参考資料

TEST DATA OF PCA300F-12

Regulated DC Power Supply
March 11, 2019

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Item	Input Current (by Load Current)
Object	———————

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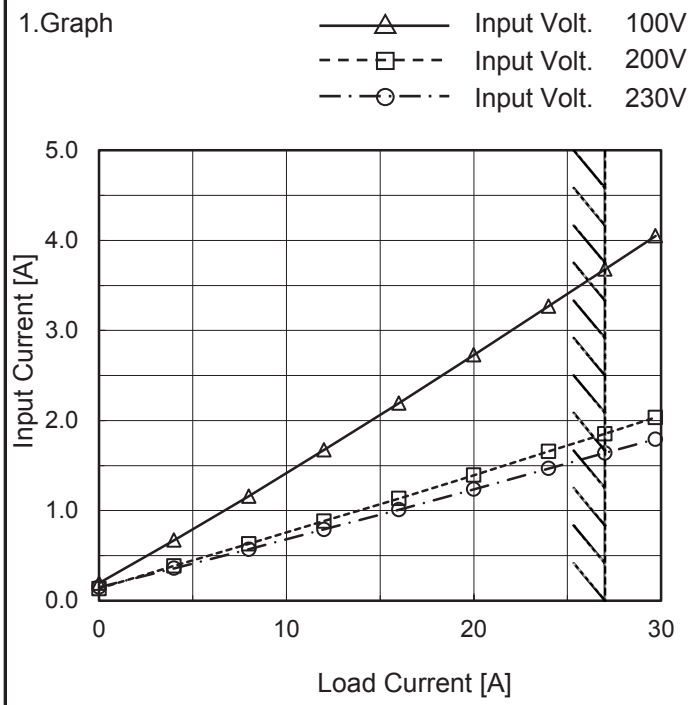

Note: Slanted line shows the range of the rated load current.

2.Values

Load Current [A]	Input Current [A]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.0	0.194	0.134	0.150
4.0	0.671	0.386	0.359
8.0	1.161	0.631	0.570
12.0	1.673	0.883	0.791
16.0	2.193	1.133	1.010
20.0	2.728	1.393	1.237
24.0	3.271	1.657	1.467
27.0	3.680	1.853	1.639
29.7	4.050	2.035	1.792
--	-	-	-
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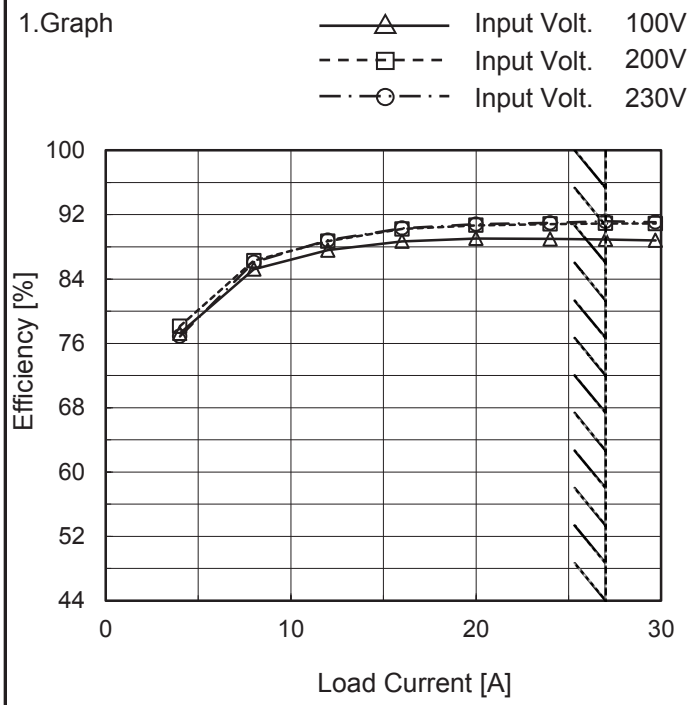
Model	PCA300F-12
Item	Efficiency (by Load Current)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

Load Current [A]	Efficiency [%]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.0	-	-	-
4.0	77.2	78.1	76.9
8.0	85.2	86.3	86.1
12.0	87.6	88.7	88.8
16.0	88.7	90.2	90.3
20.0	89.0	90.7	90.8
24.0	89.0	90.8	91.0
27.0	88.9	90.9	91.2
29.7	88.8	90.9	91.1
--	-	-	-
--	-	-	-

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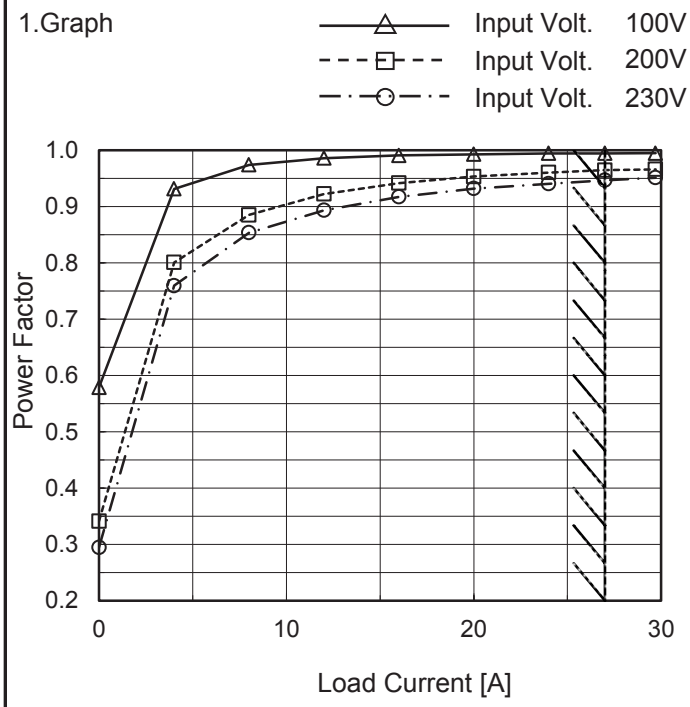
Model	PCA300F-12
Item	Power Factor (by Load Current)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

Load Current [A]	Power Factor		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.0	0.579	0.341	0.295
4.0	0.932	0.801	0.760
8.0	0.974	0.885	0.854
12.0	0.986	0.922	0.894
16.0	0.991	0.942	0.917
20.0	0.993	0.953	0.932
24.0	0.995	0.960	0.941
27.0	0.995	0.965	0.947
29.7	0.995	0.966	0.952
--	-	-	-
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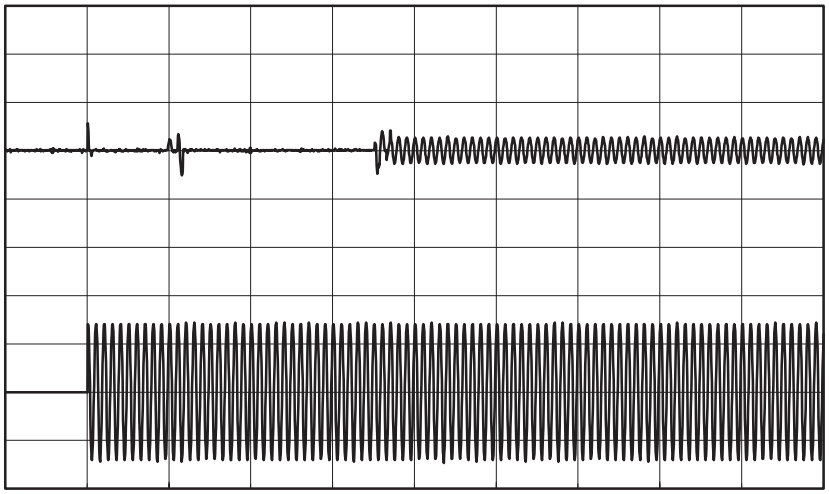
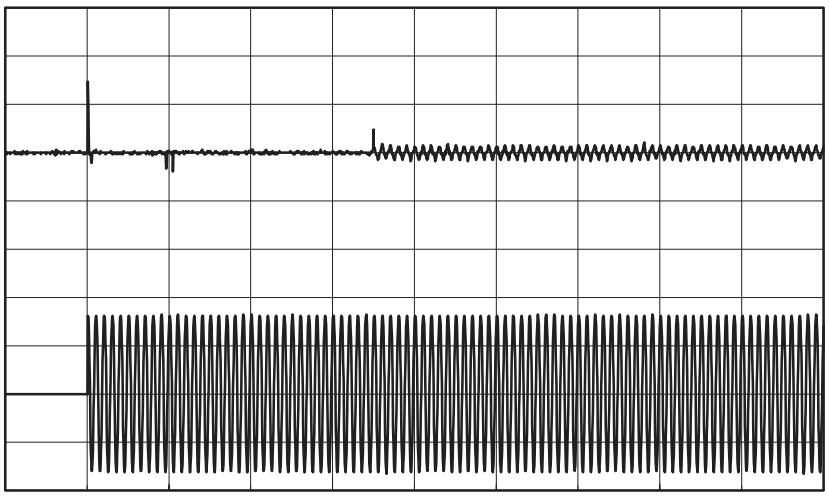
Model	PCA300F-12
Item	Inrush Current
Object	————————

Temperature 25°C
Testing Circuitry Figure A



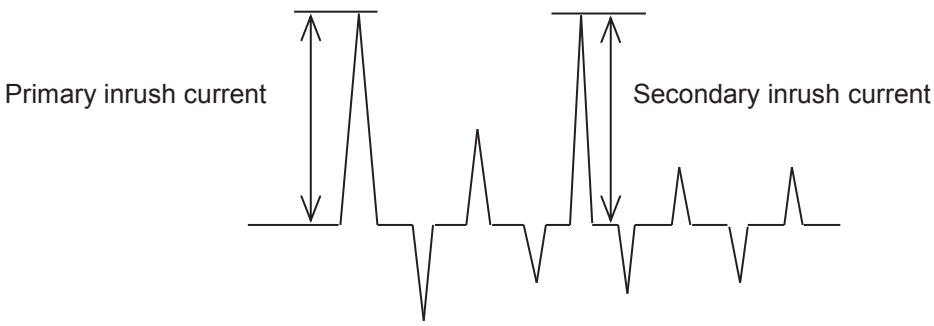
Input Voltage 100 V
Frequency 50 Hz
Load 100 %

Primary inrush current :
11.4 A
Secondary inrush current :
10.2 A



Input Voltage 230 V
Frequency 50 Hz
Load 100 %

Primary inrush current :
29.5 A
Secondary inrush current :
9.7 A



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Model	PCA300F-12	
Item	Leakage Current	Temperature 25°C Testing Circuitry Figure B
Object	———————————	

1.Results

[mA]

Standards	Testing Circuitry	Measuring Method	Input Volt.			Note
			100 [V]	230 [V]	240 [V]	
DEN-AN	Figure B-1	Both phases	0.13	0.30	0.31	Operation
		One of phases	0.24	0.55	0.58	Stand by
IEC62368-1	Figure B-2	Both phases	0.13	0.29	0.31	Operation
		One of phases	0.22	0.54	0.57	Stand by
	Figure B-3	Both phases	0.13	0.29	0.30	Operation
		One of phases	0.24	0.54	0.56	Stand by
IEC60601-1	Figure B-4	Both phases	0.12	0.30	0.31	Operation
		One of phases	0.24	0.55	0.58	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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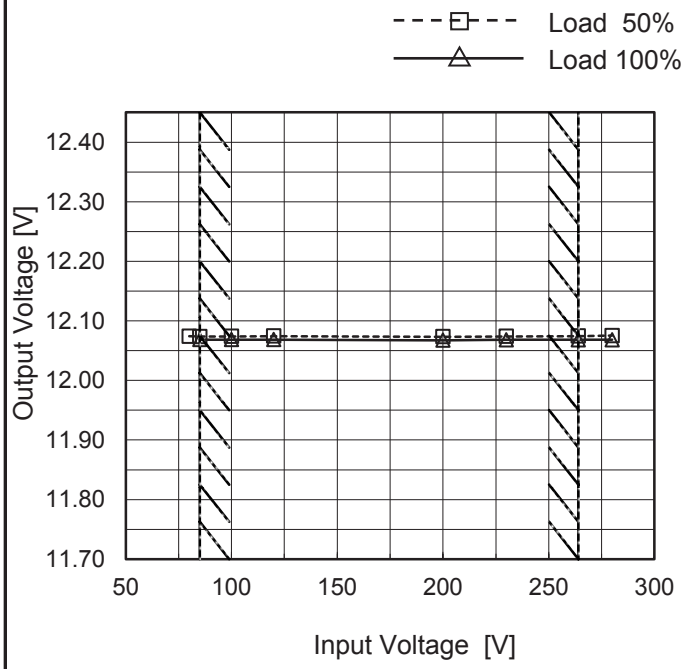
Model	PCA300F-12
Item	Line Regulation
Object	+12V27A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated input voltage.

2.Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
80	12.074	-
85	12.074	12.069
100	12.074	12.068
120	12.074	12.069
200	12.073	12.067
230	12.074	12.068
264	12.074	12.068
280	12.075	12.068
--	-	-

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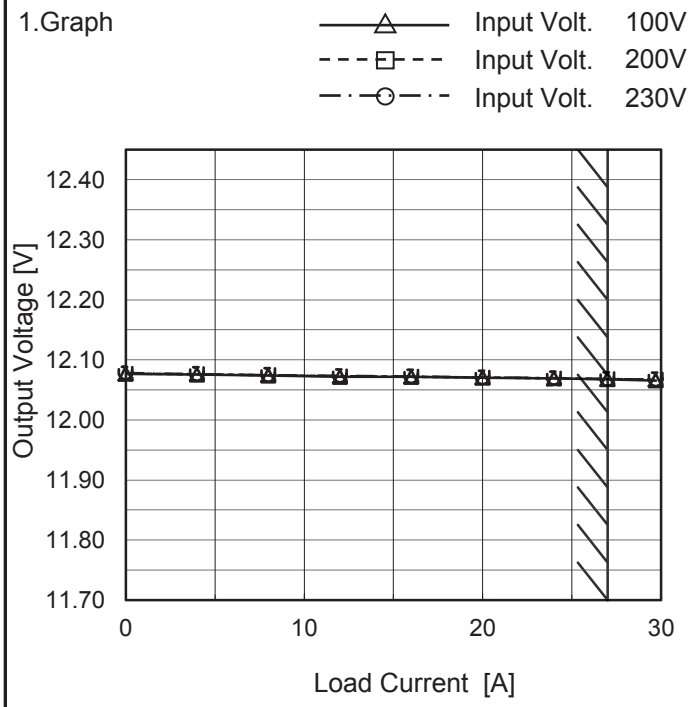
Model	PCA300F-12
Item	Load Regulation
Object	+12V27A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

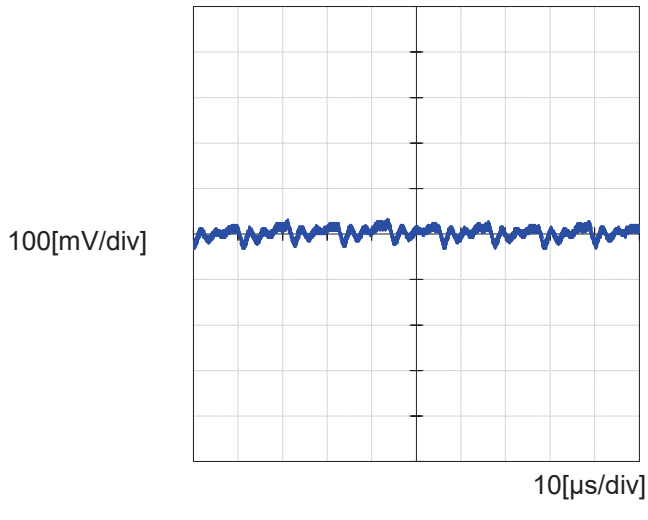
Load Current [A]	Output Voltage [V] Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.0	12.077	12.077	12.078
4.0	12.076	12.076	12.076
8.0	12.074	12.075	12.075
12.0	12.072	12.073	12.074
16.0	12.072	12.072	12.073
20.0	12.070	12.071	12.071
24.0	12.069	12.069	12.070
27.0	12.068	12.068	12.068
29.7	12.066	12.067	12.067

Item	Ripple-Noise
Object	+12V27A

Temperature 25°C
Testing Circuitry Figure C

1.Graph

Input Voltage 200V
Load 100%



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Model	PCA300F-12
Item	Dynamic Load Response
Object	+12V27A

Temperature 25°C
Testing Circuitry Figure A

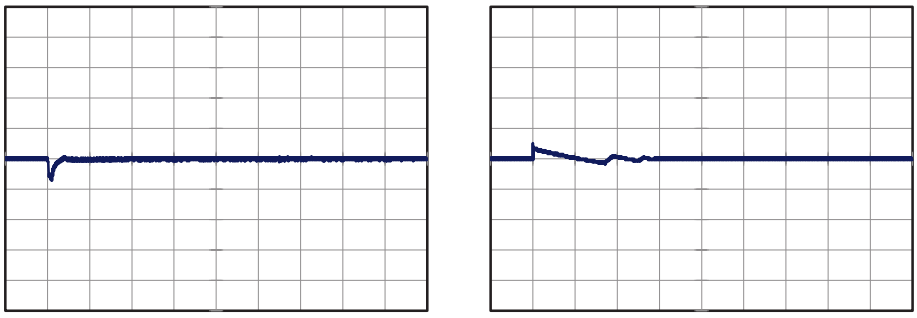
Input Volt. 200 V
Cycle 1000 ms

t1,t2 = 50 μ s

Load Current

t1 t2

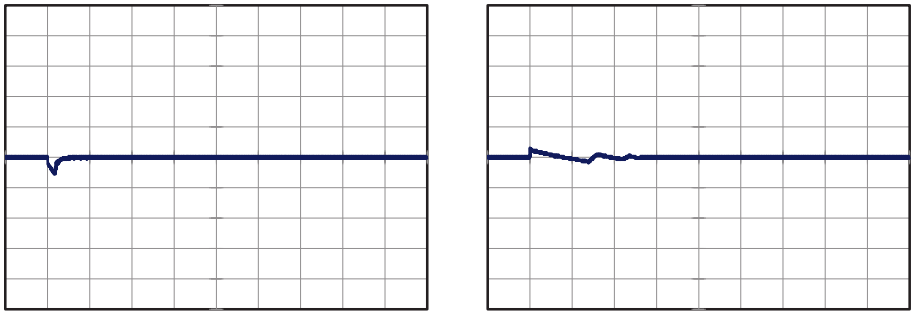
Min.Load (0A)←→
Load 100% (27A)



1 V/div

2 ms/div 20 ms/div

Min.Load (0A)←→
Load 50% (13.5A)



1 V/div

2 ms/div 20 ms/div

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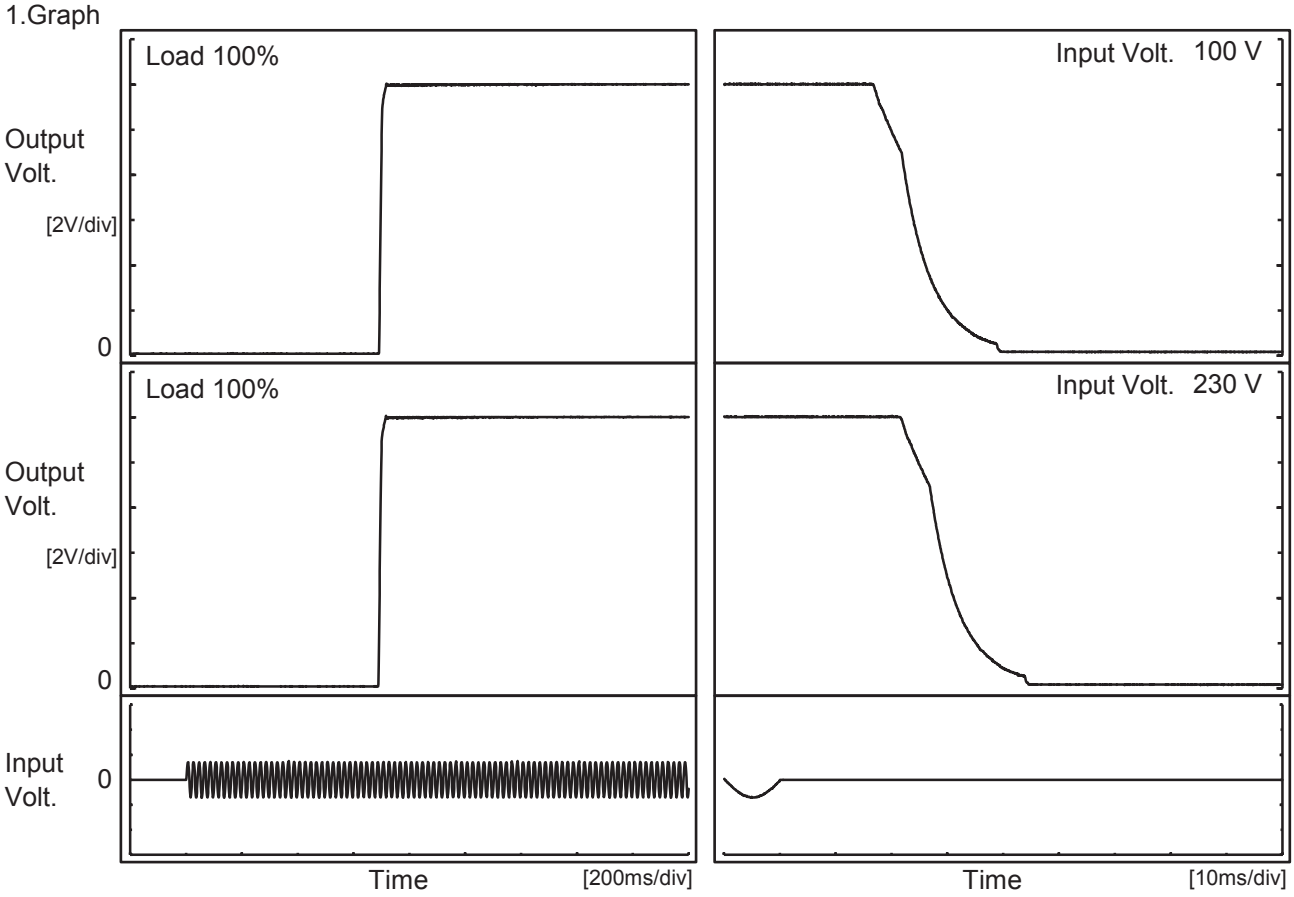
Model	PCA300F-12
Item	Rise and Fall Time
Object	+12V27A

Temperature 25°C
Testing Circuitry Figure A

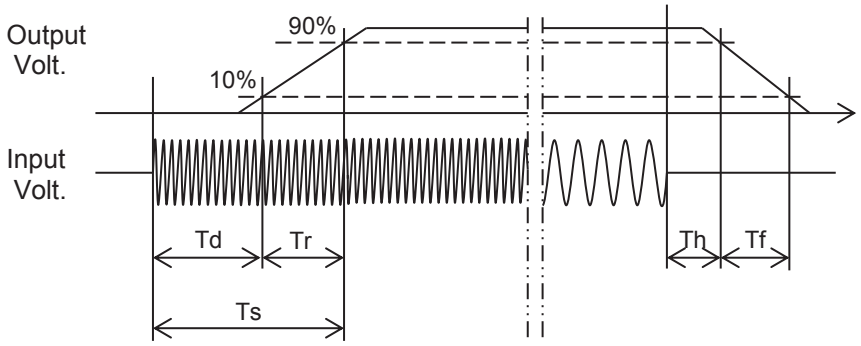
1.Graph



2.Values

[ms]

Input Volt. \ Time	Td	Tr	Ts	Th	Tf
100 V	693.0	10.0	703.0	18.4	14.5
230 V	691.0	10.0	701.0	23.3	14.7



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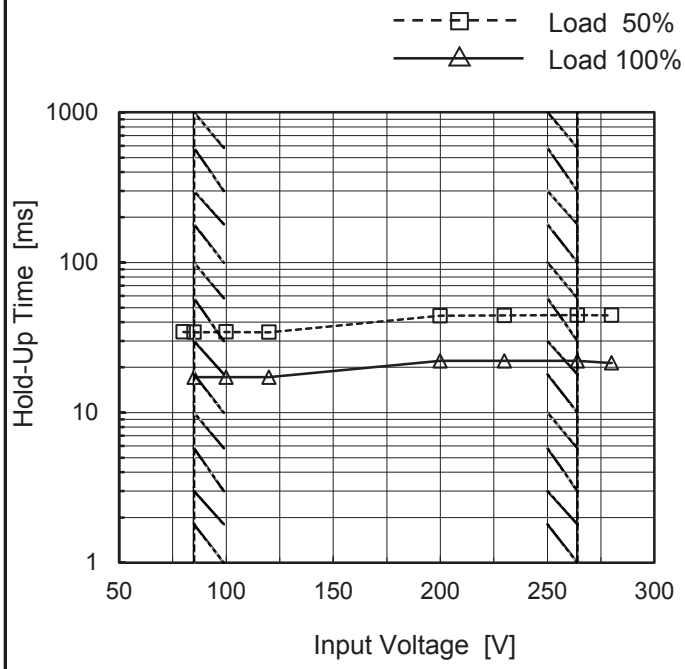
COSEL

Model	PCA300F-12
Item	Hold-Up Time
Object	+12V27A

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.
Note: Slanted line shows the range of the rated input voltage.

2.Values

Input Voltage [V]	Hold-Up Time [ms]	
	Load 50%	Load 100%
80	34	-
85	34	17
100	34	17
120	34	17
200	44	22
230	44	22
264	45	22
280	45	21
--	-	-

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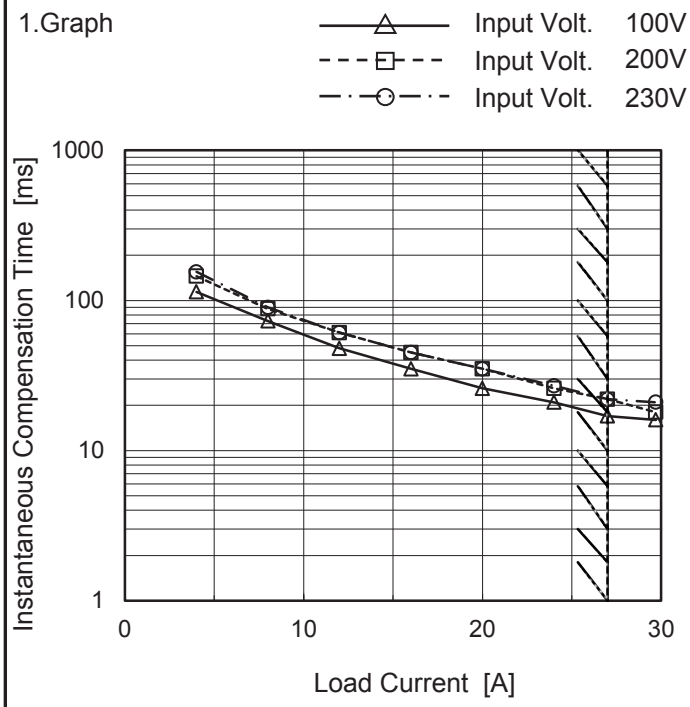
Model	PCA300F-12
Item	Instantaneous Interruption Compensation
Object	+12V27A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

Load Current [A]	Time [ms]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.0	-	-	-
4.0	114	145	155
8.0	73	88	90
12.0	48	61	61
16.0	35	45	45
20.0	26	35	35
24.0	21	26	27
27.0	17	22	22
29.7	16	18	21
--	-	-	-
--	-	-	-

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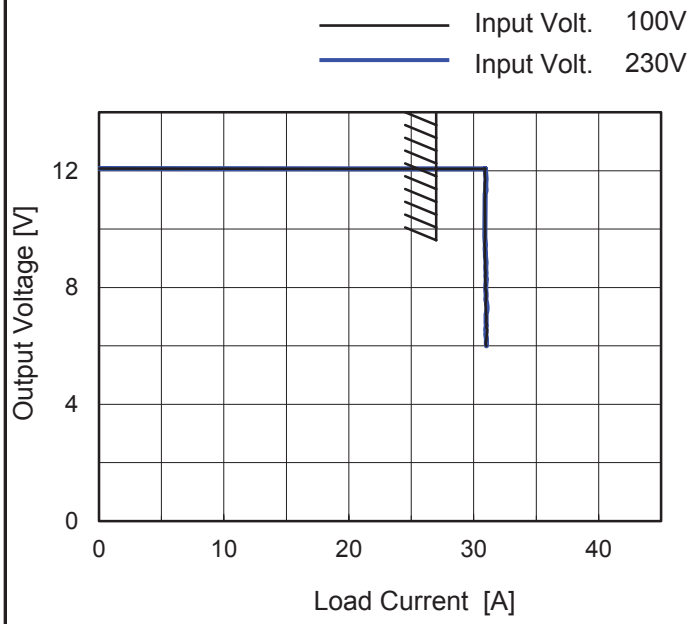
Model	PCA300F-12
Item	Overcurrent Protection
Object	+12V27A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

Hiccup mode activates when the output voltage is from 6V to 0V.

2.Values

Output Voltage [V]	Load Current [A]	
	Input Volt. 100[V]	Input Volt. 230[V]
11.4	30.89	30.89
10.8	30.90	30.89
9.6	30.90	30.89
8.4	30.93	30.98
7.2	30.97	31.07
6.0	31.01	31.01
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	PCA300F-12	
Item	Ambient Temperature Drift	Testing Circuitry Figure A
Object	+12V27A	

1.Values

Load 100%

Ambient Temperature[℃]	Output Voltage [V]		
	Input Volt. 100V	Input Volt. 200V	Input Volt. 230V
-20	12.027	12.027	12.027
25	12.064	12.064	12.064
50	12.089	12.089	12.089

Item	Minimum Input Voltage for Regulated Output Voltage	Testing Circuitry Figure A
Object	+12V27A	

1.Values

Ambient Temperature[℃]	Input Voltage [V]	
	Load 50%	Load 100%
-20	73	80
25	73	80
50	73	80

Item	Overvoltage Protection	Testing Circuitry Figure A
Object	+12V27A	

1.Values

Load 0%

Ambient Temperature[℃]	Operating Point [V]	
	Input Volt. 100V	Input Volt. 230V
-20	15.35	15.35
25	15.38	15.38
50	15.38	15.38

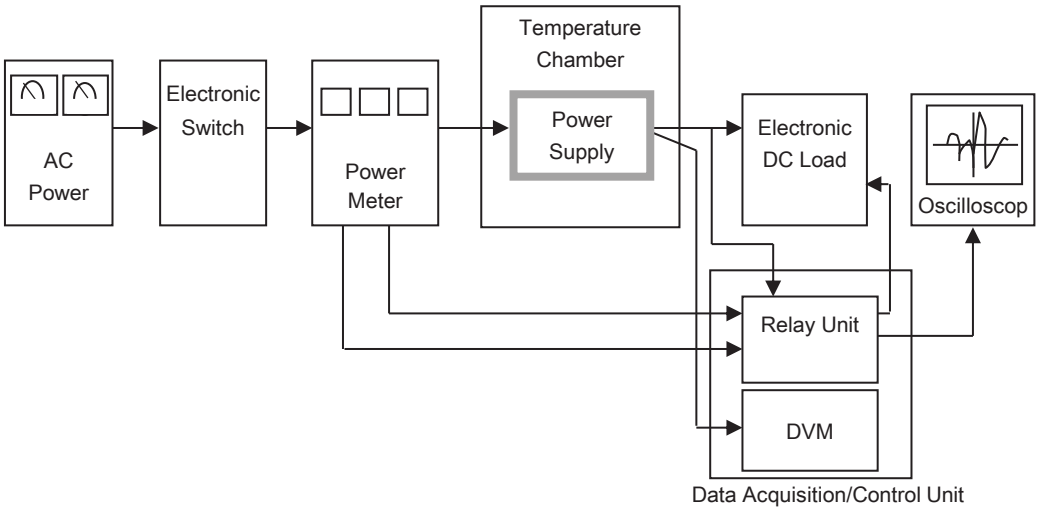


Figure A

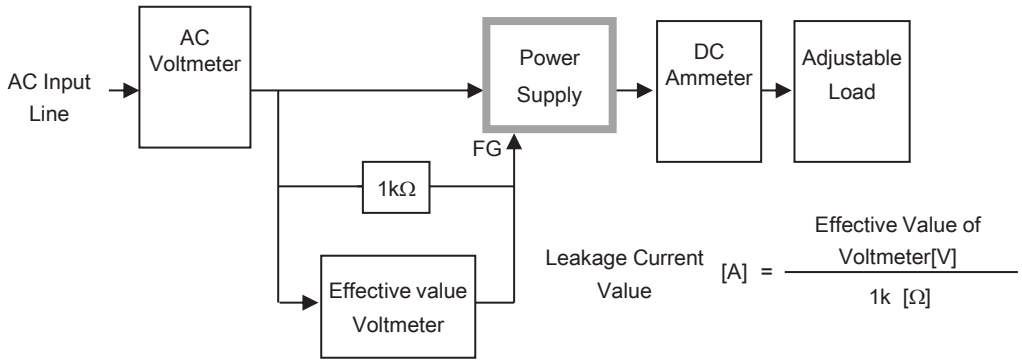


Figure B-1 (DEN-AN)

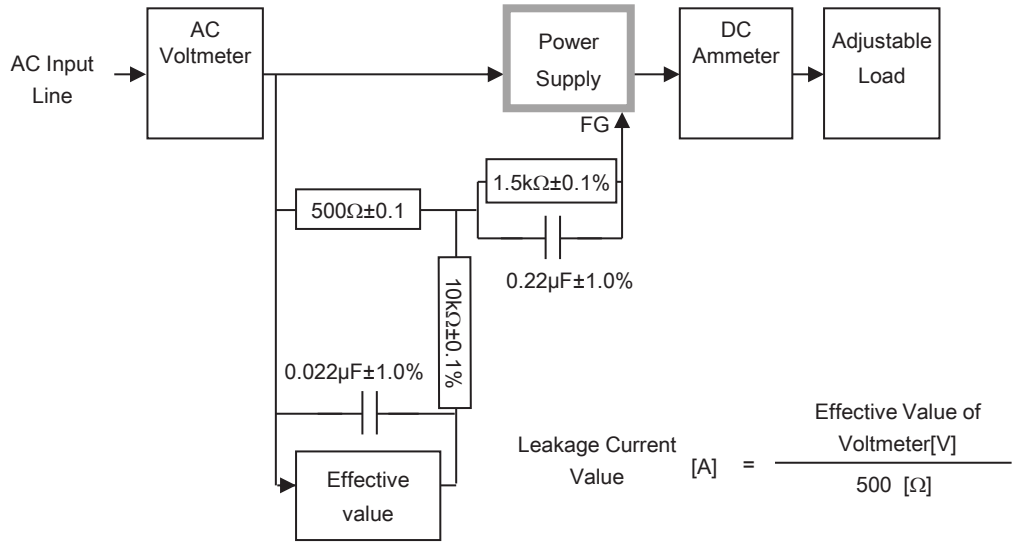


Figure B-2 (IEC62368-1 refer to IEC60990 Fig.4)

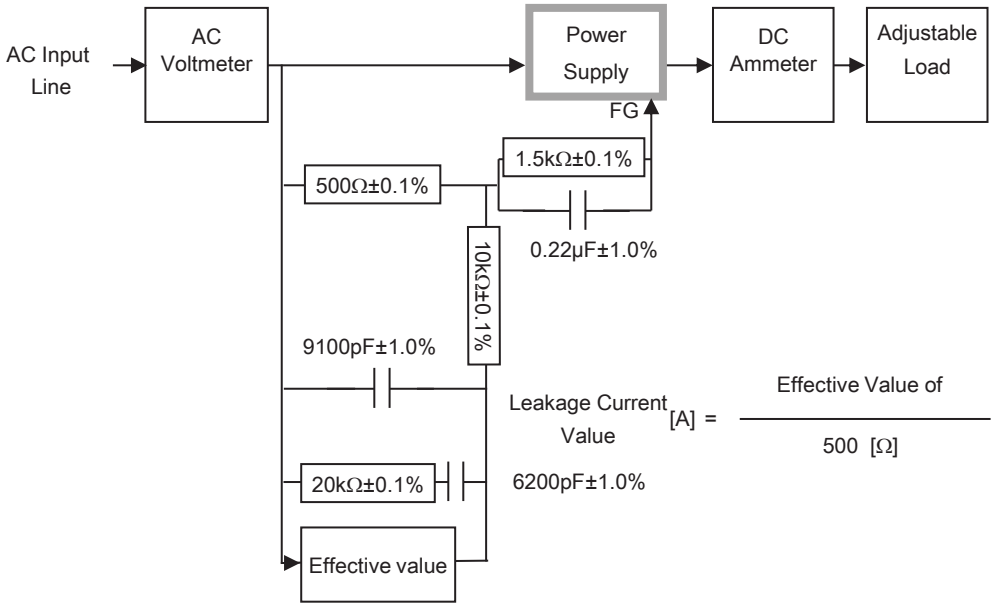


Figure B-3 (IEC62368-1 refer to IEC60990 Fig.5)

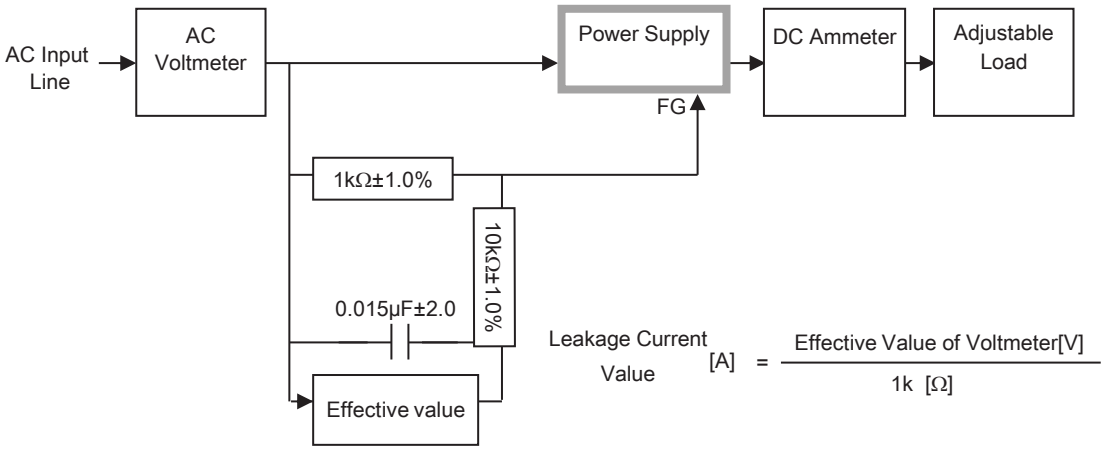
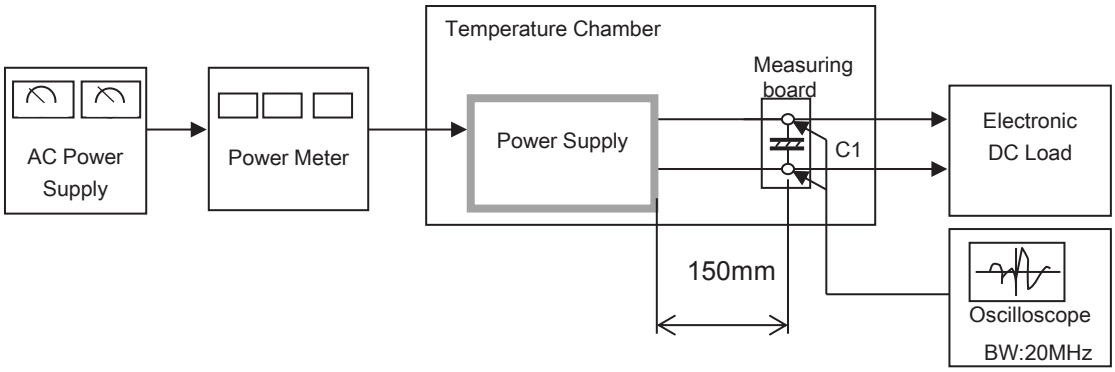


Figure B-4 (IEC60601-1)



C1= 22 μF
(Electrolytic capacitor)

Figure C