

TEST DATA OF PDA50F-24

Regulated DC Power Supply
November 21, 2023

Approved by : Tetsukazu Okamoto
Design Manager

Prepared by : Takaaki Sekiguchi
Design Engineer

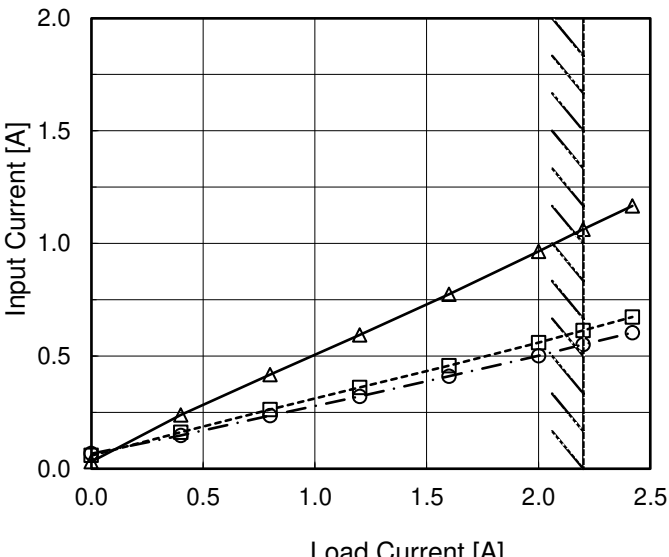
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Model		PDA50F-24		Temperature 25°C																																																				
Item		Input Current (by Load Current)		Testing Circuitry Figure A																																																				
Object		_____																																																						
1.Graph		<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>Input Current [A]</p> <p>Load Current [A]</p>		2.Values																																																				
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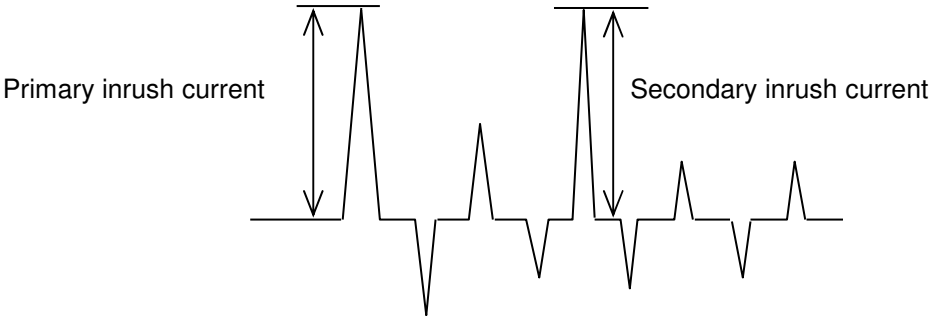
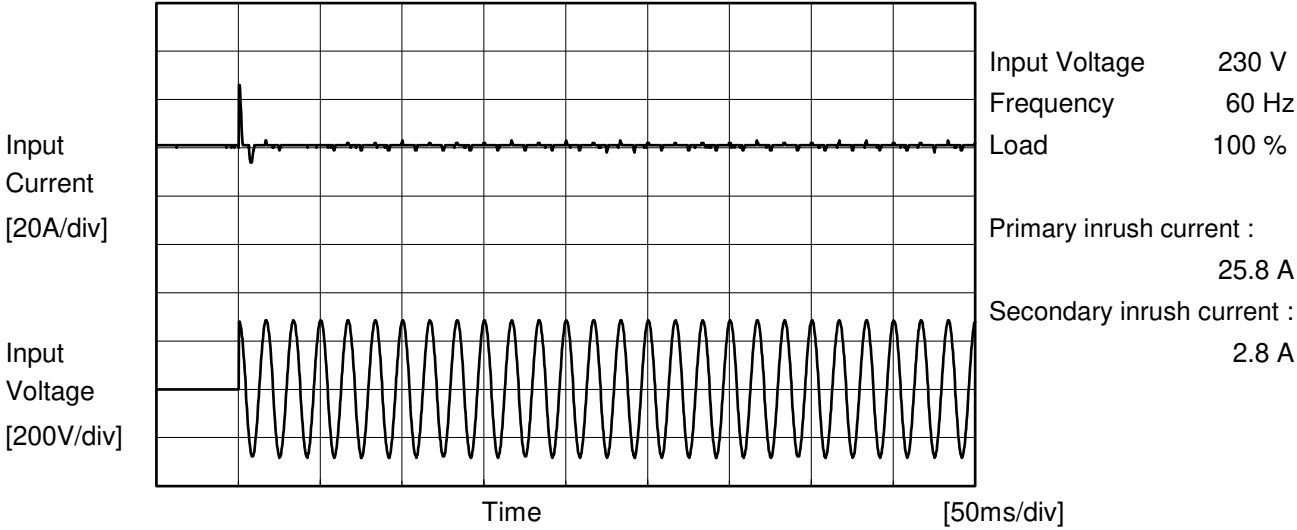
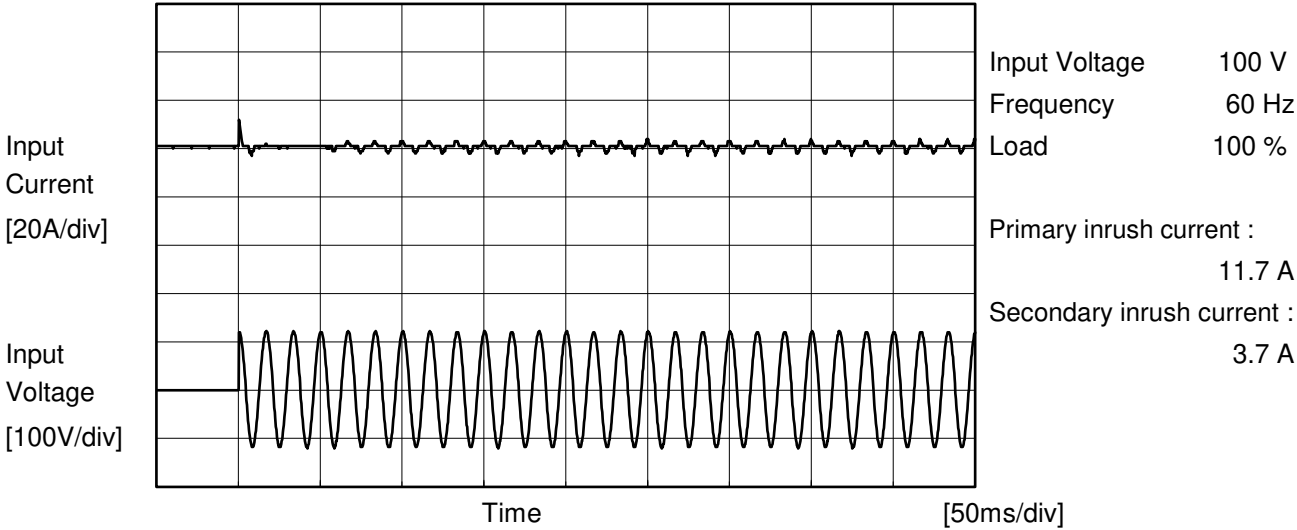
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Model		PDA50F-24	Temperature 25°C Testing Circuitry Figure A
Item		Inrush Current	
Object		_____	





Model		PDA50F-24	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	0.18	0.47	0.49	Operation
		One of phases	0.26	0.68	0.72	Stand by
IEC62368-1	Figure C-2	Both phases	0.18	0.46	0.48	Operation
		One of phases	0.26	0.67	0.71	Stand by
	Figure C-3	Both phases	0.18	0.46	0.48	Operation
		One of phases	0.26	0.67	0.71	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	PDA50F-24																																		
Item	Line Regulation	Temperature	25°C																																
Object	+24V2.2A	Testing Circuitry	Figure A																																
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<div><div><div>---</div><div>□</div><div>---</div><div>Load 50%</div></div><div><div>—</div><div>△</div><div>—</div><div>Load 100%</div></div></div> <p>Note: Slanted line shows the range of the rated input voltage.</p>		<table><tr><th rowspan="2">Input Voltage [V]</th><th colspan="2">Output Voltage [V]</th></tr><tr><th>Load 50%</th><th>Load 100%</th></tr><tr><td>85</td><td>24.087</td><td>24.081</td></tr><tr><td>90</td><td>24.087</td><td>24.081</td></tr><tr><td>100</td><td>24.087</td><td>24.081</td></tr><tr><td>120</td><td>24.087</td><td>24.081</td></tr><tr><td>200</td><td>24.088</td><td>24.082</td></tr><tr><td>230</td><td>24.088</td><td>24.082</td></tr><tr><td>264</td><td>24.088</td><td>24.082</td></tr><tr><td>280</td><td>24.088</td><td>24.082</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></table>		Input Voltage [V]	Output Voltage [V]		Load 50%	Load 100%	85	24.087	24.081	90	24.087	24.081	100	24.087	24.081	120	24.087	24.081	200	24.088	24.082	230	24.088	24.082	264	24.088	24.082	280	24.088	24.082	--	-	-
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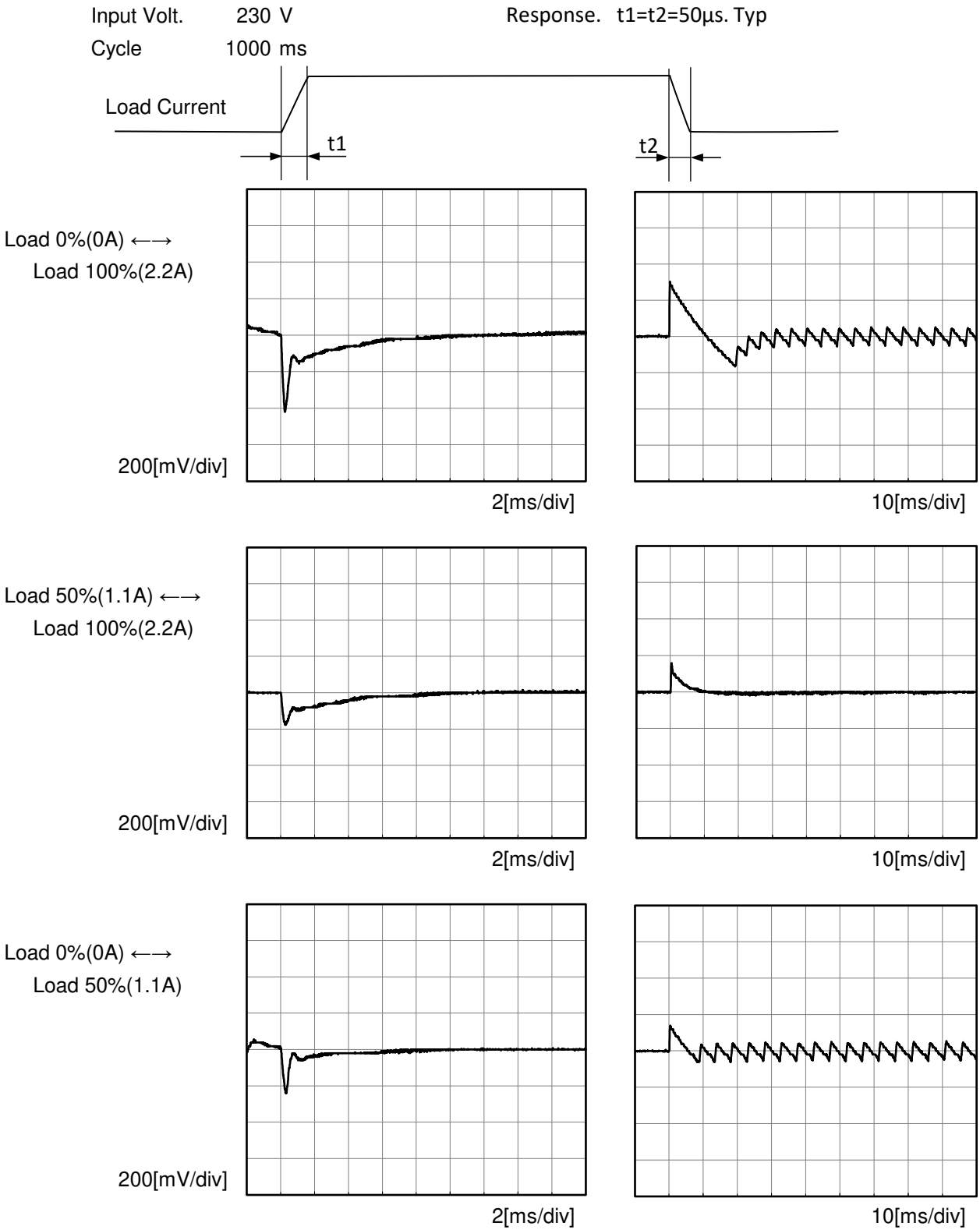
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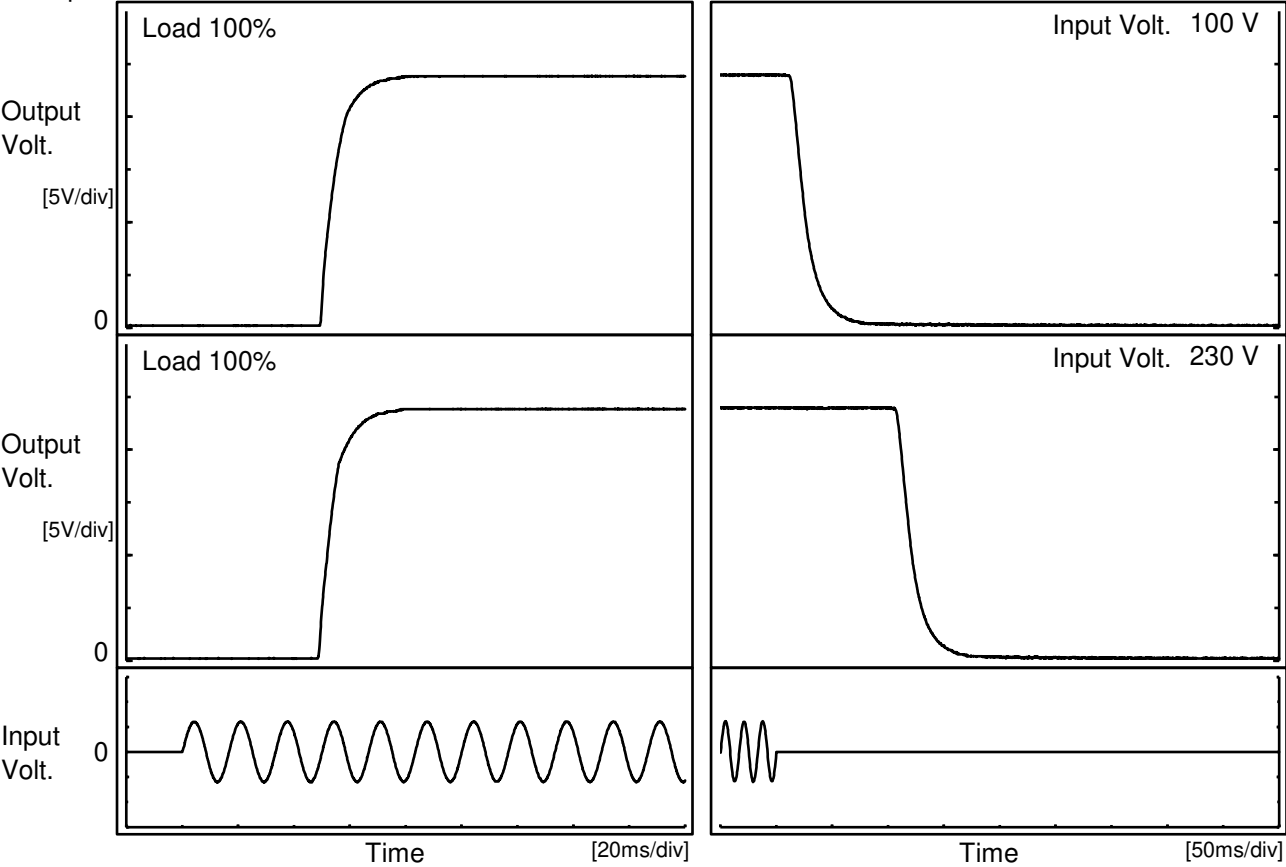
Model		PDA50F-24	Temperature 25°C Testing Circuitry Figure A
Item		Dynamic Load Response	
Object		+24V2.2A	





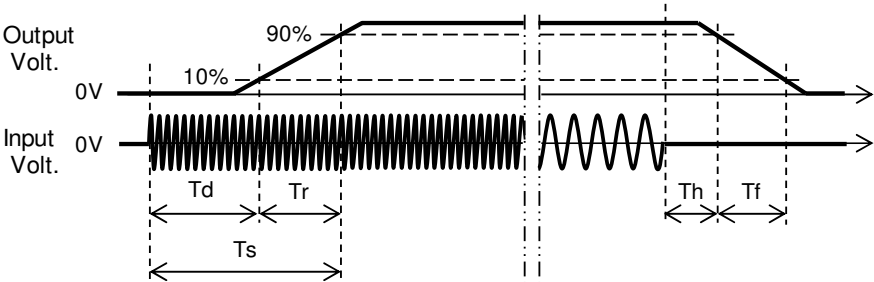
Model		PDA50F-24	Temperature 25°C Testing Circuitry Figure A
Item		Rise and Fall Time	
Object		+24V2.2A	

1.Graph



2.Values

		[ms]				
Input Volt.	Time	Td	Tr	Ts	Th	Tf
100 V		50.1	12.4	62.5	22.0	30.0
230 V		49.5	12.5	62.0	147.0	29.8



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Model	PDA50F-24		
Item	Hold-Up Time	Temperature	25°C
		Testing Circuitry	Figure A
Object	+24V2.2A		
1.Graph		2.Values	
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Model		PDA50F-24	Temperature25°C																																																				
Item		Instantaneous Interruption Compensation	Testing CircuitryFigure A																																																				
Object		+24V2.2A																																																					
1.Graph		<div><div>—△—</div>Input Volt.100V</div> <div><div>---□---</div>Input Volt.200V</div> <div><div>---○---</div>Input Volt.230V</div> <p>Instantaneous Compensation Time [ms]</p> <p>Load Current [A]</p>	2.Values																																																				
			<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>0.00</td><td>-</td><td>-</td><td>-</td></tr><tr><td>0.40</td><td>143</td><td>604</td><td>802</td></tr><tr><td>0.80</td><td>68</td><td>313</td><td>420</td></tr><tr><td>1.20</td><td>43</td><td>207</td><td>280</td></tr><tr><td>1.60</td><td>30</td><td>154</td><td>207</td></tr><tr><td>2.00</td><td>22</td><td>121</td><td>164</td></tr><tr><td>2.20</td><td>18</td><td>107</td><td>148</td></tr><tr><td>2.42</td><td>15</td><td>97</td><td>132</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. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]	0.00	-	-	-	0.40	143	604	802	0.80	68	313	420	1.20	43	207	280	1.60	30	154	207	2.00	22	121	164	2.20	18	107	148	2.42	15	97	132	--	-	-	-	--	-	-	-	--	-	-	-
Load Current [A]	Time [ms]																																																						
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Note: Slanted line shows the range of the rated load current.																																																							

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Model		PDA50F-24	Temperature Testing Circuitry	25°C Figure A																																									
Item		Overcurrent Protection																																											
Object		+24V2.2A																																											
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>Overcurrent protection is Hiccup mode.</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>24.0</td><td>2.81</td><td>3.01</td></tr><tr><td>22.8</td><td>-</td><td>-</td></tr><tr><td>21.6</td><td>-</td><td>-</td></tr><tr><td>19.2</td><td>-</td><td>-</td></tr><tr><td>16.8</td><td>-</td><td>-</td></tr><tr><td>14.4</td><td>-</td><td>-</td></tr><tr><td>12.0</td><td>-</td><td>-</td></tr><tr><td>9.6</td><td>-</td><td>-</td></tr><tr><td>7.2</td><td>-</td><td>-</td></tr><tr><td>4.8</td><td>-</td><td>-</td></tr><tr><td>2.4</td><td>-</td><td>-</td></tr><tr><td>0.0</td><td>-</td><td>-</td></tr></table>		Output Voltage [V]	Load Current [A]		Input Volt. 100[V]	Input Volt. 230[V]	24.0	2.81	3.01	22.8	-	-	21.6	-	-	19.2	-	-	16.8	-	-	14.4	-	-	12.0	-	-	9.6	-	-	7.2	-	-	4.8	-	-	2.4	-	-	0.0	-	-
Output Voltage [V]	Load Current [A]																																												
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7.2	-	-																																											
4.8	-	-																																											
2.4	-	-																																											
0.0	-	-																																											



Model		PDA50F-24	Testing Circuitry Figure A
Item		Ambient Temperature Drift	
Object		+24V2.2A	
1.Values Load 100%			
Ambient Temperature [°C]		Output Voltage [V]	
		Input Volt. 100V	Input Volt. 200V Input Volt. 230V
	-10	24.071	24.071 24.071
	25	24.081	24.082 24.082
	50	24.067	24.068 24.068
Item		Minimum Input Voltage for Regulated Output Voltage	Testing Circuitry Figure A
Object		+24V2.2A	
1.Values			
Ambient Temperature [°C]		Input Voltage [V]	
		Load 50%	Load 100%
	-10	36	57
	25	36	57
	50	35	57
Item		Overvoltage Protection	Testing Circuitry Figure A
Object		+24V2.2A	
1.Values Load 0%			
Ambient Temperature [°C]		Operating Point [V]	
		Input Volt. 100V	Input Volt. 230V
	-20	32.02	32.02
	25	33.24	33.24
	50	33.88	33.88

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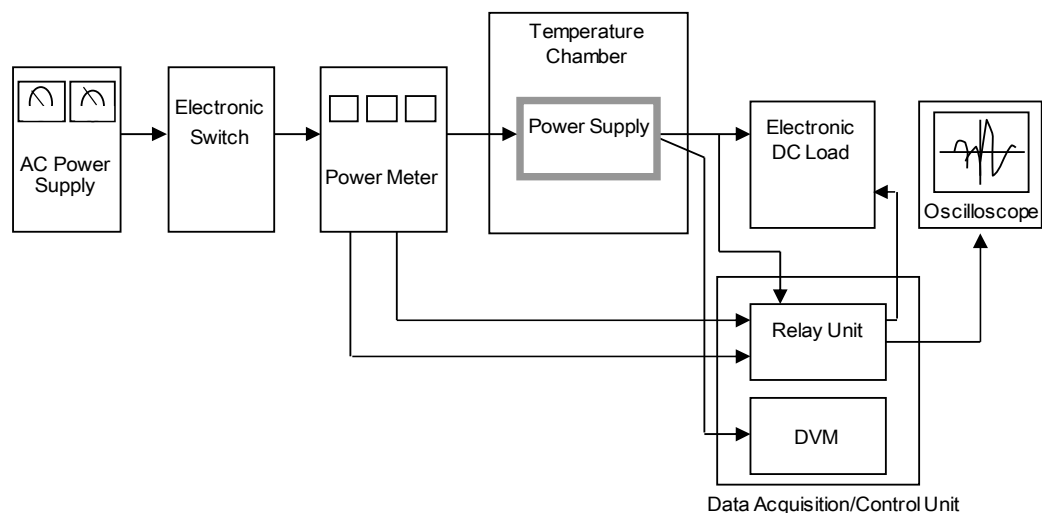


Figure A

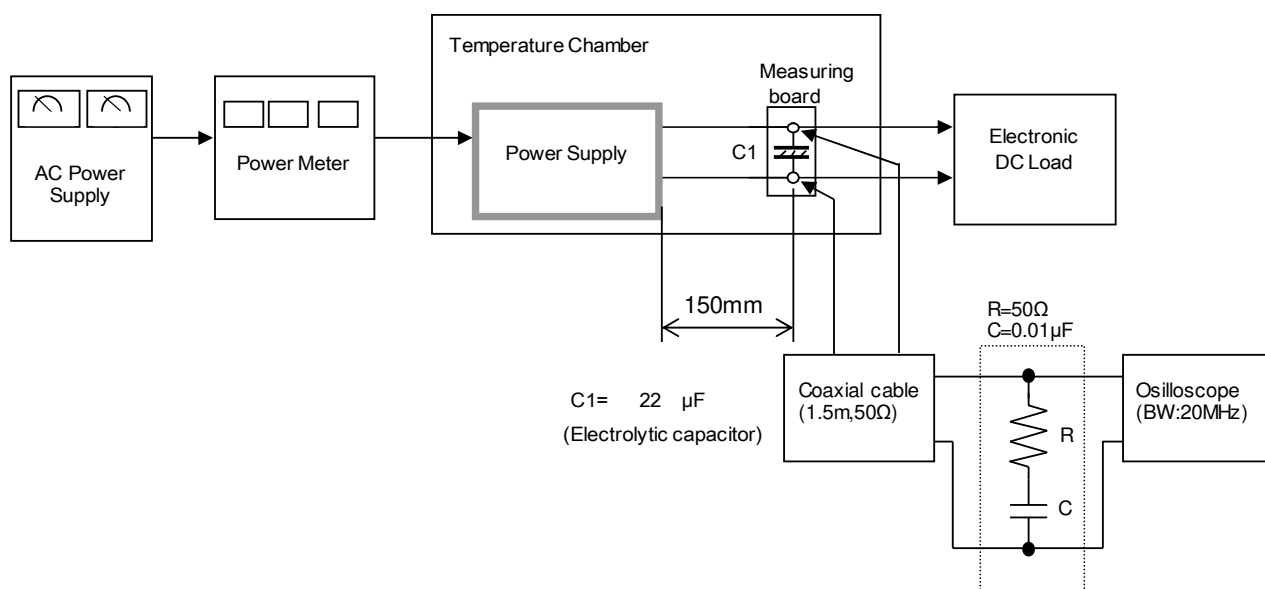


Figure B

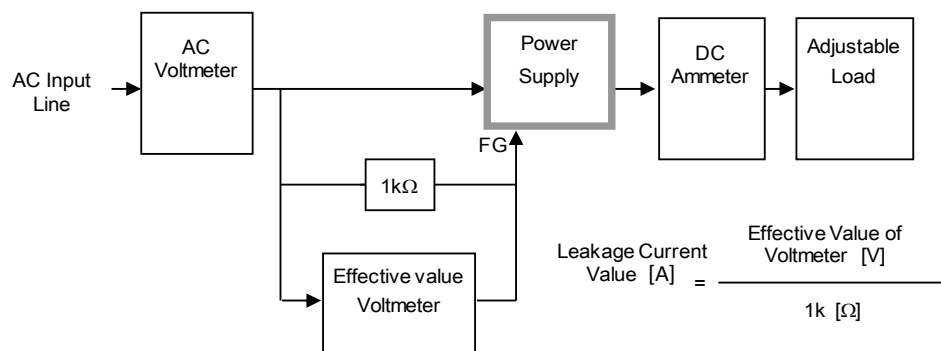


Figure C-1 (DEN-AN)

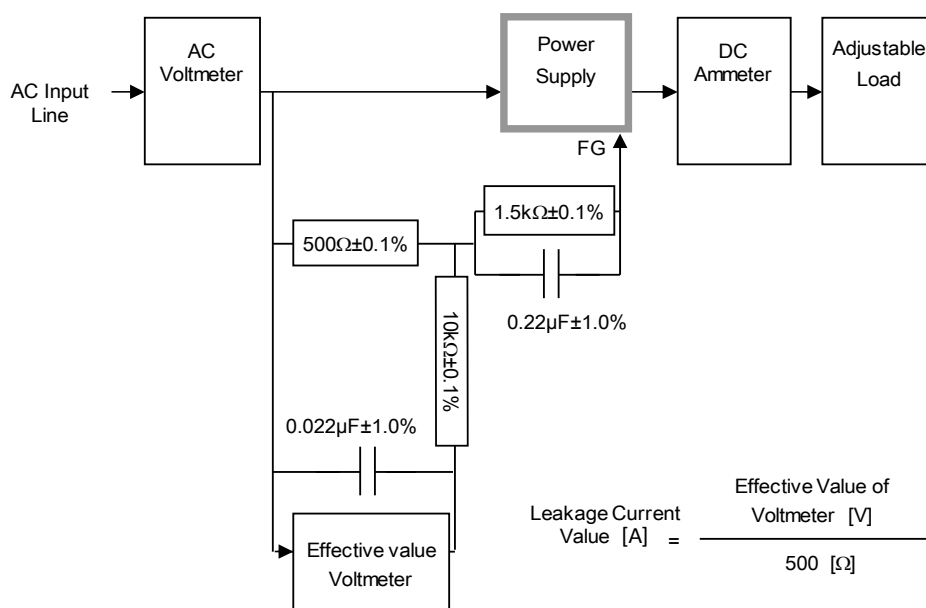


Figure C-2 (IEC62368-1 refer to IEC60990 Fig.4)

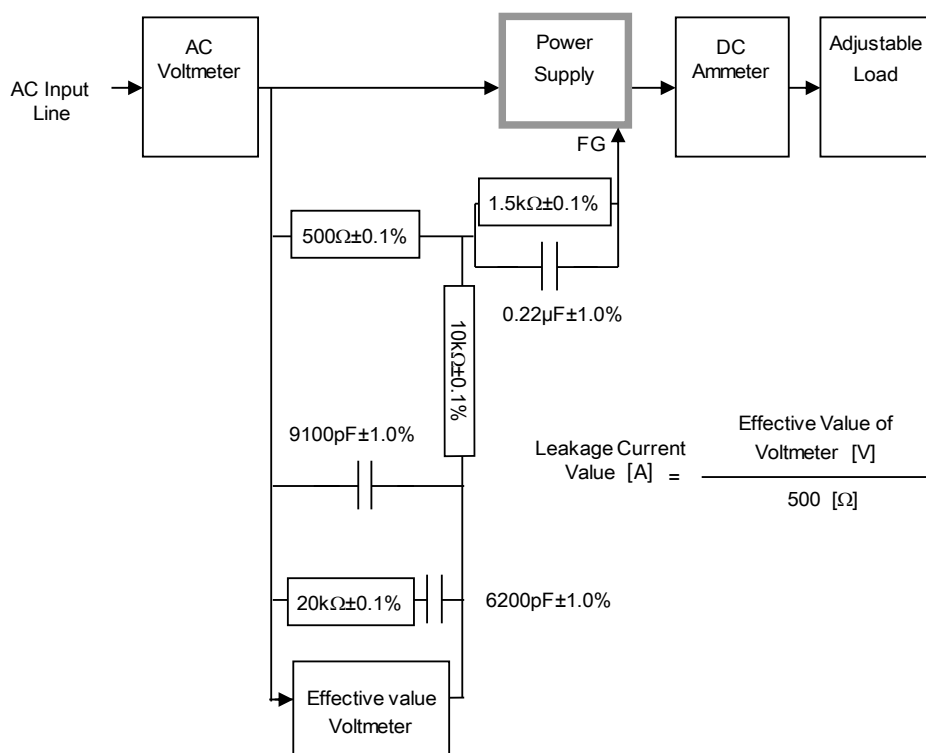


Figure C-3 (IEC62368-1 refer to IEC60990 Fig.5)