

TEST DATA OF MODULE A

(ACE series)

Regulated DC power supply
May.27.2003

Approved by : 
K. Shibutani Design Manager

Prepared by : 
M. Hamaguchi Design Engineer

COSEL CO.,LTD.

CONTENTS

1.Line Regulation	1
2.Load Regulation	2
3.Dynamic Load Response	3
4.Ripple Voltage (by Load Current)	4
5.Ripple-Noise	5
6.Ripple Voltage (by Ambient Temperature)	6
7.Ambient Temperature Drift	7
8.Output Voltage Accuracy	8
9.Time Lapse Drift	9
10.Overcurrent Protection	10
11.Overvoltage Protection	11
12.Figure of Testing Circuitry	12

(Final Page 12)



COSEL																																		
Model	MODULE A																																	
Item	Line Regulation	Temperature 25°C Testing Circuitry Figure A																																
Object	+2V26A																																	
<p>1.Graph</p> <p style="text-align: right;"> ---□--- Load 50% —△— Load 100% </p>		<p>2.Values</p> <table border="1"> <thead> <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> </thead> <tbody> <tr> <td>85</td> <td>2.035</td> <td>2.026</td> </tr> <tr> <td>100</td> <td>2.035</td> <td>2.026</td> </tr> <tr> <td>120</td> <td>2.035</td> <td>2.026</td> </tr> <tr> <td>200</td> <td>2.035</td> <td>2.026</td> </tr> <tr> <td>230</td> <td>2.035</td> <td>2.025</td> </tr> <tr> <td>264</td> <td>2.035</td> <td>2.025</td> </tr> <tr> <td>--</td> <td>-</td> <td>-</td> </tr> <tr> <td>--</td> <td>-</td> <td>-</td> </tr> <tr> <td>--</td> <td>-</td> <td>-</td> </tr> </tbody> </table>	Input Voltage [V]	Output Voltage [V]		Load 50%	Load 100%	85	2.035	2.026	100	2.035	2.026	120	2.035	2.026	200	2.035	2.026	230	2.035	2.025	264	2.035	2.025	--	-	-	--	-	-	--	-	-
Input Voltage [V]	Output Voltage [V]																																	
	Load 50%	Load 100%																																
85	2.035	2.026																																
100	2.035	2.026																																
120	2.035	2.026																																
200	2.035	2.026																																
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<p>Note: Slanted line shows the range of the rated input voltage.</p>																																		

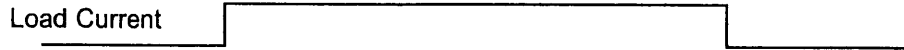


Model		MODULE A	Temperature 25°C																																																				
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1.Graph		<p>—△— Input Volt. 100V</p> <p>---□--- Input Volt. 200V</p> <p>-○- Input Volt. 230V</p>	2.Values																																																				
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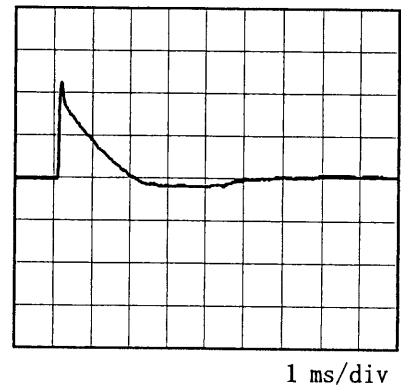
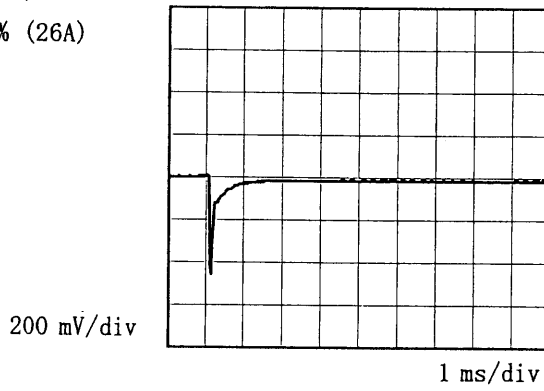


Model		MODULE A	Temperature 25°C Testing Circuitry Figure A
Item		Dynamic Load Response	
Object		+2V26A	

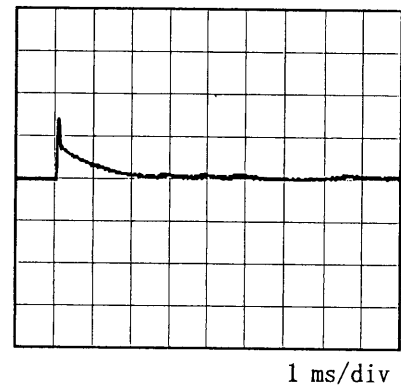
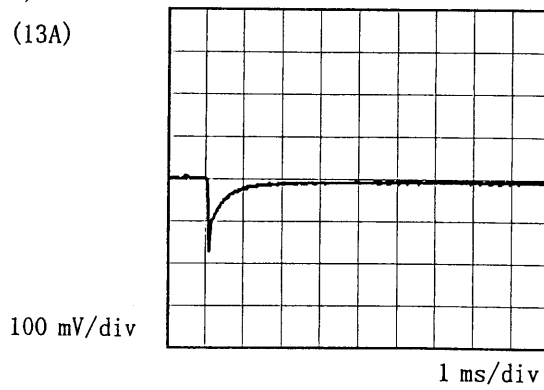
Input Volt. 100 V
Cycle 1000 mS



Min. Load (0A) ←→
Load 100% (26A)



Min. Load (0A) ←→
Load 50% (13A)



* The characteristic of AC200V is equal.

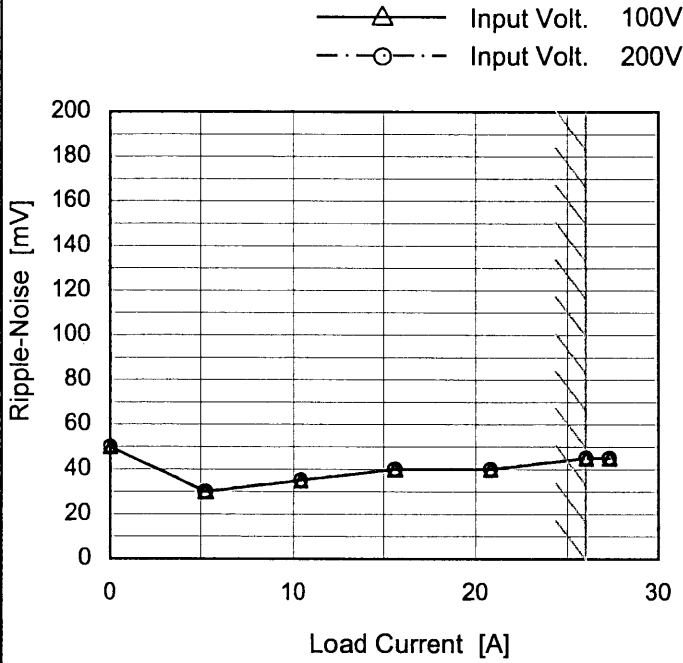


Model		MODULE A		Temperature 25°C Testing Circuitry Figure A																																							
Item		Ripple Voltage (by Load Current)																																									
Object		+2V26A		2.Values <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th colspan="2">Ripple Voltage [mV]</th> </tr> <tr> <th>Input Volt. 100 [V]</th> <th>Input Volt. 200 [V]</th> </tr> </thead> <tbody> <tr><td>0.0</td><td>35</td><td>35</td></tr> <tr><td>5.2</td><td>25</td><td>25</td></tr> <tr><td>10.4</td><td>30</td><td>30</td></tr> <tr><td>15.6</td><td>30</td><td>30</td></tr> <tr><td>20.8</td><td>30</td><td>30</td></tr> <tr><td>26.0</td><td>35</td><td>35</td></tr> <tr><td>27.3</td><td>35</td><td>35</td></tr> <tr><td>--</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td></tr> </tbody> </table>		Load Current [A]	Ripple Voltage [mV]		Input Volt. 100 [V]	Input Volt. 200 [V]	0.0	35	35	5.2	25	25	10.4	30	30	15.6	30	30	20.8	30	30	26.0	35	35	27.3	35	35	--	-	-	--	-	-	--	-	-	--	-	-
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1.Graph 																																											
Ripple Voltage is shown as p-p in the figure below. Note: Slanted line shows the range of the rated load current.																																											
T1: Due to AC Input Line T2: Due to Switching																																											
Fig. Complex Ripple Wave Form																																											



Model	MODULE A	Temperature	25°C
Item	Ripple-Noise	Testing Circuitry	Figure A
Object	+2V26A		

1. Graph



2. Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 100 [V]	Input Volt. 200 [V]
0.0	50	50
5.2	30	30
10.4	35	35
15.6	40	40
20.8	40	40
26.0	45	45
27.3	45	45
--	-	-
--	-	-
--	-	-
--	-	-

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

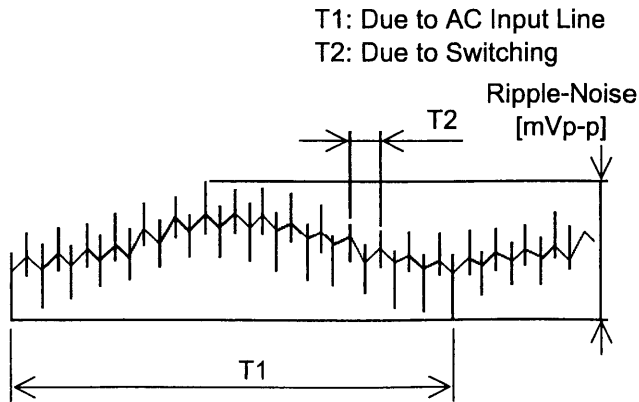


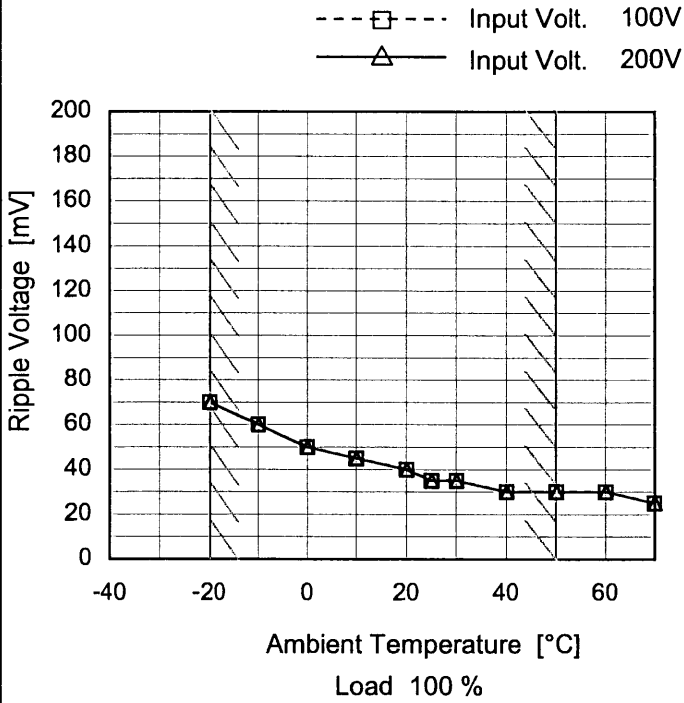
Fig. Complex Ripple Wave Form



Model	MODULE A
Item	Ripple Voltage (by Ambient Temp.)
Object	+2V26A

Testing Circuitry Figure A

1. Graph



2. Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Input Volt. 100 [V]	Input Volt. 200 [V]
-20	70	70
-10	60	60
0	50	50
10	45	45
20	40	40
25	35	35
30	35	35
40	30	30
50	30	30
60	30	30
70	25	25

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



Model		MODULE A		Testing Circuitry Figure A																																																				
Item		Ambient Temperature Drift																																																						
Object		+2V26A																																																						
1.Graph		<p> —△— Input Volt. 100V ---□--- Input Volt. 200V -·-○-·- Input Volt. 230V </p>		2.Values																																																				
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25	2.026	2.026	2.026																																																					
30	2.025	2.025	2.025																																																					
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<p>Note: Slanted line shows the range of the rated ambient temperature.</p>																																																								



COSEL		Testing Circuitry Figure A
Model	MODULE A	
Item	Output Voltage Accuracy	
Object	+2V26A	

1. Output Voltage Accuracy

This is defined as the value of the output voltage, regulation load, ambient temperature and input voltage varied at random in the range as specified below.

Temperature : -20 - 50°C

Input Voltage : 85 - 264V

Load Current : 0 - 26A

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

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

2. Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	-20	264	0	2.048	±14	±0.7
Minimum Voltage	50	264	26	2.020		



COSEL																								
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Item	Time Lapse Drift	Temperature 25°C Testing Circuitry Figure A																						
Object	+2V26A																							
1.Graph		2.Values																						
<p style="text-align: center;">Time [H]</p> <p style="text-align: center;">Input Volt. 100V Load 100%</p>		<table border="1"> <thead> <tr> <th>Time since start [H]</th> <th>Output Voltage [V]</th> </tr> </thead> <tbody> <tr><td>0.0</td><td>2.027</td></tr> <tr><td>0.5</td><td>2.024</td></tr> <tr><td>1.0</td><td>2.024</td></tr> <tr><td>2.0</td><td>2.025</td></tr> <tr><td>3.0</td><td>2.025</td></tr> <tr><td>4.0</td><td>2.025</td></tr> <tr><td>5.0</td><td>2.025</td></tr> <tr><td>6.0</td><td>2.025</td></tr> <tr><td>7.0</td><td>2.025</td></tr> <tr><td>8.0</td><td>2.025</td></tr> </tbody> </table>	Time since start [H]	Output Voltage [V]	0.0	2.027	0.5	2.024	1.0	2.024	2.0	2.025	3.0	2.025	4.0	2.025	5.0	2.025	6.0	2.025	7.0	2.025	8.0	2.025
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* The characteristic of AC200V is equal.																								



<p>Model MODULE A</p> <p>Item Overcurrent Protection</p> <p>Object +2V26A</p>		<p>Temperature 25°C</p> <p>Testing Circuitry Figure A</p>																																												
<p>1.Graph</p> <div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <p>————— Input Volt. 100V</p> <p>————— Input Volt. 200V</p> </div> </div> <p>Note: Slanted line shows the range of the rated load current.</p> <p>Intermittent operation occurs when the output voltage is from 1.1V to 0V.</p>		<p>2.Values</p> <table border="1"> <thead> <tr> <th rowspan="2">Output Voltage [V]</th> <th colspan="2">Load Current [A]</th> </tr> <tr> <th>Input Volt. 100[V]</th> <th>Input Volt. 200[V]</th> </tr> </thead> <tbody> <tr><td>2.0</td><td>30.23</td><td>30.14</td></tr> <tr><td>1.9</td><td>33.90</td><td>34.48</td></tr> <tr><td>1.8</td><td>34.41</td><td>34.97</td></tr> <tr><td>1.6</td><td>35.47</td><td>36.06</td></tr> <tr><td>1.4</td><td>36.65</td><td>37.02</td></tr> <tr><td>1.2</td><td>37.94</td><td>38.27</td></tr> <tr><td>--</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td></tr> </tbody> </table>	Output Voltage [V]	Load Current [A]		Input Volt. 100[V]	Input Volt. 200[V]	2.0	30.23	30.14	1.9	33.90	34.48	1.8	34.41	34.97	1.6	35.47	36.06	1.4	36.65	37.02	1.2	37.94	38.27	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-
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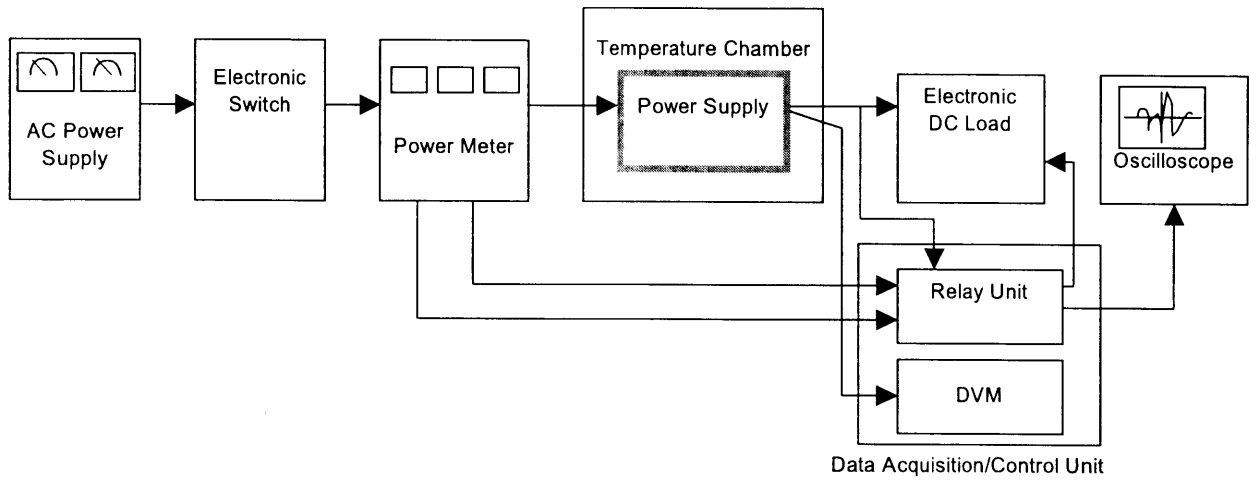


Figure A

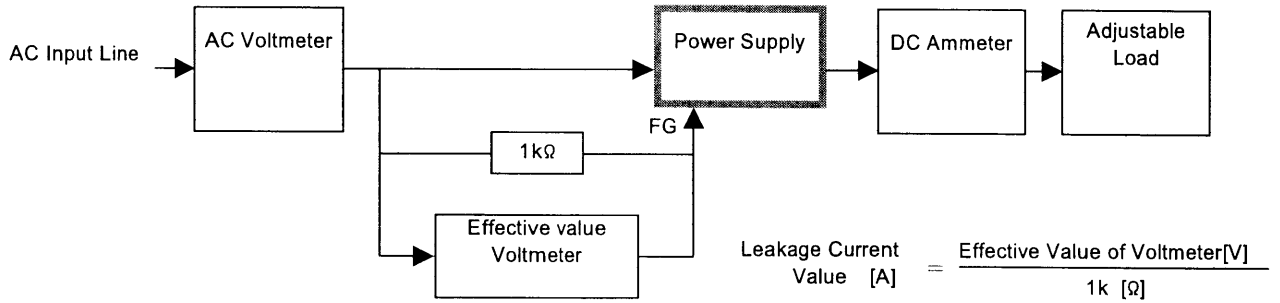


Figure B (DEN-AN)

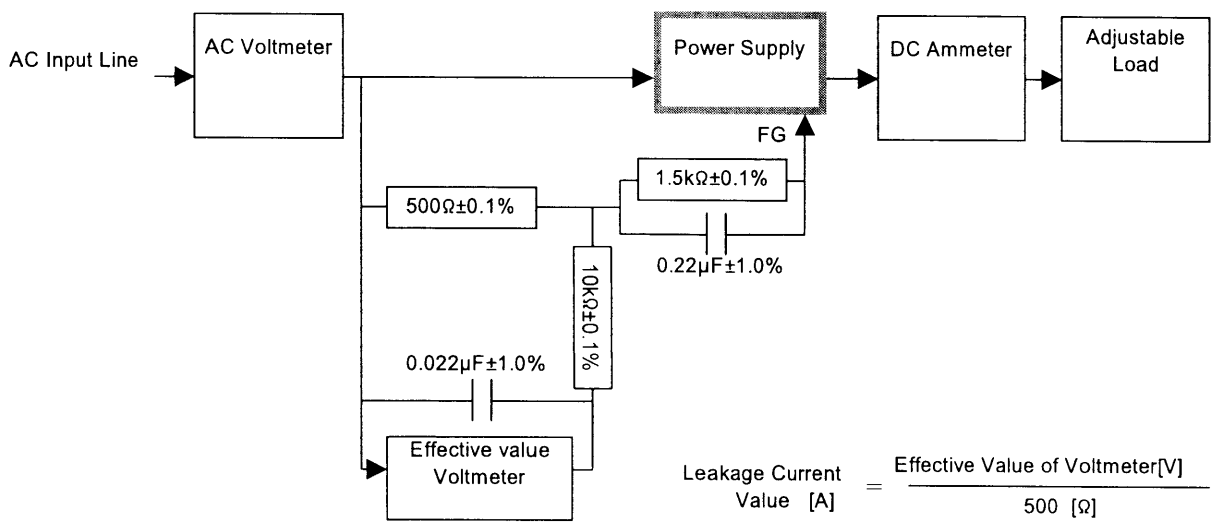


Figure B (IEC60950)