参考資料

COSEL

TEST DATA OF LDA100W-18

(100V INPUT)

Regulated DC Power Supply
Dec.9. 2004

Approved by : K. Shiho
K.Shiho Design Manager

Prepared by : S. Ueda
S.Ueda Design Engineer

COSEL CO.,LTD.

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Model	LDA100W-18
Item	Input Current (by Load Current)
Object	———————

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Testing Circuitry Figure A

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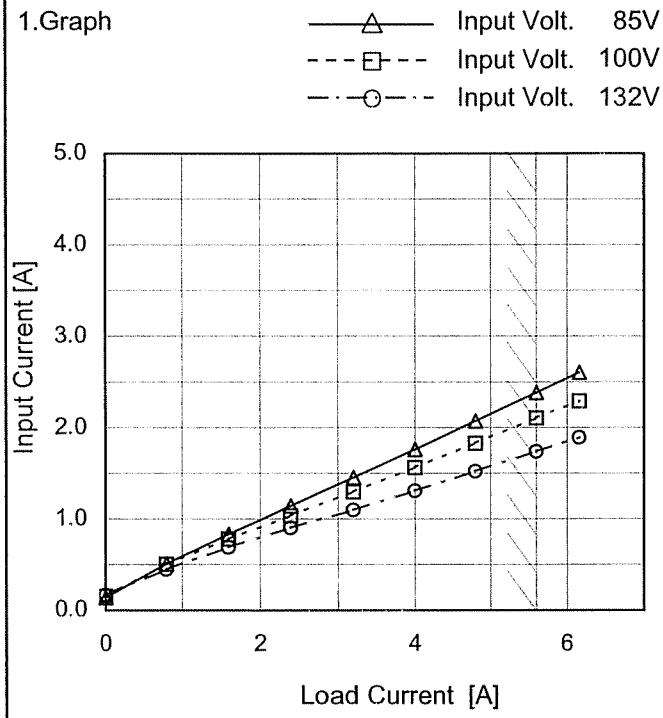

Note: Slanted line shows the range of the rated load current.

2.Values

Load Current [A]	Input Current [A]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0.00	0.138	0.152	0.168
0.80	0.509	0.503	0.448
1.60	0.830	0.779	0.690
2.40	1.143	1.035	0.900
3.20	1.454	1.297	1.098
4.00	1.762	1.562	1.306
4.80	2.072	1.827	1.521
5.60	2.384	2.102	1.738
6.16	2.604	2.290	1.890
--	-	-	-
--	-	-	-

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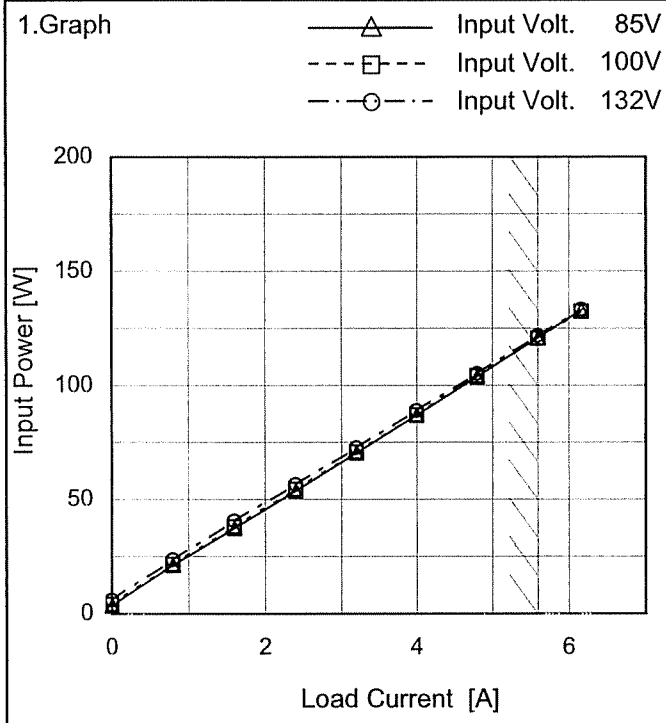
Model	LDA100W-18
Item	Input Power (by Load Current)
Object	————————

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 Power [W]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0.00	3.5	4.2	6.0
0.80	21.2	21.7	23.6
1.60	37.5	38.2	40.7
2.40	53.8	54.5	56.6
3.20	70.5	70.8	72.7
4.00	87.0	87.1	88.9
4.80	103.8	104.1	105.1
5.60	120.9	120.6	121.8
6.16	132.9	132.3	133.2
--	-	-	-
--	-	-	-

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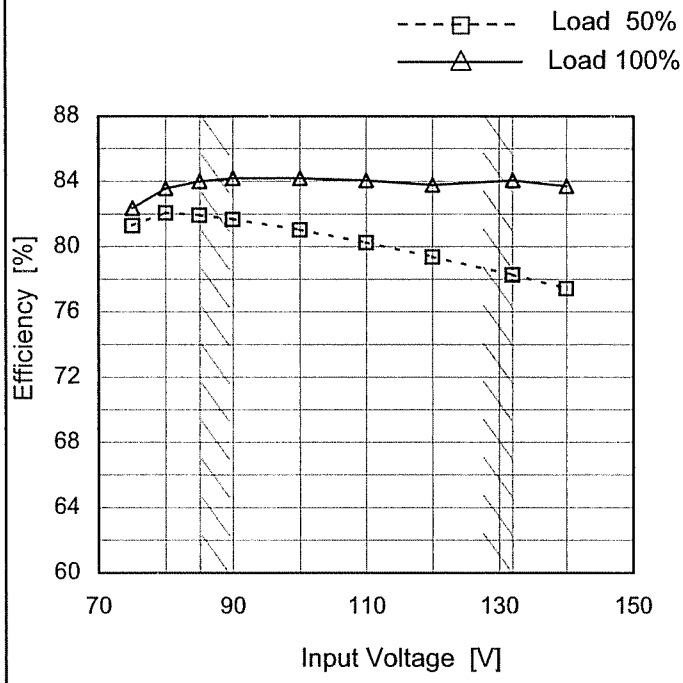
Model	LDA100W-18
Item	Efficiency (by Input Voltage)
Object	———————————

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	81.3	82.4
80	82.1	83.6
85	81.9	84.0
90	81.7	84.2
100	81.0	84.2
110	80.3	84.1
120	79.4	83.8
132	78.3	84.1
140	77.4	83.7

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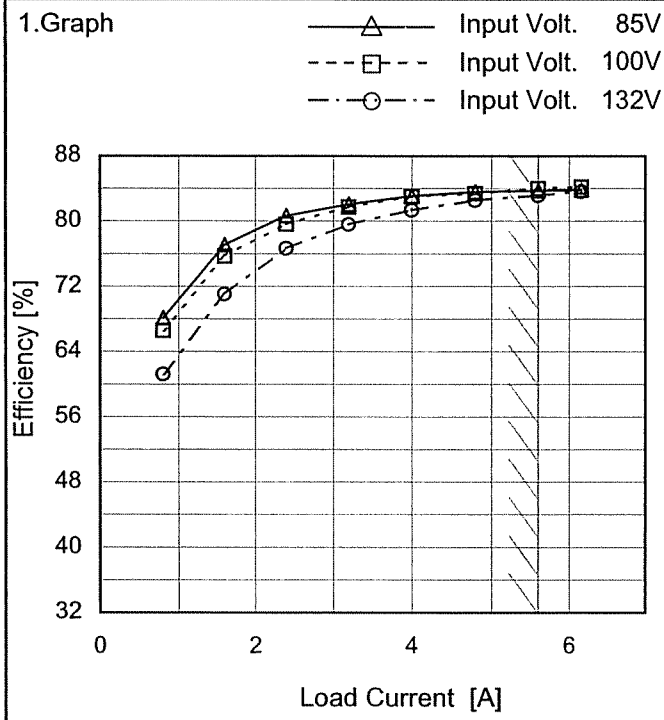
Model	LDA100W-18
Item	Efficiency (by Load Current)
Object	————————

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. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0.00	-	-	-
0.80	68.1	66.6	61.2
1.60	77.1	75.7	71.1
2.40	80.7	79.6	76.7
3.20	82.1	81.7	79.6
4.00	83.1	83.0	81.3
4.80	83.6	83.4	82.6
5.60	83.8	84.0	83.2
6.16	83.8	84.2	83.6
--	-	-	-
--	-	-	-

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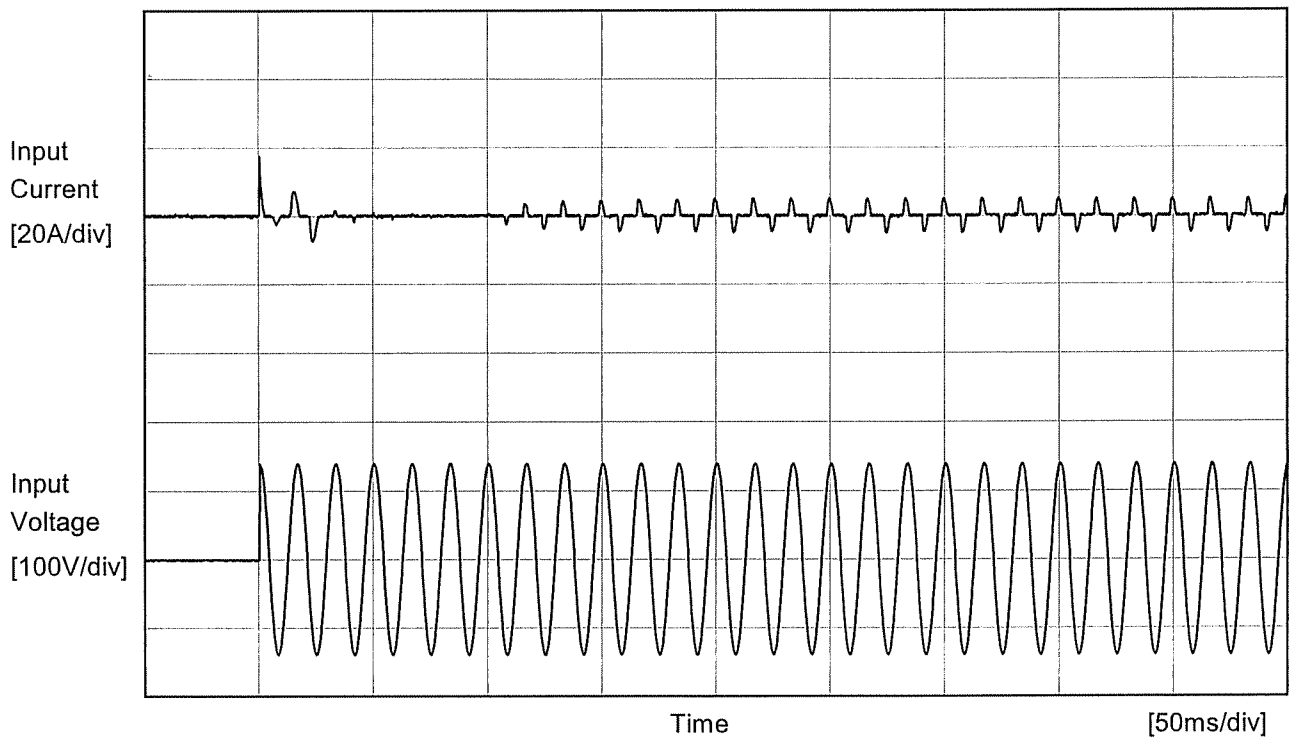
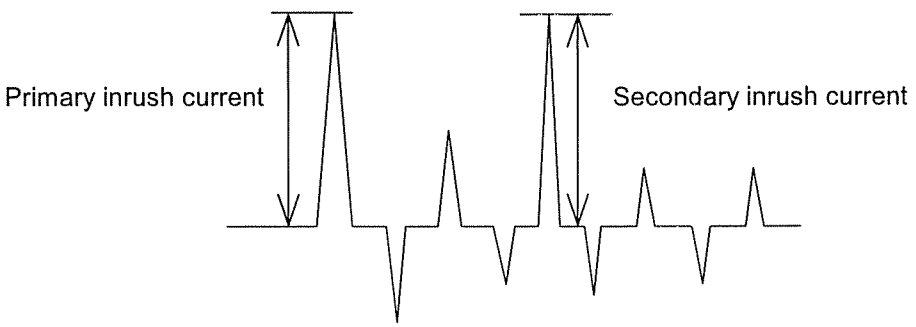
Model	LDA100W-18
Item	Inrush Current
Object	————————

Temperature 25°C
Testing Circuitry Figure A



Input Voltage	100 V
Frequency	60 Hz
Load	100 %
Primary inrush current	17.5 A
Secondary inrush current	5.5 A



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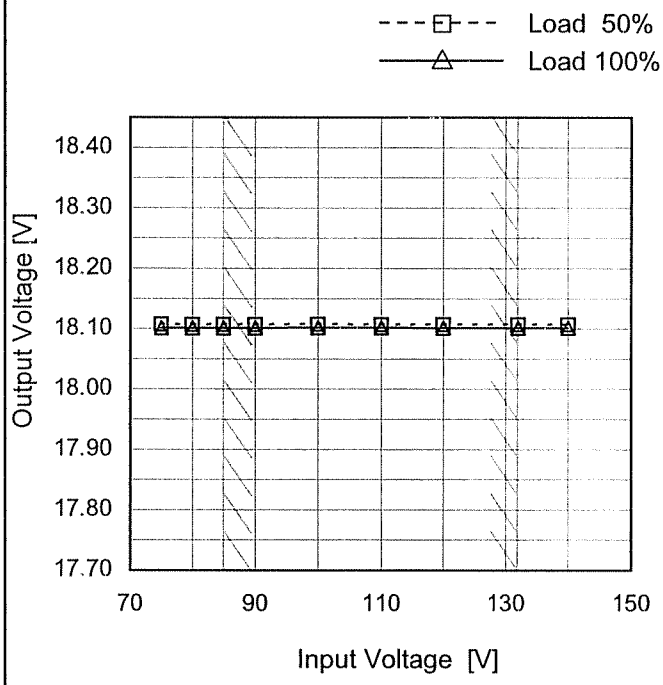
Model	LDA100W-18
Item	Line Regulation
Object	+18V5.6A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

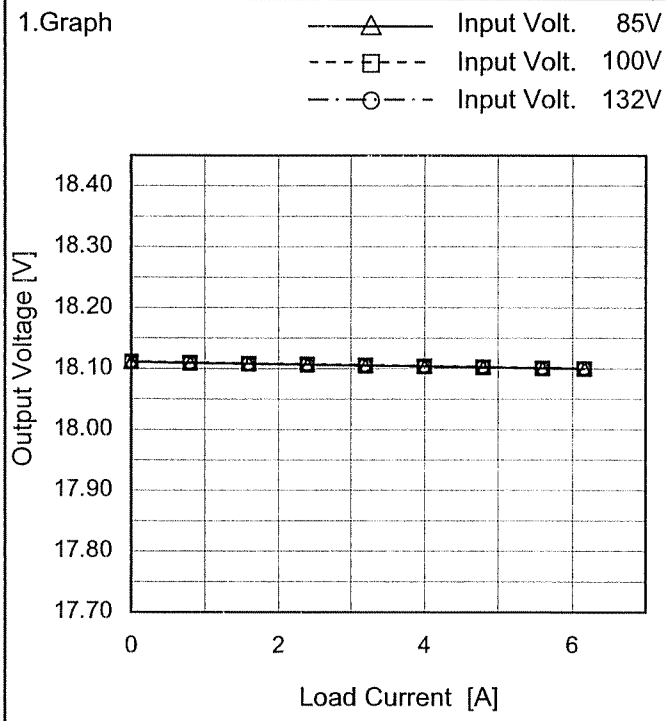
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
75	18.107	18.102
80	18.107	18.102
85	18.107	18.102
90	18.107	18.102
100	18.107	18.102
110	18.107	18.102
120	18.107	18.102
132	18.107	18.102
140	18.107	18.102

COSEL

Model	LDA100W-18
Item	Load Regulation
Object	+18V5.6A

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. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0.00	18.111	18.112	18.111
0.80	18.110	18.110	18.110
1.60	18.108	18.108	18.109
2.40	18.107	18.107	18.107
3.20	18.105	18.105	18.106
4.00	18.104	18.104	18.104
4.80	18.102	18.103	18.103
5.60	18.101	18.101	18.101
6.16	18.100	18.100	18.100
--	-	-	-
--	-	-	-

COSEL

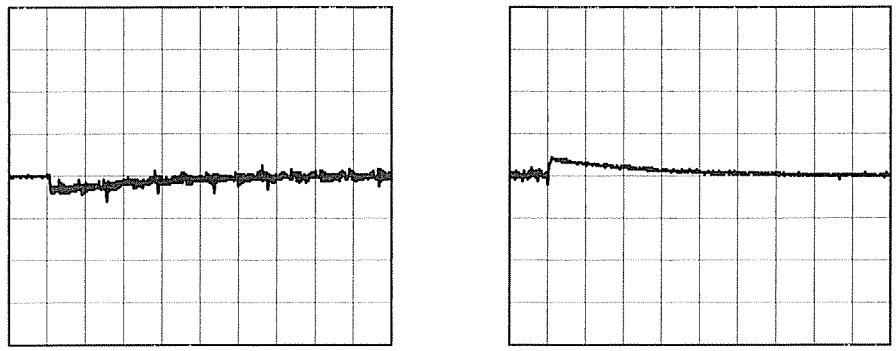
Model	LDA100W-18		
Item	Dynamic Load Response	Temperature Testing Circuitry	25℃ Figure A
Object	+18V5.6A		

Input Volt. 100 V

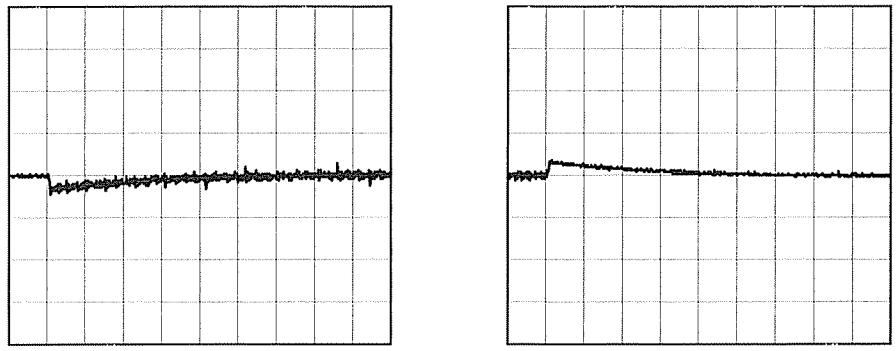
Cycle 1000 ms

Load Current

Min. Load (0A) ⟷
Load 100% (5.6A)



Min. Load (0A) ⟷
Load 50% (2.8A)



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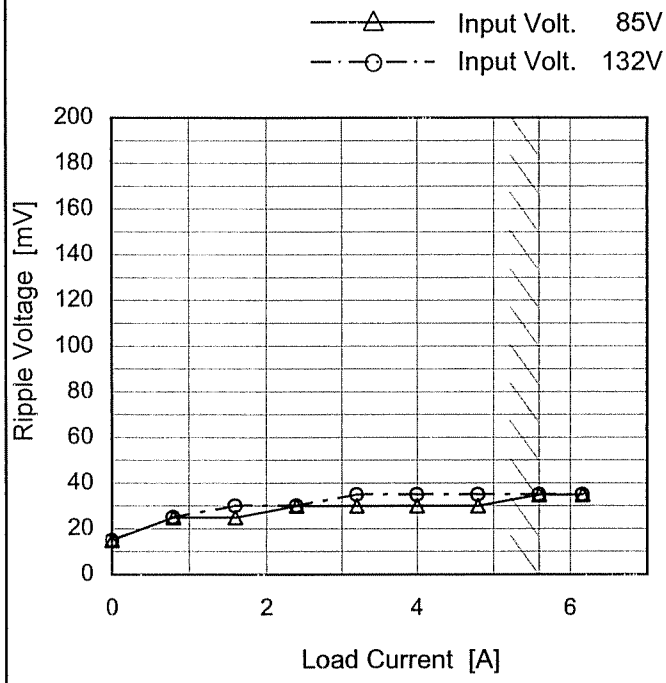
Model	LDA100W-18
Item	Ripple Voltage (by Load Current)
Object	+18V5.6A

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.

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

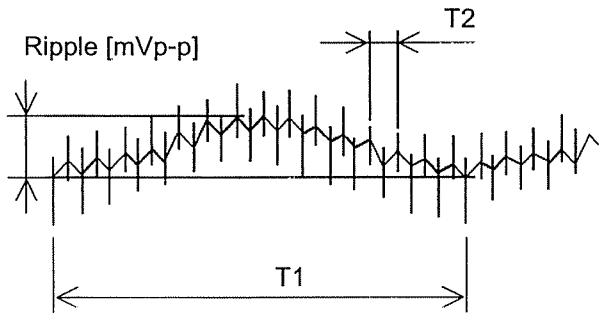


Fig. Complex Ripple Wave Form

2.Values

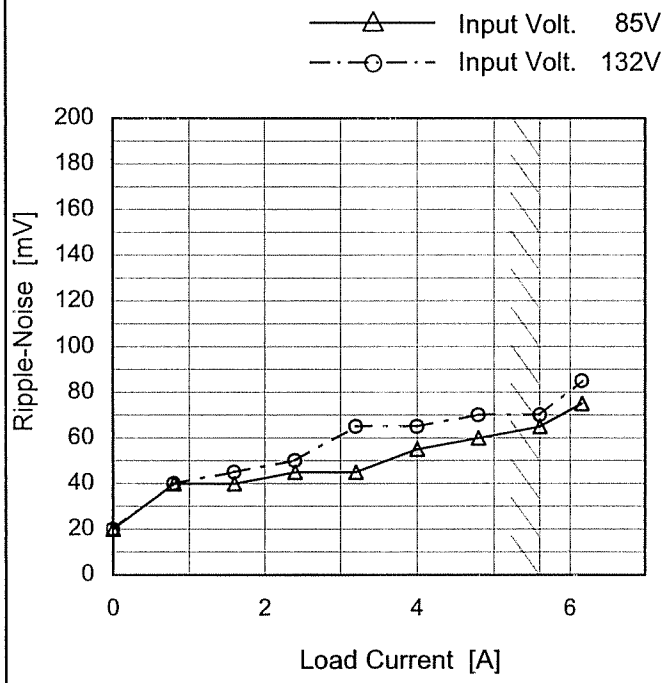
Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 85 [V]	Input Volt. 132 [V]
0.00	15	15
0.80	25	25
1.60	25	30
2.40	30	30
3.20	30	35
4.00	30	35
4.80	30	35
5.60	35	35
6.16	35	35
--	-	-
--	-	-

COSEL

Model	LDA100W-18
Item	Ripple-Noise
Object	+18V5.6A

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. 85 [V]	Input Volt. 132 [V]
0.00	20	20
0.80	40	40
1.60	40	45
2.40	45	50
3.20	45	65
4.00	55	65
4.80	60	70
5.60	65	70
6.16	75	85
--	-	-
--	-	-

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

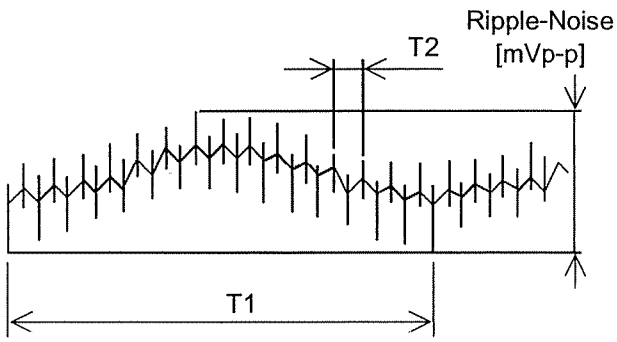


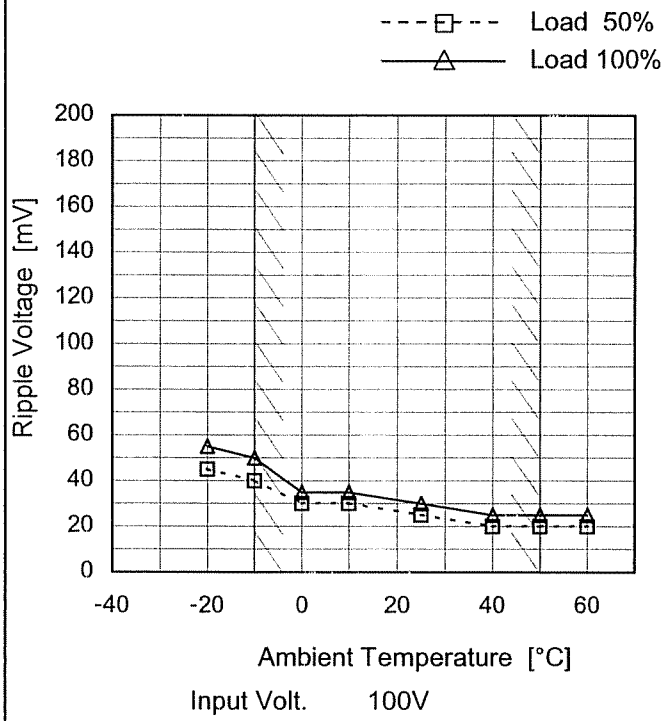
Fig. Complex Ripple Wave Form

COSEL

Model	LDA100W-18
Item	Ripple Voltage (by Ambient Temp.)
Object	+18V5.6A

Testing Circuitry Figure A

1.Graph



Input Volt. 100V

Measured by 20 MHz Oscilloscope.

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

2.Values

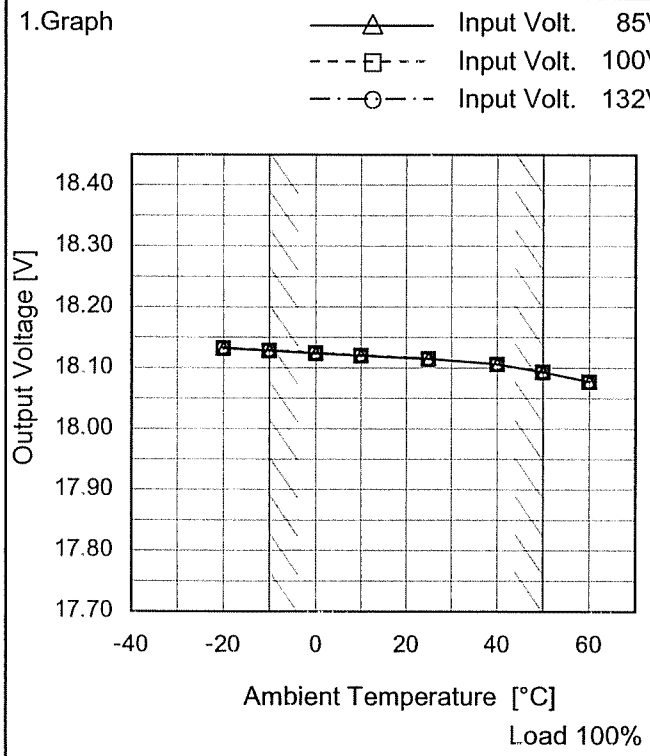
Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-20	45	55
-10	40	50
0	30	35
10	30	35
25	25	30
40	20	25
50	20	25
60	20	25
--	-	-
--	-	-
--	-	-

COSEL

Model	LDA100W-18
Item	Ambient Temperature Drift
Object	+18V5.6A

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. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
-20	18.132	18.132	18.133
-10	18.129	18.129	18.129
0	18.124	18.125	18.125
10	18.120	18.120	18.121
25	18.115	18.115	18.115
40	18.107	18.106	18.106
50	18.094	18.094	18.093
60	18.078	18.078	18.077
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	LDA100W-18	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+18V5.6A	

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 - 132V
Load Current : 0 - 5.6A

* 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

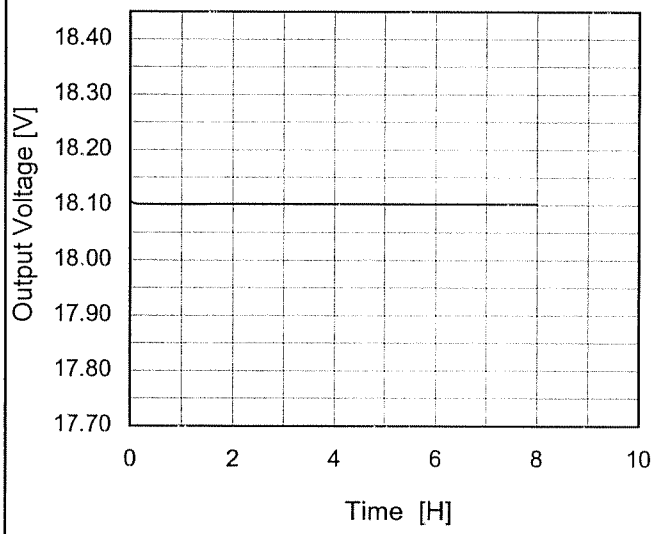
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	-10	85	0	18.138	±24	±0.1
Minimum Voltage	50	132	5.6	18.091		

COSEL

Model	LDA100W-18
Item	Time Lapse Drift
Object	+18V5.6A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Input Volt. 100V
Load 100%

2.Values

Time since start [H]	Output Voltage [V]
0.0	18.110
0.5	18.101
1.0	18.102
2.0	18.102
3.0	18.102
4.0	18.102
5.0	18.102
6.0	18.102
7.0	18.102
8.0	18.102

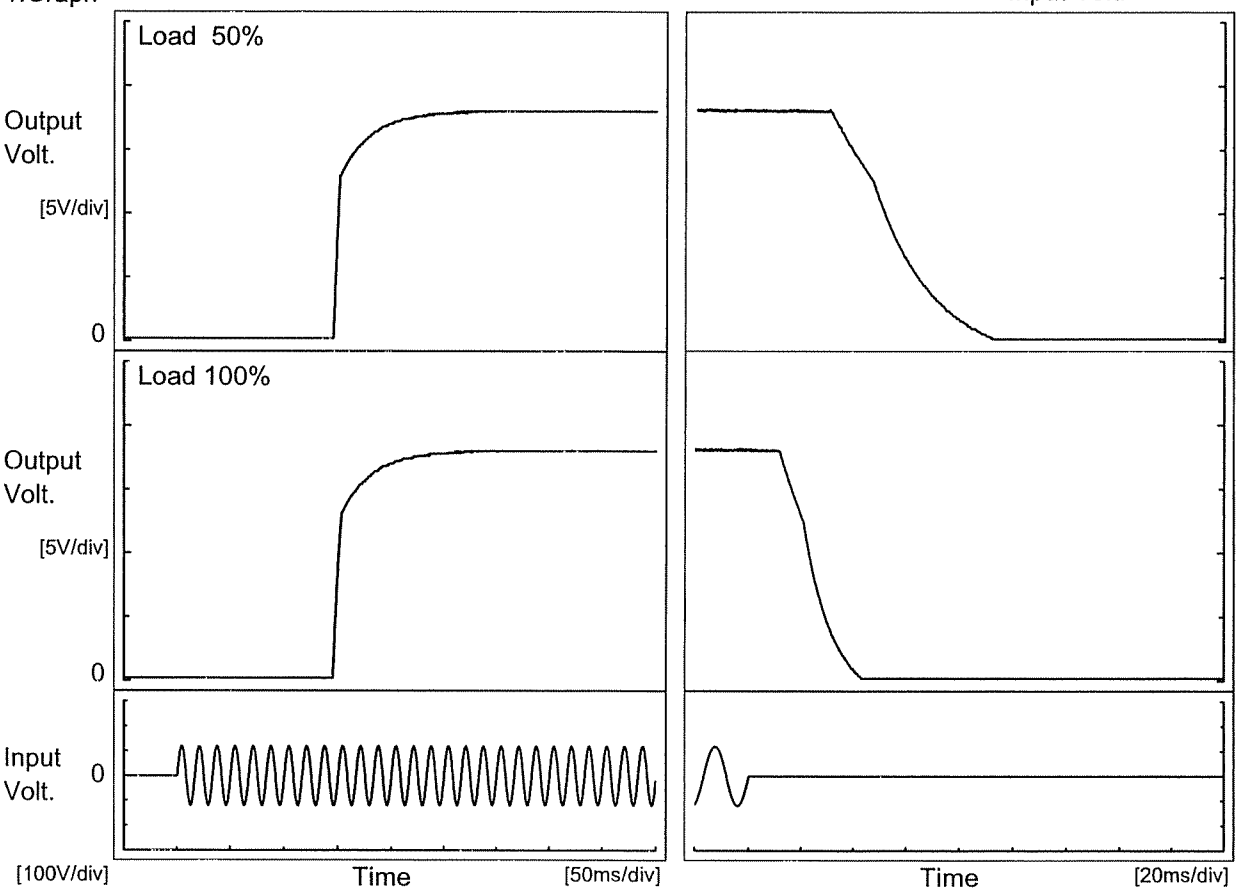
COSEL

Model	LDA100W-18
Item	Rise and Fall Time
Object	+18V5.6A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

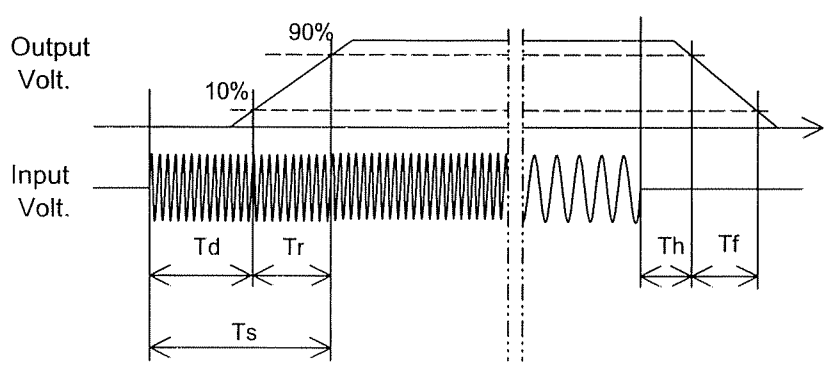
Input Volt. 100 V



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	146.0	40.5	186.5	35.3	42.8
100 %	146.0	40.8	186.8	13.9	22.2

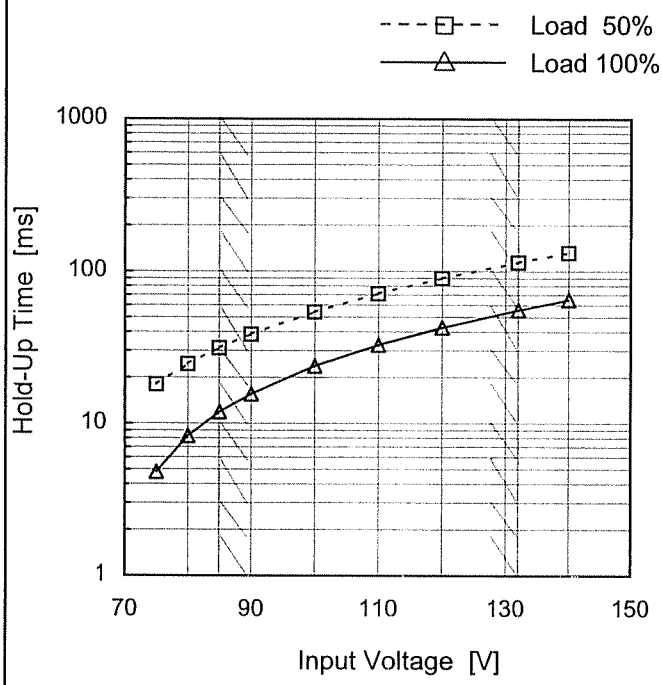


COSEL

Model	LDA100W-18
Item	Hold-Up Time
Object	+18V5.6A

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

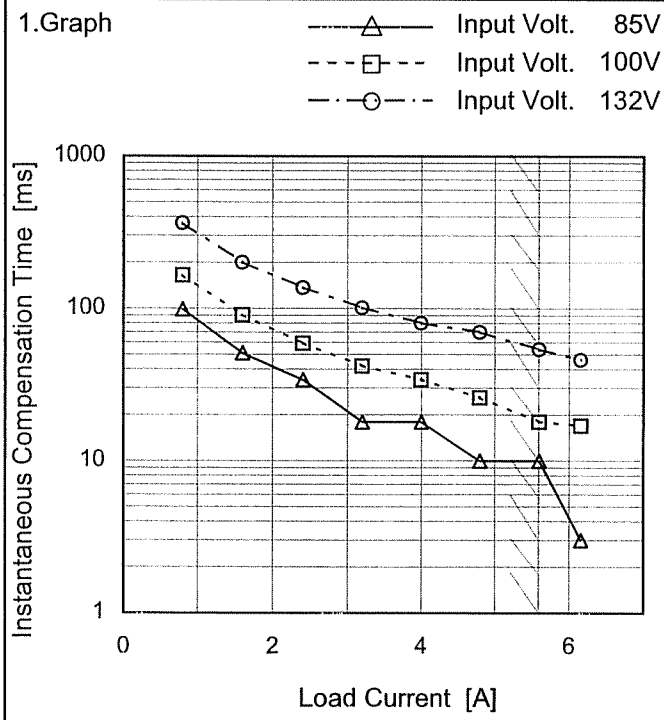
Input Voltage [V]	Hold-Up Time [ms]	
	Load 50%	Load 100%
75	18	5
80	25	8
85	31	12
90	38	16
100	54	24
110	71	33
120	90	43
132	114	56
140	132	65

COSEL

Model	LDA100W-18
Item	Instantaneous Interruption Compensation
Object	+18V5.6A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

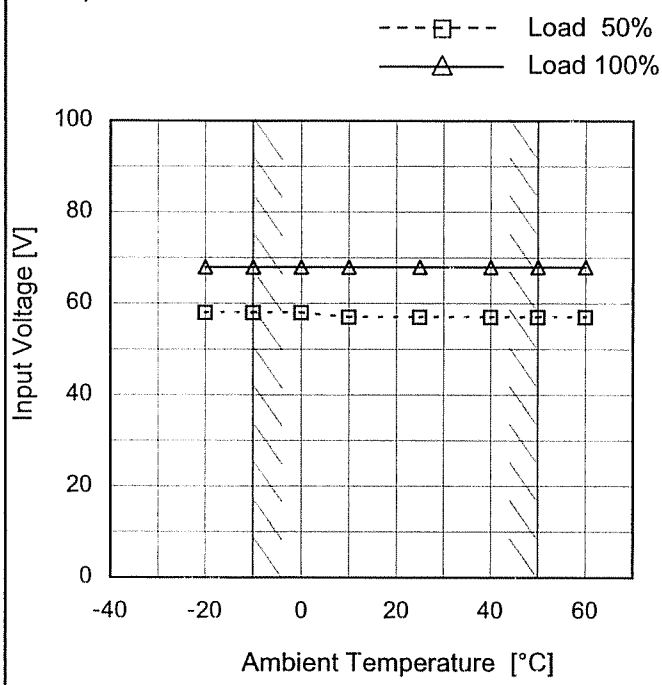
Load Current [A]	Time [ms] Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0.00	-	-	-
0.80	99	165	363
1.60	51	91	200
2.40	34	59	137
3.20	18	42	101
4.00	18	34	80
4.80	10	26	70
5.60	10	18	54
6.16	3	17	46
--	-	-	-
--	-	-	-

COSEL

Model	LDA100W-18
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+18V5.6A

Testing Circuitry Figure A

1.Graph



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

2.Values

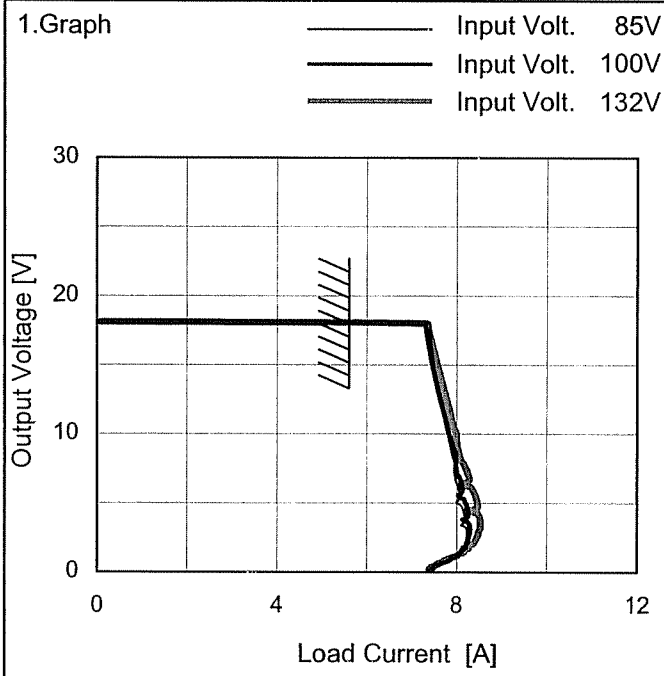
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-20	58	68
-10	58	68
0	58	68
10	57	68
25	57	68
40	57	68
50	57	68
60	57	68
--	-	-
--	-	-
--	-	-

COSEL

Model	LDA100W-18
Item	Overcurrent Protection
Object	+18V5.6A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

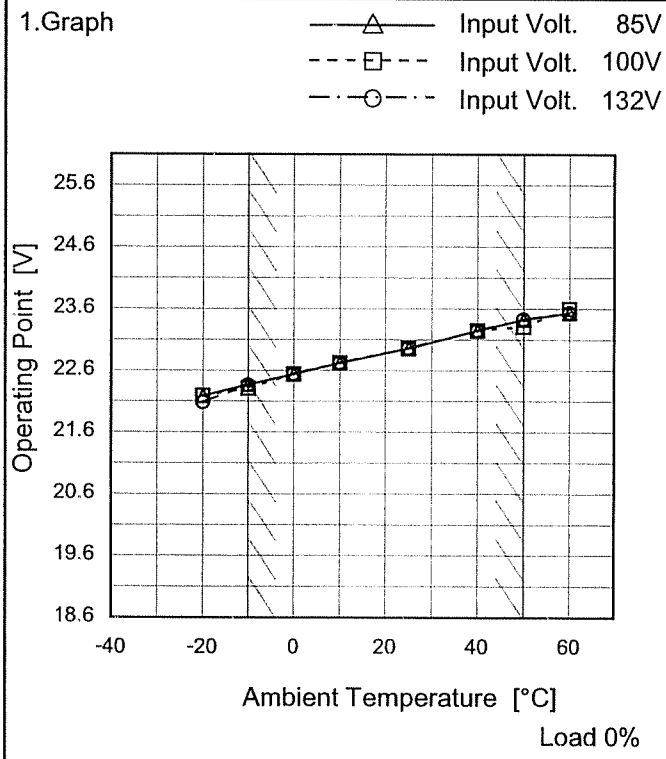
Output Voltage [V]	Load Current [A]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
18.0	7.41	7.30	7.34
17.1	7.42	7.34	7.40
16.2	7.44	7.38	7.47
14.4	7.51	7.50	7.62
12.6	7.62	7.63	7.78
10.8	7.76	7.77	7.91
9.0	7.88	7.92	8.03
7.2	7.96	8.01	8.25
5.4	8.08	8.10	8.43
3.6	8.15	8.27	8.53
1.8	8.12	8.18	8.28
0.0	7.48	7.40	7.50

COSEL

Model	LDA100W-18
Item	Overvoltage Protection
Object	+18V5.6A

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. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
-20	22.20	22.20	22.09
-10	22.38	22.32	22.37
0	22.55	22.55	22.55
10	22.73	22.73	22.73
25	22.97	22.97	22.97
40	23.26	23.26	23.26
50	23.44	23.32	23.44
60	23.55	23.61	23.55
--	-	-	-
--	-	-	-
--	-	-	-

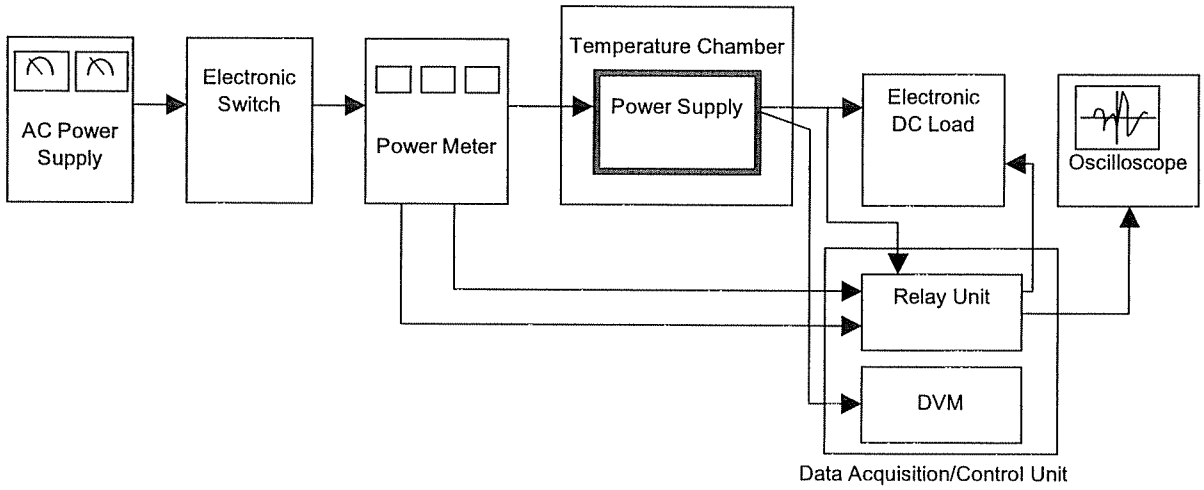


Figure A

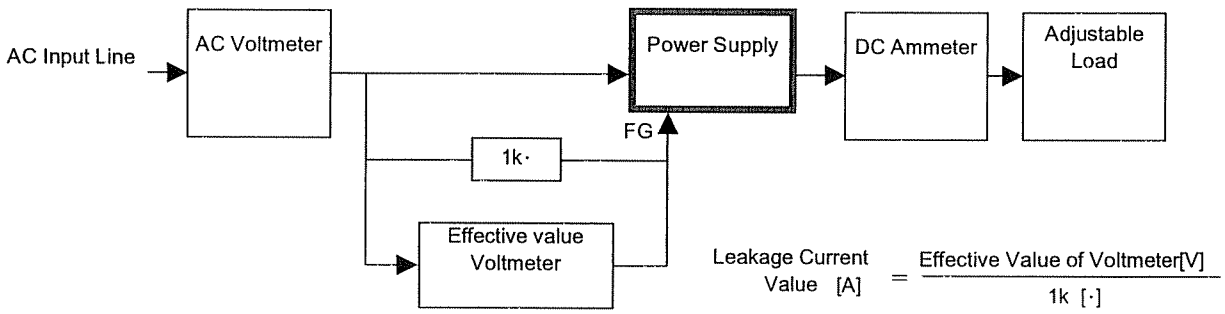


Figure B (DEN-AN)

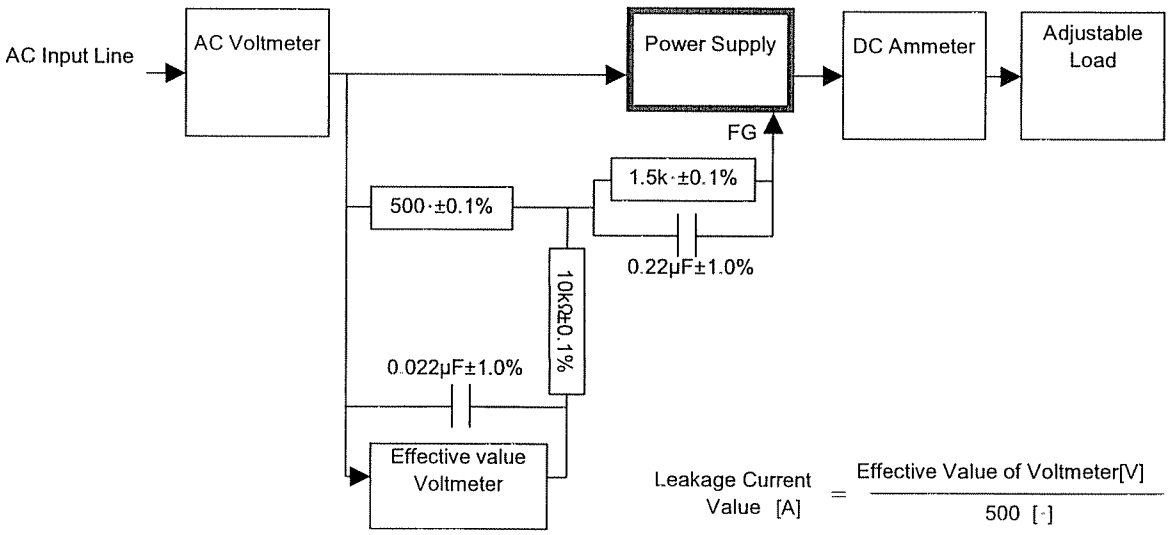


Figure B (IEC60950)