

# TEST DATA OF PCA300F-5

Regulated DC Power Supply  
March 11, 2019

Approved by : Koji Todo  
Koji Todo Design Manager

Prepared by : Yuya Takeda  
Yuya Takeda Design Engineer

**COSEL CO.,LTD.**

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<p>Model PCA300F-5</p>		<p>Temperature 25°C Testing Circuitry Figure A</p>																																																			
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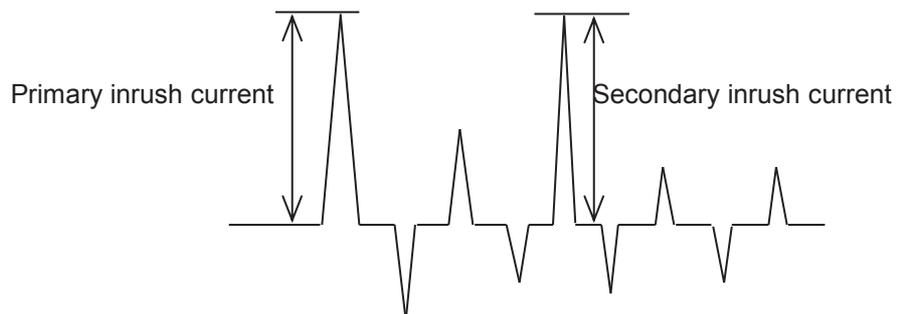
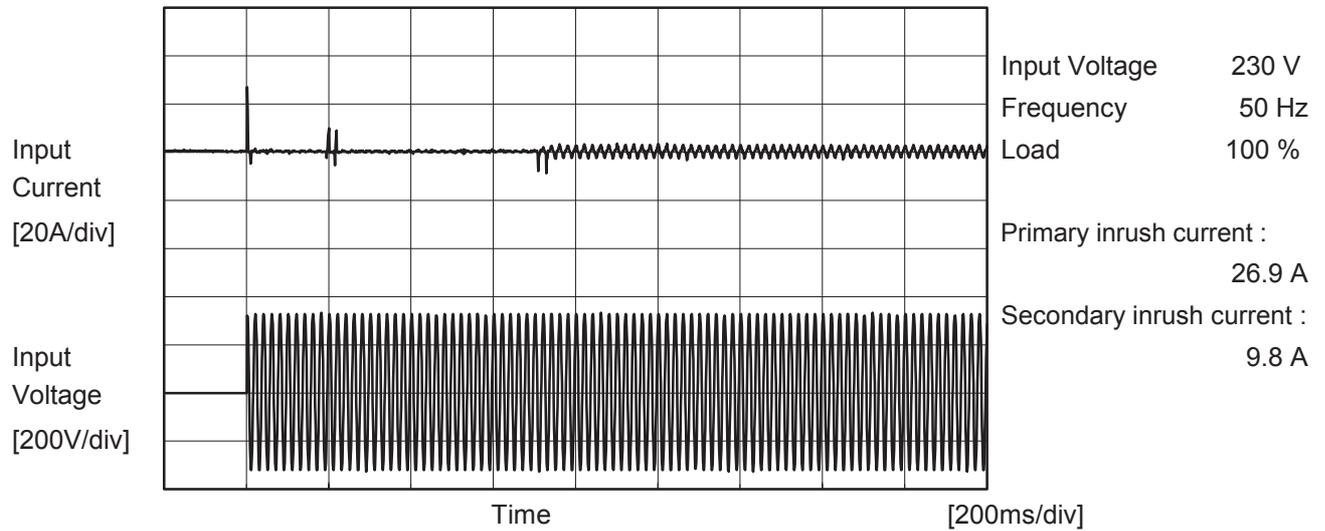
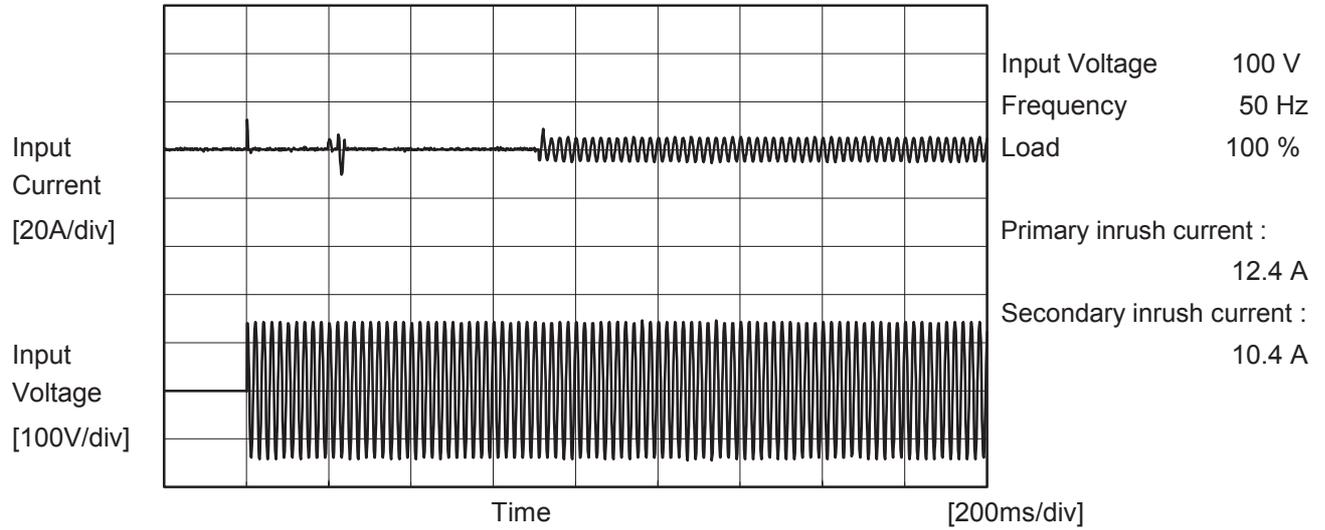
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Model		PCA300F-5	
Item		Temperature	25°C
Object		Testing Circuitry	Figure A





<b>COSEL</b>		
Model	PCA300F-5	
Item	Leakage Current	Temperature 25°C Testing Circuitry Figure B
Object	_____	

1.Results

Standards	Testing Circuitry	Measuring Method	Input Volt.			Note
			100 [V]	230 [V]	240 [V]	
DEN-AN	Figure B-1	Both phases	0.13	0.30	0.31	Operation
		One of phases	0.24	0.55	0.58	Stand by
IEC62368-1	Figure B-2	Both phases	0.13	0.29	0.31	Operation
		One of phases	0.22	0.54	0.57	Stand by
	Figure B-3	Both phases	0.13	0.29	0.30	Operation
		One of phases	0.24	0.54	0.56	Stand by
IEC60601-1	Figure B-4	Both phases	0.12	0.30	0.31	Operation
		One of phases	0.24	0.55	0.58	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.



<b>COSEL</b>																																		
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Item	Line Regulation	Temperature 25°C Testing Circuitry Figure A																																
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<p>1.Graph</p> <p>                     Input Voltage 200V                      Load 100%                 </p> <p style="text-align: center;">10[μs/div]</p>																																																					



Model		PCA300F-5	Temperature 25°C Testing Circuitry Figure A
Item		Dynamic Load Response	
Object		+5V60A	

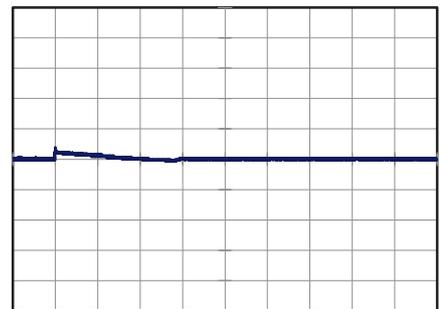
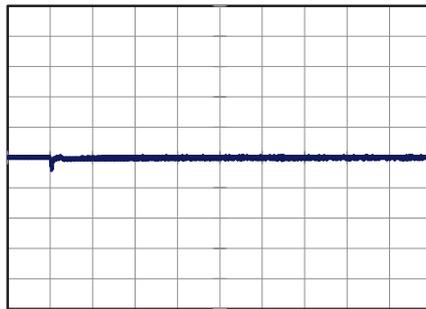
Input Volt. 200 V  
Cycle 1000 ms

Response.  $t_1, t_2 = 50 \mu\text{s}$ .Typ



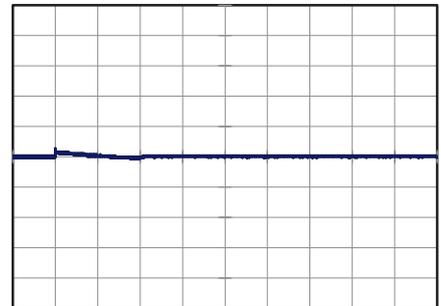
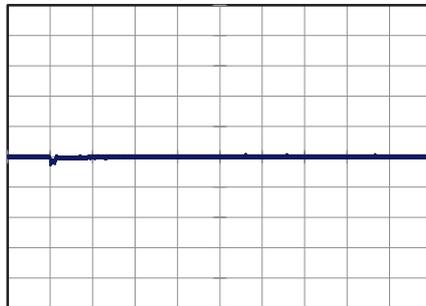
Min.Load (0A) ←→  
Load 100% (60A)

1 V/div



Min.Load (0A) ←→  
Load 50% (30A)

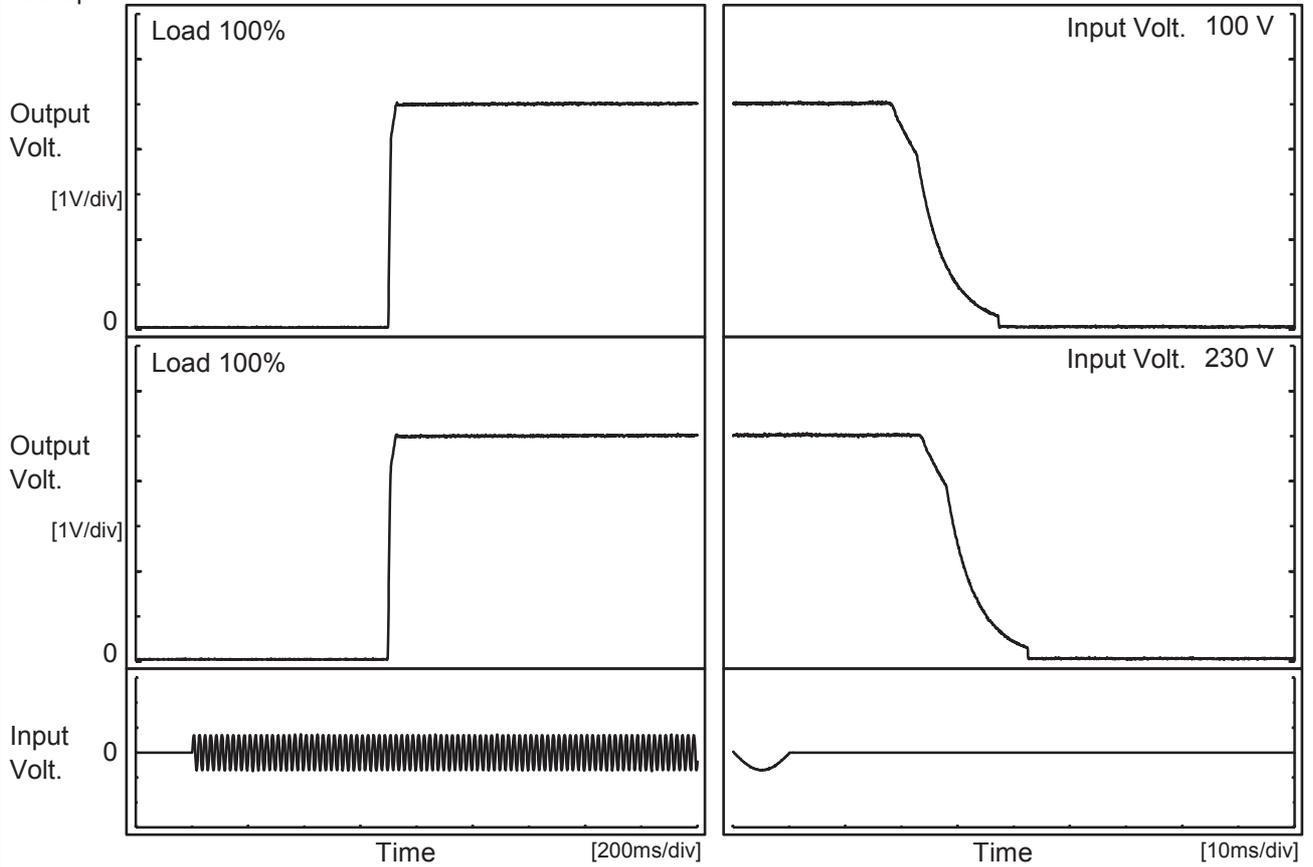
1 V/div





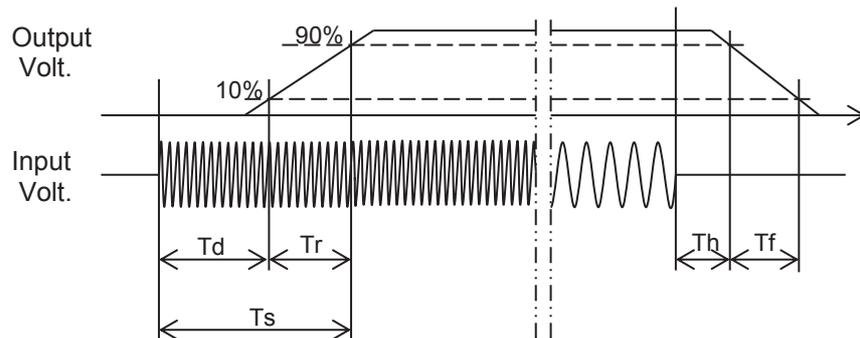
Model	PCA300F-5	Temperature	25°C
Item	Rise and Fall Time	Testing Circuitry	Figure A
Object	+5V60A		

1. Graph



2. Values

Input Volt.	Time	Td	Tr	Ts	Th	Tf
100 V		701.0	15.0	716.0	19.9	13.5
230 V		699.0	16.0	715.0	25.2	13.6





<p>Model PCA300F-5</p>		<p>Temperature 25°C Testing Circuitry Figure A</p>																																
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<p>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 input voltage.</p>																																		



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<p>1.Graph</p> <p>                     —△— Input Volt. 100V                      - - - □ - - - Input Volt. 200V                      - · - ○ - · - - Input Volt. 230V                 </p> <p>Instantaneous Compensation Time [ms]</p> <p>Load Current [A]</p> <p>Note: Slanted line shows the range of the rated load current.</p>		<p>2.Values</p> <table border="1"> <thead> <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> </thead> <tbody> <tr><td>0</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>10</td><td>119</td><td>144</td><td>141</td></tr> <tr><td>20</td><td>67</td><td>80</td><td>85</td></tr> <tr><td>30</td><td>45</td><td>56</td><td>55</td></tr> <tr><td>40</td><td>33</td><td>41</td><td>41</td></tr> <tr><td>50</td><td>24</td><td>31</td><td>33</td></tr> <tr><td>60</td><td>18</td><td>24</td><td>24</td></tr> <tr><td>66</td><td>16</td><td>20</td><td>22</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]	Time [ms]			Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]	0	-	-	-	10	119	144	141	20	67	80	85	30	45	56	55	40	33	41	41	50	24	31	33	60	18	24	24	66	16	20	22	--	-	-	-	--	-	-	-	--	-	-	-
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<p>Model PCA300F-5</p>		<p>Temperature 25°C Testing Circuitry Figure A</p>																																												
<p>Item Overcurrent Protection</p>																																														
<p>Object +5V60A</p>																																														
<p>1.Graph</p> <div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <p>— Input Volt. 100V</p> <p>— Input Volt. 230V</p> </div> </div> <p>Note: Slanted line shows the range of the rated load current.</p> <p>Hiccup mode activates when the output voltage is from 2.5V to 0V.</p>		<p>2.Values</p> <table border="1"> <thead> <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> </thead> <tbody> <tr><td>4.75</td><td>68.96</td><td>69.12</td></tr> <tr><td>4.50</td><td>68.95</td><td>69.00</td></tr> <tr><td>4.00</td><td>69.00</td><td>68.99</td></tr> <tr><td>3.50</td><td>68.99</td><td>68.99</td></tr> <tr><td>3.00</td><td>69.17</td><td>69.17</td></tr> <tr><td>2.50</td><td>69.08</td><td>69.14</td></tr> <tr><td>--</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td></tr> </tbody> </table>	Output Voltage [V]	Load Current [A]		Input Volt. 100[V]	Input Volt. 230[V]	4.75	68.96	69.12	4.50	68.95	69.00	4.00	69.00	68.99	3.50	68.99	68.99	3.00	69.17	69.17	2.50	69.08	69.14	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-
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<b>COSEL</b>		
Model	PCA300F-5	
Item	Ambient Temperature Drift	Testing Circuitry Figure A
Object	+5V60A	

1.Values Load 100%

Ambient Temperature[°C]	Output Voltage [V]		
	Input Volt. 100V	Input Volt. 200V	Input Volt. 230V
-20	5.003	5.003	5.003
25	5.013	5.012	5.012
40	5.018	5.018	5.017

Item	Minimum Input Voltage for Regulated Output Voltage	Testing Circuitry Figure A
Object	+5V60A	

1.Values

Ambient Temperature[°C]	Input Voltage [V]	
	Load 50%	Load 100%
-20	73	79
25	73	79
40	73	79

Item	Oversvoltage Protection	Testing Circuitry Figure A
Object	+5V60A	

1.Values Load 0%

Ambient Temperature[°C]	Operating Point [V]	
	Input Volt. 100V	Input Volt. 230V
-20	6.43	6.43
25	6.43	6.43
40	6.43	6.43

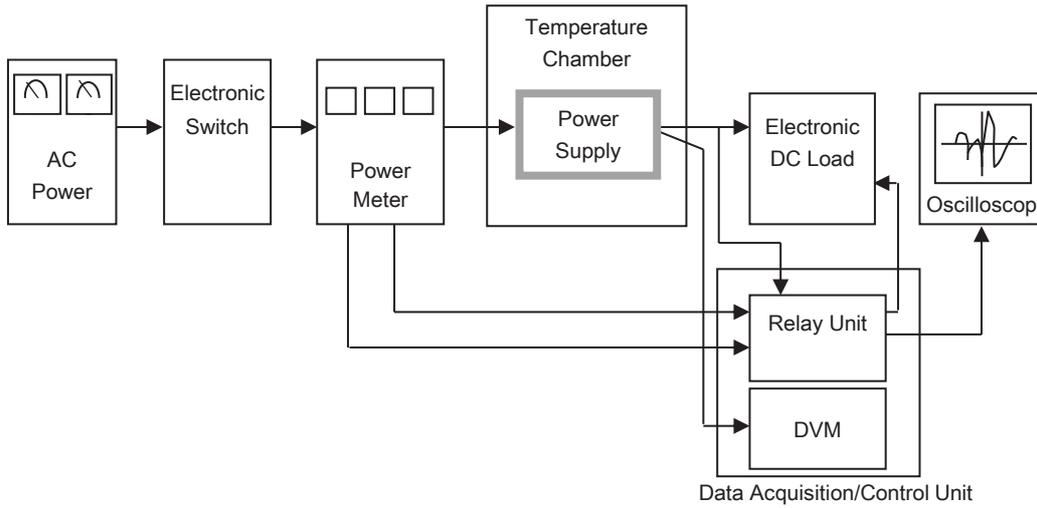


Figure A

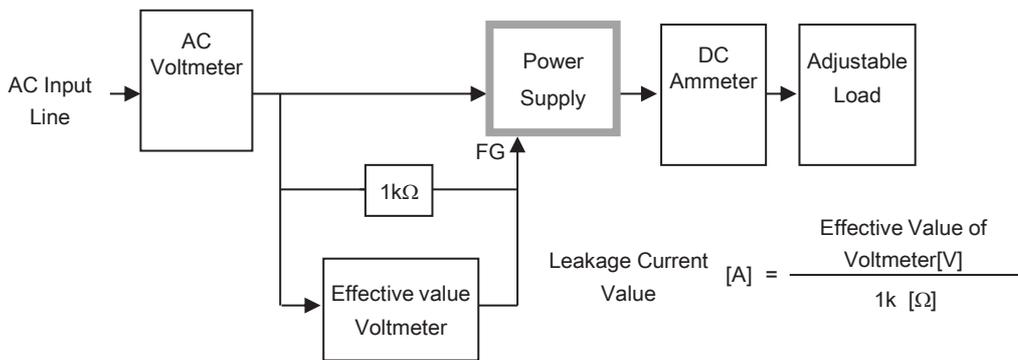


Figure B-1 ( DEN-AN )

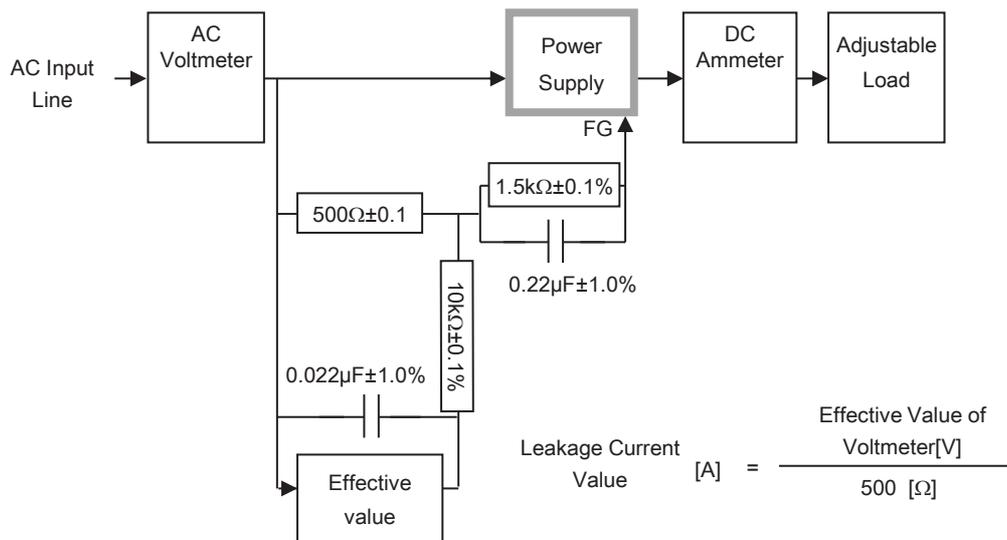


Figure B-2 ( IEC62368-1 refer to IEC60990 Fig.4 )

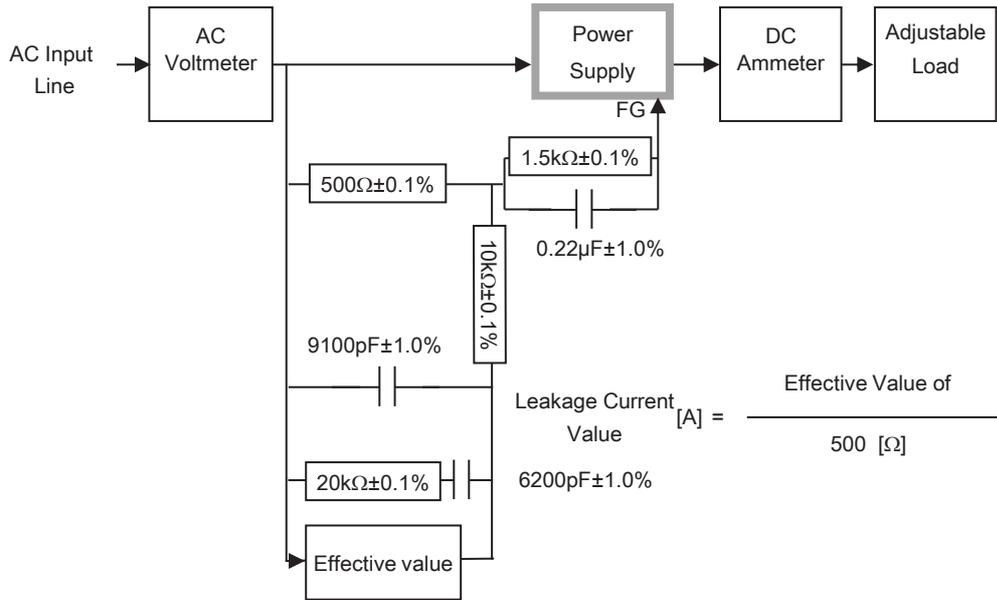


Figure B-3 ( IEC62368-1 refer to IEC60990 Fig.5 )

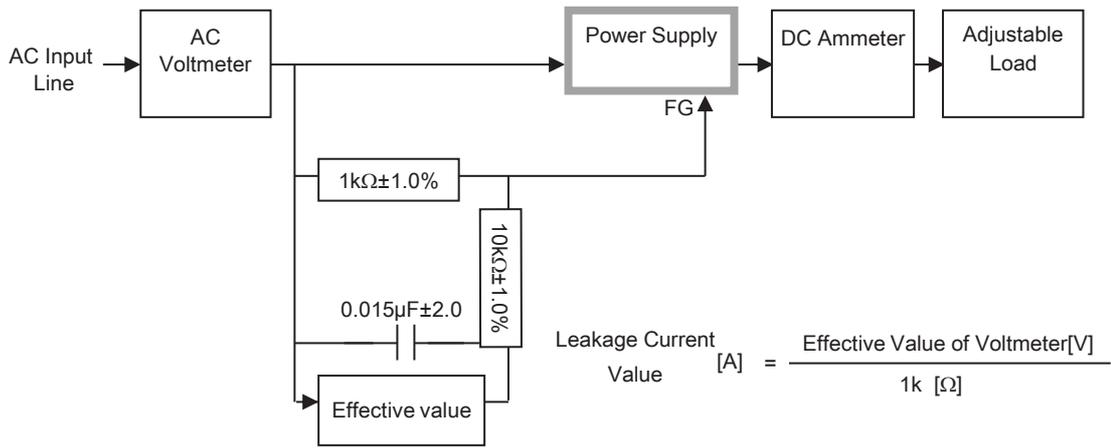
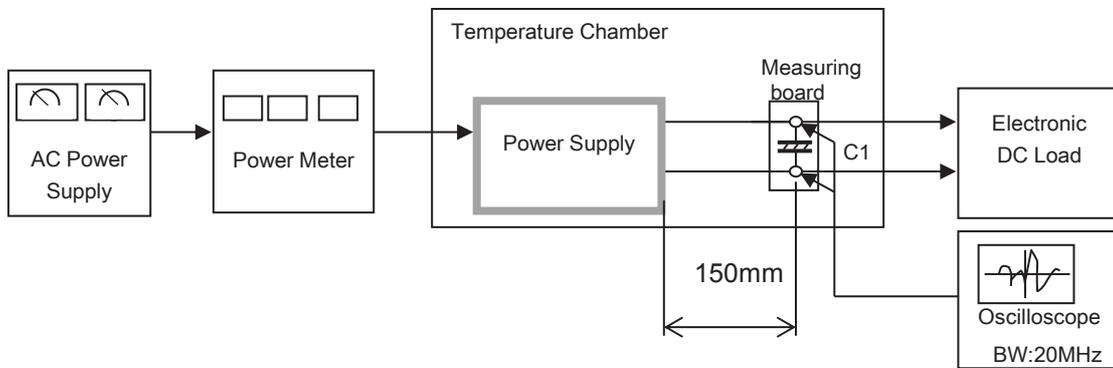


Figure B-4 ( IEC60601-1)



C1= 22 μF  
(Electrolytic capacitor)

Figure C