



TEST DATA OF LDA150W-18

(200V INPUT)

Regulated DC Power Supply
Feb.14. 2005

Approved by : K. Shiho
K. Shiho Design Manager

Prepared by : S. Ueda
S. Ueda Design Engineer

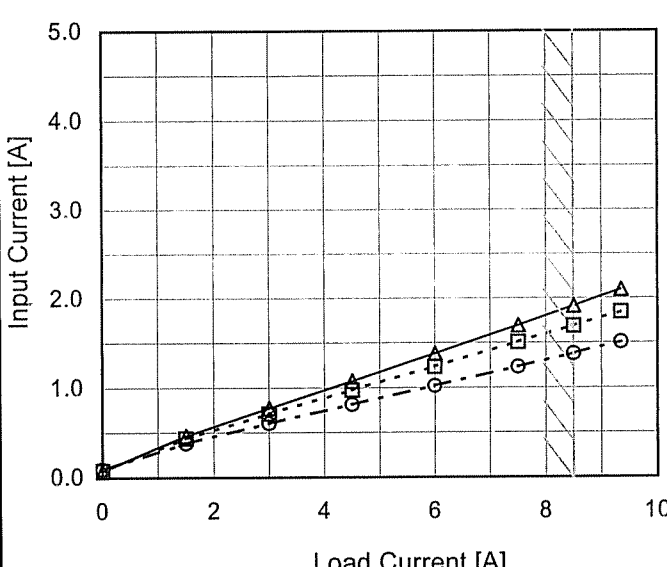
COSEL CO.,LTD.

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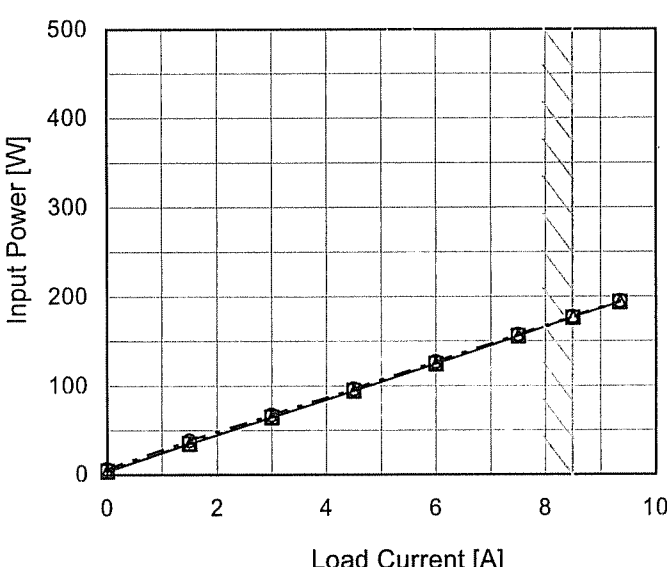
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Model		LDA150W-18		Temperature 25°C																																																				
Item		Input Current (by Load Current)		Testing Circuitry Figure A																																																				
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1.Graph		<div><div><div>—△—</div><div>---□---</div><div>-·-○-·-</div></div><div><div>Input Volt. 170V</div><div>Input Volt. 200V</div><div>Input Volt. 264V</div></div></div> 		2.Values																																																				
		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Input Current [A]</th></tr><tr><th>Input Volt. 170[V]</th><th>Input Volt. 200[V]</th><th>Input Volt. 264[V]</th></tr><tr><td>0.00</td><td>0.070</td><td>0.077</td><td>0.090</td></tr><tr><td>1.50</td><td>0.465</td><td>0.435</td><td>0.382</td></tr><tr><td>3.00</td><td>0.772</td><td>0.712</td><td>0.604</td></tr><tr><td>4.50</td><td>1.073</td><td>0.972</td><td>0.812</td></tr><tr><td>6.00</td><td>1.383</td><td>1.237</td><td>1.019</td></tr><tr><td>7.50</td><td>1.697</td><td>1.507</td><td>1.233</td></tr><tr><td>8.50</td><td>1.915</td><td>1.690</td><td>1.380</td></tr><tr><td>9.35</td><td>2.096</td><td>1.848</td><td>1.507</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></table>				Load Current [A]	Input Current [A]			Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]	0.00	0.070	0.077	0.090	1.50	0.465	0.435	0.382	3.00	0.772	0.712	0.604	4.50	1.073	0.972	0.812	6.00	1.383	1.237	1.019	7.50	1.697	1.507	1.233	8.50	1.915	1.690	1.380	9.35	2.096	1.848	1.507	--	-	-	-	--	-	-	-	--	-	-	-
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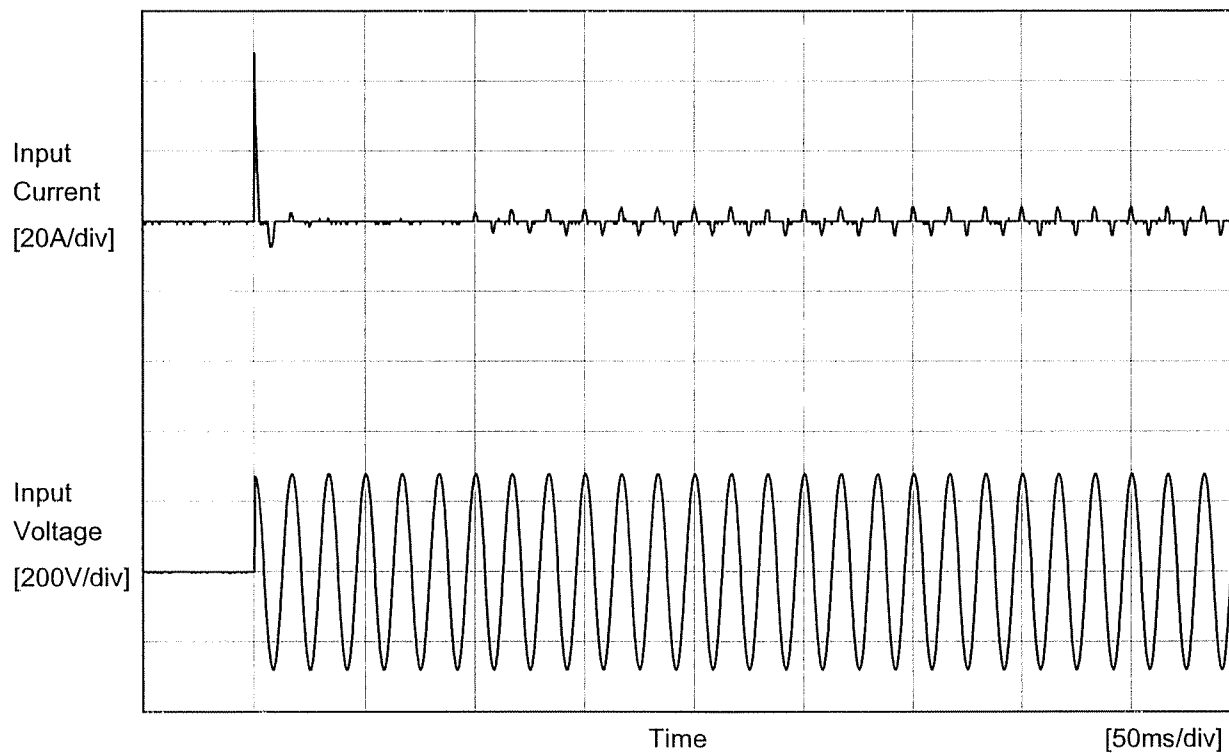
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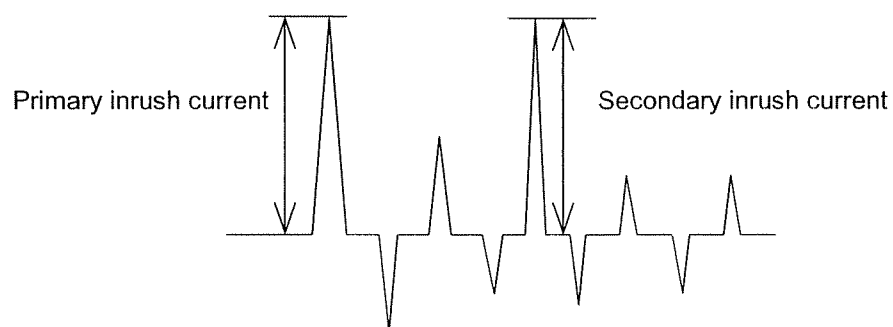
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Note: Slanted line shows the range of the rated load current.																																																						

Model	LDA150W-18	Temperature 25°C Testing Circuitry Figure A
Item	Inrush Current	
Object	_____	



Input Voltage 200 V
Frequency 60 Hz
Load 100 %

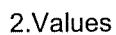
Primary inrush current 48.0 A
Secondary inrush current 7.2 A



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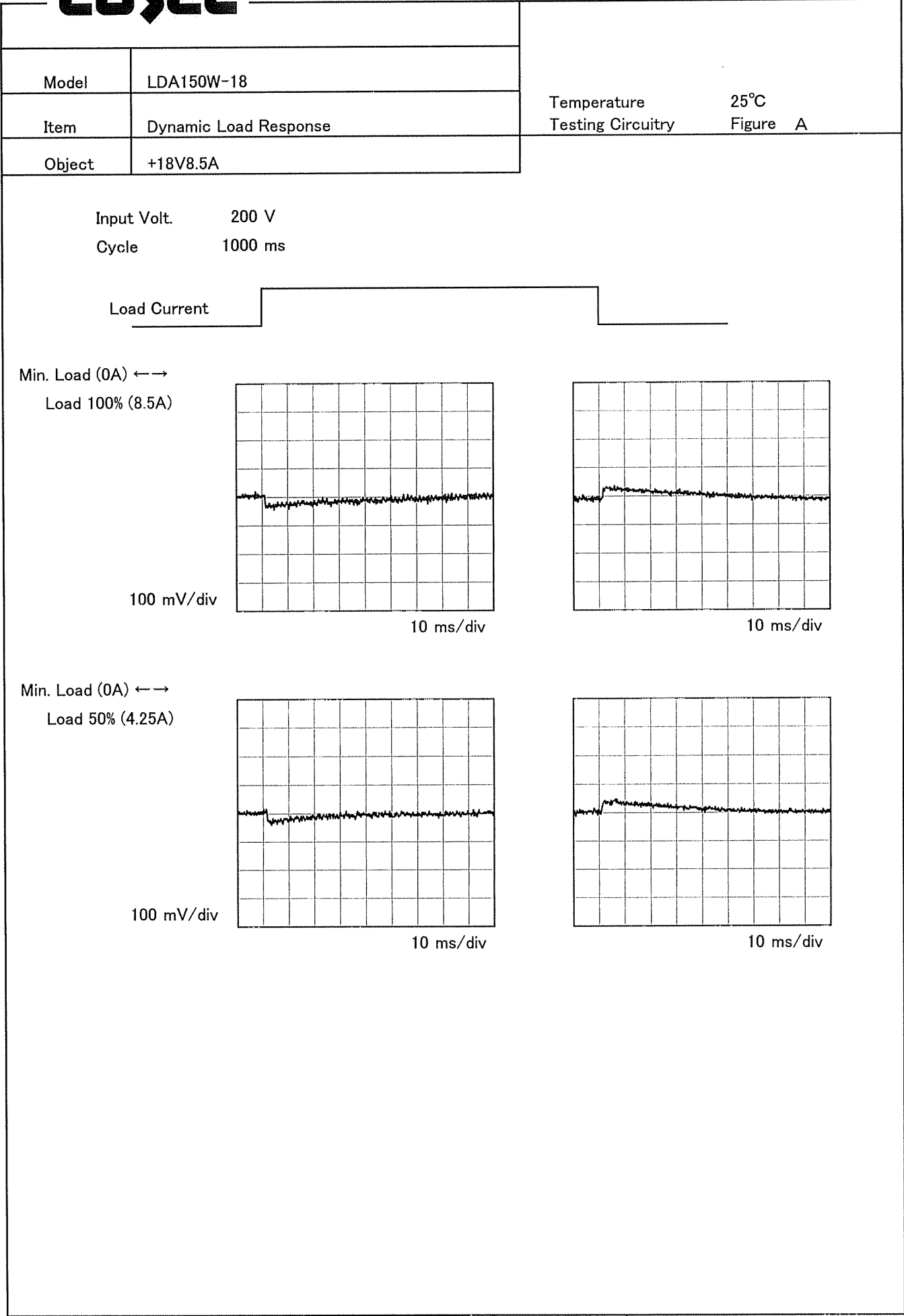
Model	LDA150W-18	Temperature 25°C Testing Circuitry Figure A																																	
Item	Line Regulation																																		
Object	+18V8.5A																																		
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Temperature 25°C
Testing Circuitry Figure A

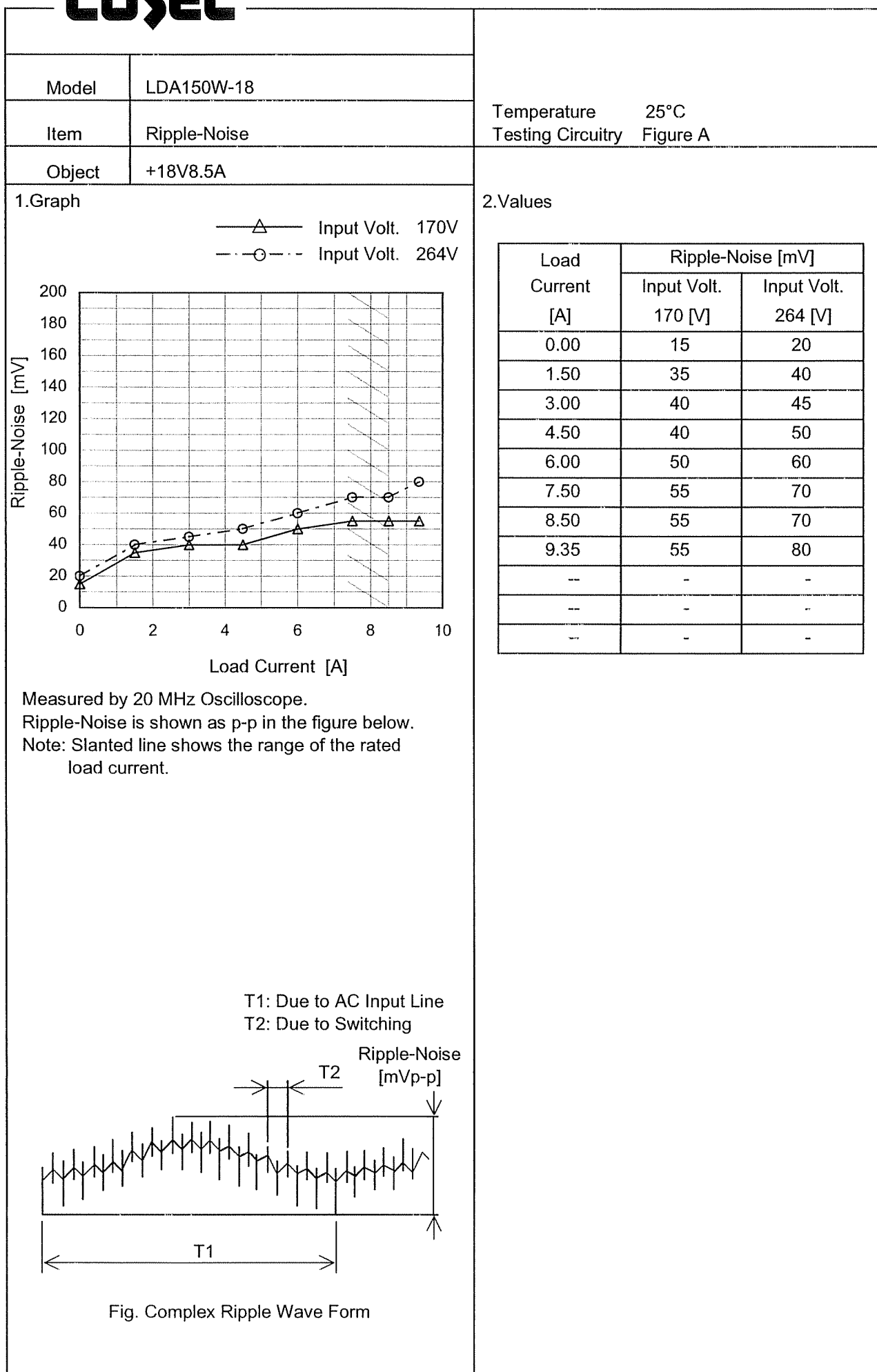


Load Current [A]	Output Voltage [V]		
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
0.00	18.069	18.069	18.069
1.50	18.069	18.068	18.068
3.00	18.069	18.068	18.068
4.50	18.069	18.068	18.068
6.00	18.068	18.068	18.068
7.50	18.068	18.068	18.068
8.50	18.068	18.068	18.068
9.35	18.068	18.068	18.068
--	-	-	-
--	-	-	-
--	-	-	-

Note: Slanted line shows the range of the rated load current.



Model		LDA150W-18		Temperature		25°C																																																																											
Item		Ripple Voltage (by Load Current)		Testing Circuitry		Figure A																																																																											
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<p>Measured by 20 MHz Oscilloscope.</p> <p>Ripple Voltage is shown as p-p in the figure below.</p> <p>Note: Slanted line shows the range of the rated load current.</p>																																																																																	
<div><div><div>T1: Due to AC Input Line</div><div>T2: Due to Switching</div></div><p>Fig. Complex Ripple Wave Form</p></div>																																																																																	



Model		LDA150W-18	Testing Circuitry Figure A
Item		Ripple Voltage (by Ambient Temp.)	
Object		+18V8.5A	
1.Graph			2.Values
<div><div><div><div><div></div><div></div><div></div></div><div><div></div><div></div><div></div></div><div><div></div><div></div><div></div></div></div><div><div></div><div></div><div></div></div><div><div></div><div></div><div></div></div></div><div><div></div><div></div><div></div></div><div><div></div><div></div><div></div></div></div> <div><div></div><div></div><div></div></div> <div><div></div><div></div><div></div></div> <div><div></div><div></div><div></div></div> <div><div></div><div></div><div></div></div> <div><div></div><div></div><div></div></div> <div><div></div><div></div><div></div></div> <div><div></div><div></div><div></div></div> <div><div></div><div></div><div></div></div> <div><div></div><div></div><div></div></div> <div><div></div><div></div><div></div></div> <div><div></div><div></div><div></div></div> <div><div></div><div></div><div></div></div> <div><div></div><div></div><div></div></div> <div><div></div><div></div><div></div></div> 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BC-0996



		Testing Circuitry Figure A
Model	LDA150W-18	
Item	Output Voltage Accuracy	
Object	+18V8.5A	

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 : 0 - 50°C

Input Voltage : 170 - 264V

Load Current : 0 - 8.5A

* 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

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ratio [%]
Maximum Voltage	0	170	0	18.088	±24	±0.1
Minimum Voltage	50	170	8.5	18.040		

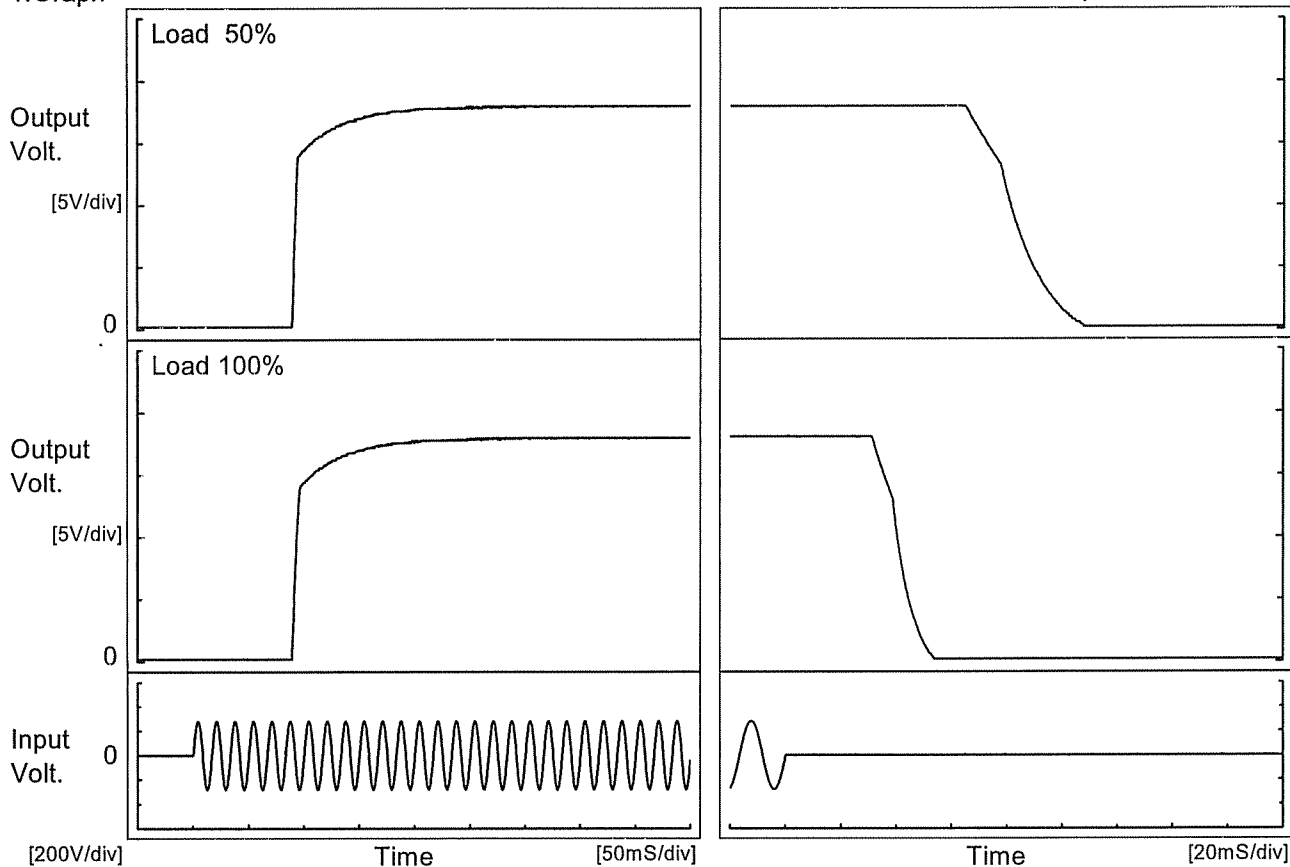


Model	LDA150W-18																								
Item	Time Lapse Drift	Temperature	25°C																						
		Testing Circuitry	Figure A																						
Object	+18V8.5A																								
1.Graph		2.Values																							
<div><p>Output Voltage [V]</p><p>Time [H]</p><p>Input Volt. 200V</p><p>Load 100%</p></div>		<table><tr><th>Time since start [H]</th><th>Output Voltage [V]</th></tr><tr><td>0.0</td><td>18.077</td></tr><tr><td>0.5</td><td>18.066</td></tr><tr><td>1.0</td><td>18.066</td></tr><tr><td>2.0</td><td>18.066</td></tr><tr><td>3.0</td><td>18.065</td></tr><tr><td>4.0</td><td>18.066</td></tr><tr><td>5.0</td><td>18.066</td></tr><tr><td>6.0</td><td>18.066</td></tr><tr><td>7.0</td><td>18.066</td></tr><tr><td>8.0</td><td>18.066</td></tr></table>		Time since start [H]	Output Voltage [V]	0.0	18.077	0.5	18.066	1.0	18.066	2.0	18.066	3.0	18.065	4.0	18.066	5.0	18.066	6.0	18.066	7.0	18.066	8.0	18.066
Time since start [H]	Output Voltage [V]																								
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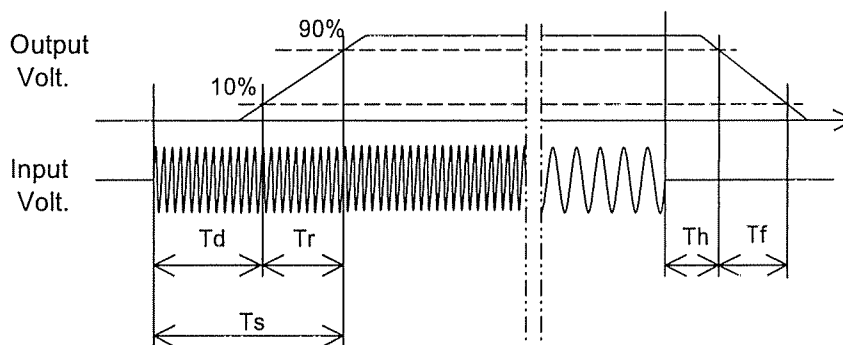
Model	LDA150W-18	Temperature	25°C
Item	Rise and Fall Time	Testing Circuitry	Figure A
Object	+18V8.5A		

1.Graph

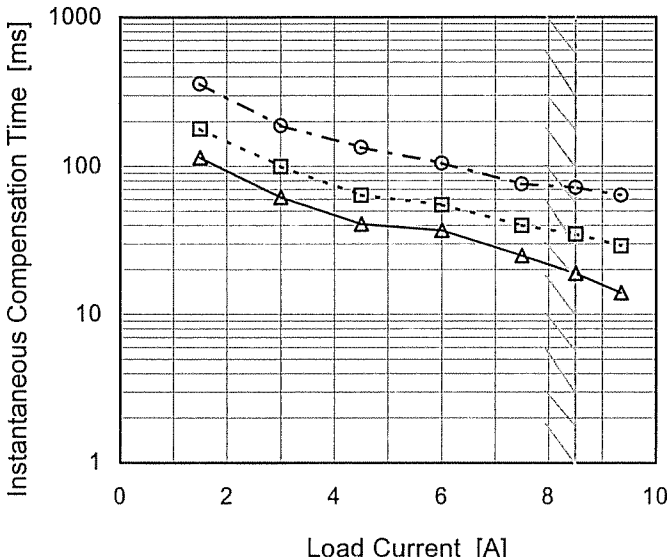


2.Values

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	90.3	39.3	129.6	68.8	29.6
100 %	90.0	40.0	130.0	33.3	15.7

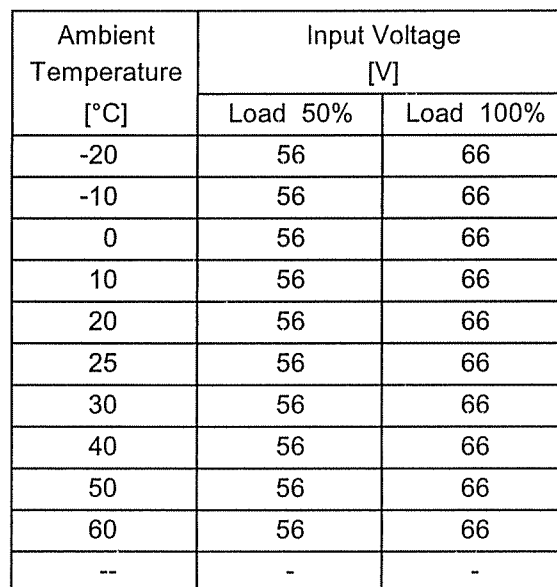


Model	LDA150W-18	Temperature	25°C																																
Item	Hold-Up Time	Testing Circuitry	Figure A																																
Object	+18V8.5A																																		
1.Graph		2.Values																																	
<div><div><div>---□---</div><div>Load 50%</div></div><div><div>—△—</div><div>Load 100%</div></div></div> <table><thead><tr><th rowspan="2">Input Voltage [V]</th><th colspan="2">Hold-Up Time [ms]</th></tr><tr><th>Load 50%</th><th>Load 100%</th></tr></thead><tbody><tr><td>150</td><td>27</td><td>11</td></tr><tr><td>160</td><td>34</td><td>15</td></tr><tr><td>170</td><td>41</td><td>19</td></tr><tr><td>180</td><td>49</td><td>23</td></tr><tr><td>200</td><td>66</td><td>32</td></tr><tr><td>220</td><td>85</td><td>41</td></tr><tr><td>240</td><td>106</td><td>52</td></tr><tr><td>264</td><td>133</td><td>66</td></tr><tr><td>280</td><td>153</td><td>76</td></tr></tbody></table>		Input Voltage [V]	Hold-Up Time [ms]		Load 50%	Load 100%	150	27	11	160	34	15	170	41	19	180	49	23	200	66	32	220	85	41	240	106	52	264	133	66	280	153	76		
Input Voltage [V]	Hold-Up Time [ms]																																		
	Load 50%	Load 100%																																	
150	27	11																																	
160	34	15																																	
170	41	19																																	
180	49	23																																	
200	66	32																																	
220	85	41																																	
240	106	52																																	
264	133	66																																	
280	153	76																																	
<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>																																			

Model		LDA150W-18		Temperature 25°C																																																				
Item		Instantaneous Interruption Compensation		Testing Circuitry Figure A																																																				
Object		+18V8.5A																																																						
1.Graph		<div><div>—△—</div>Input Volt. 170V</div> <div><div>---□---</div>Input Volt. 200V</div> <div><div>-·-○-·-</div>Input Volt. 264V</div>  <p>Instantaneous Compensation Time [ms]</p> <p>Load Current [A]</p> <p>Note: Slanted line shows the range of the rated load current.</p>		2.Values																																																				
				<table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Time [ms]</th></tr><tr><th>Input Volt. 170[V]</th><th>Input Volt. 200[V]</th><th>Input Volt. 264[V]</th></tr><tr><td>0.00</td><td>-</td><td>-</td><td>-</td></tr><tr><td>1.50</td><td>115</td><td>180</td><td>360</td></tr><tr><td>3.00</td><td>62</td><td>100</td><td>189</td></tr><tr><td>4.50</td><td>41</td><td>64</td><td>135</td></tr><tr><td>6.00</td><td>37</td><td>55</td><td>105</td></tr><tr><td>7.50</td><td>25</td><td>40</td><td>76</td></tr><tr><td>8.50</td><td>19</td><td>35</td><td>72</td></tr><tr><td>9.35</td><td>14</td><td>29</td><td>64</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></table>		Load Current [A]	Time [ms]			Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]	0.00	-	-	-	1.50	115	180	360	3.00	62	100	189	4.50	41	64	135	6.00	37	55	105	7.50	25	40	76	8.50	19	35	72	9.35	14	29	64	--	-	-	-	--	-	-	-	--	-	-	-
Load Current [A]	Time [ms]																																																							
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]																																																					
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7.50	25	40	76																																																					
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Testing Circuitry Figure A

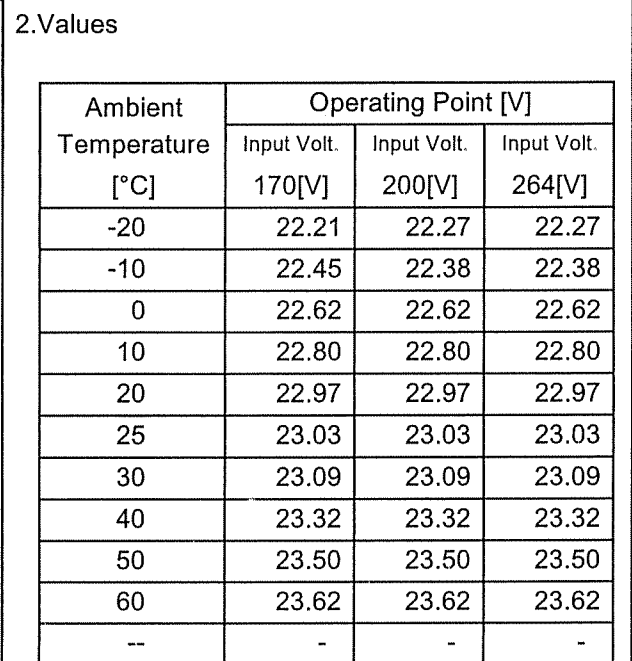
2.Values



- 18 -

BC-0996

Testing Circuitry Figure A



- 20 -

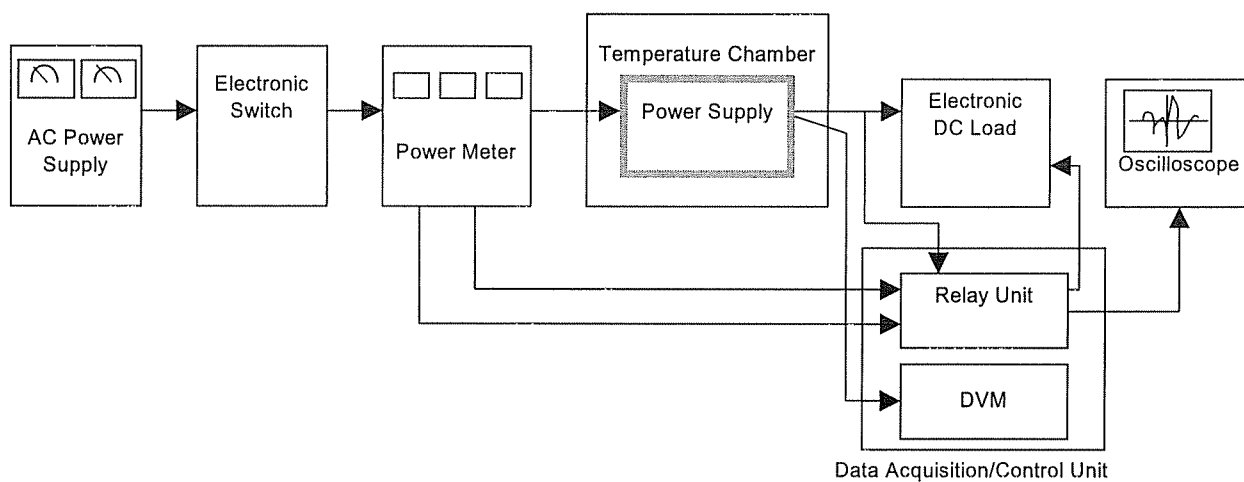


Figure A

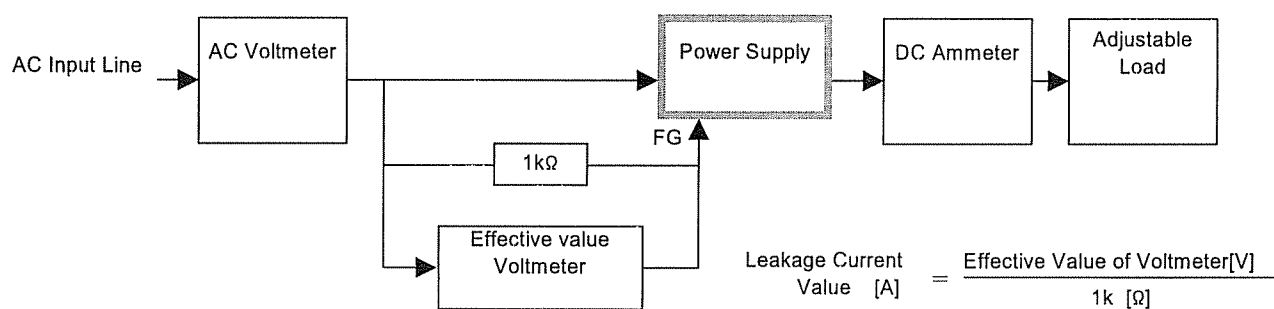


Figure B (DEN-AN)

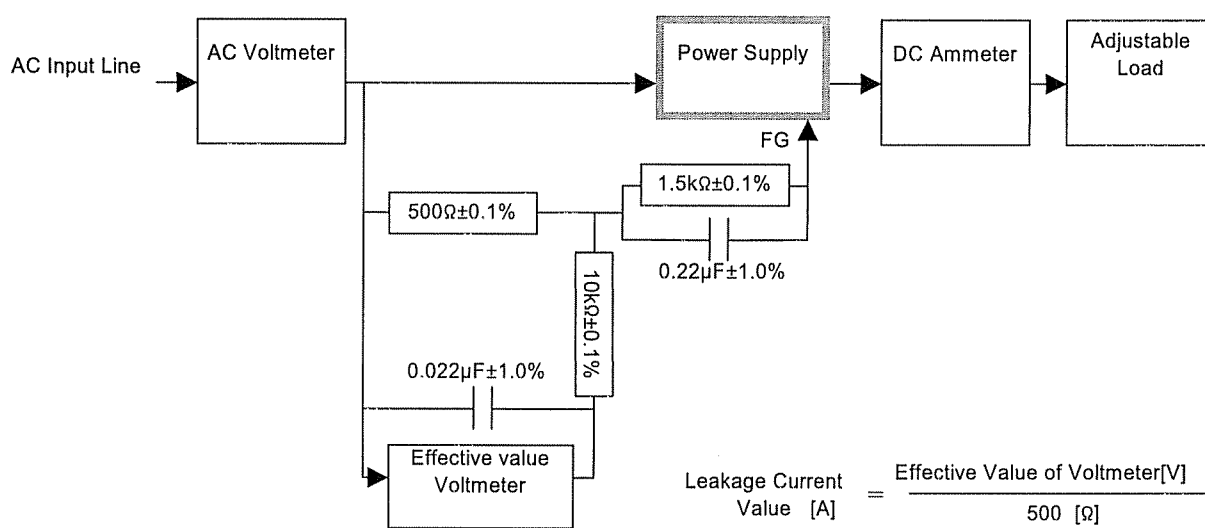


Figure B (IEC60950)