For Reference

TEST DATA OF PDA30F-24

Regulated DC Power Supply
November 24, 2023

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COSEL CO.,LTD.

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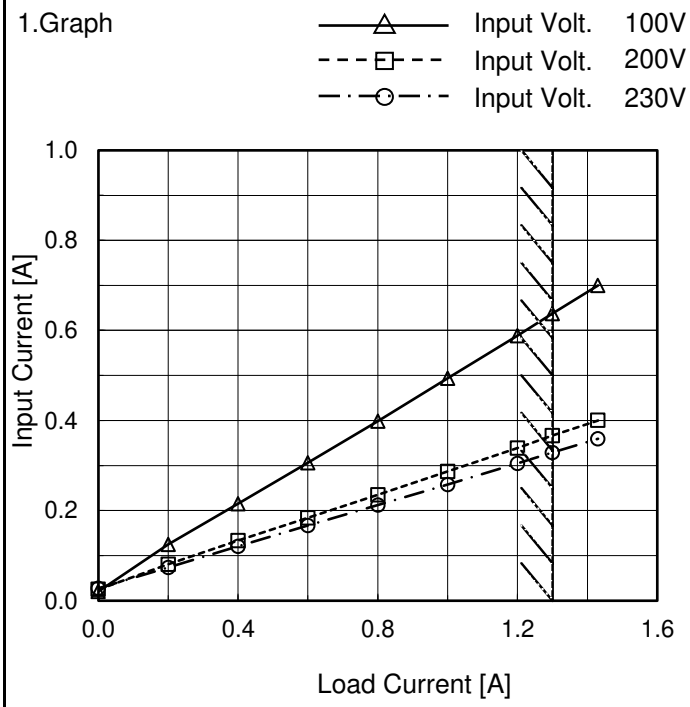
Model	PDA30F-24
Item	Input Current (by Load Current)
Object	———————

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]
0.00	0.021	0.025	0.028
0.20	0.125	0.081	0.074
0.40	0.215	0.133	0.121
0.60	0.306	0.184	0.167
0.80	0.399	0.235	0.212
1.00	0.493	0.287	0.258
1.20	0.588	0.339	0.305
1.30	0.637	0.366	0.329
1.43	0.700	0.401	0.360
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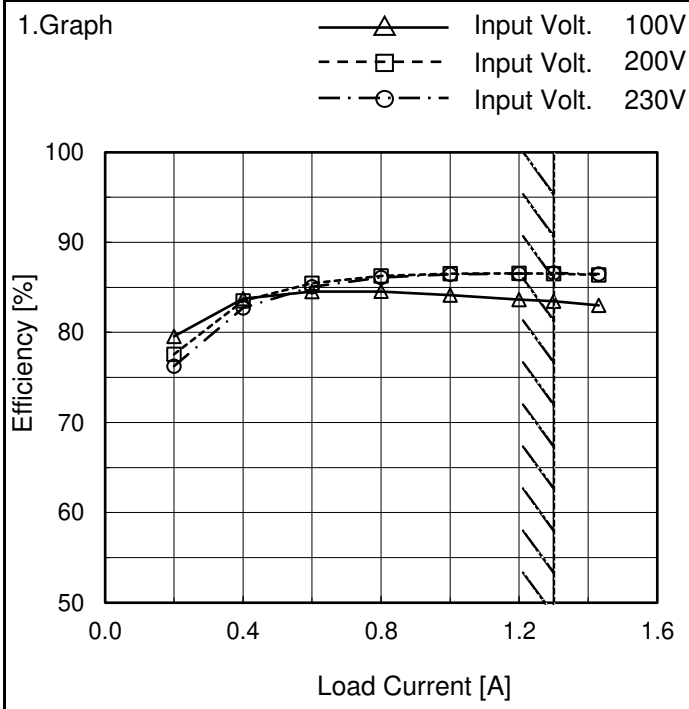
Model	PDA30F-24
Item	Efficiency (by Load Current)
Object	———————

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]
0.00	-	-	-
0.20	79.6	77.6	76.3
0.40	83.8	83.5	82.7
0.60	84.5	85.4	85.0
0.80	84.6	86.3	86.1
1.00	84.1	86.5	86.4
1.20	83.6	86.6	86.5
1.30	83.5	86.5	86.6
1.43	83.0	86.4	86.5
--	-	-	-
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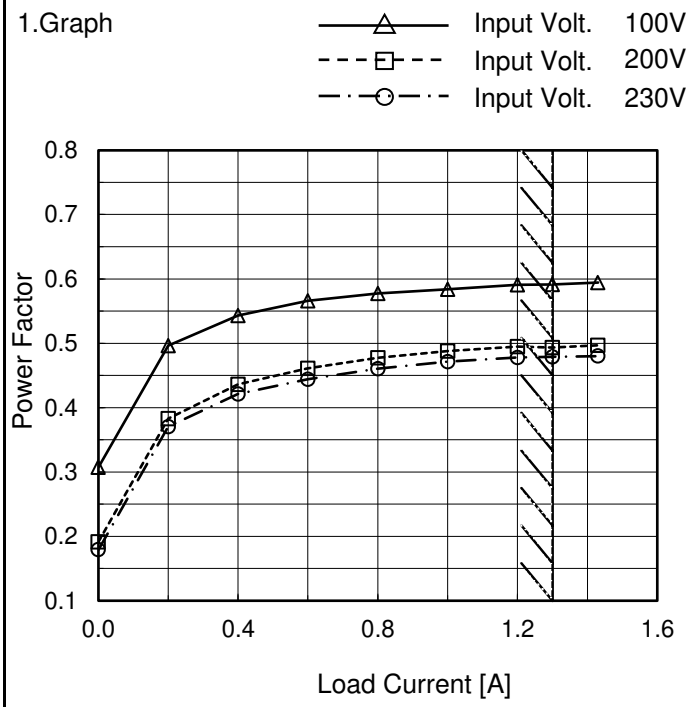
Model	PDA30F-24
Item	Power Factor (by Load Current)
Object	————————

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]
0.00	0.307	0.192	0.179
0.20	0.496	0.383	0.370
0.40	0.543	0.436	0.421
0.60	0.566	0.461	0.444
0.80	0.577	0.478	0.460
1.00	0.584	0.488	0.471
1.20	0.591	0.495	0.478
1.30	0.591	0.493	0.479
1.43	0.594	0.497	0.480
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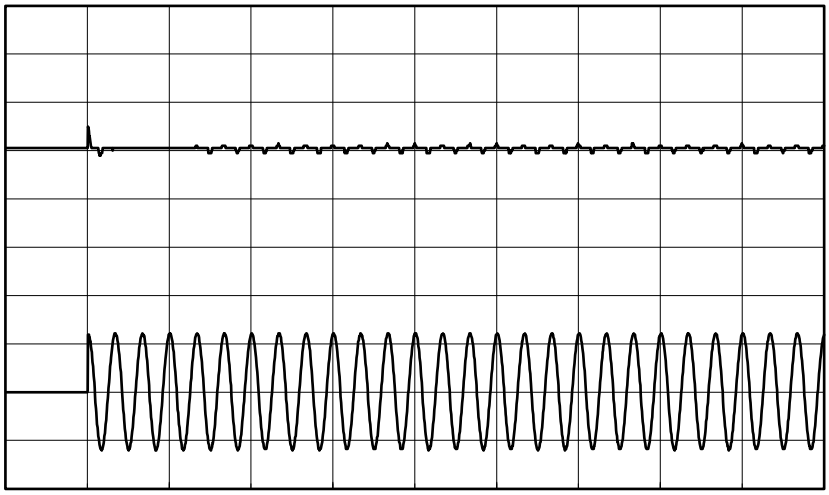
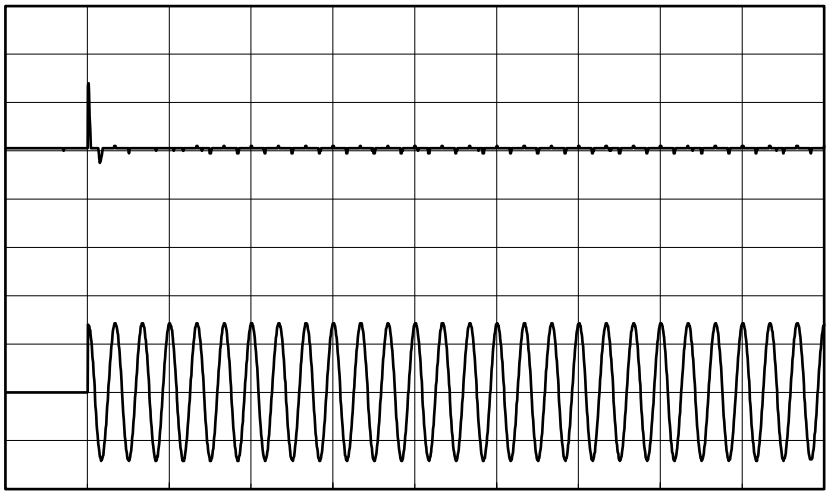
Model	PDA30F-24
Item	Inrush Current
Object	————————

Temperature 25°C
Testing Circuitry Figure A



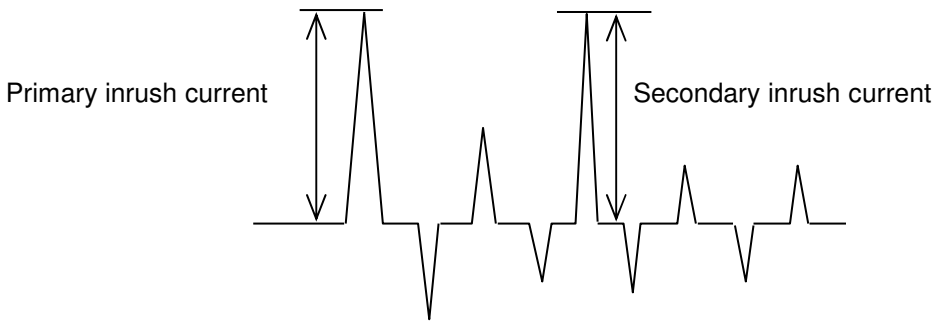
Input Voltage 100 V
Frequency 60 Hz
Load 100 %

Primary inrush current : 9.6 A
Secondary inrush current : 2.6 A



Input Voltage 230 V
Frequency 60 Hz
Load 100 %

Primary inrush current : 27.7 A
Secondary inrush current : 1.7 A



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Model	PDA30F-24	
Item	Leakage Current	Temperature 25°C Testing Circuitry Figure C
Object	————————	

1.Results

[mA]

Standards	Testing Circuitry	Measuring Method	Input Volt.			Note
			100 [V]	230 [V]	240 [V]	
DEN-AN	Figure C-1	Both phases	0.16	0.41	0.43	Operation
		One of phases	0.24	0.60	0.63	Stand by
IEC62368-1	Figure C-2	Both phases	0.16	0.40	0.42	Operation
		One of phases	0.24	0.59	0.62	Stand by
	Figure C-3	Both phases	0.16	0.40	0.42	Operation
		One of phases	0.24	0.59	0.62	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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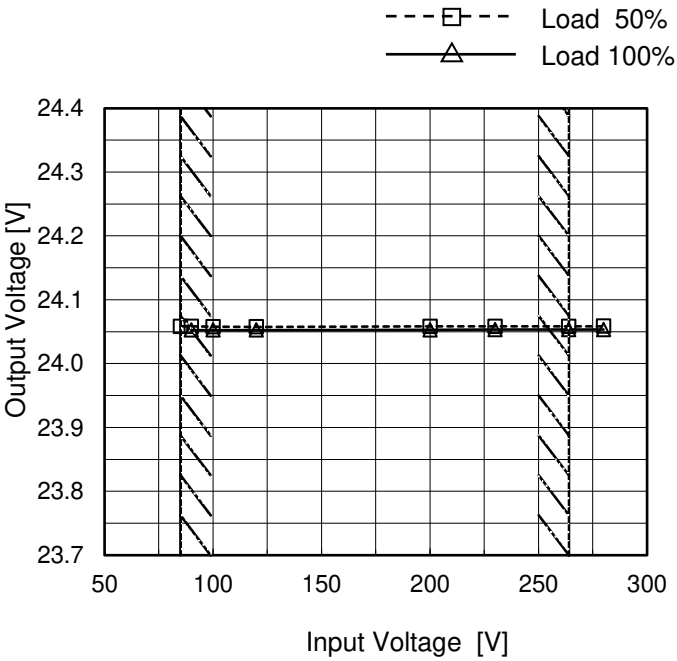
Model	PDA30F-24
Item	Line Regulation
Object	+24V1.3A

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	24.058	-
90	24.058	24.053
100	24.058	24.053
120	24.058	24.053
200	24.058	24.053
230	24.058	24.053
264	24.058	24.053
280	24.059	24.053
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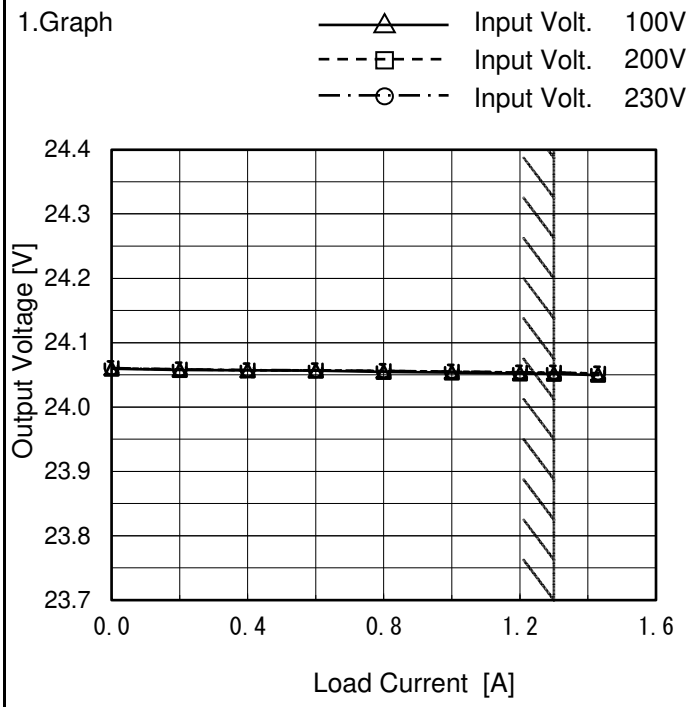
COSEL

Model	PDA30F-24
Item	Load Regulation
Object	+24V1.3A

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]
0.00	24.060	24.060	24.061
0.20	24.058	24.058	24.058
0.40	24.057	24.057	24.058
0.60	24.056	24.057	24.057
0.80	24.055	24.056	24.056
1.00	24.054	24.055	24.055
1.20	24.052	24.054	24.054
1.30	24.052	24.053	24.054
1.43	24.050	24.052	24.053
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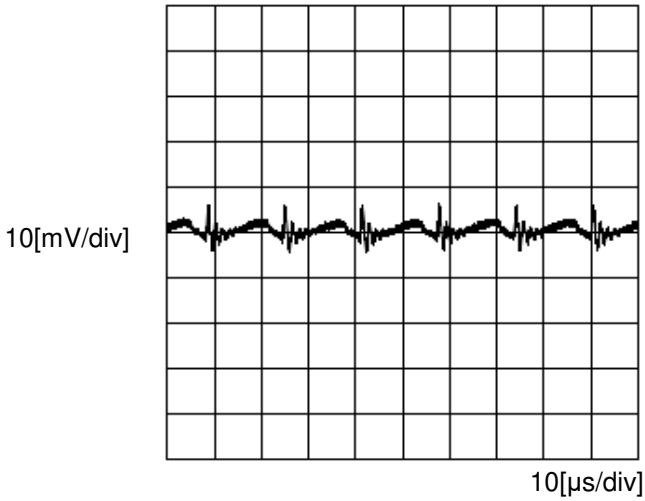
Item	Ripple-Noise
Object	+24V1.3A

Temperature 25°C
Testing Circuitry Figure B

1.Graph

Input Voltage 230V
Load 100%



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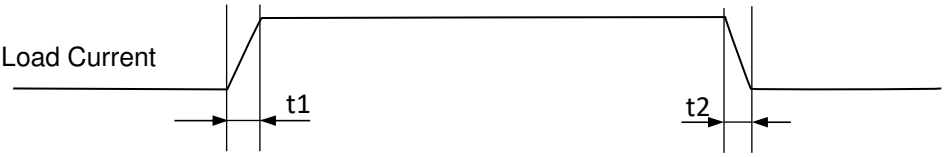
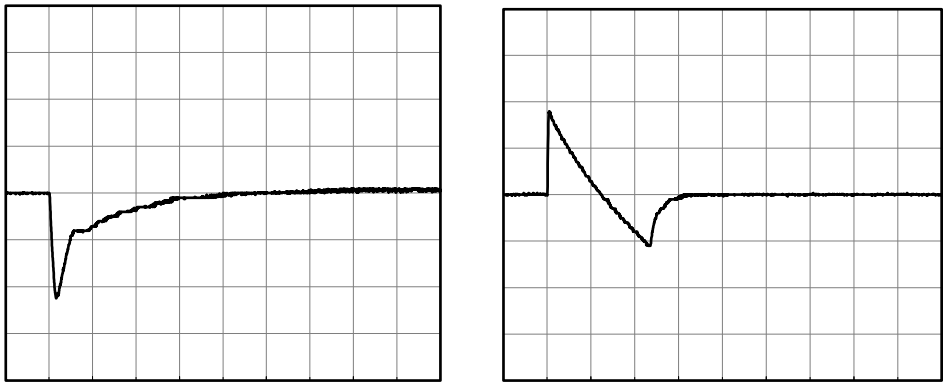
Model	PDA30F-24	
Item	Dynamic Load Response	Temperature 25°C Testing Circuitry Figure A
Object	+24V1.3A	

Input Volt. 230 V
Cycle 1000 ms

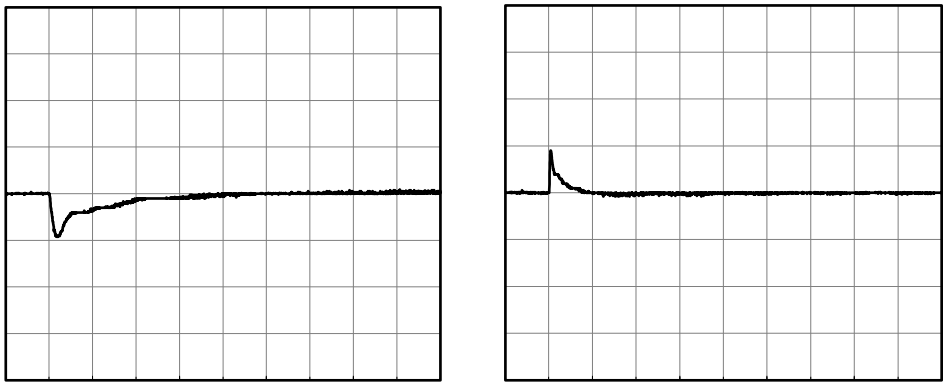
Response. t1=t2=50µs. Typ



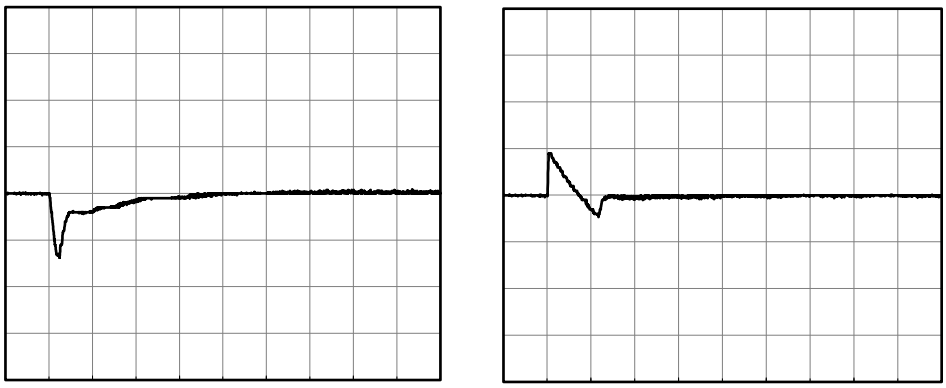
Load 0%(0A) ←→
Load 100%(1.3A)



Load 50%(0.65A) ←→
Load 100%(1.3A)



Load 0%(0A) ←→
Load 50%(0.65A)



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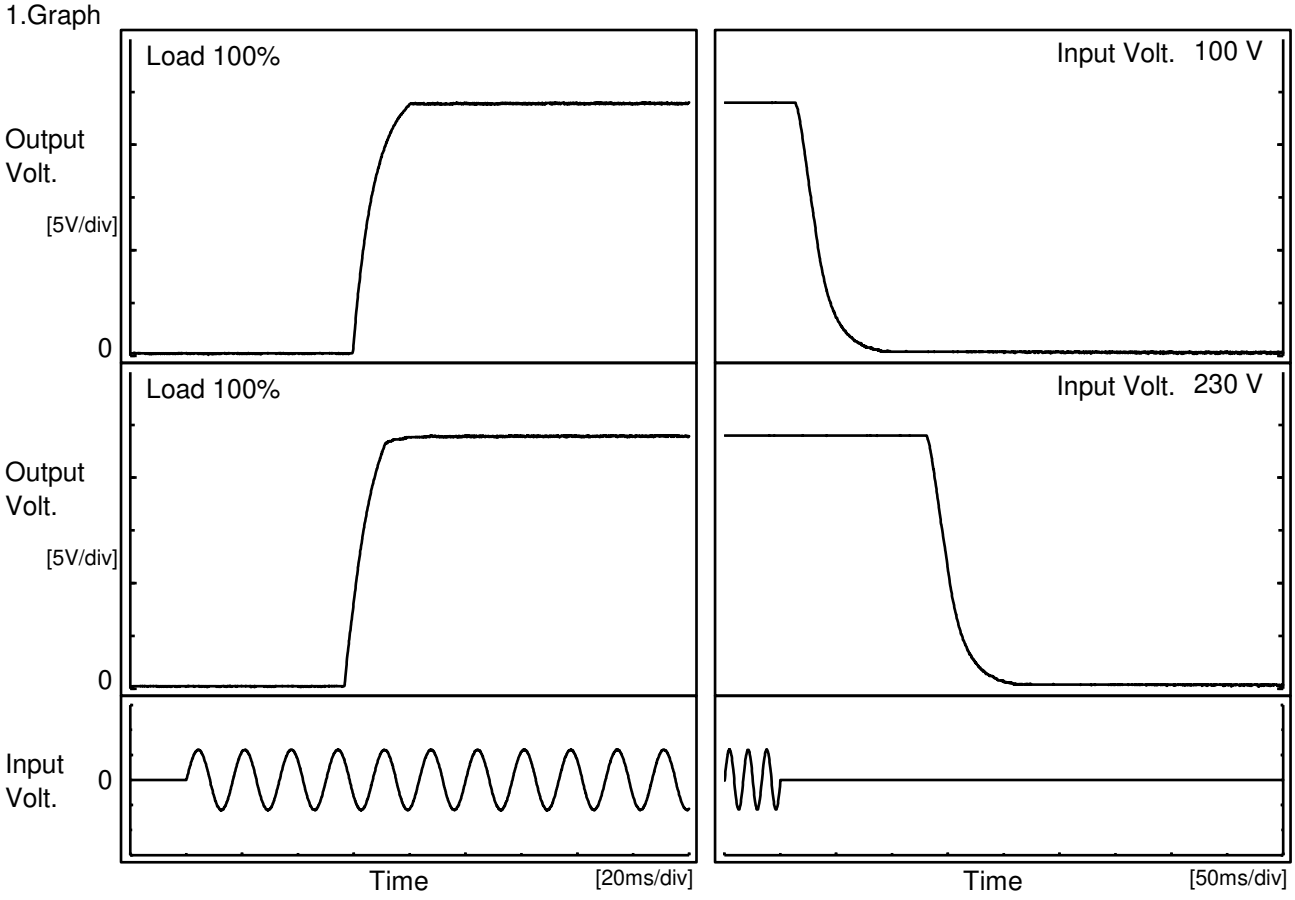
Model	PDA30F-24	
Item	Rise and Fall Time	Temperature 25°C Testing Circuitry Figure A
Object	+24V1.3A	

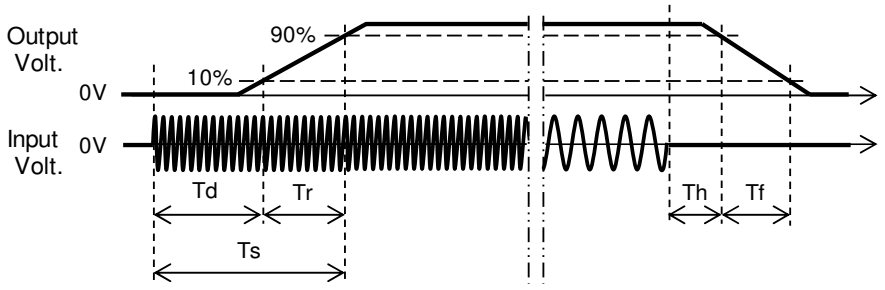
1.Graph



2.Values

[ms]

Input Volt. \ Time	Td	Tr	Ts	Th	Tf
100 V	60.5	13.9	74.4	24.0	37.5
230 V	57.6	11.8	69.4	181.0	38.0



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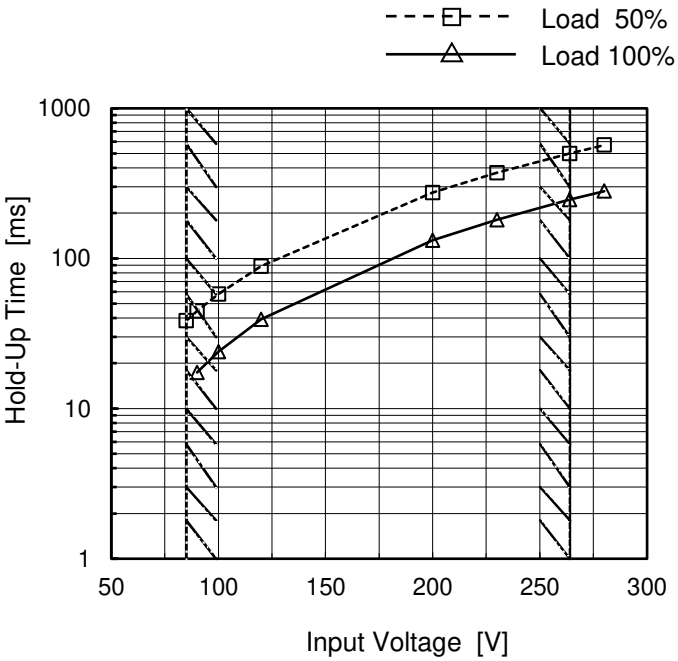
Model	PDA30F-24
Item	Hold-Up Time
Object	+24V1.3A

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	39	-
90	45	17
100	58	24
120	89	39
200	274	132
230	372	181
264	499	246
280	569	281
--	-	-

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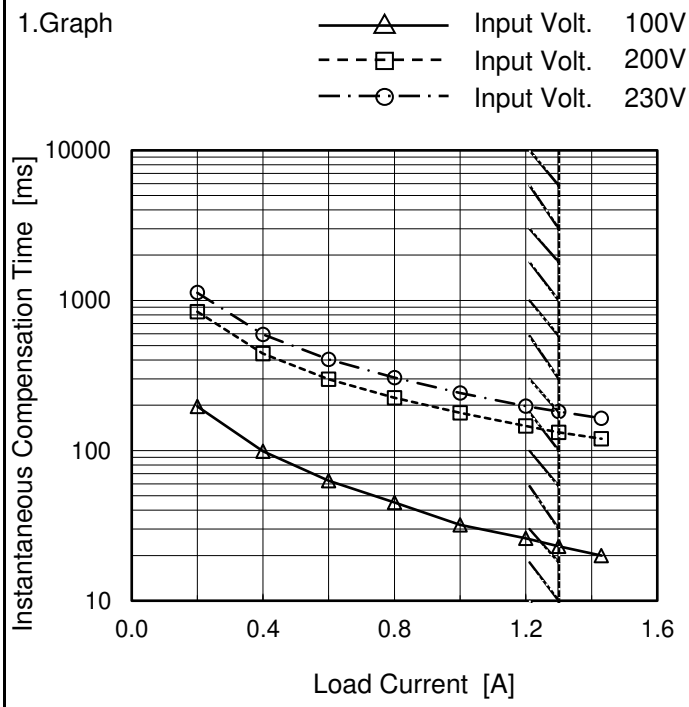
Model	PDA30F-24
Item	Instantaneous Interruption Compensation
Object	+24V1.3A

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]
0.00	-	-	-
0.20	197	842	1126
0.40	99	441	594
0.60	63	299	405
0.80	45	224	305
1.00	32	178	241
1.20	26	146	198
1.30	23	132	182
1.43	20	120	164
--	-	-	-
--	-	-	-

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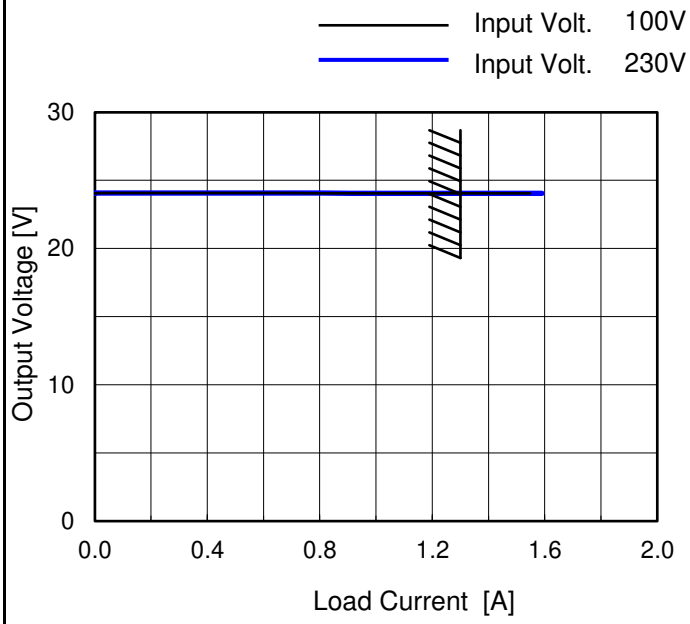
Model	PDA30F-24
Item	Overcurrent Protection
Object	+24V1.3A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

Overcurrent protection is Hiccup mode.

2.Values

Output Voltage [V]	Load Current [A]	
	Input Volt. 100[V]	Input Volt. 230[V]
24.0	1.55	1.59
22.8	-	-
21.6	-	-
19.2	-	-
16.8	-	-
14.4	-	-
12.0	-	-
9.6	-	-
7.2	-	-
4.8	-	-
2.4	-	-
0.0	-	-

Model	PDA30F-24	
Item	Ambient Temperature Drift	Testing Circuitry Figure A
Object	+24V1.3A	

1.Values

Load 100%

Ambient Temperature [°C]	Output Voltage [V]		
	Input Volt. 100V	Input Volt. 200V	Input Volt. 230V
-10	24.057	24.058	24.059
25	24.052	24.053	24.054
55	24.014	24.015	24.016

Item	Minimum Input Voltage for Regulated Output Voltage	Testing Circuitry Figure A
Object	+24V1.3A	

1.Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-10	39	59
25	39	58
55	38	58

Item	Overvoltage Protection	Testing Circuitry Figure A
Object	+24V1.3A	

1.Values

Load 0%

Ambient Temperature [°C]	Operating Point [V]	
	Input Volt. 100V	Input Volt. 230V
-20	32.00	32.00
25	33.17	33.17
55	34.02	34.02

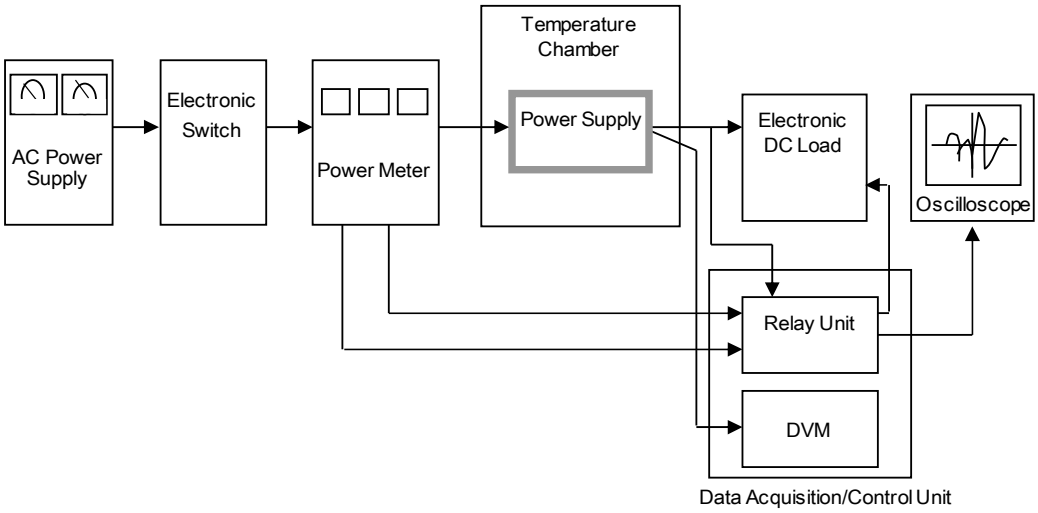


Figure A

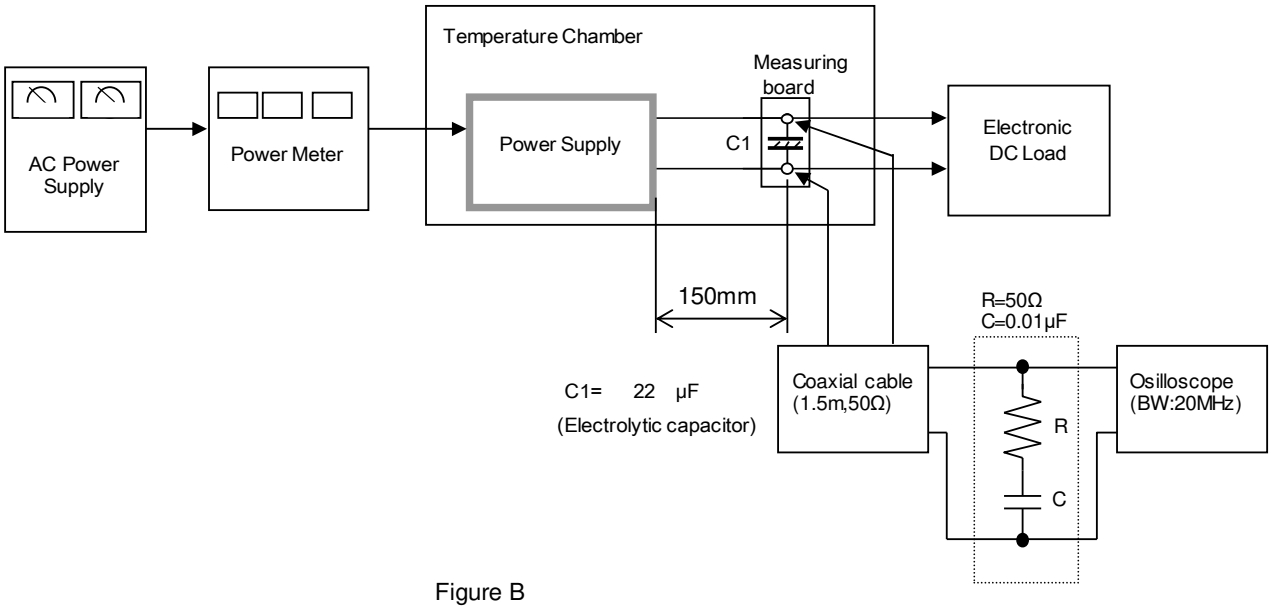


Figure B

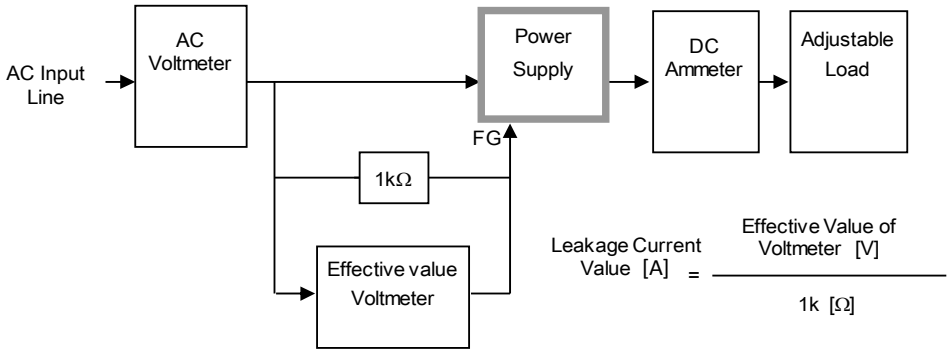


Figure C-1 (DEN-AN)

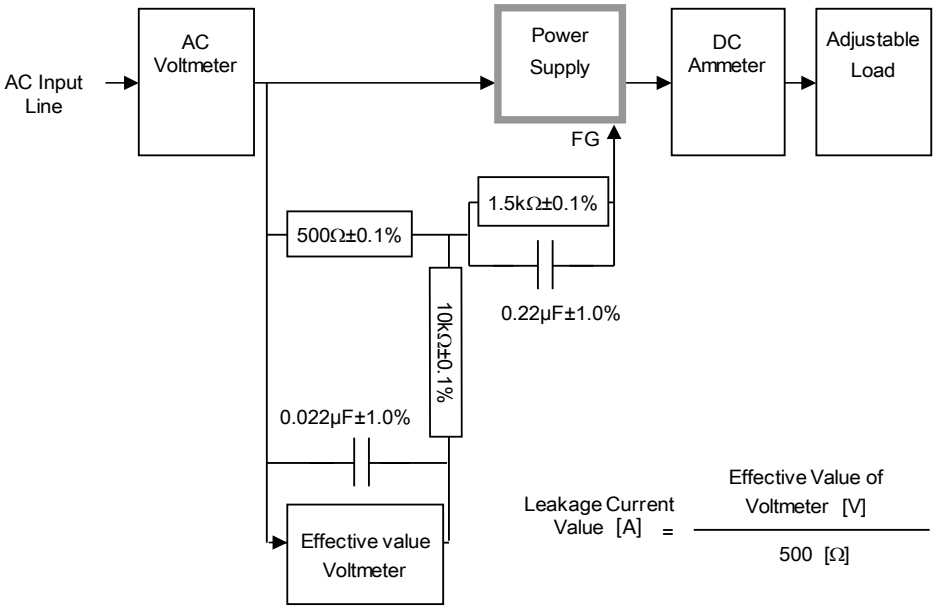


Figure C-2 (IEC62368-1 refer to IEC60990 Fig.4)

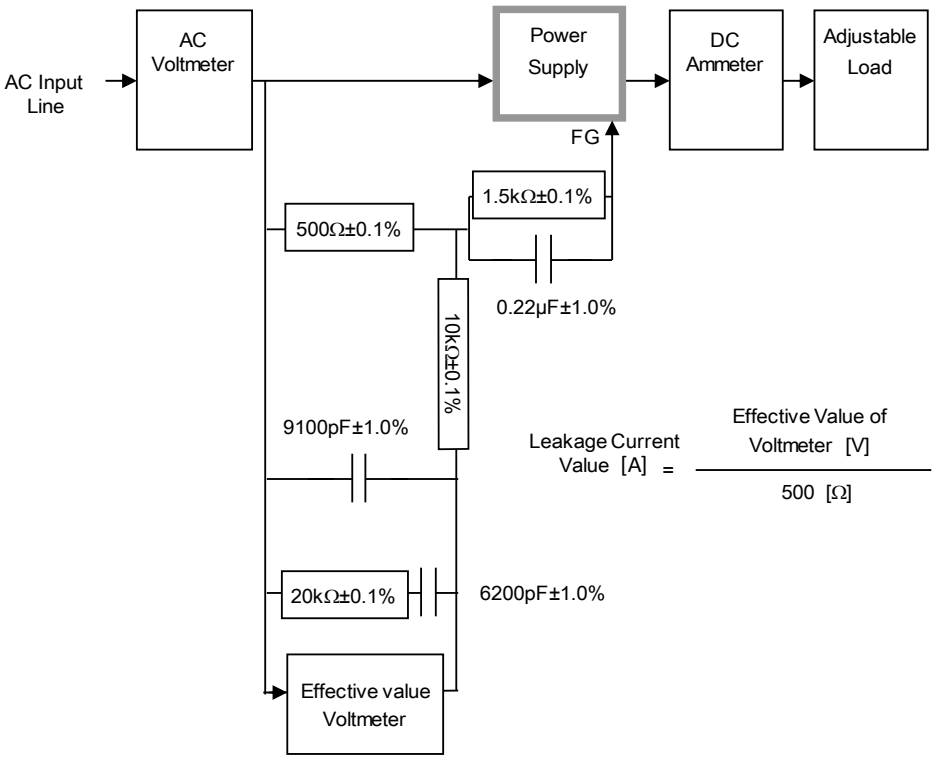


Figure C-3 (IEC62368-1 refer to IEC60990 Fig.5)