



# TEST DATA OF RBC300F

Regulated DC power supply  
July 21, 2020

Approved by : \_\_\_\_\_ Satoshi Uetani  
\_\_\_\_\_  
Design Manager

Prepared by : \_\_\_\_\_ Yutaka Murai  
\_\_\_\_\_  
Design Engineer

INPUT : AC 85~264V

**COSEL CO.,LTD.**



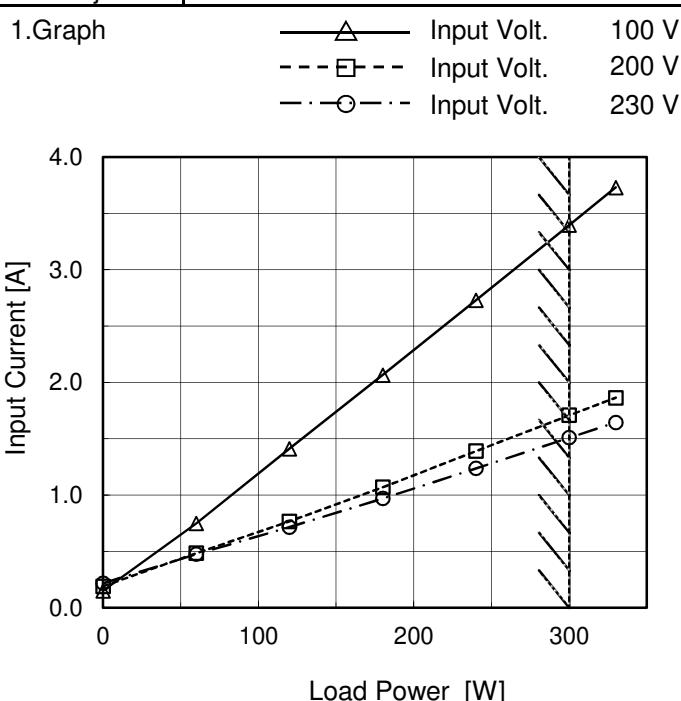
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Model	RBC300F
Item	Input Current (by Load Power)
Object	_____

 Temperature 25°C  
 Testing Circuitry Figure A


## 2.Values

Load Power [W]	Input Current [A]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0	0.149	0.189	0.216
60	0.748	0.484	0.474
120	1.411	0.767	0.715
180	2.064	1.068	0.970
240	2.728	1.389	1.237
300	3.397	1.708	1.510
330	3.731	1.864	1.645
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Note: Slanted line shows the range of the rated load power.

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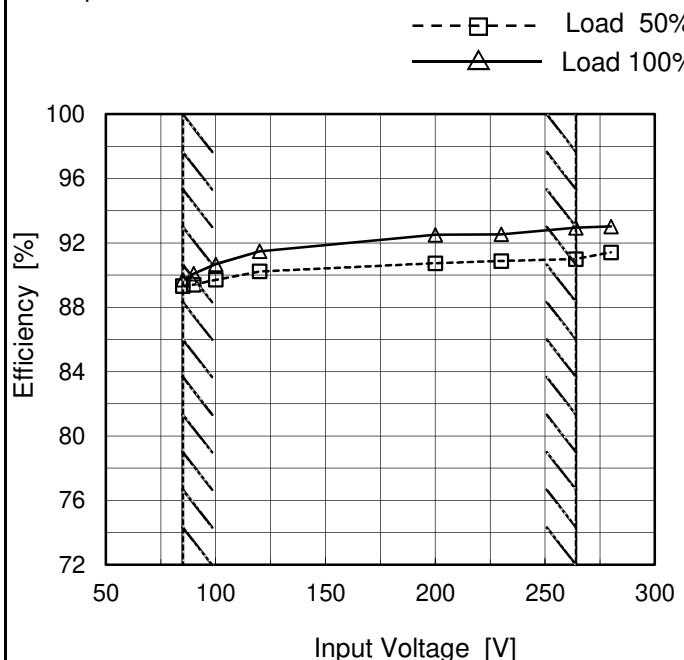
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Item	Input Power (by Load Power)	Testing Circuitry	Figure A																																																			
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1.Graph		2.Values																																																				
<p>The graph shows a linear relationship between Input Power [W] on the Y-axis (0 to 400) and Load Power [W] on the X-axis (0 to 300). Three straight lines are plotted for different input voltages: 100V (solid line with triangle markers), 200V (dashed line with square markers), and 230V (dash-dot line with circle markers). All lines pass through the origin (0,0). A slanted line is drawn across the graph, starting from approximately (0, 40) and ending at (300, 360), representing the rated load power range.</p>		<table border="1"> <thead> <tr> <th rowspan="2">Load Power [W]</th> <th colspan="3">Input Power [W]</th> </tr> <tr> <th>Input Volt. 100[V]</th> <th>Input Volt. 200[V]</th> <th>Input Volt. 230[V]</th> </tr> </thead> <tbody> <tr><td>0</td><td>8.0</td><td>7.7</td><td>7.7</td></tr> <tr><td>60</td><td>72.3</td><td>71.7</td><td>71.8</td></tr> <tr><td>120</td><td>136.9</td><td>135.4</td><td>135.4</td></tr> <tr><td>180</td><td>202.5</td><td>200.4</td><td>199.4</td></tr> <tr><td>240</td><td>268.9</td><td>264.7</td><td>264.2</td></tr> <tr><td>300</td><td>336.0</td><td>329.1</td><td>329.1</td></tr> <tr><td>330</td><td>369.7</td><td>361.4</td><td>361.3</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 Power [W]	Input Power [W]			Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]	0	8.0	7.7	7.7	60	72.3	71.7	71.8	120	136.9	135.4	135.4	180	202.5	200.4	199.4	240	268.9	264.7	264.2	300	336.0	329.1	329.1	330	369.7	361.4	361.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
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Model	RBC300F
Item	Efficiency (by Input Voltage)
Object	_____

 Temperature 25°C  
 Testing Circuitry Figure A

## 1.Graph



## 2.Values

Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
85	89.3	89.7
90	89.4	90.1
100	89.7	90.7
120	90.2	91.5
200	90.7	92.5
230	90.9	92.5
264	91.0	92.9
280	91.4	93.0
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Note: Slanted line shows the range of the rated input voltage.

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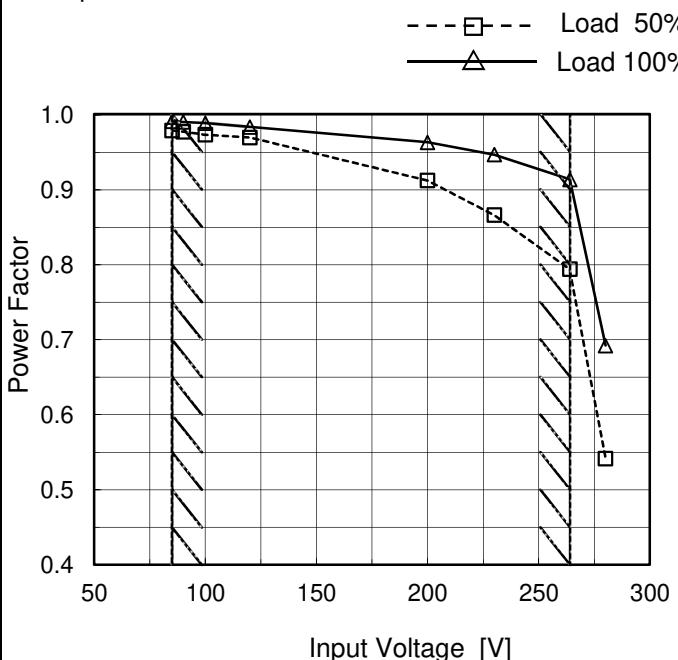
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<p>The graph shows efficiency increasing with load power. At low loads, efficiency is lower (around 85% for 100V at 50W). As load power increases, efficiency rises and plateaus around 90-92%. The 200V curve is the highest, followed by 230V, then 100V. A slanted line on the right side of the graph indicates the rated load power range.</p>		<table border="1"> <thead> <tr> <th rowspan="2">Load Power [W]</th> <th colspan="3">Efficiency [%]</th> </tr> <tr> <th>Input Volt. 100[V]</th> <th>Input Volt. 200[V]</th> <th>Input Volt. 230[V]</th> </tr> </thead> <tbody> <tr><td>0</td><td>--</td><td>--</td><td>--</td></tr> <tr><td>60</td><td>85.0</td><td>85.4</td><td>85.4</td></tr> <tr><td>120</td><td>89.2</td><td>90.3</td><td>90.1</td></tr> <tr><td>180</td><td>90.4</td><td>91.3</td><td>91.8</td></tr> <tr><td>240</td><td>90.8</td><td>92.2</td><td>92.3</td></tr> <tr><td>300</td><td>90.7</td><td>92.5</td><td>92.5</td></tr> <tr><td>330</td><td>90.8</td><td>92.8</td><td>92.8</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 Power [W]	Efficiency [%]			Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]	0	--	--	--	60	85.0	85.4	85.4	120	89.2	90.3	90.1	180	90.4	91.3	91.8	240	90.8	92.2	92.3	300	90.7	92.5	92.5	330	90.8	92.8	92.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
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Model	RBC300F
Item	Power Factor (by Input Voltage)
Object	_____

 Temperature 25°C  
 Testing Circuitry Figure A

## 1.Graph



## 2.Values

Input Voltage [V]	Power Factor	
	Load 50%	Load 100%
85	0.979	0.992
90	0.978	0.991
100	0.974	0.989
120	0.970	0.984
200	0.913	0.963
230	0.866	0.947
264	0.794	0.914
280	0.541	0.692
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Note: Slanted line shows the range of the rated input voltage.

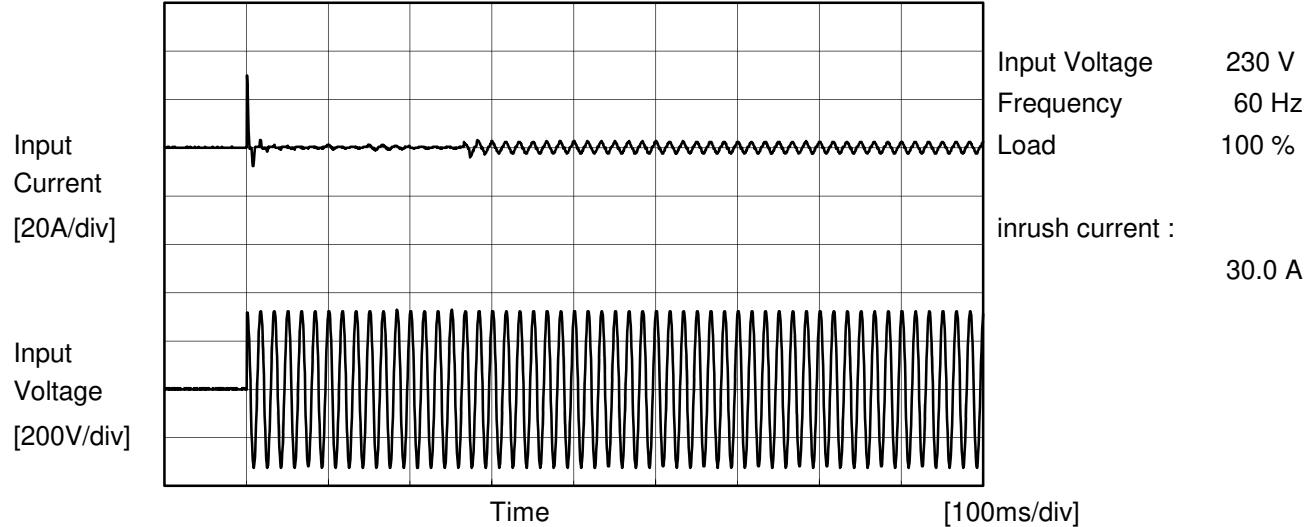
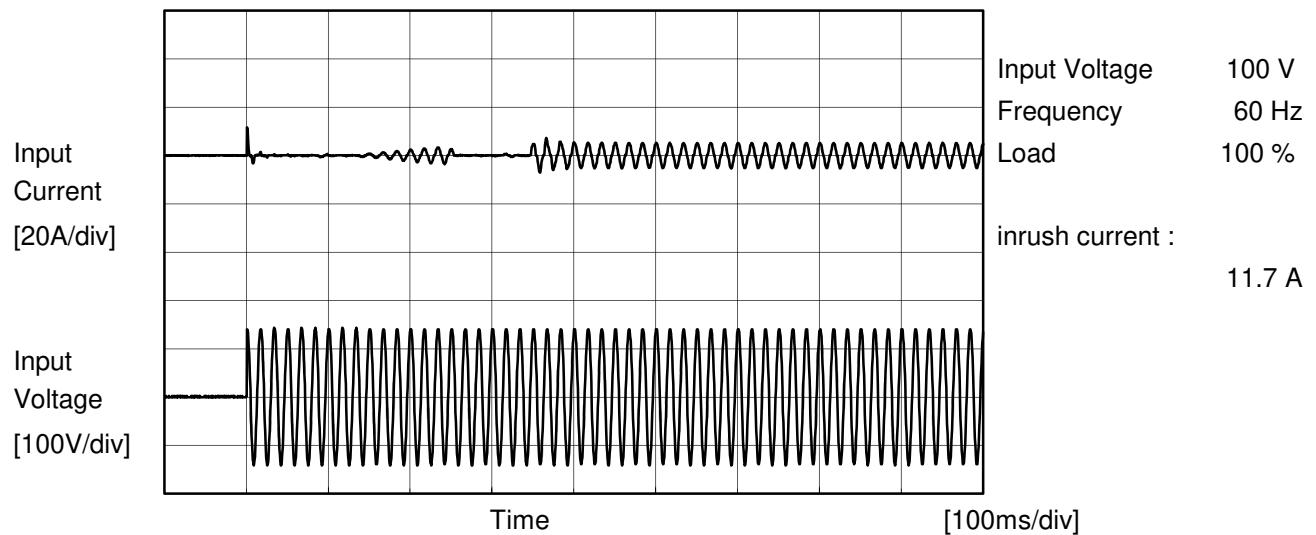
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Note: Slanted line shows the range of the rated load power.

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Model	RBC300F	Temperature	25°C
Item	Inrush Current	Testing Circuitry	Figure A
Object	_____		





Model	RBC300F	Temperature Testing Circuitry	25°C Figure B	
Item	Leakage Current			
Object	_____			

## 1. Results

[mA]

Standards	Testing Circuitry	Measuring Method	Input Volt.			Note
			100 [V]	200 [V]	240 [V]	
DEN-AN	Figure B-1	Both phases	0.11	0.20	0.21	Operation
		One of phases	0.14	0.32	0.39	Stand by
IEC62368-1	Figure B-2	Both phases	0.08	0.17	0.20	Operation
		One of phases	0.14	0.32	0.38	Stand by
	Figure B-3	Both phases	0.10	0.18	0.21	Operation
		One of phases	0.15	0.31	0.38	Stand by

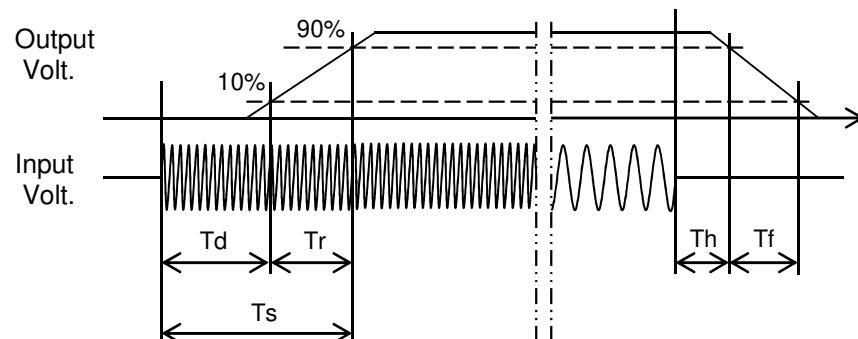
The value for "One of phases" is the reference value only.

## 2. Condition

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

**COSEL**

Model	RBC300F	Temperature Testing Circuitry Figure A	25°C
Item	Rise and Fall Time		
Object	—		



Input Volt 100V

Load power 100%

[ms]

Module	Time	Td	Tr	Ts	Th	Tf
240W,SINGLE		379	3~5	382~384	30	2~10
30W,SINGLE		330	2~39	332~369	41	3~46
30W,DUAL		330	4~20	334~350	44	8~11
15W,SINGLE		332	4~27	336~359	50	9~63
15W,DUAL		333	4~7	337~340	59	10~17

Input Volt 230V

Load power 100%

[ms]

Module	Time	Td	Tr	Ts	Th	Tf
240W,SINGLE		297	3~5	300~302	30	2~10
30W,SINGLE		242	2~39	244~281	41	3~47
30W,DUAL		241	4~20	245~261	44	8~11
15W,SINGLE		256	4~27	260~283	50	9~62
15W,DUAL		256	4~7	260~263	59	10~17

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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 load power.

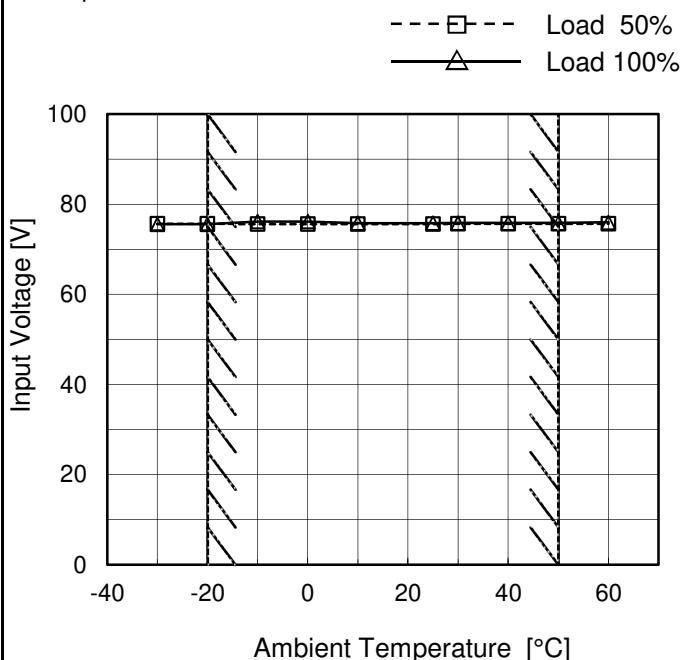
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1.Graph	<p>Graph showing Instantaneous Compensation Time [ms] vs Load Power [W]. The Y-axis is logarithmic from 1 to 1000 ms. The X-axis is linear from 0 to 300 W. Three curves are shown for Input Volt. 100V (solid line with open squares), Input Volt. 200V (dashed line with open squares), and Input Volt. 230V (dash-dot line with open circles). A slanted line indicates the rated load power range.</p> <table border="1"> <thead> <tr> <th>Load Power [W]</th> <th>Input Volt. 100[V] [ms]</th> <th>Input Volt. 200[V] [ms]</th> <th>Input Volt. 230[V] [ms]</th> </tr> </thead> <tbody> <tr><td>50</td><td>150</td><td>---</td><td>---</td></tr> <tr><td>100</td><td>80</td><td>140</td><td>---</td></tr> <tr><td>150</td><td>60</td><td>72</td><td>---</td></tr> <tr><td>200</td><td>50</td><td>48</td><td>---</td></tr> <tr><td>250</td><td>40</td><td>37</td><td>---</td></tr> <tr><td>300</td><td>30</td><td>30</td><td>30</td></tr> </tbody> </table>			Load Power [W]	Input Volt. 100[V] [ms]	Input Volt. 200[V] [ms]	Input Volt. 230[V] [ms]	50	150	---	---	100	80	140	---	150	60	72	---	200	50	48	---	250	40	37	---	300	30	30	30																								
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**COSEL**

Model	RBC300F
Item	Minimum Input Voltage for Regulated Output Voltage
Object	_____

## 1. Graph



Testing Circuitry Figure A

## 2. Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-30	76	76
-20	76	76
-10	76	76
0	76	76
10	76	76
25	76	76
30	76	76
40	76	76
50	76	76
60	76	76
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Note: Slanted line shows the range of the rated ambient temperature.

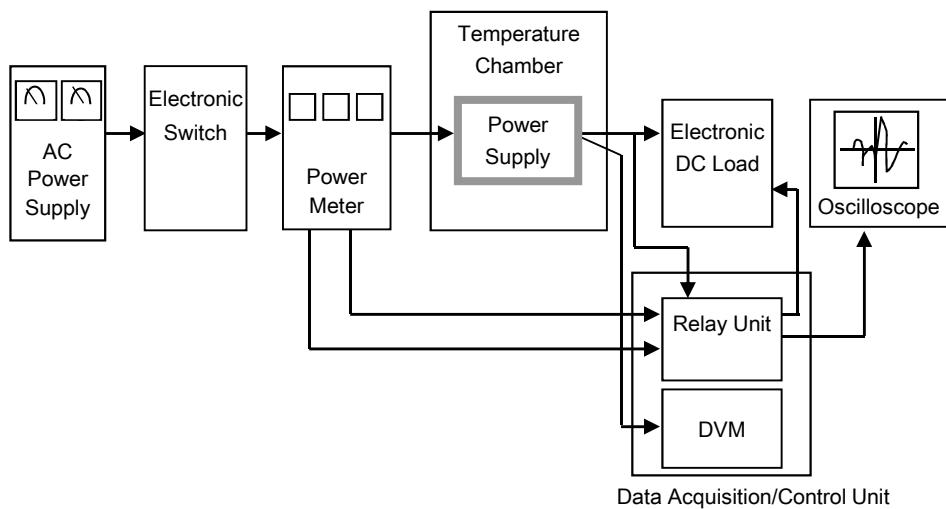


Figure A

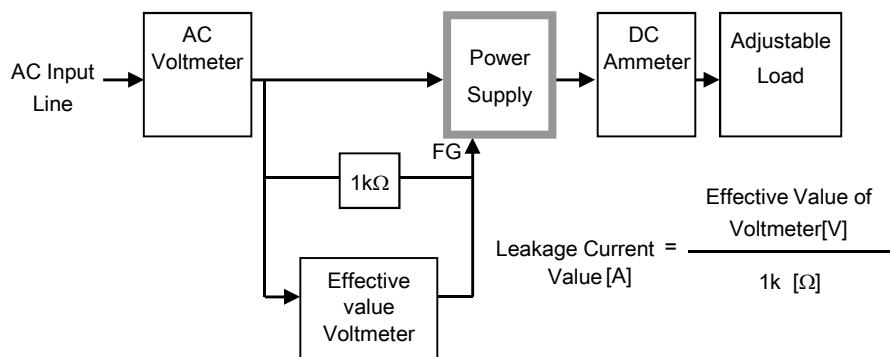


Figure B-1 ( DEN-AN )

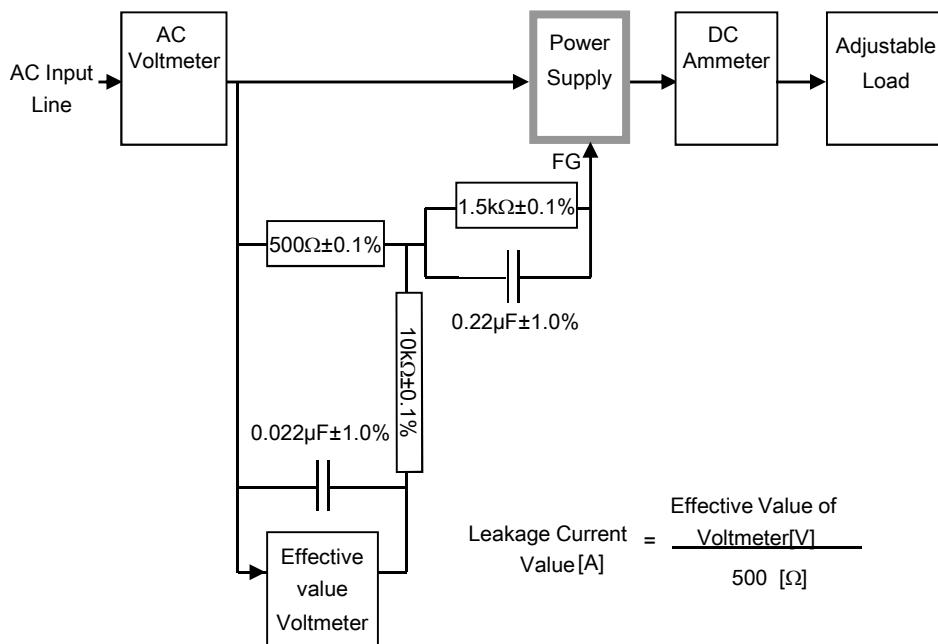


Figure B-2 ( IEC62368-1 refer to IEC60990 Fig.4 )

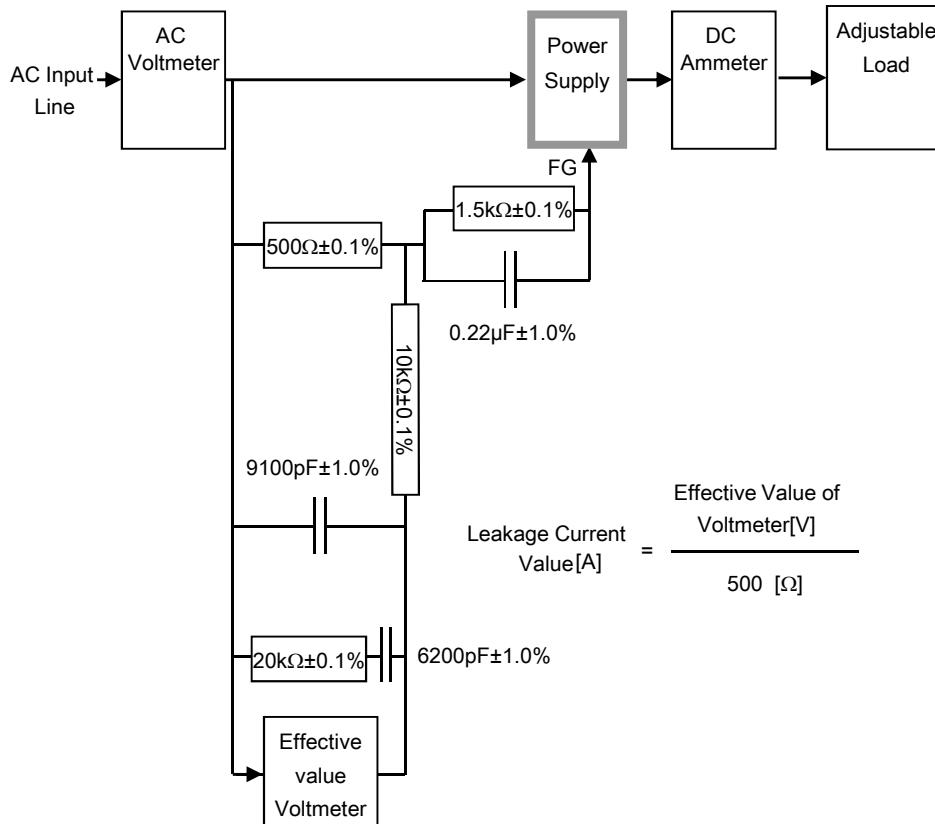


Figure B-3 ( IEC62368-1 refer to IEC60990 Fig.5 )