



TEST DATA OF LDA100W-9

(200V INPUT)

Regulated DC Power Supply
Dec.9. 2004

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K.Shihō

Design Manager

Prepared by : S. Ueda
S.Ueda

Design Engineer

COSEL CO.,LTD.



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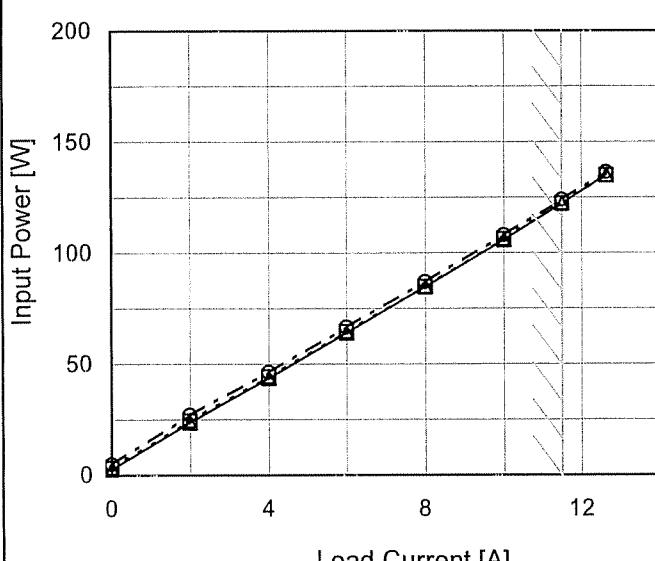
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Model	LDA100W-9																																																					
Item	Input Current (by Load Current)	Temperature Testing Circuitry	25°C Figure A																																																			
Object	—	—	—																																																			
1.Graph	—△— Input Volt. 170V ---□--- Input Volt. 200V ---○--- Input Volt. 264V	2.Values																																																				
<p>The graph shows three curves representing different input voltages: 170V (solid line with triangles), 200V (dashed line with squares), and 264V (dash-dot line with circles). All curves show a positive linear relationship between input current and load current. A slanted line is drawn across the graph, starting from approximately (0, 0.05) and ending at approximately (12, 1.5), representing the rated load current range.</p>																																																						
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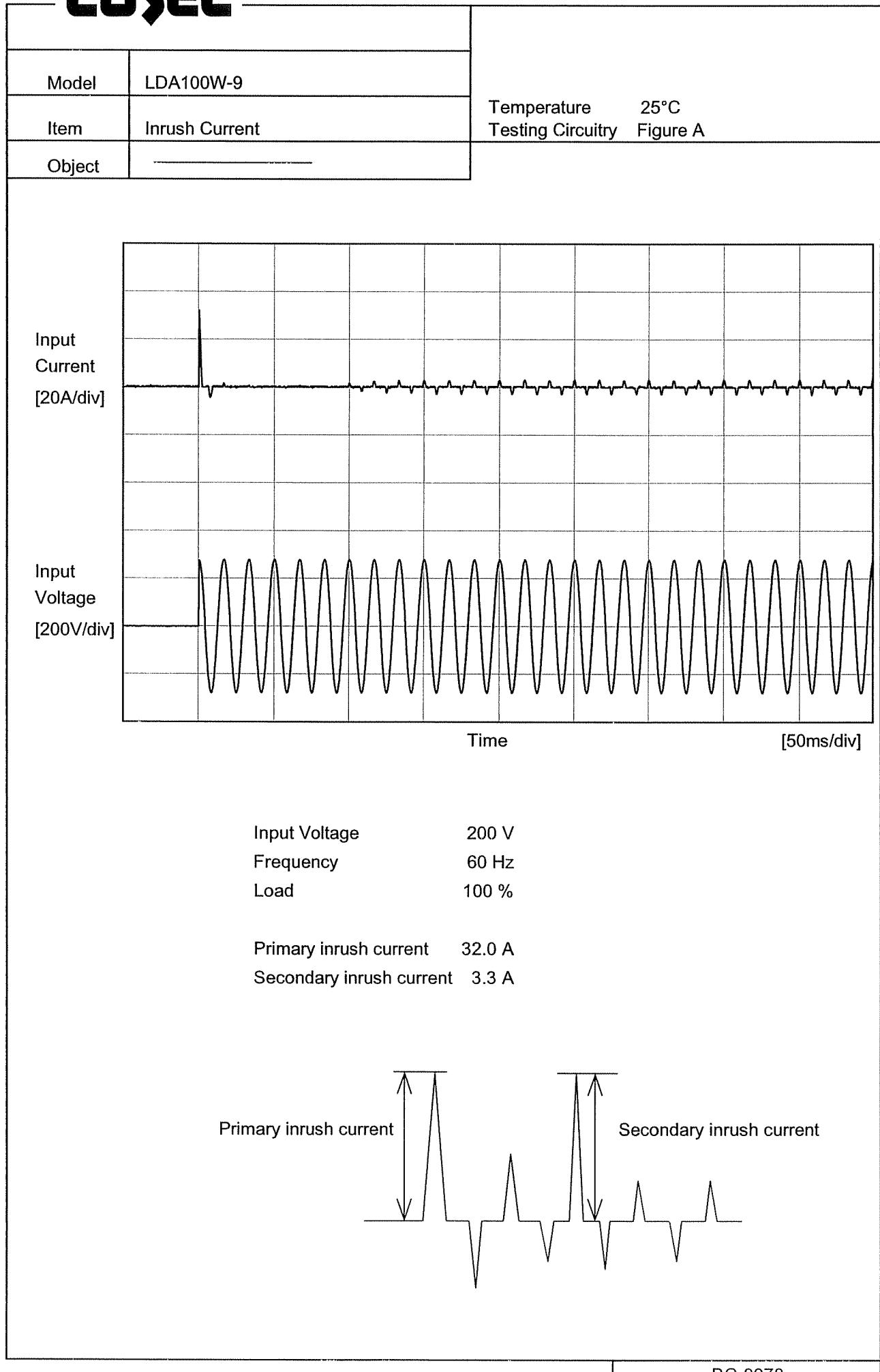
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Item	Efficiency (by Input Voltage)	Temperature Testing Circuitry 25°C Figure A																																
Object	_____	_____																																
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<p>The graph plots Efficiency [%] on the y-axis (60 to 88) against Input Voltage [V] on the x-axis (140 to 300). 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>150</td><td>84.0</td><td>83.5</td></tr> <tr><td>160</td><td>83.8</td><td>83.5</td></tr> <tr><td>170</td><td>83.5</td><td>83.3</td></tr> <tr><td>180</td><td>83.2</td><td>83.0</td></tr> <tr><td>220</td><td>81.5</td><td>82.5</td></tr> <tr><td>260</td><td>79.5</td><td>81.0</td></tr> <tr><td>280</td><td>78.5</td><td>80.5</td></tr> </tbody> </table>			Input Voltage [V]	Efficiency Load 50% [%]	Efficiency Load 100% [%]	150	84.0	83.5	160	83.8	83.5	170	83.5	83.3	180	83.2	83.0	220	81.5	82.5	260	79.5	81.0	280	78.5	80.5								
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1.Graph	<p>Legend:</p> <ul style="list-style-type: none"> Input Volt. 170V (solid line with triangle markers) Input Volt. 200V (dashed line with square markers) Input Volt. 264V (dash-dot line with circle markers) <table border="1"> <thead> <tr> <th>Load Current [A]</th> <th>170[V]</th> <th>200[V]</th> <th>264[V]</th> </tr> </thead> <tbody> <tr><td>2.00</td><td>75.0</td><td>72.3</td><td>65.6</td></tr> <tr><td>4.00</td><td>81.4</td><td>80.1</td><td>76.7</td></tr> <tr><td>6.00</td><td>83.2</td><td>82.6</td><td>80.0</td></tr> <tr><td>8.00</td><td>84.0</td><td>83.8</td><td>81.7</td></tr> <tr><td>10.00</td><td>84.0</td><td>83.6</td><td>82.3</td></tr> <tr><td>11.50</td><td>83.7</td><td>83.5</td><td>82.5</td></tr> <tr><td>12.65</td><td>83.3</td><td>83.4</td><td>82.5</td></tr> </tbody> </table>			Load Current [A]	170[V]	200[V]	264[V]	2.00	75.0	72.3	65.6	4.00	81.4	80.1	76.7	6.00	83.2	82.6	80.0	8.00	84.0	83.8	81.7	10.00	84.0	83.6	82.3	11.50	83.7	83.5	82.5	12.65	83.3	83.4	82.5
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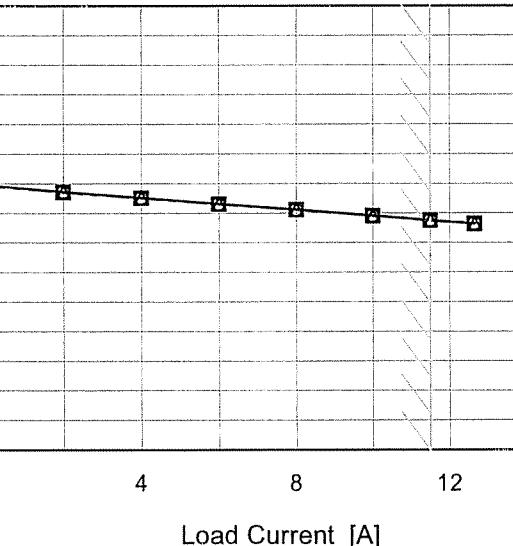
Note: Slanted line shows the range of the rated load current.

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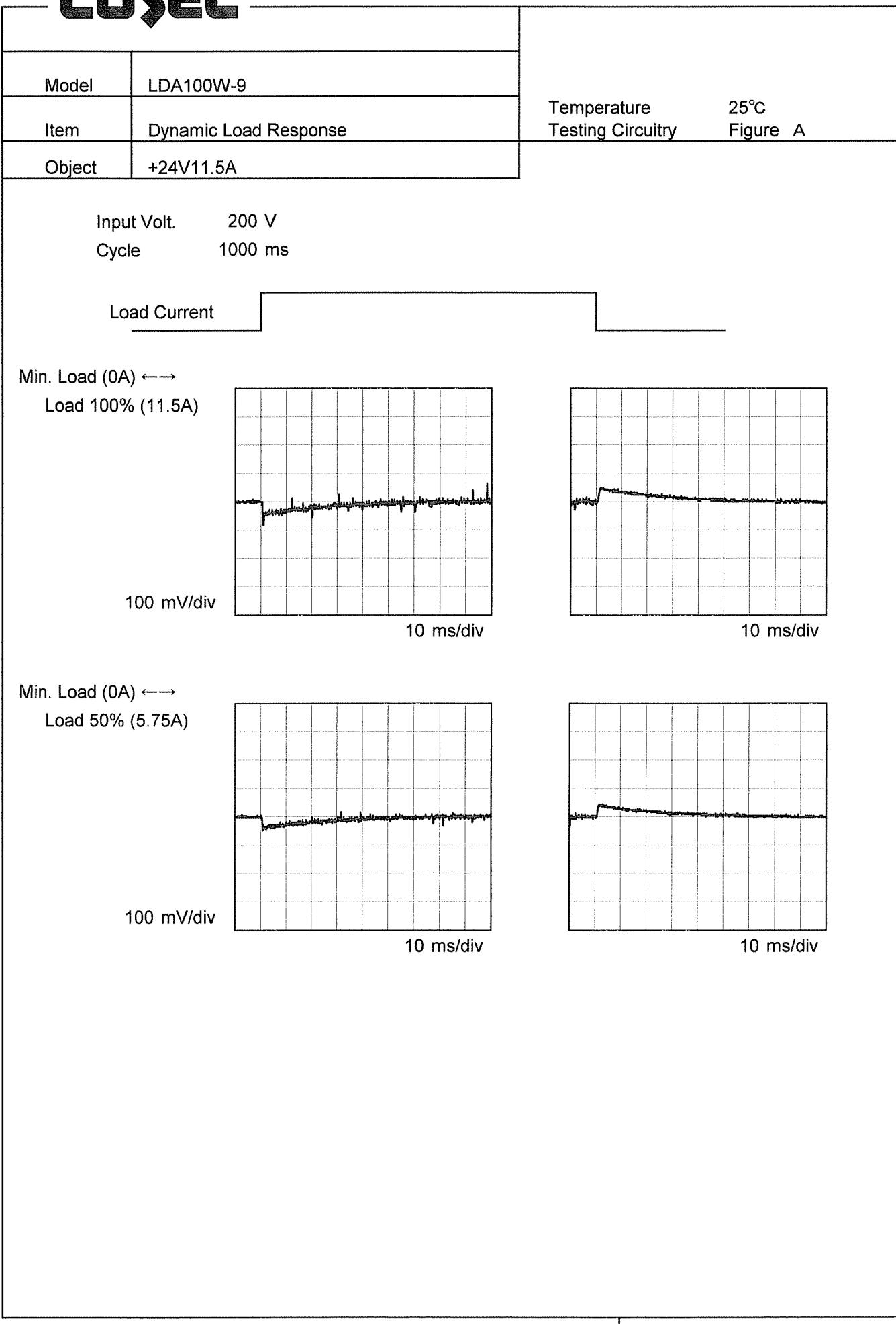


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Item	Line Regulation	Temperature 25°C Testing Circuitry Figure A																																
Object	+9V11.5A																																	
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1. Graph <div style="display: flex; justify-content: space-between; align-items: center;"> —△— Input Volt. 170V - -□- - Input Volt. 200V —○— Input Volt. 264V </div>  <p style="text-align: center; margin-top: 10px;"> Output Voltage [V] 8.98 8.96 8.94 8.92 8.90 8.88 8.86 8.84 0 4 8 12 Load Current [A] </p>																																																						
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<p>T1: Due to AC Input Line T2: Due to Switching</p>																																								
Fig. Complex Ripple Wave Form																																								

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 curves are shown: one for Input Volt. 170V (solid line with triangle markers) and one for Input Volt. 264V (dashed line with circle markers). Both curves show an increase in noise with increasing load current, with the 264V curve generally higher than the 170V curve. A slanted line indicates the range of the rated load current.</p> <table border="1"> <caption>Data points estimated from the graph</caption> <thead> <tr> <th>Load Current [A]</th> <th>Ripple-Noise [mV] (170V)</th> <th>Ripple-Noise [mV] (264V)</th> </tr> </thead> <tbody> <tr><td>0.00</td><td>25</td><td>25</td></tr> <tr><td>2.00</td><td>30</td><td>35</td></tr> <tr><td>4.00</td><td>35</td><td>40</td></tr> <tr><td>6.00</td><td>40</td><td>40</td></tr> <tr><td>8.00</td><td>45</td><td>45</td></tr> <tr><td>10.00</td><td>50</td><td>50</td></tr> <tr><td>11.50</td><td>50</td><td>55</td></tr> <tr><td>12.65</td><td>55</td><td>55</td></tr> </tbody> </table>			Load Current [A]	Ripple-Noise [mV] (170V)	Ripple-Noise [mV] (264V)	0.00	25	25	2.00	30	35	4.00	35	40	6.00	40	40	8.00	45	45	10.00	50	50	11.50	50	55	12.65	55	55											
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<p>Measured by 20 MHz Oscilloscope. Ripple-Noise is shown as p-p in the figure below. Note: Slanted line shows the range of the rated load current.</p> <p>T1: Due to AC Input Line T2: Due to Switching</p> <p>Ripple-Noise [mVp-p]</p> <p>T1</p> <p>T2</p>																																								
Fig. Complex Ripple Wave Form																																								

Model	LDA100W-9																																							
Item	Ripple Voltage (by Ambient Temp.)																																							
Object	+9V11.5A																																							
1.Graph																																								
<p>Graph showing Ripple Voltage [mV] vs Ambient Temperature [°C] for LDA100W-9 at Input Volt. 200V. The graph shows two data series: Load 50% (represented by squares) and Load 100% (represented by triangles). Both series show a slight decrease in ripple voltage as ambient temperature increases from -20°C to 60°C. A slanted line indicates the range of rated ambient temperature.</p>																																								
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Ambient Temperature [°C]	Ripple Voltage [mV]																																							
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Measured by 20 MHz Oscilloscope.

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

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Model	LDA100W-9																																																					
Item	Ambient Temperature Drift																																																					
Object	+9V11.5A																																																					
1.Graph	<p>Output Voltage [V]</p> <p>Ambient Temperature [°C]</p> <p>Load 100%</p> <p>Legend:</p> <ul style="list-style-type: none"> Input Volt. 170V Input Volt. 200V Input Volt. 264V 																																																					
Testing Circuitry	Figure A																																																					
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Ambient Temperature [°C]	Output Voltage [V]																																																					
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25	8.920	8.920	8.920																																																			
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Note:	Slanted line shows the range of the rated ambient temperature.																																																					



Model	LDA100W-9	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
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 : 170 ~ 264V

Load Current : 0 ~ 11.5A

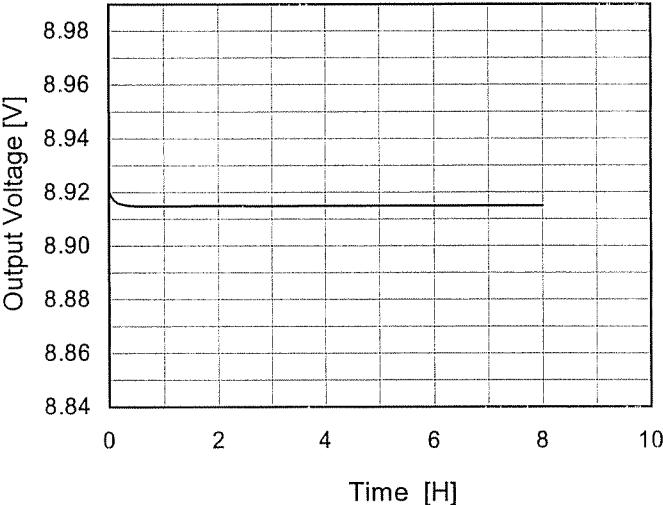
* Output Voltage Accuracy = $\pm(\text{Maximum of Output Voltage} - \text{Minimum of Output Voltage}) / 2$

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

2. Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	-10	264	0	8.938	± 15	± 0.2
Minimum Voltage	50	170	11.5	8.909		

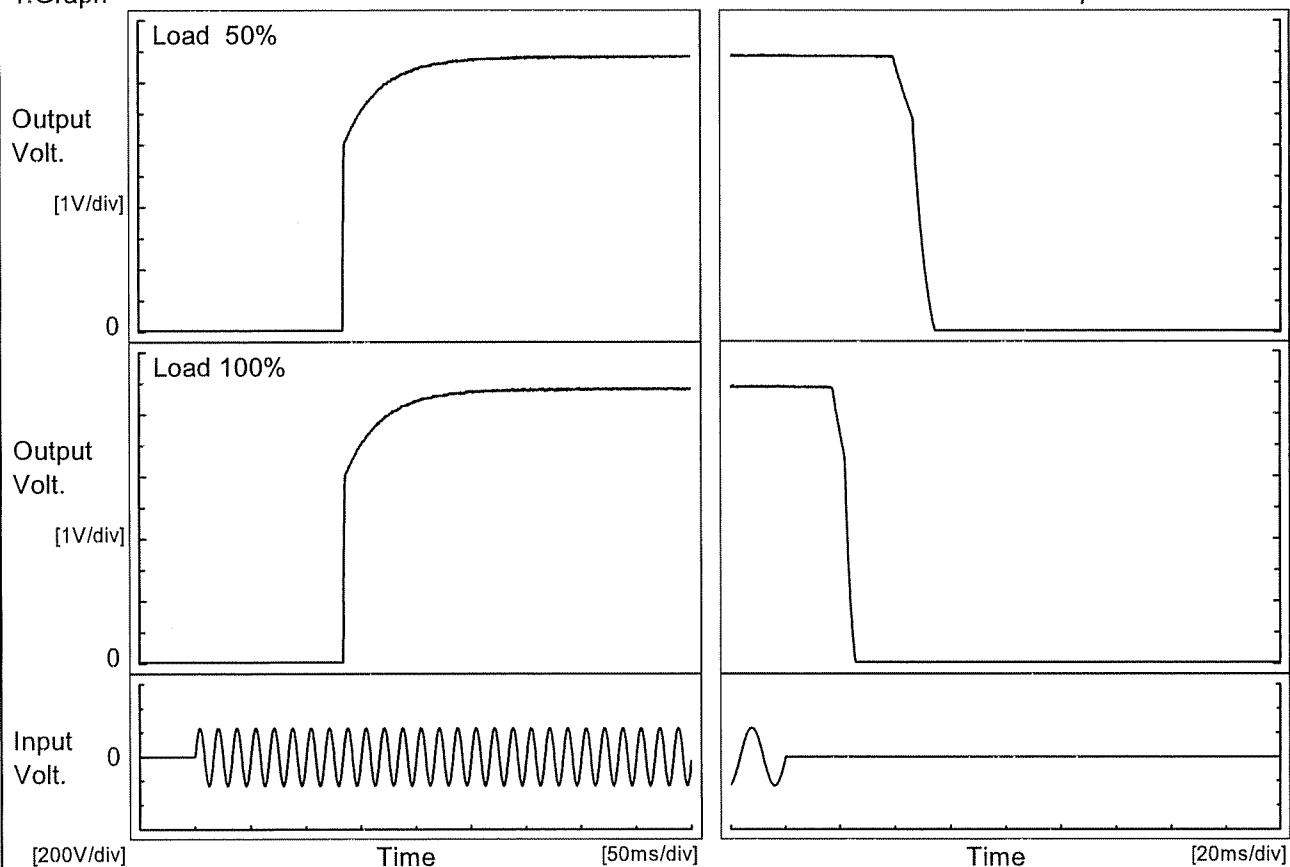
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Model	LDA100W-9	Temperature Testing Circuitry	25°C Figure A																						
Item	Time Lapse Drift																								
Object	+9V11.5A																								
1. Graph			2. Values																						
 <p>Output Voltage [V]</p> <p>Time [H]</p> <p>Input Volt. 200V 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

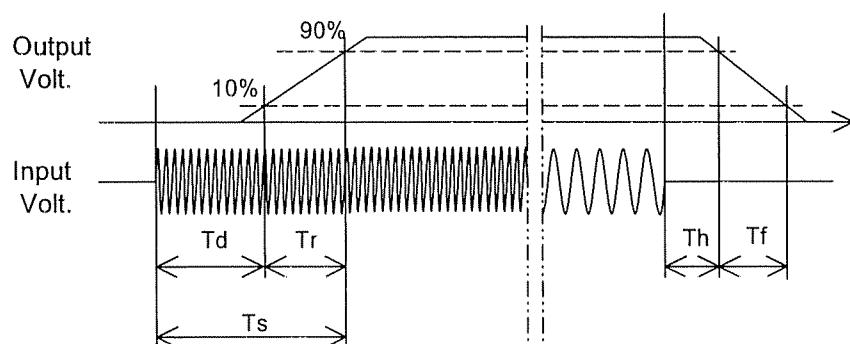
Model	LDA100W-9	Temperature Testing Circuitry Figure A
Item	Rise and Fall Time	
Object	+9V11.5A	

1. Graph



2. Values

Load	Time	Td	Tr	Ts	Th	Tf	[ms]
50 %		134.3	48.8	183.1	41.4	11.0	
100 %		134.0	49.3	183.3	18.6	6.3	



COSEL

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]	Hold-Up Time [ms]																																	
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<p>This duration covers from Shut-off of input voltage to the moment when output voltage descends to the rated range of voltage accuracy. 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>—△— Input Volt. 170V - - □ - - Input Volt. 200V - - ○ - - Input Volt. 264V</p>																																																					
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Note: Slanted line shows the range of the rated load current.

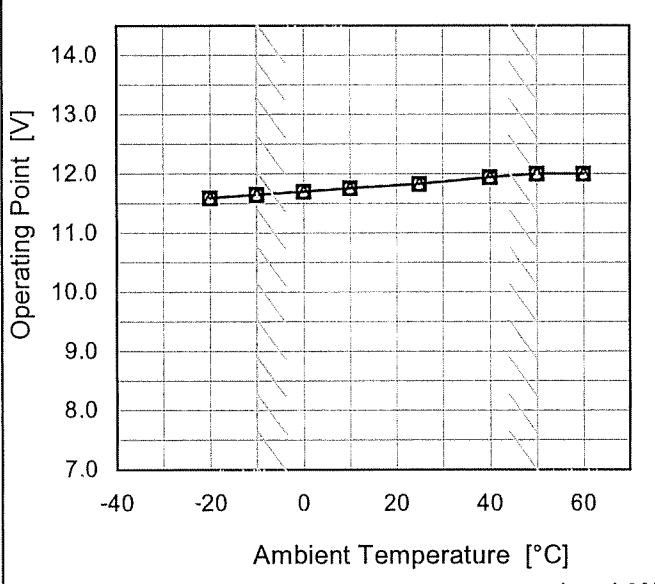
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Model	LDA100W-9																																							
Item	Minimum Input Voltage for Regulated Output Voltage																																							
Object	+9V11.5A																																							
1.Graph																																								
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COSEL

Model	LDA100W-9																																																									
Item	Overcurrent Protection	Temperature Testing Circuitry	25°C Figure A																																																							
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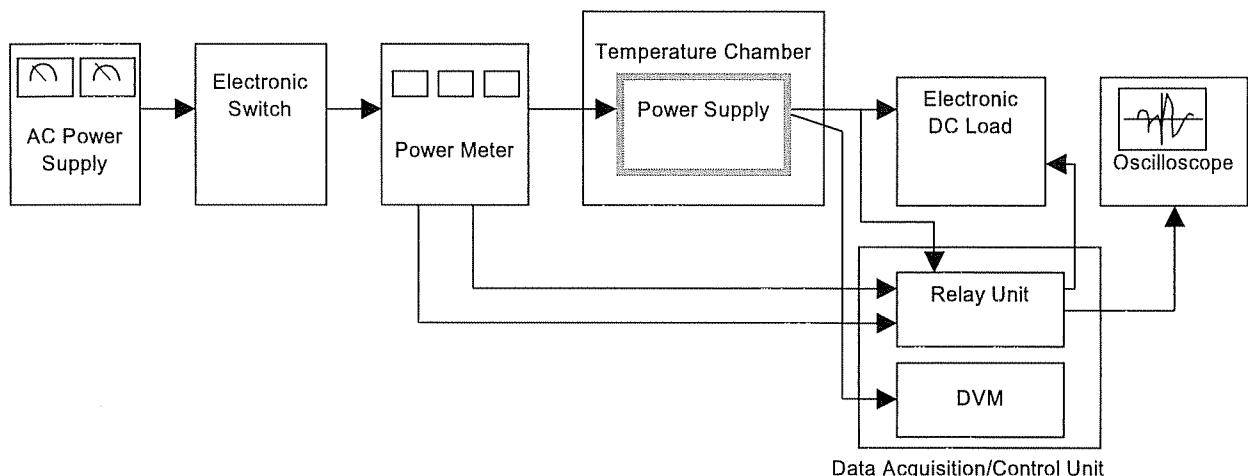


Figure A

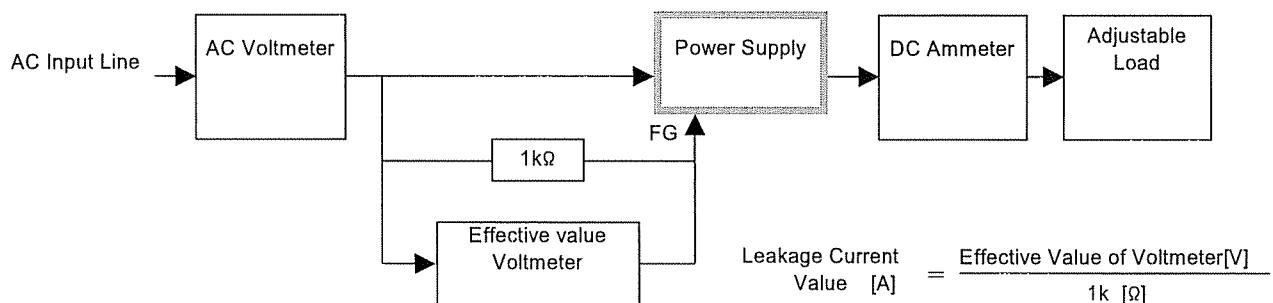


Figure B (DEN-AN)

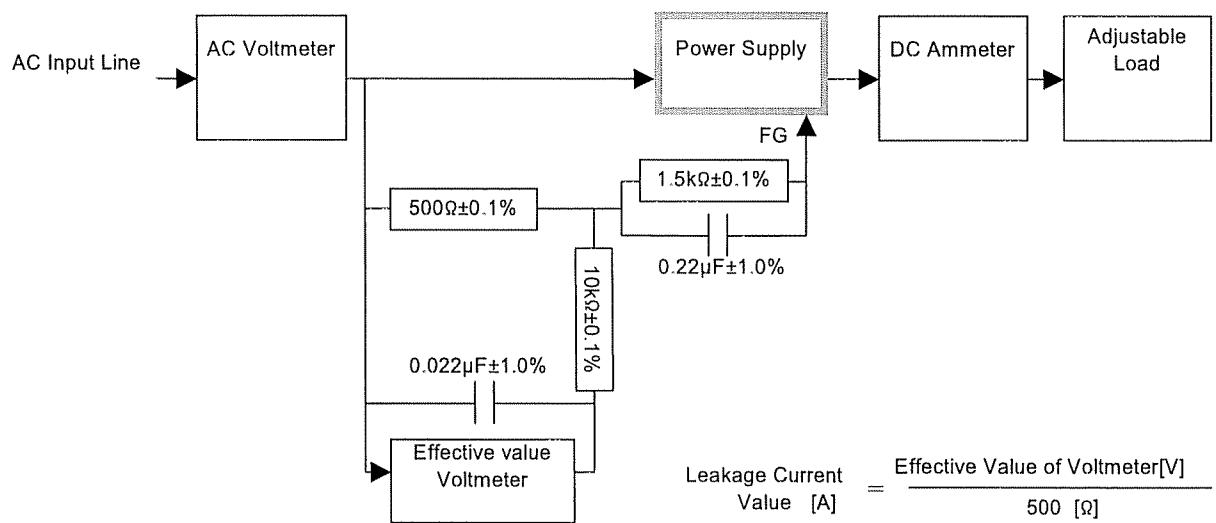


Figure B (IEC60950)