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参考資料

TEST DATA OF GT5-15

Regulated DC Power Supply
July 23, 2010

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COSEL CO.,LTD.

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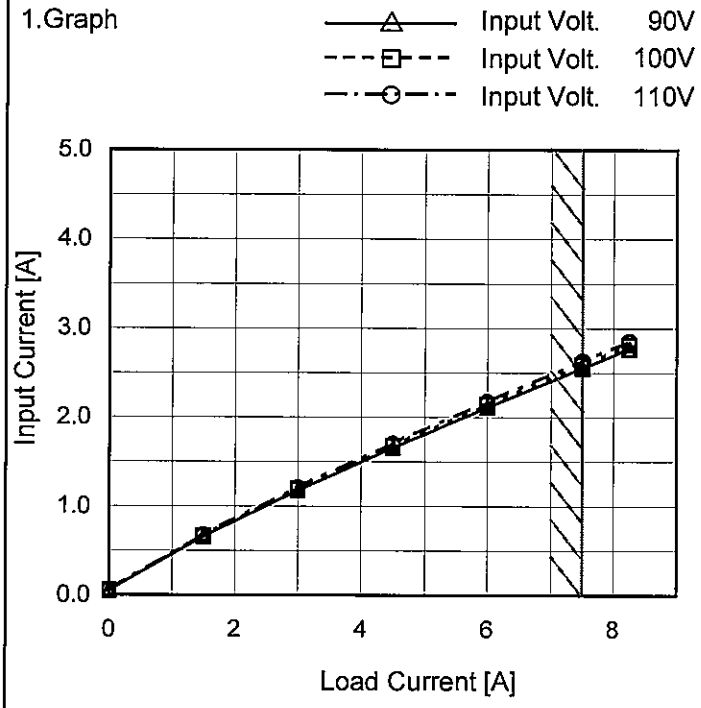
Model	GT5-15
Item	Input Current (by Load Current)
Object	———————

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. 90[V]	Input Volt. 100[V]	Input Volt. 110[V]
0.00	0.049	0.052	0.056
1.50	0.658	0.669	0.680
3.00	1.175	1.192	1.212
4.50	1.656	1.678	1.706
6.00	2.113	2.144	2.176
7.50	2.554	2.594	2.632
8.25	2.769	2.814	2.855
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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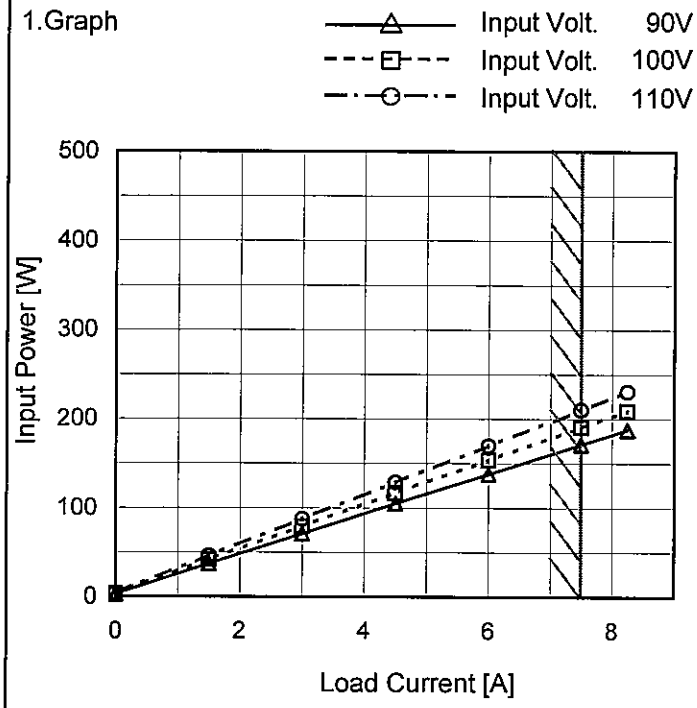
Model	GT5-15
Item	Input Power (by Load Current)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

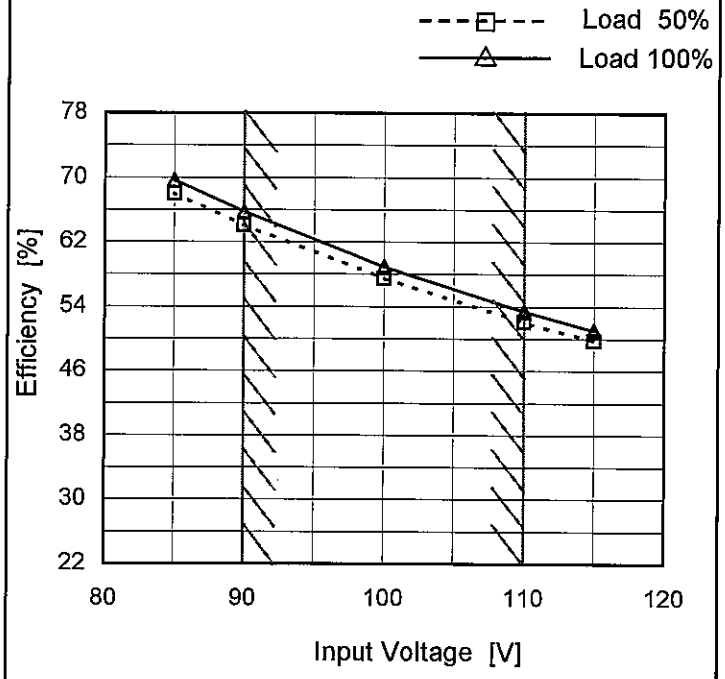
Load Current [A]	Input Power [W]		
	Input Volt. 90[V]	Input Volt. 100[V]	Input Volt. 110[V]
0.00	2.9	3.5	4.1
1.50	37.1	41.5	46.0
3.00	70.9	79.1	87.4
4.50	105.0	116.7	128.7
6.00	138.0	153.9	169.8
7.50	171.3	190.8	210.3
8.25	187.8	209.1	230.7
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	GT5-15
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

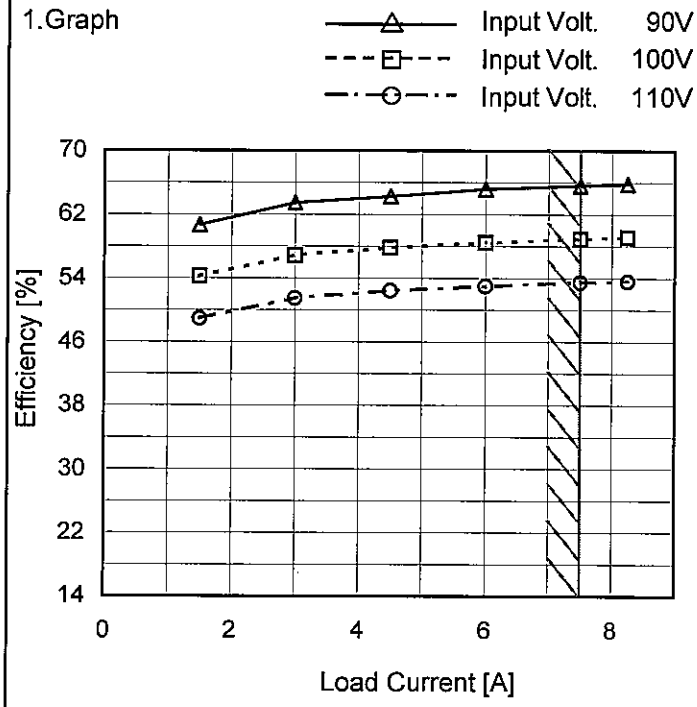
Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
85	68.0	69.6
90	64.1	65.7
100	57.5	58.9
110	52.1	53.5
115	49.8	51.1
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	GT5-15
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

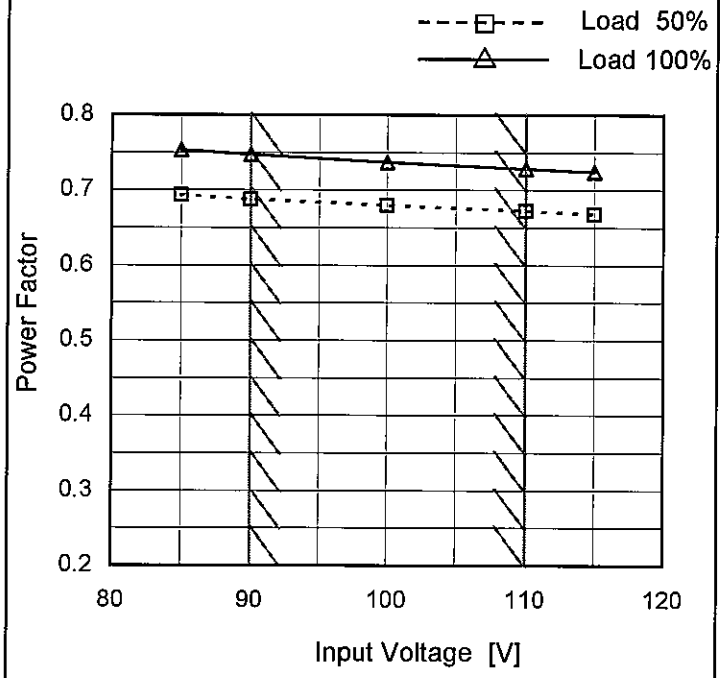
Load Current [A]	Efficiency [%]		
	Input Volt. 90[V]	Input Volt. 100[V]	Input Volt. 110[V]
0.00	-	-	-
1.50	60.7	54.2	48.9
3.00	63.4	56.9	51.5
4.50	64.2	57.8	52.4
6.00	65.2	58.4	53.0
7.50	65.6	58.9	53.5
8.25	65.8	59.1	53.6
---	-	-	-
---	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	GT5-15
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

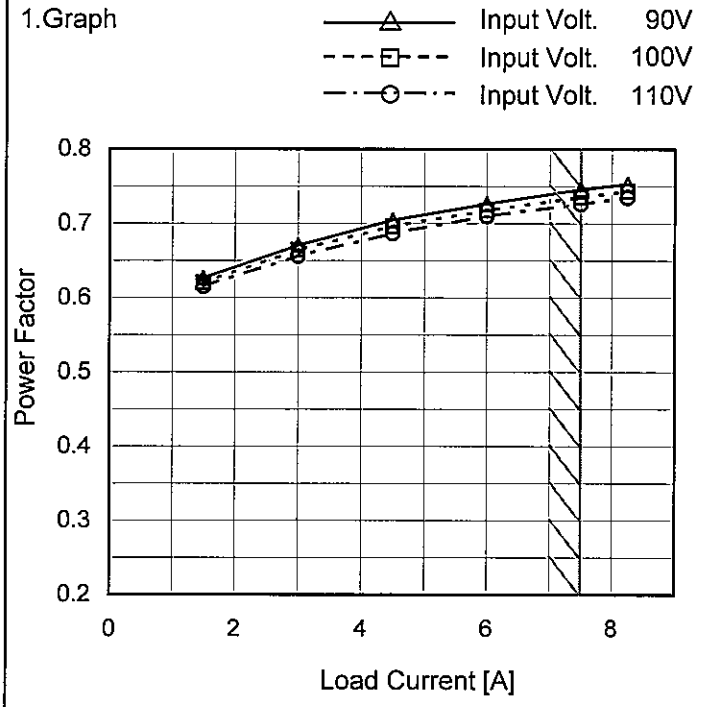
Input Voltage [V]	Power Factor	
	Load 50%	Load 100%
85	0.693	0.753
90	0.688	0.747
100	0.680	0.737
110	0.672	0.728
115	0.668	0.724
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	GT5-15
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.

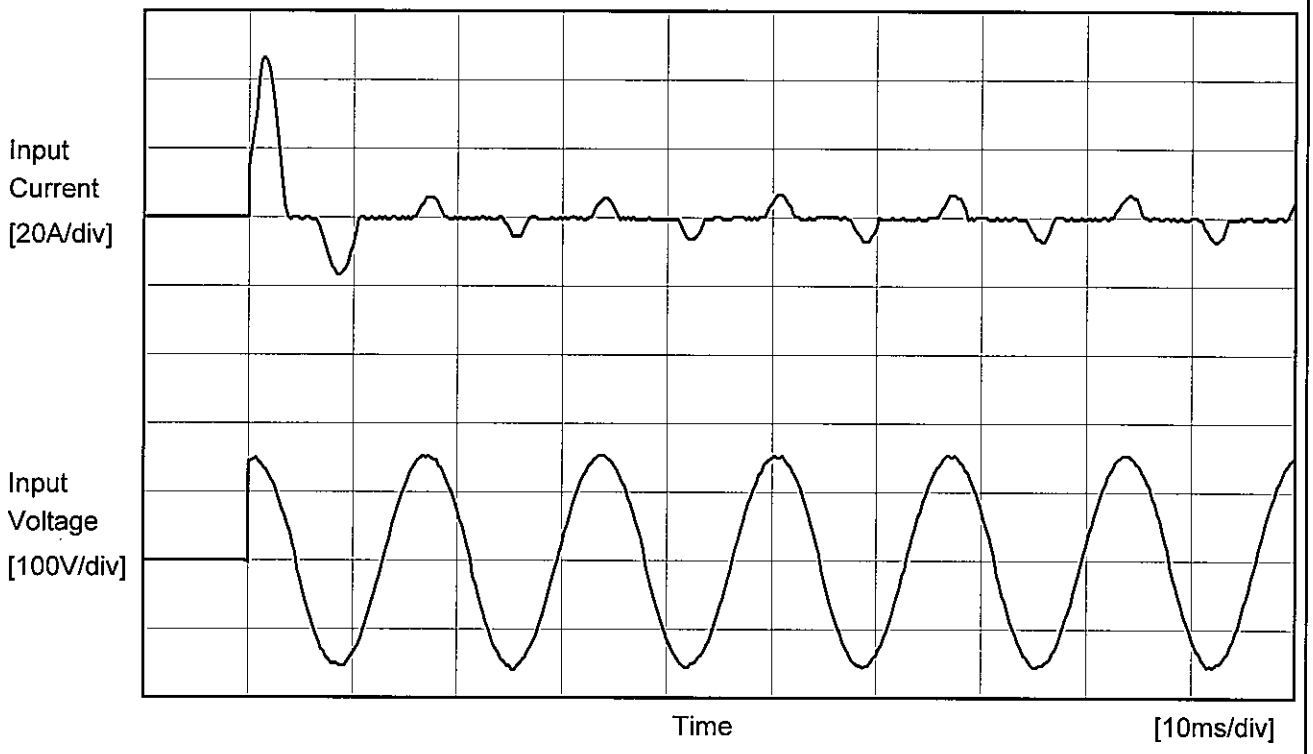
2.Values

Load Current [A]	Power Factor		
	Input Volt. 90[V]	Input Volt. 100[V]	Input Volt. 110[V]
0.00	-	-	-
1.50	0.627	0.620	0.615
3.00	0.671	0.664	0.656
4.50	0.705	0.696	0.687
6.00	0.727	0.718	0.710
7.50	0.746	0.736	0.726
8.25	0.754	0.743	0.735
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

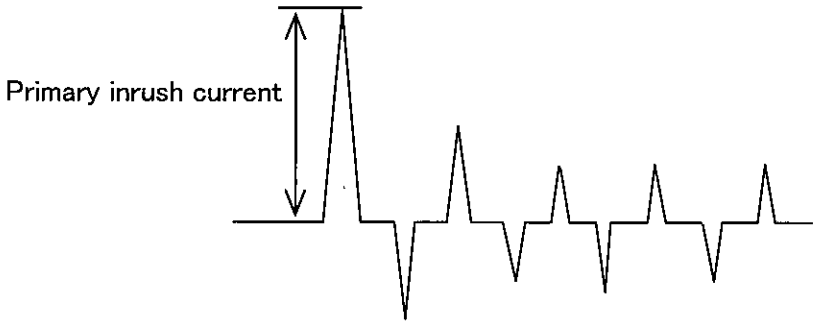
COSEL

Model	GT5-15
Item	Inrush Current
Object	————————

Temperature 25°C
Testing Circuitry Figure A



Input Voltage	100 V
Frequency	60 Hz
Load	100 %
Primary inrush current	46.6 A

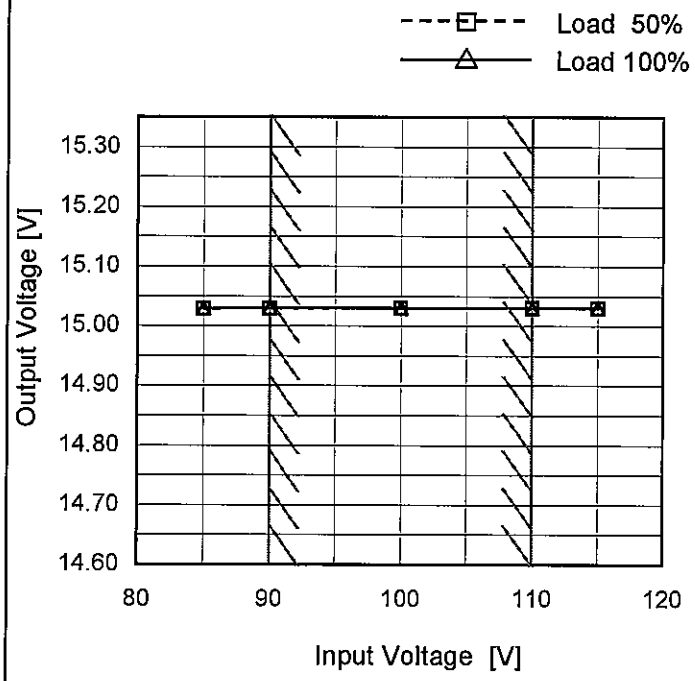


COSEL

Model	GT5-15
Item	Line Regulation
Object	+15V7.5A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

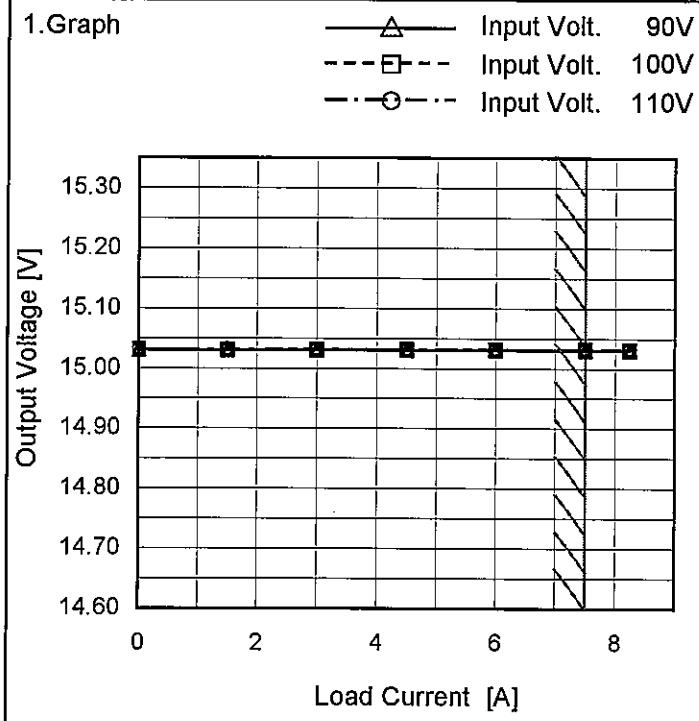
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
85	15.030	15.030
90	15.030	15.030
100	15.030	15.030
110	15.030	15.031
115	15.030	15.030
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	GT5-15
Item	Load Regulation
Object	+15V7.5A

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. 90[V]	Input Volt. 100[V]	Input Volt. 110[V]
0.00	15.031	15.031	15.031
1.50	15.031	15.031	15.031
3.00	15.031	15.031	15.031
4.50	15.031	15.031	15.031
6.00	15.031	15.031	15.031
7.50	15.031	15.031	15.031
8.25	15.030	15.031	15.031
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

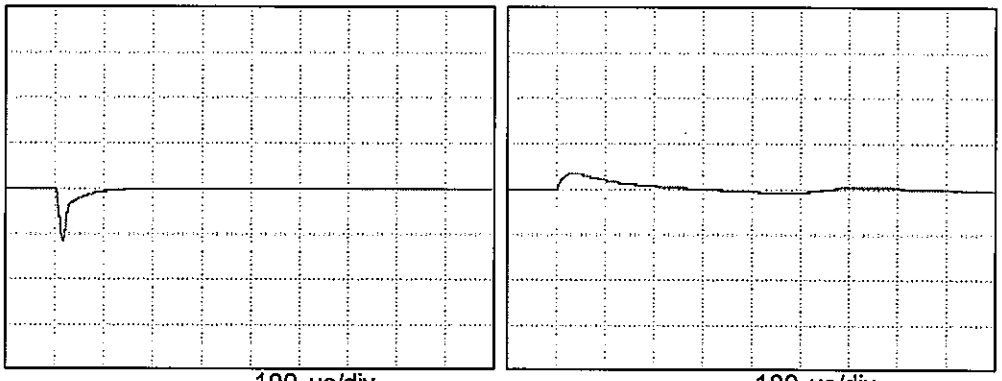
COSEL

Model	GT5-15		
Item	Dynamic Load Response	Temperature	25°C
		Testing Circuitry	Figure A
Object	+15V7.5A		

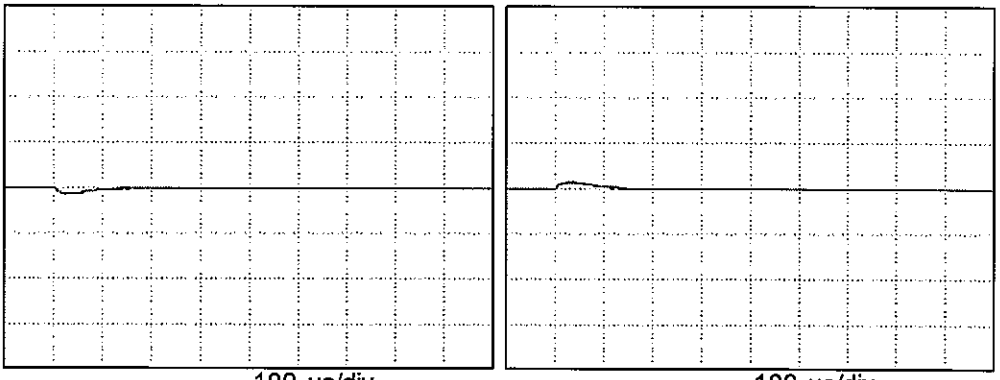
Input Volt. 100 V
Cycle 1000 ms

Load Current

Min. Load (0A) ⟷
Load 100% (7.5A)



Load 50% (3.75A) ⟷
Load 100% (7.5A)

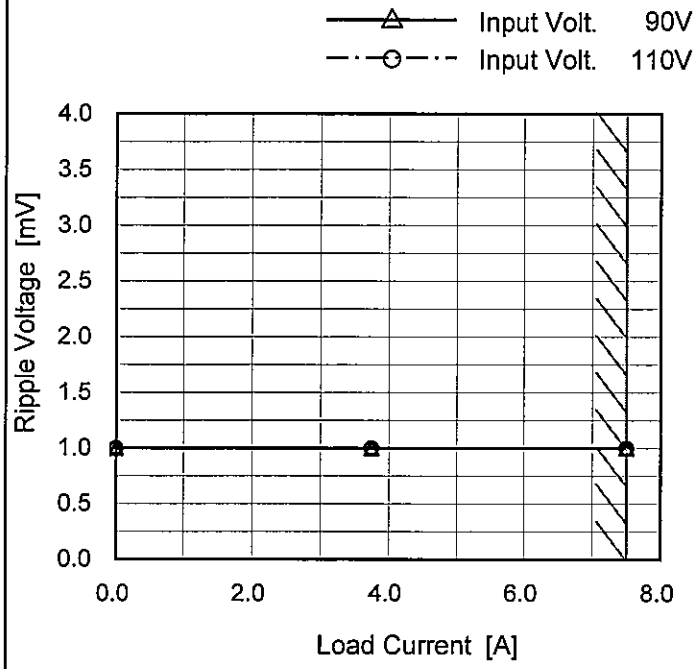


COSEL

Model	GT5-15
Item	Ripple Voltage (by Load Current)
Object	+15V7.5A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Measured by 20 MHz Oscilloscope.
Note: Slanted line shows the range of the rated load current.

2.Values

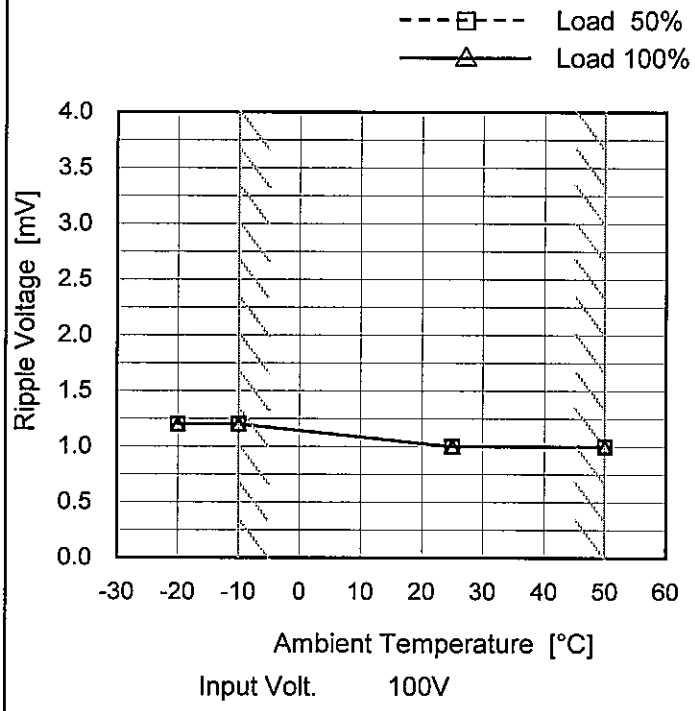
Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 90 [V]	Input Volt. 110 [V]
0.00	1.0	1.0
3.75	1.0	1.0
7.50	1.0	1.0
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	GT5-15
Item	Ripple Voltage (by Ambient Temp.)
Object	+15V7.5A

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

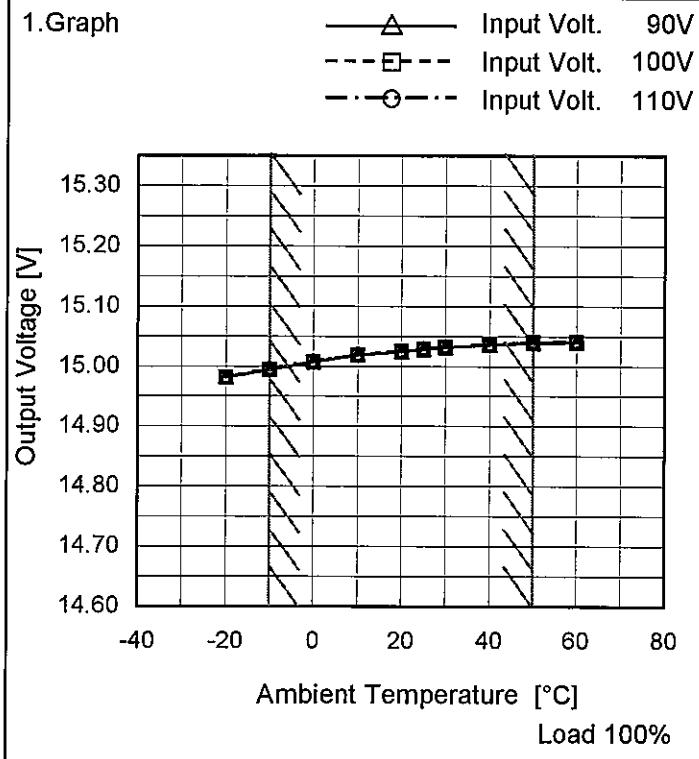
Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-20	1.2	1.2
-10	1.2	1.2
25	1.0	1.0
50	1.0	1.0
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	GT5-15
Item	Ambient Temperature Drift
Object	+15V7.5A

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. 90[V]	Input Volt. 100[V]	Input Volt. 110[V]
-20	14.981	14.982	14.982
-10	14.994	14.995	14.995
0	15.007	15.007	15.008
10	15.019	15.019	15.019
20	15.024	15.025	15.025
25	15.028	15.029	15.029
30	15.031	15.032	15.032
40	15.036	15.036	15.036
50	15.039	15.040	15.040
60	15.040	15.041	15.041
--	-	-	-

COSEL

Model	GT5-15	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+15V7.5A	

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 : 90 - 110V
Load Current : 0 - 7.5A

* 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

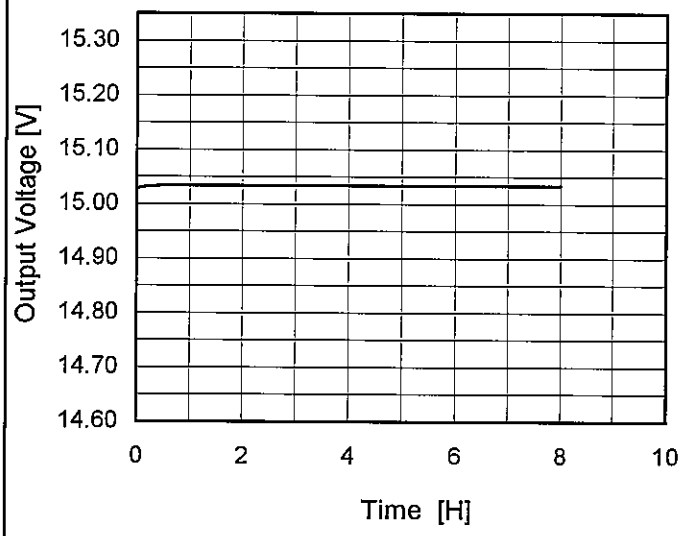
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	50	110	0	15.040	±24	±0.2
Minimum Voltage	-10	90	0	14.993		

COSEL

Model	GT5-15
Item	Time Lapse Drift
Object	+15V7.5A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Input Volt. 100V
Load 100%

2.Values

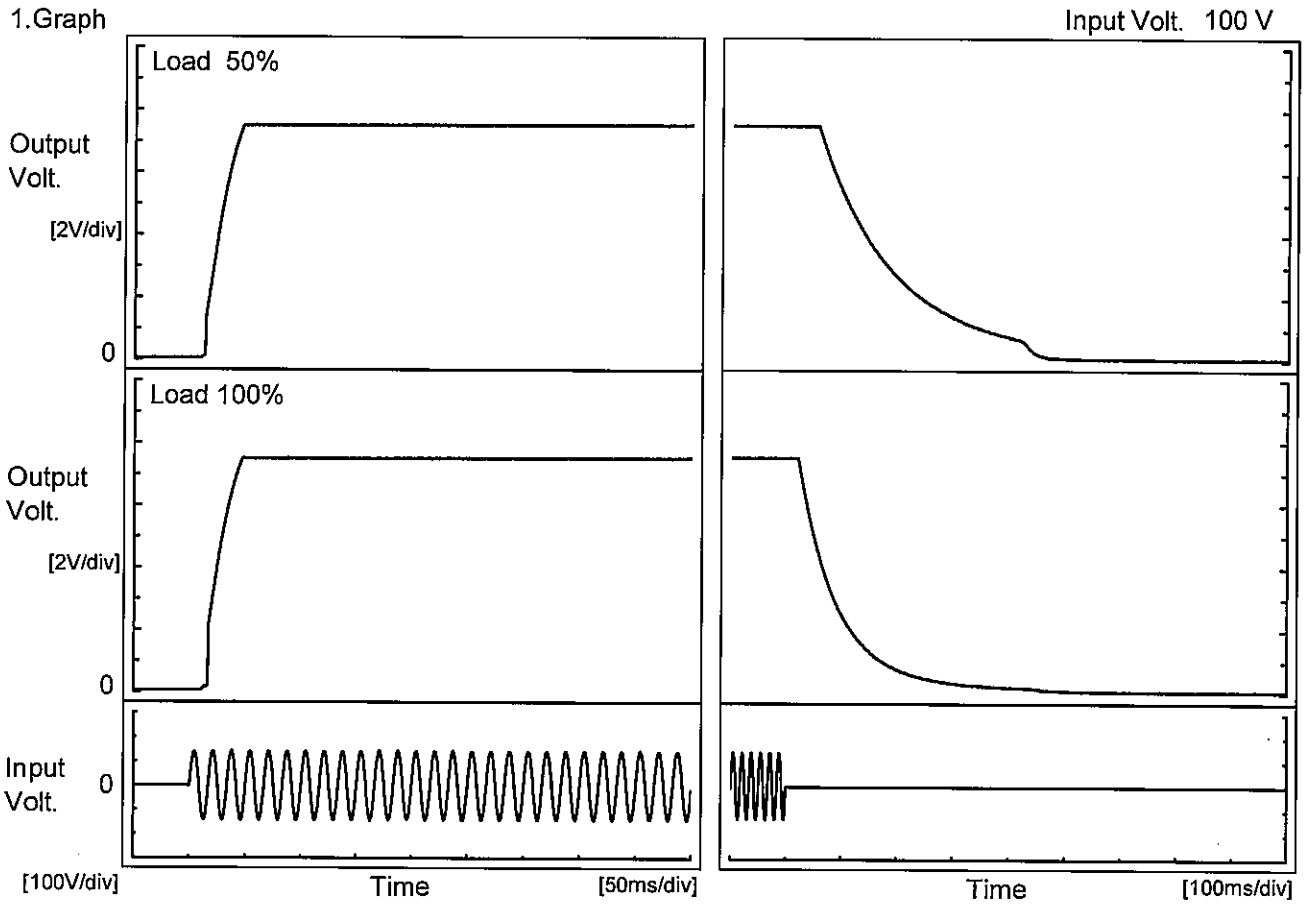
Time since start [H]	Output Voltage [V]
0.0	15.027
0.5	15.033
1.0	15.034
2.0	15.034
3.0	15.034
4.0	15.034
5.0	15.034
6.0	15.034
7.0	15.034
8.0	15.034

COSEL

Model	GT5-15
Item	Rise and Fall Time
Object	+15V7.5A

Temperature 25°C
Testing Circuitry Figure A

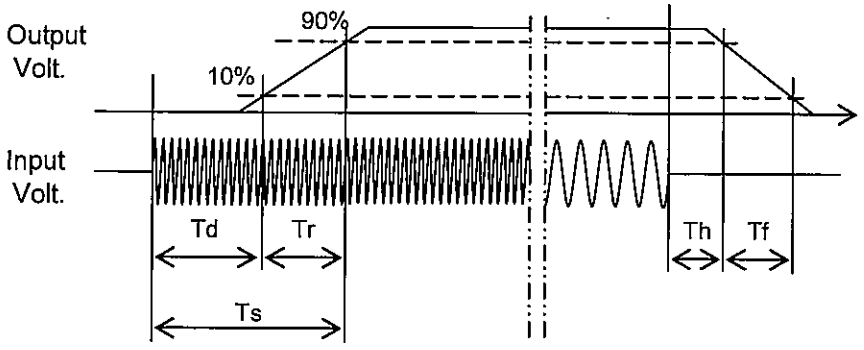
1.Graph



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	13.5	26.5	40.0	68.5	328.5
100 %	16.3	23.8	40.1	28.5	169.0

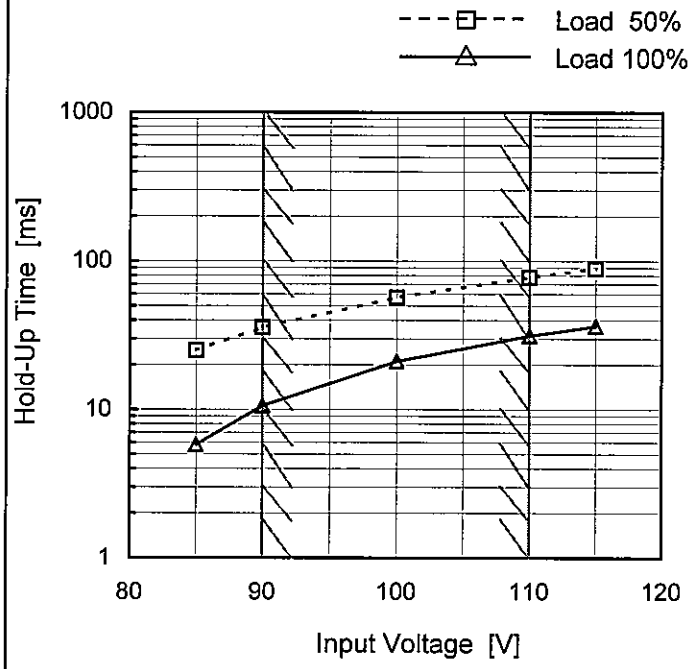


COSEL

Model	GT5-15
Item	Hold-Up Time
Object	+15V7.5A

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

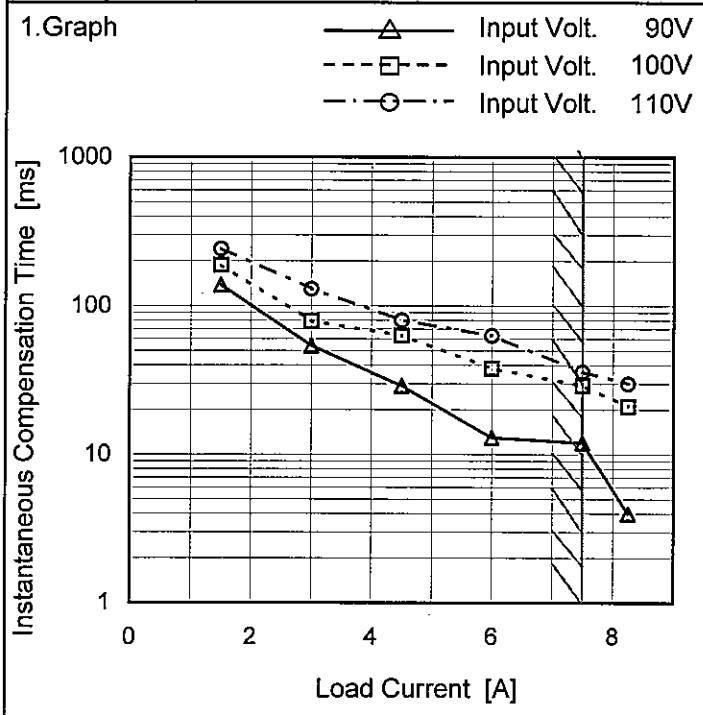
Input Voltage [V]	Hold-Up Time [ms]	
	Load 50%	Load 100%
85	25	6
90	36	11
100	57	21
110	78	31
115	89	37
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	GT5-15
Item	Instantaneous Interruption Compensation
Object	+15V7.5A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

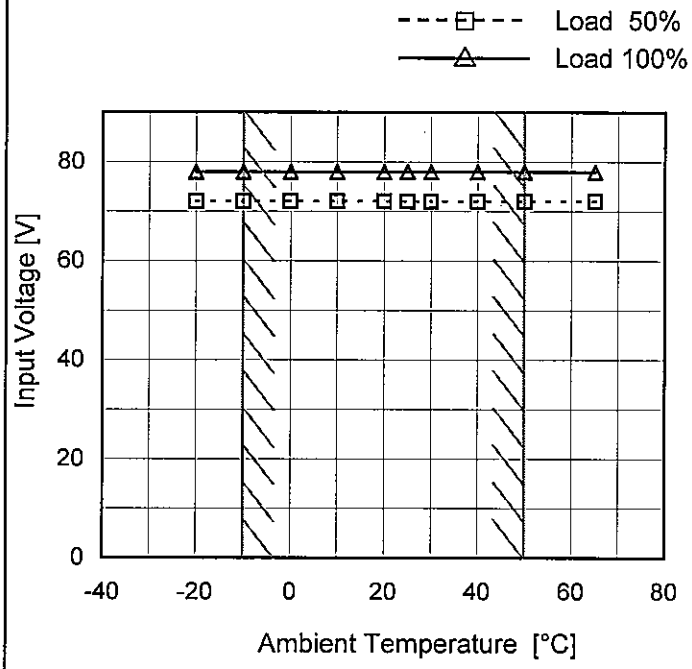
Load Current [A]	Time [ms] Input Volt. 90[V]	Input Volt. 100[V]	Input Volt. 110[V]
0.00	-	-	-
1.50	138	188	242
3.00	54	79	130
4.50	29	63	80
6.00	13	38	63
7.50	12	29	36
8.25	4	21	30
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	GT5-15
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+15V7.5A

Testing Circuitry Figure A

1.Graph



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

2.Values

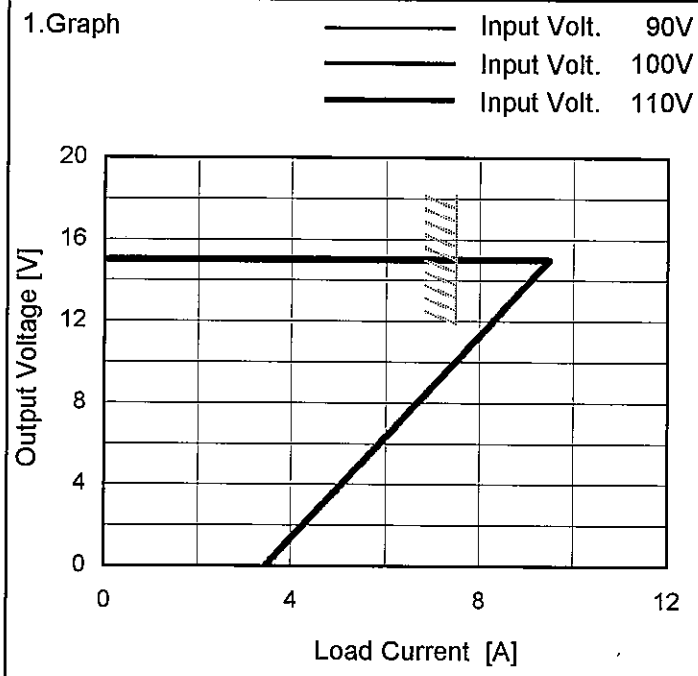
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-20	72	78
-10	72	78
0	72	78
10	72	78
20	72	78
25	72	78
30	72	78
40	72	78
50	72	78
65	72	78
--	-	-

COSEL

Model	GT5-15
Item	Overcurrent Protection
Object	+15V7.5A

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. 90[V]	Input Volt. 100[V]	Input Volt. 110[V]
15.0	9.45	9.45	9.45
14.3	9.14	9.13	9.12
13.5	8.96	8.95	8.94
12.0	8.35	8.35	8.35
10.5	7.75	7.75	7.75
9.0	7.17	7.16	7.16
7.5	6.50	6.50	6.49
6.0	5.90	5.90	5.90
4.5	5.30	5.30	5.30
3.0	4.68	4.68	4.67
1.5	4.07	4.07	4.06
0.0	3.45	3.45	3.45

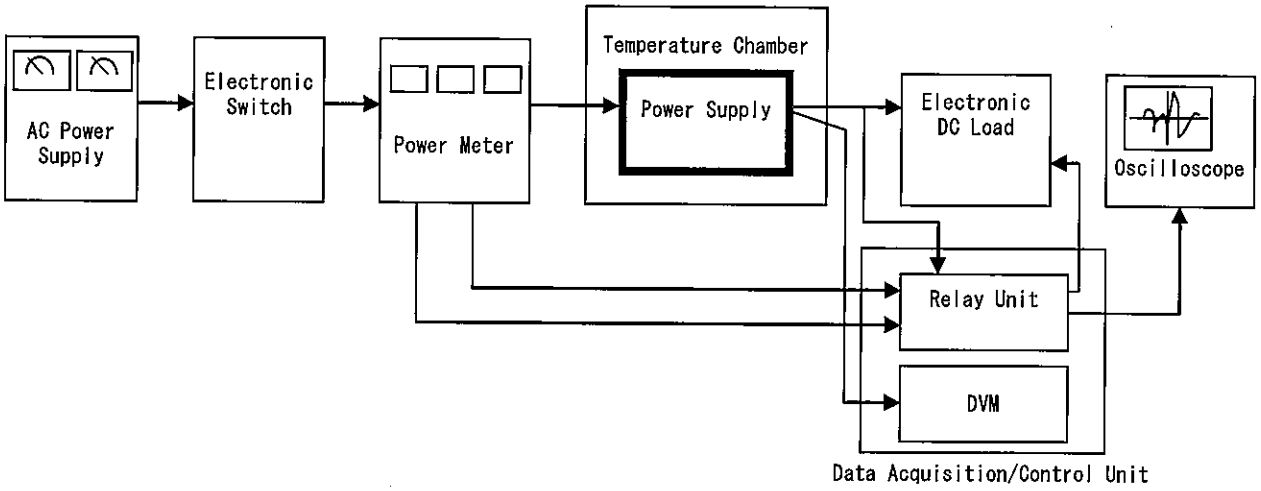

AC Power Supply
Electronic Switch
Power Meter
Temperature Chamber
Power Supply
Electronic DC Load
Oscilloscope
Relay Unit
DVM
Data Acquisition/Control Unit

Figure A