参考資料

TEST DATA OF PCA300F-24

Regulated DC Power Supply
March 11, 2019

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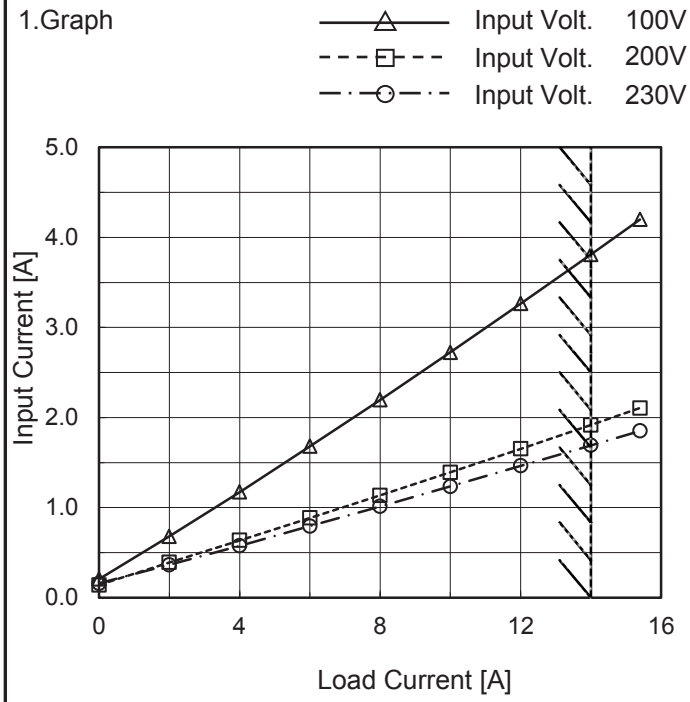
Model	PCA300F-24
Item	Input Current (by Load Current)
Object	———————

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	0.206	0.140	0.158
2.0	0.680	0.391	0.364
4.0	1.172	0.636	0.575
6.0	1.680	0.885	0.794
8.0	2.195	1.135	1.012
10.0	2.724	1.391	1.235
12.0	3.265	1.653	1.464
14.0	3.810	1.917	1.692
15.4	4.200	2.106	1.852
--	-	-	-
--	-	-	-

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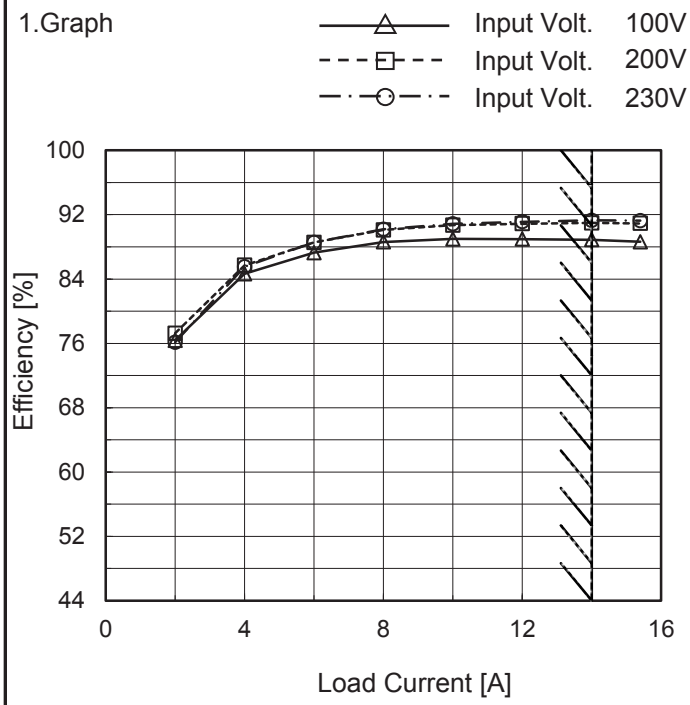
Model	PCA300F-24
Item	Efficiency (by Load Current)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

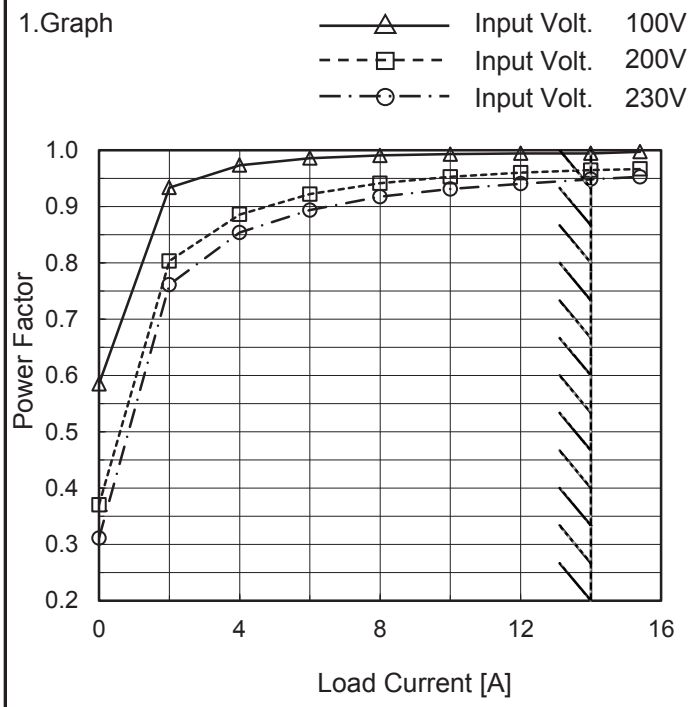
Load Current [A]	Efficiency [%]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.0	-	-	-
2.0	76.4	77.2	76.1
4.0	84.6	85.7	85.5
6.0	87.3	88.6	88.5
8.0	88.6	90.1	90.2
10.0	89.0	90.7	90.9
12.0	89.0	90.9	91.1
14.0	88.9	91.0	91.3
15.4	88.6	90.9	91.3
--	-	-	-
--	-	-	-

COSEL

Model	PCA300F-24
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	0.585	0.370	0.311
2.0	0.934	0.803	0.761
4.0	0.974	0.886	0.854
6.0	0.986	0.922	0.894
8.0	0.991	0.941	0.918
10.0	0.993	0.953	0.931
12.0	0.995	0.960	0.941
14.0	0.995	0.965	0.949
15.4	0.998	0.967	0.953
--	-	-	-
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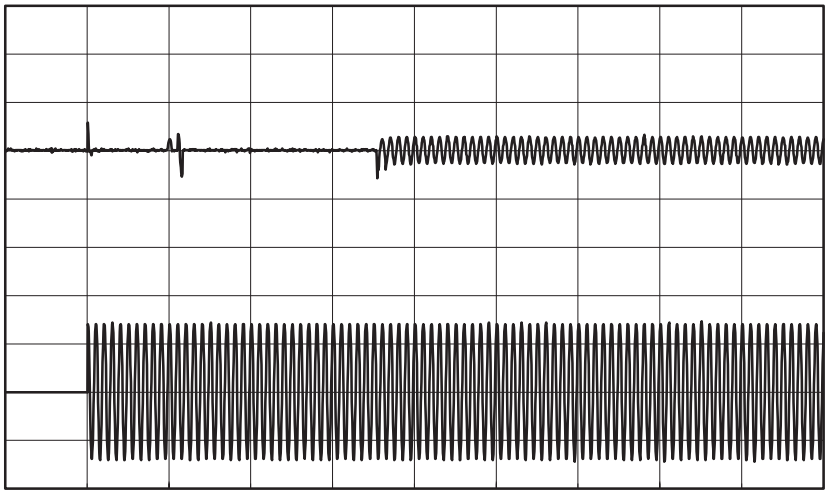
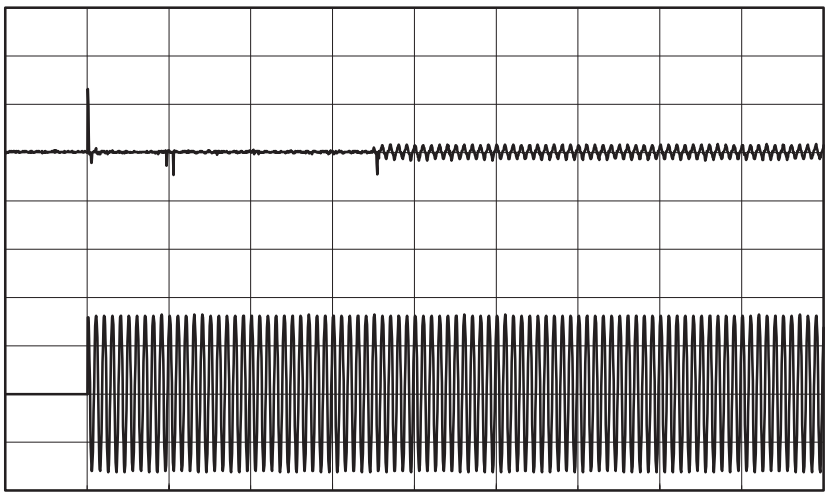
Model	PCA300F-24
Item	Inrush Current
Object	————————

Temperature 25°C
Testing Circuitry Figure A



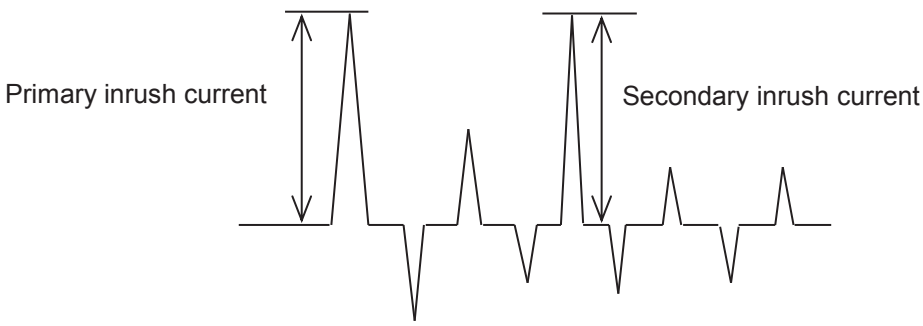
Input Voltage 100 V
Frequency 50 Hz
Load 100 %

Primary inrush current :
11.7 A
Secondary inrush current :
11.4 A



Input Voltage 230 V
Frequency 50 Hz
Load 100 %

Primary inrush current :
26.4 A
Secondary inrush current :
9.3 A



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Model	PCA300F-24	
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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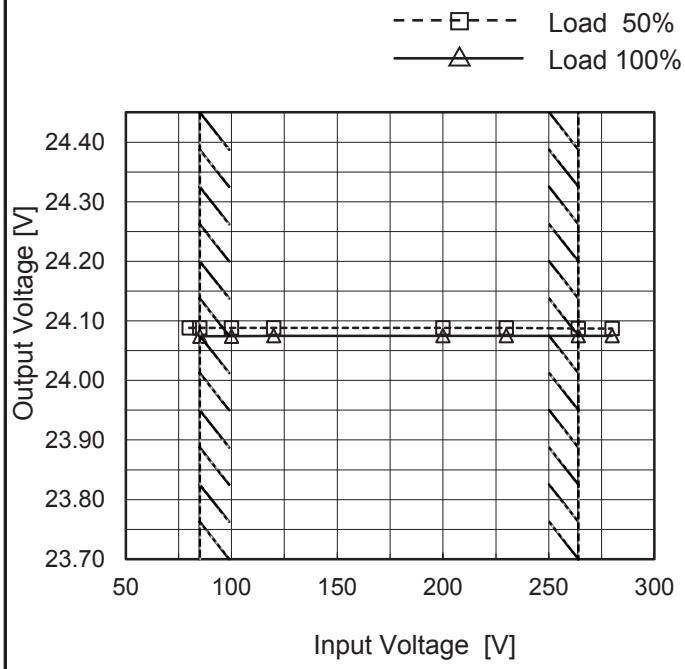
Model	PCA300F-24
Item	Line Regulation
Object	+24V14A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

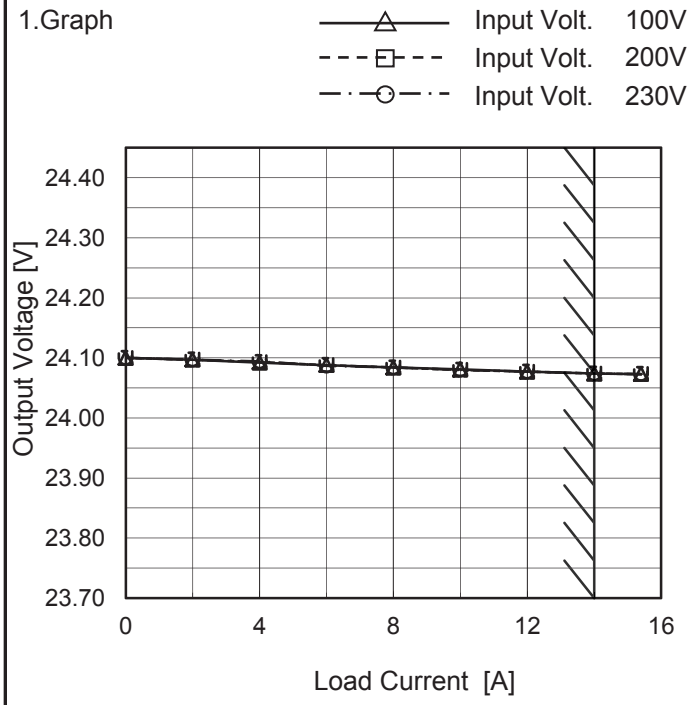
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
80	24.088	-
85	24.088	24.074
100	24.088	24.074
120	24.088	24.075
200	24.088	24.075
230	24.088	24.075
264	24.087	24.075
280	24.087	24.075
--	-	-

COSEL

Model	PCA300F-24
Item	Load Regulation
Object	+24V14A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

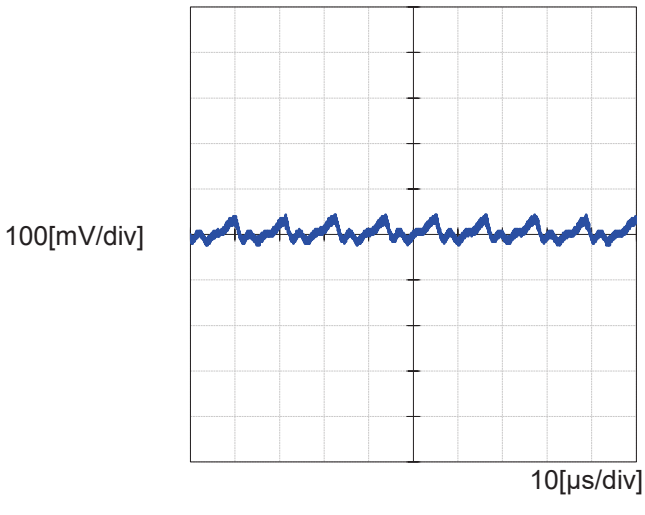
Load Current [A]	Output Voltage [V]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.0	24.100	24.100	24.100
2.0	24.097	24.097	24.097
4.0	24.092	24.093	24.094
6.0	24.088	24.088	24.087
8.0	24.084	24.084	24.084
10.0	24.081	24.080	24.080
12.0	24.077	24.077	24.077
14.0	24.074	24.074	24.074
15.4	24.073	24.073	24.073
--	-	-	-
--	-	-	-

Item	Ripple-Noise
Object	+24V14A

Temperature 25°C
Testing Circuitry Figure C

1.Graph

Input Voltage 200V
Load 100%



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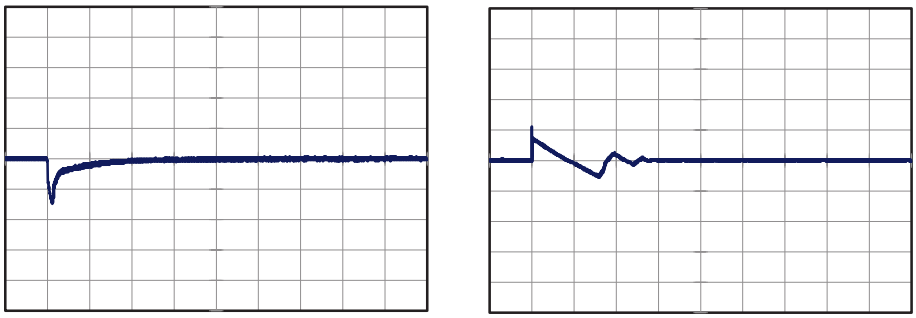
Model	PCA300F-24	
Item	Dynamic Load Response	Temperature 25°C Testing Circuitry Figure A
Object	+24V14A	

Input Volt. 200 V
Cycle 1000 ms

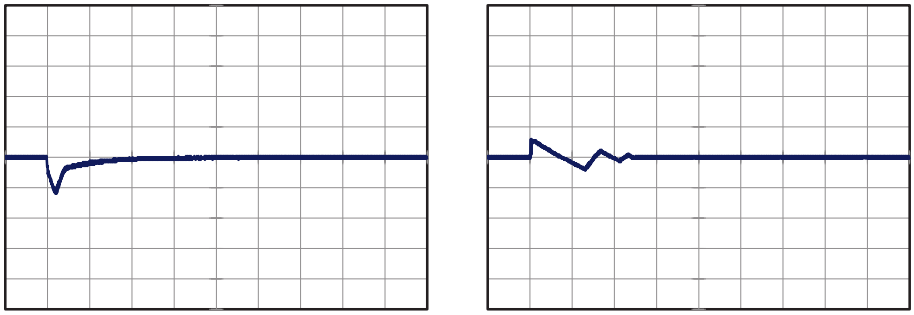
Min.Load (0A)←→
Load 100% (14A)



1 V/div

2 ms/div 20 ms/div

Min.Load (0A)←→
Load 50% (7A)



1 V/div

2 ms/div 20 ms/div

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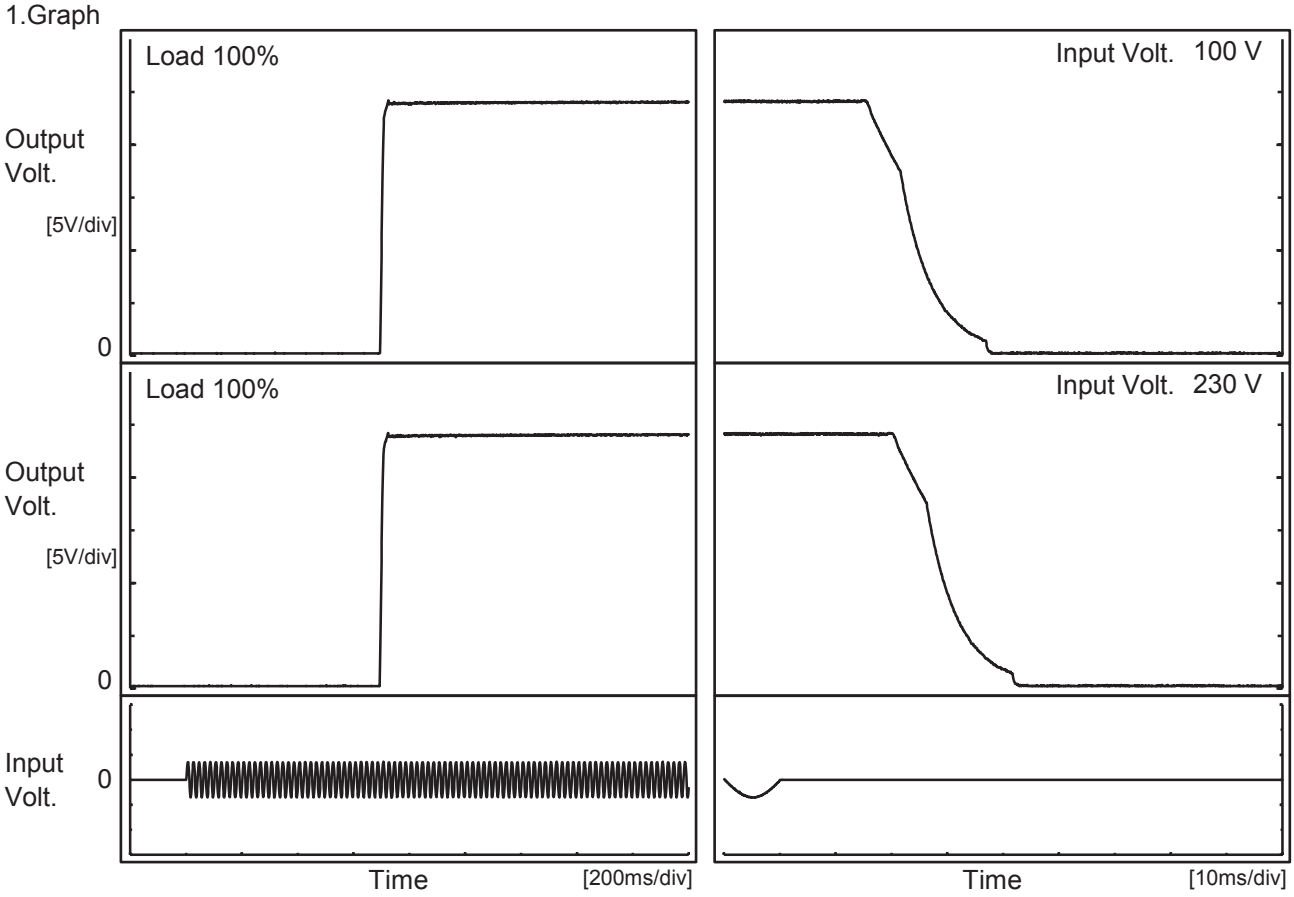
Model	PCA300F-24	
Item	Rise and Fall Time	Temperature 25°C Testing Circuitry Figure A
Object	+24V14A	

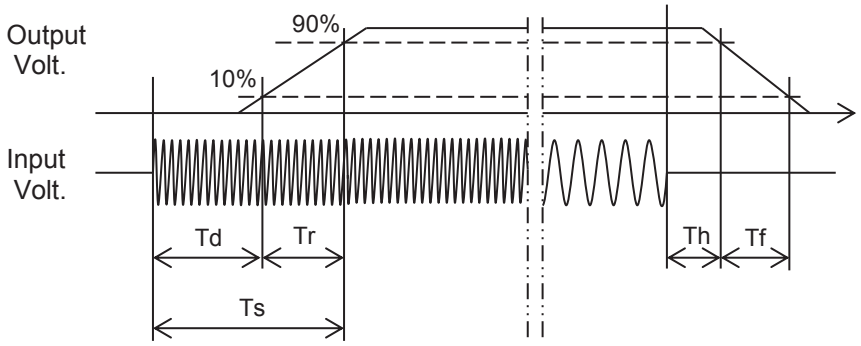
1.Graph



2.Values

[ms]

Input Volt. \ Time	Td	Tr	Ts	Th	Tf
100 V	697.0	11.0	708.0	17.4	15.6
230 V	696.0	11.0	707.0	22.2	15.5



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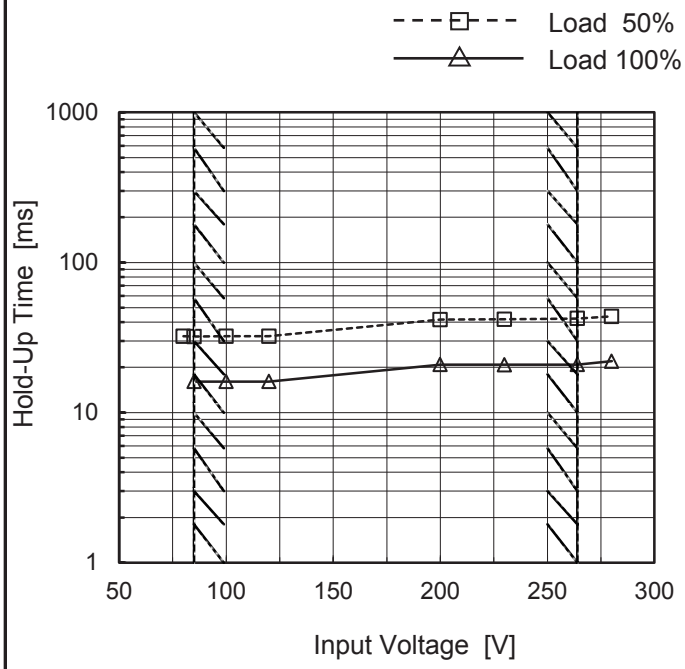
COSEL

Model	PCA300F-24
Item	Hold-Up Time
Object	+24V14A

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	32	-
85	32	16
100	32	16
120	32	16
200	42	21
230	42	21
264	42	21
280	44	22
--	-	-

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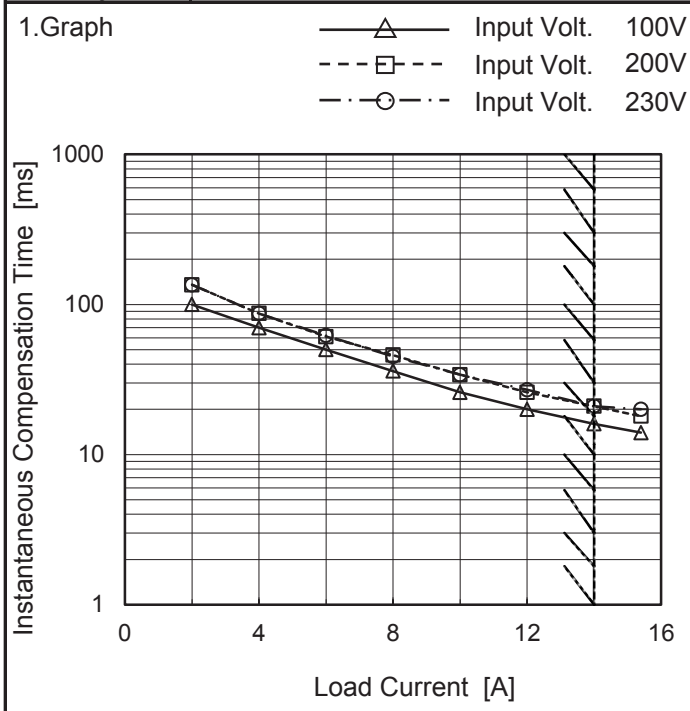
Model	PCA300F-24
Item	Instantaneous Interruption Compensation
Object	+24V14A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

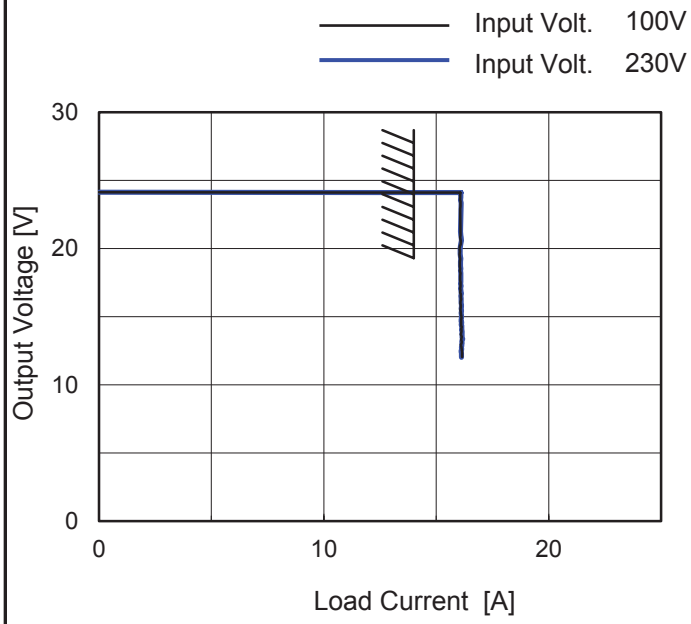
Load Current [A]	Time [ms]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.0	-	-	-
2.0	100	135	135
4.0	70	87	87
6.0	50	61	62
8.0	36	46	45
10.0	26	34	34
12.0	20	26	27
14.0	16	21	21
15.4	14	18	20
--	-	-	-
--	-	-	-

COSEL

Model	PCA300F-24
Item	Overcurrent Protection
Object	+24V14A

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 12V to 0V.

2.Values

Output Voltage [V]	Load Current [A]	
	Input Volt. 100[V]	Input Volt. 230[V]
22.8	16.07	16.07
21.6	16.08	16.08
19.2	16.06	16.09
16.8	16.08	16.10
14.4	16.11	16.13
12.0	16.15	16.12
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	PCA300F-24	
Item	Ambient Temperature Drift	Testing Circuitry Figure A
Object	+24V14A	

1.Values

Load 100%

Ambient Temperature[℃]	Output Voltage [V]		
	Input Volt. 100V	Input Volt. 200V	Input Volt. 230V
-20	24.012	24.012	24.012
25	24.110	24.109	24.110
50	24.162	24.161	24.161

Item	Minimum Input Voltage for Regulated Output Voltage	Testing Circuitry Figure A
Object	+24V14A	

1.Values

Ambient Temperature[℃]	Input Voltage [V]	
	Load 50%	Load 100%
-20	74	79
25	73	79
50	73	79

Item	Overvoltage Protection	Testing Circuitry Figure A
Object	+24V14A	

1.Values

Load 0%

Ambient Temperature[℃]	Operating Point [V]	
	Input Volt. 100V	Input Volt. 230V
-20	30.64	30.63
25	30.73	30.72
50	30.78	30.77

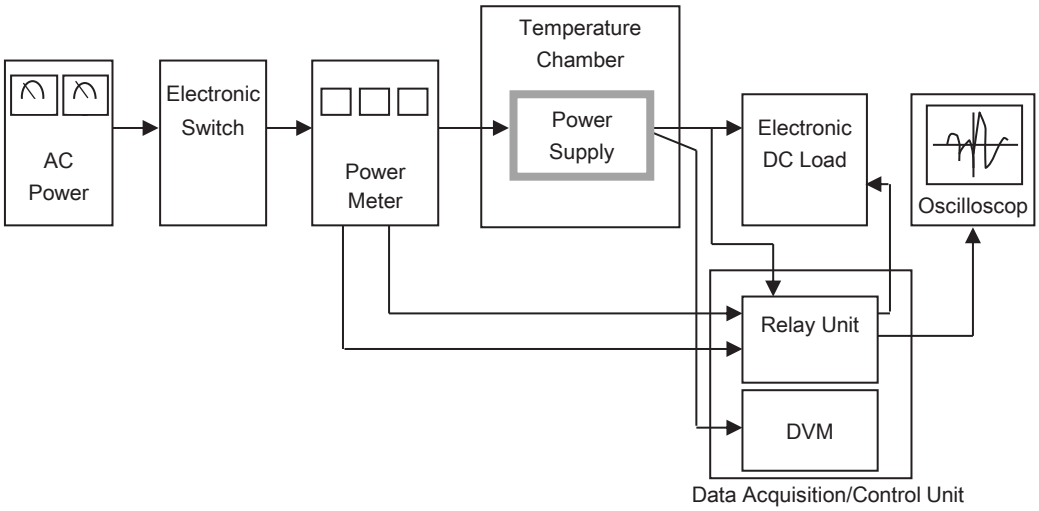


Figure A

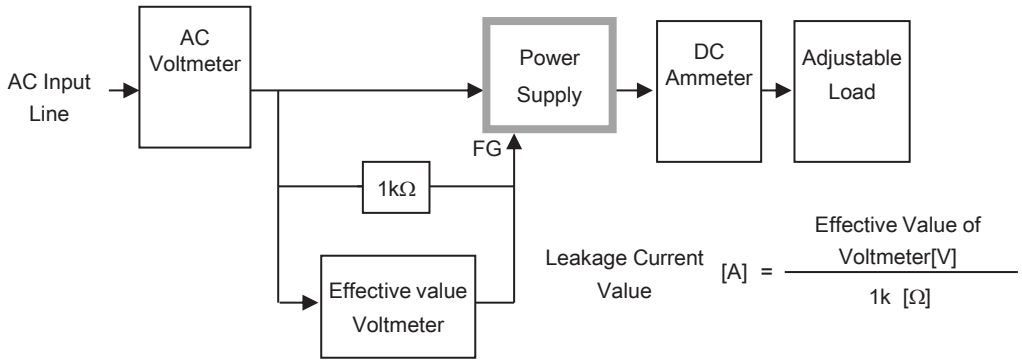


Figure B-1 (DEN-AN)

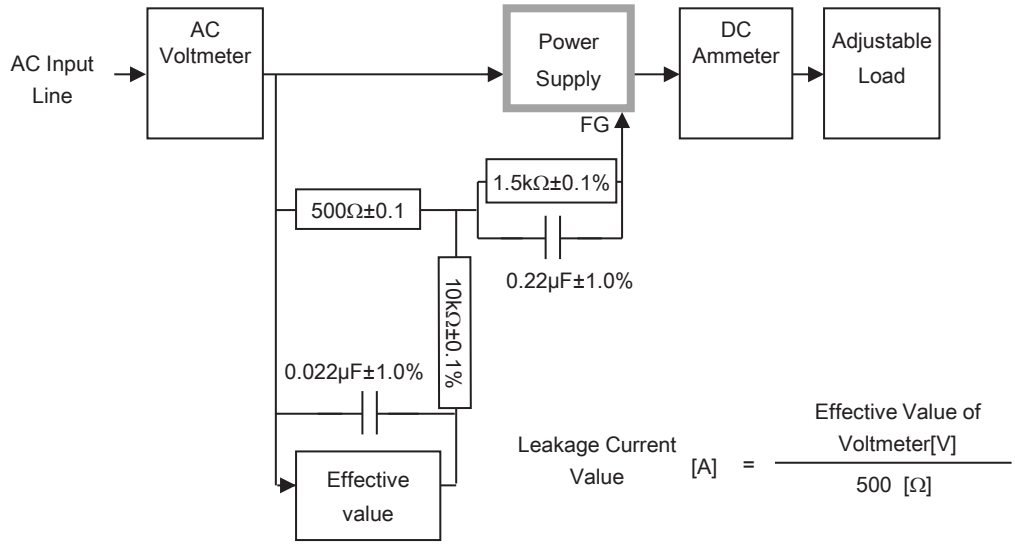


Figure B-2 (IEC62368-1 refer to IEC60990 Fig.4)

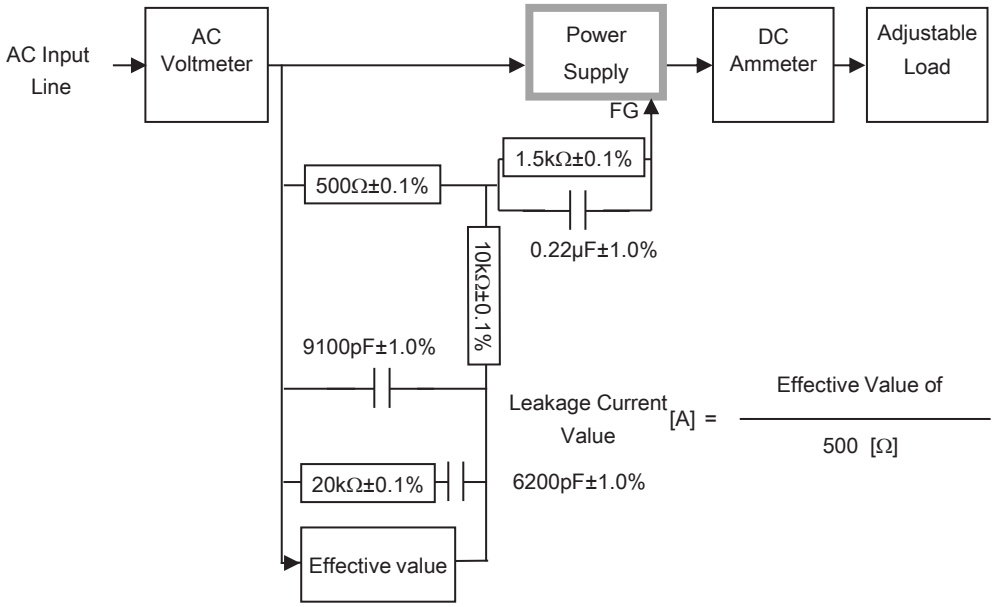


Figure B-3 (IEC62368-1 refer to IEC60990 Fig.5)

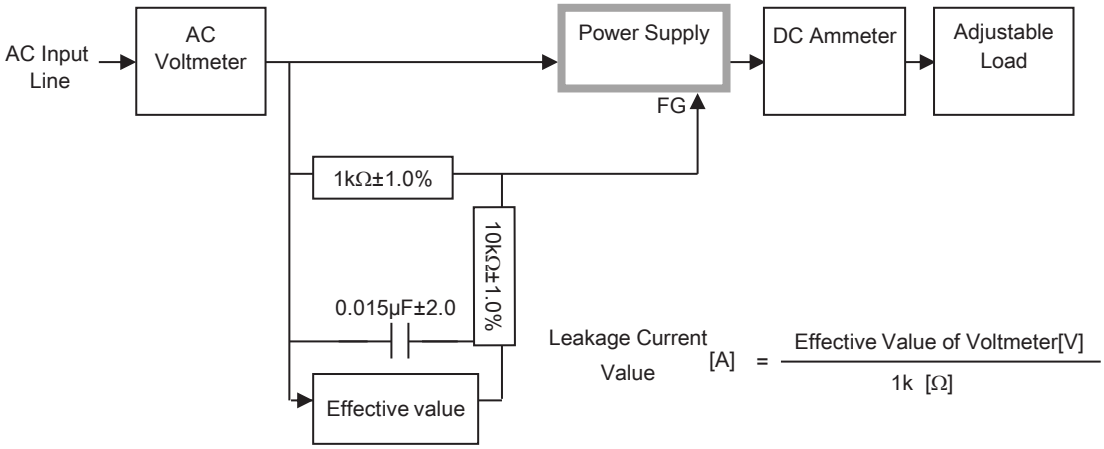
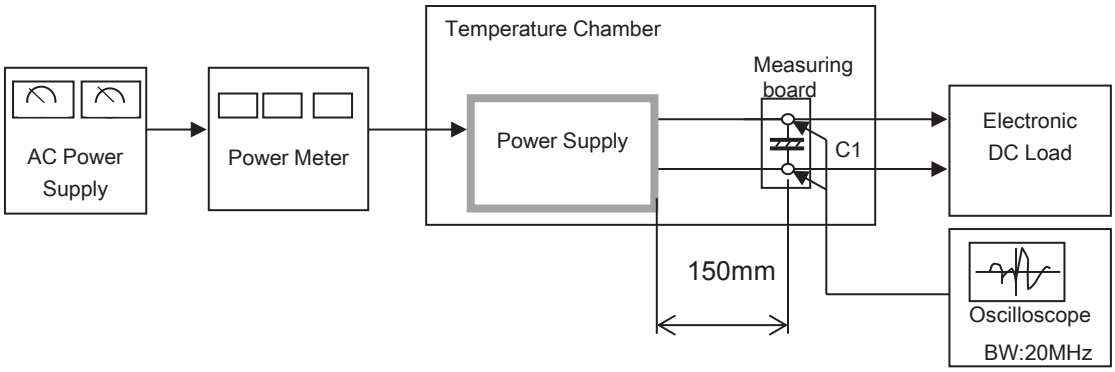


Figure B-4 (IEC60601-1)



C1= 22 μF
(Electrolytic capacitor)

Figure C