

TEST DATA OF MODULE 2B

(ACE series)

Regulated DC power supply
Jun.5.2003

Approved by : 
K. Shibutani Design Manager

Prepared by : 
M. Hamaguchi Design Engineer

COSEL CO.,LTD.

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COSEL																																			
Model	MODULE 2B	Temperature	25°C																																
Item	Line Regulation	Testing Circuitry	Figure A																																
Object	+3.3V60A																																		
<p>1. Graph</p> <div style="text-align: right;"> <p>---□--- Load 50%</p> <p>—△— Load 100%</p> </div> <p style="text-align: center;">Input Voltage [V]</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>3.359</td><td>3.360</td></tr> <tr><td>100</td><td>3.359</td><td>3.360</td></tr> <tr><td>120</td><td>3.359</td><td>3.360</td></tr> <tr><td>200</td><td>3.359</td><td>3.360</td></tr> <tr><td>230</td><td>3.359</td><td>3.360</td></tr> <tr><td>264</td><td>3.359</td><td>3.360</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	3.359	3.360	100	3.359	3.360	120	3.359	3.360	200	3.359	3.360	230	3.359	3.360	264	3.359	3.360	--	-	-	--	-	-	--	-	-
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<p>Note: Slanted line shows the range of the rated input voltage.</p>																																			



Model		MODULE 2B		Temperature 25°C Testing Circuitry Figure A
Item		Load Regulation		
Object		+3.3V60A		2.Values
<p>1.Graph</p> <p> —△— Input Volt. 100V - - - □ - - - Input Volt. 200V - - - ○ - - - Input Volt. 230V </p> <p>Output Voltage [V]</p> <p>Load Current [A]</p> <p>Note: Slanted line shows the range of the rated load current.</p>				
Load Current [A]		Output Voltage [V]		
		Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0		3.358	3.358	3.358
10		3.358	3.359	3.359
20		3.359	3.359	3.359
30		3.359	3.359	3.359
40		3.360	3.360	3.360
50		3.360	3.360	3.360
60		3.360	3.360	3.360
66		3.360	3.361	3.361
--		-	-	-
--		-	-	-
--		-	-	-



Model	MODULE 2B	Temperature	25°C
Item	Dynamic Load Response	Testing Circuitry	Figure A
Object	+3.3V60A		

Input Volt. 100 V
 Cycle 1000 ms

Load Current

Min. Load (0A) ←→
 Load 100% (60A)

200 mV/div



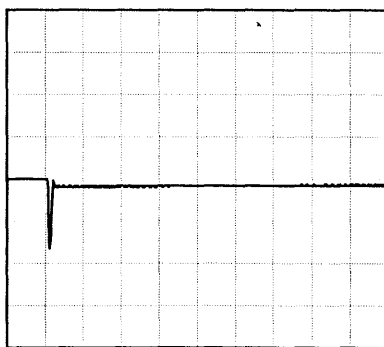
1 ms/div



1 ms/div

Min. Load (0A) ←→
 Load 50% (30A)

100 mV/div



1 ms/div



1 ms/div

* The characteristic of AC200V is equal.



<p>Model MODULE 2B</p> <p>Item Ripple Voltage (by Load Current)</p> <p>Object +3.3V60A</p>		<p>Temperature 25°C</p> <p>Testing Circuitry Figure A</p>																																						
<p>1.Graph</p> <p>—△— Input Volt. 100V</p> <p>- -○- - Input Volt. 200V</p> <p>Measured by 20 MHz Oscilloscope. Ripple Voltage is shown as p-p in the figure below. Note: Slanted line shows the range of the rated load current.</p>		<p>2.Values</p> <table border="1"> <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</td><td>20</td><td>20</td></tr> <tr><td>12</td><td>30</td><td>30</td></tr> <tr><td>24</td><td>35</td><td>35</td></tr> <tr><td>36</td><td>35</td><td>35</td></tr> <tr><td>48</td><td>40</td><td>40</td></tr> <tr><td>60</td><td>40</td><td>40</td></tr> <tr><td>66</td><td>45</td><td>45</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	20	20	12	30	30	24	35	35	36	35	35	48	40	40	60	40	40	66	45	45	--	-	-	--	-	-	--	-	-	--	-	-
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Model		MODULE 2B	Temperature	25°C																																						
Item		Ripple-Noise	Testing Circuitry	Figure A																																						
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COSEL		
Model	MODULE 2B	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+3.3V60A	

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 - 60A

* 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	50	85	60	3.361	±4	±0.1
Minimum Voltage	-20	85	0	3.353		



COSEL																									
Model	MODULE 2B	Temperature	25°C																						
Item	Time Lapse Drift	Testing Circuitry	Figure A																						
Object	+3.3V60A																								
<p>1.Graph</p> <p style="text-align: center;">Time [H]</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>3.361</td></tr> <tr><td>0.5</td><td>3.361</td></tr> <tr><td>1.0</td><td>3.361</td></tr> <tr><td>2.0</td><td>3.361</td></tr> <tr><td>3.0</td><td>3.361</td></tr> <tr><td>4.0</td><td>3.361</td></tr> <tr><td>5.0</td><td>3.361</td></tr> <tr><td>6.0</td><td>3.361</td></tr> <tr><td>7.0</td><td>3.361</td></tr> <tr><td>8.0</td><td>3.361</td></tr> </tbody> </table>		Time since start [H]	Output Voltage [V]	0.0	3.361	0.5	3.361	1.0	3.361	2.0	3.361	3.0	3.361	4.0	3.361	5.0	3.361	6.0	3.361	7.0	3.361	8.0	3.361
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<p>1. Graph</p> <div style="text-align: center;"> <p>————— Input Volt. 100V</p> <p>————— Input Volt. 200V</p> </div> <p>Note: Slanted line shows the range of the rated load current.</p> <p>Intermittent operation occurs when the output voltage is from 1.6V 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>3.30</td><td>60.15</td><td>60.00</td></tr> <tr><td>3.14</td><td>68.45</td><td>68.79</td></tr> <tr><td>2.97</td><td>68.78</td><td>69.08</td></tr> <tr><td>2.64</td><td>69.51</td><td>69.78</td></tr> <tr><td>2.31</td><td>70.36</td><td>70.67</td></tr> <tr><td>1.98</td><td>71.52</td><td>71.88</td></tr> <tr><td>1.65</td><td>72.93</td><td>73.48</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]	3.30	60.15	60.00	3.14	68.45	68.79	2.97	68.78	69.08	2.64	69.51	69.78	2.31	70.36	70.67	1.98	71.52	71.88	1.65	72.93	73.48	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-
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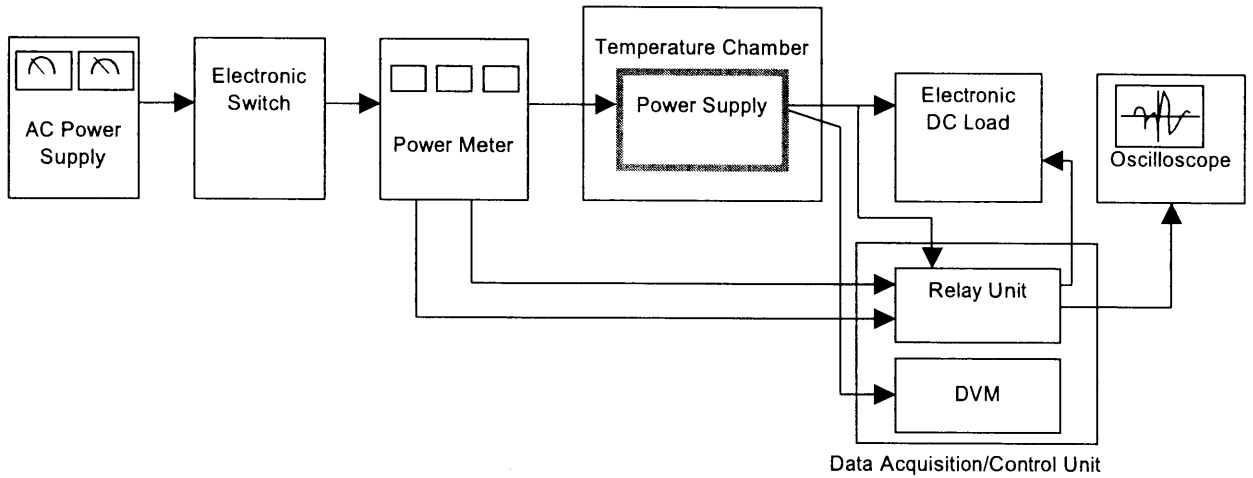


Figure A

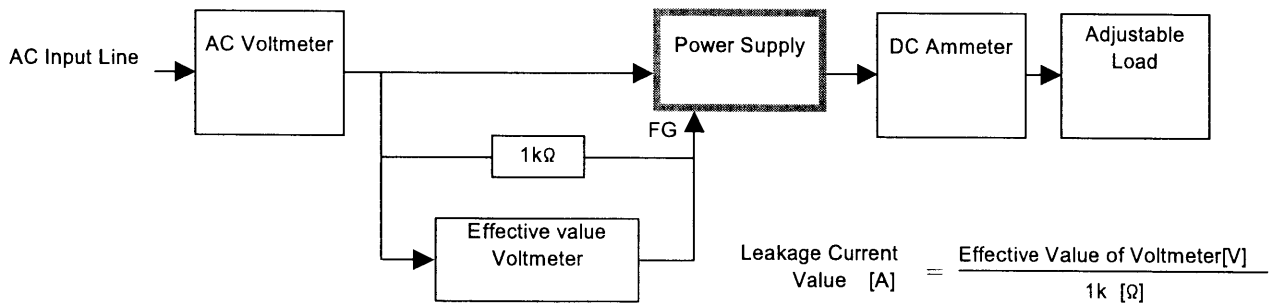


Figure B (DEN-AN)

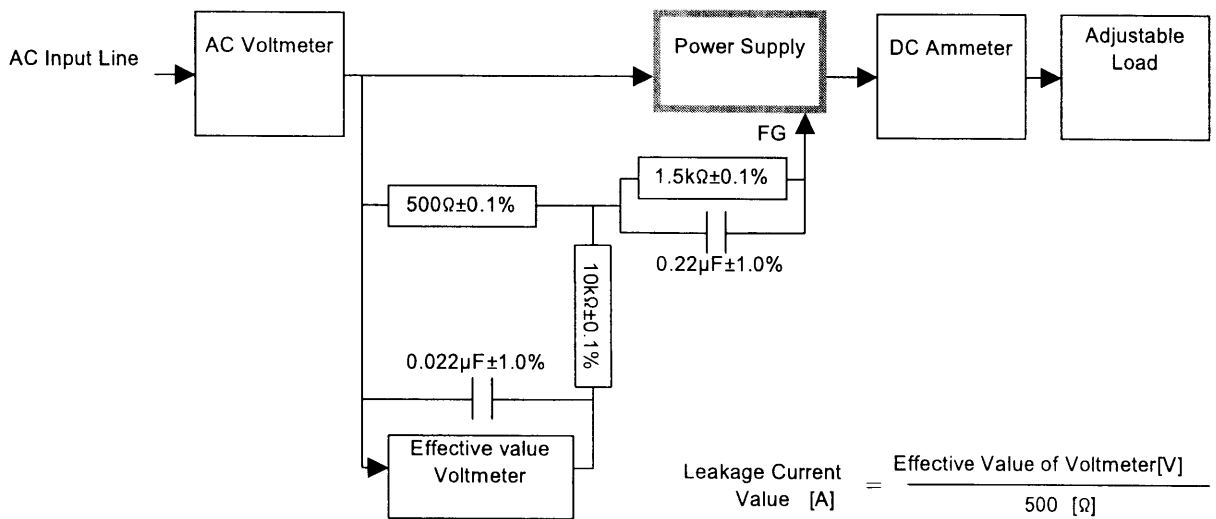


Figure B (IEC60950)