

TEST DATA OF SPLFA75F-5

Regulated DC Power Supply
May 18, 2011

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COSEL CO.,LTD.

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Model		SPLFA75F-5																																																				
Item		Input Current (by Load Current)																																																				
Object																																																						
1.Graph		2.Values																																																				
<div><div><div>—△—</div><div>Input Volt. 100V</div></div><div><div>---□---</div><div>Input Volt. 200V</div></div><div><div>-○-</div><div>Input Volt. 230V</div></div></div> <div><p>Note: Slanted line shows the range of the rated load current.</p></div>		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Input Current [A]</th></tr><tr><th>Input Volt. 100[V]</th><th>Input Volt. 200[V]</th><th>Input Volt. 230[V]</th></tr><tr><td>0.0</td><td>0.064</td><td>0.045</td><td>0.040</td></tr><tr><td>3.0</td><td>0.232</td><td>0.144</td><td>0.129</td></tr><tr><td>6.0</td><td>0.418</td><td>0.245</td><td>0.215</td></tr><tr><td>9.0</td><td>0.599</td><td>0.330</td><td>0.300</td></tr><tr><td>12.0</td><td>0.788</td><td>0.415</td><td>0.378</td></tr><tr><td>15.0</td><td>0.977</td><td>0.505</td><td>0.455</td></tr><tr><td>16.5</td><td>1.076</td><td>0.553</td><td>0.495</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></table>		Load Current [A]	Input Current [A]			Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]	0.0	0.064	0.045	0.040	3.0	0.232	0.144	0.129	6.0	0.418	0.245	0.215	9.0	0.599	0.330	0.300	12.0	0.788	0.415	0.378	15.0	0.977	0.505	0.455	16.5	1.076	0.553	0.495	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
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Model

SPLFA75F-5

Item

Efficiency (by Input Voltage)

Object

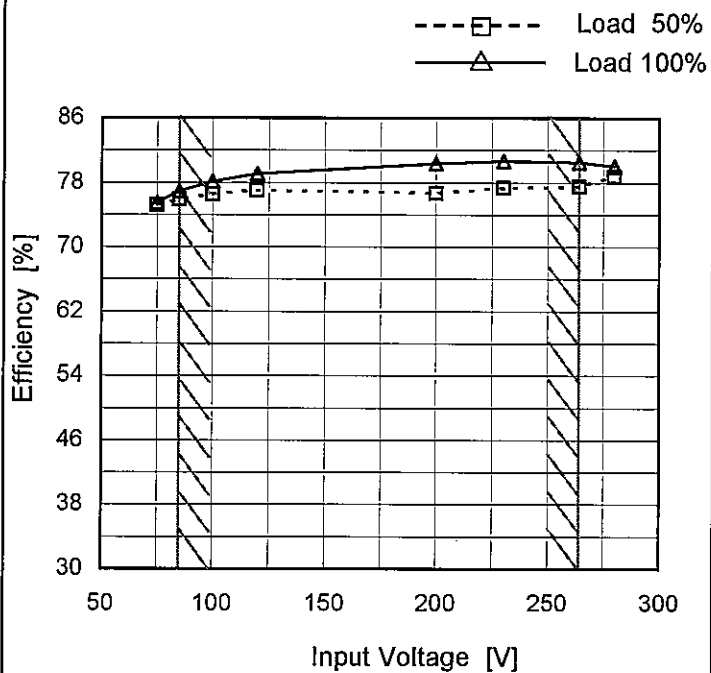
Temperature

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%
75	75.2	75.5
85	75.9	76.9
100	76.5	78.1
120	77.0	79.1
200	76.7	80.4
230	77.3	80.7
264	77.5	80.5
280	78.8	80.0
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Model		SPLFA75F-5		Temperature 25°C																																																				
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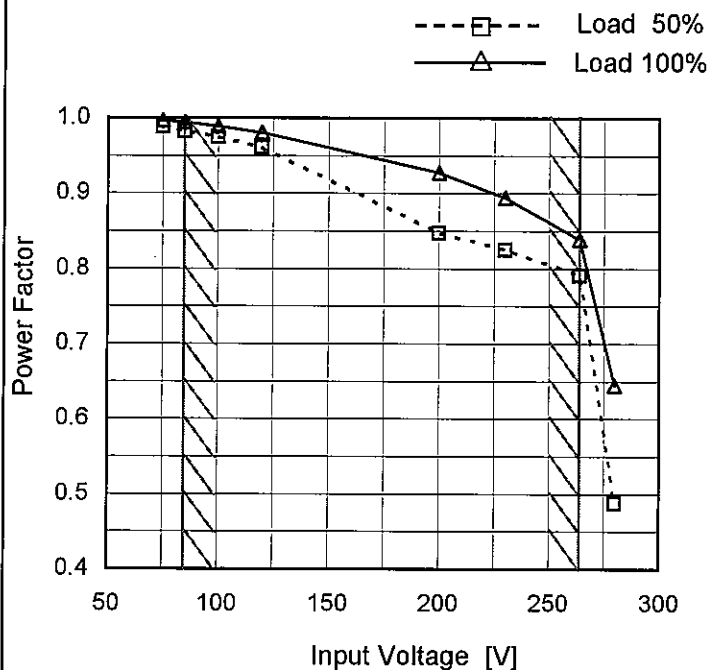
Model SPLFA75F-5

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%
75	0.988	0.997
85	0.982	0.994
100	0.974	0.989
120	0.961	0.980
200	0.848	0.928
230	0.825	0.894
264	0.791	0.839
280	0.488	0.644
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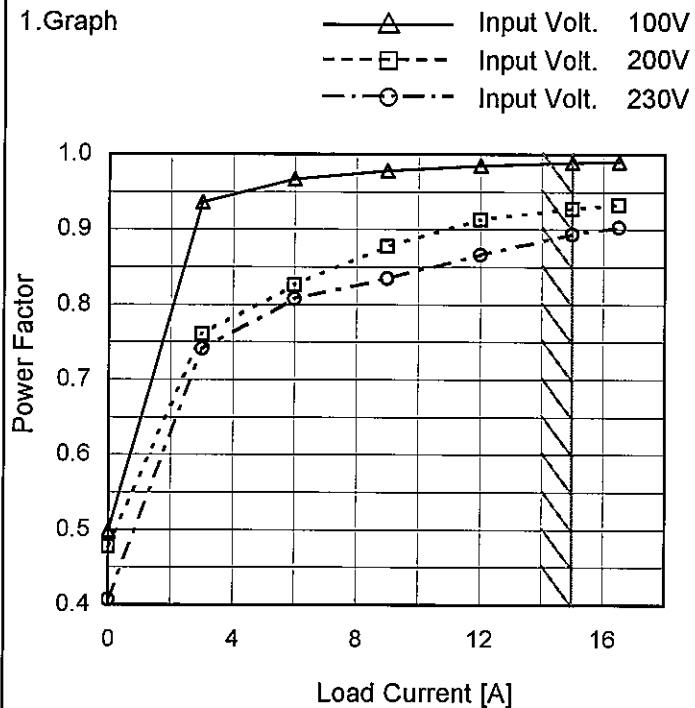
Model SPLFA75F-5

Item Power Factor (by Load Current)

Object

Temperature 25°C
Testing Circuitry Figure A

1. Graph



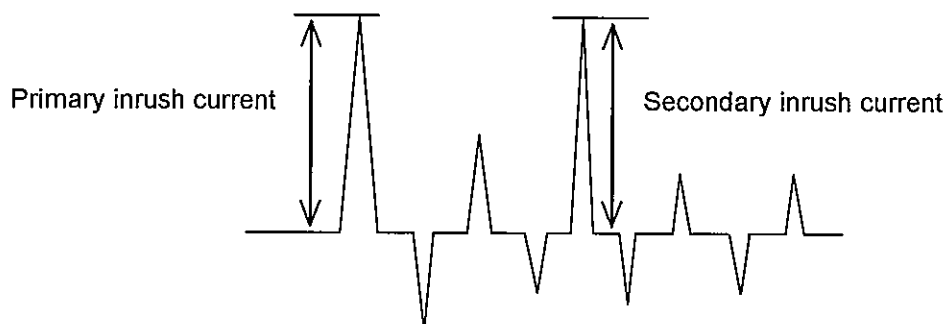
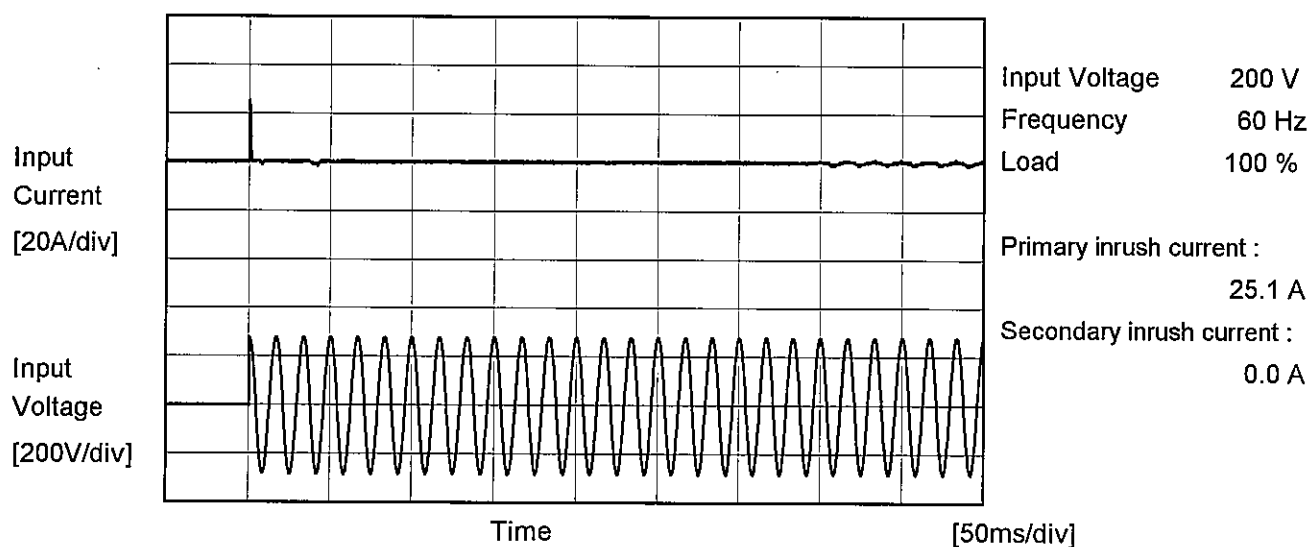
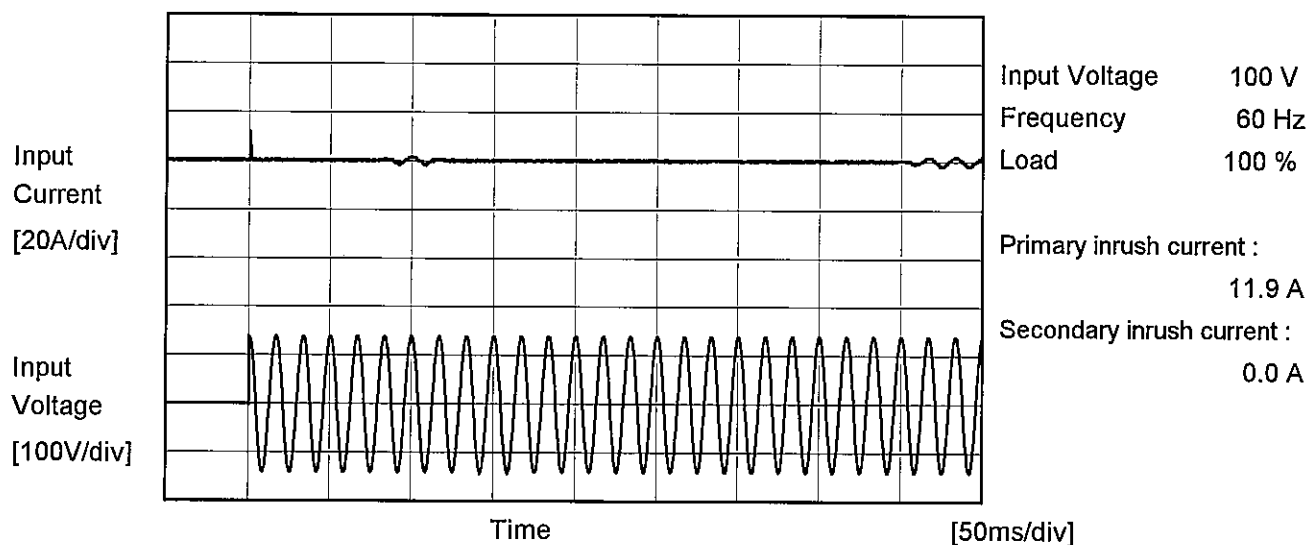
Note: Slanted line shows the range of the rated load current.

2. Values

Load Current [A]	Power Factor		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.0	0.498	0.478	0.407
3.0	0.936	0.760	0.741
6.0	0.966	0.826	0.807
9.0	0.978	0.877	0.835
12.0	0.985	0.913	0.867
15.0	0.989	0.928	0.894
16.5	0.990	0.933	0.903
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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Model	SPLFA75F-5	Temperature	25°C
Item	Inrush Current	Testing Circuitry	Figure A
Object	_____		



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		Temperature 25°C Testing Circuitry Figure B
Model	SPLFA75F-5	
Item	Leakage Current	
Object		

1.Results

[mA]

Standards		Input Volt.			Note
		100 [V]	200 [V]	240 [V]	
DEN-AN	Both phases	0.14	0.25	0.31	Operation
	One of phases	0.21	0.46	0.57	Stand by
IEC60950-1	Both phases	0.15	0.29	0.36	Operation
	One of phases	0.22	0.45	0.56	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 SPLFA75F-5

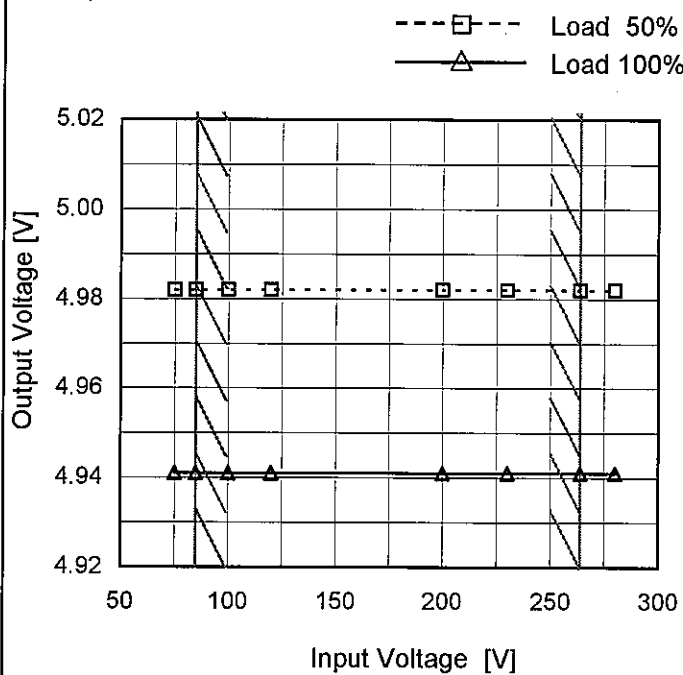
Item Line Regulation

Object +5V15A

Temperature 25°C

Testing Circuitry Figure A

1. Graph



2. Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
75	4.982	4.941
85	4.982	4.941
100	4.982	4.941
120	4.982	4.941
200	4.982	4.941
230	4.982	4.941
264	4.982	4.941
280	4.982	4.941
--	-	-

Model SPLFA75F-5

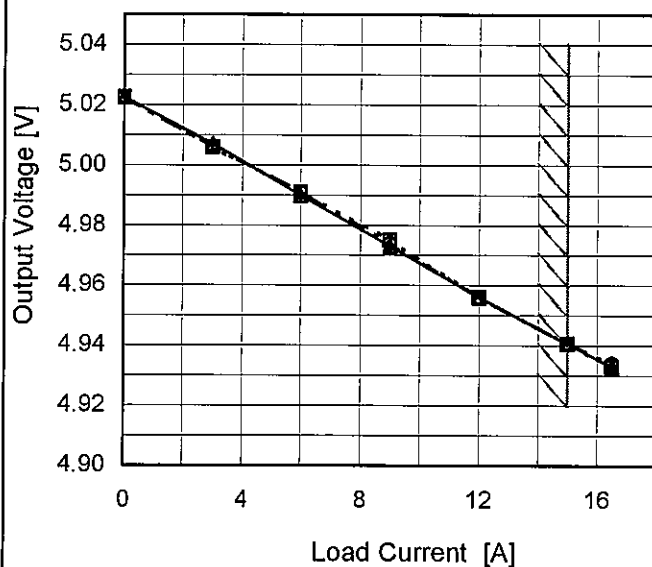
Item Load Regulation

Object +5V15A

 Temperature 25°C
 Testing Circuitry Figure A

1. Graph

—△— Input Volt. 100V
 ---□--- Input Volt. 200V
 -·-○-·- Input Volt. 230V



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

2. Values

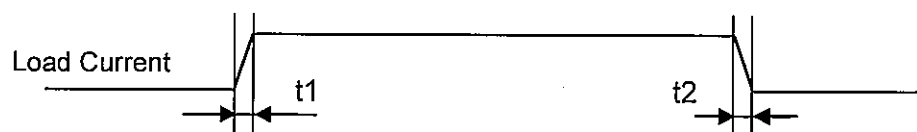
Load Current [A]	Output Voltage [V]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.0	5.023	5.023	5.023
3.0	5.007	5.006	5.006
6.0	4.990	4.991	4.991
9.0	4.973	4.975	4.974
12.0	4.956	4.956	4.956
15.0	4.941	4.941	4.941
16.5	4.933	4.933	4.934
--	-	-	-
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--	-	-	-
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Model	SPLFA75F-5	Temperature Testing Circuitry	25°C Figure A
Item	Dynamic Load Response		
Object	+5V15A		

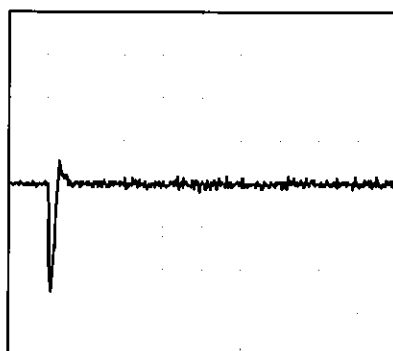
Input Volt. 100 V
Cycle 1000 ms

Response. $t_1=t_2=50\mu\text{s}$. Typ

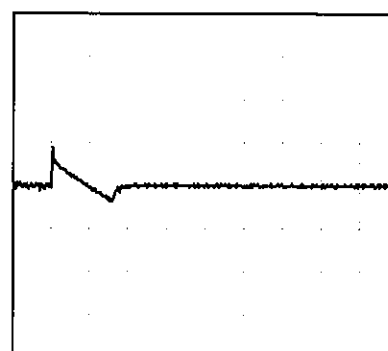


Min. Load (0A) \longleftrightarrow
Load 100% (15A)

200 mV/div



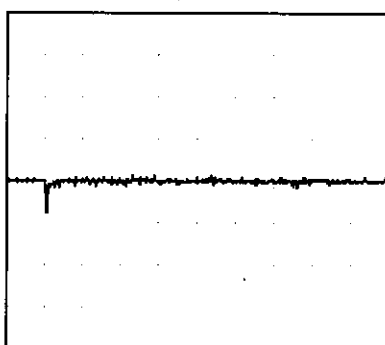
4 ms/div



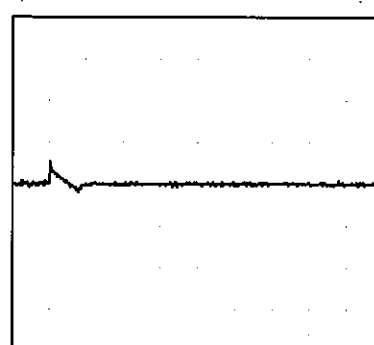
4 ms/div

Min. Load (0A) \longleftrightarrow
Load 50% (7.5A)

200 mV/div



4 ms/div



4 ms/div

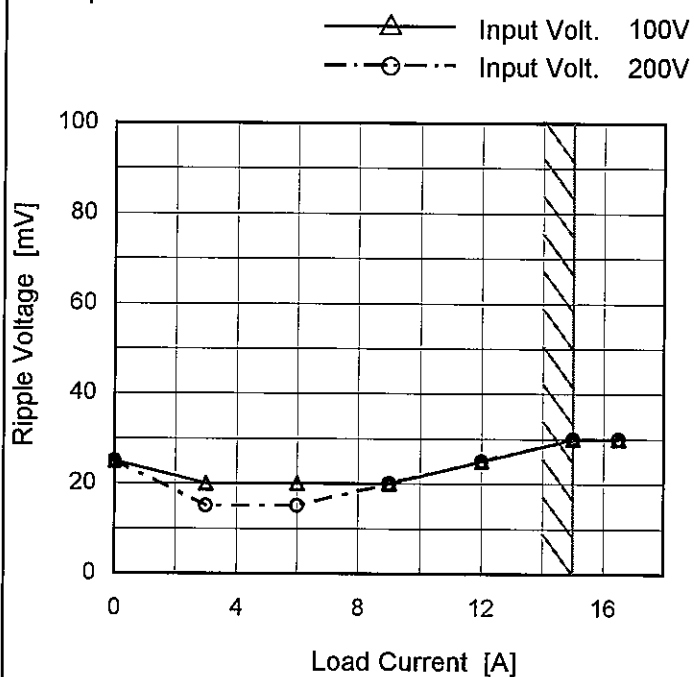
Model SPLFA75F-5

Item Ripple Voltage (by Load Current)

Object +5V15A

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.

2. Values

Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 100 [V]	Input Volt. 200 [V]
0.0	25	25
3.0	20	15
6.0	20	15
9.0	20	20
12.0	25	25
15.0	30	30
16.5	30	30
--	-	-
--	-	-
--	-	-
--	-	-

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

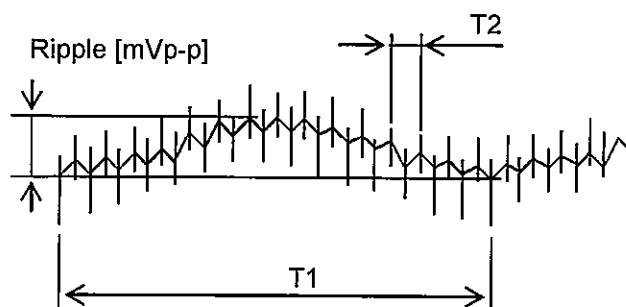


Fig. Complex Ripple Wave Form

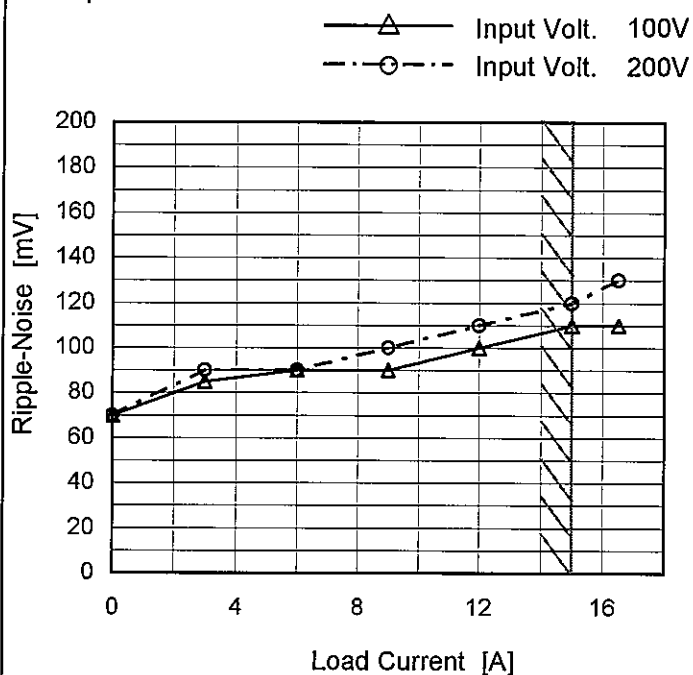
Model SPLFA75F-5

Item Ripple-Noise

Object +5V15A

 Temperature 25°C
 Testing Circuitry Figure A

1. Graph



Measured by 20 MHz Oscilloscope.

Ripple-Noise is shown as p-p in the figure below.

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

2. Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 100 [V]	Input Volt. 200 [V]
0.0	70	70
3.0	85	90
6.0	90	90
9.0	90	100
12.0	100	110
15.0	110	120
16.5	110	130
--	-	-
--	-	-
--	-	-
--	-	-

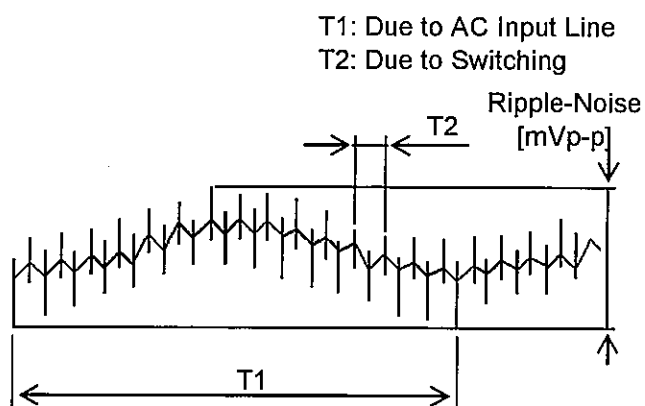


Fig. Complex Ripple Wave Form

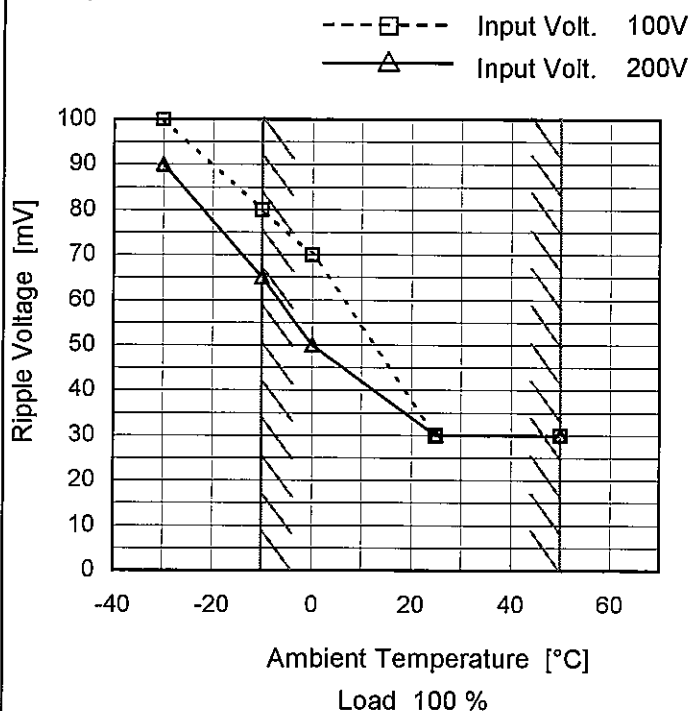
Model SPLFA75F-5

Item Ripple Voltage (by Ambient Temp.)

Object +5V15A

Testing Circuitry Figure A

1. Graph



Measured by 20 MHz Oscilloscope.

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

2. Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Input Volt. 100 [V]	Input Volt. 200 [V]
-30	100	90
-10	80	65
0	70	50
25	30	30
50	30	30
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

Model		SPLFA75F-5	
Item		Ambient Temperature Drift	
Object		+5V15A	
1.Graph		2.Values	

—△—

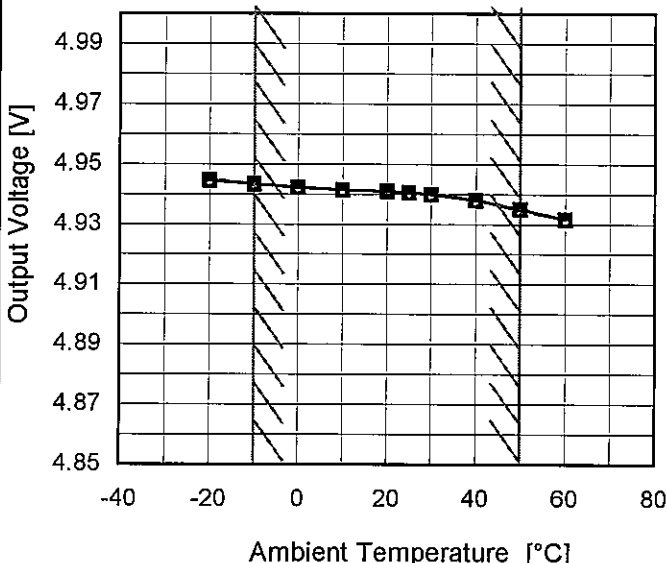
Input Volt. 100V

---□---

Input Volt. 200V

---○---

Input Volt. 230V



Output Voltage [V]

Ambient Temperature [°C]

Load 100%

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

Ambient Temperature [°C]	Output Voltage [V]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
-20	4.945	4.945	4.945
-10	4.943	4.943	4.943
0	4.942	4.942	4.942
10	4.941	4.941	4.941
20	4.941	4.941	4.941
25	4.941	4.941	4.941
30	4.940	4.940	4.940
40	4.938	4.938	4.938
50	4.935	4.935	4.935
60	4.932	4.932	4.932
---	-	-	-

Model		SPLFA75F-5	Testing Circuitry Figure A
Item		Output Voltage Accuracy	
Object		+5V15A	

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 : -10 - 50°C

Input Voltage : 85 - 264V

Load Current : 0 - 15A

* Output Voltage Accuracy = $\pm(\text{Maximum of Output Voltage} - \text{Minimum of Output Voltage}) / 2$

* 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 [mV]	Ration [%]
Maximum Voltage	-10	85	0	5.070	±45	±0.9
Minimum Voltage	50	264	15	4.981		

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Model		SPLFA75F-5	
Item		Time Lapse Drift	
Object		+5V15A	
1.Graph		2.Values	
<div><div><div>Output Voltage [V]</div><div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></di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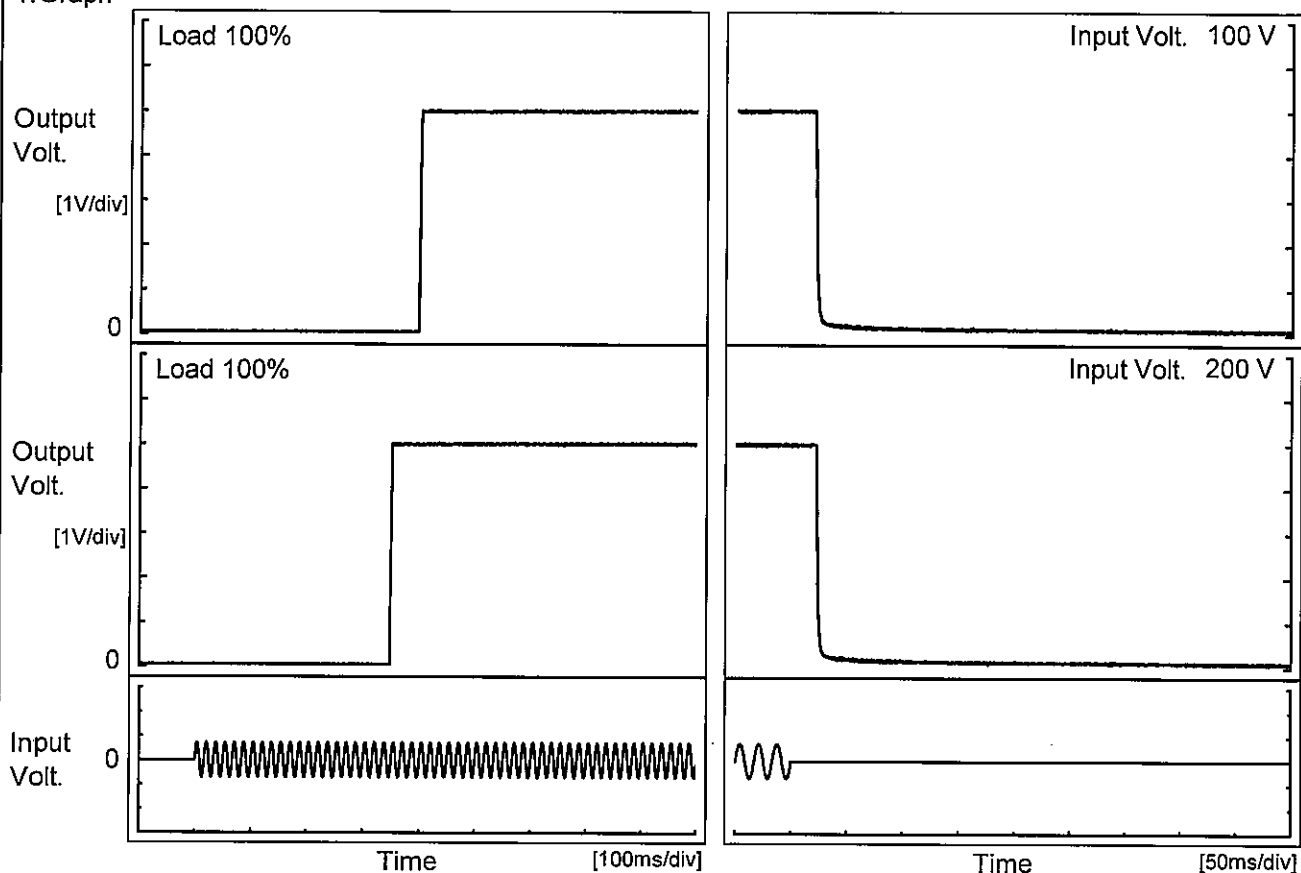
Model SPLFA75F-5

Item Rise and Fall Time

Object +5V15A

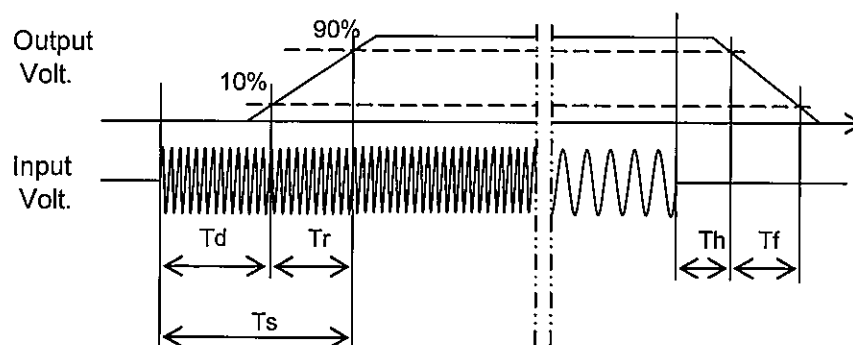
Temperature 25°C
Testing Circuitry Figure A

1. Graph



2. Values

		[ms]				
Input Volt.	Time	Td	Tr	Ts	Th	Tf
100 V		398.0	3.5	401.5	21.0	3.3
200 V		348.0	3.5	351.5	23.0	3.3



Model		SPLFA75F-5	
Item		Hold-Up Time	
Object		+5V15A	

1.Graph

</

Model SPLFA75F-5

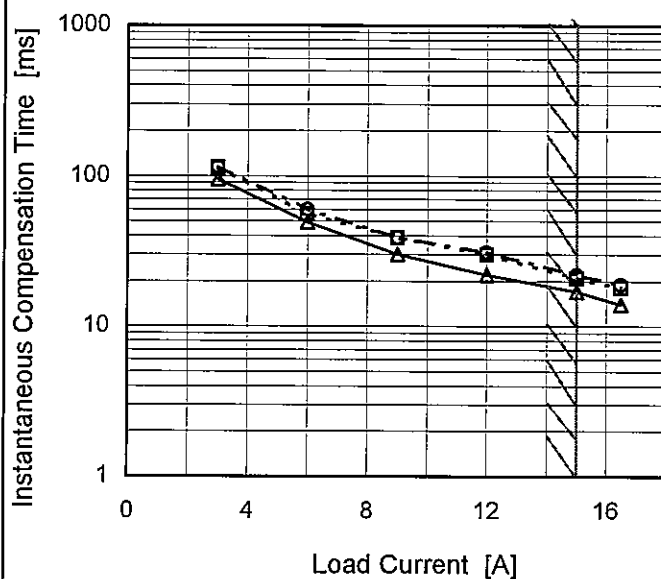
Item Instantaneous Interruption Compensation

Object +5V15A

Temperature 25°C
Testing Circuitry Figure A

1. Graph

—△— Input Volt. 100V
 ---□--- Input Volt. 200V
 ---○--- Input Volt. 230V



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	-	-	-
3.0	95	113	114
6.0	49	56	60
9.0	30	39	39
12.0	22	30	31
15.0	17	21	22
16.5	14	18	19
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

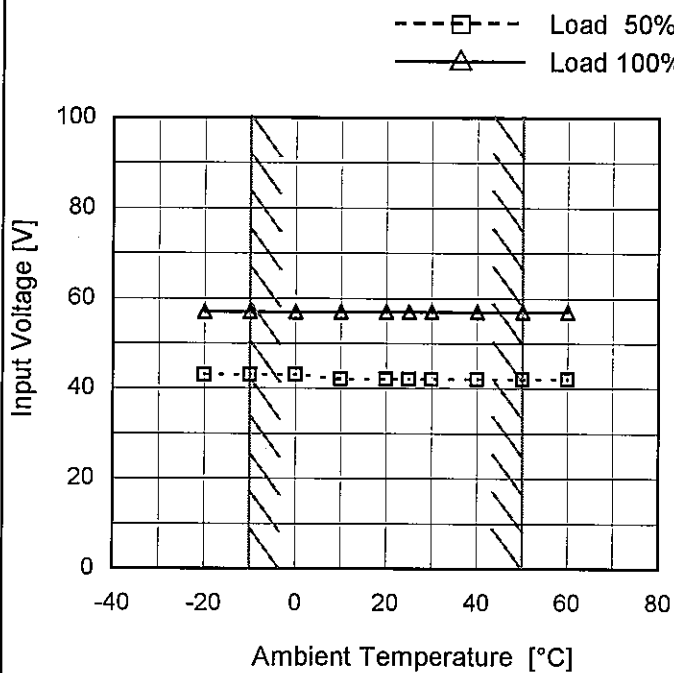
Model SPLFA75F-5

Item Minimum Input Voltage
for Regulated Output Voltage

Object +5V15A

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%
-20	43	57
-10	43	57
0	43	57
10	42	57
20	42	57
25	42	57
30	42	57
40	42	57
50	42	57
60	42	57
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Model	LFA75F-5																																																	
Item	Overcurrent Protection	Temperature	25°C																																															
Object	+5V15A	Testing Circuitry	Figure A																																															
1.Graph		2.Values																																																
<div><div></div>Input Volt. 100V</div> <div><div></div>Input Volt. 200V</div> <p>Output Voltage [V]</p> <p>Load Current [A]</p> <p>Note: Slanted line shows the range of the rated load current.</p> <p>Intermittent operation occurs when the output voltage is from 4.75V to 0V.</p>		<table><tr><th rowspan="2">Output Voltage [V]</th><th colspan="2">Load Current [A]</th></tr><tr><th>Input Volt. 100[V]</th><th>Input Volt. 200[V]</th></tr><tr><td>5.00</td><td>19.30</td><td>19.31</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></table>		Output Voltage [V]	Load Current [A]		Input Volt. 100[V]	Input Volt. 200[V]	5.00	19.30	19.31	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-
Output Voltage [V]	Load Current [A]																																																	
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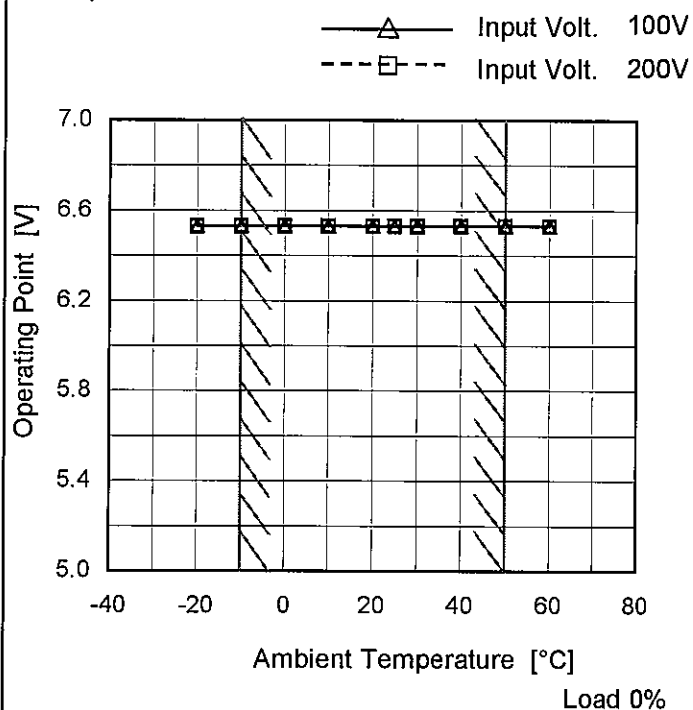
Model SPLFA75F-5

Item Overvoltage Protection

Object +5V15A

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. 100[V]	Input Volt. 200[V]
-20	6.53	6.53
-10	6.53	6.53
0	6.53	6.53
10	6.53	6.53
20	6.53	6.53
25	6.53	6.53
30	6.53	6.53
40	6.53	6.53
50	6.53	6.53
60	6.53	6.53
--	-	-

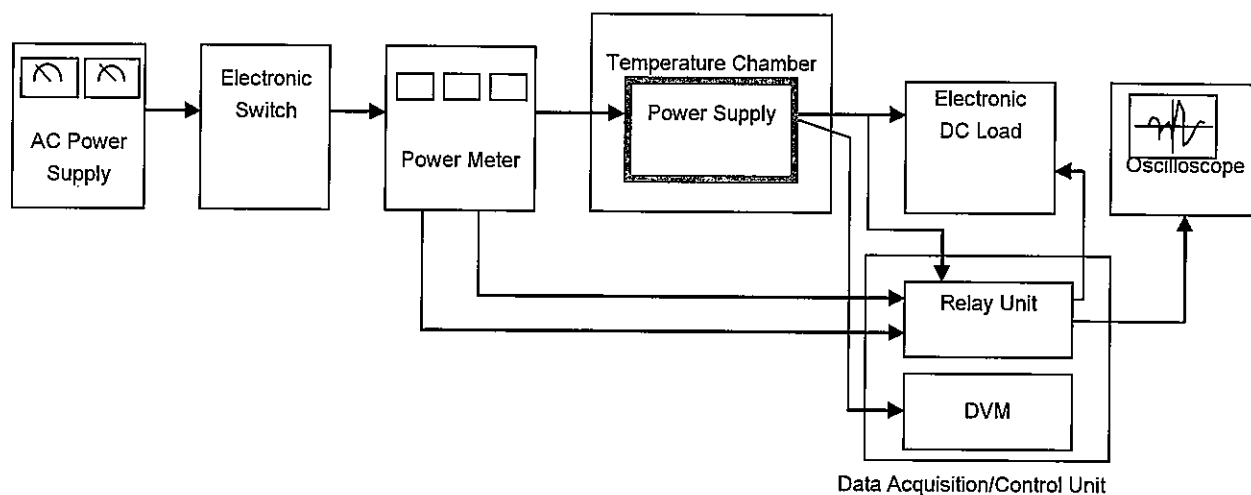


Figure A

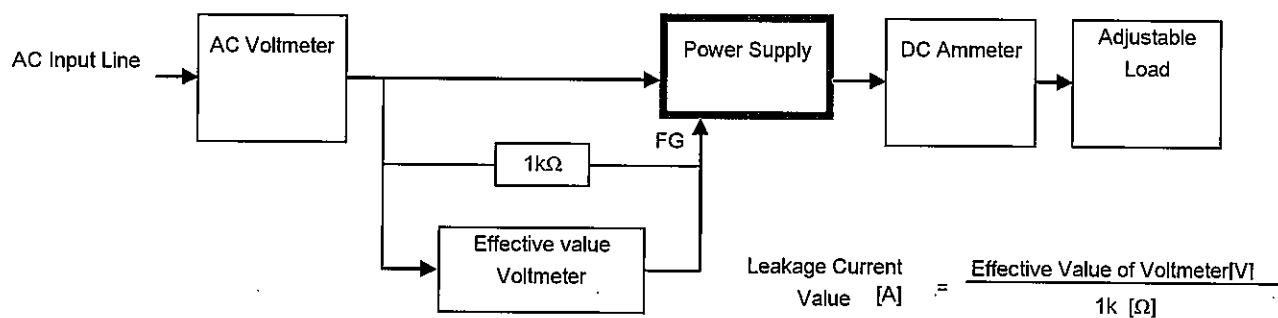


Figure B (DEN-AN)

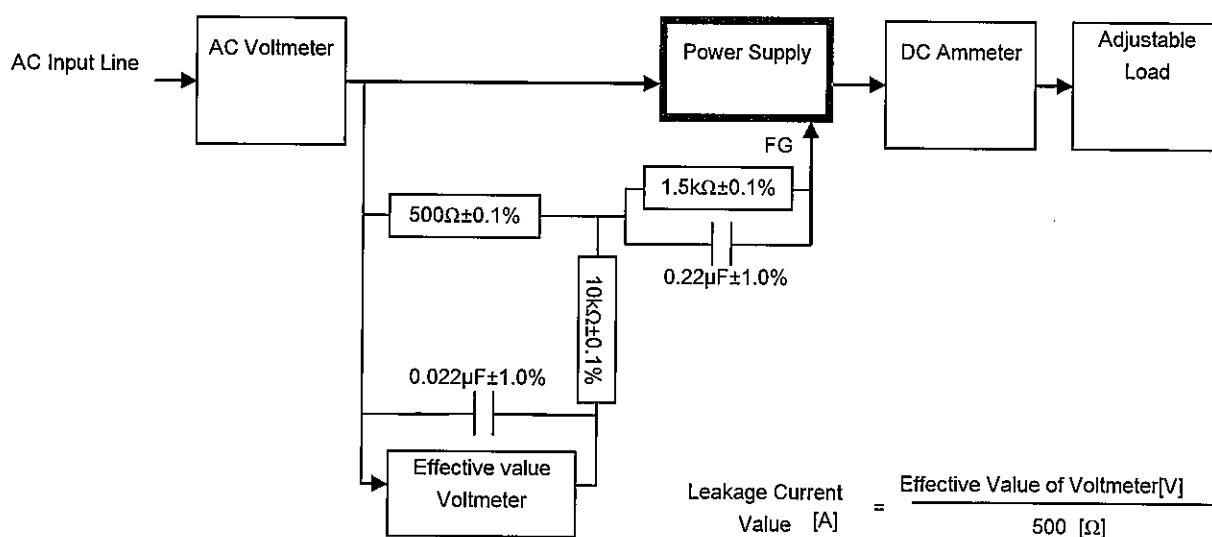


Figure B (IEC60950-1)