure A																																
Object		+24.0V4.3A																																			
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<div><div>□ Load 50%</div><div>—△— Load 100%</div></div> <div><p>[V]</p><p>Output Voltage</p><p>Input Voltage [V]</p><p>Note: Slanted line shows the range of the rated input voltage.</p><p>(注)斜線は定格入力電圧範囲を示す。</p></div>			<table><tr><th rowspan="2">Input Voltage [V]</th><th colspan="2">Output Voltage [V]</th></tr><tr><th>Load 50%</th><th>Load 100%</th></tr><tr><td>150</td><td>24.200</td><td>24.199</td></tr><tr><td>160</td><td>24.200</td><td>24.199</td></tr><tr><td>170</td><td>24.200</td><td>24.199</td></tr><tr><td>180</td><td>24.200</td><td>24.199</td></tr><tr><td>200</td><td>24.200</td><td>24.200</td></tr><tr><td>220</td><td>24.200</td><td>24.200</td></tr><tr><td>240</td><td>24.200</td><td>24.200</td></tr><tr><td>264</td><td>24.200</td><td>24.200</td></tr><tr><td>280</td><td>24.200</td><td>24.200</td></tr></table>			Input Voltage [V]	Output Voltage [V]		Load 50%	Load 100%	150	24.200	24.199	160	24.200	24.199	170	24.200	24.199	180	24.200	24.199	200	24.200	24.200	220	24.200	24.200	240	24.200	24.200	264	24.200	24.200	280	24.200	24.200
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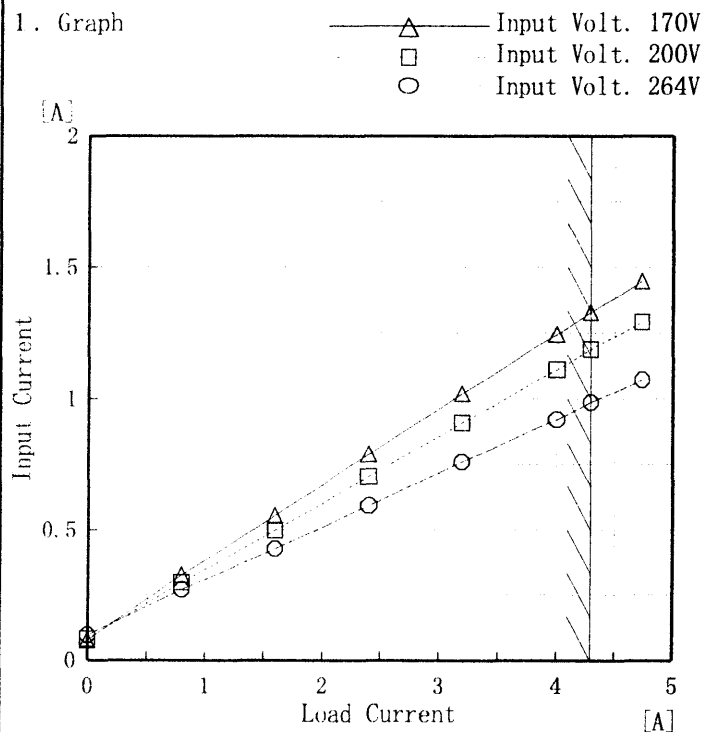
Model LDA100W-24

Item Input Current (by Load Current)
入力電流 (負荷特性)

Output

Temperature 25°C
Testing Circuitry Figure A

1. Graph



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。

2. Values

Load Current [A]	Input Current [A]		
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
0.00	0.075	0.081	0.096
0.80	0.327	0.298	0.270
1.60	0.555	0.498	0.428
2.40	0.789	0.704	0.592
3.20	1.020	0.909	0.759
4.00	1.243	1.110	0.923
4.30	1.329	1.187	0.987
4.73	1.446	1.292	1.074
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

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<div><div>—△—</div><div>□</div><div>○</div></div> <div><div>Input Volt. 170V</div><div>Input Volt. 200V</div><div>Input Volt. 264V</div></div> <div><div>Input Power [W]</div><div>200</div><div>150</div><div>100</div><div>50</div><div>0</div></div> <div><div>Load Current [A]</div><div>0</div><div>1</div><div>2</div><div>3</div><div>4</div><div>5</div></div> <div></div>				<table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Input Power [W]</th></tr><tr><th>Input Volt. 170 [V]</th><th>Input Volt. 200 [V]</th><th>Input Volt. 264 [V]</th></tr><tr><td>0.00</td><td>3.80</td><td>4.90</td><td>6.70</td></tr><tr><td>0.80</td><td>27.20</td><td>27.80</td><td>30.80</td></tr><tr><td>1.60</td><td>48.40</td><td>49.10</td><td>52.10</td></tr><tr><td>2.40</td><td>69.60</td><td>70.30</td><td>73.20</td></tr><tr><td>3.20</td><td>91.40</td><td>92.00</td><td>94.70</td></tr><tr><td>4.00</td><td>113.10</td><td>113.70</td><td>116.10</td></tr><tr><td>4.30</td><td>121.40</td><td>121.90</td><td>124.30</td></tr><tr><td>4.73</td><td>133.30</td><td>133.50</td><td>135.90</td></tr><tr><td>—</td><td>—</td><td>—</td><td>—</td></tr><tr><td>—</td><td>—</td><td>—</td><td>—</td></tr><tr><td>—</td><td>—</td><td>—</td><td>—</td></tr><tr><td>—</td><td>—</td><td>—</td><td>—</td></tr></table>		Load Current [A]	Input Power [W]			Input Volt. 170 [V]	Input Volt. 200 [V]	Input Volt. 264 [V]	0.00	3.80	4.90	6.70	0.80	27.20	27.80	30.80	1.60	48.40	49.10	52.10	2.40	69.60	70.30	73.20	3.20	91.40	92.00	94.70	4.00	113.10	113.70	116.10	4.30	121.40	121.90	124.30	4.73	133.30	133.50	135.90	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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Model		LDA100W-24	
Item		Efficiency 効率	
Object			
1. Graph		2. Values	

□ Load 50%

△ Load 100%

Efficiency [%]

88

84

80

76

72

68

64

0

0

160

180

200

220

240

260

280

300

Input Voltage [V]

88

84

80

76

72

68

64

0

0

160

180

200

220

240

260

280

300

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。

Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
150	83.0	86.5
160	83.3	86.4
170	83.0	86.3
180	82.3	86.0
200	81.2	85.9
220	80.2	85.4
240	79.0	84.7
264	77.5	84.3
280	76.3	83.9

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Model		LDA100W-24		Temperature		25℃																																																								
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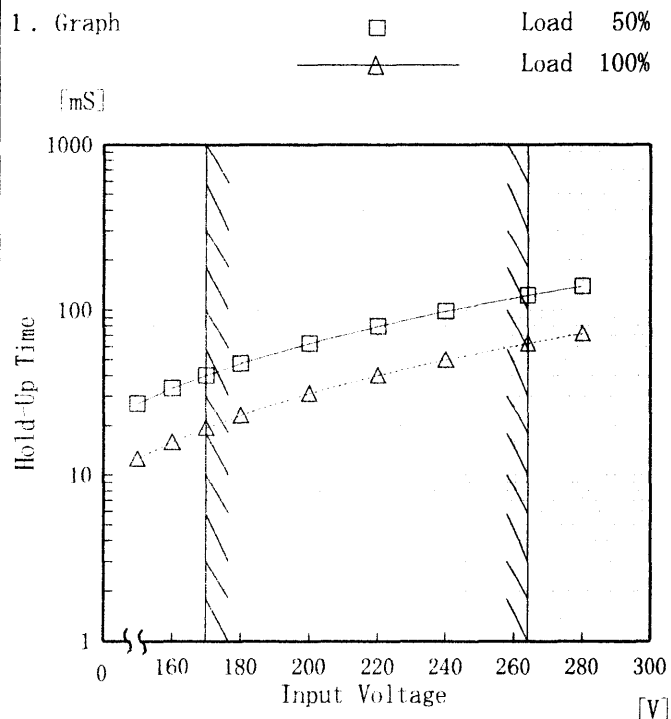
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Model LDA100W-24

Item Hold-Up Time 出力保持時間

Object $\pm 24.0\text{V} 4.3\text{A}$ Temperature 25°C
Testing Circuitry Figure A

1. Graph



This duration covers from Shut-off of input voltage to the moment when output voltage descends to the rated range of voltage accuracy.

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

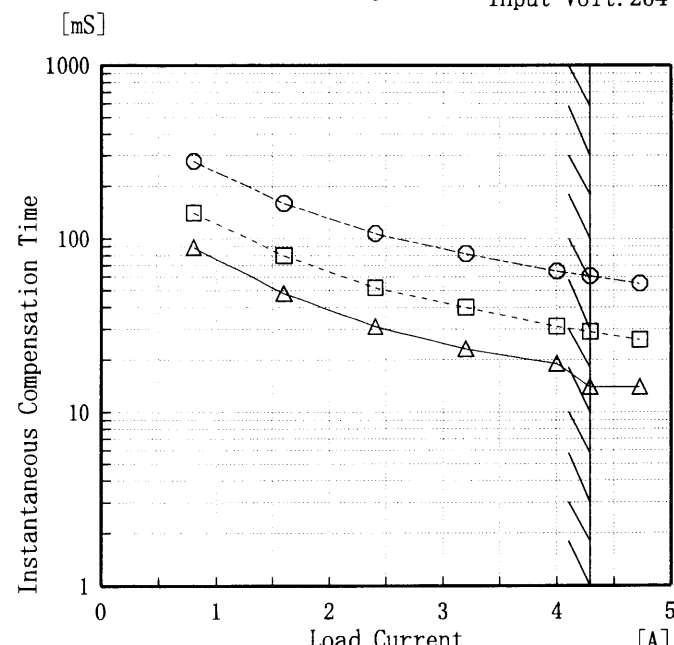
出力保持時間とは、入力電圧断から出力電圧が、定電圧精度の規格範囲を保持しているところまでの時間。

(注)斜線は定格入力電圧範囲を示す。

2. Values

Input Voltage [V]	Hold-Up Time [mS]	
	Load 50%	Load 100%
150	27	13
160	34	16
170	40	19
180	47	23
200	63	31
220	80	40
240	98	50
264	122	63
280	140	72

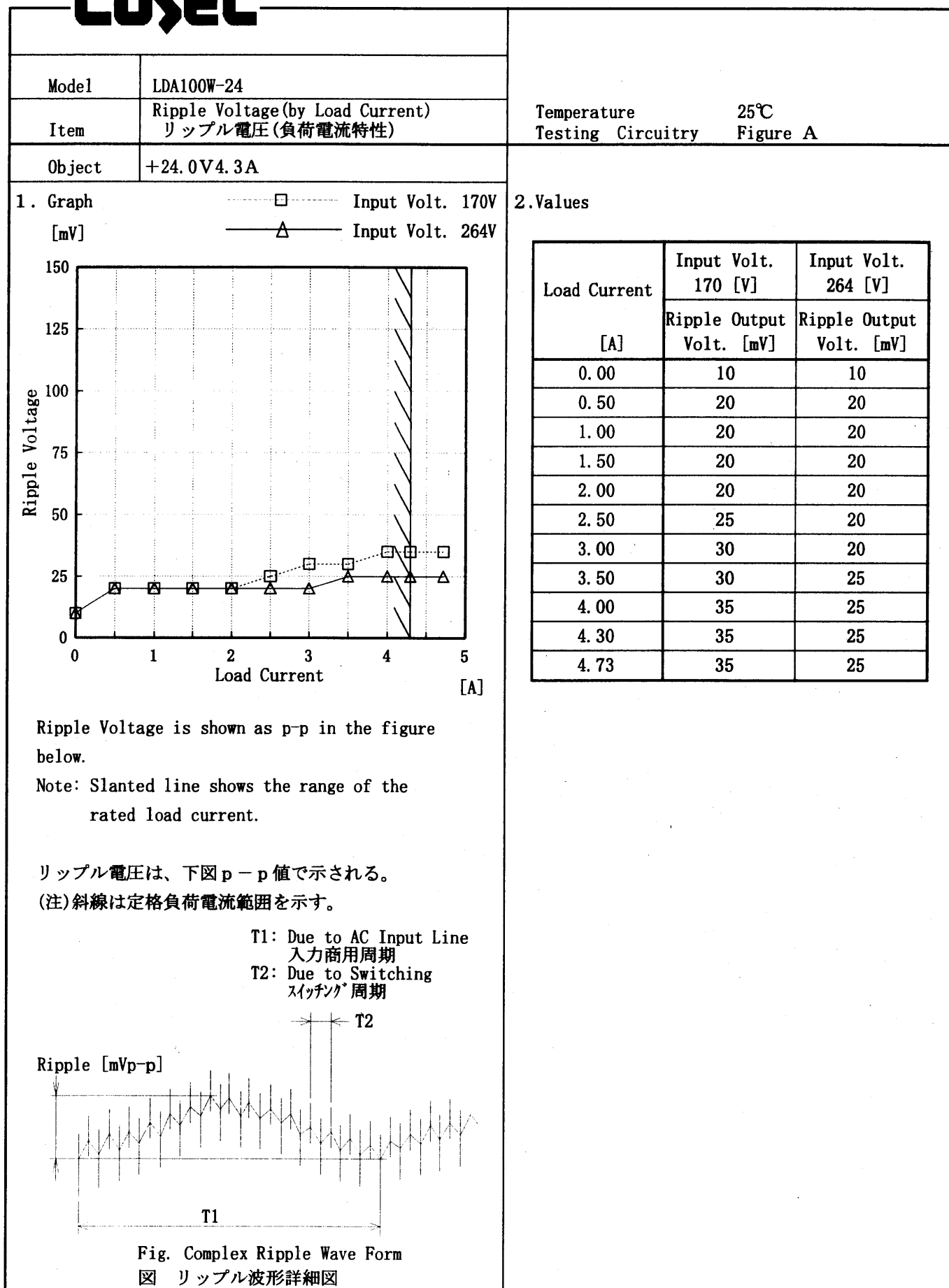
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Item		Instantaneous Interruption Compensation 瞬時停電保障		Testing Circuitry		Figure A																																																				
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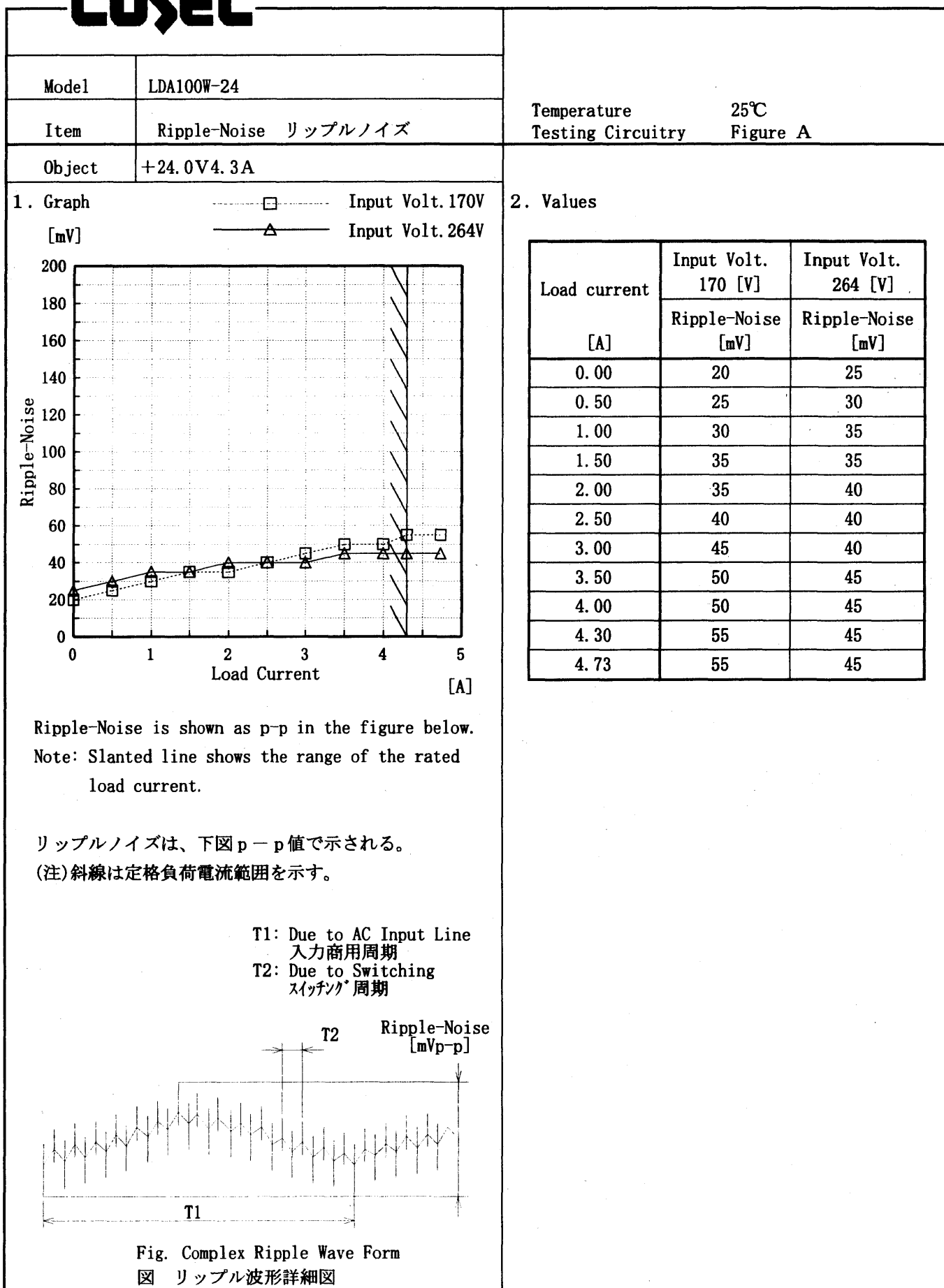
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1. Graph				2. Values	
<div><div><div>△</div><div>Input Volt.170 V</div></div><div><div>□</div><div>Input Volt.200 V</div></div><div><div>○</div><div>Input Volt.264 V</div></div></div> <div><div><div><div>Output Voltage</div><div>[V]</div></div><div><div>24.34</div><div>24.30</div><div>24.26</div><div>24.22</div><div>24.18</div><div>24.14</div><div>24.10</div><div>0</div></div><div><div>0</div><div>1</div><div>2</div><div>3</div><div>4</div><div>5</div></div><div><div>Load Current</div><div>[A]</div></div></div><div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><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Model		LDA100W-24		Temperature 25℃																																																								
Item		Overcurrent Protection 過電流保護		Testing Circuitry Figure A																																																								
Object		+24.0V4.3A																																																										
1. Graph				2. Values																																																								
<div><div>[V]</div><div><div>----- Input Volt. 170 V</div><div>_____ Input Volt. 200 V</div><div>———— Input Volt. 264 V</div></div><div><div>40.0</div><div>30.0</div><div>20.0</div><div>10.0</div><div>0.0</div><div>Output Voltage</div></div><div><div>0</div><div>2</div><div>4</div><div>6</div><div>8</div><div>Load Current</div><div>[A]</div></div></div> <div>Note: Slanted line shows the range of the rated load current.</div> <div>(注)斜線は定格負荷電流範囲を示す。</div>				<table><tr><th rowspan="2">Output Voltage [V]</th><th colspan="3">Load Current [A]</th></tr><tr><th>Input Volt. 170[V]</th><th>Input Volt. 200[V]</th><th>Input Volt. 264[V]</th></tr><tr><td>24.00</td><td>5.68</td><td>5.66</td><td>5.72</td></tr><tr><td>22.80</td><td>5.69</td><td>5.69</td><td>5.76</td></tr><tr><td>21.60</td><td>5.71</td><td>5.71</td><td>5.79</td></tr><tr><td>19.20</td><td>5.77</td><td>5.78</td><td>5.83</td></tr><tr><td>16.80</td><td>5.84</td><td>5.83</td><td>5.94</td></tr><tr><td>14.40</td><td>5.92</td><td>5.94</td><td>5.98</td></tr><tr><td>12.00</td><td>5.99</td><td>5.99</td><td>6.04</td></tr><tr><td>9.60</td><td>5.97</td><td>6.04</td><td>6.11</td></tr><tr><td>7.20</td><td>6.02</td><td>6.06</td><td>6.18</td></tr><tr><td>4.80</td><td>6.02</td><td>6.15</td><td>6.26</td></tr><tr><td>2.40</td><td>6.03</td><td>5.97</td><td>6.03</td></tr><tr><td>0.00</td><td>5.66</td><td>5.62</td><td>5.65</td></tr></table>		Output Voltage [V]	Load Current [A]			Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]	24.00	5.68	5.66	5.72	22.80	5.69	5.69	5.76	21.60	5.71	5.71	5.79	19.20	5.77	5.78	5.83	16.80	5.84	5.83	5.94	14.40	5.92	5.94	5.98	12.00	5.99	5.99	6.04	9.60	5.97	6.04	6.11	7.20	6.02	6.06	6.18	4.80	6.02	6.15	6.26	2.40	6.03	5.97	6.03	0.00	5.66	5.62	5.65
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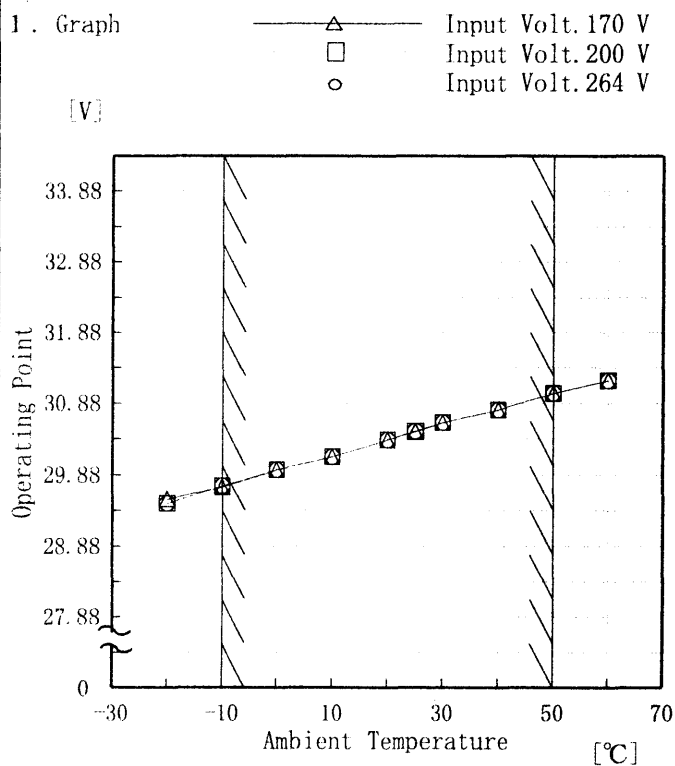
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Model LDA100W-24
Item Overvoltage Protection
過電圧保護

Object +24.0V4.3A

Testing Circuitry Figure A

1. Graph



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

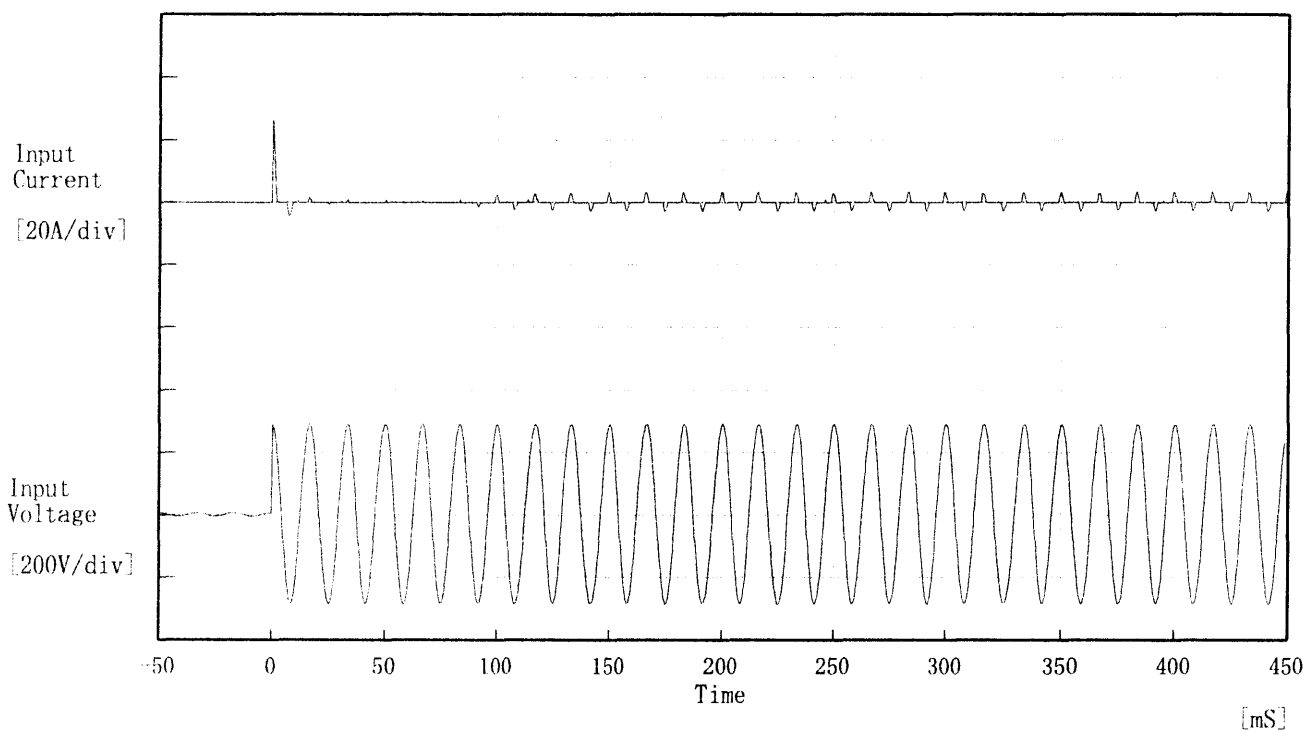
(注) 斜線は定格周囲温度範囲を示す。

2. Values

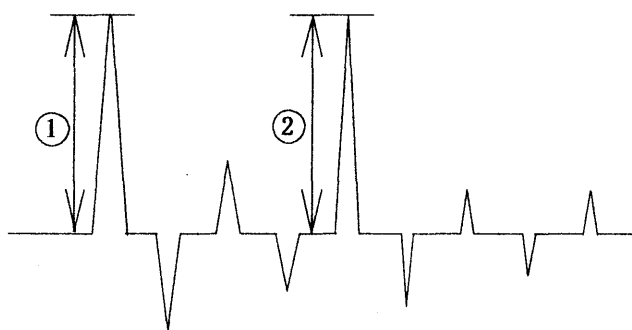
Ambient Temperature [°C]	Operating Point [V]		
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
-20	29.54	29.48	29.48
-10	29.71	29.72	29.72
0	29.95	29.95	29.95
10	30.13	30.13	30.13
20	30.37	30.37	30.37
25	30.48	30.49	30.49
30	30.61	30.61	30.61
40	30.79	30.79	30.79
50	31.02	31.02	31.02
60	31.20	31.20	31.20
—	—	—	—

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Model	LDA100W-24	Temperature 25℃ Testing Circuitry Figure A
Item	Inrush Current 突入電流	
Object	_____	



Input Voltage 200 V
Frequency 60 Hz
Load 100 %
Inrush Current
① 26.39 [A]
② 3.19 [A]



COSEL

Model	LDA100W-24	Temperature 25°C Testing Circuitry Figure A
Item	Dynamic Load Response 動的負荷変動	
Object	+24.0V 4.3A	

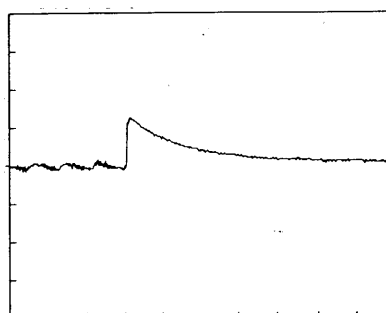
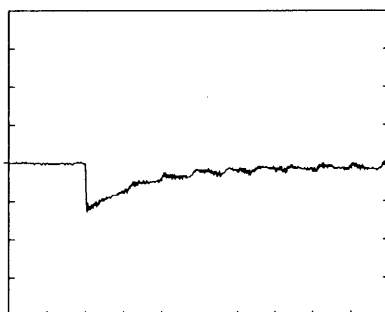
Input Volt. 200 V

Cycle 1000 mS

Load Current

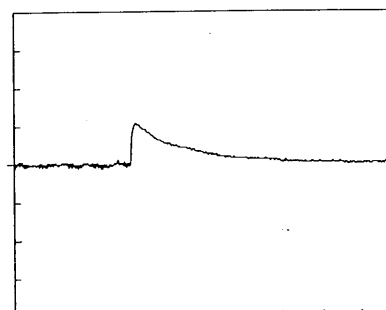
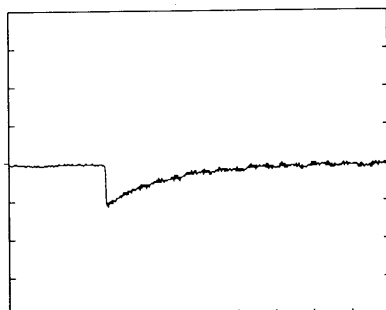
Load 0% ↔

Load 100 %



Load 0% ↔

Load 50 %



100 mV/div

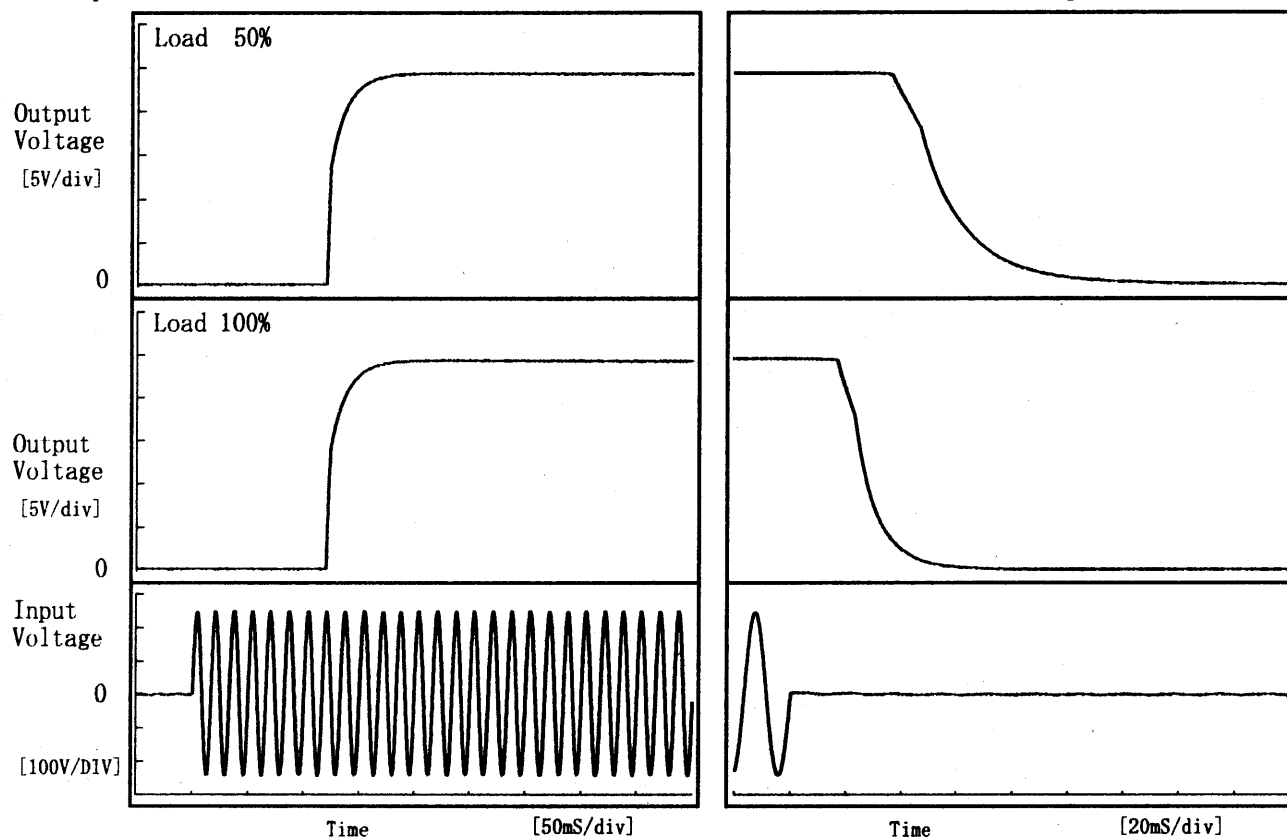
10 mS/div

COSEL

Model	LDA100W-24	Temperature	25°C
Item	Rise and Fall Time 立上り、立下り時間	Testing Circuitry	Figure A
Object	+24.0V 4.3A		

1. Graph

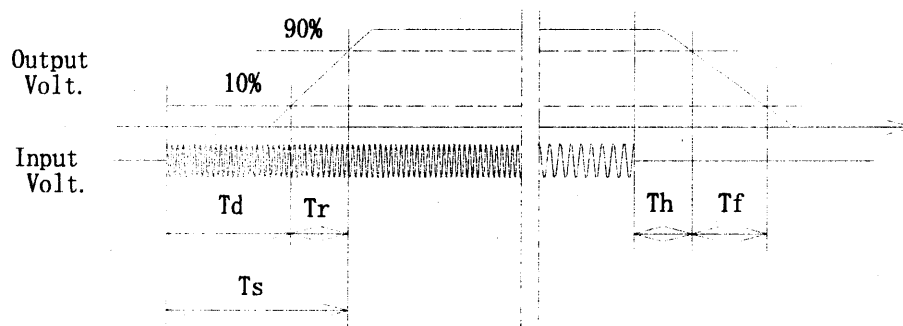
Input Volt. 170 V



2. Values

[mS]

Load \ Time	T _d	T _r	T _s	T _h	T _f
50 %	120.3	23.8	144.0	40.5	40.1
100 %	120.3	23.8	144.0	19.6	20.5



COSEL

Model		LDA100W-24
Item		Ambient Temperature Drift 周囲温度変動
Object		+24.0V 4.3A

1. Graph

△

Input Volt. 170V

□

Input Volt. 200V

○

Input Volt. 264V

Output Voltage [V]

</

COSEL

Model

LDA100W-24

Item

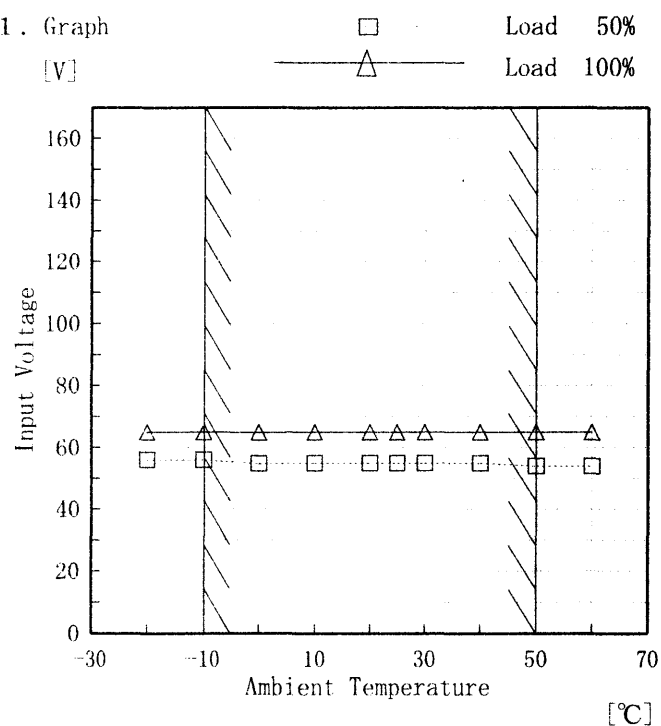
Minimum Input Voltage for Regulated Output Voltage
最低レギュレーション電圧

Object

+24.0V 4.3A

Testing Circuitry Figure A

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。

2. Values

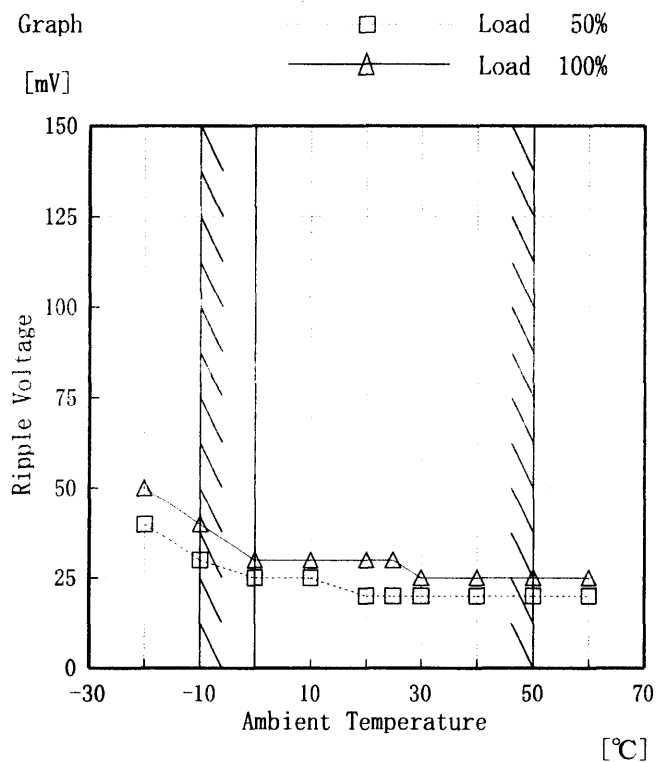
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-20	56	65
-10	56	65
0	55	65
10	55	65
20	55	65
25	55	65
30	55	65
40	55	65
50	54	65
60	54	65
—	—	—

COSEL

Model	LDA100W-24
Item	Ripple Voltage (by Ambient Temp.) リップル電圧 (周囲温度特性)
Object	+24.0V4.3A

Testing Circuitry Figure A

1. Graph



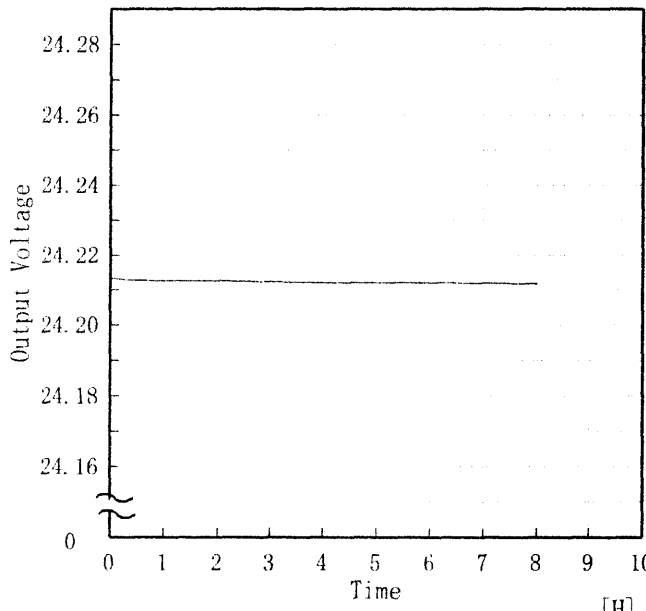
Note: Slanted line shows the range of the rated ambient temperature.

(注)斜線は定格周囲温度範囲を示す。

2. Values

Ambient Temp. [°C]	Load 50%	Load 100%
	Ripple Output Volt. [mV]	Ripple Output Volt. [mV]
-20	40	50
-10	30	40
0	25	30
10	25	30
20	20	30
25	20	30
30	20	25
40	20	25
50	20	25
60	20	25
—	—	—

COSEL

COSEL																									
Model	LDA100W-24	Temperature	25℃																						
Item	Time Lapse Drift 経時ドリフト	Testing Circuitry	Figure A																						
Object	+24.0V4.3A																								
1. Graph		2.Values																							
<div><p>[V]</p><p>Output Voltage</p><p>Time [H]</p><p>Input Volt. 200V</p><p>Load 100%</p></div>		<table><tr><th>Time since start [H]</th><th>Output Voltage [V]</th></tr><tr><td>0.0</td><td>24.214</td></tr><tr><td>0.5</td><td>24.213</td></tr><tr><td>1.0</td><td>24.213</td></tr><tr><td>2.0</td><td>24.213</td></tr><tr><td>3.0</td><td>24.212</td></tr><tr><td>4.0</td><td>24.212</td></tr><tr><td>5.0</td><td>24.212</td></tr><tr><td>6.0</td><td>24.212</td></tr><tr><td>7.0</td><td>24.212</td></tr><tr><td>8.0</td><td>24.212</td></tr></table>		Time since start [H]	Output Voltage [V]	0.0	24.214	0.5	24.213	1.0	24.213	2.0	24.213	3.0	24.212	4.0	24.212	5.0	24.212	6.0	24.212	7.0	24.212	8.0	24.212
Time since start [H]	Output Voltage [V]																								
0.0	24.214																								
0.5	24.213																								
1.0	24.213																								
2.0	24.213																								
3.0	24.212																								
4.0	24.212																								
5.0	24.212																								
6.0	24.212																								
7.0	24.212																								
8.0	24.212																								

COSEL

Model		LDA100W-24	Testing Circuitry Figure A
Item		Output Voltage Accuracy 定電圧精度	
Object		+24.0V 4.3A	

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 : 0~4.3 A

* Output Voltage Accuracy = $\pm (\text{Maximum of Output Voltage} - \text{Minimum of Output Voltage}) / 2$

* 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 : 0~4.3 A

* 定電圧精度(変動値) = $\pm (\text{出力電圧の最高値} - \text{出力電圧の最低値}) / 2$

* 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	-10	264	0.0	24.240	±38	±0.2
Minimum Voltage	50	264	4.3	24.164		

COSEL

Model	LDA100W-24	Temperature	25℃
Item	Leakage Current 漏洩電流	Testing Circuitry	Figure B
Object	_____		

1. Results

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

Standards	Leakage Current [mA]		
	Input Volt. 170 [V]	Input Volt. 230 [V]	Input Volt. 264 [V]
(B) IEC60950	0.41	0.54	0.64

2. Condition

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

交流入力 of 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。

COSEL

Model	LDA100W-24	Temperature 25°C Testing Circuitry Figure C	
Item	Line Noise Tolerance 入力雑音耐量		
Object	+24.0V 4.3A		

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-24	Temperature 25°C Testing Circuitry Figure D
Item	Conducted Emission 雑音端子電圧	
Object		

1. Graph

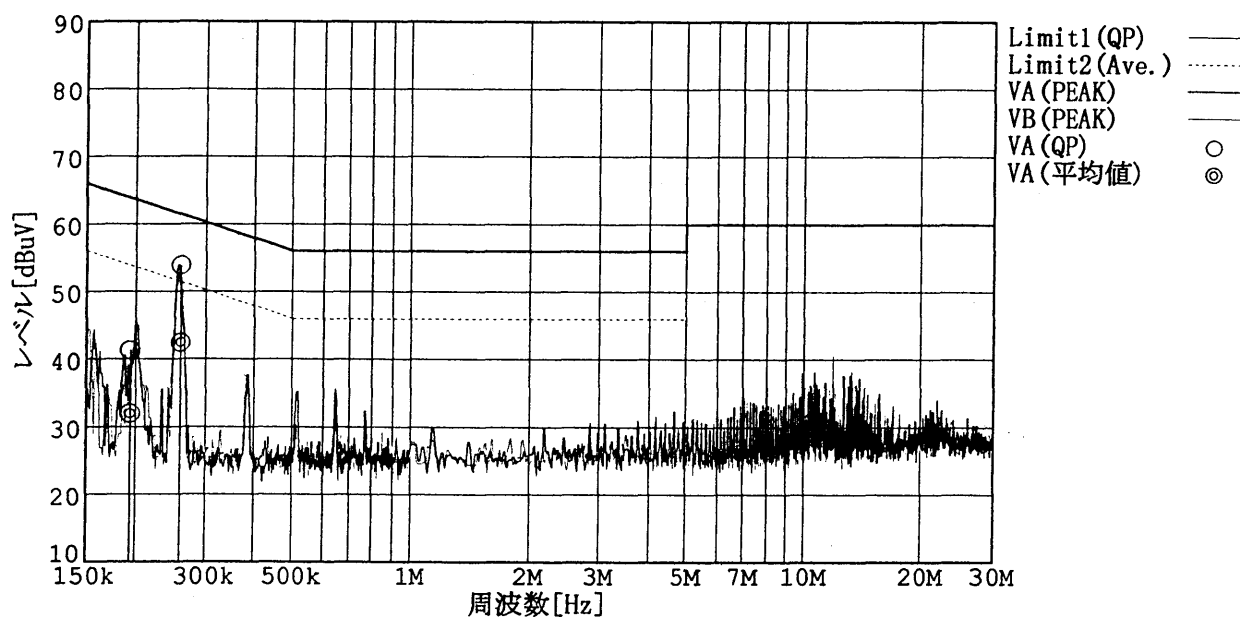
Remarks

Input Volt. 230 V

Load 100 %

規格 1 : [EN 55022] Class B (QP)

規格 2 : [EN 55022] Class B (平均値)



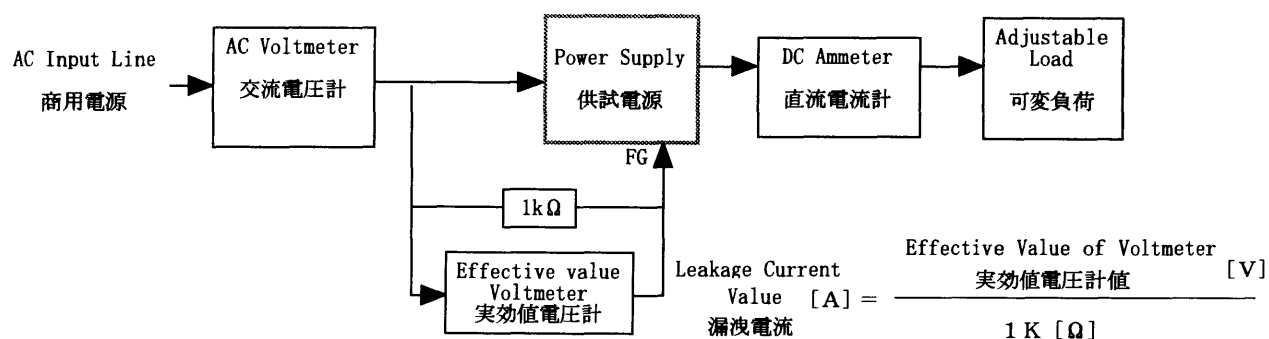
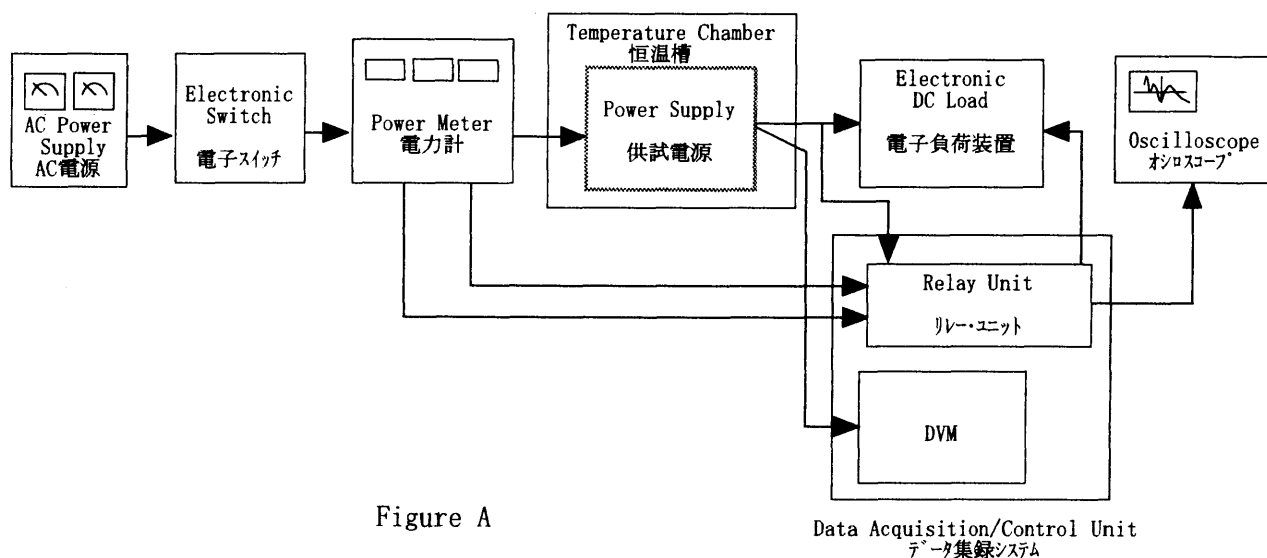


Figure B (DENTORI)

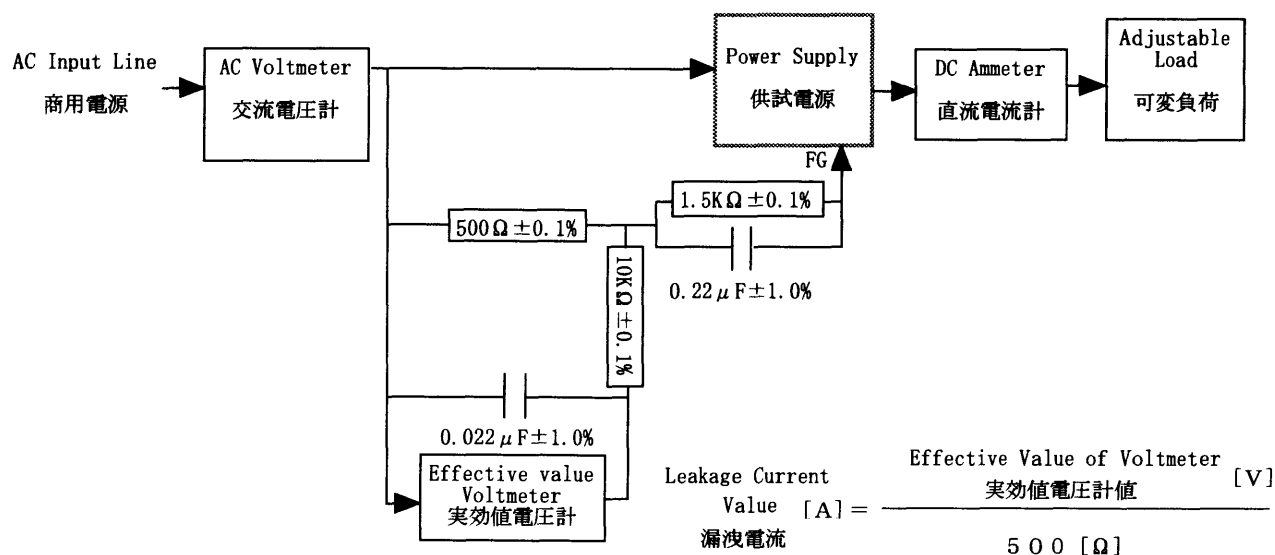


Figure B (IEC 60950)

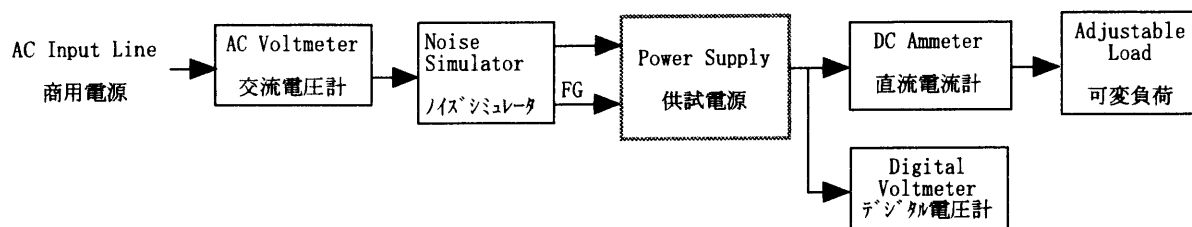


Figure C

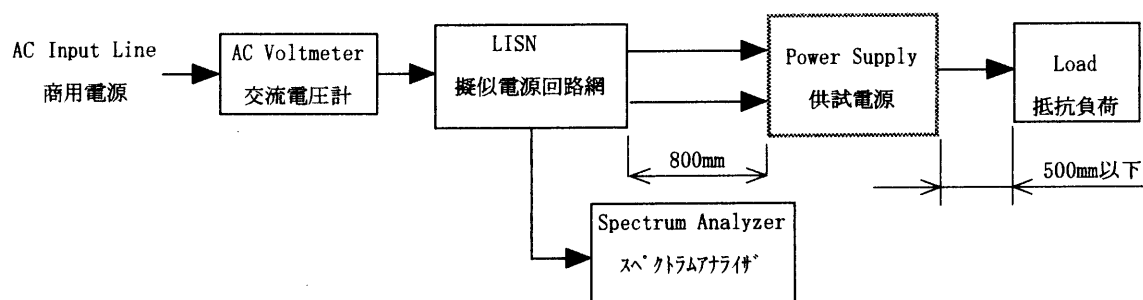


Figure D

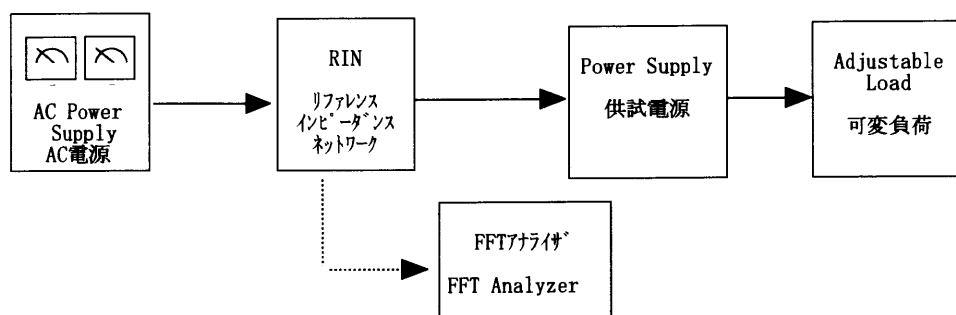


Figure E