参考資料

TEST DATA OF PCA1000F-32

Regulated DC Power Supply
February 22, 2019

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COSEL CO.,LTD.

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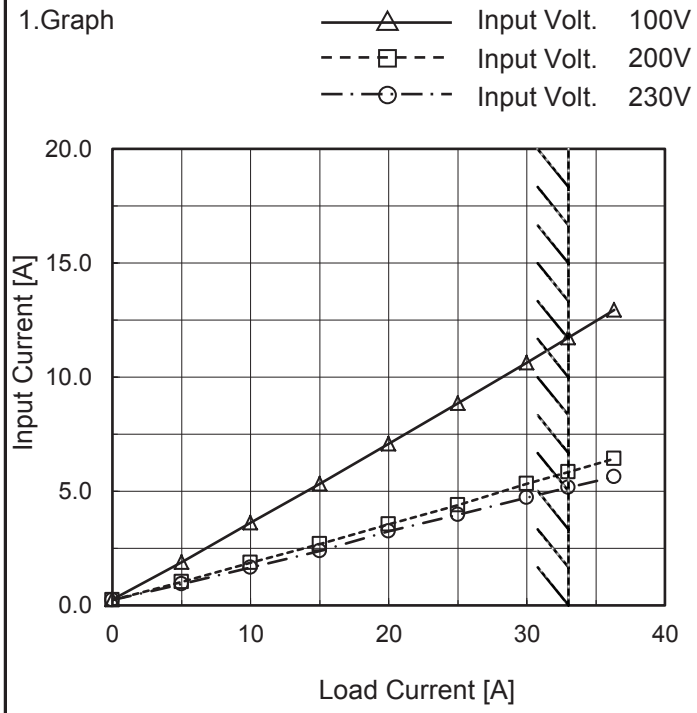
Model	PCA1000F-32
Item	Input Current (by Load Current)
Object	———————

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]	Input Current [A]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.0	0.248	0.218	0.231
5.0	1.890	1.025	0.926
10.0	3.610	1.856	1.646
15.0	5.330	2.688	2.376
20.0	7.080	3.540	3.233
25.0	8.850	4.400	3.970
30.0	10.640	5.320	4.710
33.0	11.740	5.840	5.150
36.3	12.960	6.420	5.640
--	-	-	-
--	-	-	-

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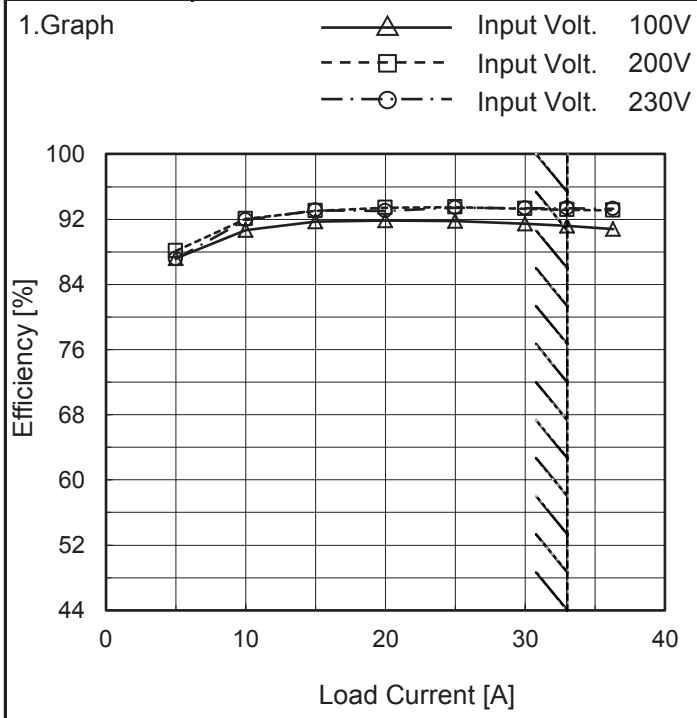
Model	PCA1000F-32
Item	Efficiency (by Load Current)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

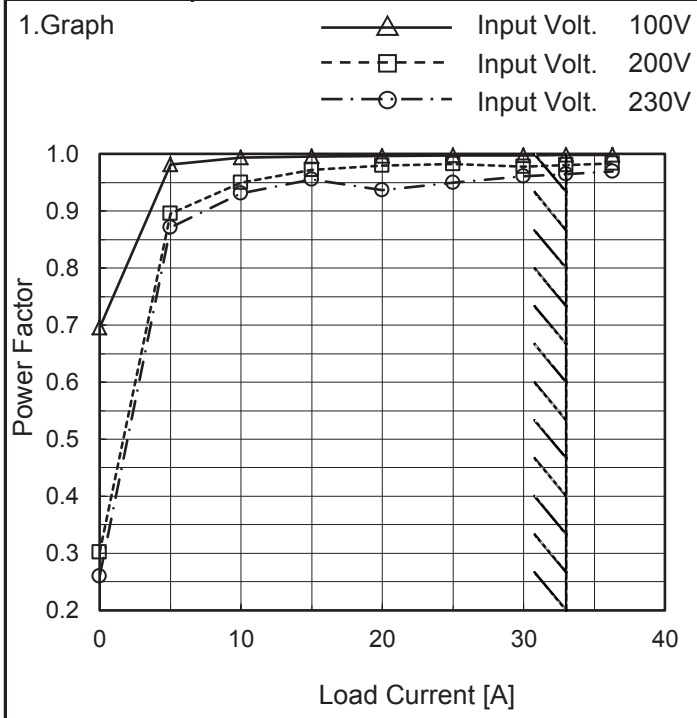
Load Current [A]	Efficiency [%]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.0	-	-	-
5.0	87.2	88.1	87.1
10.0	90.6	92.1	91.9
15.0	91.7	93.0	93.1
20.0	91.8	93.4	93.0
25.0	91.8	93.5	93.4
30.0	91.4	93.3	93.4
33.0	91.2	93.2	93.3
36.3	90.8	93.1	93.3
--	-	-	-
--	-	-	-

COSEL

Model	PCA1000F-32
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	0.696	0.302	0.259
5.0	0.982	0.896	0.872
10.0	0.994	0.950	0.931
15.0	0.996	0.972	0.956
20.0	0.997	0.980	0.937
25.0	0.998	0.983	0.950
30.0	0.998	0.978	0.961
33.0	0.998	0.981	0.965
36.3	0.998	0.984	0.970
--	-	-	-
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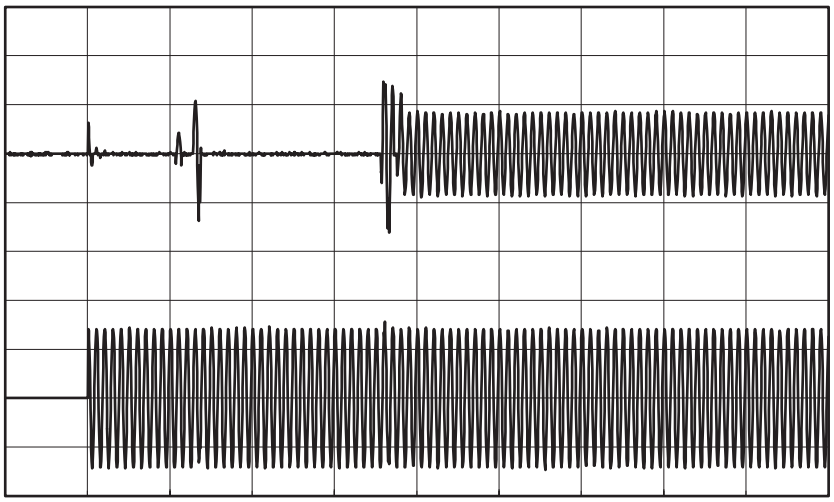
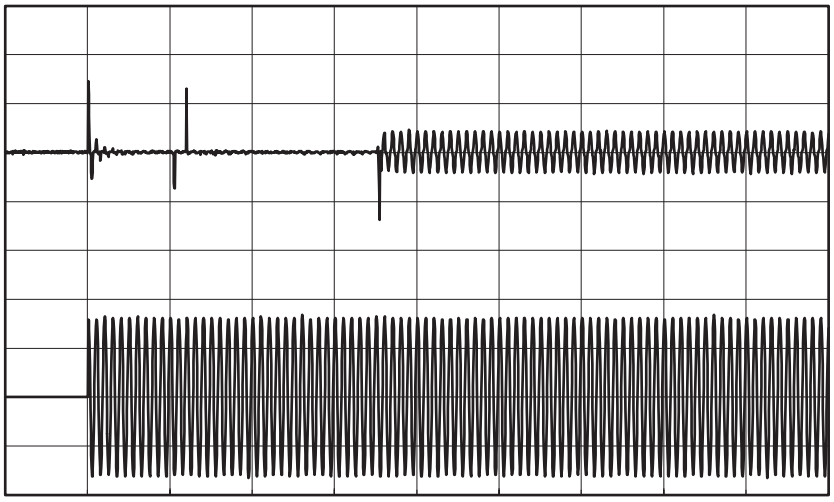
Model	PCA1000F-32		
Item	Inrush Current	Temperature	25°C
		Testing Circuitry	Figure A
Object	———————		



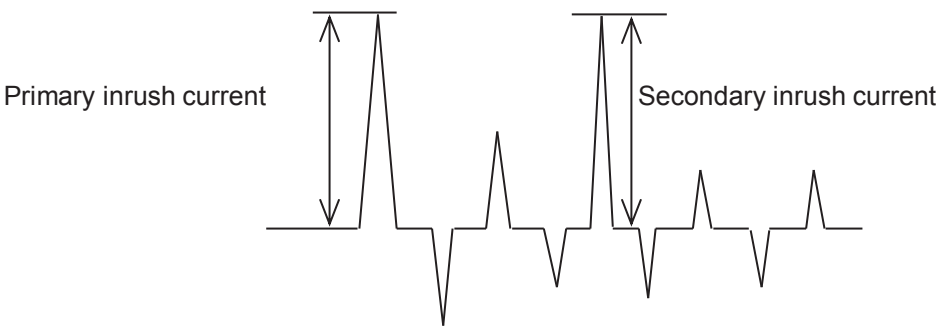
Input Voltage 100 V
Frequency 50 Hz
Load 100 %

Primary inrush current :
12.7 A
Secondary inrush current :
32.3 A



Input Voltage 230 V
Frequency 50 Hz
Load 100 %

Primary inrush current :
29.2 A
Secondary inrush current :
27.5 A



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Model	PCA1000F-32		
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	0.11	0.29	0.31	Operation
		One of phases	0.22	0.56	0.59	Stand by
IEC62368-1	Figure B-2	Both phases	0.10	0.28	0.30	Operation
		One of phases	0.22	0.56	0.60	Stand by
	Figure B-3	Both phases	0.11	0.29	0.31	Operation
		One of phases	0.22	0.57	0.61	Stand by
IEC60601-1	Figure B-4	Both phases	0.11	0.28	0.29	Operation
		One of phases	0.22	0.55	0.57	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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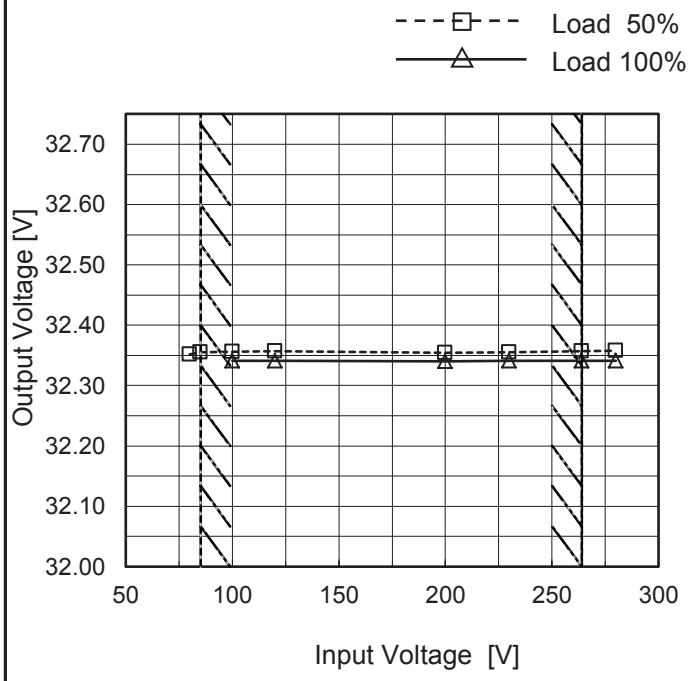
Model	PCA1000F-32
Item	Line Regulation
Object	+32V33A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

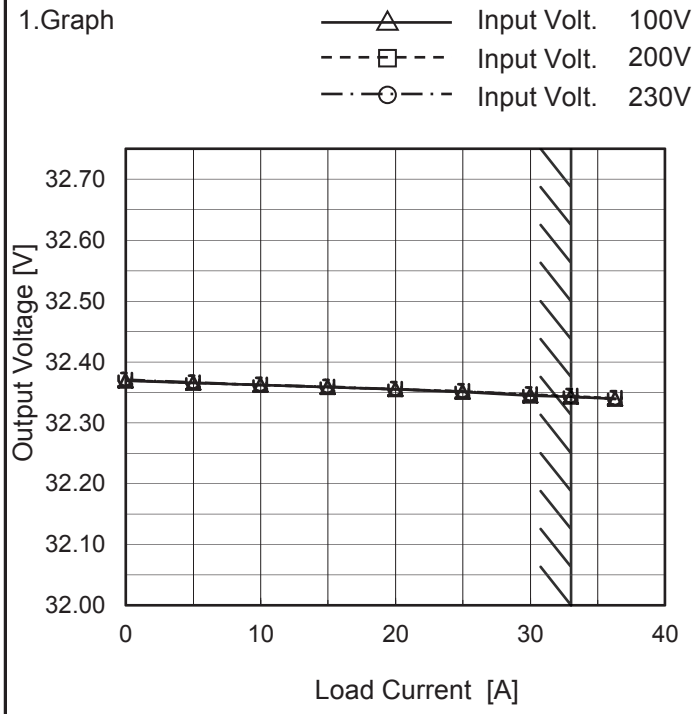
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
80	32.352	-
85	32.355	-
100	32.356	32.341
120	32.357	32.341
200	32.354	32.340
230	32.356	32.341
264	32.357	32.341
280	32.358	32.341
--	-	-

COSEL

Model	PCA1000F-32
Item	Load Regulation
Object	+32V33A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

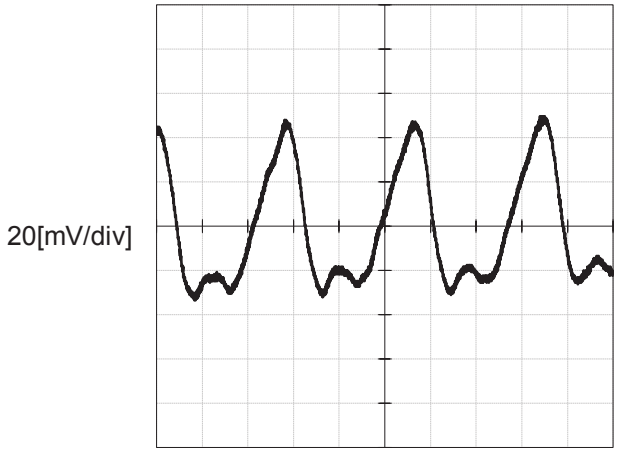
Load Current [A]	Output Voltage [V]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.0	32.369	32.370	32.371
5.0	32.365	32.366	32.366
10.0	32.362	32.362	32.362
15.0	32.359	32.359	32.359
20.0	32.355	32.355	32.355
25.0	32.351	32.352	32.351
30.0	32.345	32.347	32.347
33.0	32.342	32.344	32.343
36.3	32.339	32.340	32.339
--	-	-	-
--	-	-	-

Item	Ripple-Noise
Object	+32V33A

Temperature 25°C
Testing Circuitry Figure C

1.Graph

Input Voltage 200V
Load 100%



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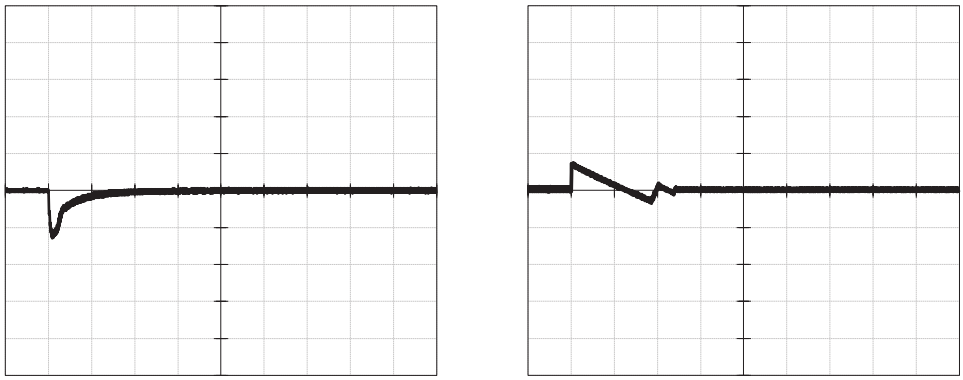
Model	PCA1000F-32		
Item	Dynamic Load Response	Temperature Testing Circuitry	25°C Figure A
Object	+32V33A		

Input Volt. 100 V
Cycle 1000 ms

Response. t1=t2=50µs. Typ

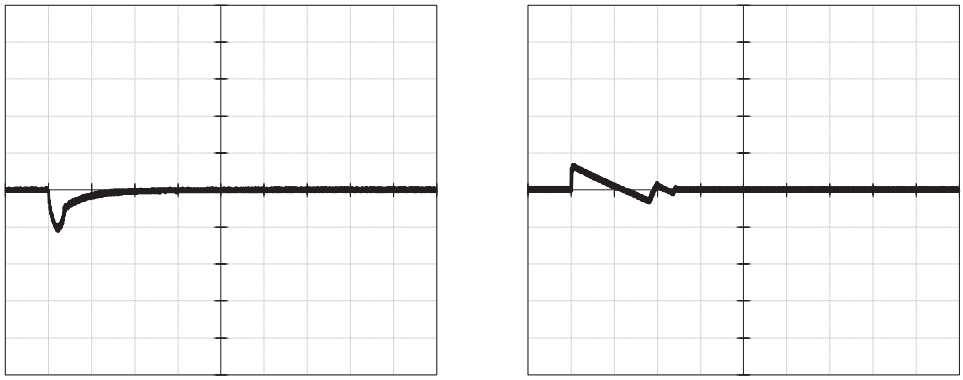
Load 0%(0A) ←→
Load 100%(33A)



2[V/div]

2[ms/div] 20[ms/div]

Load 0%(0A) ←→
Load 50%(16.5A)



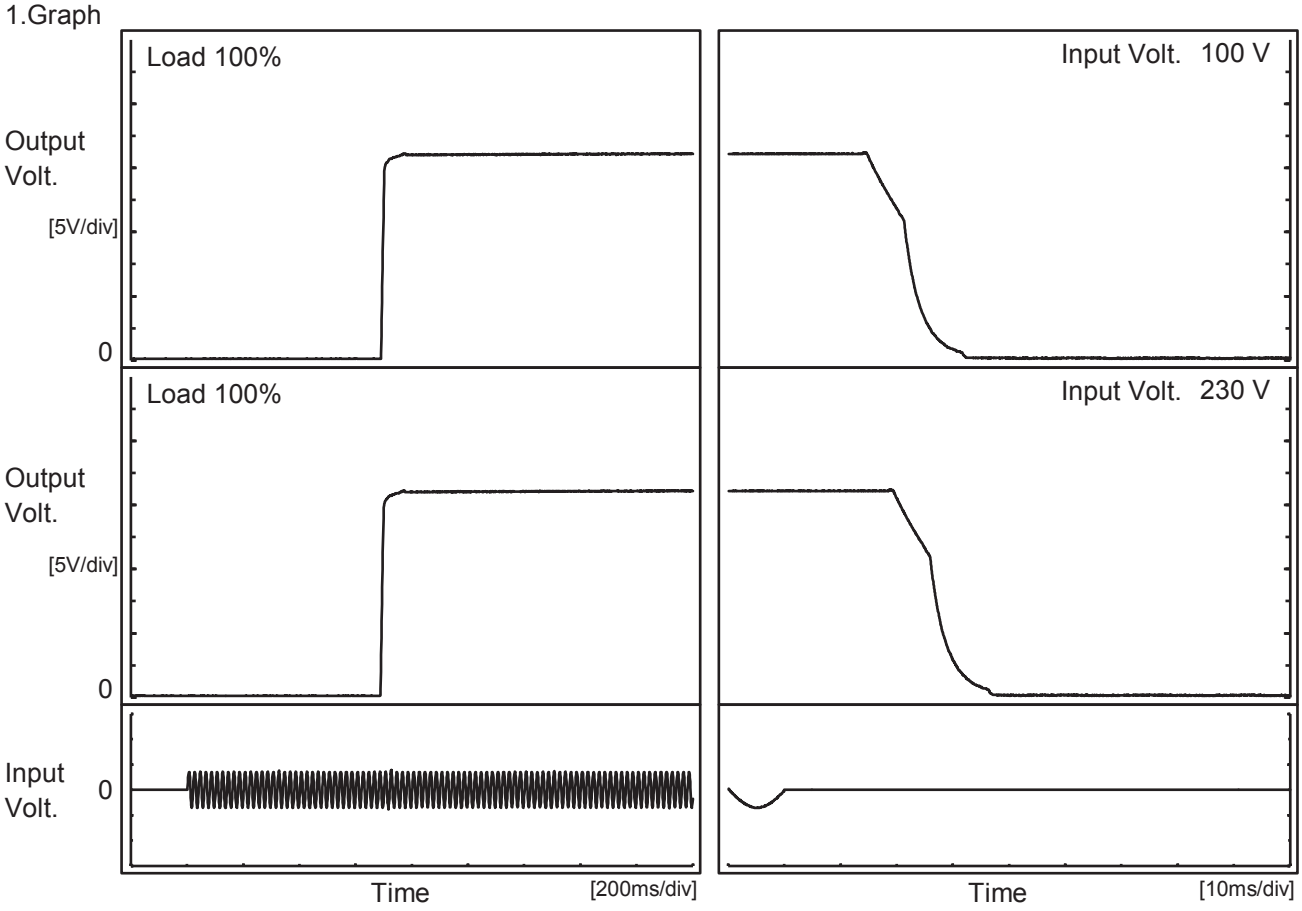
2[V/div]

2[ms/div] 20[ms/div]

COSEL

Model	PCA1000F-32	
Item	Rise and Fall Time	Temperature 25°C Testing Circuitry Figure A
Object	+32V33A	

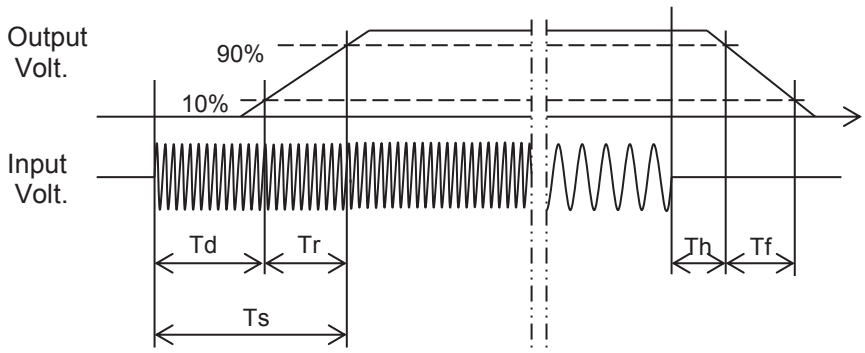
1.Graph



2.Values

[ms]

Input Volt. \ Time	Td	Tr	Ts	Th	Tf
100 V	692.0	10.0	702.0	16.5	10.8
230 V	690.0	10.0	700.0	21.2	10.8

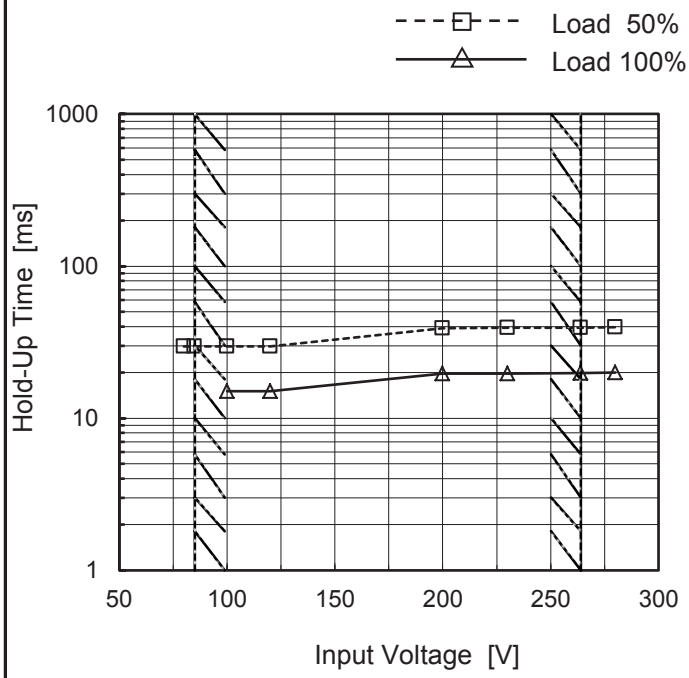


COSEL

Model	PCA1000F-32
Item	Hold-Up Time
Object	+32V33A

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

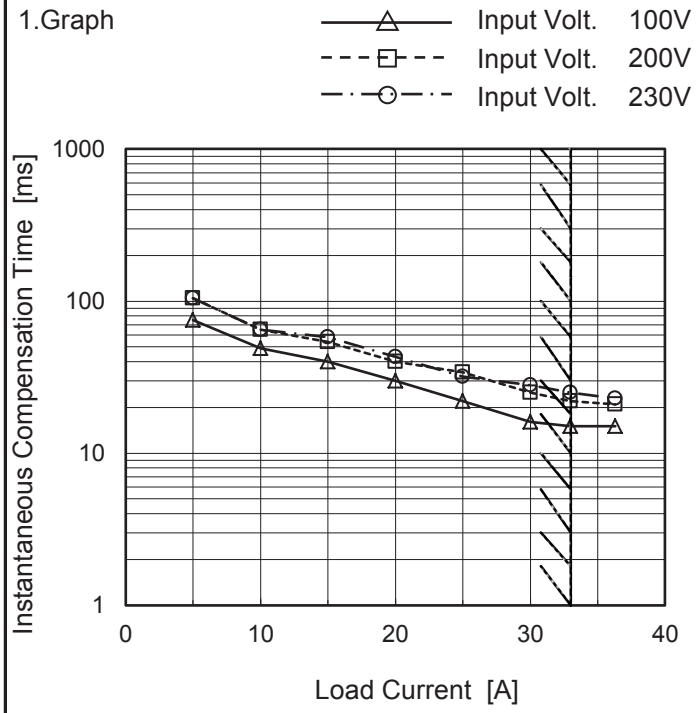
Input Voltage [V]	Hold-Up Time [ms]	
	Load 50%	Load 100%
80	30	-
85	30	-
100	30	15
120	30	15
200	39	20
230	39	20
264	40	20
280	40	20
--	-	-

COSEL

Model	PCA1000F-32
Item	Instantaneous Interruption Compensation
Object	+32V33A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

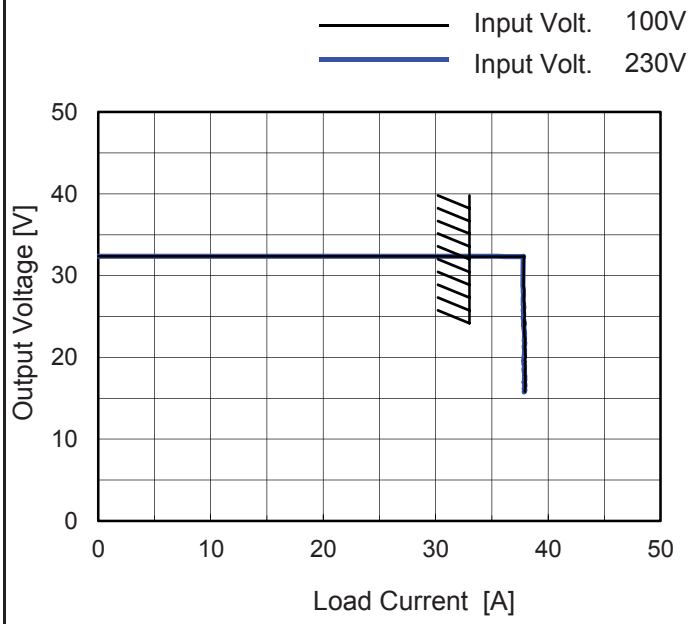
Load Current [A]	Time [ms] Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.0	-	-	-
5.0	75	105	105
10.0	49	65	65
15.0	40	54	58
20.0	30	40	43
25.0	22	34	32
30.0	16	25	28
33.0	15	22	25
36.3	15	21	23
--	-	-	-
--	-	-	-

COSEL

Model	PCA1000F-32
Item	Overcurrent Protection
Object	+32V33A

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 16 to 0V.

2.Values

Output Voltage [V]	Load Current [A]	
	Input Volt. 100[V]	Input Volt. 230[V]
30.4	37.82	37.77
28.8	37.82	37.79
25.6	37.89	37.79
22.4	37.89	37.91
19.2	37.93	37.86
16.0	37.96	37.89
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	PCA1000F-32	
Item	Ambient Temperature Drift	Testing Circuitry Figure A
Object	+32V33A	

1.Values

Load 100%

Ambient Temperature[℃]	Output Voltage [V]		
	Input Volt. 100V	Input Volt. 200V	Input Volt. 230V
-20	32.221	32.220	32.219
25	32.338	32.338	32.339
40	32.389	32.389	32.389
50	-	32.414	32.414

Item	Minimum Input Voltage for Regulated Output Voltage	Testing Circuitry Figure A
Object	+32V33A	

1.Values

Ambient Temperature[℃]	Input Voltage [V]	
	Load 50%	Load 100%
-20	73	78
25	73	77
40	73	77

Item	Overvoltage Protection	Testing Circuitry Figure A
Object	+32V33A	

1.Values

Load 0%

Ambient Temperature[℃]	Operating Point [V]	
	Input Volt. 100V	Input Volt. 230V
-20	41.25	41.25
25	41.14	41.14
40	41.13	41.13
50	41.13	41.13

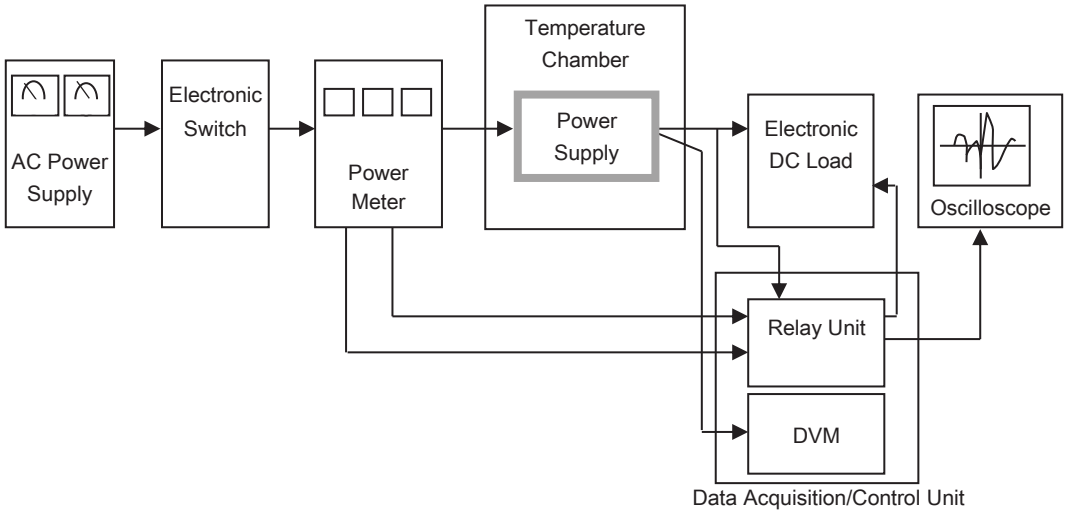


Figure A

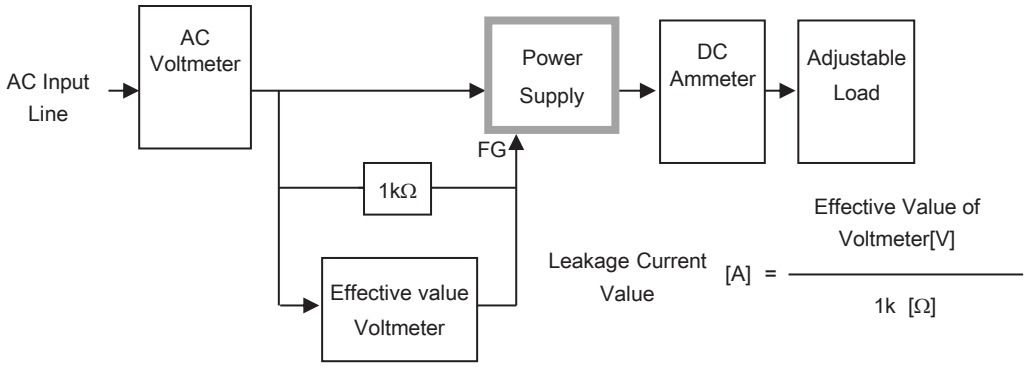


Figure B-1 (DEN-AN)

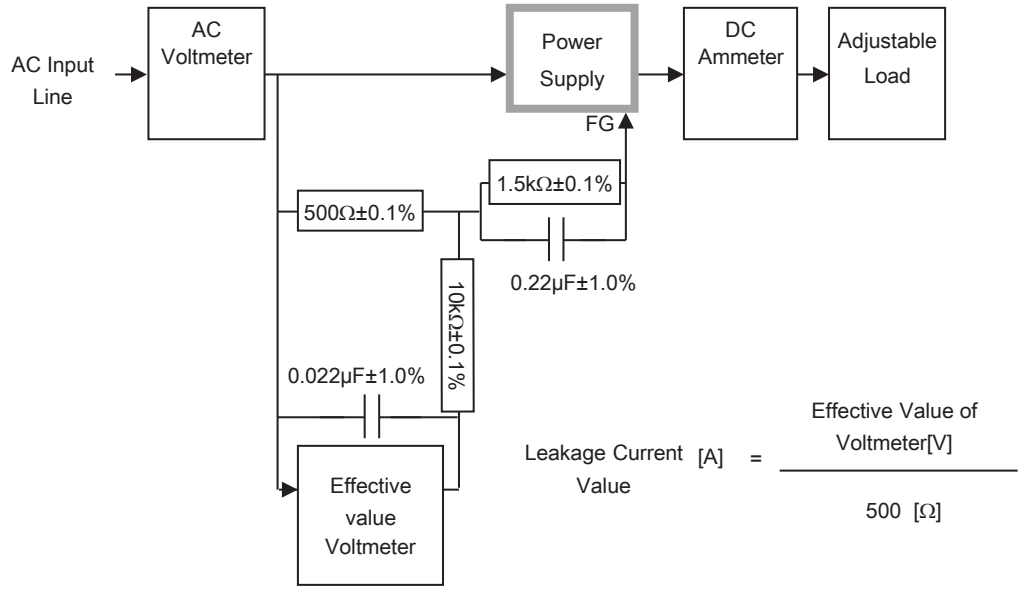


Figure B-2 (IEC62368-1 refer to IEC60990 Fig.4)

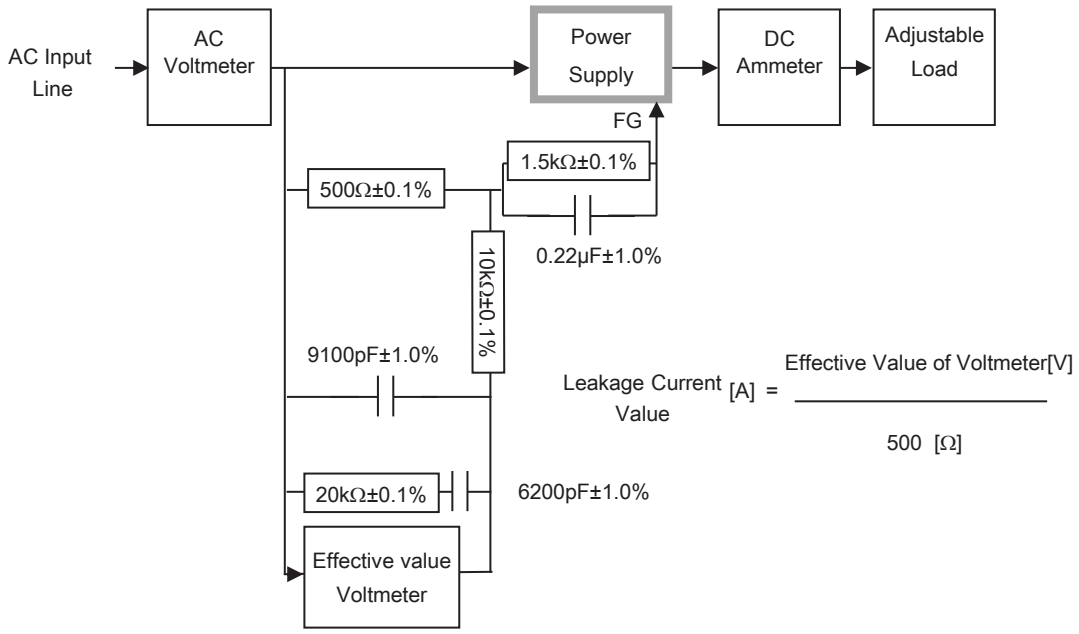


Figure B-3 (IEC62368-1 refer to IEC60990 Fig.5)

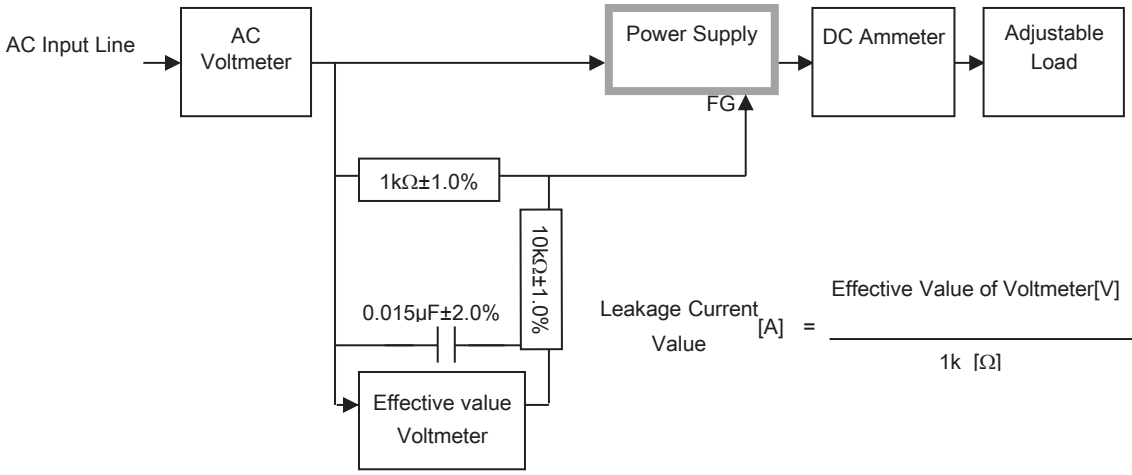


Figure B-4 (IEC60601-1)

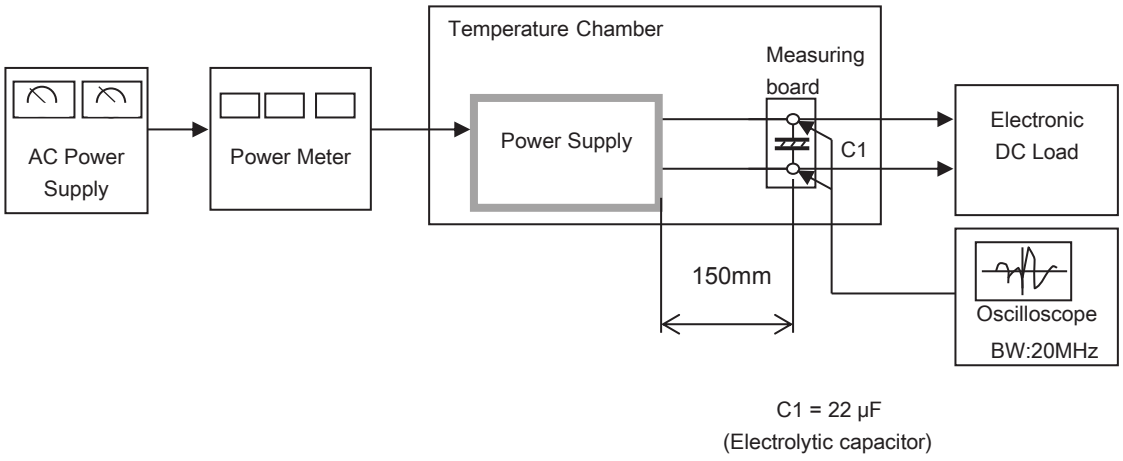


Figure C