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参考資料

TEST DATA OF GT3.5-15

Regulated DC Power Supply
July 23, 2010

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COSEL CO.,LTD.

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CONTENTS

1.Input Current (by Load Current) · 1
2.Input Power (by Load Current) · 2
3.Efficiency (by Input Voltage) · 3
4.Efficiency (by Load Current) · 4
5.Power Factor (by Input Voltage) · 5
6.Power Factor (by Load Current) · 6
7.Inrush Current · 7
8.Line Regulation · 8
9.Load Regulation · 9
10.Dynamic Load Response · 10
11.Ripple Voltage (by Load Current) · 11
12.Ripple Voltage (by Ambient Temperature) · 12
13.Ambient Temperature Drift · 13
14.Output Voltage Accuracy · 14
15.Time Lapse Drift · 15
16.Rise and Fall Time · 16
17.Hold-Up Time · 17
18.Instantaneous Interruption Compensation · 18
19.Minimum Input Voltage for Regulated Output Voltage · · · · · · · · · · · · · · 19
20.Overcurrent Protection · 20
21.Figure of Testing Circuitry · 21
(Final Page 21)

参考資料

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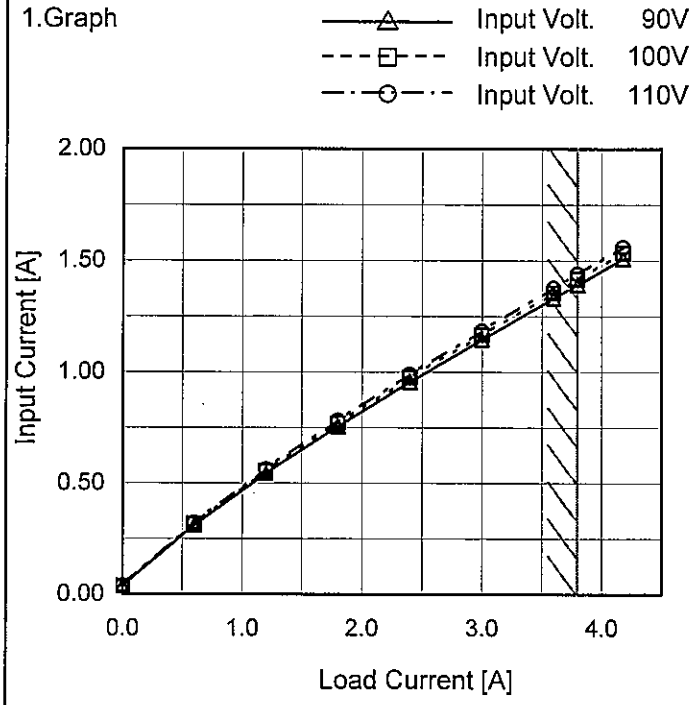
Model	GT3.5-15
Item	Input Current (by Load Current)
Object	――――――

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	0.038	0.037	0.038
0.60	0.312	0.318	0.324
1.20	0.544	0.554	0.563
1.80	0.756	0.769	0.783
2.40	0.956	0.975	0.990
3.00	1.146	1.166	1.186
3.60	1.332	1.355	1.378
3.80	1.392	1.417	1.441
4.18	1.508	1.534	1.560
--	-	-	-
--	-	-	-

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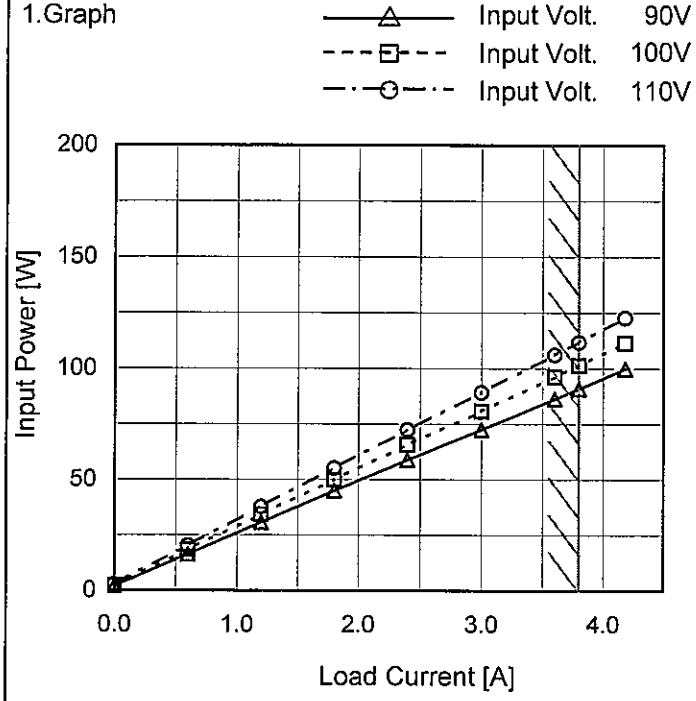
Model	GT3.5-15
Item	Input Power (by Load Current)
Object	――――――

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	2.0	2.3	2.7
0.60	16.4	18.2	20.2
1.20	30.7	34.2	37.8
1.80	44.9	49.9	55.2
2.40	58.9	65.6	72.4
3.00	72.6	80.8	89.2
3.60	86.4	96.2	106.2
3.80	91.0	101.3	111.8
4.18	99.9	111.3	122.7
--	-	-	-
--	-	-	-

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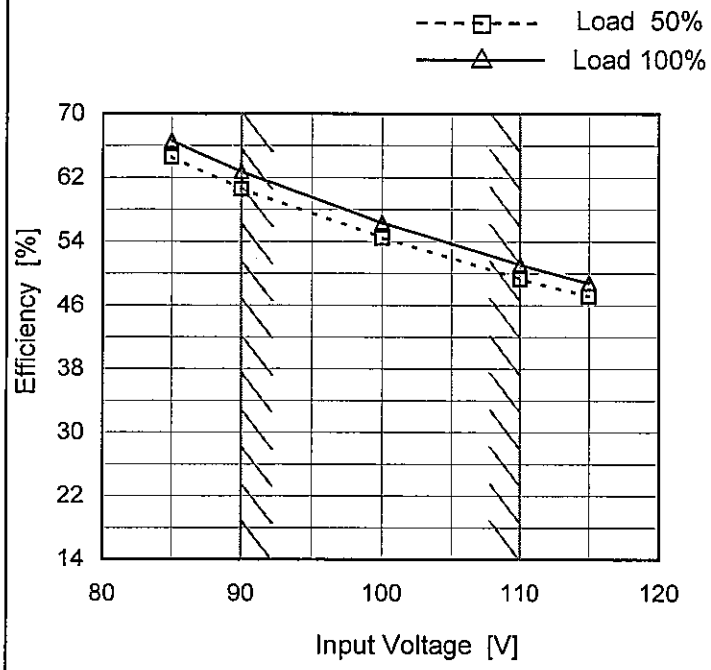
Model	GT3.5-15
Item	Efficiency (by Input Voltage)
Object	――――――――――

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	64.6	66.6
90	60.6	62.7
100	54.5	56.4
110	49.3	51.1
115	47.1	48.8
--	-	-
--	-	-
--	-	-
--	-	-

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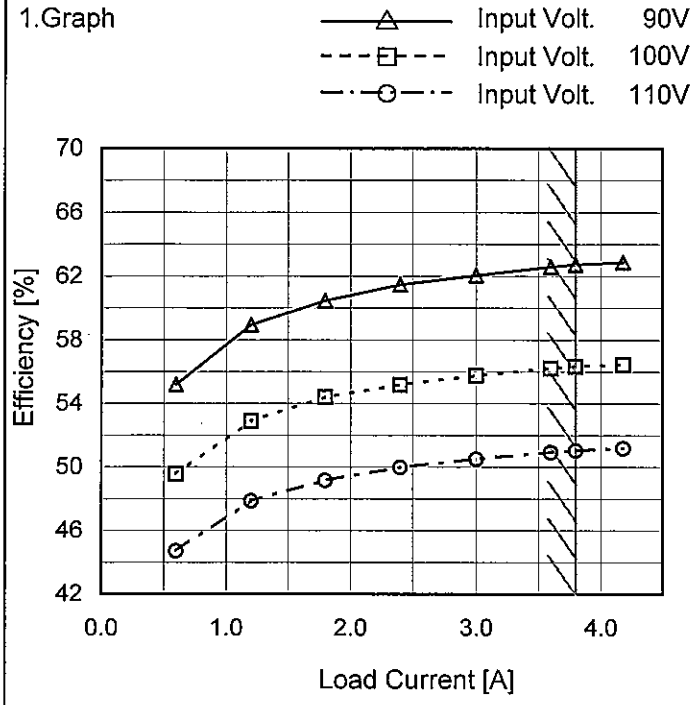
COSEL

Model	GT3.5-15
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	-	-	-
0.60	55.2	49.6	44.7
1.20	58.9	52.9	47.9
1.80	60.5	54.4	49.2
2.40	61.5	55.2	50.0
3.00	62.1	55.8	50.5
3.60	62.6	56.2	50.9
3.80	62.7	56.4	51.1
4.18	62.9	56.4	51.2
--	-	-	-
--	-	-	-

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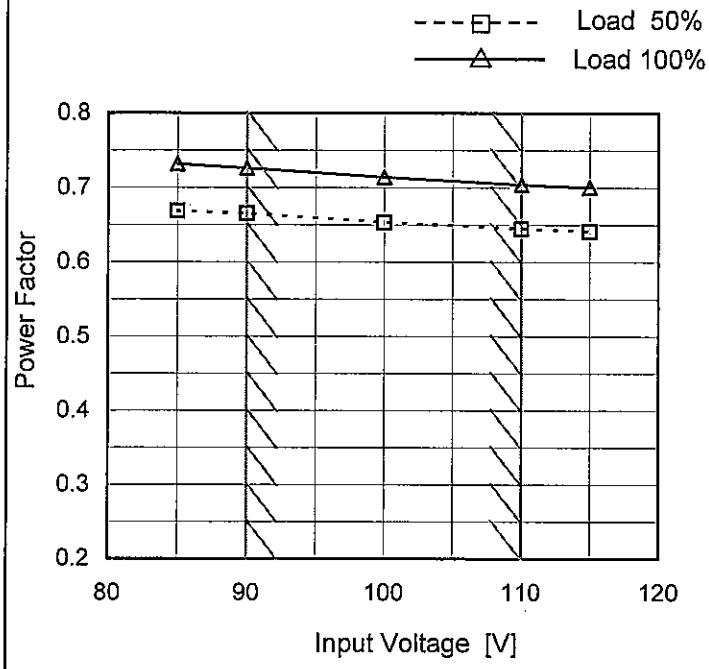
Model	GT3.5-15
Item	Power Factor (by Input Voltage)
Object	――――――――

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	0.669	0.732
90	0.665	0.726
100	0.653	0.714
110	0.645	0.704
115	0.641	0.701
--	-	-
--	-	-
--	-	-
--	-	-

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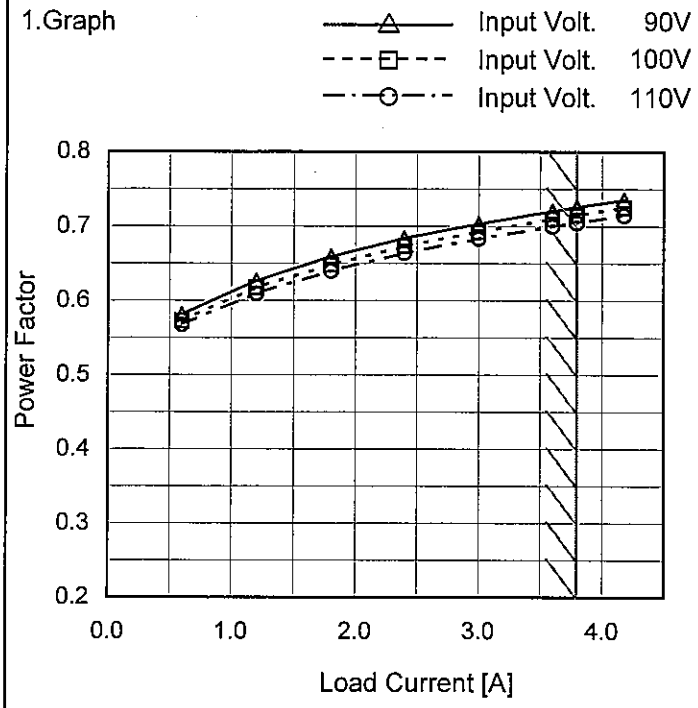
Model	GT3.5-15
Item	Power Factor (by Load Current)
Object	————————

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	-	-	-
0.60	0.582	0.573	0.567
1.20	0.627	0.617	0.610
1.80	0.659	0.648	0.640
2.40	0.684	0.673	0.664
3.00	0.703	0.692	0.683
3.60	0.721	0.710	0.700
3.80	0.726	0.715	0.705
4.18	0.736	0.725	0.715
--	-	-	-
--	-	-	-

参考資料

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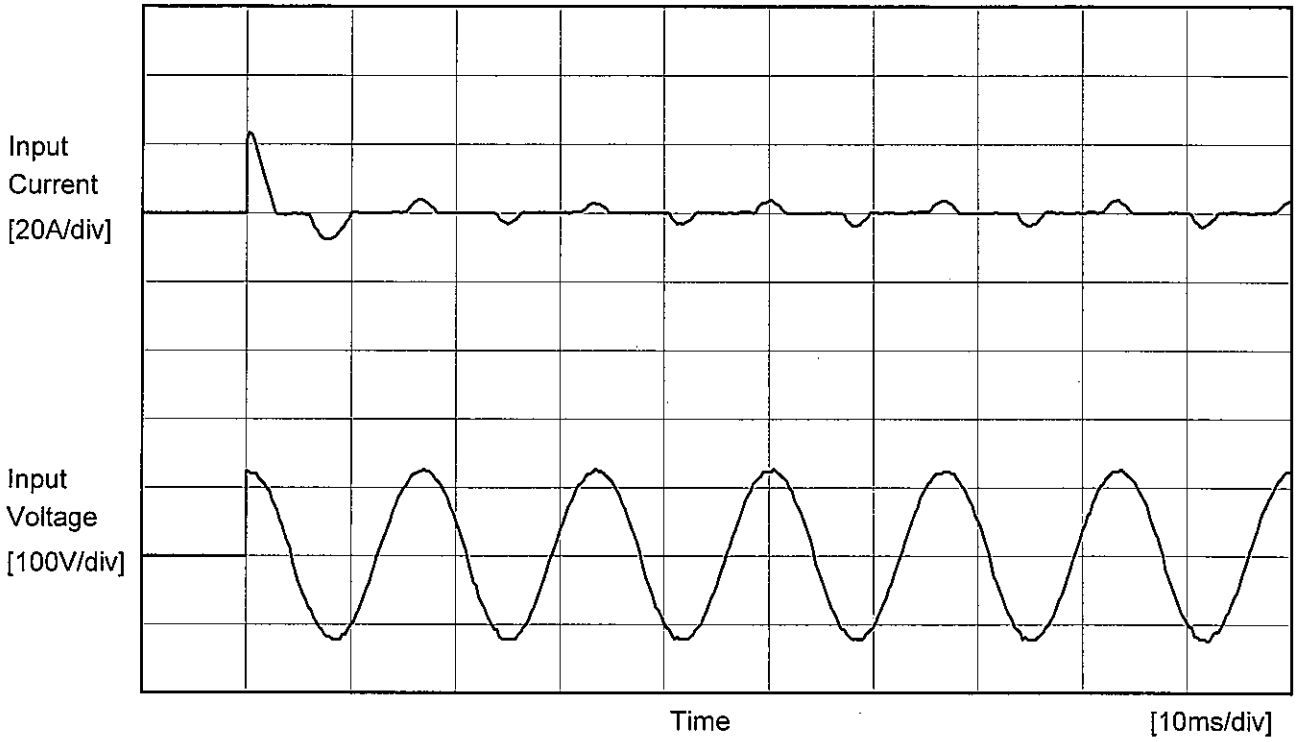
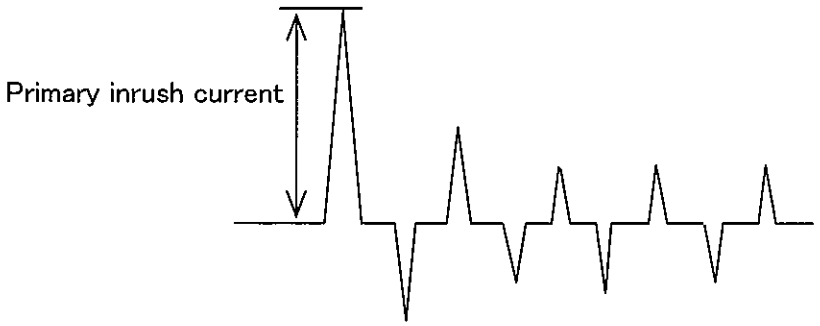
Model	GT3.5-15	Temperature 25°C
Item	Inrush Current	Testing Circuitry Figure A
Object	————————	



Input Voltage	100 V
Frequency	60 Hz
Load	100 %
Primary inrush current	23.3 A



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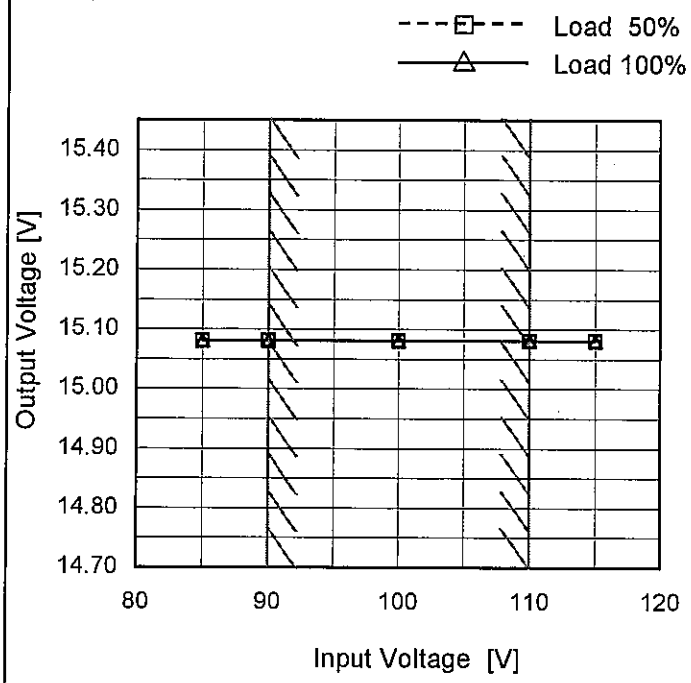
Model	GT3.5-15
Item	Line Regulation
Object	+15V3.8A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

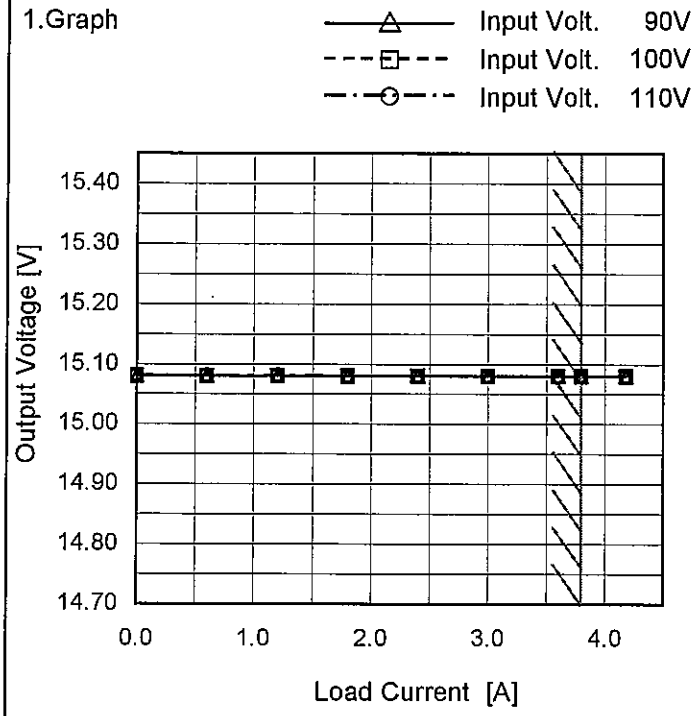
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
85	15.081	15.081
90	15.081	15.081
100	15.081	15.081
110	15.081	15.081
115	15.081	15.081
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	GT3.5-15
Item	Load Regulation
Object	+15V3.8A

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	15.081	15.081	15.081
0.60	15.081	15.081	15.081
1.20	15.081	15.081	15.081
1.80	15.081	15.081	15.081
2.40	15.081	15.081	15.081
3.00	15.081	15.081	15.081
3.60	15.080	15.081	15.081
3.80	15.080	15.081	15.081
4.18	15.080	15.081	15.081
--	-	-	-
--	-	-	-

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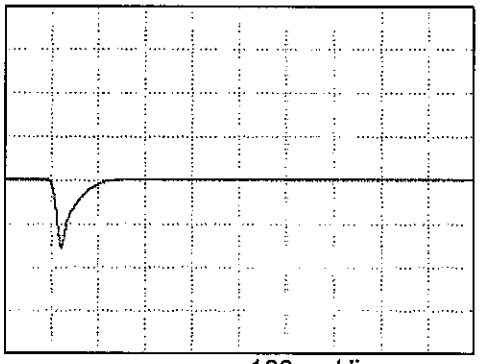
Model	GT3.5-15		
Item	Dynamic Load Response	Temperature	25°C
		Testing Circuitry	Figure A
Object	+15V3.8A		

Input Volt. 100 V
Cycle 1000 ms

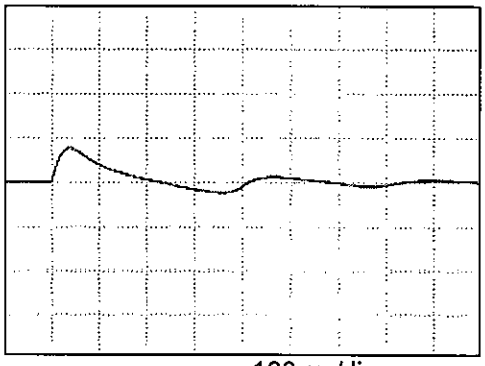
Load Current

Min. Load (0A) ⟷
Load 100% (3.8A)



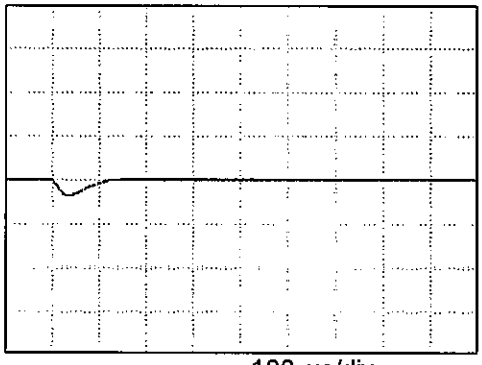
100 mV/div

100 μs/div



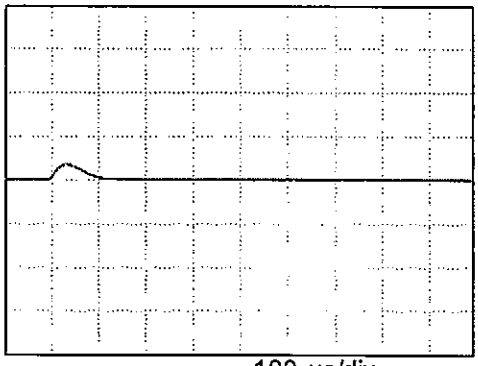
100 μs/div

Load 50% (1.9A) ⟷
Load 100% (3.8A)



100 mV/div

100 μs/div



100 μs/div

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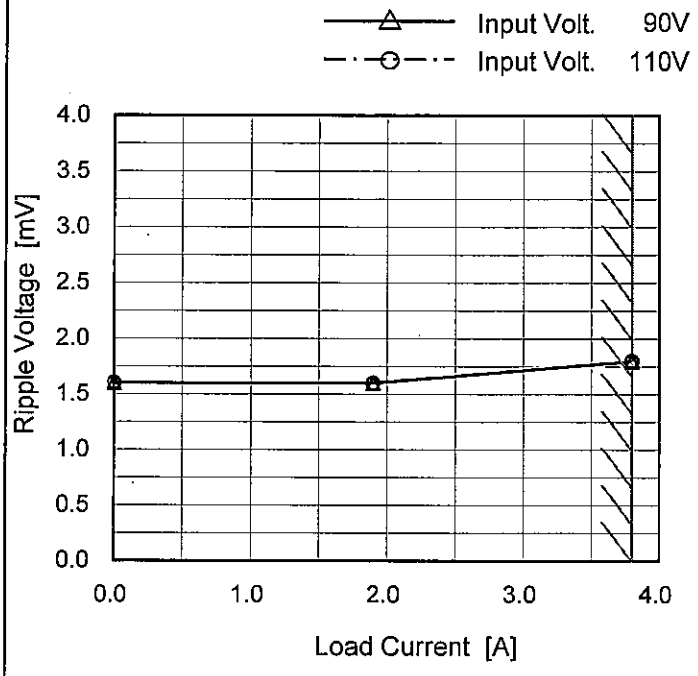
Model	GT3.5-15
Item	Ripple Voltage (by Load Current)
Object	+15V3.8A

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	1.6	1.6
1.9	1.6	1.6
3.8	1.8	1.8
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

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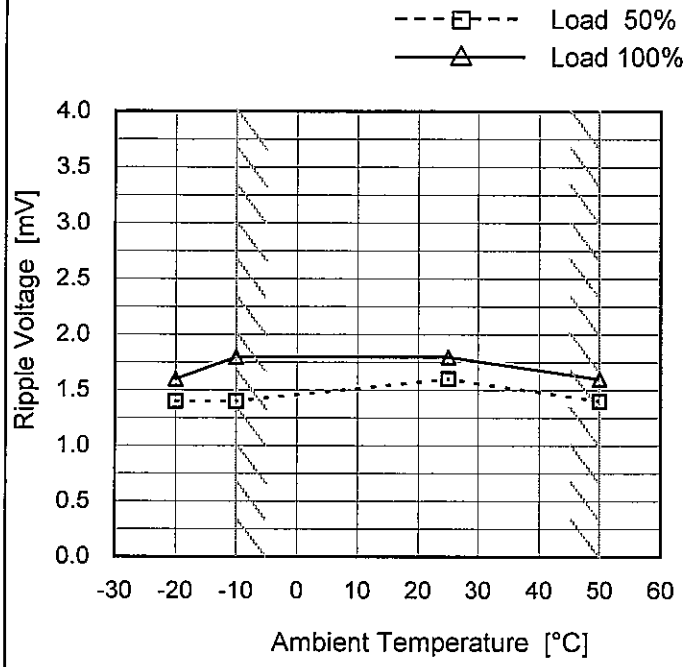
Model	GT3.5-15
Item	Ripple Voltage (by Ambient Temp.)
Object	+15V3.8A

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

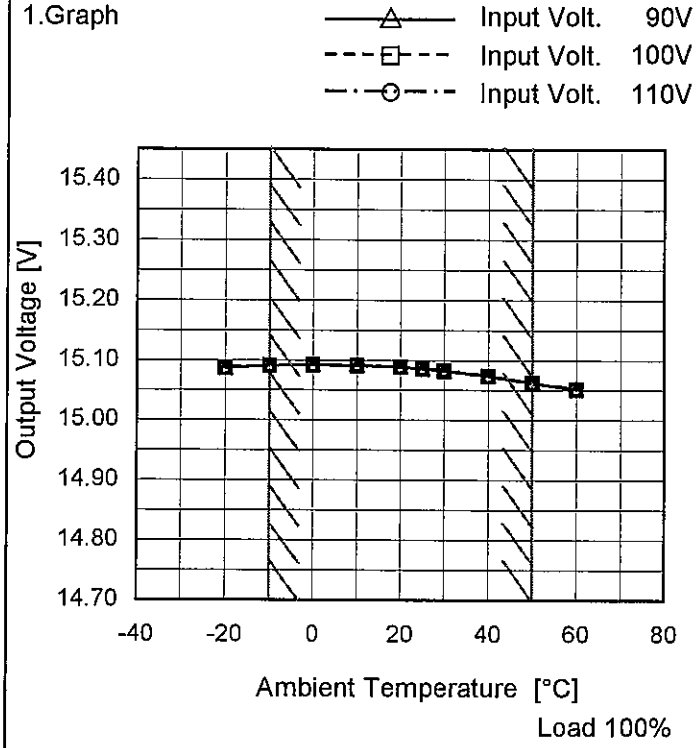
Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-20	1.4	1.6
-10	1.4	1.8
25	1.6	1.8
50	1.4	1.6
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	GT3.5-15
Item	Ambient Temperature Drift
Object	+15V3.8A

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	15.087	15.087	15.087
-10	15.091	15.091	15.091
0	15.092	15.092	15.092
10	15.091	15.091	15.092
20	15.088	15.089	15.089
25	15.086	15.086	15.086
30	15.083	15.083	15.083
40	15.074	15.074	15.074
50	15.062	15.062	15.063
60	15.052	15.052	15.052
--	-	-	-

COSEL

Model	GT3.5-15
Item	Output Voltage Accuracy
Object	+15V3.8A

Testing Circuitry Figure A

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 - 3.8A

* 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	15.093	±16	±0.1
Minimum Voltage	50	90	3.8	15.062		

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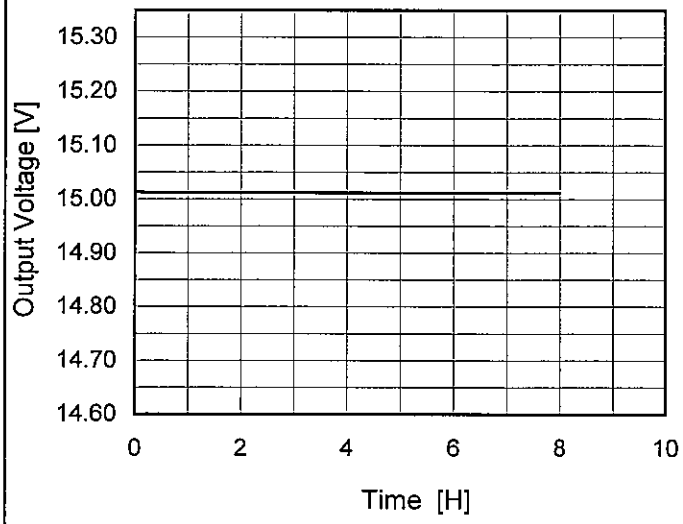
Model	GT3.5-15
Item	Time Lapse Drift
Object	+15V3.8A

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	15.014
0.5	15.012
1.0	15.012
2.0	15.012
3.0	15.012
4.0	15.012
5.0	15.012
6.0	15.012
7.0	15.012
8.0	15.012

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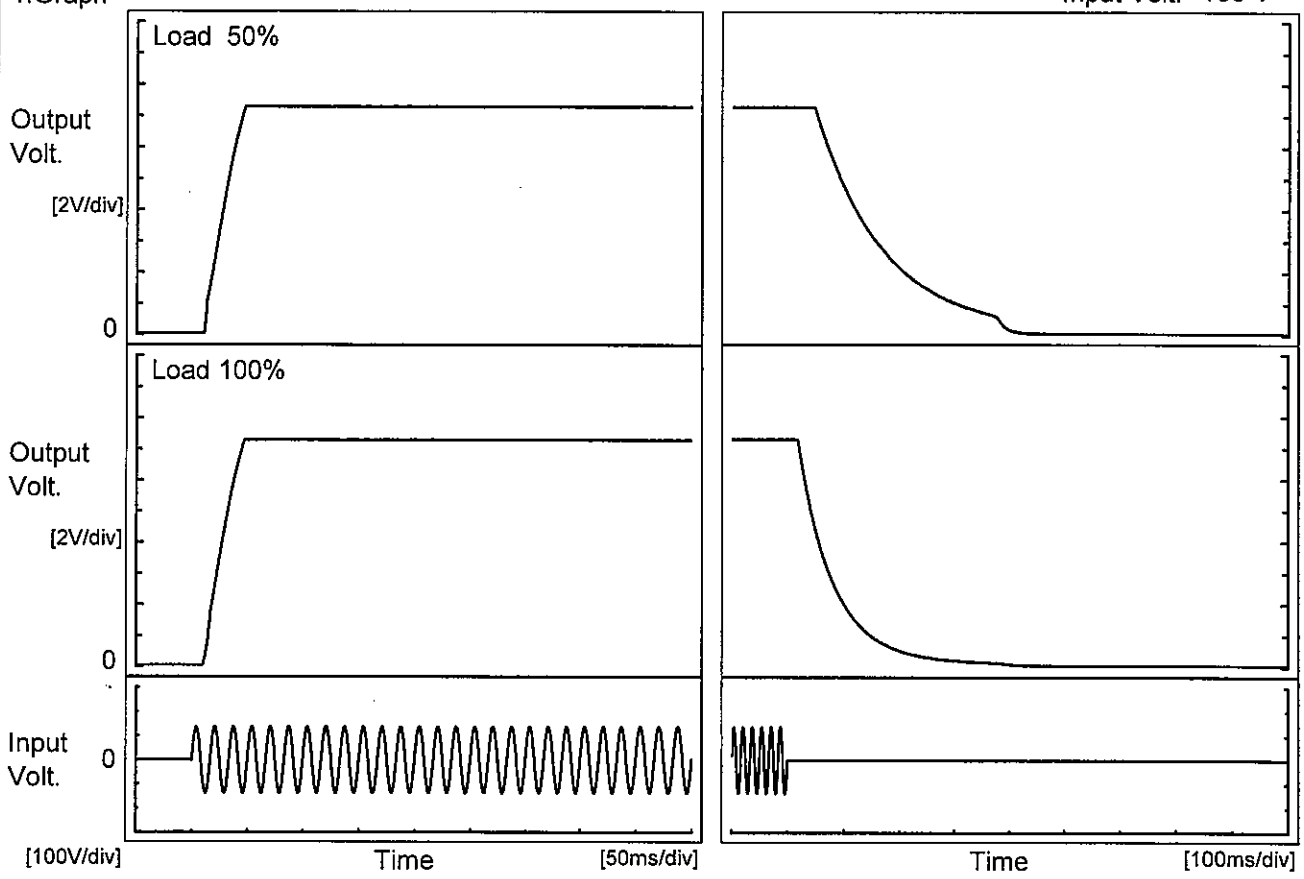
Model	GT3.5-15	
Item	Rise and Fall Time	Temperature 25°C Testing Circuitry Figure A
Object	+15V3.8A	

1.Graph

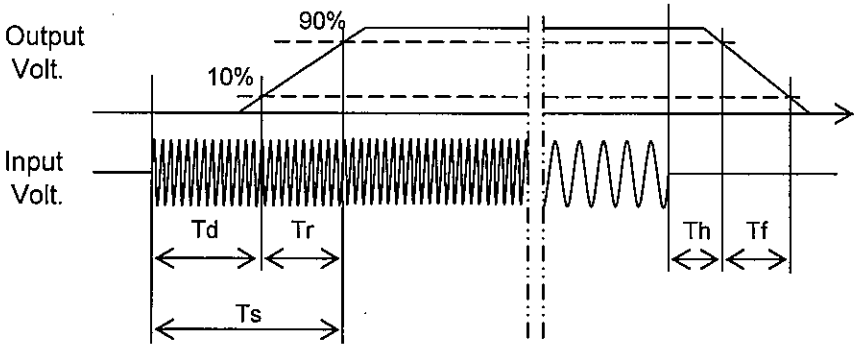
Input Volt. 100 V



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	12.5	30.5	43.0	56.0	284.0
100 %	14.0	28.8	42.8	22.5	146.0



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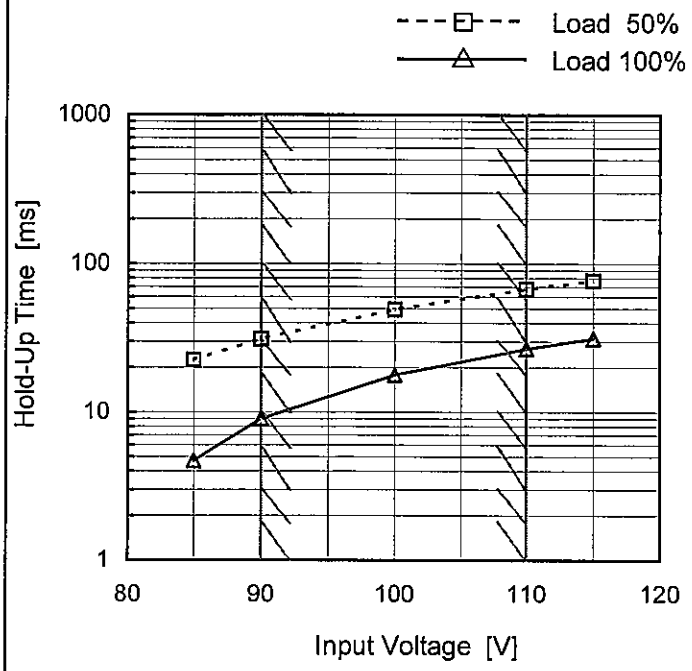
Model	GT3.5-15
Item	Hold-Up Time
Object	+15V3.8A

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	22	5
90	31	9
100	49	18
110	68	27
115	77	32
--	-	-
--	-	-
--	-	-
--	-	-

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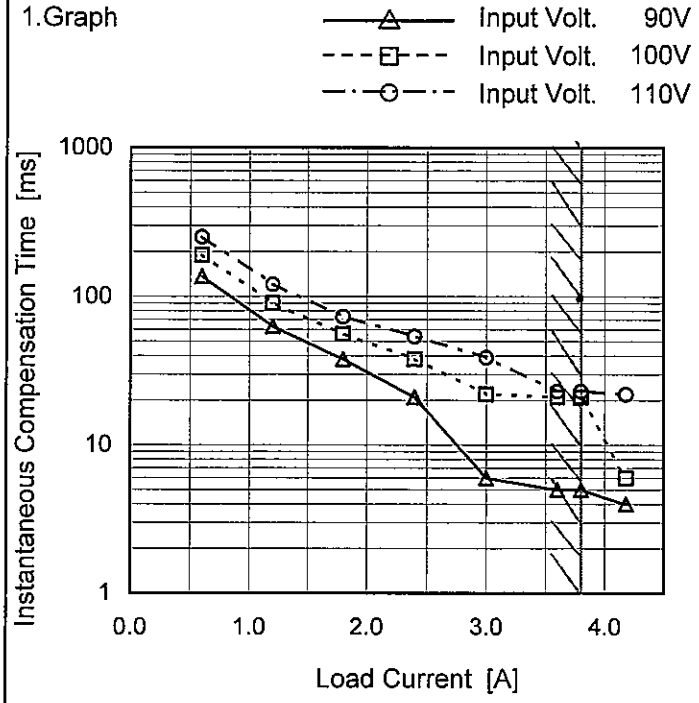
Model	GT3.5-15
Item	Instantaneous Interruption Compensation
Object	+15V3.8A

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	-	-	-
0.60	137	191	252
1.20	63	90	121
1.80	38	56	73
2.40	21	38	54
3.00	6	22	39
3.60	5	21	23
3.80	5	21	23
4.18	4	6	22
---	-	-	-
---	-	-	-

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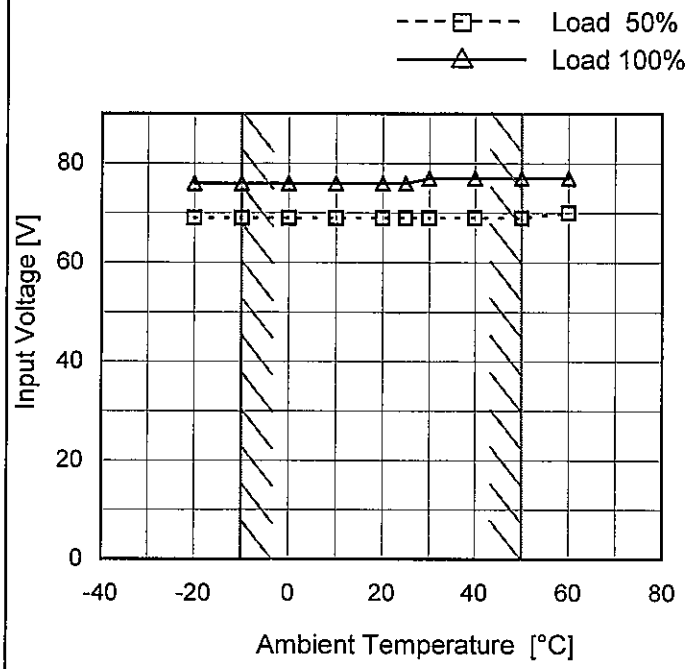
Model	GT3.5-15
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+15V3.8A

Testing Circuitry Figure A

1.Graph



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

2.Values

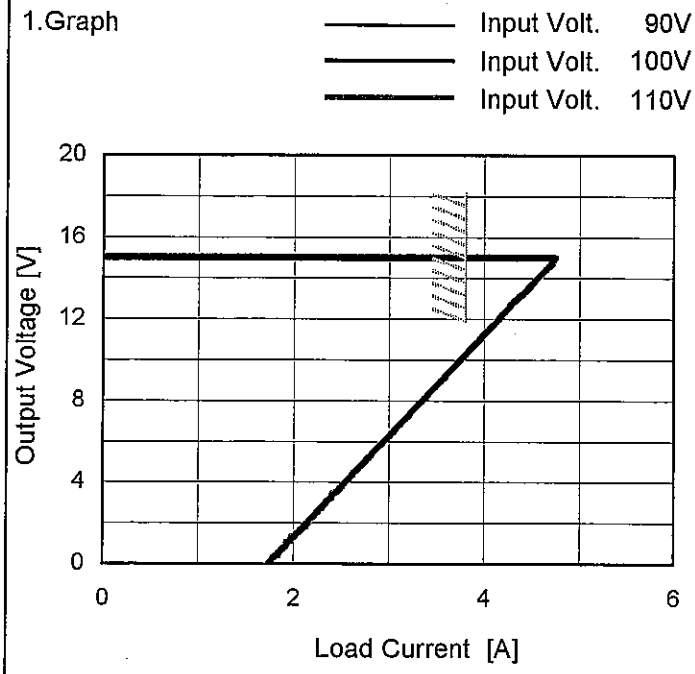
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-20	69	76
-10	69	76
0	69	76
10	69	76
20	69	76
25	69	76
30	69	77
40	69	77
50	69	77
60	70	77
--	-	-

COSEL

Model	GT3.5-15
Item	Overcurrent Protection
Object	+15V3.8A

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	4.75	4.75	4.75
14.3	4.64	4.58	4.61
13.5	4.50	4.46	4.54
12.0	4.20	4.16	4.15
10.5	3.87	3.88	3.88
9.0	3.55	3.56	3.58
7.5	3.25	3.26	3.26
6.0	2.96	2.95	2.96
4.5	2.65	2.66	2.65
3.0	2.35	2.34	2.35
1.5	2.04	2.04	2.04
0.0	1.73	1.73	1.74

COSEL

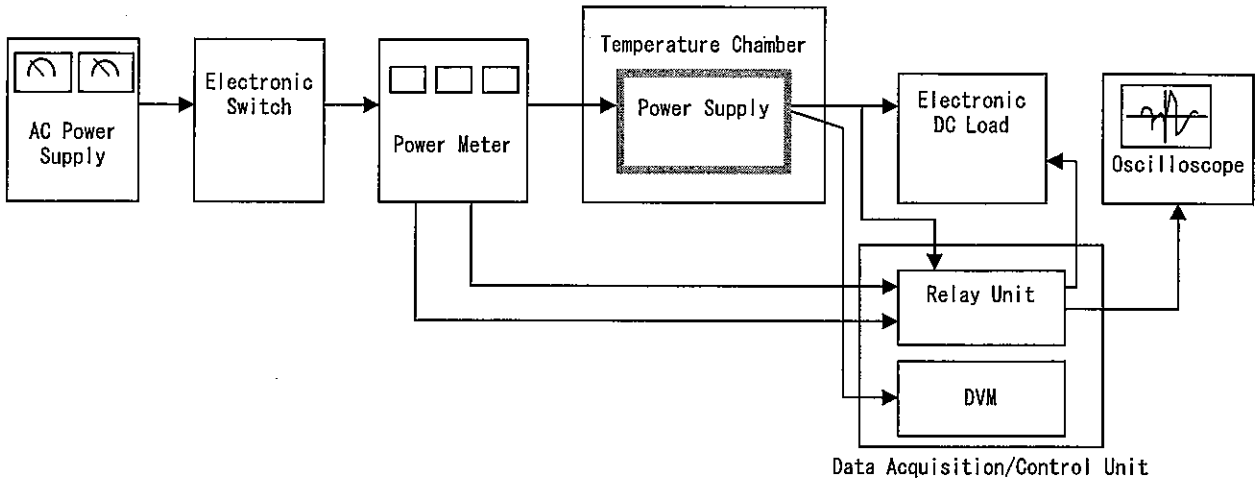


Figure A