



# TEST DATA OF LDA100W-9

(100V INPUT)

Regulated DC Power Supply  
Dec.9. 2004

Approved by : K. Shiho Design Manager  
K.Shiho

Prepared by : S. Ueda Design Engineer  
S.Ueda

**COSEL CO.,LTD.**



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Model	LDA100W-9																																																					
Item	Input Current (by Load Current)	Temperature Testing Circuitry	25°C Figure A																																																			
Object	_____																																																					
1.Graph	<p>Legend:</p> <ul style="list-style-type: none"> <li>Input Volt. 85V</li> <li>Input Volt. 100V</li> <li>Input Volt. 132V</li> </ul>																																																					
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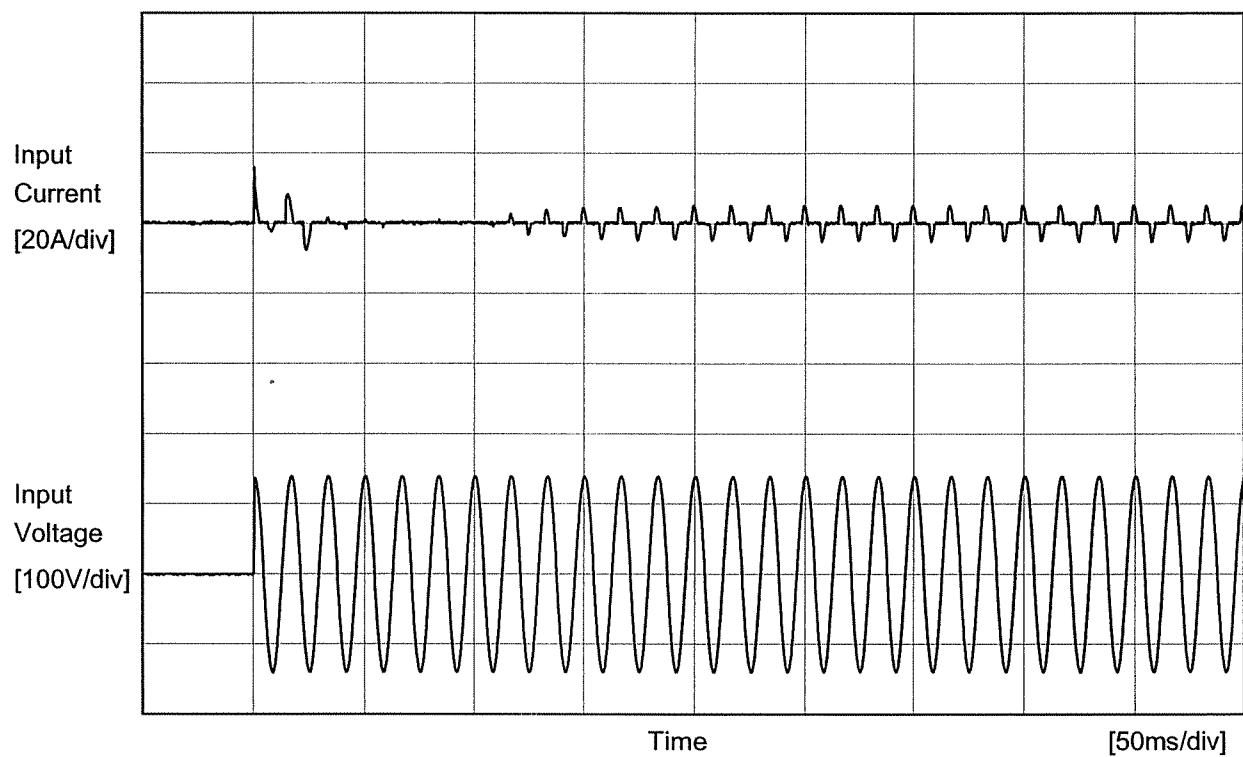
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Item	Efficiency (by Input Voltage)																																
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<p>The graph plots Efficiency [%] on the y-axis (60 to 88) against Input Voltage [V] on the x-axis (70 to 150). Two data series are shown: Load 50% (dashed line with square markers) and Load 100% (solid line with triangle markers). Both series show a slight decrease in efficiency as input voltage increases. A slanted line on the graph indicates the rated input voltage range.</p> <table border="1"> <thead> <tr> <th>Input Voltage [V]</th> <th>Efficiency Load 50% [%]</th> <th>Efficiency Load 100% [%]</th> </tr> </thead> <tbody> <tr><td>75</td><td>82.0</td><td>80.4</td></tr> <tr><td>80</td><td>82.1</td><td>81.0</td></tr> <tr><td>85</td><td>82.0</td><td>81.4</td></tr> <tr><td>90</td><td>81.8</td><td>81.6</td></tr> <tr><td>100</td><td>81.3</td><td>81.7</td></tr> <tr><td>110</td><td>80.6</td><td>81.8</td></tr> <tr><td>120</td><td>79.9</td><td>81.6</td></tr> <tr><td>132</td><td>79.0</td><td>82.0</td></tr> <tr><td>140</td><td>78.2</td><td>81.8</td></tr> </tbody> </table>				Input Voltage [V]	Efficiency Load 50% [%]	Efficiency Load 100% [%]	75	82.0	80.4	80	82.1	81.0	85	82.0	81.4	90	81.8	81.6	100	81.3	81.7	110	80.6	81.8	120	79.9	81.6	132	79.0	82.0	140	78.2	81.8
Input Voltage [V]	Efficiency Load 50% [%]	Efficiency Load 100% [%]																															
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Item	Efficiency (by Load Current)	Temperature 25°C	Testing Circuitry Figure A																																																			
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<p>The graph plots Efficiency [%] on the y-axis (32 to 88) against Load Current [A] on the x-axis (0 to 12). Three curves are shown for Input Volt. 85V (solid line with triangles), Input Volt. 100V (dashed line with squares), and Input Volt. 132V (dash-dot line with circles). All curves show efficiency increasing with load current. A slanted line on the right indicates the rated load current range.</p>																																																						
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<table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th colspan="3">Efficiency [%]</th> </tr> <tr> <th>Input Volt. 85[V]</th> <th>Input Volt. 100[V]</th> <th>Input Volt. 132[V]</th> </tr> </thead> <tbody> <tr><td>0.00</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>2.00</td><td>72.9</td><td>70.6</td><td>64.7</td></tr> <tr><td>4.00</td><td>79.8</td><td>79.1</td><td>75.7</td></tr> <tr><td>6.00</td><td>81.6</td><td>81.1</td><td>78.9</td></tr> <tr><td>8.00</td><td>81.8</td><td>82.0</td><td>80.7</td></tr> <tr><td>10.00</td><td>81.6</td><td>81.9</td><td>81.3</td></tr> <tr><td>11.50</td><td>81.4</td><td>81.7</td><td>81.3</td></tr> <tr><td>12.65</td><td>80.9</td><td>81.5</td><td>81.3</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td></tr> </tbody> </table>				Load Current [A]	Efficiency [%]			Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]	0.00	-	-	-	2.00	72.9	70.6	64.7	4.00	79.8	79.1	75.7	6.00	81.6	81.1	78.9	8.00	81.8	82.0	80.7	10.00	81.6	81.9	81.3	11.50	81.4	81.7	81.3	12.65	80.9	81.5	81.3	--	-	-	-	--	-	-	-	--	-	-	-
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Model	LDA100W-9	Temperature	25°C
Item	Inrush Current	Testing Circuitry	Figure A
Object	_____		



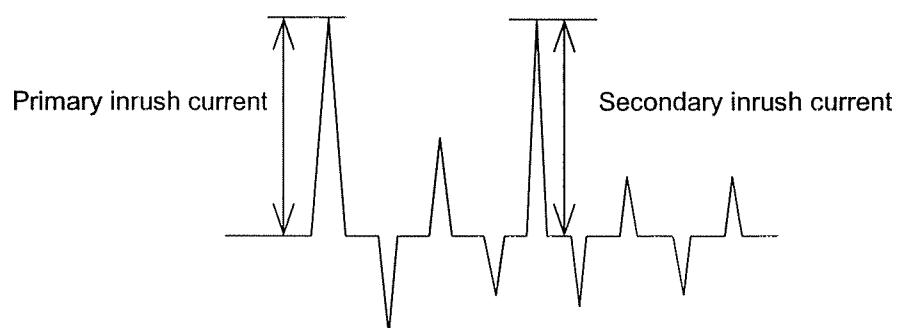
Input Voltage 100 V

Frequency 60 Hz

Load 100 %

Primary inrush current 16.0 A

Secondary inrush current 5.4 A



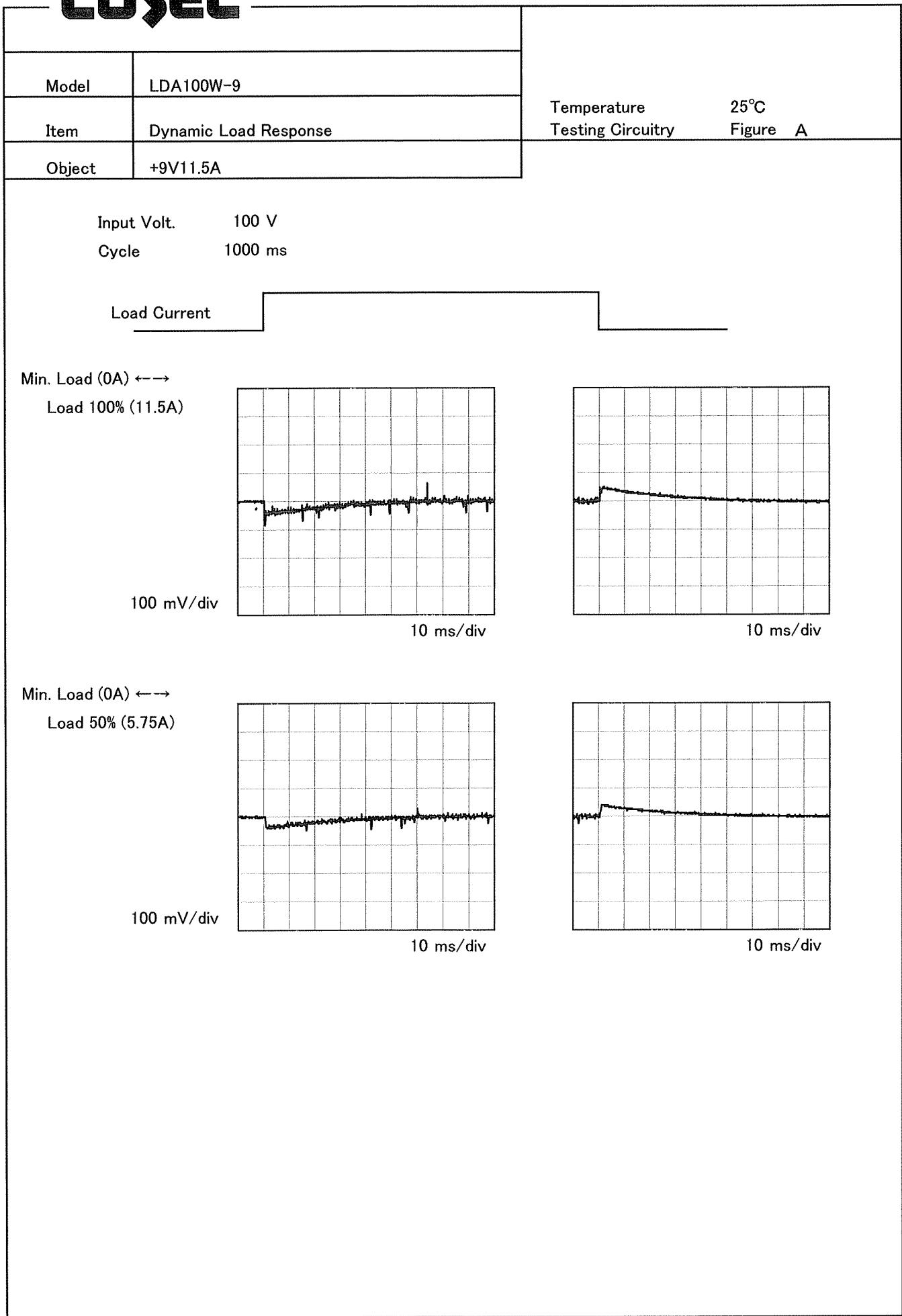


Model	LDA100W-9																																	
Item	Line Regulation	Temperature 25°C Testing Circuitry Figure A																																
Object	+9V11.5A																																	
1. Graph																																		
<p style="text-align: center;"> <span style="display: inline-block; width: 15px; height: 15px; border: 1px dashed black; margin-right: 5px;"></span> Load 50%  <span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; margin-right: 5px;"></span> Load 100%     </p>																																		
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<p>The graph plots Output Voltage [V] on the Y-axis (8.84 to 8.98) against Load Current [A] on the X-axis (0 to 12). Three data series are shown for input voltages of 85V, 100V, and 132V. All series show a slight decrease in output voltage as load current increases, with the 85V series being the highest and the 132V series being the lowest.</p> <table border="1"> <thead> <tr> <th>Load Current [A]</th> <th>Output Voltage [V] (85V)</th> <th>Output Voltage [V] (100V)</th> <th>Output Voltage [V] (132V)</th> </tr> </thead> <tbody> <tr><td>0.00</td><td>8.931</td><td>8.931</td><td>8.931</td></tr> <tr><td>2.00</td><td>8.929</td><td>8.929</td><td>8.929</td></tr> <tr><td>4.00</td><td>8.927</td><td>8.927</td><td>8.926</td></tr> <tr><td>6.00</td><td>8.925</td><td>8.925</td><td>8.924</td></tr> <tr><td>8.00</td><td>8.923</td><td>8.923</td><td>8.922</td></tr> <tr><td>10.00</td><td>8.921</td><td>8.920</td><td>8.920</td></tr> <tr><td>11.50</td><td>8.919</td><td>8.919</td><td>8.919</td></tr> <tr><td>12.65</td><td>8.918</td><td>8.918</td><td>8.918</td></tr> </tbody> </table>			Load Current [A]	Output Voltage [V] (85V)	Output Voltage [V] (100V)	Output Voltage [V] (132V)	0.00	8.931	8.931	8.931	2.00	8.929	8.929	8.929	4.00	8.927	8.927	8.926	6.00	8.925	8.925	8.924	8.00	8.923	8.923	8.922	10.00	8.921	8.920	8.920	11.50	8.919	8.919	8.919	12.65	8.918	8.918	8.918
Load Current [A]	Output Voltage [V] (85V)	Output Voltage [V] (100V)	Output Voltage [V] (132V)																																			
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**COSEL**

Model	LDA100W-9																																							
Item	Ripple-Noise	Temperature 25°C Testing Circuitry Figure A																																						
Object	+9V11.5A																																							
1. Graph																																								
<p>Graph showing Ripple-Noise [mV] vs Load Current [A]. The Y-axis ranges from 0 to 200 mV, and the X-axis ranges from 0 to 12 A. Two data series are plotted: Input Volt. 85V (solid line with triangle markers) and Input Volt. 132V (dashed line with circle markers). Both series show a slight increase in noise as load current increases. A slanted line indicates the range of the rated load current.</p> <table border="1"> <thead> <tr> <th>Load Current [A]</th> <th>Ripple-Noise [mV] (85V)</th> <th>Ripple-Noise [mV] (132V)</th> </tr> </thead> <tbody> <tr><td>0.00</td><td>20</td><td>30</td></tr> <tr><td>2.00</td><td>35</td><td>45</td></tr> <tr><td>4.00</td><td>35</td><td>45</td></tr> <tr><td>6.00</td><td>35</td><td>45</td></tr> <tr><td>8.00</td><td>40</td><td>45</td></tr> <tr><td>10.00</td><td>45</td><td>50</td></tr> <tr><td>11.50</td><td>45</td><td>50</td></tr> <tr><td>12.65</td><td>50</td><td>50</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-Noise [mV] (85V)	Ripple-Noise [mV] (132V)	0.00	20	30	2.00	35	45	4.00	35	45	6.00	35	45	8.00	40	45	10.00	45	50	11.50	45	50	12.65	50	50	--	-	-	--	-	-	--	-	-		
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Model	LDA100W-9																																							
Item	Ripple Voltage (by Ambient Temp.)																																							
Object	+9V11.5A																																							
1. Graph																																								
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Measured by 20 MHz Oscilloscope.

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

**COSEL**

Model      LDA100W-9 Item      Ambient Temperature Drift Object    +9V11.5A	Testing Circuitry   Figure A																																																				
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1.Graph <div style="text-align: center;"> <p>The graph plots Output Voltage [V] on the y-axis (8.84 to 8.98) against Ambient Temperature [°C] on the x-axis (-40 to 60). Three data series are shown for Input Volt. 85V (solid line with squares), Input Volt. 100V (dashed line with squares), and Input Volt. 132V (dash-dot line with circles). All series show a slight decrease in output voltage as temperature increases. A diagonal line is drawn across the graph, representing the rated ambient temperature range.</p> </div>																																																					
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- 12 -		BC-0973																																																			



Model	LDA100W-9	Testing Circuitry Figure A
Item	Output Voltage Accuracy	
Object	+9V11.5A	

### 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 : -10 - 50°C

Input Voltage : 85 - 132V

Load Current : 0 - 11.5A

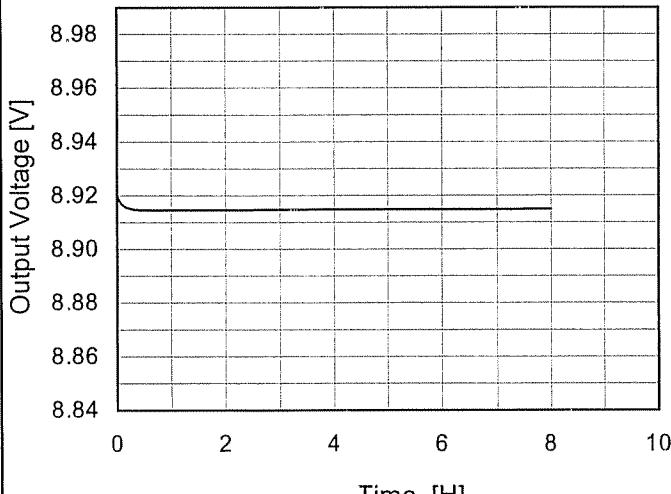
\* Output Voltage Accuracy =  $\pm(\text{Maximum of Output Voltage} - \text{Minimum of Output Voltage}) / 2$

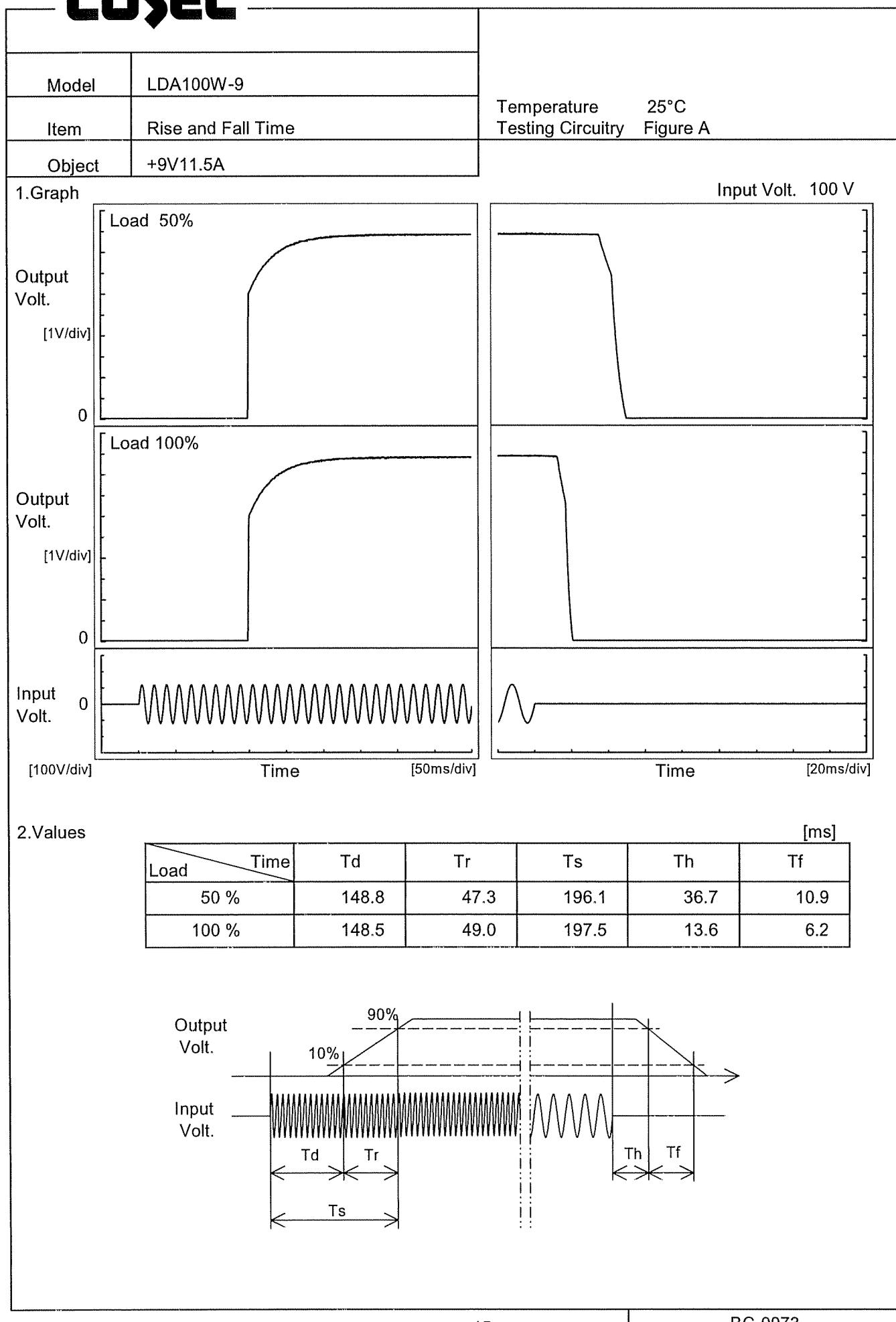
$$\text{* Output Voltage Accuracy (Ration)} = \frac{\text{Output Voltage Accuracy}}{\text{Rated Output Voltage}} \times 100$$

### 2. Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	-10	85	0	8.938	$\pm 14$	$\pm 0.2$
Minimum Voltage	50	85	11.5	8.910		

**COSEL**

Model	LDA100W-9	Temperature	25°C																						
Item	Time Lapse Drift	Testing Circuitry	Figure A																						
Object	+9V11.5A																								
1.Graph			2.Values																						
 <p>Output Voltage [V]</p> <p>Time [H]</p> <p>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>8.920</td></tr> <tr><td>0.5</td><td>8.915</td></tr> <tr><td>1.0</td><td>8.915</td></tr> <tr><td>2.0</td><td>8.915</td></tr> <tr><td>3.0</td><td>8.915</td></tr> <tr><td>4.0</td><td>8.915</td></tr> <tr><td>5.0</td><td>8.915</td></tr> <tr><td>6.0</td><td>8.915</td></tr> <tr><td>7.0</td><td>8.915</td></tr> <tr><td>8.0</td><td>8.915</td></tr> </tbody> </table>	Time since start [H]	Output Voltage [V]	0.0	8.920	0.5	8.915	1.0	8.915	2.0	8.915	3.0	8.915	4.0	8.915	5.0	8.915	6.0	8.915	7.0	8.915	8.0	8.915
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**COSEL**

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Model	LDA100W-9																															
Item	Hold-Up Time	Temperature 25°C Testing Circuitry Figure A																														
Object	+9V11.5A																															
1.Graph																																
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Input Voltage [V]	Load 50% [ms]	Load 100% [ms]																														
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2.Values																																
<p>This duration covers from Shut-off of input voltage to the moment when output voltage descends to the rated range of voltage accuracy.</p> <p>Note: Slanted line shows the range of the rated input voltage.</p>																																

**COSEL**

Model	LDA100W-9																																																						
Item	Instantaneous Interruption Compensation	Temperature Testing Circuitry	25°C Figure A																																																				
Object	+9V11.5A																																																						
1.Graph	<p style="text-align: center;">—△— Input Volt. 85V        - - -□- - Input Volt. 100V        - - ○- - Input Volt. 132V</p>	<p>2.Values</p> <table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th colspan="3">Time [ms]</th> </tr> <tr> <th>Input Volt. 85[V]</th> <th>Input Volt. 100[V]</th> <th>Input Volt. 132[V]</th> </tr> </thead> <tbody> <tr><td>0.00</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>2.00</td><td>99</td><td>165</td><td>326</td></tr> <tr><td>4.00</td><td>50</td><td>90</td><td>180</td></tr> <tr><td>6.00</td><td>26</td><td>50</td><td>118</td></tr> <tr><td>8.00</td><td>18</td><td>34</td><td>86</td></tr> <tr><td>10.00</td><td>17</td><td>26</td><td>65</td></tr> <tr><td>11.50</td><td>10</td><td>18</td><td>57</td></tr> <tr><td>12.65</td><td>3</td><td>17</td><td>50</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td></tr> </tbody> </table>			Load Current [A]	Time [ms]			Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]	0.00	-	-	-	2.00	99	165	326	4.00	50	90	180	6.00	26	50	118	8.00	18	34	86	10.00	17	26	65	11.50	10	18	57	12.65	3	17	50	--	-	-	-	--	-	-	-	--	-	-	-
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Note: Slanted line shows the range of the rated load current.

**COSEL**

Model	LDA100W-9																																							
Item	Minimum Input Voltage for Regulated Output Voltage																																							
Object	+9V11.5A																																							
1. Graph																																								
<p>Input Voltage [V]</p> <p>Ambient Temperature [°C]</p> <p>Legend:</p> <ul style="list-style-type: none"> <li>Load 50% (Dashed line)</li> <li>Load 100% (Solid line)</li> </ul>																																								
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**COSEL**

Model	LDA100W-9																																																									
Item	Overcurrent Protection	Temperature Testing Circuitry	25°C Figure A																																																							
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Model	LDA100W-9																																																					
Item	Overvoltage Protection																																																					
Object	+9V11.5A																																																					
1.Graph	<p>Operating Point [V]</p> <p>Ambient Temperature [°C]</p> <p>Load 0%</p> <ul style="list-style-type: none"> <li>—△— Input Volt. 85V</li> <li>- -□-- Input Volt. 100V</li> <li>- -○-- Input Volt. 132V</li> </ul>																																																					
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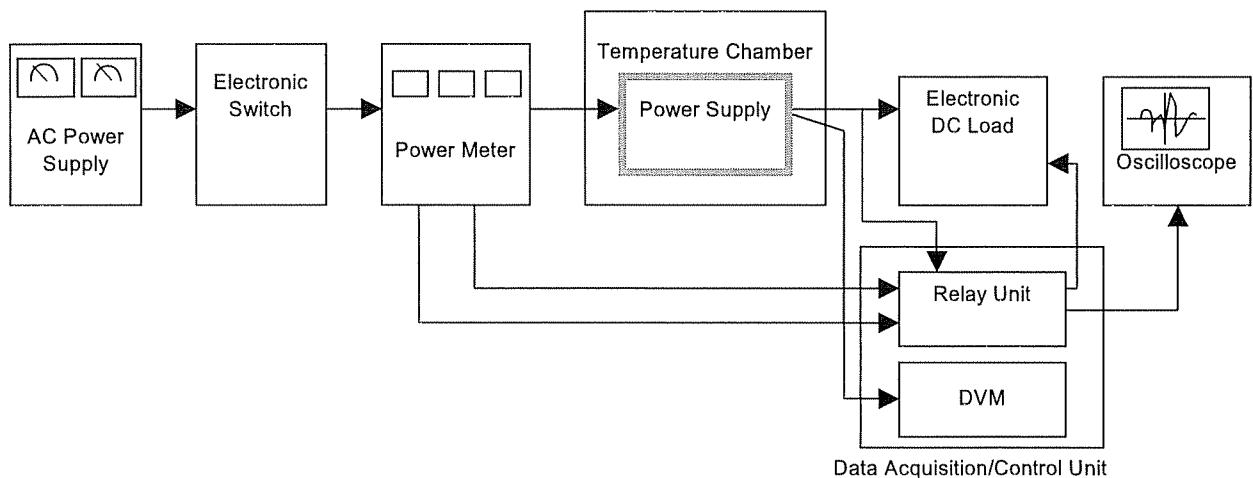


Figure A

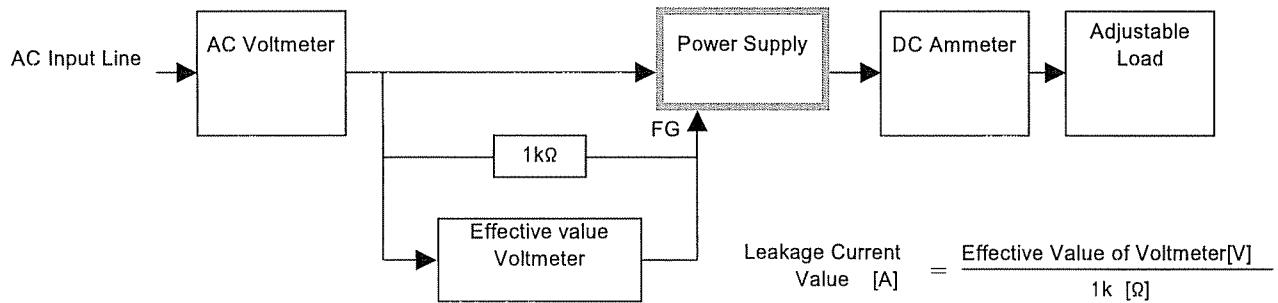


Figure B ( DEN-AN )

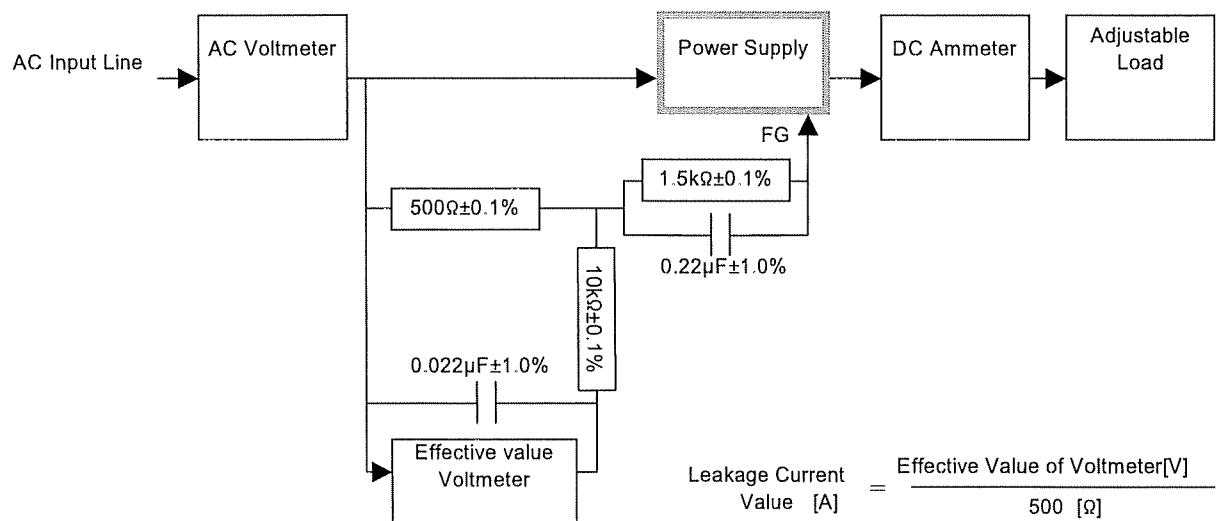


Figure B ( IEC60950 )