



TEST DATA OF ADA
ADA600F-36
(200V INPUT)

Regulated DC power supply
Mar. 11, 2003

Approved by : Kuniaki Nagahara
Kuniaki Nagahara Design Manager

Prepared by : Koji Todo
Koji Todo Design Engineer

INPUT : AC 170~264V

OUTPUT : V1: 36V 16.5A

コーセル株式会社
COSEL CO.,LTD.



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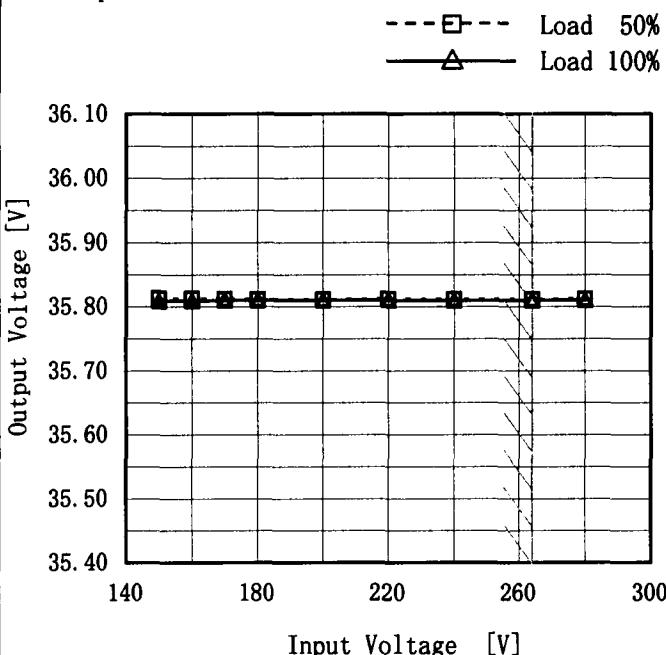
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Model	ADA600F (ADA600F-36)
Item	Line Regulation 静的入力変動
Object	V1:+36V16.5A

Temperature 25°C
Testing Circuitry Figure A

1. Graph



2. Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
150	35.813	35.809
160	35.813	35.809
170	35.812	35.810
180	35.812	35.810
200	35.811	35.810
220	35.812	35.810
240	35.812	35.810
264	35.812	35.810
280	35.812	35.810

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

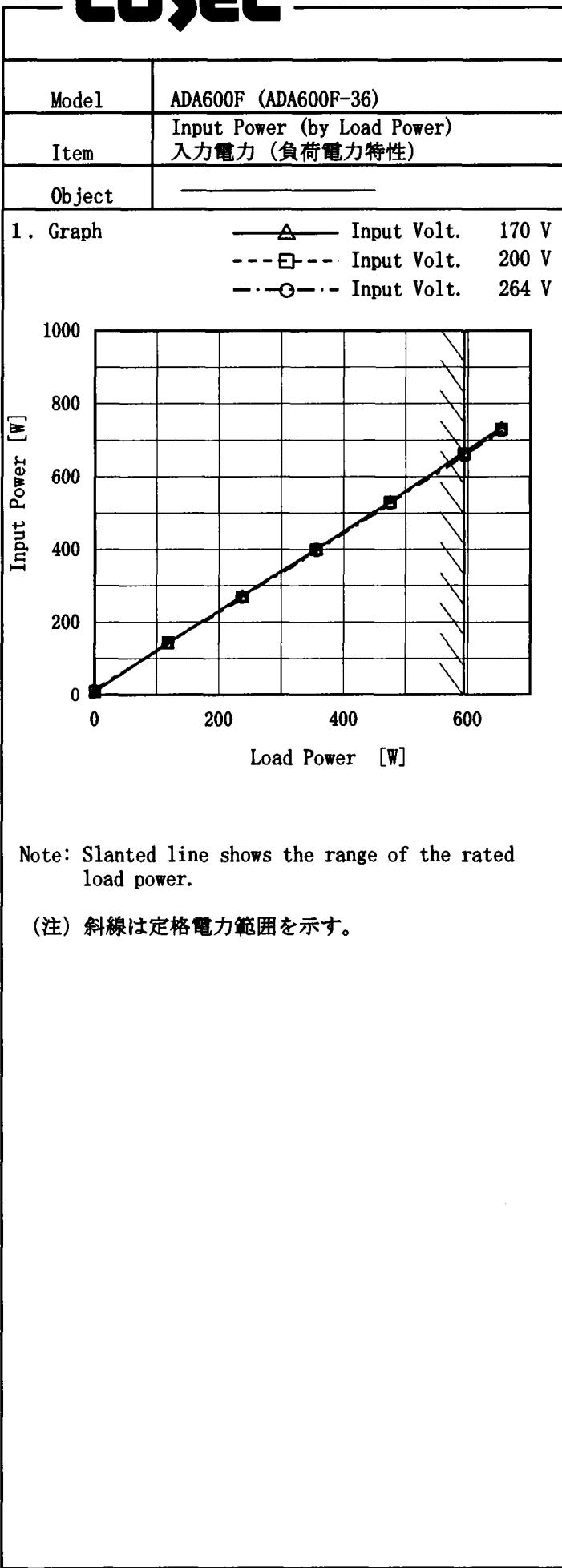
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Model	ADA600F (ADA600F-36)																																																					
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Note: Slanted line shows the range of the rated load power.

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Temperature 25°C
Testing Circuitry Figure A

2. Values

Load Power [W]	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
0.0	8.3	8.8	11.1
118.8	143.2	142.7	142.1
237.6	272.0	269.4	268.1
356.4	401.0	399.0	396.0
475.2	531.0	529.0	526.0
594.0	667.0	662.0	658.0
653.4	734.0	729.0	725.0
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

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Model	ADA600F (ADA600F-36)																																	
Item	Efficiency (by Input Voltage) 効率 (入力電圧特性)	Temperature Testing Circuitry 25°C Figure A																																
Object	—																																	
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<p>Efficiency [%]</p> <p>Input Voltage [V]</p> <p>Legend: ---□--- Load 50% —△— Load 100%</p>																																		
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Note: Slanted line shows the range of the rated load power.

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Item	Power Factor (by Input Voltage) 力率 (入力電圧特性)	Temperature 25°C Testing Circuitry Figure A																																
Object	_____																																	
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<p>The graph plots Power Factor (Y-axis, 0.3 to 1.0) against Input Voltage [V] (X-axis, 140 to 300). Two data series are shown: Load 50% (dashed line with open squares) and Load 100% (solid line with open triangles). Both series show a high power factor (near 1.0) across the entire input voltage range, with a slight decrease as the input voltage approaches 300V. A diagonal line is drawn from approximately (140V, 1.0) to (280V, 0.75), indicating the rated input voltage range.</p>																																		
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<p>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 load power.</p> <p>出力保持時間とは、入力電圧断から出力電圧が定電圧精度の範囲を保持しているところまでの時間。 (注) 斜線は定格電力範囲を示す。</p>																																																						

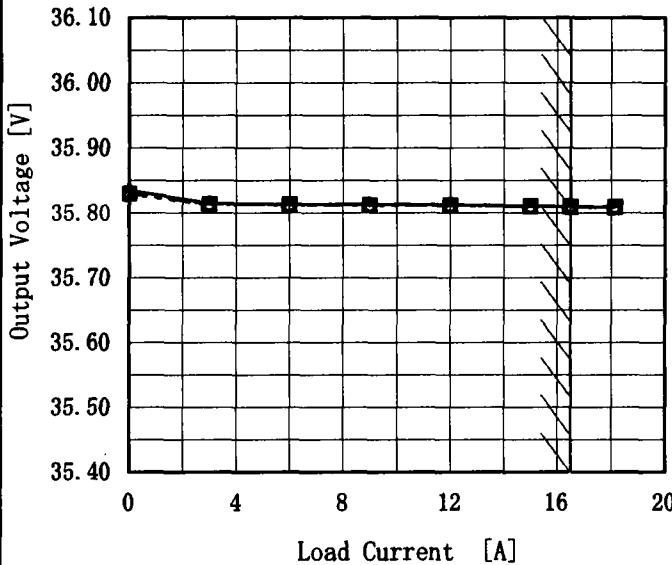
COSEL

Model	ADA600F (ADA600F-36)																																																					
Item	Instantaneous Interruption Compensation (by Load Power)	Temperature Testing Circuitry	25°C																																																			
Object	瞬時停電保障 (負荷電力特性)	Figure A																																																				
1. Graph	<p>—▲— Input Volt. 170V - - - □ - - Input Volt. 200V - - ○ - - Input Volt. 264V</p>																																																					
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Note: Slanted line shows the range of the rated load power.

(注) 斜線は定格電力範囲を示す。

COSEL

Model	ADA600F (ADA600F-36)	Temperature Testing Circuitry 25°C Figure A																																																			
Item	Load Regulation 靜的負荷變動																																																				
Object	V1:+36V16.5A																																																				
1. Graph	<p>—△— Input Volt. 170 V - - -□- - Input Volt. 200 V - - -○- - Input Volt. 264 V</p> 	2. Values																																																			
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(注) 斜線は定格負荷電流範囲を示す。

COSEL

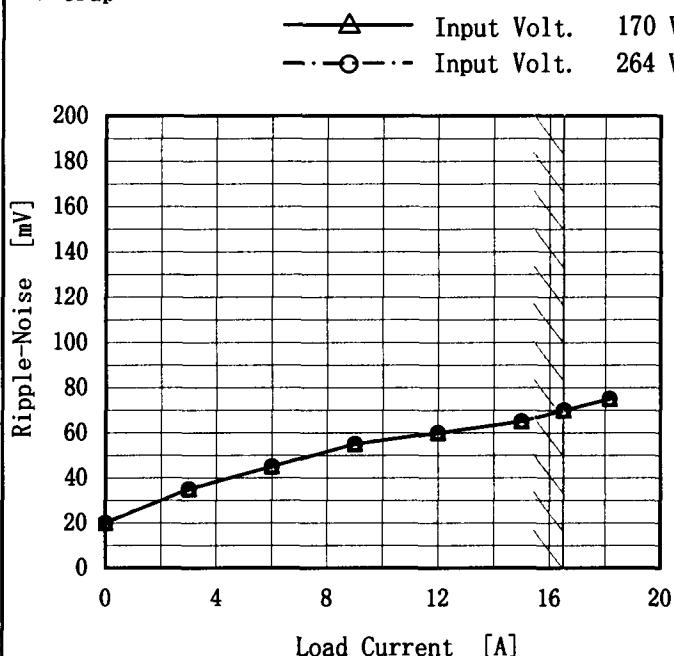
Model	ADA600F (ADA600F-36)																																							
Item	Ripple Voltage (by Load Current) リップル電圧 (負荷特性)	Temperature Testing Circuitry 25°C Figure A																																						
Object	V1:+36V16.5A																																							
1. Graph																																								
<p>Graph showing Ripple Voltage [mV] vs Load Current [A]. The Y-axis ranges from 0 to 200 mV, and the X-axis ranges from 0 to 20 A. Two curves are shown: Input Volt. 170 V (solid line with triangle markers) and Input Volt. 264 V (dashed line with circle markers). The 170 V curve starts at approximately (0, 15) and rises to about (18, 60). The 264 V curve starts at approximately (0, 10) and rises to about (16, 50). A slanted line indicates the rated load current range between approximately 12.5 A and 17.5 A.</p>																																								
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<p>Ripple Voltage is shown as p-p in the figure below. Note: Slanted line shows the range of the rated load current.</p> <p>リップル電圧は、下図 p - p 値で示される。 (注) 斜線は定格負荷電流範囲を示す。</p> <p>T1: Due to AC Input Line T2: Due to Switching</p> <p>入力商用周期 スイッチング周期</p> <p>Fig. Complex Ripple Wave Form 図 リップル波形詳細図</p>																																								

COSEL

Model	ADA600F (ADA600F-36)
Item	Ripple-Noise リップルノイズ
Object	V1:+36V16.5A

Temperature 25°C
Testing Circuitry Figure A

1. Graph



2. Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 170[V]	Input Volt. 264[V]
0.000	20	20
3.000	35	35
6.000	45	45
9.000	55	55
12.000	60	60
15.000	65	65
16.500	70	70
18.150	75	75
—	—	—
—	—	—
—	—	—

Ripple-Noise is shown as p-p in the figure below.
Note: Slanted line shows the range of the rated load current.

リップルノイズは、下図 p - p 値で示される。
(注) 斜線は定格負荷電流範囲を示す。

- T1: Due to AC Input Line
入力商用周期
T2: Due to Switching
スイッチング周期

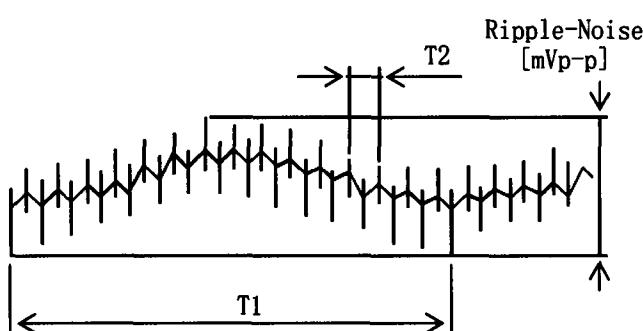


Fig. Complex Ripple Wave Form
図 リップル波形詳細図

COSEL

Model	ADA600F (ADA600F-36)		
Item	Overcurrent Protection 過電流保護		
Object	V1:+36V16.5A		
1. Graph	<p>— Input Volt. 170 V — Input Volt. 200 V - - - Input Volt. 264 V</p>		
Temperature	25°C	Testing Circuitry	Figure A
2. Values			
Output Voltage [V]	Load Current [A]		
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
36.0	22.37	22.39	22.42
34.2	22.52	22.55	22.58
32.4	22.68	22.71	22.73
28.8	22.91	22.91	22.91
25.2	23.06	23.06	23.05
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

Note: Slanted line shows the range of the rated load current.
 (注) 斜線は定格負荷電流範囲を示す。

Intermittent operation occurs when the output voltage is from 25.2V to 0V.
 25.2V~0V間は、間欠モードとなる。

COSEL

Model	ADA600F (ADA600F-36)				
Item	Overvoltage Protection 過電圧保護				
Object	V1:+36V16.5A				
1. Graph					
<p>Operating Point [V]</p> <p>Ambient Temperature [°C]</p> <p>Load 0%</p> <p>Legend:</p> <ul style="list-style-type: none"> Input Volt. 170 V Input Volt. 200 V Input Volt. 264 V 			Testing Circuitry Figure A		
2. Values					
Ambient Temperature [°C]	Operating Point [V]				
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]		
-20	53.52	53.52	53.63		
-10	54.10	54.10	54.10		
0	54.63	54.63	54.63		
10	55.10	55.10	55.10		
20	55.63	55.63	55.63		
25	55.80	55.80	55.80		
30	56.09	56.04	56.09		
40	56.51	56.51	56.51		
50	56.92	56.92	56.92		
60	57.44	57.44	57.50		
—	—	—	—		

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

(注) 斜線は定格周囲温度範囲を示す。

COSEL

Model ADA600F (ADA600F-36)

Item Inrush Current
突入電流

Object

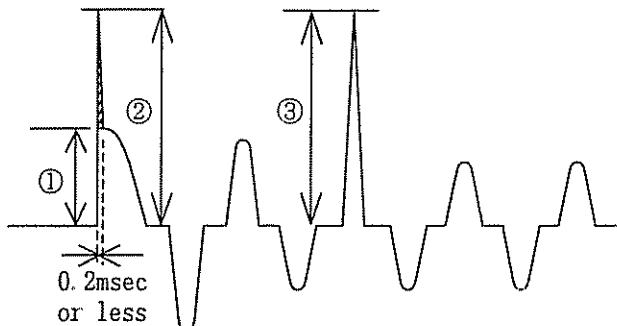
Temperature 25°C
Testing Circuitry Figure AInput
Current
[20A/div]Input
Voltage
[200V/div]

Time

[50mS/div]

Input Voltage 200 V
 Frequency 60 Hz
 Load 100 %
 Inrush Current

- ① 23.1 [A]
- ② 29.4 [A] (0.2msec or less)*1
- ③ 15.3 [A]



*1 The specification of the inrush current (primary surge) means that the surge current to a built-in noise filter (0.2msec or less : waveform ②) is excluded.

本製品の突入電流(1次サージ)の仕様は、内蔵ノイズフィルタへの
サージ電流(0.2msec以下:波形②)を除きます。

COSEL

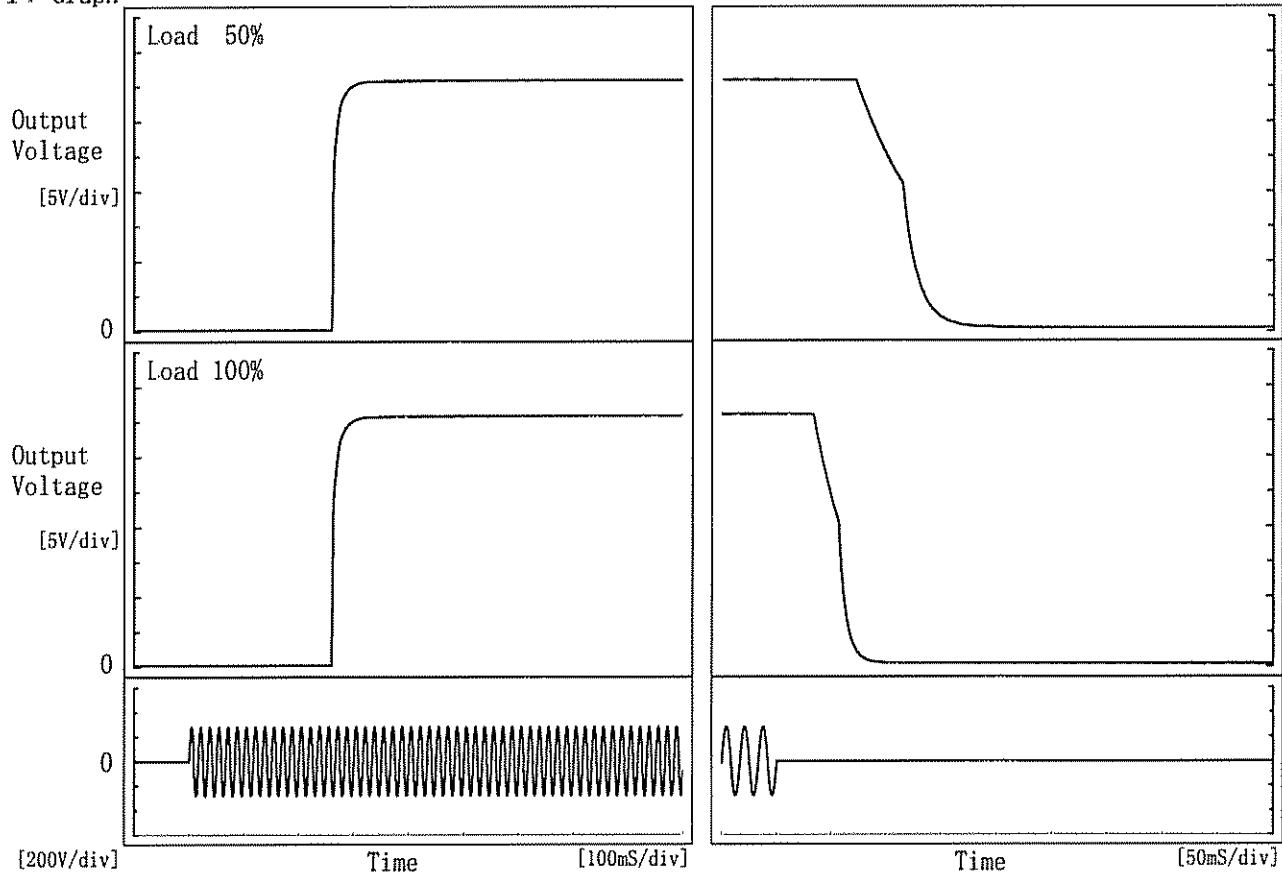
Model ADA600F (ADA600F-36)

Item Rise and Fall Time
立上り、立下り時間

Object V1:+36V16.5A

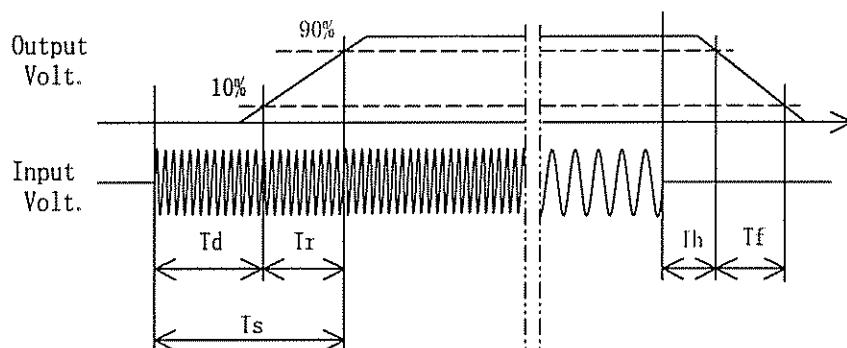
Temperature 25°C
Testing Circuitry Figure A

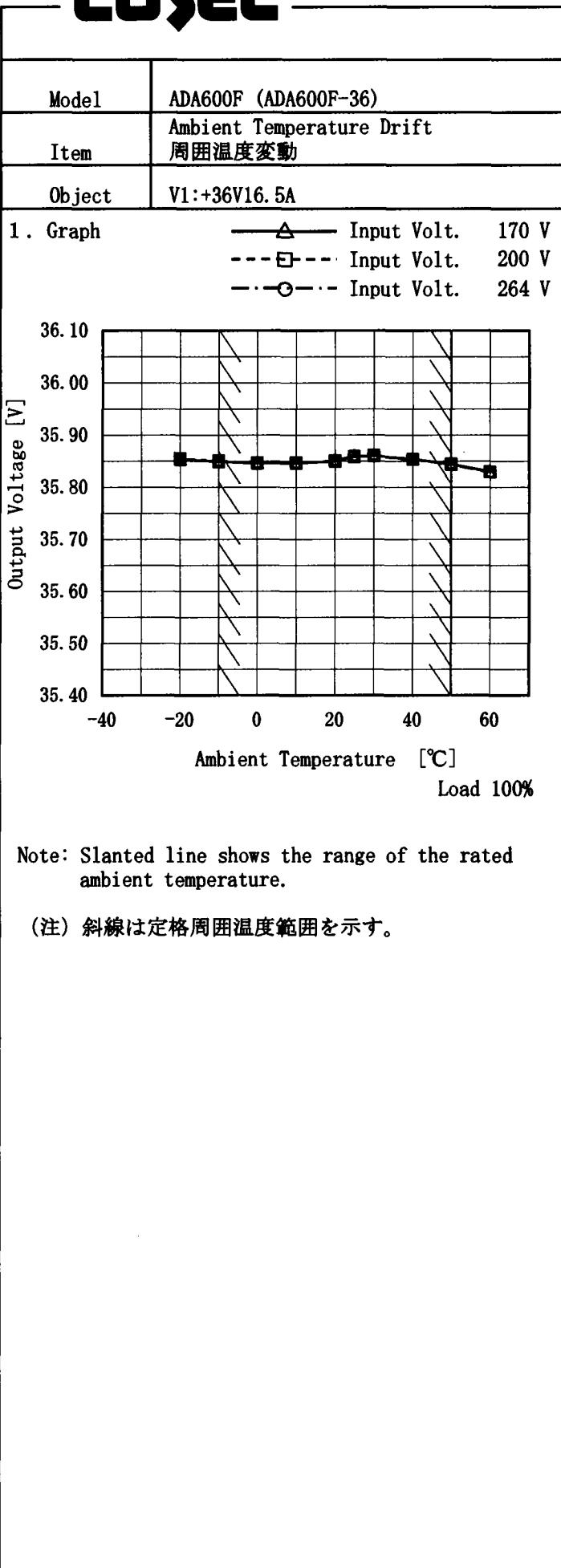
1. Graph



2. Values

Load	Time	T _d	T _r	T _s	T _h	T _f	[mS]
50 %		261.0	16.5	277.5	79.5	59.8	
100 %		260.5	17.0	277.5	37.8	31.0	



COSEL

Testing Circuitry Figure A

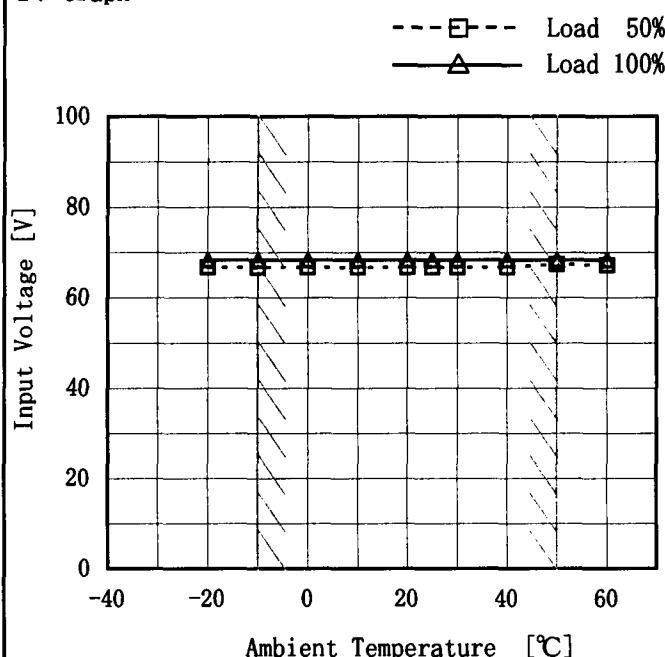
2. Values

Ambient Temperature [°C]	Output Voltage [V]		
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
-20	35.854	35.855	35.855
-10	35.849	35.850	35.850
0	35.846	35.847	35.846
10	35.846	35.847	35.846
20	35.850	35.851	35.851
25	35.859	35.859	35.860
30	35.860	35.861	35.861
40	35.854	35.854	35.855
50	35.844	35.845	35.844
60	35.830	35.830	35.829
—	—	—	—

COSEL

Model	ADA600F (ADA600F-36)
Item	Minimum Input Voltage for Regulated Output Voltage 最低レギュレーション電圧
Object	V1:+36V16.5A

1. Graph



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

(注) 斜線は定格周囲温度範囲を示す。

Testing Circuitry Figure A

2. Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-20	67	68
-10	67	68
0	67	68
10	67	68
20	67	68
25	67	68
30	67	68
40	67	68
50	67	68
60	67	68
—	—	—

Model	ADA600F (ADA600F-36)																												
Item	Ripple Voltage (by Ambient Temp.) リップル電圧 (周囲温度特性)	Testing Circuitry Figure A																											
Object	V1:+36V16.5A																												
1. Graph																													
<p>Ambient Temperature [°C]</p> <p>Ripple Voltage [mV]</p> <p>Input Volt. 200 V</p> <p>Load 100 %</p>		2. Values																											
		<table border="1"> <thead> <tr> <th>Ambient Temperature [°C]</th> <th>Ripple Voltage [mV]</th> </tr> </thead> <tbody> <tr><td>-10</td><td>85</td></tr> <tr><td>0</td><td>65</td></tr> <tr><td>25</td><td>50</td></tr> <tr><td>50</td><td>40</td></tr> <tr><td>—</td><td>—</td></tr> <tr><td>—</td><td>—</td></tr> <tr><td>—</td><td>—</td></tr> <tr><td>—</td><td>—</td></tr> <tr><td>—</td><td>—</td></tr> <tr><td>—</td><td>—</td></tr> <tr><td>—</td><td>—</td></tr> <tr><td>—</td><td>—</td></tr> </tbody> </table>		Ambient Temperature [°C]	Ripple Voltage [mV]	-10	85	0	65	25	50	50	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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COSEL

Model	ADA600F (ADA600F-36)
Item	Time Lapse Drift 経時ドリフト
Object	V1:+36V16.5A

1. Graph

Output Voltage [V]	36.10
	36.00
	35.90
	35.80
	35.70
	35.60
	35.50
	35.40
Time [H]	0 2 4 6 8 10

Input Volt. 200V
Load 100%

Temperature 25°C
Testing Circuitry Figure A

2. Values

Time since start [H]	Output Voltage [V]
0.0	35.831
0.5	35.811
1.0	35.811
2.0	35.811
3.0	35.811
4.0	35.811
5.0	35.811
6.0	35.811
7.0	35.812
8.0	35.812



Model	ADA600F (ADA600F-36)	
Item	Output Voltage Accuracy 定電圧精度	Testing Circuitry Figure A
Object	V1:+36V16.5A	

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 : 170 ~ 264V

Load Current : 0 ~ 16.5A

* Output Voltage Accuracy = ±(Maximum of Output Voltage - Minimum of Output Voltage) / 2

$$* \text{Output Voltage Accuracy (Ration)} = \frac{\text{Output Voltage Accuracy}}{\text{Rated Output Voltage}} \times 100$$

1. 定電圧精度

周囲温度、入力電圧、負荷電流を下記仕様内で、任意に変動させたときの出力電圧の変動をいう。

周囲温度 : -10 ~ 50°C

入力電圧 : 170 ~ 264V

負荷電流 : 0 ~ 16.5A

* 定電圧精度(変動値) = ±(出力電圧の最高値-出力電圧の最低値) / 2

$$* \text{定電圧精度(変動率)} = \frac{\text{変動値}}{\text{定格出力電圧}} \times 100$$

2. Values

Item	Temperature [°C]	Input Voltage [V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	25	170	0	35.875		
Minimum Voltage	50	170	16.5	35.839	±18	±0.1



Model	ADA600F (ADA600F-36)	Temperature	25°C
Item	Leakage Current 漏洩電流	Testing Circuitry	Figure B
Object	<hr/>		

1. Results

Standards	Leakage Current [mA]		
	Input Volt. 85 [V]	Input Volt. 100 [V]	Input Volt. 132 [V]
(A) DEN-AN	—	—	—
(B) IEC60950	—	—	—

Standards	Leakage Current [mA]		
	Input Volt. 170 [V]	Input Volt. 240 [V]	Input Volt. 264 [V]
(B) IEC60950	0.31	0.44	0.51

2. Condition

Leakage current value is concluded after measuring each phases of AC input and by choosing the larger one.

交流入力の各相について測定し、その大きい方を漏洩電流測定値とする。

COSEL

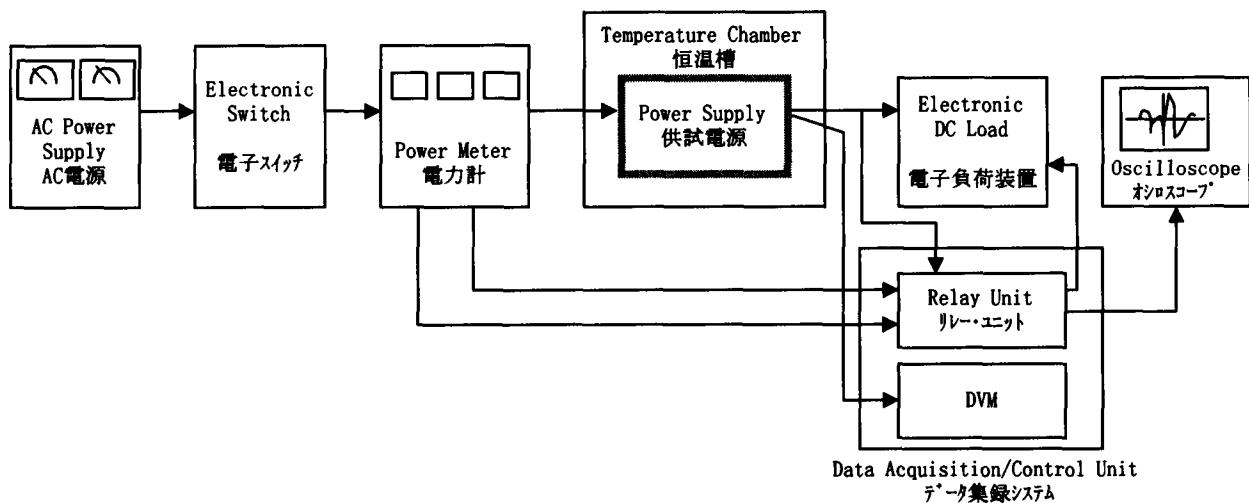


Figure A

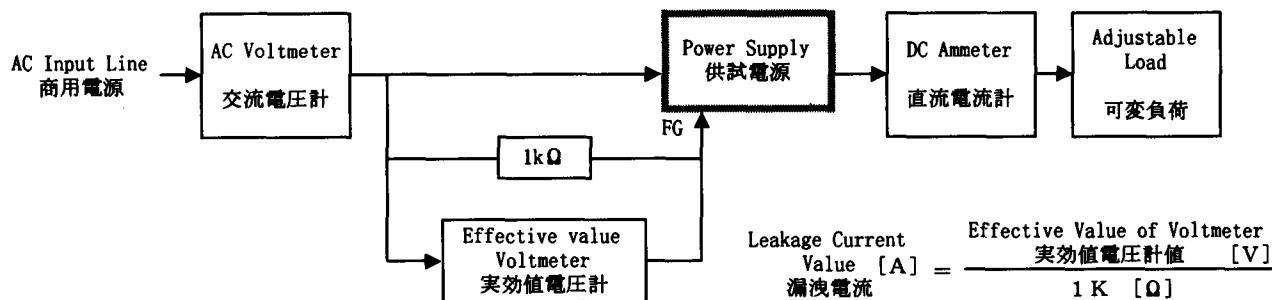


Figure B (DEN-AN)

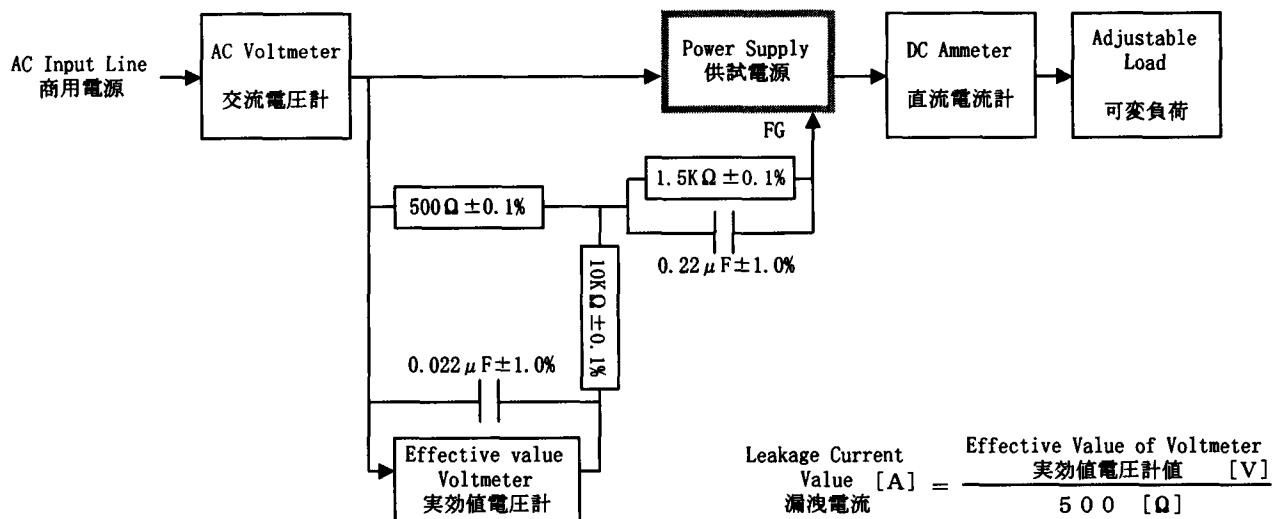


Figure B (IEC60950)