

TEST DATA OF MODULE E

(ACE series)

Regulated DC power supply
Sep.24.2003

Approved by : 
K. Shibutani Design Manager

Prepared by : 
M. Hamaguchi Design Engineer

COSEL CO.,LTD.

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COSEL																																		
Model	MODULE E	Temperature 25°C Testing Circuitry Figure A																																
Item	Line Regulation																																	
Object	+12V13A																																	
1.Graph		2.Values																																
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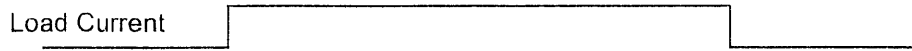


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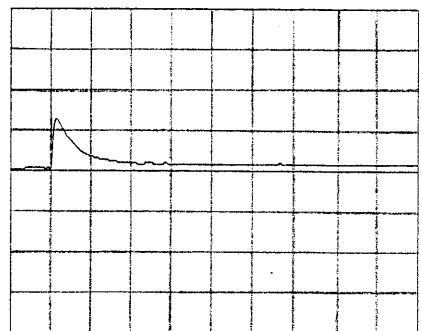
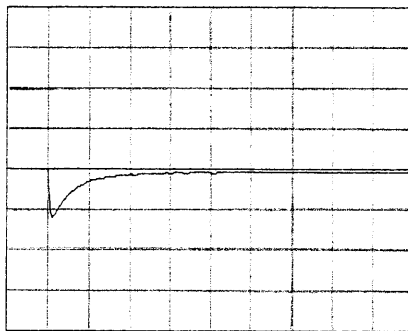


Model		MODULE E	Temperature 25°C Testing Circuitry Figure A
Item		Dynamic Load Response	
Object		+12V13A	

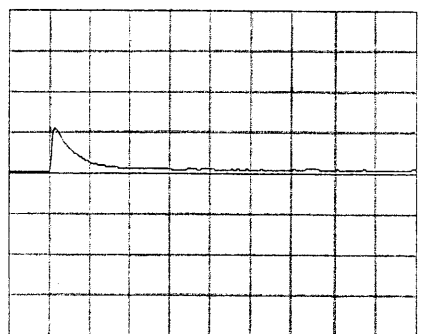
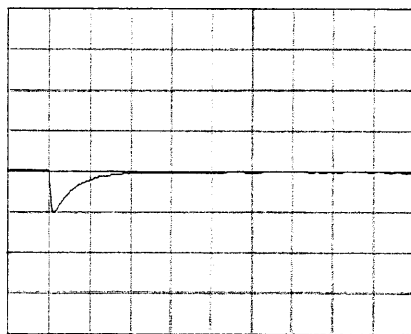
Input Volt. 100 V
Cycle 1000 mS



Min. Load ←→
Load 100 %



Min. Load ←→
Load 50 %



100 mV/div

10 ms/div

* The characteristic of AC200V is equal.



COSEL																																								
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Item	Ripple Voltage (by Load Current)	Temperature 25°C Testing Circuitry Figure A																																						
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<p>1.Graph</p> <div style="text-align: right;"> <p>—△— Input Volt. 100V</p> <p>- -○- - Input Volt. 200V</p> </div> <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>0.0</td><td>20</td><td>20</td></tr> <tr><td>2.0</td><td>30</td><td>30</td></tr> <tr><td>4.0</td><td>35</td><td>35</td></tr> <tr><td>6.0</td><td>35</td><td>35</td></tr> <tr><td>8.0</td><td>40</td><td>40</td></tr> <tr><td>10.0</td><td>40</td><td>40</td></tr> <tr><td>12.0</td><td>45</td><td>45</td></tr> <tr><td>13.0</td><td>50</td><td>50</td></tr> <tr><td>13.7</td><td>55</td><td>55</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	20	20	2.0	30	30	4.0	35	35	6.0	35	35	8.0	40	40	10.0	40	40	12.0	45	45	13.0	50	50	13.7	55	55	--	-	-	--	-	-
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COSEL		
Model	MODULE E	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+12V13A	

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 - 13A

* 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	12.123	±27	±0.2
Minimum Voltage	50	85	13	12.069		



COSEL																								
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Item	Time Lapse Drift	Temperature 25°C Testing Circuitry Figure A																						
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<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>12.098</td></tr> <tr><td>0.5</td><td>12.087</td></tr> <tr><td>1.0</td><td>12.087</td></tr> <tr><td>2.0</td><td>12.087</td></tr> <tr><td>3.0</td><td>12.087</td></tr> <tr><td>4.0</td><td>12.087</td></tr> <tr><td>5.0</td><td>12.087</td></tr> <tr><td>6.0</td><td>12.087</td></tr> <tr><td>7.0</td><td>12.087</td></tr> <tr><td>8.0</td><td>12.087</td></tr> </tbody> </table>	Time since start [H]	Output Voltage [V]	0.0	12.098	0.5	12.087	1.0	12.087	2.0	12.087	3.0	12.087	4.0	12.087	5.0	12.087	6.0	12.087	7.0	12.087	8.0	12.087
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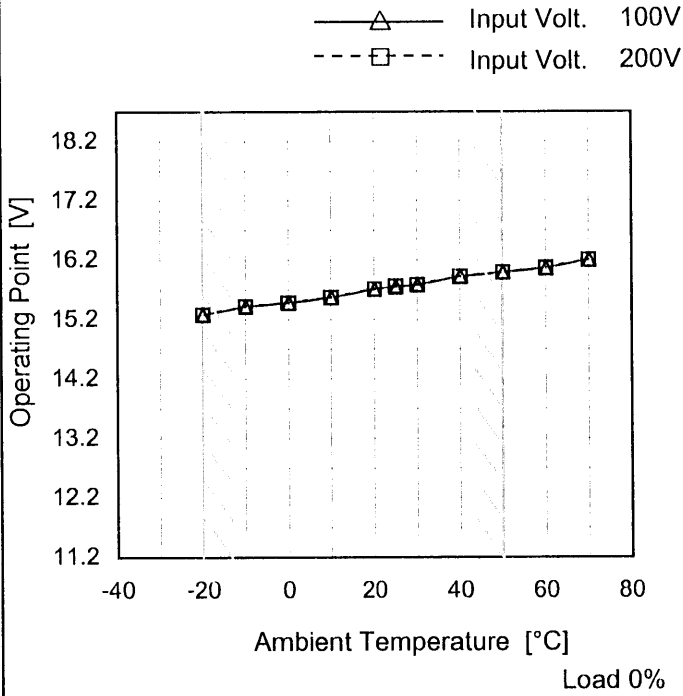
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Output Voltage [V]	Load Current [A]																																													
	Input Volt. 100[V]	Input Volt. 200[V]																																												
12.0	13.00	13.00																																												
11.4	15.06	15.39																																												
10.8	15.22	15.58																																												
9.6	15.60	16.04																																												
8.4	16.12	16.55																																												
7.2	16.71	16.97																																												
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Model	MODULE E
Item	Overvoltage Protection
Object	+12V13A

Testing Circuitry Figure A

1. Graph



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

2. Values

Ambient Temperature [°C]	Operating Point [V]	
	Input Volt. 100[V]	Input Volt. 200[V]
-20	15.25	15.25
-10	15.39	15.39
0	15.45	15.45
10	15.54	15.54
20	15.68	15.68
25	15.72	15.73
30	15.75	15.75
40	15.89	15.89
50	15.96	15.96
60	16.03	16.03
70	16.17	16.17

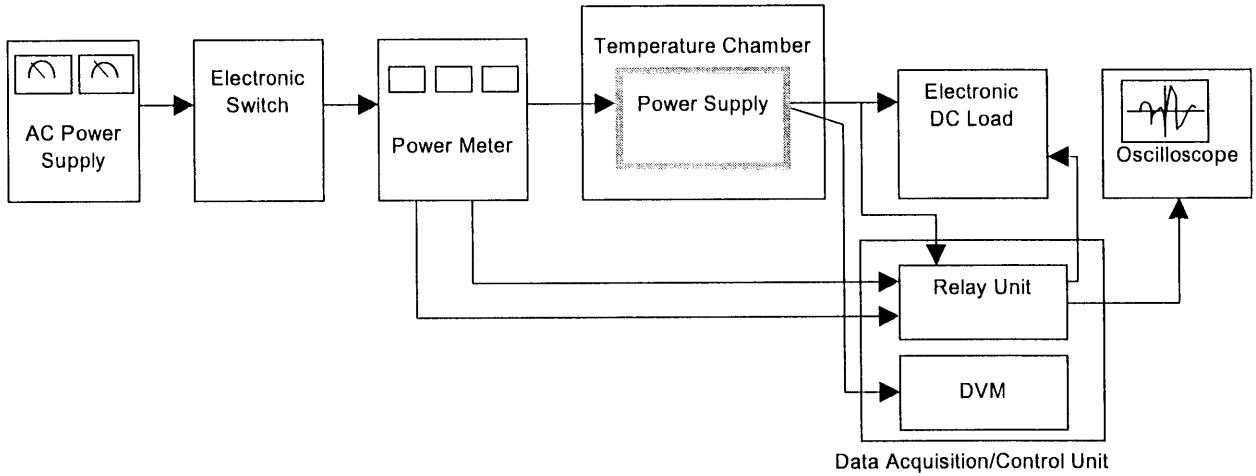


Figure A

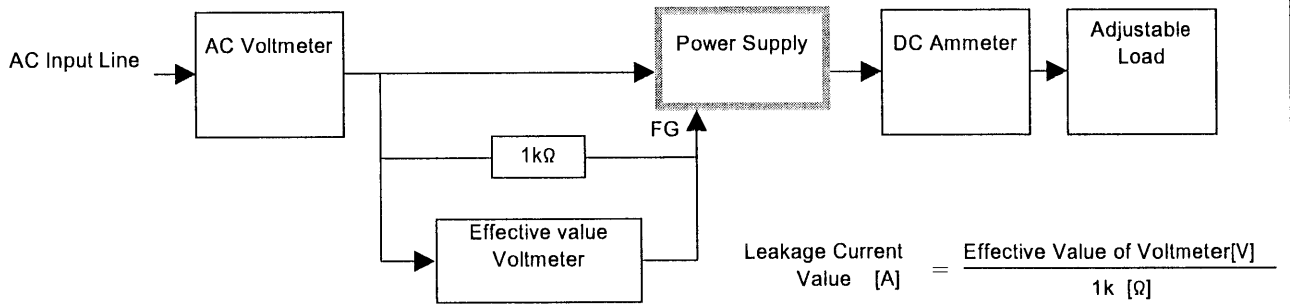


Figure B (DEN-AN)

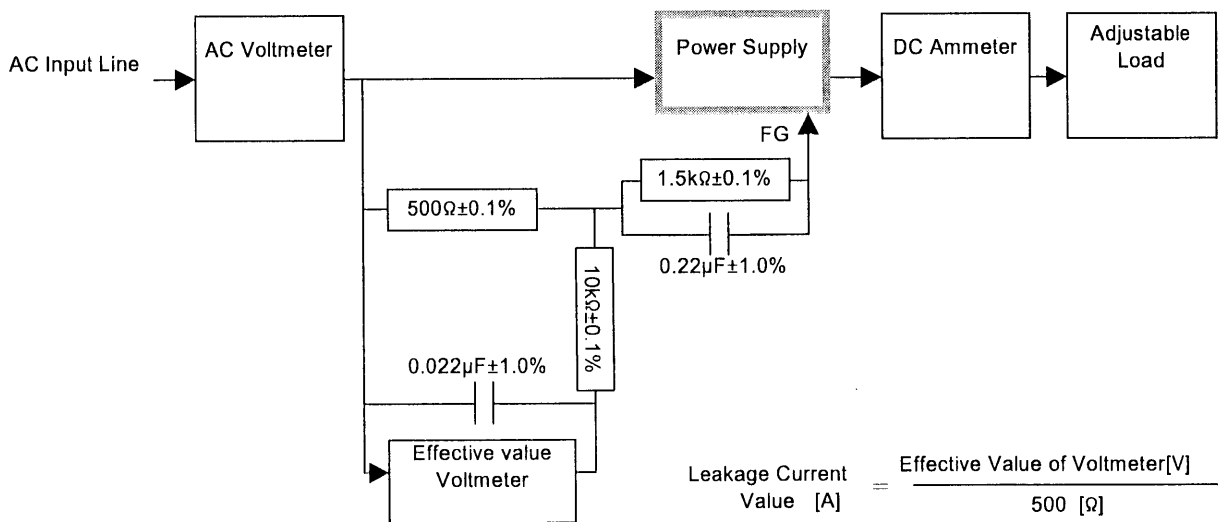


Figure B (IEC60950)