COSEL

参考資料

TEST DATA OF DPG500

(200V INPUT)

AC-DC Front End Module
March.8. 2010

Approved by : Tatsuya Mano
Tatsuya Mano Design Manager

Prepared by : Satoshi Uetani
Satoshi Uetani Design Engineer

COSEL CO.,LTD.

参考資料

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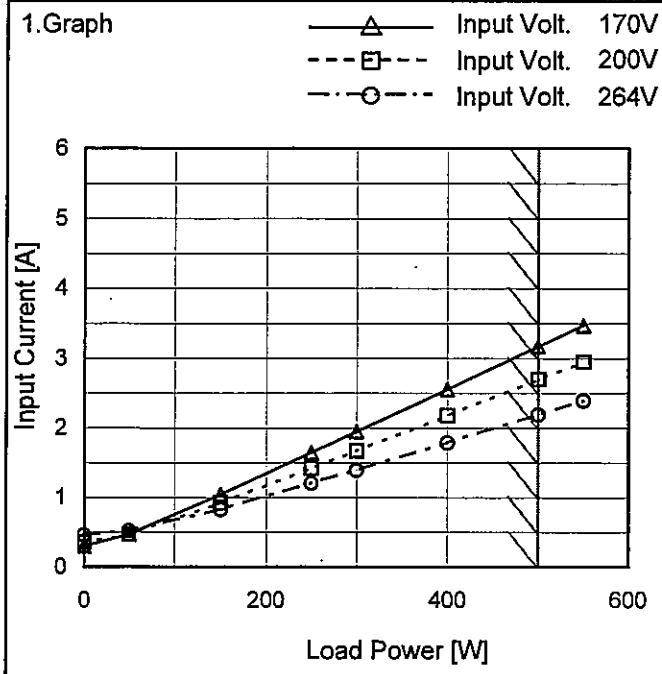
COSEL

Model	DPG500
Item	Input Current (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 Current [A]		
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
0	0.30	0.35	0.46
50	0.47	0.47	0.53
150	1.05	0.92	0.83
250	1.65	1.42	1.21
300	1.95	1.67	1.39
400	2.56	2.18	1.79
500	3.17	2.69	2.20
550	3.47	2.95	2.39
--	-	-	-
--	-	-	-
--	-	-	-

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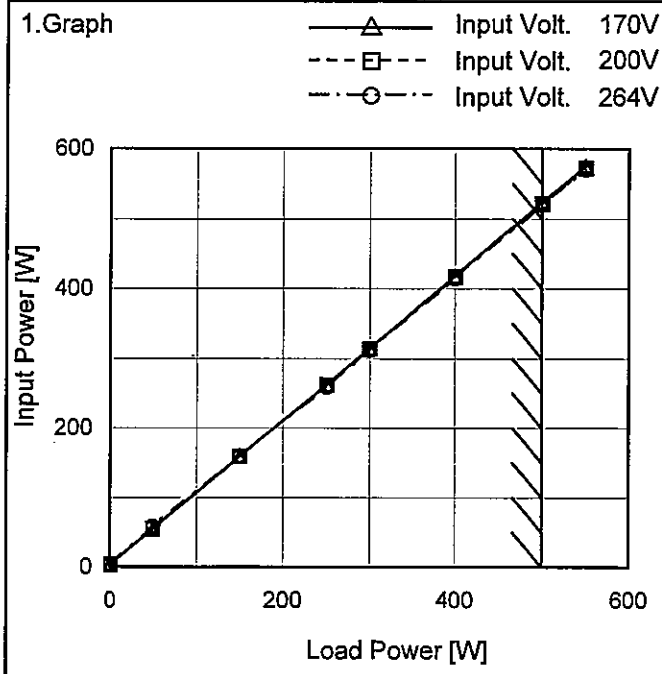
Model	DPG500
Item	Input Power (by Load Power)
Object	————————

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	3.8	4.1	4.0
50	55.3	55.1	59.1
150	159.1	158.5	160.1
250	262.7	261.5	259.2
300	314.7	313.1	311.8
400	418.8	416.6	414.8
500	524.5	521.3	520.5
550	575.5	571.8	570.8
--	-	-	-
--	-	-	-
--	-	-	-

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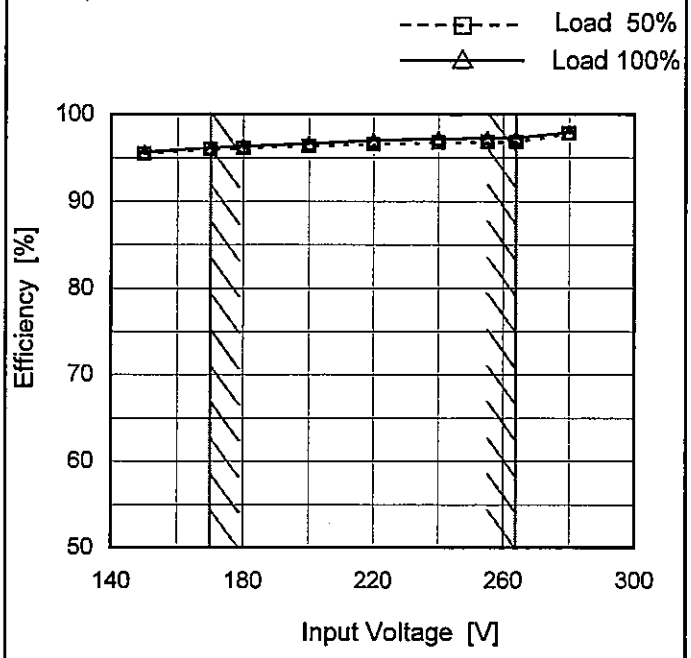
COSEL

Model	DPG500
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	95.4	95.7
170	95.9	96.1
180	96.1	96.4
200	96.3	96.7
220	96.6	97.0
240	96.7	97.3
255	96.8	97.3
264	96.8	97.3
280	97.8	97.9

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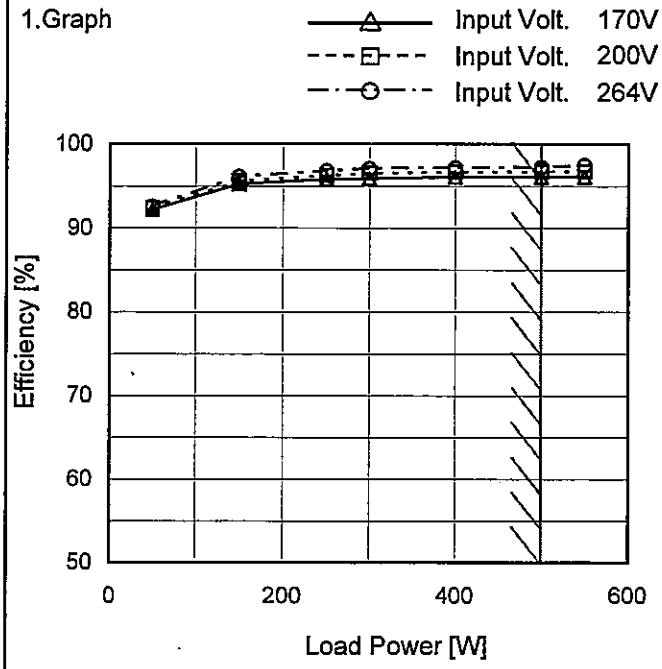
Model	DPG500
Item	Efficiency (by Load Power)
Object	――――――

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]
0	-	-	-
50	92.2	92.4	92.6
150	95.3	95.6	96.1
250	95.9	96.3	96.8
300	95.9	96.5	97.1
400	96.1	96.7	97.2
500	96.1	96.7	97.3
550	96.1	96.7	97.5
---	-	-	-
---	-	-	-
---	-	-	-

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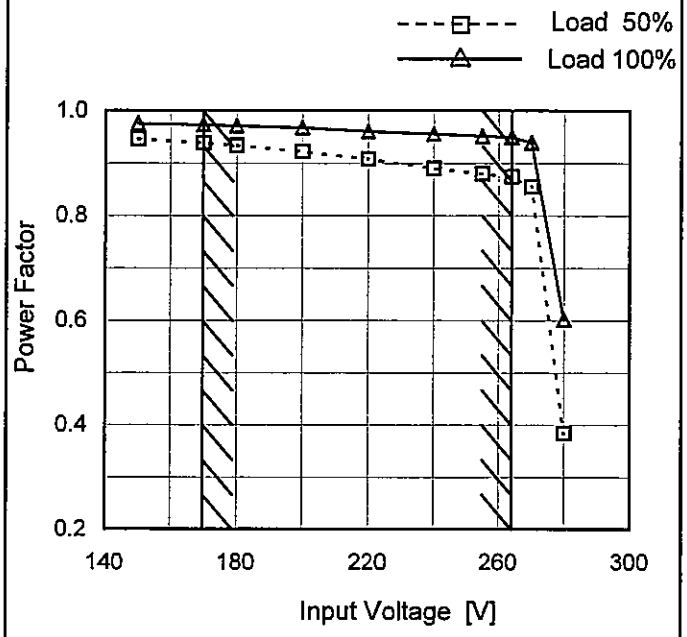
Model	DPG500
Item	Power Factor (by Input Voltage)
Object	――――――――

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	0.946	0.976
170	0.938	0.973
180	0.934	0.971
200	0.922	0.968
220	0.908	0.961
240	0.890	0.956
255	0.880	0.952
264	0.874	0.950
270	0.855	0.940
280	0.384	0.602

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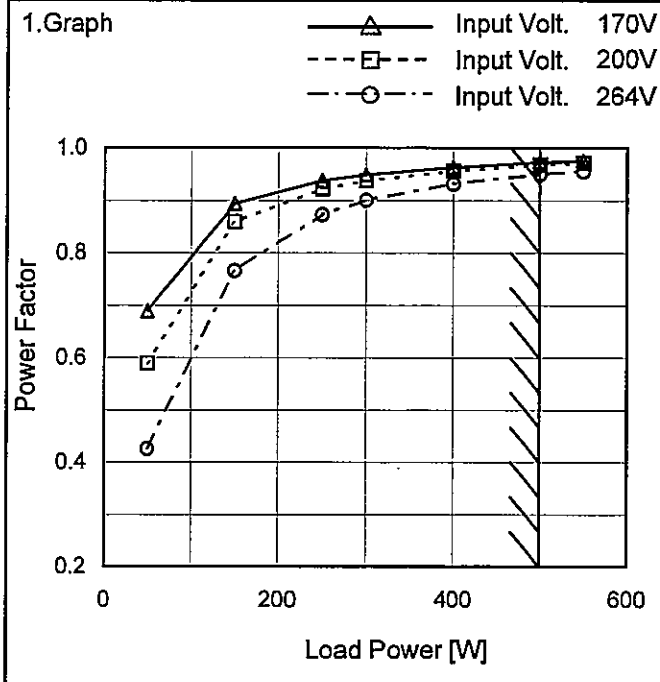
Model	DPG500
Item	Power Factor (by Load Power)
Object	――――――

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]
50	0.690	0.589	0.426
150	0.894	0.859	0.766
250	0.938	0.922	0.874
300	0.949	0.938	0.901
400	0.964	0.957	0.932
500	0.973	0.968	0.950
550	0.976	0.971	0.956
--	-	-	-
--	-	-	-
--	-	-	-
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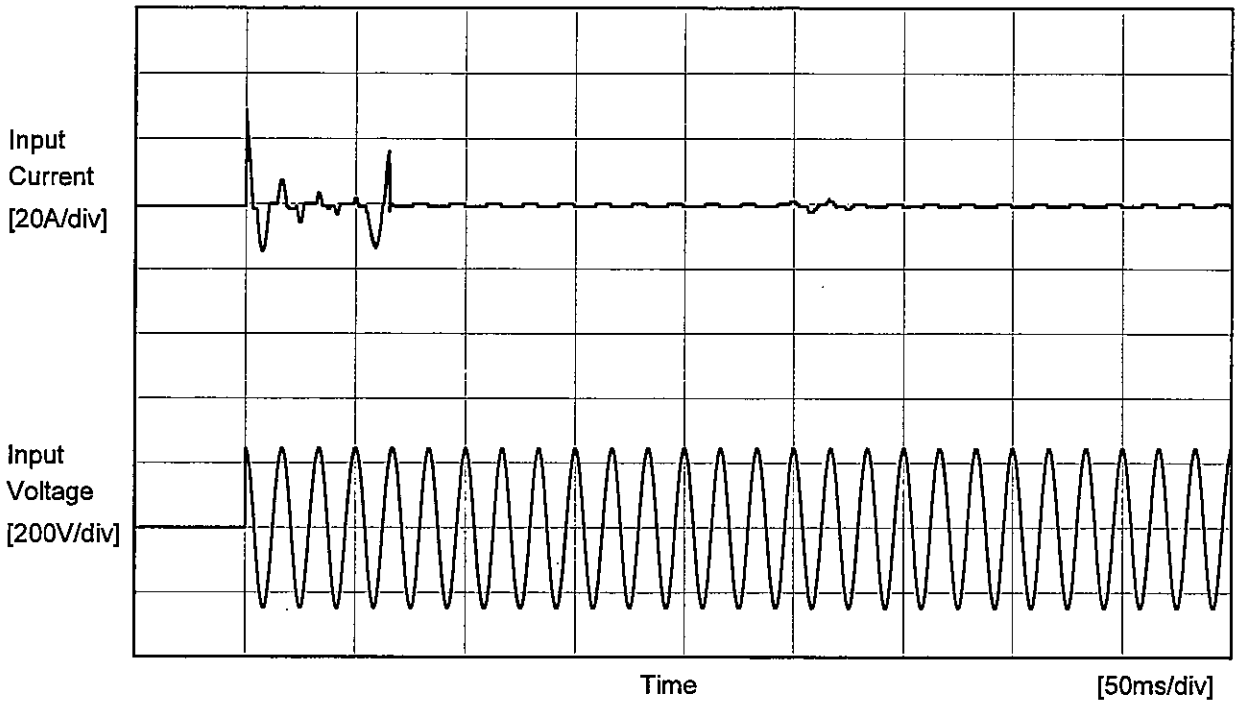
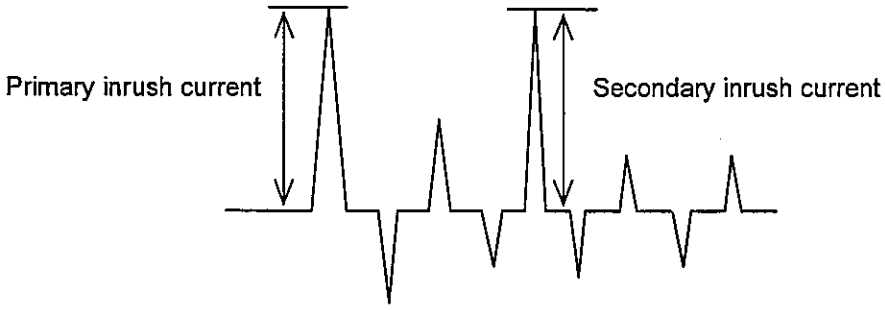
Model	DPG500	Temperature 25°C
Item	Inrush Current	Testing Circuitry Figure A
Object	————————	



Input Voltage	200 V
Frequency	60 Hz
Load	0 %
Primary inrush current	28.8 A
Secondary inrush current	16.0 A



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Model	DPG500		
Item	Leakage Current	Temperature	25°C
		Testing Circuitry	Figure B
Object	――――――――		

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. 230 [V]	Input Volt. 264 [V]
(B)IEC60950-1	0.25	0.31	0.42

2.Condition

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

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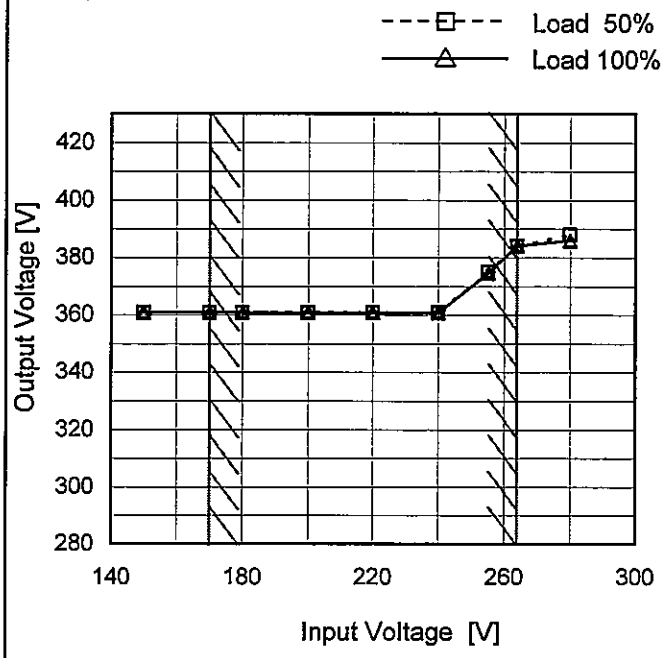
Model	DPG500
Item	Line Regulation
Object	+360V 500W

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	360.89	360.88
170	360.89	360.88
180	360.90	360.89
200	360.90	360.89
220	360.91	360.90
240	360.91	360.91
255	375.02	374.73
264	384.11	384.01
280	387.90	386.06

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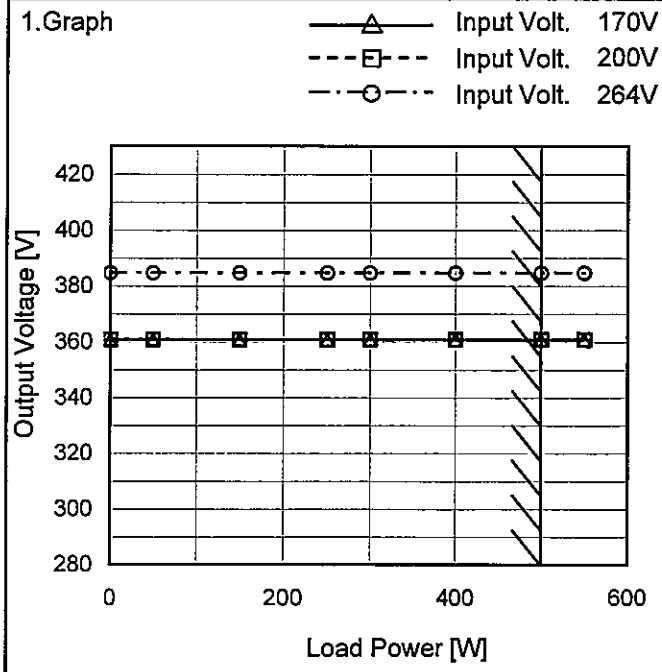
COSEL

Model	DPG500
Item	Load Regulation
Object	+360V 500W

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	360.89	360.91	384.81
50	360.88	360.90	384.80
150	360.88	360.89	384.80
250	360.88	360.89	384.79
300	360.87	360.89	384.79
400	360.87	360.88	384.79
500	360.87	360.88	384.79
550	360.87	360.88	384.79
--	-	-	-
--	-	-	-
--	-	-	-

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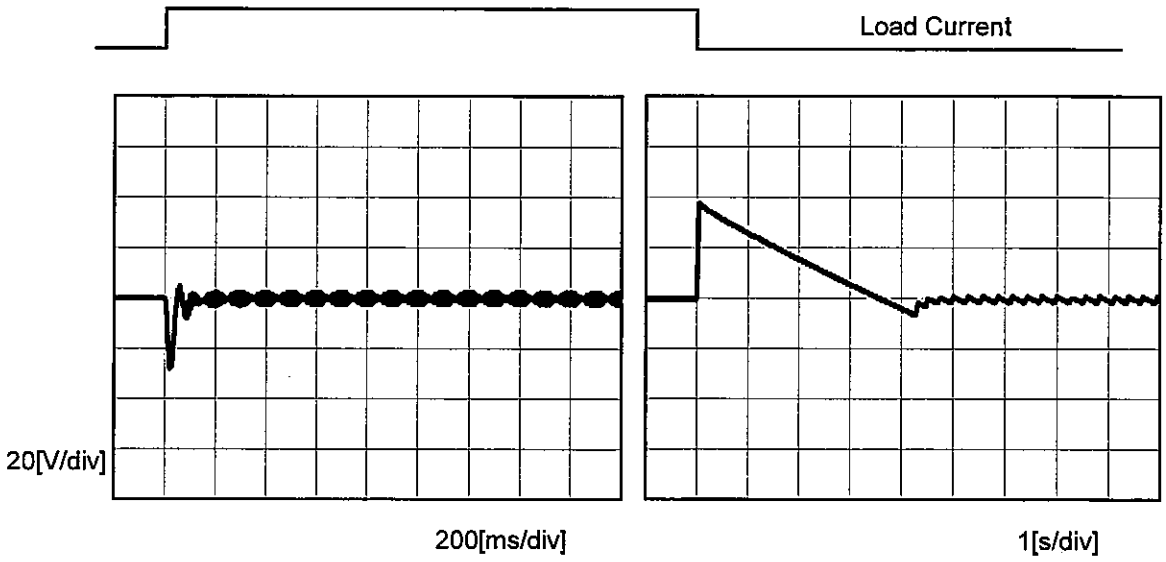
COSEL

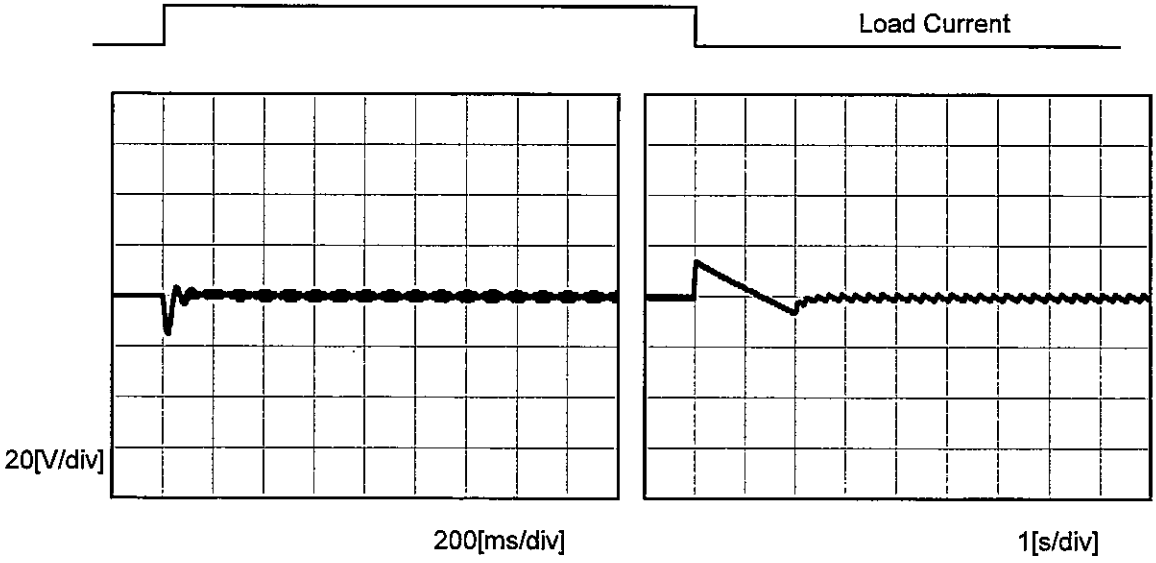
Model	DPG500	Temperature 25°C
Item	Dynamic Load Response	Testing Circuitry Figure A
Object	+360V500W	

Input Volt. 200 V
Cycle 10 s

Min. Load (0 W) -- Load 100% (500 W)



Min. Load (0 W) -- Load 50% (250 W)



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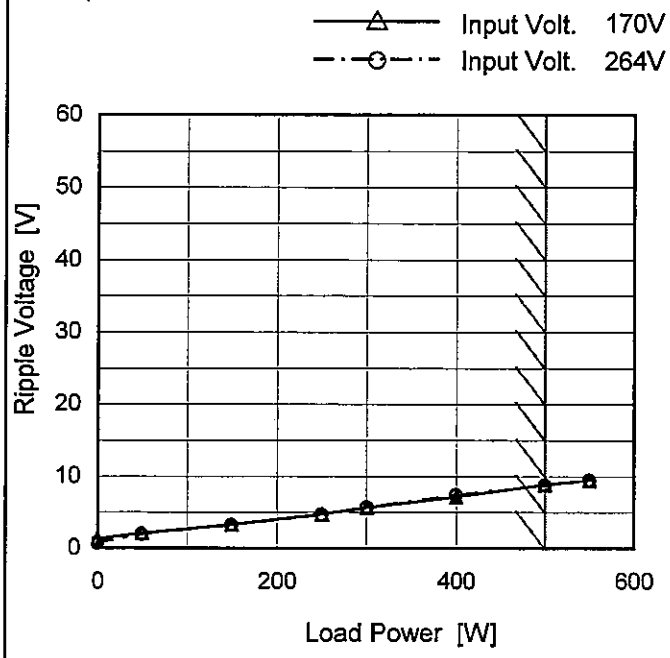
Model	DPG500
Item	Ripple Voltage (by Load Current)
Object	+360V500W

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Measured by 20 MHz Oscilloscope.
Ripple Voltage is shown as p-p in the figure below.
Note: Slanted line shows the range of the rated load current.

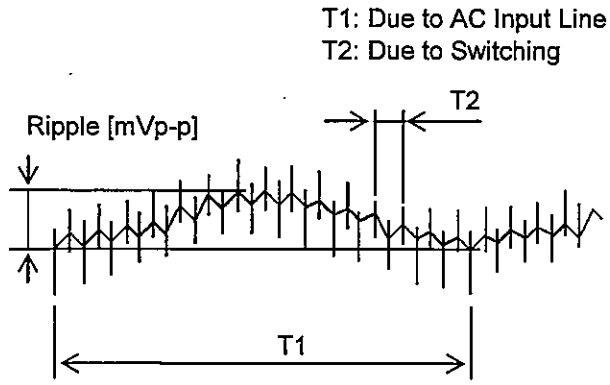


Fig. Complex Ripple Wave Form

2.Values

Load Power [W]	Ripple Voltage [V] Input Volt. 170 [V]	Ripple Voltage [V] Input Volt. 264 [V]
0	1.4	0.8
50	2.1	2.0
150	3.3	3.2
250	4.8	4.7
300	5.7	5.7
400	7.2	7.4
500	8.9	8.8
550	9.5	9.5
--	-	-
--	-	-
--	-	-

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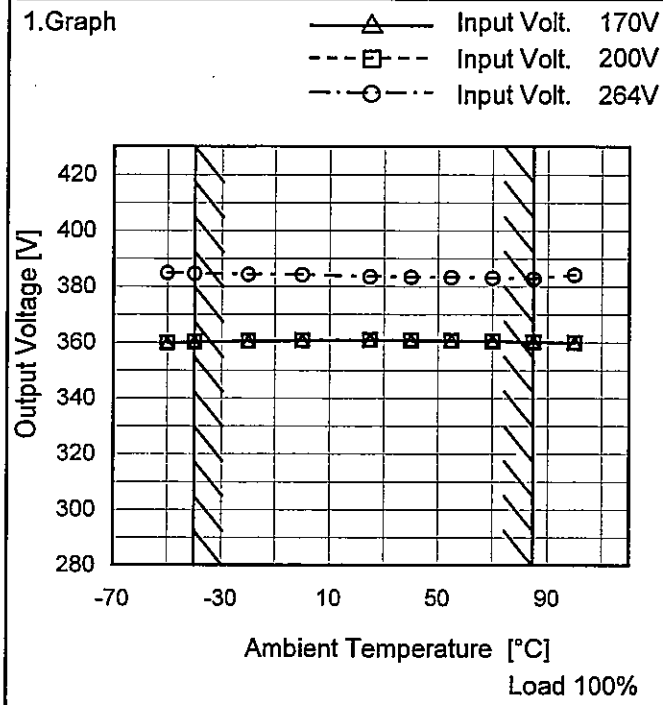
Model	DPG500
Item	Ambient Temperature Drift
Object	+360V 500W

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]
-50	359.87	359.88	384.89
-40	360.14	360.15	384.70
-20	360.53	360.54	384.38
0	360.76	360.77	384.32
25	360.86	360.86	383.60
40	360.78	360.79	383.46
55	360.66	360.66	383.33
70	360.49	360.48	383.12
85	360.21	360.22	382.81
100	359.92	359.92	384.27
--	-	-	-

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COSEL

Model	DPG500	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+360V 500W	

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 : -40 - 85°C
Input Voltage : 170 - 240V
Load Power : 0 - 500W

* 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	
			Power[W]	Voltage[V]	Value [V]	Ration [%]
Maximum Voltage	25	240	0	360.92	±0.39	±0.1
Minimum Voltage	-40	170	500	360.14		

* When the input voltage is more than 240V, the output voltage becomes the value proportional to the input voltage.

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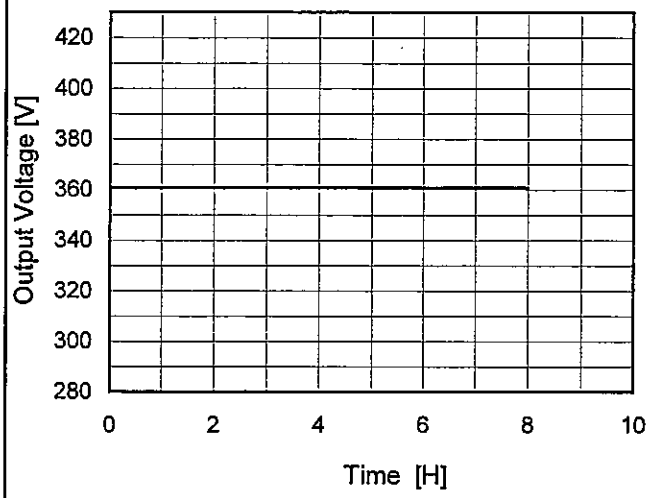
Model	DPG500
Item	Time Lapse Drift
Object	+360V 500W

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	360.85
0.5	360.89
1.0	360.89
2.0	360.88
3.0	360.88
4.0	360.88
5.0	360.88
6.0	360.88
7.0	360.88
8.0	360.88

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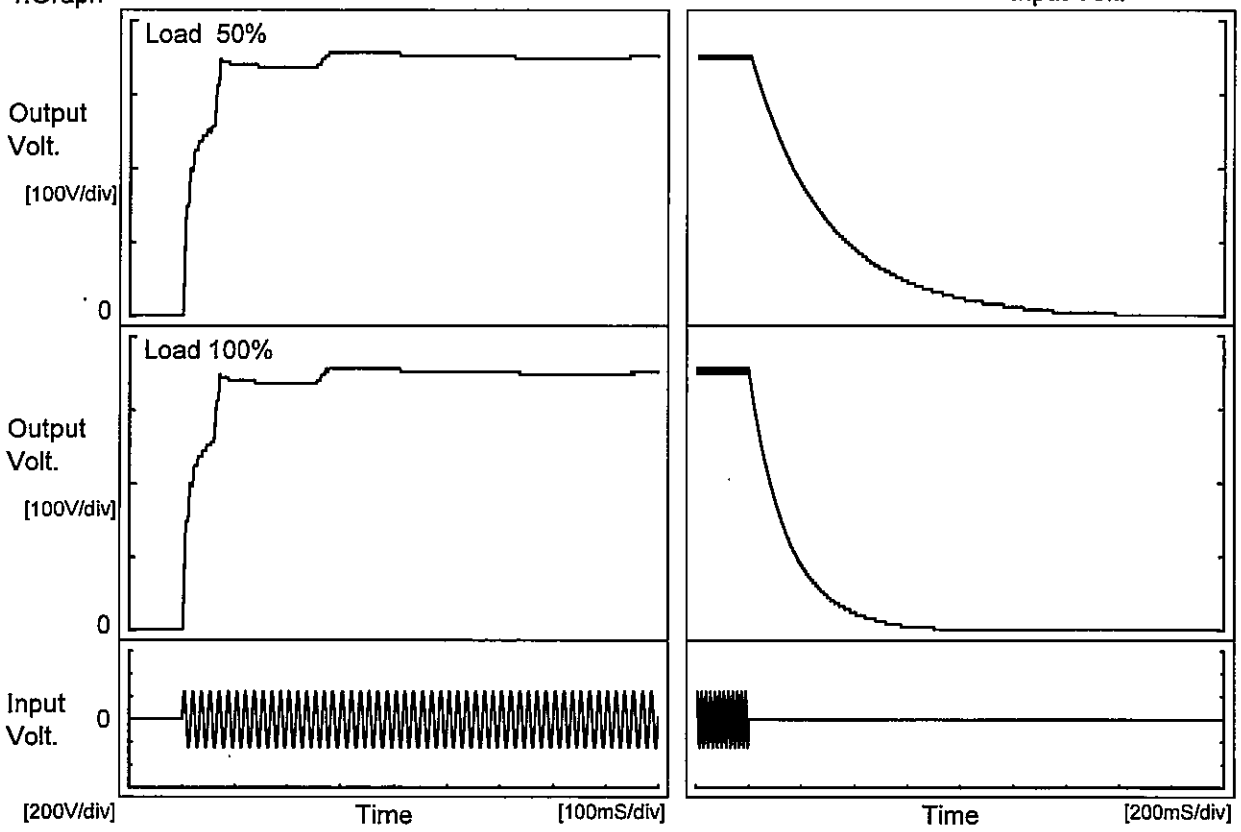
Model	DPG500
Item	Rise and Fall Time
Object	+360V 500W

Temperature 25°C
Testing Circuitry Figure A

1.Graph

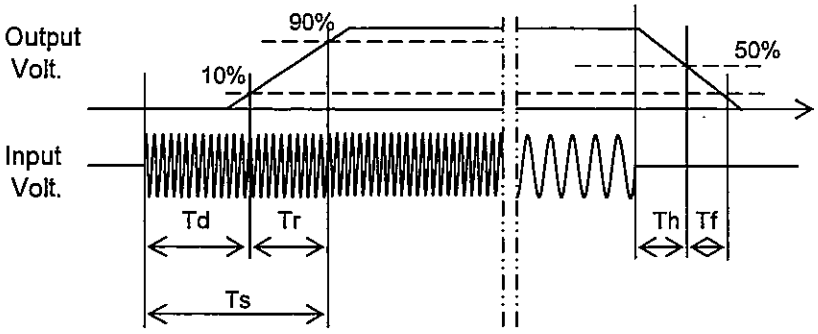
Input Volt. 200 V



2.Values

[mS]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	2.0	67.0	69.0	200.0	491.0
100 %	2.0	67.0	69.0	97.0	247.0



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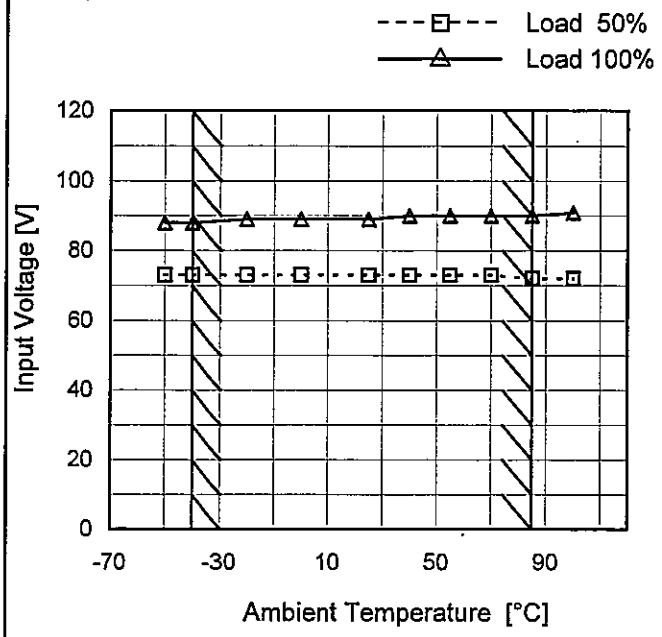
Model	DPG500
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+360V 500W

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%
-50	73	88
-40	73	88
-20	73	89
0	73	89
25	73	89
40	73	90
55	73	90
70	73	90
85	72	90
100	72	91
--	-	-

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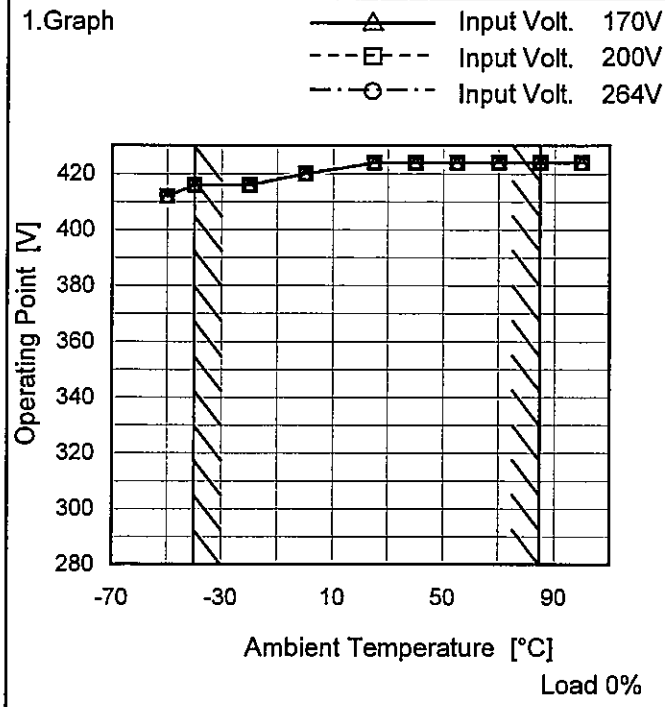
Model	DPG500
Item	Overvoltage Protection
Object	+360V500W

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. 200[V]	Input Volt. 264[V]
-50	412.00	412.00	412.00
-40	416.00	416.00	416.00
-20	416.00	416.00	416.00
0	420.00	420.00	420.00
25	424.00	424.00	424.00
40	424.00	424.00	424.00
55	424.00	424.00	424.00
70	424.00	424.00	424.00
85	424.00	424.00	424.00
100	424.00	424.00	424.00
--	-	-	-

COSEL

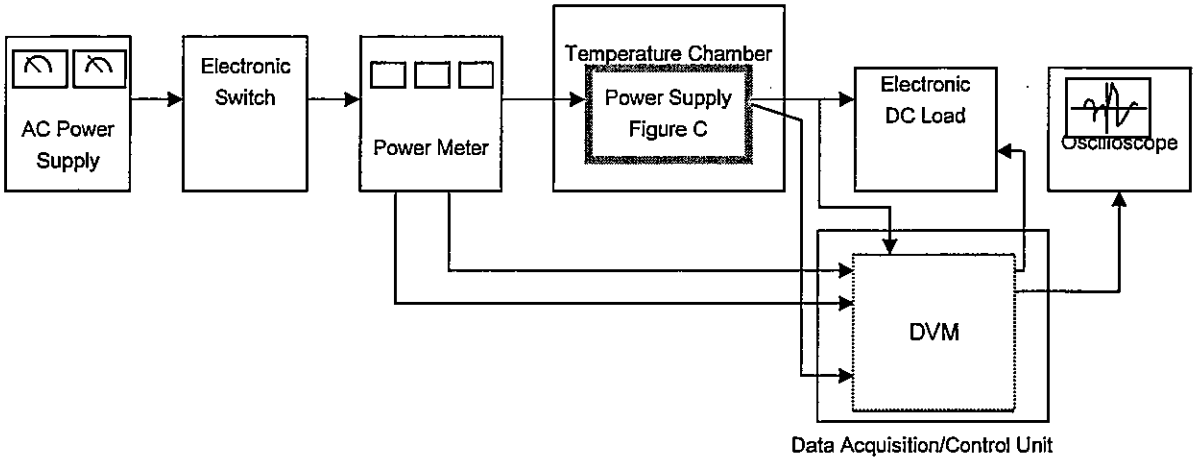


Figure A

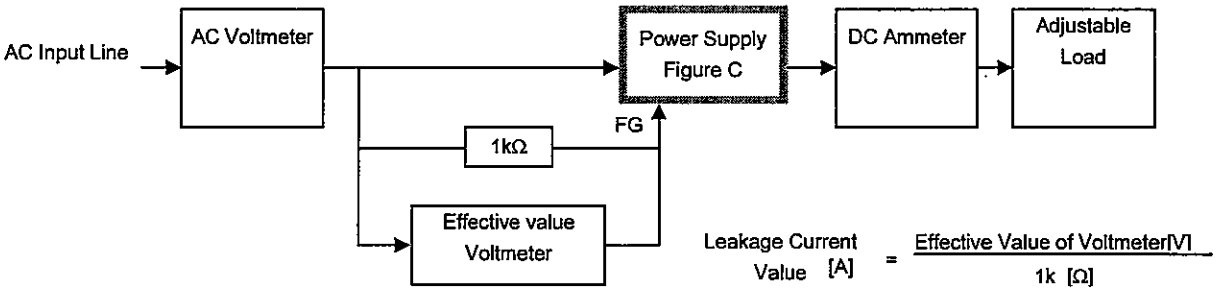


Figure B (DEN-AN)

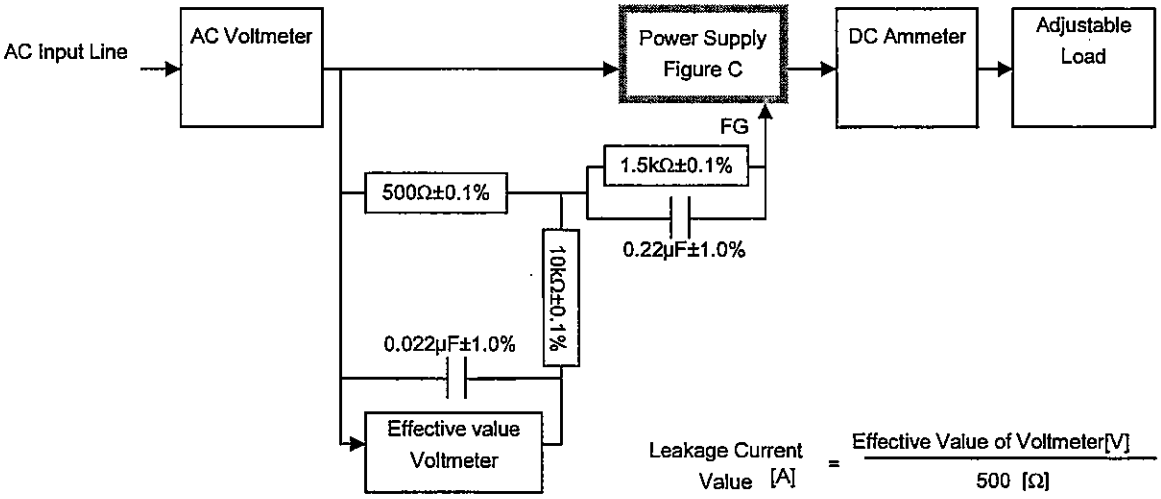


Figure B (IEC60950-1)