



TEST DATA OF PJMA1000F-36

Regulated DC Power Supply
January 22, 2021

Approved by :

A handwritten signature in black ink that reads "Takashi Kajii".

Takashi Kajii

Design Manager

Prepared by :

A handwritten signature in black ink that reads "Ryo Takahashi".

Ryo Takahashi

Design Engineer

COSEL CO.,LTD.



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.Leakage Current	8
9.Line Regulation	9
10.Load Regulation	10
11.Dynamic Load Response	11
12.Ripple Voltage (by Load Current)	12
13.Ripple-Noise	13
14.Ripple Voltage (by Ambient Temperature)	14
15.Ambient Temperature Drift	15
16.Output Voltage Accuracy	16
17.Time Lapse Drift	17
18.Rise and Fall Time	18
19.Hold-Up Time	19
20.Instantaneous Interruption Compensation	20
21.Minimum Input Voltage for Regulated Output Voltage	21
22.Overcurrent Protection	22
23.Ovvervoltage Protection	23
24.Figure of Testing Circuitry	24

(Final Page 24)

COSEL

Model	PJMA1000F-36	Temperature Testing Circuitry	25°C Figure A																																																			
Item	Input Current (by Load Current)																																																					
Object																																																						
1.Graph	<p>—△— Input Volt. 100V - - -□- - Input Volt. 115V - · -○- - Input Volt. 230V</p>																																																					
2.Values	<table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th colspan="3">Input Current [A]</th> </tr> <tr> <th>Input Volt. 100[V]</th> <th>Input Volt. 115[V]</th> <th>Input Volt. 230[V]</th> </tr> </thead> <tbody> <tr> <td>0.0</td><td>0.133</td><td>0.139</td><td>0.211</td></tr> <tr> <td>4.0</td><td>1.970</td><td>1.716</td><td>0.951</td></tr> <tr> <td>8.0</td><td>3.608</td><td>3.130</td><td>1.638</td></tr> <tr> <td>12.0</td><td>5.235</td><td>4.541</td><td>2.320</td></tr> <tr> <td>16.0</td><td>6.881</td><td>5.955</td><td>3.003</td></tr> <tr> <td>20.0</td><td>8.560</td><td>7.400</td><td>3.693</td></tr> <tr> <td>24.0</td><td>10.300</td><td>8.860</td><td>4.393</td></tr> <tr> <td>28.0</td><td>12.120</td><td>10.370</td><td>5.102</td></tr> <tr> <td>30.8</td><td>-</td><td>11.470</td><td>5.603</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]	Input Current [A]			Input Volt. 100[V]	Input Volt. 115[V]	Input Volt. 230[V]	0.0	0.133	0.139	0.211	4.0	1.970	1.716	0.951	8.0	3.608	3.130	1.638	12.0	5.235	4.541	2.320	16.0	6.881	5.955	3.003	20.0	8.560	7.400	3.693	24.0	10.300	8.860	4.393	28.0	12.120	10.370	5.102	30.8	-	11.470	5.603	--	-	-	-	--	-	-	-
Load Current [A]	Input Current [A]																																																					
	Input Volt. 100[V]	Input Volt. 115[V]	Input Volt. 230[V]																																																			
0.0	0.133	0.139	0.211																																																			
4.0	1.970	1.716	0.951																																																			
8.0	3.608	3.130	1.638																																																			
12.0	5.235	4.541	2.320																																																			
16.0	6.881	5.955	3.003																																																			
20.0	8.560	7.400	3.693																																																			
24.0	10.300	8.860	4.393																																																			
28.0	12.120	10.370	5.102																																																			
30.8	-	11.470	5.603																																																			
--	-	-	-																																																			
--	-	-	-																																																			
Note:	Slanted line shows the range of the rated load current.																																																					

COSEL

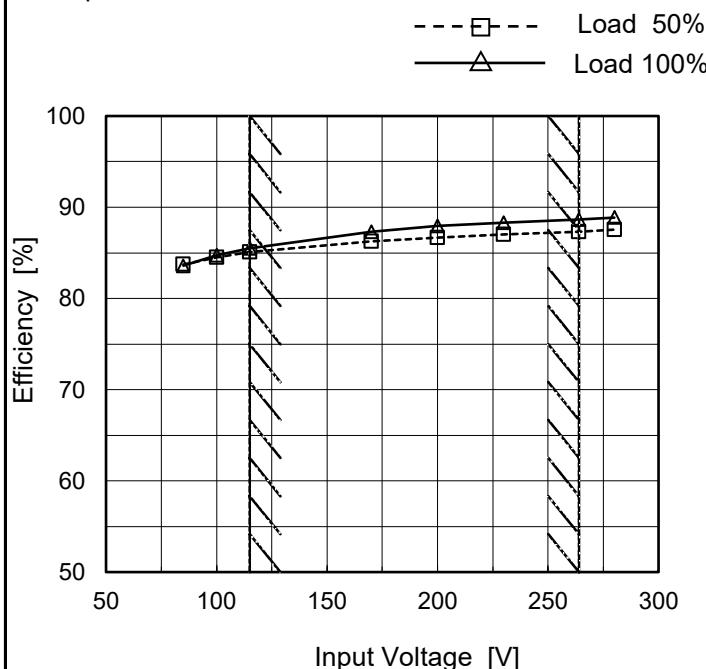
Model	PJMA1000F-36	Temperature Testing Circuitry	25°C Figure A																																																				
Item	Input Power (by Load Current)																																																						
Object																																																							
1.Graph	<p>—△— Input Volt. 100V - - -□--- Input Volt. 115V - · -○--- Input Volt. 230V</p> <table border="1"> <caption>Data points estimated from the graph</caption> <thead> <tr> <th>Load Current [A]</th> <th>Input Power [W] (100V)</th> <th>Input Power [W] (115V)</th> <th>Input Power [W] (230V)</th> </tr> </thead> <tbody> <tr><td>0.0</td><td>5</td><td>5</td><td>5</td></tr> <tr><td>4.0</td><td>189</td><td>188</td><td>185</td></tr> <tr><td>8.0</td><td>354</td><td>353</td><td>346</td></tr> <tr><td>12.0</td><td>519</td><td>516</td><td>505</td></tr> <tr><td>16.0</td><td>684</td><td>680</td><td>664</td></tr> <tr><td>20.0</td><td>853</td><td>846</td><td>824</td></tr> <tr><td>24.0</td><td>1026</td><td>1016</td><td>987</td></tr> <tr><td>28.0</td><td>1204</td><td>1189</td><td>1150</td></tr> <tr><td>30.8</td><td>-</td><td>1312</td><td>1266</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]	Input Power [W] (100V)	Input Power [W] (115V)	Input Power [W] (230V)	0.0	5	5	5	4.0	189	188	185	8.0	354	353	346	12.0	519	516	505	16.0	684	680	664	20.0	853	846	824	24.0	1026	1016	987	28.0	1204	1189	1150	30.8	-	1312	1266	--	-	-	-	--	-	-	-	2.Values					
Load Current [A]	Input Power [W] (100V)	Input Power [W] (115V)	Input Power [W] (230V)																																																				
0.0	5	5	5																																																				
4.0	189	188	185																																																				
8.0	354	353	346																																																				
12.0	519	516	505																																																				
16.0	684	680	664																																																				
20.0	853	846	824																																																				
24.0	1026	1016	987																																																				
28.0	1204	1189	1150																																																				
30.8	-	1312	1266																																																				
--	-	-	-																																																				
--	-	-	-																																																				
	<table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th colspan="3">Input Power [W]</th> </tr> <tr> <th>Input Volt. 100[V]</th> <th>Input Volt. 115[V]</th> <th>Input Volt. 230[V]</th> </tr> </thead> <tbody> <tr><td>0.0</td><td>5</td><td>5</td><td>5</td></tr> <tr><td>4.0</td><td>189</td><td>188</td><td>185</td></tr> <tr><td>8.0</td><td>354</td><td>353</td><td>346</td></tr> <tr><td>12.0</td><td>519</td><td>516</td><td>505</td></tr> <tr><td>16.0</td><td>684</td><td>680</td><td>664</td></tr> <tr><td>20.0</td><td>853</td><td>846</td><td>824</td></tr> <tr><td>24.0</td><td>1026</td><td>1016</td><td>987</td></tr> <tr><td>28.0</td><td>1204</td><td>1189</td><td>1150</td></tr> <tr><td>30.8</td><td>-</td><td>1312</td><td>1266</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]	Input Power [W]			Input Volt. 100[V]	Input Volt. 115[V]	Input Volt. 230[V]	0.0	5	5	5	4.0	189	188	185	8.0	354	353	346	12.0	519	516	505	16.0	684	680	664	20.0	853	846	824	24.0	1026	1016	987	28.0	1204	1189	1150	30.8	-	1312	1266	--	-	-	-	--	-	-	-			
Load Current [A]	Input Power [W]																																																						
	Input Volt. 100[V]	Input Volt. 115[V]	Input Volt. 230[V]																																																				
0.0	5	5	5																																																				
4.0	189	188	185																																																				
8.0	354	353	346																																																				
12.0	519	516	505																																																				
16.0	684	680	664																																																				
20.0	853	846	824																																																				
24.0	1026	1016	987																																																				
28.0	1204	1189	1150																																																				
30.8	-	1312	1266																																																				
--	-	-	-																																																				
--	-	-	-																																																				

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

COSEL

Model	PJMA1000F-36
Item	Efficiency (by Input Voltage)
Object	_____

1.Graph


 Temperature 25°C
 Testing Circuitry Figure A

2.Values

Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
85	83.7	83.6 ※1
100	84.5	84.7 ※2
115	85.1	85.5
170	86.3	87.3
200	86.7	87.9
230	87.0	88.3
264	87.3	88.6
280	87.5	88.9
--	-	-

※1: Load 80%

※2: Load 90%

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

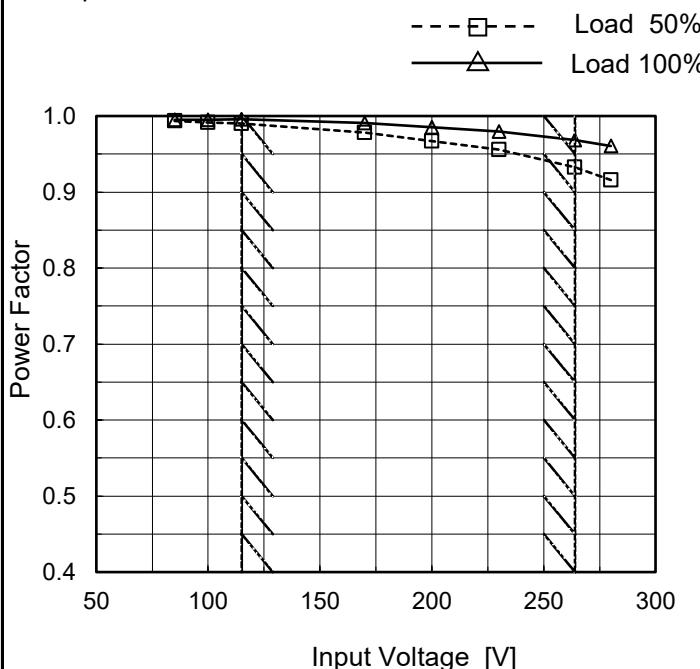
COSEL

Model	PJMA1000F-36	Temperature Testing Circuitry	25°C Figure A																																																									
Item	Efficiency (by Load Current)																																																											
Object																																																												
1.Graph	<p>—△— Input Volt. 100V - - □ - - Input Volt. 115V - - ○ - - Input Volt. 230V</p> <table border="1"> <caption>Data points estimated from the graph</caption> <thead> <tr> <th>Load Current [A]</th> <th>Efficiency [100V] (%)</th> <th>Efficiency [115V] (%)</th> <th>Efficiency [230V] (%)</th> </tr> </thead> <tbody> <tr><td>6</td><td>77</td><td>77</td><td>77</td></tr> <tr><td>8</td><td>82</td><td>82</td><td>82</td></tr> <tr><td>10</td><td>84</td><td>84</td><td>84</td></tr> <tr><td>12</td><td>85</td><td>85</td><td>85</td></tr> <tr><td>14</td><td>85</td><td>85</td><td>85</td></tr> <tr><td>16</td><td>85</td><td>85</td><td>85</td></tr> <tr><td>18</td><td>85</td><td>85</td><td>85</td></tr> <tr><td>20</td><td>85</td><td>85</td><td>85</td></tr> <tr><td>22</td><td>85</td><td>85</td><td>85</td></tr> <tr><td>24</td><td>85</td><td>85</td><td>85</td></tr> <tr><td>26</td><td>85</td><td>85</td><td>85</td></tr> <tr><td>28</td><td>85</td><td>85</td><td>85</td></tr> <tr><td>30</td><td>85</td><td>85</td><td>85</td></tr> </tbody> </table>	Load Current [A]	Efficiency [100V] (%)	Efficiency [115V] (%)	Efficiency [230V] (%)	6	77	77	77	8	82	82	82	10	84	84	84	12	85	85	85	14	85	85	85	16	85	85	85	18	85	85	85	20	85	85	85	22	85	85	85	24	85	85	85	26	85	85	85	28	85	85	85	30	85	85	85			
Load Current [A]	Efficiency [100V] (%)	Efficiency [115V] (%)	Efficiency [230V] (%)																																																									
6	77	77	77																																																									
8	82	82	82																																																									
10	84	84	84																																																									
12	85	85	85																																																									
14	85	85	85																																																									
16	85	85	85																																																									
18	85	85	85																																																									
20	85	85	85																																																									
22	85	85	85																																																									
24	85	85	85																																																									
26	85	85	85																																																									
28	85	85	85																																																									
30	85	85	85																																																									
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. 115[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>76.6</td><td>77.0</td><td>78.3</td></tr> <tr><td>8.0</td><td>82.2</td><td>82.6</td><td>84.2</td></tr> <tr><td>12.0</td><td>84.1</td><td>84.6</td><td>86.4</td></tr> <tr><td>16.0</td><td>85.0</td><td>85.6</td><td>87.6</td></tr> <tr><td>20.0</td><td>85.2</td><td>85.9</td><td>88.2</td></tr> <tr><td>24.0</td><td>85.0</td><td>85.8</td><td>88.3</td></tr> <tr><td>28.0</td><td>84.4</td><td>85.5</td><td>88.4</td></tr> <tr><td>30.8</td><td>-</td><td>85.2</td><td>88.3</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. 115[V]	Input Volt. 230[V]	0.0	-	-	-	4.0	76.6	77.0	78.3	8.0	82.2	82.6	84.2	12.0	84.1	84.6	86.4	16.0	85.0	85.6	87.6	20.0	85.2	85.9	88.2	24.0	85.0	85.8	88.3	28.0	84.4	85.5	88.4	30.8	-	85.2	88.3	--	-	-	-	--	-	-	-						
Load Current [A]	Efficiency [%]																																																											
	Input Volt. 100[V]	Input Volt. 115[V]	Input Volt. 230[V]																																																									
0.0	-	-	-																																																									
4.0	76.6	77.0	78.3																																																									
8.0	82.2	82.6	84.2																																																									
12.0	84.1	84.6	86.4																																																									
16.0	85.0	85.6	87.6																																																									
20.0	85.2	85.9	88.2																																																									
24.0	85.0	85.8	88.3																																																									
28.0	84.4	85.5	88.4																																																									
30.8	-	85.2	88.3																																																									
--	-	-	-																																																									
--	-	-	-																																																									
Note:	Slanted line shows the range of the rated load current.																																																											

COSEL

Model	PJMA1000F-36
Item	Power Factor (by Input Voltage)
Object	_____

1.Graph



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

 Temperature 25°C
 Testing Circuitry Figure A

2.Values

Input Voltage [V]	Power Factor	
	Load 50%	Load 100%
85	0.993	0.995 ※1
100	0.992	0.995 ※2
115	0.990	0.996
170	0.978	0.991
200	0.967	0.986
230	0.956	0.980
264	0.932	0.969
280	0.916	0.961
--	-	-

※1: Load 80%

※2: Load 90%

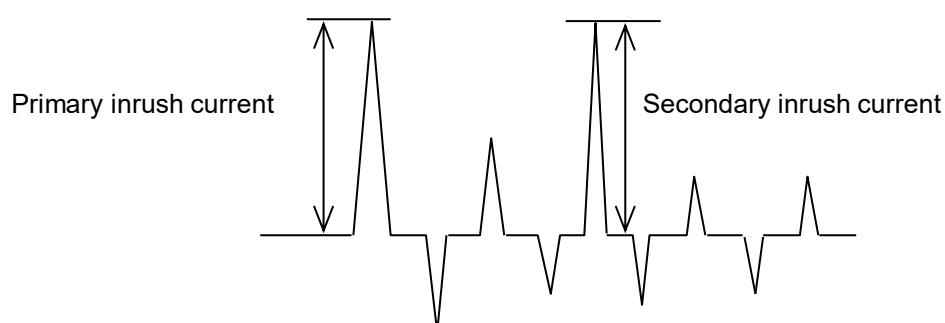
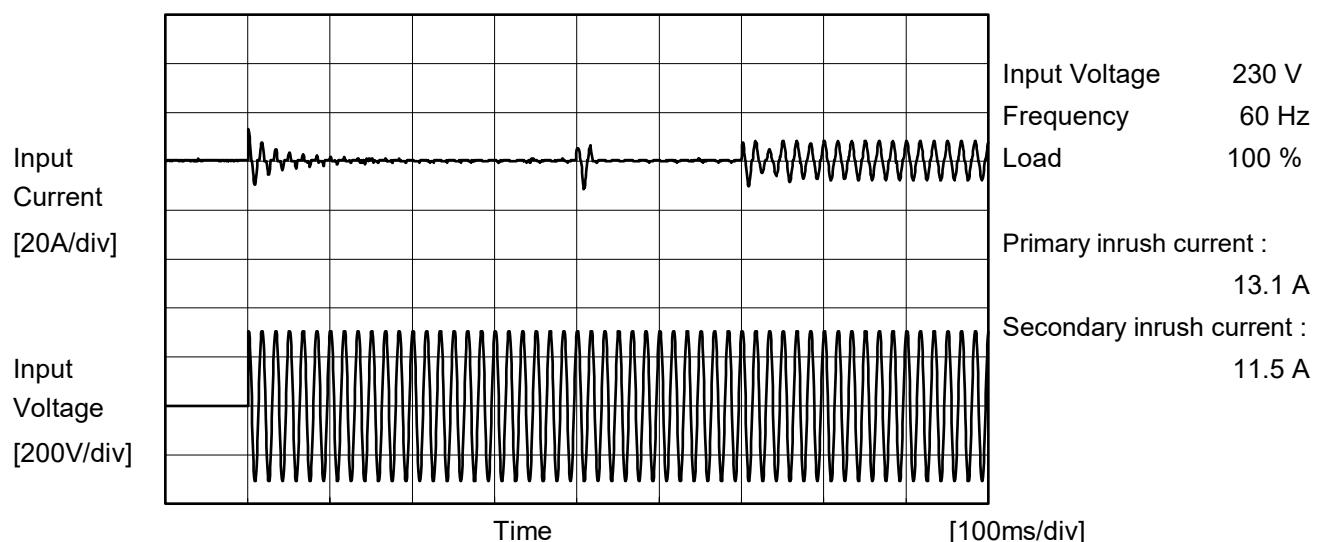
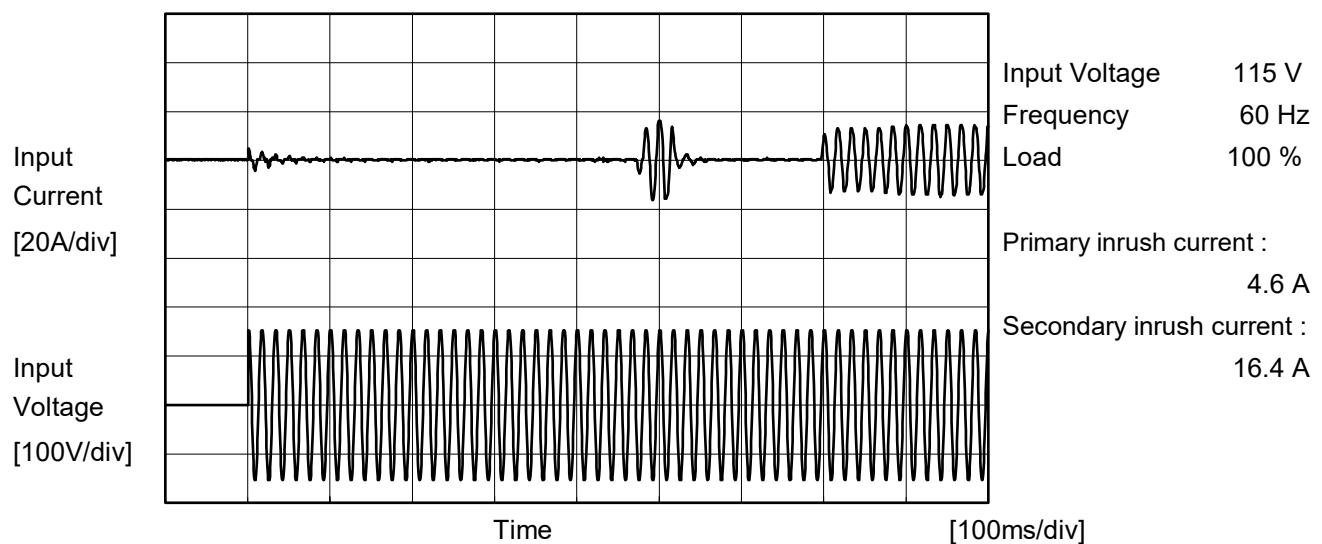
COSEL

Model	PJMA1000F-36	Temperature Testing Circuitry	25°C Figure A																																																			
Item	Power Factor (by Load Current)																																																					
Object	_____																																																					
1.Graph	<p>—△— Input Volt. 100V - - -□- - Input Volt. 115V - · -○- - Input Volt. 230V</p> <p>The graph plots Power Factor (Y-axis, 0.0 to 1.0) against Load Current [A] (X-axis, 0 to 32). Three curves are shown for different input voltages: 100V (solid line with triangles), 115V (dashed line with squares), and 230V (dash-dot line with circles). All curves show an initial increase in power factor with load current, followed by a plateau. A slanted line on the right side of the graph indicates the rated load current range.</p>																																																					
2.Values	<table border="1"> <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. 115[V]</th> <th>Input Volt. 230[V]</th> </tr> </thead> <tbody> <tr> <td>0.0</td><td>0.399</td><td>0.324</td><td>0.111</td></tr> <tr> <td>4.0</td><td>0.962</td><td>0.955</td><td>0.847</td></tr> <tr> <td>8.0</td><td>0.983</td><td>0.980</td><td>0.918</td></tr> <tr> <td>12.0</td><td>0.991</td><td>0.988</td><td>0.946</td></tr> <tr> <td>16.0</td><td>0.993</td><td>0.992</td><td>0.961</td></tr> <tr> <td>20.0</td><td>0.995</td><td>0.994</td><td>0.971</td></tr> <tr> <td>24.0</td><td>0.995</td><td>0.996</td><td>0.976</td></tr> <tr> <td>28.0</td><td>0.992</td><td>0.996</td><td>0.980</td></tr> <tr> <td>30.8</td><td>-</td><td>0.993</td><td>0.982</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. 115[V]	Input Volt. 230[V]	0.0	0.399	0.324	0.111	4.0	0.962	0.955	0.847	8.0	0.983	0.980	0.918	12.0	0.991	0.988	0.946	16.0	0.993	0.992	0.961	20.0	0.995	0.994	0.971	24.0	0.995	0.996	0.976	28.0	0.992	0.996	0.980	30.8	-	0.993	0.982	--	-	-	-	--	-	-	-
Load Current [A]	Power Factor																																																					
	Input Volt. 100[V]	Input Volt. 115[V]	Input Volt. 230[V]																																																			
0.0	0.399	0.324	0.111																																																			
4.0	0.962	0.955	0.847																																																			
8.0	0.983	0.980	0.918																																																			
12.0	0.991	0.988	0.946																																																			
16.0	0.993	0.992	0.961																																																			
20.0	0.995	0.994	0.971																																																			
24.0	0.995	0.996	0.976																																																			
28.0	0.992	0.996	0.980																																																			
30.8	-	0.993	0.982																																																			
--	-	-	-																																																			
--	-	-	-																																																			
Note:	Slanted line shows the range of the rated load current.																																																					

COSEL

Model	PJMA1000F-36
Item	Inrush Current
Object	

Temperature 25°C
Testing Circuitry Figure A





Model	PJMA1000F-36	Temperature	25°C
Item	Leakage Current	Testing Circuitry	Figure B
Object	<hr/>		

1. Results

Standards		Input Volt.			Note
		100 [V]	115 [V]	240 [V]	
IEC60601-1	Both phases	0.11	0.10	0.25	Operation
	One of phases	0.18	0.22	0.49	Stand by

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

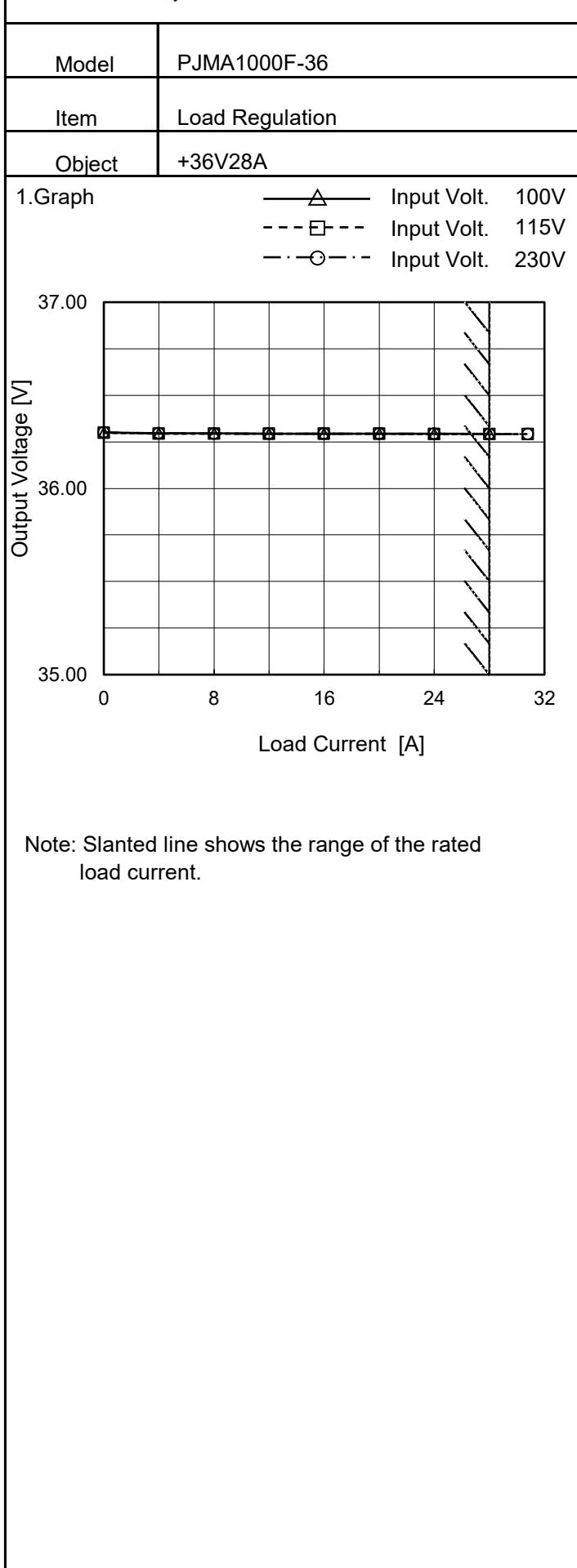
2. Condition

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

COSEL

Model	PJMA1000F-36	Temperature Testing Circuitry	25°C Figure A																																
Item	Line Regulation																																		
Object	+36V28A																																		
1.Graph			2.Values																																
<p>Output Voltage [V]</p> <p>Input Voltage [V]</p> <p>Legend: Load 50% (Dashed Line), Load 100% (Solid Line)</p>			<table border="1"> <thead> <tr> <th rowspan="2">Input Voltage [V]</th> <th colspan="2">Output Voltage [V]</th> </tr> <tr> <th>Load 50%</th> <th>Load 100%</th> </tr> </thead> <tbody> <tr><td>85</td><td>36.291</td><td>36.292</td></tr> <tr><td>100</td><td>36.291</td><td>36.292</td></tr> <tr><td>115</td><td>36.292</td><td>36.291</td></tr> <tr><td>170</td><td>36.291</td><td>36.291</td></tr> <tr><td>200</td><td>36.292</td><td>36.292</td></tr> <tr><td>230</td><td>36.292</td><td>36.292</td></tr> <tr><td>264</td><td>36.292</td><td>36.292</td></tr> <tr><td>280</td><td>36.292</td><td>36.293</td></tr> <tr><td>--</td><td>-</td><td>-</td></tr> </tbody> </table> <p>※1 : Load 80%</p> <p>※2 : Load 90%</p>	Input Voltage [V]	Output Voltage [V]		Load 50%	Load 100%	85	36.291	36.292	100	36.291	36.292	115	36.292	36.291	170	36.291	36.291	200	36.292	36.292	230	36.292	36.292	264	36.292	36.292	280	36.292	36.293	--	-	-
Input Voltage [V]	Output Voltage [V]																																		
	Load 50%	Load 100%																																	
85	36.291	36.292																																	
100	36.291	36.292																																	
115	36.292	36.291																																	
170	36.291	36.291																																	
200	36.292	36.292																																	
230	36.292	36.292																																	
264	36.292	36.292																																	
280	36.292	36.293																																	
--	-	-																																	

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

COSEL

Temperature 25°C
Testing Circuitry Figure A

2.Values

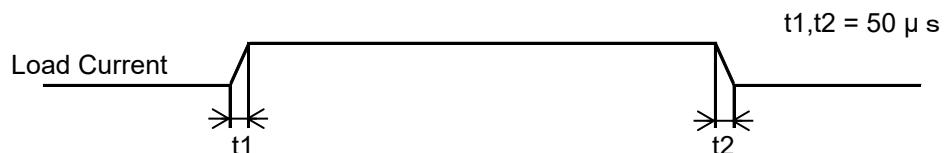
Load Current [A]	Output Voltage [V]		
	Input Volt. 100[V]	Input Volt. 115[V]	Input Volt. 230[V]
0.0	36.300	36.299	36.300
4.0	36.296	36.295	36.296
8.0	36.295	36.294	36.295
12.0	36.295	36.293	36.294
16.0	36.294	36.293	36.294
20.0	36.294	36.293	36.293
24.0	36.293	36.292	36.293
28.0	36.293	36.292	36.292
30.8	-	36.292	36.292
--	-	-	-
--	-	-	-

COSEL

Model	PJMA1000F-36
Item	Dynamic Load Response
Object	+36V28A

Temperature 25°C
Testing Circuitry Figure A

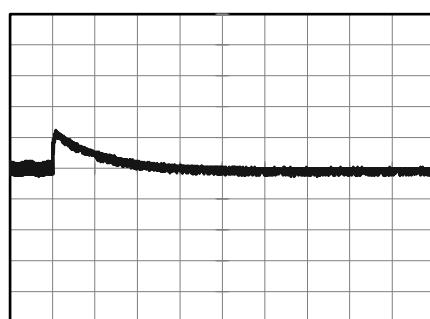
Input Volt. 115 V
Cycle 1000 ms



Min.Load (0A)↔
Load 100% (28A)

200 mV/div

20 ms/div

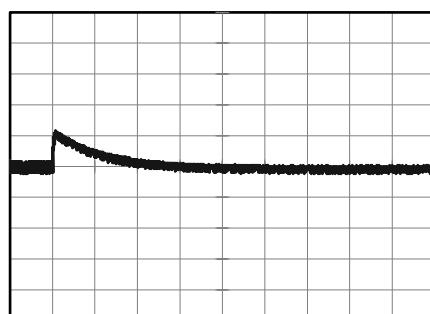


20 ms/div

Min.Load (0A)↔
Load 50% (14A)

200 mV/div

20 ms/div

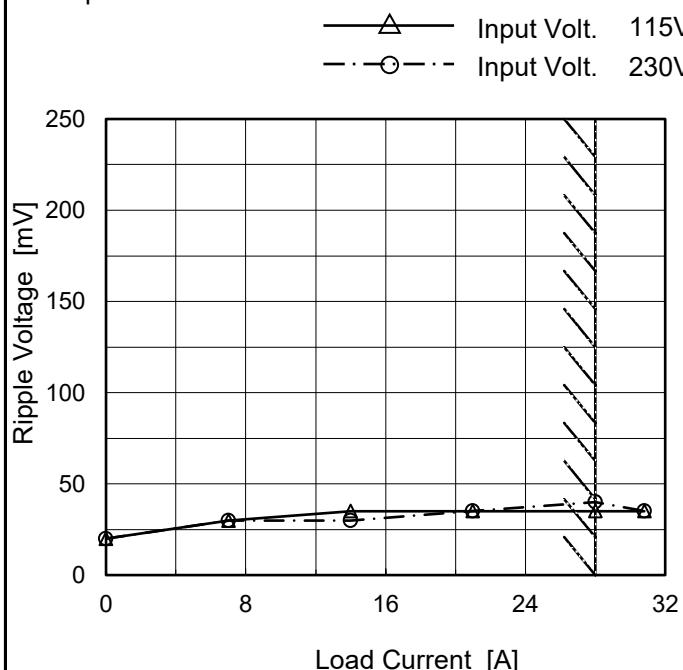


20 ms/div

COSEL

Model	PJMA1000F-36	Temperature	25°C
Item	Ripple Voltage (by Load Current)	Testing Circuitry	Figure C
Object	+36V28A		

1. Graph



2. Values

Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 115 [V]	Input Volt. 230 [V]
0.0	20	20
7.0	30	30
14.0	35	30
21.0	35	35
28.0	35	40
30.8	35	35
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

Measured by 20 MHz Oscilloscope.

Ripple Voltage is shown as p-p in the figure below.

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

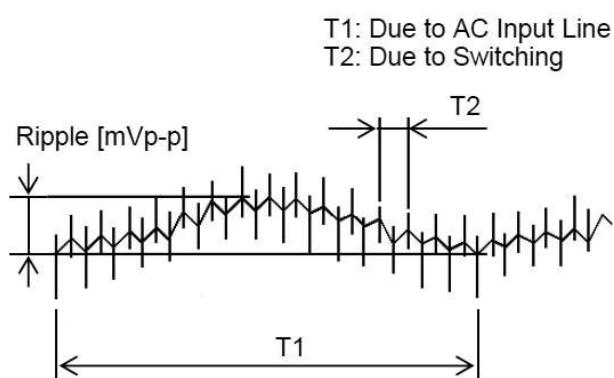


Fig. Complex Ripple Wave Form

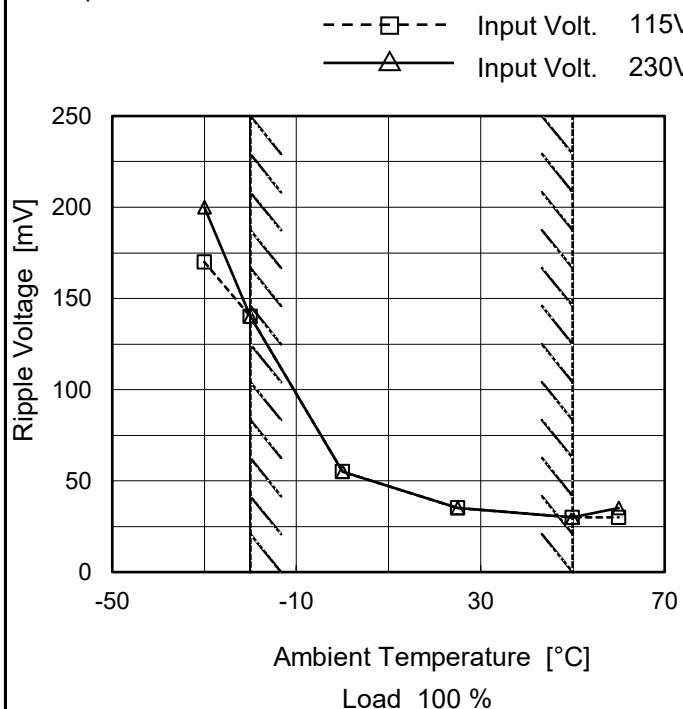
COSEL

Model	PJMA1000F-36	Temperature Testing Circuitry	25°C Figure C																																			
Item	Ripple-Noise																																					
Object	+36V28A																																					
1. Graph			2. Values																																			
<p>Graph showing Ripple-Noise [mV] vs Load Current [A]. The Y-axis ranges from 0 to 250 mV, and the X-axis ranges from 0 to 32 A. Two curves are plotted: one for Input Volt. 115V (solid line with open circles) and one for Input Volt. 230V (dashed line with open circles). A slanted line indicates the range of the rated load current.</p> <table border="1"> <thead> <tr> <th>Load Current [A]</th> <th>Ripple-Noise [mV] (Input Volt. 115V)</th> <th>Ripple-Noise [mV] (Input Volt. 230V)</th> </tr> </thead> <tbody> <tr><td>0.0</td><td>20</td><td>25</td></tr> <tr><td>7.0</td><td>40</td><td>40</td></tr> <tr><td>14.0</td><td>40</td><td>40</td></tr> <tr><td>21.0</td><td>35</td><td>35</td></tr> <tr><td>28.0</td><td>35</td><td>40</td></tr> <tr><td>30.8</td><td>40</td><td>40</td></tr> <tr><td>--</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td></tr> </tbody> </table>			Load Current [A]	Ripple-Noise [mV] (Input Volt. 115V)	Ripple-Noise [mV] (Input Volt. 230V)	0.0	20	25	7.0	40	40	14.0	40	40	21.0	35	35	28.0	35	40	30.8	40	40	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-
Load Current [A]	Ripple-Noise [mV] (Input Volt. 115V)	Ripple-Noise [mV] (Input Volt. 230V)																																				
0.0	20	25																																				
7.0	40	40																																				
14.0	40	40																																				
21.0	35	35																																				
28.0	35	40																																				
30.8	40	40																																				
--	-	-																																				
--	-	-																																				
--	-	-																																				
--	-	-																																				
--	-	-																																				
<p>Measured by 20 MHz Oscilloscope. Ripple-Noise is shown as p-p in the figure below. Note: Slanted line shows the range of the rated load current.</p> <p>Fig. Complex Ripple Wave Form</p>																																						

COSEL

Model	PJMA1000F-36
Item	Ripple Voltage (by Ambient Temp.)
Object	+36V28A

1. Graph



Measured by 20 MHz Oscilloscope.

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

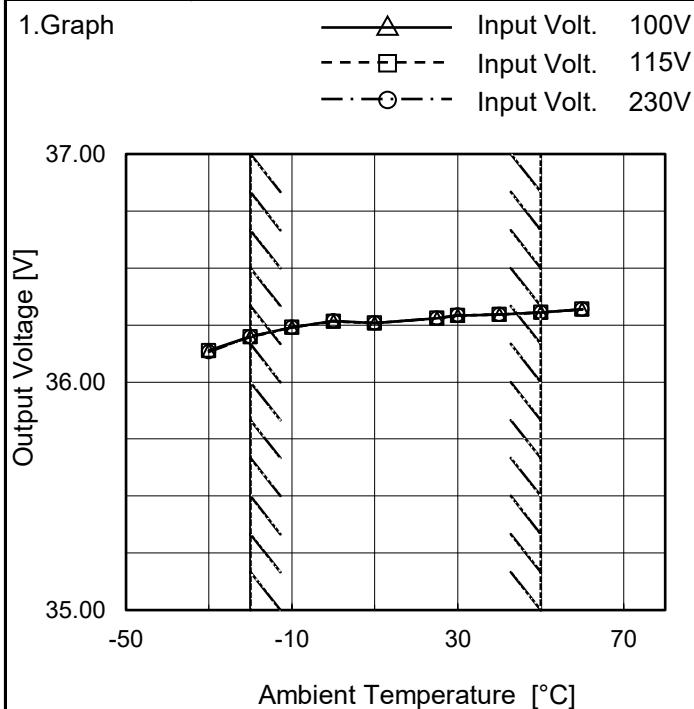
Testing Circuitry Figure A

2. Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Input Volt. 115 [V]	Input Volt. 230 [V]
-30	170	200
-20	140	140
0	55	55
25	35	35
50	30	30
60	30	35
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	PJMA1000F-36
Item	Ambient Temperature Drift
Object	+36V28A



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

Testing Circuitry Figure A

2. Values

Ambient Temperature [°C]	Output Voltage [V]		
	Input Volt. 100[V]	Input Volt. 115[V]	Input Volt. 230[V]
-30	36.139	36.136	36.133
-20	36.199	36.199	36.198
-10	36.240	36.241	36.240
0	36.267	36.267	36.267
10	36.258	36.258	36.259
25	36.280	36.280	36.281
30	36.292	36.292	36.293
40	36.297	36.297	36.297
50	36.306	36.306	36.306
60	36.319	36.319	36.319
--	-	-	-

Note: In case of Input Volt. 100V, Load 90%.
Other case Load 100%.



Model	PJMA1000F-36
Item	Output Voltage Accuracy
Object	+36V28A

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 : -20 - 50°C

Input Voltage : 115 - 264V

Load Current : 0 - 28A

* Output Voltage Accuracy = $\pm(\text{Maximum of Output Voltage} - \text{Minimum of Output Voltage}) / 2$

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

2. Values

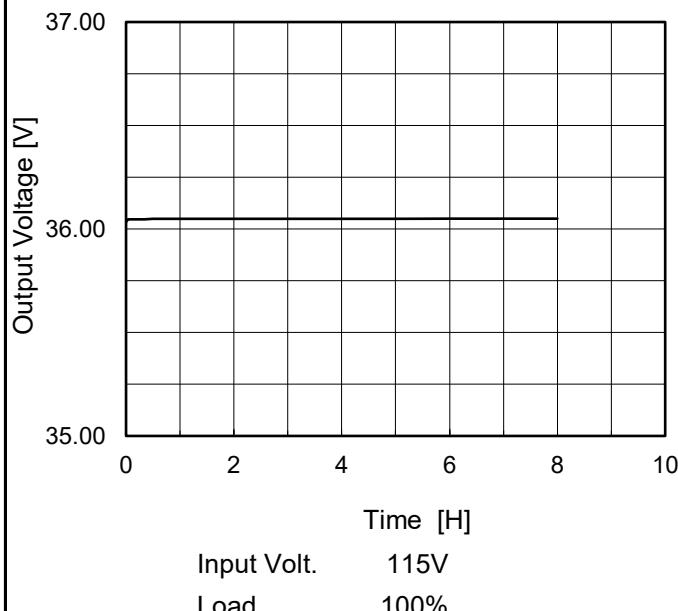
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ratio [%]
Maximum Voltage	50	264	0	36.311	±57	±0.2
Minimum Voltage	-20	264	28	36.197		

COSEL

Model	PJMA1000F-36
Item	Time Lapse Drift
Object	+36V28A

Temperature 25°C
 Testing Circuitry Figure A

1.Graph



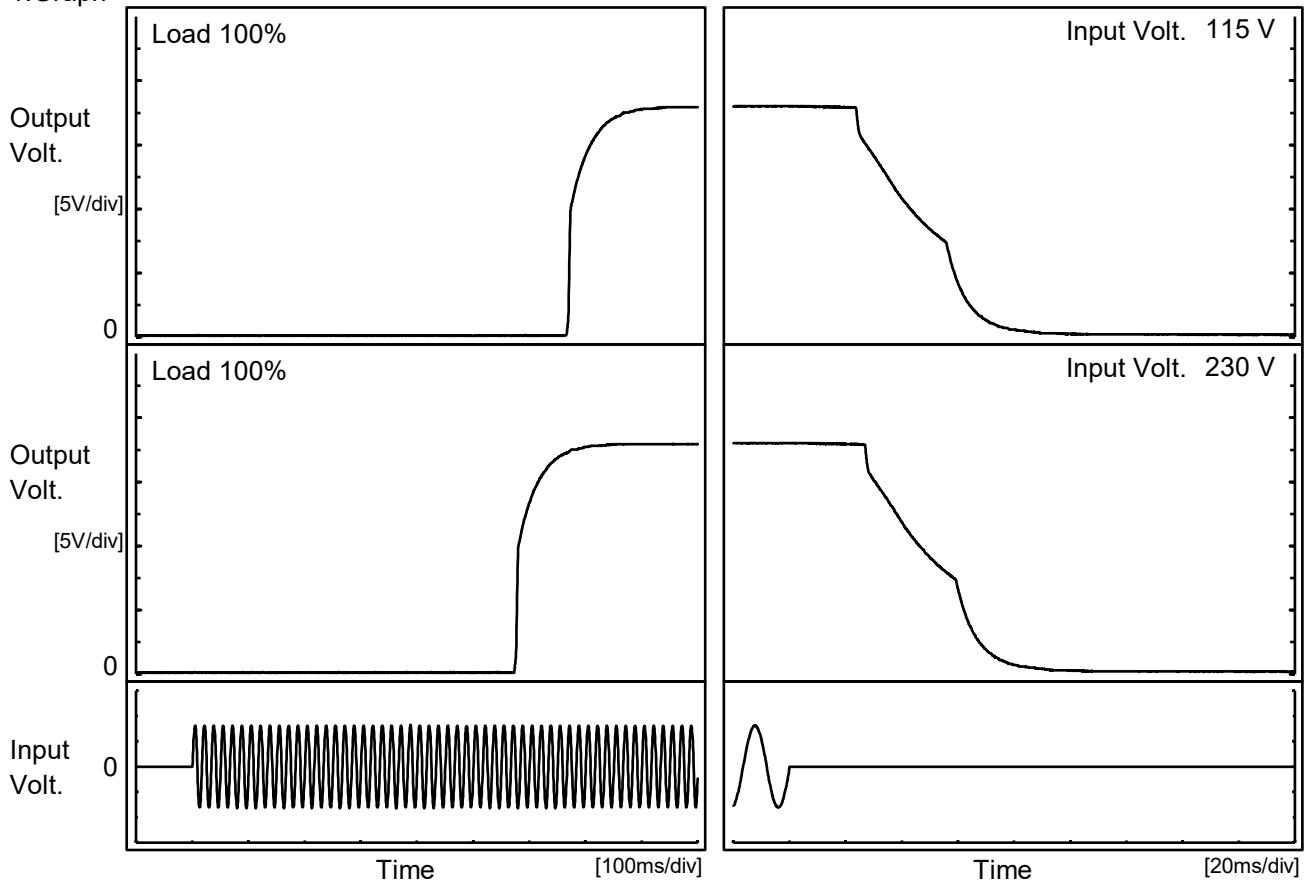
2.Values

Time since start [H]	Output Voltage [V]
0.0	36.033
0.5	36.048
1.0	36.048
2.0	36.049
3.0	36.049
4.0	36.049
5.0	36.049
6.0	36.050
7.0	36.050
8.0	36.050

COSEL

Model	PJMA1000F-36	Temperature Testing Circuitry	25°C
Item	Rise and Fall Time		Figure A
Object	+36V28A		

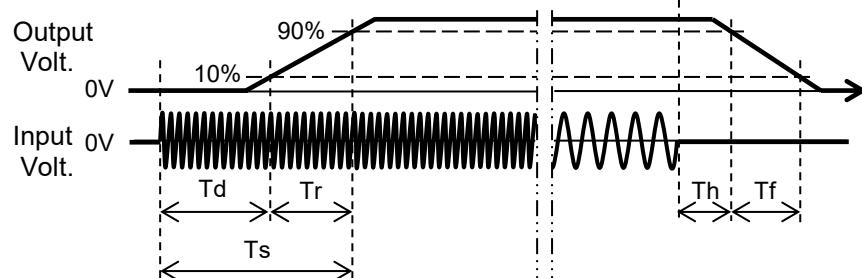
1.Graph



2.Values

[ms]

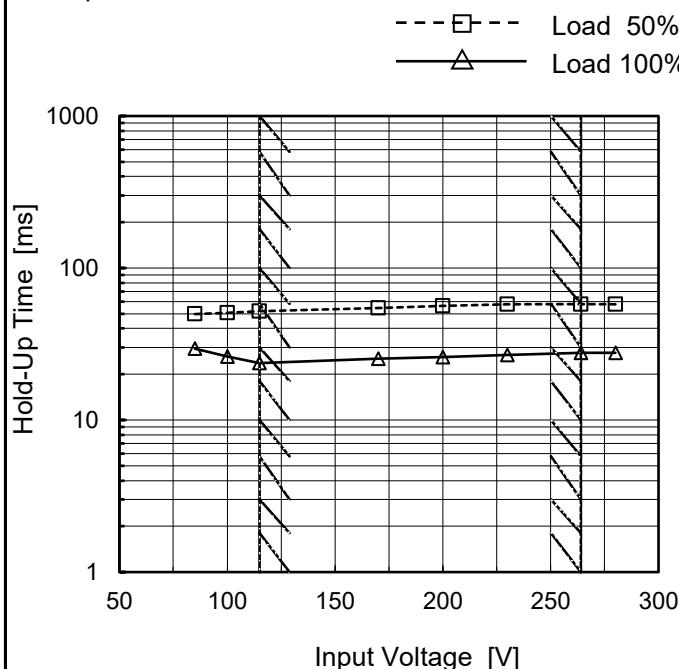
Input Volt.	Time	Td	Tr	Ts	Th	Tf
115 V		670.0	58.5	728.5	24.5	42.2
230 V		577.0	59.0	636.0	27.7	42.3



COSEL

Model	PJMA1000F-36	Temperature Testing Circuitry	25°C Figure A
Item	Hold-Up Time		
Object	+36V28A		

1.Graph



2.Values

Input Voltage [V]	Hold-Up Time [ms]	
	Load 50%	Load 100%
85	50	30 ※1
100	51	26 ※2
115	52	24
170	55	25
200	57	26
230	58	27
264	58	28
280	58	28
--	-	-

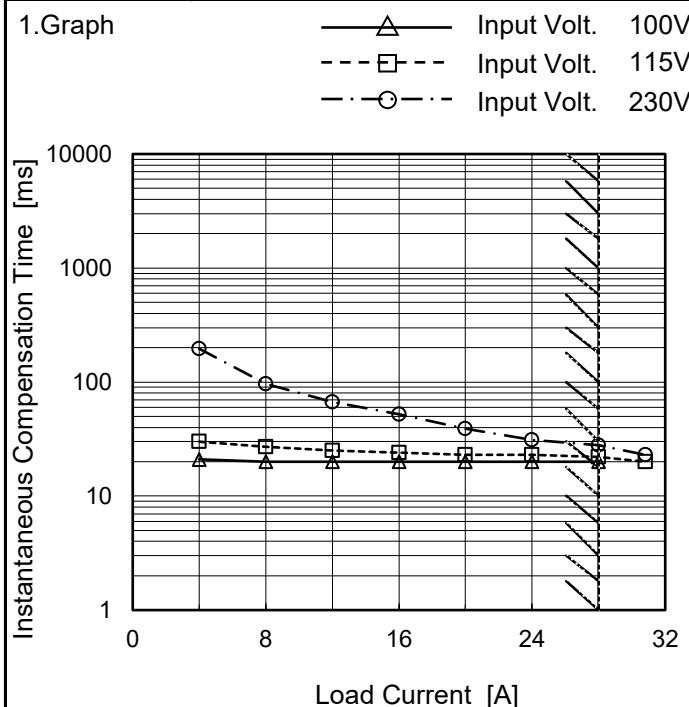
※1: Load 80%

※2: Load 90%

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.

COSEL

Model	PJMA1000F-36
Item	Instantaneous Interruption Compensation
Object	+36V28A


 Temperature 25°C
 Testing Circuitry Figure A

2.Values

Load Current [A]	Time [ms]		
	Input Volt. 100[V]	Input Volt. 115[V]	Input Volt. 230[V]
0.0	-	-	-
4.0	21	30	196
8.0	20	27	96
12.0	20	25	67
16.0	20	24	52
20.0	20	23	39
24.0	20	23	31
28.0	20	22	28
30.8	-	20	23
--	-	-	-
--	-	-	-

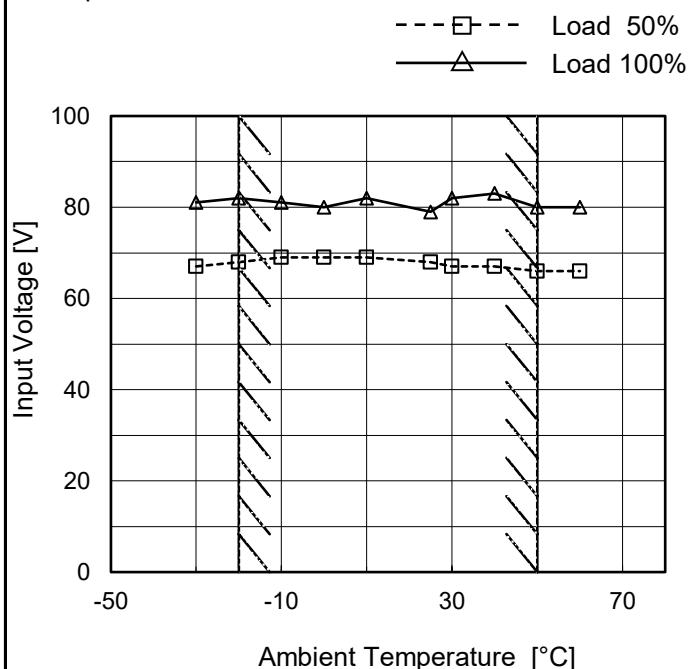
Note: Slanted line shows the range of the rated load current.



Model	PJMA1000F-36
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+36V28A

Testing Circuitry Figure A

1.Graph



2.Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-30	67	81
-20	68	82
-10	69	81
0	69	80
10	69	82
25	68	79
30	67	82
40	67	83
50	66	80
60	66	80
--	-	-

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

COSEL

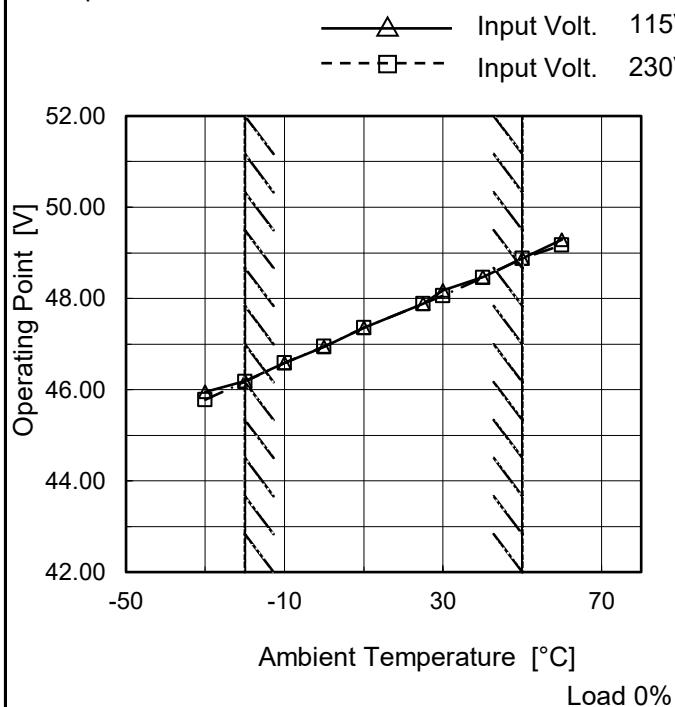
Model	PJMA1000F-36	Temperature Testing Circuitry	25°C Figure A																																																															
Item	Overcurrent Protection																																																																	
Object	+36V28A																																																																	
1.Graph		2.Values																																																																
<p>The graph plots Output Voltage [V] on the Y-axis (0.0 to 50.0) against Load Current [A] on the X-axis (0 to 50). Three horizontal lines represent different input voltages: 100V (top), 115V (middle), and 230V (bottom). At low currents, the output voltage remains constant. Around 28A, each curve drops sharply, indicating overcurrent protection. A slanted line is drawn from the start of the drop at ~28A up to the point where the voltage begins to drop, spanning from ~28A to ~35A.</p>		<table border="1"> <thead> <tr> <th rowspan="2">Output Voltage [V]</th> <th colspan="3">Load Current [A]</th> </tr> <tr> <th>Input Volt. 100[V]</th> <th>Input Volt. 115[V]</th> <th>Input Volt. 230[V]</th> </tr> </thead> <tbody> <tr><td>34.2</td><td>33.42</td><td>33.45</td><td>33.49</td></tr> <tr><td>32.4</td><td>33.58</td><td>33.57</td><td>33.70</td></tr> <tr><td>28.8</td><td>33.99</td><td>34.00</td><td>33.99</td></tr> <tr><td>25.2</td><td>34.14</td><td>34.17</td><td>34.44</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td></tr> </tbody> </table>		Output Voltage [V]	Load Current [A]			Input Volt. 100[V]	Input Volt. 115[V]	Input Volt. 230[V]	34.2	33.42	33.45	33.49	32.4	33.58	33.57	33.70	28.8	33.99	34.00	33.99	25.2	34.14	34.17	34.44	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
Output Voltage [V]	Load Current [A]																																																																	
	Input Volt. 100[V]	Input Volt. 115[V]	Input Volt. 230[V]																																																															
34.2	33.42	33.45	33.49																																																															
32.4	33.58	33.57	33.70																																																															
28.8	33.99	34.00	33.99																																																															
25.2	34.14	34.17	34.44																																																															
--	-	-	-																																																															
--	-	-	-																																																															
--	-	-	-																																																															
--	-	-	-																																																															
--	-	-	-																																																															
--	-	-	-																																																															
--	-	-	-																																																															
--	-	-	-																																																															
--	-	-	-																																																															
--	-	-	-																																																															

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

COSEL

Model	PJMA1000F-36
Item	Overvoltage Protection
Object	+36V28A

1.Graph



Testing Circuitry Figure A

2.Values

Ambient Temperature [°C]	Operating Point [V]	
	Input Volt.	Input Volt.
115[V]	115[V]	230[V]
-30	45.78	45.78
-20	46.19	46.18
-10	46.48	46.59
0	46.95	46.95
10	47.35	47.36
25	47.88	47.88
30	48.17	48.06
40	48.46	48.46
50	48.88	48.88
60	49.17	49.17
--	-	-

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

COSEL

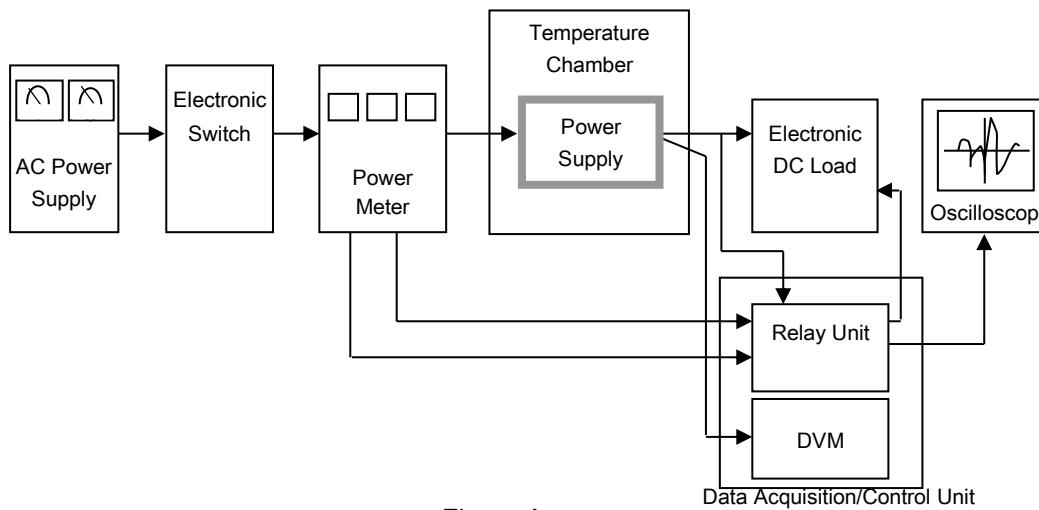


Figure A

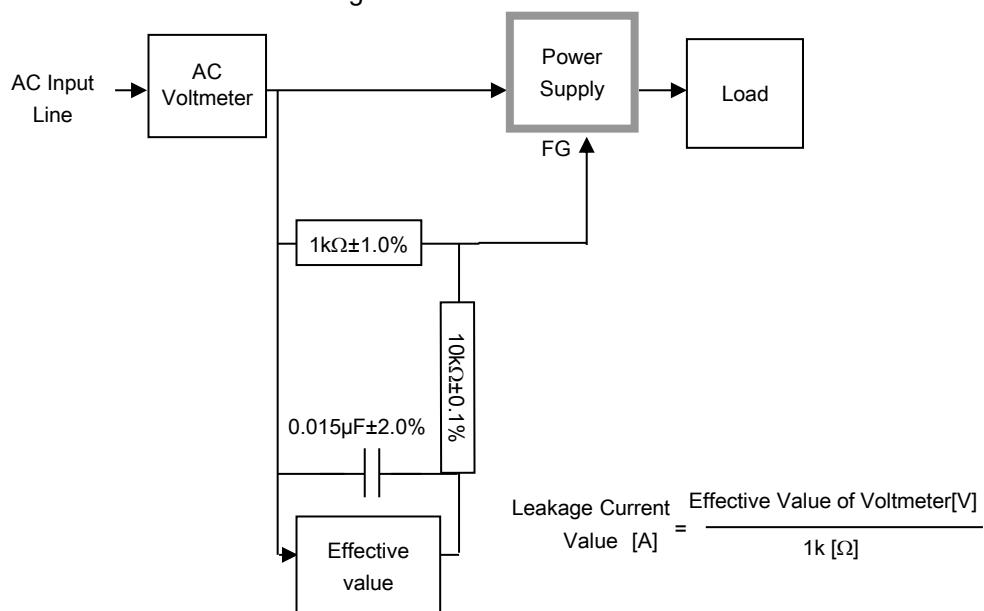


Figure B (IEC60601-1)

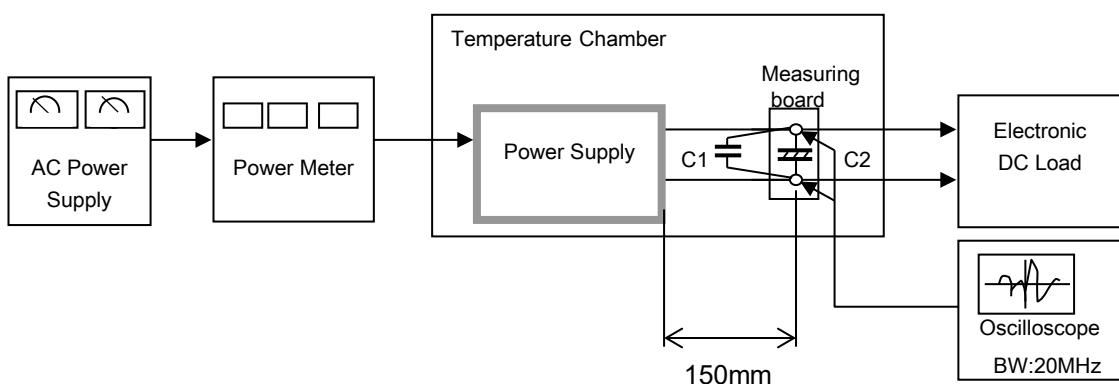
(Ceramic capacitor)
C1= 0.1 μF (Electrolytic capacitor)
C2= 22 μF

Figure C