



TEST DATA OF MODULE E

(RB series)

Regulated DC Power Supply
November 25, 2019

Approved by : Yoshimichi Hirokawa
Yoshimichi Hirokawa Design Manager

Prepared by : Yutaka Murai
Yutaka Murai Design Engineer

COSEL CO.,LTD.



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Model	MODULE E	Temperature	25°C																																
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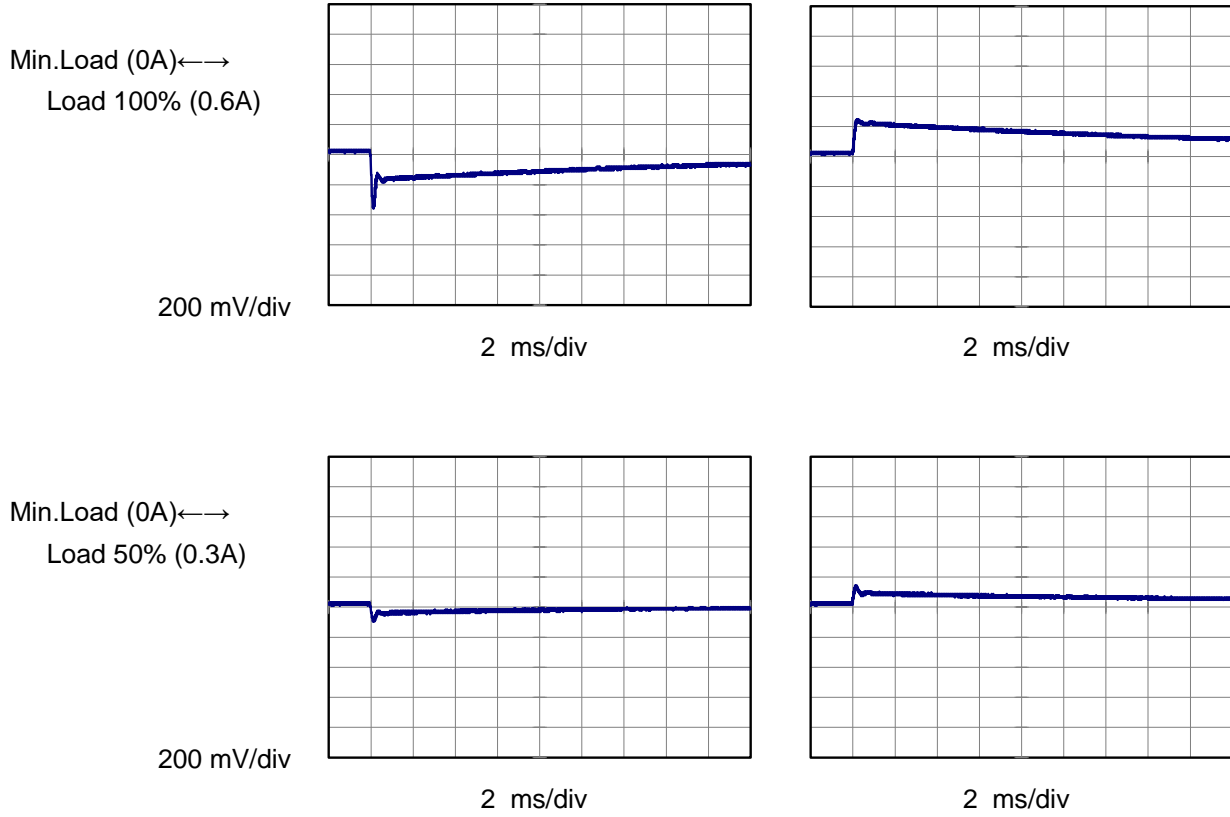
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Model		MODULE E	Temperature 25°C Testing Circuitry Figure A
Item		Dynamic Load Response	
Object		+12V0.6A	

Input Volt. 100 V
Other output current rated
Cycle 1000 ms

t1,t2 = 50 μsTyp

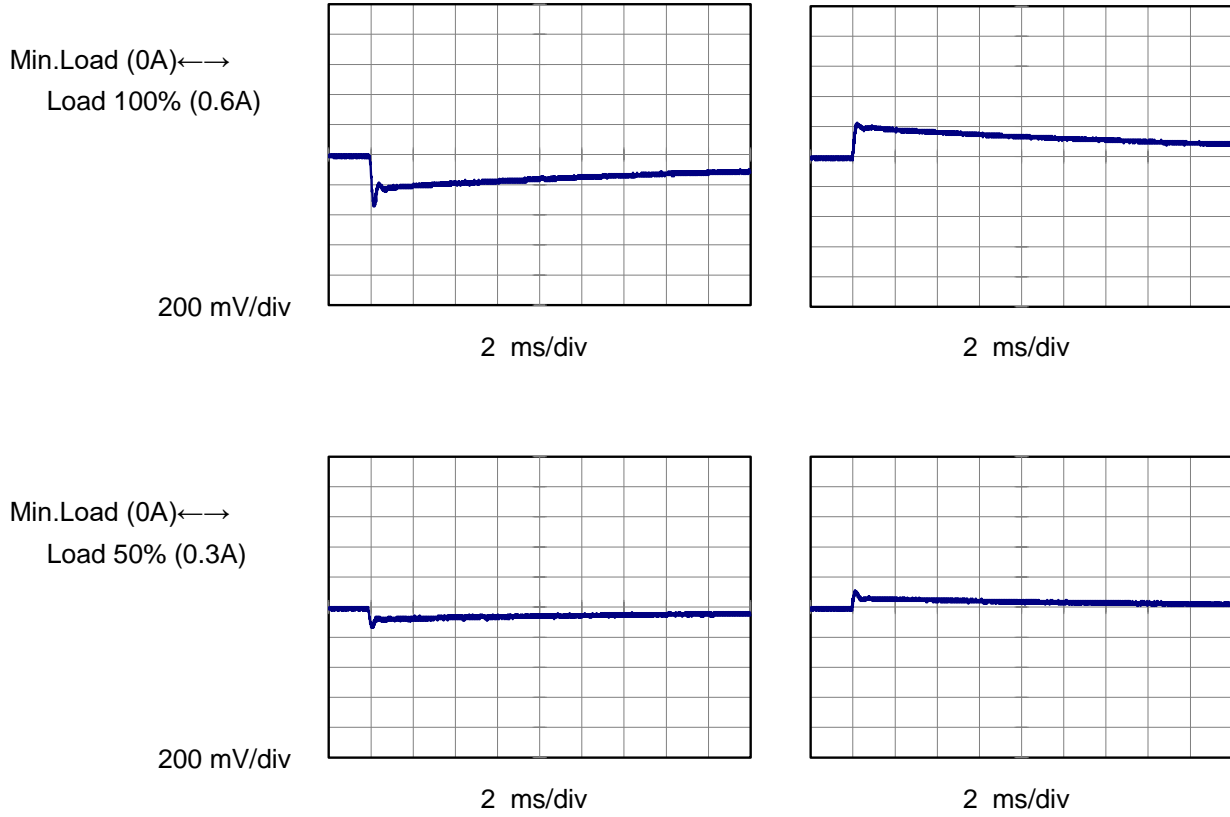




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<p>1.Graph</p> <p style="text-align: right;"> ---□--- Input Volt. 100V —△— Input Volt. 230V </p> <p style="text-align: center;">Ambient Temperature [°C]</p> <p style="text-align: center;">Load 100 %</p>		<p>2.Values</p> <table border="1"> <thead> <tr> <th rowspan="2">Ambient Temperature [°C]</th> <th colspan="2">Ripple Voltage [mV]</th> </tr> <tr> <th>Input Volt. 100 [V]</th> <th>Input Volt. 230 [V]</th> </tr> </thead> <tbody> <tr><td>-30</td><td>35</td><td>35</td></tr> <tr><td>-20</td><td>20</td><td>20</td></tr> <tr><td>0</td><td>20</td><td>20</td></tr> <tr><td>25</td><td>20</td><td>20</td></tr> <tr><td>50</td><td>15</td><td>15</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> <p style="text-align: center;">-12V: Rated Load Current</p>	Ambient Temperature [°C]	Ripple Voltage [mV]		Input Volt. 100 [V]	Input Volt. 230 [V]	-30	35	35	-20	20	20	0	20	20	25	20	20	50	15	15	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-
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COSEL																																																					
Model	MODULE E																																																				
Item	Ambient Temperature Drift	Testing Circuitry Figure A																																																			
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COSEL		Testing Circuitry Figure A
Model	MODULE E	
Item	Output Voltage Accuracy	

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 (AVR 1) : 0 - 0.6A (AVR 2) : 0 - 0.6A

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

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

2. Values

Object		+12V0.6A		Output		Output Voltage Accuracy	
Item	Temperature [°C]	Input Voltage[V]	Output		Value [mV]	Ratio [%]	
			Current[A]	Voltage[V]			
Maximum Voltage	50	200	0.00	12.420	±213	±1.8	
Minimum Voltage	50	85	0.60	11.994			

Object		-12V0.6A		Output		Output Voltage Accuracy	
Item	Temperature [°C]	Input Voltage[V]	Output		Value [mV]	Ratio [%]	
			Current[A]	Voltage[V]			
Maximum Voltage	50	264	0.60	-11.975	±213	±1.8	
Minimum Voltage	50	85	0.00	-12.401			



COSEL																								
Model	MODULE E																							
Item	Time Lapse Drift	Temperature 25°C Testing Circuitry Figure A																						
Object	+12V0.6A																							
<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>12.161</td></tr> <tr><td>0.5</td><td>12.169</td></tr> <tr><td>1.0</td><td>12.169</td></tr> <tr><td>2.0</td><td>12.169</td></tr> <tr><td>3.0</td><td>12.169</td></tr> <tr><td>4.0</td><td>12.169</td></tr> <tr><td>5.0</td><td>12.169</td></tr> <tr><td>6.0</td><td>12.169</td></tr> <tr><td>7.0</td><td>12.169</td></tr> <tr><td>8.0</td><td>12.169</td></tr> </tbody> </table>	Time since start [H]	Output Voltage [V]	0.0	12.161	0.5	12.169	1.0	12.169	2.0	12.169	3.0	12.169	4.0	12.169	5.0	12.169	6.0	12.169	7.0	12.169	8.0	12.169
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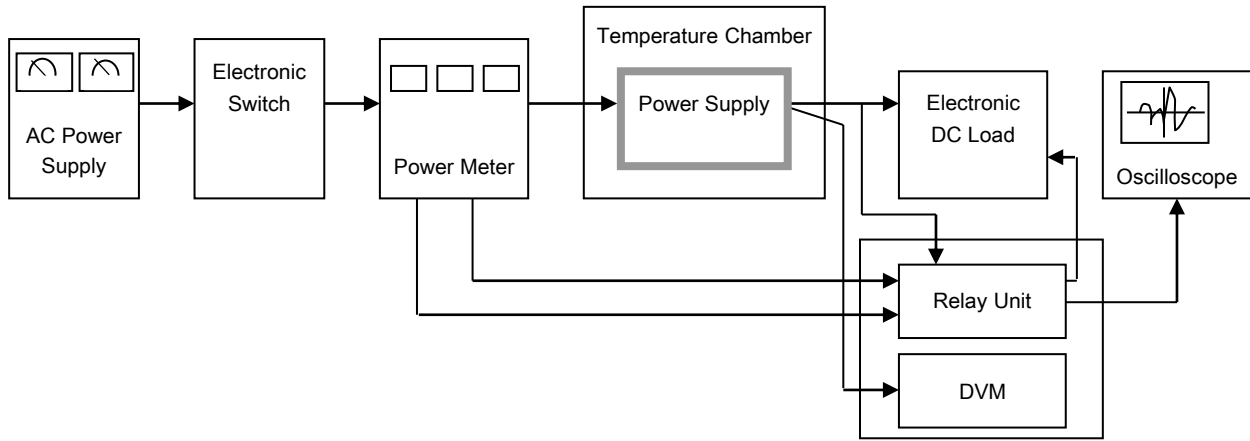
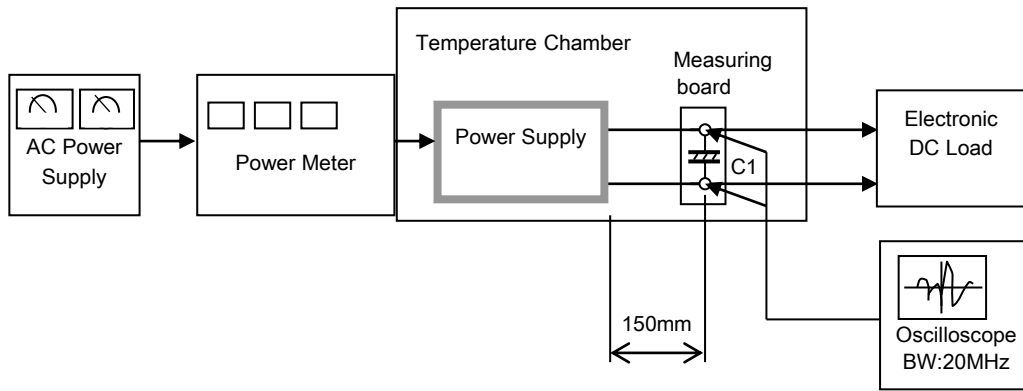


Figure A

Data Acquisition/Control Unit



C1= 22 μ F
(Electrolytic capacitor)

Figure B