参考資料

COSEL

TEST DATA OF R100-18

Regulated DC Power Supply
Mar 15, 2005

Approved by : J. Uchida
J.Uchida Design Manager

Prepared by : A. Kawai
A.Kawai Design Engineer

COSEL CO.,LTD.

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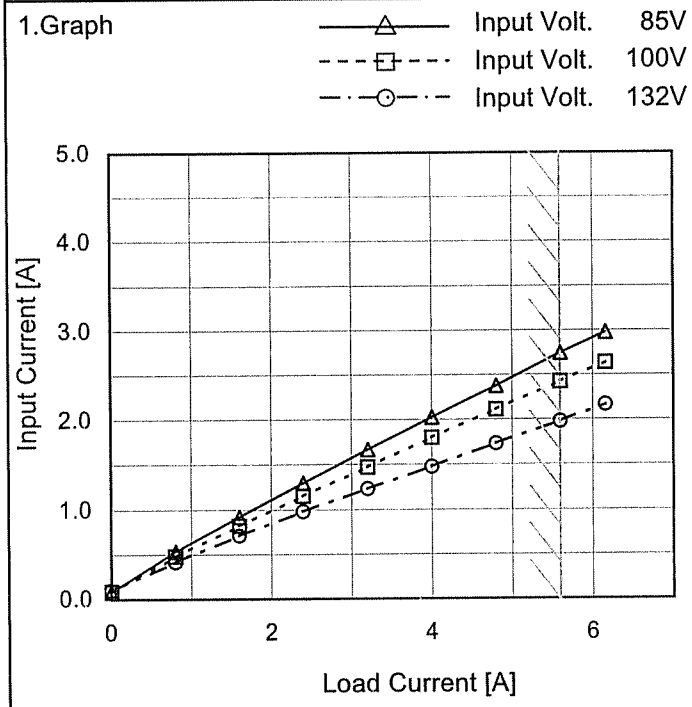
COSEL

Model	R100-18
Item	Input Current (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

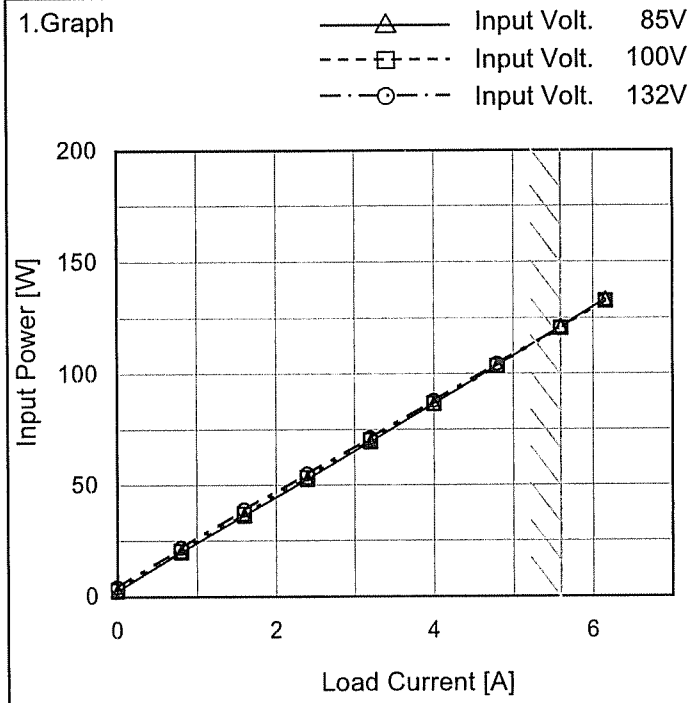
Load Current [A]	Input Current [A]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0.00	0.084	0.087	0.096
0.80	0.535	0.483	0.416
1.60	0.924	0.824	0.710
2.40	1.296	1.152	0.980
3.20	1.665	1.472	1.232
4.00	2.027	1.798	1.478
4.80	2.379	2.113	1.732
5.60	2.744	2.424	1.978
6.16	2.976	2.636	2.165
--	-	-	-
--	-	-	-

COSEL

Model	R100-18
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

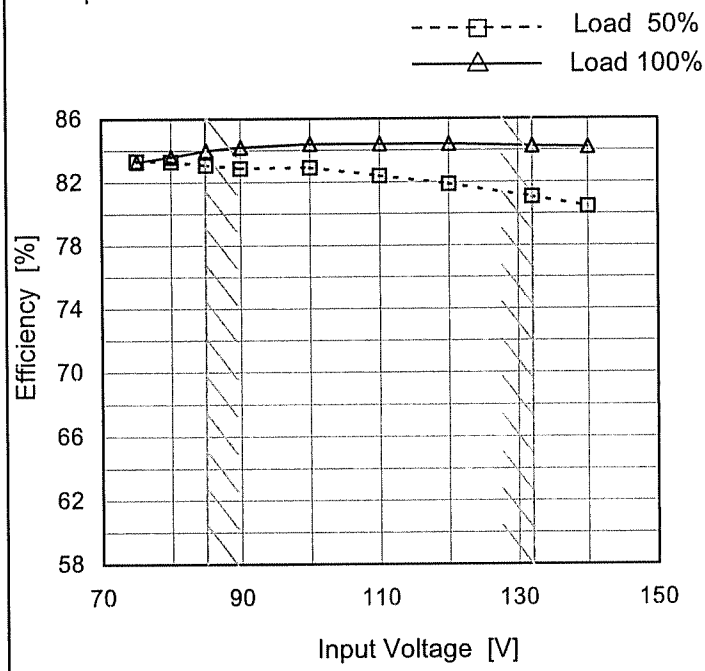
Load Current [A]	Input Power [W]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0.00	2.5	3.0	4.1
0.80	19.9	20.4	21.8
1.60	36.4	37.1	39.0
2.40	52.8	53.4	55.1
3.20	69.6	70.2	71.3
4.00	86.6	86.7	87.9
4.80	103.8	103.5	104.4
5.60	121.2	120.6	120.9
6.16	133.5	132.6	132.6
--	-	-	-
--	-	-	-

COSEL

Model	R100-18
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	83.3	83.3
80	83.3	83.6
85	83.1	84.0
90	82.9	84.2
100	82.9	84.4
110	82.4	84.4
120	81.9	84.4
132	81.1	84.3
140	80.5	84.2

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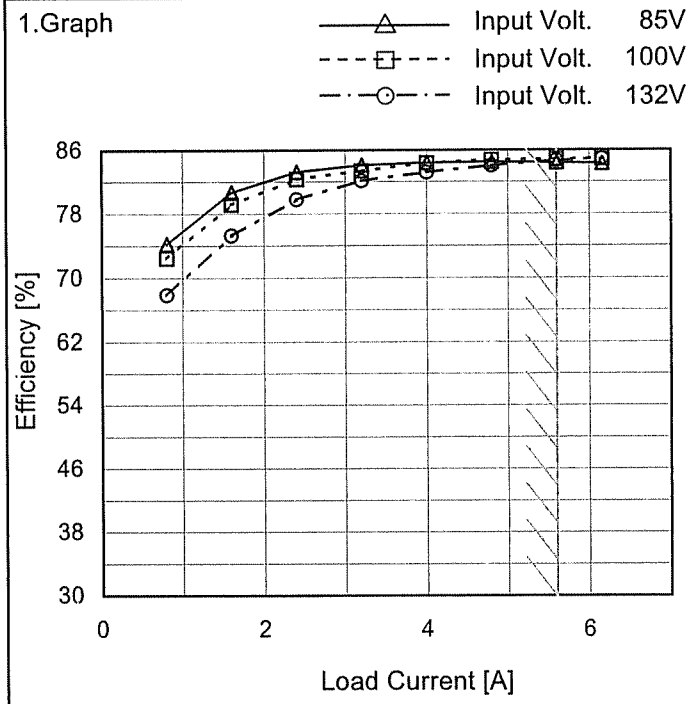
Model	R100-18
Item	Efficiency (by Load Current)
Object	———————

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	74.3	72.5	67.9
1.60	80.7	79.2	75.3
2.40	83.3	82.3	79.8
3.20	84.1	83.4	82.1
4.00	84.4	84.4	83.2
4.80	84.5	84.8	84.0
5.60	84.4	84.8	84.6
6.16	84.3	84.9	84.9
--	-	-	-
--	-	-	-

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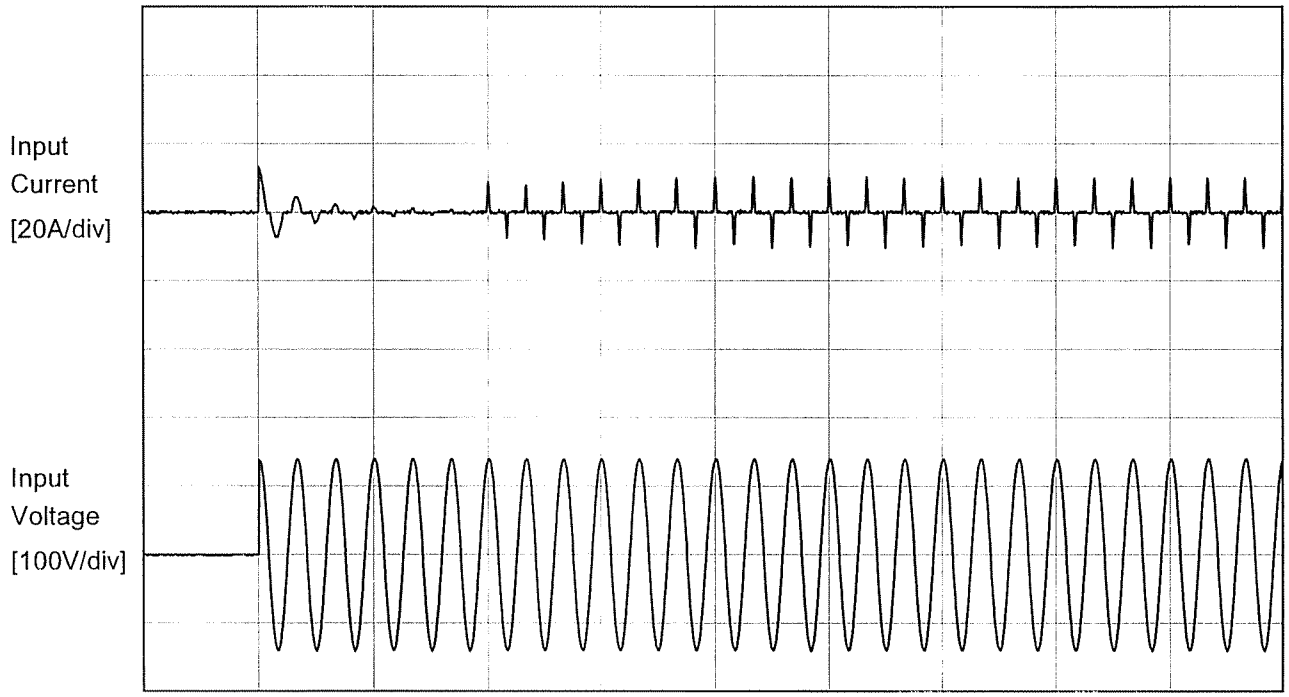
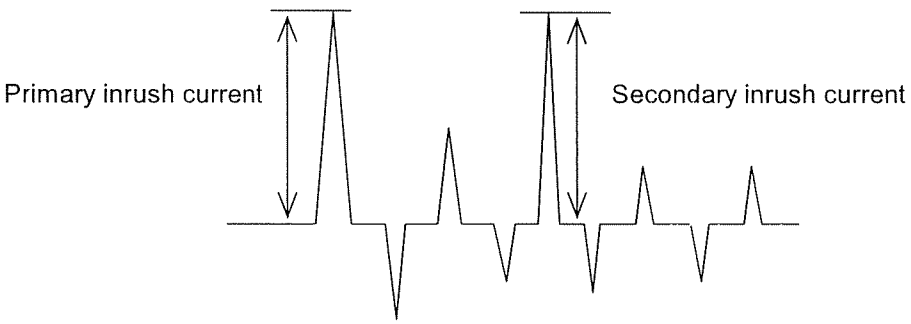
Model	R100-18
Item	Inrush Current
Object	————————

Temperature 25°C
Testing Circuitry Figure A



Input Voltage	100 V
Frequency	60 Hz
Load	100 %
Primary inrush current	13.1 A
Secondary inrush current	8.5A



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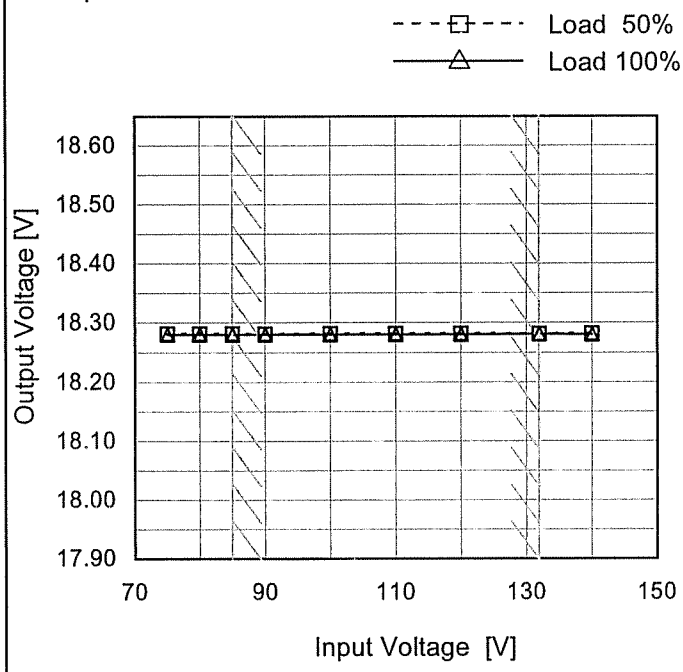
Model	R100-18
Item	Line Regulation
Object	+18V5.6A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

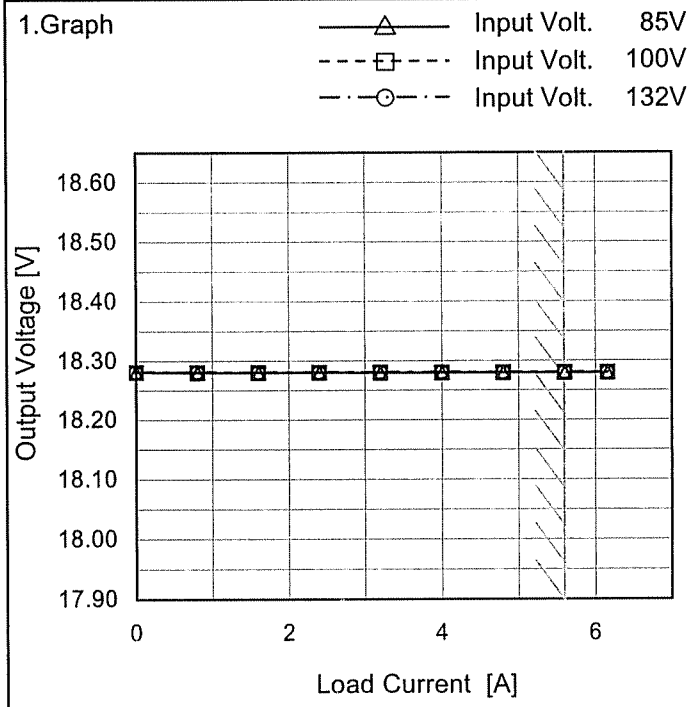
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
75	18.282	18.281
80	18.282	18.281
85	18.282	18.281
90	18.282	18.281
100	18.282	18.281
110	18.282	18.281
120	18.282	18.281
132	18.282	18.281
140	18.282	18.281

COSEL

Model	R100-18
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	18.281	18.281	18.281
0.80	18.281	18.281	18.281
1.60	18.280	18.280	18.281
2.40	18.280	18.280	18.280
3.20	18.280	18.280	18.280
4.00	18.280	18.280	18.280
4.80	18.280	18.280	18.280
5.60	18.280	18.280	18.280
6.16	18.280	18.280	18.280
--	-	-	-
--	-	-	-

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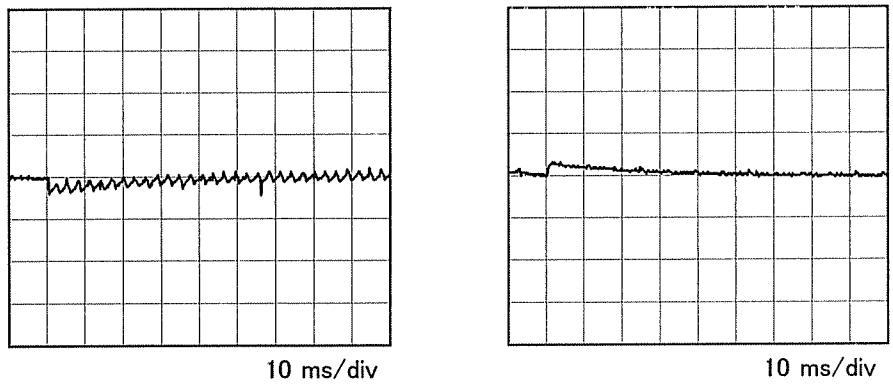
Model	R100-18		
Item	Dynamic Load Response	Temperature	25℃
		Testing Circuitry	Figure A
Object	+18V5.6A		

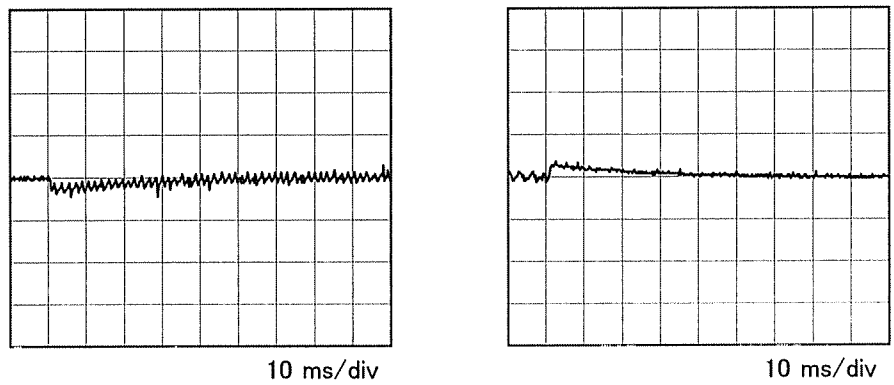
Input Volt. 100 V
Cycle 1000 ms

Load Current

Min. Load (0A) ⟷
Load 100% (5.6A)



Min. Load (0A) ⟷
Load 50% (2.8A)



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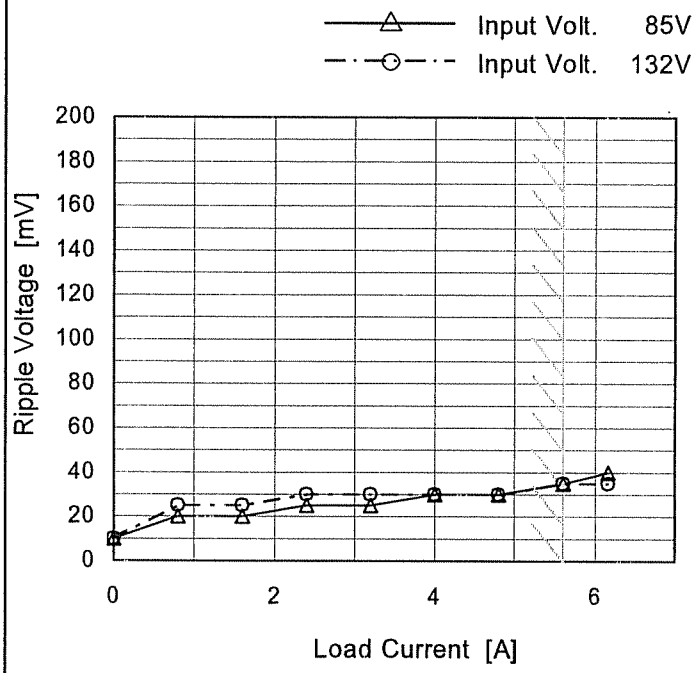
Model	R100-18
Item	Ripple Voltage (by Load Current)
Object	+18V5.6A

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

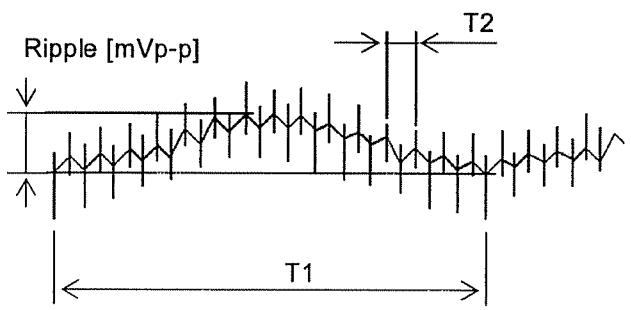


Fig. Complex Ripple Wave Form

2.Values

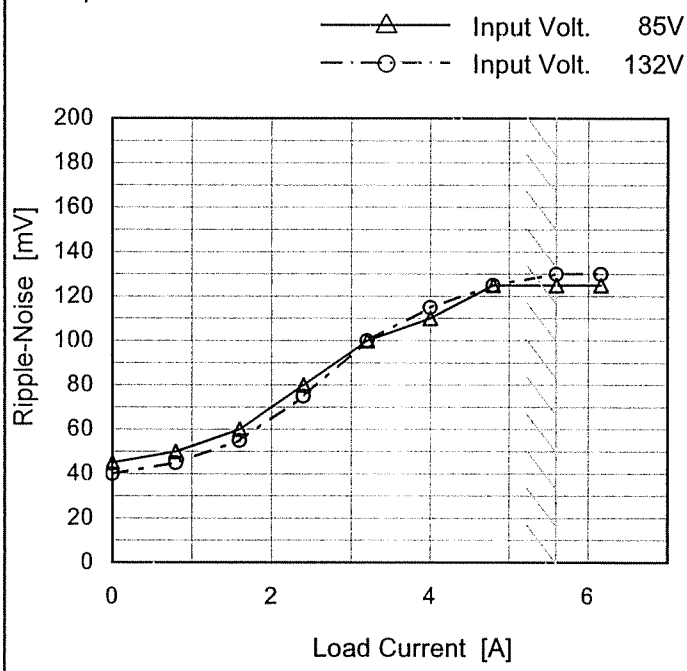
Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 85 [V]	Input Volt. 132 [V]
0.00	10	10
0.80	20	25
1.60	20	25
2.40	25	30
3.20	25	30
4.00	30	30
4.80	30	30
5.60	35	35
6.16	40	35
--	-	-
--	-	-

COSEL

Model	R100-18
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.

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

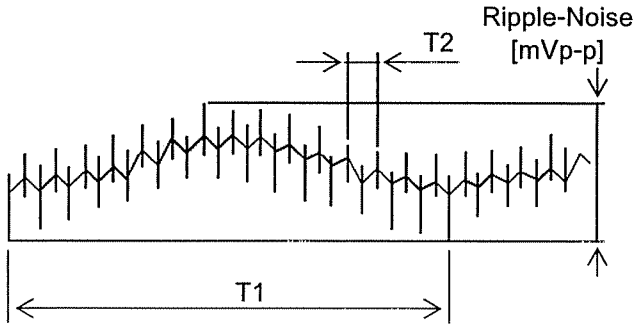


Fig. Complex Ripple Wave Form

2.Values

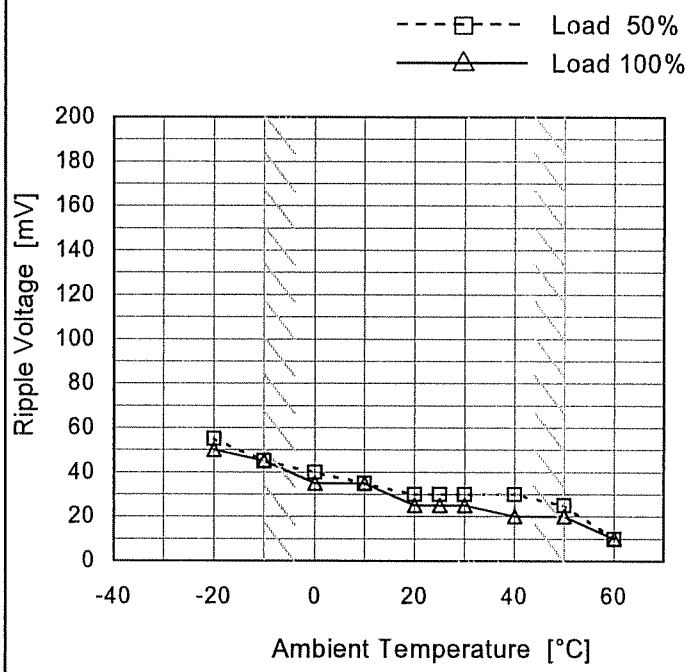
Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 85 [V]	Input Volt. 132 [V]
0.00	45	40
0.80	50	45
1.60	60	55
2.40	80	75
3.20	100	100
4.00	110	115
4.80	125	125
5.60	125	130
6.16	125	130
--	-	-
--	-	-

COSEL

Model	R100-18
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

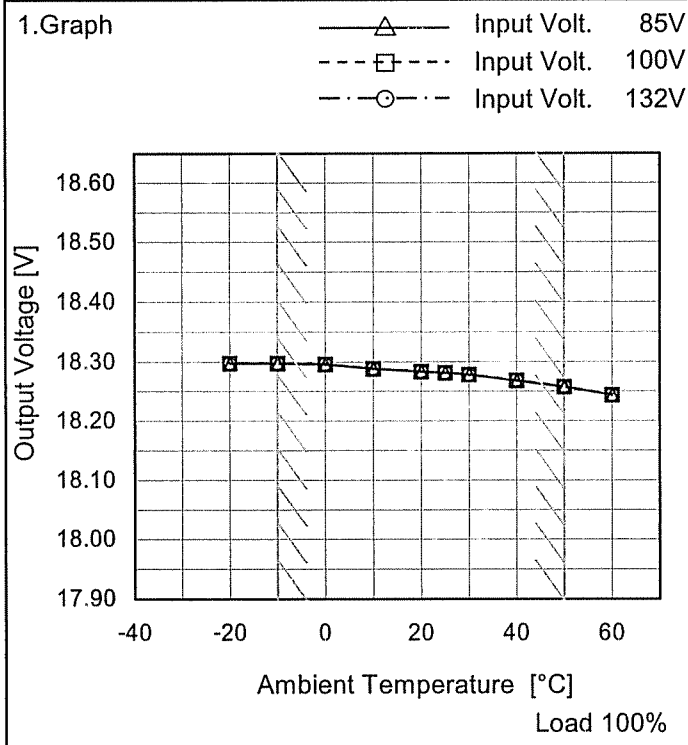
Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-20	55	50
-10	45	45
0	40	35
10	35	35
20	30	25
25	30	25
30	30	25
40	30	20
50	25	20
60	10	10
--	-	-

COSEL

Model	R100-18
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	18.298	18.298	18.298
-10	18.297	18.298	18.298
0	18.296	18.296	18.296
10	18.289	18.289	18.289
20	18.283	18.284	18.284
25	18.281	18.281	18.281
30	18.279	18.278	18.278
40	18.268	18.269	18.269
50	18.258	18.258	18.258
60	18.244	18.244	18.244
--	-	-	-

COSEL

Model	R100-18	
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

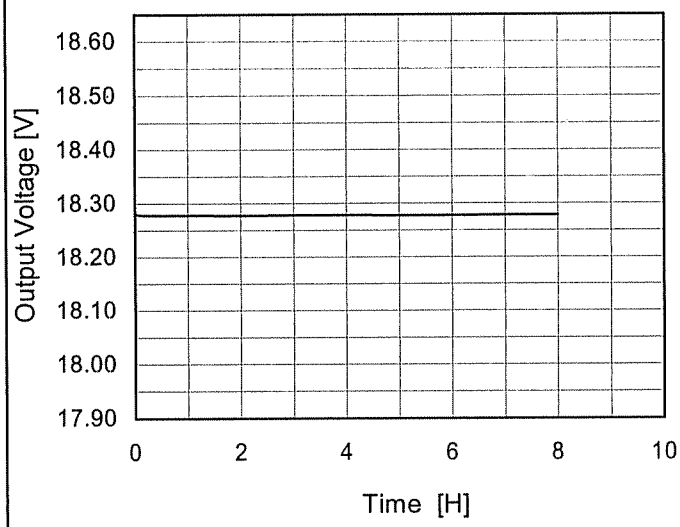
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	-10	100	0	18.299	±22	±0.1
Minimum Voltage	50	85	5.6	18.256		

COSEL

Model	R100-18
Item	Time Lapse Drift
Object	+18V5.6A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Input Volt. 100V
Load 100%

2.Values

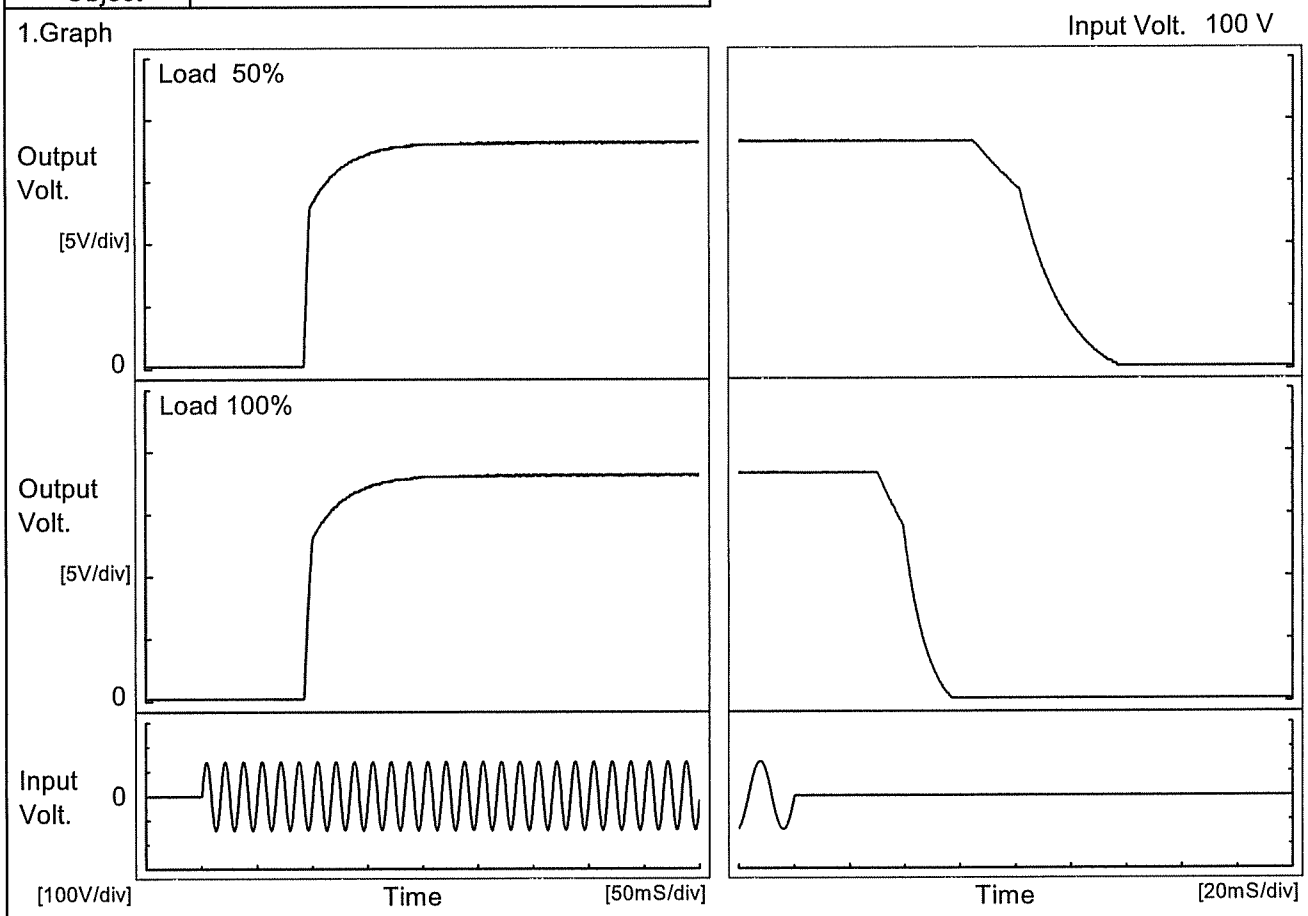
Time since start [H]	Output Voltage [V]
0.0	18.283
0.5	18.279
1.0	18.279
2.0	18.278
3.0	18.279
4.0	18.278
5.0	18.278
6.0	18.278
7.0	18.278
8.0	18.279

COSEL

Model	R100-18
Item	Rise and Fall Time
Object	+18V5.6A

Temperature 25°C
Testing Circuitry Figure A

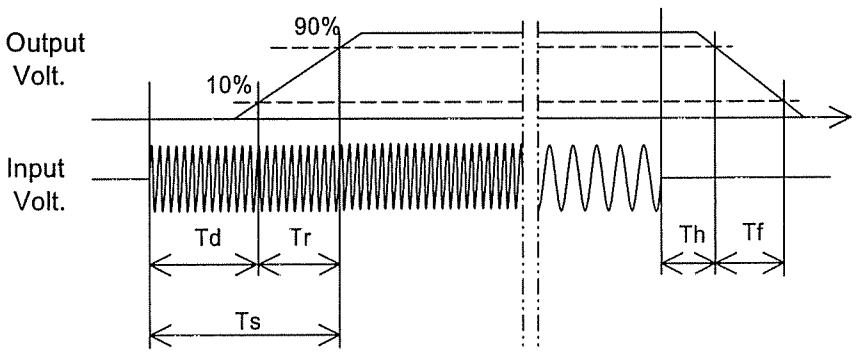
1.Graph



2.Values

[mS]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	93.3	37.3	130.6	72.0	34.0
100 %	93.3	38.3	131.6	33.8	17.9

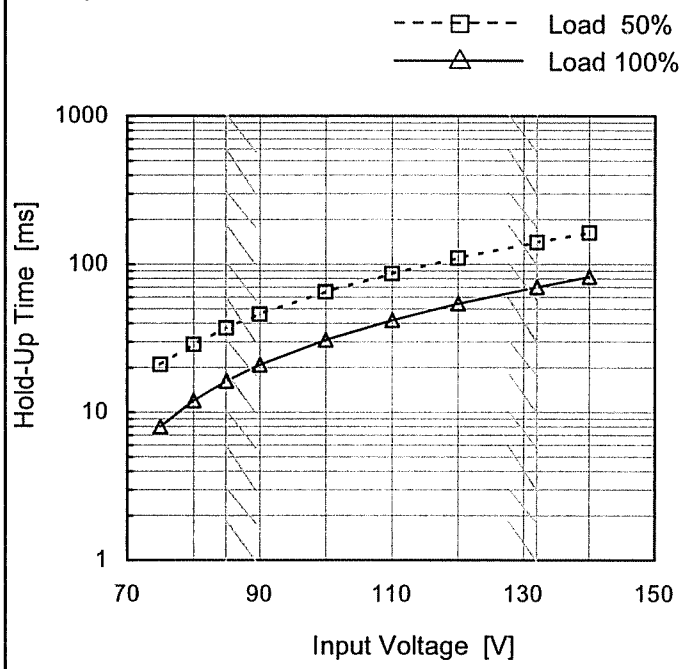


COSEL

Model	R100-18
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

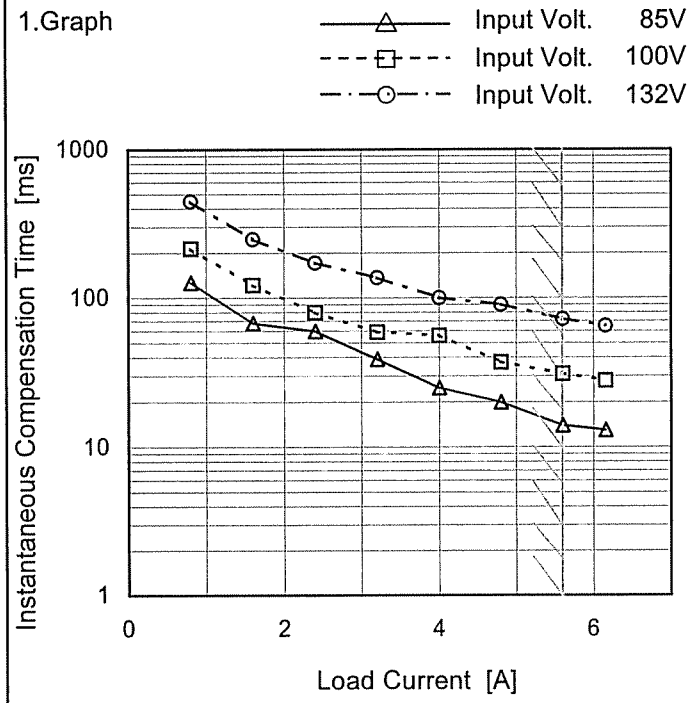
Input Voltage [V]	Hold-Up Time [ms]	
	Load 50%	Load 100%
75	21	8
80	29	12
85	37	16
90	46	21
100	65	31
110	87	42
120	110	54
132	141	70
140	163	82

COSEL

Model	R100-18
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

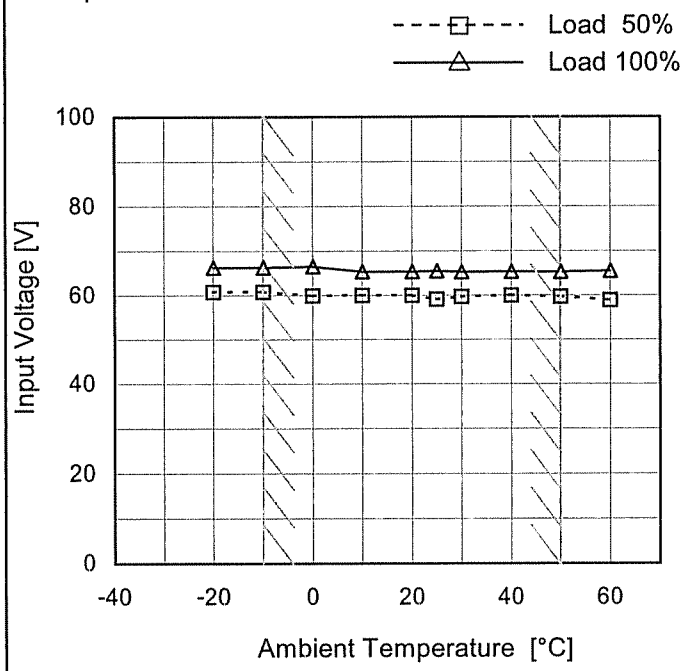
Load Current [A]	Time [ms]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0.00	-	-	-
0.80	127	215	447
1.60	68	122	248
2.40	60	80	172
3.20	39	59	137
4.00	25	56	100
4.80	20	37	90
5.60	14	31	72
6.16	13	28	65
--	-	-	-
--	-	-	-

COSEL

Model	R100-18
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

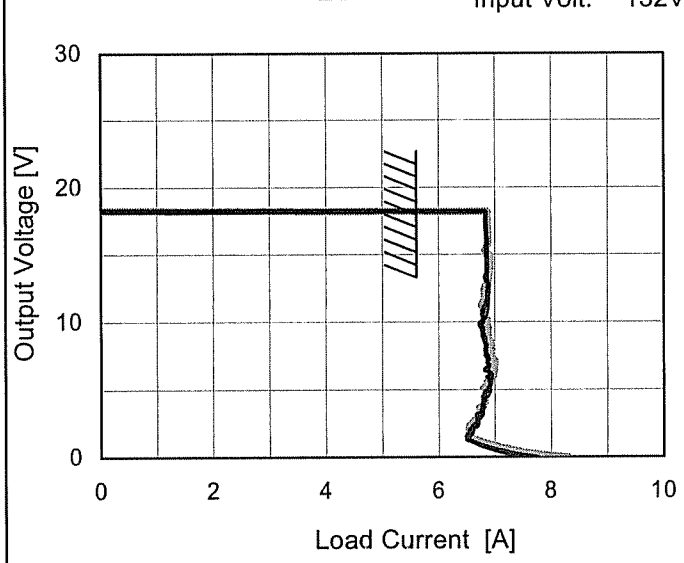
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-20	61	67
-10	61	67
0	60	67
10	60	66
20	60	66
25	60	66
30	60	66
40	60	66
50	60	66
60	59	66
--	-	-

COSEL

Model	R100-18
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

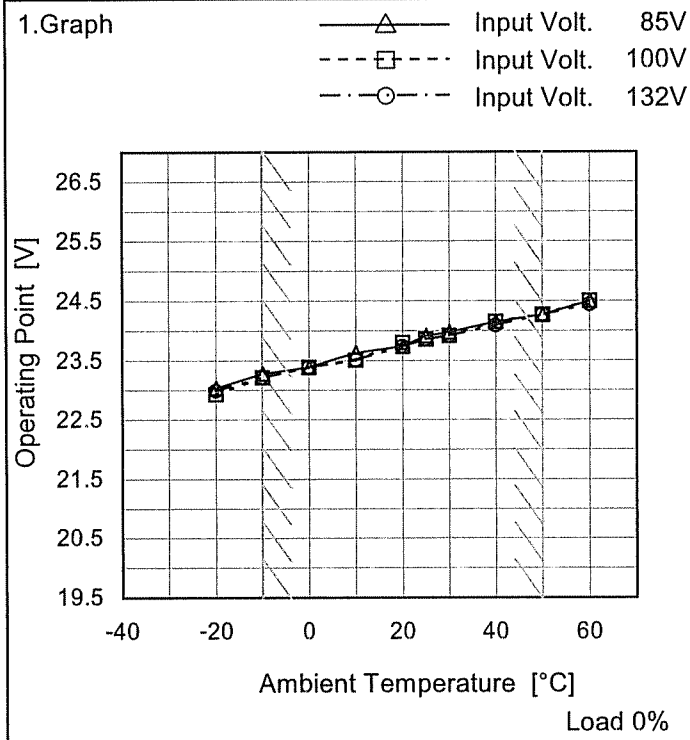
Output Voltage [V]	Load Current [A]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
18.0	6.85	6.84	6.87
17.1	6.85	6.84	6.87
16.2	6.86	6.86	6.88
14.4	6.87	6.86	6.91
12.6	6.87	6.88	6.84
10.8	6.88	6.79	6.79
9.0	6.75	6.81	6.88
7.2	6.85	6.88	6.99
5.4	6.94	6.92	6.87
3.6	6.81	6.77	6.74
1.8	6.61	6.56	6.54
0.0	7.53	7.76	8.31

COSEL

Model	R100-18
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	23.08	22.97	23.03
-10	23.32	23.26	23.26
0	23.43	23.43	23.43
10	23.67	23.55	23.55
20	23.78	23.84	23.78
25	23.96	23.90	23.90
30	24.02	23.96	23.96
40	24.19	24.19	24.13
50	24.31	24.31	24.31
60	24.54	24.54	24.48
--	-	-	-

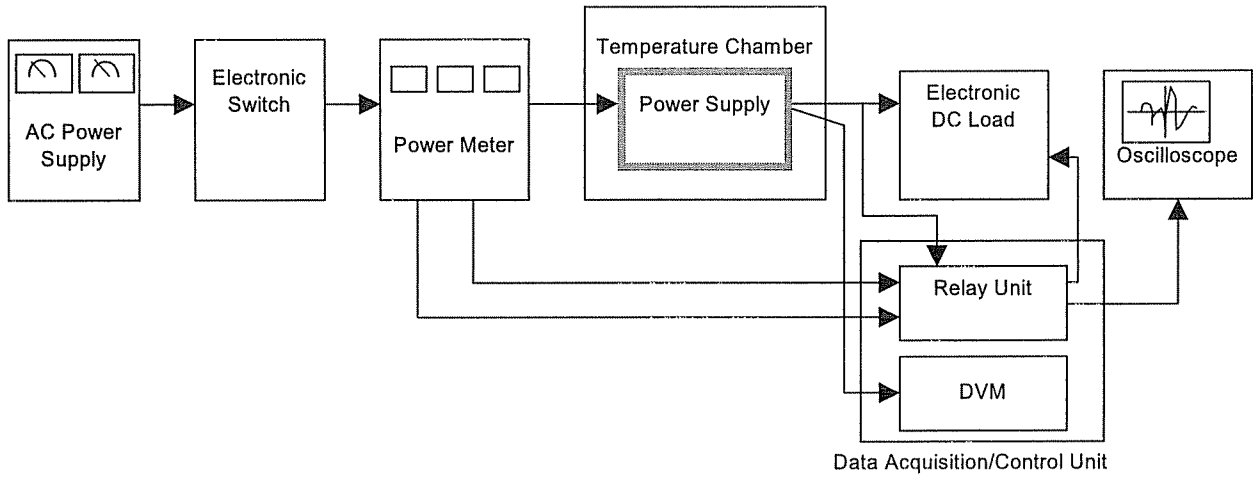


Figure A

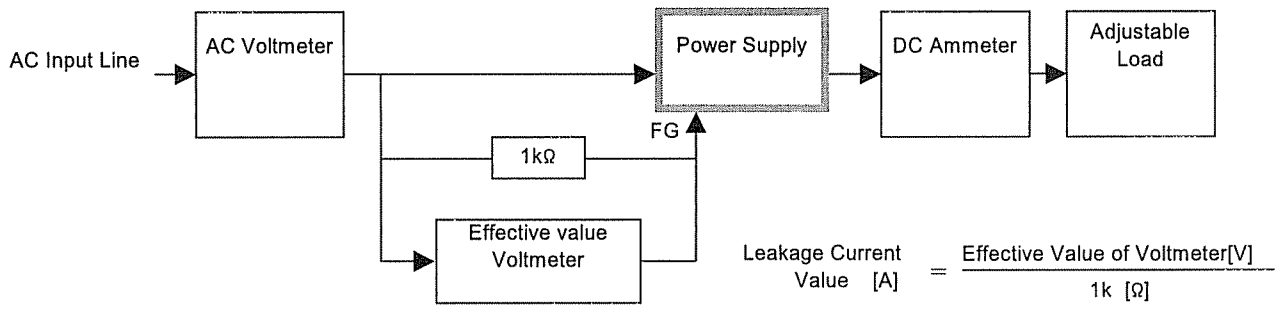


Figure B (DEN-AN)

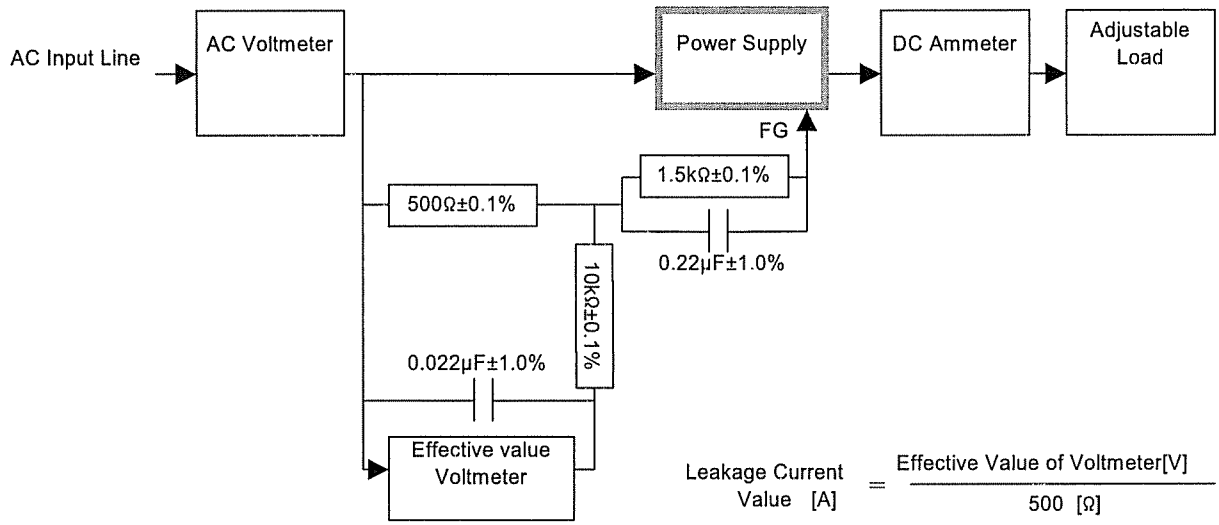


Figure B (IEC60950)