

TEST DATA OF WDA120F-48

Regulated DC Power Supply
April 7, 2025

Approved by : Takashi Kajii
Design Manager

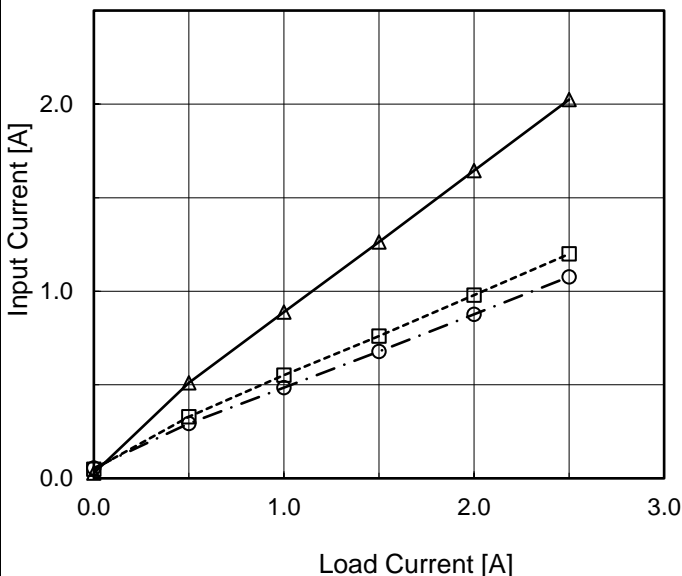
Prepared by : Yuya Sakai
Design Engineer

COSEL CO.,LTD.

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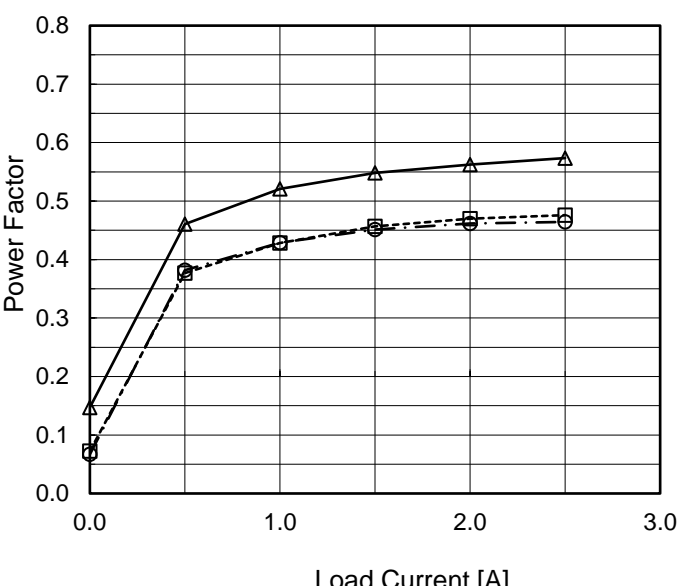
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Model		WDA120F-48	Temperature 25°C Testing Circuitry Figure A																																																				
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Object		+48V2.5A																																																					
1.Graph		<div><div><div>—△—</div><div>Input Volt. 115V</div></div><div><div>---□---</div><div>Input Volt. 230V</div></div><div><div>-·-○-·-</div><div>Input Volt. 264V</div></div></div> 	2.Values																																																				
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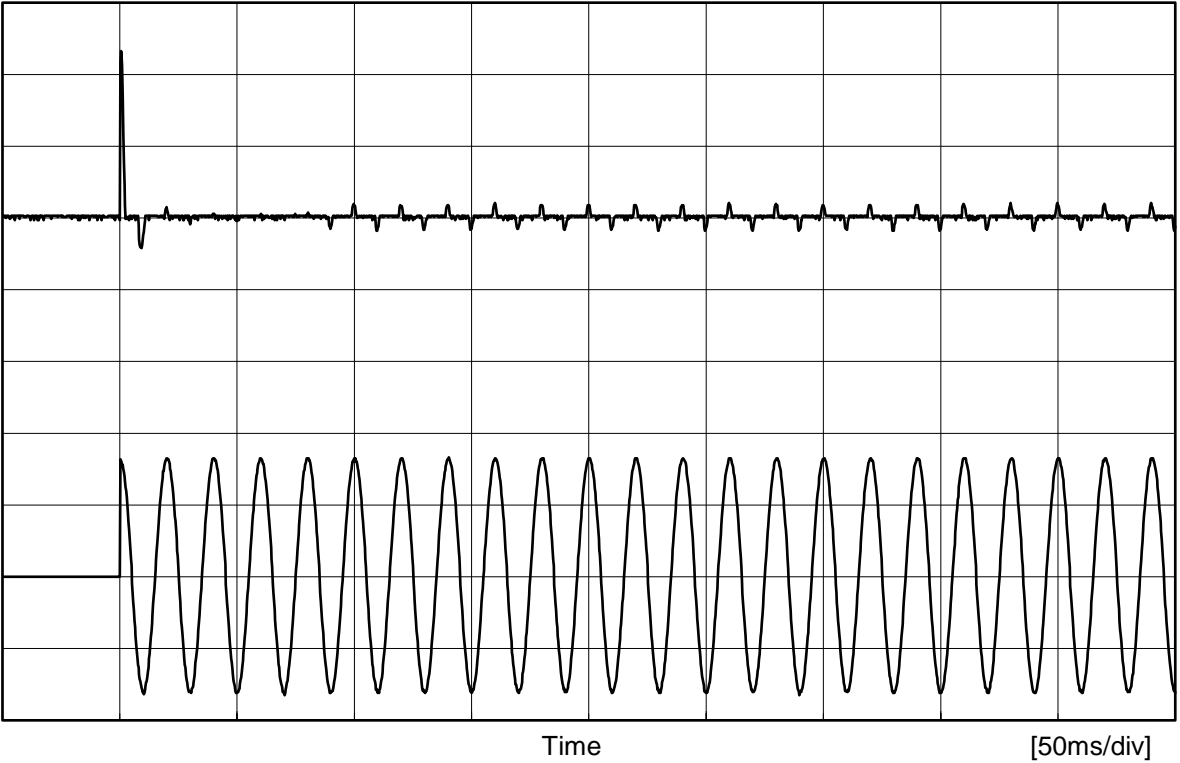
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Item		Inrush Current	
Object		+48V2.5A	

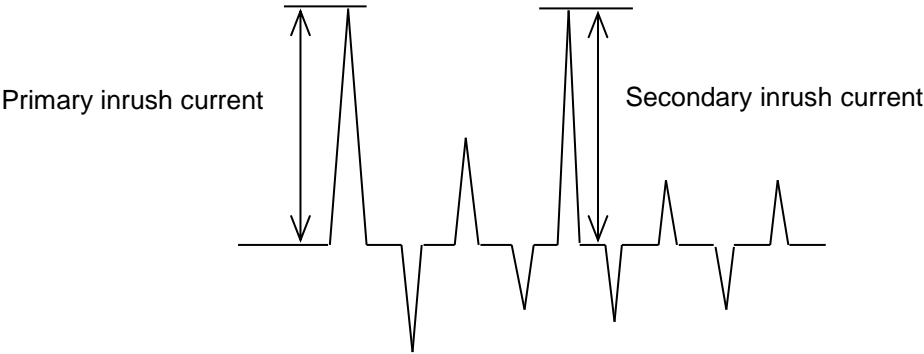
Input
Current
[20A/div]

Input
Voltage
[200V/div]



Input Voltage 230 V
Frequency 50 Hz
Load 100 %

Primary inrush current 46.5 A
Secondary inrush current 4.2 A





Model		WDA120F-48	Temperature 25°C Testing Circuitry Figure C
Item		Leakage Current	
Object		+48V2.5A	

1.Results

[mA]

Standards	Testing Circuitry	Measuring Method	Input Volt.			Note
			115 [V]	240 [V]	264 [V]	
DEN-AN	Figure C-1	Both phases	0.20	0.45	0.51	Operation
		One of phases	0.37	0.81	0.92	Stand by
IEC62368-1	Figure C-2	Both phases	0.20	0.45	0.47	Operation
		One of phases	0.36	0.82	0.84	Stand by
	Figure C-3	Both phases	0.20	0.52	0.48	Operation
		One of phases	0.35	0.93	0.85	Stand by

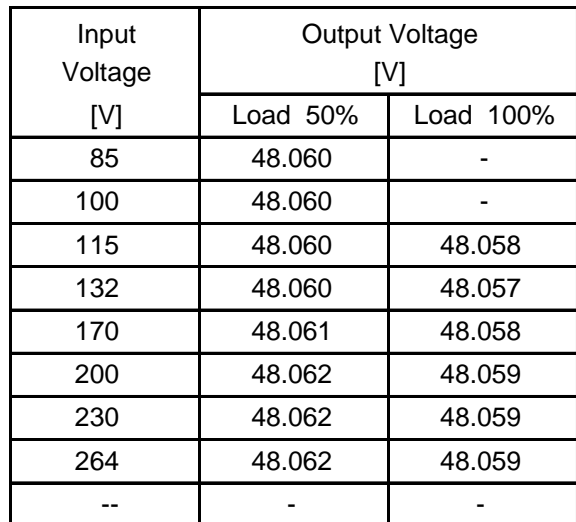
The value for "One of phases" is the reference value only.

2.Condition

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

Temperature	25°C
Testing Circuitry	Figure A

2.Values



Model	WDA120F-48																																																					
Item	Load Regulation	Temperature	25°C																																																			
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<div><div><div>—△—</div><div>Input Volt.</div><div>115V</div></div><div><div>---□---</div><div>Input Volt.</div><div>230V</div></div><div><div>-·-○-·-</div><div>Input Volt.</div><div>264V</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. 115[V]</th><th>Input Volt. 230[V]</th><th>Input Volt. 264[V]</th></tr><tr><td>0.0</td><td>48.067</td><td>48.065</td><td>48.065</td></tr><tr><td>0.5</td><td>48.065</td><td>48.066</td><td>48.067</td></tr><tr><td>1.0</td><td>48.064</td><td>48.065</td><td>48.065</td></tr><tr><td>1.5</td><td>48.063</td><td>48.063</td><td>48.064</td></tr><tr><td>2.0</td><td>48.062</td><td>48.063</td><td>48.064</td></tr><tr><td>2.5</td><td>48.059</td><td>48.062</td><td>48.062</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><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. 115[V]	Input Volt. 230[V]	Input Volt. 264[V]	0.0	48.067	48.065	48.065	0.5	48.065	48.066	48.067	1.0	48.064	48.065	48.065	1.5	48.063	48.063	48.064	2.0	48.062	48.063	48.064	2.5	48.059	48.062	48.062	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
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<div><div>Input Voltage</div><div>230V</div></div> <div><div>Load</div><div>100%</div></div> <div>50[mV/div]</div> <div>20[ms/div]</div>																																																						

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7

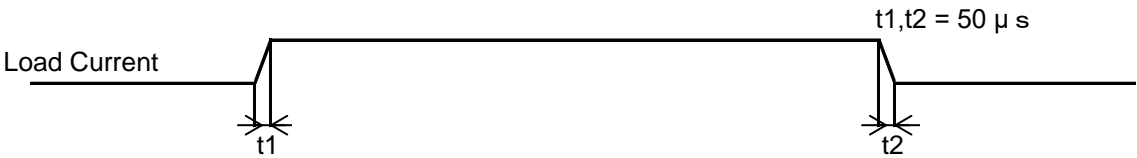
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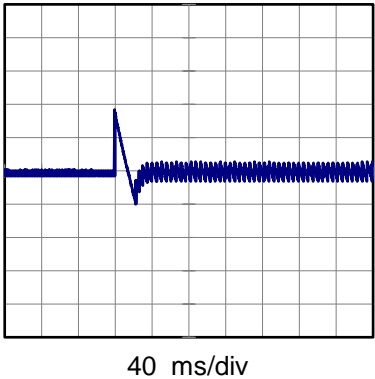
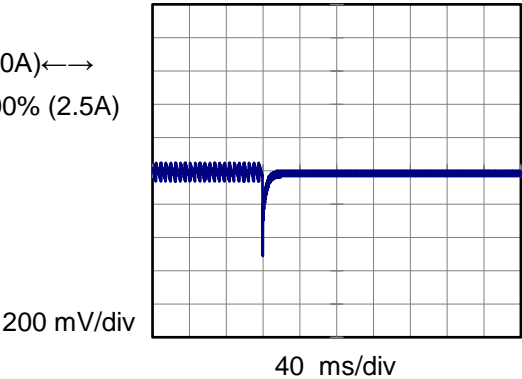


Model	WDA120F-48	Temperature 25°C Testing Circuitry Figure A
Item	Dynamic Load Response	
Object	+48V2.5A	

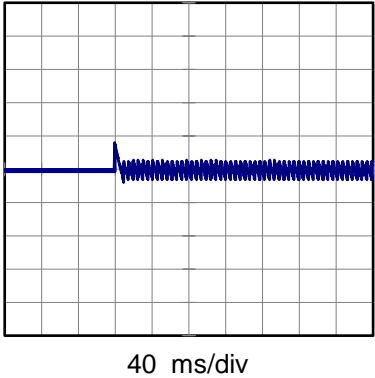
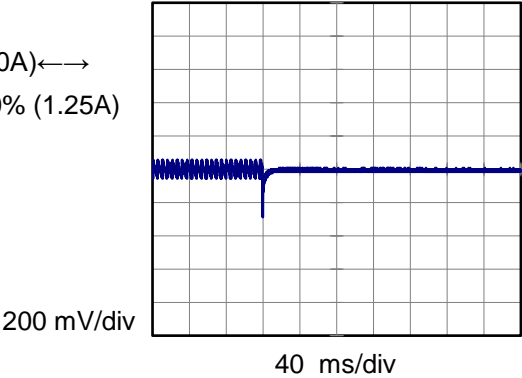
Input Volt. 230 V
Cycle 1000 ms



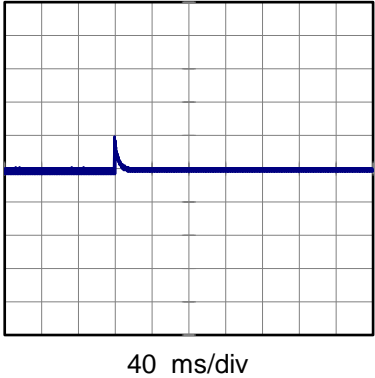
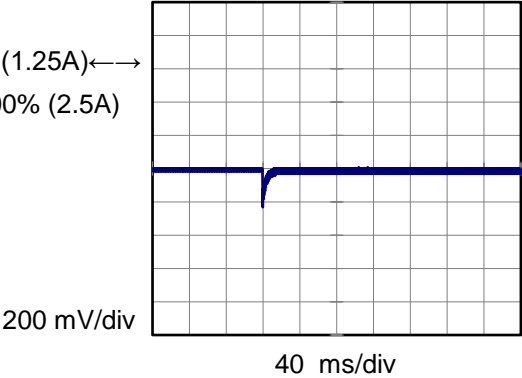
Min.Load (0A) \longleftrightarrow
Load 100% (2.5A)



Load 0% (0A) \longleftrightarrow
Load 50% (1.25A)



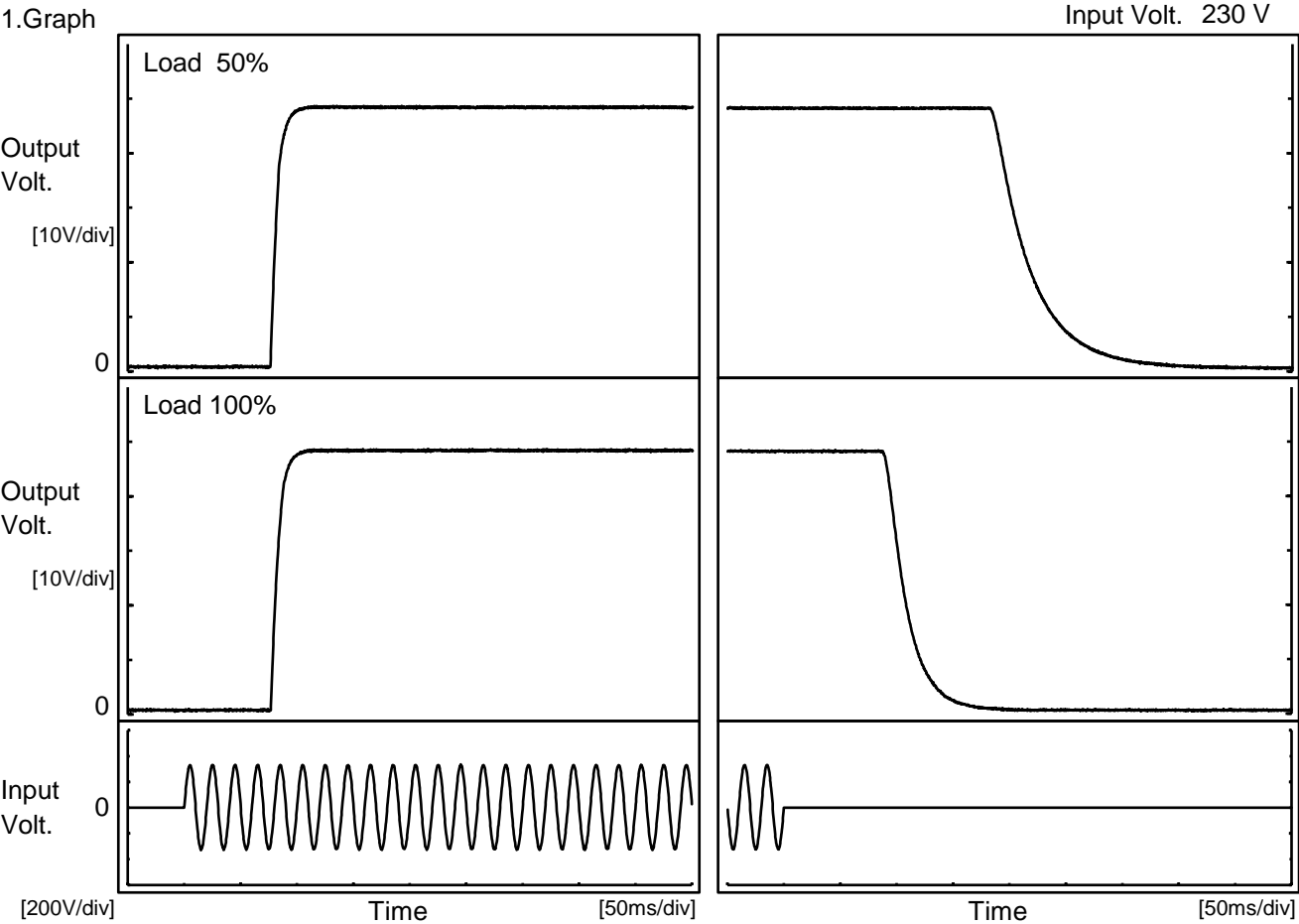
Load 50% (1.25A) \longleftrightarrow
Load 100% (2.5A)





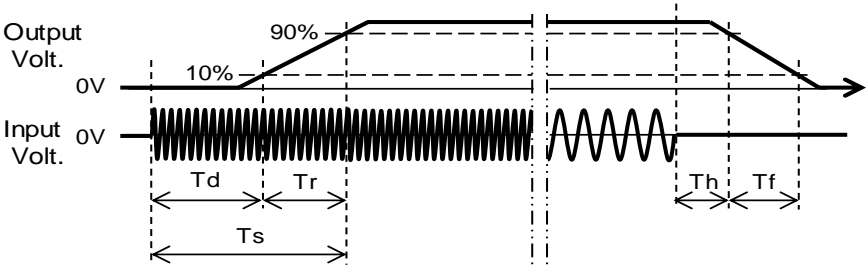
Model		WDA120F-48	Temperature 25°C Testing Circuitry Figure A
Item		Rise and Fall Time	
Object		+48V2.5A	

1.Graph



2.Values

		[ms]				
Load	Time	Td	Tr	Ts	Th	Tf
50 %		77.0	12.0	89.0	188.8	74.3
100 %		77.5	12.5	90.0	92.5	41.0





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Item		Hold-Up Time																																
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1.Graph			2.Values																															
<div><div><div>-----□----- Load 50%</div><div>-----△----- Load 100%</div></div><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></div>																																		
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Object		+48V2.5A	
1.Graph			2.Values
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BC-12099



<div>COSEL</div>			
Model	WDA120F-48		
Item	Ambient Temperature Drift	Testing Circuitry Figure A	
Object	+48V2.5A		
1.Values		Load 100%	
Ambient Temperature[°C]	Output Voltage [V]		
	Input Volt. 115V	Input Volt. 230V	Input Volt. 264V
-20	47.964	47.965	47.966
25	48.050	48.051	48.051
50	48.068	48.068	48.068

Item	Minimum Input Voltage for Regulated Output Voltage	Testing Circuitry Figure A	
Object	+48V2.5A		
1.Values			
Ambient Temperature[°C]	Input Voltage [V]		
	Load 50%	Load 100%	
-20	47	76	
25	47	76	
50	47	76	

Item	Overvoltage Protection	Testing Circuitry Figure A	
Object	+48V2.5A		
1.Values		Load 0%	
Ambient Temperature[°C]	Operating Point [V]		
	Input Volt. 115V	Input Volt. 264V	
-20	60.63	60.79	
25	61.40	61.50	
50	61.90	62.00	

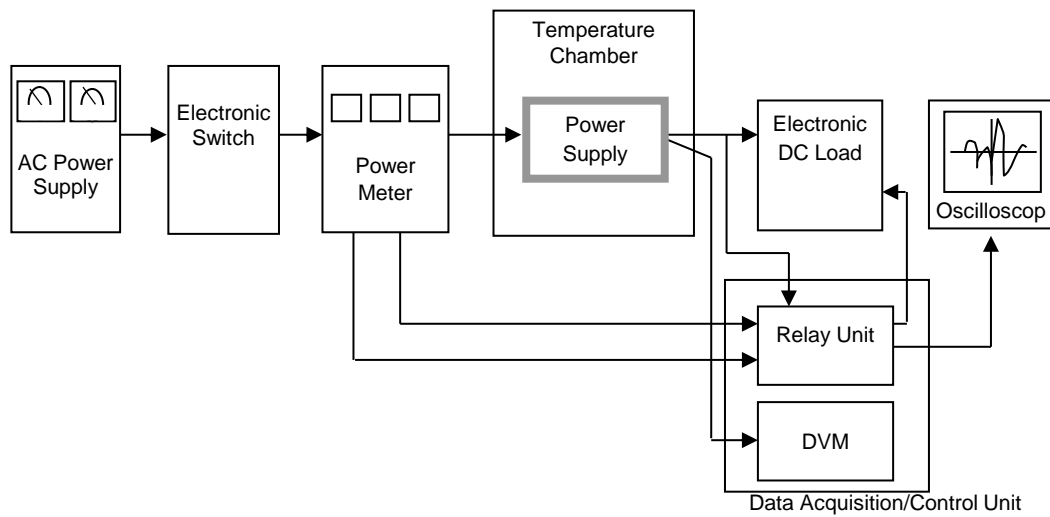
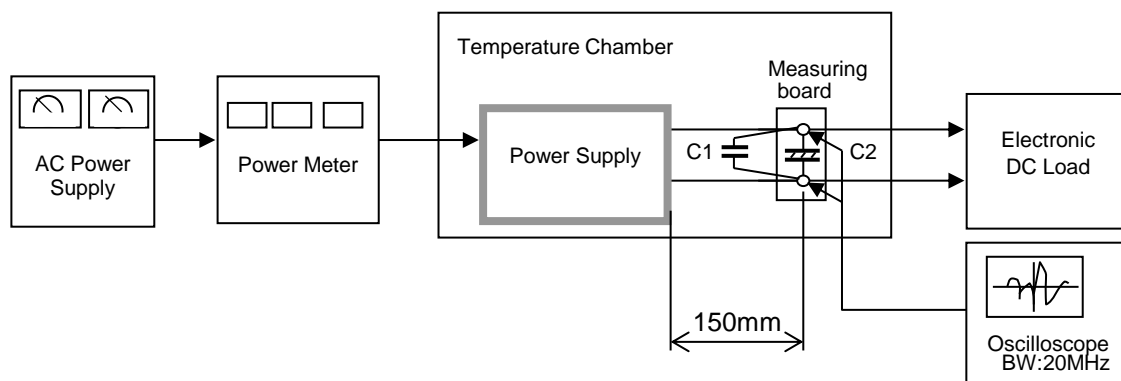


Figure A



C1= 0.1 μ F
(Ceramic capacitor)
C2= 47 μ F
(Electrolytic capacitor)

Figure B

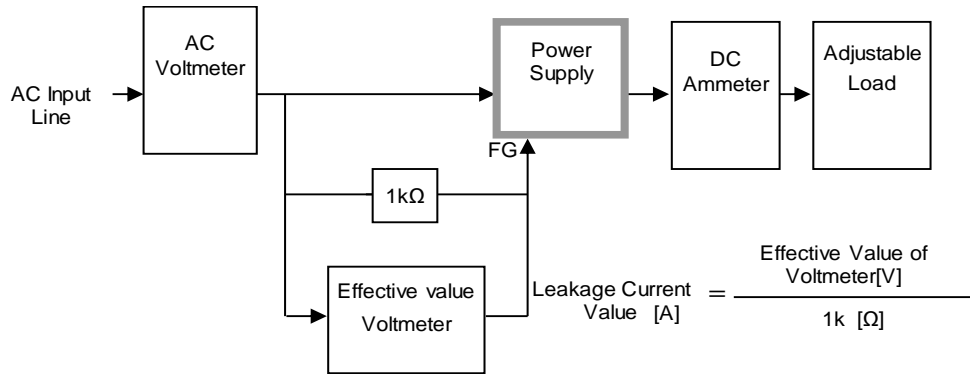


Figure C-1 (DEN-AN)

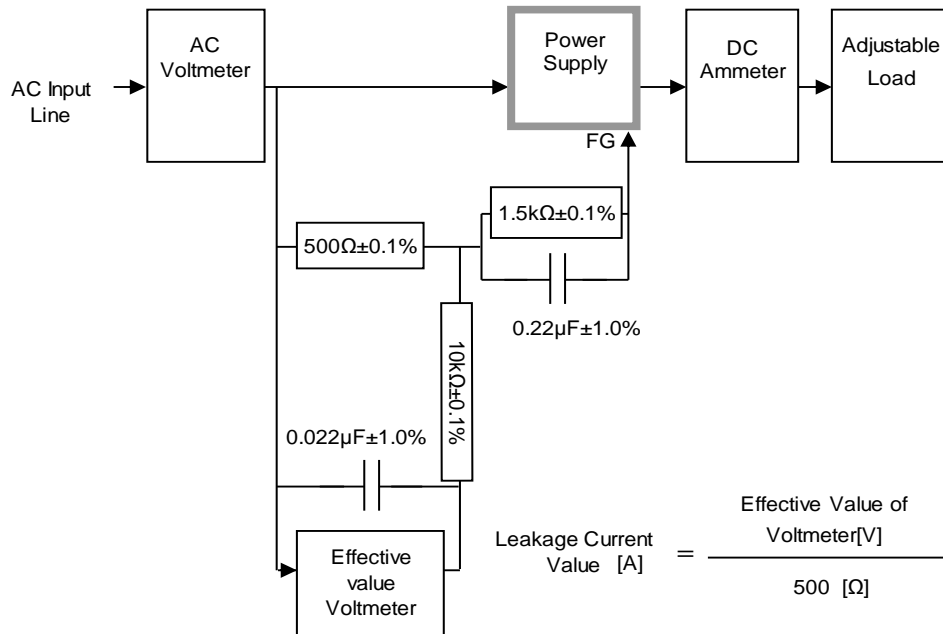


Figure C-2 (IEC62368-1 refer to IEC60990 Fig.4)

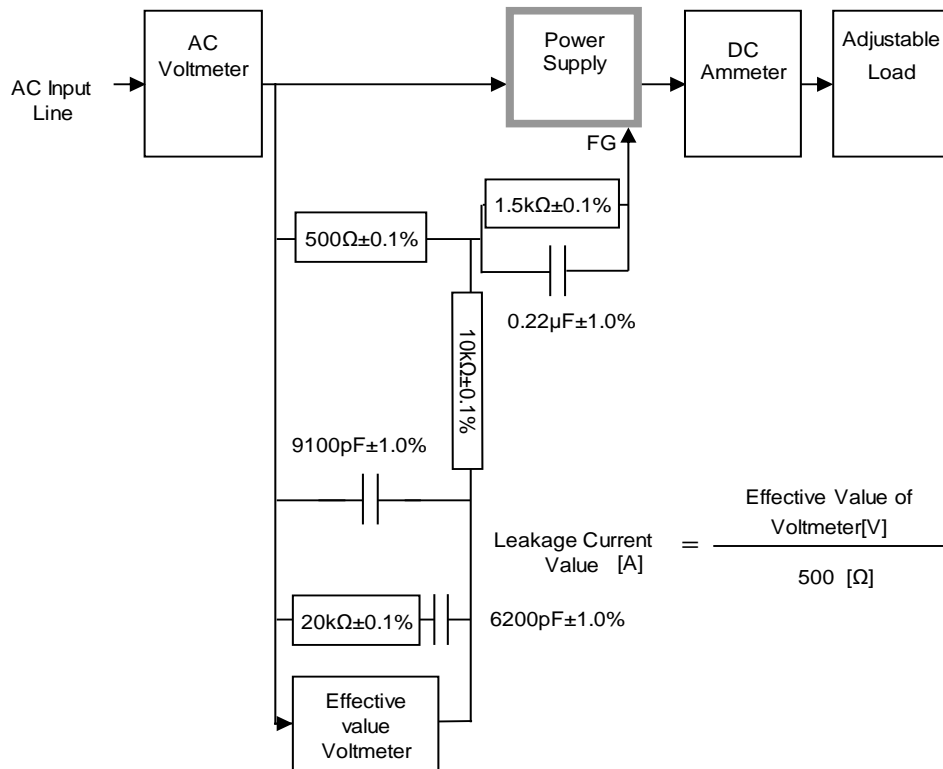


Figure C-3 (IEC62368-1 refer to IEC60990 Fig.5)