For Reference

TEST DATA OF UMA120F-12-Y

Regulated DC Power Supply
November 6, 2024

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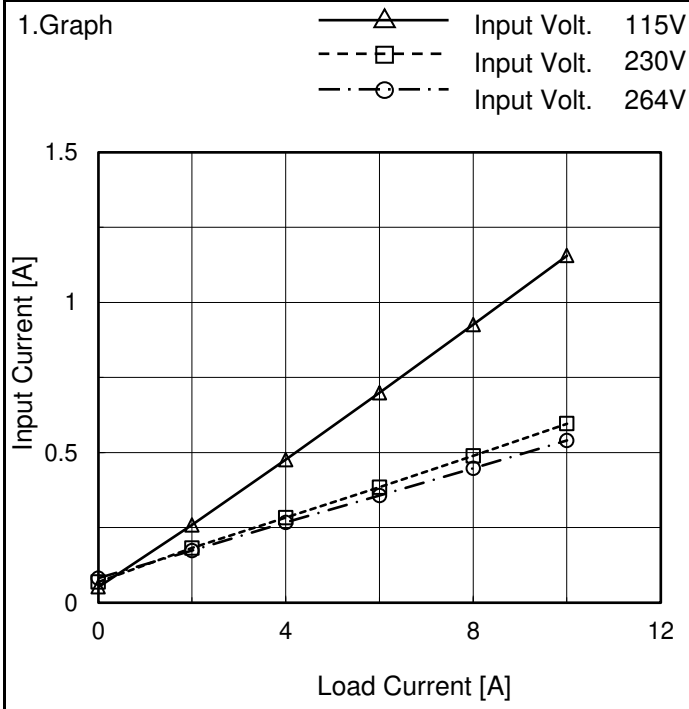
Model	UMA120F-12-Y
Item	Input Current (by Load Current)
Object	+12V10A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



2.Values

Load Current [A]	Input Current [A]		
	Input Volt. 115[V]	Input Volt. 230[V]	Input Volt. 264[V]
0	0.053	0.069	0.082
2	0.259	0.182	0.173
4	0.476	0.283	0.267
6	0.699	0.385	0.357
8	0.926	0.489	0.448
10	1.156	0.596	0.540
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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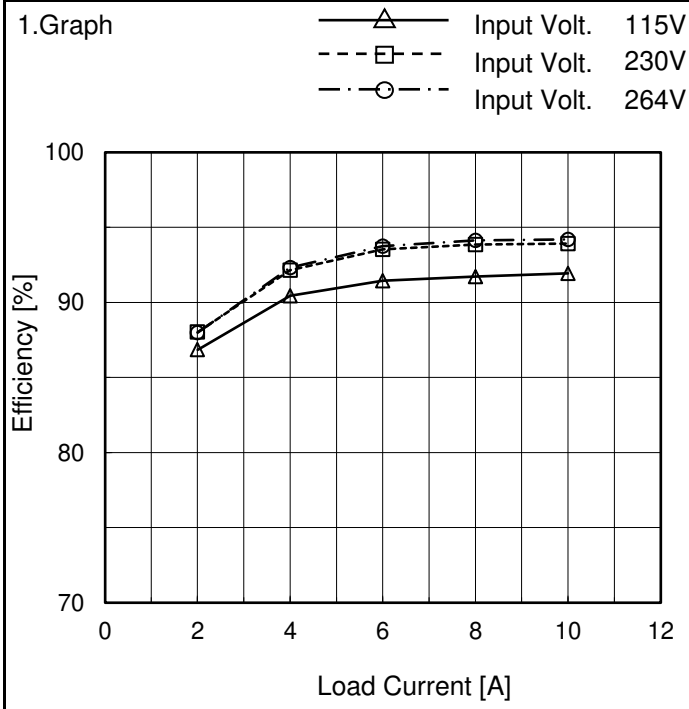
Model	UMA120F-12-Y
Item	Efficiency (by Load Current)
Object	+12V10A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



2.Values

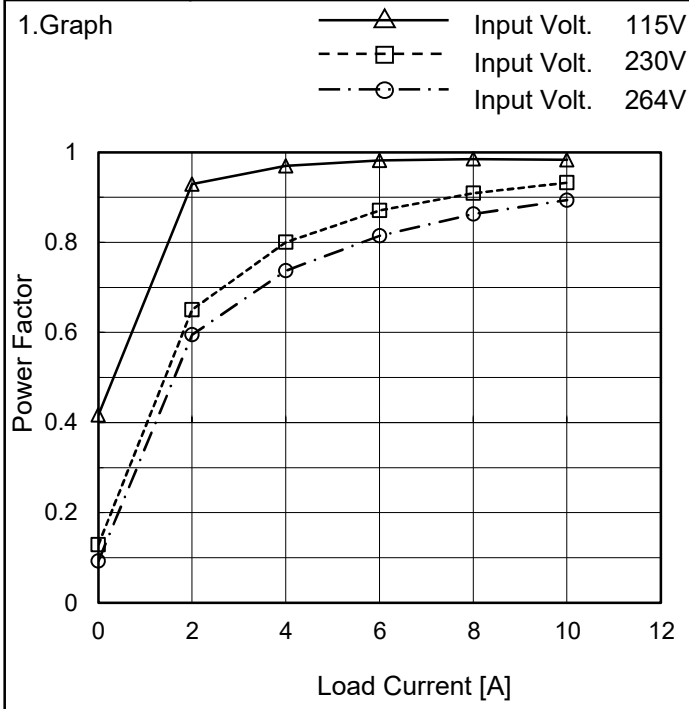
Load Current [A]	Efficiency [%]		
	Input Volt. 115[V]	Input Volt. 230[V]	Input Volt. 264[V]
0	-	-	-
2	86.8	88.0	88.0
4	90.4	92.2	92.3
6	91.4	93.5	93.7
8	91.7	93.9	94.1
10	91.9	93.9	94.2
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	UMA120F-12-Y
Item	Power Factor (by Load Current)
Object	+12V10A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



2.Values

Load Current [A]	Power Factor		
	Input Volt. 115[V]	Input Volt. 230[V]	Input Volt. 264[V]
0	0.417	0.129	0.093
2	0.929	0.650	0.596
4	0.970	0.801	0.737
6	0.982	0.871	0.815
8	0.985	0.910	0.863
10	0.983	0.933	0.894
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
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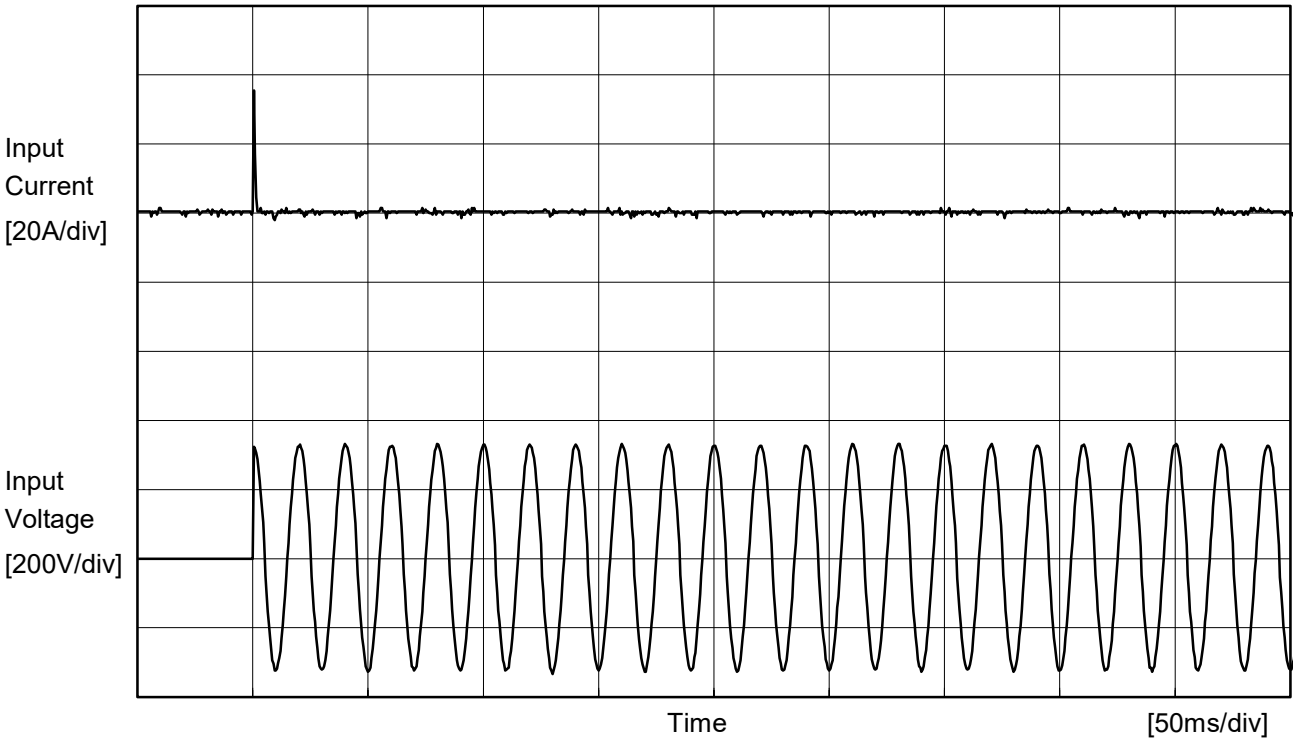
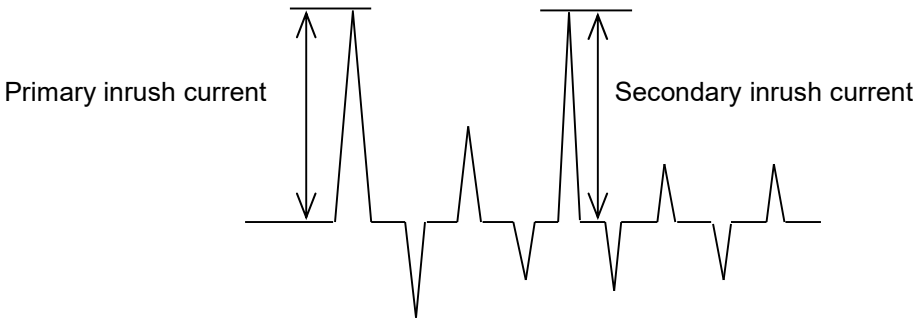
Model	UMA120F-12-Y
Item	Inrush Current
Object	+12V10A

Temperature 25°C
Testing Circuitry Figure A



Input Voltage	230 V
Frequency	50 Hz
Load	100 %
Primary inrush current	35.5 A
Secondary inrush current	4.5 A



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Model	UMA120F-12-Y
Item	Leakage Current
Object	+12V10A

Temperature 25°C
Testing Circuitry Figure C

1.Results

[mA]

Standards	Testing Circuitry	Measuring Method	Input Volt.			Note
			115 [V]	230 [V]	264 [V]	
IEC60601-1	Figure C-1	Both phases	0.05	0.10	0.12	Operation
		One of phases	0.09	0.20	0.23	Stand by
IEC62368-1	Figure C-2	Both phases	0.05	0.10	0.12	Operation
		One of phases	0.09	0.20	0.23	Stand by
	Figure C-3	Both phases	0.05	0.10	0.12	Operation
		One of phases	0.09	0.20	0.23	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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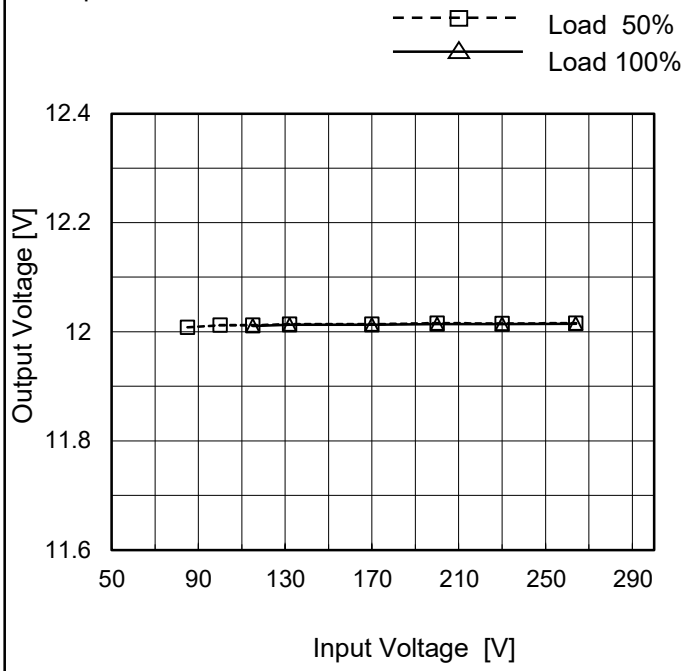
Model	UMA120F-12-Y
Item	Line Regulation
Object	+12V10A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



2.Values

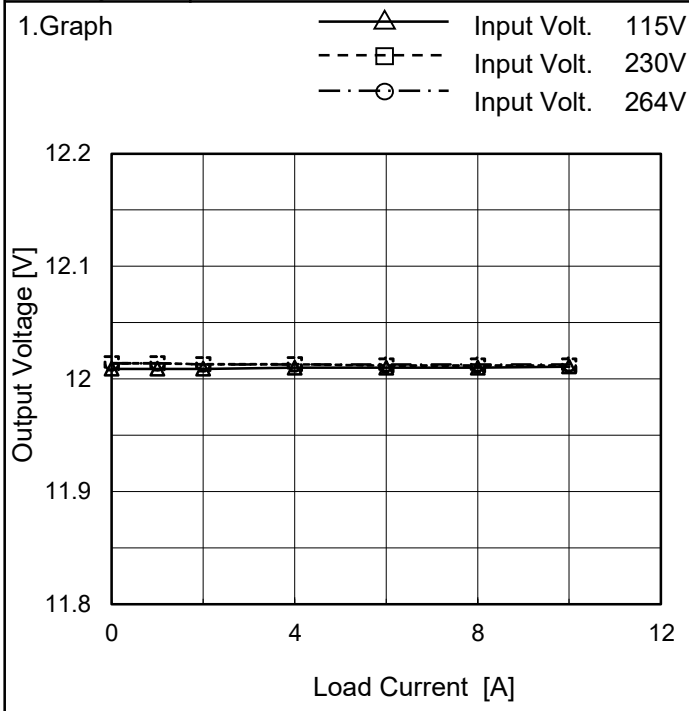
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
85	12.008	-
100	12.012	-
115	12.012	12.011
132	12.014	12.013
170	12.014	12.013
200	12.016	12.014
230	12.015	12.014
264	12.016	12.015
--	-	-

COSEL

Model	UMA120F-12-Y
Item	Load Regulation
Object	+12V10A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



2.Values

Load Current [A]	Output Voltage [V]		
	Input Volt. 115[V]	Input Volt. 230[V]	Input Volt. 264[V]
0	12.009	12.014	12.014
1	12.009	12.014	12.014
2	12.009	12.013	12.013
4	12.010	12.013	12.013
6	12.010	12.012	12.013
8	12.010	12.012	12.013
10	12.011	12.012	12.013
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--	--	--	--
--	--	--	--
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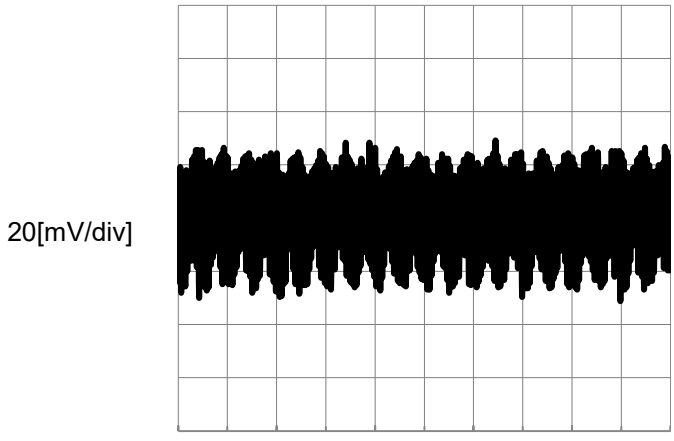
Item	Ripple-Noise
Object	+12V10A

Temperature 25°C
Testing Circuitry Figure B

1.Graph

Input Voltage 230V
Load 100%



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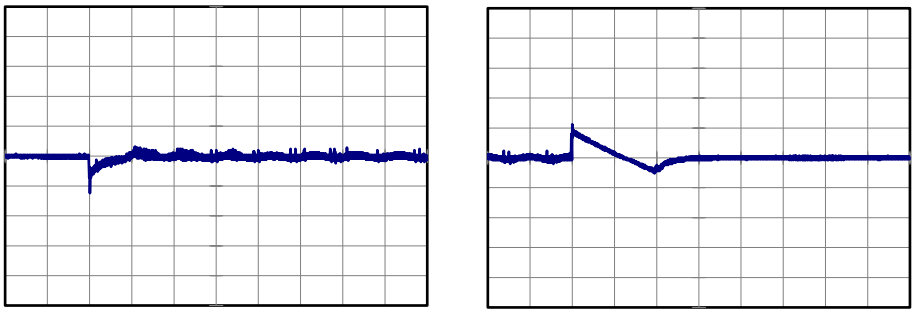
Model	UMA120F-12-Y	
Item	Dynamic Load Response	Temperature 25°C Testing Circuitry Figure A
Object	+12V10A	

Input Volt. 230 V
Cycle 1000 ms

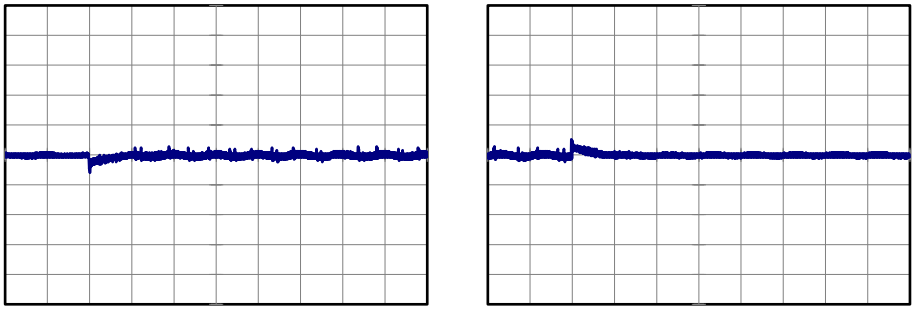
Min.Load (0A)←→
Load 100% (10A)



200 mV/div

10 ms/div 10 ms/div

Load 50% (5A)←→
Load 100% (10A)



200 mV/div

10 ms/div 10 ms/div

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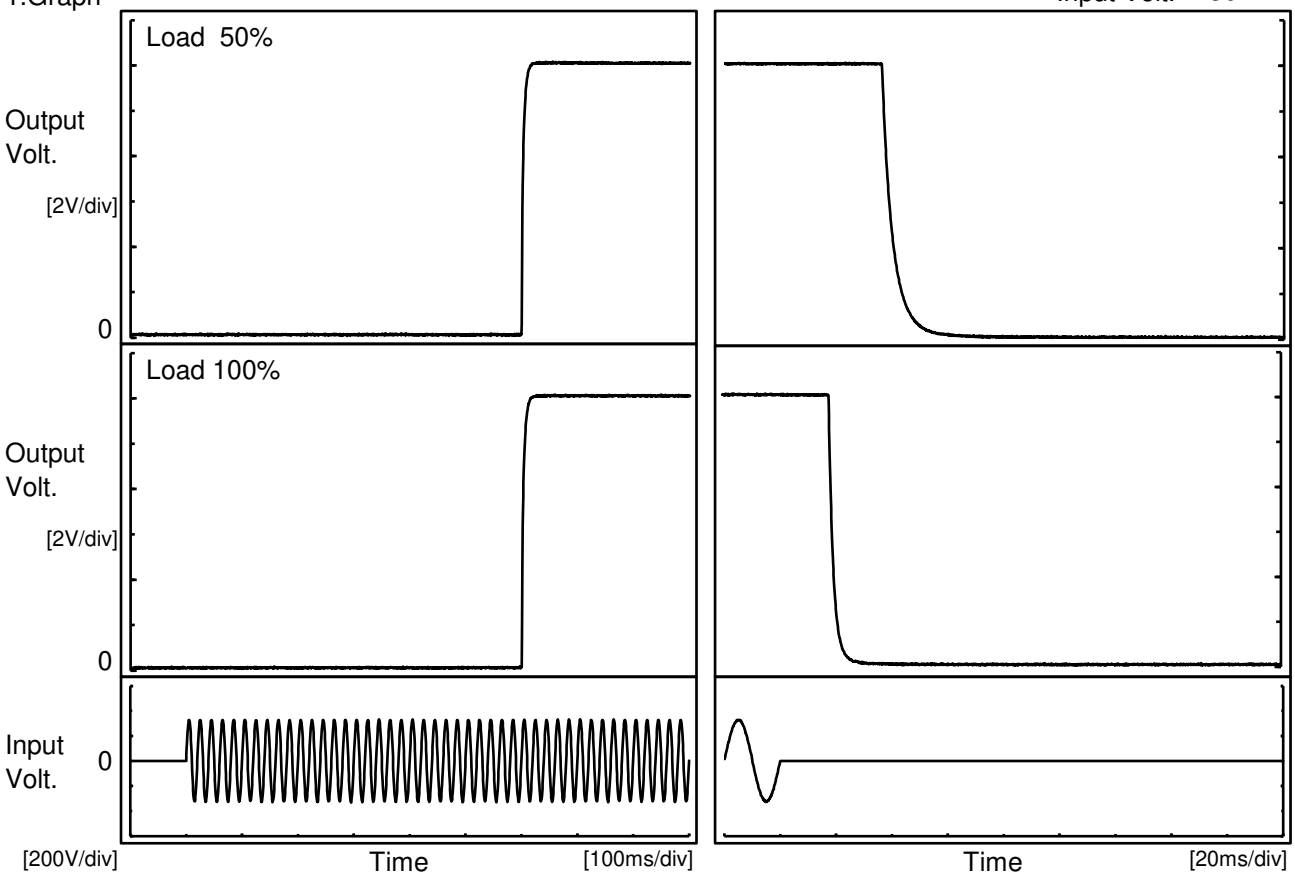
Model	UMA120F-12-Y
Item	Rise and Fall Time
Object	+12V10A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

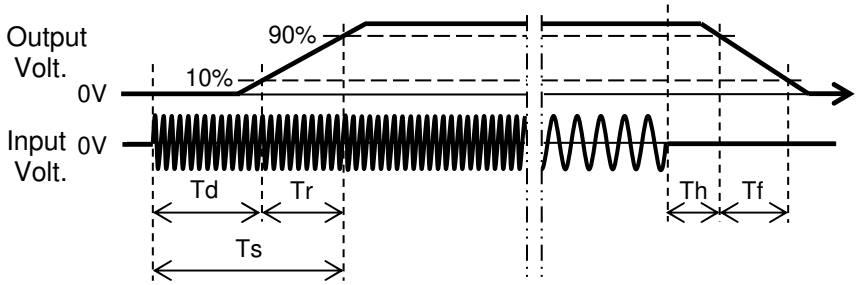
Input Volt. 230 V



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	600.0	7.0	607.0	36.6	8.9
100 %	600.0	7.0	607.0	18.3	3.8

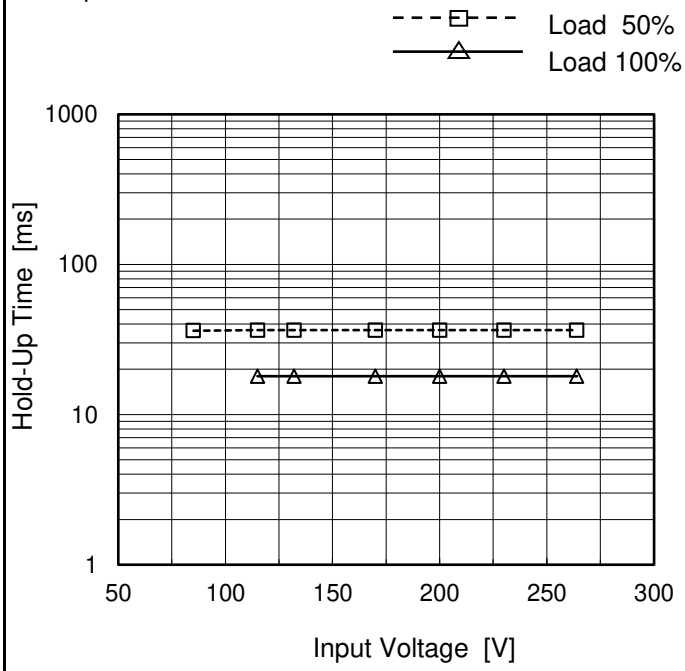


COSEL

Model	UMA120F-12-Y
Item	Hold-Up Time
Object	+12V10A

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

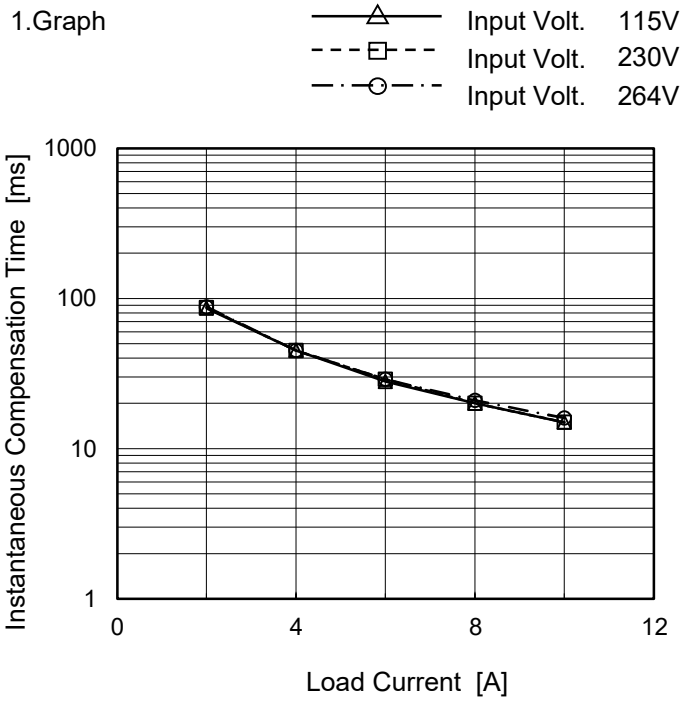
Input Voltage [V]	Hold-Up Time [ms]	
	Load 50%	Load 100%
85	36	-
100	36	-
115	37	18
132	37	18
170	37	18
200	37	18
230	37	18
264	37	18
--	-	-

COSEL

Model	UMA120F-12-Y
Item	Instantaneous Interruption Compensation
Object	+12V10A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



2.Values

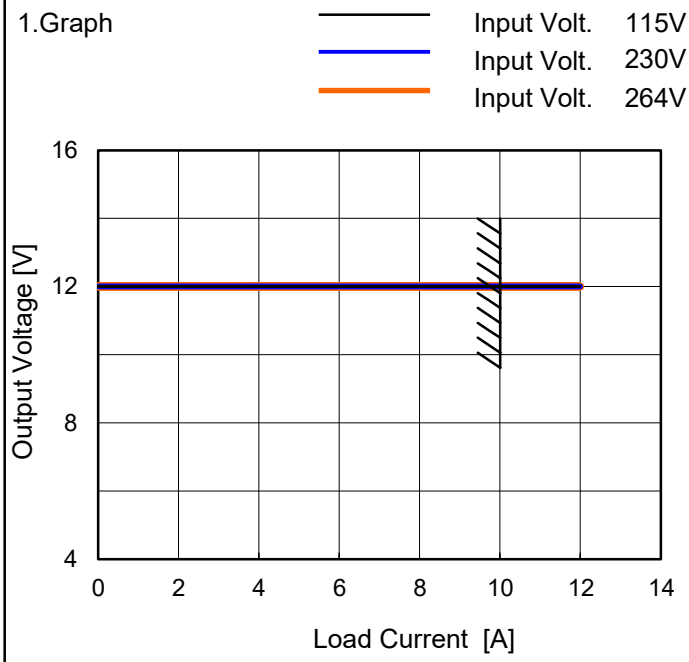
Load Current [A]	Time [ms]		
	Input Volt. 115[V]	Input Volt. 230[V]	Input Volt. 264[V]
0	-	-	-
2	86	87	88
4	45	45	45
6	28	29	29
8	20	20	21
10	15	15	16
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	UMA120F-12-Y
Item	Overcurrent Protection
Object	+12V10A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

Overcurrent protection is Hiccup mode.

2.Values

Output Voltage [V]	Load Current [A]		
	Input Volt. 115[V]	Input Volt. 230[V]	Input Volt. 264[V]
12	11.99	11.99	11.99
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	UMA120F-12-Y	
Item	Ambient Temperature Drift	Testing Circuitry Figure A
Object	+12V10A	

1.Values

Load 100%

Ambient Temperature[℃]	Output Voltage [V]		
	Input Volt. 115V	Input Volt. 230V	Input Volt. 264V
-20	11.955	11.958	11.959
25	12.004	12.005	12.006
40	12.014	12.015	12.016

Item	Minimum Input Voltage for Regulated Output Voltage	Testing Circuitry Figure A
Object	+12V10A	

1.Values

Ambient Temperature[℃]	Input Voltage [V]	
	Load 50%	Load 100%
-20	50	58
25	50	58
40	50	59

Item	Overvoltage Protection	Testing Circuitry Figure A
Object	+12V10A	

1.Values

Load 0%

Ambient Temperature[℃]	Operating Point [V]	
	Input Volt. 115V	Input Volt. 264V
-20	14.67	14.67
25	14.82	14.75
40	14.90	14.82

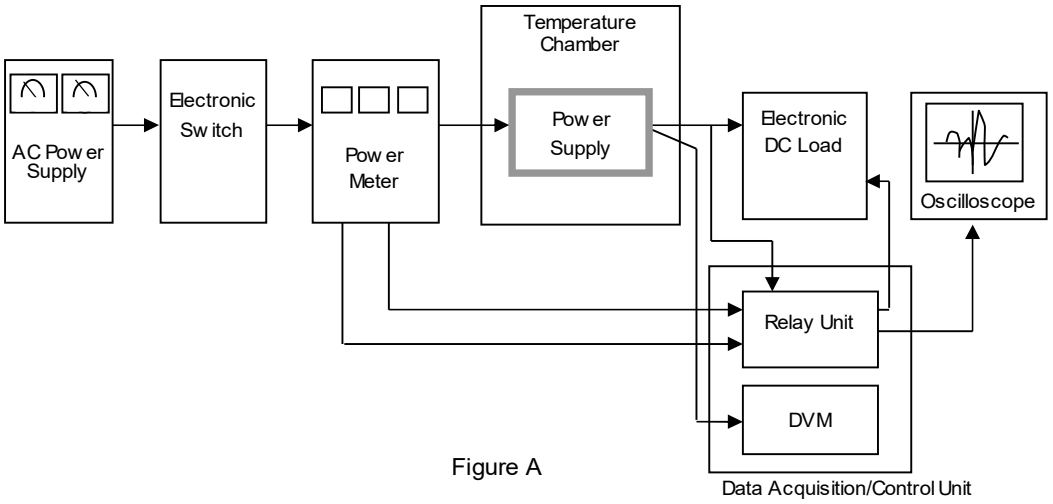
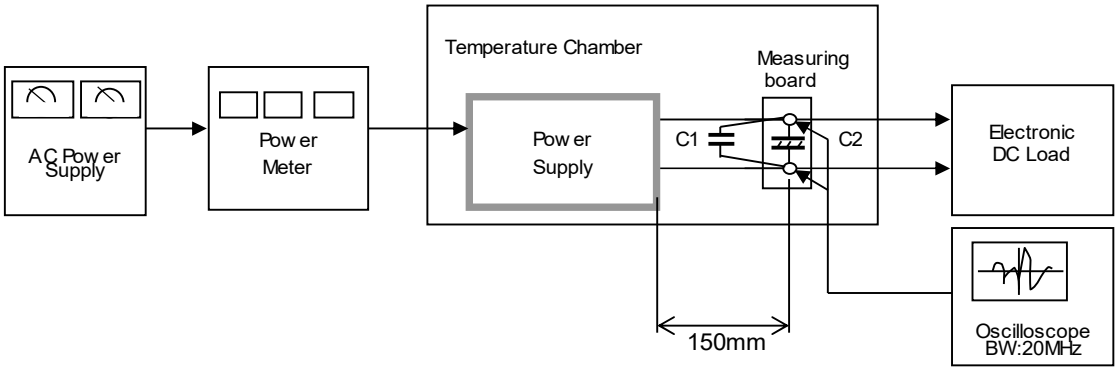


Figure A



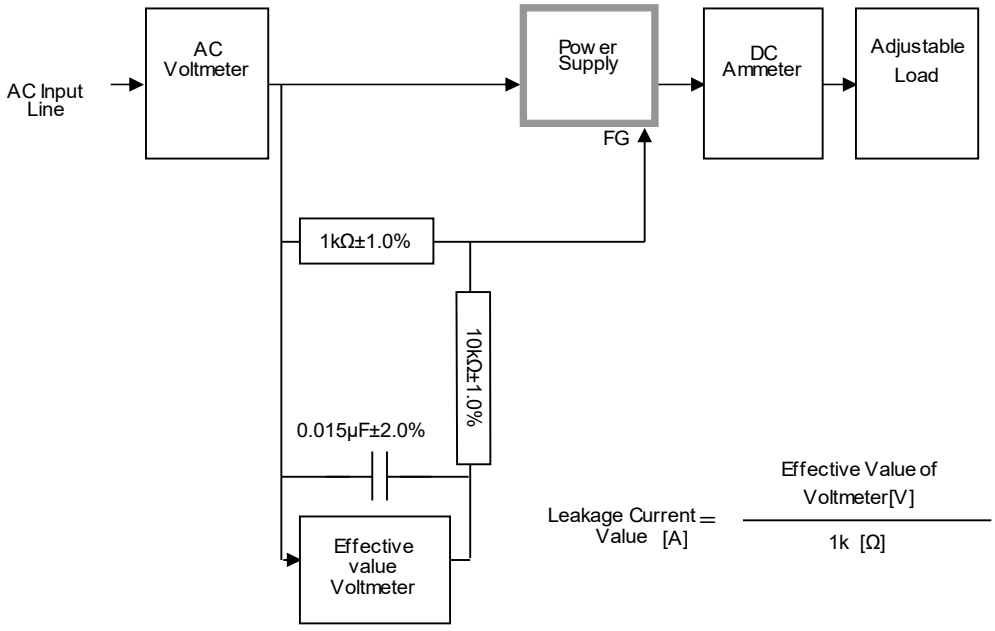
(Ceramic capacitor)

C1= 0.1 μF

(Electrolytic capacitor)

C2= 47 μF

Figure B



$$\text{Leakage Current Value [A]} = \frac{\text{Effective Value of Voltmeter[V]}}{\text{1k [Ω]}}$$

Figure C-1 (IEC60601-1)

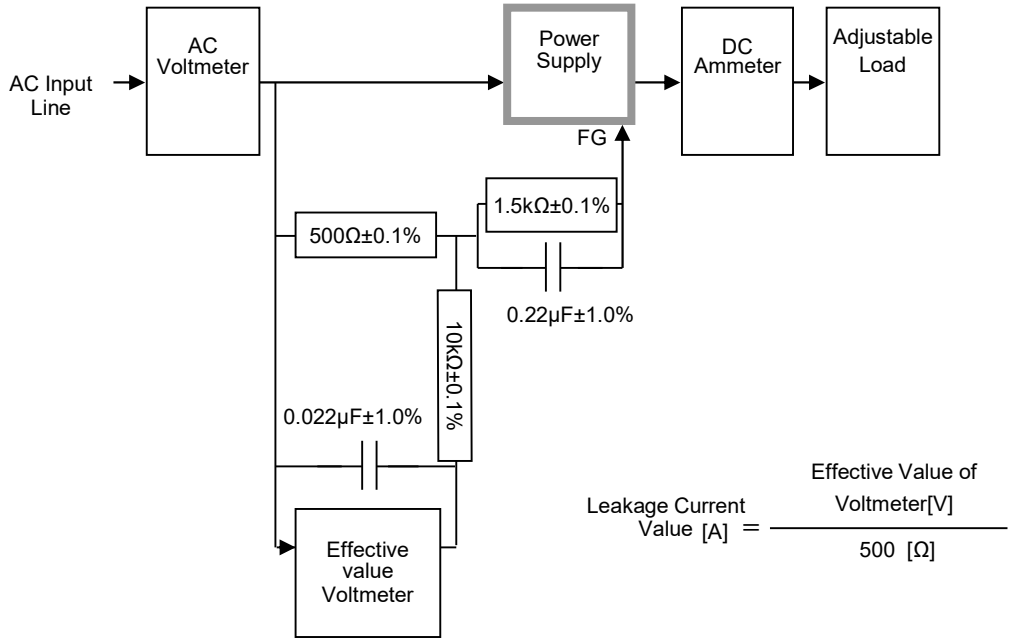


Figure C-2 (IEC62368-1 refer to IEC60990 Fig.4)

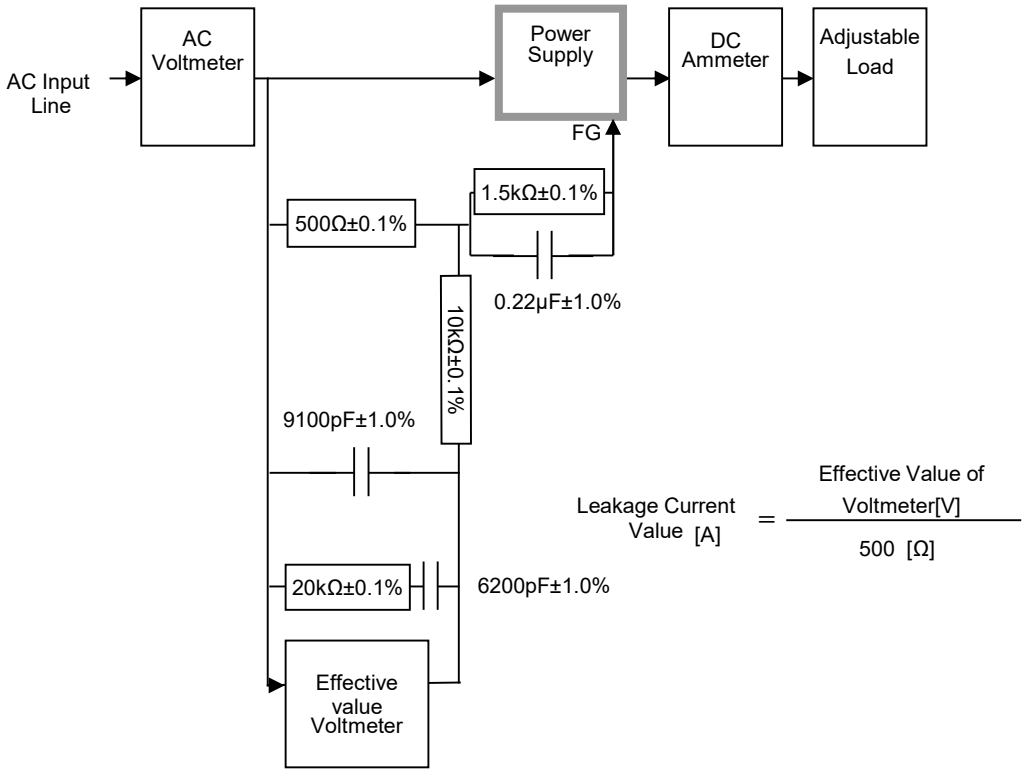


Figure C-3 (IEC62368-1 refer to IEC60990 Fig.5)