

TEST DATA OF UMCS60F-12-E

Regulated DC Power Supply
July 18, 2024

Approved by : Takashi Kajii
Design Manager

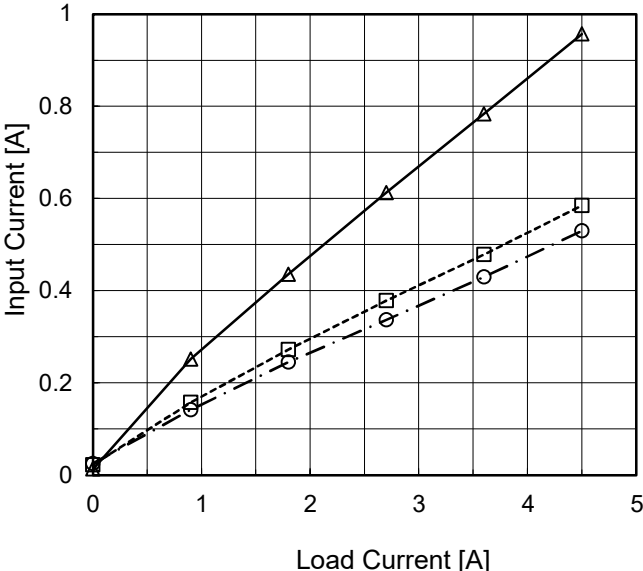
Prepared by : Kyosuke Kurata
Design Engineer

COSEL CO.,LTD.

CONTENTS

1.Input Current (by Load Current)	1
2.Efficiency (by Load Current)	2
3.Power Factor (by Load Current)	3
4.Inrush Current	4
5.Leakage Current	5
6.Line Regulation	6
7.Load Regulation	7
8.Ripple-Noise	7
9.Dynamic Load Response	8
10.Rise and Fall Time	9
11.Hold-Up Time	10
12.Instantaneous Interruption Compensation	11
13.Overcurrent Protection	12
14.Ambient Temperature Drift	13
15.Minimum Input Voltage for Regulated Output Voltage	13
16.Overvoltage Protection	13
17.Figure of Testing Circuitry	14

(Final Page 15)

Model	UMCS60F-12-E																																																									
Item	Input Current (by Load Current)	Temperature	25°C																																																							
Object	+12V4.5A	Testing Circuitry	Figure A																																																							
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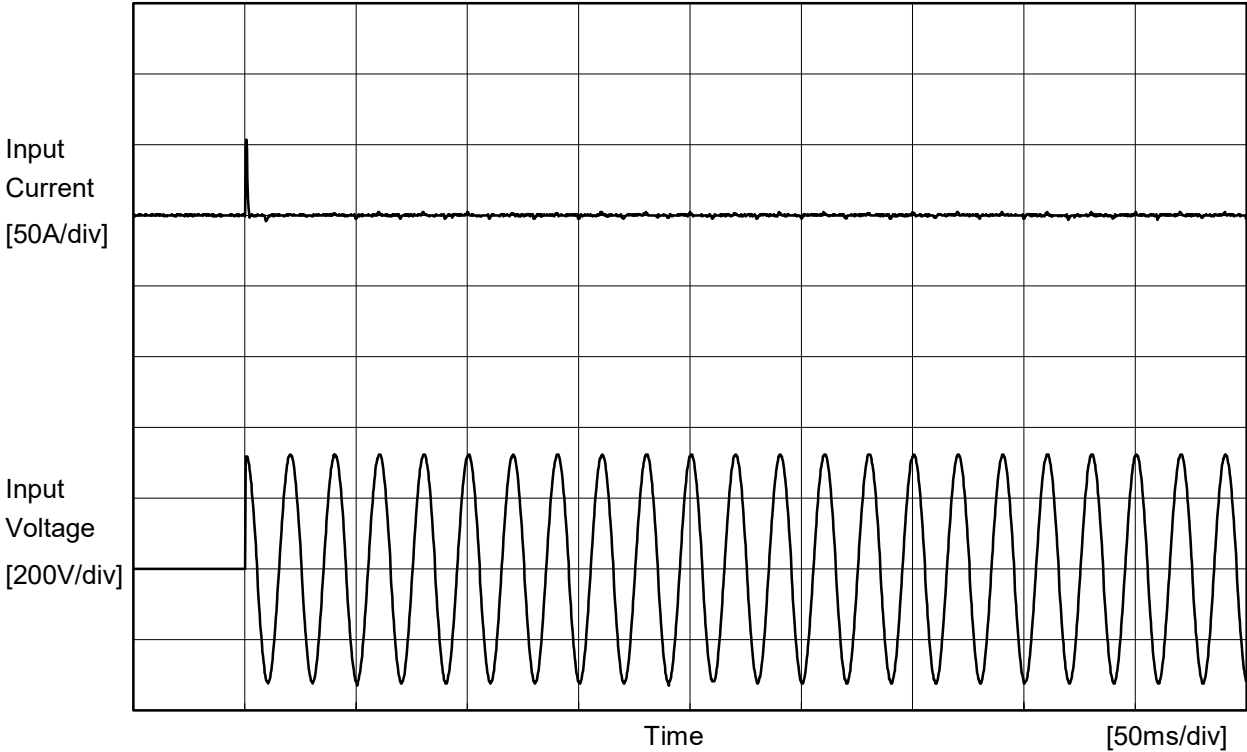


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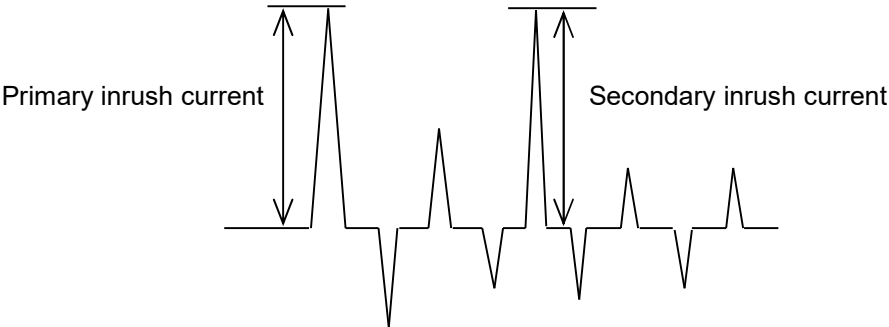


Model		UMCS60F-12-E	
Item		Inrush Current	Temperature 25°C Testing Circuitry Figure A
Object		+12V4.5A	



Input Voltage 230 V
Frequency 50 Hz
Load 100 %

Primary inrush current 53.7 A
Secondary inrush current 3.1 A





Model		UMCS60F-12-E	Temperature 25°C Testing Circuitry Figure C
Item		Leakage Current	
Object		+12V4.5A	

1.Results

Standards	Testing Circuitry	Measuring Method	Input Volt.			Note
			115 [V]	230 [V]	264 [V]	
IEC60601-1	Figure C-1	Both phases	1.9	4.0	3.9	Operation
		One of phases	3.0	6.2	7.2	Stand by
IEC62368-1	Figure C-2	Both phases	1.0	3.6	4.3	Operation
		One of phases	2.6	5.9	6.8	Stand by
	Figure C-3	Both phases	1.0	3.6	4.3	Operation
		One of phases	2.6	5.9	6.8	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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<div><div><div><div>---□---</div><div>Load 50%</div></div><div><div>—△—</div><div>Load 100%</div></div></div><div><div>Output Voltage [V]</div><div><div><div>12.3</div><div>12.2</div><div>12.1</div><div>12</div><div>11.9</div></div><div><div>50</div><div>100</div><div>150</div><div>200</div><div>250</div><div>300</div></div></div><div><div>Input Voltage [V]</div></div></div></div>		<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>12.078</td><td>-</td></tr><tr><td>100</td><td>12.079</td><td>-</td></tr><tr><td>115</td><td>12.079</td><td>12.058</td></tr><tr><td>132</td><td>12.079</td><td>12.058</td></tr><tr><td>170</td><td>12.079</td><td>12.059</td></tr><tr><td>200</td><td>12.079</td><td>12.058</td></tr><tr><td>230</td><td>12.079</td><td>12.058</td></tr><tr><td>264</td><td>12.080</td><td>12.059</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></table>		Input Voltage [V]	Output Voltage [V]		Load 50%	Load 100%	85	12.078	-	100	12.079	-	115	12.079	12.058	132	12.079	12.058	170	12.079	12.059	200	12.079	12.058	230	12.079	12.058	264	12.080	12.059	--	-	-
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Object	+12V4.5A	Testing Circuitry	Figure B																																																			
<div>1.Graph<div><div>Input Voltage</div>230V</div><div><div>Load</div>100%</div><div><div>20[mV/div]</div><div><div></div></div><div>10[ms/div]</div></div></div>																																																						

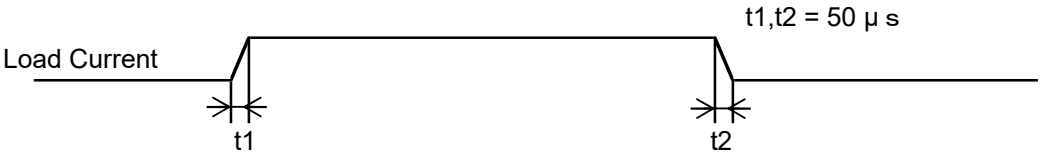
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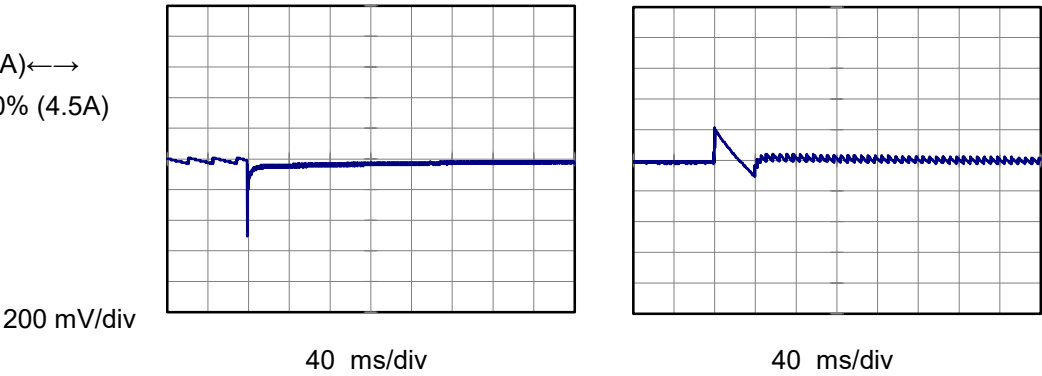


Model	UMCS60F-12-E		
Item	Dynamic Load Response	Temperature	25°C
Object	+12V4.5A	Testing Circuitry	Figure A

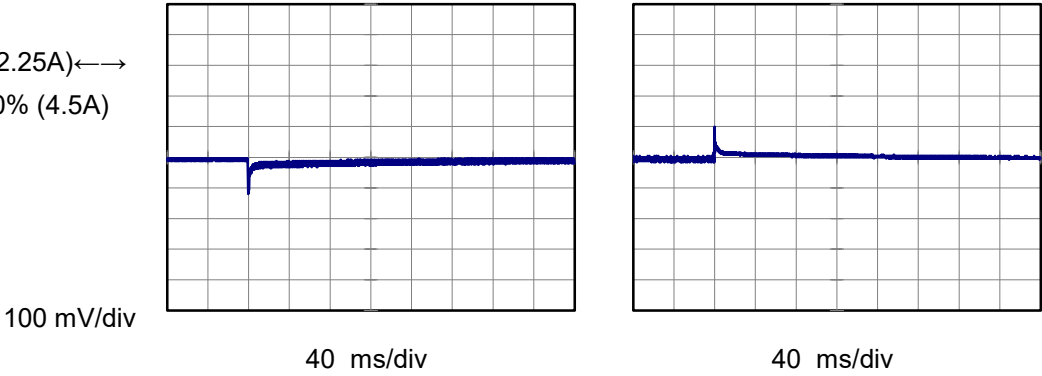
Input Volt. 230 V
Cycle 1000 ms



Min.Load (0A) ←→
Load 100% (4.5A)

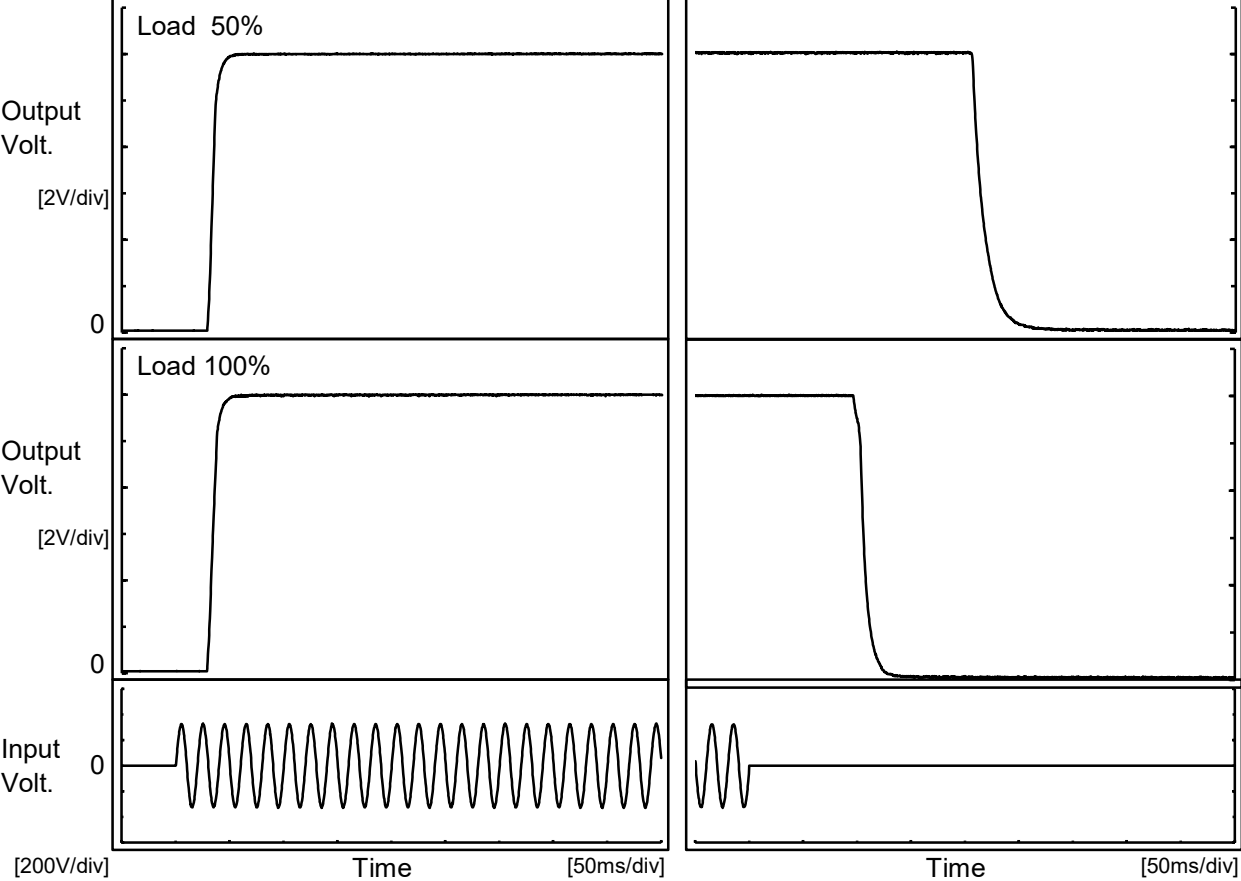


Load 50% (2.25A) ←→
Load 100% (4.5A)



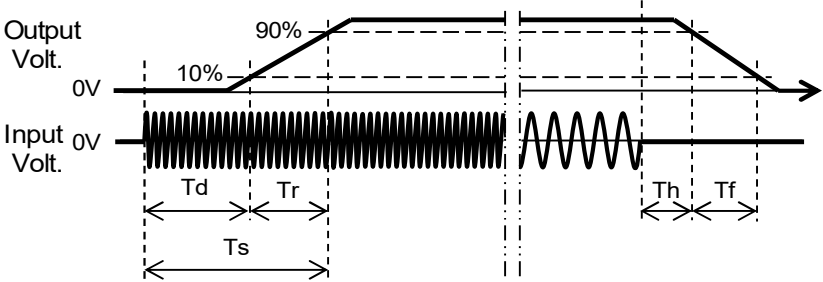
Model		UMCS60F-12-E	Temperature 25°C Testing Circuitry Figure A
Item		Rise and Fall Time	
Object		+12V4.5A	

1.Graph



2.Values

		[ms]				
Load	Time	Td	Tr	Ts	Th	Tf
50 %		31.0	9.0	40.0	207.3	24.8
100 %		30.8	9.5	40.3	101.0	14.8





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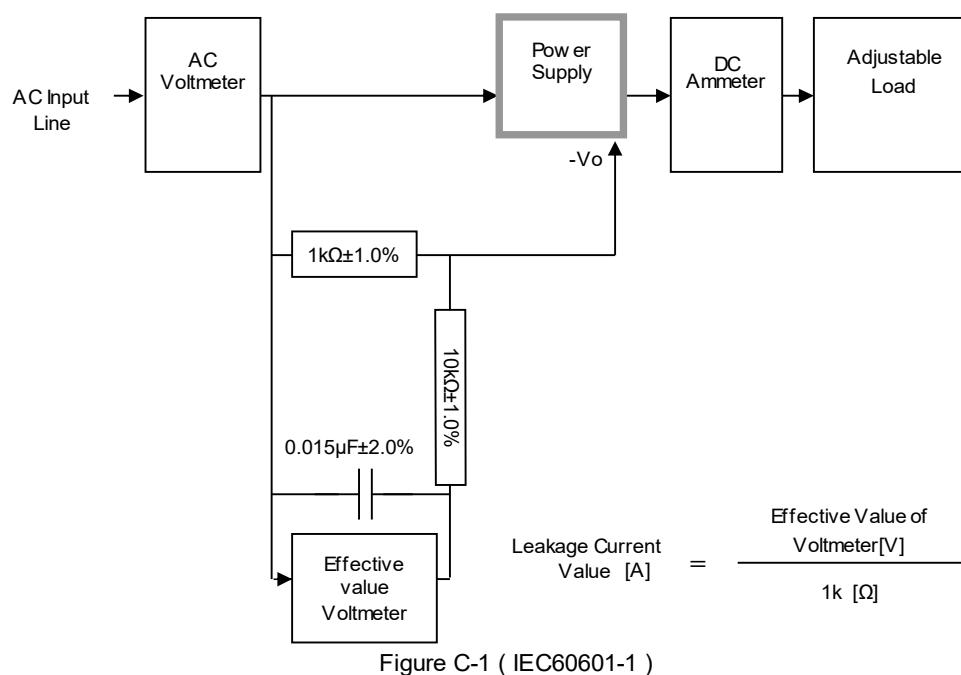
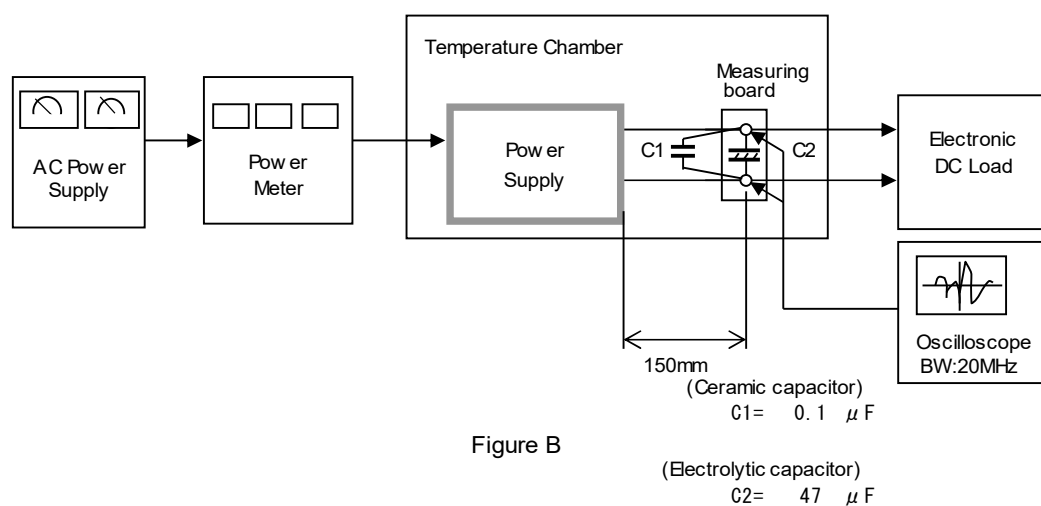
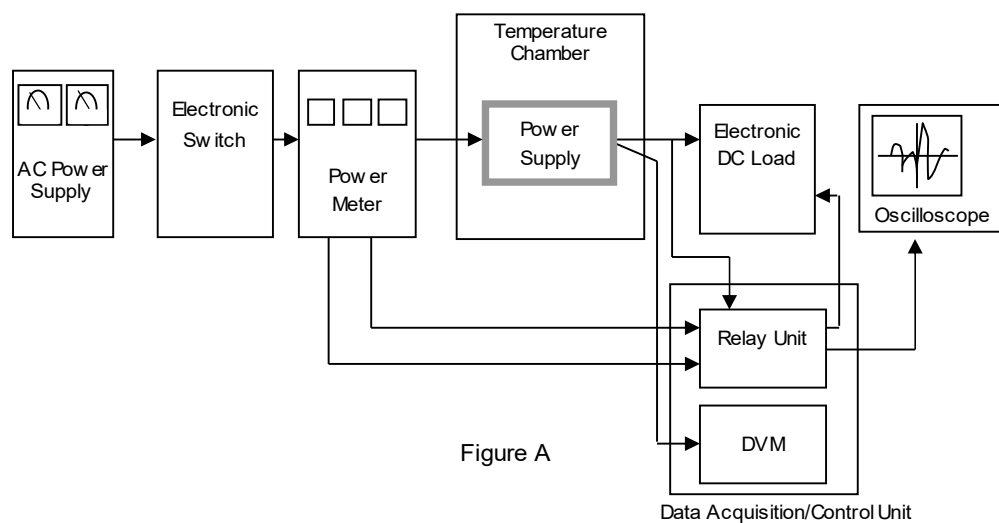
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		Testing Circuitry Figure A	
Model	UMCS60F-12-E		
Item	Ambient Temperature Drift		
Object	+12V4.5A		
1.Values Load 100%			
Ambient Temperature[°C]	Output Voltage [V]		
	Input Volt. 115V	Input Volt. 230V	Input Volt. 264V
-20	12.003	12.003	12.005
25	12.049	12.049	12.050
30	12.059	12.059	12.059
Item	Minimum Input Voltage for Regulated Output Voltage	Testing Circuitry Figure A	
Object	+12V4.5A		
1.Values			
Ambient Temperature[°C]	Input Voltage [V]		
	Load 50%	Load 100%	
-20	38	56	
25	37	56	
30	37	57	
Item	Overvoltage Protection	Testing Circuitry Figure A	
Object	+12V4.5A		
1.Values Load 0%			
Ambient Temperature[°C]	Operating Point [V]		
	Input Volt. 115V	Input Volt. 264V	
-20	14.62	14.16	
25	15.03	14.97	
30	15.08	15.08	

- 13 -

BC-11997



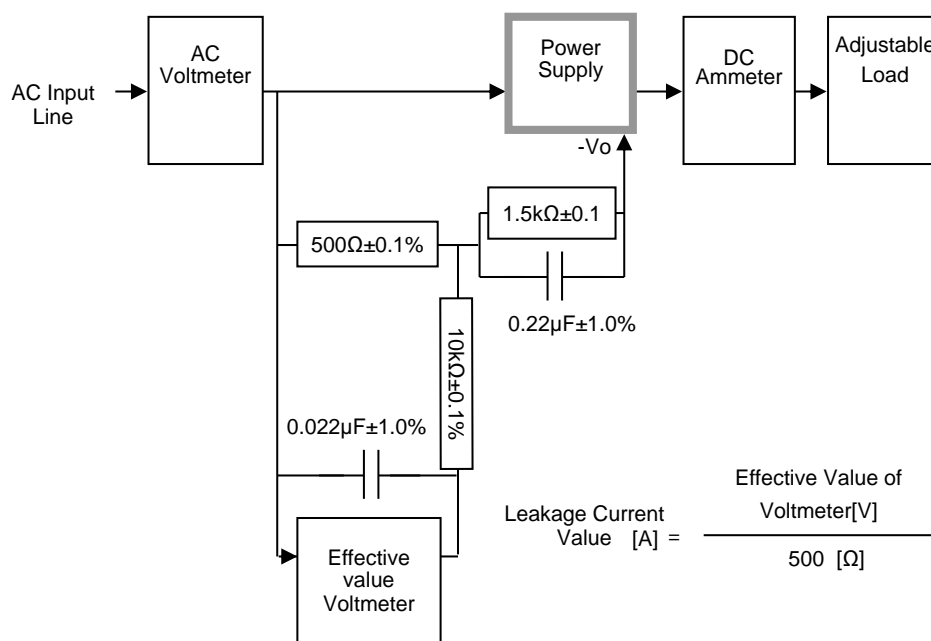


Figure C-2 (IEC62368-1 refer to IEC60990 Fig.4)

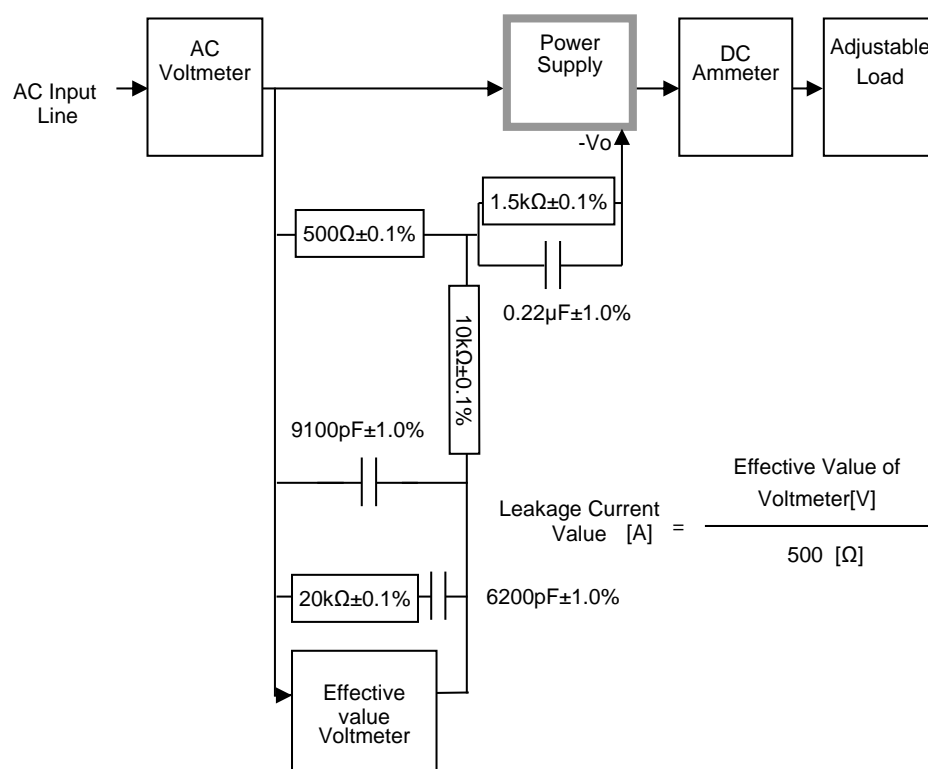


Figure C-3 (IEC62368-1 refer to IEC60990 Fig.5)