

TEST DATA OF WBA35B-5

Regulated DC Power Supply
May 24, 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

WBA35B-5

Item

Input Current (by Load Current)

Object

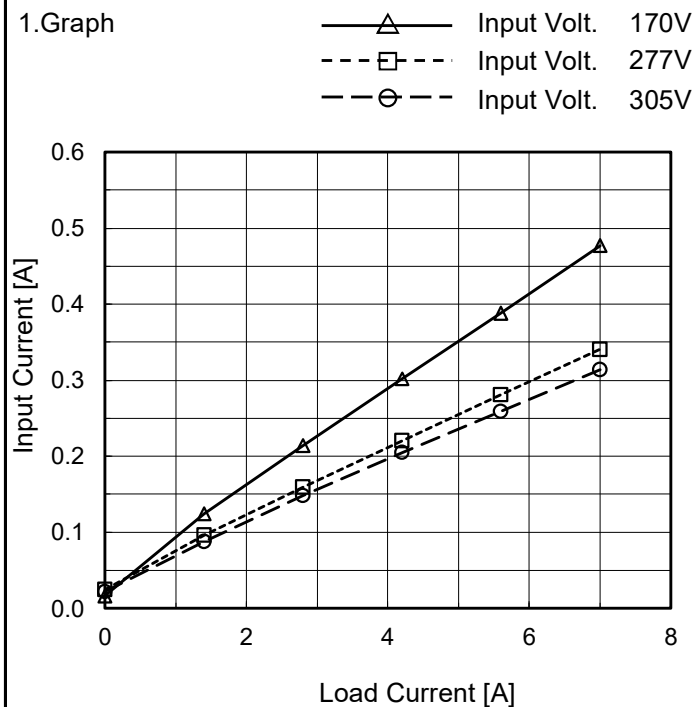
Temperature

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]
0.0	0.017	0.025	0.022
1.4	0.124	0.096	0.088
2.8	0.214	0.160	0.148
4.2	0.302	0.221	0.205
5.6	0.388	0.281	0.259
7.0	0.477	0.341	0.314
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model

WBA35B-5

Item

Efficiency (by Load Current)

Object

Temperature

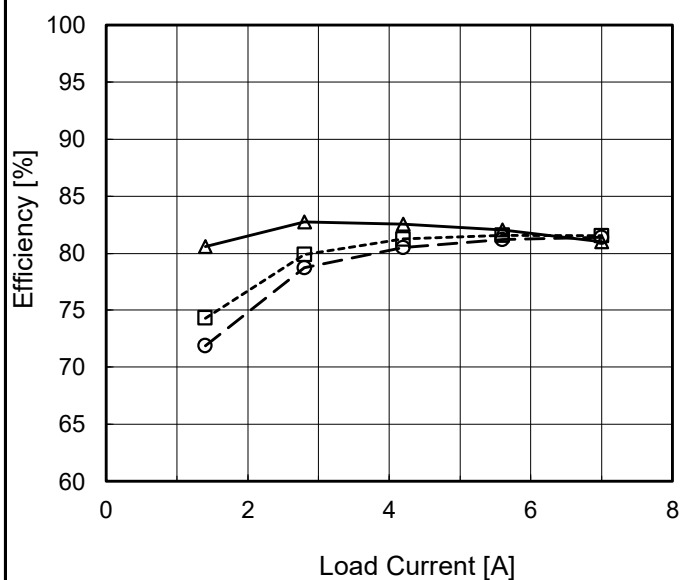
25°C

Testing Circuitry

Figure A

1.Graph

—△— Input Volt. 170V
 ---□--- Input Volt. 277V
 ---○--- Input Volt. 305V



2.Values

Load Current [A]	Efficiency [%]		
	Input Volt. 170[V]	Input Volt. 277[V]	Input Volt. 305[V]
0.0	-	-	-
1.4	80.6	74.3	71.9
2.8	82.8	79.9	78.7
4.2	82.6	81.2	80.5
5.6	82.0	81.6	81.2
7.0	81.0	81.5	81.4
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model

WBA35B-5

Item

Power Factor (by Load Current)

Object

Temperature

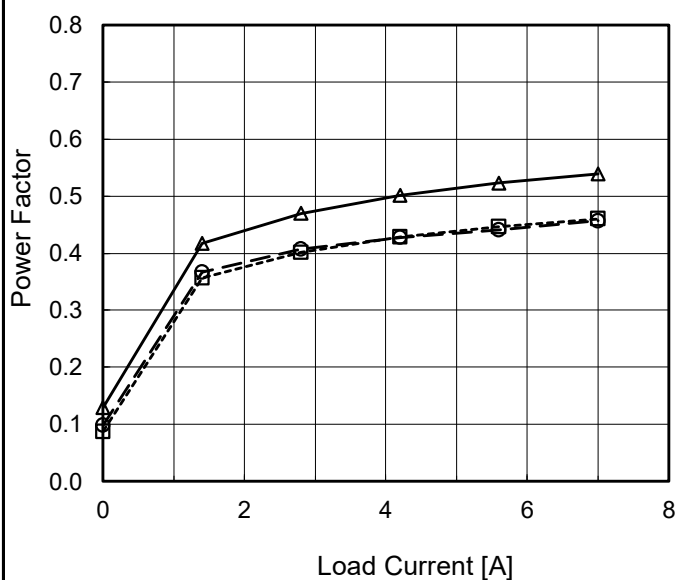
25°C

Testing Circuitry

Figure A

1.Graph

—△— Input Volt. 170V
 ---□--- Input Volt. 277V
 ---⊖--- Input Volt. 305V

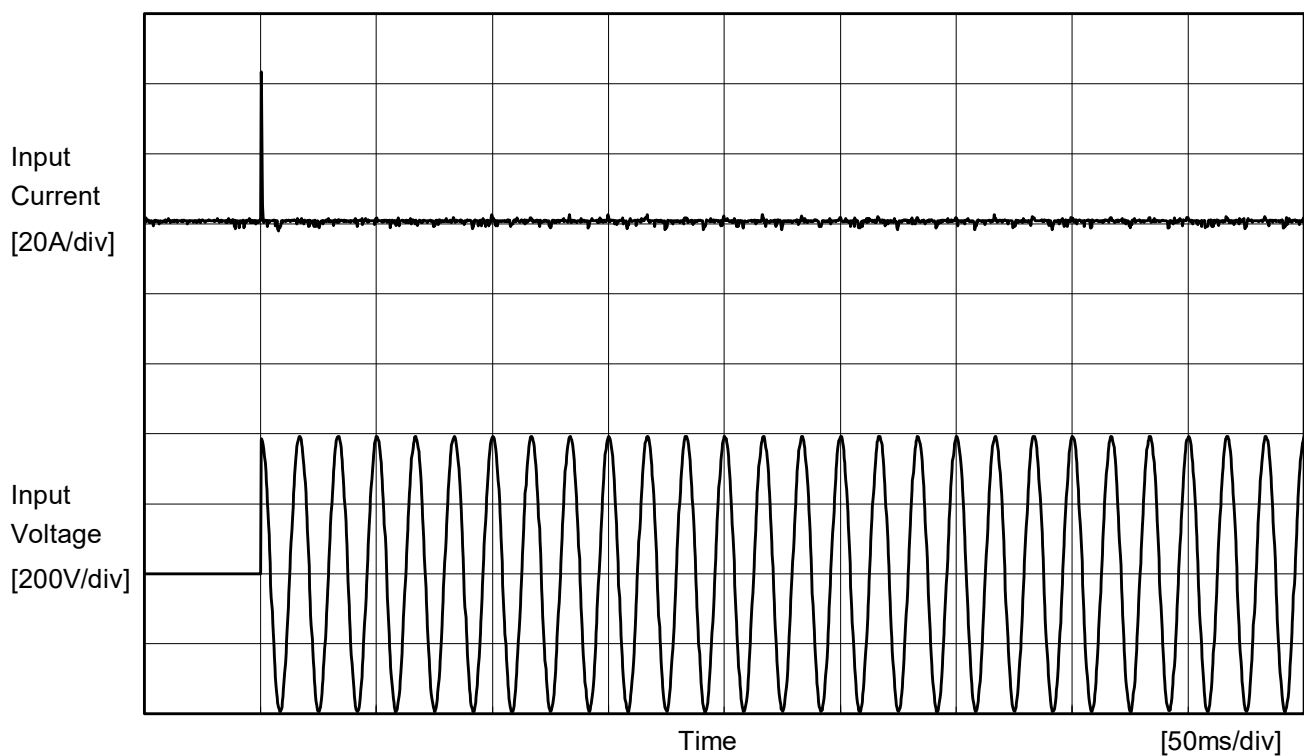


2.Values

Load Current [A]	Power Factor		
	Input Volt. 170[V]	Input Volt. 277[V]	Input Volt. 305[V]
0.0	0.129	0.088	0.098
1.4	0.417	0.357	0.367
2.8	0.470	0.402	0.407
4.2	0.501	0.428	0.428
5.6	0.523	0.447	0.441
7.0	0.539	0.460	0.457
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

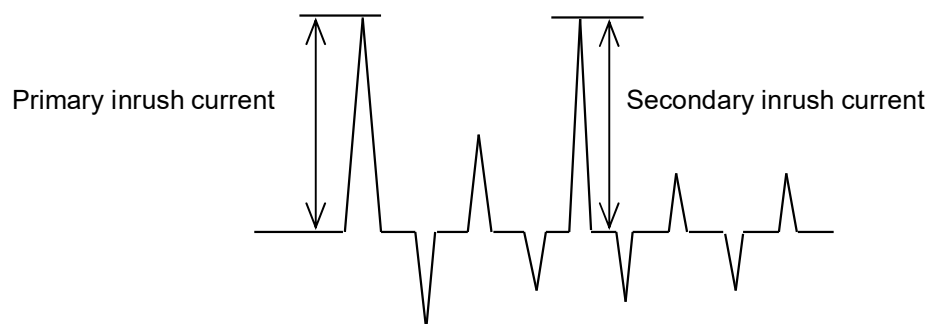
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Model	WBA35B-5	Temperature 25°C Testing Circuitry Figure A	
Item	Inrush Current		
Object			



Input Voltage 277 V
Frequency 60 Hz
Load 100 %

Primary inrush current 43.1 A
Secondary inrush current 2.2 A





		Temperature 25°C Testing Circuitry Figure C
Model	WBA35B-5	
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	0.21	0.36	0.40	Operation
		One of phases	0.40	0.68	0.75	Stand by
IEC62368-1	Figure C-2	Both phases	0.21	0.36	0.40	Operation
		One of phases	0.40	0.67	0.75	Stand by
	Figure C-3	Both phases	0.21	0.36	0.39	Operation
		One of phases	0.40	0.67	0.74	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

WBA35B-5

Item

Line Regulation

Object

+5V7A

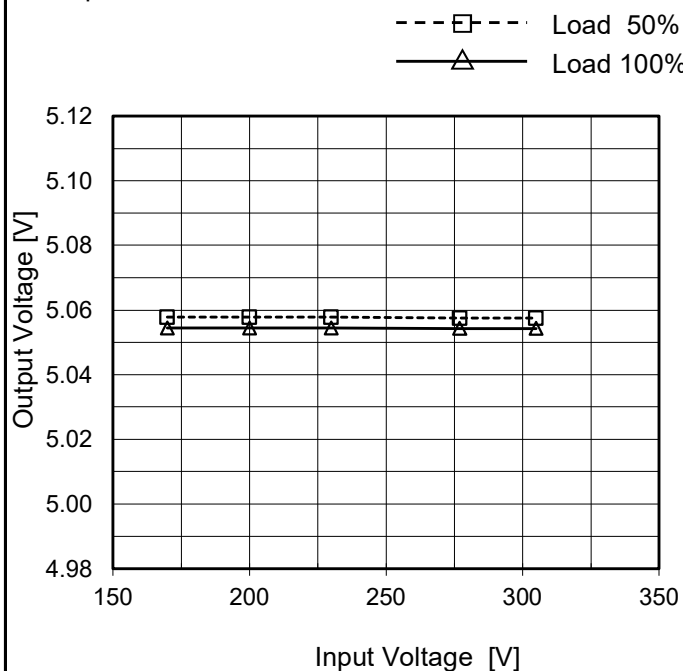
Temperature

25°C

Testing Circuitry

Figure A

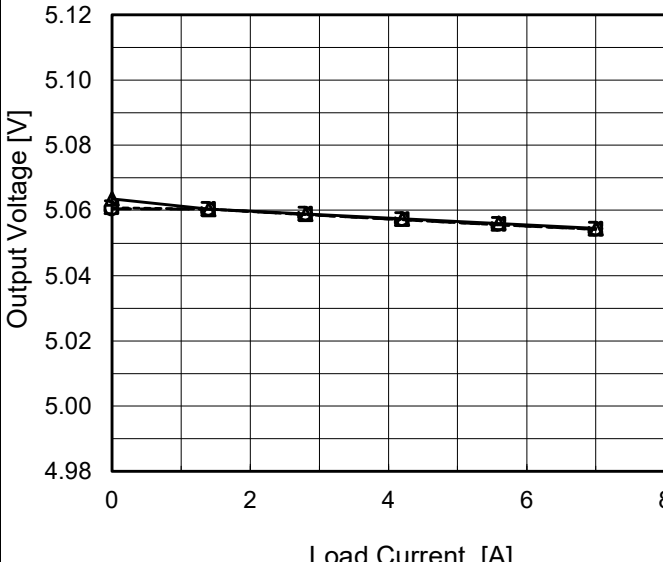
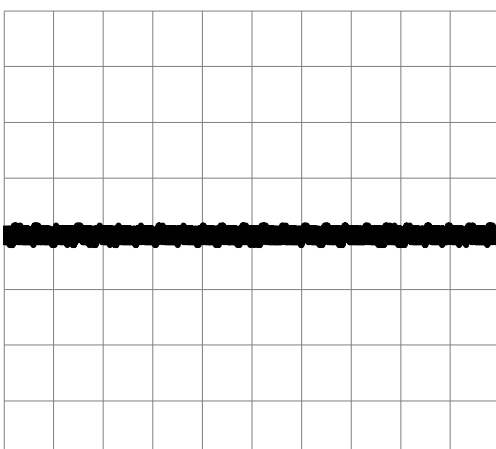
1.Graph



2.Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
170	5.058	5.054
200	5.058	5.055
230	5.058	5.054
277	5.058	5.054
305	5.058	5.054
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	WBA35B-5																																																									
Item	Load Regulation	Temperature	25°C																																																							
Object	+5V7A	Testing Circuitry	Figure A																																																							
1.Graph		2.Values																																																								
<div><div><div>—△—</div><div>Input Volt.</div><div>170V</div></div><div><div>---□---</div><div>Input Volt.</div><div>277V</div></div><div><div>---⊖---</div><div>Input Volt.</div><div>305V</div></div></div>  <div>Output Voltage [V]</div> <div>Load Current [A]</div>		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Output Voltage [V]</th></tr><tr><th>Input Volt. 170[V]</th><th>Input Volt. 277[V]</th><th>Input Volt. 305[V]</th></tr><tr><td>0.0</td><td>5.064</td><td>5.061</td><td>5.061</td></tr><tr><td>1.4</td><td>5.060</td><td>5.060</td><td>5.060</td></tr><tr><td>2.8</td><td>5.059</td><td>5.059</td><td>5.059</td></tr><tr><td>4.2</td><td>5.057</td><td>5.057</td><td>5.057</td></tr><tr><td>5.6</td><td>5.056</td><td>5.056</td><td>5.056</td></tr><tr><td>7.0</td><td>5.055</td><td>5.054</td><td>5.054</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><tr><td>--</td><td>--</td><td>--</td><td>--</td></tr></table>		Load Current [A]	Output Voltage [V]			Input Volt. 170[V]	Input Volt. 277[V]	Input Volt. 305[V]	0.0	5.064	5.061	5.061	1.4	5.060	5.060	5.060	2.8	5.059	5.059	5.059	4.2	5.057	5.057	5.057	5.6	5.056	5.056	5.056	7.0	5.055	5.054	5.054	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
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Item	Ripple-Noise	Temperature	25°C																																																							
Object	+5V7A	Testing Circuitry	Figure B																																																							
1.Graph																																																										
<div><div>Input Voltage</div><div>277V</div><div>Load</div><div>100%</div></div>  <div>20[mV/div]</div> <div>20[ms/div]</div>																																																										

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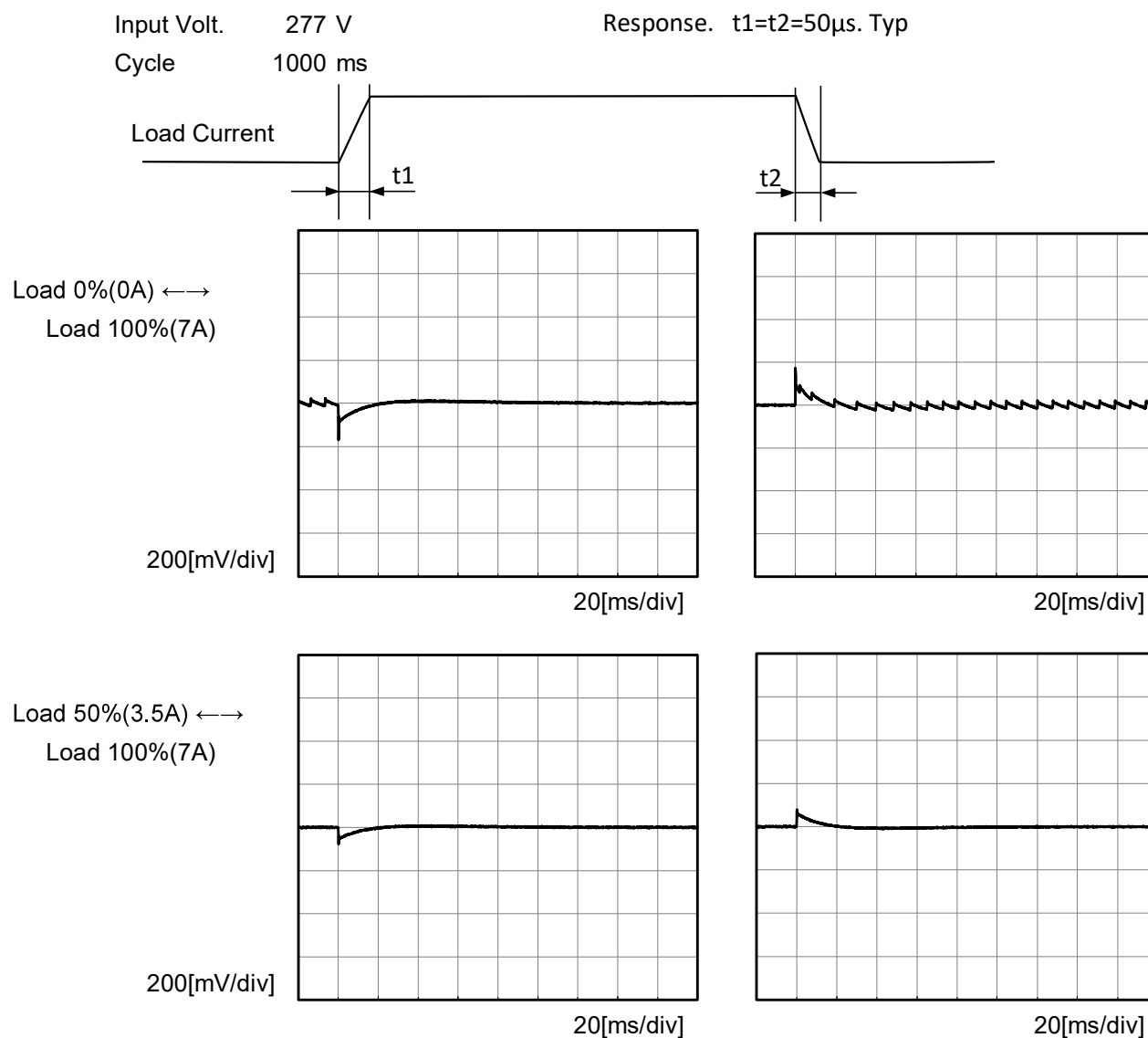
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COSEL

Model	WBA35B-5		
Item	Dynamic Load Response	Temperature	25°C
Object	+5V7A	Testing Circuitry	Figure A

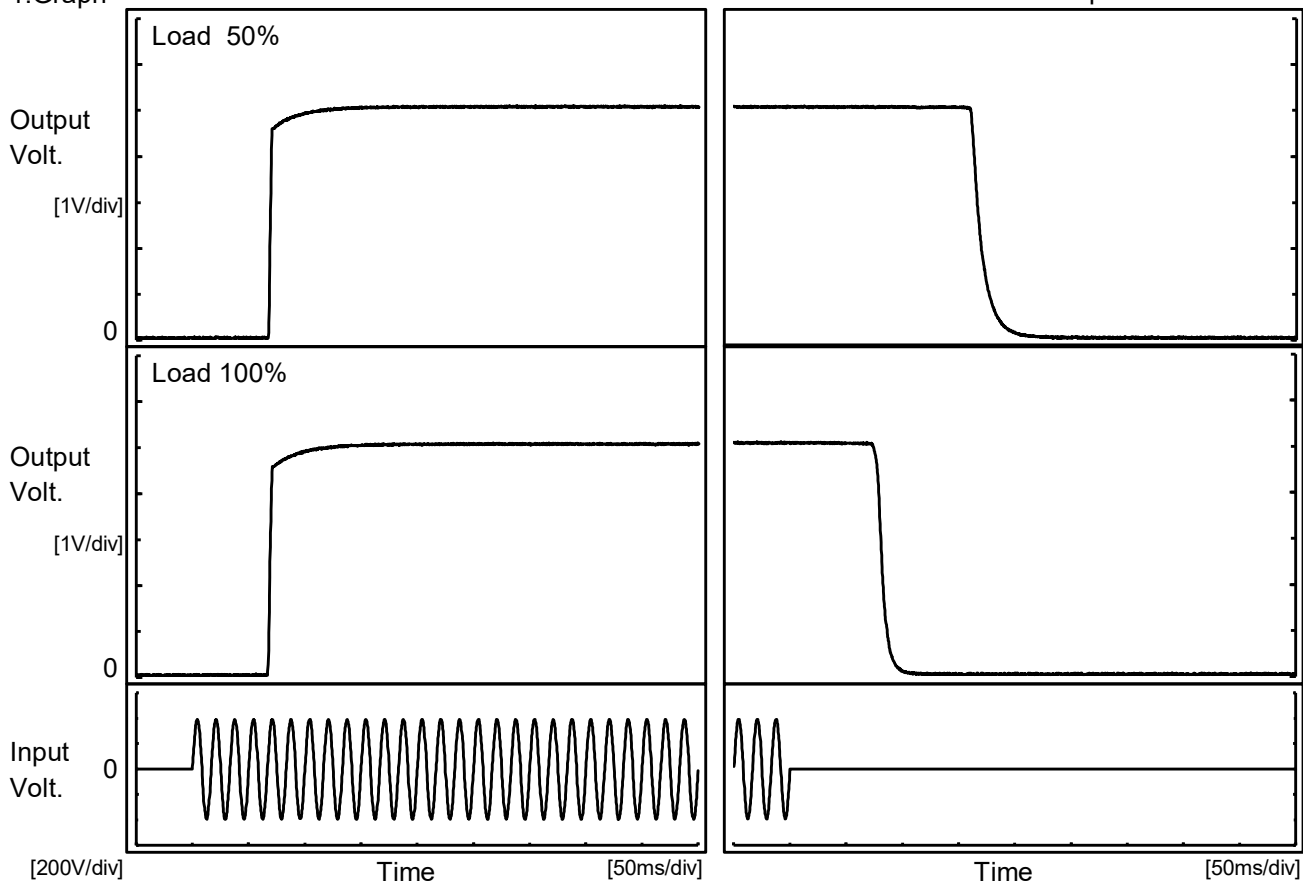


COSEL

Model	WBA35B-5	Temperature 25°C Testing Circuitry Figure A
Item	Rise and Fall Time	
Object	+5V7A	

1.Graph

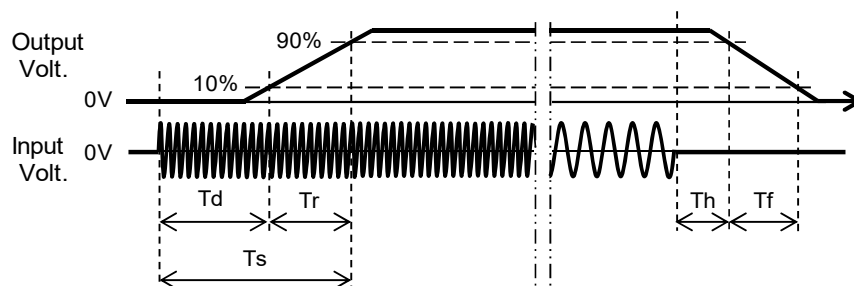
Input Volt. 277 V



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	68.0	2.8	70.8	162.3	21.3
100 %	67.5	3.5	71.0	77.3	12.0



COSEL

Model

WBA35B-5

Item

Hold-Up Time

Object

+5V7A

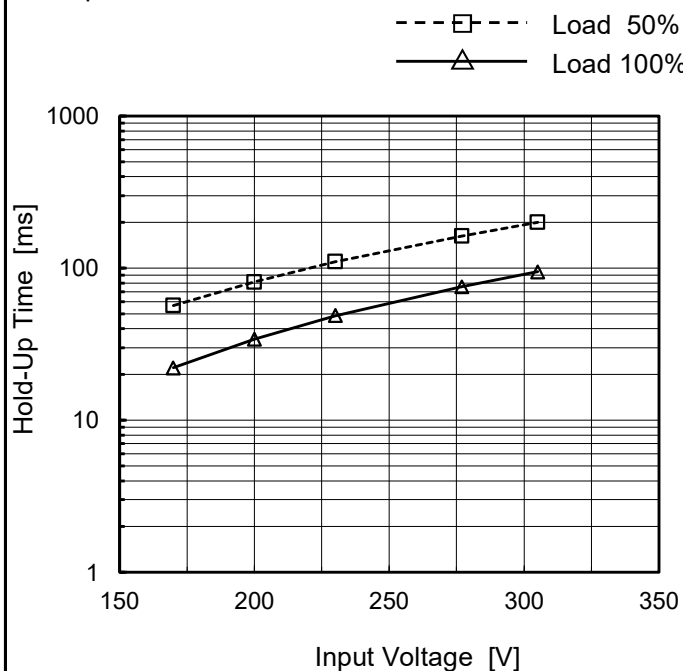
Temperature

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	57	22
200	81	34
230	110	49
277	163	75
305	200	95
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model		WBA35B-5		Temperature 25°C																																																				
Item		Instantaneous Interruption Compensation		Testing Circuitry Figure A																																																				
Object		+5V7A																																																						
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Load Current [A]	Time [ms]																																																							
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COSEL

Model		WBA35B-5																																																																
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COSEL		Testing Circuitry Figure A	
Model	WBA35B-5		
Item	Ambient Temperature Drift		
Object	+5V7A		
1.Values Load 100%			
Ambient Temperature[°C]	Output Voltage [V]		
	Input Volt. 170V	Input Volt. 277V	Input Volt. 305V
-20	5.042	5.042	5.042
25	5.055	5.054	5.054
50	5.056	5.056	5.056
Item	Minimum Input Voltage for Regulated Output Voltage	Testing Circuitry Figure A	
Object	+5V7A		
1.Values			
Ambient Temperature[°C]	Input Voltage [V]		
	Load 50%	Load 100%	
-20	44	97	
25	42	93	
40	42	91	
Item	Overvoltage Protection	Testing Circuitry Figure A	
Object	+5V7A		
1.Values Load 0%			
Ambient Temperature[°C]	Operating Point [V]		
	Input Volt. 170V	Input Volt. 305V	
-20	5.93	5.92	
25	6.18	6.18	
40	6.26	6.32	

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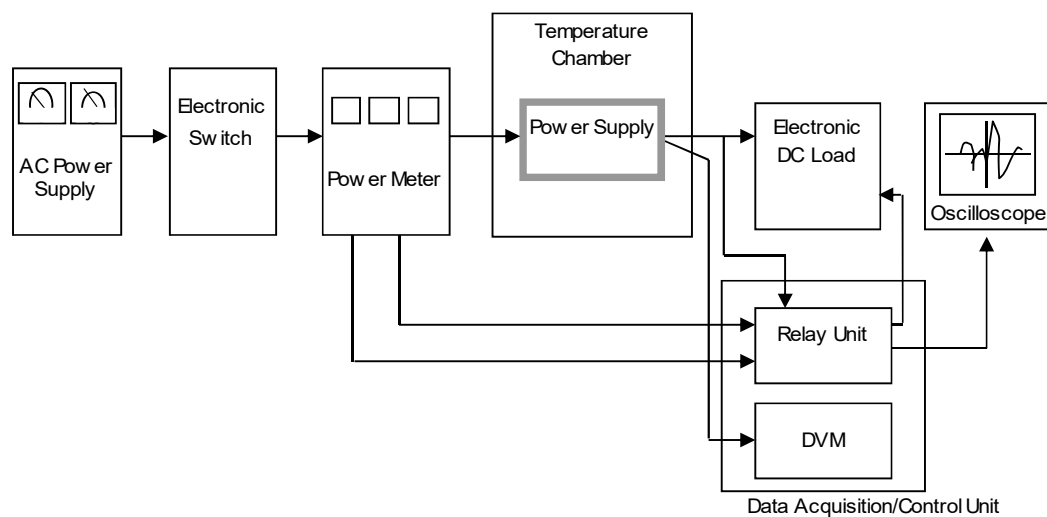


Figure A

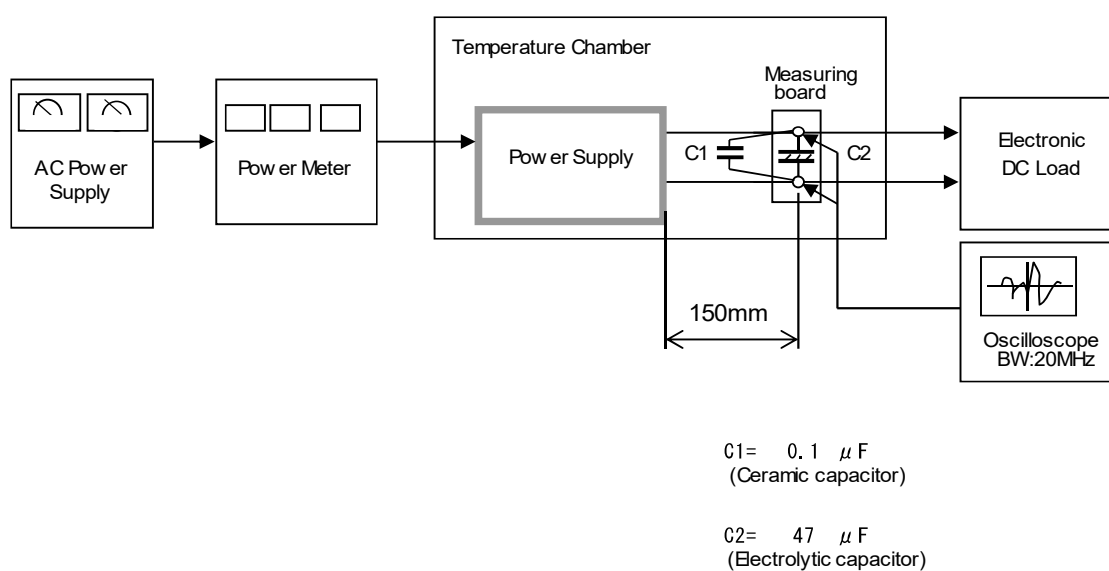


Figure B

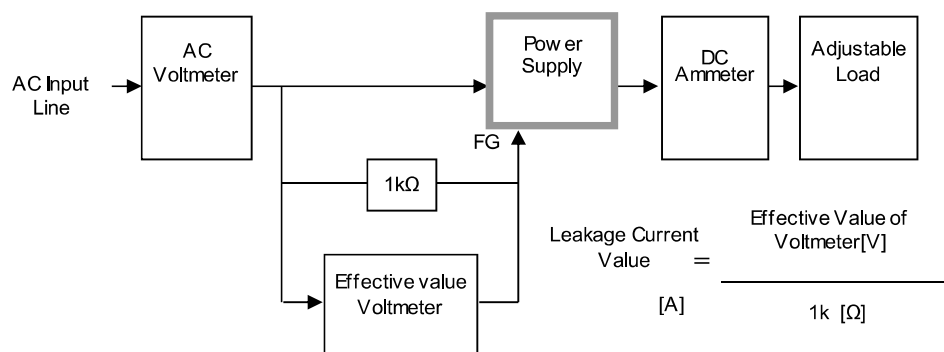


Figure C-1 (DEN-AN)

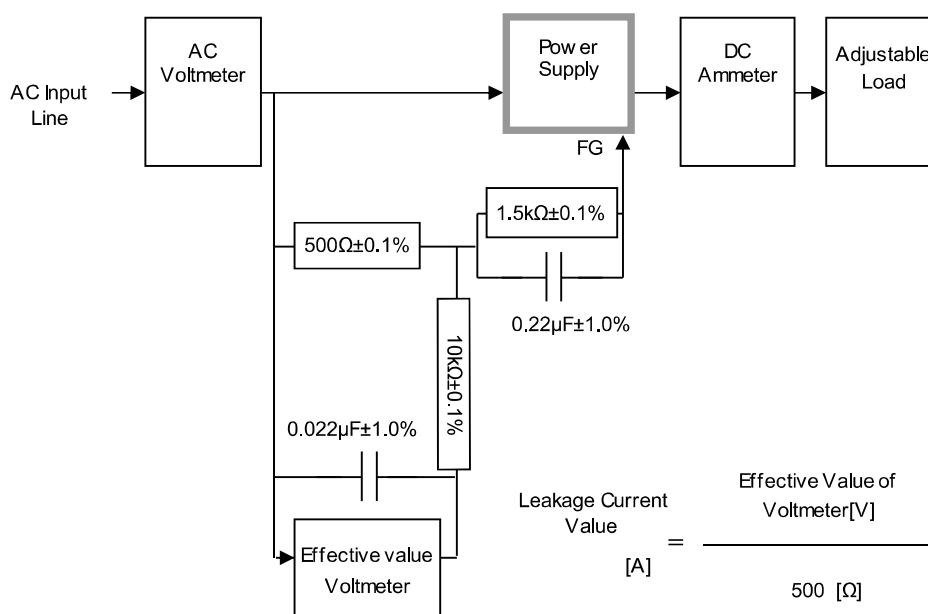


Figure C-2 (IEC62368-1 refer to IEC60990 Fig.4)

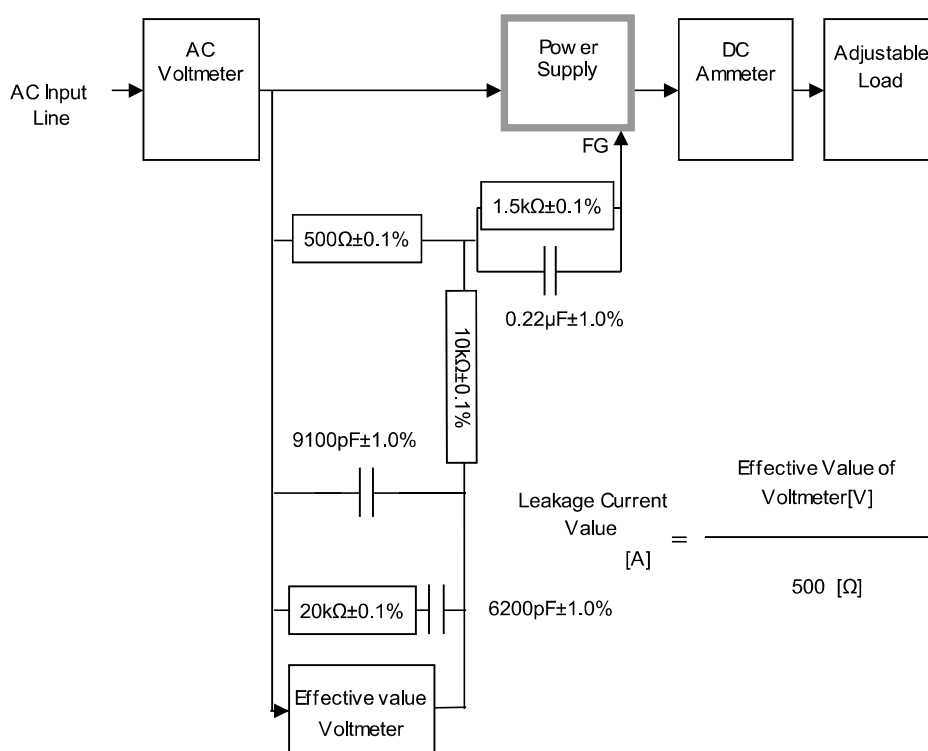


Figure C-3 (IEC62368-1 refer to IEC60990 Fig.5)