Reference

COSEL

TEST DATA OF WBA350B-48

Regulated DC Power Supply
July 7, 2021

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COSEL CO.,LTD.

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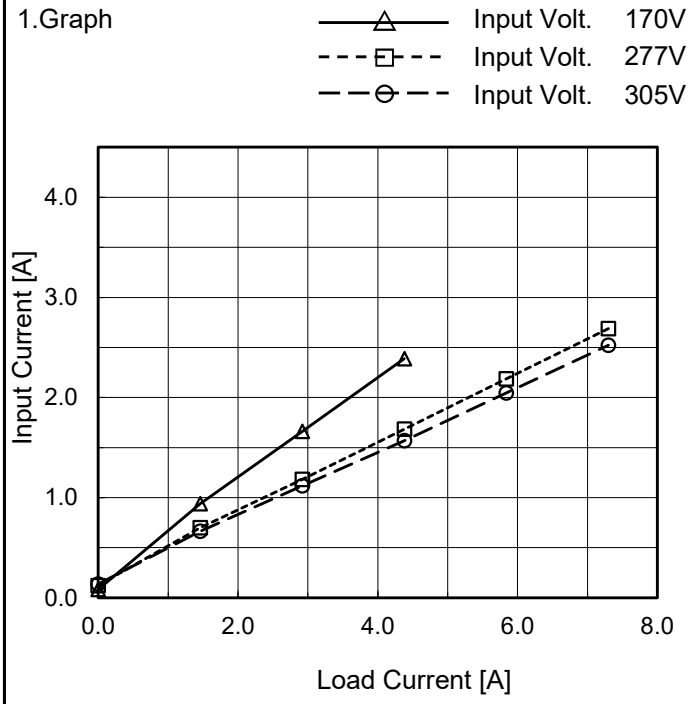
Model	WBA350B-48
Item	Input Current (by Load Current)
Object	――――――

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	0.082	0.123	0.138
1.46	0.940	0.699	0.664
2.92	1.661	1.182	1.118
4.38	2.388	1.686	1.571
5.84	-	2.185	2.046
7.30	-	2.687	2.521
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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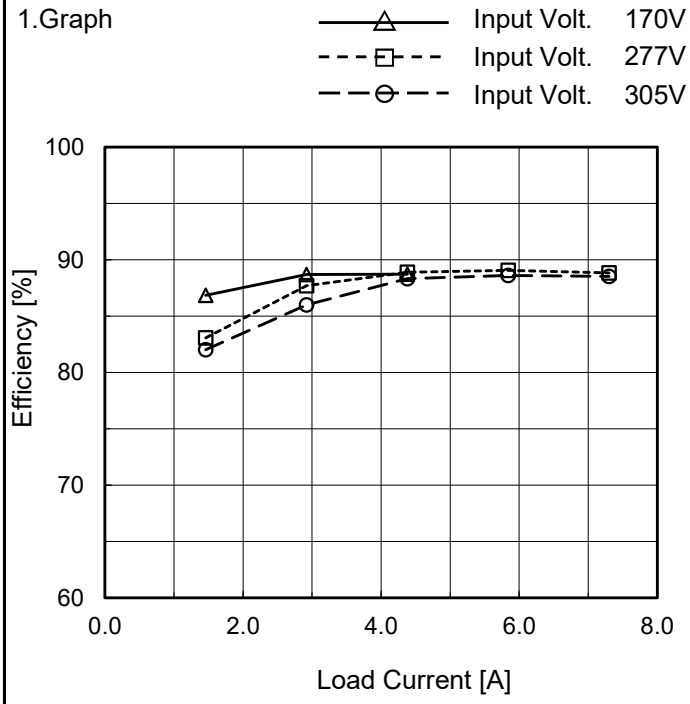
Model	WBA350B-48
Item	Efficiency (by Load Current)
Object	————————

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	-	-	-
1.46	86.8	83.1	82.0
2.92	88.7	87.7	86.0
4.38	88.7	88.9	88.3
5.84	-	89.1	88.6
7.30	-	88.9	88.5
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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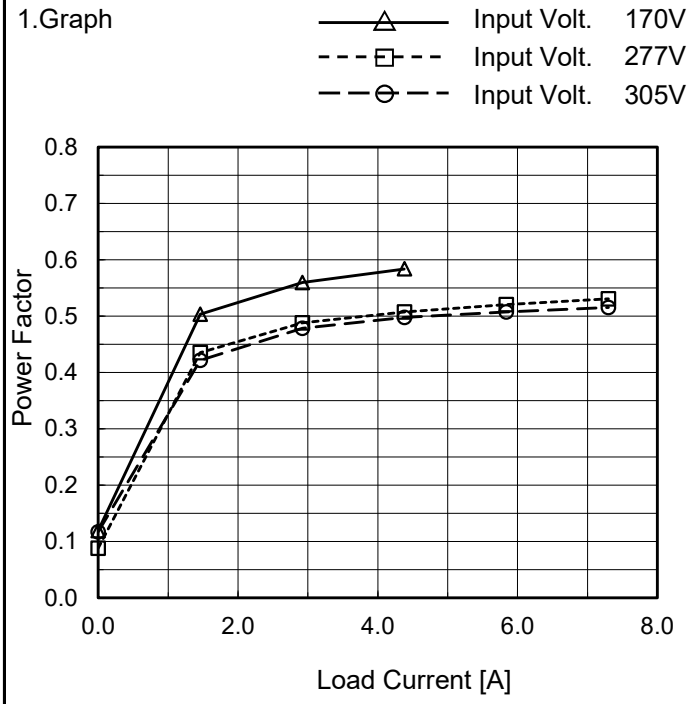
Model	WBA350B-48
Item	Power Factor (by Load Current)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



2.Values

Load Current [A]	Power Factor		
	Input Volt. 170[V]	Input Volt. 277[V]	Input Volt. 305[V]
0.00	0.120	0.088	0.117
1.46	0.504	0.435	0.422
2.92	0.560	0.488	0.478
4.38	0.584	0.507	0.498
5.84	-	0.521	0.507
7.30	-	0.531	0.515
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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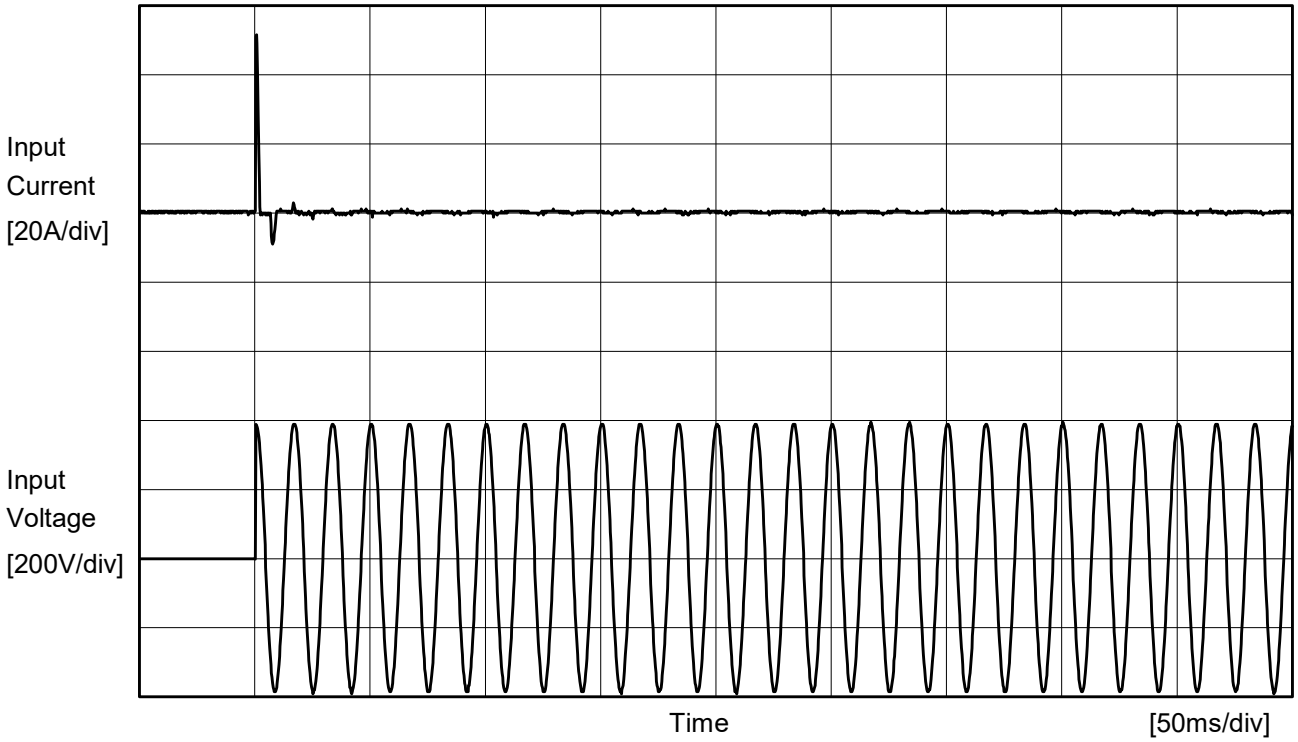
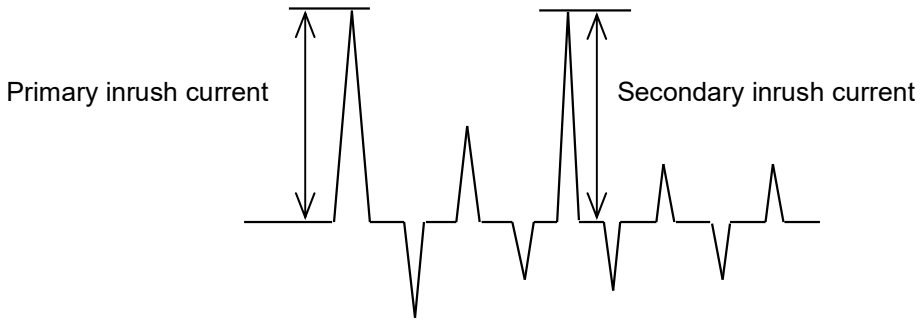
Model	WBA350B-48	
Item	Inrush Current	Temperature 25°C Testing Circuitry Figure A
Object	————————	



Input Voltage	277 V
Frequency	60 Hz
Load	100 %
Primary inrush current	51.5 A



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Model	WBA350B-48	
Item	Leakage Current	Temperature 25°C Testing Circuitry Figure C
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	0.18	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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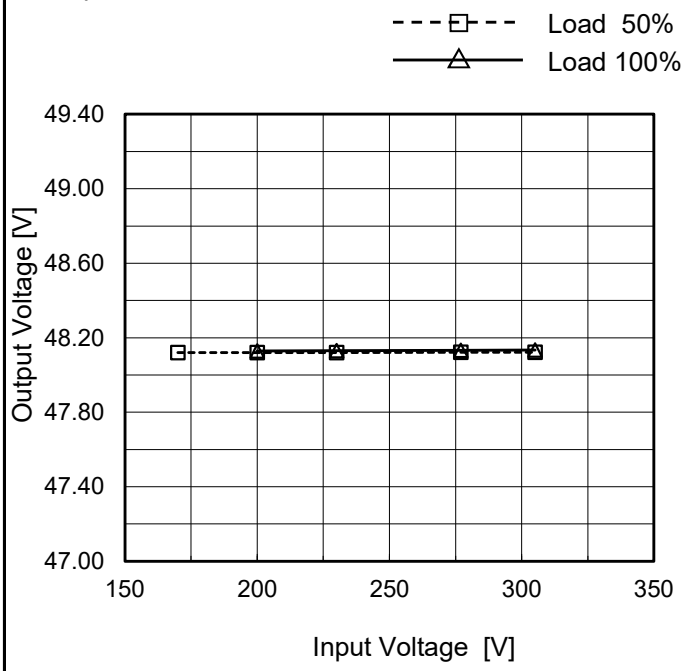
Model	WBA350B-48
Item	Line Regulation
Object	+48V7.3A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



2.Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
170	48.120	-
200	48.120	48.129
230	48.120	48.131
277	48.122	48.133
305	48.122	48.134
--	-	-
--	-	-
--	-	-
--	-	-

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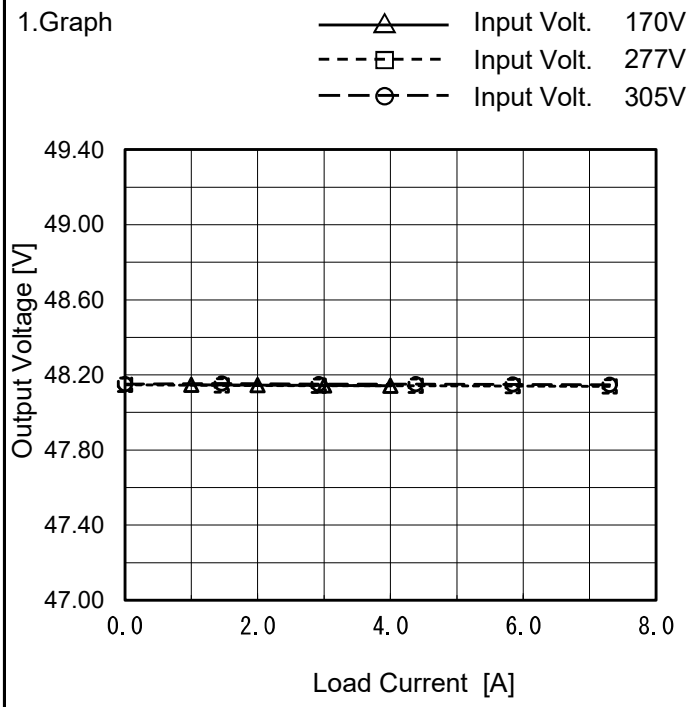
Model	WBA350B-48
Item	Load Regulation
Object	+48V7.3A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



2.Values

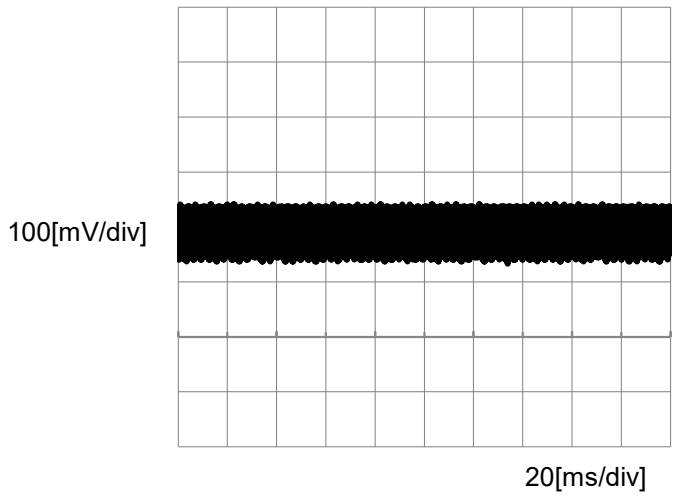
Load Current [A]	Output Voltage [V]		
	Input Volt. 170[V]	Input Volt. 277[V]	Input Volt. 305[V]
0.00	48.147	48.148	48.151
1.46	48.145	48.144	48.153
2.92	48.144	48.142	48.151
4.38	48.142	48.142	48.151
5.84	-	48.140	48.149
7.30	-	48.138	48.147
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

Item	Ripple-Noise
Object	+48V7.3A

Temperature 25°C
Testing Circuitry Figure B

1.Graph

Input Voltage 277V
Load 100%



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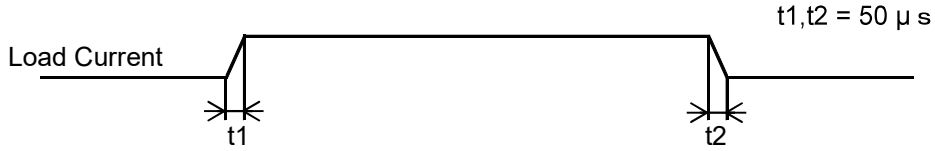
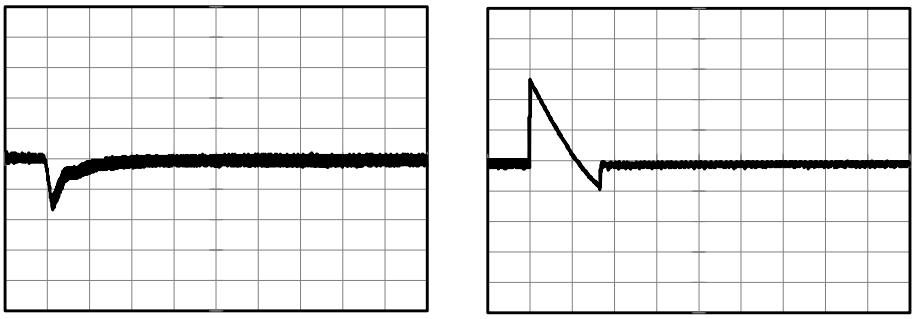
Model	WBA350B-48		
Item	Dynamic Load Response	Temperature	25°C
		Testing Circuitry	Figure A
Object	+48V7.3A		

Input Volt. 277 V
Cycle 2000 ms



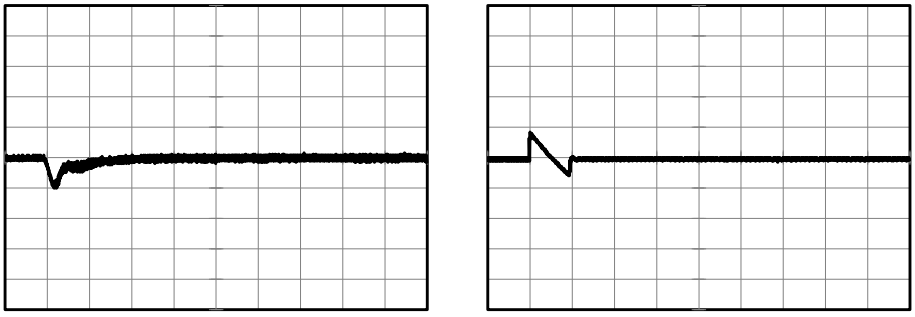
Min.Load (0A)←→
Load 100% (7.3A)



500 mV/div

400 us/div 20 ms/div

Min.Load (0A)←→
Load 50% (3.65A)



500 mV/div

400 us/div 20 ms/div

-

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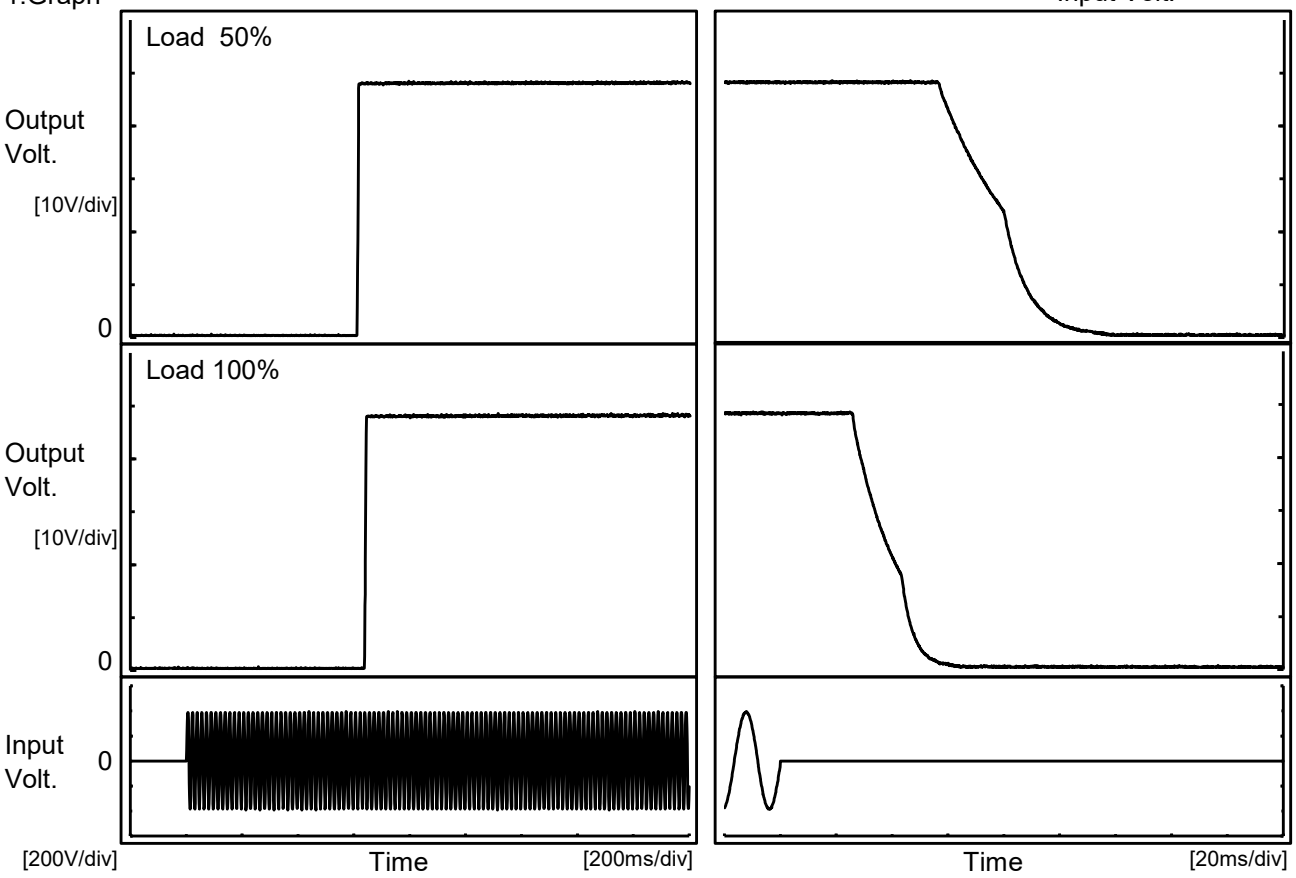
Model	WBA350B-48	
Item	Rise and Fall Time	Temperature 25°C Testing Circuitry Figure A
Object	+48V7.3A	

1.Graph

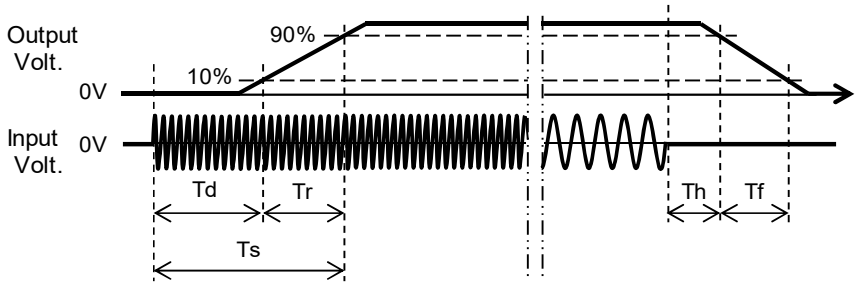
Input Volt. 277 V



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	611.0	5.0	616.0	59.6	33.9
100 %	638.0	5.0	643.0	27.2	21.7



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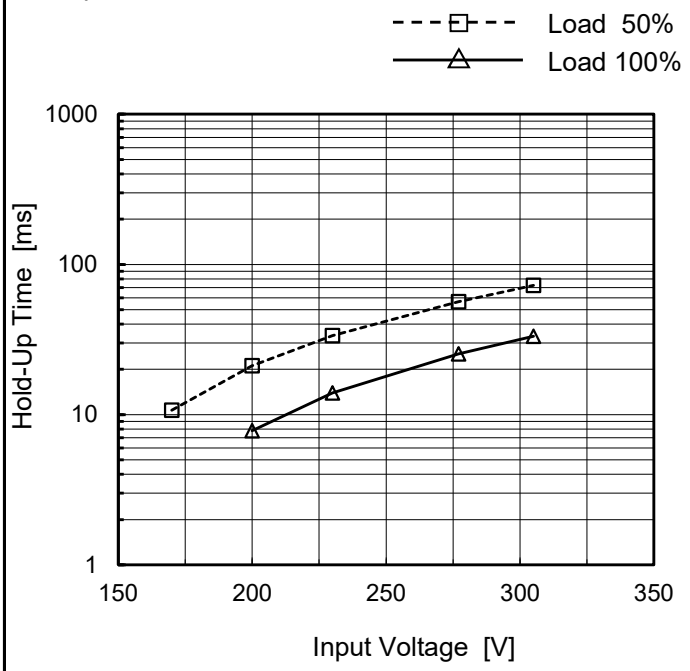
COSEL

Model	WBA350B-48
Item	Hold-Up Time
Object	+48V7.3A

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

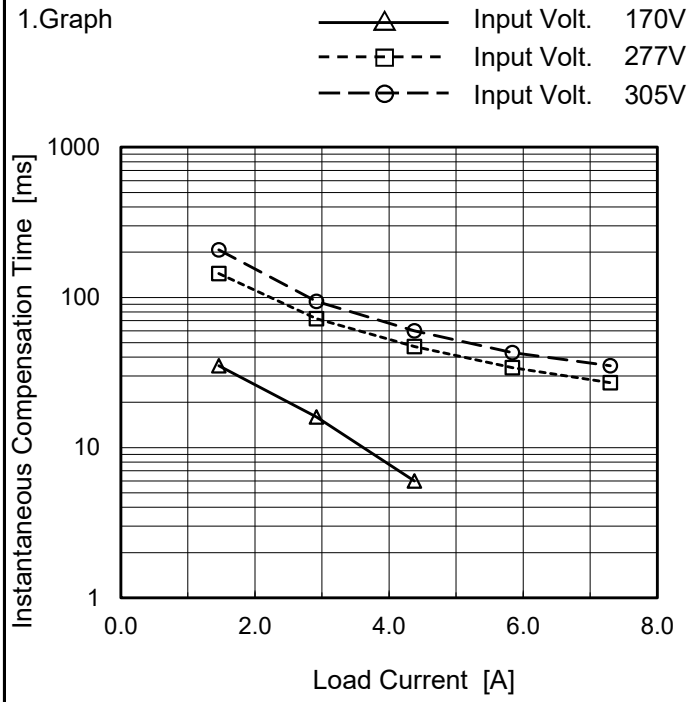
Input Voltage [V]	Hold-Up Time [ms]	
	Load 50%	Load 100%
170	11	-
200	21	8
230	34	14
277	57	25
305	73	33
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	WBA350B-48
Item	Instantaneous Interruption Compensation
Object	+48V7.3A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



2.Values

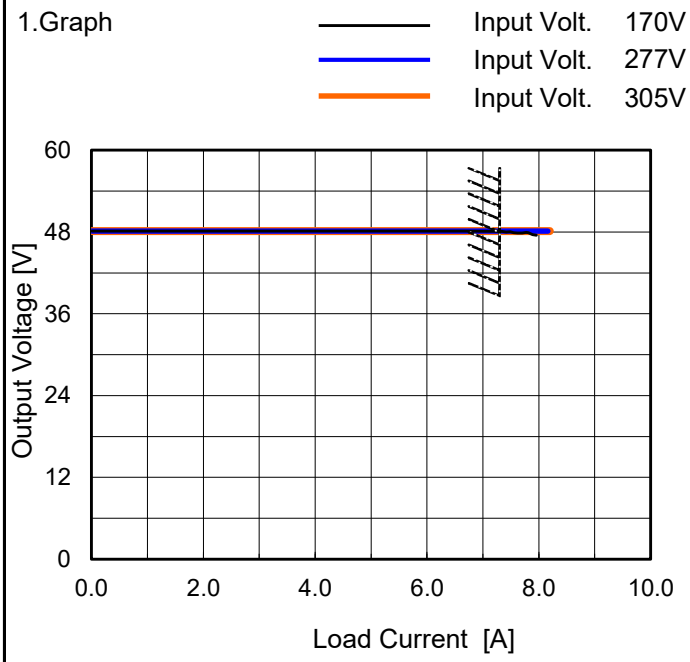
Load Current [A]	Time [ms]		
	Input Volt. 170[V]	Input Volt. 277[V]	Input Volt. 305[V]
0.00	-	-	-
1.46	35	144	207
2.92	16	72	94
4.38	6	47	60
5.84	-	34	43
7.30	-	27	35
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	WBA350B-48
Item	Overcurrent Protection
Object	+48V7.3A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

Output Voltage [V]	Load Current [A]		
	Input Volt. 170[V]	Input Volt. 277[V]	Input Volt. 305[V]
48	7.96	8.16	8.20
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	WBA350B-48
Item	Ambient Temperature Drift
Object	+48V7.3A

Testing Circuitry Figure A

1.Values

Load 100%

Ambient Temperature[℃]	Output Voltage [V]		
	Input Volt. 170V	Input Volt. 277V	Input Volt. 305V
-20	47.690	47.890	47.987
25	48.083	48.117	48.165
50	48.160	48.183	48.218

Item	Minimum Input Voltage for Regulated Output Voltage
Object	+48V7.3A

Testing Circuitry Figure A

1.Values

Ambient Temperature[℃]	Input Voltage [V]	
	Load 50%	Load 100%
-20	131	156
25	129	154
50	127	153

Item	Overvoltage Protection
Object	+48V7.3A

Testing Circuitry Figure A

1.Values

Load 0%

Ambient Temperature[℃]	Operating Point [V]	
	Input Volt. 170V	Input Volt. 305V
-20	56.87	56.67
25	58.79	58.74
50	59.99	59.95

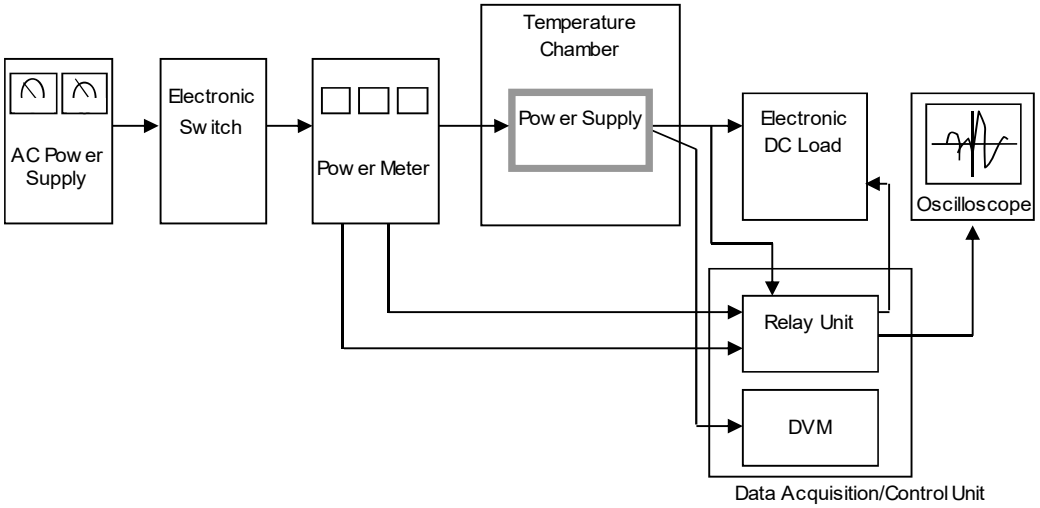


Figure A

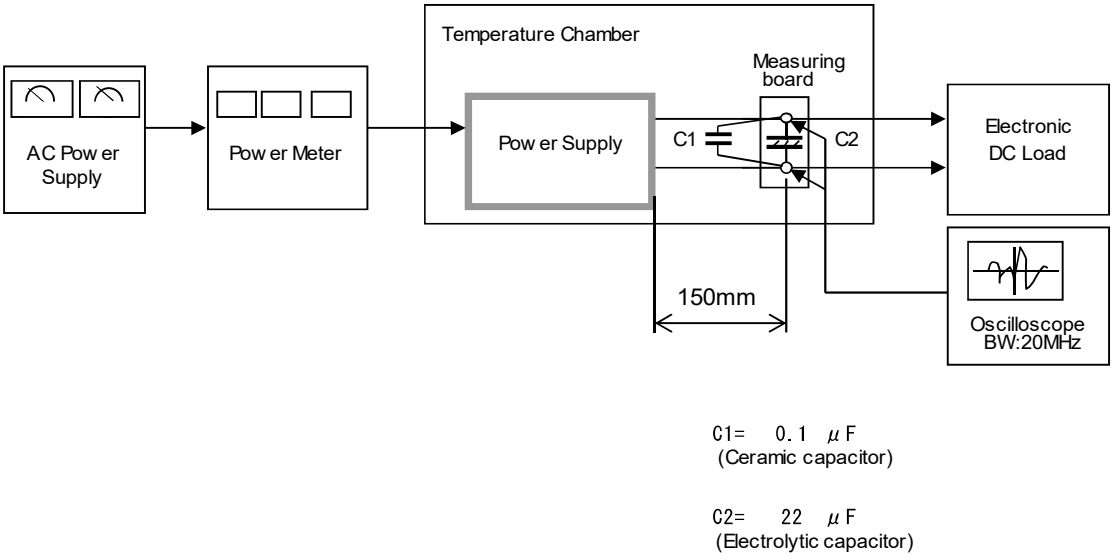


Figure B

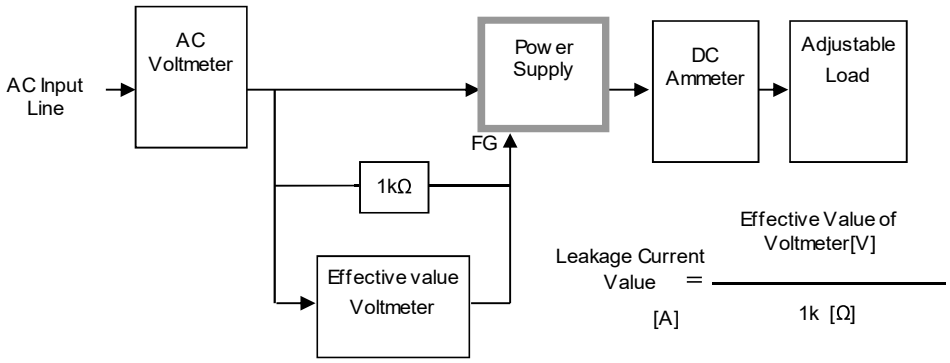


Figure C-1 (DEN-AN)

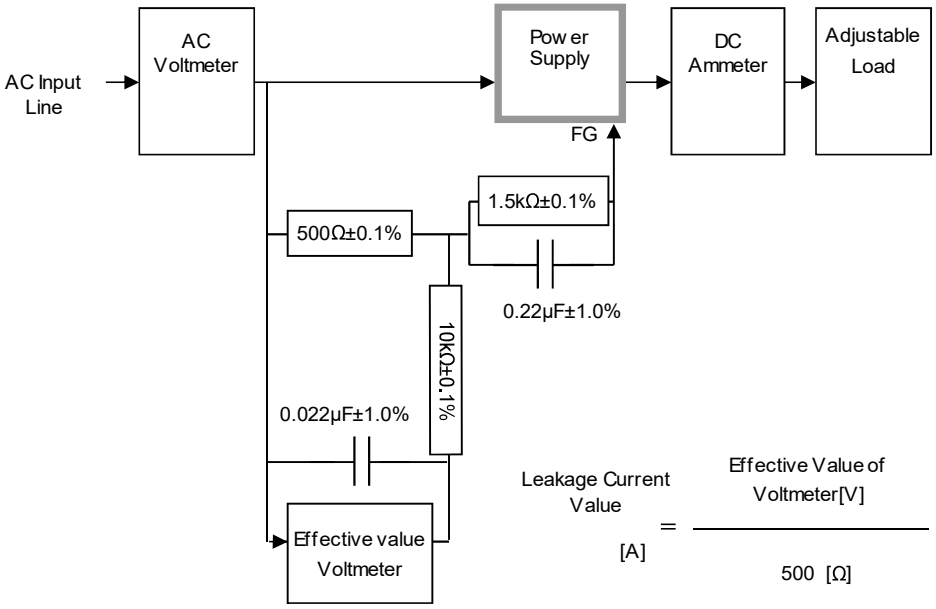


Figure C-2 (IEC62368-1 refer to IEC60990 Fig.4)

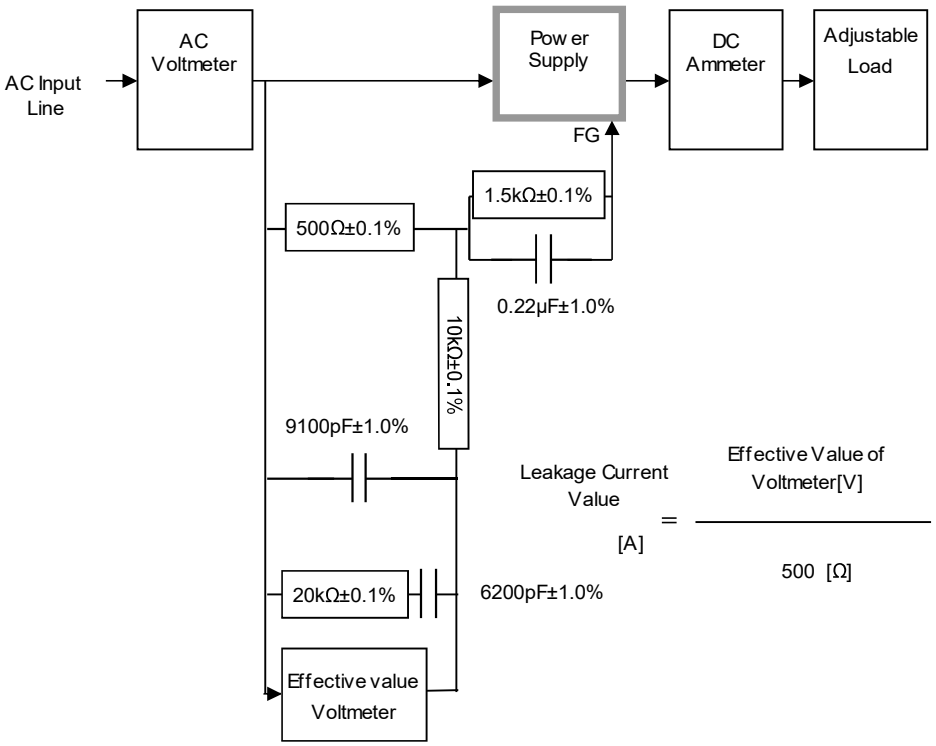


Figure C-3 (IEC62368-1 refer to IEC60990 Fig.5)