

TEST DATA OF WBA75B-24

Regulated DC Power Supply
May 26, 2021

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Design Manager

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Design Engineer

COSEL CO.,LTD.

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(Final Page 15)

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Model

WBA75B-24

Item

Input Current (by Load Current)

Object

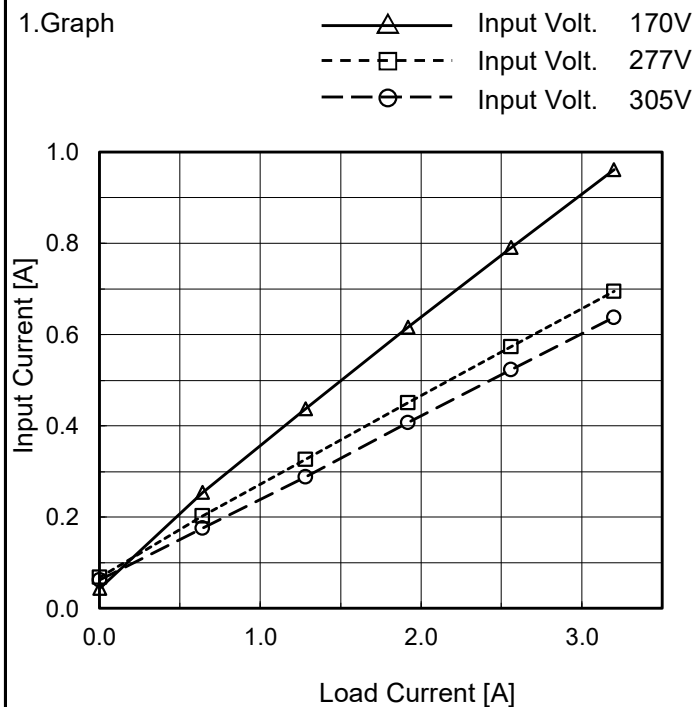
Temperature

25°C

Testing Circuitry

Figure A

1.Graph



2.Values

Load Current [A]	Input Current [A]		
	Input Volt. 170[V]	Input Volt. 277[V]	Input Volt. 305[V]
0.00	0.043	0.068	0.062
0.64	0.254	0.202	0.176
1.28	0.438	0.327	0.288
1.92	0.616	0.450	0.407
2.56	0.791	0.573	0.523
3.20	0.961	0.695	0.638
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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Model

WBA75B-24

Item

Efficiency (by Load Current)

Object

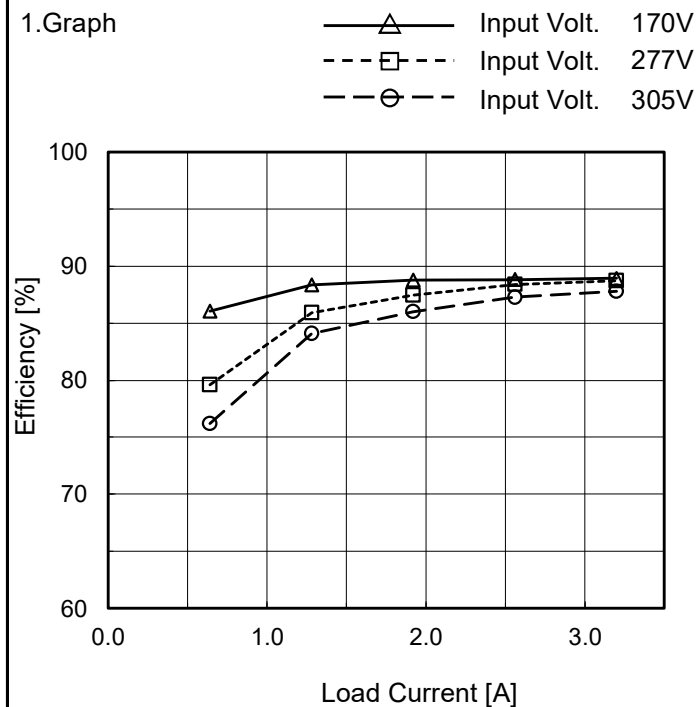
Temperature

25°C

Testing Circuitry

Figure A

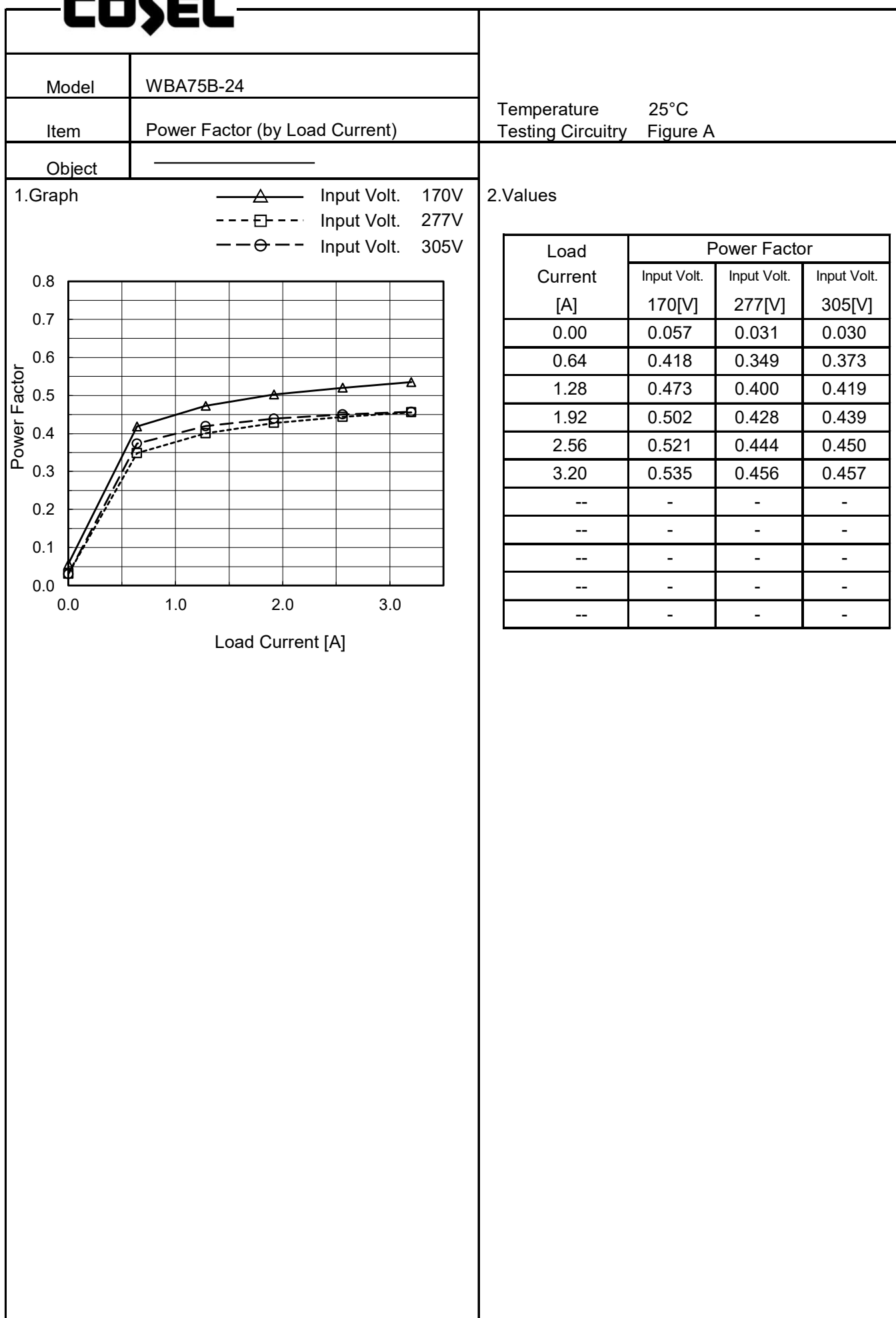
1.Graph



2.Values

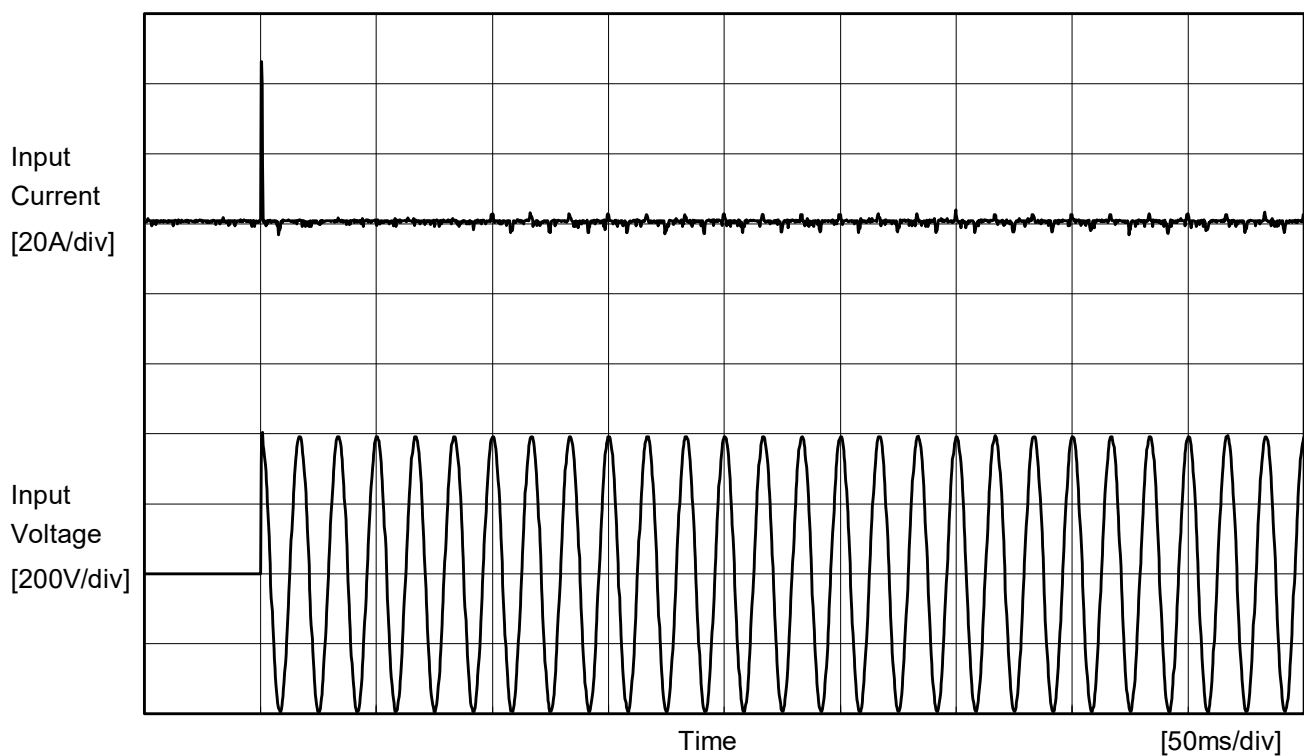
Load Current [A]	Efficiency [%]		
	Input Volt. 170[V]	Input Volt. 277[V]	Input Volt. 305[V]
0.00	-	-	-
0.64	86.0	79.6	76.2
1.28	88.4	85.9	84.1
1.92	88.8	87.5	86.0
2.56	88.8	88.4	87.3
3.20	88.9	88.7	87.8
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--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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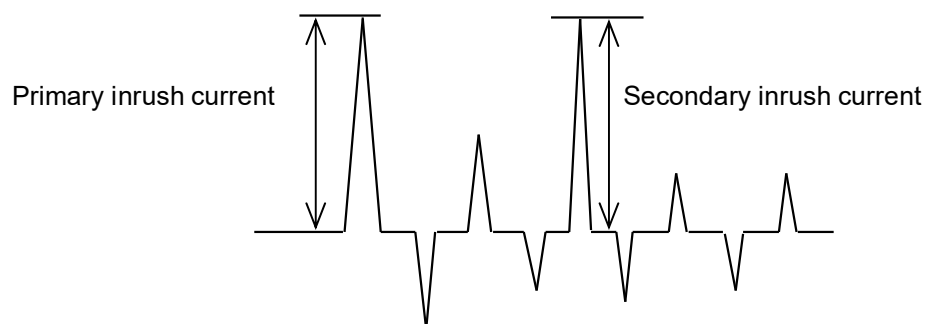
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Model	WBA75B-24	Temperature 25°C Testing Circuitry Figure A	
Item	Inrush Current		
Object			



Input Voltage 277 V
Frequency 60 Hz
Load 100 %

Primary inrush current 46.0 A
Secondary inrush current 3.6 A





		Temperature 25°C Testing Circuitry Figure C
Model	WBA75B-24	
Item	Leakage Current	
Object	_____	

1.Results

[mA]

Standards	Testing Circuitry	Measuring Method	Input Volt.			Note
			170 [V]	277 [V]	305 [V]	
DEN-AN	Figure C-1	Both phases	0.24	0.41	0.46	Operation
		One of phases	0.37	0.65	0.73	Stand by
IEC62368-1	Figure C-2	Both phases	0.24	0.40	0.44	Operation
		One of phases	0.37	0.64	0.71	Stand by
	Figure C-3	Both phases	0.23	0.39	0.43	Operation
		One of phases	0.37	0.62	0.69	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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Model	WBA75B-24																																		
Item	Line Regulation	Temperature	25°C																																
		Testing Circuitry	Figure A																																
Object	+24V3.2A																																		
1.Graph		2.Values																																	
<div><div><div><div>---□---</div><div>Load 50%</div></div><div><div>—△—</div><div>Load 100%</div></div></div><div><div><div>Output Voltage [V]</div><div>24.60</div><div>24.50</div><div>24.40</div><div>24.30</div><div>24.20</div><div>24.10</div><div>24.00</div><div>23.90</div></div><div><div>150</div><div>200</div><div>250</div><div>300</div><div>350</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>170</td><td>24.320</td><td>24.321</td></tr><tr><td>200</td><td>24.319</td><td>24.320</td></tr><tr><td>230</td><td>24.317</td><td>24.318</td></tr><tr><td>277</td><td>24.313</td><td>24.313</td></tr><tr><td>305</td><td>24.312</td><td>24.312</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></table>		Input Voltage [V]	Output Voltage [V]		Load 50%	Load 100%	170	24.320	24.321	200	24.319	24.320	230	24.317	24.318	277	24.313	24.313	305	24.312	24.312	--	-	-	--	-	-	--	-	-	--	-	-
Input Voltage [V]	Output Voltage [V]																																		
	Load 50%	Load 100%																																	
170	24.320	24.321																																	
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230	24.317	24.318																																	
277	24.313	24.313																																	
305	24.312	24.312																																	
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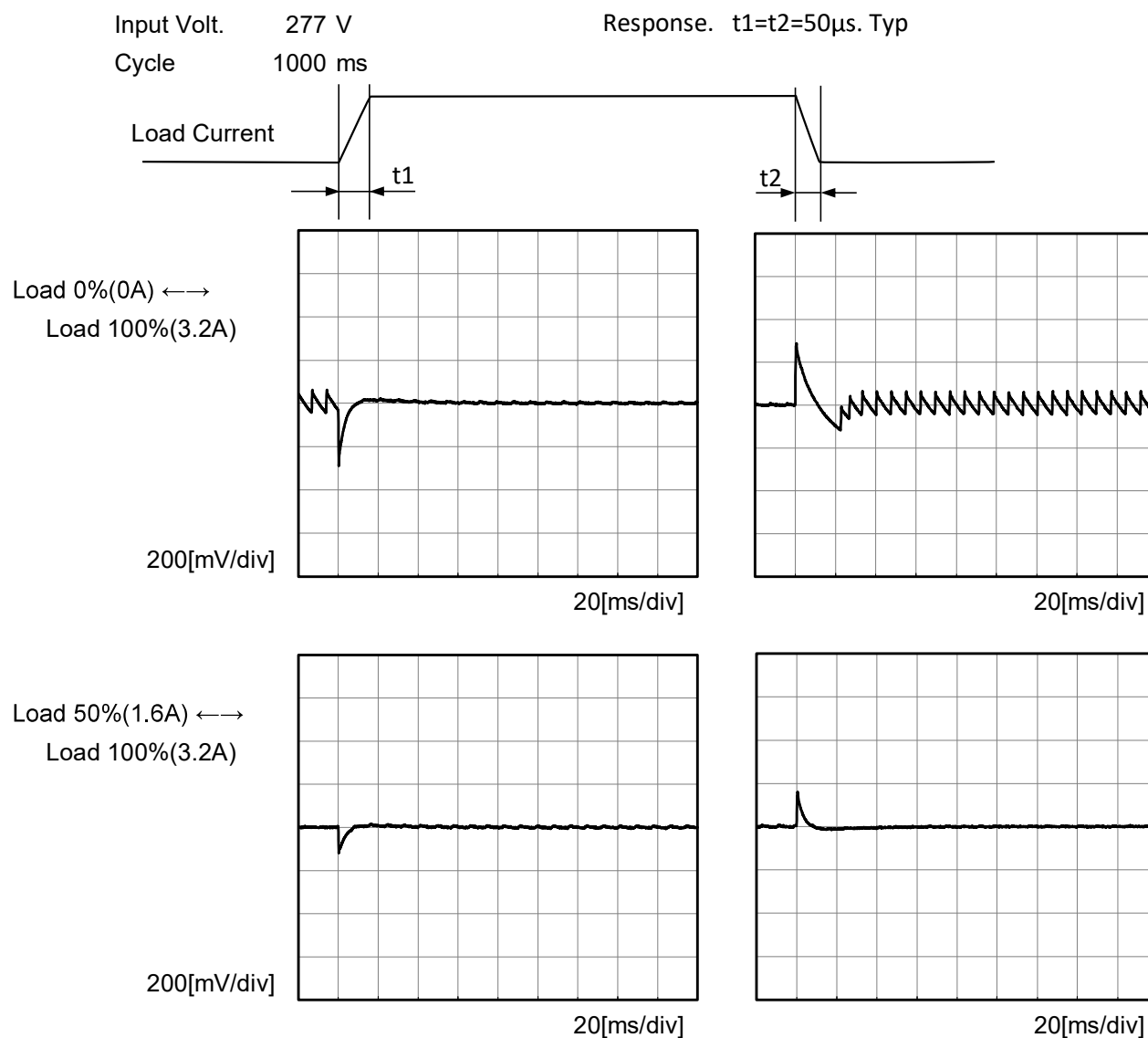
Model		WBA75B-24																																																					
Item		Load Regulation	Temperature	25°C																																																			
Object		+24V3.2A	Testing Circuitry	Figure A																																																			
1.Graph		<div><div><div>—△—</div><div>---□---</div><div>---⊖---</div></div><div><div>Input Volt. 170V</div><div>Input Volt. 277V</div><div>Input Volt. 305V</div></div></div> <div><table><thead><tr><th>Load Current [A]</th><th>Input Volt. 170[V]</th><th>Input Volt. 277[V]</th><th>Input Volt. 305[V]</th></tr></thead><tbody><tr><td>0.00</td><td>24.331</td><td>24.327</td><td>24.332</td></tr><tr><td>0.64</td><td>24.328</td><td>24.325</td><td>24.325</td></tr><tr><td>1.28</td><td>24.327</td><td>24.320</td><td>24.320</td></tr><tr><td>1.92</td><td>24.325</td><td>24.318</td><td>24.318</td></tr><tr><td>2.56</td><td>24.324</td><td>24.317</td><td>24.317</td></tr><tr><td>3.20</td><td>24.322</td><td>24.315</td><td>24.315</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></div>	Load Current [A]	Input Volt. 170[V]	Input Volt. 277[V]	Input Volt. 305[V]	0.00	24.331	24.327	24.332	0.64	24.328	24.325	24.325	1.28	24.327	24.320	24.320	1.92	24.325	24.318	24.318	2.56	24.324	24.317	24.317	3.20	24.322	24.315	24.315	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.Values				
Load Current [A]	Input Volt. 170[V]	Input Volt. 277[V]	Input Volt. 305[V]																																																				
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Item		Ripple-Noise	Temperature	25°C																																																			
Object		+24V3.2A	Testing Circuitry	Figure B																																																			
1.Graph		<div><div><div>Input Voltage 277V</div><div>Load 100%</div></div><div><div>20[mV/div]</div><div>20[ms/div]</div></div></div>																																																					

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Model	WBA75B-24		
Item	Dynamic Load Response	Temperature	25°C
Object	+24V3.2A	Testing Circuitry	Figure A

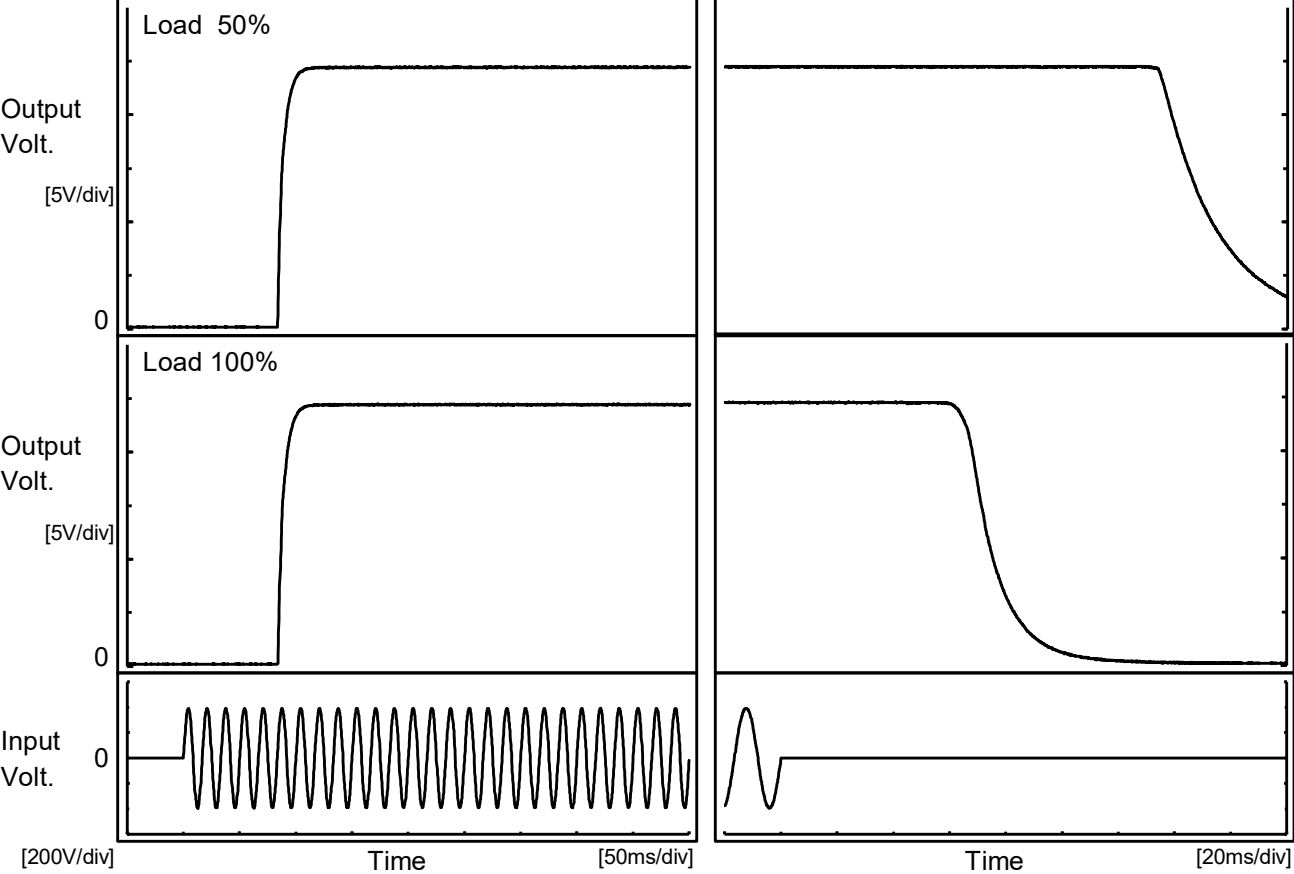




Model	WBA75B-24		
Item	Rise and Fall Time	Temperature	25°C
Object	+24V3.2A	Testing Circuitry	Figure A

1.Graph

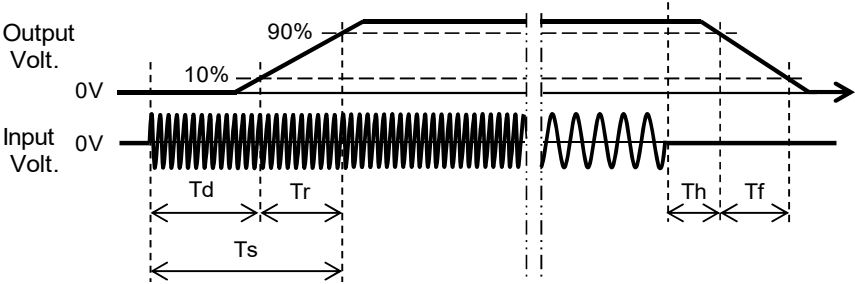
Input Volt. 277 V



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	84.3	10.8	95.1	136.9	43.1
100 %	84.5	10.8	95.3	66.5	23.8



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Model

WBA75B-24

Item

Hold-Up Time

Object

+24V3.2A

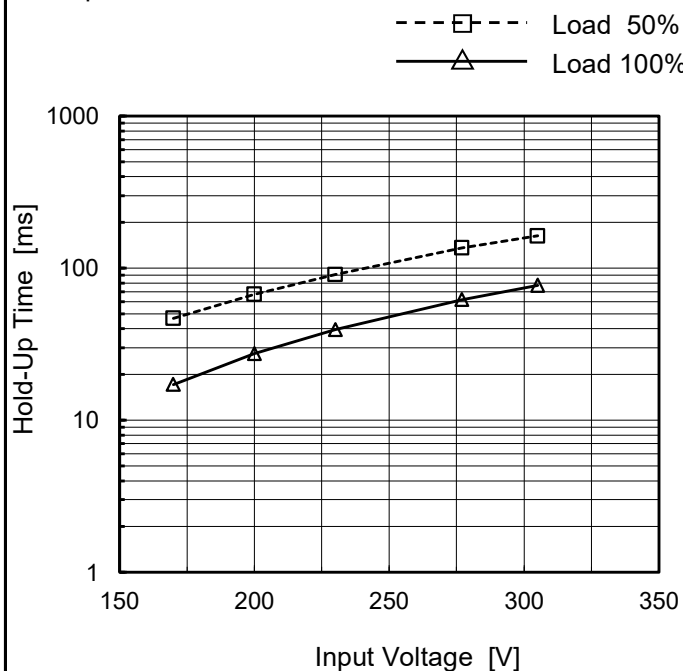
Temperature

25°C

Testing Circuitry

Figure A

1.Graph



This duration covers from Shut-off of input voltage to the moment when output voltage descends to the rated range of voltage accuracy.

2.Values

Input Voltage [V]	Hold-Up Time [ms]	
	Load 50%	Load 100%
170	47	17
200	67	27
230	91	39
277	136	62
305	163	77
--	-	-
--	-	-
--	-	-
--	-	-

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Model		WBA75B-24		Temperature 25°C																																																				
Item		Instantaneous Interruption Compensation		Testing Circuitry Figure A																																																				
Object		+24V3.2A																																																						
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<div><div><div>—△— Input Volt. 170V</div><div>- - □ - - Input Volt. 277V</div><div>- - ⊖ - - Input Volt. 305V</div></div><div>Instantaneous Compensation Time [ms]</div><div>Load Current [A]</div></div>				<table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Time [ms]</th></tr><tr><th>Input Volt. 170[V]</th><th>Input Volt. 277[V]</th><th>Input Volt. 305[V]</th></tr><tr><td>0.00</td><td>-</td><td>-</td><td>-</td></tr><tr><td>0.64</td><td>123</td><td>336</td><td>449</td></tr><tr><td>1.28</td><td>61</td><td>171</td><td>225</td></tr><tr><td>1.92</td><td>39</td><td>113</td><td>140</td></tr><tr><td>2.56</td><td>27</td><td>82</td><td>102</td></tr><tr><td>3.20</td><td>15</td><td>63</td><td>77</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]	Time [ms]			Input Volt. 170[V]	Input Volt. 277[V]	Input Volt. 305[V]	0.00	-	-	-	0.64	123	336	449	1.28	61	171	225	1.92	39	113	140	2.56	27	82	102	3.20	15	63	77	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
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Model	WBA75B-24		
Item	Ambient Temperature Drift	Testing Circuitry Figure A	
Object	+24V3.2A		
1.Values		Load 100%	
Ambient Temperature[°C]	Output Voltage [V]		
	Input Volt. 170V	Input Volt. 277V	Input Volt. 305V
-20	24.238	24.231	24.231
25	24.320	24.312	24.314
50	24.344	24.335	24.335
Item	Minimum Input Voltage for Regulated Output Voltage	Testing Circuitry Figure A	
Object	+24V3.2A		
1.Values			
Ambient Temperature[°C]	Input Voltage [V]		
	Load 50%	Load 100%	
-20	49	108	
25	48	105	
50	49	103	
Item	Overvoltage Protection	Testing Circuitry Figure A	
Object	+24V3.2A		
1.Values		Load 0%	
Ambient Temperature[°C]	Operating Point [V]		
	Input Volt. 170V	Input Volt. 305V	
-20	31.27	31.23	
25	31.72	31.69	
50	31.96	31.95	

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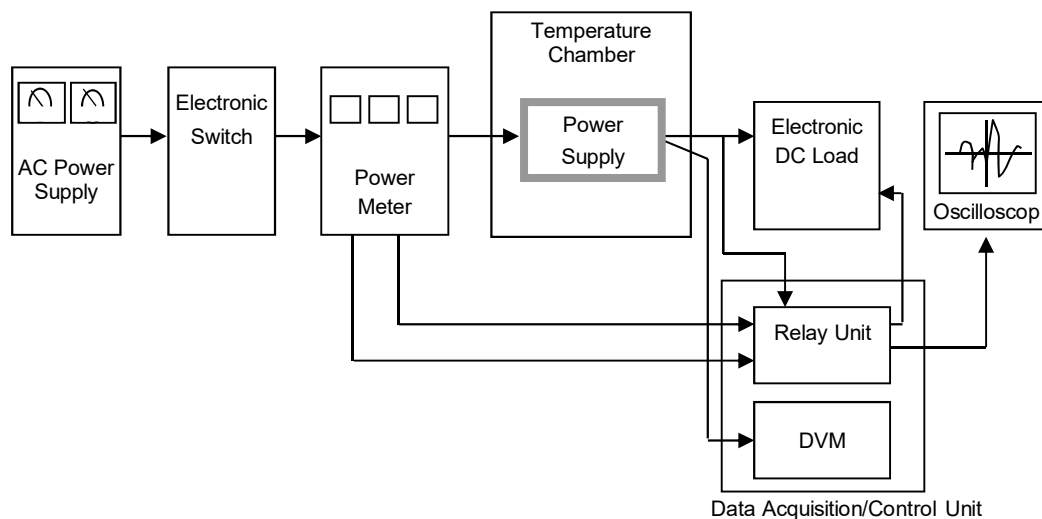


Figure A

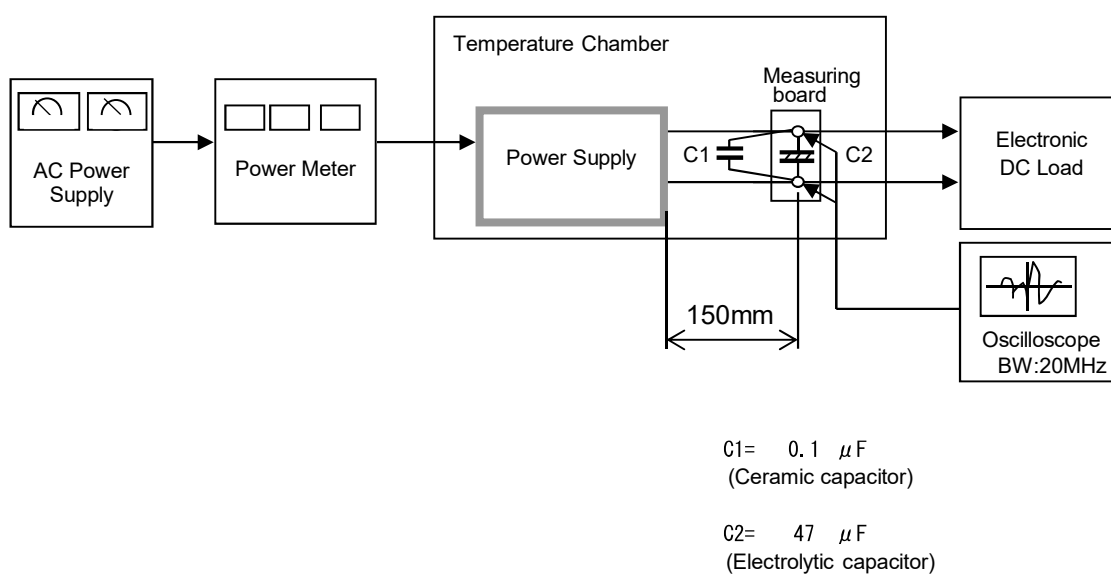


Figure B

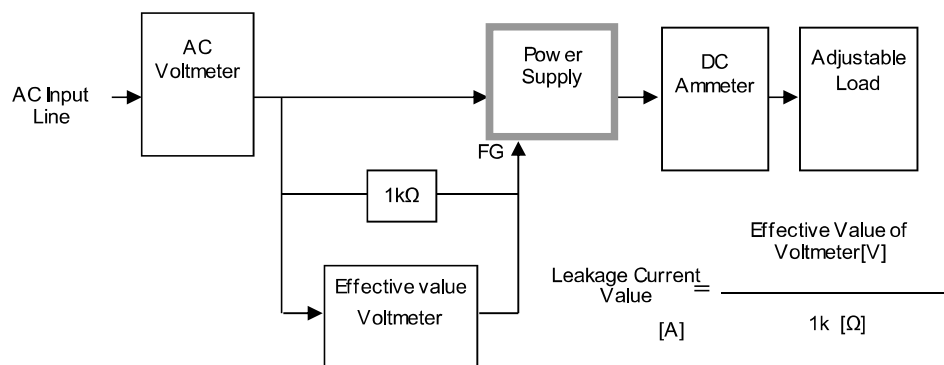


Figure C-1 (DEN-AN)

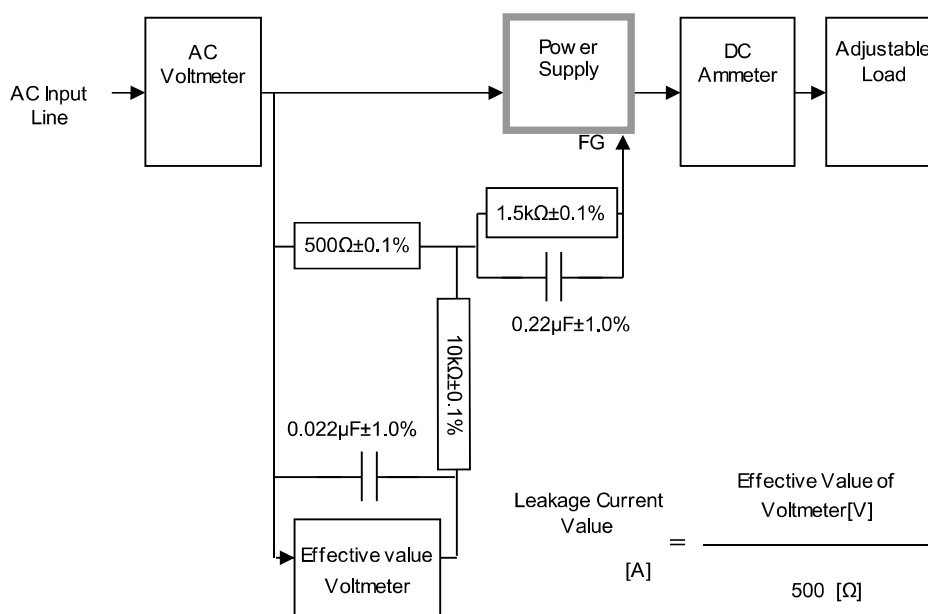


Figure C-2 (IEC62368-1 refer to IEC60990 Fig.4)

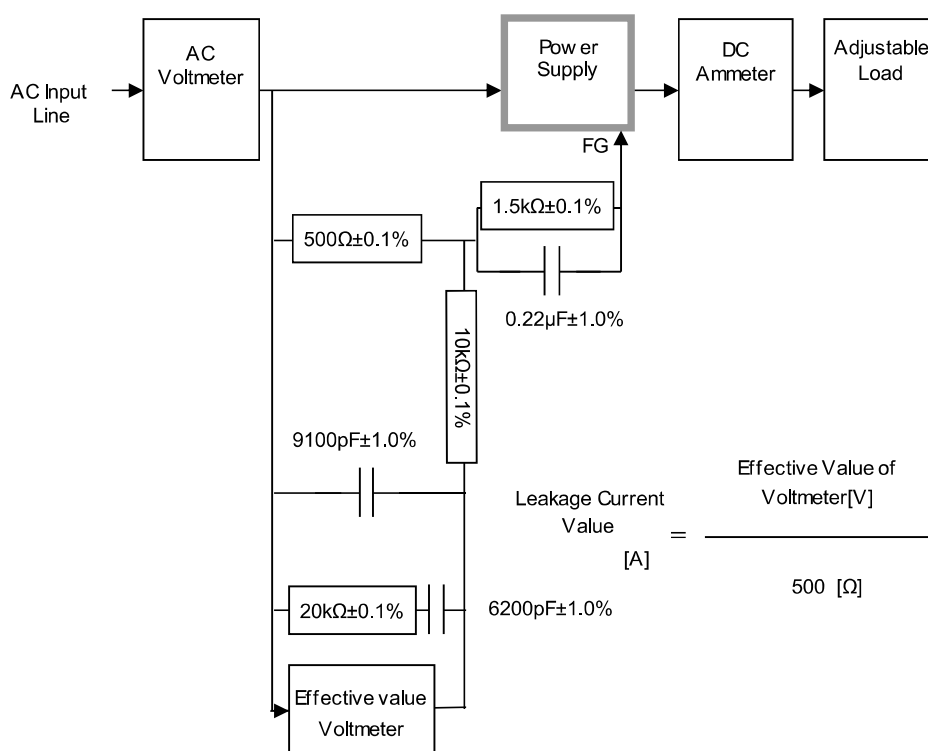


Figure C-3 (IEC62368-1 refer to IEC60990 Fig.5)