



# TEST DATA OF VAA1012

(100V INPUT)

Regulated DC Power Supply

Date : June 2. 1998

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コーセル株式会社

COSEL CO., LTD.

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# COSEL

Model		VAA1012	Temperature Testing Circuitry	25℃ Figure A																															
Item		Line Regulation  静的入力変動																																	
Object		+12.0V0.90A																																	
1. Graph		<div><div><div>-----□-----</div><div>Load 50%</div></div><div><div>-----△-----</div><div>Load 100%</div></div></div> <div><div><div>Output Voltage [V]</div><div><div><div>12.09</div><div>12.07</div><div>12.05</div><div>12.03</div><div>12.01</div><div>11.99</div><div>11.97</div><div>0</div></div><div><div>0</div><div>80</div><div>90</div><div>100</div><div>110</div><div>120</div><div>130</div><div>140</div><div>150</div></div></div><div>Input Voltage [V]</div></div></div> <div><div>Note: Slanted line shows the range of the rated input voltage.</div><div>(注)斜線は定格入力電圧範囲を示す。</div></div>	2. Values																																
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Input Voltage [V]	Load 50%	Load 100%																																	
	Output Volt. [V]	Output Volt. [V]																																	
75	12.019	12.017																																	
80	12.019	12.017																																	
85	12.019	12.017																																	
90	12.019	12.017																																	
100	12.019	12.017																																	
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120	12.019	12.018																																	
132	12.019	12.018																																	
140	12.019	12.018																																	

# COSEL

Model		VAA1012	Temperature		25℃
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

Input Current [A]

0.5

0.4

0.3

0.2

0.1

0

0

0.2

0.4

0.6

0.8

1

1.2

Load Current [A]

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	0.024	0.025	0.020
0.15	0.073	0.068	0.065
0.30	0.115	0.106	0.096
0.45	0.154	0.141	0.123
0.60	0.193	0.174	0.150
0.75	0.234	0.209	0.177
0.90	0.274	0.243	0.204
0.99	0.299	0.264	0.219
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

# COSEL

Model		VAA1012	Temperature		25℃
Item		Input Power (by Load Current) 入力電力（負荷特性）	Testing Circuitry		Figure A
Output		_____			

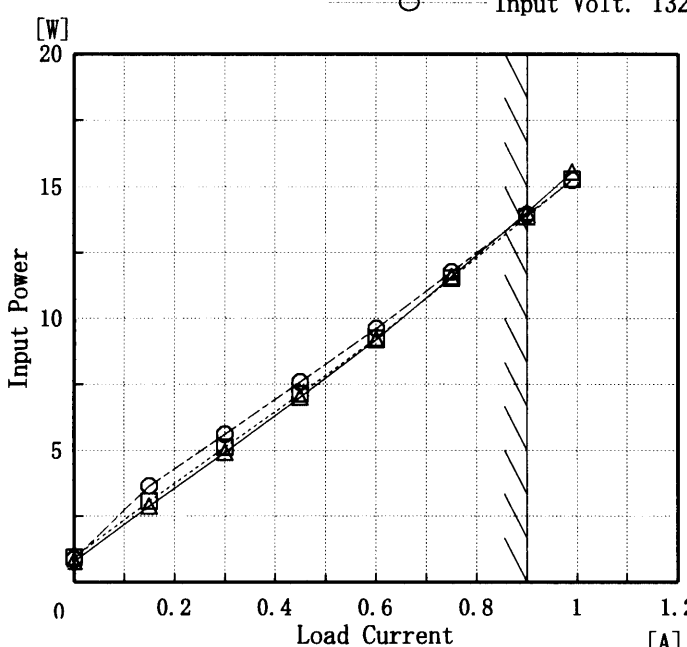
1. Graph

—△— Input Volt. 85V

- - -□- - - Input Volt. 100V

.....○..... Input Volt. 132V

Input Power [W]



Load Current [A]

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 Power [W]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0.00	0.78	0.94	0.87
0.15	2.88	3.08	3.65
0.30	4.93	5.12	5.61
0.45	7.01	7.15	7.60
0.60	9.20	9.26	9.62
0.75	11.58	11.54	11.77
0.90	14.03	13.86	13.94
0.99	15.56	15.27	15.24
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

# COSEL

LOVEL

Model	VAA1012
Item	Efficiency (by Input Voltage) 効率 (入力電圧特性)
Object	_____

Temperature25℃
Testing CircuitryFigure A

1. Graph

□

-----

Load 50%

△

-----

Load 100%

Efficiency [%]

86

82

78

74

70

66

62

0

0

80

90

100

110

120

130

140

150

Input Voltage [V]

[V]

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%
	Efficiency [%]	Efficiency [%]
75	76.7	75.0
80	76.5	75.9
85	76.2	76.5
90	75.8	77.0
100	74.7	77.6
110	73.5	77.7
120	72.1	77.5
132	70.3	77.1
140	69.0	76.7

# COSEL

Model		VAA1012		Temperature		25℃	
Item		Efficiency (by Load Current) 効率（負荷電流特性）		Testing Circuitry		Figure A	
Output		_____					

1. Graph

—△—

Input Volt. 85V

---□---

Input Volt. 100V

---○---

Input Volt. 132V

Efficiency [%]

90

80

70

60

50

40

0

0.2

0.4

0.6

0.8

1

1.2

Load Current

[A]

Load Current [A]	85V Efficiency [%]	100V Efficiency [%]	132V Efficiency [%]
0.15	61.7	57.7	48.5
0.30	72.1	69.5	63.4
0.45	76.2	74.7	70.2
0.60	77.4	76.9	74.1
0.75	77.4	77.6	76.1
0.90	76.6	77.5	77.1
0.99	75.8	77.2	77.4
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

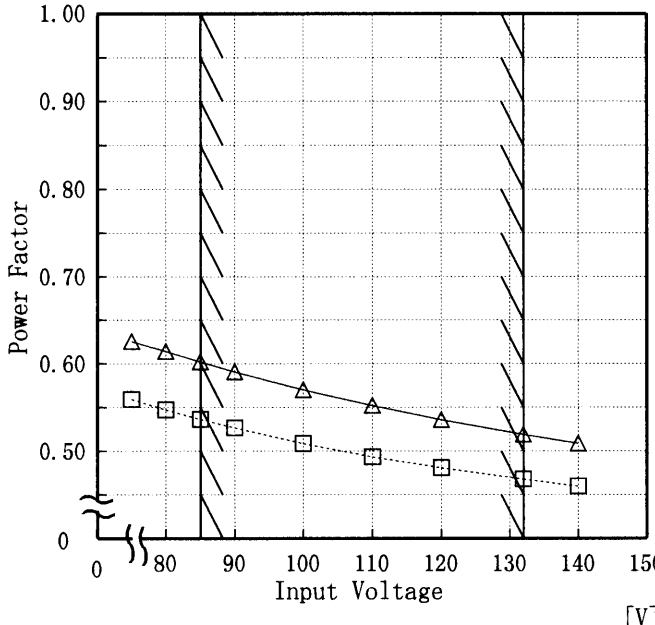
Note: Slanted line shows the range of the rated load current

(注)斜線は定格負荷電流範囲を示す。

2. Values

Load Current [A]	Efficiency [%]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0.15	61.7	57.7	48.5
0.30	72.1	69.5	63.4
0.45	76.2	74.7	70.2
0.60	77.4	76.9	74.1
0.75	77.4	77.6	76.1
0.90	76.6	77.5	77.1
0.99	75.8	77.2	77.4
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

# COSEL

Model VAA1012		Temperature 25°C Testing Circuitry Figure A																																
Item	Power Factor (by Input Voltage) 力率 (入力電圧特性)																																	
Object																																		
<p>1. Graph</p> <p>-----□----- load 50% ——△—— load 100%</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>		<p>2. Values</p> <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>0.61</td></tr> <tr><td>85</td><td>0.54</td><td>0.60</td></tr> <tr><td>90</td><td>0.53</td><td>0.59</td></tr> <tr><td>100</td><td>0.51</td><td>0.57</td></tr> <tr><td>110</td><td>0.49</td><td>0.55</td></tr> <tr><td>120</td><td>0.48</td><td>0.54</td></tr> <tr><td>132</td><td>0.47</td><td>0.52</td></tr> <tr><td>140</td><td>0.46</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	0.61	85	0.54	0.60	90	0.53	0.59	100	0.51	0.57	110	0.49	0.55	120	0.48	0.54	132	0.47	0.52	140	0.46	0.51
Input Voltage [V]	load 50%	load 100%																																
	Power Factor	Power Factor																																
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**COSEL**

Model

VAA1012

Item

Power Factor (by Load Current)  
力率 (負荷電流特性)

Output

1. Graph

△

Input Volt. 85V

□

Input Volt. 100V

○

Input Volt. 132V

Power Factor

0.8

0.6

0.4

0.2

0

0

0.2

0.4

0.6

0.8

1

1.2

Load Current

[A]

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	Power Factor		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
—	0.39	0.38	0.33
0.15	0.46	0.43	0.40
0.30	0.50	0.48	0.44
0.45	0.54	0.51	0.47
0.60	0.56	0.53	0.49
0.75	0.58	0.55	0.50
0.90	0.60	0.57	0.52
0.99	0.61	0.58	0.53
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

# COSEL

Model		VAA1012	Temperature Testing Circuitry	25℃ Figure A																																															
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Object		+12.0V0.90A																																																	
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<div><div><div>—△—</div><div>Load 50%</div></div><div><div>- -□- -</div><div>Load 100%</div></div></div> <div><div>[mS]</div><div>1000</div><div>100</div><div>10</div><div>1</div><div>Hold-Up Time</div><div>0 80 90 100 110 120 130 140 150</div><div>Input Voltage [V]</div></div> <tr><td colspan="5">2. Values</td></tr> <tr><td colspan="5"><table><tr><th rowspan="2">Input Voltage [V]</th><th>Load 50%</th><th>Load 100%</th></tr><tr><th>Hold-Up Time [mS]</th><th>Hold-Up Time [mS]</th></tr><tr><td>75</td><td>27</td><td>8</td></tr><tr><td>80</td><td>33</td><td>11</td></tr><tr><td>85</td><td>38</td><td>13</td></tr><tr><td>90</td><td>44</td><td>16</td></tr><tr><td>100</td><td>57</td><td>23</td></tr><tr><td>110</td><td>71</td><td>30</td></tr><tr><td>120</td><td>87</td><td>38</td></tr><tr><td>132</td><td>107</td><td>48</td></tr><tr><td>140</td><td>121</td><td>57</td></tr></table></td></tr> <tr><td colspan="5"><div><div>This duration covers from Shut-off of input voltage to the moment when output voltage descends to the rated range of voltage accuracy.</div><div>Note: Slanted line shows the range of the rated input voltage.</div><div>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。</div><div>(注)斜線は定格入力電圧範囲を示す。</div></div></td></tr>					2. Values					<table><tr><th rowspan="2">Input Voltage [V]</th><th>Load 50%</th><th>Load 100%</th></tr><tr><th>Hold-Up Time [mS]</th><th>Hold-Up Time [mS]</th></tr><tr><td>75</td><td>27</td><td>8</td></tr><tr><td>80</td><td>33</td><td>11</td></tr><tr><td>85</td><td>38</td><td>13</td></tr><tr><td>90</td><td>44</td><td>16</td></tr><tr><td>100</td><td>57</td><td>23</td></tr><tr><td>110</td><td>71</td><td>30</td></tr><tr><td>120</td><td>87</td><td>38</td></tr><tr><td>132</td><td>107</td><td>48</td></tr><tr><td>140</td><td>121</td><td>57</td></tr></table>					Input Voltage [V]	Load 50%	Load 100%	Hold-Up Time [mS]	Hold-Up Time [mS]	75	27	8	80	33	11	85	38	13	90	44	16	100	57	23	110	71	30	120	87	38	132	107	48	140	121	57	<div><div>This duration covers from Shut-off of input voltage to the moment when output voltage descends to the rated range of voltage accuracy.</div><div>Note: Slanted line shows the range of the rated input voltage.</div><div>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。</div><div>(注)斜線は定格入力電圧範囲を示す。</div></div>				
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# COSEL

COSEL

Model	VAA1012
Item	Instantaneous Interruption Compensation 瞬時停電保障
Object	+12.0V0.90A

1. Graph

—△—

Input Volt. 85V

---□---

Input Volt. 100V

---○---

Input Volt. 132V

Instantaneous Compensation Time [mS]

Load Current [A]

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.

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。

Testing Circuitry    Figure A

2. Values

Load Current [A]	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
	Time [mS]		
0.0	—	—	—
0.15	122	168	282
0.30	62	89	159
0.45	38	57	107
0.60	26	40	80
0.75	18	30	62
0.90	13	23	48
0.99	10	19	43
—	—	—	—
—	—	—	—
—	—	—	—

**COSEL**

Model	VAA1012																																																	
Item	Load Regulation 静的負荷変動	Temperature	25℃																																															
		Testing Circuitry	Figure A																																															
Object	+12.0V0.90A																																																	
1. Graph		2. Values																																																
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Load Current [A]	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]																																															
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<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>																																																		

BC-3154

# COSEL

Model		VAA1012	
Item		Ripple-Noise   リップルノイズ	
Object		+12.0V0.90A	

1. Graph

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

Load Current [A]	Input Volt. 85V [mV]	Input Volt. 132V [mV]
0.00	20	20
0.18	20	20
0.36	30	30
0.54	30	30
0.72	40	30
0.90	50	30
1.00	60	40

2. Values

Load current [A]	Input Volt. 85 [V]	Input Volt. 132 [V]
	Ripple-Noise [mV]	Ripple-Noise [mV]
0.00	20	20
0.18	20	20
0.36	30	30
0.54	30	30
0.72	40	30
0.90	50	30
1.00	60	40
—	—	—
—	—	—
—	—	—
—	—	—

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

Ripple-Noise [mVp-p]

Fig. Complex Ripple Wave Form

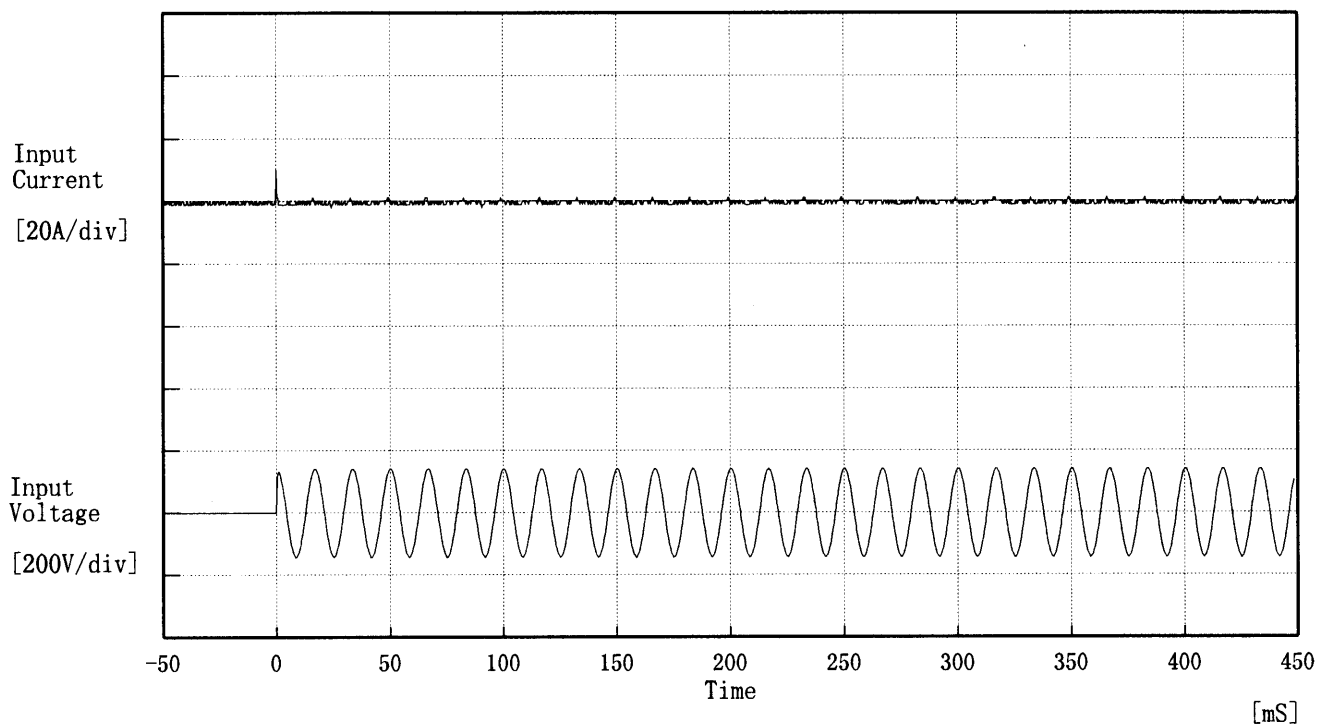
図   リップル波形詳細図

**COSEL**

Model	VAA1012																																																									
Item	Overcurrent Protection 過電流保護	Temperature	25°C																																																							
Object	+12.0V0.90A	Testing Circuitry	Figure A																																																							
1. Graph <div style="display: flex; align-items: center; margin-top: 10px;"> <div style="flex: 1;"> <p>[V]</p> <p>Output Voltage</p> <p>Load Current [A]</p> </div> <div style="flex: 1; margin-left: 10px;"> <p>Input Volt. 85 V</p> <p>Input Volt. 100 V</p> <p>Input Volt. 132 V</p> </div> </div>		2. Values <table border="1" style="margin-top: 10px; width: 100%; border-collapse: collapse; text-align: center;"> <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>1.16</td><td>1.15</td><td>1.16</td></tr> <tr><td>11.40</td><td>1.16</td><td>1.15</td><td>1.16</td></tr> <tr><td>10.80</td><td>1.16</td><td>1.14</td><td>1.15</td></tr> <tr><td>9.60</td><td>1.15</td><td>1.13</td><td>1.13</td></tr> <tr><td>8.40</td><td>1.13</td><td>1.11</td><td>1.10</td></tr> <tr><td>7.20</td><td>1.10</td><td>1.08</td><td>1.07</td></tr> <tr><td>6.00</td><td>1.07</td><td>1.04</td><td>1.03</td></tr> <tr><td>4.80</td><td>1.02</td><td>0.99</td><td>0.98</td></tr> <tr><td>3.60</td><td>0.96</td><td>0.93</td><td>0.92</td></tr> <tr><td>2.40</td><td>0.86</td><td>0.84</td><td>0.84</td></tr> <tr><td>1.20</td><td>0.74</td><td>0.73</td><td>0.73</td></tr> <tr><td>0.00</td><td>0.58</td><td>0.57</td><td>0.59</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	1.16	1.15	1.16	11.40	1.16	1.15	1.16	10.80	1.16	1.14	1.15	9.60	1.15	1.13	1.13	8.40	1.13	1.11	1.10	7.20	1.10	1.08	1.07	6.00	1.07	1.04	1.03	4.80	1.02	0.99	0.98	3.60	0.96	0.93	0.92	2.40	0.86	0.84	0.84	1.20	0.74	0.73	0.73	0.00	0.58	0.57	0.59
Output Voltage [V]	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]																																																							
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**COSEL**

Model	VAA1012	Temperature 25°C Testing Circuitry Figure A
Item	Inrush Current 突入電流	
Object	_____	



Input Voltage 100 V

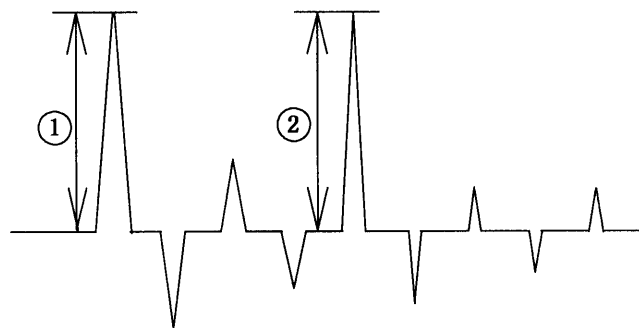
Frequency 60 Hz

Load 100 %

Inrush Current

① 10.10 [A]

② 2.24 [A]





# COSEL

Model	VAA1012	Temperature 25℃ Testing Circuitry Figure A
Item	Dynamic Load Responce 動的負荷変動	
Object	+12.0V0.90A	

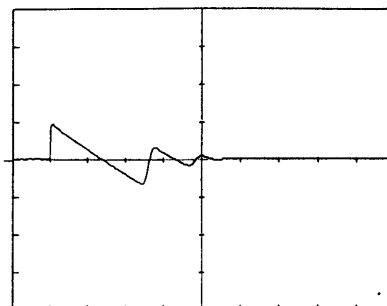
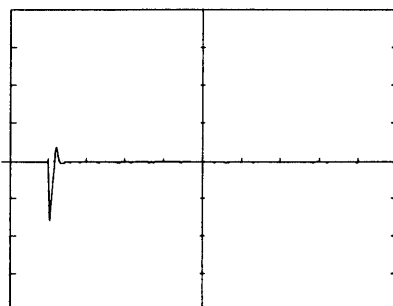
Input Volt. 100 V

Cycle 1000 mS

Load Current

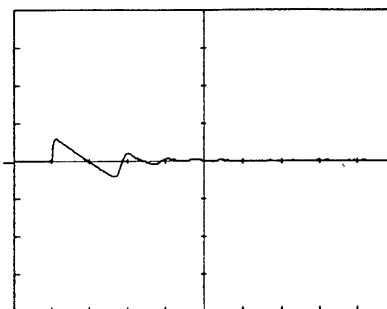
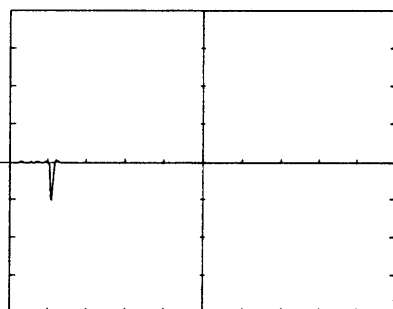
Load 0% ↔

Load 100 %



Load 0% ↔

Load 50 %



200 mV/div

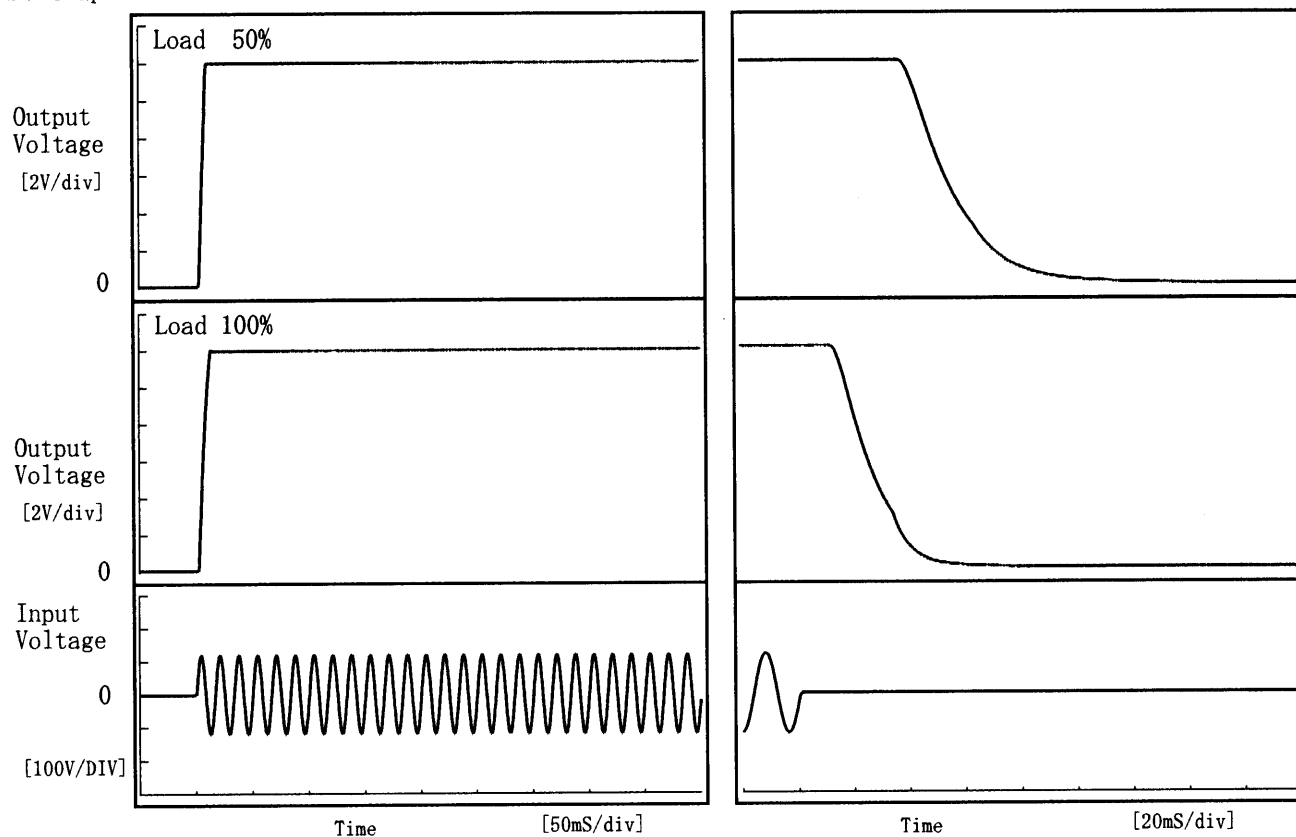
5 mS/div

**COSEL**

Model	VAA1012	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

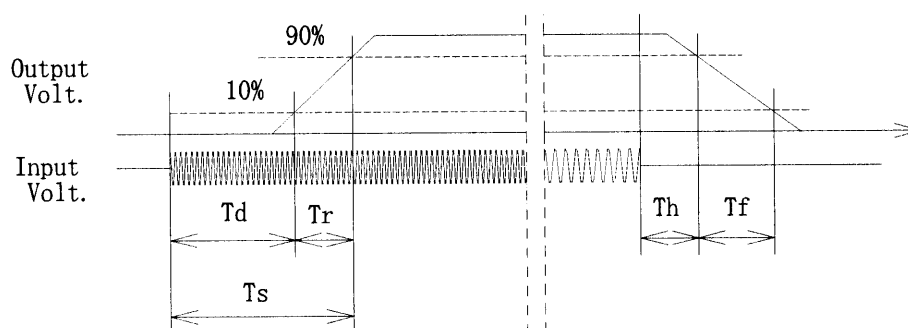
Input Volt. 85 V



## 2. Values

[mS]

Load \ Time	T d	T r	T s	T h	T f
50 %	3.5	5.8	9.3	41.5	35.8
100 %	3.5	8.3	11.8	16.1	24.9



# COSEL

Model		VAA1012	Testing Circuitry Figure A																																																			
Item		Ambient Temperature Drift 周囲温度変動																																																				
Object		+12.0V0.90A																																																				
1. Graph		<div> <div> <div>△</div> <div>Input Volt. 85V</div> </div> <div> <div>□</div> <div>Input Volt. 100V</div> </div> <div> <div>○</div> <div>Input Volt. 132V</div> </div> </div> <p>Output Voltage [V]</p> <p>Ambient Temperature [°C]</p> <p>Load 100%</p> <p>Note: Slanted line shows the range of the rated ambient temperature.</p> <p>(注)斜線は定格周囲温度範囲を示す。</p>	2. Values																																																			
		<table> <tr> <th>Temperature</th><th>Input Volt. 85[V]</th><th>Input Volt. 100[V]</th><th>Input Volt. 132[V]</th></tr> <tr> <th>[°C]</th><th>Output Volt. [V]</th><th>Output Volt. [V]</th><th>Output Volt. [V]</th></tr> <tr><td>-30</td><td>12.027</td><td>12.027</td><td>12.027</td></tr> <tr><td>-20</td><td>12.027</td><td>12.027</td><td>12.027</td></tr> <tr><td>-10</td><td>12.025</td><td>12.025</td><td>12.026</td></tr> <tr><td>0</td><td>12.023</td><td>12.023</td><td>12.023</td></tr> <tr><td>10</td><td>12.020</td><td>12.020</td><td>12.020</td></tr> <tr><td>25</td><td>12.017</td><td>12.017</td><td>12.017</td></tr> <tr><td>30</td><td>12.016</td><td>12.016</td><td>12.016</td></tr> <tr><td>40</td><td>12.012</td><td>12.012</td><td>12.012</td></tr> <tr><td>55</td><td>12.006</td><td>12.006</td><td>12.006</td></tr> <tr><td>60</td><td>12.003</td><td>12.003</td><td>12.003</td></tr> <tr><td>—</td><td>—</td><td>—</td><td>—</td></tr> </table>		Temperature	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]	[°C]	Output Volt. [V]	Output Volt. [V]	Output Volt. [V]	-30	12.027	12.027	12.027	-20	12.027	12.027	12.027	-10	12.025	12.025	12.026	0	12.023	12.023	12.023	10	12.020	12.020	12.020	25	12.017	12.017	12.017	30	12.016	12.016	12.016	40	12.012	12.012	12.012	55	12.006	12.006	12.006	60	12.003	12.003	12.003	—	—	—
Temperature	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]																																																			
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# COSEL

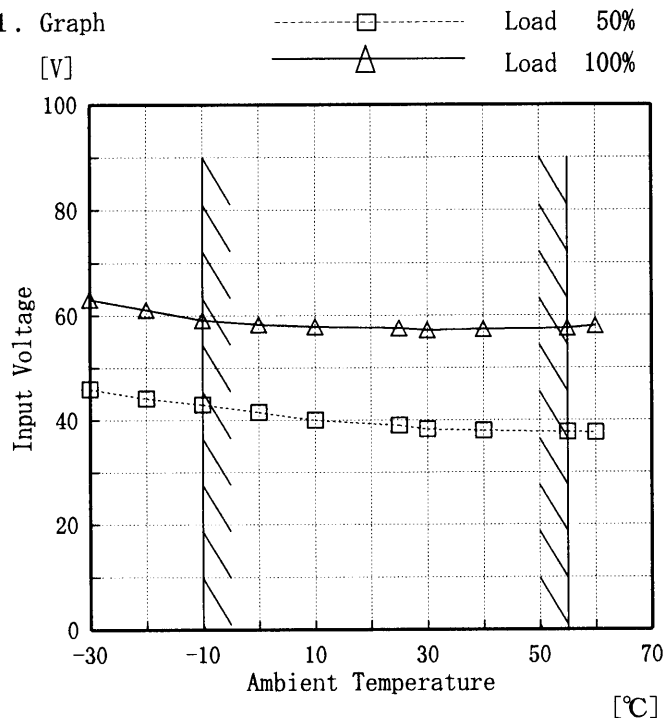
Model VAA1012

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



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]
-30	46	63
-20	44	61
-10	43	59
0	42	58
10	40	58
25	39	58
30	38	57
40	38	57
55	38	58
60	38	58
—	—	—

# COSEL

Model		VAA1012
Item	Ripple Voltage (by Ambient Temp.) リップル電圧 (周囲温度特性)	
Object	+12.0V0.90A	

1. Graph

-----□----- Load 50%

-----△----- Load 100%

[mV]

Ripple Voltage

Ambient Temperature

[°C]

Input Volt. 100 V

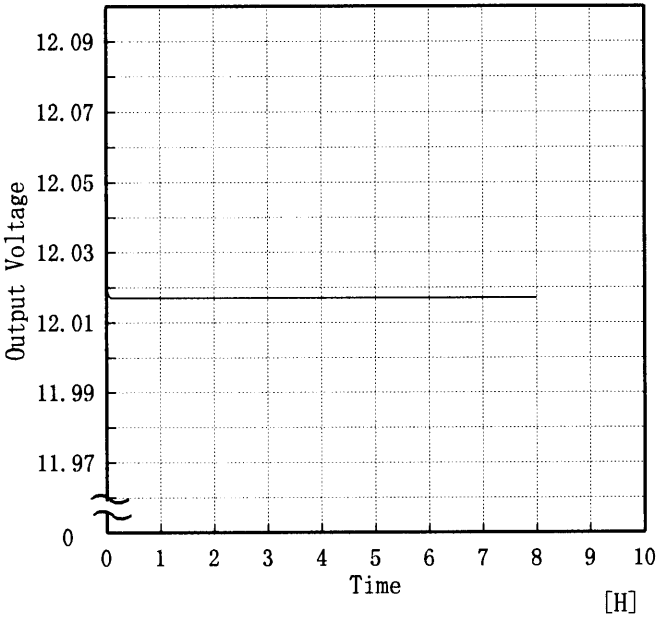
Note: Slanted line shows the range of the rated ambient temperature.

(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	40	100
-10	30	70
0	20	50
10	20	40
20	20	40
25	20	30
30	20	30
40	20	30
55	10	20
60	10	20
—	—	—

**COSEL**

COSEL																									
Model	VAA1012																								
Item	Time Lapse Drift 経時ドリフト	Temperature	25 ℃																						
Object	+12.0V0.90A	Testing Circuitry	Figure A																						
1. Graph		2.Values																							
<div>[V]</div> <div></div> <div>Output Voltage</div> <div>Time [H]</div> <div>Input Volt. 100V</div> <div>Load 100%</div>		<table><tr><th>Time since start [H]</th><th>Output Voltage [V]</th></tr><tr><td>0.0</td><td>12.020</td></tr><tr><td>0.5</td><td>12.017</td></tr><tr><td>1.0</td><td>12.017</td></tr><tr><td>2.0</td><td>12.017</td></tr><tr><td>3.0</td><td>12.017</td></tr><tr><td>4.0</td><td>12.017</td></tr><tr><td>5.0</td><td>12.017</td></tr><tr><td>6.0</td><td>12.017</td></tr><tr><td>7.0</td><td>12.017</td></tr><tr><td>8.0</td><td>12.017</td></tr></table>		Time since start [H]	Output Voltage [V]	0.0	12.020	0.5	12.017	1.0	12.017	2.0	12.017	3.0	12.017	4.0	12.017	5.0	12.017	6.0	12.017	7.0	12.017	8.0	12.017
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6.0	12.017																								
7.0	12.017																								
8.0	12.017																								

# COSEL

Model		VAA1012	Testing Circuitry Figure A
Item		Output Voltage Accuracy 定電圧精度	
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 : -10~55 °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 : -10~55 °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	-10	132	0.00	12.030	±12	±0.1
Minimum Voltage	55	132	0.90	12.006		

# COSEL

Model		VAA1012	Temperature		25℃																																																			
Item		Oscillator Frequency 発振周波数	Testing Circuitry		Figure A																																																			
Object		+12.0V0.90A																																																						
1. Graph		<div><div><div>—△—</div><div>Input Volt. 85 V</div></div><div><div>- -□- -</div><div>Input Volt. 100 V</div></div><div><div>- -○- -</div><div>Input Volt. 132 V</div></div></div>																																																						
<div><div>[KHz]</div><div>1000</div><div>Oscillator Frequency</div><div>100</div><div>10</div></div> <div>0 0.2 0.4 0.6 0.8 1 1.2</div> <div>Load Current [A]</div>		2. Values																																																						
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0.72	132	147	166																																																					
0.90	106	124	140																																																					
1.00	96	112	130																																																					
—	—	—	—																																																					
—	—	—	—																																																					
—	—	—	—																																																					
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。																																																								



# COSEL

LOGEL

Model	VAA1012
Item	Condensation 結露特性
Object	+12.0V0.90A

Testing Circuitry      Figure A

1. Condensation test

Testing procedure is as follows.

① Keeping and cooling the unit in a tank at -10℃ 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℃ and the humidity is 40%RH.

③ Testing electrical characteristics of the unit to confirm there be no fault.

④ Repeating ①, ② and ③ three times.

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3度行い、異常のないことを確認する。

2. Values

	Times	Output Voltage [V]	Ripple Voltage [mV]	Ripple Noise [mV]
Load 50 %	1	12.019	20	30
	2	12.019	20	30
	3	12.019	20	30
Load 100 %	1	12.018	30	40
	2	12.018	30	40
	3	12.018	30	40

Input Volt. 100 V

**COSEL**

Model	VAA1012				
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	0.09	0.10	0.13
(B) U L	0.09	0.10	0.13
(C) C S A	0.09	0.10	0.13

Standards	Leakage Current [mA]		
	Input Volt. 170 [V]	Input Volt. 220 [V]	Input Volt. 264 [V]
(D) V D E	—	—	—

## 2. Condition

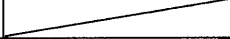

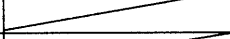
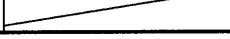
Leakage current value is concluded after measuring both phases of AC input and by choosing the larger one.

交流入力の高相について測定し、その大きい方を漏洩電流測定値とする。

# COSEL

Model		VAA1012	Testing Circuitry      Figure C
Item		Line Noise Tolerance 入力雑音耐量	
Object		+12.0V0.90A	

## 1. Results

Pulse Width [n S]	MODE	Operating Point of Overvoltage Protection [V] 過電圧保護動作値	DC-like Regulation of Output Voltage 出力電圧の直流的変動
50	COMMON		no regulation
	NORMAL		no regulation
1000	COMMON		no regulation
	NORMAL		no regulation

## Conditions

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

# COSEL

Model	VAA1012	Testing Circuitry      Figure D
Item	Conducted Emission 雑音端子電圧	
Object	_____	

## 1. Graph

Remarks

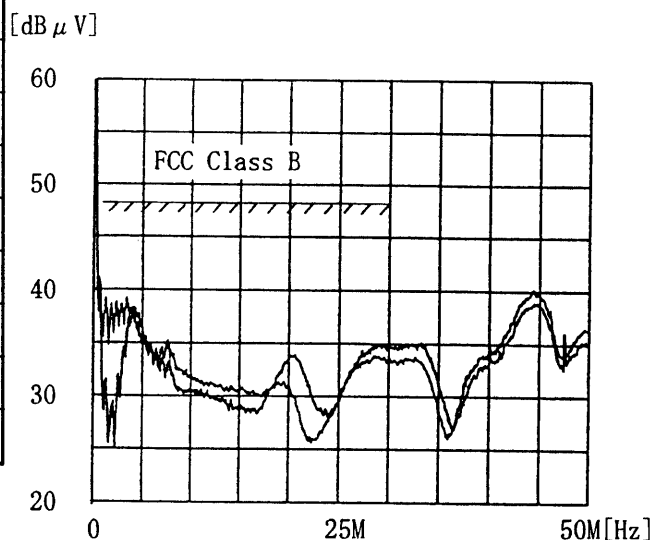
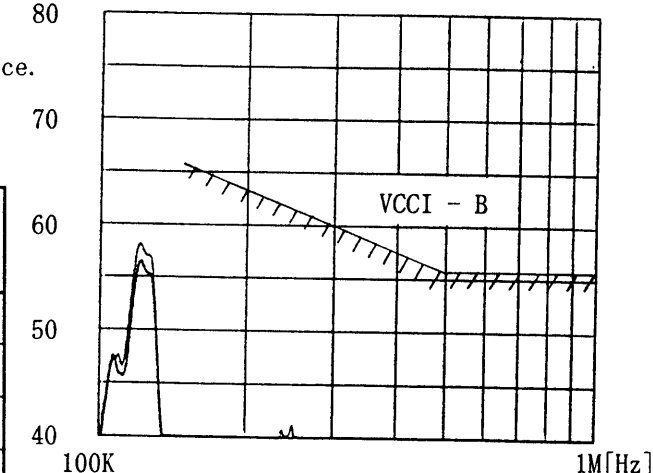
Input Volt.      100 V (VCCI class B)  
                          120 V (FCC class B)      [dB $\mu$ V]

Load              100 %              80

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 $\mu$ V]
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



注：図1に示すように、外付けコンデンサーを  
 取り付けて測定する。(C=0.47 $\mu$ F)

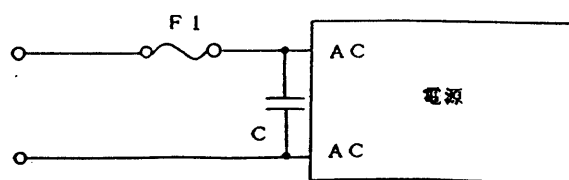


図1

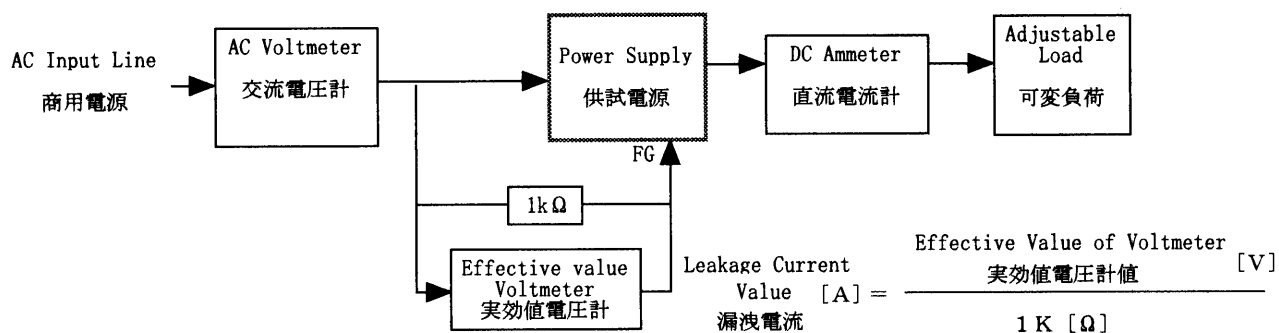
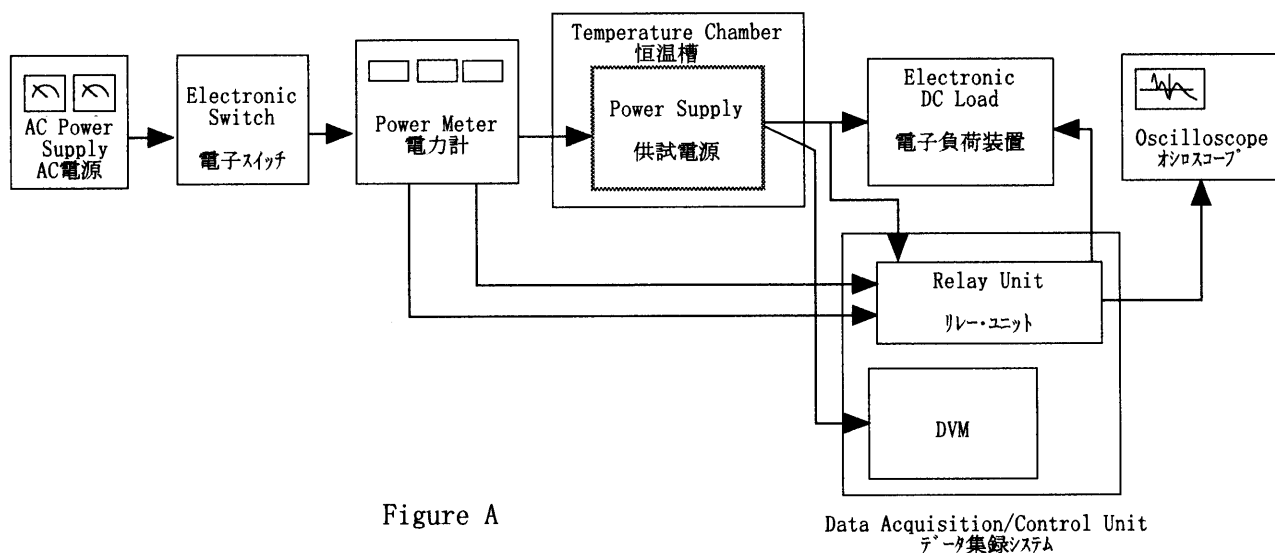


Figure B (DENTORI)

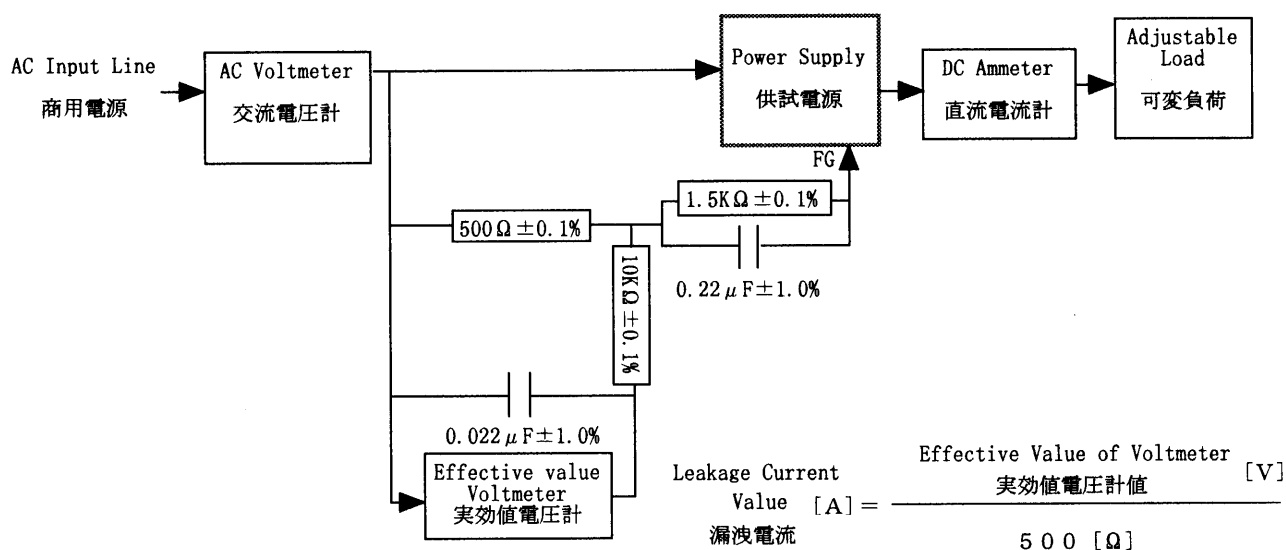


Figure B (UL, CSA, VDE)

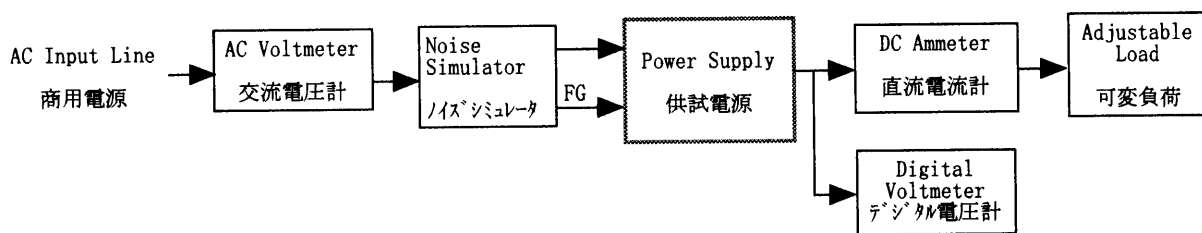


Figure C

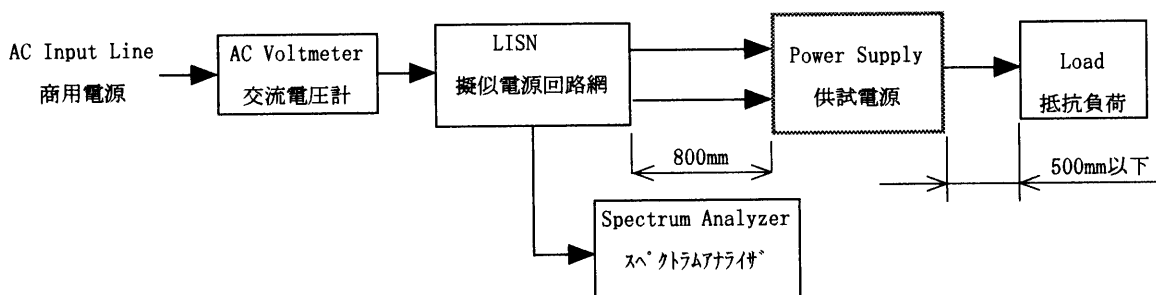


Figure D

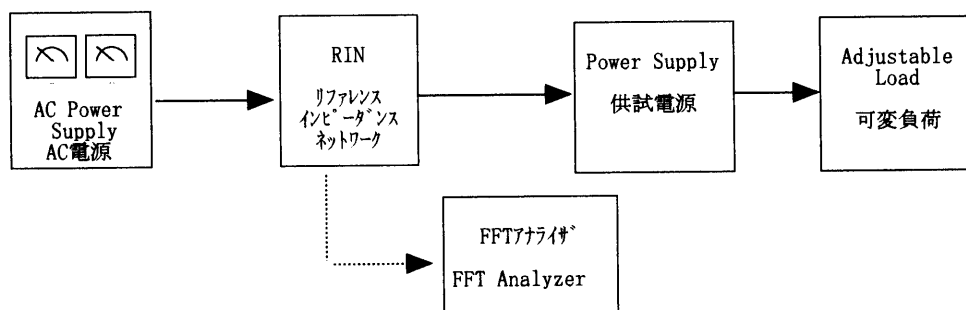


Figure E