



TEST DATA OF PJMA600F-12

Regulated DC Power Supply
July 6, 2020

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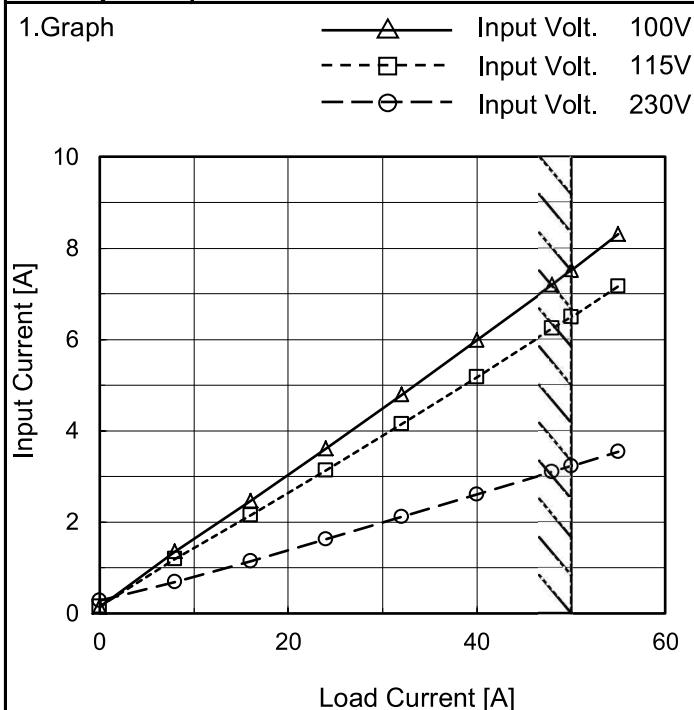
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Model	PJMA600F-12
Item	Input Current (by Load Current)
Object	_____


 Temperature 25°C
 Testing Circuitry Figure A

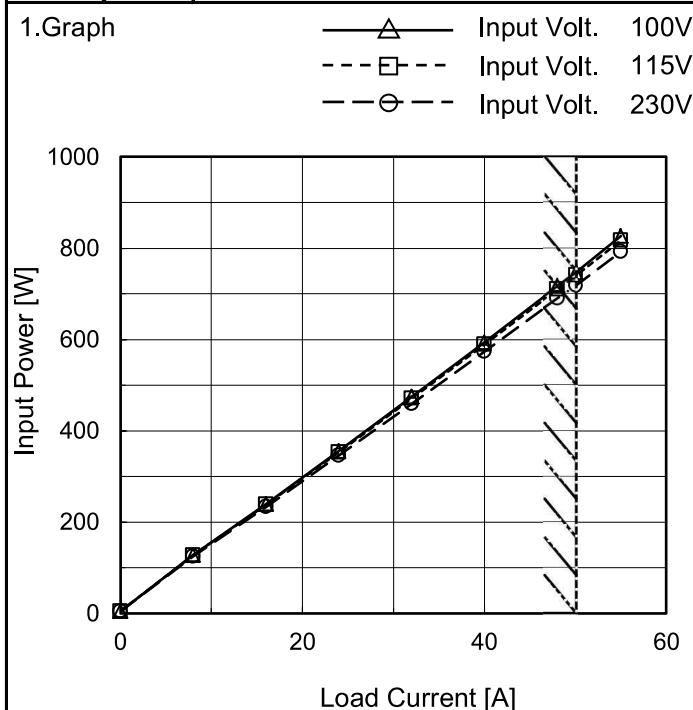
2.Values

Load Current [A]	Input Current [A]		
	Input Volt. 100[V]	Input Volt. 115[V]	Input Volt. 230[V]
0	0.136	0.152	0.278
8	1.356	1.192	0.686
16	2.463	2.148	1.146
24	3.607	3.132	1.621
32	4.787	4.147	2.109
40	5.985	5.176	2.599
48	7.190	6.223	3.096
50	7.520	6.487	3.220
55	8.310	7.160	3.534
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Note: Slanted line shows the range of the rated load current.

COSEL

Model	PJMA600F-12
Item	Input Power (by Load Current)
Object	_____


 Temperature 25°C
 Testing Circuitry Figure A

2.Values

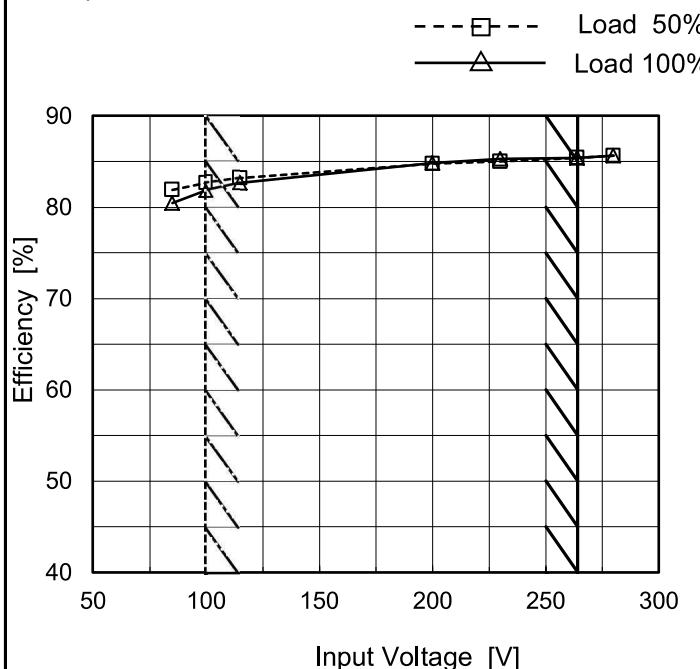
Load Current [A]	Input Power [W]		
	Input Volt. 100[V]	Input Volt. 115[V]	Input Volt. 230[V]
0	4.4	4.3	4.8
8	127.3	126.8	125.3
16	239.4	238.0	233.9
24	355.1	352.8	345.3
32	473.9	470.3	459.0
40	594.0	589.1	574.0
48	716.0	709.8	689.0
50	747.0	740.1	718.0
55	826.0	817.0	792.0
--	-	-	-
--	-	-	-

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

COSEL

Model	PJMA600F-12
Item	Efficiency (by Input Voltage)
Object	_____

1.Graph



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

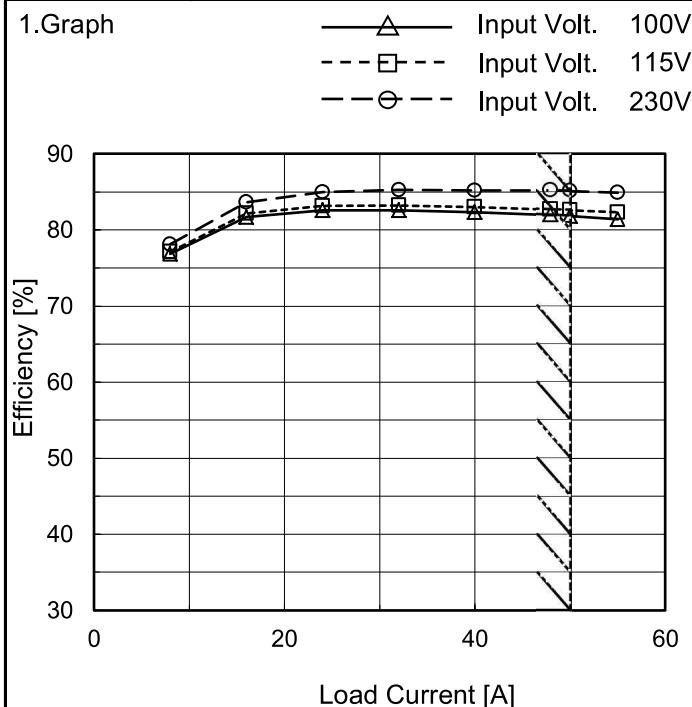
 Temperature 25°C
 Testing Circuitry Figure A

2.Values

Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
85	81.9	80.4
100	82.6	81.8
115	83.2	82.7
200	84.7	84.8
230	85.0	85.3
264	85.4	85.4
280	85.6	85.6
--	-	-
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COSEL

Model	PJMA600F-12
Item	Efficiency (by Load Current)
Object	_____


 Temperature 25°C
 Testing Circuitry Figure A

2. Values

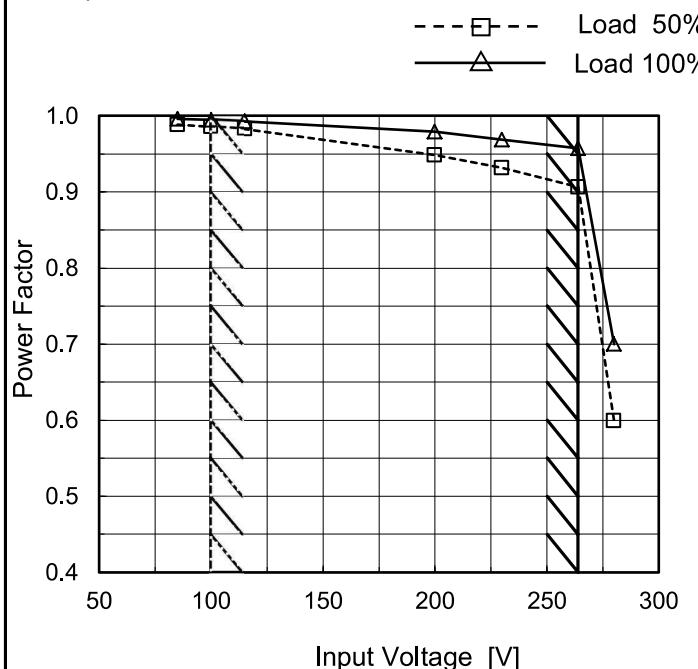
Load Current [A]	Efficiency [%]		
	Input Volt. 100[V]	Input Volt. 115[V]	Input Volt. 230[V]
0	-	-	-
8	76.8	77.1	78.1
16	81.7	82.2	83.6
24	82.6	83.2	85.0
32	82.6	83.2	85.3
40	82.3	83.0	85.2
48	82.0	82.7	85.2
50	81.8	82.6	85.2
55	81.4	82.3	84.9
--	-	-	-
--	-	-	-

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

COSEL

Model	PJMA600F-12
Item	Power Factor (by Input Voltage)
Object	—

1.Graph



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

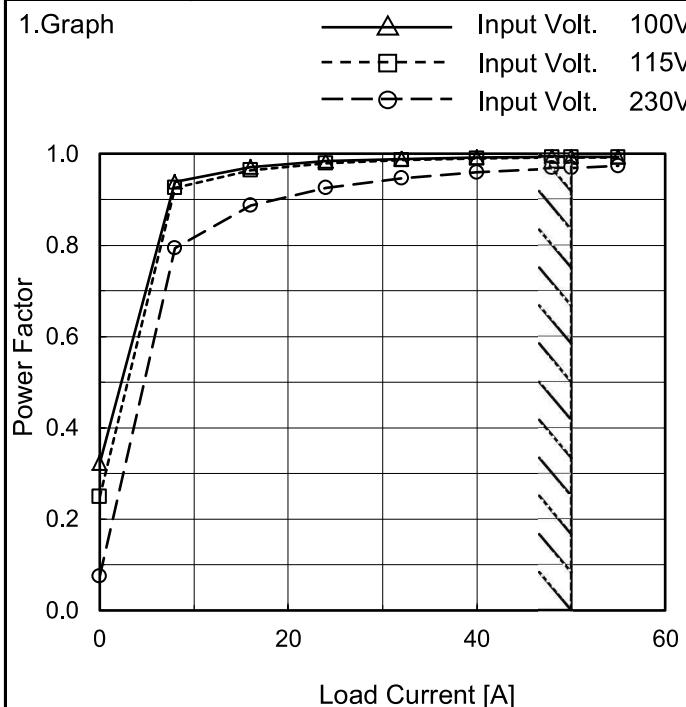
 Temperature 25°C
 Testing Circuitry Figure A

2.Values

Input Voltage [V]	Power Factor	
	Load 50%	Load 100%
85	0.989	0.996
100	0.986	0.995
115	0.983	0.993
200	0.949	0.980
230	0.931	0.969
264	0.906	0.957
280	0.599	0.700
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COSEL

Model	PJMA600F-12
Item	Power Factor (by Load Current)
Object	_____


 Temperature 25°C
 Testing Circuitry Figure A

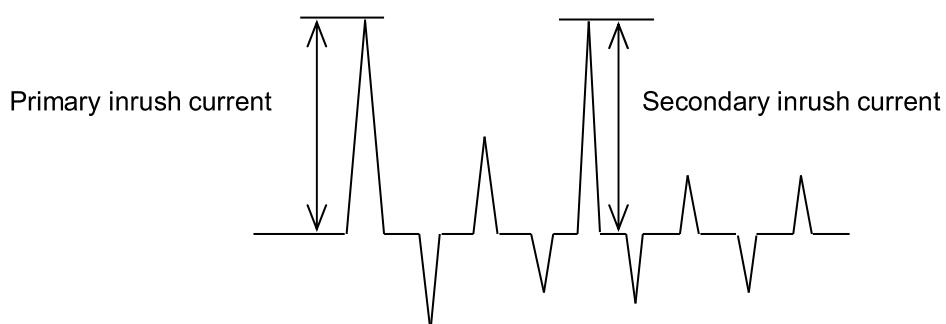
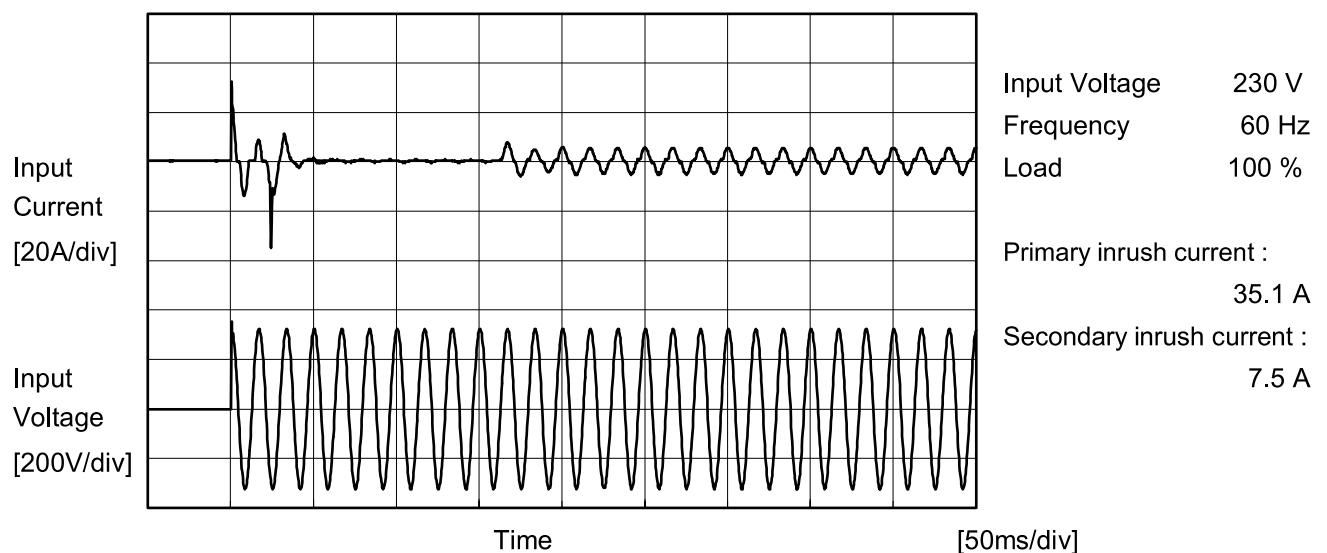
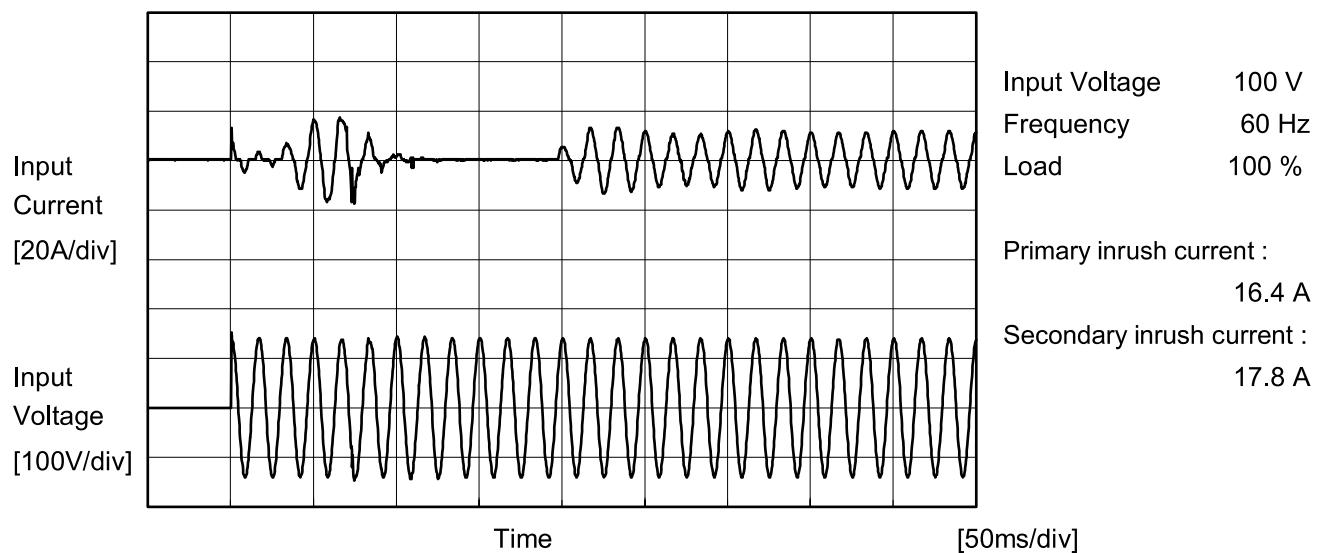
2. Values

Load Current [A]	Power Factor		
	Input Volt. 100[V]	Input Volt. 115[V]	Input Volt. 230[V]
0	0.323	0.248	0.075
8	0.938	0.926	0.794
16	0.972	0.964	0.887
24	0.984	0.980	0.926
32	0.989	0.987	0.947
40	0.992	0.990	0.960
48	0.993	0.992	0.968
50	0.993	0.993	0.969
55	0.994	0.993	0.974
--	-	-	-
--	-	-	-

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

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Model	PJMA600F-12	Temperature	25°C
Item	Inrush Current	Testing Circuitry	Figure A
Object	_____		





Model	PJMA600F-12	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	0.09	0.10	0.23	Operation
	One of phases	0.16	0.19	0.43	Stand by

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

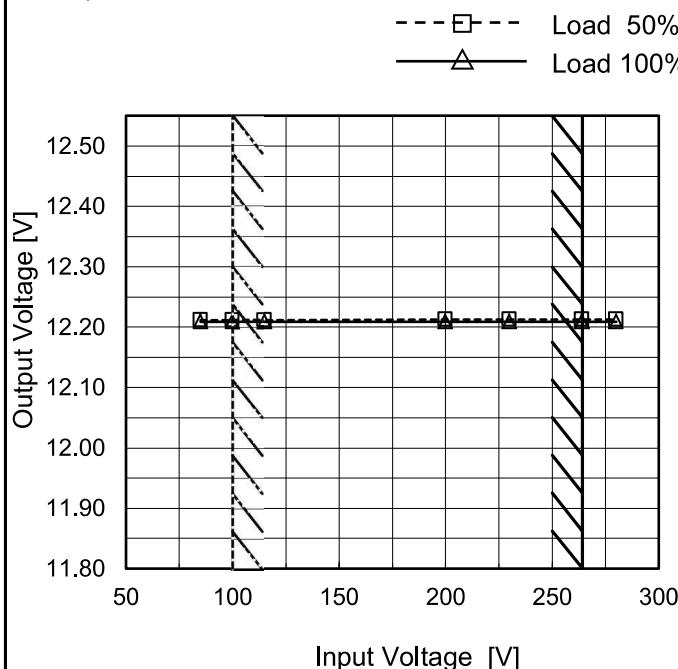
2. Condition

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

COSEL

Model	PJMA600F-12
Item	Line Regulation
Object	+12V50A

1.Graph



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

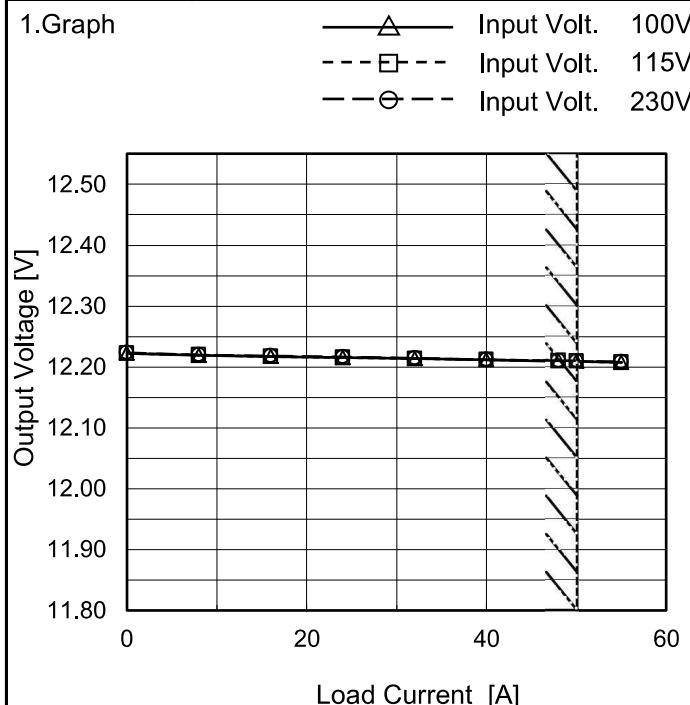
 Temperature 25°C
 Testing Circuitry Figure A

2.Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
85	12.212	12.209
100	12.212	12.209
115	12.212	12.209
200	12.212	12.209
230	12.212	12.209
264	12.213	12.209
280	12.213	12.209
--	-	-
--	-	-

COSEL

Model	PJMA600F-12
Item	Load Regulation
Object	+12V50A


 Temperature 25°C
 Testing Circuitry Figure A

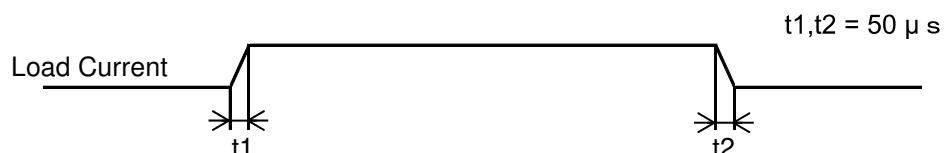
2.Values

Load Current [A]	Output Voltage [V]		
	Input Volt. 100[V]	Input Volt. 115[V]	Input Volt. 230[V]
0	12.223	12.223	12.223
8	12.219	12.219	12.220
16	12.217	12.218	12.218
24	12.215	12.216	12.216
32	12.213	12.214	12.214
40	12.212	12.212	12.212
48	12.209	12.210	12.210
50	12.209	12.209	12.209
55	12.208	12.208	12.208
--	-	-	-
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Note: Slanted line shows the range of the rated load current.

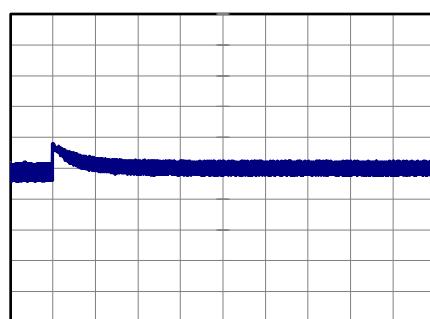
COSEL

Model	PJMA600F-12
Item	Dynamic Load Response
Object	+12V50A

Temperature 25°C
Testing Circuitry Figure AInput Volt. 100 V
Cycle 1000 msMin.Load (0A)↔
Load 100% (50A)

200 mV/div

20 ms/div

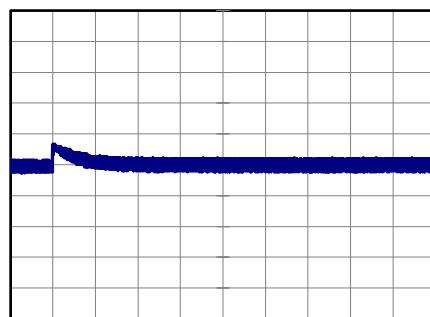


20 ms/div

Min.Load (0A)↔
Load 50% (25A)

200 mV/div

20 ms/div

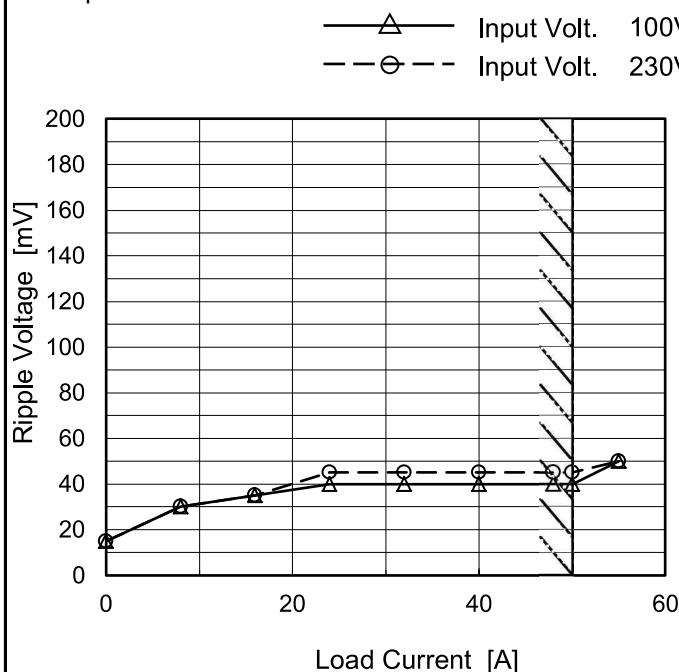


20 ms/div

COSEL

Model	PJMA600F- 12
Item	Ripple Voltage (by Load Current)
Object	+12V50A

1.Graph



Temperature 25°C
Testing Circuitry Figure C

2.Values

Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 100 [V]	Input Volt. 230 [V]
0	15	15
8	30	30
16	35	35
24	40	45
32	40	45
40	40	45
48	40	45
50	40	45
55	50	50
--	-	-
--	-	-

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.

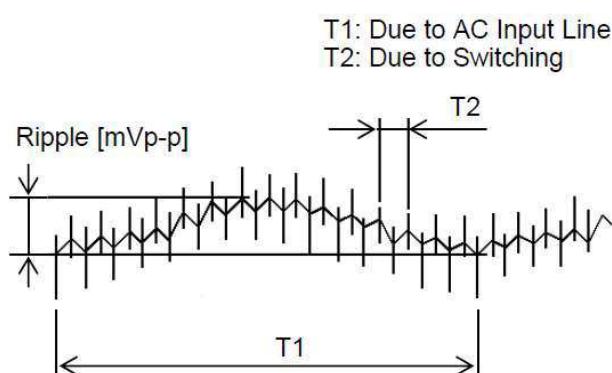


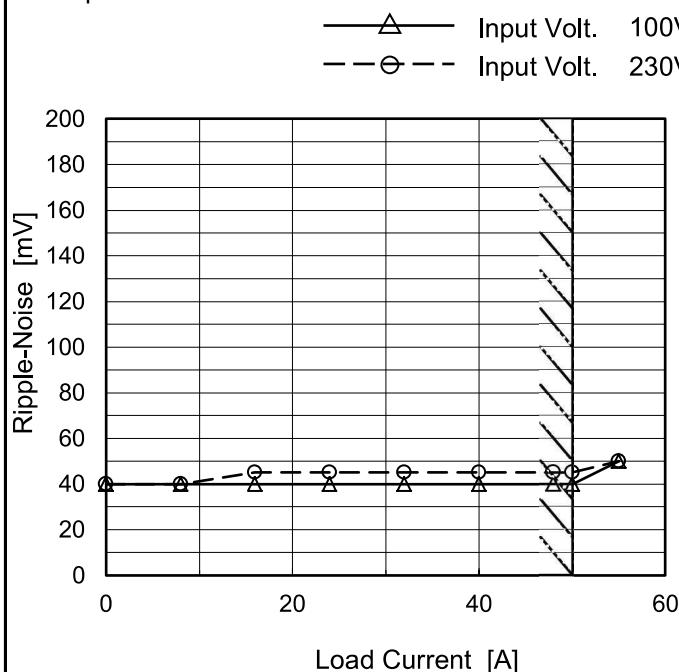
Fig. Complex Ripple Wave Form

COSEL

Model	PJMA600F-12
Item	Ripple-Noise
Object	+12V50A

Temperature 25°C
Testing Circuitry Figure C

1. Graph



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.

2. Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 100 [V]	Input Volt. 230 [V]
0	40	40
8	40	40
16	40	45
24	40	45
32	40	45
40	40	45
48	40	45
50	40	45
55	50	50
--	-	-
--	-	-

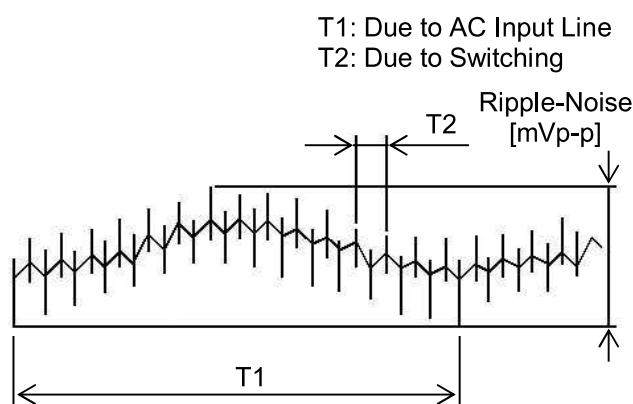
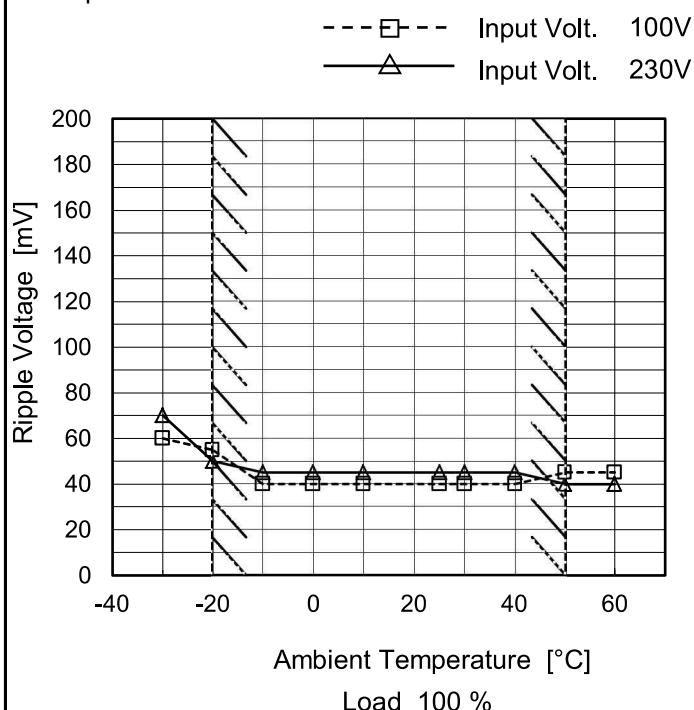


Fig. Complex Ripple Wave Form

COSEL

Model	PJMA600F-12
Item	Ripple Voltage (by Ambient Temp.)
Object	+12V50A

1.Graph



Measured by 20 MHz Oscilloscope.

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

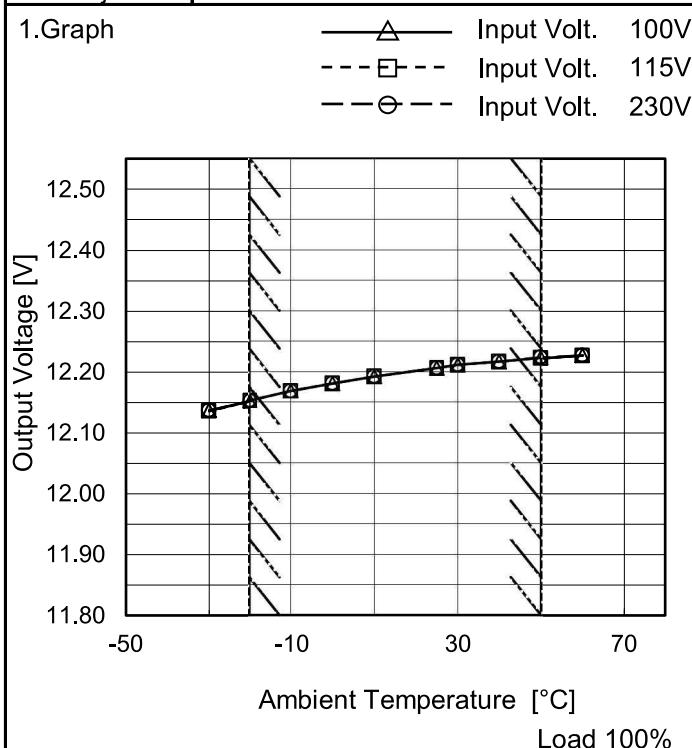
Testing Circuitry Figure A

2.Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Input Volt. 100 [V]	Input Volt. 230 [V]
-30	60	70
-20	55	50
-10	40	45
0	40	45
10	40	45
25	40	45
30	40	45
40	40	45
50	45	40
60	45	40
--	-	-

COSEL

Model	PJMA600F-12
Item	Ambient Temperature Drift
Object	+12V50A



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	12.136	12.136	12.137
-20	12.152	12.152	12.152
-10	12.168	12.168	12.168
0	12.181	12.180	12.181
10	12.192	12.192	12.192
25	12.206	12.206	12.206
30	12.211	12.211	12.211
40	12.216	12.217	12.217
50	12.222	12.223	12.223
60	12.227	12.227	12.227
--	-	-	-

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



Model	PJMA600F-12	Testing Circuitry Figure A
Item	Output Voltage Accuracy	
Object	+12V50A	

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 : 100 - 230V

Load Current : 0 - 50A

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

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

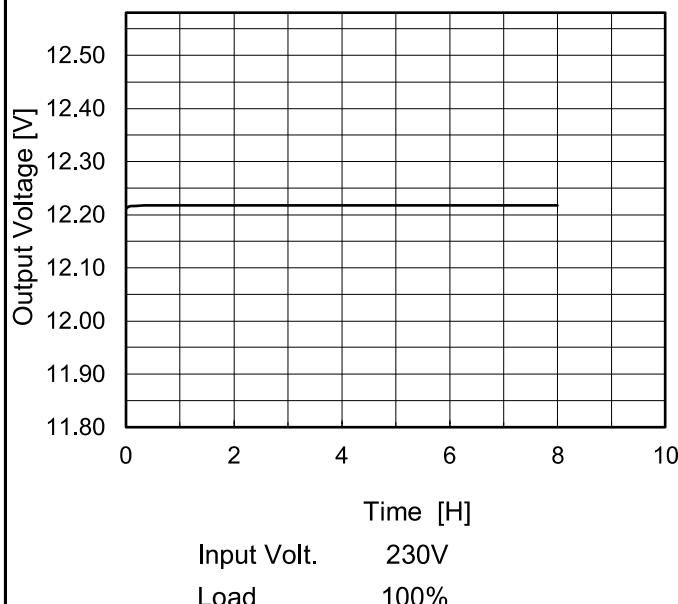
2. Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ratio [%]
Maximum Voltage	50	100	0	12.237	±43	±0.4
Minimum Voltage	-20	100	50	12.152		

COSEL

Model	PJMA600F-12
Item	Time Lapse Drift
Object	+12V50A

1.Graph


 Temperature 25°C
 Testing Circuitry Figure A

2.Values

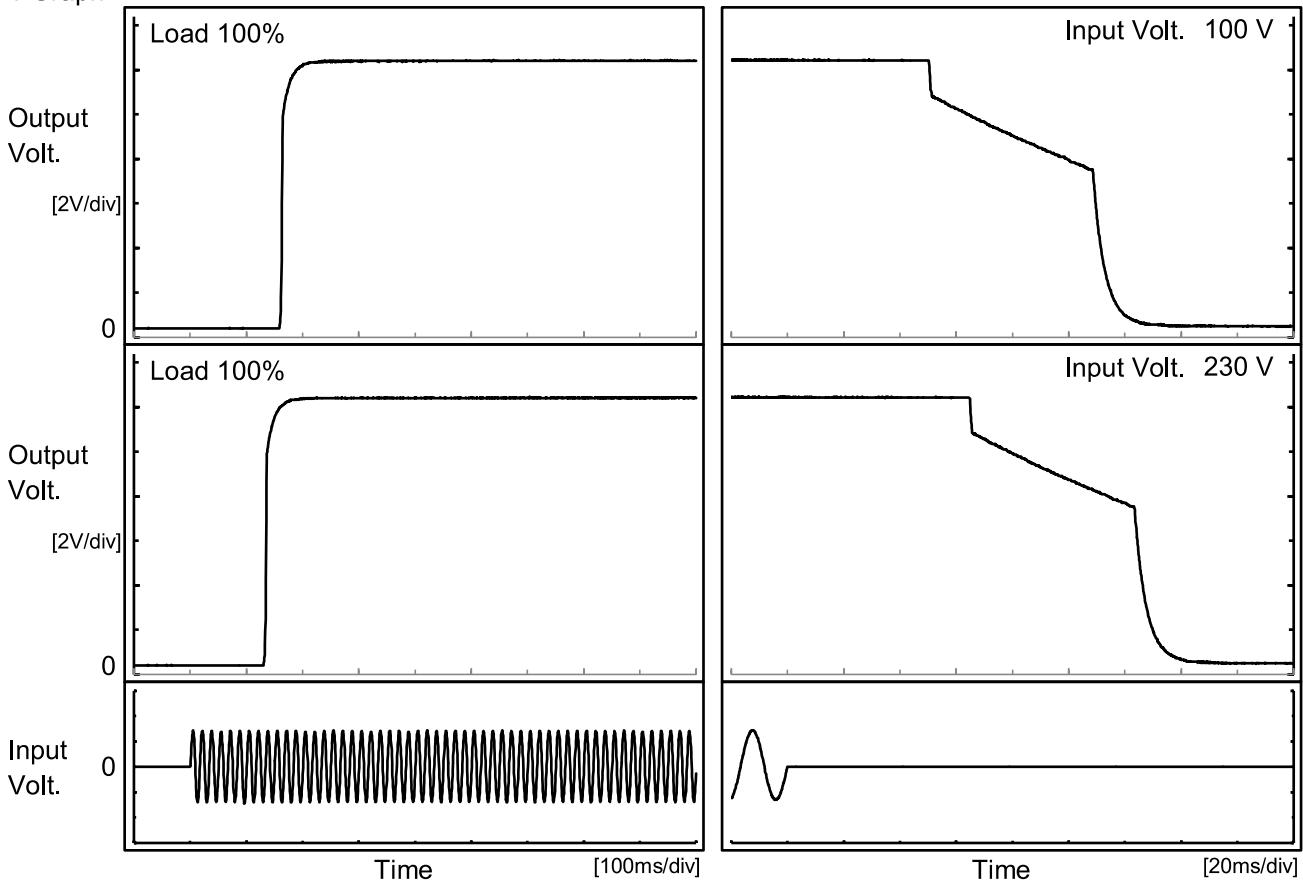
Time since start [H]	Output Voltage [V]
0.0	12.212
0.5	12.218
1.0	12.218
2.0	12.218
3.0	12.218
4.0	12.218
5.0	12.218
6.0	12.218
7.0	12.218
8.0	12.218

COSEL

Model	PJMA600F-12
Item	Rise and Fall Time
Object	+12V50A

Temperature
Testing Circuitry 25°C
Figure A

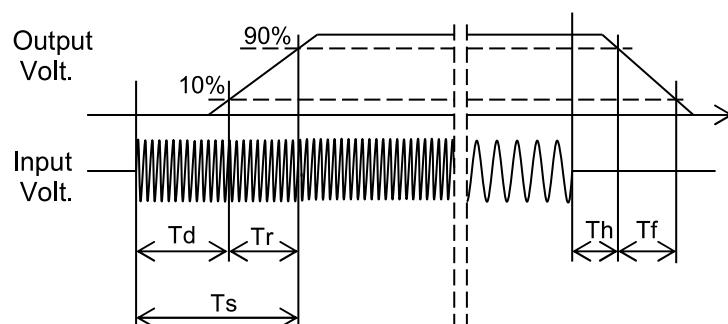
1.Graph



2.Values

[ms]

Input Volt.	Time	Td	Tr	Ts	Th	Tf
100 V		161.5	13.0	174.5	20.7	39.1
230 V		133.0	12.5	145.5	27.6	39.2

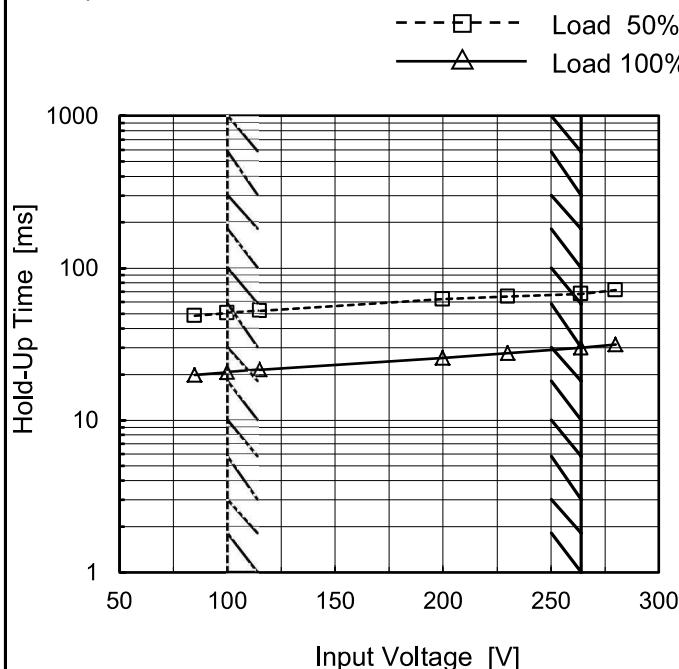


COSEL

Model	PJMA600F-12
Item	Hold-Up Time
Object	+12V50A

 Temperature 25°C
 Testing Circuitry Figure A

1.Graph



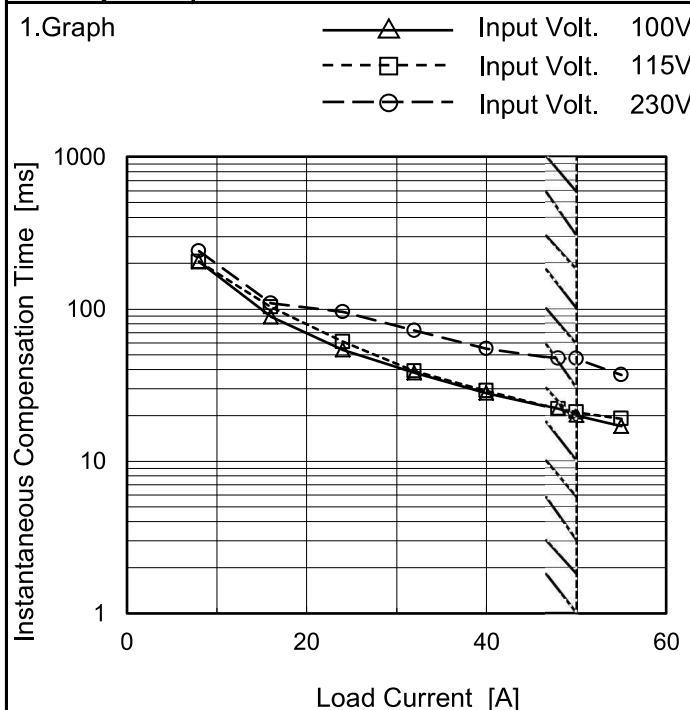
2.Values

Input Voltage [V]	Hold-Up Time [ms]	
	Load 50%	Load 100%
85	49	20
100	51	21
115	52	22
200	63	26
230	65	28
264	68	30
280	71	32
--	-	-
--	-	-

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	PJMA600F-12
Item	Instantaneous Interruption Compensation
Object	+12V50A


 Temperature 25°C
 Testing Circuitry Figure A

2.Values

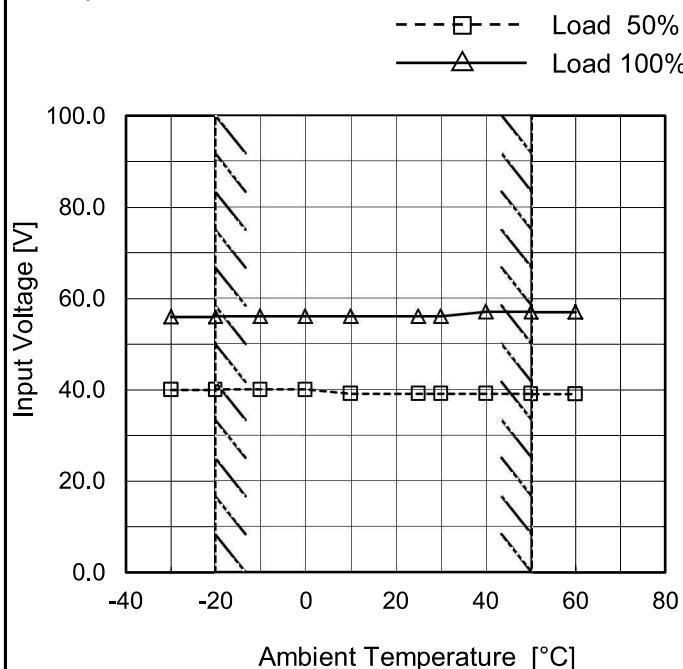
Load Current [A]	Time [ms]		
	Input Volt. 100[V]	Input Volt. 115[V]	Input Volt. 230[V]
0	-	-	-
8	204	204	240
16	89	103	109
24	54	61	96
32	38	39	72
40	28	29	55
48	22	22	47
50	20	21	47
55	17	19	37
--	-	-	-
--	-	-	-

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

COSEL

Model	PJMA600F-12
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+12V50A

1.Graph



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

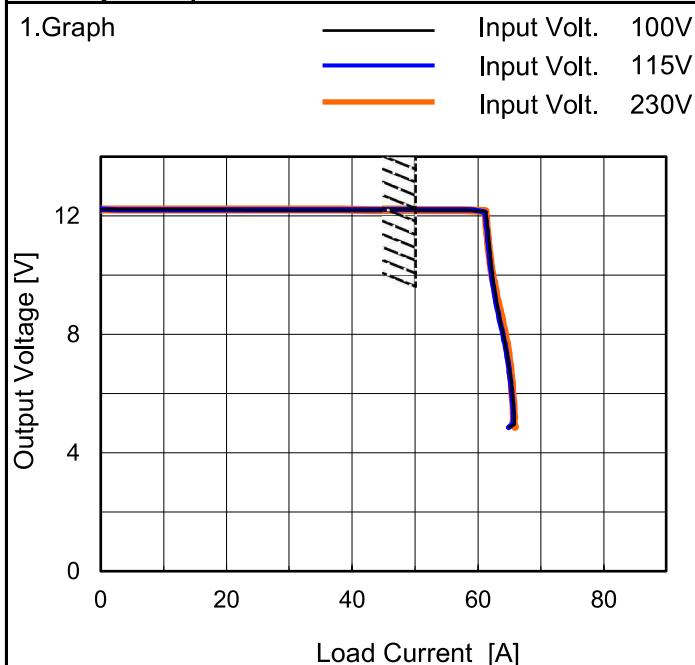
Testing Circuitry Figure A

2.Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-30	40.0	56.0
-20	40.0	56.0
-10	40.0	56.0
0	40.0	56.0
10	39.0	56.0
25	39.0	56.0
30	39.0	56.0
40	39.0	57.0
50	39.0	57.0
60	39.0	57.0
--	-	-

COSEL

Model	PJMA600F-12
Item	Overcurrent Protection
Object	+12V50A



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

Temperature 25°C
Testing Circuitry Figure A

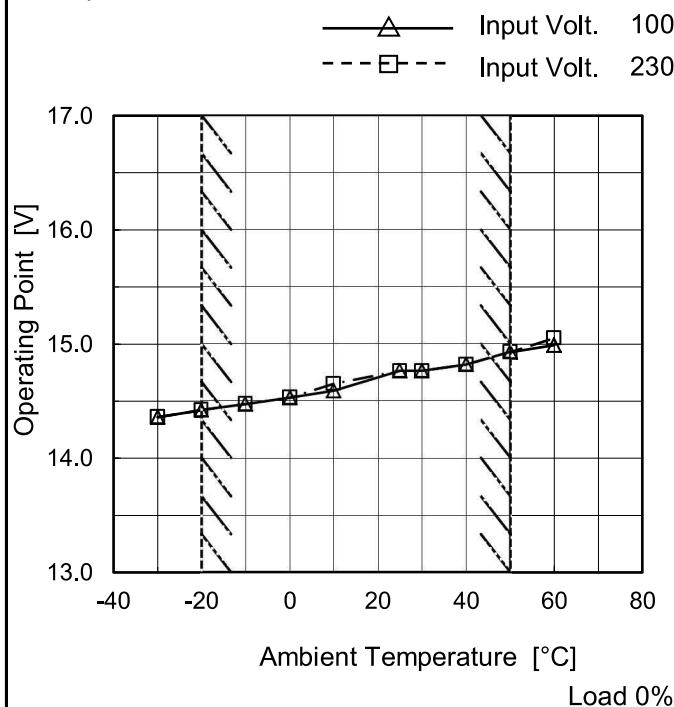
2. Values

Output Voltage [V]	Load Current [A]		
	Input Volt. 100[V]	Input Volt. 115[V]	Input Volt. 230[V]
11.4	61.63	61.51	61.49
10.8	61.88	61.75	61.74
9.6	62.53	62.41	62.60
8.4	63.59	63.47	63.80
7.2	64.72	64.63	64.87
6.0	65.47	65.37	65.47
4.8	64.91	64.84	65.86
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	PJMA600F-12
Item	Oversupply Protection
Object	+12V50A

1.Graph



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

Testing Circuitry Figure A

2.Values

Ambient Temperature [°C]	Operating Point [V]	
	Input Volt. 100[V]	Input Volt. 230[V]
-30	14.36	14.36
-20	14.42	14.42
-10	14.47	14.47
0	14.53	14.53
10	14.59	14.65
25	14.76	14.76
30	14.76	14.76
40	14.82	14.82
50	14.93	14.93
60	14.99	15.05
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COSEL

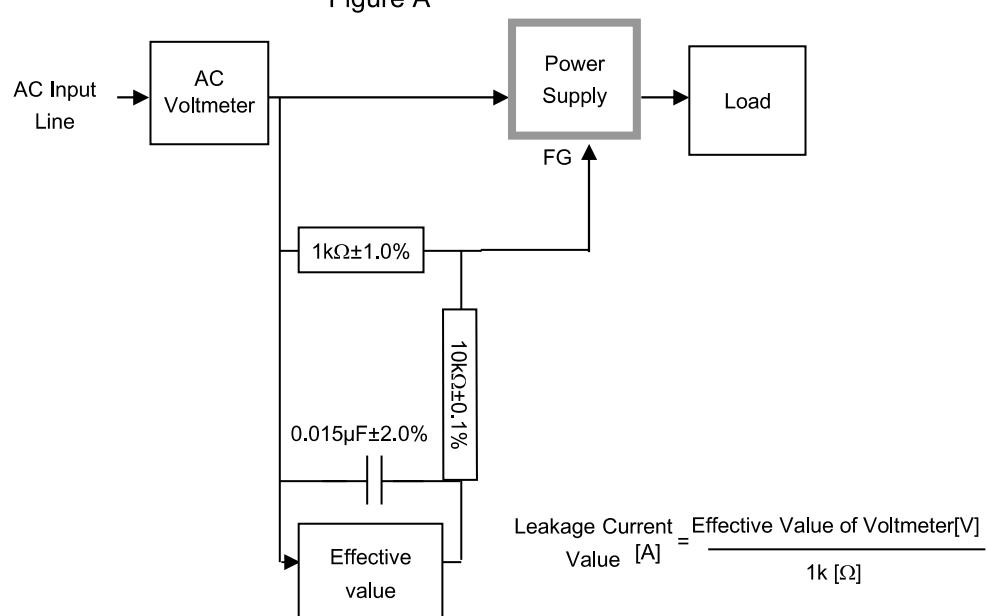
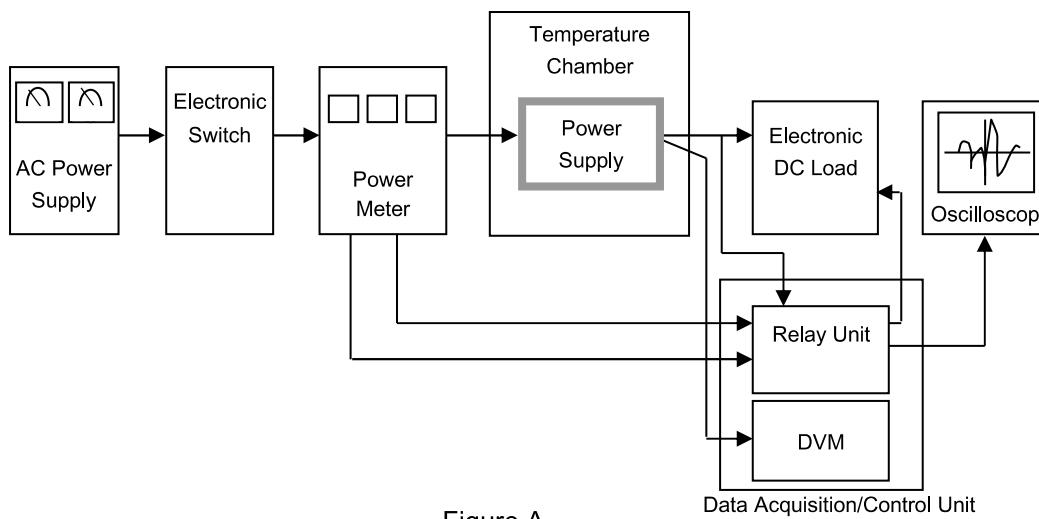
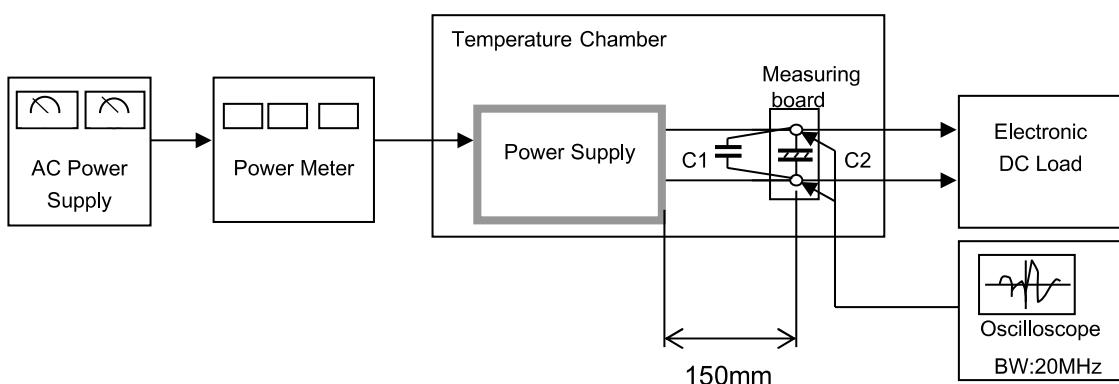


Figure B (IEC60601-1)



(Ceramic capacitor)
C1= 0.1 µF

(Electrolytic capacitor)
C2= 47 µF

Figure C