

# TEST DATA OF PDA600F-24

Regulated DC Power Supply  
May 28, 2025

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Design Manager

Prepared by : Terumasa Araki  
Design Engineer

**COSEL CO.,LTD.**



## CONTENTS

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

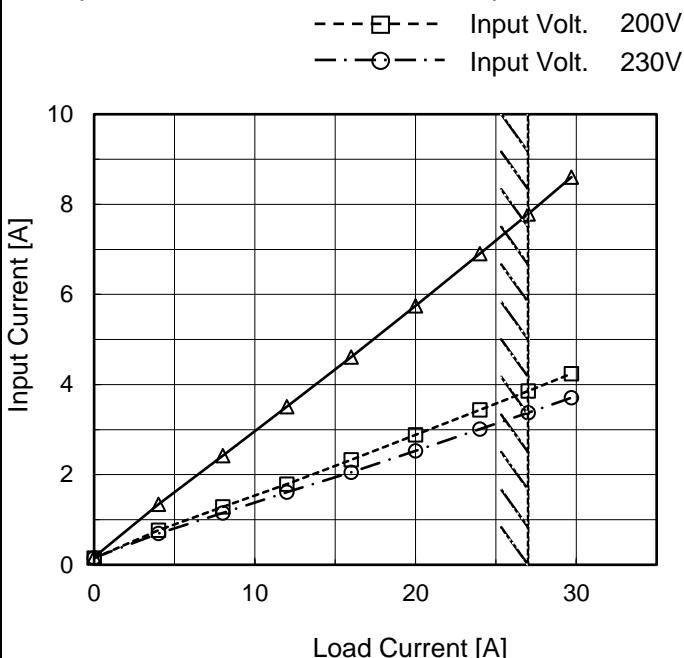
(Final Page 15)

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Model	PDA600F-24
Item	Input Current (by Load Current)
Object	_____

 Temperature 25°C  
 Testing Circuitry Figure A

## 1.Graph



## 2.Values

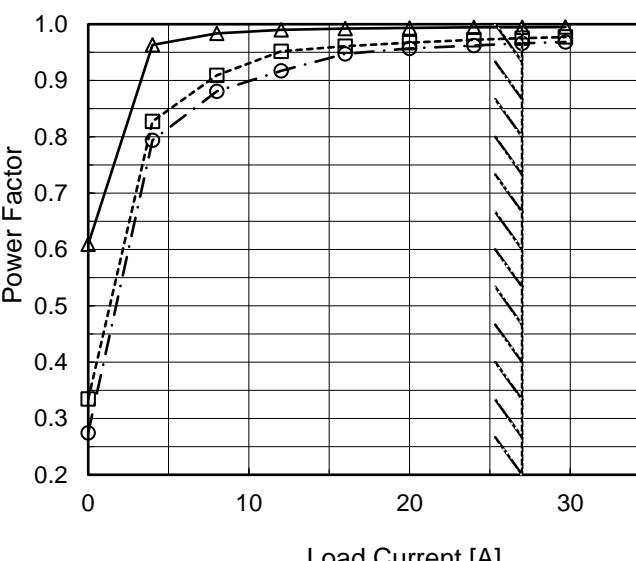
Load Current [A]	Input Current [A]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.0	0.170	0.146	0.155
4.0	1.342	0.769	0.697
8.0	2.421	1.286	1.151
12.0	3.509	1.788	1.609
16.0	4.611	2.331	2.051
20.0	5.750	2.883	2.527
24.0	6.904	3.439	3.011
27.0	7.789	3.859	3.376
29.7	8.604	4.242	3.708
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Note: Slanted line shows the range of the rated load current.

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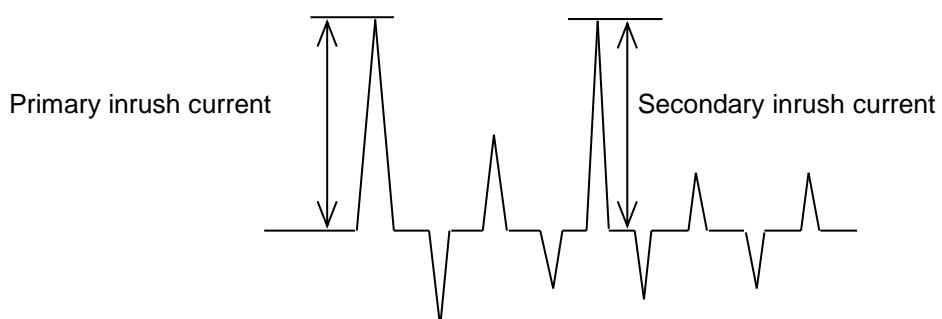
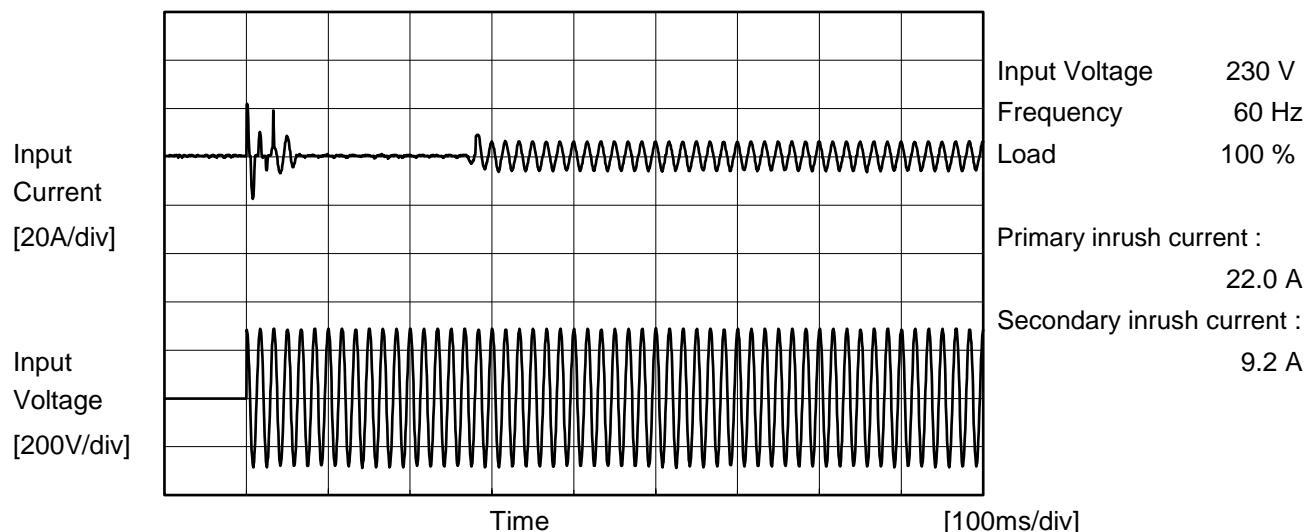
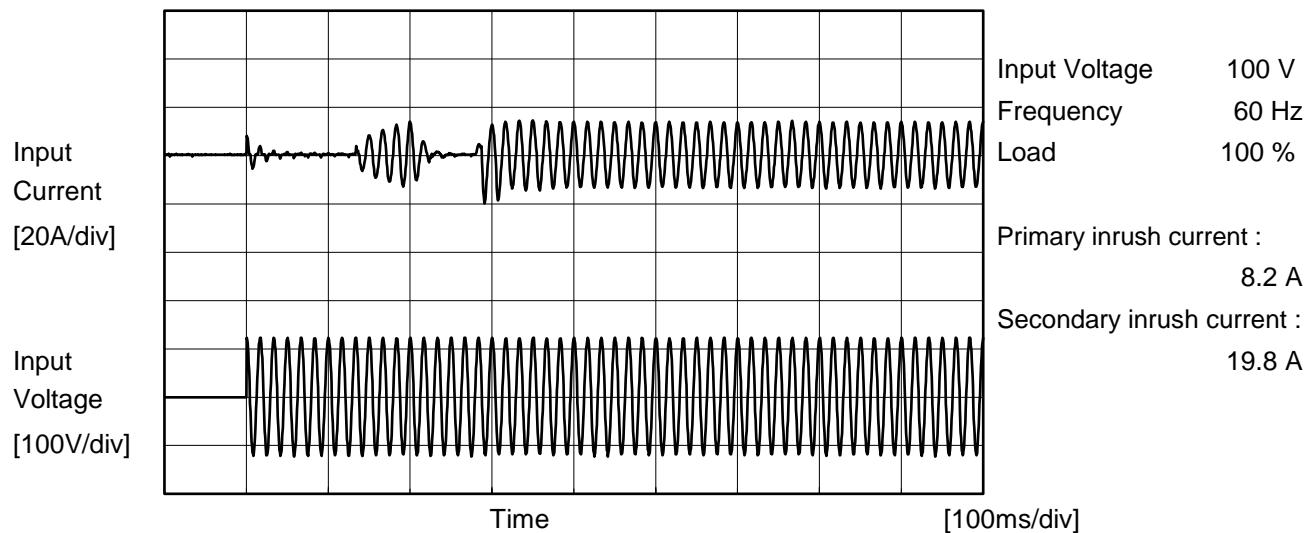
Model	PDA600F-24																																																					
Item	Efficiency (by Load Current)	Temperature 25°C	Testing Circuitry Figure A																																																			
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1.Graph	<p>Efficiency [%]</p> <p>Load Current [A]</p> <p>Legend:</p> <ul style="list-style-type: none"> <li>Input Volt. 100V</li> <li>Input Volt. 200V</li> <li>Input Volt. 230V</li> </ul>																																																					
2.Values	<table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th colspan="3">Efficiency [%]</th> </tr> <tr> <th>Input Volt. 100[V]</th> <th>Input Volt. 200[V]</th> <th>Input Volt. 230[V]</th> </tr> </thead> <tbody> <tr> <td>0.0</td><td>-</td><td>-</td><td>-</td></tr> <tr> <td>4.0</td><td>75.5</td><td>76.6</td><td>76.6</td></tr> <tr> <td>8.0</td><td>81.9</td><td>83.3</td><td>83.5</td></tr> <tr> <td>12.0</td><td>84.2</td><td>85.8</td><td>86.0</td></tr> <tr> <td>16.0</td><td>85.2</td><td>86.9</td><td>87.1</td></tr> <tr> <td>20.0</td><td>85.4</td><td>87.4</td><td>87.6</td></tr> <tr> <td>24.0</td><td>85.3</td><td>87.5</td><td>87.8</td></tr> <tr> <td>27.0</td><td>85.0</td><td>87.5</td><td>87.7</td></tr> <tr> <td>29.7</td><td>84.7</td><td>87.4</td><td>87.7</td></tr> <tr> <td>--</td><td>-</td><td>-</td><td>-</td></tr> <tr> <td>--</td><td>-</td><td>-</td><td>-</td></tr> </tbody> </table>			Load Current [A]	Efficiency [%]			Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]	0.0	-	-	-	4.0	75.5	76.6	76.6	8.0	81.9	83.3	83.5	12.0	84.2	85.8	86.0	16.0	85.2	86.9	87.1	20.0	85.4	87.4	87.6	24.0	85.3	87.5	87.8	27.0	85.0	87.5	87.7	29.7	84.7	87.4	87.7	--	-	-	-	--	-	-	-
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Model	PDA600F-24	Temperature	25°C																																																			
Item	Power Factor (by Load Current)	Testing Circuitry	Figure A																																																			
Object	<hr/>																																																					
1.Graph	<p style="text-align: center;"> <span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; border-radius: 50%; margin-right: 5px;"></span> Input Volt. 100V  <span style="display: inline-block; width: 15px; height: 15px; border: 1px dashed black; border-radius: 50%; margin-right: 5px;"></span> Input Volt. 200V  <span style="display: inline-block; width: 15px; height: 15px; border: 1px dash-dot black; border-radius: 50%; margin-right: 5px;"></span> Input Volt. 230V     </p>  <p>The graph plots Power Factor (Y-axis, 0.2 to 1.0) against Load Current [A] (X-axis, 0 to 30). Three curves are shown for Input Voltages: 100V (solid line with triangles), 200V (dashed line with squares), and 230V (dash-dot line with circles). All curves start at (0, 0.6) and rise towards 1.0 as load current increases. A slanted line on the right indicates the rated load current range.</p>																																																					
2.Values	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th colspan="3">Power Factor</th> </tr> <tr> <th>Input Volt. 100[V]</th> <th>Input Volt. 200[V]</th> <th>Input Volt. 230[V]</th> </tr> </thead> <tbody> <tr> <td>0.0</td> <td>0.609</td> <td>0.334</td> <td>0.275</td> </tr> <tr> <td>4.0</td> <td>0.963</td> <td>0.828</td> <td>0.794</td> </tr> <tr> <td>8.0</td> <td>0.984</td> <td>0.910</td> <td>0.881</td> </tr> <tr> <td>12.0</td> <td>0.990</td> <td>0.952</td> <td>0.917</td> </tr> <tr> <td>16.0</td> <td>0.992</td> <td>0.961</td> <td>0.947</td> </tr> <tr> <td>20.0</td> <td>0.994</td> <td>0.967</td> <td>0.957</td> </tr> <tr> <td>24.0</td> <td>0.994</td> <td>0.972</td> <td>0.962</td> </tr> <tr> <td>27.0</td> <td>0.995</td> <td>0.975</td> <td>0.966</td> </tr> <tr> <td>29.7</td> <td>0.995</td> <td>0.977</td> <td>0.968</td> </tr> <tr> <td>--</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>--</td> <td>-</td> <td>-</td> <td>-</td> </tr> </tbody> </table>			Load Current [A]	Power Factor			Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]	0.0	0.609	0.334	0.275	4.0	0.963	0.828	0.794	8.0	0.984	0.910	0.881	12.0	0.990	0.952	0.917	16.0	0.992	0.961	0.947	20.0	0.994	0.967	0.957	24.0	0.994	0.972	0.962	27.0	0.995	0.975	0.966	29.7	0.995	0.977	0.968	--	-	-	-	--	-	-	-
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Note:	Slanted line shows the range of the rated load current.																																																					

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Model	PDA600F-24	Temperature Testing Circuitry Figure A
Item	Inrush Current	
Object	_____	





Model	PDA600F-24	Temperature Testing Circuitry	25°C Figure C	
Item	Leakage Current			
Object	_____			

## 1. Results

[mA]

Standards	Testing Circuitry	Measuring Method	Input Volt.			Note
			100 [V]	230 [V]	240 [V]	
DEN-AN	Figure C-1	Both phases	0.16	0.43	0.45	Operation
		One of phases	0.31	0.81	0.85	Stand by
IEC62368-1	Figure C-2	Both phases	0.16	0.42	0.45	Operation
		One of phases	0.31	0.80	0.84	Stand by
	Figure C-3	Both phases	0.16	0.42	0.44	Operation
		One of phases	0.31	0.79	0.83	Stand by

The value for "One of phases" is the reference value only.

## 2. Condition

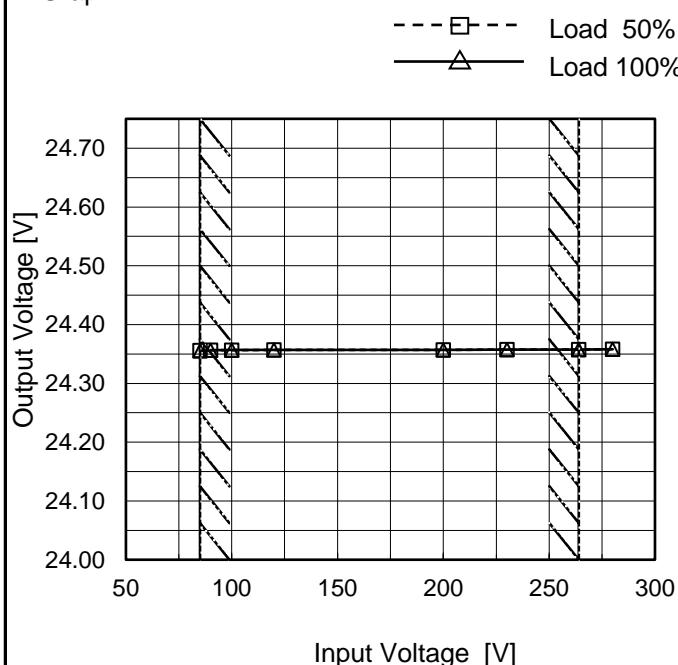
Leakage current value is concluded after measuring both phases of AC input and by choosing the larger one.

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Model	PDA600F-24
Item	Line Regulation
Object	+24V27A

 Temperature 25°C  
 Testing Circuitry Figure A

## 1.Graph

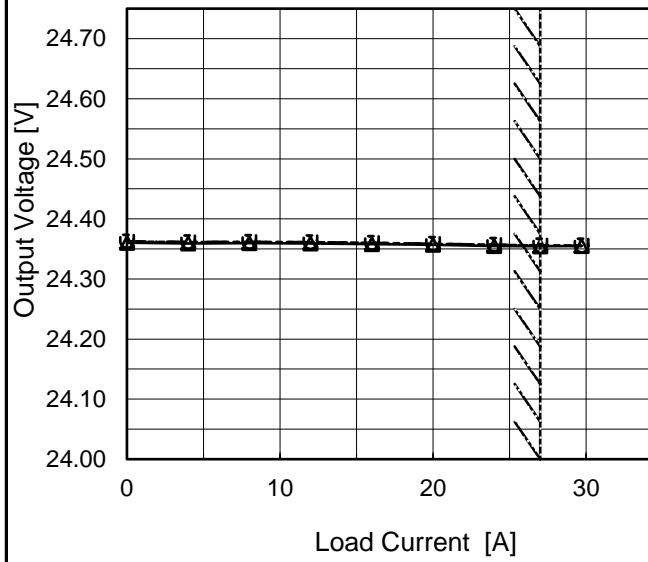
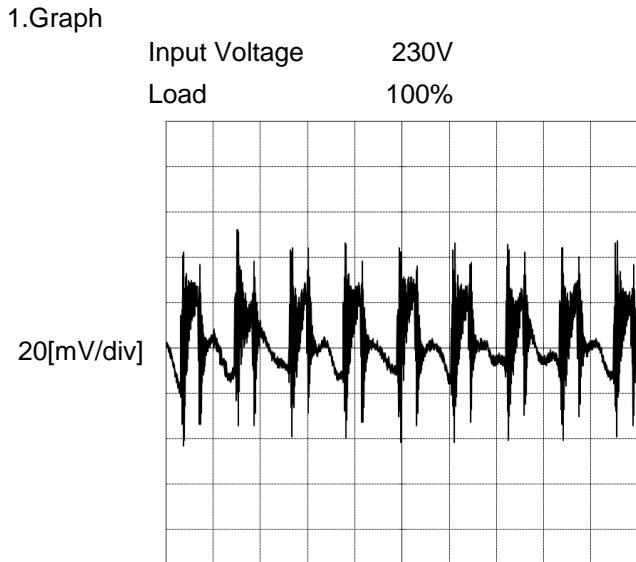


## 2.Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
85	24.356	24.355
90	24.356	24.357
100	24.357	24.357
120	24.357	24.357
200	24.357	24.357
230	24.357	24.357
264	24.358	24.358
280	24.358	24.358
--	-	-

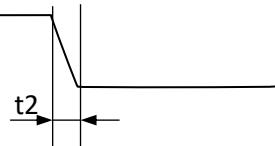
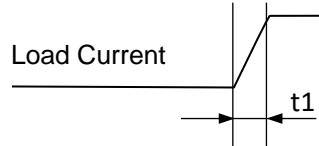
Note: Slanted line shows the range of the rated input voltage.

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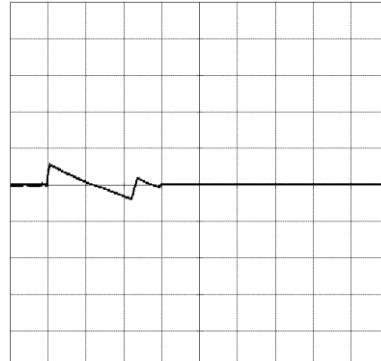
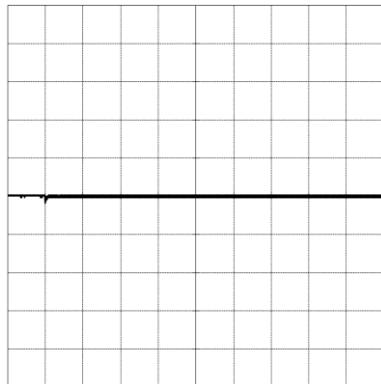
Model	PDA600F-24	Temperature	25°C																																																			
Item	Load Regulation	Testing Circuitry	Figure A																																																			
Object	+24V27A																																																					
1.Graph	<p>—△— Input Volt. 100V        - - -□- - Input Volt. 200V        - - -○- - Input Volt. 230V</p> 																																																					
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Item	Ripple-Noise	Temperature	25°C																																																			
Object	+24V27A	Testing Circuitry	Figure B																																																			
1.Graph	<p>Input Voltage 230V        Load 100%</p> 																																																					

**COSEL**

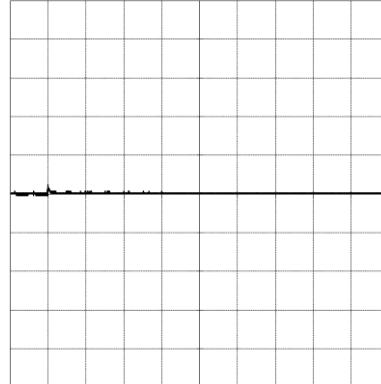
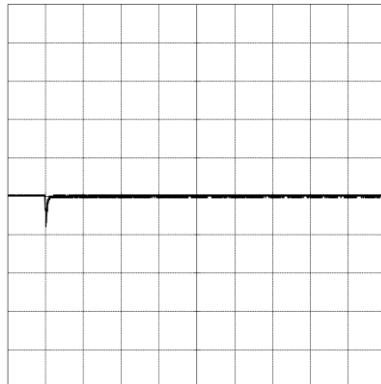
Model	PDA600F-24
Item	Dynamic Load Response
Object	+24V27A

Temperature 25°C  
Testing Circuitry Figure AInput Volt. 230 V  
Cycle 1000 msResponse.  $t_1=t_2=50\mu s$ . TypLoad 0%(0A)  $\longleftrightarrow$   
Load 100%(27A)

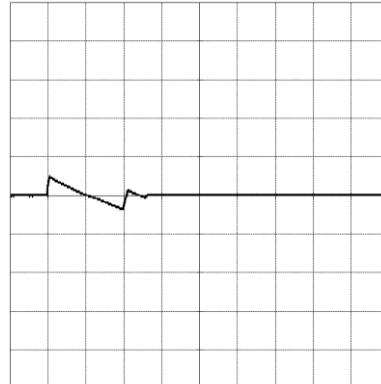
20[ms/div]

Load 50%(13.5A)  $\longleftrightarrow$   
Load 100%(27A)

20[ms/div]

Load %(0A)  $\longleftrightarrow$   
Load 50%(13.5A)

20[ms/div]

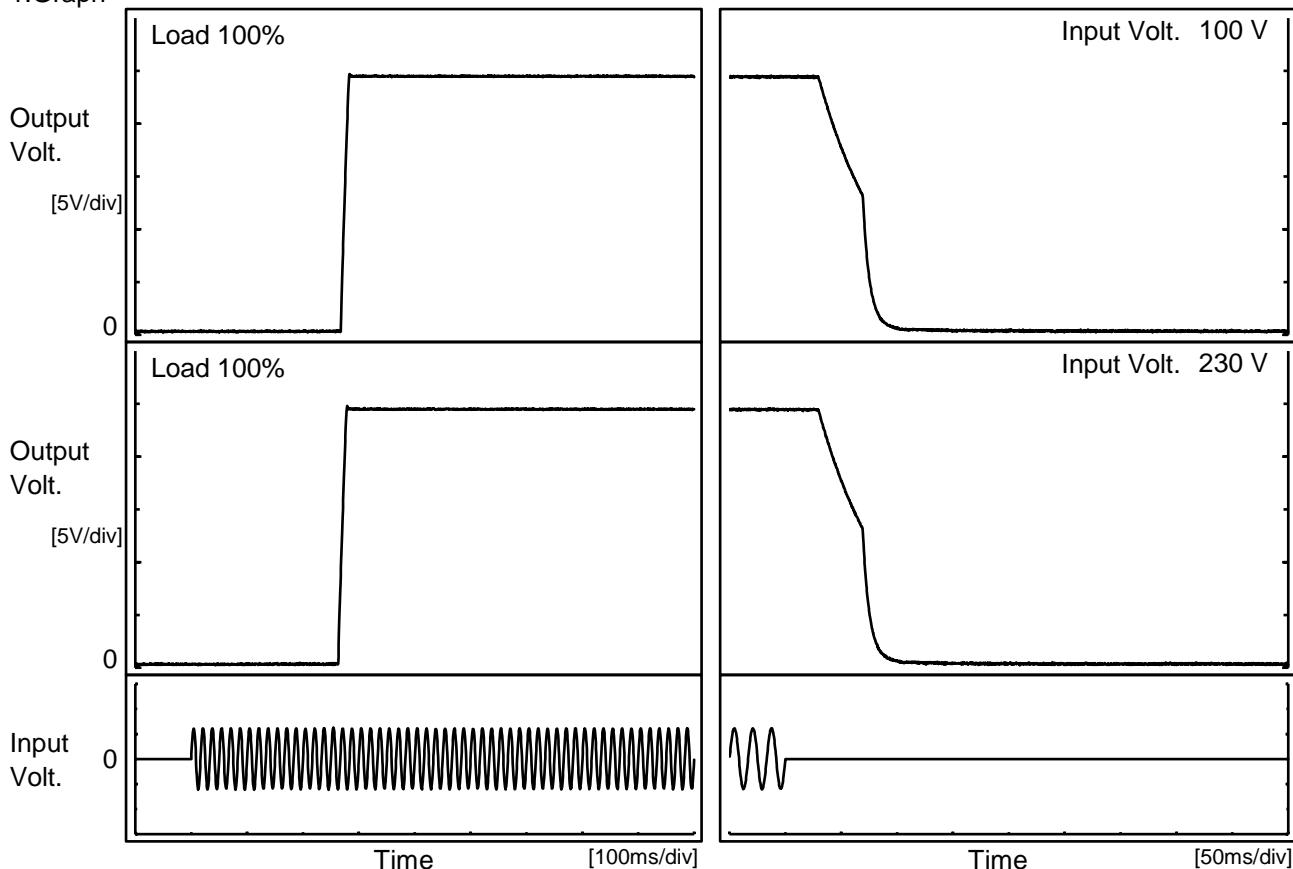


**COSEL**

Model	PDA600F-24
Item	Rise and Fall Time
Object	+24V27A

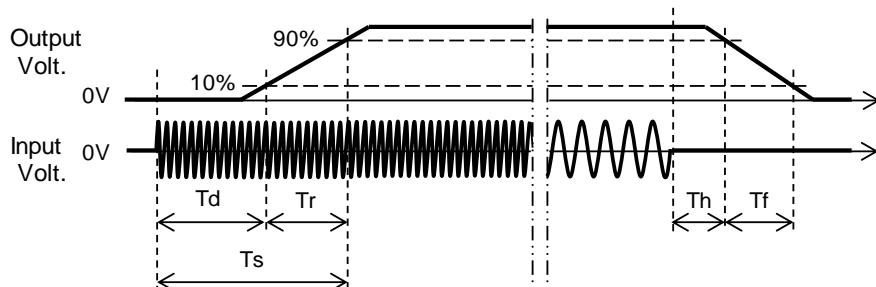
Temperature 25°C  
Testing Circuitry Figure A

## 1. Graph



## 2. Values

Input Volt.	Time	Td	Tr	Ts	Th	Tf	[ms]
100 V		269.0	11.5	280.5	36.8	43.5	
230 V		264.5	11.5	276.0	36.8	43.5	

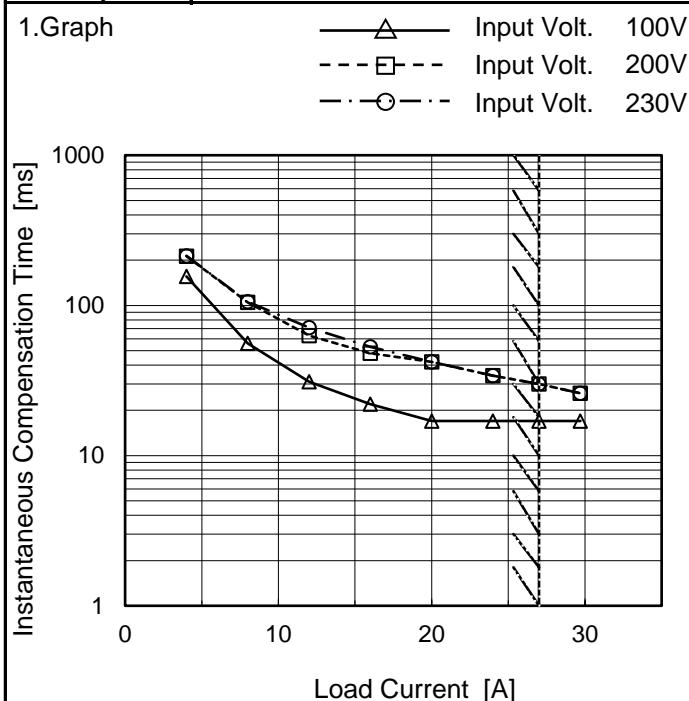


**COSEL**

Model	PDA600F-24	Temperature	25°C																																
Item	Hold-Up Time	Testing Circuitry	Figure A																																
Object	+24V27A																																		
1. Graph		2. Values																																	
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230	65	37																																	
264	65	37																																	
280	70	36																																	
--	-	-																																	
<p>This duration covers from Shut-off of input voltage to the moment when output voltage descends to the rated range of voltage accuracy.</p> <p>Note: Slanted line shows the range of the rated input voltage.</p>																																			

**COSEL**

Model	PDA600F-24
Item	Instantaneous Interruption Compensation
Object	+24V27A


 Temperature 25°C  
 Testing Circuitry Figure A

## 2.Values

Load Current [A]	Time [ms]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.0	-	-	-
4.0	156	213	214
8.0	56	105	106
12.0	31	63	71
16.0	22	48	53
20.0	17	42	42
24.0	17	34	34
27.0	17	30	30
29.7	17	26	26
--	-	-	-
--	-	-	-

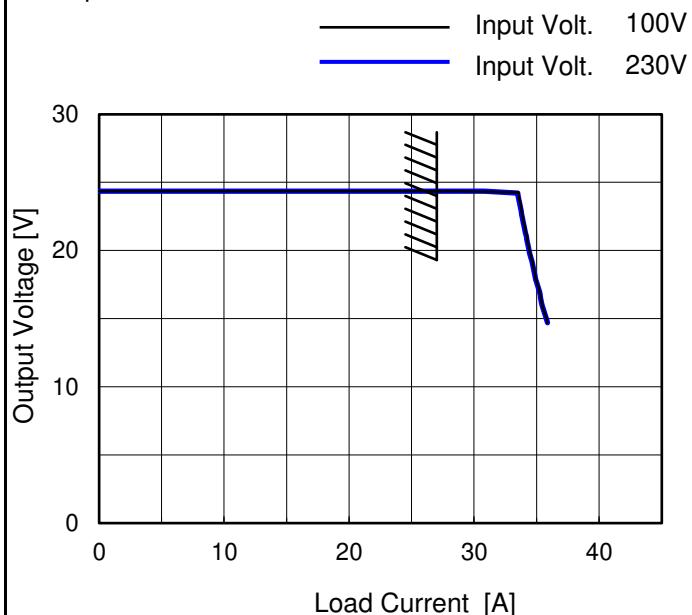
Note: Slanted line shows the range of the rated load current.

**COSEL**

Model	PDA600F-24
Item	Overcurrent Protection
Object	+24V27A

 Temperature 25°C  
 Testing Circuitry Figure A

## 1. Graph



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

Intermittent operation occurs when the output voltage is from 16.8V to 0V.

## 2. Values

Output Voltage [V]	Load Current [A]	
	Input Volt. 100[V]	Input Volt. 230[V]
22.8	33.81	33.77
21.6	34.05	34.01
19.2	34.64	34.62
16.8	35.25	35.23
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

**COSEL**

Model	PDA600F-24	Testing Circuitry Figure A
Item	Ambient Temperature Drift	
Object	+24V27A	

## 1.Values

Load 100%

Ambient Temperature[°C]	Output Voltage [V]		
	Input Volt. 100V	Input Volt. 200V	Input Volt. 230V
-20	24.257	24.258	24.258
25	24.336	24.336	24.336
50	24.334	24.335	24.335

Item	Minimum Input Voltage for Regulated Output Voltage	Testing Circuitry Figure A
Object	+24V27A	

## 1.Values

Ambient Temperature[°C]	Input Voltage [V]	
	Load 50%	Load 100%
-20	67	69
25	68	69
50	68	69

Item	Overvoltage Protection	Testing Circuitry Figure A
Object	+24V27A	

## 1.Values

Load 0%

Ambient Temperature[°C]	Operating Point [V]	
	Input Volt. 100V	Input Volt. 230V
-20	34.31	34.20
25	34.37	34.37
50	34.37	34.37

**COSEL**

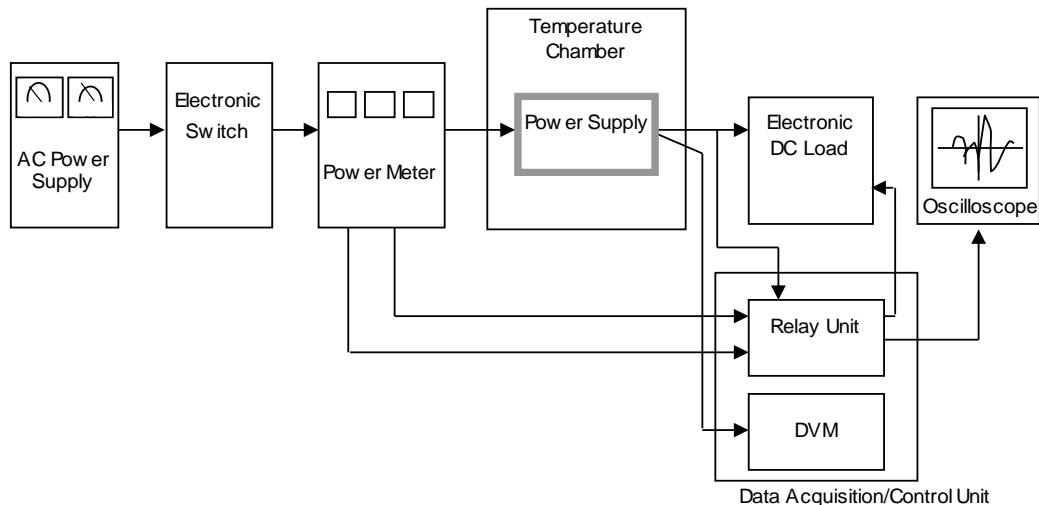


Figure A

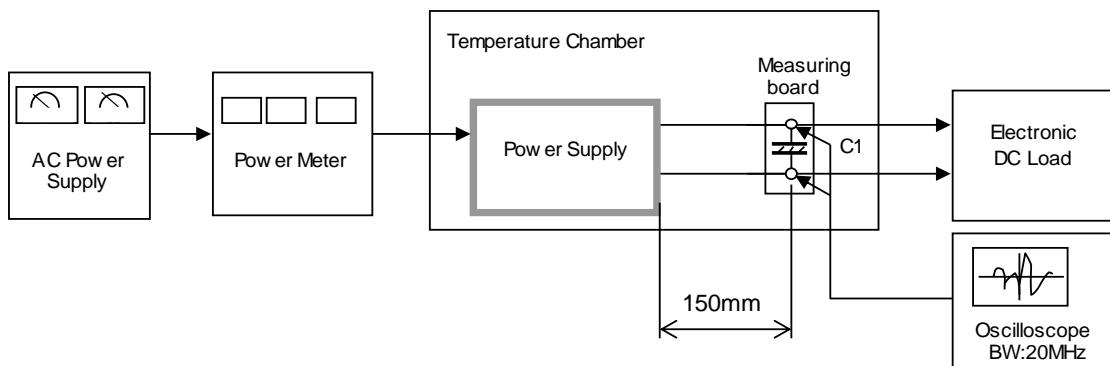


Figure B

$$C1 = 22 \mu F \\ (\text{Electrolytic capacitor})$$

**COSEL**

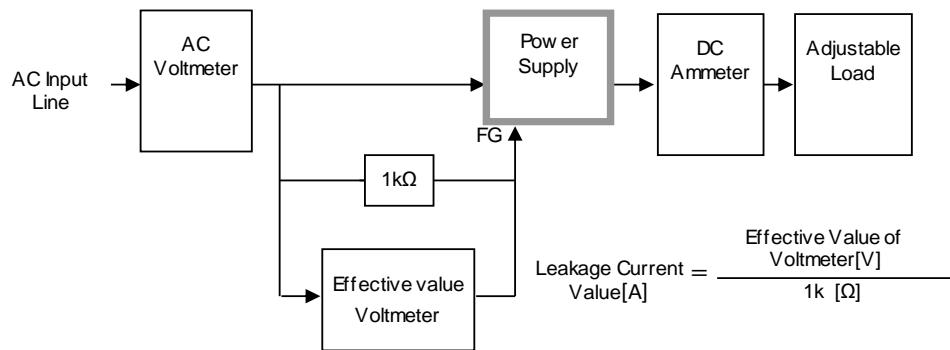


Figure C-1 ( DEN-AN )

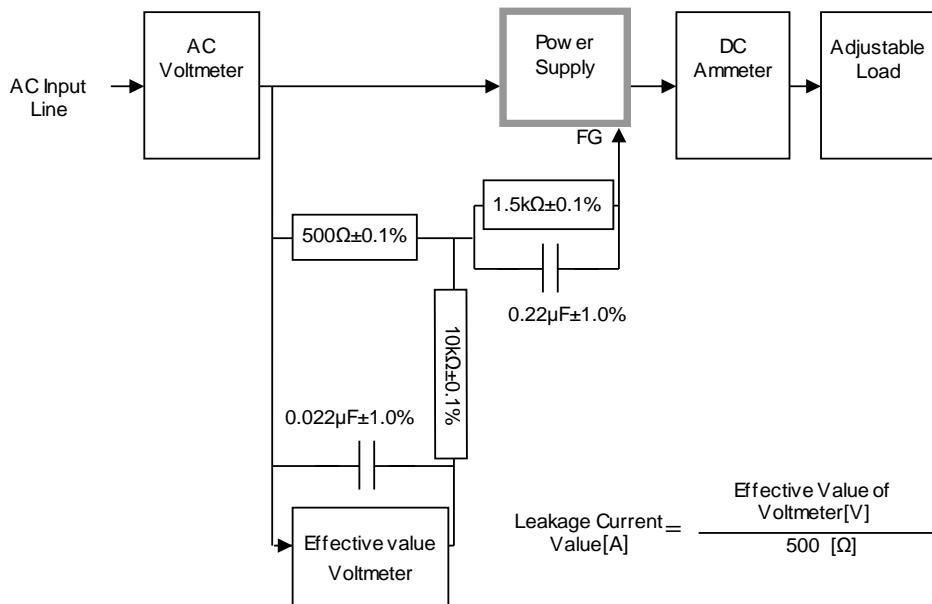


Figure C-2 ( IEC62368-1 refer to IEC60990 Fig.4 )

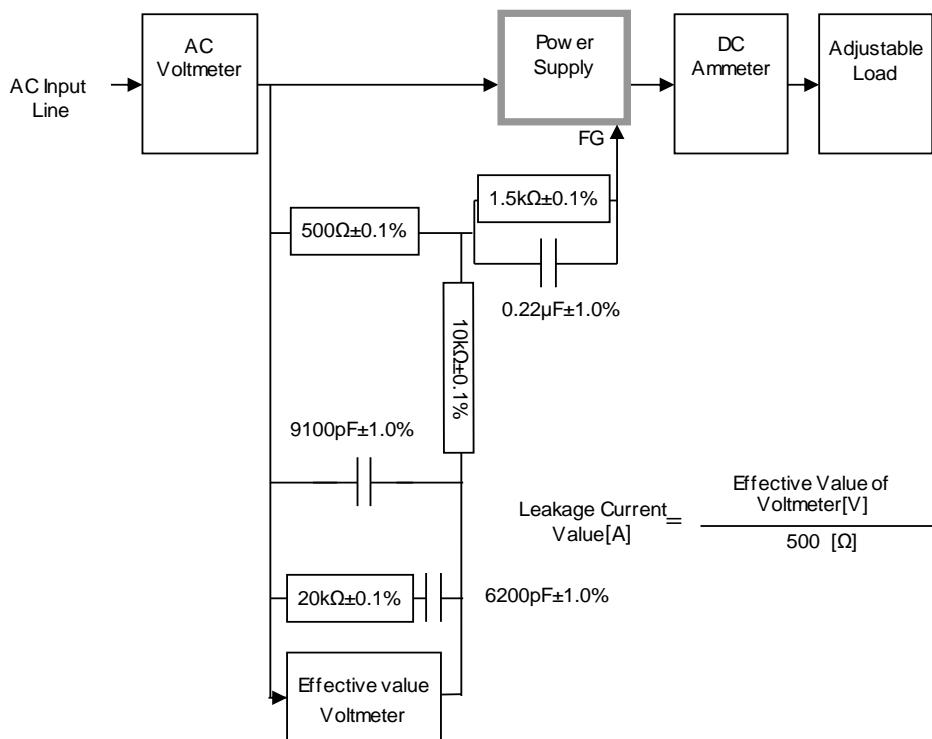


Figure C-3 ( IEC62368-1 refer to IEC60990 Fig.5 )