

TEST DATA OF WDA30F-5

Regulated DC Power Supply
August 17, 2022

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Design Engineer

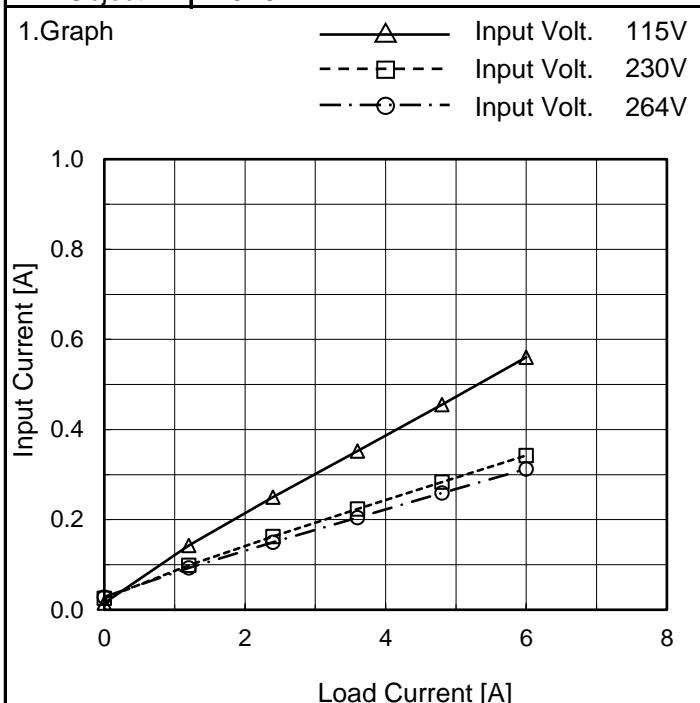
COSEL CO.,LTD.

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Model	WDA30F-5
Item	Input Current (by Load Current)
Object	+5V6A

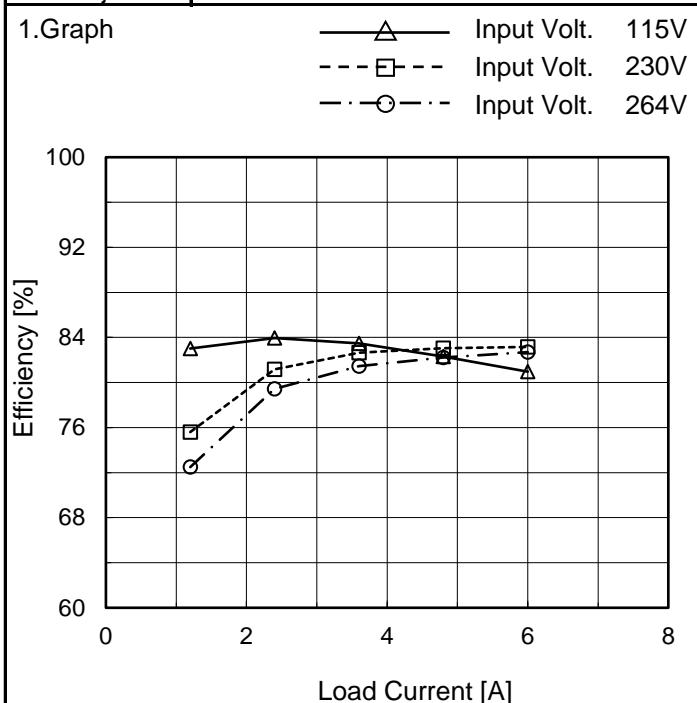


Temperature 25°C
Testing Circuitry Figure A

2.Values

Load Current [A]	Input Current [A]		
	Input Volt. 115[V]	Input Volt. 230[V]	Input Volt. 264[V]
0.0	0.015	0.025	0.029
1.2	0.143	0.099	0.093
2.4	0.250	0.163	0.150
3.6	0.352	0.224	0.205
4.8	0.455	0.284	0.259
6.0	0.561	0.343	0.313
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

Model	WDA30F-5
Item	Efficiency (by Load Current)
Object	+5V6A

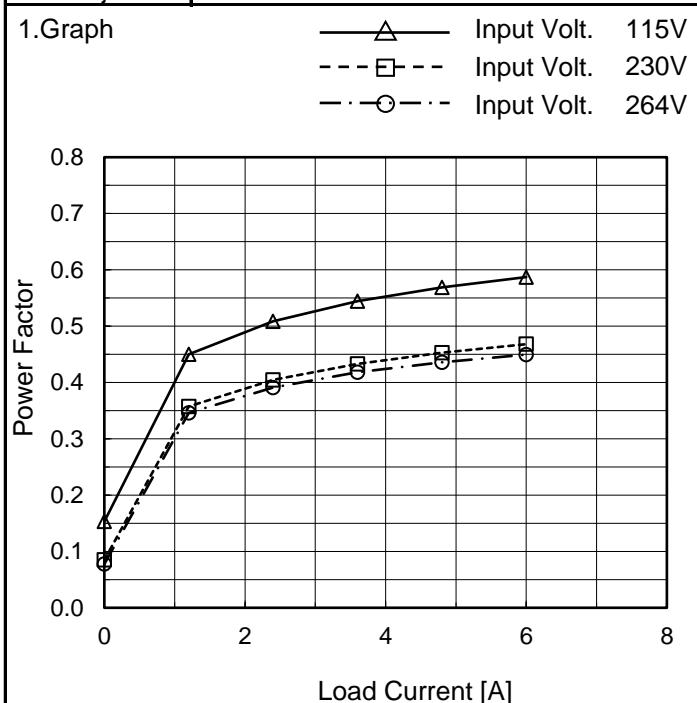


Temperature 25°C
Testing Circuitry Figure A

2.Values

Load Current [A]	Efficiency [%]		
	Input Volt. 115[V]	Input Volt. 230[V]	Input Volt. 264[V]
0.0	-	-	-
1.2	83.0	75.6	72.5
2.4	83.9	81.2	79.4
3.6	83.5	82.6	81.4
4.8	82.3	83.1	82.2
6.0	81.0	83.2	82.7
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

Model	WDA30F-5
Item	Power Factor (by Load Current)
Object	+5V6A



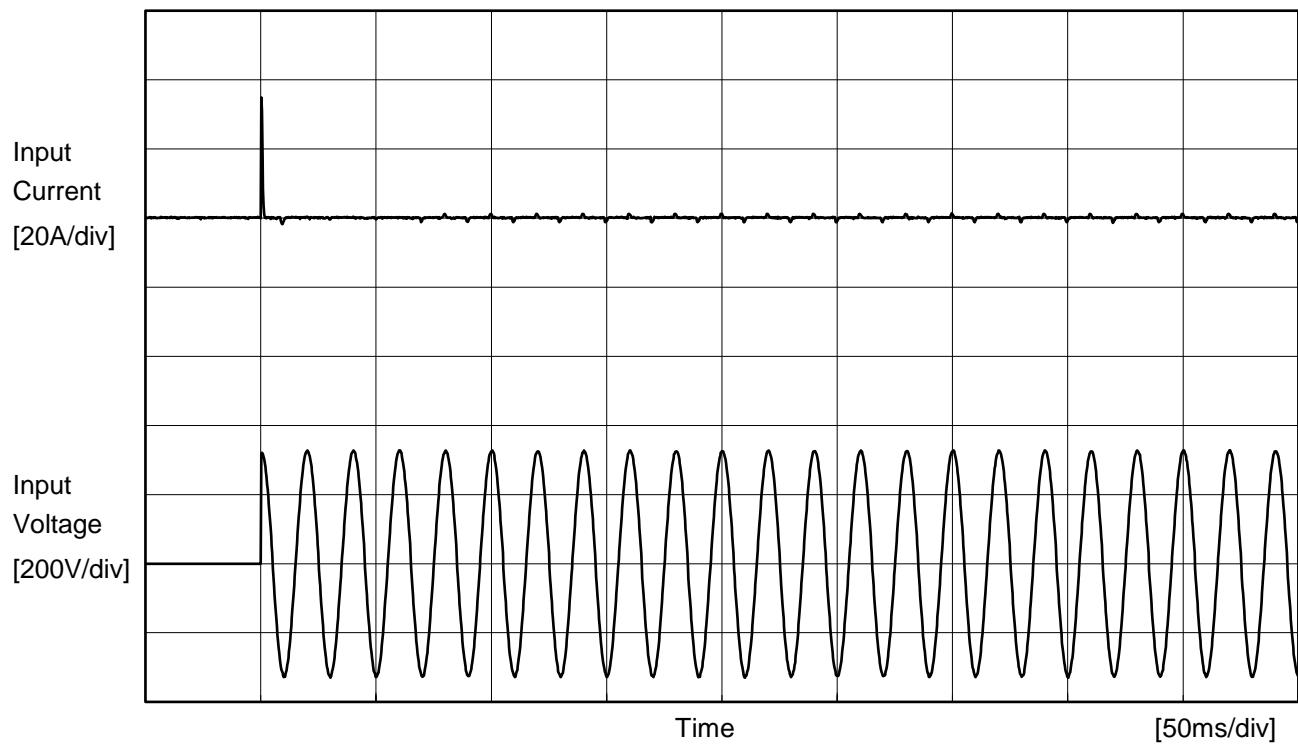
Temperature 25°C
Testing Circuitry Figure A

2.Values

Load Current [A]	Power Factor		
	Input Volt. 115[V]	Input Volt. 230[V]	Input Volt. 264[V]
0.0	0.153	0.085	0.078
1.2	0.450	0.358	0.346
2.4	0.509	0.404	0.391
3.6	0.545	0.433	0.418
4.8	0.569	0.453	0.436
6.0	0.587	0.468	0.450
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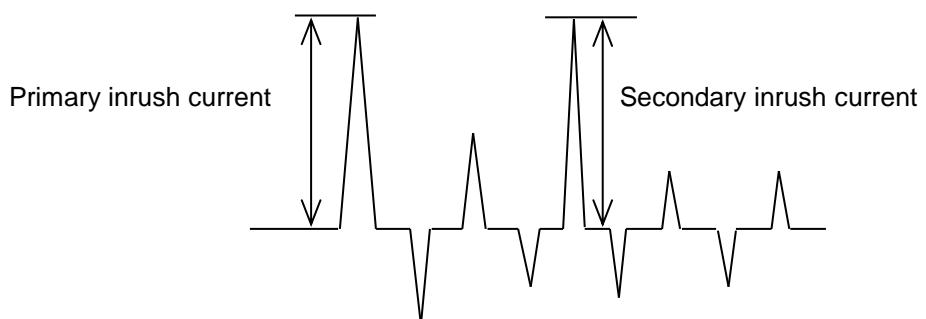
Model	WDA30F-5
Item	Inrush Current
Object	+5V6A

Temperature 25°C
Testing Circuitry Figure A



Input Voltage 230 V
Frequency 50 Hz
Load 100 %

Primary inrush current 34.7 A
Secondary inrush current 0.0 A



Model	WDA30F-5	Temperature Testing Circuitry Figure C	25°C
Item	Leakage Current		
Object	+5V6A		

1. Results

[mA]

Standards	Testing Circuitry	Measuring Method	Input Volt.			Note
			115 [V]	240 [V]	264 [V]	
DEN-AN	Figure C-1	Both phases	0.14	0.33	0.37	Operation
		One of phases	0.27	0.62	0.69	Stand by
IEC62368-1	Figure C-2	Both phases	0.14	0.32	0.35	Operation
		One of phases	0.27	0.60	0.67	Stand by
	Figure C-3	Both phases	0.14	0.35	0.35	Operation
		One of phases	0.26	0.67	0.66	Stand by

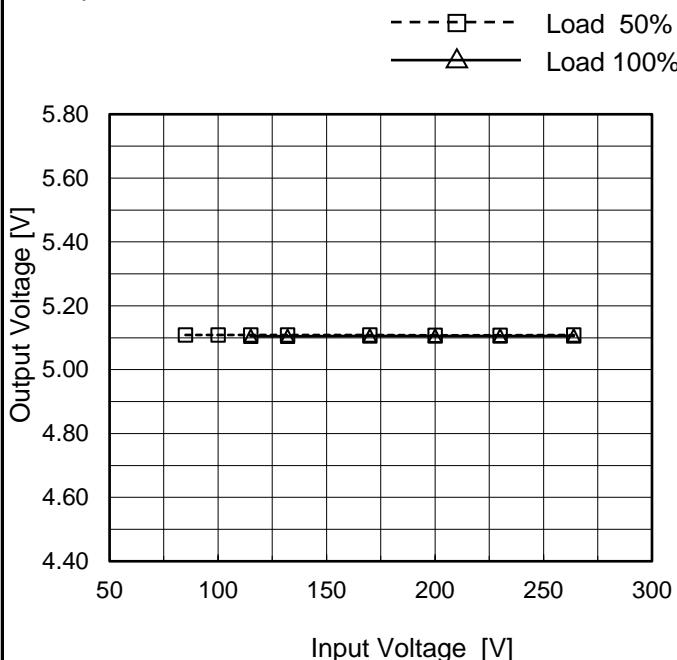
The value for "One of phases" is the reference value only.

2. Condition

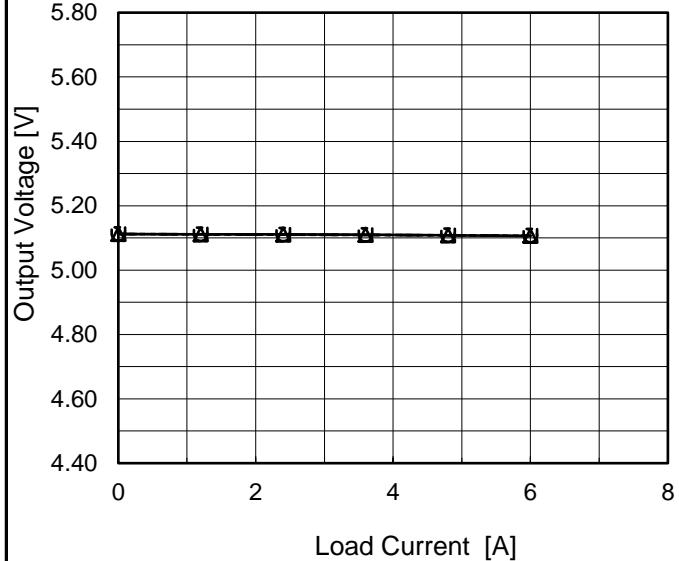
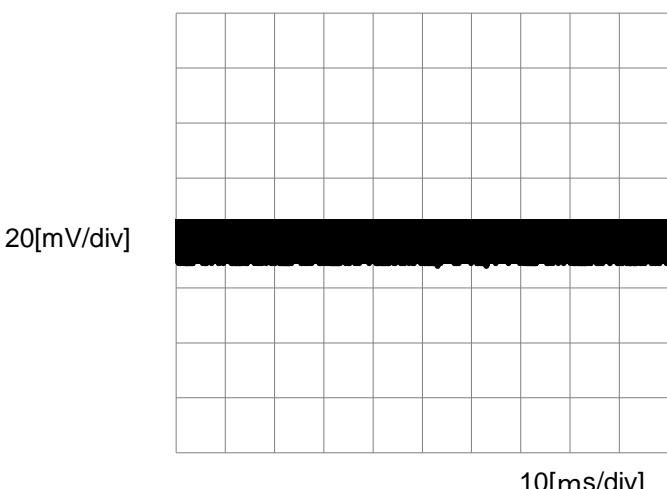
Leakage current value is concluded after measuring both phases of AC input and by choosing the larger one.

Model	WDA30F-5
Item	Line Regulation
Object	+5V6A

Temperature 25°C
Testing Circuitry Figure A

1.Graph**2.Values**

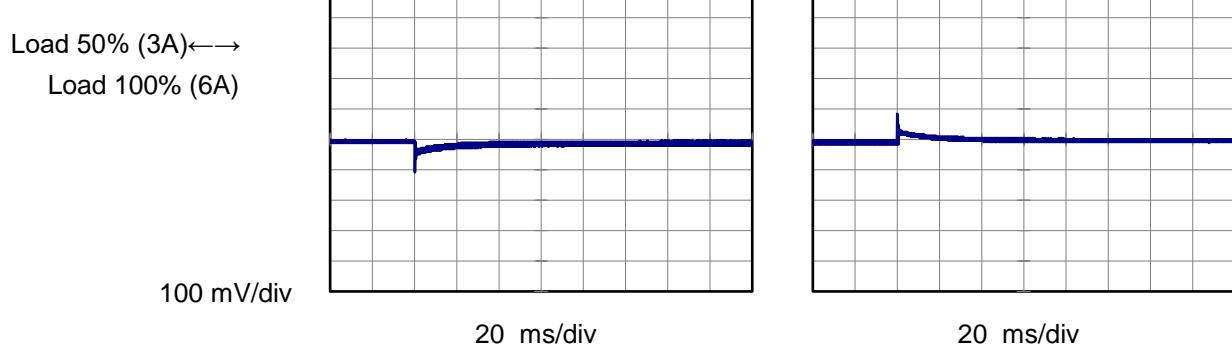
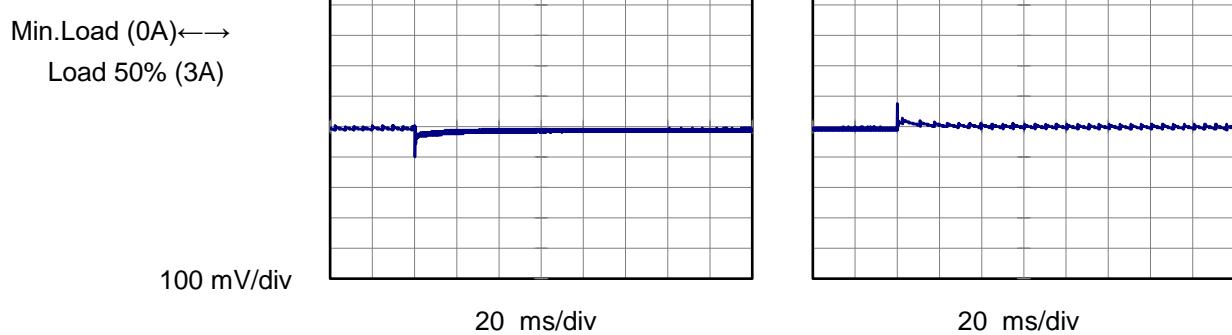
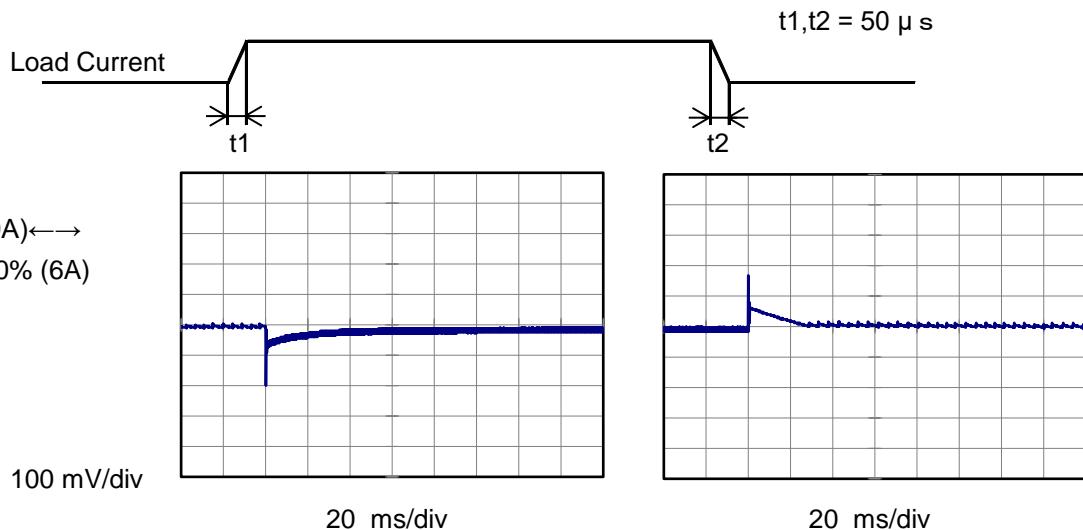
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
85	5.109	-
100	5.109	-
115	5.109	5.105
132	5.109	5.105
170	5.108	5.105
200	5.108	5.105
230	5.108	5.105
264	5.108	5.105
--	-	-

Model	WDA30F-5	Temperature	25°C																																																			
Item	Load Regulation	Testing Circuitry	Figure A																																																			
Object	+5V6A																																																					
1.Graph		2.Values																																																				
<p style="text-align: center;"> —△— Input Volt. 115V ---□--- Input Volt. 230V ---○--- Input Volt. 264V </p> 		<table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th colspan="3">Output Voltage [V]</th> </tr> <tr> <th>Input Volt. 115[V]</th> <th>Input Volt. 230[V]</th> <th>Input Volt. 264[V]</th> </tr> </thead> <tbody> <tr><td>0.0</td><td>5.112</td><td>5.112</td><td>5.112</td></tr> <tr><td>1.2</td><td>5.111</td><td>5.111</td><td>5.111</td></tr> <tr><td>2.4</td><td>5.111</td><td>5.111</td><td>5.111</td></tr> <tr><td>3.6</td><td>5.110</td><td>5.109</td><td>5.109</td></tr> <tr><td>4.8</td><td>5.108</td><td>5.108</td><td>5.108</td></tr> <tr><td>6.0</td><td>5.106</td><td>5.107</td><td>5.107</td></tr> <tr><td>--</td><td>--</td><td>--</td><td>--</td></tr> <tr><td>--</td><td>--</td><td>--</td><td>--</td></tr> <tr><td>--</td><td>--</td><td>--</td><td>--</td></tr> <tr><td>--</td><td>--</td><td>--</td><td>--</td></tr> <tr><td>--</td><td>--</td><td>--</td><td>--</td></tr> </tbody> </table>		Load Current [A]	Output Voltage [V]			Input Volt. 115[V]	Input Volt. 230[V]	Input Volt. 264[V]	0.0	5.112	5.112	5.112	1.2	5.111	5.111	5.111	2.4	5.111	5.111	5.111	3.6	5.110	5.109	5.109	4.8	5.108	5.108	5.108	6.0	5.106	5.107	5.107	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
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6.0	5.106	5.107	5.107																																																			
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Item		Temperature 25°C																																																				
Object		Testing Circuitry Figure B																																																				
1.Graph																																																						
<p style="text-align: center;"> Input Voltage 230V Load 100% </p> 																																																						

Model	WDA30F-5
Item	Dynamic Load Response
Object	+5V6A

Temperature 25°C
Testing Circuitry Figure A

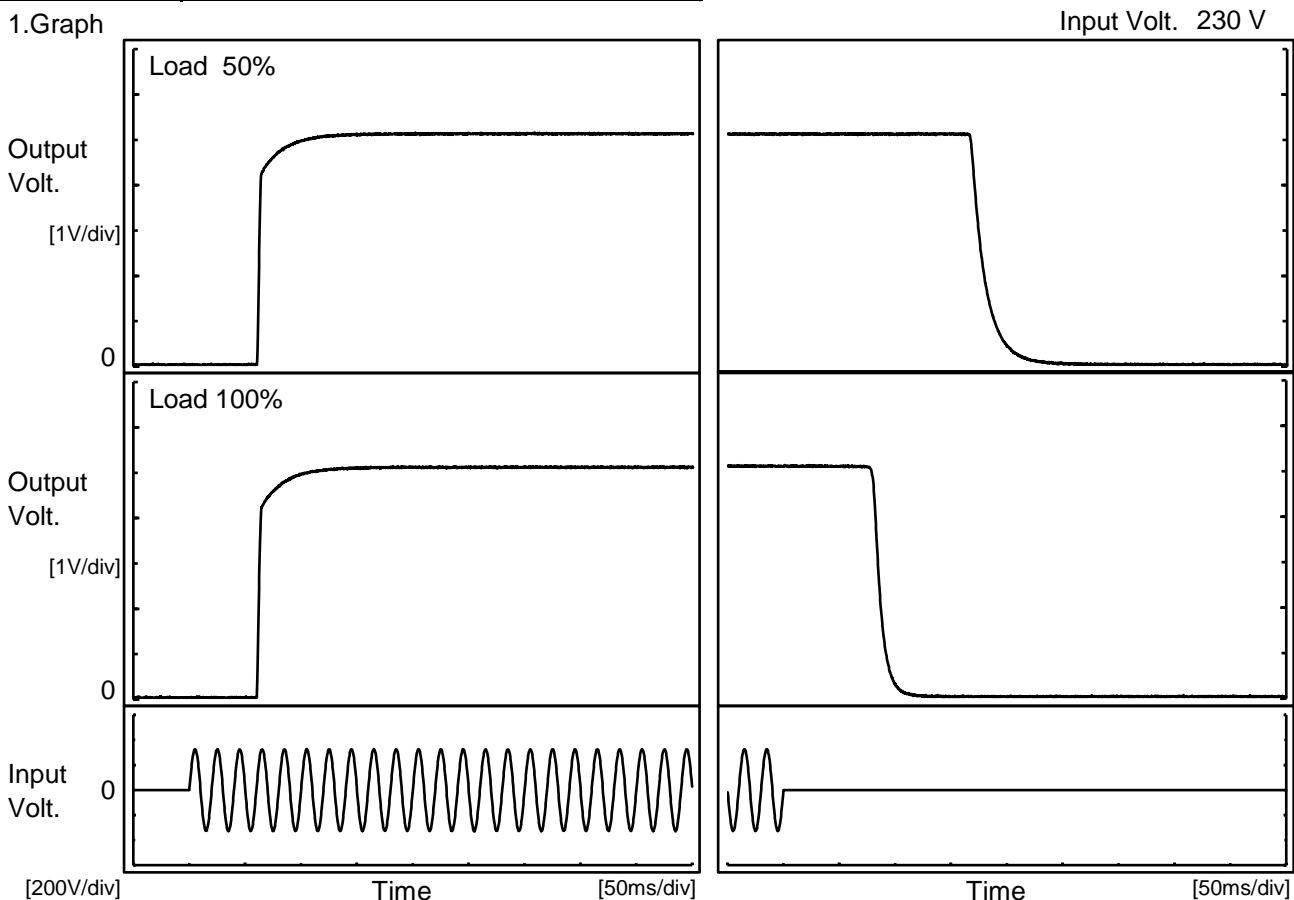
Input Volt. 230 V
Cycle 1000 ms



Model	WDA30F-5
Item	Rise and Fall Time
Object	+5V6A

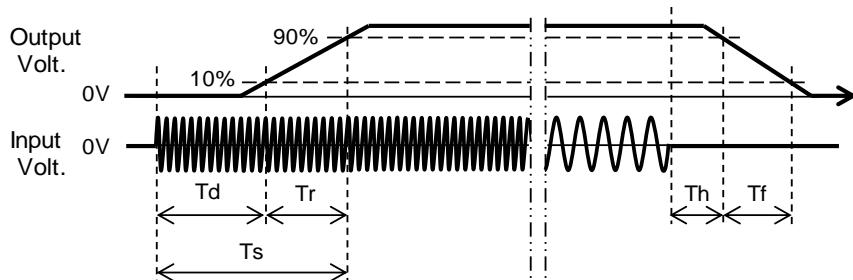
Temperature 25°C
Testing Circuitry Figure A

1. Graph



2. Values

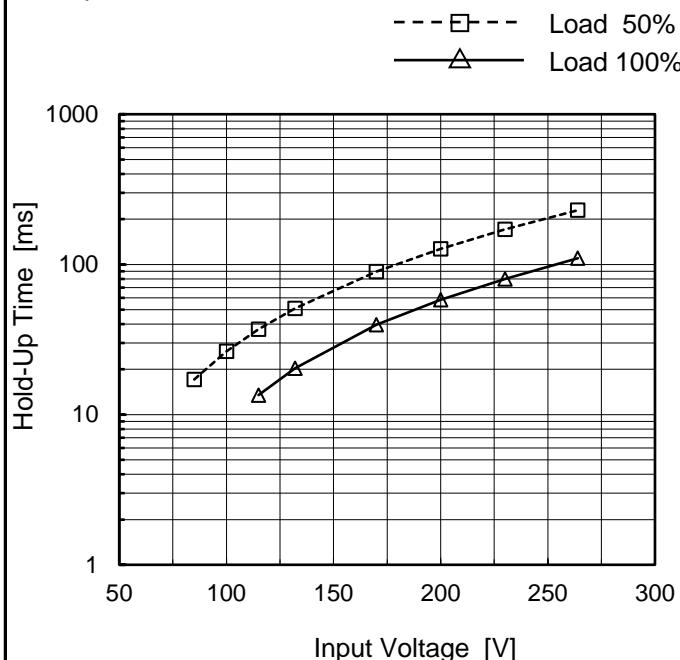
Load	Time	Td	Tr	Ts	Th	Tf
50 %		61.3	11.0	72.3	169.0	28.3
100 %		61.0	12.0	73.0	81.0	14.8



Model	WDA30F-5
Item	Hold-Up Time
Object	+5V6A

Temperature 25°C
Testing Circuitry Figure A

1. Graph

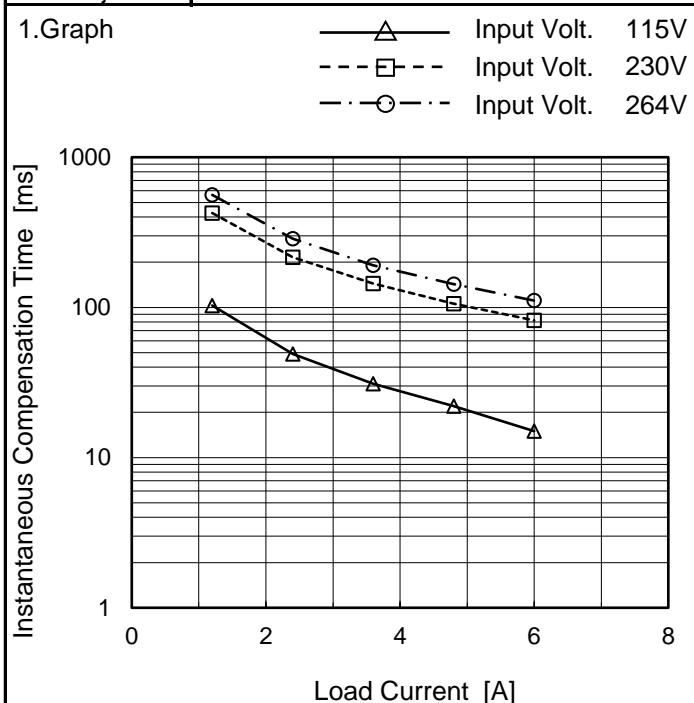


2. Values

Input Voltage [V]	Hold-Up Time [ms]	
	Load 50%	Load 100%
85	17	-
100	26	-
115	37	13
132	51	20
170	90	40
200	127	58
230	172	80
264	230	110
--	-	-

This duration covers from Shut-off of input voltage to the moment when output voltage descends to the rated range of voltage accuracy.

Model	WDA30F-5
Item	Instantaneous Interruption Compensation
Object	+5V6A

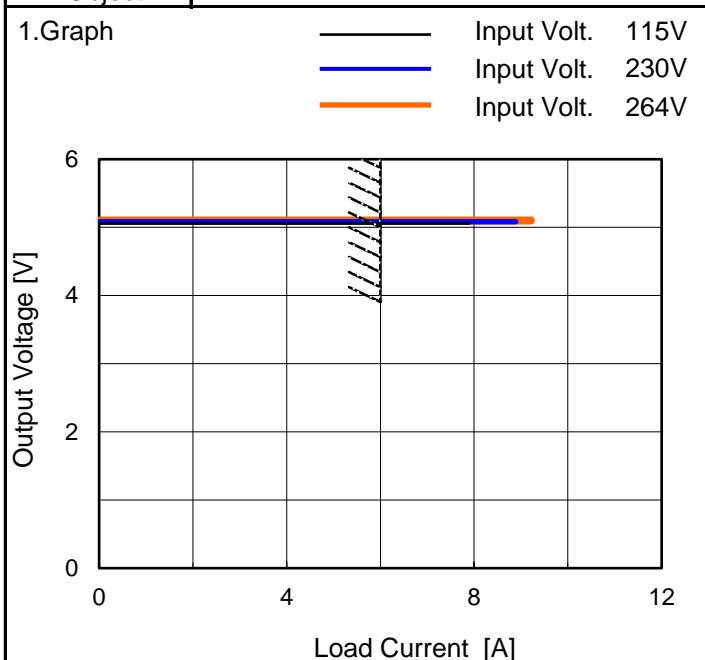


Temperature 25°C
Testing Circuitry Figure A

2.Values

Load Current [A]	Time [ms]		
	Input Volt. 115[V]	Input Volt. 230[V]	Input Volt. 264[V]
0.0	-	-	-
1.2	103	425	561
2.4	49	216	287
3.6	31	144	191
4.8	22	106	143
6.0	15	82	111
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

Model	WDA30F-5
Item	Overcurrent Protection
Object	+5V6A



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

Hiccup mode activates when the output voltage is from 1.0 to 0V.

Temperature 25°C
Testing Circuitry Figure A

2.Values

Output Voltage [V]	Load Current [A]		
	Input Volt. 115[V]	Input Volt. 230[V]	Input Volt. 264[V]
5	7.90	8.89	9.21
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
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--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

Model	WDA30F-5	Testing Circuitry Figure A
Item	Ambient Temperature Drift	
Object	+5V6A	

1.Values

Load 100%

Ambient Temperature[°C]	Output Voltage [V]		
	Input Volt. 115V	Input Volt. 230V	Input Volt. 264V
-20	5.082	5.088	5.089
25	5.100	5.101	5.101
50	5.105	5.106	5.105

Item	Minimum Input Voltage for Regulated Output Voltage	Testing Circuitry Figure A
Object	+5V6A	

1.Values

Ambient Temperature[°C]	Input Voltage [V]	
	Load 50%	Load 100%
-20	39	70
25	38	68
50	37	68

Item	Overvoltage Protection	Testing Circuitry Figure A
Object	+5V6A	

1.Values

Load 0%

Ambient Temperature[°C]	Operating Point [V]	
	Input Volt. 115V	Input Volt. 264V
-20	5.93	6.01
25	6.16	6.22
50	6.24	6.28

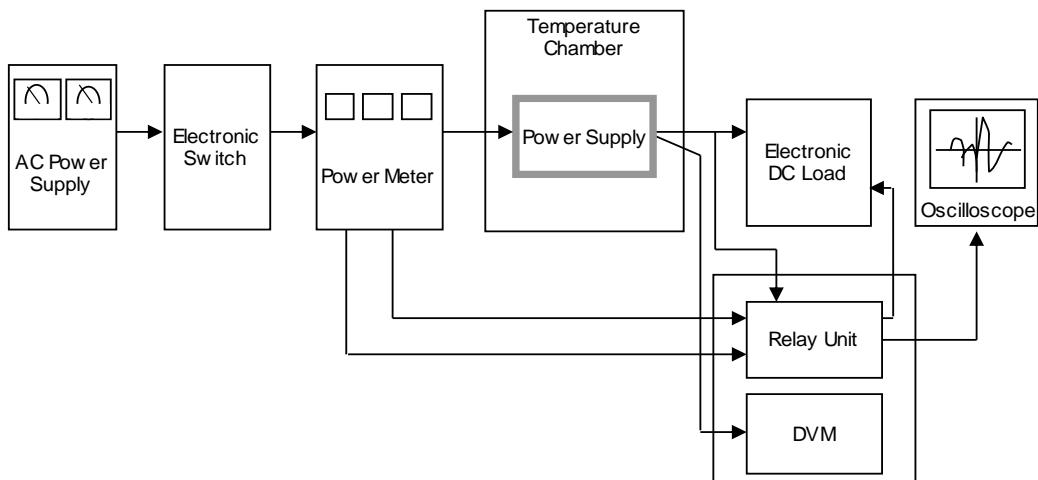


Figure A

Data Acquisition/Control Unit

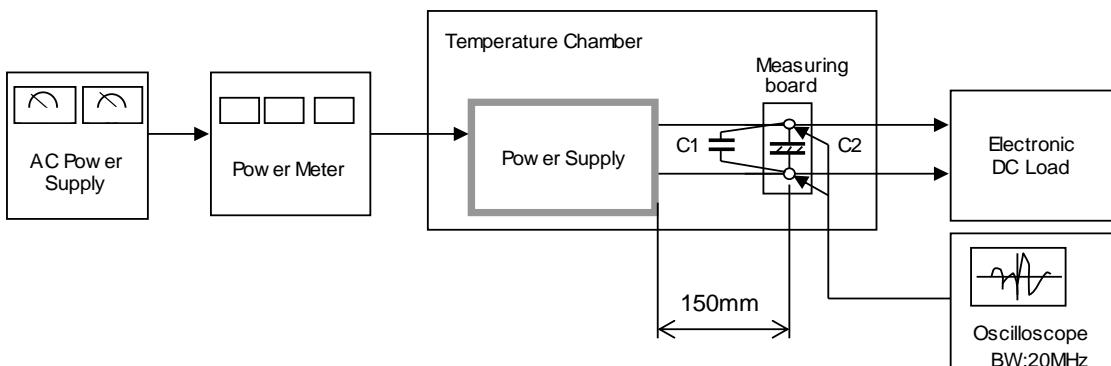


Figure B

 $C1 = 0.1 \mu F$
(Ceramic capacitor) $C2 = 47 \mu F$
(Electrolytic capacitor)

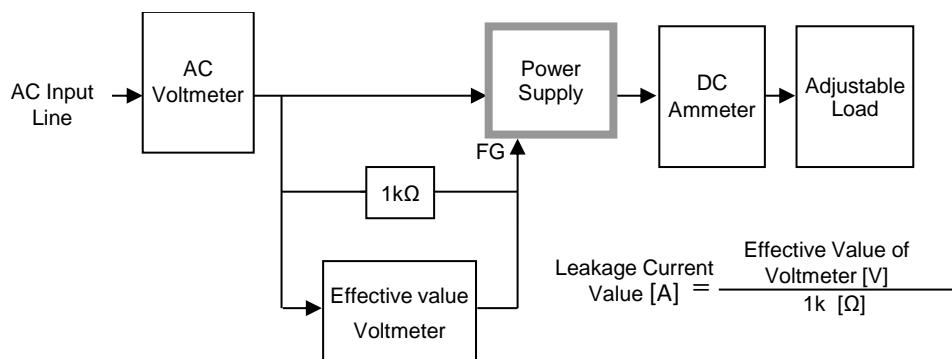


Figure C-1 (DEN-AN)

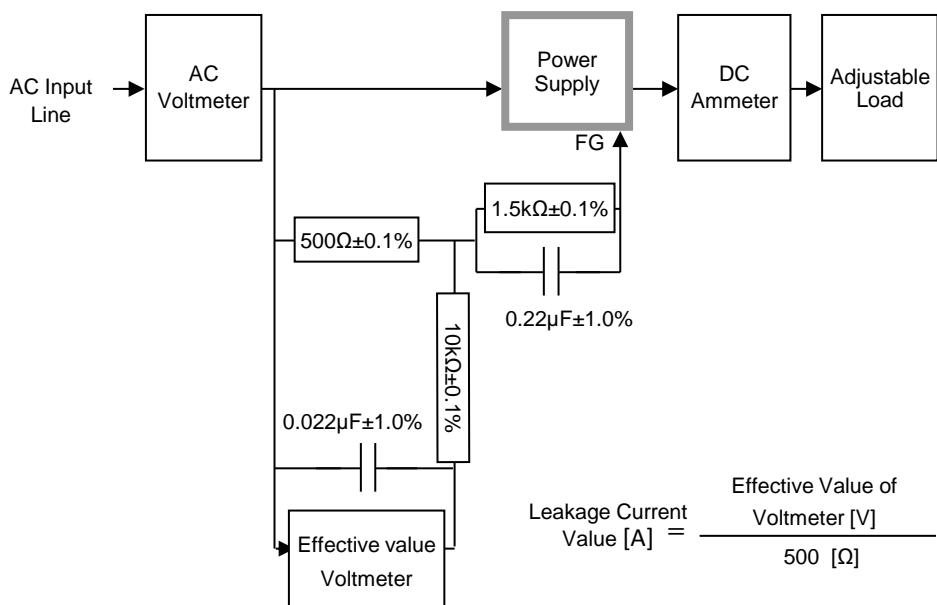


Figure C-2 (IEC62368-1 refer to IEC60990 Fig.4)

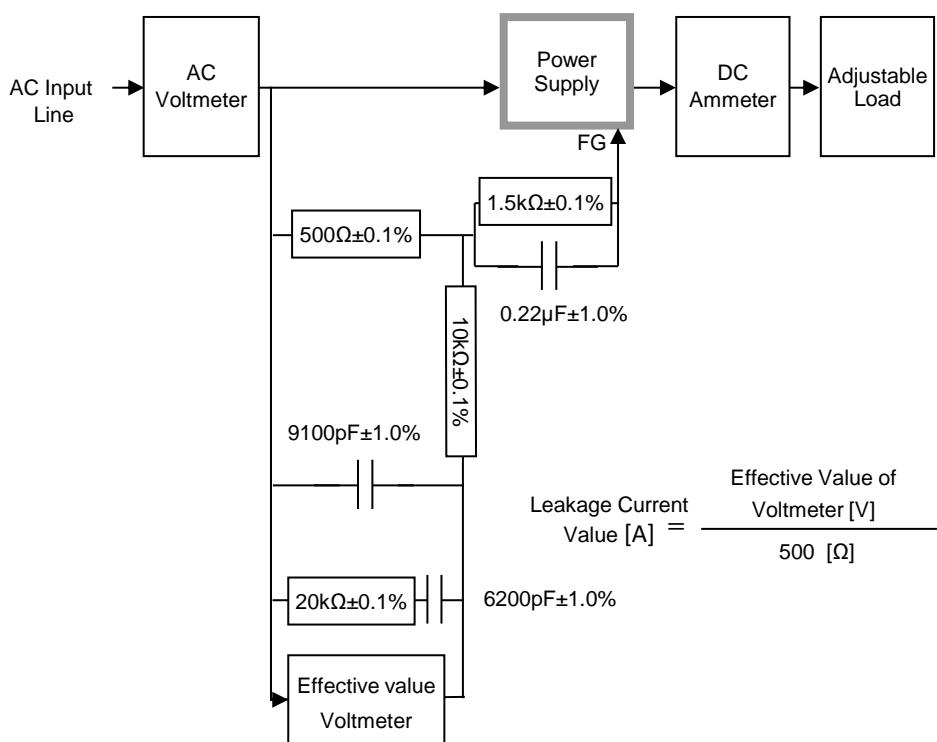


Figure C-3 (IEC62368-1 refer to IEC60990 Fig.5)