

# TEST DATA OF UMA120F-12-Y

Regulated DC Power Supply  
November 6, 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)

**COSEL**

Model	UMA120F-12-Y																																																					
Item	Input Current (by Load Current)	Temperature 25°C	Testing Circuitry Figure A																																																			
Object	+12V10A																																																					
1.Graph	Input Volt. 115V Input Volt. 230V Input Volt. 264V																																																					
	<p>The graph plots Input Current [A] on the y-axis (0 to 1.5) against Load Current [A] on the x-axis (0 to 12). Three curves are shown for different input voltages:</p> <ul style="list-style-type: none"> <li>Input Volt. 115V (solid line with open triangle markers): Starts at (0,0), passes through (4, 0.476), (8, 0.926), and ends at (10, 1.156).</li> <li>Input Volt. 230V (dashed line with open square markers): Starts at (0,0), passes through (4, 0.259), (8, 0.489), and ends at (10, 0.596).</li> <li>Input Volt. 264V (dotted line with open circle markers): Starts at (0,0), passes through (4, 0.173), (8, 0.385), and ends at (10, 0.540).</li> </ul>																																																					
2.Values	<table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th colspan="3">Input Current [A]</th> </tr> <tr> <th>Input Volt. 115[V]</th> <th>Input Volt. 230[V]</th> <th>Input Volt. 264[V]</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>0.053</td> <td>0.069</td> <td>0.082</td> </tr> <tr> <td>2</td> <td>0.259</td> <td>0.182</td> <td>0.173</td> </tr> <tr> <td>4</td> <td>0.476</td> <td>0.283</td> <td>0.267</td> </tr> <tr> <td>6</td> <td>0.699</td> <td>0.385</td> <td>0.357</td> </tr> <tr> <td>8</td> <td>0.926</td> <td>0.489</td> <td>0.448</td> </tr> <tr> <td>10</td> <td>1.156</td> <td>0.596</td> <td>0.540</td> </tr> <tr> <td>--</td> <td>-</td> <td>-</td> <td>-</td> </tr> </tbody> </table>			Load Current [A]	Input Current [A]			Input Volt. 115[V]	Input Volt. 230[V]	Input Volt. 264[V]	0	0.053	0.069	0.082	2	0.259	0.182	0.173	4	0.476	0.283	0.267	6	0.699	0.385	0.357	8	0.926	0.489	0.448	10	1.156	0.596	0.540	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
Load Current [A]	Input Current [A]																																																					
	Input Volt. 115[V]	Input Volt. 230[V]	Input Volt. 264[V]																																																			
0	0.053	0.069	0.082																																																			
2	0.259	0.182	0.173																																																			
4	0.476	0.283	0.267																																																			
6	0.699	0.385	0.357																																																			
8	0.926	0.489	0.448																																																			
10	1.156	0.596	0.540																																																			
--	-	-	-																																																			
--	-	-	-																																																			
--	-	-	-																																																			
--	-	-	-																																																			
--	-	-	-																																																			

**COSEL**

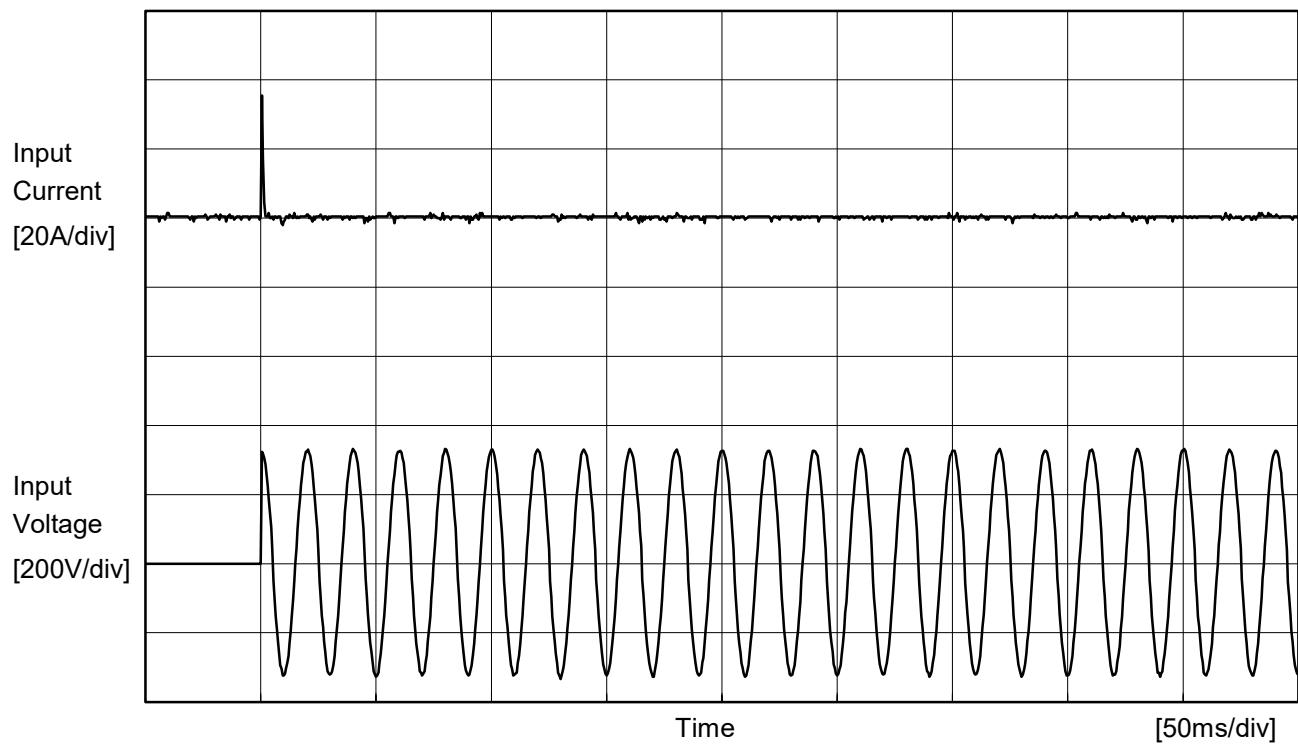
Model	UMA120F-12-Y	Temperature	25°C																																																			
Item	Efficiency (by Load Current)	Testing Circuitry	Figure A																																																			
Object	+12V10A																																																					
1.Graph	<p>—△— Input Volt. 115V        - - -□- - Input Volt. 230V        - - ○ - - Input Volt. 264V</p>																																																					
2.Values	<table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th colspan="3">Efficiency [%]</th> </tr> <tr> <th>Input Volt. 115[V]</th> <th>Input Volt. 230[V]</th> <th>Input Volt. 264[V]</th> </tr> </thead> <tbody> <tr> <td>0</td><td>-</td><td>-</td><td>-</td></tr> <tr> <td>2</td><td>86.8</td><td>88.0</td><td>88.0</td></tr> <tr> <td>4</td><td>90.4</td><td>92.2</td><td>92.3</td></tr> <tr> <td>6</td><td>91.4</td><td>93.5</td><td>93.7</td></tr> <tr> <td>8</td><td>91.7</td><td>93.9</td><td>94.1</td></tr> <tr> <td>10</td><td>91.9</td><td>93.9</td><td>94.2</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> </tbody> </table>			Load Current [A]	Efficiency [%]			Input Volt. 115[V]	Input Volt. 230[V]	Input Volt. 264[V]	0	-	-	-	2	86.8	88.0	88.0	4	90.4	92.2	92.3	6	91.4	93.5	93.7	8	91.7	93.9	94.1	10	91.9	93.9	94.2	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
Load Current [A]	Efficiency [%]																																																					
	Input Volt. 115[V]	Input Volt. 230[V]	Input Volt. 264[V]																																																			
0	-	-	-																																																			
2	86.8	88.0	88.0																																																			
4	90.4	92.2	92.3																																																			
6	91.4	93.5	93.7																																																			
8	91.7	93.9	94.1																																																			
10	91.9	93.9	94.2																																																			
--	-	-	-																																																			
--	-	-	-																																																			
--	-	-	-																																																			
--	-	-	-																																																			
--	-	-	-																																																			

**COSEL**

Model	UMA120F-12-Y	Temperature	25°C																																																																															
Item	Power Factor (by Load Current)	Testing Circuitry	Figure A																																																																															
Object	+12V10A																																																																																	
1.Graph		2.Values																																																																																
<p>The graph plots Power Factor (Y-axis, 0 to 1) against Load Current [A] (X-axis, 0 to 12). Three curves are shown for Input Voltages: 115V (solid line with triangles), 230V (dashed line with squares), and 264V (dash-dot line with circles). All curves show an increasing trend, with the 115V curve reaching the highest power factor of approximately 1.0 at 10A.</p> <table border="1"> <thead> <tr> <th>Load Current [A]</th> <th>Input Volt. 115V</th> <th>Input Volt. 230V</th> <th>Input Volt. 264V</th> </tr> </thead> <tbody> <tr><td>0</td><td>0.417</td><td>0.129</td><td>0.093</td></tr> <tr><td>2</td><td>0.929</td><td>0.650</td><td>0.596</td></tr> <tr><td>4</td><td>0.970</td><td>0.801</td><td>0.737</td></tr> <tr><td>6</td><td>0.982</td><td>0.871</td><td>0.815</td></tr> <tr><td>8</td><td>0.985</td><td>0.910</td><td>0.863</td></tr> <tr><td>10</td><td>0.983</td><td>0.933</td><td>0.894</td></tr> </tbody> </table>		Load Current [A]	Input Volt. 115V	Input Volt. 230V	Input Volt. 264V	0	0.417	0.129	0.093	2	0.929	0.650	0.596	4	0.970	0.801	0.737	6	0.982	0.871	0.815	8	0.985	0.910	0.863	10	0.983	0.933	0.894	<table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th colspan="3">Power Factor</th> </tr> <tr> <th>Input Volt. 115[V]</th> <th>Input Volt. 230[V]</th> <th>Input Volt. 264[V]</th> </tr> </thead> <tbody> <tr><td>0</td><td>0.417</td><td>0.129</td><td>0.093</td></tr> <tr><td>2</td><td>0.929</td><td>0.650</td><td>0.596</td></tr> <tr><td>4</td><td>0.970</td><td>0.801</td><td>0.737</td></tr> <tr><td>6</td><td>0.982</td><td>0.871</td><td>0.815</td></tr> <tr><td>8</td><td>0.985</td><td>0.910</td><td>0.863</td></tr> <tr><td>10</td><td>0.983</td><td>0.933</td><td>0.894</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> </tbody> </table>		Load Current [A]	Power Factor			Input Volt. 115[V]	Input Volt. 230[V]	Input Volt. 264[V]	0	0.417	0.129	0.093	2	0.929	0.650	0.596	4	0.970	0.801	0.737	6	0.982	0.871	0.815	8	0.985	0.910	0.863	10	0.983	0.933	0.894	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
Load Current [A]	Input Volt. 115V	Input Volt. 230V	Input Volt. 264V																																																																															
0	0.417	0.129	0.093																																																																															
2	0.929	0.650	0.596																																																																															
4	0.970	0.801	0.737																																																																															
6	0.982	0.871	0.815																																																																															
8	0.985	0.910	0.863																																																																															
10	0.983	0.933	0.894																																																																															
Load Current [A]	Power Factor																																																																																	
	Input Volt. 115[V]	Input Volt. 230[V]	Input Volt. 264[V]																																																																															
0	0.417	0.129	0.093																																																																															
2	0.929	0.650	0.596																																																																															
4	0.970	0.801	0.737																																																																															
6	0.982	0.871	0.815																																																																															
8	0.985	0.910	0.863																																																																															
10	0.983	0.933	0.894																																																																															
--	-	-	-																																																																															
--	-	-	-																																																																															
--	-	-	-																																																																															
--	-	-	-																																																																															
--	-	-	-																																																																															

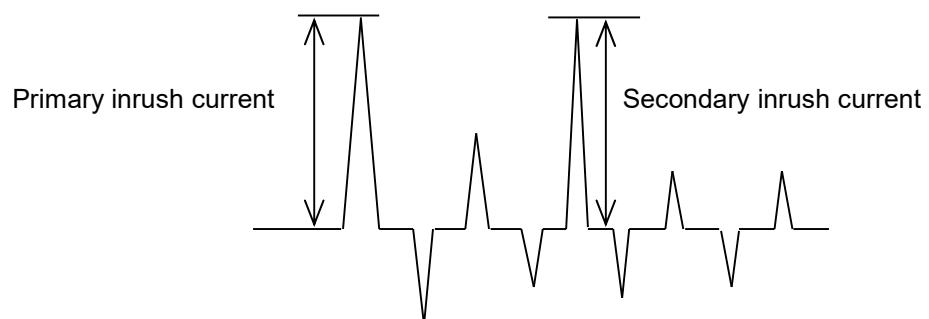
**COSEL**

Model	UMA120F-12-Y	Temperature Testing Circuitry Figure A	25°C Figure A
Item	Inrush Current		
Object	+12V10A		



Input Voltage	230 V
Frequency	50 Hz
Load	100 %

Primary inrush current	35.5 A
Secondary inrush current	4.5 A





Model	UMA120F-12-Y	Temperature	25°C
Item	Leakage Current	Testing Circuitry	Figure C
Object	+12V10A		

## 1. Results

[mA]

Standards	Testing Circuitry	Measuring Method	Input Volt.			Note
			115 [V]	230 [V]	264 [V]	
IEC60601-1	Figure C-1	Both phases	0.05	0.10	0.12	Operation
		One of phases	0.09	0.20	0.23	Stand by
IEC62368-1	Figure C-2	Both phases	0.05	0.10	0.12	Operation
		One of phases	0.09	0.20	0.23	Stand by
	Figure C-3	Both phases	0.05	0.10	0.12	Operation
		One of phases	0.09	0.20	0.23	Stand by

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

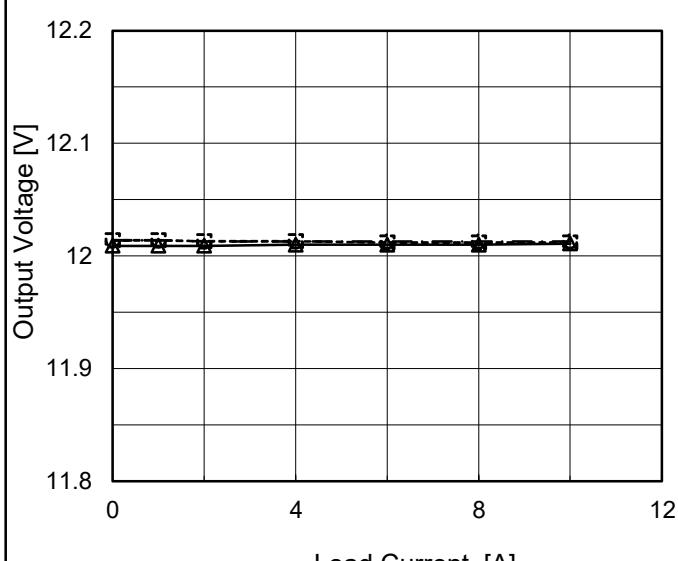
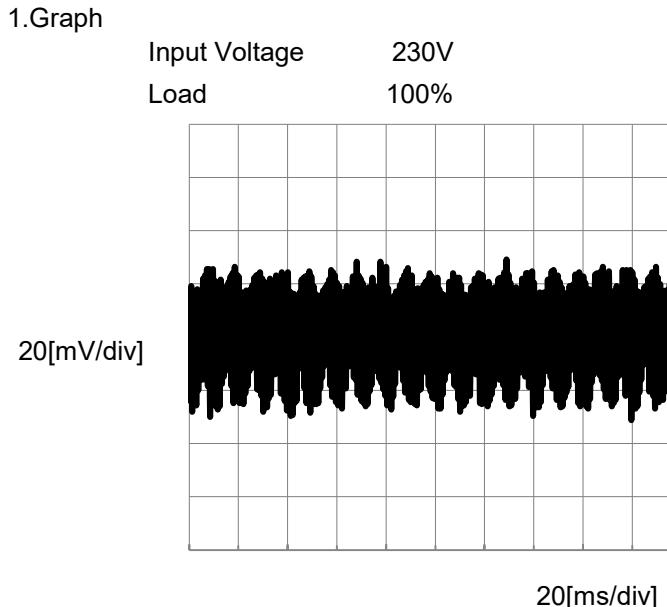
## 2. Condition

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

**COSEL**

Model	UMA120F-12-Y																																	
Item	Line Regulation	Temperature 25°C Testing Circuitry Figure A																																
Object	+12V10A																																	
1. Graph																																		
<p>Output Voltage [V]</p> <p>Input Voltage [V]</p> <p>Load 50%</p> <p>Load 100%</p>																																		
2. Values																																		
<table border="1"> <thead> <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> </thead> <tbody> <tr> <td>85</td><td>12.008</td><td>-</td></tr> <tr> <td>100</td><td>12.012</td><td>-</td></tr> <tr> <td>115</td><td>12.012</td><td>12.011</td></tr> <tr> <td>132</td><td>12.014</td><td>12.013</td></tr> <tr> <td>170</td><td>12.014</td><td>12.013</td></tr> <tr> <td>200</td><td>12.016</td><td>12.014</td></tr> <tr> <td>230</td><td>12.015</td><td>12.014</td></tr> <tr> <td>264</td><td>12.016</td><td>12.015</td></tr> <tr> <td>--</td><td>-</td><td>-</td></tr> </tbody> </table>			Input Voltage [V]	Output Voltage [V]		Load 50%	Load 100%	85	12.008	-	100	12.012	-	115	12.012	12.011	132	12.014	12.013	170	12.014	12.013	200	12.016	12.014	230	12.015	12.014	264	12.016	12.015	--	-	-
Input Voltage [V]	Output Voltage [V]																																	
	Load 50%	Load 100%																																
85	12.008	-																																
100	12.012	-																																
115	12.012	12.011																																
132	12.014	12.013																																
170	12.014	12.013																																
200	12.016	12.014																																
230	12.015	12.014																																
264	12.016	12.015																																
--	-	-																																

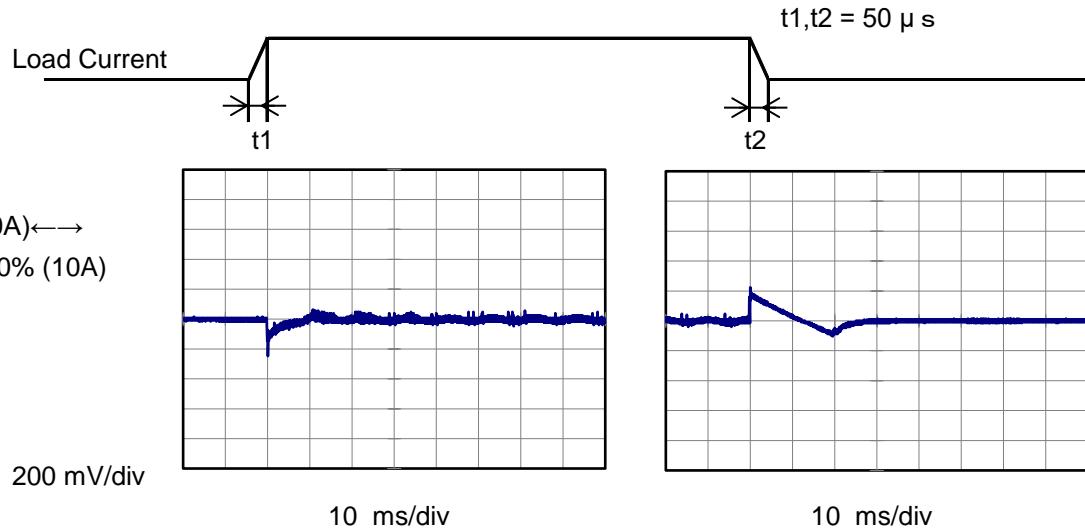
**COSEL**

Model	UMA120F-12-Y	Temperature	25°C																																																				
Item	Load Regulation	Testing Circuitry	Figure A																																																				
Object	+12V10A																																																						
1.Graph	<p>—△— Input Volt. 115V        - - - □ - - Input Volt. 230V        - - ○ - - Input Volt. 264V</p>  <table border="1"> <caption>Data for Figure A: Load Regulation</caption> <thead> <tr> <th>Load Current [A]</th> <th>Output Voltage [V] (Input 115V)</th> <th>Output Voltage [V] (Input 230V)</th> <th>Output Voltage [V] (Input 264V)</th> </tr> </thead> <tbody> <tr><td>0</td><td>12.009</td><td>12.014</td><td>12.014</td></tr> <tr><td>1</td><td>12.009</td><td>12.014</td><td>12.014</td></tr> <tr><td>2</td><td>12.009</td><td>12.013</td><td>12.013</td></tr> <tr><td>4</td><td>12.010</td><td>12.013</td><td>12.013</td></tr> <tr><td>6</td><td>12.010</td><td>12.012</td><td>12.013</td></tr> <tr><td>8</td><td>12.010</td><td>12.012</td><td>12.013</td></tr> <tr><td>10</td><td>12.011</td><td>12.012</td><td>12.013</td></tr> </tbody> </table>				Load Current [A]	Output Voltage [V] (Input 115V)	Output Voltage [V] (Input 230V)	Output Voltage [V] (Input 264V)	0	12.009	12.014	12.014	1	12.009	12.014	12.014	2	12.009	12.013	12.013	4	12.010	12.013	12.013	6	12.010	12.012	12.013	8	12.010	12.012	12.013	10	12.011	12.012	12.013																			
Load Current [A]	Output Voltage [V] (Input 115V)	Output Voltage [V] (Input 230V)	Output Voltage [V] (Input 264V)																																																				
0	12.009	12.014	12.014																																																				
1	12.009	12.014	12.014																																																				
2	12.009	12.013	12.013																																																				
4	12.010	12.013	12.013																																																				
6	12.010	12.012	12.013																																																				
8	12.010	12.012	12.013																																																				
10	12.011	12.012	12.013																																																				
2.Values	<table border="1"> <thead> <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> </thead> <tbody> <tr><td>0</td><td>12.009</td><td>12.014</td><td>12.014</td></tr> <tr><td>1</td><td>12.009</td><td>12.014</td><td>12.014</td></tr> <tr><td>2</td><td>12.009</td><td>12.013</td><td>12.013</td></tr> <tr><td>4</td><td>12.010</td><td>12.013</td><td>12.013</td></tr> <tr><td>6</td><td>12.010</td><td>12.012</td><td>12.013</td></tr> <tr><td>8</td><td>12.010</td><td>12.012</td><td>12.013</td></tr> <tr><td>10</td><td>12.011</td><td>12.012</td><td>12.013</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> </tbody> </table>				Load Current [A]	Output Voltage [V]			Input Volt. 115[V]	Input Volt. 230[V]	Input Volt. 264[V]	0	12.009	12.014	12.014	1	12.009	12.014	12.014	2	12.009	12.013	12.013	4	12.010	12.013	12.013	6	12.010	12.012	12.013	8	12.010	12.012	12.013	10	12.011	12.012	12.013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Load Current [A]	Output Voltage [V]																																																						
	Input Volt. 115[V]	Input Volt. 230[V]	Input Volt. 264[V]																																																				
0	12.009	12.014	12.014																																																				
1	12.009	12.014	12.014																																																				
2	12.009	12.013	12.013																																																				
4	12.010	12.013	12.013																																																				
6	12.010	12.012	12.013																																																				
8	12.010	12.012	12.013																																																				
10	12.011	12.012	12.013																																																				
--	--	--	--																																																				
--	--	--	--																																																				
--	--	--	--																																																				
--	--	--	--																																																				
Item	Ripple-Noise	Temperature	25°C																																																				
Object	+12V10A	Testing Circuitry	Figure B																																																				
1.Graph	<p>Input Voltage 230V        Load 100%</p>  <table border="1"> <caption>Data for Figure B: Ripple-Noise</caption> <thead> <tr> <th>Time [ms]</th> <th>Output Voltage [mV]</th> </tr> </thead> <tbody> <tr><td>0</td><td>20</td></tr> <tr><td>20</td><td>20</td></tr> </tbody> </table>				Time [ms]	Output Voltage [mV]	0	20	20	20																																													
Time [ms]	Output Voltage [mV]																																																						
0	20																																																						
20	20																																																						

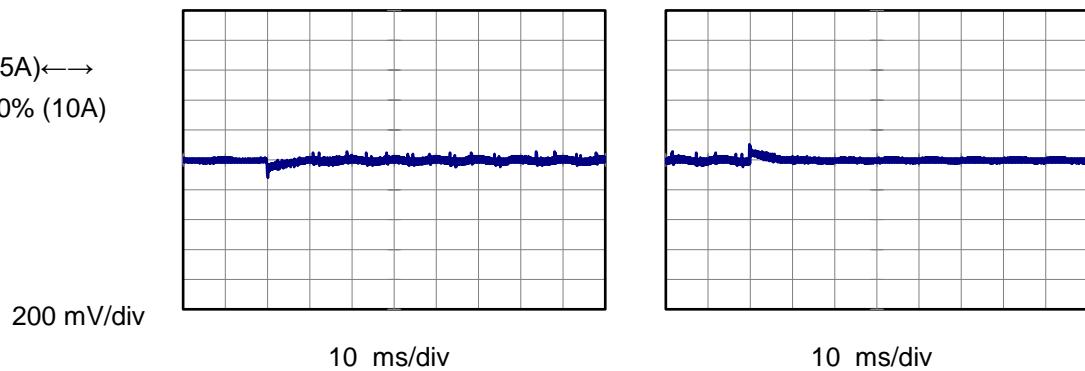
**COSEL**

Model	UMA120F-12-Y	Temperature	25°C
Item	Dynamic Load Response	Testing Circuitry	Figure A
Object	+12V10A		

Input Volt. 230 V  
 Cycle 1000 ms



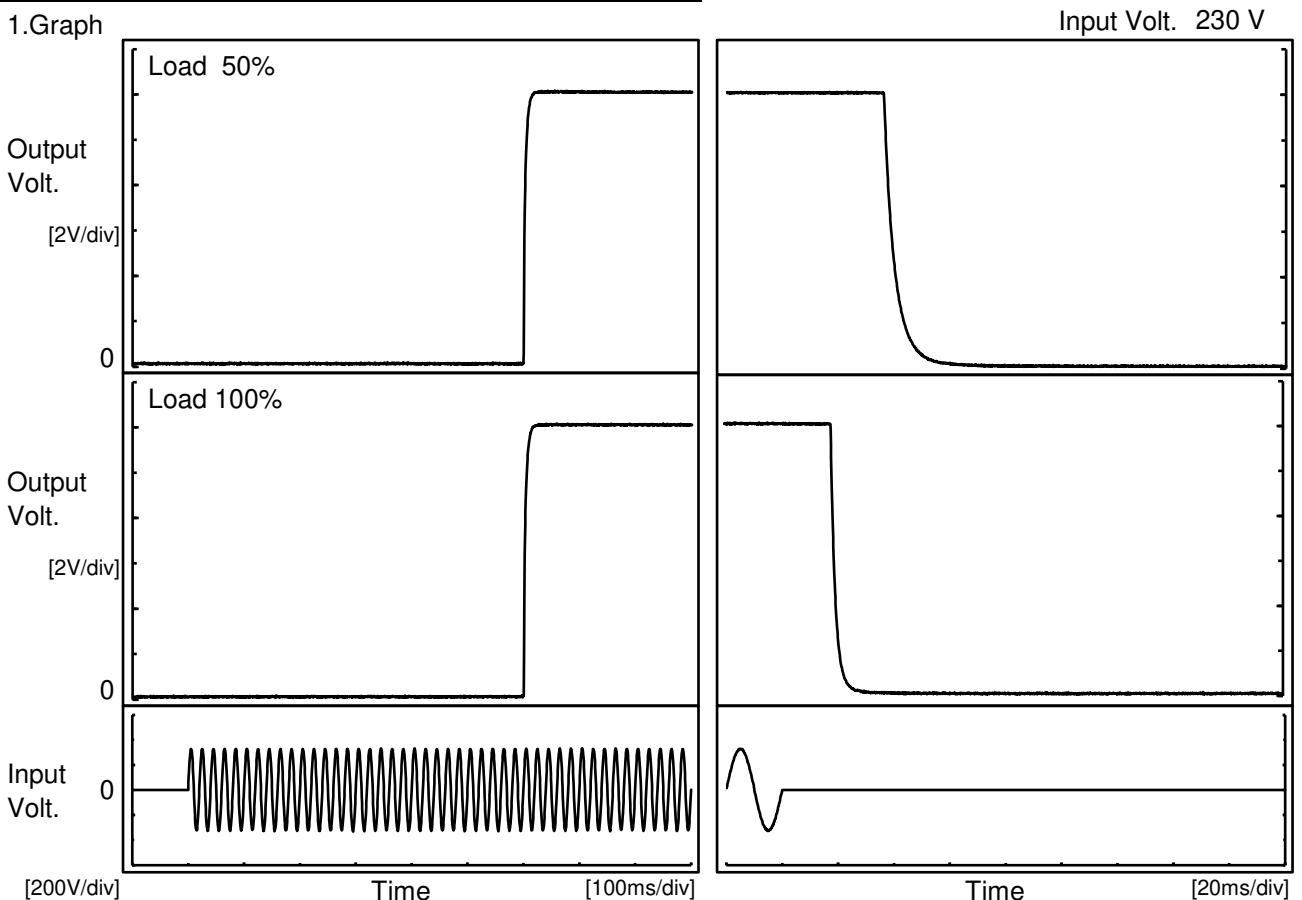
Load 50% (5A)  $\longleftrightarrow$   
 Load 100% (10A)



**COSEL**

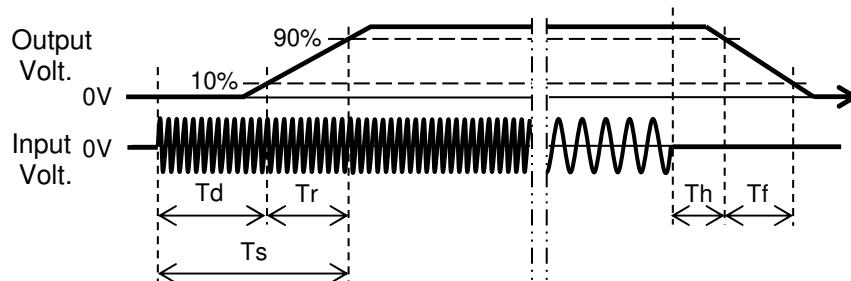
Model	UMA120F-12-Y	Temperature	25°C
Item	Rise and Fall Time	Testing Circuitry	Figure A
Object	+12V10A		

## 1. Graph



## 2. Values

Load	Time	Td	Tr	Ts	Th	Tf	[ms]
50 %		600.0	7.0	607.0	36.6	8.9	
100 %		600.0	7.0	607.0	18.3	3.8	



**COSEL**

Model	UMA120F-12-Y	Temperature	25°C																																
Item	Hold-Up Time	Testing Circuitry	Figure A																																
Object	+12V10A																																		
1. Graph			2. Values																																
			<table border="1"> <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>36</td> <td>-</td> </tr> <tr> <td>100</td> <td>36</td> <td>-</td> </tr> <tr> <td>115</td> <td>37</td> <td>18</td> </tr> <tr> <td>132</td> <td>37</td> <td>18</td> </tr> <tr> <td>170</td> <td>37</td> <td>18</td> </tr> <tr> <td>200</td> <td>37</td> <td>18</td> </tr> <tr> <td>230</td> <td>37</td> <td>18</td> </tr> <tr> <td>264</td> <td>37</td> <td>18</td> </tr> <tr> <td>--</td> <td>-</td> <td>-</td> </tr> </tbody> </table>	Input Voltage [V]	Hold-Up Time [ms]		Load 50%	Load 100%	85	36	-	100	36	-	115	37	18	132	37	18	170	37	18	200	37	18	230	37	18	264	37	18	--	-	-
Input Voltage [V]	Hold-Up Time [ms]																																		
	Load 50%	Load 100%																																	
85	36	-																																	
100	36	-																																	
115	37	18																																	
132	37	18																																	
170	37	18																																	
200	37	18																																	
230	37	18																																	
264	37	18																																	
--	-	-																																	
<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>																																			

**COSEL**

Model	UMA120F-12-Y	Temperature	25°C																																																			
Item	Instantaneous Interruption Compensation	Testing Circuitry	Figure A																																																			
Object	+12V10A																																																					
1.Graph	<p>—△— Input Volt. 115V        - - □ - - Input Volt. 230V        - - ○ - - Input Volt. 264V</p> <table border="1"> <caption>Data points estimated from Graph 1</caption> <thead> <tr> <th>Load Current [A]</th> <th>115V [ms]</th> <th>230V [ms]</th> <th>264V [ms]</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>86</td> <td>87</td> <td>88</td> </tr> <tr> <td>4</td> <td>45</td> <td>45</td> <td>45</td> </tr> <tr> <td>6</td> <td>28</td> <td>29</td> <td>29</td> </tr> <tr> <td>8</td> <td>20</td> <td>20</td> <td>21</td> </tr> <tr> <td>10</td> <td>15</td> <td>15</td> <td>16</td> </tr> </tbody> </table>			Load Current [A]	115V [ms]	230V [ms]	264V [ms]	2	86	87	88	4	45	45	45	6	28	29	29	8	20	20	21	10	15	15	16																											
Load Current [A]	115V [ms]	230V [ms]	264V [ms]																																																			
2	86	87	88																																																			
4	45	45	45																																																			
6	28	29	29																																																			
8	20	20	21																																																			
10	15	15	16																																																			
2.Values	<table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th colspan="3">Time [ms]</th> </tr> <tr> <th>Input Volt. 115[V]</th> <th>Input Volt. 230[V]</th> <th>Input Volt. 264[V]</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>2</td> <td>86</td> <td>87</td> <td>88</td> </tr> <tr> <td>4</td> <td>45</td> <td>45</td> <td>45</td> </tr> <tr> <td>6</td> <td>28</td> <td>29</td> <td>29</td> </tr> <tr> <td>8</td> <td>20</td> <td>20</td> <td>21</td> </tr> <tr> <td>10</td> <td>15</td> <td>15</td> <td>16</td> </tr> <tr> <td>--</td> <td>-</td> <td>-</td> <td>-</td> </tr> </tbody> </table>			Load Current [A]	Time [ms]			Input Volt. 115[V]	Input Volt. 230[V]	Input Volt. 264[V]	0	-	-	-	2	86	87	88	4	45	45	45	6	28	29	29	8	20	20	21	10	15	15	16	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
Load Current [A]	Time [ms]																																																					
	Input Volt. 115[V]	Input Volt. 230[V]	Input Volt. 264[V]																																																			
0	-	-	-																																																			
2	86	87	88																																																			
4	45	45	45																																																			
6	28	29	29																																																			
8	20	20	21																																																			
10	15	15	16																																																			
--	-	-	-																																																			
--	-	-	-																																																			
--	-	-	-																																																			
--	-	-	-																																																			
--	-	-	-																																																			

# COSEL

Model	UMA120F-12-Y	Temperature	25°C																																																																											
Item	Overcurrent Protection	Testing Circuitry	Figure A																																																																											
Object	+12V10A																																																																													
1.Graph		2.Values																																																																												
<p>Graph showing Output Voltage [V] vs Load Current [A]. The Y-axis ranges from 4 to 16 in increments of 2. The X-axis ranges from 0 to 14 in increments of 2. A horizontal red line is at 12V. Two slanted lines meet at (10A, 12V).</p>		<table border="1"> <thead> <tr> <th rowspan="2">Output Voltage [V]</th> <th colspan="3">Load Current [A]</th> </tr> <tr> <th>Input Volt. 115[V]</th> <th>Input Volt. 230[V]</th> <th>Input Volt. 264[V]</th> </tr> </thead> <tbody> <tr><td>12</td><td>11.99</td><td>11.99</td><td>11.99</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td></tr> </tbody> </table>		Output Voltage [V]	Load Current [A]			Input Volt. 115[V]	Input Volt. 230[V]	Input Volt. 264[V]	12	11.99	11.99	11.99	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
Output Voltage [V]	Load Current [A]																																																																													
	Input Volt. 115[V]	Input Volt. 230[V]	Input Volt. 264[V]																																																																											
12	11.99	11.99	11.99																																																																											
--	-	-	-																																																																											
--	-	-	-																																																																											
--	-	-	-																																																																											
--	-	-	-																																																																											
--	-	-	-																																																																											
--	-	-	-																																																																											
--	-	-	-																																																																											
--	-	-	-																																																																											
--	-	-	-																																																																											
--	-	-	-																																																																											
--	-	-	-																																																																											
--	-	-	-																																																																											
--	-	-	-																																																																											
--	-	-	-																																																																											
--	-	-	-																																																																											
--	-	-	-																																																																											

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

Overcurrent protection is Hiccup mode.



Model	UMA120F-12-Y	Testing Circuitry Figure A
Item	Ambient Temperature Drift	
Object	+12V10A	

## 1.Values

Load 100%

Ambient Temperature[°C]	Output Voltage [V]		
	Input Volt. 115V	Input Volt. 230V	Input Volt. 264V
-20	11.955	11.958	11.959
25	12.004	12.005	12.006
40	12.014	12.015	12.016

Item	Minimum Input Voltage for Regulated Output Voltage	Testing Circuitry Figure A	
Object	+12V10A		

## 1.Values

Ambient Temperature[°C]	Input Voltage [V]	
	Load 50%	Load 100%
-20	50	58
25	50	58
40	50	59

Item	Overvoltage Protection	Testing Circuitry Figure A	
Object	+12V10A		

## 1.Values

Load 0%

Ambient Temperature[°C]	Operating Point [V]	
	Input Volt. 115V	Input Volt. 264V
-20	14.67	14.67
25	14.82	14.75
40	14.90	14.82

COSEL

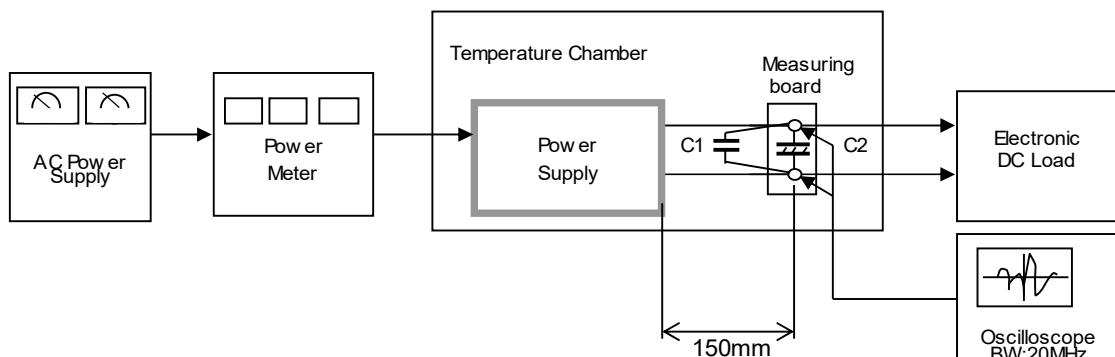
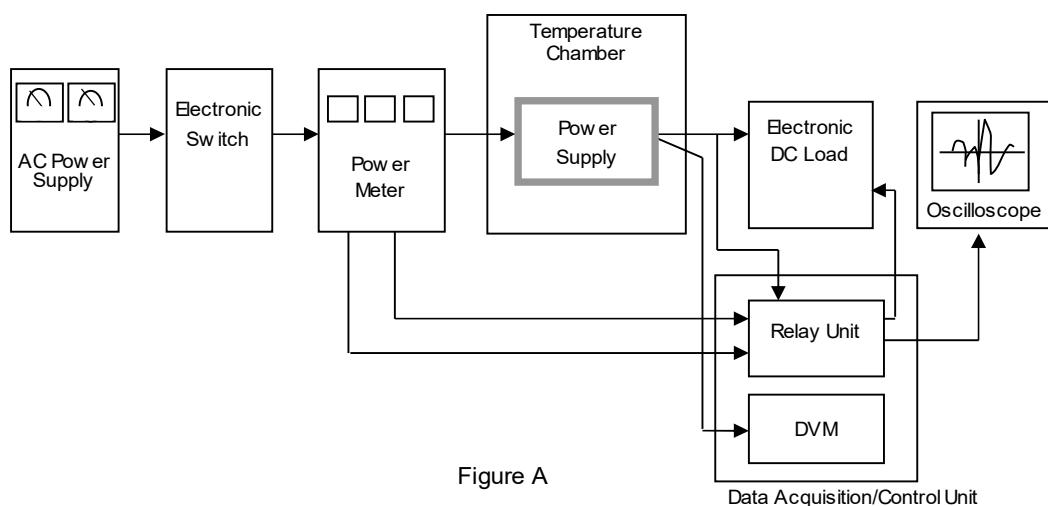


Figure B

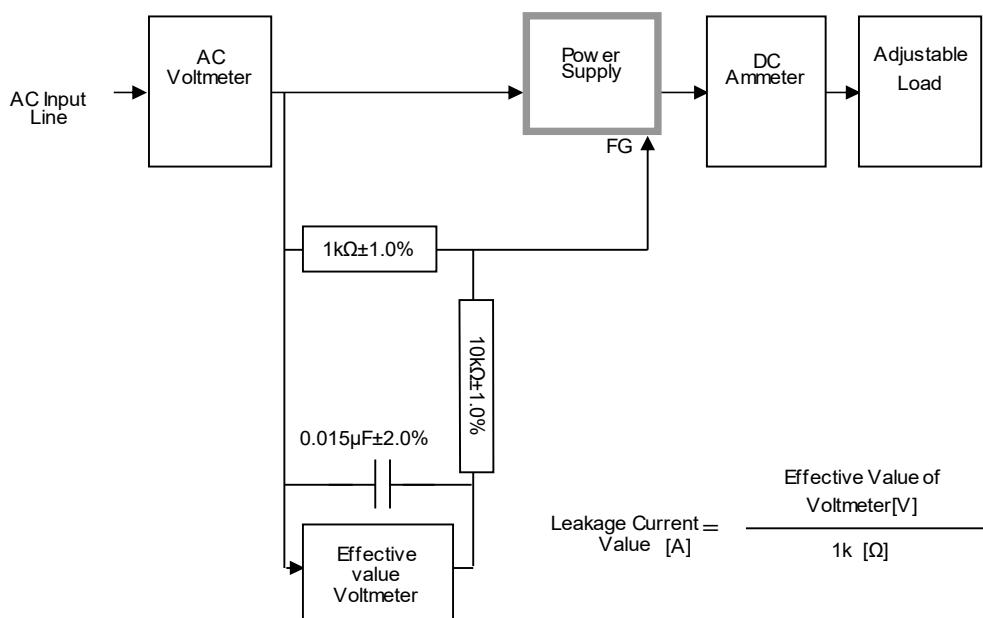


Figure C-1 ( IEC60601-1 )

**COSEL**

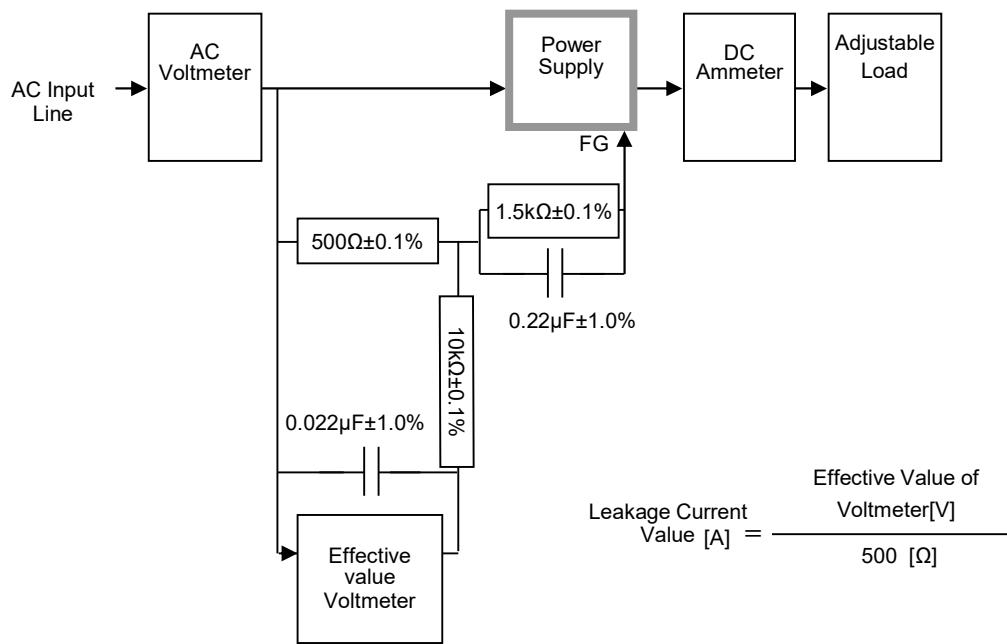


Figure C-2 ( IEC62368-1 refer to IEC60990 Fig.4 )

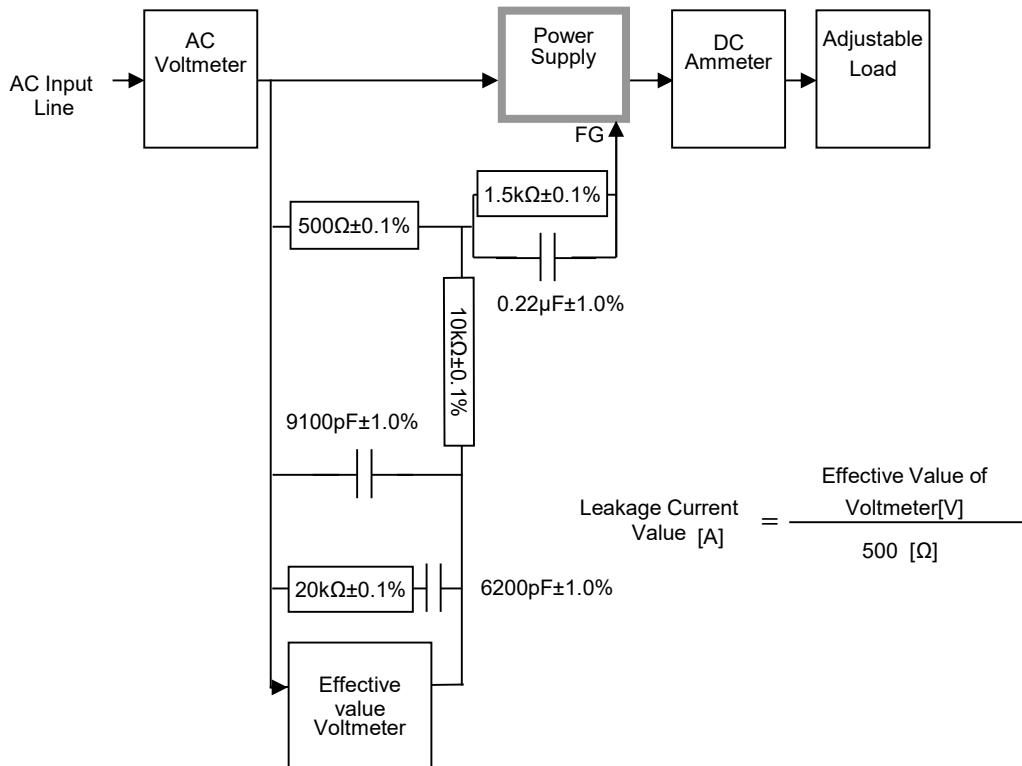


Figure C-3 ( IEC62368-1 refer to IEC60990 Fig.5 )