COSEL

参考資料

TEST DATA OF G2-24

Regulated DC Power Supply
July 23, 2010

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Satoshi Kinoshita Design Engineer

COSEL CO.,LTD.

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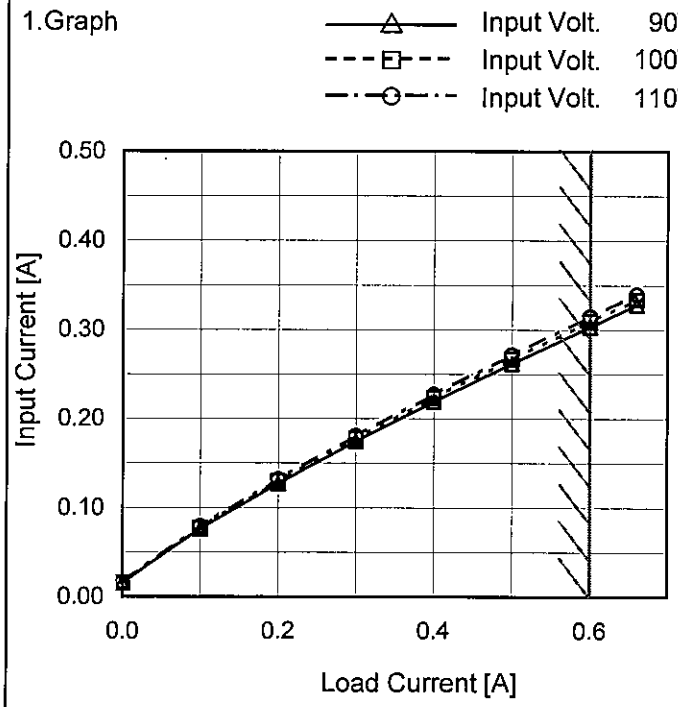

Note: Slanted line shows the range of the rated load current.

2.Values

Load Current [A]	Input Current [A]		
	Input Volt. 90[V]	Input Volt. 100[V]	Input Volt. 110[V]
0.00	0.015	0.016	0.016
0.10	0.076	0.077	0.079
0.20	0.127	0.130	0.132
0.30	0.174	0.178	0.181
0.40	0.219	0.223	0.227
0.50	0.262	0.267	0.271
0.60	0.303	0.309	0.315
0.66	0.328	0.334	0.339
--	-	-	-
--	-	-	-
--	-	-	-

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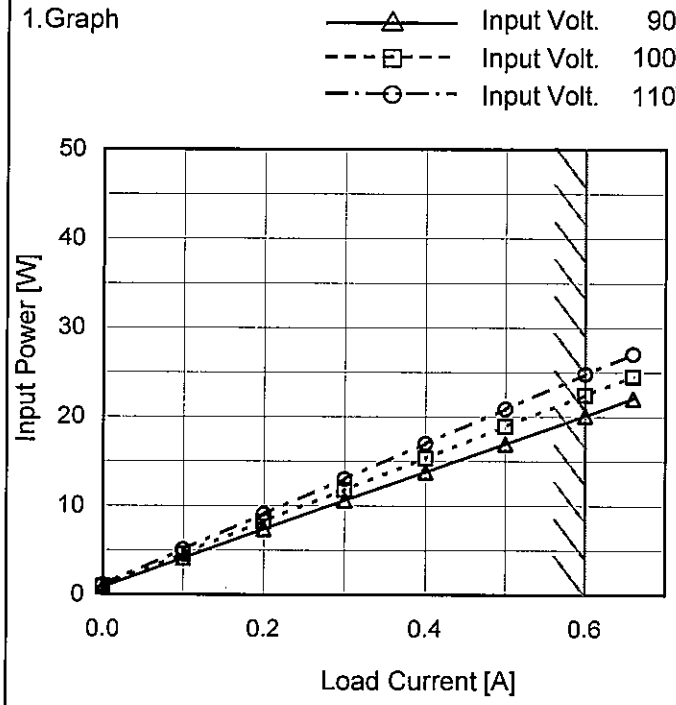
Model	G2-24
Item	Input Power (by Load Current)
Object	———————

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	0.83	0.94	1.06
0.10	4.11	4.57	5.08
0.20	7.35	8.21	9.04
0.30	10.60	11.79	12.99
0.40	13.78	15.33	16.99
0.50	16.97	18.94	20.86
0.60	20.10	22.45	24.80
0.66	22.05	24.53	27.06
--	-	-	-
--	-	-	-
--	-	-	-

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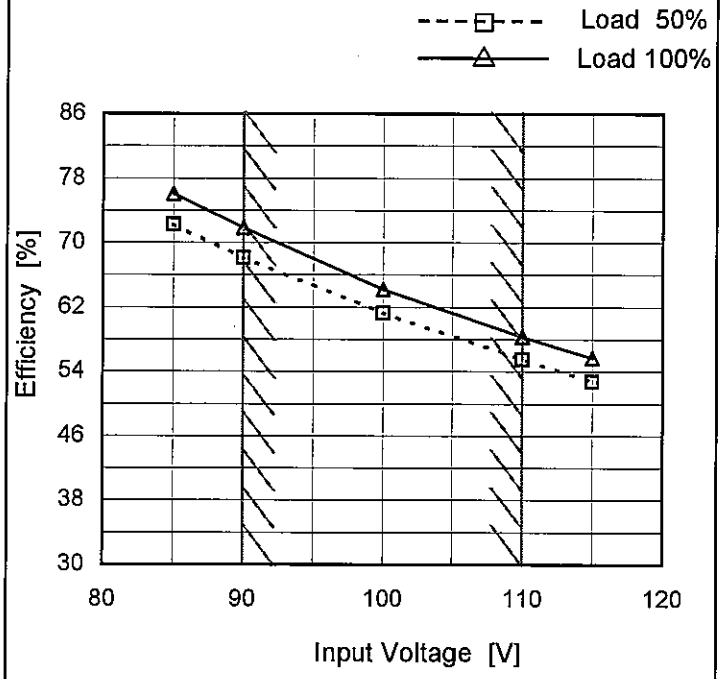
Model	G2-24
Item	Efficiency (by Input Voltage)
Object	———————————

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	72.3	76.1
90	68.1	71.9
100	61.2	64.2
110	55.5	58.3
115	52.8	55.7
--	-	-
--	-	-
--	-	-
--	-	-

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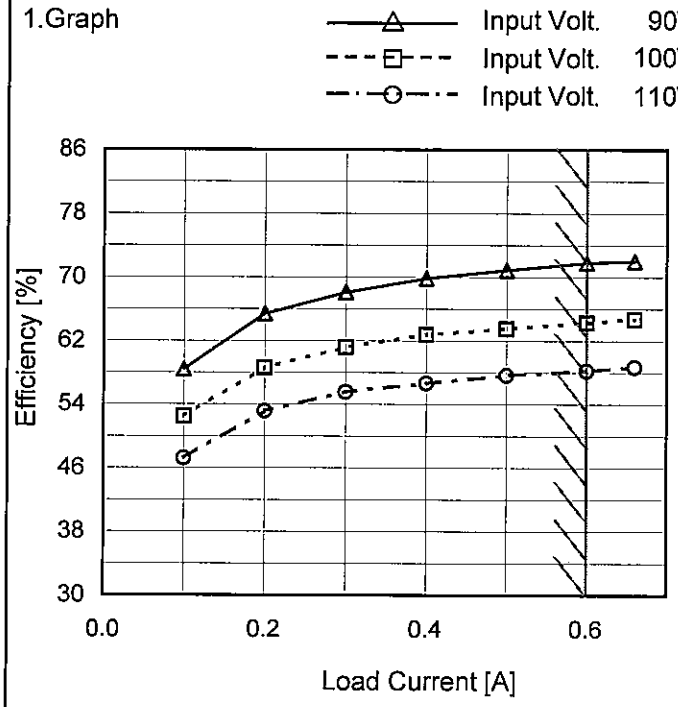
Model	G2-24
Item	Efficiency (by Load Current)
Object	———————

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	-	-	-
0.10	58.4	52.5	47.2
0.20	65.4	58.5	53.1
0.30	68.1	61.2	55.5
0.40	69.8	62.8	56.6
0.50	70.9	63.5	57.6
0.60	71.8	64.3	58.2
0.66	72.0	64.7	58.7
--	-	-	-
--	-	-	-
--	-	-	-

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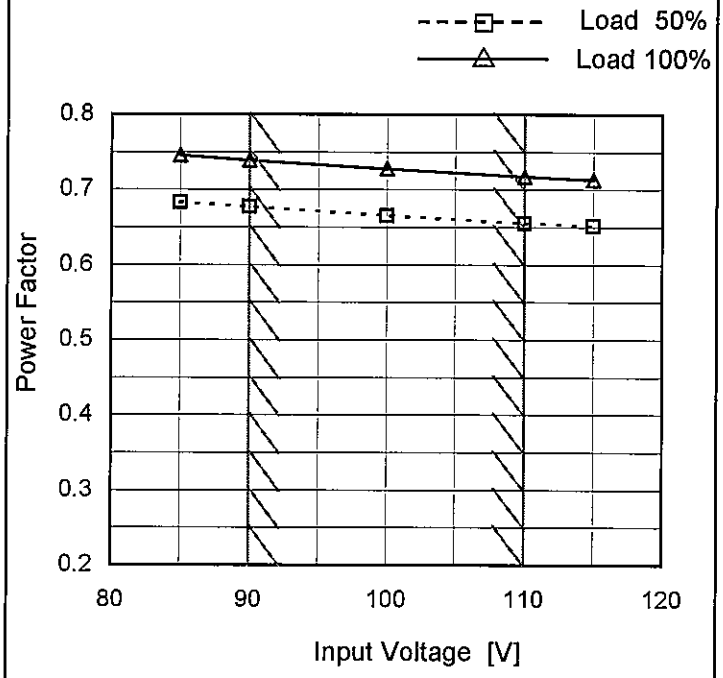
Model	G2-24
Item	Power Factor (by Input Voltage)
Object	――――――――

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	0.683	0.745
90	0.677	0.739
100	0.665	0.728
110	0.655	0.717
115	0.652	0.713
--	-	-
--	-	-
--	-	-
--	-	-

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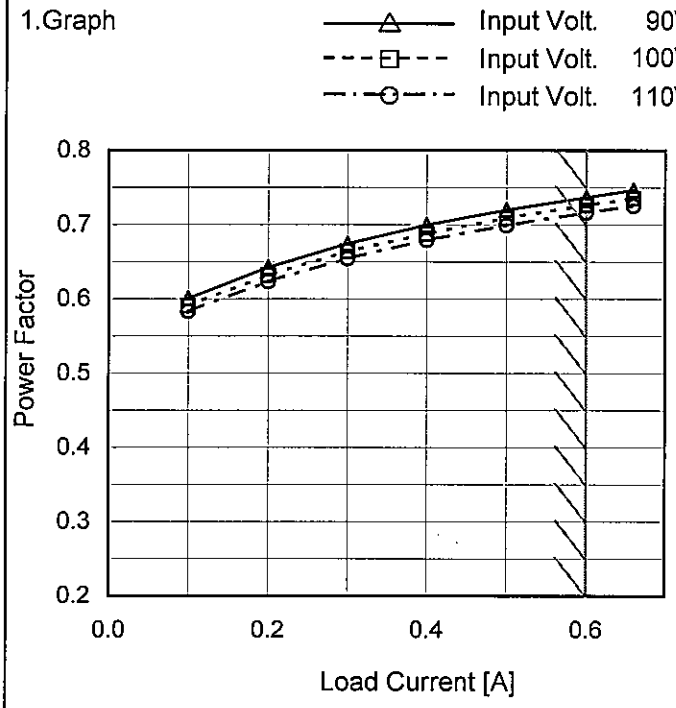
Model	G2-24
Item	Power Factor (by Load Current)
Object	———————

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	-	-	-
0.10	0.601	0.590	0.583
0.20	0.642	0.632	0.623
0.30	0.675	0.664	0.654
0.40	0.700	0.688	0.679
0.50	0.720	0.709	0.699
0.60	0.737	0.726	0.717
0.66	0.747	0.736	0.725
--	-	-	-
--	-	-	-
--	-	-	-

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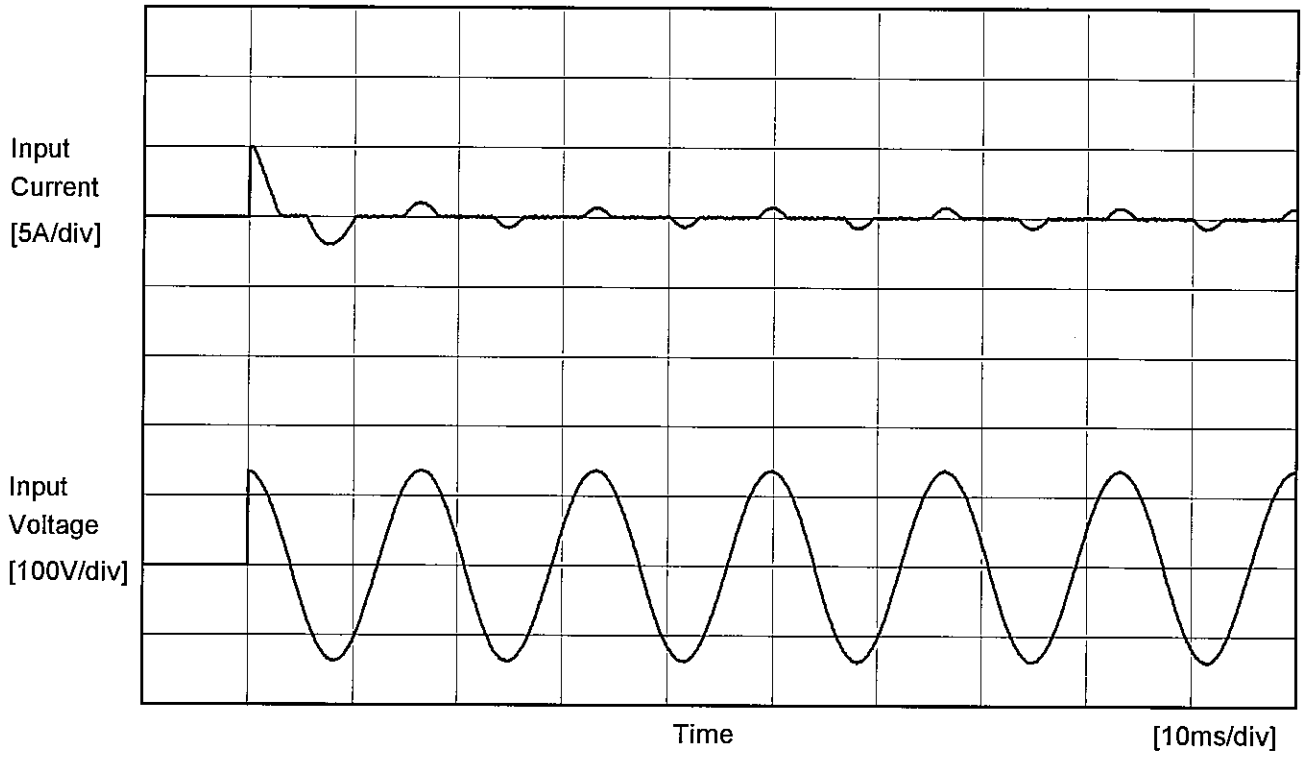
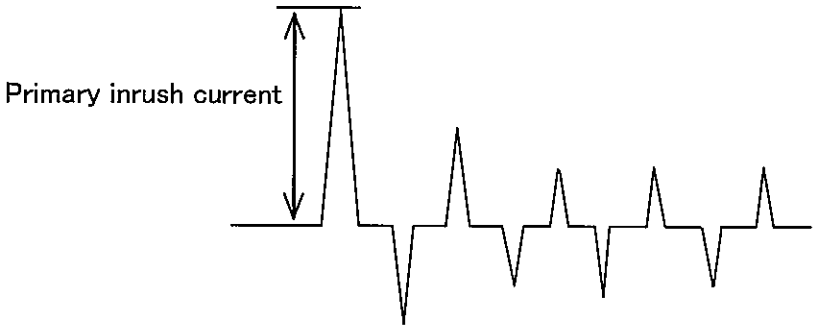
Model	G2-24
Item	Inrush Current
Object	———————

Temperature 25°C
Testing Circuitry Figure A



Input Voltage	100 V
Frequency	60 Hz
Load	100 %
Primary inrush current	5.0 A



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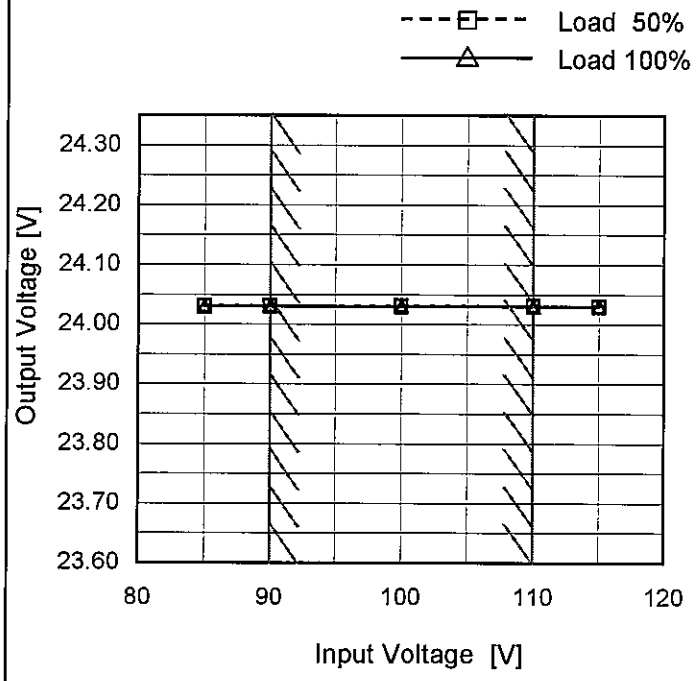
Model	G2-24
Item	Line Regulation
Object	+24V0.6A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

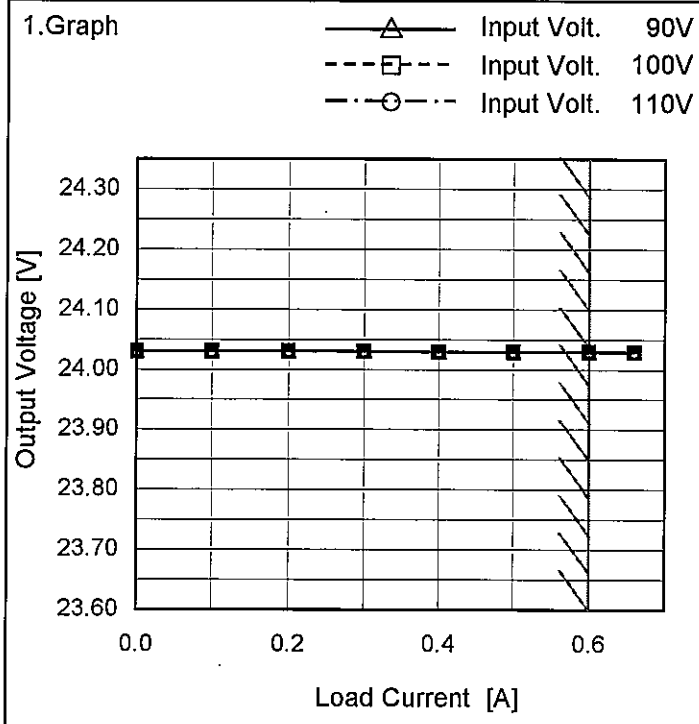
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
85	24.031	24.030
90	24.031	24.030
100	24.031	24.030
110	24.031	24.030
115	24.031	24.030
---	-	-
---	-	-
---	-	-
---	-	-

COSEL

Model	G2-24
Item	Load Regulation
Object	+24V0.6A

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. 90[V]	Input Volt. 100[V]	Input Volt. 110[V]
0.00	24.031	24.031	24.031
0.10	24.030	24.030	24.030
0.20	24.030	24.030	24.030
0.30	24.030	24.030	24.030
0.40	24.030	24.030	24.030
0.50	24.030	24.030	24.030
0.60	24.029	24.029	24.029
0.66	24.029	24.029	24.029
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

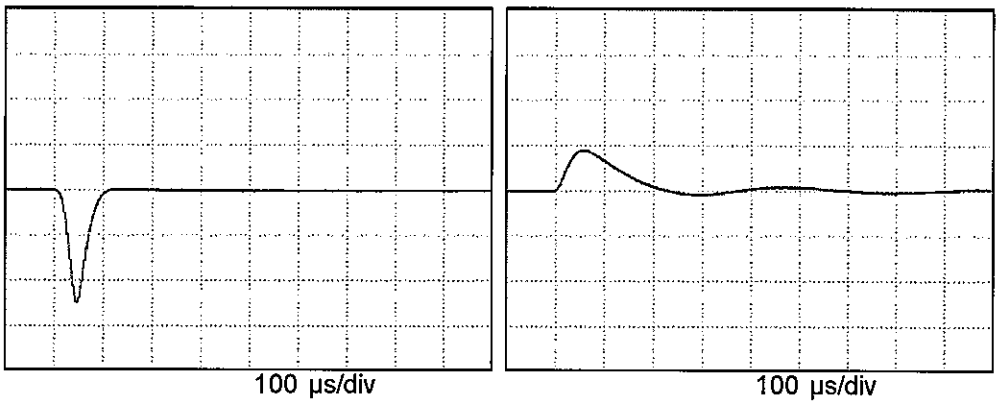
Model	G2-24
Item	Dynamic Load Response
Object	+24V0.6A

Temperature 25°C
Testing Circuitry Figure A

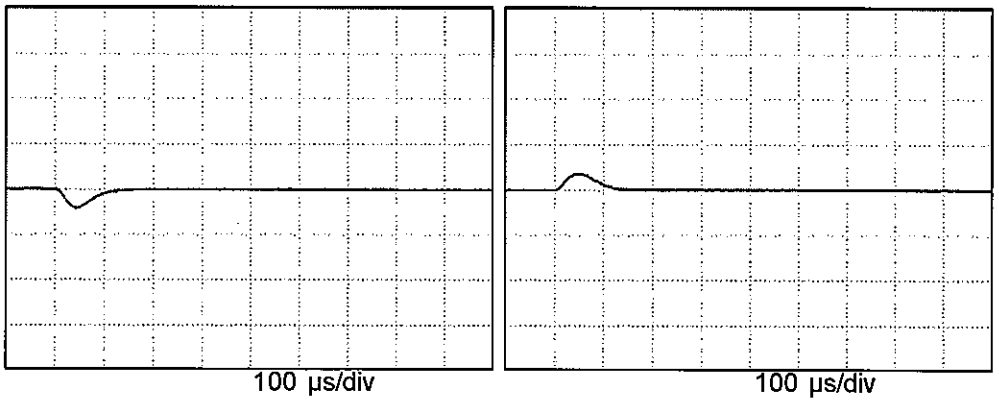
Input Volt. 100 V
Cycle 1000 ms

Load Current

Min. Load (0A) ⟷
Load 100% (0.6A)



Load 50% (0.3A) ⟷
Load 100% (0.6A)



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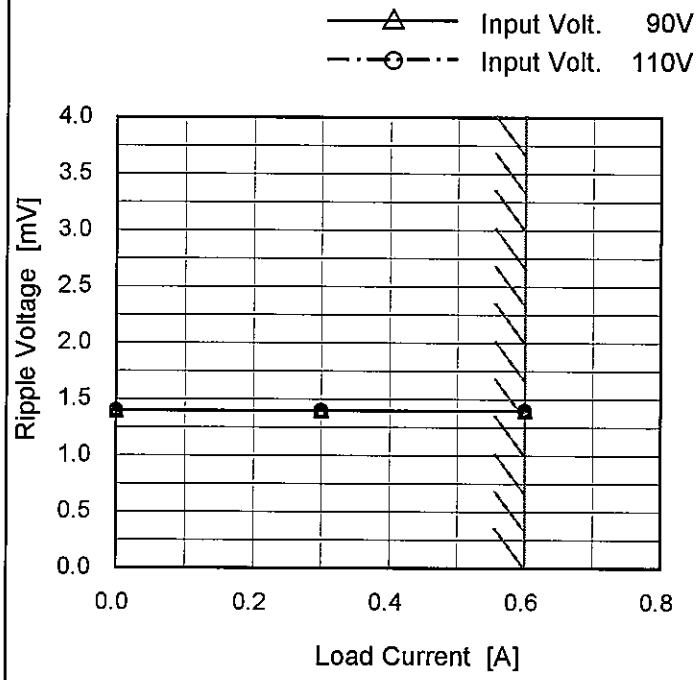
Model	G2-24
Item	Ripple Voltage (by Load Current)
Object	+24V0.6A

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

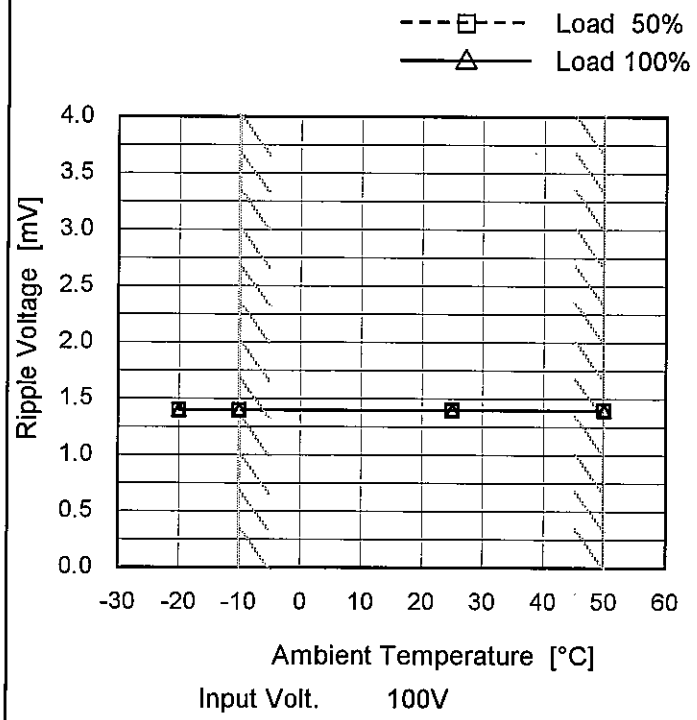
Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 90 [V]	Input Volt. 110 [V]
0.0	1.4	1.4
0.3	1.4	1.4
0.6	1.4	1.4
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	G2-24
Item	Ripple Voltage (by Ambient Temp.)
Object	+24V0.6A

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

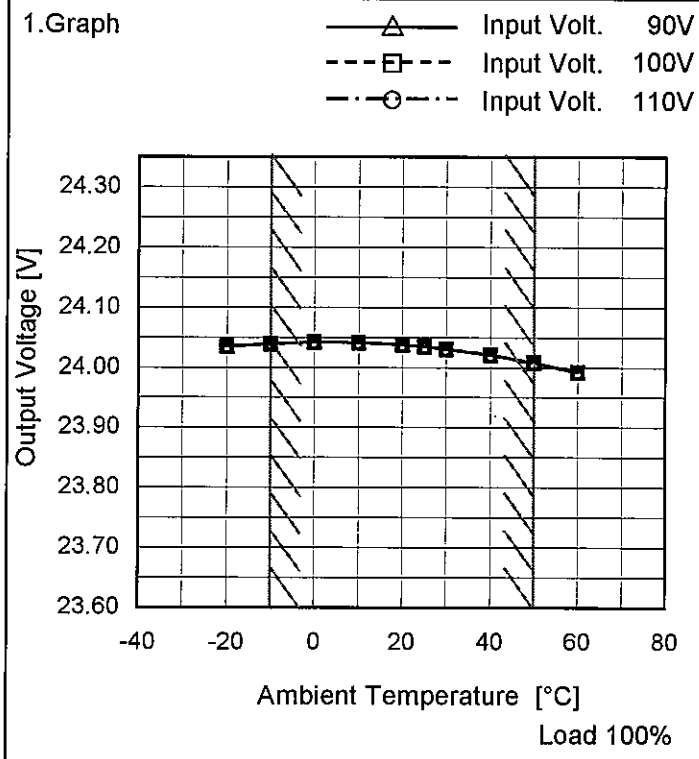
Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-20	1.4	1.4
-10	1.4	1.4
25	1.4	1.4
50	1.4	1.4
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	G2-24
Item	Ambient Temperature Drift
Object	+24V0.6A

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. 90[V]	Input Volt. 100[V]	Input Volt. 110[V]
-20	24.034	24.034	24.035
-10	24.039	24.039	24.039
0	24.042	24.042	24.042
10	24.041	24.041	24.041
20	24.037	24.038	24.038
25	24.034	24.034	24.034
30	24.030	24.030	24.030
40	24.021	24.021	24.021
50	24.008	24.008	24.007
60	23.992	23.992	23.992
--	-	-	-

COSEL

Model	G2-24	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+24V0.6A	

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 : 90 - 110V
Load Current : 0 - 0.6A

* 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

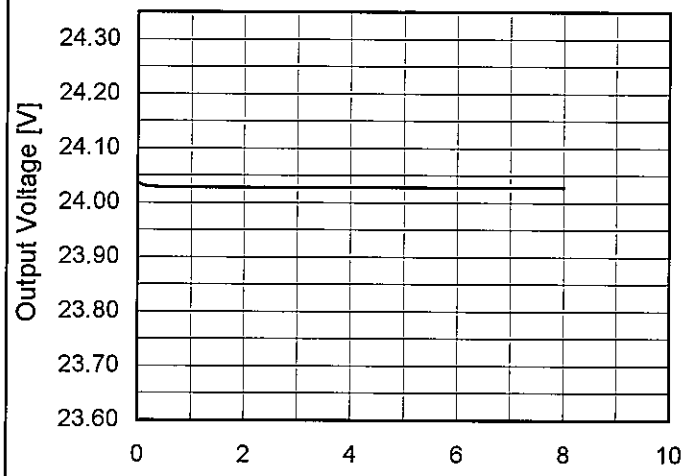
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	0	110	0	24.043	±18	±0.1
Minimum Voltage	50	110	0.6	24.007		

COSEL

Model	G2-24
Item	Time Lapse Drift
Object	+24V0.6A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Input Volt. 100V
Load 100%

2.Values

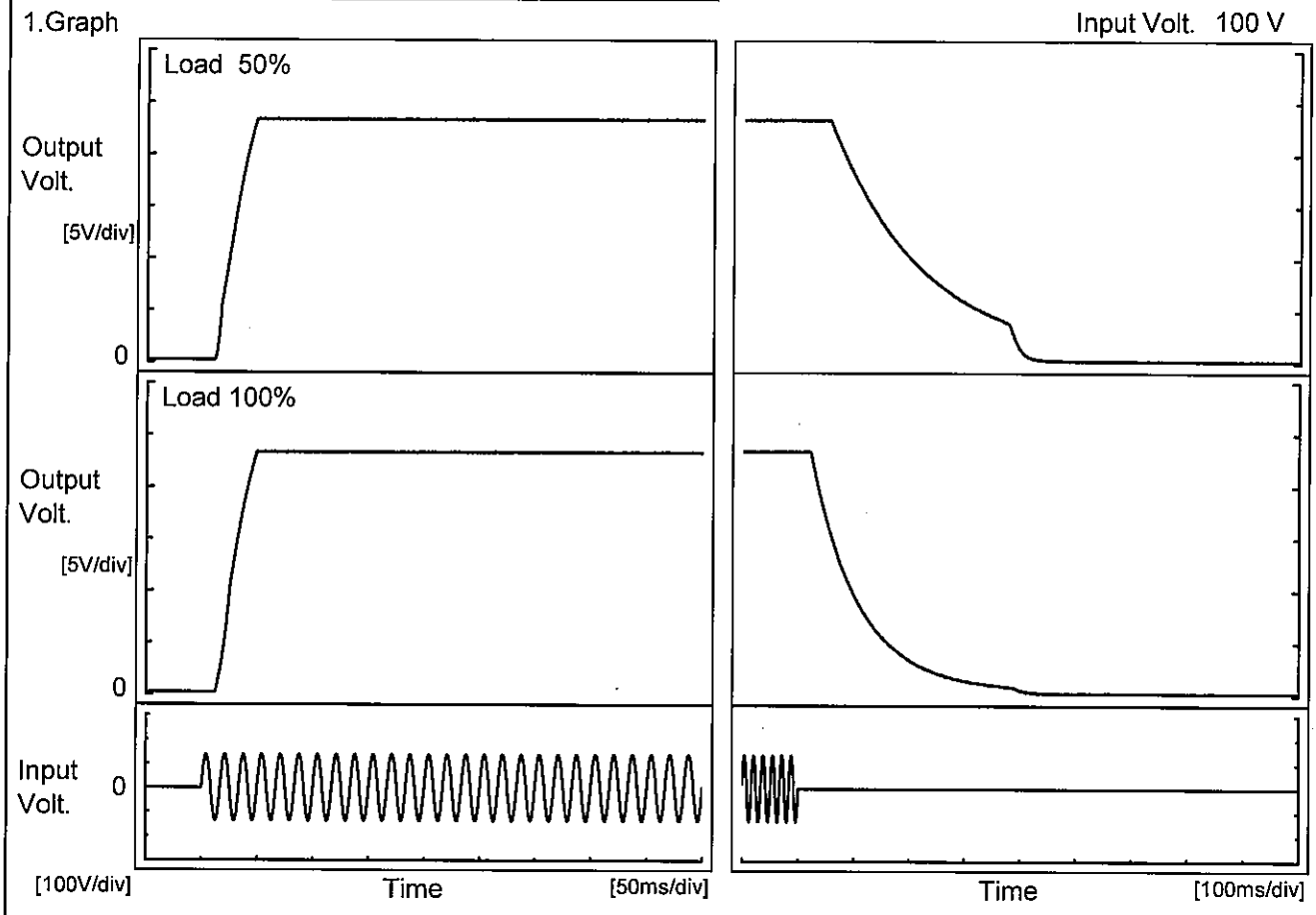
Time since start [H]	Output Voltage [V]
0.0	24.036
0.5	24.028
1.0	24.028
2.0	24.028
3.0	24.028
4.0	24.028
5.0	24.028
6.0	24.028
7.0	24.028
8.0	24.028

COSEL

Model	G2-24
Item	Rise and Fall Time
Object	+24V0.6A

Temperature 25°C
Testing Circuitry Figure A

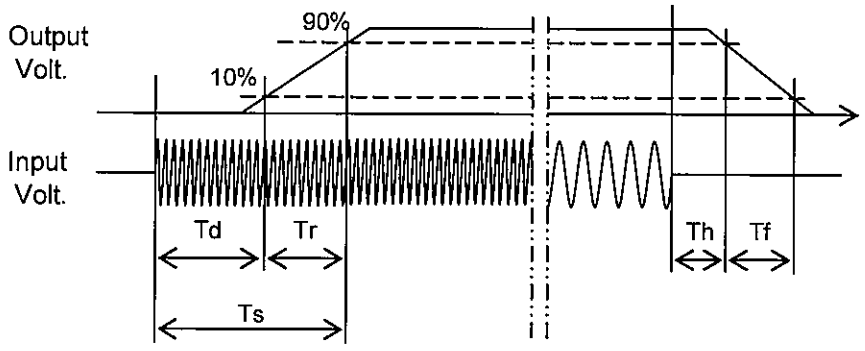
1.Graph



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	14.5	29.5	44.0	65.0	321.5
100 %	16.8	28.3	45.1	27.0	200.5

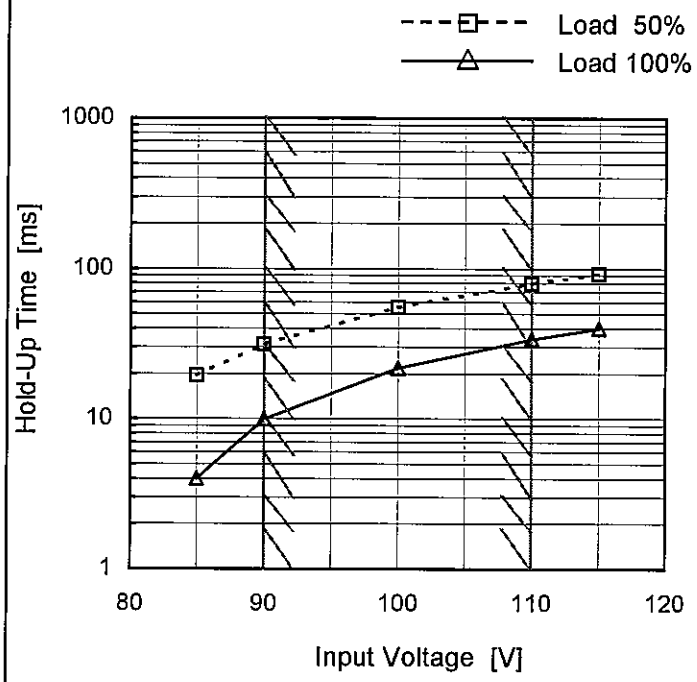


COSEL

Model	G2-24
Item	Hold-Up Time
Object	+24V0.6A

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%
85	19	4
90	31	10
100	55	22
110	80	34
115	92	40
--	-	-
--	-	-
--	-	-
--	-	-

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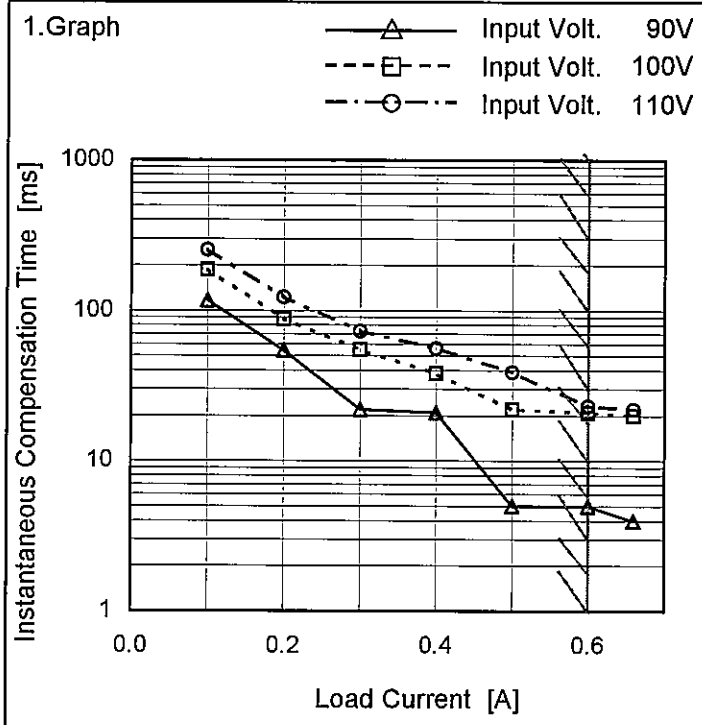
Model	G2-24
Item	Instantaneous Interruption Compensation
Object	+24V0.6A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

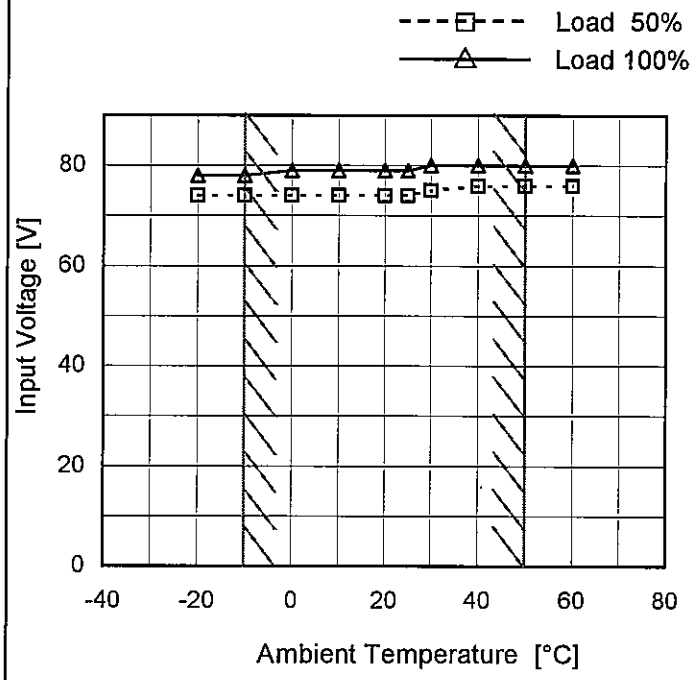
Load Current [A]	Time [ms] Input Volt. 90[V]	Input Volt. 100[V]	Input Volt. 110[V]
0.00	-	-	-
0.10	117	186	254
0.20	54	88	123
0.30	22	55	73
0.40	21	38	56
0.50	5	22	39
0.60	5	21	23
0.66	4	20	22
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	G2-24
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+24V0.6A

Testing Circuitry Figure A

1.Graph



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

2.Values

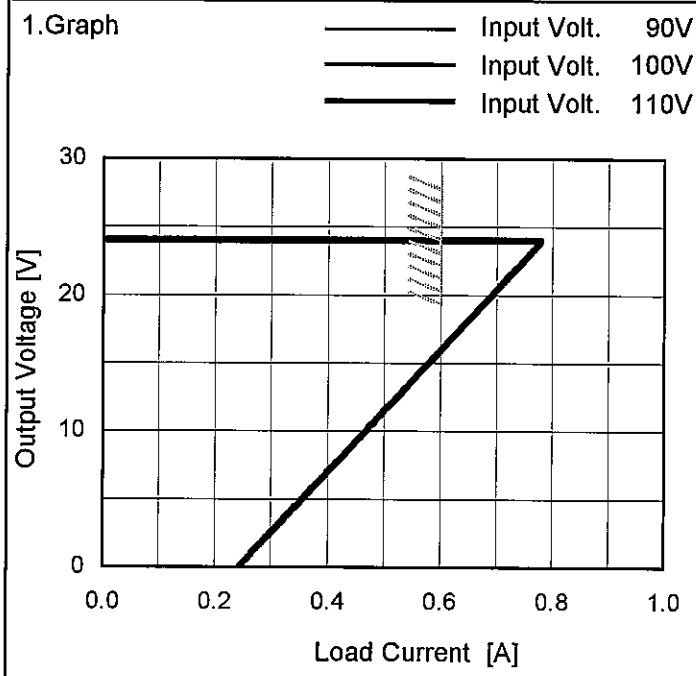
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-20	74	78
-10	74	78
0	74	79
10	74	79
20	74	79
25	74	79
30	75	80
40	76	80
50	76	80
60	76	80
--	-	-

COSEL

Model	G2-24
Item	Overcurrent Protection
Object	+24V0.6A

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. 90[V]	Input Volt. 100[V]	Input Volt. 110[V]
24.0	0.78	0.78	0.78
22.8	0.75	0.75	0.75
21.6	0.74	0.74	0.74
19.2	0.68	0.68	0.68
16.8	0.62	0.62	0.62
14.4	0.57	0.57	0.57
12.0	0.52	0.52	0.52
9.6	0.46	0.46	0.46
7.2	0.41	0.41	0.41
4.8	0.35	0.35	0.35
2.4	0.30	0.30	0.30
0.0	0.24	0.24	0.24

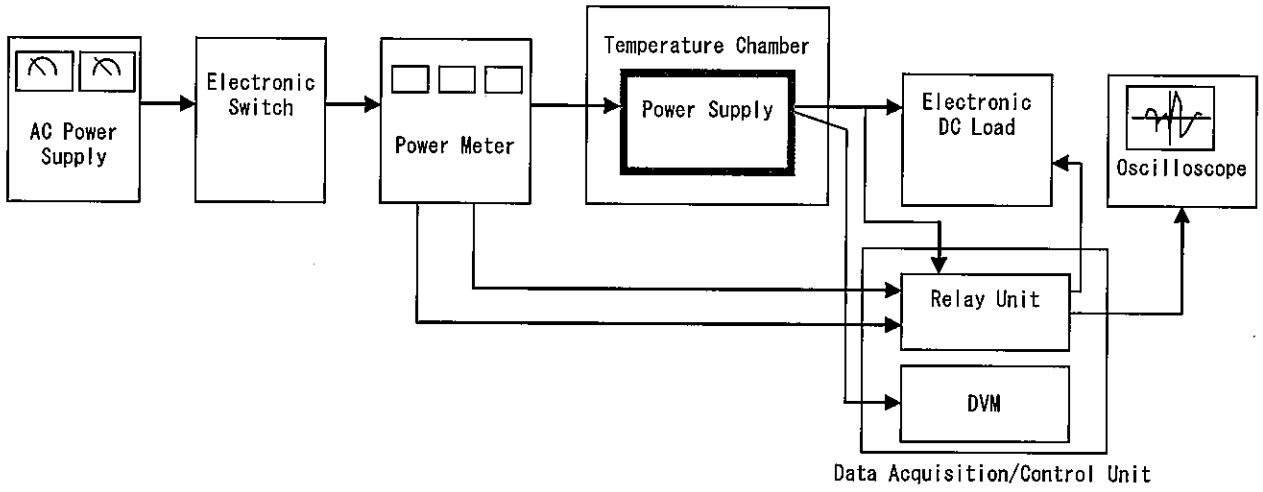

AC Power Supply
Electronic Switch
Power Meter
Temperature Chamber
Power Supply
Electronic DC Load
Oscilloscope
Relay Unit
DVM
Data Acquisition/Control Unit

Figure A