

TEST DATA OF PDA300F-12

Regulated DC Power Supply
May 28, 2025

Approved by : Yoshiaki Shimizu
Design Manager

Prepared by : Terumasa Araki
Design Engineer

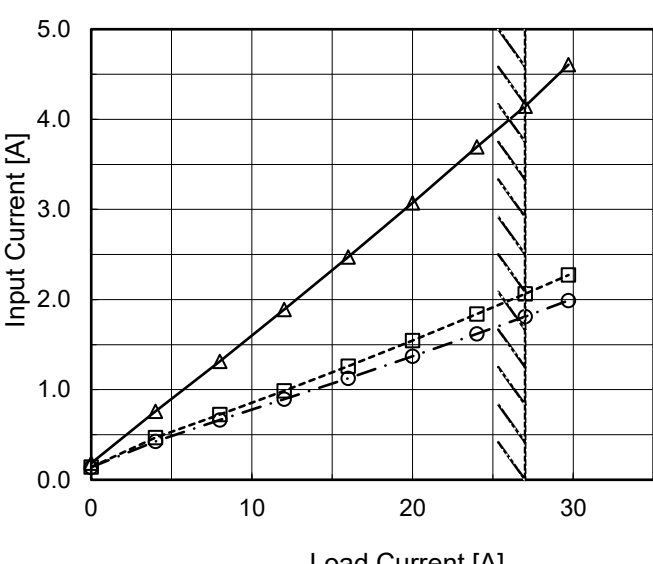
COSEL CO.,LTD.

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Model		PDA300F-12		Temperature 25°C																																																				
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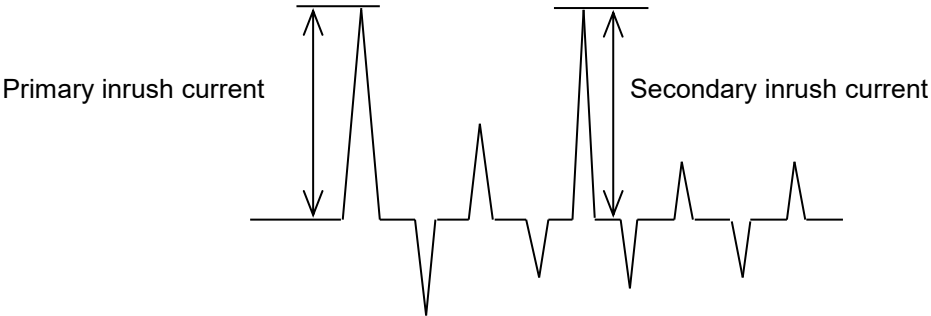
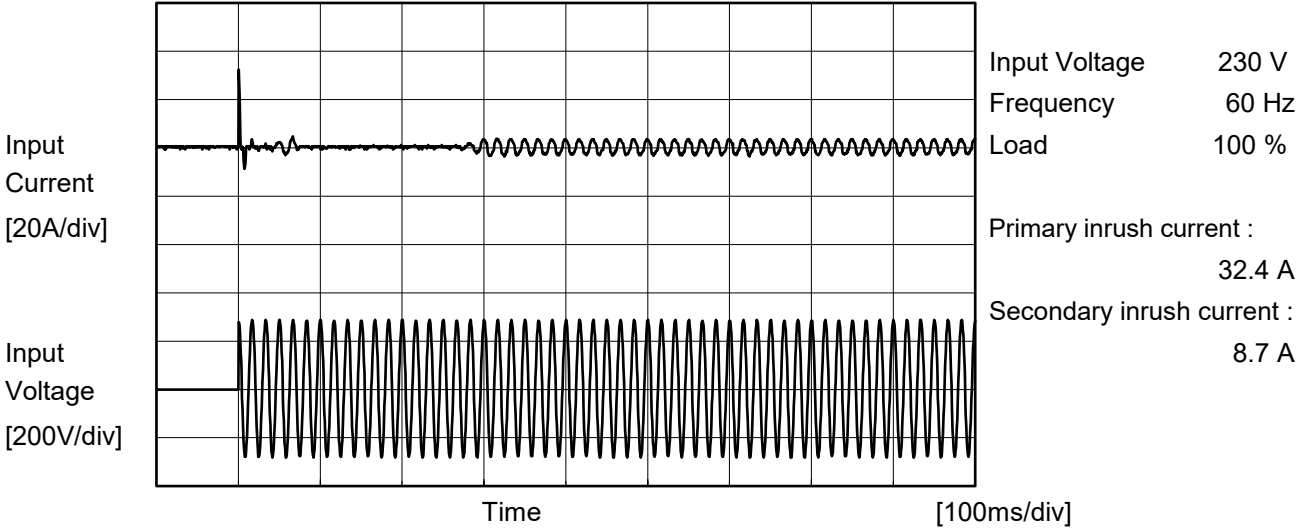
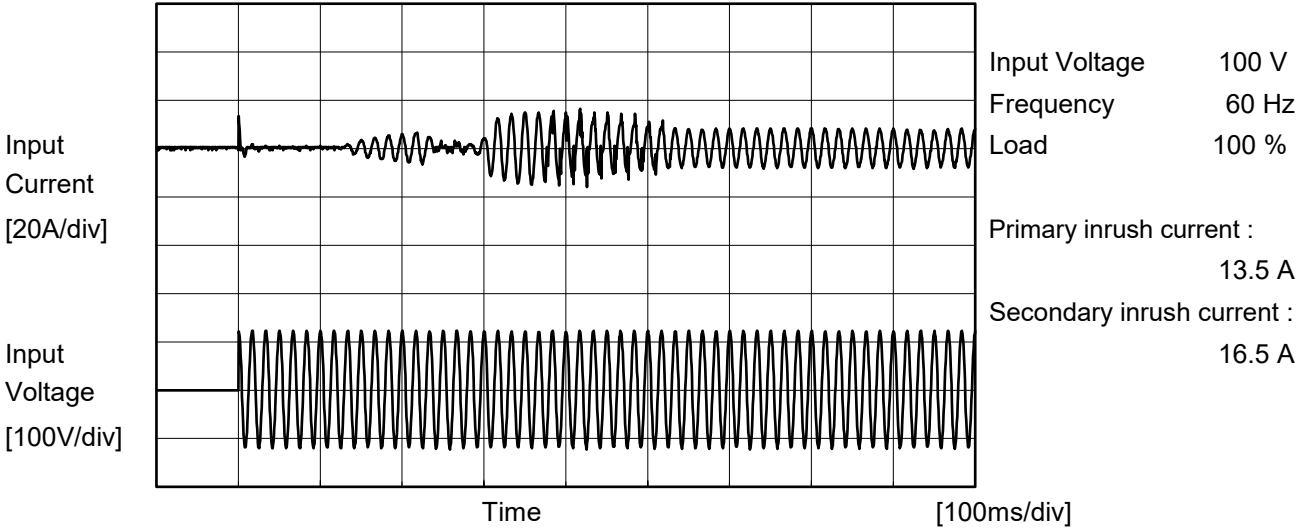
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Model		PDA300F-12	Temperature 25°C Testing Circuitry Figure A
Item		Inrush Current	
Object		_____	





Model		PDA300F-12	Temperature 25°C Testing Circuitry Figure C
Item		Leakage Current	
Object		_____	

1.Results

[mA]

Standards	Testing Circuitry	Measuring Method	Input Volt.			Note
			100 [V]	230 [V]	240 [V]	
DEN-AN	Figure C-1	Both phases	0.19	0.38	0.37	Operation
		One of phases	0.29	0.68	0.71	Stand by
IEC62368-1	Figure C-2	Both phases	0.14	0.35	0.37	Operation
		One of phases	0.26	0.67	0.70	Stand by
	Figure C-3	Both phases	0.14	0.35	0.37	Operation
		One of phases	0.26	0.66	0.69	Stand by

The value for "One of phases" is the reference value only.

2.Condition

Leakage current value is concluded after measuring both phases of AC input and by choosing the larger one.

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Model		PDA300F-12	Temperature		25°C
Item		Line Regulation	Testing Circuitry		Figure A
Object		+12V27A			
1.Graph			2.Values		
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Model	PDA300F-12																																																					
Item	Load Regulation	Temperature	25°C																																																			
		Testing Circuitry	Figure A																																																			
Object	+12V27A																																																					
1.Graph		2.Values																																																				
<div><div><div>—△—</div><div>Input Volt.</div><div>100V</div></div><div><div>---□---</div><div>Input Volt.</div><div>200V</div></div><div><div>-·-○-·-</div><div>Input Volt.</div><div>230V</div></div></div> <p>Note: Slanted line shows the range of the rated load current.</p>		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Output Voltage [V]</th></tr><tr><th>Input Volt. 100[V]</th><th>Input Volt. 200[V]</th><th>Input Volt. 230[V]</th></tr><tr><td>0.0</td><td>12.109</td><td>12.106</td><td>12.106</td></tr><tr><td>4.0</td><td>12.108</td><td>12.105</td><td>12.105</td></tr><tr><td>8.0</td><td>12.105</td><td>12.104</td><td>12.103</td></tr><tr><td>12.0</td><td>12.102</td><td>12.102</td><td>12.102</td></tr><tr><td>16.0</td><td>12.101</td><td>12.101</td><td>12.100</td></tr><tr><td>20.0</td><td>12.099</td><td>12.099</td><td>12.098</td></tr><tr><td>24.0</td><td>12.097</td><td>12.097</td><td>12.097</td></tr><tr><td>27.0</td><td>12.096</td><td>12.096</td><td>12.096</td></tr><tr><td>29.7</td><td>12.095</td><td>12.095</td><td>12.095</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]	Output Voltage [V]			Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]	0.0	12.109	12.106	12.106	4.0	12.108	12.105	12.105	8.0	12.105	12.104	12.103	12.0	12.102	12.102	12.102	16.0	12.101	12.101	12.100	20.0	12.099	12.099	12.098	24.0	12.097	12.097	12.097	27.0	12.096	12.096	12.096	29.7	12.095	12.095	12.095	--	--	--	--	--	--	--	--
Load Current [A]	Output Voltage [V]																																																					
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]																																																			
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29.7	12.095	12.095	12.095																																																			
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--	--	--	--																																																			
Item	Ripple-Noise	Temperature	25°C																																																			
		Testing Circuitry	Figure B																																																			
Object	+12V27A																																																					
1.Graph																																																						
<div><div>Input Voltage</div><div>230V</div></div> <div><div>Load</div><div>100%</div></div> <div>20[mV/div]</div> <div>4[μs/div]</div>																																																						

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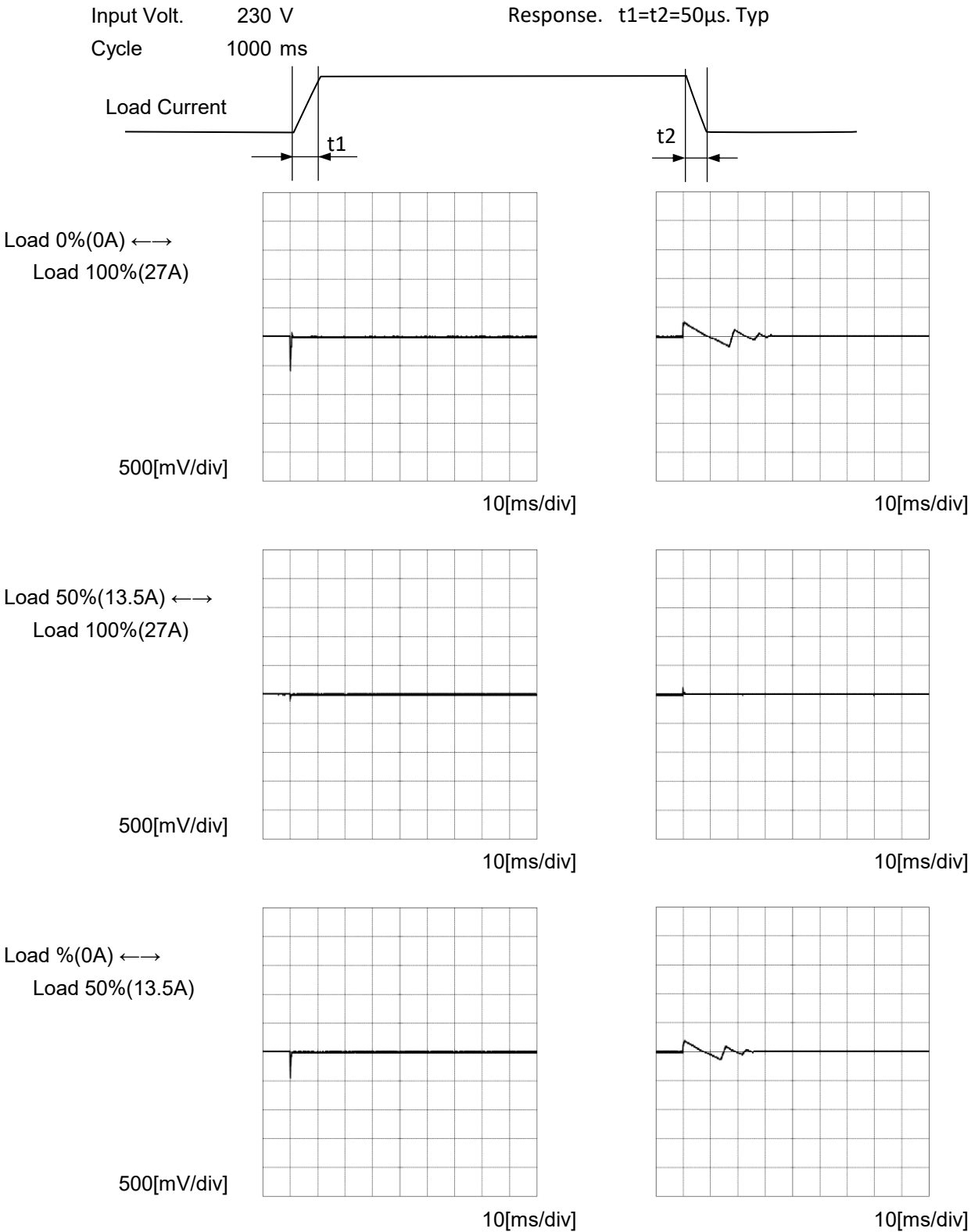
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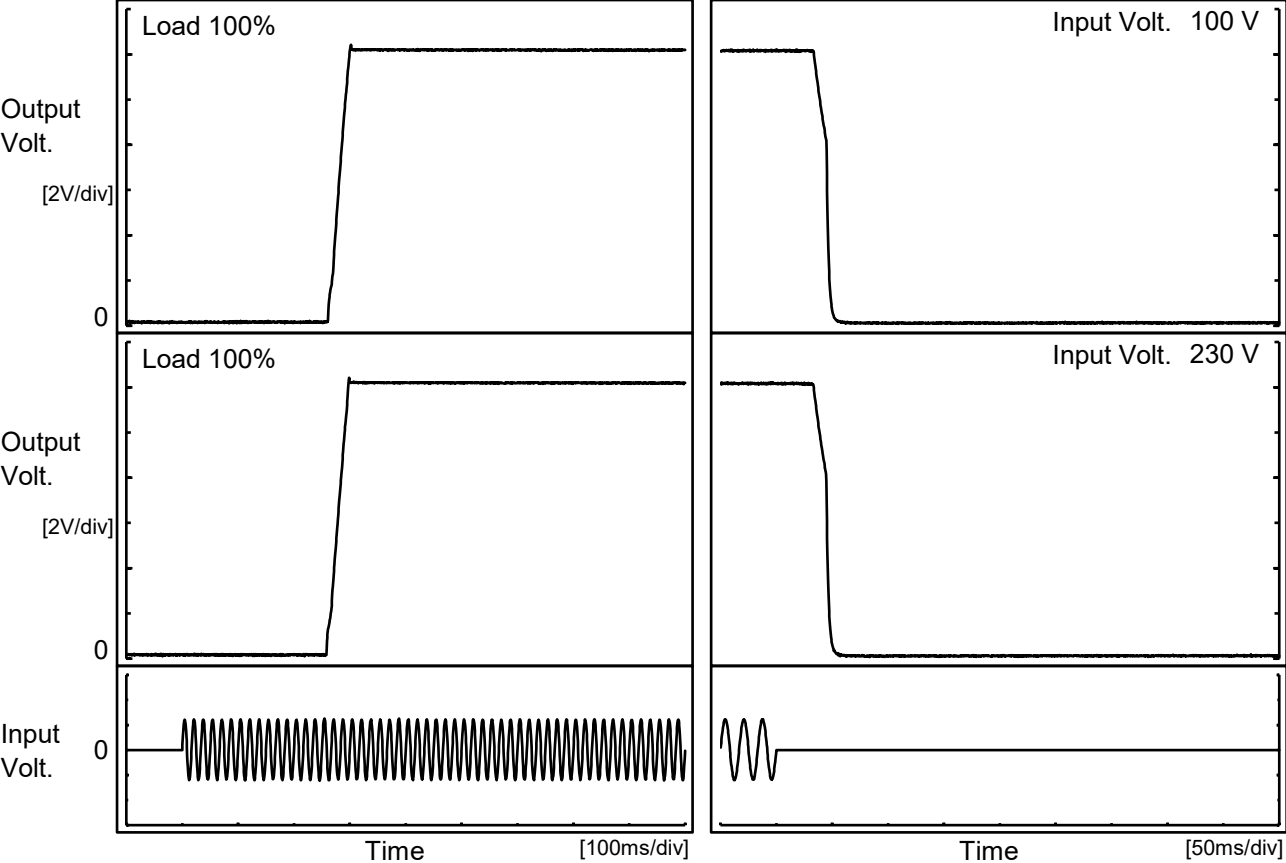
Model	PDA300F-12	Temperature 25°C Testing Circuitry Figure A
Item	Dynamic Load Response	
Object	+12V27A	





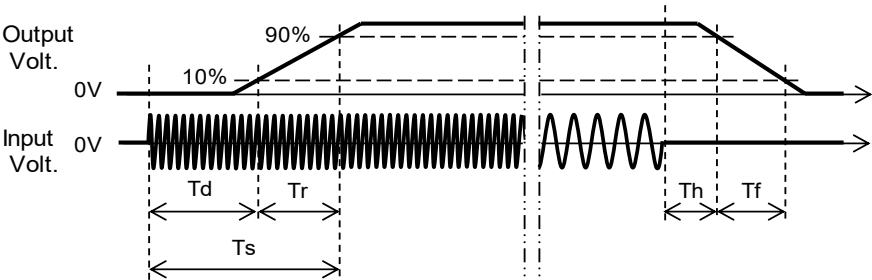
Model		PDA300F-12	Temperature 25°C Testing Circuitry Figure A
Item		Rise and Fall Time	
Object		+12V27A	

1.Graph



2.Values

		[ms]				
Input Volt.	Time	Td	Tr	Ts	Th	Tf
100 V		264.0	31.5	295.5	36.3	12.3
230 V		261.0	33.5	294.5	36.0	12.3



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Model		PDA300F-12	Temperature		25°C																																
Item		Hold-Up Time	Testing Circuitry		Figure A																																
Object		+12V27A																																			
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>Load 50%</div><div>Load 100%</div></div> <p>The graph shows Hold-Up Time [ms] on a logarithmic y-axis (1 to 1000) versus Input Voltage [V] on a linear x-axis (50 to 300). Two data series are plotted: Load 50% (dashed line with square markers) and Load 100% (solid line with triangle markers). Both series show a constant hold-up time of approximately 70 ms for Load 50% and 34 ms for Load 100% across the input voltage range of 85V to 280V. Vertical slanted lines at 85V and 280V indicate the rated input voltage range.</p> <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>85</td><td>70</td><td>34</td></tr><tr><td>90</td><td>70</td><td>34</td></tr><tr><td>100</td><td>70</td><td>34</td></tr><tr><td>120</td><td>70</td><td>34</td></tr><tr><td>200</td><td>70</td><td>34</td></tr><tr><td>230</td><td>70</td><td>34</td></tr><tr><td>264</td><td>70</td><td>34</td></tr><tr><td>280</td><td>73</td><td>34</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></tbody></table> <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>			Input Voltage [V]	Hold-Up Time [ms]		Load 50%	Load 100%	85	70	34	90	70	34	100	70	34	120	70	34	200	70	34	230	70	34	264	70	34	280	73	34	--	-	-			
Input Voltage [V]	Hold-Up Time [ms]																																				
	Load 50%	Load 100%																																			
85	70	34																																			
90	70	34																																			
100	70	34																																			
120	70	34																																			
200	70	34																																			
230	70	34																																			
264	70	34																																			
280	73	34																																			
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Model	PDA300F-12	Temperature	25°C																																																			
Item	Instantaneous Interruption Compensation	Testing Circuitry	Figure A																																																			
Object	+12V27A																																																					
1.Graph		2.Values																																																				
<div><div><div>—△—</div><div>Input Volt.</div><div>100V</div></div><div><div>---□---</div><div>Input Volt.</div><div>200V</div></div><div><div>---○---</div><div>Input Volt.</div><div>230V</div></div></div> <div><div><div>Instantaneous Compensation Time [ms]</div><div>1000</div><div>100</div><div>10</div><div>1</div></div><div><div>0102030</div><div>Load Current [A]</div></div></div> <div><div>Note: Slanted line shows the range of the rated load current.</div></div>		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Time [ms]</th></tr><tr><th>Input Volt. 100[V]</th><th>Input Volt. 200[V]</th><th>Input Volt. 230[V]</th></tr><tr><td>0.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>4.0</td><td>139</td><td>210</td><td>210</td></tr><tr><td>8.0</td><td>49</td><td>114</td><td>111</td></tr><tr><td>12.0</td><td>31</td><td>78</td><td>77</td></tr><tr><td>16.0</td><td>22</td><td>55</td><td>56</td></tr><tr><td>20.0</td><td>22</td><td>45</td><td>44</td></tr><tr><td>24.0</td><td>21</td><td>36</td><td>36</td></tr><tr><td>27.0</td><td>18</td><td>32</td><td>32</td></tr><tr><td>29.7</td><td>18</td><td>28</td><td>27</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. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]	0.0	-	-	-	4.0	139	210	210	8.0	49	114	111	12.0	31	78	77	16.0	22	55	56	20.0	22	45	44	24.0	21	36	36	27.0	18	32	32	29.7	18	28	27	--	-	-	-	--	-	-	-
Load Current [A]	Time [ms]																																																					
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]																																																			
0.0	-	-	-																																																			
4.0	139	210	210																																																			
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12.0	31	78	77																																																			
16.0	22	55	56																																																			
20.0	22	45	44																																																			
24.0	21	36	36																																																			
27.0	18	32	32																																																			
29.7	18	28	27																																																			
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Model		PDA300F-12	Temperature		25°C																																												
Item		Overcurrent Protection	Testing Circuitry		Figure A																																												
Object		+12V27A																																															
1.Graph			2.Values																																														
<div><div><div></div><div>Input Volt. 100V</div></div><div><div></div><div>Input Volt. 230V</div></div></div> <p>Note: Slanted line shows the range of the rated load current.</p> <p>Intermittent operation occurs when the output voltage is from 7.2V to 0V.</p>			<table><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. 230[V]</th></tr><tr><td>11.4</td><td>31.74</td><td>31.71</td></tr><tr><td>10.8</td><td>31.93</td><td>31.90</td></tr><tr><td>9.6</td><td>32.34</td><td>32.32</td></tr><tr><td>8.4</td><td>32.80</td><td>32.79</td></tr><tr><td>7.2</td><td>33.15</td><td>33.14</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><tr><td>--</td><td>-</td><td>-</td></tr></table>			Output Voltage [V]	Load Current [A]		Input Volt. 100[V]	Input Volt. 230[V]	11.4	31.74	31.71	10.8	31.93	31.90	9.6	32.34	32.32	8.4	32.80	32.79	7.2	33.15	33.14	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-
Output Voltage [V]	Load Current [A]																																																
	Input Volt. 100[V]	Input Volt. 230[V]																																															
11.4	31.74	31.71																																															
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		Testing Circuitry Figure A	
Model	PDA300F-12		
Item	Ambient Temperature Drift		
Object	+12V27A		
1.Values Load 100%			
Ambient Temperature[°C]		Output Voltage [V]	
	Input Volt. 100V	Input Volt. 200V	Input Volt. 230V
-20	12.007	12.009	12.011
25	12.061	12.063	12.064
50	12.098	12.097	12.098
Item	Minimum Input Voltage for Regulated Output Voltage	Testing Circuitry Figure A	
Object	+12V27A		
1.Values			
Ambient Temperature[°C]		Input Voltage [V]	
	Load 50%	Load 100%	
-20	66	68	
25	66	68	
50	66	68	
Item	Overvoltage Protection	Testing Circuitry Figure A	
Object	+12V27A		
1.Values Load 0%			
Ambient Temperature[°C]		Operating Point [V]	
	Input Volt. 100V	Input Volt. 230V	
-20	17.04	17.04	
25	17.15	17.15	
50	17.15	17.15	

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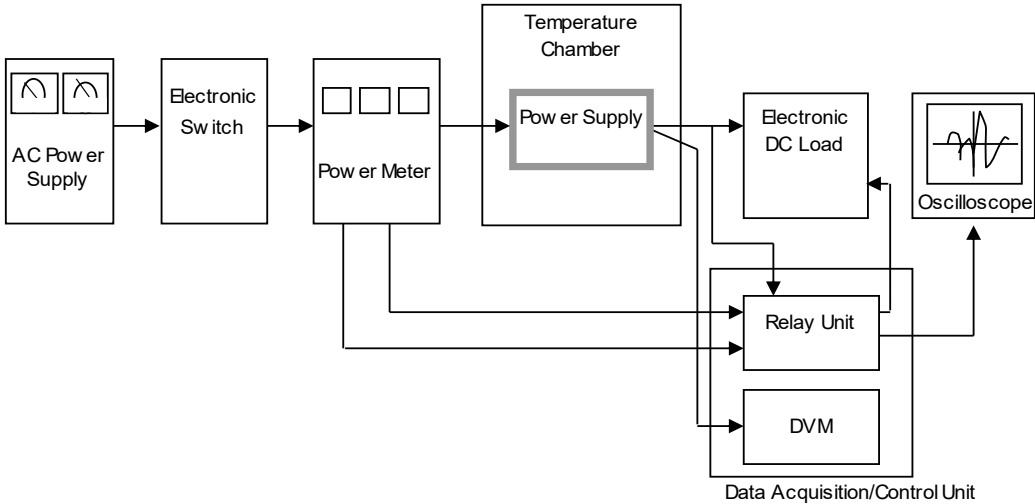


Figure A

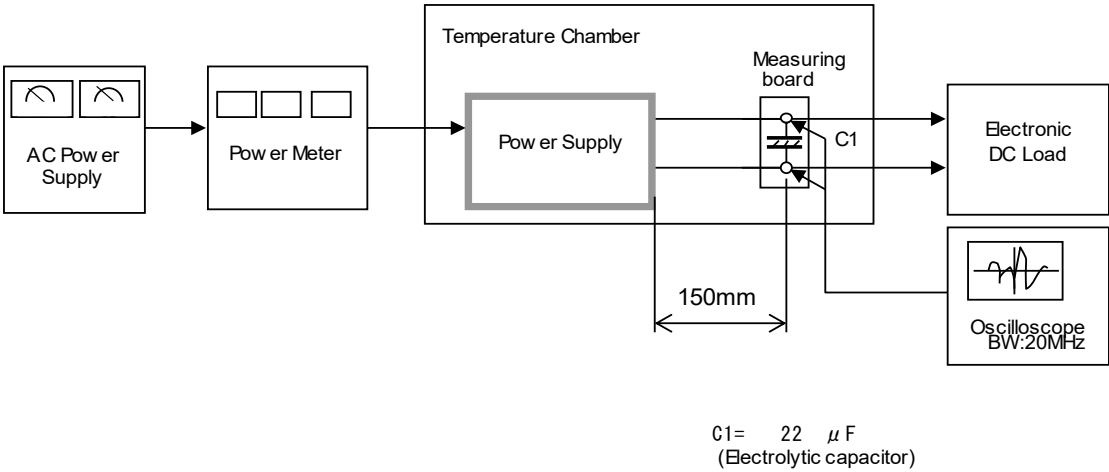


Figure B

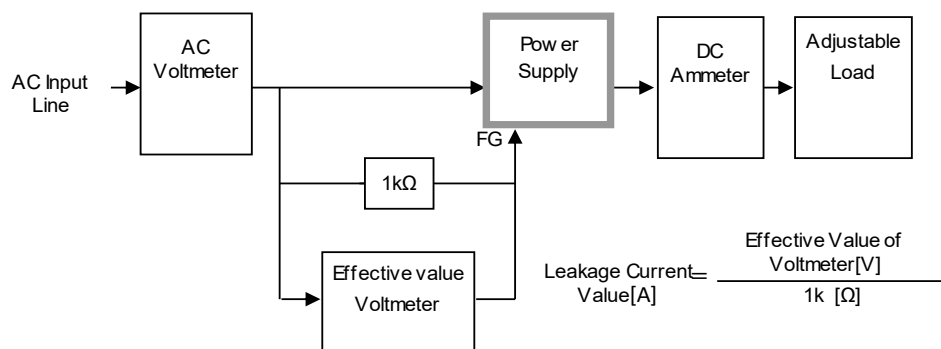


Figure C-1 (DEN-AN)

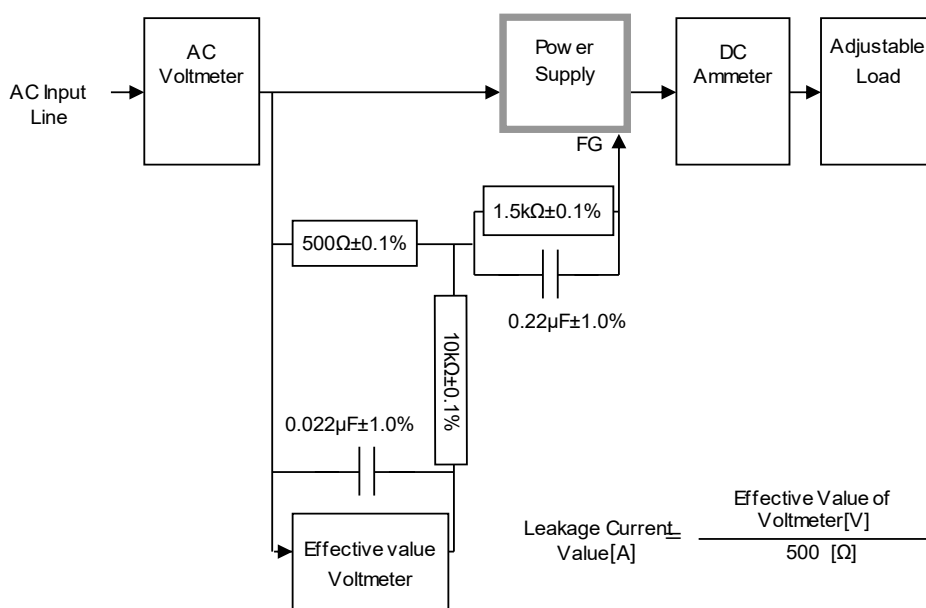


Figure C-2 (IEC62368-1 refer to IEC60990 Fig.4)

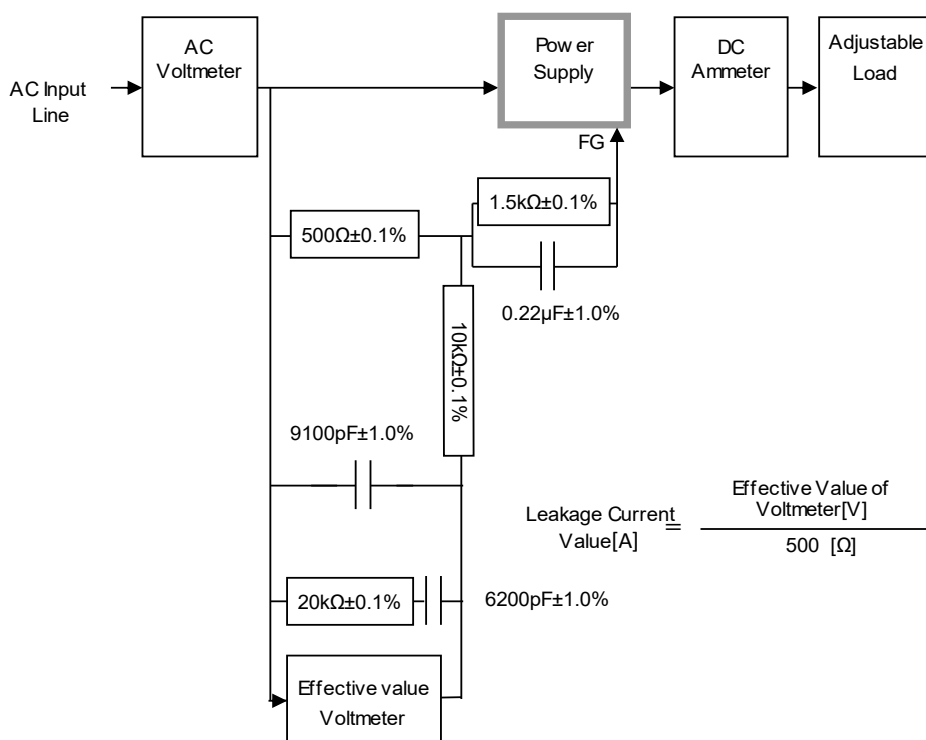


Figure C-3 (IEC62368-1 refer to IEC60990 Fig.5)