



# TEST DATA OF MODULE H

(ACE series)

Regulated DC power supply  
Sep.5.2003

Approved by :   
K. Shibutani Design Manager

Prepared by :   
M. Hamaguchi Design Engineer

**COSEL CO.,LTD.**

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(Final Page 12)



<b>COSEL</b>																																			
Model	MODULE H	Temperature	25°C																																
Item	Line Regulation	Testing Circuitry	Figure A																																
Object	+24V6.5A																																		
<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>24.104</td><td>24.100</td></tr> <tr><td>100</td><td>24.104</td><td>24.101</td></tr> <tr><td>120</td><td>24.104</td><td>24.101</td></tr> <tr><td>200</td><td>24.104</td><td>24.101</td></tr> <tr><td>230</td><td>24.104</td><td>24.101</td></tr> <tr><td>264</td><td>24.104</td><td>24.101</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	24.104	24.100	100	24.104	24.101	120	24.104	24.101	200	24.104	24.101	230	24.104	24.101	264	24.104	24.101	--	-	-	--	-	-	--	-	-
Input Voltage [V]	Output Voltage [V]																																		
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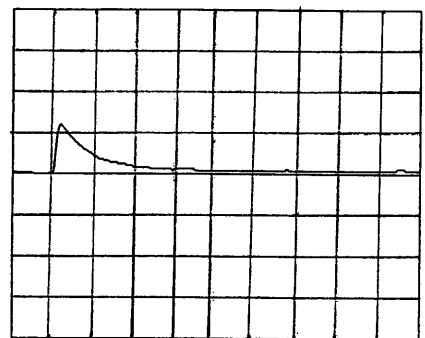
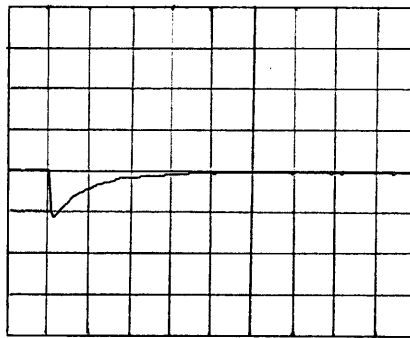
Model		MODULE H	Temperature 25°C Testing Circuitry Figure A
Item		Dynamic Load Response	
Object		+24V6.5A	

Input Volt. 100 V  
Cycle 1000 mS

Load Current

Min. Load ↔

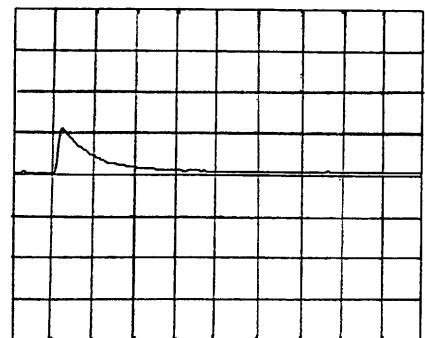
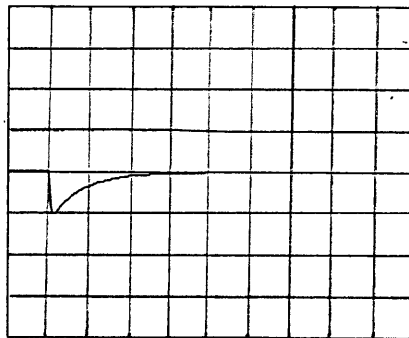
Load 100 %



Min. Load ↔

Load 50 %

100 mV/div



10 ms/div

\* The characteristic of AC200V is equal.



Model		MODULE H	Temperature 25°C																																							
Item		Ripple Voltage (by Load Current)	Testing Circuitry Figure A																																							
Object		+24V6.5A																																								
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<p>                     T1: Due to AC Input Line                      T2: Due to Switching                 </p> <p>Fig. Complex Ripple Wave Form</p>																																										



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Model		MODULE H		Testing Circuitry Figure A																																																				
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1.Graph		<p>                 —△— Input Volt. 100V                  - - - □ - - - Input Volt. 200V                  - · - ○ - · - - Input Volt. 230V             </p>		2.Values																																																				
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<b>COSEL</b>		Testing Circuitry Figure A
Model	MODULE H	
Item	Output Voltage Accuracy	
Object	+24V6.5A	

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 - 6.5A

\* 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	25	264	0	24.107	±18	±0.1
Minimum Voltage	50	85	6.5	24.072		



<b>COSEL</b>																								
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Item	Time Lapse Drift	Temperature 25°C Testing Circuitry Figure A																						
Object	+24V6.5A																							
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>24.084</td></tr> <tr><td>0.5</td><td>24.081</td></tr> <tr><td>1.0</td><td>24.081</td></tr> <tr><td>2.0</td><td>24.081</td></tr> <tr><td>3.0</td><td>24.081</td></tr> <tr><td>4.0</td><td>24.081</td></tr> <tr><td>5.0</td><td>24.081</td></tr> <tr><td>6.0</td><td>24.081</td></tr> <tr><td>7.0</td><td>24.081</td></tr> <tr><td>8.0</td><td>24.081</td></tr> </tbody> </table>	Time since start [H]	Output Voltage [V]	0.0	24.084	0.5	24.081	1.0	24.081	2.0	24.081	3.0	24.081	4.0	24.081	5.0	24.081	6.0	24.081	7.0	24.081	8.0	24.081
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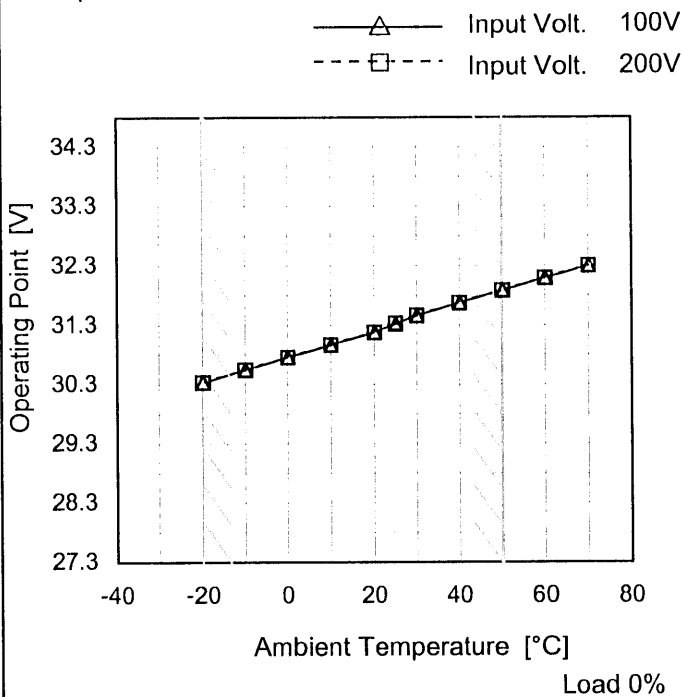
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		<p>Note: Slanted line shows the range of the rated load current.</p> <p>Intermittent operation occurs when the output voltage is from 14.4V to 0V.</p>	<table border="1"> <thead> <tr> <th rowspan="2">Output Voltage [V]</th> <th colspan="2">Load Current [A]</th> </tr> <tr> <th>Input Volt. 100[V]</th> <th>Input Volt. 200[V]</th> </tr> </thead> <tbody> <tr><td>24.0</td><td>6.50</td><td>6.50</td></tr> <tr><td>22.8</td><td>8.68</td><td>8.81</td></tr> <tr><td>21.6</td><td>8.75</td><td>8.90</td></tr> <tr><td>19.2</td><td>8.93</td><td>9.11</td></tr> <tr><td>16.8</td><td>9.16</td><td>9.30</td></tr> <tr><td>14.4</td><td>9.40</td><td>9.49</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]	24.0	6.50	6.50	22.8	8.68	8.81	21.6	8.75	8.90	19.2	8.93	9.11	16.8	9.16	9.30	14.4	9.40	9.49	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-
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24.0	6.50	6.50																																													
22.8	8.68	8.81																																													
21.6	8.75	8.90																																													
19.2	8.93	9.11																																													
16.8	9.16	9.30																																													
14.4	9.40	9.49																																													
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Model	MODULE H
Item	Overvoltage Protection
Object	+24V6.5A

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	30.36	30.36
-10	30.57	30.57
0	30.78	30.78
10	30.99	30.99
20	31.20	31.20
25	31.34	31.35
30	31.48	31.48
40	31.69	31.69
50	31.90	31.90
60	32.11	32.11
70	32.32	32.32

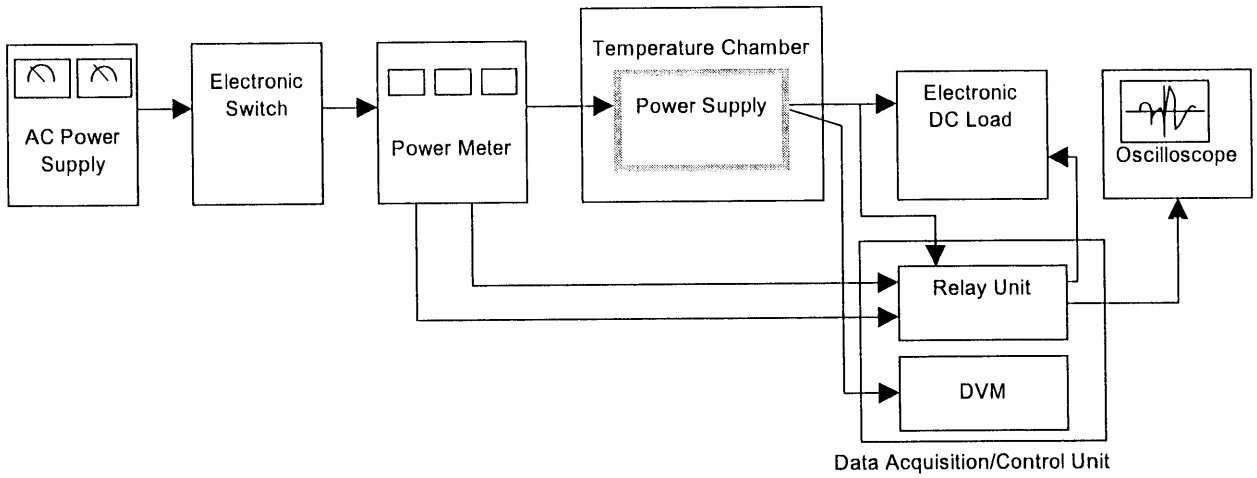


Figure A

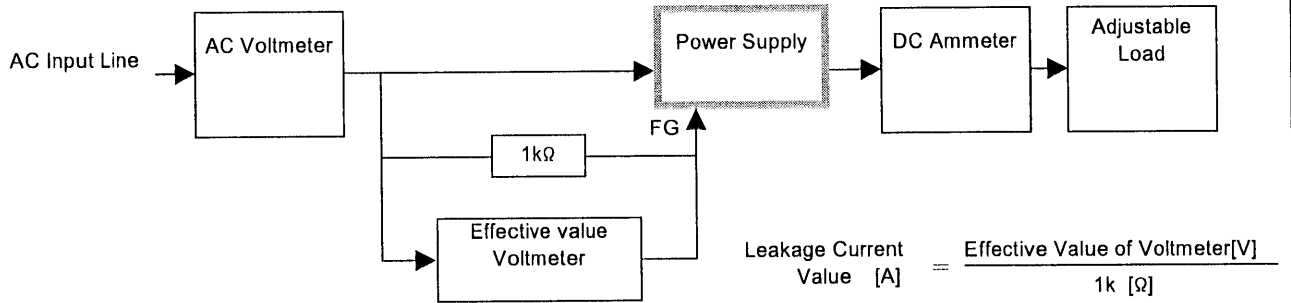


Figure B ( DEN-AN )

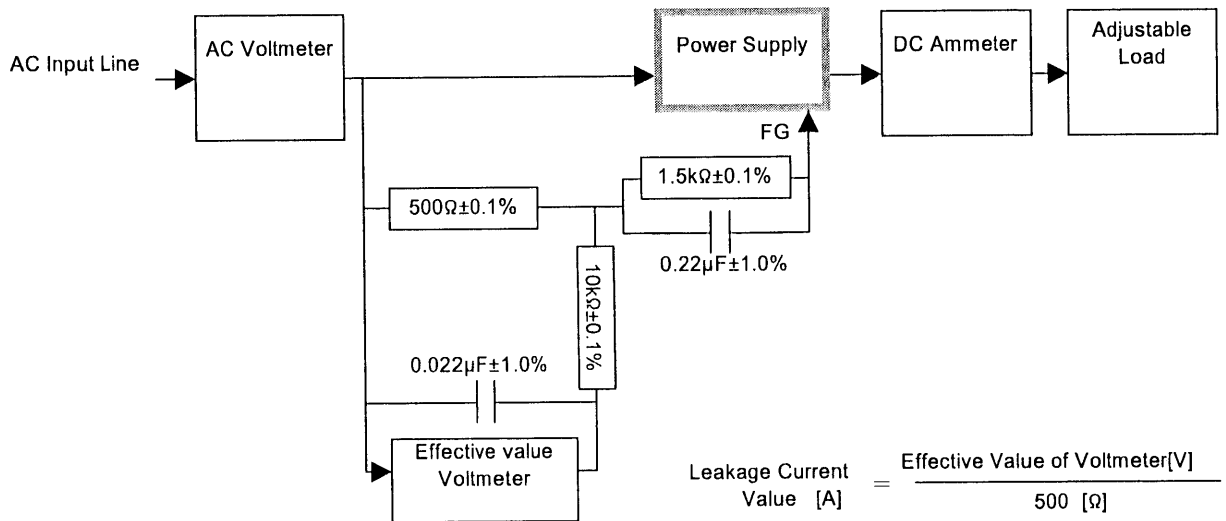


Figure B ( IEC60950 )