Reference

TEST DATA OF PJMA1500F-24

Regulated DC Power Supply
September 22, 2022

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Design Manager

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Design Engineer

COSEL CO.,LTD.

COSEL

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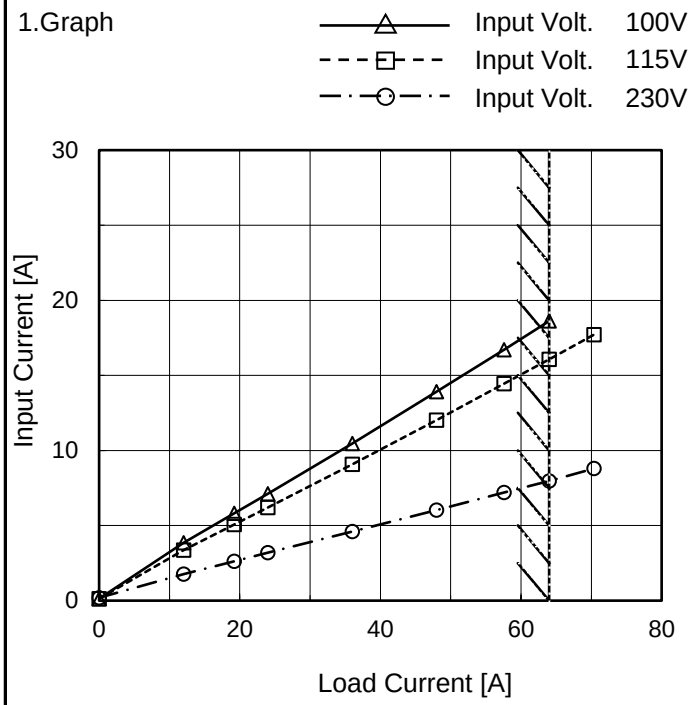
Model	PJMA1500F-24
Item	Input Current (by Load Current)
Object	———————

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. 100[V]	Input Volt. 115[V]	Input Volt. 230[V]
0.0	0.130	0.133	0.192
12.0	3.857	3.370	1.763
19.2	5.810	5.064	2.621
24.0	7.126	6.190	3.190
36.0	10.472	9.075	4.607
48.0	13.912	12.010	6.030
57.6	16.709	14.446	7.208
64.0	18.617	16.068	7.978
70.4	-	17.718	8.798
--	-	-	-
--	-	-	-

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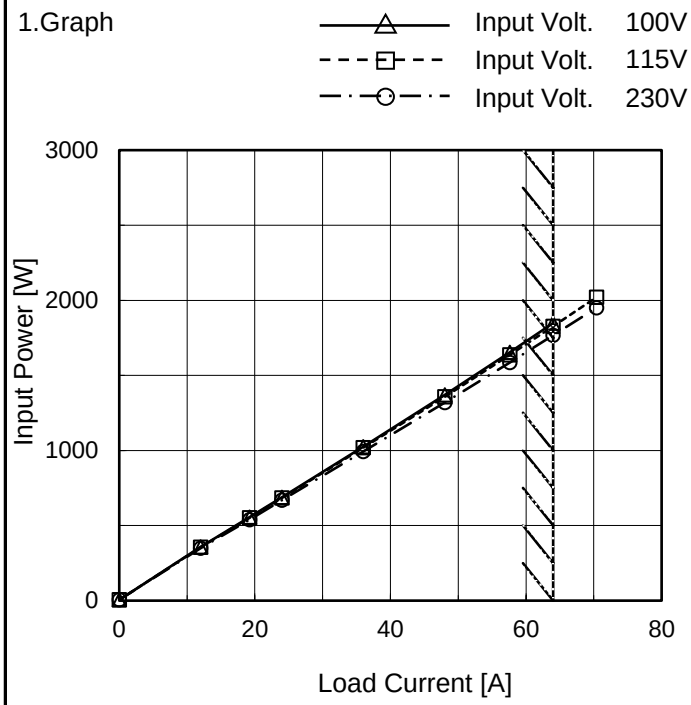
Model	PJMA1500F-24
Item	Input Power (by Load Current)
Object	———————

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. 100[V]	Input Volt. 115[V]	Input Volt. 230[V]
0.0	5	5	6
12.0	358	356	349
19.2	556	552	540
24.0	689	684	668
36.0	1025	1019	992
48.0	1370	1358	1319
57.6	1654	1637	1586
64.0	1848	1827	1767
70.4	-	2021	1950
--	-	-	-
--	-	-	-

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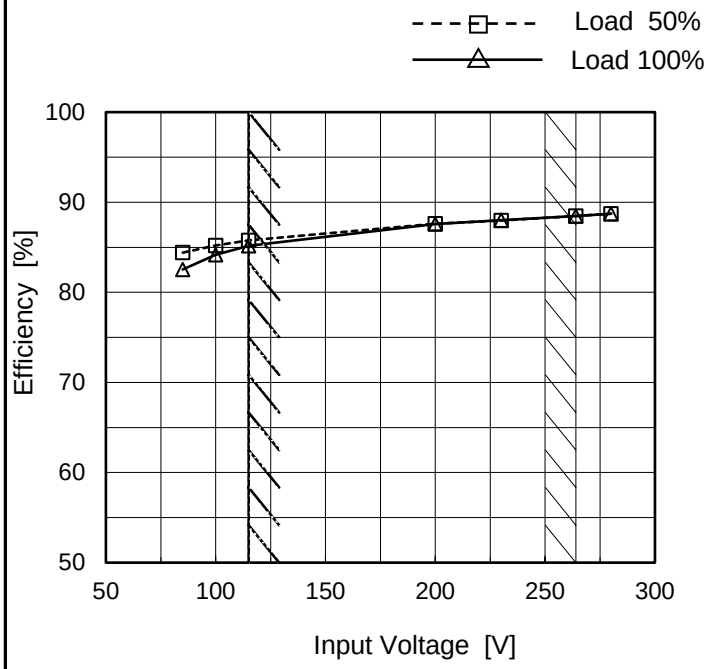
Model	PJMA1500F-24
Item	Efficiency (by Input Voltage)
Object	————————

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	84.4	82.5 ※1
100	85.2	84.2 ※2
115	85.8	85.2
200	87.6	87.6
230	88.0	88.0
264	88.5	88.5
280	88.7	88.7
--	-	-
--	-	-

※1 : Load 80%
※2 : Load 90%

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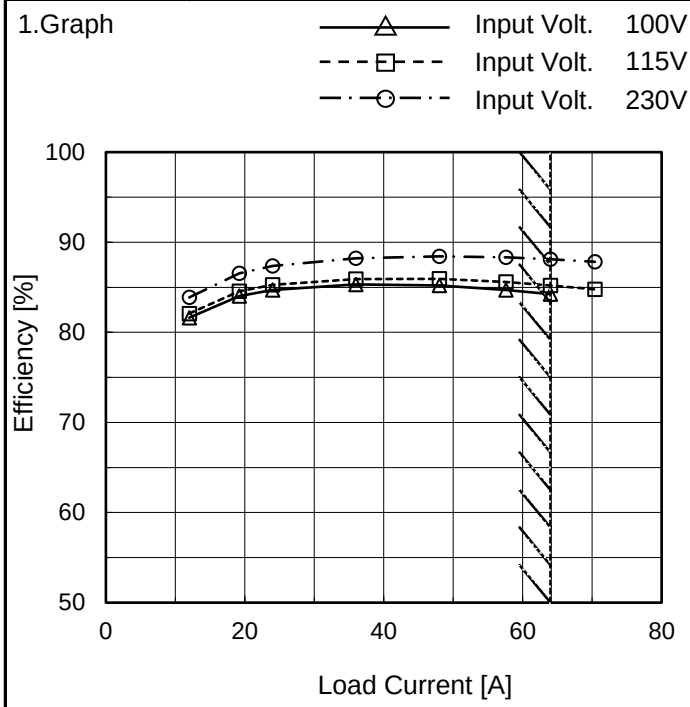
Model	PJMA1500F-24
Item	Efficiency (by Load Current)
Object	————————

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. 100[V]	Input Volt. 115[V]	Input Volt. 230[V]
0.0	-	-	-
12.0	81.6	82.1	83.9
19.2	84.0	84.6	86.6
24.0	84.7	85.3	87.4
36.0	85.3	85.9	88.2
48.0	85.2	85.9	88.4
57.6	84.7	85.6	88.3
64.0	84.2	85.2	88.1
70.4	-	84.8	87.8
--	-	-	-
--	-	-	-

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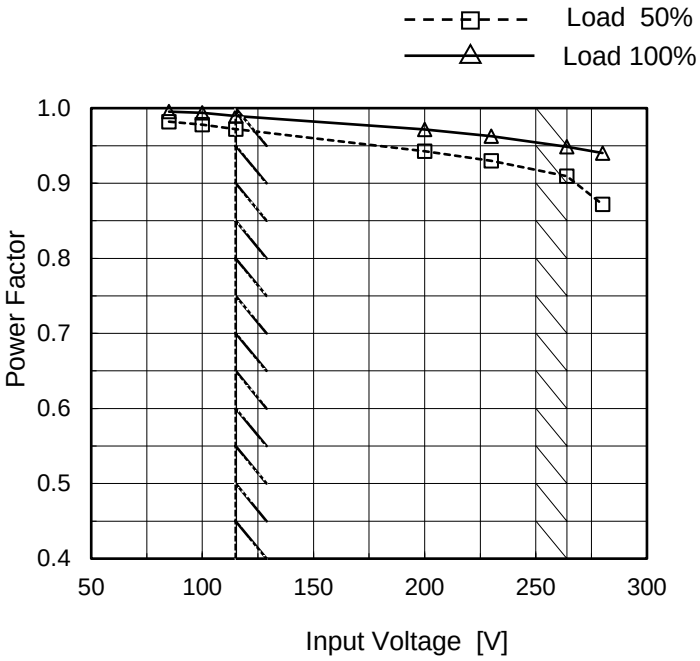
Model	PJMA1500F-24
Item	Power Factor (by Input Voltage)
Object	————————

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	0.982	0.995 ※1
100	0.978	0.994 ※2
115	0.972	0.990
200	0.943	0.971
230	0.930	0.963
264	0.909	0.949
280	0.872	0.940
--	-	-
--	-	-

※1 : Load 80%
※2 : Load 90%

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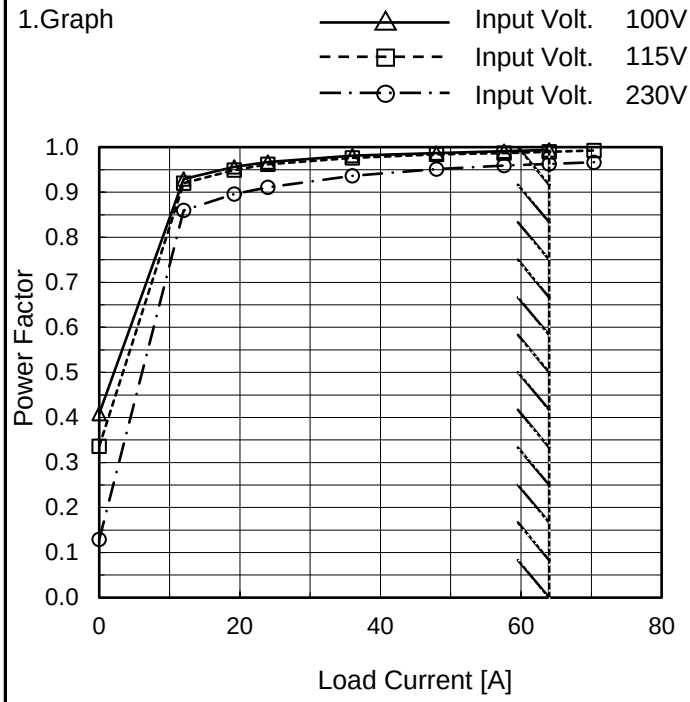
Model	PJMA1500F-24
Item	Power Factor (by Load Current)
Object	———————

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. 100[V]	Input Volt. 115[V]	Input Volt. 230[V]
0.0	0.409	0.336	0.129
12.0	0.929	0.920	0.860
19.2	0.956	0.949	0.896
24.0	0.967	0.962	0.911
36.0	0.981	0.976	0.937
48.0	0.987	0.984	0.951
57.6	0.991	0.987	0.959
64.0	0.994	0.990	0.963
70.4	-	0.993	0.967
--	-	-	-
--	-	-	-

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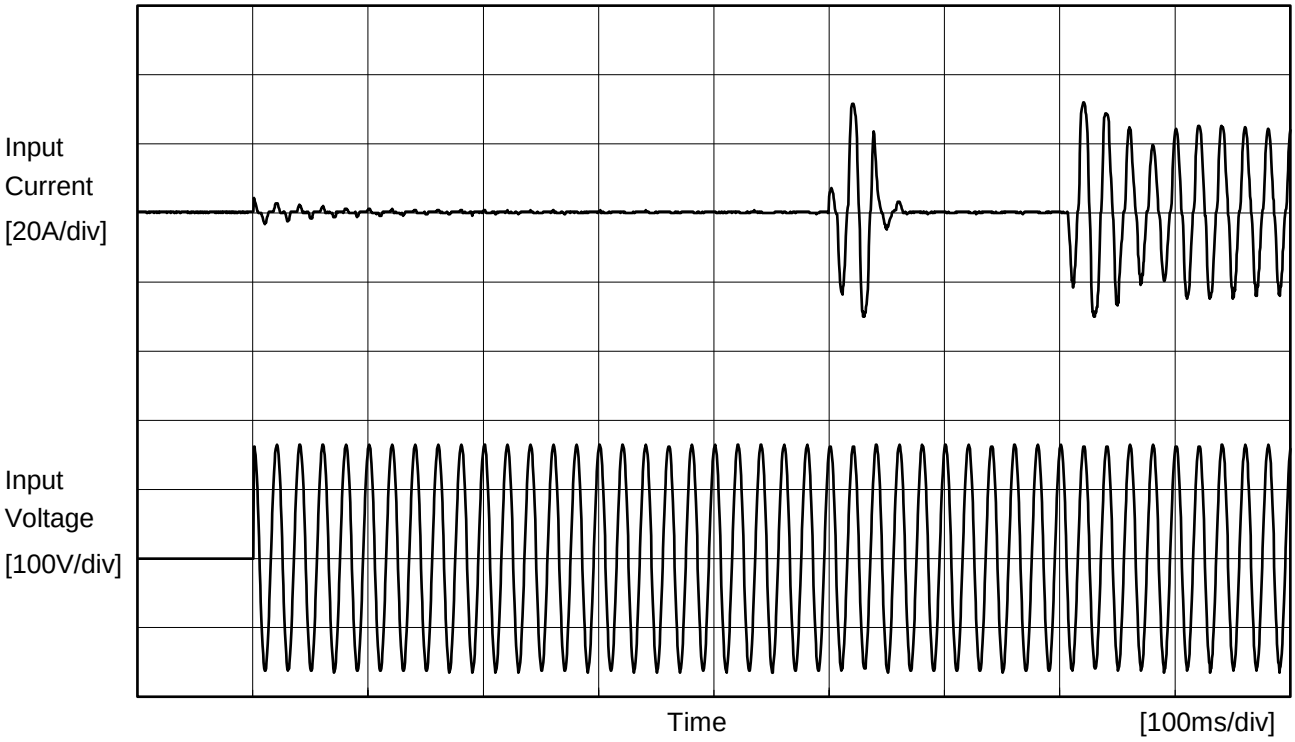
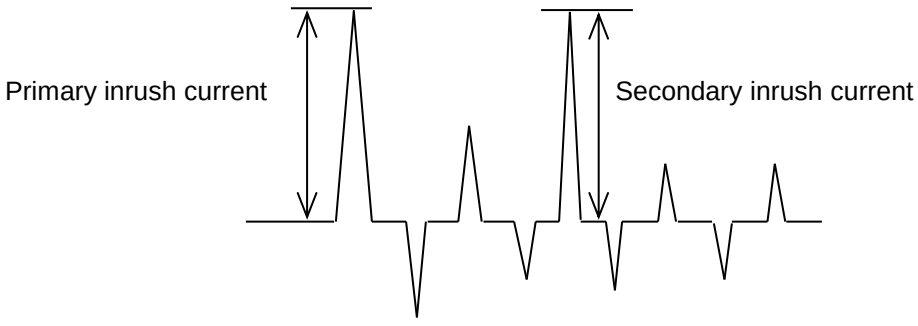
Model	PJMA1500F-24
Item	Inrush Current
Object	————————

Temperature 25°C
Testing Circuitry Figure A



Input Voltage	115 V
Frequency	50 Hz
Load	100 %
Primary inrush current	4.3 A
Secondary inrush current	31.9 A



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Model	PJMA1500F-24	
Item	Leakage Current	Temperature 25°C Testing Circuitry Figure C
Object	————————	

1.Results

[mA]

Standards		Input Volt.			Note
		230 [V]	240 [V]	264 [V]	
IEC60601-1	Both phases	0.21	0.24	0.27	Operation
	One of phases	0.39	0.40	0.45	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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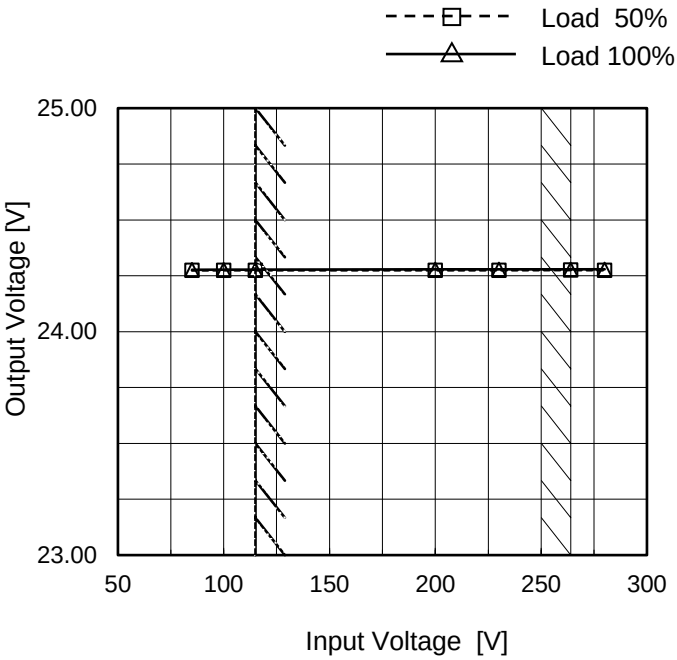
Model	PJMA1500F-24
Item	Line Regulation
Object	+24V64A

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	24.274	24.277 ※1
100	24.274	24.277 ※2
115	24.275	24.277
200	24.274	24.279
230	24.275	24.279
264	24.275	24.278
280	24.275	24.279
--	-	-
--	-	-

※1 : Load 80%
※2 : Load 90%

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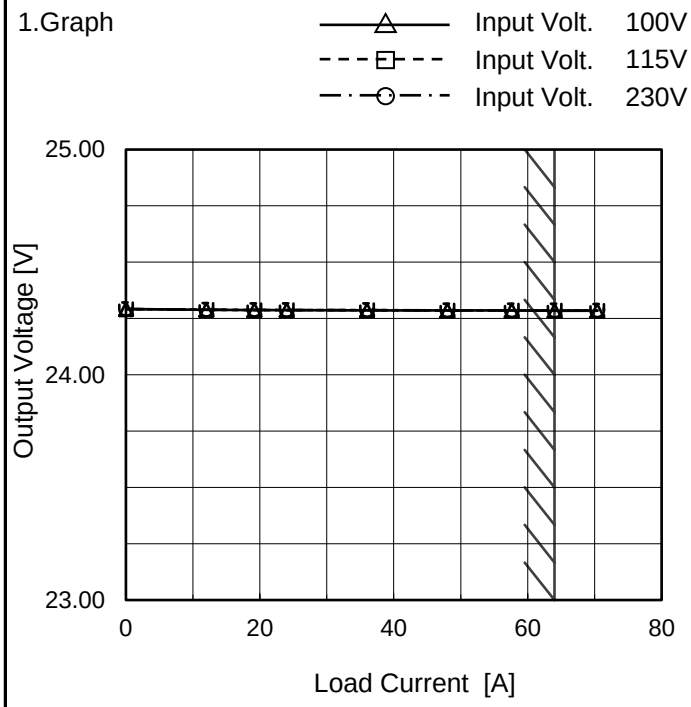
Model	PJMA1500F-24
Item	Load Regulation
Object	+24V64A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

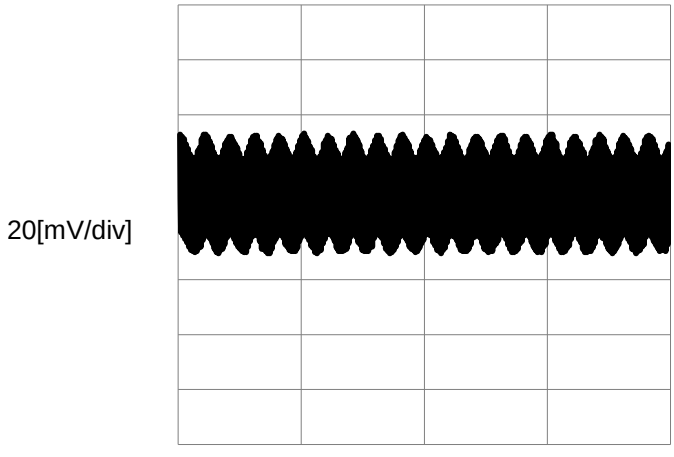
Load Current [A]	Output Voltage [V] Input Volt. 100[V]	Input Volt. 115[V]	Input Volt. 230[V]
0.0	24.292	24.292	24.292
12.0	24.288	24.288	24.289
19.2	24.287	24.288	24.288
24.0	24.287	24.287	24.288
36.0	24.286	24.287	24.287
48.0	24.286	24.285	24.286
57.6	24.286	24.286	24.286
64.0	24.284	24.286	24.285
70.4	24.285	24.285	24.286
--	--	--	--
--	--	--	--

Item	Ripple-Noise
Object	+24V64A

Temperature 25°C
Testing Circuitry Figure B

1.Graph

Input Voltage 115V
Load 100%



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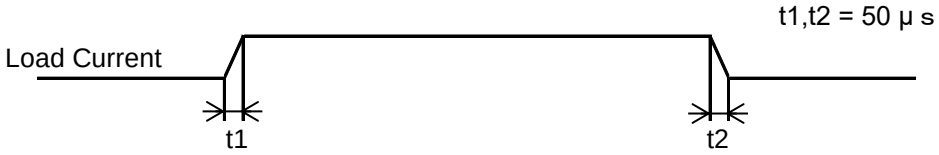
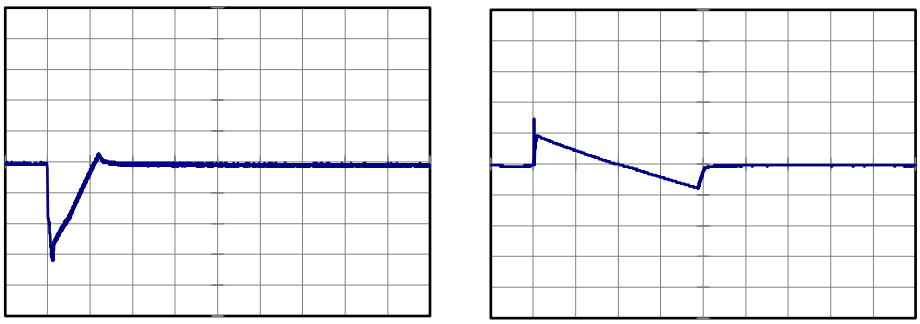
Model	PJMA1500F-24		
Item	Dynamic Load Response	Temperature	25°C
		Testing Circuitry	Figure A
Object	+24V64A		

Input Volt. 115 V
Cycle 1000 ms



Min.Load (0A)←→
Load 100% (64A)

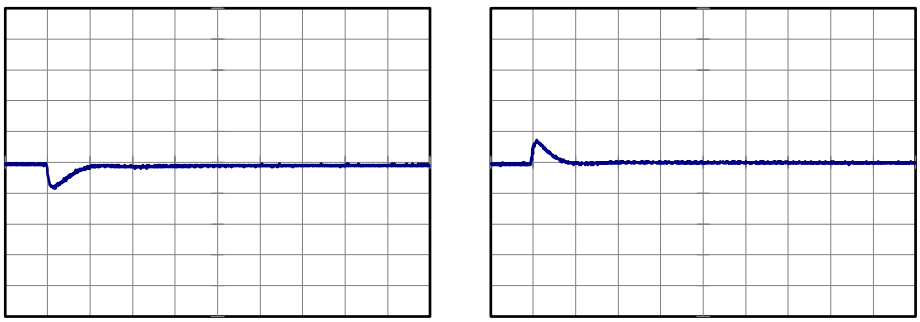


200 mV/div

1 ms/div

10 ms/div

Load 50% (32A)←→
Load 100% (64A)



200 mV/div

100 us/div

100 us/div

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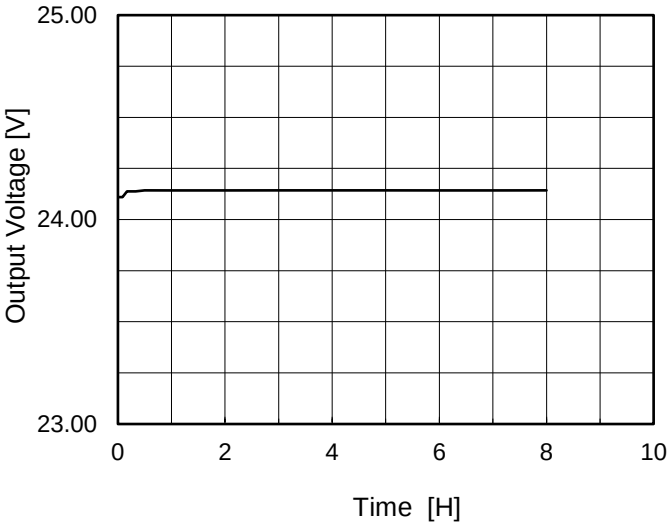
Model	PJMA1500F-24
Item	Time Lapse Drift
Object	+24V64A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Input Volt. 115V
Load 100%

2.Values

Time since start [H]	Output Voltage [V]
0.0	24.110
0.5	24.143
1.0	24.142
2.0	24.142
3.0	24.143
4.0	24.143
5.0	24.143
6.0	24.142
7.0	24.142
8.0	24.143

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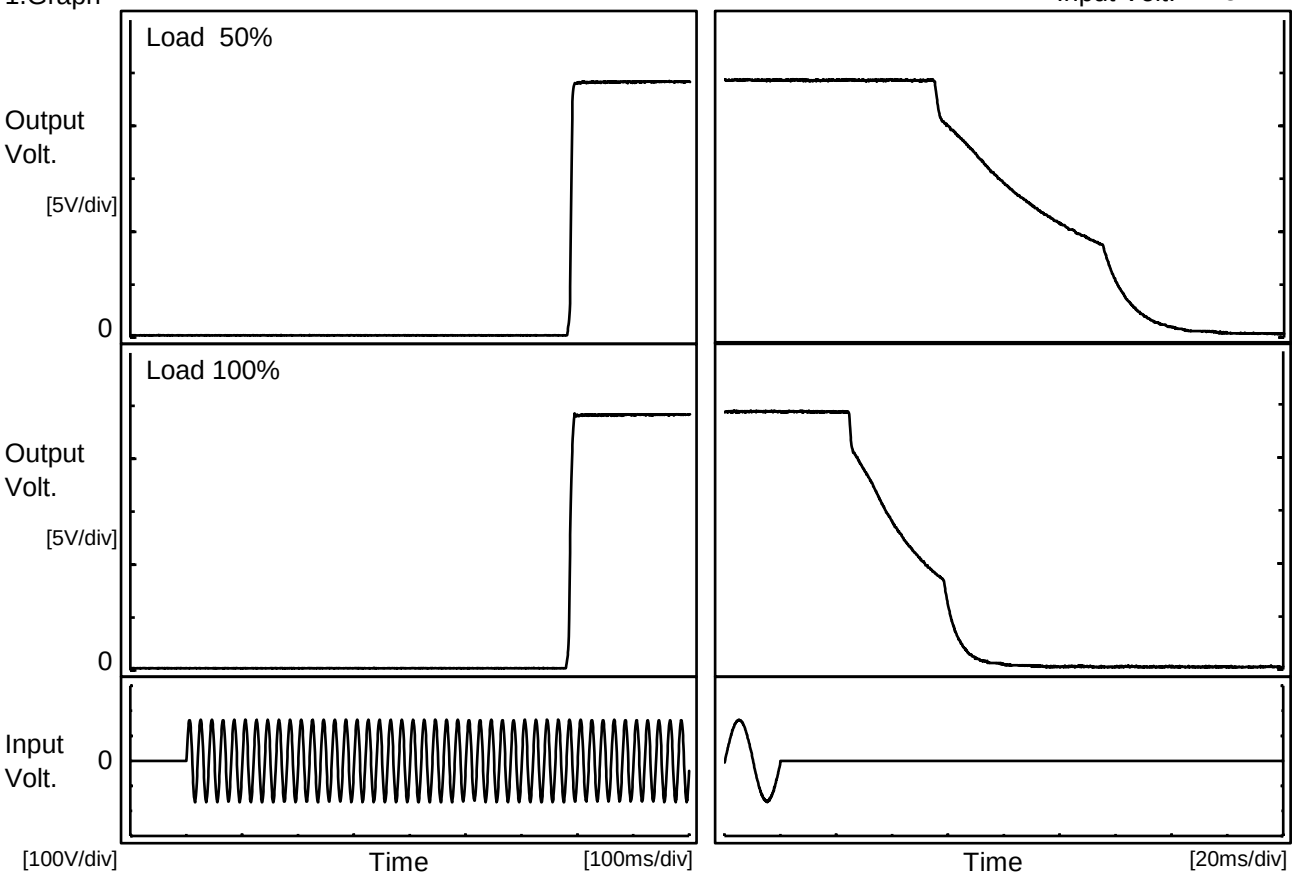
Model	PJMA1500F-24
Item	Rise and Fall Time
Object	+24V64A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

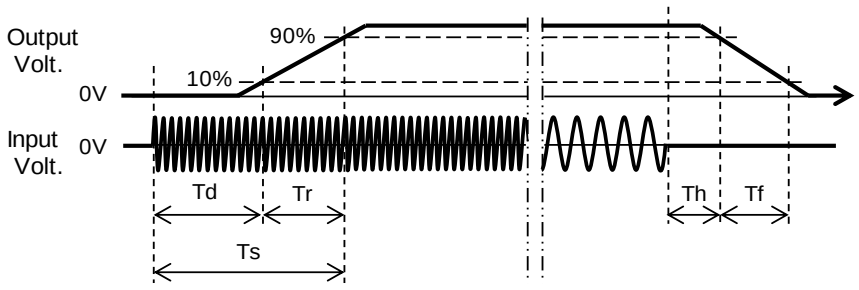
Input Volt. 115 V



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	685.5	4.5	690.0	56.3	71.2
100 %	683.5	7.0	690.5	25.2	39.3

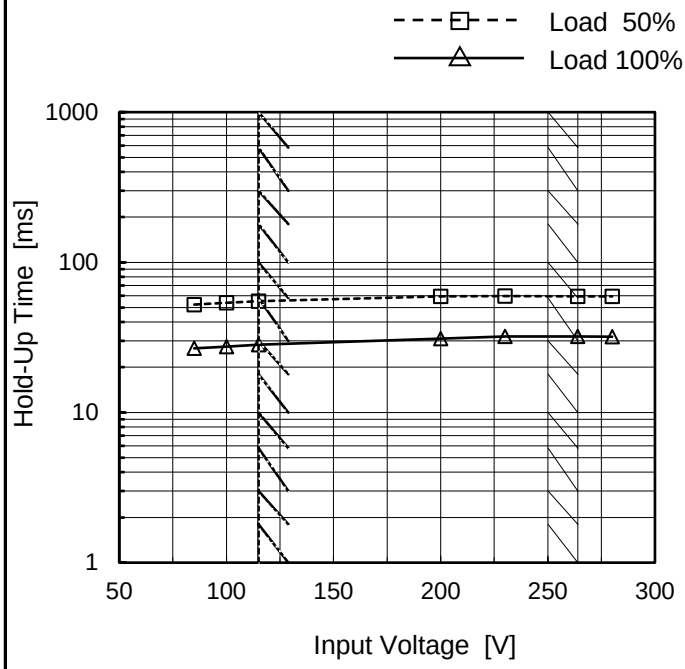


COSEL

Model	PJMA1500F-24
Item	Hold-Up Time
Object	+24V64A

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	52	27 ※1
100	54	28 ※2
115	55	28
200	59	31
230	60	32
264	59	32
280	59	32
--	-	-
--	-	-

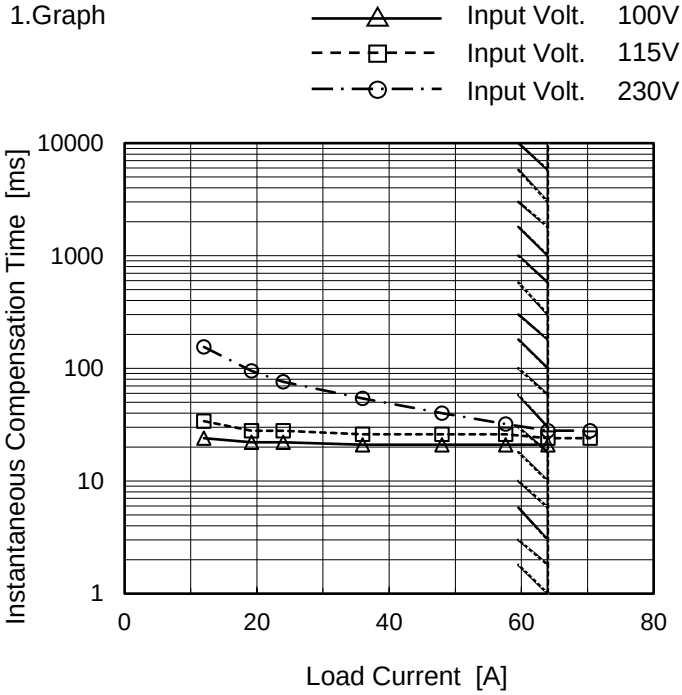
※1 : Load 80%
※2 : Load 90%

COSEL

Model	PJMA1500F-24
Item	Instantaneous Interruption Compensation
Object	+24V64A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

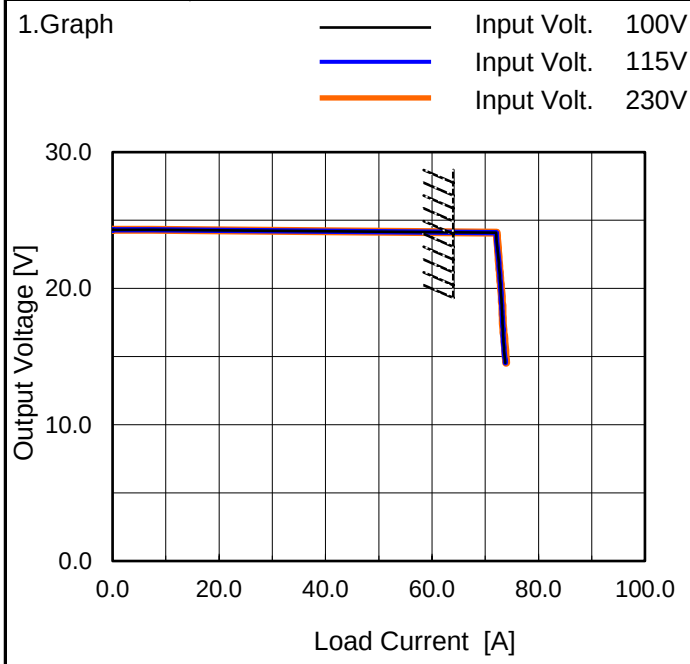
Load Current [A]	Time [ms] Input Volt. 100[V]	Input Volt. 115[V]	Input Volt. 230[V]
0.0	-	-	-
12.0	24	34	155
19.2	22	28	95
24.0	22	28	76
36.0	21	26	54
48.0	21	26	40
57.6	21	26	32
64.0	21	24	28
70.4	-	24	28
--	-	-	-
--	-	-	-

COSEL

Model	PJMA1500F-24
Item	Overcurrent Protection
Object	+24V64A

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 14.4V to 0V.

2.Values

Output Voltage [V]	Load Current [A]		
	Input Volt. 100[V]	Input Volt. 115[V]	Input Volt. 230[V]
24.0	72.02	72.08	72.15
22.8	72.33	72.33	72.41
21.6	72.02	72.08	72.15
19.2	73.03	73.02	73.09
16.8	73.28	73.44	73.40
14.4	73.77	73.79	73.93
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	PJMA1500F-24
Item	Ambient Temperature Drift
Object	+24V64A

Testing Circuitry Figure A

1.Values

Load 100%

Ambient Temperature[℃]	Output Voltage [V]		
	Input Volt. 100V	Input Volt. 115V	Input Volt. 230V
-20	24.181	24.183	24.184
25	24.245	24.247	24.248
50	24.299	24.300	24.301

Item	Minimum Input Voltage for Regulated Output Voltage
Object	+24V64A

Testing Circuitry Figure A

1.Values

Ambient Temperature[℃]	Input Voltage [V]	
	Load 50%	Load 100%
-20	67	68
25	66	67
50	65	66

Item	Overvoltage Protection
Object	+24V64A

Testing Circuitry Figure A

1.Values

Load 0%

Ambient Temperature[℃]	Operating Point [V]	
	Input Volt. 100V	Input Volt. 230V
-20	31.08	31.08
25	32.13	32.07
50	32.59	32.65

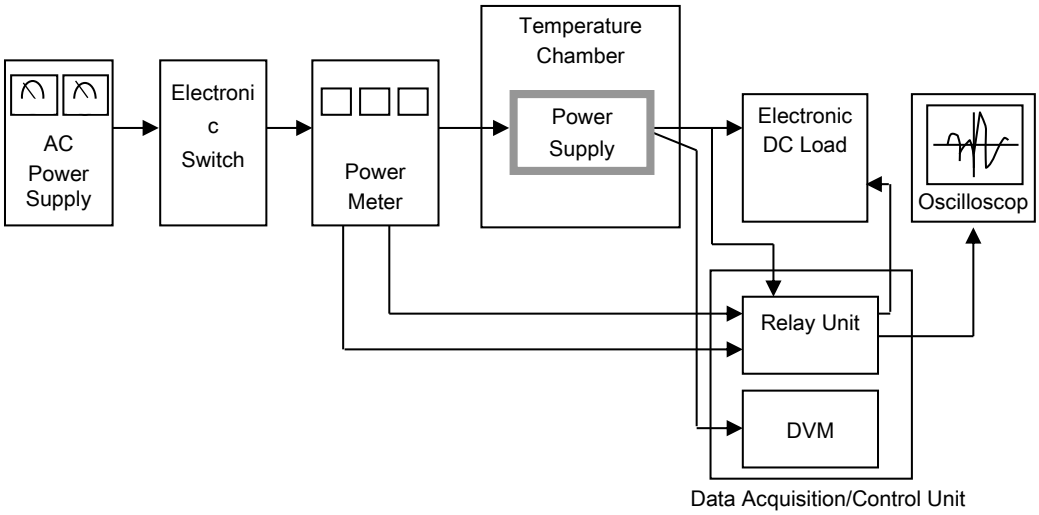
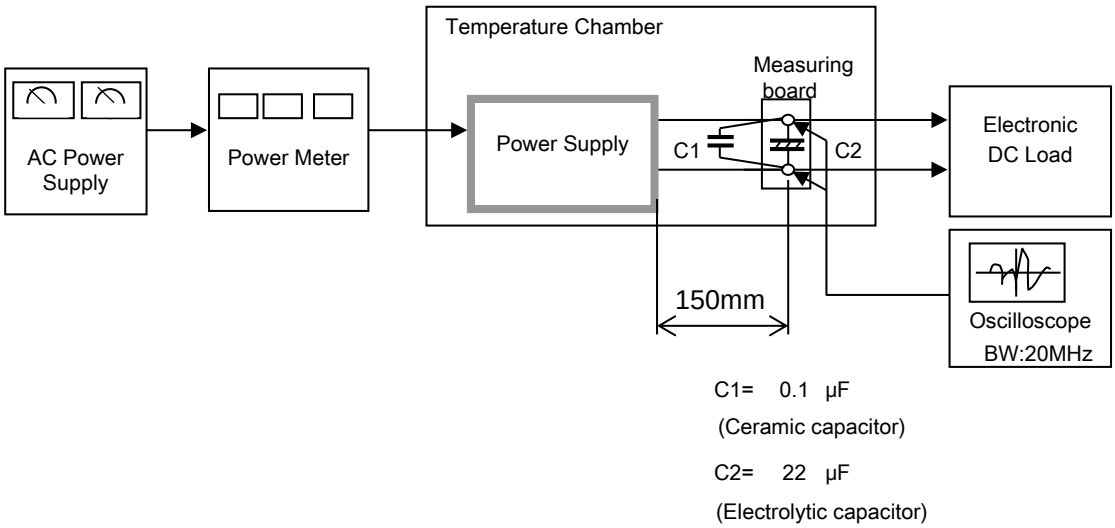


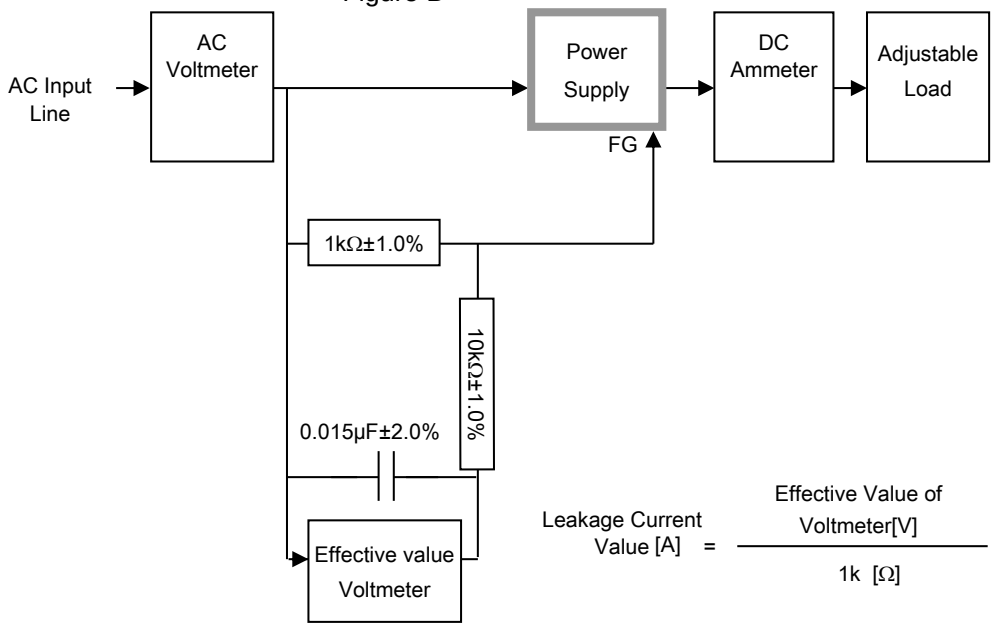
Figure A



C1= 0.1 μF
(Ceramic capacitor)

C2= 22 μF
(Electrolytic capacitor)

Figure B



$$\text{Leakage Current Value [A]} = \frac{\text{Effective Value of Voltmeter[V]}}{1\text{k }[\Omega]}$$

Figure C (IEC60601-1)