

TEST DATA OF PCA1500F-5

Regulated DC Power Supply
February 22, 2021

Approved by : Takashi Yamamine
Design Manager

Prepared by : Koki Miyazaki
Design Engineer

COSEL CO.,LTD.

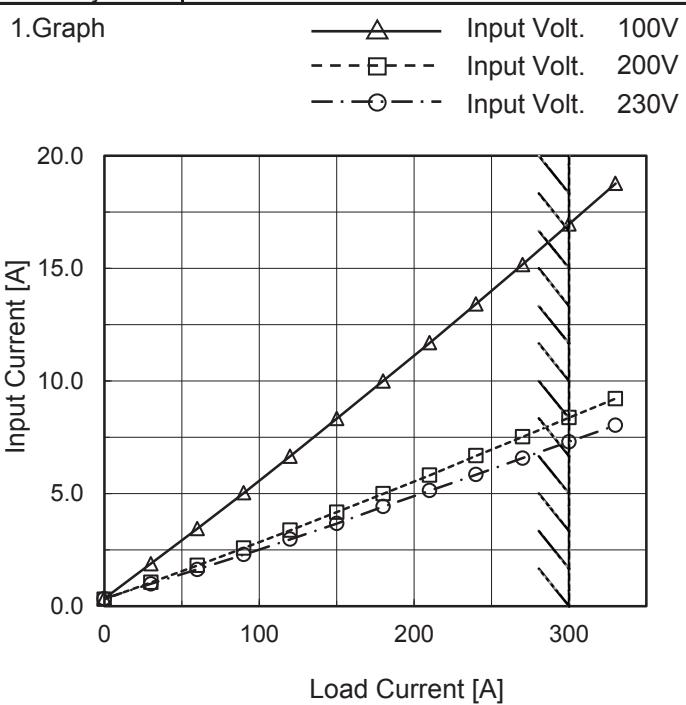
CONTENTS

1.Input Current (by Load Current)	1
2.Efficiency (by Load Current)	2
3.Power Factor (by Load Current)	3
4.Inrush Current	4
5.Leakage Current	5
6.Line Regulation	6
7.Load Regulation	7
8.Ripple-Noise	7
9.Dynamic Load Response	8
10.Rise and Fall Time	9
11.Hold-Up Time	10
12.Instantaneous Interruption Compensation	11
13.Overcurrent Protection	12
14.Ambient Temperature Drift	13
15.Minimum Input Voltage for Regulated Output Voltage	13
16.Overvoltage Protection	13
17.Figure of Testing Circuitry	14

(Final Page 15)

Model	PCA1500F-5
Item	Input Current (by Load Current)
Object	_____

Temperature 25°C
Testing Circuitry Figure A



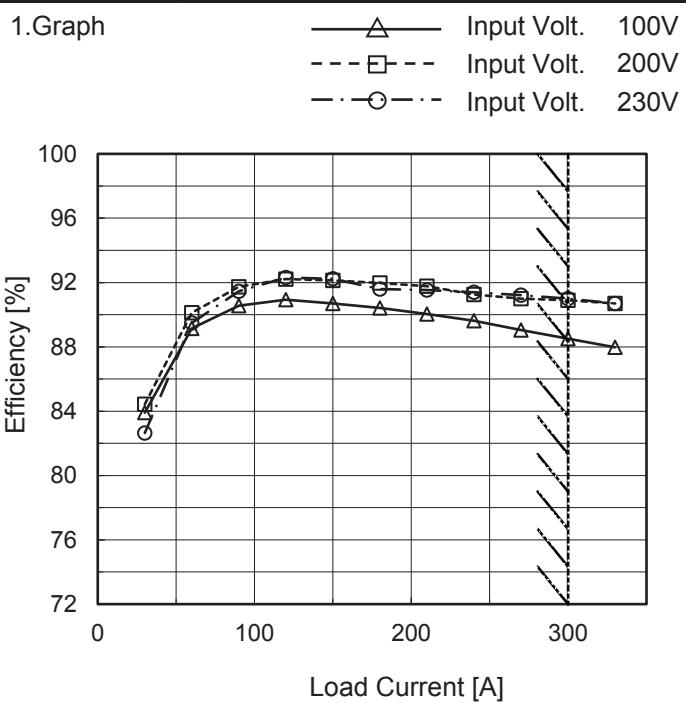
2.Values

Load Current [A]	Input Current [A]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.000	0.342	0.304	0.333
30.000	1.881	1.052	0.986
60.000	3.439	1.807	1.628
90.000	5.030	2.583	2.292
120.000	6.660	3.372	2.970
150.000	8.330	4.170	3.670
180.000	10.000	4.990	4.420
210.000	11.700	5.810	5.130
240.000	13.420	6.680	5.840
270.000	15.170	7.520	6.570
300.000	16.970	8.370	7.300
330.000	18.770	9.220	8.030

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

Model	PCA1500F-5
Item	Efficiency (by Load Current)
Object	_____

Temperature 25°C
Testing Circuitry Figure A



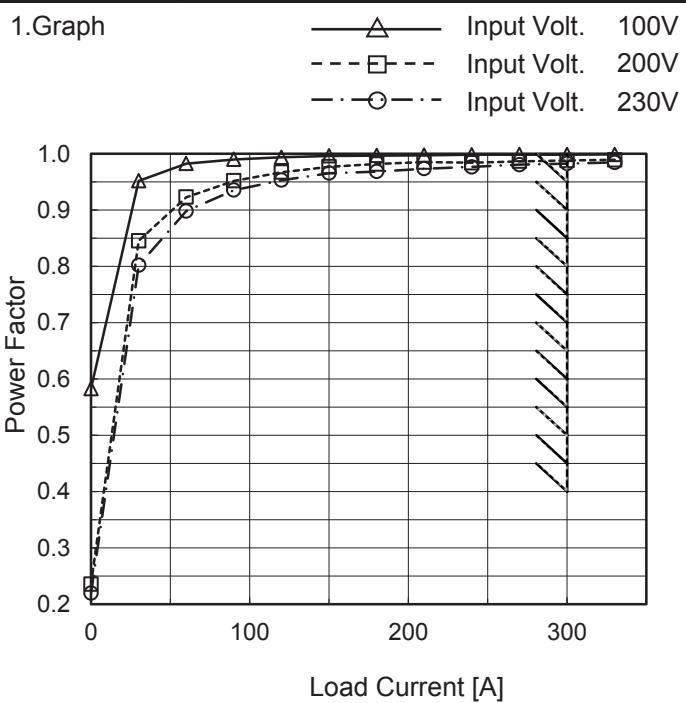
2.Values

Load Current [A]	Efficiency [%]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.000	-	-	-
30.000	83.9	84.4	82.6
60.000	89.1	90.1	89.5
90.000	90.6	91.7	91.5
120.000	90.9	92.2	92.3
150.000	90.7	92.1	92.2
180.000	90.4	92.0	91.6
210.000	90.0	91.8	91.5
240.000	89.6	91.2	91.4
270.000	89.0	91.0	91.2
300.000	88.5	90.9	91.0
330.000	88.0	90.7	90.7

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

Model	PCA1500F-5
Item	Power Factor (by Load Current)
Object	_____

Temperature 25°C
Testing Circuitry Figure A

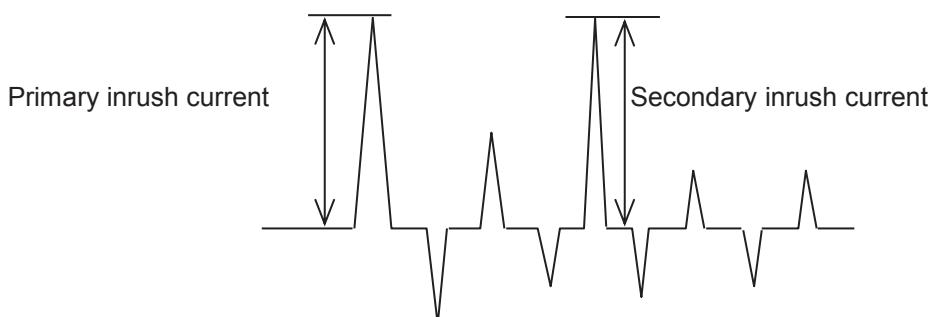
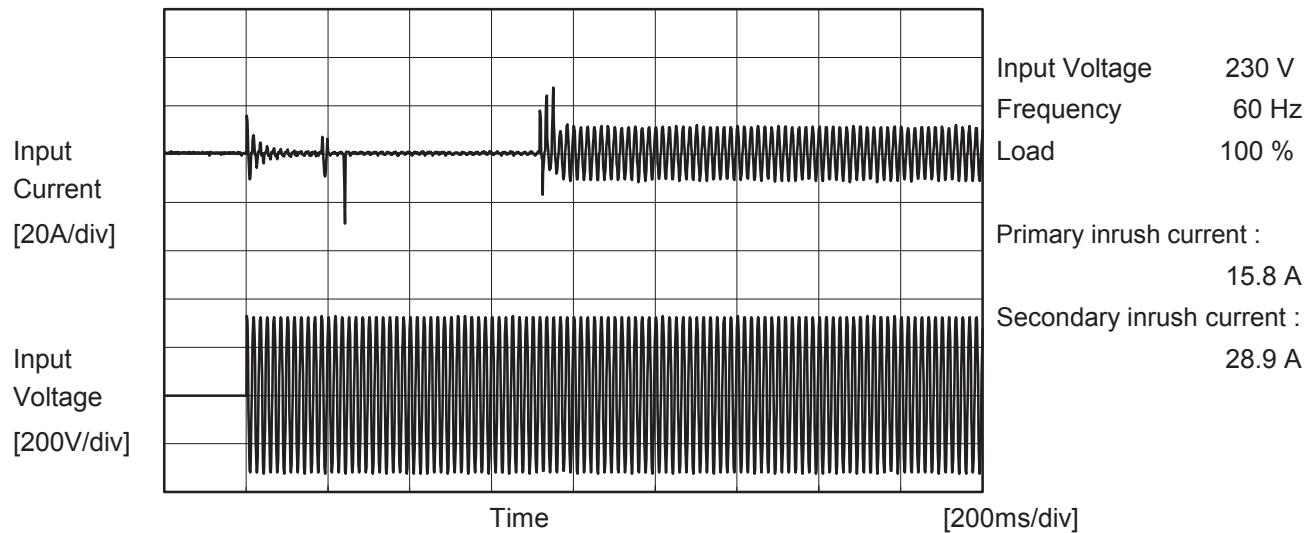
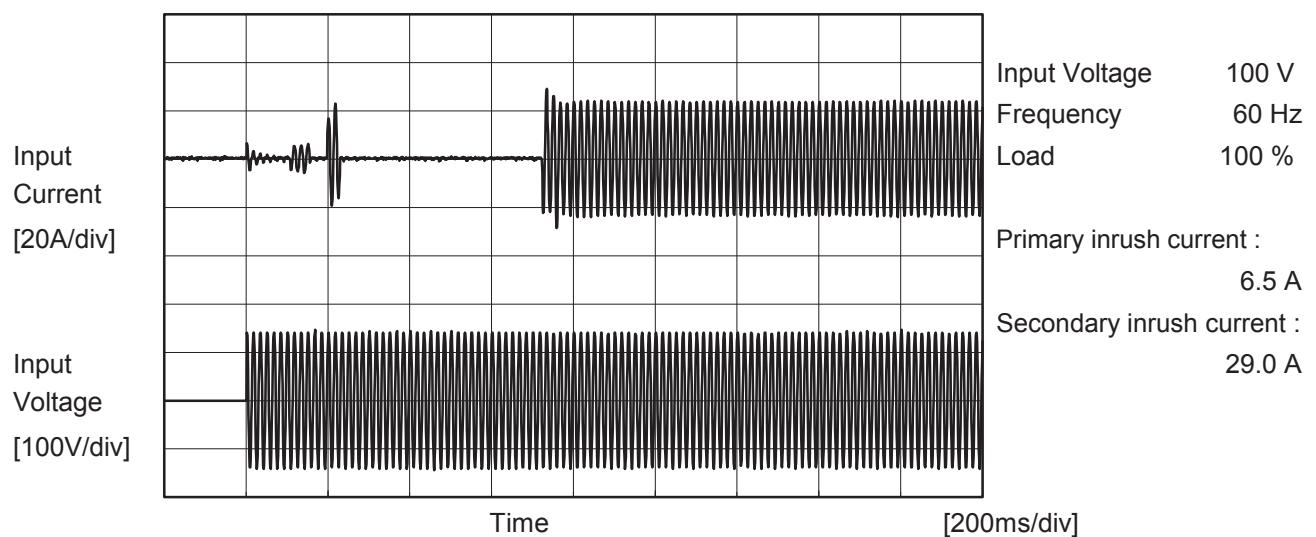


2.Values

Load Current [A]	Power Factor		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0	0.583	0.235	0.219
30	0.952	0.846	0.802
60	0.983	0.923	0.898
90	0.990	0.952	0.935
120	0.994	0.967	0.953
150	0.996	0.977	0.966
180	0.997	0.982	0.968
210	0.997	0.985	0.974
240	0.999	0.984	0.977
270	0.999	0.987	0.981
300	0.999	0.988	0.983
330	0.999	0.989	0.985

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

Model	PCA1500F-5	Temperature	25°C
Item	Inrush Current	Testing Circuitry	Figure A
Object	_____		



Model	PCA1500F-5	Temperature Testing Circuitry Figure B	25°C Figure B
Item	Leakage Current		
Object	_____		

Standards	Testing Circuitry	Measuring Method	Input Volt.			Note
			100 [V]	230 [V]	240 [V]	
DEN-AN	Figure B-1	Both phases	0.23	0.28	0.29	Operation
		One of phases	0.23	0.55	0.58	Stand by
IEC62368-1	Figure B-2	Both phases	0.15	0.27	0.29	Operation
		One of phases	0.22	0.53	0.56	Stand by
IEC60601-1	Figure B-3	Both phases	0.22	0.30	0.32	Operation
		One of phases	0.23	0.56	0.58	Stand by
	Figure B-4	Both phases	0.18	0.28	0.30	Operation
		One of phases	0.22	0.57	0.62	Stand by

Note:

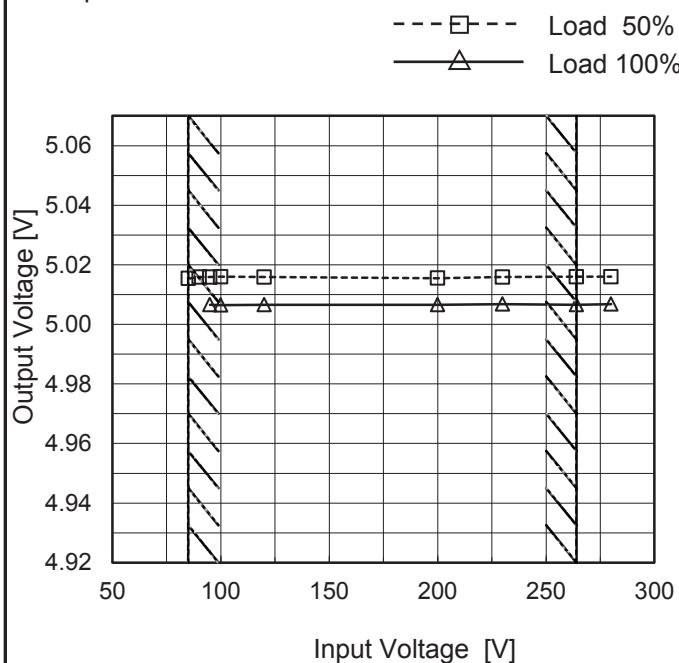
The value of "One of phases" is for reference only.

The above value is the larger one of each phase of AC input.

Model	PCA1500F-5
Item	Line Regulation
Object	+5V300A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



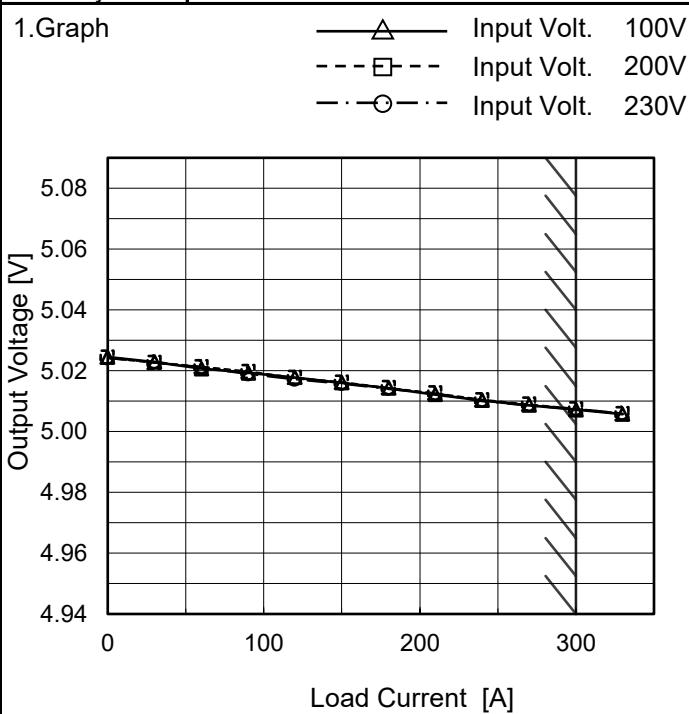
Note: Slanted line shows the range of the rated input voltage.

2.Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
85	5.015	-
90	5.016	-
95	5.016	5.007
100	5.016	5.007
120	5.016	5.007
200	5.016	5.007
230	5.016	5.007
264	5.016	5.007
280	5.016	5.007

Model	PCA1500F-5
Item	Load Regulation
Object	+5V300A

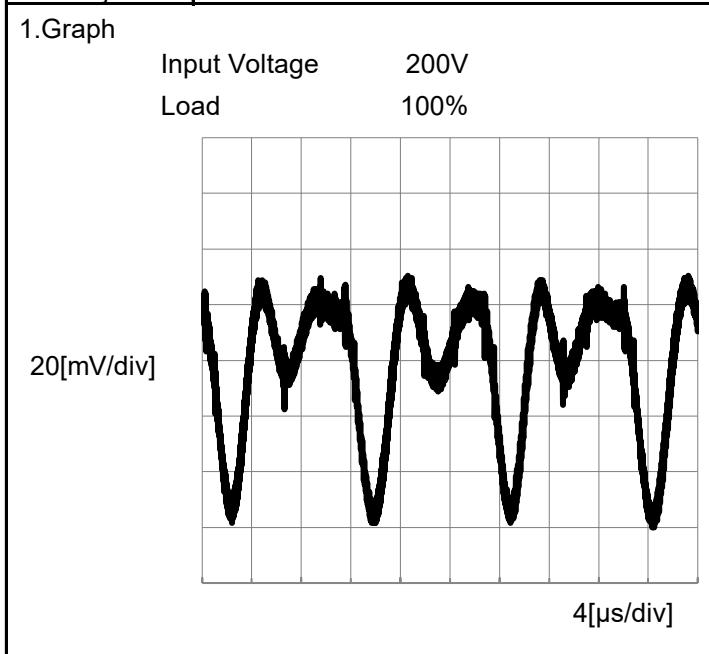
Temperature 25°C
Testing Circuitry Figure A



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

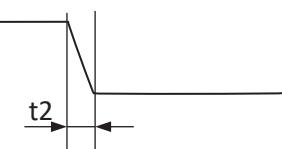
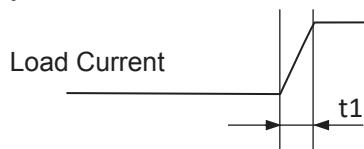
Item	Ripple-Noise
Object	+5V300A

Temperature 25°C
Testing Circuitry Figure C



Model	PCA1500F-5	Temperature	25°C
Item	Dynamic Load Response	Testing Circuitry	Figure A
Object	+5V300A		

Input Volt. 200 V
Cycle 1000 ms

Response. $t_1=t_2=50\mu s$. Typ

Load 0%(0A) \longleftrightarrow
Load 100%(300A)

1[V/div]

2[ms/div]

20[ms/div]

Load 0%(0A) \longleftrightarrow
Load 50%(150A)

1[V/div]

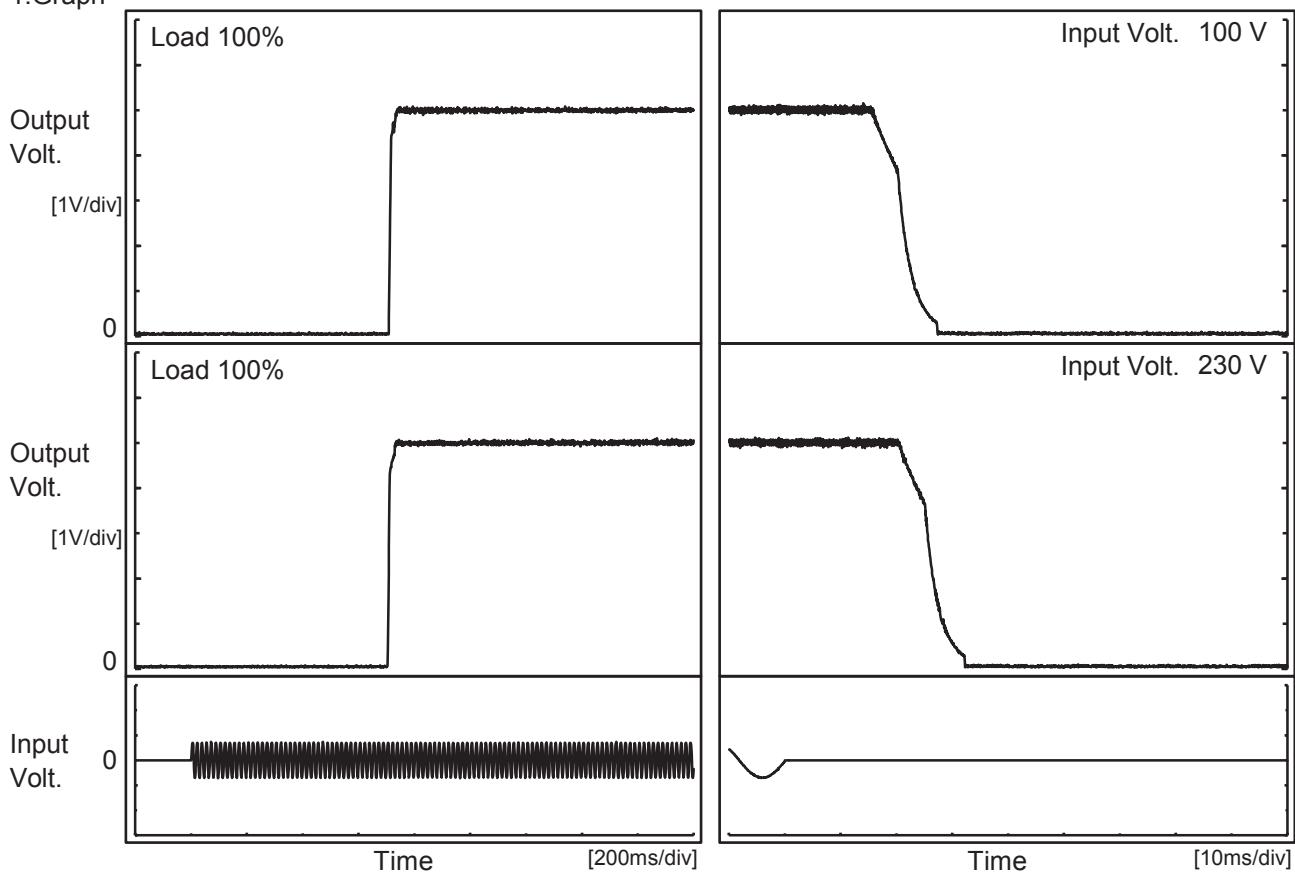
2[ms/div]

20[ms/div]

Model	PCA1500F-5
Item	Rise and Fall Time
Object	+5V300A

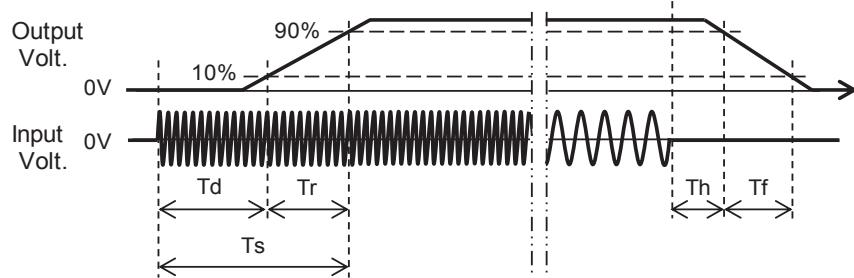
Temperature 25°C
Testing Circuitry Figure A

1. Graph



2. Values

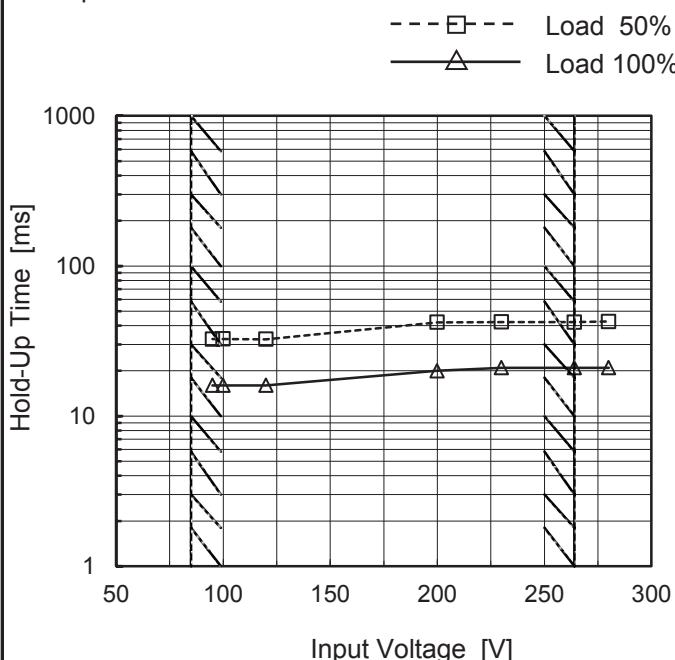
Input Volt.	Time	Td	Tr	Ts	Th	Tf	[ms]
100 V		710.0	12.0	722.0	17.1	8.3	
230 V		706.0	13.0	719.0	21.7	8.5	



Model	PCA1500F-5
Item	Hold-Up Time
Object	+5V300A

Temperature 25°C
Testing Circuitry Figure A

1. Graph



2. Values

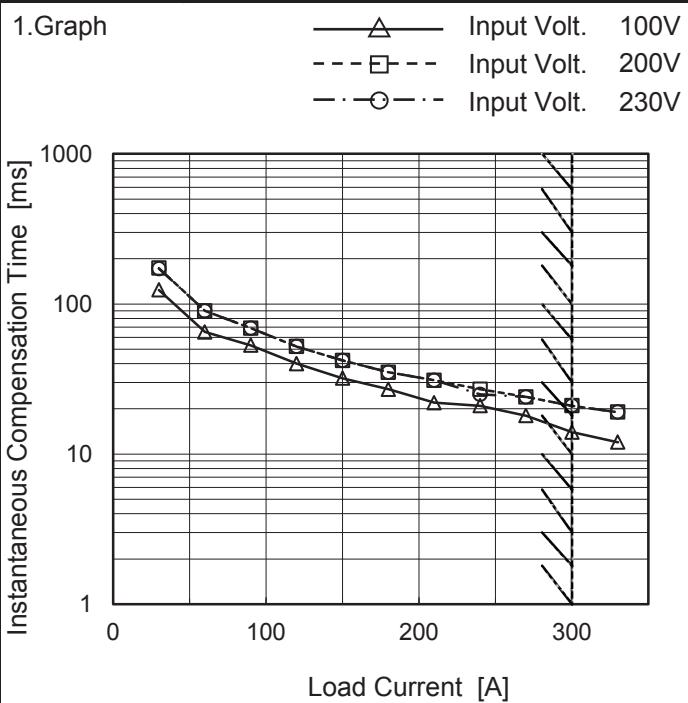
Input Voltage [V]	Hold-Up Time [ms]	
	Load 50%	Load 100%
85	33	-
90	33	-
95	33	16
100	33	16
120	32	16
200	42	20
230	42	21
264	42	21
280	43	21

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.

Model	PCA1500F-5
Item	Instantaneous Interruption Compensation
Object	+5V300A

Temperature 25°C
Testing Circuitry Figure A



2.Values

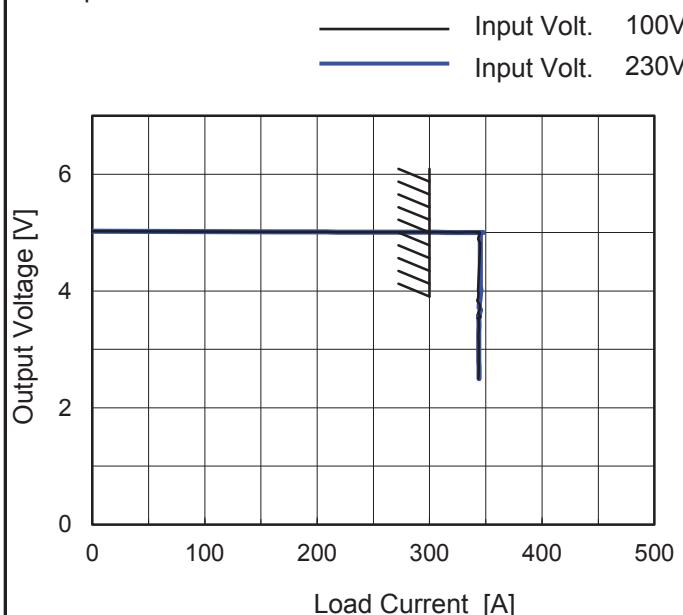
Load Current [A]	Time [ms]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0	-	-	-
30	124	173	172
60	65	90	90
90	53	69	69
120	40	52	52
150	32	42	42
180	27	35	35
210	22	31	31
240	21	27	25
270	18	24	24
300	14	21	21
330	12	19	19

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

Model	PCA1500F-5
Item	Overcurrent Protection
Object	+5V300A

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. 100[V]	Input Volt. 230[V]
4.75	344.72	344.31
4.50	342.86	344.68
4.00	342.98	345.06
3.50	343.34	343.67
3.00	343.18	343.66
2.50	343.41	343.80
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

Model	PCA1500F-5	
Item	Ambient Temperature Drift	Testing Circuitry Figure A
Object	+5V300A	

1.Values

Load 100%

Ambient Temperature[°C]	Output Voltage [V]		
	Input Volt. 100V	Input Volt. 200V	Input Volt. 230V
-20	5.008	5.008	5.008
25	5.008	5.008	5.008
50	5.006	5.006	5.006

Item	Minimum Input Voltage for Regulated Output Voltage	Testing Circuitry Figure A
Object	+5V300A	

1.Values

Ambient Temperature[°C]	Input Voltage [V]	
	Load 50%	Load 100%
-20	74	81
25	74	80
50	74	80

Item	Overvoltage Protection	Testing Circuitry Figure A
Object	+5V300A	

1.Values

Load 0%

Ambient Temperature[°C]	Operating Point [V]	
	Input Volt. 100V	Input Volt. 230V
-20	6.63	6.63
25	6.51	6.51
50	6.51	6.51

COSEL

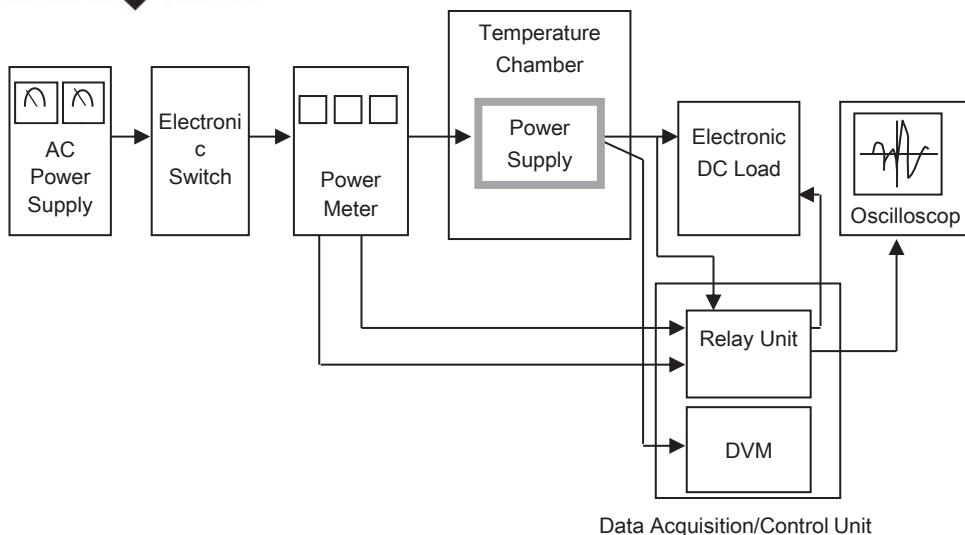


Figure A

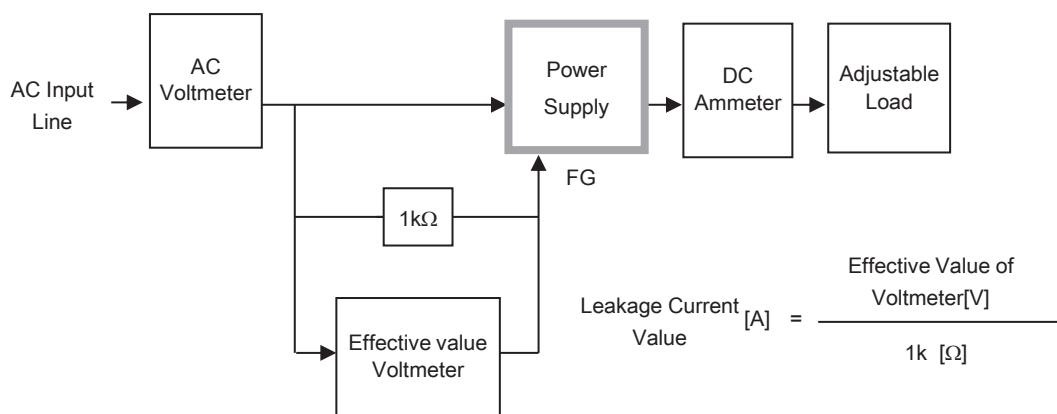


Figure B-1 (DEN-AN)

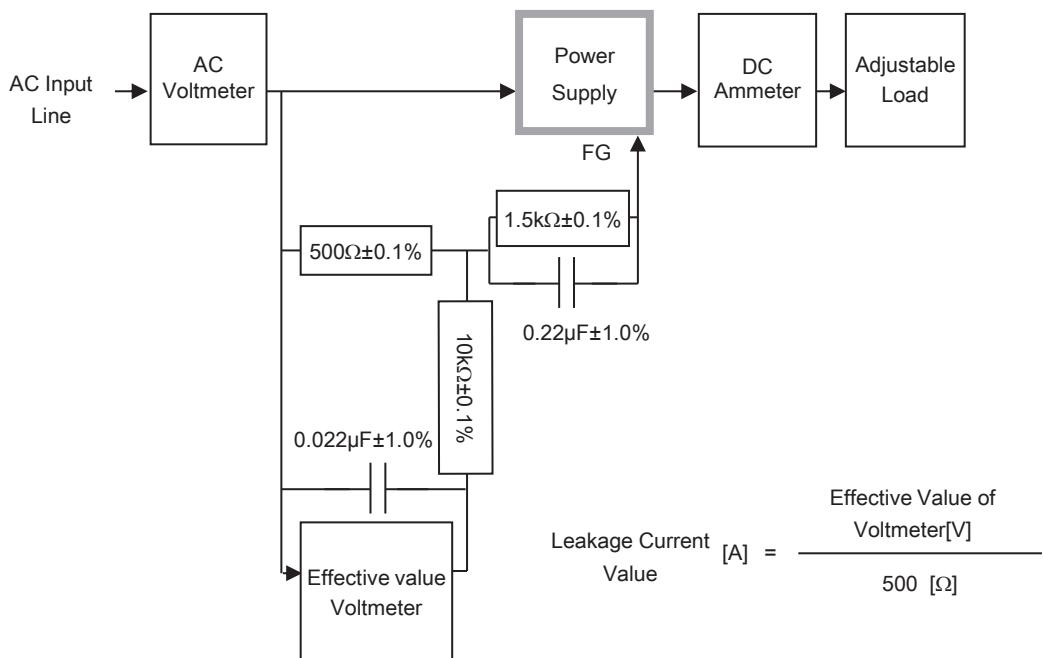


Figure B-2 (IEC62368-1 refer to IEC60990 Fig.4)

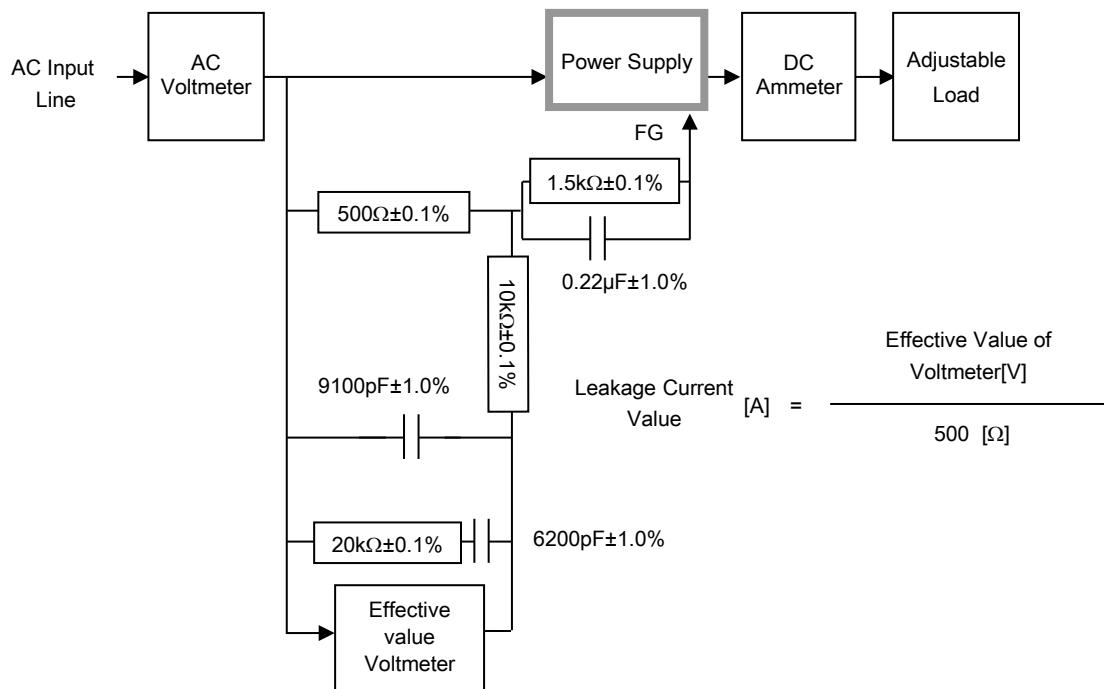


Figure B-3 (IEC62368-1 refer to IEC60990 Fig.5)

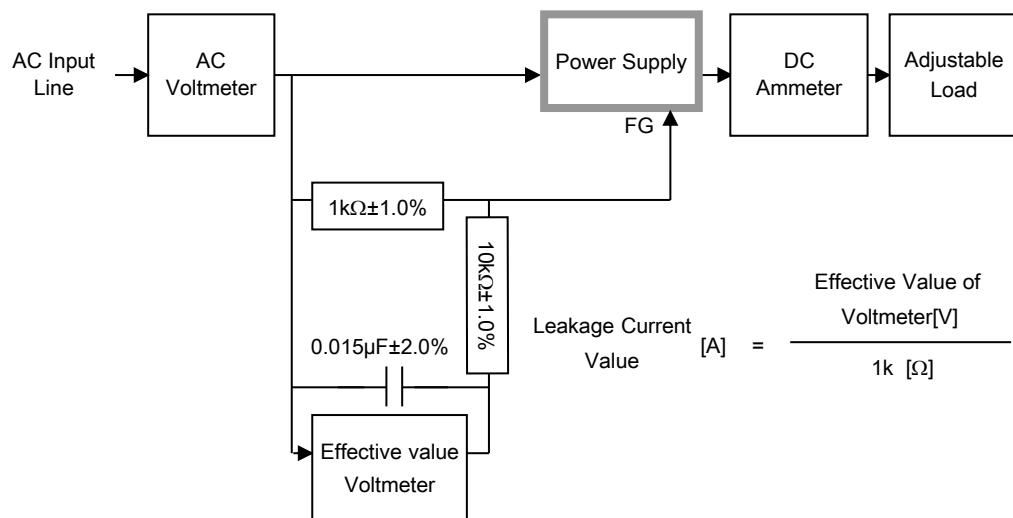


Figure B-4 (IEC60601-1)

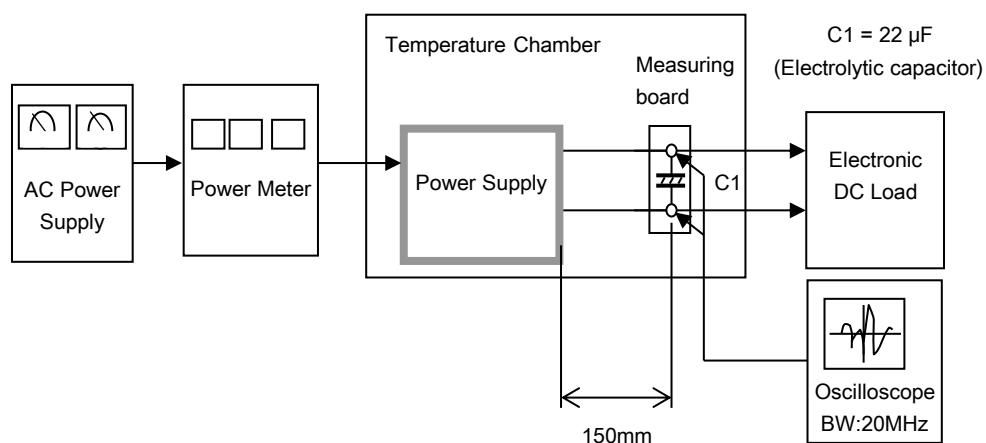


Figure C