



TEST DATA OF YS1012A
(100V INPUT)

Regulated DC Power Supply

Date : Apr. 9. 1999

Approved by : *H. Takahira*
Design Manager

Prepared by : *Y. Shimizu*
Design Engineer

コーセル株式会社

COSEL CO., LTD.

CONTENTS

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. Power Factor (by Input Voltage)	6
力率 (入力電圧特性)	
7. Power Factor (by Load Current)	7
力率 (負荷特性)	
8. Hold-Up Time	8
出力保持時間	
9. Instantaneous Interruption Compensation	9
瞬時停電保障	
10. Load Regulation	10
静的負荷変動	
11. Ripple Voltage (by Load Current)	11
リップル電圧 (負荷特性)	
12. Ripple-Noise	12
リップルノイズ	
13. Overcurrent Protection	13
過電流保護	
14. Inrush Current	14
突入電流	
15. Dynamic Load Responce	15
動的負荷変動	
16. Rise and Fall Time	16
立上り、立下がり時間	
17. Ambient Temperature Drift	17
周囲温度変動	
18. Minimum Input Voltage for Regulated Output Voltage	18
最低レギュレーション電圧	
19. Ripple Voltage (by Ambient Temperature)	19
リップル電圧 (周囲温度特性)	
20. Time Lapse Drift	20
経時ドリフト	
21. Output Voltage Accuracy	21
定電圧精度	
22. Oscillator Frequency	22
発振周波数	
23. Condensation	23
結露特性	
24. Leakage Current	24
漏洩電流	
25. Line Noise Tolerance	25
入力雑音耐量	
26. Conducted Emission	26
雑音端子電圧	
27. Figure of Testing Circuitry	27
測定回路図	

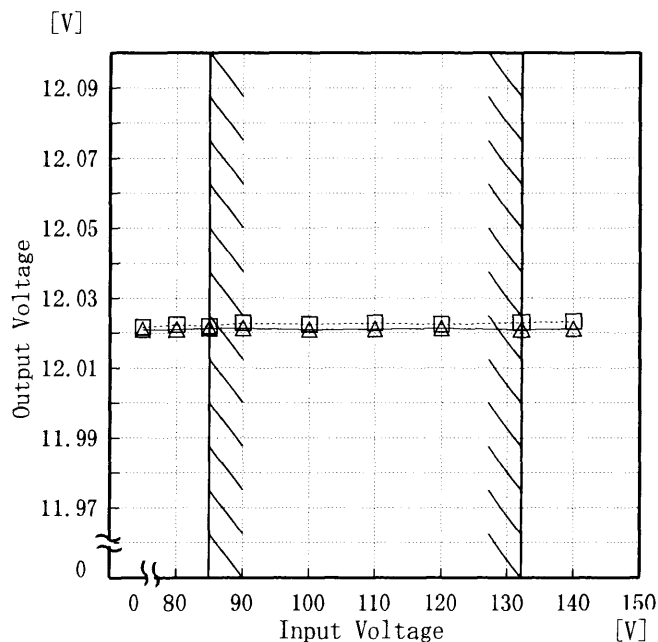
(Final Page 28)



Model	YS1012A
Item	Line Regulation 静的入力変動
Object	+12.0V0.90A

Temperature 25°C
Testing Circuitry Figure A

1. Graph
 -----□----- Load 50%
 -----△----- Load 100%



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。

2. Values

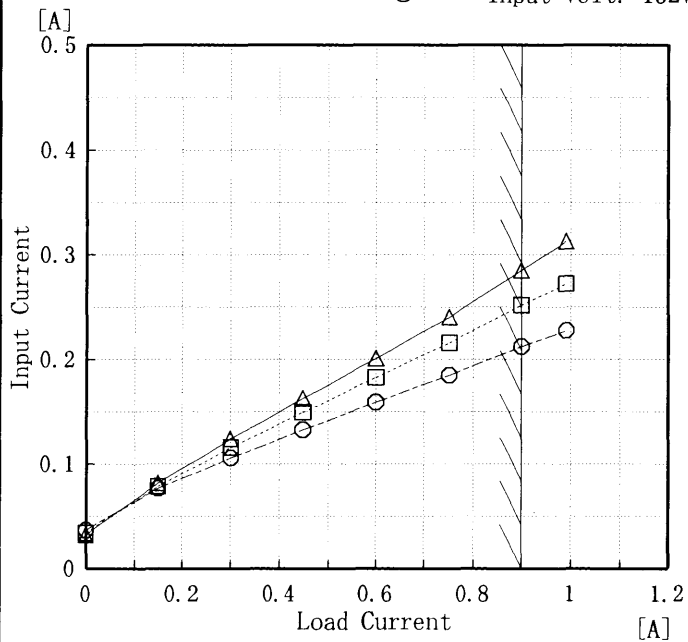
Input Voltage [V]	Load 50%	Load 100%
	Output Volt. [V]	Output Volt. [V]
75	12.022	12.021
80	12.022	12.021
85	12.022	12.021
90	12.023	12.021
100	12.023	12.021
110	12.023	12.021
120	12.023	12.021
132	12.023	12.021
140	12.023	12.021



Model	YS1012A	Temperature	25°C
Item	Input Current (by Load Current) 入力電流 (負荷特性)	Testing Circuitry	Figure A
Output	—————		

1. Graph

- △— Input Volt. 85V
- - -□- - - Input Volt. 100V
- - -○- - - Input Volt. 132V



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. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0.00	0.032	0.034	0.037
0.15	0.082	0.078	0.077
0.30	0.124	0.116	0.106
0.45	0.163	0.150	0.133
0.60	0.201	0.183	0.159
0.75	0.240	0.216	0.185
0.90	0.285	0.252	0.212
0.99	0.313	0.272	0.228
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—



Model		YS1012A		Temperature		25°C																																																								
Item		Input Power (by Load Current) 入力電力 (負荷特性)		Testing Circuitry		Figure A																																																								
Output		_____																																																												
1. Graph				2. Values																																																										
<p> △ — Input Volt. 85V □ — Input Volt. 100V ○ — Input Volt. 132V </p> <p> 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。 </p>				<table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th colspan="3">Input Power [W]</th> </tr> <tr> <th>Input Volt. 85[V]</th> <th>Input Volt. 100[V]</th> <th>Input Volt. 132[V]</th> </tr> </thead> <tbody> <tr><td>0.00</td><td>1.10</td><td>1.32</td><td>1.80</td></tr> <tr><td>0.15</td><td>3.31</td><td>3.57</td><td>4.30</td></tr> <tr><td>0.30</td><td>5.43</td><td>5.67</td><td>6.34</td></tr> <tr><td>0.45</td><td>7.52</td><td>7.73</td><td>8.33</td></tr> <tr><td>0.60</td><td>9.69</td><td>9.83</td><td>10.35</td></tr> <tr><td>0.75</td><td>12.00</td><td>12.00</td><td>12.41</td></tr> <tr><td>0.90</td><td>14.70</td><td>14.43</td><td>14.65</td></tr> <tr><td>0.99</td><td>16.40</td><td>15.82</td><td>15.93</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> </tbody> </table>				Load Current [A]	Input Power [W]			Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]	0.00	1.10	1.32	1.80	0.15	3.31	3.57	4.30	0.30	5.43	5.67	6.34	0.45	7.52	7.73	8.33	0.60	9.69	9.83	10.35	0.75	12.00	12.00	12.41	0.90	14.70	14.43	14.65	0.99	16.40	15.82	15.93	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Load Current [A]	Input Power [W]																																																													
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]																																																											
0.00	1.10	1.32	1.80																																																											
0.15	3.31	3.57	4.30																																																											
0.30	5.43	5.67	6.34																																																											
0.45	7.52	7.73	8.33																																																											
0.60	9.69	9.83	10.35																																																											
0.75	12.00	12.00	12.41																																																											
0.90	14.70	14.43	14.65																																																											
0.99	16.40	15.82	15.93																																																											
—	—	—	—																																																											
—	—	—	—																																																											
—	—	—	—																																																											
—	—	—	—																																																											



Model		YS1012A																																	
Item		Efficiency (by Input Voltage) 効率 (入力電圧特性)																																	
Object		Temperature 25°C Testing Circuitry Figure A																																	
1. Graph		2. Values																																	
<p>Efficiency [%]</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>		<table border="1"> <thead> <tr> <th rowspan="2">Input Voltage [V]</th> <th>Load 50%</th> <th>Load 100%</th> </tr> <tr> <th>Efficiency [%]</th> <th>Efficiency [%]</th> </tr> </thead> <tbody> <tr><td>75</td><td>73.1</td><td>69.9</td></tr> <tr><td>80</td><td>72.7</td><td>72.2</td></tr> <tr><td>85</td><td>72.1</td><td>74.1</td></tr> <tr><td>90</td><td>71.6</td><td>75.0</td></tr> <tr><td>100</td><td>70.1</td><td>75.6</td></tr> <tr><td>110</td><td>68.6</td><td>75.6</td></tr> <tr><td>120</td><td>67.1</td><td>75.2</td></tr> <tr><td>132</td><td>65.1</td><td>74.5</td></tr> <tr><td>140</td><td>63.8</td><td>73.8</td></tr> </tbody> </table>		Input Voltage [V]	Load 50%	Load 100%	Efficiency [%]	Efficiency [%]	75	73.1	69.9	80	72.7	72.2	85	72.1	74.1	90	71.6	75.0	100	70.1	75.6	110	68.6	75.6	120	67.1	75.2	132	65.1	74.5	140	63.8	73.8
Input Voltage [V]	Load 50%	Load 100%																																	
	Efficiency [%]	Efficiency [%]																																	
75	73.1	69.9																																	
80	72.7	72.2																																	
85	72.1	74.1																																	
90	71.6	75.0																																	
100	70.1	75.6																																	
110	68.6	75.6																																	
120	67.1	75.2																																	
132	65.1	74.5																																	
140	63.8	73.8																																	



Model		YS1012A		Temperature		25°C																																																								
Item		Efficiency (by Load Current) 効率 (負荷電流特性)		Testing Circuitry		Figure A																																																								
Output		—————																																																												
1. Graph				2. Values																																																										
<p>—△— Input Volt. 85V - - □ - - Input Volt. 100V - - ○ - - Input Volt. 132V</p> <p>Efficiency [%]</p> <p>Load Current [A]</p>				<table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th colspan="3">Efficiency [%]</th> </tr> <tr> <th>Input Volt. 85[V]</th> <th>Input Volt. 100[V]</th> <th>Input Volt. 132[V]</th> </tr> </thead> <tbody> <tr><td>0.15</td><td>53.8</td><td>50.0</td><td>41.5</td></tr> <tr><td>0.30</td><td>67.0</td><td>64.1</td><td>57.3</td></tr> <tr><td>0.45</td><td>72.0</td><td>70.2</td><td>65.1</td></tr> <tr><td>0.60</td><td>74.5</td><td>73.4</td><td>69.7</td></tr> <tr><td>0.75</td><td>75.1</td><td>75.1</td><td>72.6</td></tr> <tr><td>0.90</td><td>74.2</td><td>75.6</td><td>74.4</td></tr> <tr><td>0.99</td><td>72.6</td><td>75.6</td><td>75.0</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> <tr><td>—</td><td>—</td><td>—</td><td>—</td></tr> </tbody> </table>				Load Current [A]	Efficiency [%]			Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]	0.15	53.8	50.0	41.5	0.30	67.0	64.1	57.3	0.45	72.0	70.2	65.1	0.60	74.5	73.4	69.7	0.75	75.1	75.1	72.6	0.90	74.2	75.6	74.4	0.99	72.6	75.6	75.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Load Current [A]	Efficiency [%]																																																													
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]																																																											
0.15	53.8	50.0	41.5																																																											
0.30	67.0	64.1	57.3																																																											
0.45	72.0	70.2	65.1																																																											
0.60	74.5	73.4	69.7																																																											
0.75	75.1	75.1	72.6																																																											
0.90	74.2	75.6	74.4																																																											
0.99	72.6	75.6	75.0																																																											
—	—	—	—																																																											
—	—	—	—																																																											
—	—	—	—																																																											
—	—	—	—																																																											
—	—	—	—																																																											
<p>Note: Slanted line shows the range of the rated load current</p>																																																														
<p>(注) 斜線は定格負荷電流範囲を示す。</p>																																																														



Model		YS1012A		Temperature 25°C																																	
Item		Power Factor (by Input Voltage) 力率 (入力電圧特性)		Testing Circuitry Figure A																																	
Object																																					
1. Graph		-----□----- load 50% -----△----- load 100%		2. Values																																	
		<table border="1"> <thead> <tr> <th rowspan="2">Input Voltage [V]</th> <th>load 50%</th> <th>load 100%</th> </tr> <tr> <th>Power Factor</th> <th>Power Factor</th> </tr> </thead> <tbody> <tr><td>75</td><td>0.56</td><td>0.63</td></tr> <tr><td>80</td><td>0.55</td><td>0.62</td></tr> <tr><td>85</td><td>0.54</td><td>0.61</td></tr> <tr><td>90</td><td>0.53</td><td>0.59</td></tr> <tr><td>100</td><td>0.52</td><td>0.57</td></tr> <tr><td>110</td><td>0.50</td><td>0.56</td></tr> <tr><td>120</td><td>0.49</td><td>0.54</td></tr> <tr><td>132</td><td>0.47</td><td>0.52</td></tr> <tr><td>140</td><td>0.47</td><td>0.51</td></tr> </tbody> </table>				Input Voltage [V]	load 50%	load 100%	Power Factor	Power Factor	75	0.56	0.63	80	0.55	0.62	85	0.54	0.61	90	0.53	0.59	100	0.52	0.57	110	0.50	0.56	120	0.49	0.54	132	0.47	0.52	140	0.47	0.51
Input Voltage [V]	load 50%	load 100%																																			
	Power Factor	Power Factor																																			
75	0.56	0.63																																			
80	0.55	0.62																																			
85	0.54	0.61																																			
90	0.53	0.59																																			
100	0.52	0.57																																			
110	0.50	0.56																																			
120	0.49	0.54																																			
132	0.47	0.52																																			
140	0.47	0.51																																			
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。																																					



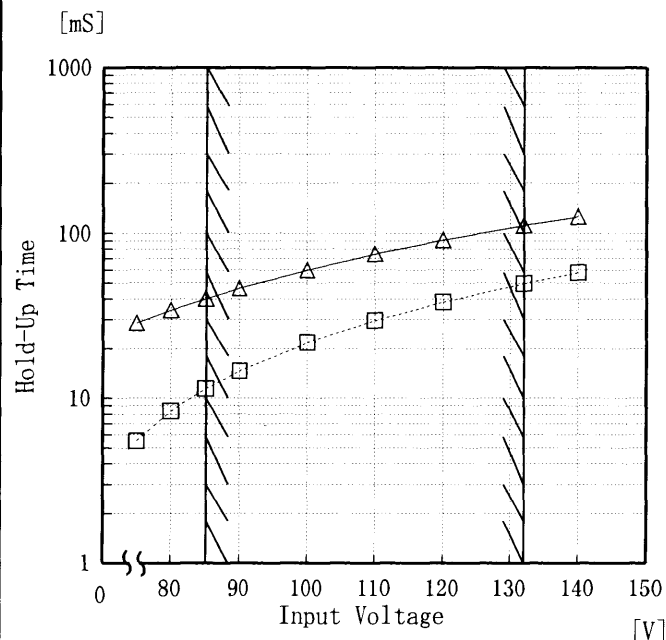
Model		YS1012A		Temperature 25°C																																																								
Item		Power Factor (by Load Current) 力率 (負荷電流特性)		Testing Circuitry Figure A																																																								
Output		—————																																																										
1. Graph			2. Values																																																									
			<table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th colspan="3">Power Factor</th> </tr> <tr> <th>Input Volt. 85[V]</th> <th>Input Volt. 100[V]</th> <th>Input Volt. 132[V]</th> </tr> </thead> <tbody> <tr><td>0.00</td><td>0.40</td><td>0.39</td><td>0.37</td></tr> <tr><td>0.15</td><td>0.47</td><td>0.45</td><td>0.43</td></tr> <tr><td>0.30</td><td>0.51</td><td>0.49</td><td>0.45</td></tr> <tr><td>0.45</td><td>0.54</td><td>0.52</td><td>0.47</td></tr> <tr><td>0.60</td><td>0.57</td><td>0.54</td><td>0.49</td></tr> <tr><td>0.75</td><td>0.59</td><td>0.56</td><td>0.51</td></tr> <tr><td>0.90</td><td>0.61</td><td>0.57</td><td>0.52</td></tr> <tr><td>0.99</td><td>0.62</td><td>0.58</td><td>0.53</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> </tbody> </table>			Load Current [A]	Power Factor			Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]	0.00	0.40	0.39	0.37	0.15	0.47	0.45	0.43	0.30	0.51	0.49	0.45	0.45	0.54	0.52	0.47	0.60	0.57	0.54	0.49	0.75	0.59	0.56	0.51	0.90	0.61	0.57	0.52	0.99	0.62	0.58	0.53	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Load Current [A]	Power Factor																																																											
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]																																																									
0.00	0.40	0.39	0.37																																																									
0.15	0.47	0.45	0.43																																																									
0.30	0.51	0.49	0.45																																																									
0.45	0.54	0.52	0.47																																																									
0.60	0.57	0.54	0.49																																																									
0.75	0.59	0.56	0.51																																																									
0.90	0.61	0.57	0.52																																																									
0.99	0.62	0.58	0.53																																																									
—	—	—	—																																																									
—	—	—	—																																																									
—	—	—	—																																																									
—	—	—	—																																																									
<p>Note: Slanted line shows the range of the rated load current</p> <p>(注) 斜線は定格負荷電流範囲を示す。</p>																																																												



Model	YS1012A
Item	Hold-Up Time 出力保持時間
Object	+12.0V0.90A

Temperature 25°C
Testing Circuitry Figure A

1. Graph —△— Load 50%
- -□- - Load 100%



2. Values

Input Voltage [V]	Load 50%	Load 100%
	Hold-Up Time [mS]	Hold-Up Time [mS]
75	29	6
80	34	8
85	40	11
90	46	15
100	60	22
110	75	30
120	91	38
132	111	50
140	126	58

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。



Model		YS1012A		Temperature		25°C																																																				
Item		Instantaneous Interruption Compensation 瞬時停電保障		Testing Circuitry		Figure A																																																				
Object		+12.0V0.90A																																																								
1. Graph				2. Values																																																						
<p> △ ——— Input Volt. 85 V □ ——— Input Volt. 100 V ○ ——— Input Volt. 132 V </p>				<table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th>Input Volt. 85[V]</th> <th>Input Volt. 100[V]</th> <th>Input Volt. 132[V]</th> </tr> <tr> <th colspan="3">Time [mS]</th> </tr> </thead> <tbody> <tr><td>0.00</td><td>—</td><td>—</td><td>—</td></tr> <tr><td>0.15</td><td>118</td><td>162</td><td>267</td></tr> <tr><td>0.30</td><td>61</td><td>88</td><td>157</td></tr> <tr><td>0.45</td><td>38</td><td>58</td><td>108</td></tr> <tr><td>0.60</td><td>25</td><td>38</td><td>78</td></tr> <tr><td>0.75</td><td>16</td><td>27</td><td>61</td></tr> <tr><td>0.90</td><td>10</td><td>17</td><td>46</td></tr> <tr><td>0.99</td><td>6</td><td>13</td><td>37</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> </tbody> </table>				Load Current [A]	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]	Time [mS]			0.00	—	—	—	0.15	118	162	267	0.30	61	88	157	0.45	38	58	108	0.60	25	38	78	0.75	16	27	61	0.90	10	17	46	0.99	6	13	37	—	—	—	—	—	—	—	—	—	—	—	—
Load Current [A]	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]																																																							
	Time [mS]																																																									
0.00	—	—	—																																																							
0.15	118	162	267																																																							
0.30	61	88	157																																																							
0.45	38	58	108																																																							
0.60	25	38	78																																																							
0.75	16	27	61																																																							
0.90	10	17	46																																																							
0.99	6	13	37																																																							
—	—	—	—																																																							
—	—	—	—																																																							
—	—	—	—																																																							
<p>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 load current.</p>																																																										
<p>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。 (注)斜線は定格負荷電流範囲を示す。</p>																																																										

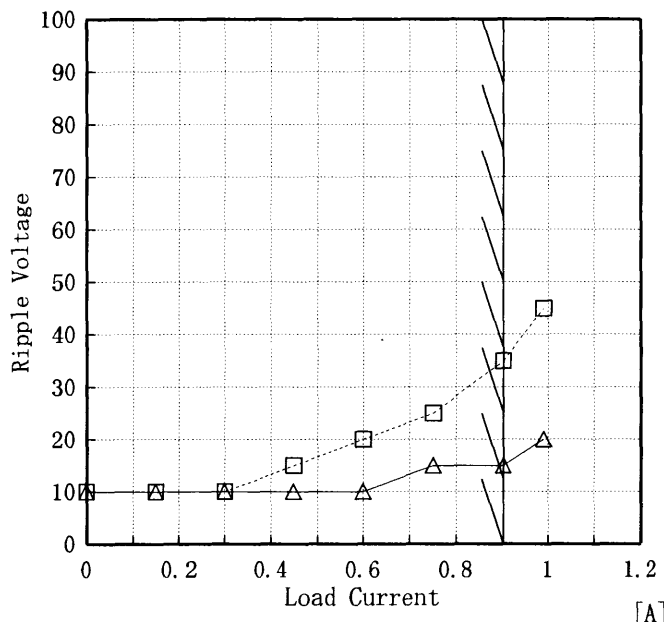


Model		YS1012A		Temperature		25°C																																																
Item		Load Regulation 静的負荷変動		Testing Circuitry		Figure A																																																
Object		+12.0V0.90A																																																				
<p>1. Graph</p> <p> Δ Input Volt. 85V \square Input Volt. 100V \circ Input Volt. 132V </p>				<p>2. Values</p> <table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th>Input Volt. 85[V]</th> <th>Input Volt. 100[V]</th> <th>Input Volt. 132[V]</th> </tr> <tr> <th>Output Volt. [V]</th> <th>Output Volt. [V]</th> <th>Output Volt. [V]</th> </tr> </thead> <tbody> <tr><td>0.00</td><td>12.025</td><td>12.026</td><td>12.026</td></tr> <tr><td>0.15</td><td>12.024</td><td>12.024</td><td>12.024</td></tr> <tr><td>0.30</td><td>12.023</td><td>12.023</td><td>12.024</td></tr> <tr><td>0.45</td><td>12.022</td><td>12.023</td><td>12.023</td></tr> <tr><td>0.60</td><td>12.022</td><td>12.022</td><td>12.023</td></tr> <tr><td>0.75</td><td>12.021</td><td>12.022</td><td>12.022</td></tr> <tr><td>0.90</td><td>12.021</td><td>12.021</td><td>12.021</td></tr> <tr><td>0.99</td><td>12.021</td><td>12.021</td><td>12.021</td></tr> <tr><td>—</td><td>—</td><td>—</td><td>—</td></tr> <tr><td>—</td><td>—</td><td>—</td><td>—</td></tr> </tbody> </table>				Load Current [A]	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]	Output Volt. [V]	Output Volt. [V]	Output Volt. [V]	0.00	12.025	12.026	12.026	0.15	12.024	12.024	12.024	0.30	12.023	12.023	12.024	0.45	12.022	12.023	12.023	0.60	12.022	12.022	12.023	0.75	12.021	12.022	12.022	0.90	12.021	12.021	12.021	0.99	12.021	12.021	12.021	—	—	—	—	—	—	—	—
Load Current [A]	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]																																																			
	Output Volt. [V]	Output Volt. [V]	Output Volt. [V]																																																			
0.00	12.025	12.026	12.026																																																			
0.15	12.024	12.024	12.024																																																			
0.30	12.023	12.023	12.024																																																			
0.45	12.022	12.023	12.023																																																			
0.60	12.022	12.022	12.023																																																			
0.75	12.021	12.022	12.022																																																			
0.90	12.021	12.021	12.021																																																			
0.99	12.021	12.021	12.021																																																			
—	—	—	—																																																			
—	—	—	—																																																			
<p>Note: Slanted line shows the range of the rated load current.</p> <p>(注)斜線は定格負荷電流範囲を示す。</p>																																																						



Model	YS1012A	Temperature	25°C
Item	Ripple Voltage(by Load Current) リップル電圧(負荷電流特性)	Testing Circuitry	Figure A
Object	+12.0V0.90A		

1. Graph
 [mV] - - - - □ - - - - Input Volt. 85V
 - - - - △ - - - - Input Volt. 132V



2. Values

Load Current [A]	Input Volt. 85 [V]	Input Volt. 132 [V]
	Ripple Output Volt. [mV]	Ripple Output Volt. [mV]
0.00	10	10
0.15	10	10
0.30	10	10
0.45	15	10
0.60	20	10
0.75	25	15
0.90	35	15
0.99	45	20
—	—	—
—	—	—
—	—	—

Ripple Voltage is shown as p-p in the figure below.

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

リップル電圧は、下図 p-p 値で示される。

(注)斜線は定格負荷電流範囲を示す。

T1: Due to AC Input Line
 入力商用周期
 T2: Due to Switching
 スイッチング周期

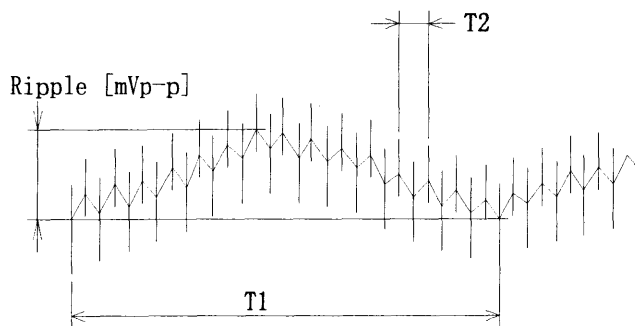
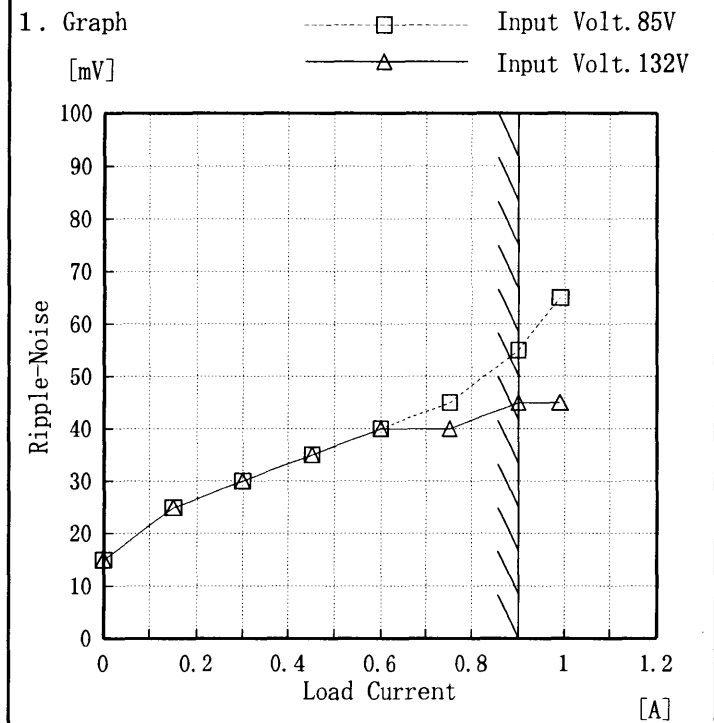


Fig. Complex Ripple Wave Form
 図 リップル波形詳細図

COSEL

Model	YS1012A	Temperature	25°C
Item	Ripple-Noise リップルノイズ	Testing Circuitry	Figure A

Object +12.0V0.90A



2. Values

Load current [A]	Input Volt. 85 [V]	Input Volt. 132 [V]
	Ripple-Noise [mV]	Ripple-Noise [mV]
0.00	15	15
0.15	25	25
0.30	30	30
0.45	35	35
0.60	40	40
0.75	45	40
0.90	55	45
0.99	65	45
—	—	—
—	—	—
—	—	—

Ripple-Noise is shown as p-p in the figure below.
 Note: Slanted line shows the range of the rated load current.

リップルノイズは、下図 p-p 値で示される。
 (注) 斜線は定格負荷電流範囲を示す。

T1: Due to AC Input Line
 入力商用周期
 T2: Due to Switching
 スイッチング周期

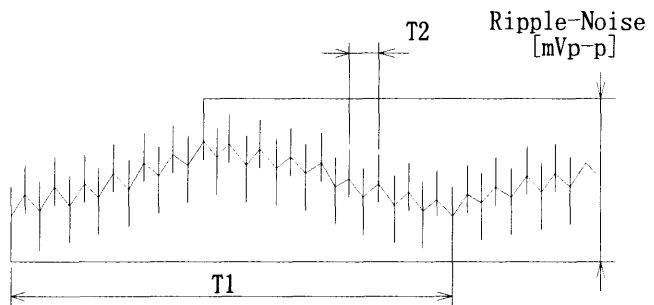


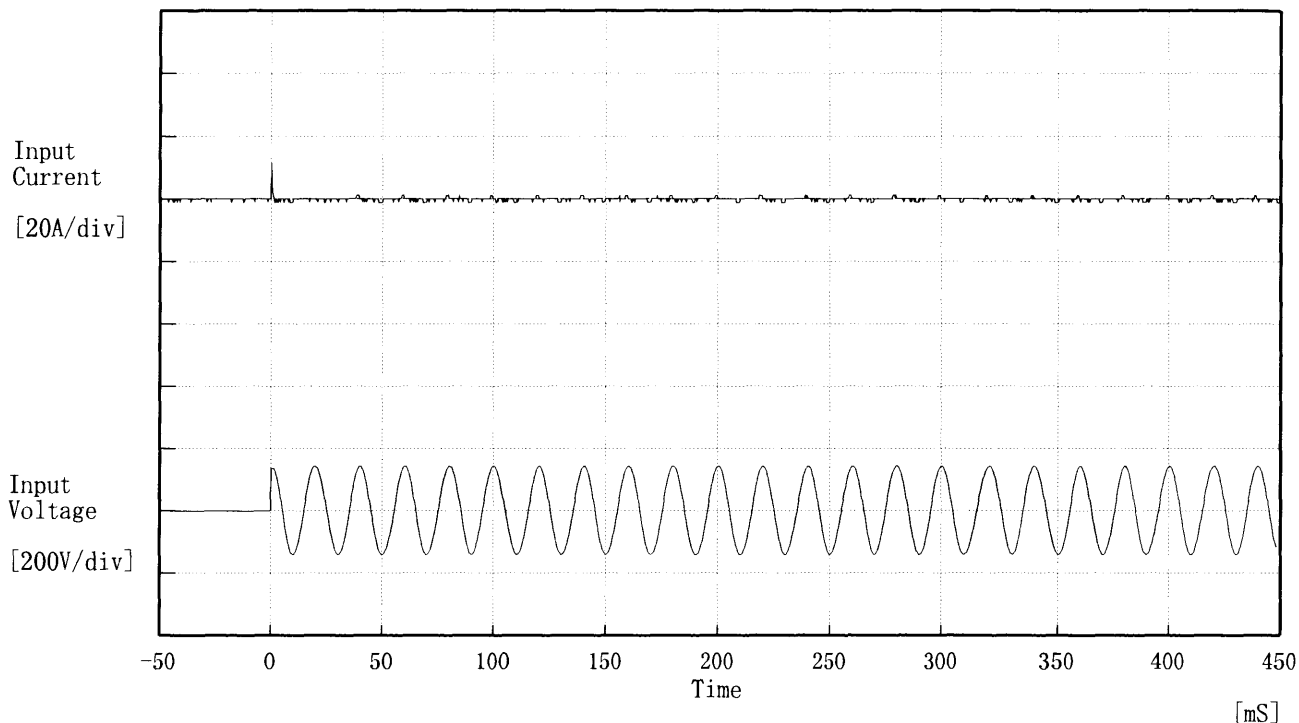
Fig. Complex Ripple Wave Form
 図 リップル波形詳細図

COSEL

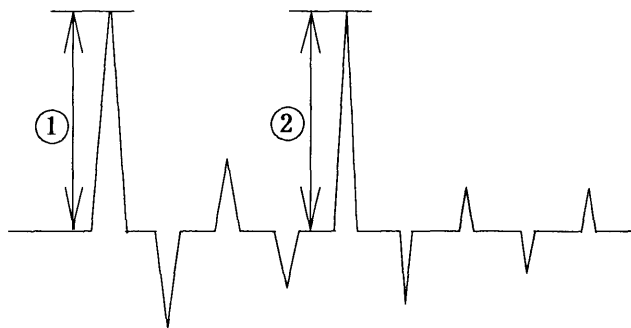
<p>Model YS1012A</p> <p>Item Overcurrent Protection 過電流保護</p> <p>Object +12.0V0.90A</p>		<p>Temperature 25°C</p> <p>Testing Circuitry Figure A</p>																																																							
<p>1. Graph</p> <p>[V]</p> <p>Output Voltage</p> <p>20.0</p> <p>15.0</p> <p>10.0</p> <p>5.0</p> <p>0.0</p> <p>0 0.2 0.4 0.6 0.8 1 1.2</p> <p>Load Current [A]</p> <p>----- Input Volt. 85 V</p> <p>----- Input Volt. 100 V</p> <p>----- Input Volt. 132 V</p> <p>Note: Slanted line shows the range of the rated load current.</p> <p>(注) 斜線は定格負荷電流範囲を示す。</p>		<p>2. Values</p> <table border="1"> <thead> <tr> <th rowspan="2">Output Voltage [V]</th> <th>Input Volt. 85[V]</th> <th>Input Volt. 100[V]</th> <th>Input Volt. 132[V]</th> </tr> <tr> <th>Load Current [A]</th> <th>Load Current [A]</th> <th>Load Current [A]</th> </tr> </thead> <tbody> <tr><td>12.00</td><td>1.05</td><td>1.14</td><td>1.12</td></tr> <tr><td>11.40</td><td>1.05</td><td>1.13</td><td>1.11</td></tr> <tr><td>10.80</td><td>1.05</td><td>1.13</td><td>1.10</td></tr> <tr><td>9.60</td><td>1.05</td><td>1.12</td><td>1.08</td></tr> <tr><td>8.40</td><td>1.04</td><td>1.10</td><td>1.06</td></tr> <tr><td>7.20</td><td>1.01</td><td>1.06</td><td>1.02</td></tr> <tr><td>6.00</td><td>0.98</td><td>1.02</td><td>0.98</td></tr> <tr><td>4.80</td><td>0.92</td><td>0.96</td><td>0.93</td></tr> <tr><td>3.60</td><td>0.85</td><td>0.89</td><td>0.87</td></tr> <tr><td>2.40</td><td>0.76</td><td>0.79</td><td>0.78</td></tr> <tr><td>1.20</td><td>0.63</td><td>0.66</td><td>0.67</td></tr> <tr><td>0.00</td><td>0.49</td><td>0.51</td><td>0.54</td></tr> </tbody> </table>	Output Voltage [V]	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]	Load Current [A]	Load Current [A]	Load Current [A]	12.00	1.05	1.14	1.12	11.40	1.05	1.13	1.11	10.80	1.05	1.13	1.10	9.60	1.05	1.12	1.08	8.40	1.04	1.10	1.06	7.20	1.01	1.06	1.02	6.00	0.98	1.02	0.98	4.80	0.92	0.96	0.93	3.60	0.85	0.89	0.87	2.40	0.76	0.79	0.78	1.20	0.63	0.66	0.67	0.00	0.49	0.51	0.54
Output Voltage [V]	Input Volt. 85[V]	Input Volt. 100[V]		Input Volt. 132[V]																																																					
	Load Current [A]	Load Current [A]	Load Current [A]																																																						
12.00	1.05	1.14	1.12																																																						
11.40	1.05	1.13	1.11																																																						
10.80	1.05	1.13	1.10																																																						
9.60	1.05	1.12	1.08																																																						
8.40	1.04	1.10	1.06																																																						
7.20	1.01	1.06	1.02																																																						
6.00	0.98	1.02	0.98																																																						
4.80	0.92	0.96	0.93																																																						
3.60	0.85	0.89	0.87																																																						
2.40	0.76	0.79	0.78																																																						
1.20	0.63	0.66	0.67																																																						
0.00	0.49	0.51	0.54																																																						



Model	YS1012A	Temperature 25°C Testing Circuitry Figure A
Item	Inrush Current 突入電流	
Object	_____	



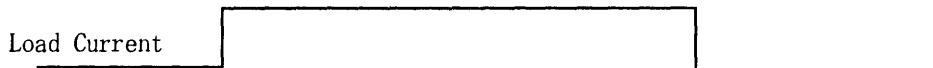
Input Voltage 100 V
 Frequency 50 Hz
 Load 100 %
 Inrush Current
 ① 11.25 [A]
 ② 1.15 [A]



COSEL

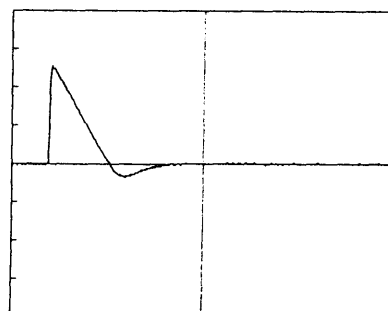
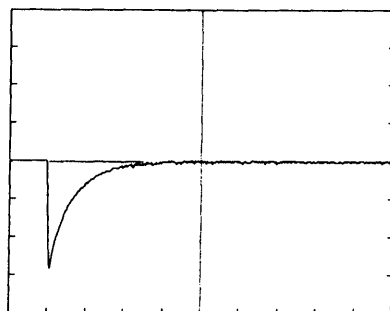
Model	YS1012A	Temperature	25°C
Item	Dynamic Load Responce 動的負荷変動	Testing Circuitry	Figure A
Object	+12.0V0.90A		

Input Volt. 100 V
Cycle 200 mS



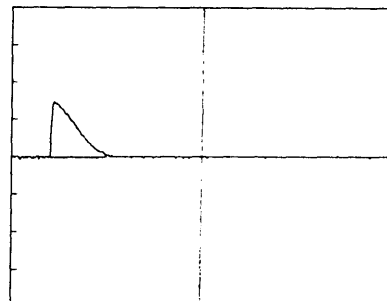
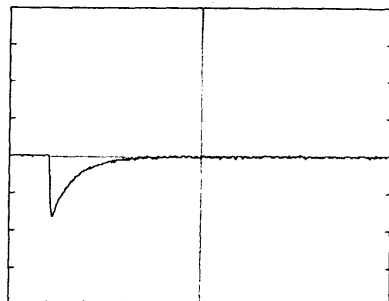
Load 0% ←→

Load 100 %



Load 0% ←→

Load 50 %



200 mV/div

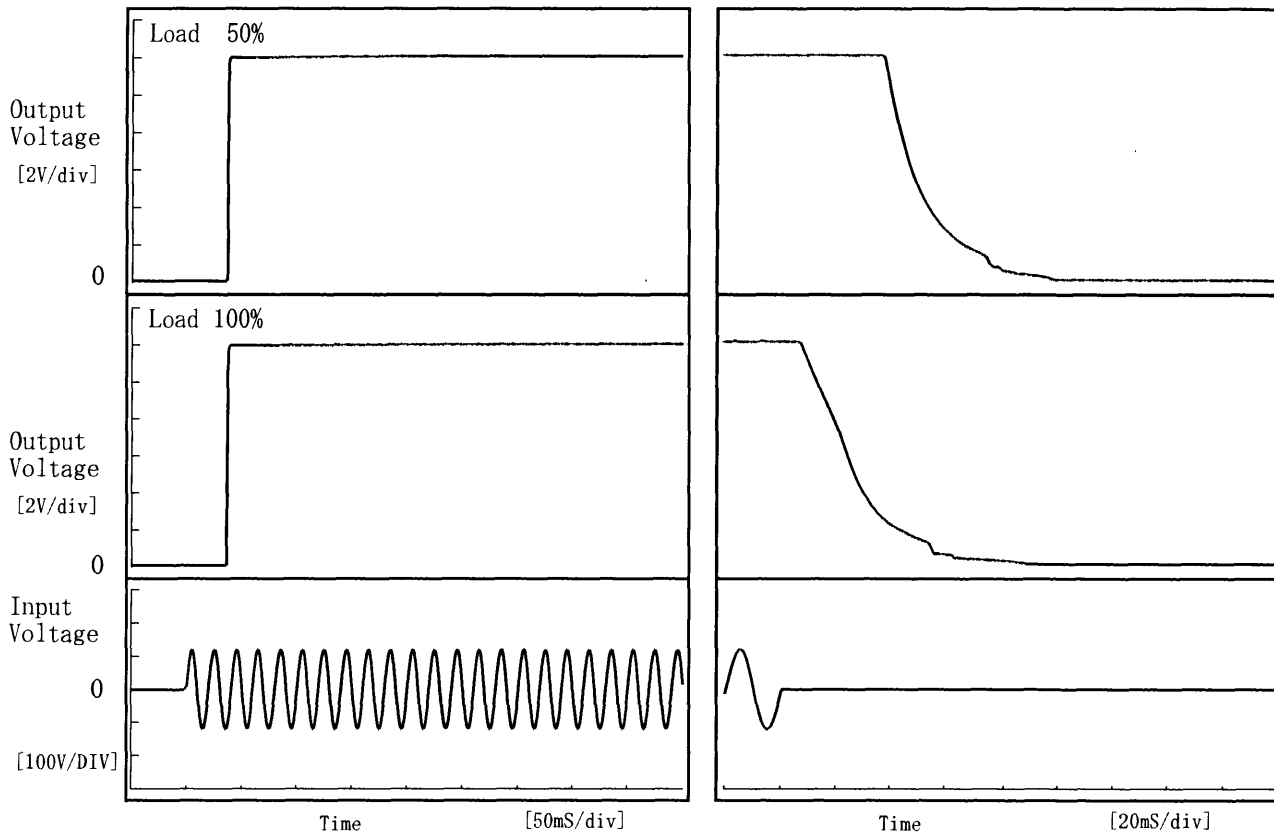
0.5 mS/div



Model	YS1012A	Temperature	25°C
Item	Rise and Fall Time 立上り、立下り時間	Testing Circuitry	Figure A
Object	+12.0V0.90A		

1. Graph

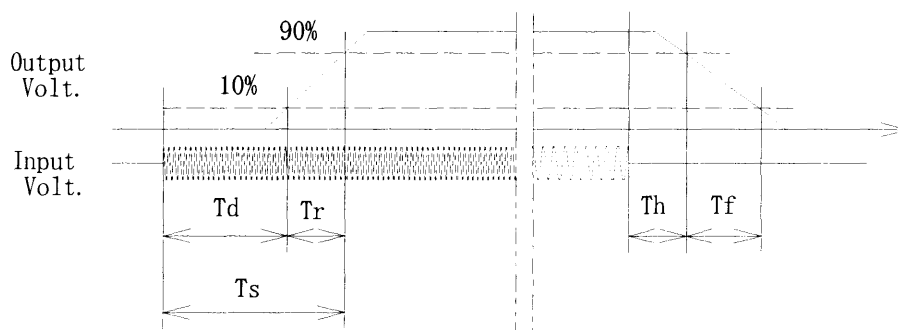
Input Volt. 85 V



2. Values

[mS]

Load \ Time	T d	T r	T s	T h	T f
50 %	35.8	1.0	36.8	40.0	34.9
100 %	35.8	1.0	36.8	11.4	43.4

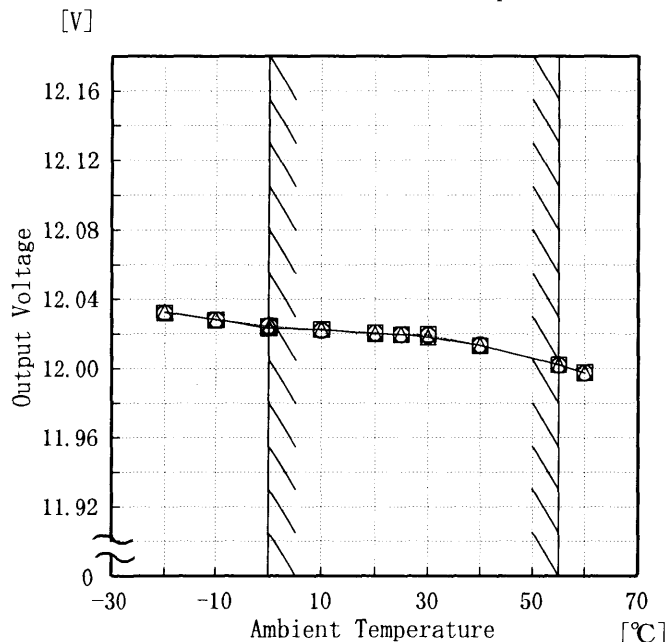


COSEL

Model	YS1012A
Item	Ambient Temperature Drift 周囲温度変動
Object	+12.0V0.90A

Testing Circuitry Figure A

1. Graph
- △— Input Volt. 85V
 - - -□- - - Input Volt. 100V
 - - -○- - - Input Volt. 132V



Load 100%

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

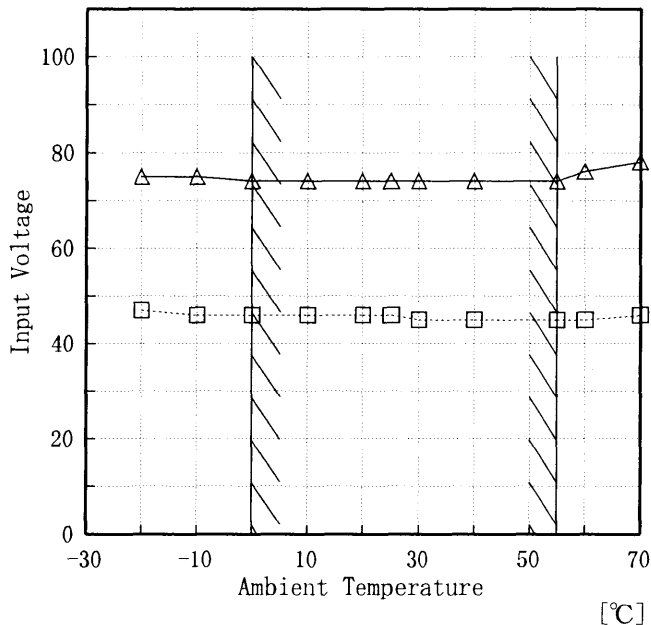
Temperature [°C]	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
	Output Volt. [V]	Output Volt. [V]	Output Volt. [V]
-20	12.033	12.032	12.032
-10	12.028	12.028	12.028
0	12.023	12.024	12.025
10	12.022	12.022	12.022
20	12.020	12.021	12.021
25	12.020	12.019	12.020
30	12.018	12.020	12.019
40	12.013	12.013	12.014
55	12.002	12.002	12.002
60	11.998	11.998	11.998
70	11.989	11.989	11.988



Model	YS1012A
Item	Minimum Input Voltage for Regulated Output Voltage 最低レギュレーション電圧
Object	+12.0V0.90A

Testing Circuitry Figure A

1. Graph
 [V] □ Load 50%
 △ Load 100%



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

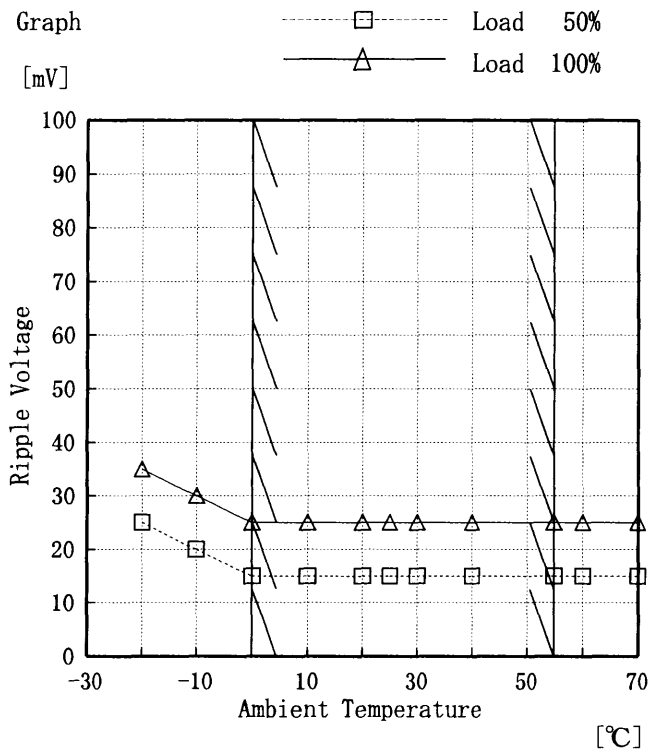
Ambient Temp. [°C]	Load 50%	Load 100%
	Input Volt. [V]	Input Volt. [V]
-20	47	74
-10	46	74
0	46	74
10	46	73
20	46	74
25	46	73
30	45	74
40	45	74
55	45	74
60	45	76
70	46	78



Model	YS1012A
Item	Ripple Voltage (by Ambient Temp.) リップル電圧 (周囲温度特性)
Object	+12.0V0.90A

Testing Circuitry Figure A

1. Graph



Input Volt. 100 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。

2. Values

Ambient Temp. [°C]	Load 50%	Load 100%
	Ripple Output Volt. [mV]	Ripple Output Volt. [mV]
-20	25	35
-10	20	30
0	15	25
10	15	25
20	15	25
25	15	25
30	15	25
40	15	25
55	15	25
60	15	25
70	15	25



COSEL																								
Model	YS1012A																							
Item	Time Lapse Drift 経時ドリフト	Temperature 25 ℃ Testing Circuitry Figure A																						
Object	+12.0V0.90A																							
<p>1. Graph</p> <p style="text-align: center;">Input Volt. 100V Load 100%</p>		<p>2. Values</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>12.022</td></tr> <tr><td>0.5</td><td>12.019</td></tr> <tr><td>1.0</td><td>12.019</td></tr> <tr><td>2.0</td><td>12.019</td></tr> <tr><td>3.0</td><td>12.019</td></tr> <tr><td>4.0</td><td>12.020</td></tr> <tr><td>5.0</td><td>12.020</td></tr> <tr><td>6.0</td><td>12.020</td></tr> <tr><td>7.0</td><td>12.020</td></tr> <tr><td>8.0</td><td>12.019</td></tr> </tbody> </table>	Time since start [H]	Output Voltage [V]	0.0	12.022	0.5	12.019	1.0	12.019	2.0	12.019	3.0	12.019	4.0	12.020	5.0	12.020	6.0	12.020	7.0	12.020	8.0	12.019
Time since start [H]	Output Voltage [V]																							
0.0	12.022																							
0.5	12.019																							
1.0	12.019																							
2.0	12.019																							
3.0	12.019																							
4.0	12.020																							
5.0	12.020																							
6.0	12.020																							
7.0	12.020																							
8.0	12.019																							



COSEL		
Model	YS1012A	
Item	Output Voltage Accuracy 定電圧精度	Testing Circuitry Figure A
Object	+12.0V0.90A	

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 : 0~55 °C

Input Voltage : 85~132 V

Load Current : 0.00~0.90 A

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

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

定電圧精度

周囲温度、入力電圧、負荷を下記仕様内で、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 0~55 °C

入力電圧 85~132 V

負荷電流 0.00~0.90 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	0	100	0.00	12.031	±15	±0.2
Minimum Voltage	55	132	0.90	12.002		



Model		YS1012A		Temperature		25°C																																																				
Item		Oscillator Frequency 発振周波数		Testing Circuitry		Figure A																																																				
Object		+12.0V0.90A																																																								
1. Graph				2. Values																																																						
<p> Δ Input Volt. 85 V \square Input Volt. 100 V \circ Input Volt. 132 V </p>																																																										
<p> [KHz] 10000 1000 100 Oscillator Frequency </p> <p> 0 0.2 0.4 0.6 0.8 1 1.2 Load Current [A] </p>				<table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th>Input Volt. 85[V]</th> <th>Input Volt. 100[V]</th> <th>Input Volt. 132[V]</th> </tr> <tr> <th colspan="3">Oscillator Frequency [KHz]</th> </tr> </thead> <tbody> <tr><td>0.00</td><td>985</td><td>990</td><td>1010</td></tr> <tr><td>0.15</td><td>685</td><td>733</td><td>803</td></tr> <tr><td>0.30</td><td>518</td><td>552</td><td>621</td></tr> <tr><td>0.45</td><td>411</td><td>448</td><td>513</td></tr> <tr><td>0.60</td><td>338</td><td>377</td><td>434</td></tr> <tr><td>0.75</td><td>285</td><td>319</td><td>372</td></tr> <tr><td>0.90</td><td>248</td><td>279</td><td>326</td></tr> <tr><td>0.99</td><td>229</td><td>258</td><td>306</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> </tbody> </table>				Load Current [A]	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]	Oscillator Frequency [KHz]			0.00	985	990	1010	0.15	685	733	803	0.30	518	552	621	0.45	411	448	513	0.60	338	377	434	0.75	285	319	372	0.90	248	279	326	0.99	229	258	306	—	—	—	—	—	—	—	—	—	—	—	—
Load Current [A]	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]																																																							
	Oscillator Frequency [KHz]																																																									
0.00	985	990	1010																																																							
0.15	685	733	803																																																							
0.30	518	552	621																																																							
0.45	411	448	513																																																							
0.60	338	377	434																																																							
0.75	285	319	372																																																							
0.90	248	279	326																																																							
0.99	229	258	306																																																							
—	—	—	—																																																							
—	—	—	—																																																							
—	—	—	—																																																							
<p>Note: Slanted line shows the range of the rated load current.</p> <p>(注) 斜線は定格負荷電流範囲を示す。</p>																																																										



COSEL		
Model	YS1012A	
Item	Condensation 結露特性	Testing Circuitry Figure A
Object	+12.0V/0.90A	

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°C 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°C 、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]	12.021	Input Volt.: 100V, Load Current:0.90A
Line Regulation [mV]	1	Input Volt.: 85~132V, Load Current:0.90A
Load Regulation [mV]	5	Input Volt.: 100V, Load Current:0.0~0.90A



Model		YS1012A	Temperature 25°C Testing Circuitry Figure B
Item		Leakage Current 漏洩電流	
Object		_____	

1. Results

Standards	Leakage Current [mA]		
	Input Volt. 85 [V]	Input Volt. 100 [V]	Input Volt. 132 [V]
(A) DENTORI	0.15	0.18	0.24
(B) IEC60950	0.15	0.17	0.23

Standards	Leakage Current [mA]		
	Input Volt. 170 [V]	Input Volt. 230 [V]	Input Volt. 264 [V]
(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 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		YS1012A	Temperature		25°C
Item		Line Noise Tolerance 入力雑音耐量	Testing Circuitry		Figure C
Object		+12.0V0.90A			

1. Results

Pulse Width [n S]	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

Conditions

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



Model		YS1012A
Item		Conducted Emission 雑音端子電圧
Object		_____

Testing Circuitry Figure D

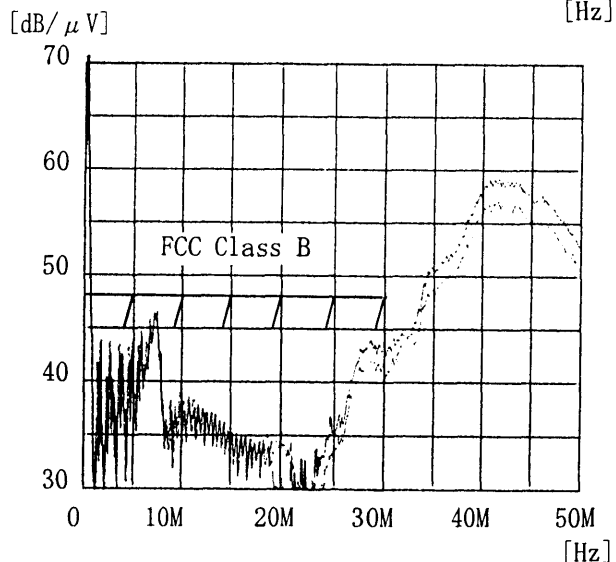
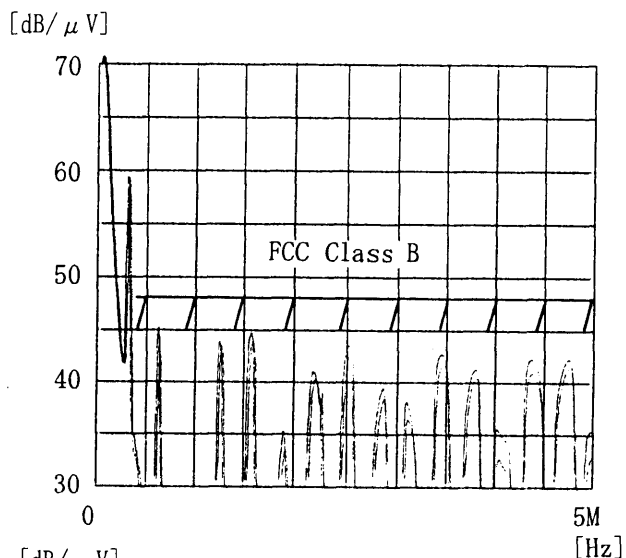
1. Graph

Remarks

Input Volt. 120 V
Load 100 %

Note: Slanted line shows the range of Tolerance.
(注)斜線は許容値を示す。

NO	Standards	Standards Complied	Frequency [MHz]	Tolerance [dB/μV]
1	FCC class A		0.45~1.6	60
			1.6~30	69.5
2	FCC class B	○	0.45~30	48
3	VCCI class A		0.15~0.5	79
			0.5~30	73
4	VCCI class B		0.15~0.5	66-56
			0.5~5	56
			5~30	60
5	CISPR Pub. 22 class A (EN55022)		0.15~0.5	79
			0.5~30	73
6	CISPR Pub. 22 class B (EN55022)		0.15~0.5	66-56
			0.5~5	56
			5~30	60



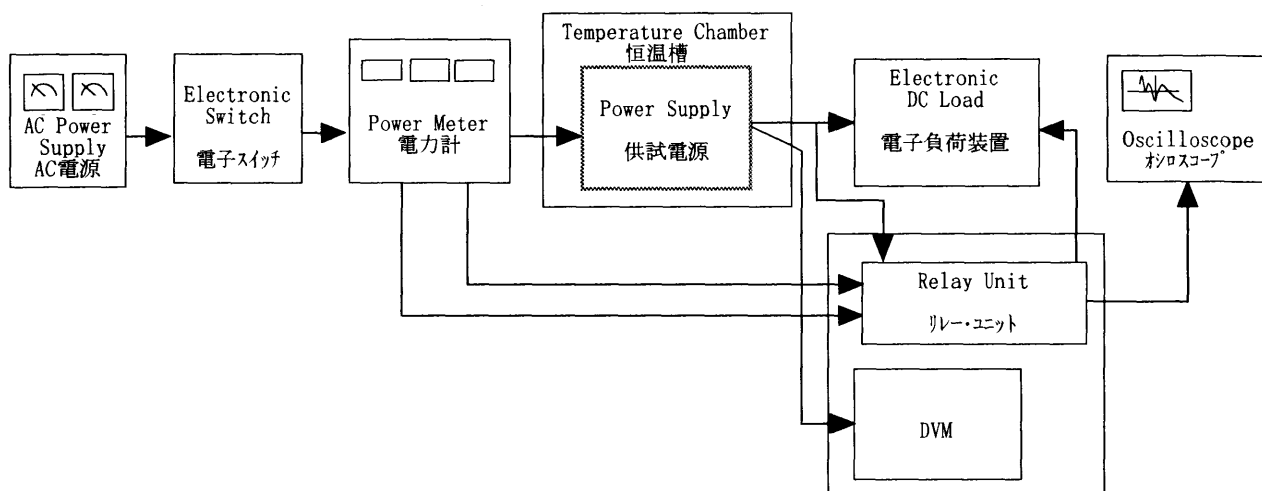


Figure A

Data Acquisition/Control Unit
データ集録システム

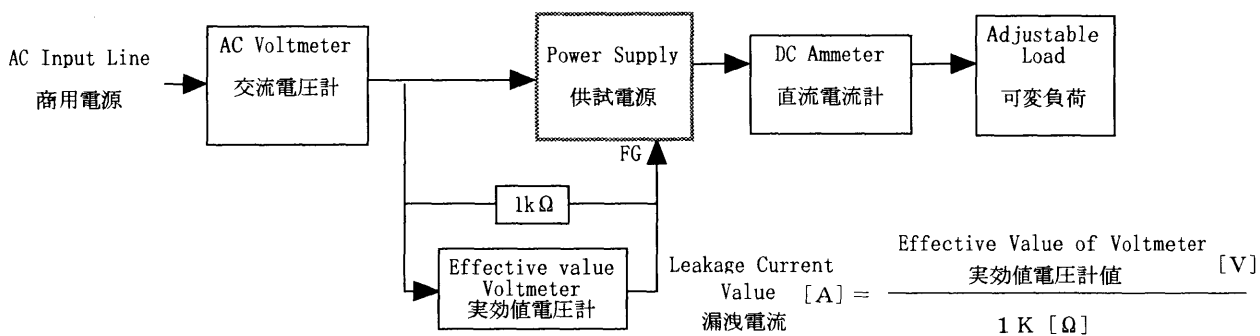


Figure B (DENTORI)

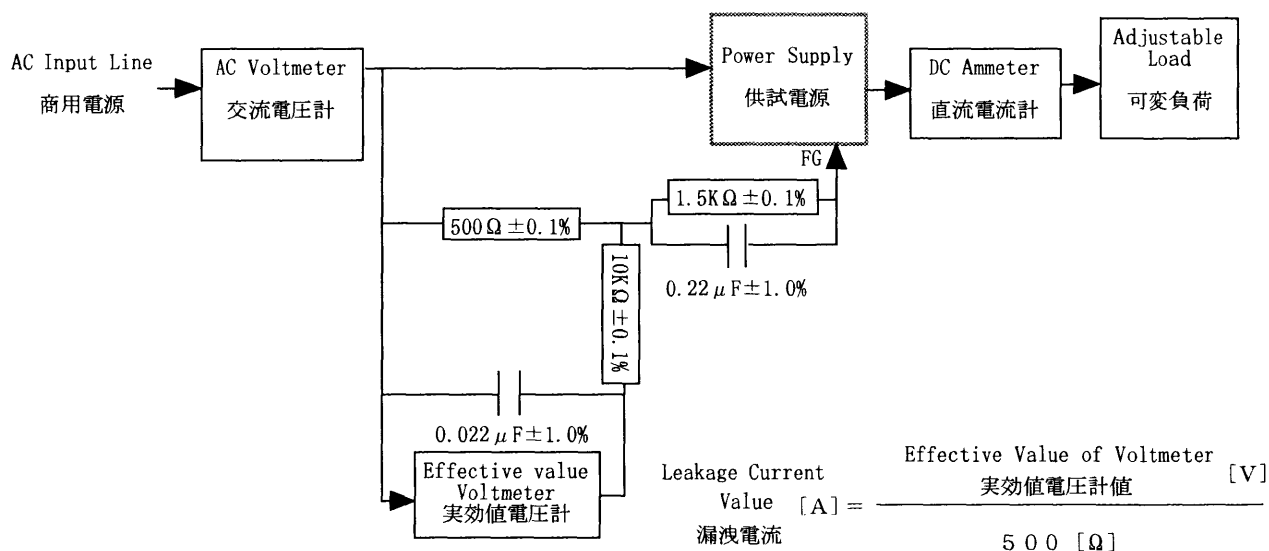


Figure B (IEC 60950)

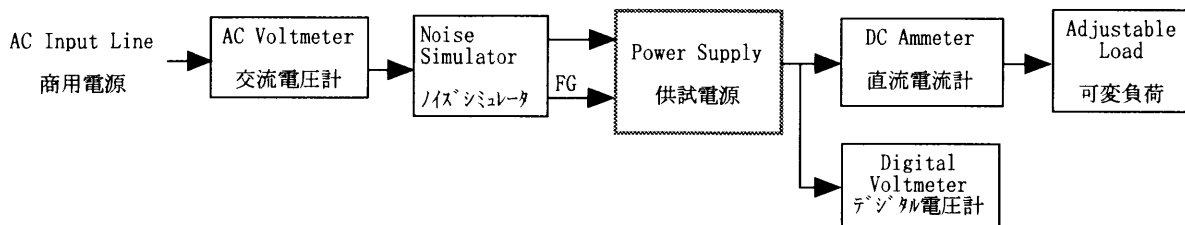


Figure C

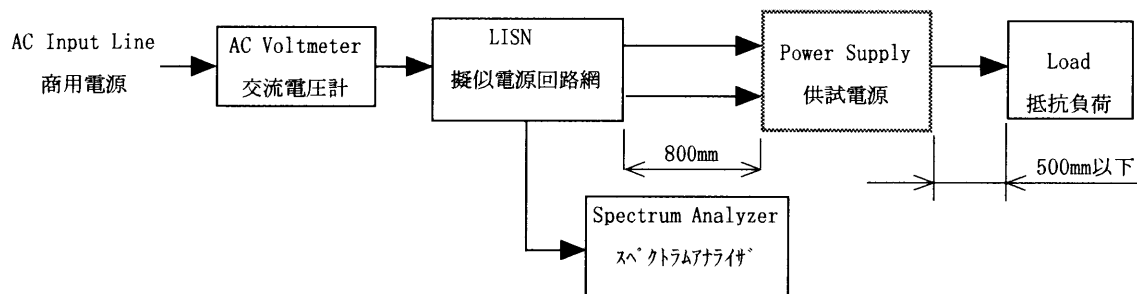


Figure D

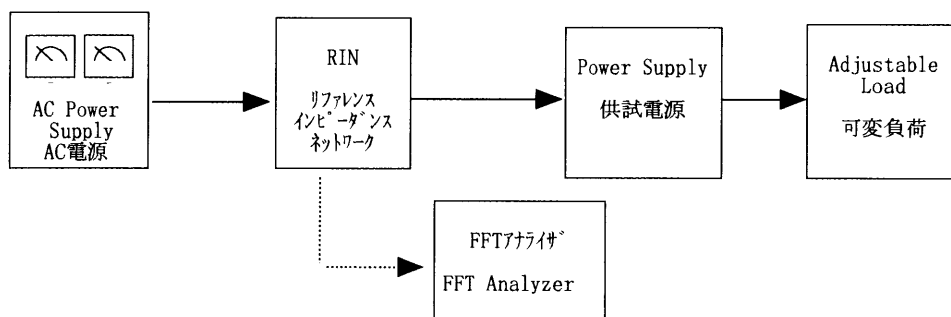


Figure E