参考資料

TEST DATA OF PCA1500F-32

Regulated DC Power Supply
February 22, 2021

Approved by : Takashi Yamamine
Design Manager

Prepared by : Koki Miyazaki
Design Engineer

COSEL CO.,LTD.

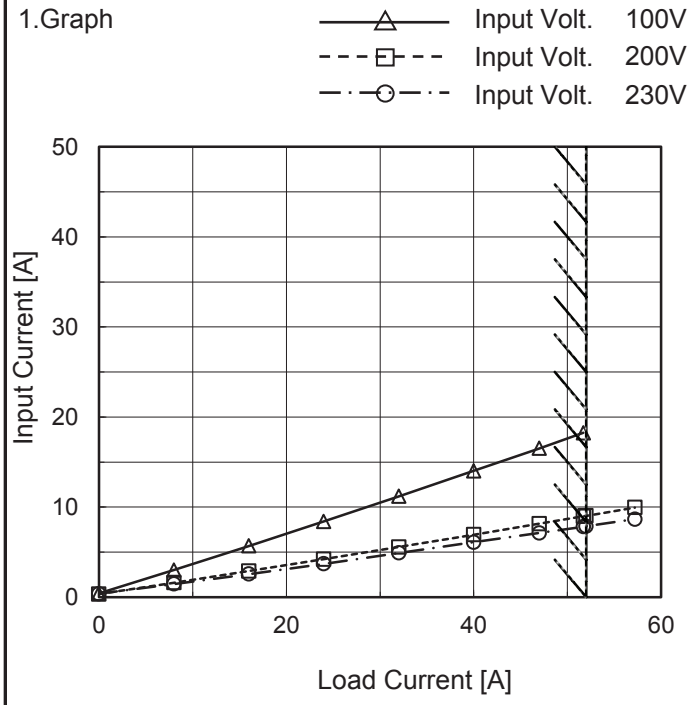
CONTENTS

COSEL

Model	PCA1500F-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

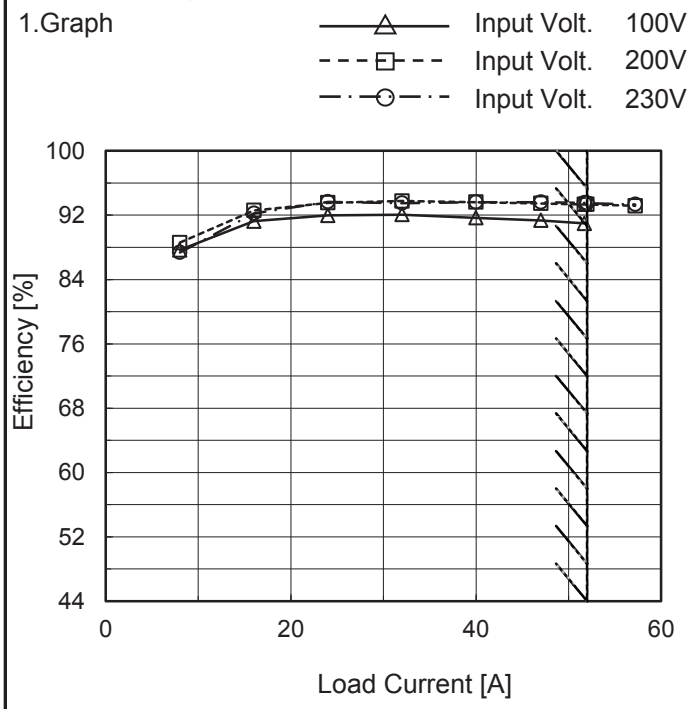
Load Current [A]	Input Current [A]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.0	0.414	0.333	0.371
8.0	3.010	1.597	1.454
16.0	5.680	2.894	2.566
24.0	8.410	4.220	3.700
32.0	11.190	5.560	4.910
40.0	14.020	6.930	6.090
47.0	16.530	8.160	7.130
51.7	18.250	8.970	7.820
52.0	-	9.030	7.870
57.2	-	9.950	8.660
--	-	-	-

COSEL

Model	PCA1500F-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

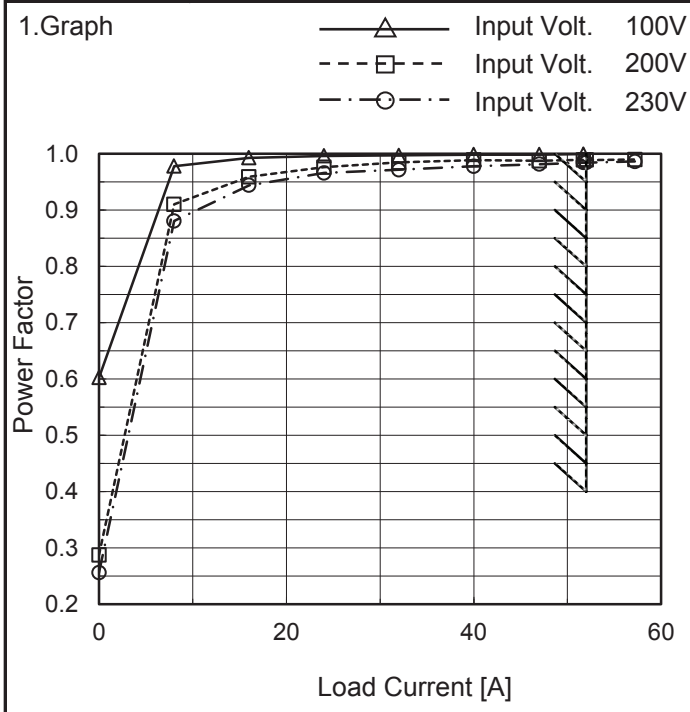
Load Current [A]	Efficiency [%] Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.0	-	-	-
8.0	87.7	88.6	87.4
16.0	91.3	92.6	92.2
24.0	92.0	93.5	93.7
32.0	92.1	93.8	93.5
40.0	91.7	93.6	93.6
47.0	91.3	93.5	93.6
51.7	91.0	93.3	93.5
52.0	-	93.3	93.5
57.2	-	93.2	93.3
--	-	-	-

COSEL

Model	PCA1500F-32
Item	Power Factor (by Load Current)
Object	———————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



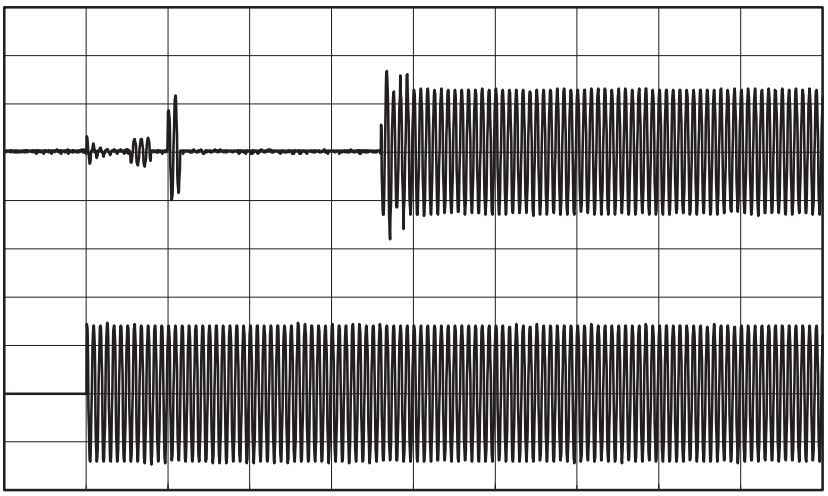
Note: Slanted line shows the range of the rated load current.

2.Values

Load Current [A]	Power Factor		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.0	0.602	0.287	0.256
8.0	0.978	0.910	0.881
16.0	0.993	0.959	0.944
24.0	0.996	0.976	0.966
32.0	0.997	0.985	0.972
40.0	0.999	0.989	0.978
47.0	0.999	0.988	0.982
51.7	0.999	0.989	0.984
52.0	-	0.989	0.985
57.2	-	0.990	0.986
--	-	-	-

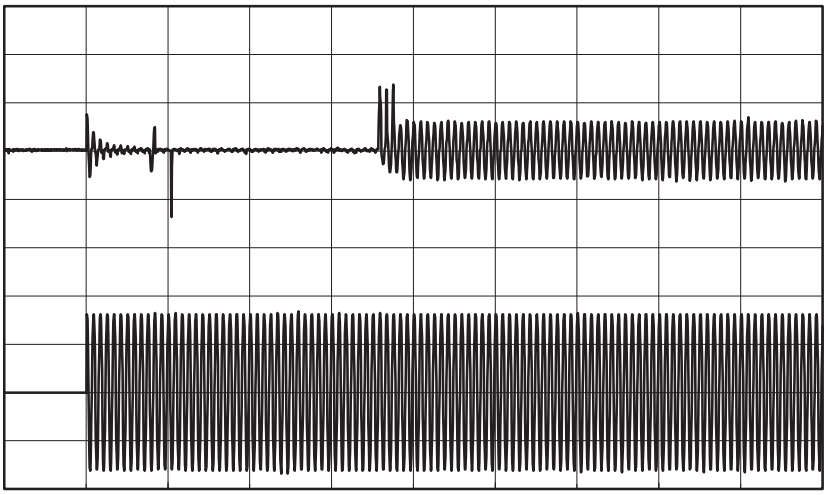
COSEL

Model	PCA1500F-32	
Item	Inrush Current	Temperature 25°C Testing Circuitry Figure A
Object	————————	



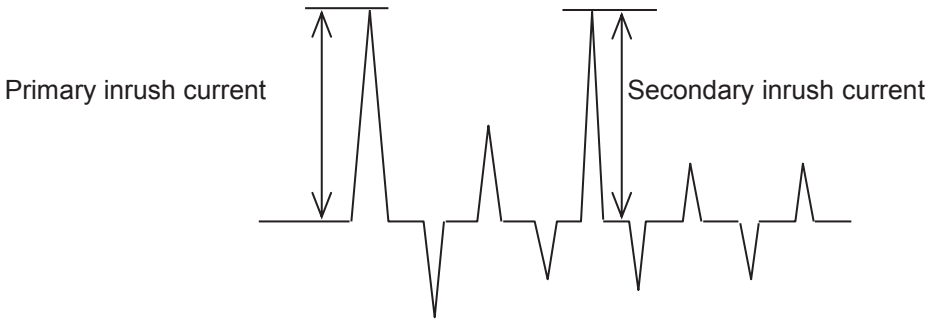
Input Voltage 100 V
Frequency 60 Hz
Load 100 %

Primary inrush current :
6.5 A
Secondary inrush current :
36.1 A



Input Voltage 230 V
Frequency 60 Hz
Load 100 %

Primary inrush current :
15.1 A
Secondary inrush current :
27.5 A



COSEL

Model	PCA1500F-32	
Item	Leakage Current	Temperature 25°C Testing Circuitry Figure B
Object	――――――――――	

[mA]

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
	Figure B-3	Both phases	0.22	0.30	0.32	Operation
		One of phases	0.23	0.56	0.58	Stand by
IEC60601-1	Figure B-4	Both phases	0.18	0.28	0.30	Operation
		One of phases	0.22	0.57	0.62	Stand by

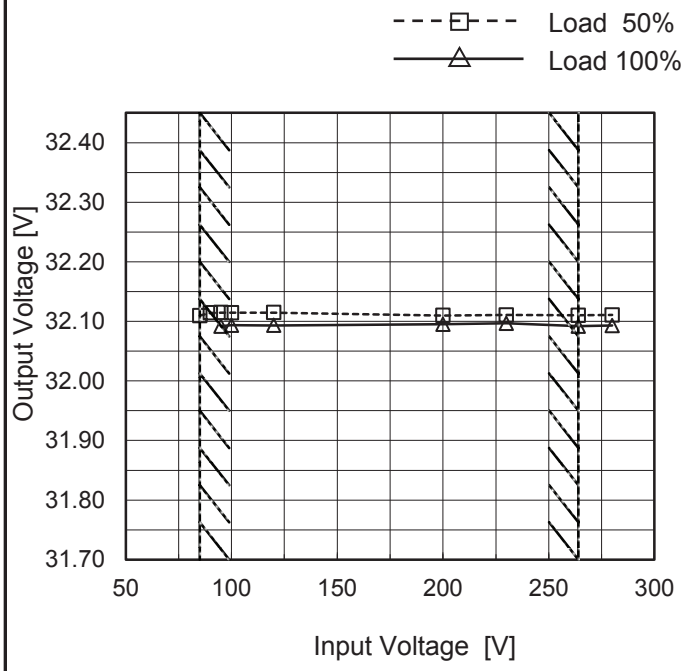
Note:
The value of "One of phases" is for reference only.
The above value is the larger one of each phase of AC input.

COSEL

Model	PCA1500F-32
Item	Line Regulation
Object	+32V52A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

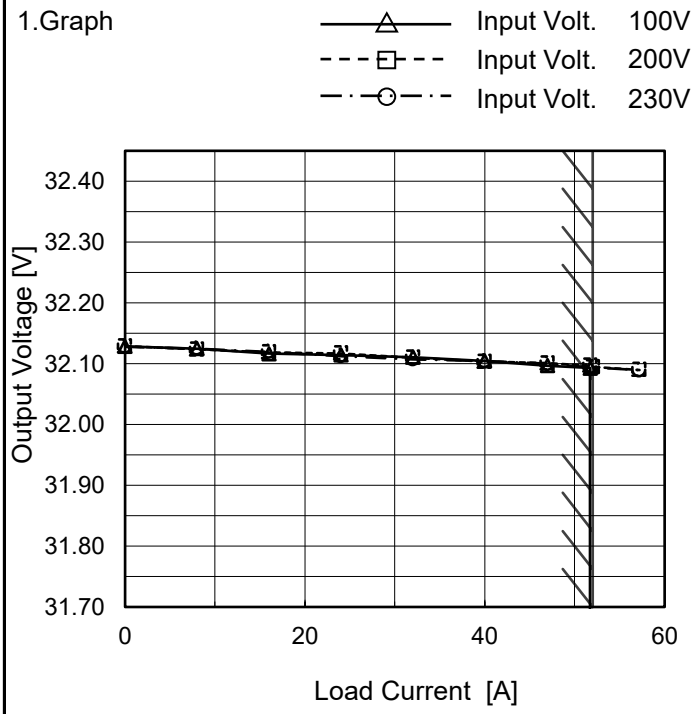
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
85	32.110	-
90	32.114	-
95	32.115	32.092
100	32.114	32.094
120	32.115	32.093
200	32.110	32.095
230	32.111	32.097
264	32.110	32.092
280	32.111	32.093

COSEL

Model	PCA1500F-32
Item	Load Regulation
Object	+32V52A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

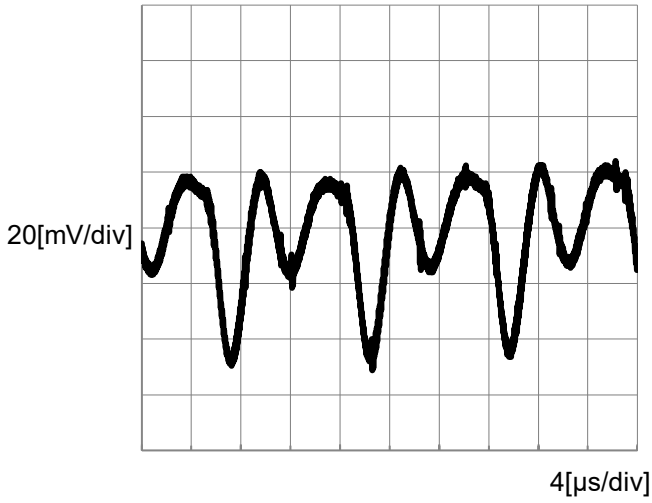
Load Current [A]	Output Voltage [V]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.0	32.129	32.129	32.128
8.0	32.125	32.124	32.125
16.0	32.116	32.119	32.119
24.0	32.115	32.117	32.113
32.0	32.111	32.110	32.107
40.0	32.105	32.103	32.104
47.0	32.097	32.101	32.100
51.7	32.093	32.097	32.094
52.0	--	32.095	32.094
57.2	--	32.090	32.089
--	--	--	--

Item	Ripple-Noise
Object	+32V52A

Temperature 25°C
Testing Circuitry Figure C

1.Graph

Input Voltage 200V
Load 100%

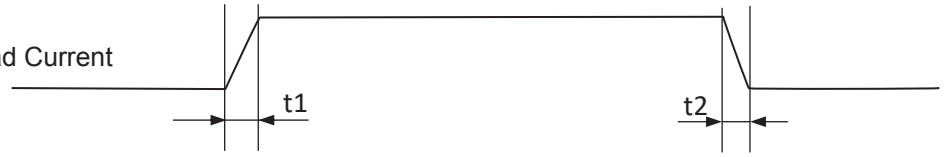


COSEL

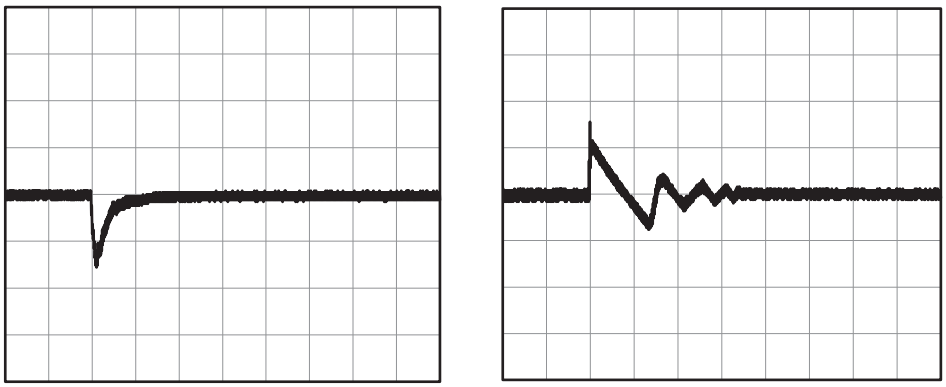
Model	PCA1500F-32	
Item	Dynamic Load Response	Temperature 25°C Testing Circuitry Figure A
Object	+32V52A	

Input Volt. 200 V
Cycle 1000 ms

Response. t1=t2=50μs. Typ



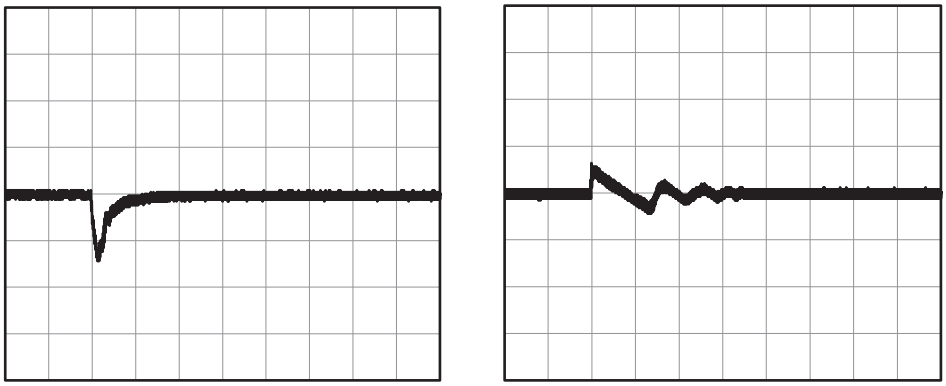
Load 0%(0A) ←→
Load 100%(52A)



2[V/div]

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

Load 0%(0A) ←→
Load 50%(26A)



2[V/div]

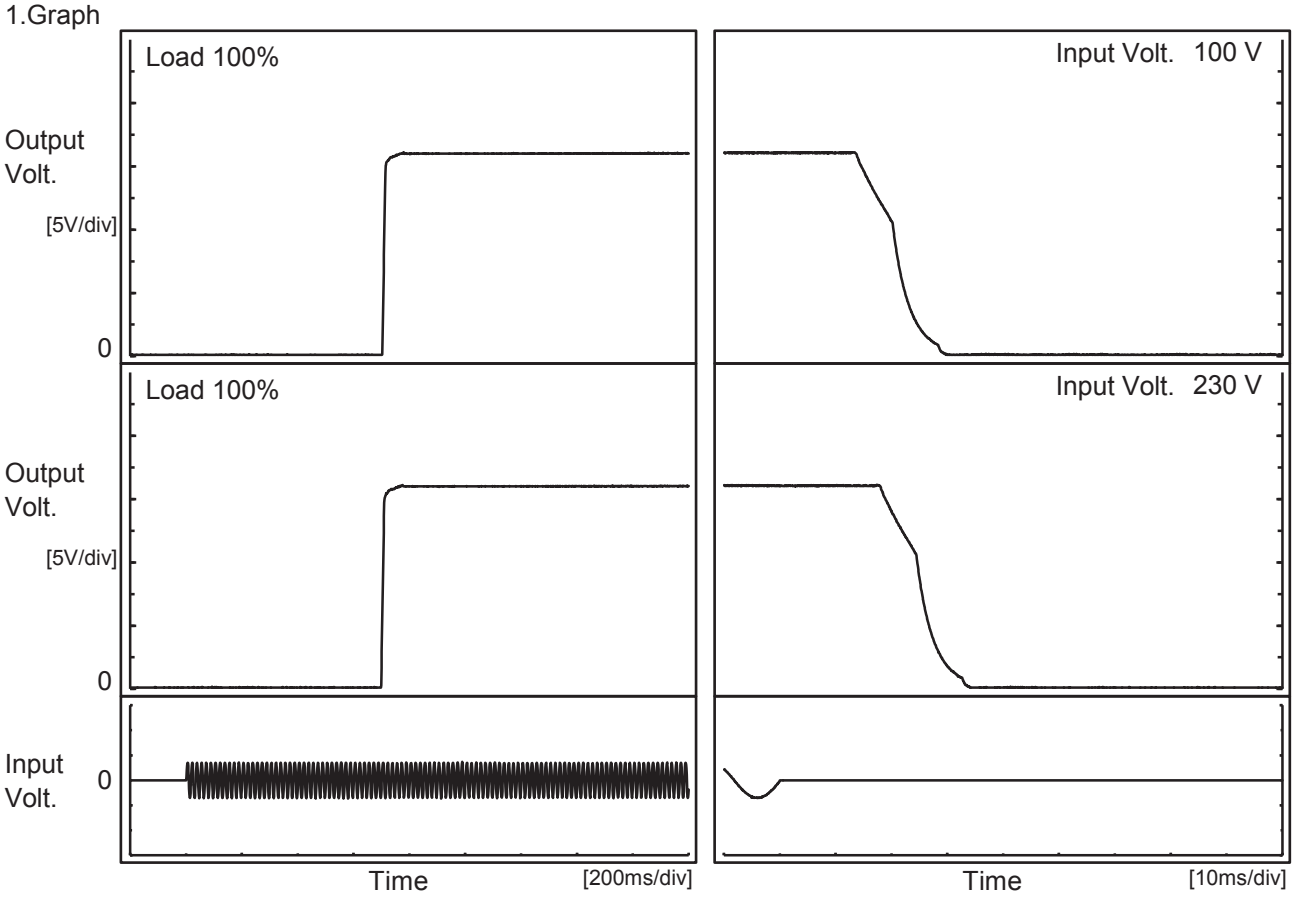
2[ms/div] 20[ms/div]

COSEL

Model	PCA1500F-32
Item	Rise and Fall Time
Object	+32V52A

Temperature 25°C
Testing Circuitry Figure A

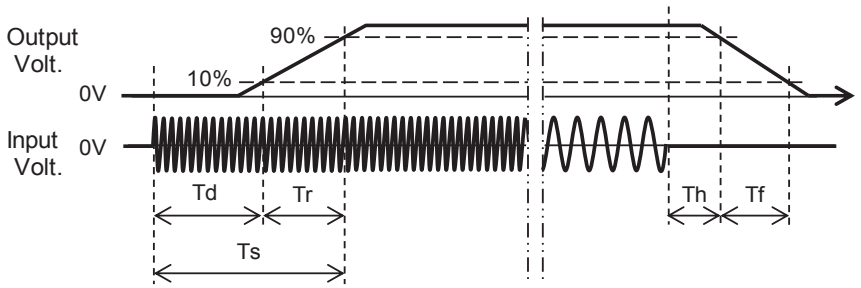
1.Graph



2.Values

[ms]

Input Volt. \ Time	Td	Tr	Ts	Th	Tf
100 V	705.0	9.0	714.0	15.2	10.9
230 V	701.0	9.0	710.0	19.5	10.8



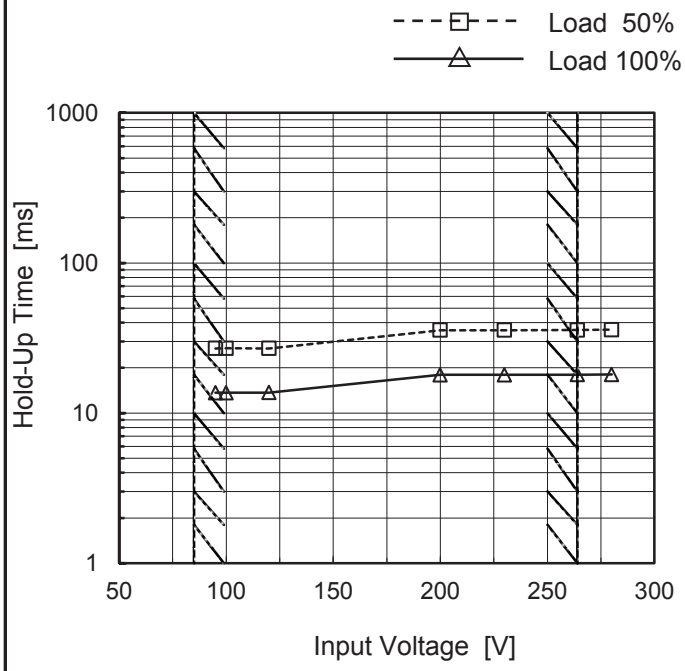
BC-11707

COSEL

Model	PCA1500F-32
Item	Hold-Up Time
Object	+32V52A

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

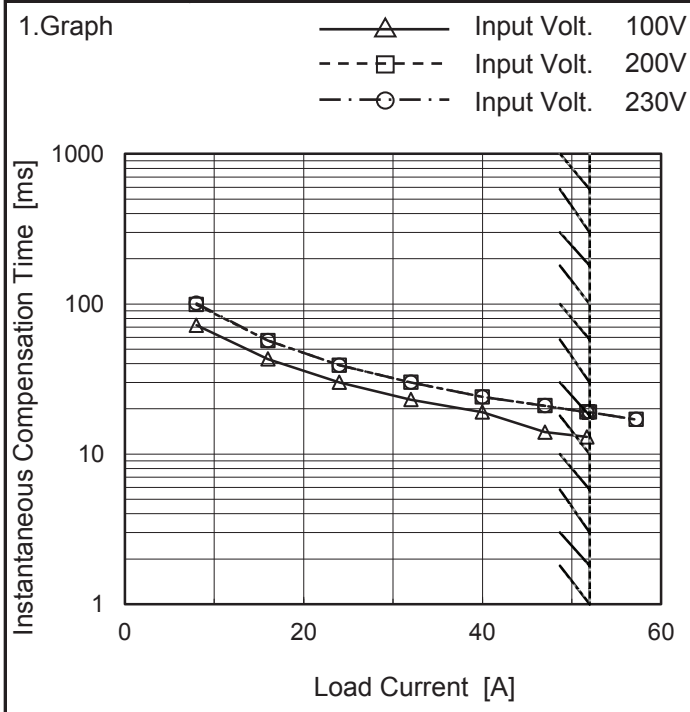
Input Voltage [V]	Hold-Up Time [ms]	
	Load 50%	Load 100%
85	27	-
90	27	-
95	27	14
100	27	14
120	27	14
200	36	18
230	36	18
264	36	18
280	36	18

COSEL

Model	PCA1500F-32
Item	Instantaneous Interruption Compensation
Object	+32V52A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

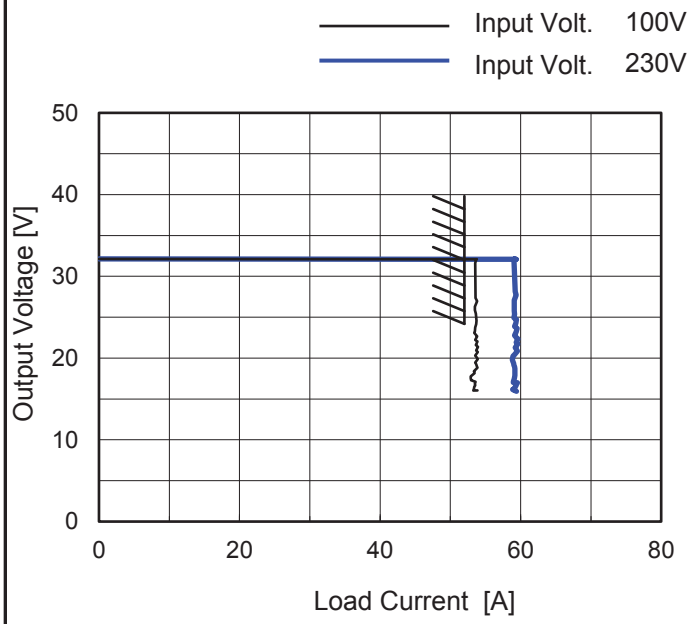
Load Current [A]	Time [ms] Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.0	-	-	-
8.0	72	99	101
16.0	43	57	57
24.0	30	39	39
32.0	23	30	30
40.0	19	24	24
47.0	14	21	21
51.7	13	19	19
52.0	-	19	19
57.2	-	17	17
--	-	-	-

COSEL

Model	PCA1500F-32
Item	Overcurrent Protection
Object	+32V52A

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]
30.4	53.53	59.06
28.8	53.61	59.24
25.6	53.51	59.09
22.4	53.79	59.37
19.2	53.67	58.99
16.0	53.86	58.85
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

Model	PCA1500F-32	
Item	Ambient Temperature Drift	Testing Circuitry Figure A
Object	+32V52A	

1.Values

Load 100%

Ambient Temperature[℃]	Output Voltage [V]		
	Input Volt. 100V	Input Volt. 200V	Input Volt. 230V
-20	32.009	32.009	32.009
25	32.116	32.116	32.115
50	32.154	32.154	32.154

Item	Minimum Input Voltage for Regulated Output Voltage	Testing Circuitry Figure A
Object	+32V52A	

1.Values

Ambient Temperature[℃]	Input Voltage [V]	
	Load 50%	Load 100%
-20	73	93
25	73	93
50	74	92

Item	Overvoltage Protection	Testing Circuitry Figure A
Object	+32V52A	

1.Values

Load 0%

Ambient Temperature[℃]	Operating Point [V]	
	Input Volt. 100V	Input Volt. 230V
-20	41.14	41.14
25	41.08	41.08
50	40.96	40.96

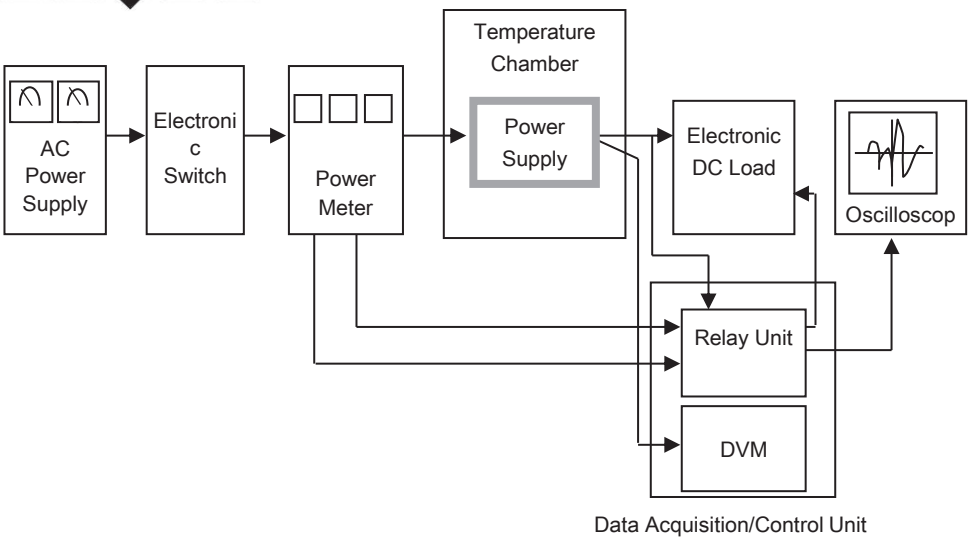


Figure A

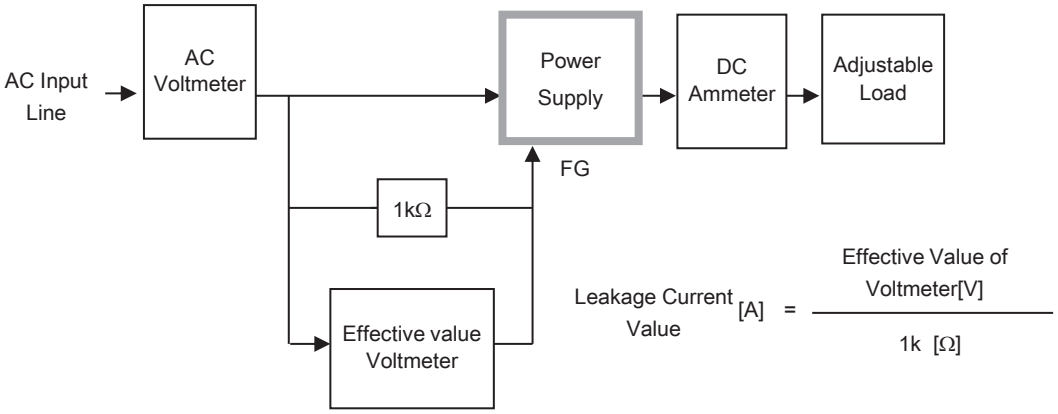


Figure B-1 (DEN-AN)

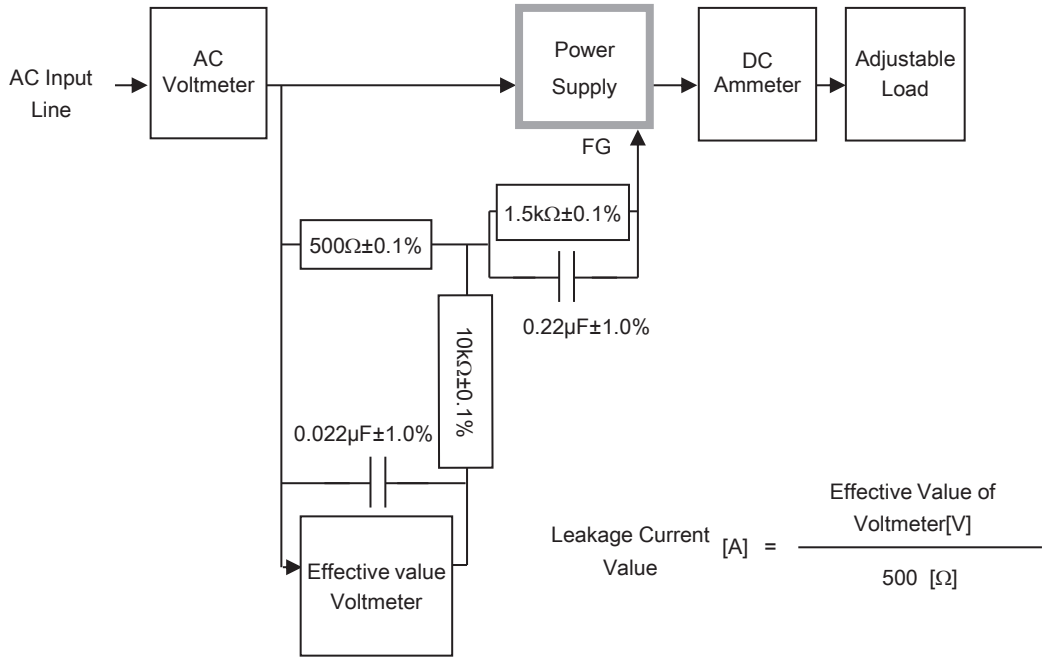


Figure B-2 (IEC62368-1 refer to IEC60990 Fig.4)

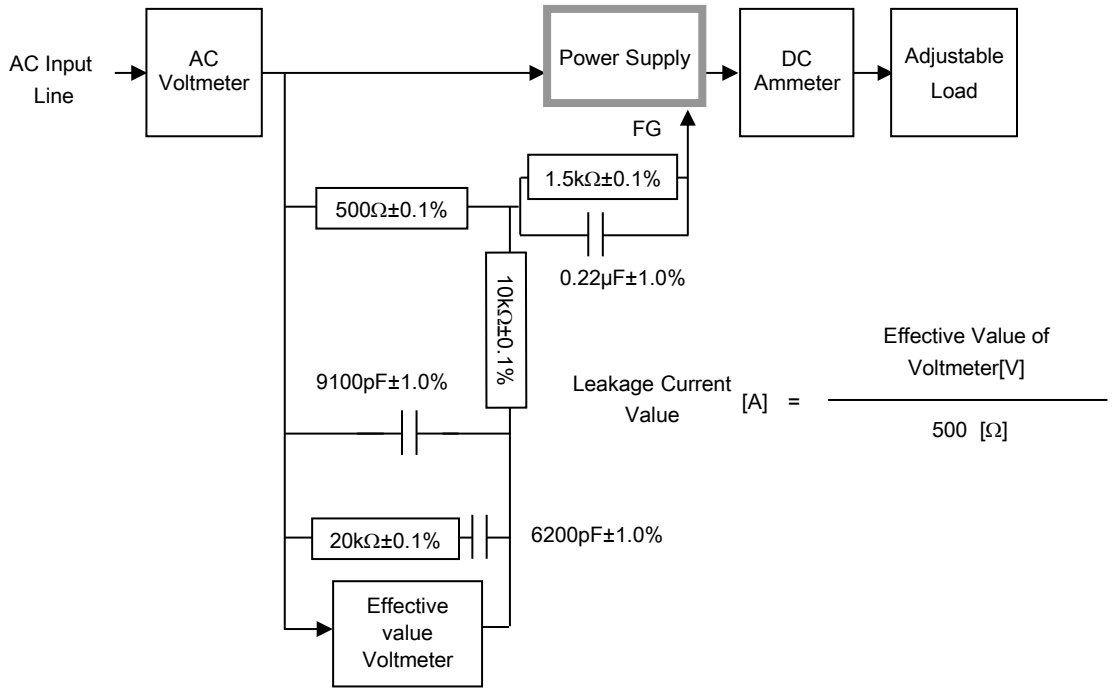


Figure B-3 (IEC62368-1 refer to IEC60990 Fig.5)

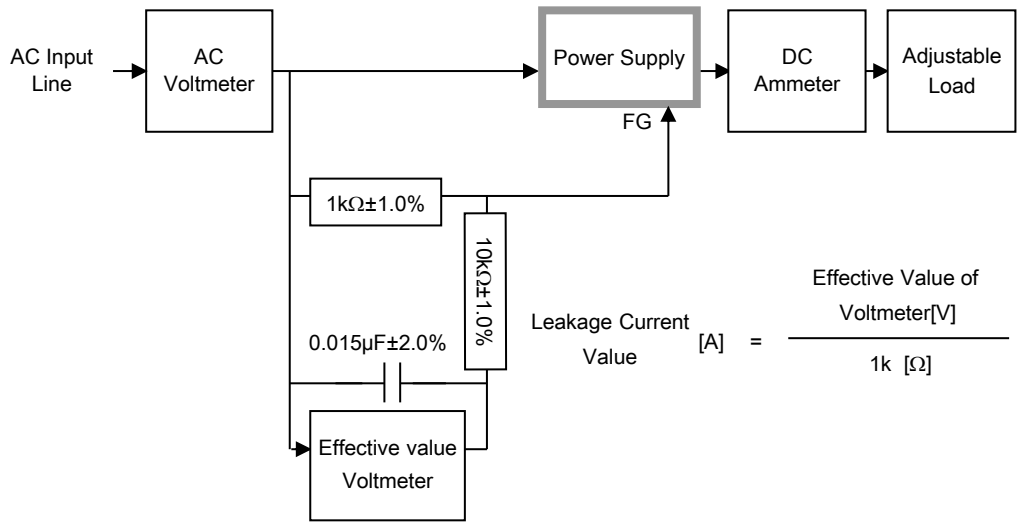


Figure B-4 (IEC60601-1)

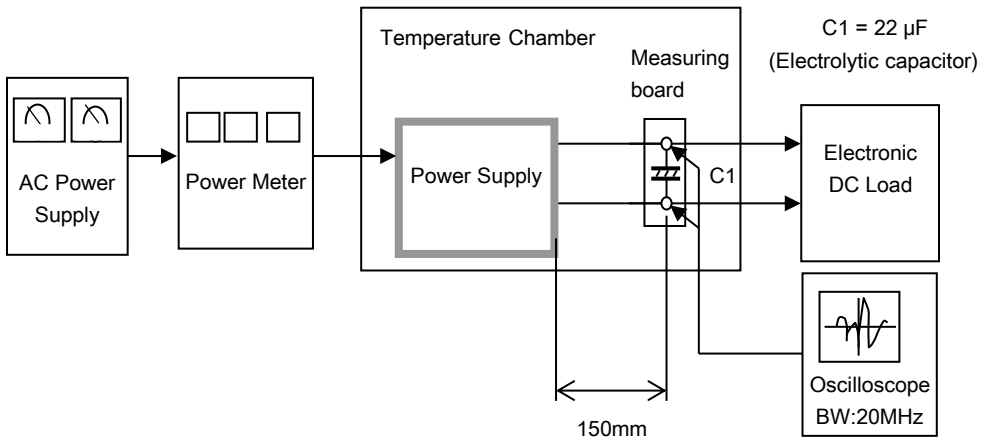


Figure C