

TEST DATA OF WBA350B-24

Regulated DC Power Supply
July 6, 2021

Approved by : Takashi Kajii
Design Manager

Prepared by : Takashi Nishimura
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)

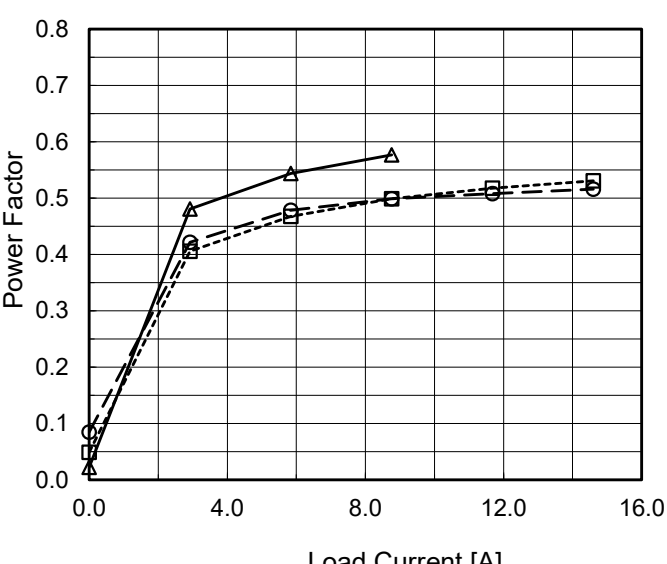
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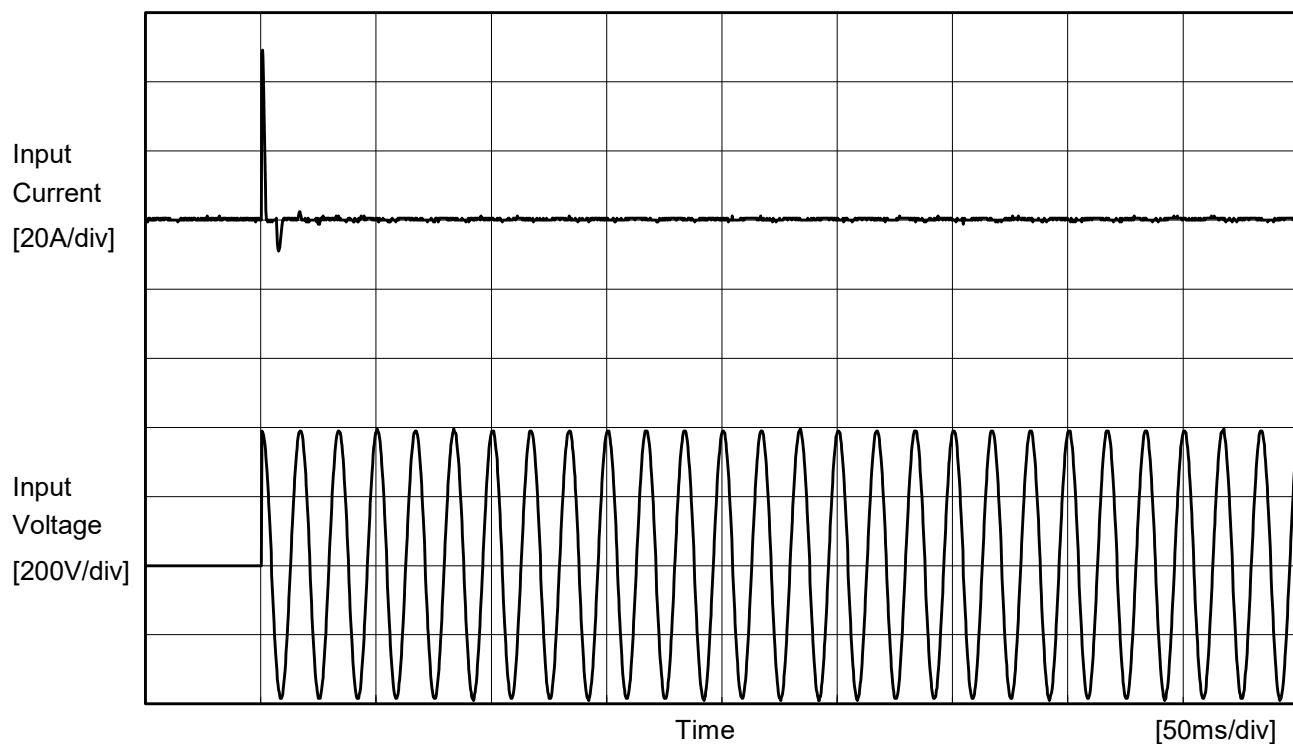
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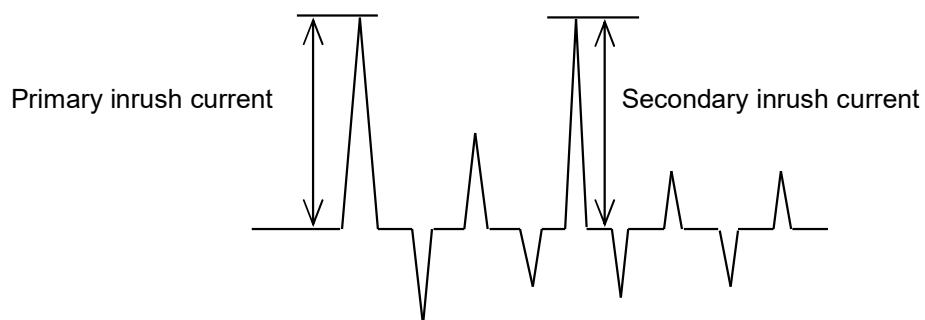
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Model	WBA350B-24	Temperature 25°C Testing Circuitry Figure A	
Item	Inrush Current		
Object	_____		



Input Voltage 277 V
Frequency 60 Hz
Load 100 %

Primary inrush current 49.2 A





		Temperature 25°C Testing Circuitry Figure C
Model	WBA350B-24	
Item	Leakage Current	
Object	_____	

1.Results

Standards	Testing Circuitry	Measuring Method	Input Volt.			Note
			170 [V]	277 [V]	305 [V]	
DEN-AN	Figure C-1	Both phases	0.18	0.30	0.32	Operation
		One of phases	0.34	0.57	0.62	Stand by
IEC62368-1	Figure C-2	Both phases	0.17	0.29	0.32	Operation
		One of phases	0.32	0.55	0.61	Stand by
	Figure C-3	Both phases	0.17	0.29	0.32	Operation
		One of phases	0.33	0.55	0.61	Stand by

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

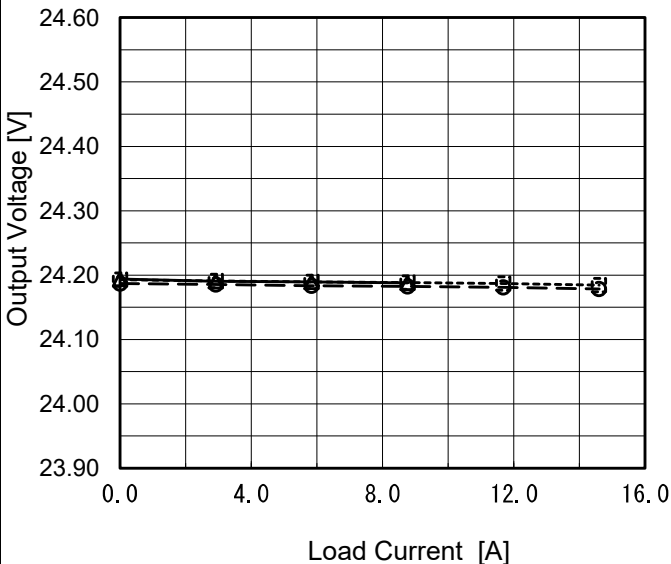
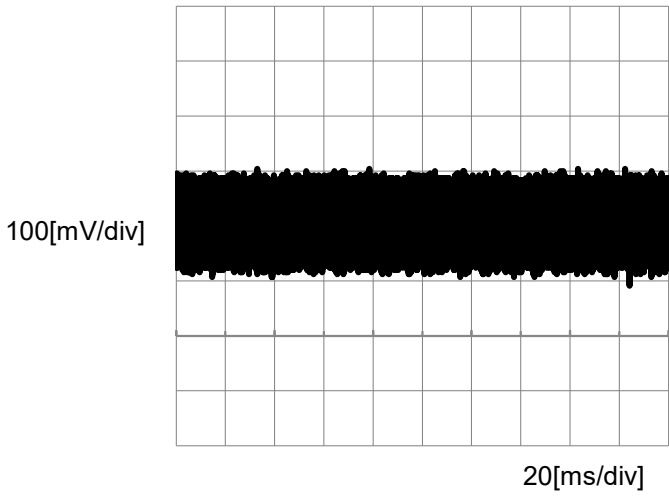
2.Condition

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



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Item	Line Regulation	Temperature	25°C																																
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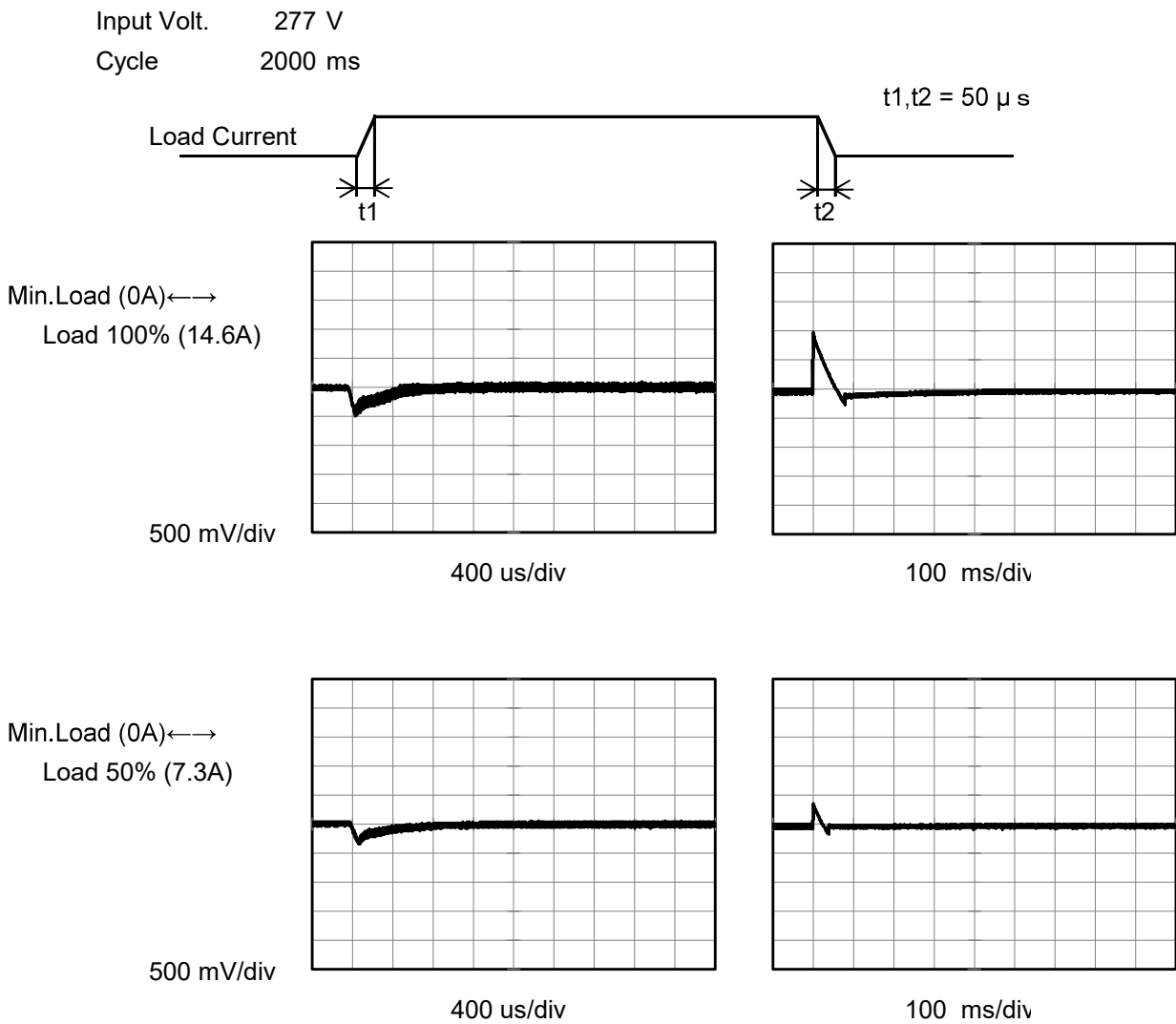
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Model	WBA350B-24		
Item	Dynamic Load Response	Temperature	25°C
		Testing Circuitry	Figure A
Object	+24V14.6A		

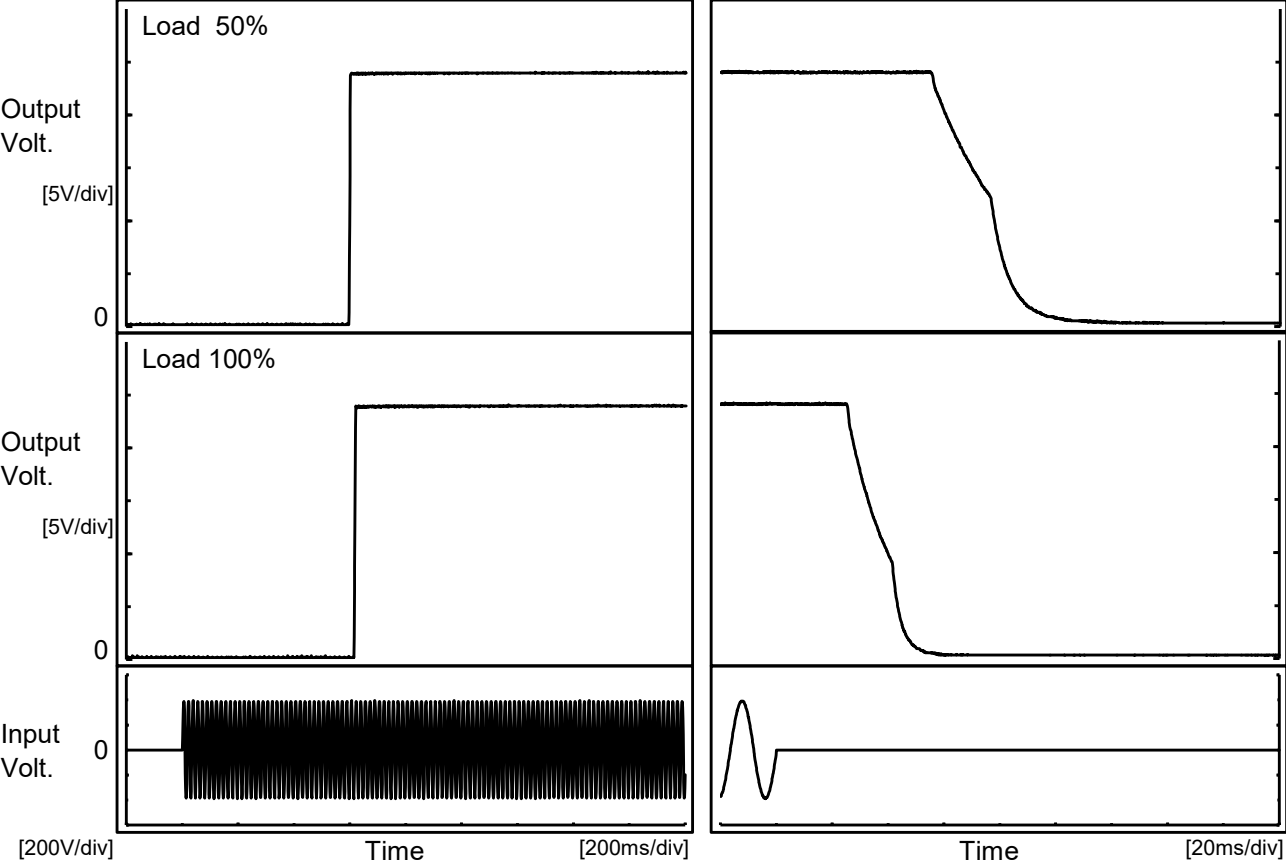




Model		WBA350B-24	Temperature 25°C Testing Circuitry Figure A
Item		Rise and Fall Time	
Object		+24V14.6A	

1.Graph

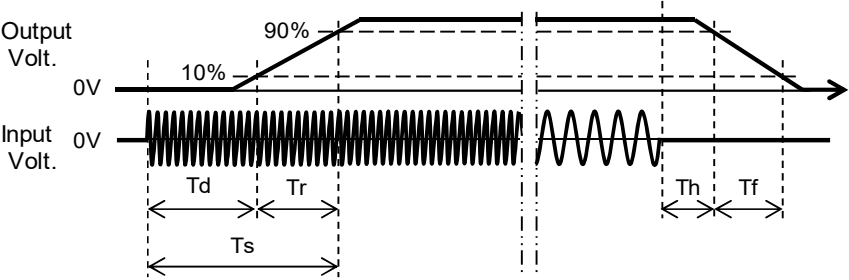
Input Volt. 277 V



2.Values

[ms]

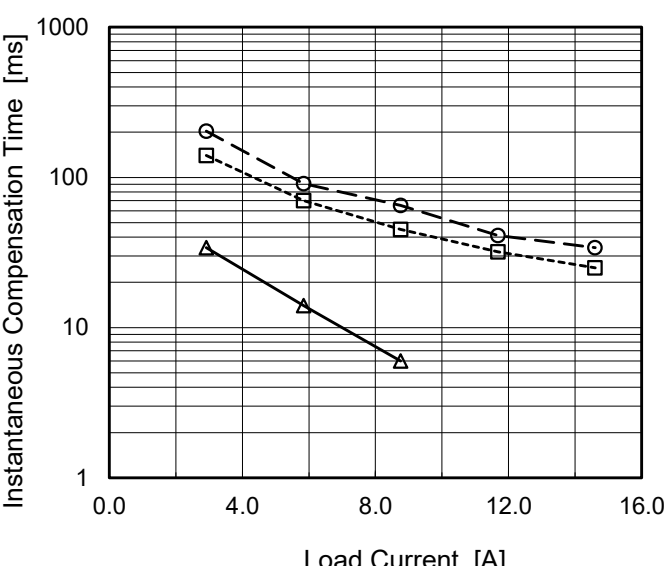
Load \ Time	Td	Tr	Ts	Th	Tf
50 %	597.0	4.0	601.0	57.7	29.7
100 %	615.0	4.0	619.0	26.3	19.4



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<div><div><div><div>---</div><div>□</div><div>---</div></div><div>Load 50%</div></div><div><div>—</div><div>△</div><div>—</div></div><div>Load 100%</div></div> <p>The graph shows the hold-up time in milliseconds on a logarithmic y-axis (1 to 1000) against the input voltage in volts on a linear x-axis (150 to 350). Two data series are plotted: Load 50% (dashed line with square markers) and Load 100% (solid line with triangle markers). Both series show an increasing trend of hold-up time with increasing input voltage. The Load 50% series consistently shows higher hold-up times than the Load 100% series for the same input voltage.</p> <table border="1"><thead><tr><th>Input Voltage [V]</th><th>Load 50% [ms]</th><th>Load 100% [ms]</th></tr></thead><tbody><tr><td>170</td><td>10</td><td>-</td></tr><tr><td>200</td><td>20</td><td>7</td></tr><tr><td>230</td><td>32</td><td>13</td></tr><tr><td>277</td><td>55</td><td>24</td></tr><tr><td>305</td><td>71</td><td>33</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>		Input Voltage [V]	Load 50% [ms]	Load 100% [ms]	170	10	-	200	20	7	230	32	13	277	55	24	305	71	33	--	-	-	--	-	-	--	-	-	--	-	-	<table><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><tr><td>170</td><td>10</td><td>-</td></tr><tr><td>200</td><td>20</td><td>7</td></tr><tr><td>230</td><td>32</td><td>13</td></tr><tr><td>277</td><td>55</td><td>24</td></tr><tr><td>305</td><td>71</td><td>33</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]	Hold-Up Time [ms]		Load 50%	Load 100%	170	10	-	200	20	7	230	32	13	277	55	24	305	71	33	--	-	-	--	-	-	--	-	-	--	-	-
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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.																																																																	

COSEL

Model		WBA350B-24		Temperature 25°C																																																				
Item		Instantaneous Interruption Compensation		Testing Circuitry Figure A																																																				
Object		+24V14.6A																																																						
1.Graph		<div><div><div>—△—</div><div>Input Volt. 170V</div></div><div><div>---□---</div><div>Input Volt. 277V</div></div><div><div>---⊖---</div><div>Input Volt. 305V</div></div></div> 		2.Values																																																				
		<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>2.92</td><td>34</td><td>140</td><td>203</td></tr><tr><td>5.84</td><td>14</td><td>70</td><td>91</td></tr><tr><td>8.76</td><td>6</td><td>45</td><td>65</td></tr><tr><td>11.68</td><td>-</td><td>32</td><td>41</td></tr><tr><td>14.60</td><td>-</td><td>25</td><td>34</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	-	-	-	2.92	34	140	203	5.84	14	70	91	8.76	6	45	65	11.68	-	32	41	14.60	-	25	34	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
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COSEL

Model		WBA350B-24	
Item		Overcurrent Protection	
Object		+24V14.6A	

1.Graph

Input Volt. 170V

Input Volt. 277V

Input Volt. 305V

Output Voltage [V]

COSEL

		Testing Circuitry Figure A	
Model	WBA350B-24		
Item	Ambient Temperature Drift		
Object	+24V14.6A		
1.Values Load 100%			
Ambient Temperature[°C]		Output Voltage [V]	
	Input Volt. 170V	Input Volt. 277V	Input Volt. 305V
-20	23.945	24.097	24.126
25	24.103	24.173	24.193
50	24.138	24.198	24.200
Item		Minimum Input Voltage for Regulated Output Voltage	Testing Circuitry Figure A
Object	+24V14.6A		
1.Values			
Ambient Temperature[°C]		Input Voltage [V]	
		Load 50%	Load 100%
-20		130	155
25		129	153
50		130	155
Item		Overvoltage Protection	Testing Circuitry Figure A
Object	+24V14.6A		
1.Values Load 0%			
Ambient Temperature[°C]		Operating Point [V]	
	Input Volt. 170V	Input Volt. 305V	
-20	28.87	28.89	
25	29.52	29.40	
50	30.05	30.00	

- 13 -

BC-11752

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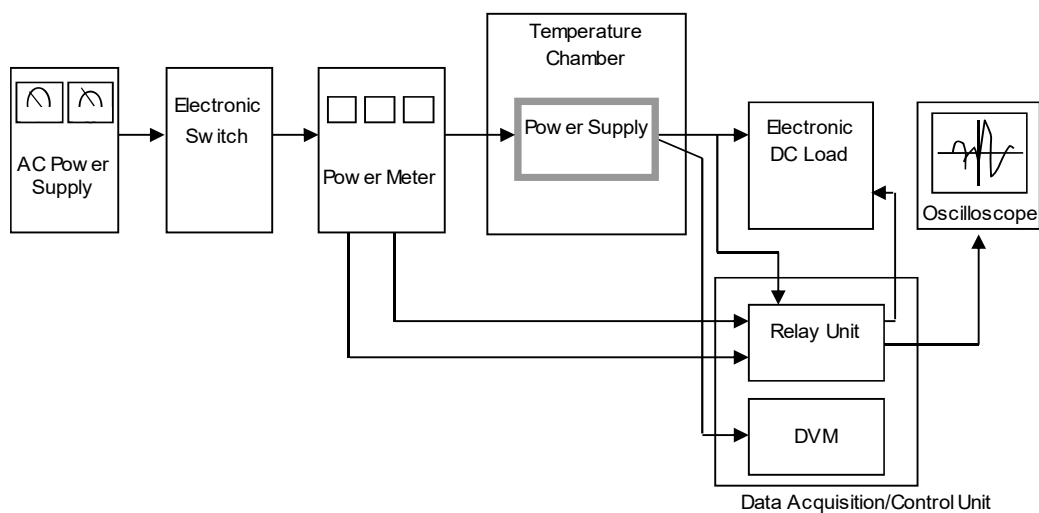


Figure A

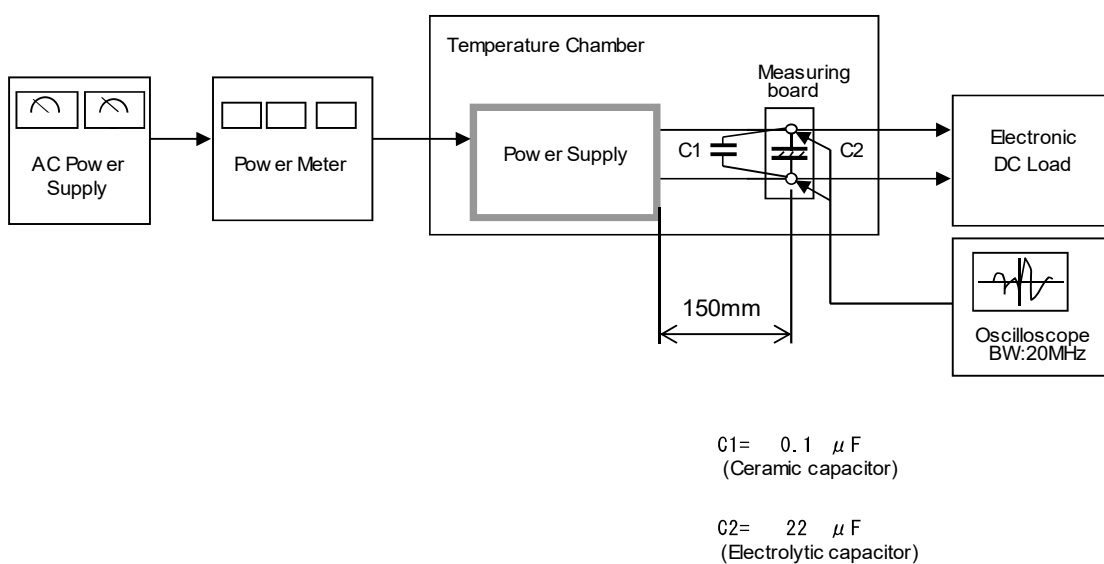


Figure B

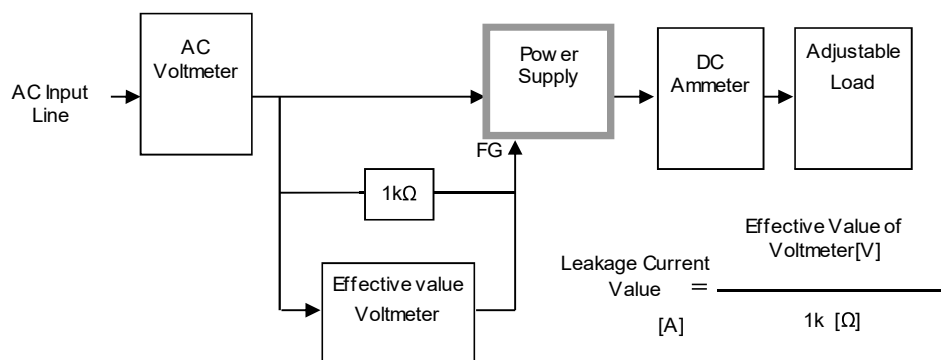


Figure C-1 (DEN-AN)

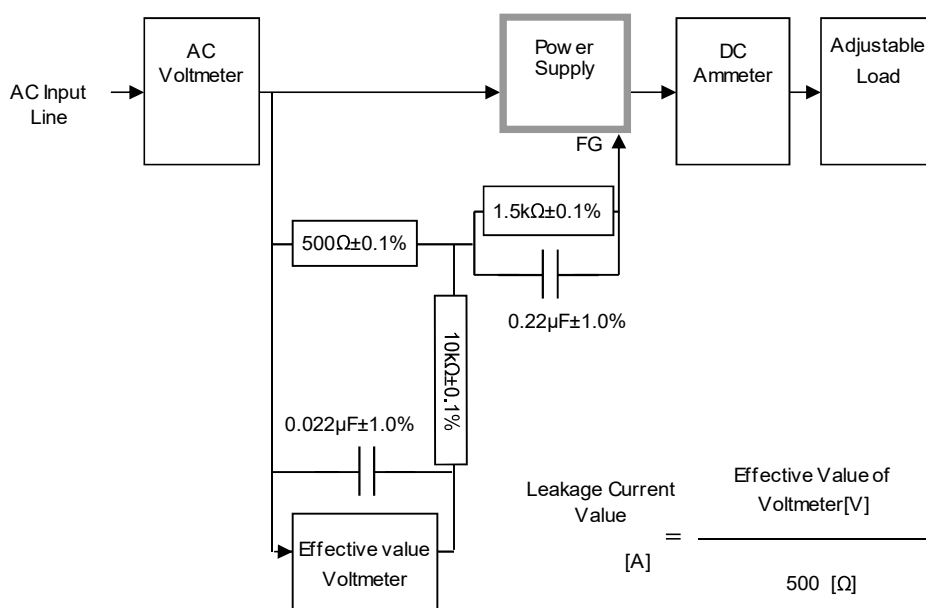


Figure C-2 (IEC62368-1 refer to IEC60990 Fig.4)

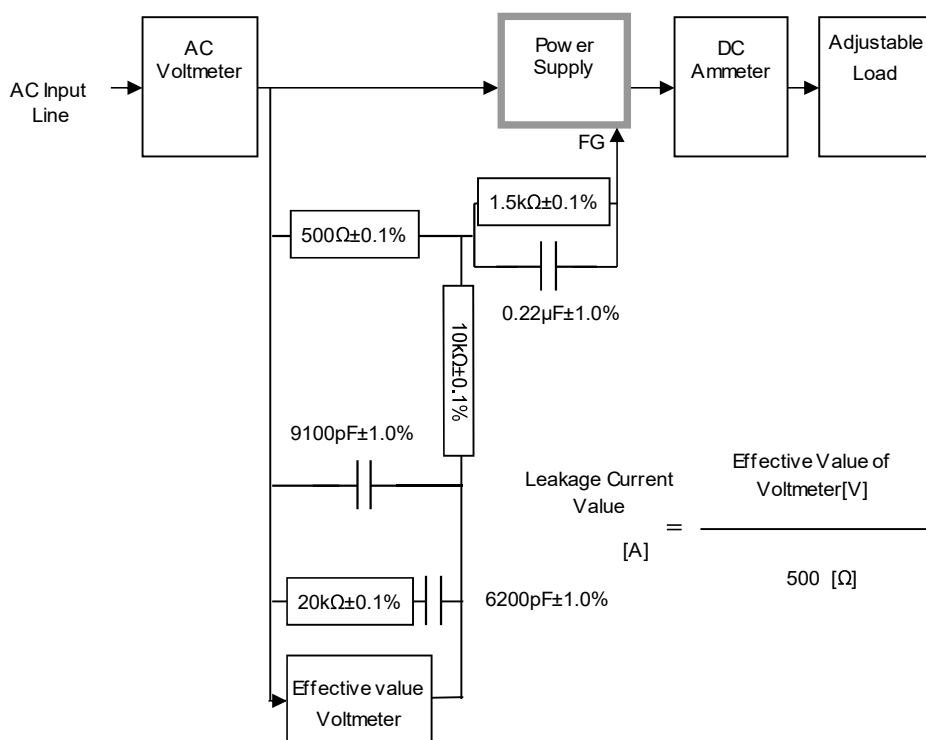


Figure C-3 (IEC62368-1 refer to IEC60990 Fig.5)