参考資料

COSEL

TEST DATA OF SNDPF1000

(200V INPUT)

Regulated DC Power Supply
July 9, 2012

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COSEL CO.,LTD.

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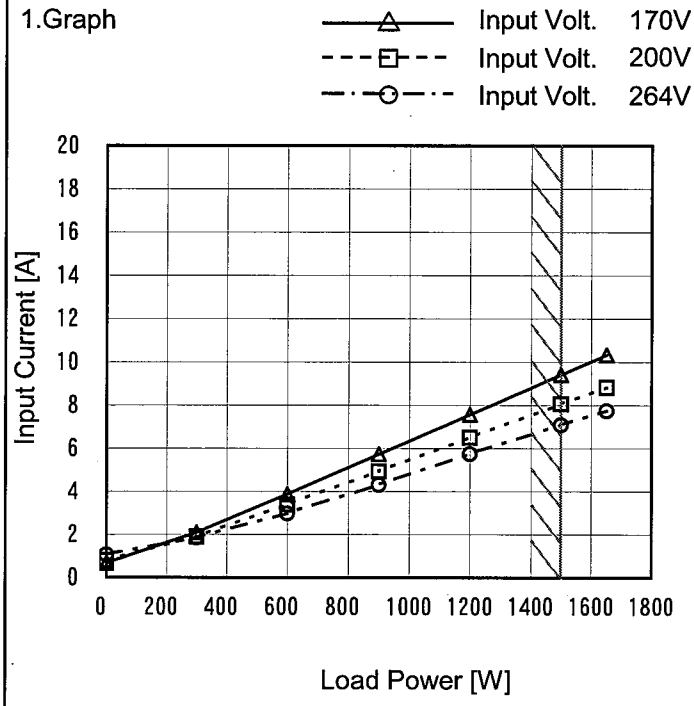

Note: Slanted line shows the range of the rated load current.

2.Values

Load Power [W]	Input Current [A]		
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
0	0.683	0.803	1.067
300	2.097	1.888	1.844
600	3.877	3.387	2.976
900	5.722	4.925	4.309
1200	7.558	6.492	5.743
1500	9.409	8.049	7.084
1650	10.338	8.829	7.738
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--	-	-	-

BC-10649

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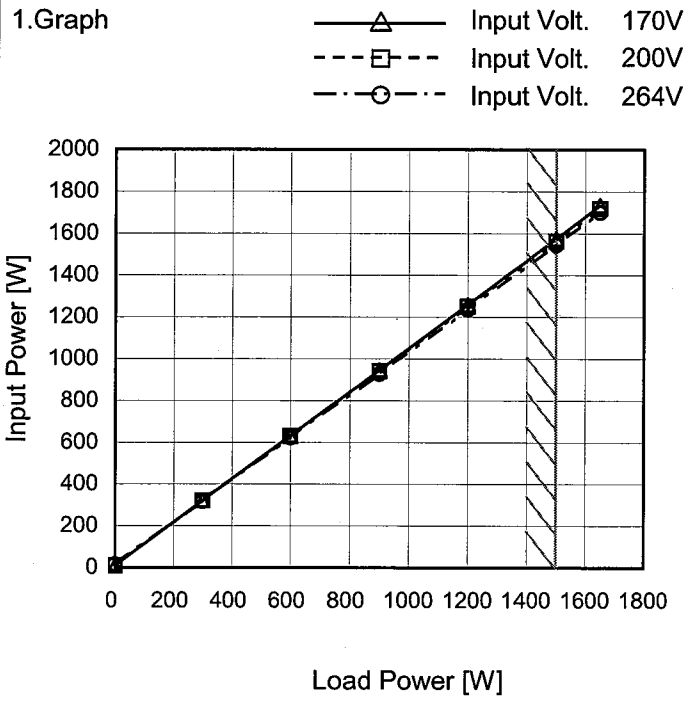
Model	SNDPF1000
Item	Input Power (by Load Power)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

Load Power [W]	Input Power [W]		
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
0	9	10	15
300	322	321	318
600	633	630	623
900	947	940	928
1200	1261	1251	1237
1500	1575	1563	1546
1650	1733	1719	1700
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BC-10649

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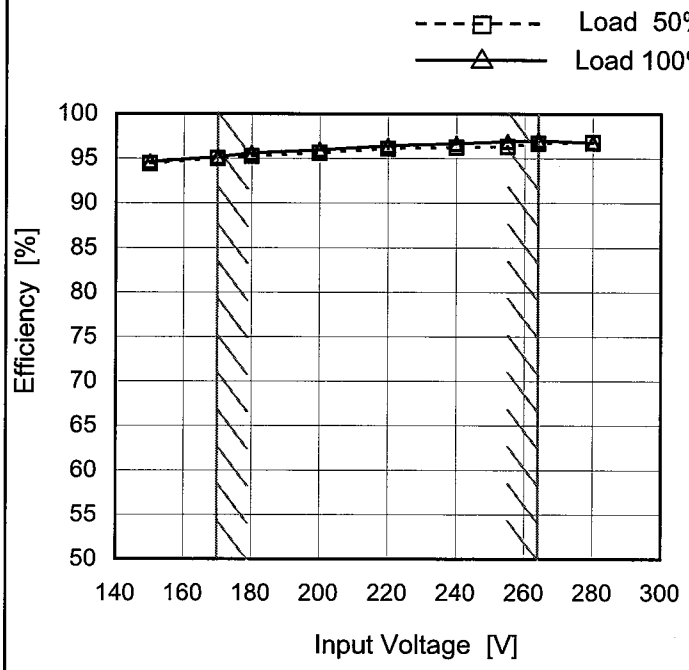
Model	SNDPF1000
Item	Efficiency (by Input Voltage)
Object	———————————

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]	Efficiency [%]	
	Load 50%	Load 100%
150	94.4	94.6
170	95.0	95.2
180	95.3	95.6
200	95.6	96.0
220	96.1	96.5
240	96.2	96.7
255	96.4	96.9
264	96.7	97.1
280	96.8	96.8

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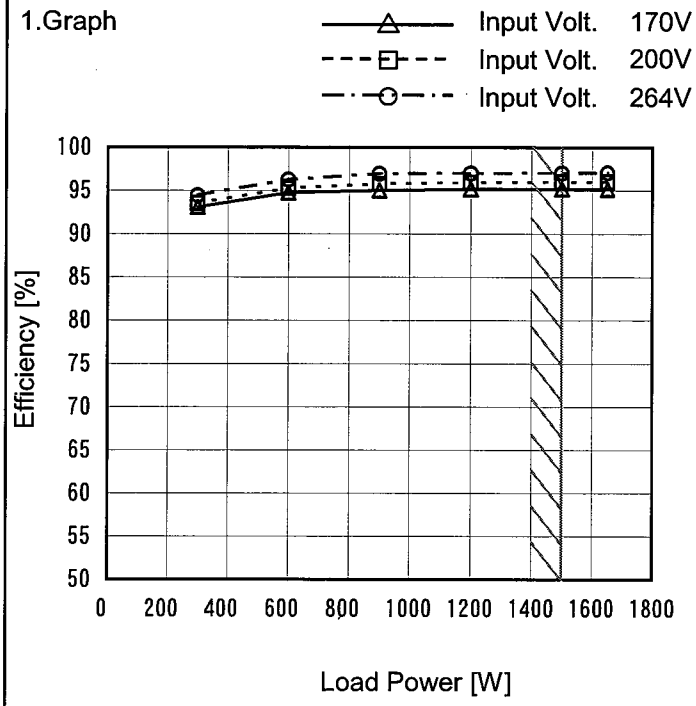
Model	SNDPF1000
Item	Efficiency (by Load Power)
Object	――――――

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

Load Power [W]	Efficiency [%] Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
300	93.1	93.5	94.4
600	94.8	95.3	96.3
900	95.0	95.8	97.0
1200	95.2	95.9	97.0
1500	95.2	96.0	97.1
1650	95.2	96.0	97.1
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--	-	-	-
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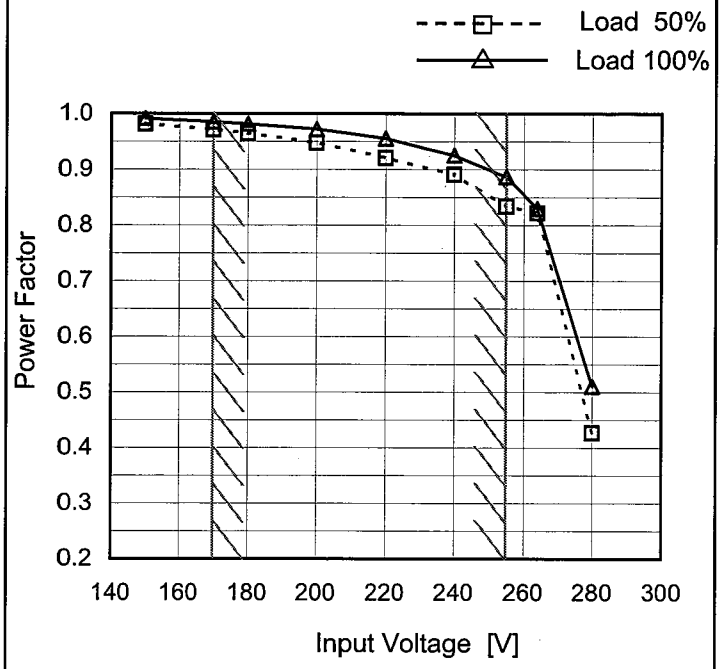
Model	SNDPF1000
Item	Power Factor (by Input Voltage)
Object	————————

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]	Power Factor	
	Load 50%	Load 100%
150	0.982	0.991
170	0.971	0.985
180	0.964	0.982
200	0.948	0.972
220	0.921	0.956
240	0.891	0.925
255	0.834	0.887
264	0.822	0.830
280	0.427	0.511

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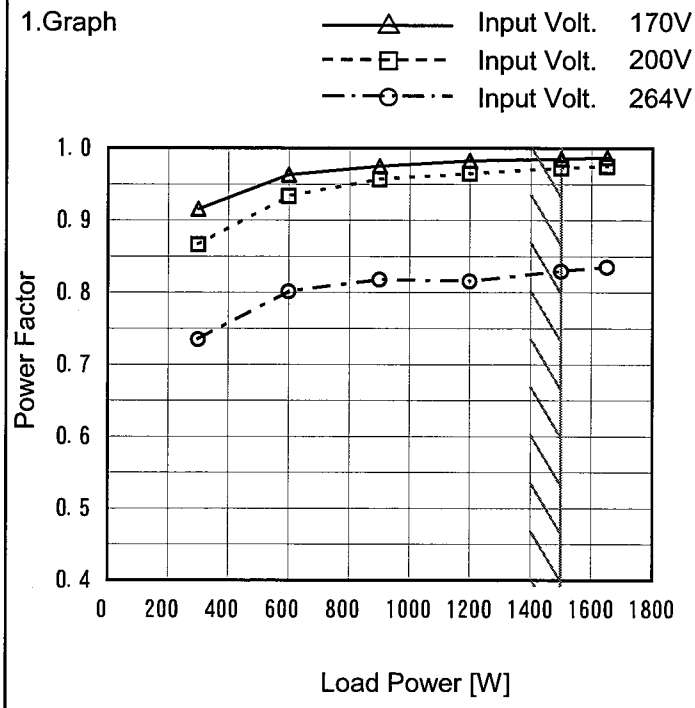
Model	SNDPF1000
Item	Power Factor (by Load Power)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

Load Power [W]	Power Factor		
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
300	0.903	0.849	0.653
600	0.960	0.930	0.793
900	0.973	0.954	0.816
1200	0.981	0.964	0.816
1500	0.985	0.971	0.826
1650	0.986	0.973	0.832
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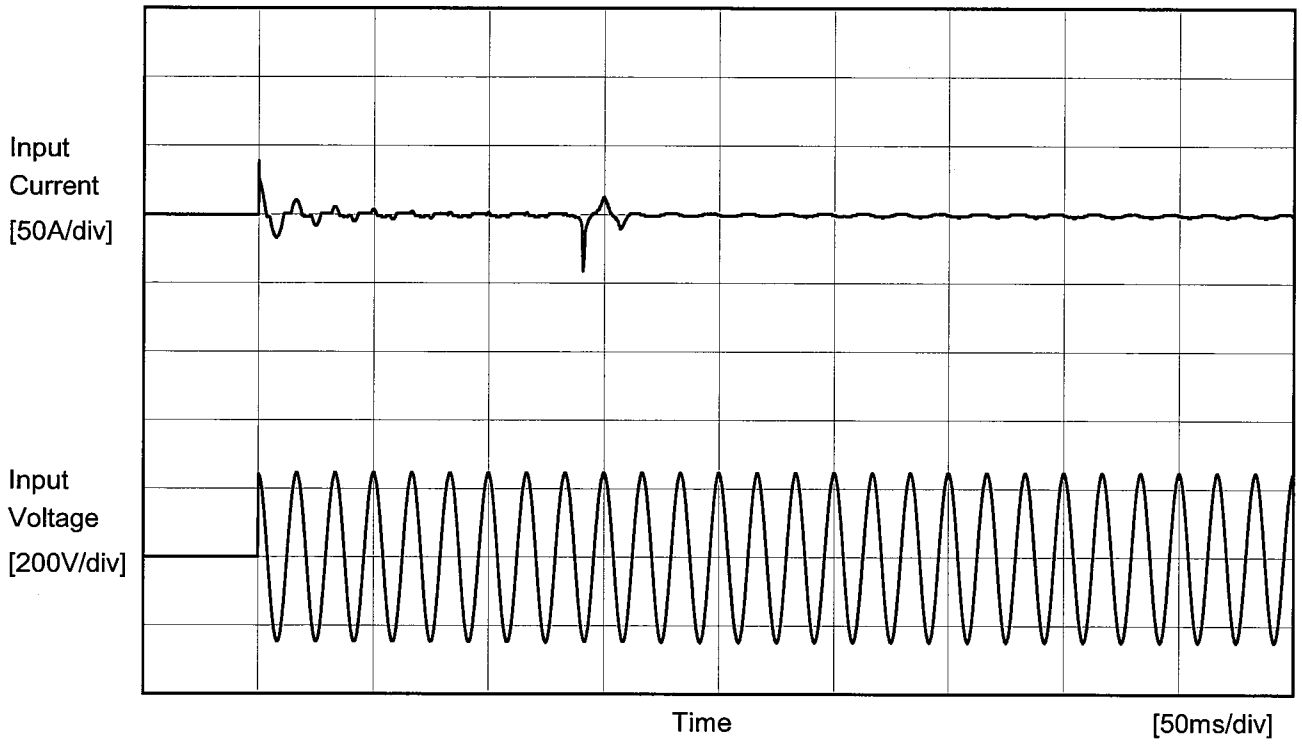
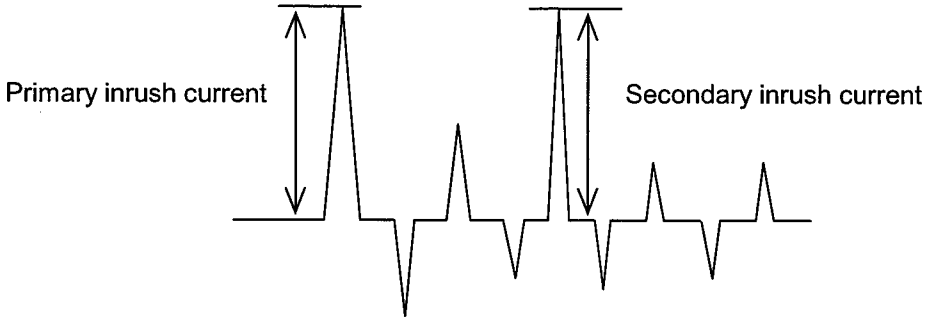
Model	SNDPF1000
Item	Inrush Current
Object	————————

Temperature 25°C
Testing Circuitry Figure A



Input Voltage	200 V
Frequency	60 Hz
Load	0 %
Primary inrush current	38.9 A
Secondary inrush current	41.1 A



Note:The current of the input surge to a built-in noise filter (0.2ms or less) is excluded.

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Model	SNDPF1000		
Item	Leakage Current	Temperature	25°C
Object	———————	Testing Circuitry	Figure B

1.Results

Standards	Leakage Current [mA]		
	Input Volt. 85 [V]	Input Volt. 100 [V]	Input Volt. 132 [V]
(A)DEN-AN	-	-	-
(B)IEC60950-1	-	-	-

Standards	Leakage Current [mA]		
	Input Volt. 170 [V]	Input Volt. 240 [V]	Input Volt. 264 [V]
(B)IEC60950-1	0.17	0.26	0.29

2.Condition

Leakage current value is concluded after measuring both phases of AC input and by choosing the larger one.

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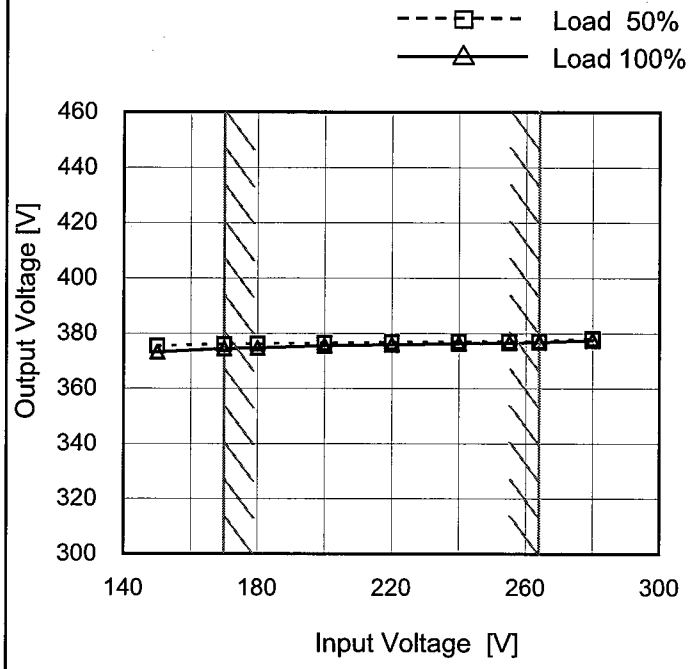
Model	SNDPF1000
Item	Line Regulation
Object	+360V 1500W

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

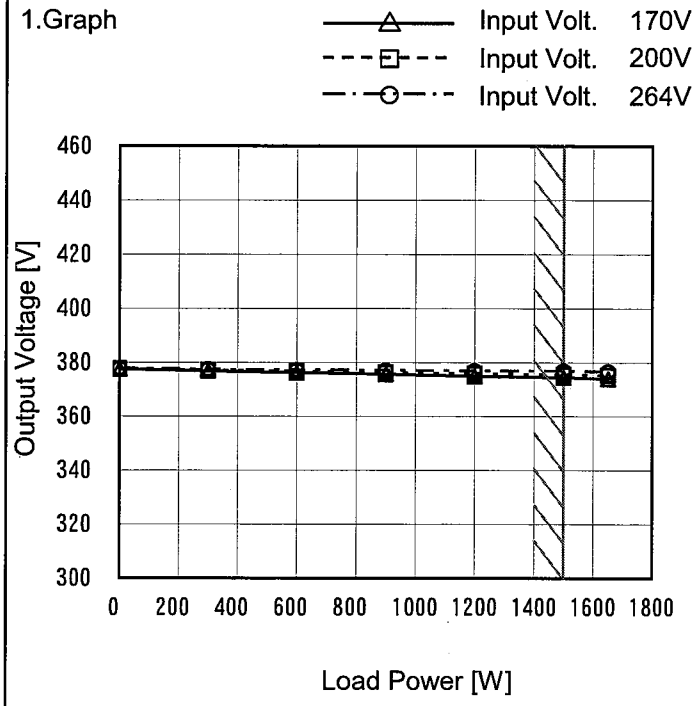
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
150	375.378	373.191
170	375.956	374.451
180	376.172	374.775
200	376.505	375.521
220	376.741	375.912
240	376.907	376.298
255	377.067	376.554
264	377.089	376.829
280	378.098	377.528

COSEL

Model	SNDPF1000
Item	Load Regulation
Object	+360V 1500W

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

Load Power [W]	Output Voltage [V]		
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
0	377.573	377.711	377.844
300	376.880	377.168	377.499
600	376.285	376.748	377.231
900	375.651	376.306	377.043
1200	374.991	375.870	376.918
1500	374.451	375.521	376.829
1650	374.014	375.203	376.634
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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Model	SNDPF1000
Item	Dynamic Load Response
Object	+360V 1500W

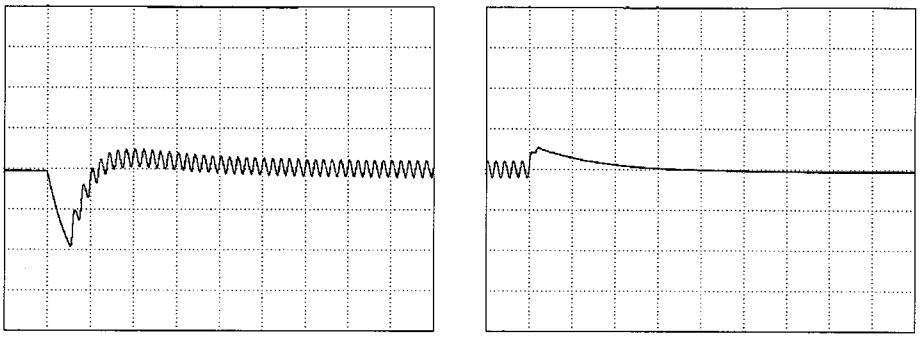
Temperature 25°C
Testing Circuitry Figure A

Input Volt. 200 V
Cycle 1000 ms

Load Current

4.17A/50μs

Min. Load (0W) ⟷
Load 100% (1500W)

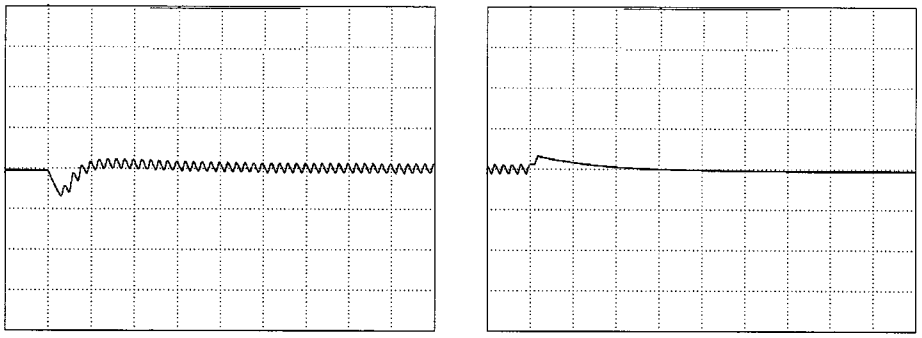


50 V/div

50 ms/div

50 ms/div

Min. Load (0W) ⟷
Load 50% (750W)



50 V/div

50 ms/div

50 ms/div

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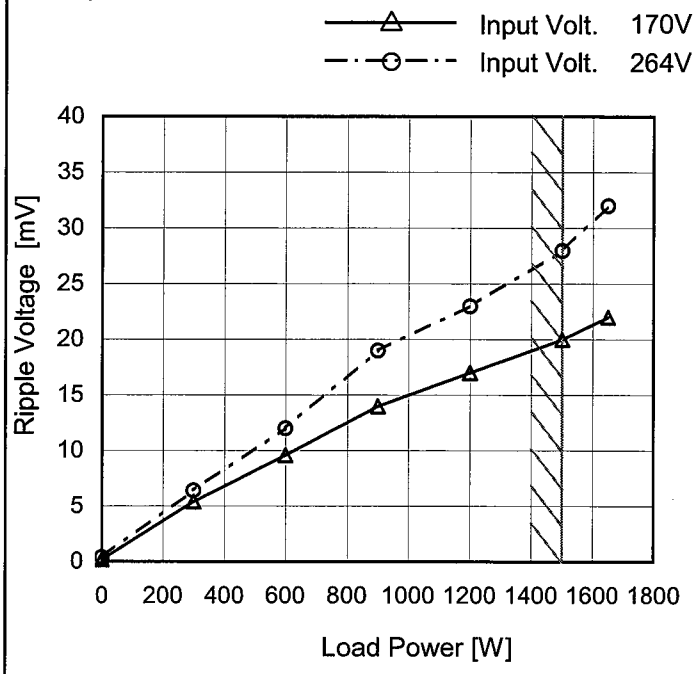
Model	SNDPF1000
Item	Ripple Voltage (by Load Current)
Object	+360V1500W

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Measured by 100 MHz Oscilloscope.
Ripple Voltage is shown as p-p in the figure below.
Note: Slanted line shows the range of the rated load current.

T1: Due to AC Input Line
T2: Due to Switching

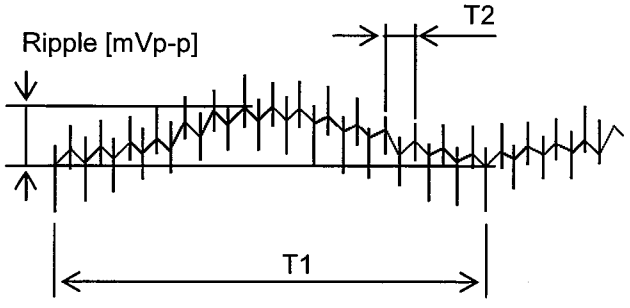


Fig. Complex Ripple Wave Form

2.Values

Load Power [W]	Ripple Voltage [mV] Input Volt. 170 [V]	Ripple Voltage [mV] Input Volt. 264 [V]
0	0.2	0.4
300	5.4	6.4
600	9.6	12.0
900	14.0	19.0
1200	17.0	23.0
1500	20.0	28.0
1650	22.0	32.0
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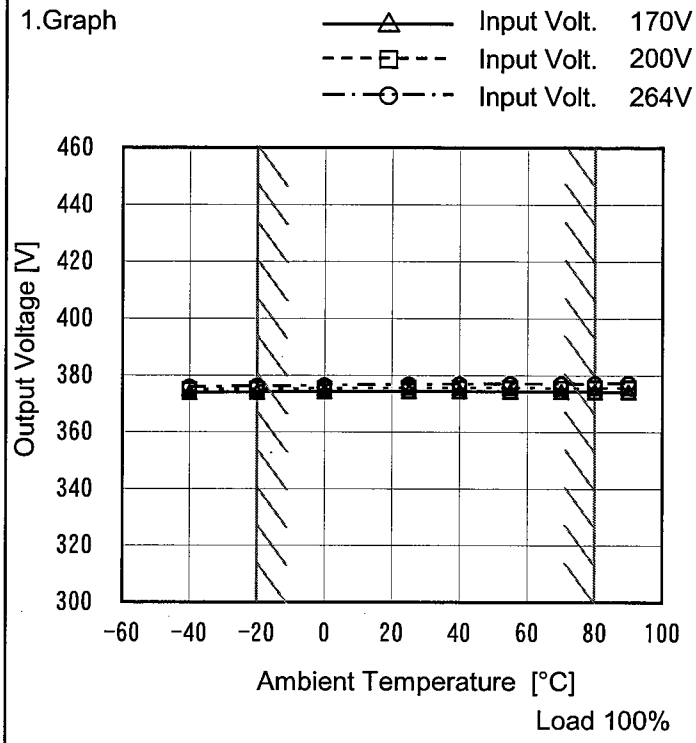
--	-	-
--	-	-
--	-	-

COSEL

Model	SNDPF1000
Item	Ambient Temperature Drift
Object	+360V 1500W

Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated ambient temperature.

2.Values

Ambient Temperature [°C]	Output Voltage [V]		
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
-40	374.023	374.941	375.936
-20	374.157	375.105	376.199
0	374.301	375.306	376.471
25	374.451	375.521	376.829
40	374.430	375.543	376.909
55	374.367	375.531	376.970
70	374.275	375.496	377.028
80	374.274	375.536	377.141
90	374.254	375.556	377.193
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--	-	-	-

COSEL

Model	SNDPF1000	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+360V 1500W	

1.Output Voltage Accuracy

This is defined as the value of the output voltage, regulation load, ambient temperature and input voltage varied at random in the range as specified below.

Temperature : -20 - 80°C
Input Voltage : 170 - 264V
Load Current : 0 - 1500W

* Output Voltage Accuracy = ±(Maximum of Output Voltage - Minimum of Output Voltage) / 2

$$\text{* Output Voltage Accuracy (Ration)} = \frac{\text{Output Voltage Accuracy}}{\text{Rated Output Voltage}} \times 100$$

2.Values

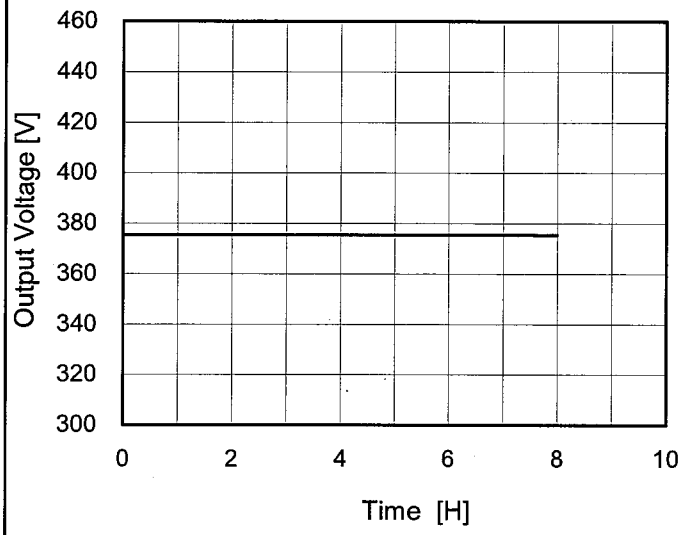
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [V]	Ration [%]
Maximum Voltage	80	264	0	378.320	±2	±0.1
Minimum Voltage	-20	170	4.17	374.157		

COSEL

Model	SNDPF1000
Item	Time Lapse Drift
Object	+360V 1500W

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Input Volt. 200V
Load 100%

2.Values

Time since start [H]	Output Voltage [V]
0.0	375.124
0.5	375.420
1.0	375.420
2.0	375.422
3.0	375.410
4.0	375.412
5.0	375.411
6.0	375.410
7.0	375.411
8.0	375.408

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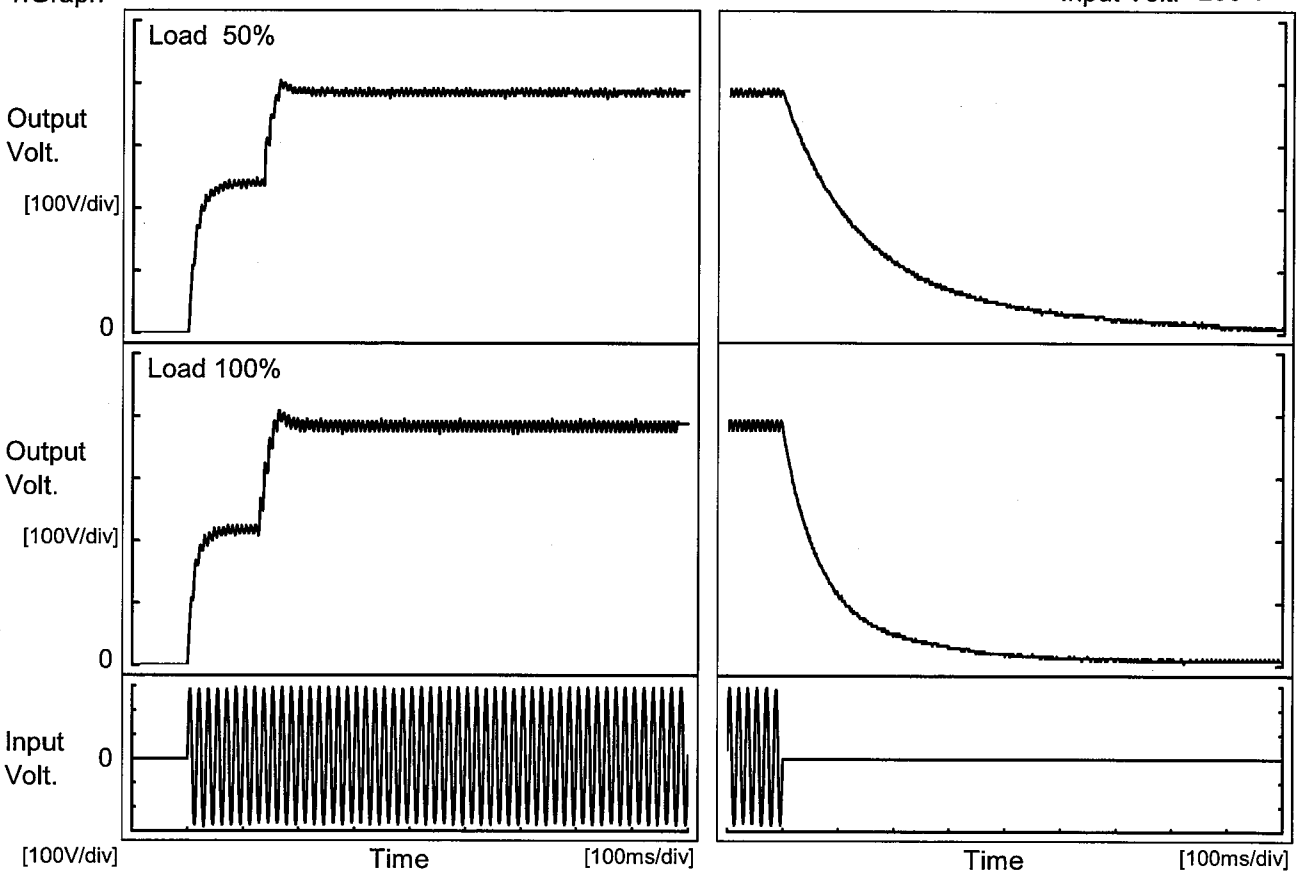
Model	SNDPF1000
Item	Rise and Fall Time
Object	+360V 1500W

Temperature 25°C
Testing Circuitry Figure A

1.Graph

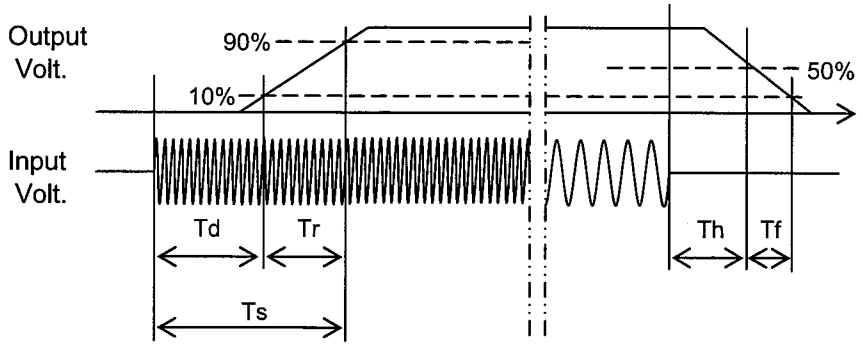
Input Volt. 200 V



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	2.4	142.6	145.0	119.0	331.0
100 %	1.6	142.4	144.0	57.0	212.0



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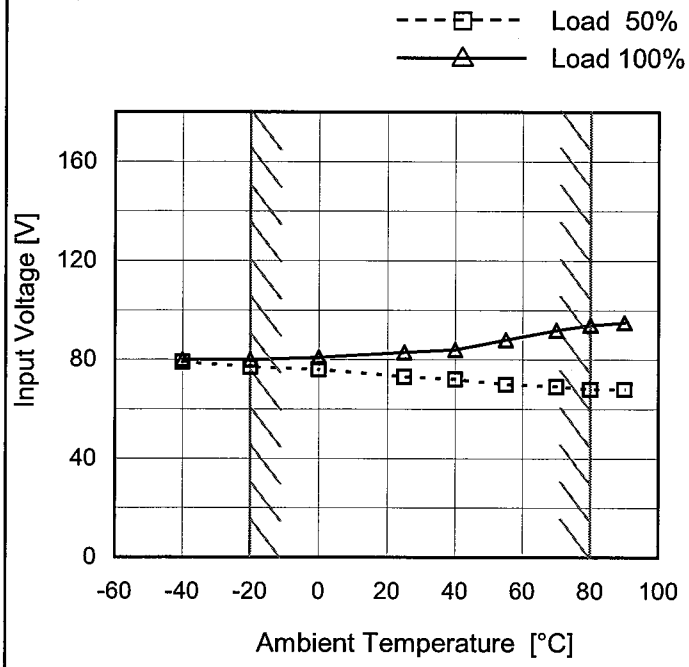
Model	SNDPF1000
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+360V 1500W

Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated ambient temperature.

2.Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-40	79	80
-20	77	80
0	76	81
25	73	83
40	72	84
55	70	88
70	69	92
80	68	94
90	68	95
--	-	-
--	-	-

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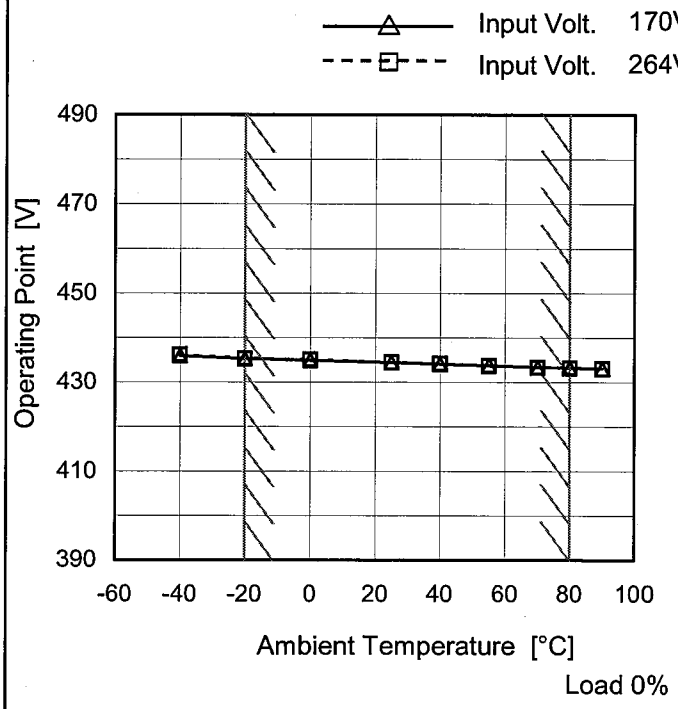
Model	SNDPF1000
Item	Overvoltage Protection
Object	+360V1500W

Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated ambient temperature.

2.Values

Ambient Temperature [°C]	Operating Point [V]	
	Input Volt. 170[V]	Input Volt. 264[V]
-40	436.0	436.2
-20	435.3	435.3
0	435.0	435.1
25	434.5	434.5
40	434.1	434.2
55	433.8	433.7
70	433.4	433.3
80	433.3	433.2
90	433.1	433.0
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--	-	-

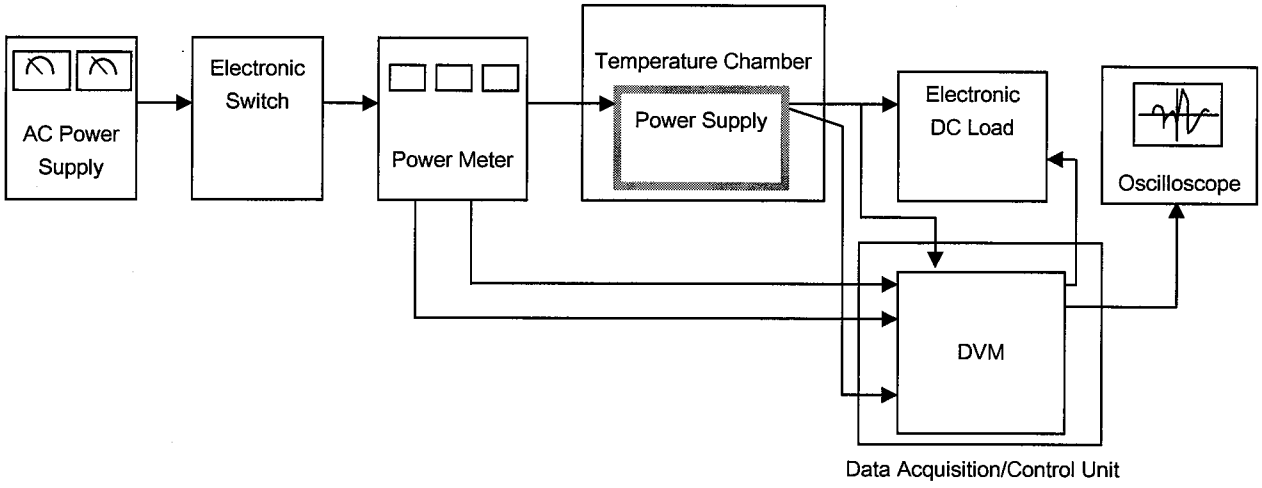

Figure A

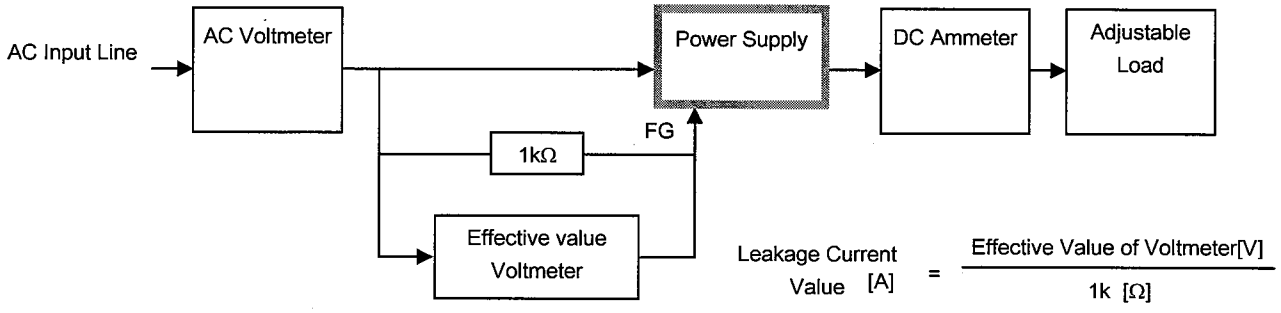

Figure B (DEN-AN)

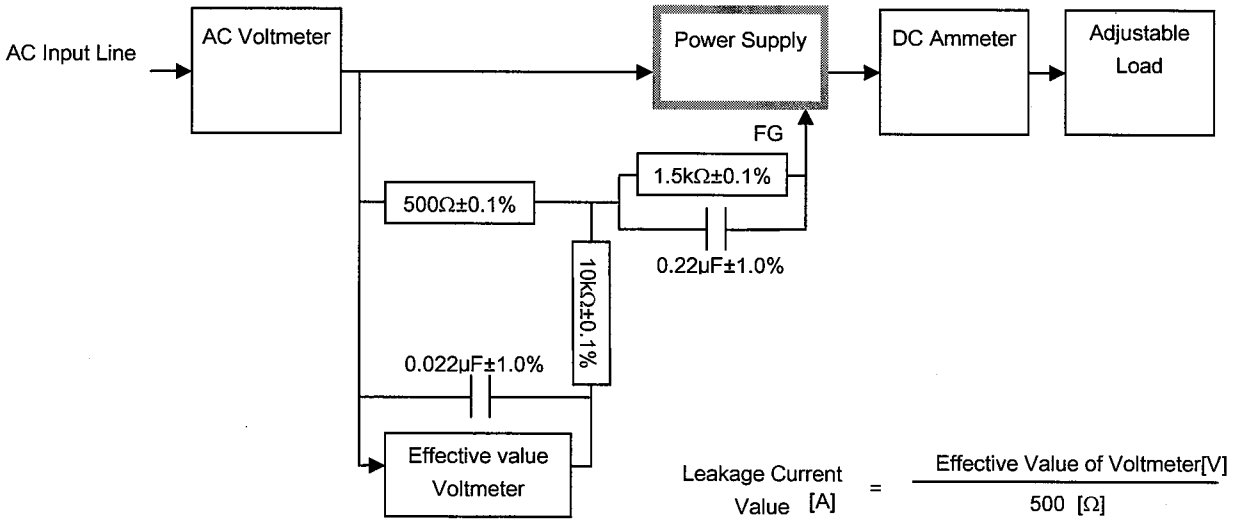

Figure B (IEC60950-1)