Nipron

Date of issue: Jul. 22, 2016

Test Data

Model Number: UZP-120-12-JBH

Model Name: DC POWER SUPPLY

INPUT: 85V – 264V AC, 50 / 60 Hz

OUTPUT: 12V 10A (16.7 A $_{peak}$)

Minimum load : 0W
Rated load :120W
Peak output power: 200.4W

Approved by : T Itsubouchi (QA manager)

Designed by : Kazuhiro Yamada (R&D engineer)

Tested by : Hiroyuki Watanabe (Evaluation test engineer)

Nipron Co., Ltd.

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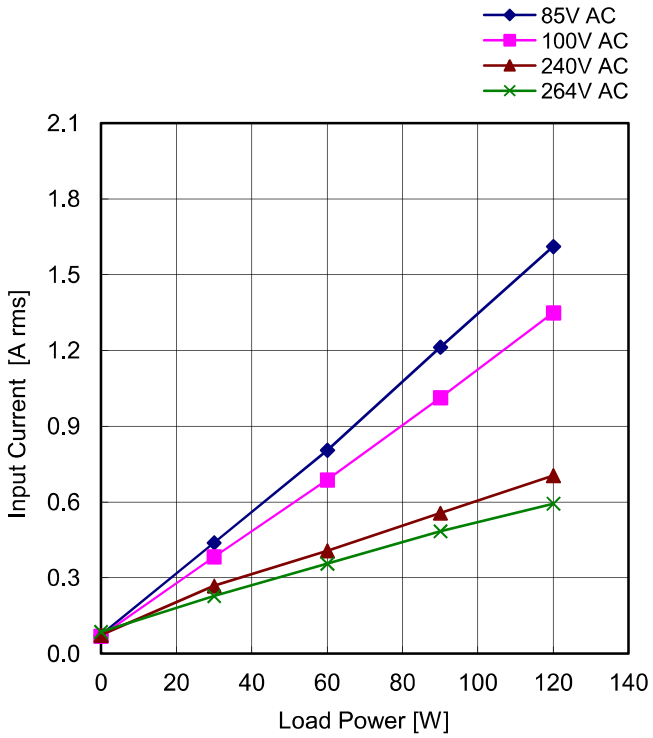
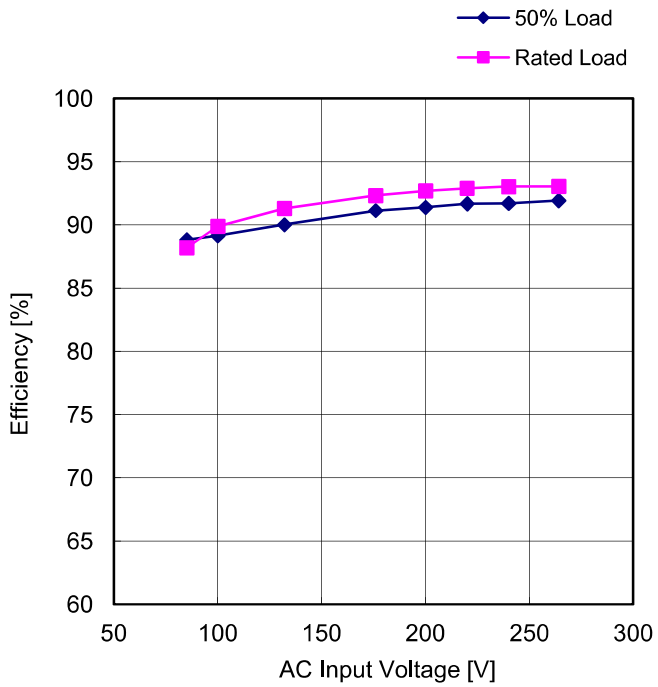
Model	UZP-120-12-JBH	Temperature: 25℃
Item	Input Current（by Load Power）	



Load Power [W]	Input Current [A rms]			
	Input Voltage 85V AC	Input Voltage 100V AC	Input Voltage 240V AC	Input Voltage 264V AC
0.0	0.07	0.07	0.07	0.09
30.0	0.44	0.38	0.27	0.23
60.0	0.81	0.69	0.41	0.36
90.0	1.21	1.01	0.56	0.48
120.0	1.61	1.35	0.71	0.59

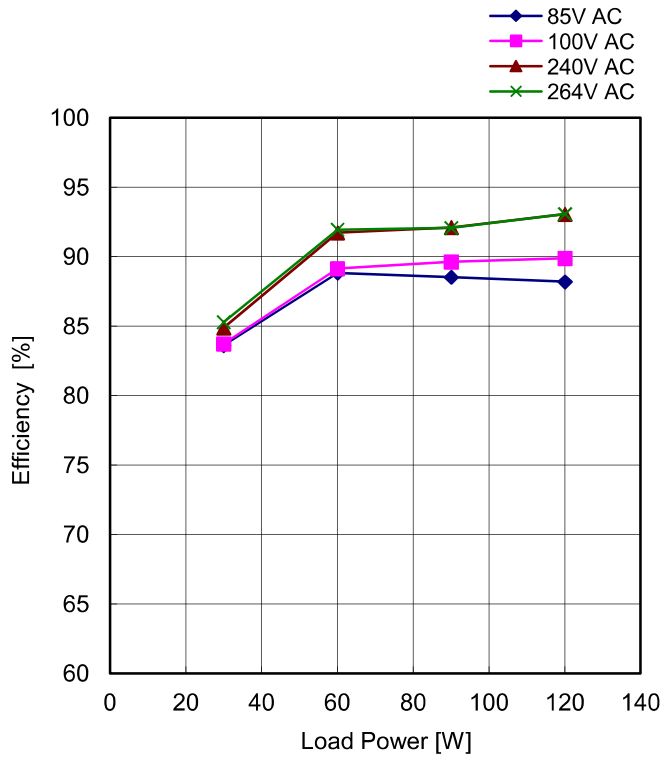
Model	UZP-120-12-JBH	Temperature: 25℃
Item	Efficiency	

■Efficiency(by Input Voltage)



AC Input Voltage [V]	Efficiency [%]	
	50% Load	Rated Load
85	88.83	88.19
100	89.15	89.89
132	90.02	91.32
176	91.15	92.35
200	91.42	92.71
220	91.70	92.91
240	91.72	93.06
264	91.95	93.07

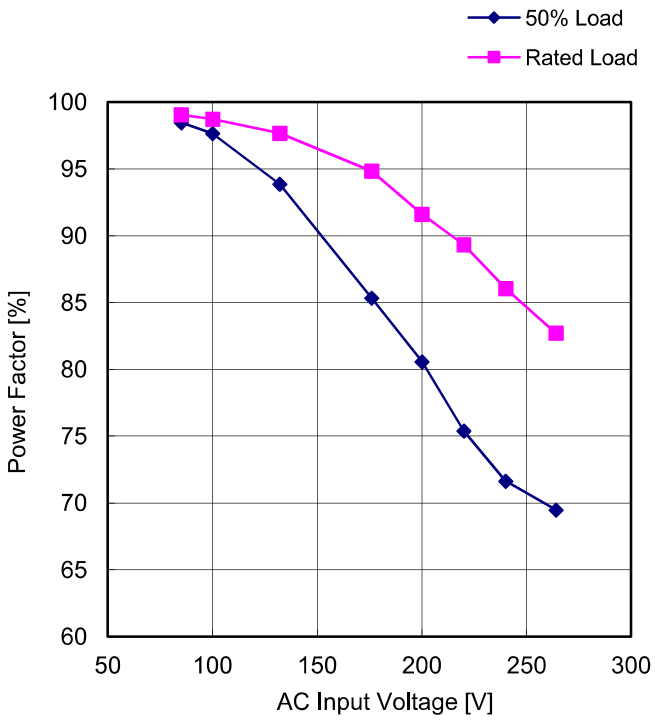
■Efficiency(by Load Power)



Load Power [W]	Efficiency [%]			
	Input Voltage 85V AC	Input Voltage 100V AC	Input Voltage 240V AC	Input Voltage 264V AC
30.0	83.62	83.72	84.87	85.28
60.0	88.83	89.15	91.72	91.95
90.0	88.53	89.64	92.10	92.07
120.0	88.19	89.89	93.06	93.07

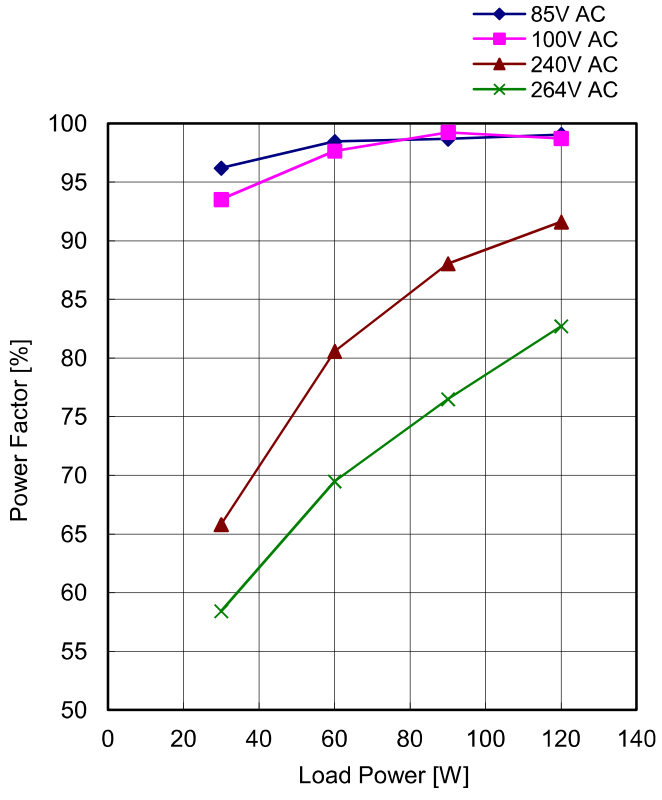
Model	UZP-120-12-JBH	Temperature: 25℃
Item	Power Factor	

■Power Factor(by Input Voltage)



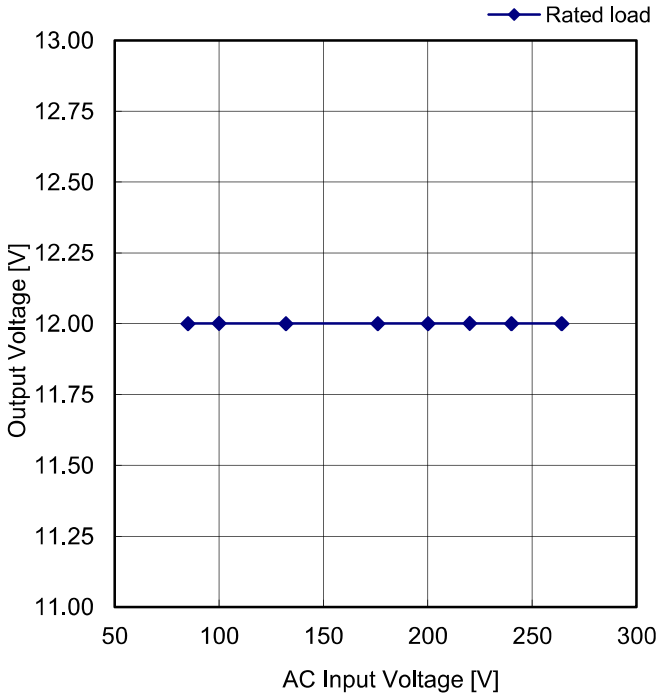
AC Input Voltage [V]	Power Factor [%]	
	50% Load	Rated Load
85	98.5	99.1
100	97.7	98.7
132	93.9	97.7
176	85.3	94.8
200	80.6	91.6
220	75.4	89.3
240	71.6	86.1
264	69.5	82.7

■Power Factor (by Load Power)



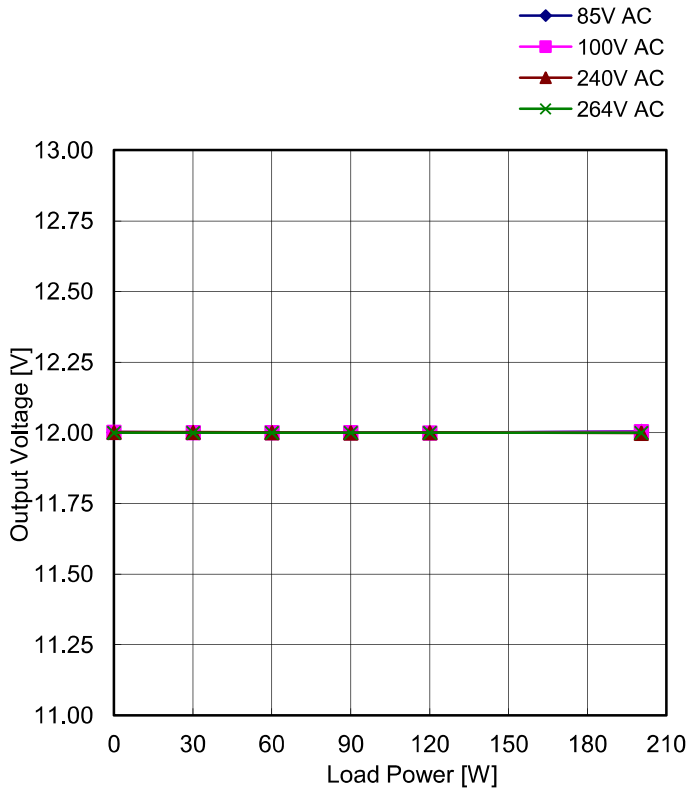
Load Power [W]	Power Factor [%]			
	Input Voltage 85V AC	Input Voltage 100V AC	Input Voltage 240V AC	Input Voltage 264V AC
30.0	96.2	93.5	65.8	58.4
60.0	98.5	97.7	80.6	69.5
90.0	98.7	99.2	88.1	76.5
120.0	99.1	98.7	91.6	82.7

Model	UZP-120-12-JBH	Temperature: 25℃
Item	Line Regulation	



AC Input Voltage [V]	Output Voltage [V]
85	12.000
100	12.001
132	12.000
176	12.000
200	12.000
220	12.001
240	12.000
264	12.000

Model	UZP-120-12-JBH	Temperature: 25℃
Item	Load Regulation	

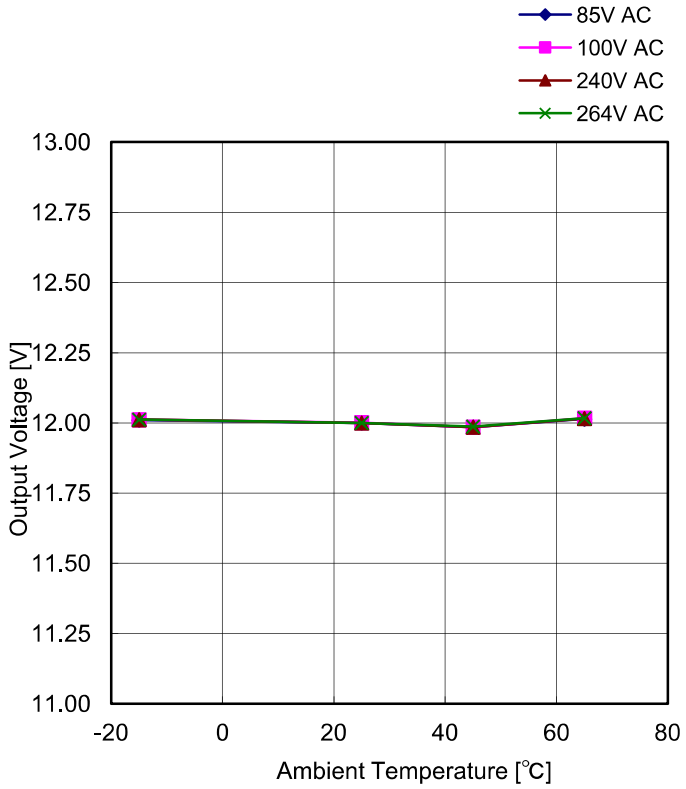


Load Power [W]	Output Voltage [V]			
	Input Voltage 85V AC	Input Voltage 100V AC	Input Voltage 240V AC	Input Voltage 264V AC
0.0	12.002	12.002	12.002	12.000
30.0	12.001	12.001	12.002	12.000
60.0	12.001	12.001	12.001	12.000
90.0	12.001	12.001	12.000	12.000
120.0	12.000	12.000	12.001	12.000
200.4	12.005	12.004	11.999	12.000

Load Condition

Load Power [W]	Load Current [A]
	12V
0.0	0.00
30.0	2.50
60.0	5.00
90.0	7.50
120.0	10.00
200.4	16.70

Model	UZP-120-12-JBH
Item	Ambient Temperature Drift



Ambient Temp. (℃)	Output Voltage [V]			
	Input Voltage 85V AC	Input Voltage 100V AC	Input Voltage 240V AC	Input Voltage 264V AC
-15	12.010	12.012	12.012	12.012
25	12.000	12.001	12.000	12.000
45	11.985	11.985	11.985	11.987
65	12.014	12.017	12.016	12.017

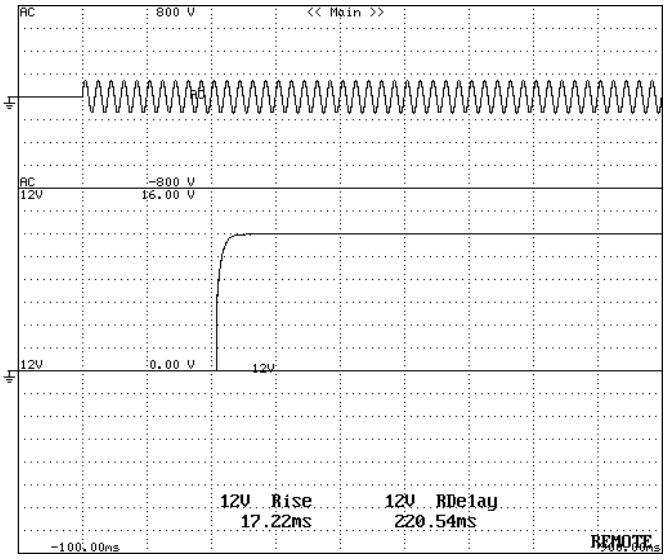
Load Condition

Ambient Temp. (℃)	Load Current [A]
	12V
-15	10.00
25	10.00
45	10.00
65	6.67

Model	UZP-120-12-JBH	Temperature: 25℃
Item	Output Rise Characteristics (at AC Power ON)	

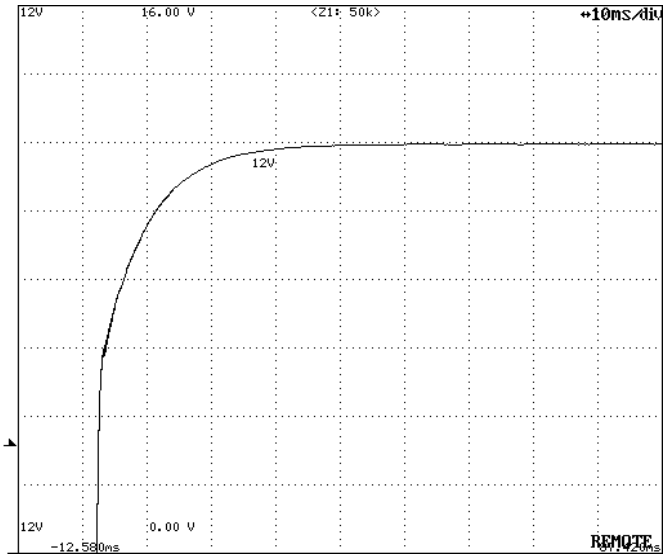
Input: 100V AC
Load: Rated Load

Timebase Range: 100ms/div



All Output Start-up Sequence

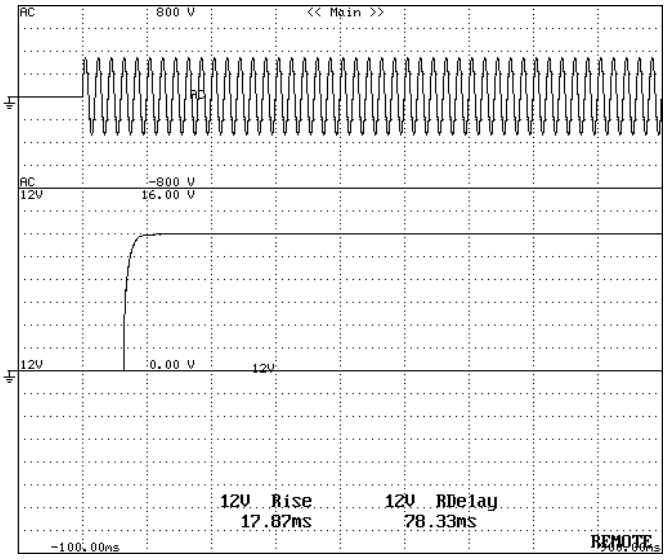
Vertical Sensitivity: 2V/div
Timebase Range: 10ms/div



12V DC Output Rise Characteristics

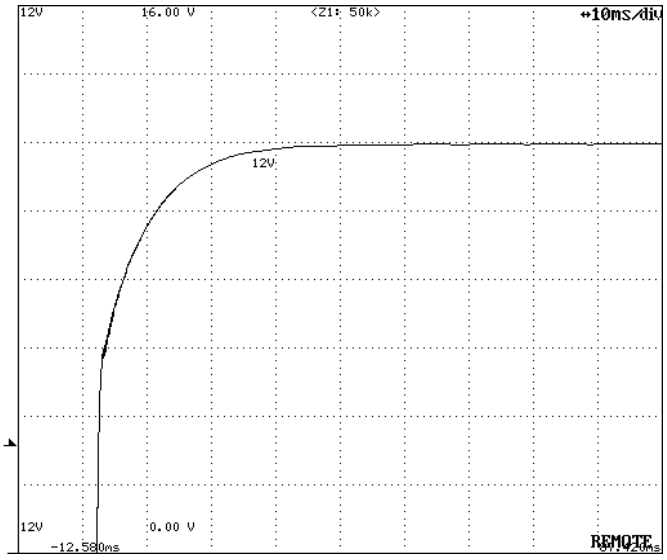
Input: 240V AC
Load: Rated Load

Timebase Range: 100ms/div



All Output Start-up Sequence

Vertical Sensitivity: 2V/div
Timebase Range: 10ms/div

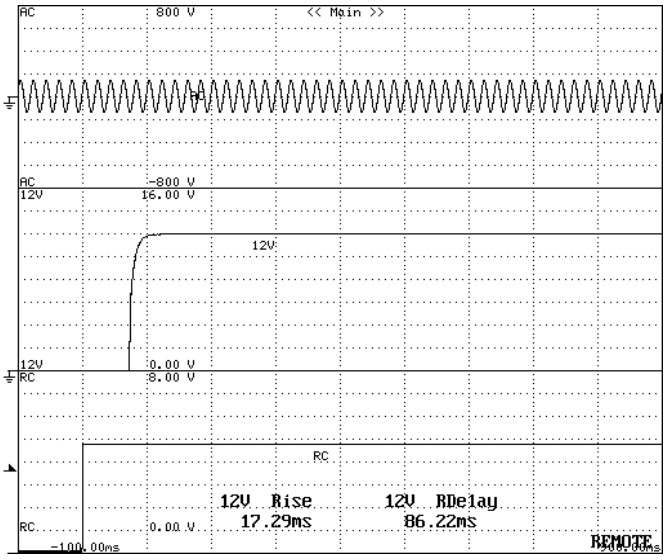


12V DC Output Rise Characteristics

Model	UZP-120-12-JBH	Temperature: 25℃
Item	Output Rise Characteristics (at Remote ON)	

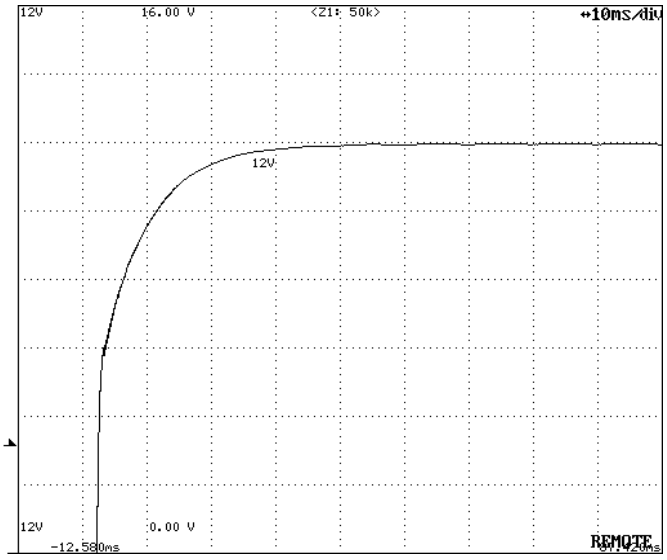
Input: 100V AC
Load: Rated Load

Timebase Range: 100ms/div



All Output Start-up Sequence

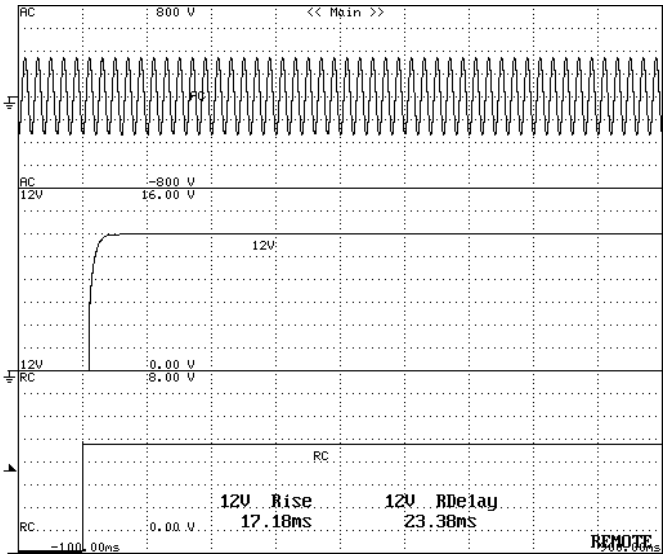
Vertical Sensitivity: 2V/div
Timebase Range: 10ms/div



12V DC Output Rise Characteristics

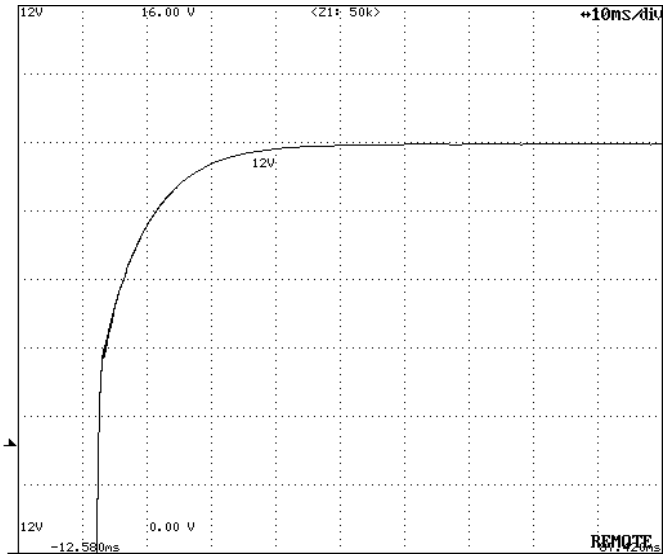
Input: 240V AC
Load: Rated Load

Timebase Range: 100ms/div



All Output Start-up Sequence

Vertical Sensitivity: 2V/div
Timebase Range: 10ms/div

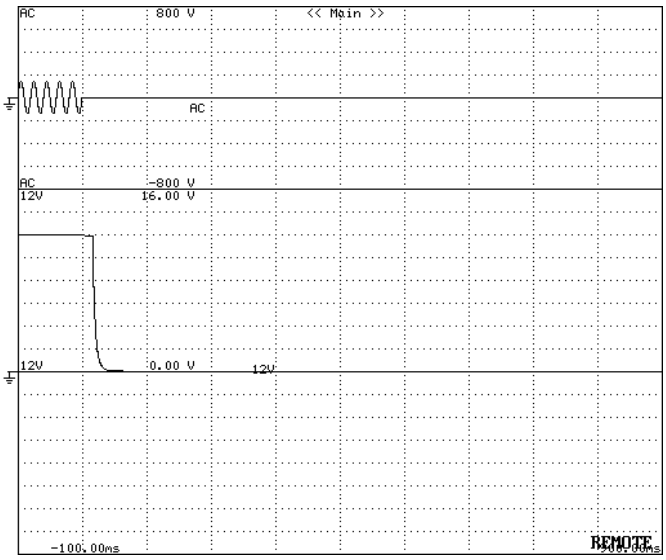


12V DC Output Rise Characteristics

Model	UZP-120-12-JBH	Temperature: 25℃
Item	Output Fall Characteristics (at AC Power OFF)	

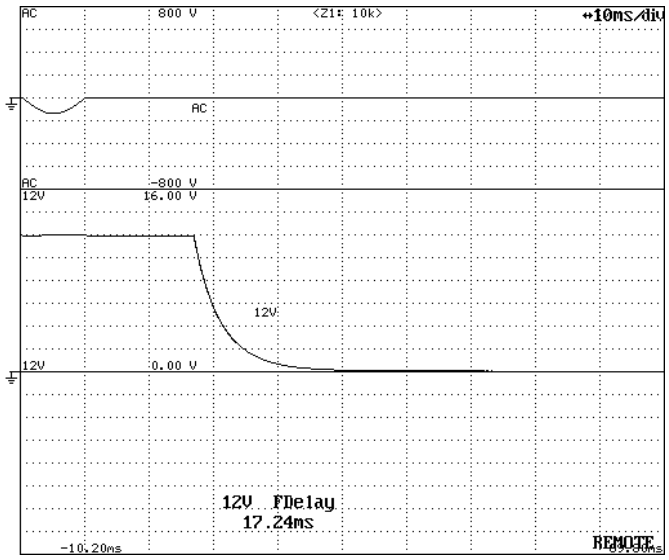
Input: 100V AC
Load: Rated Load

Timebase Range: 100ms/div



Output Fall Characteristics

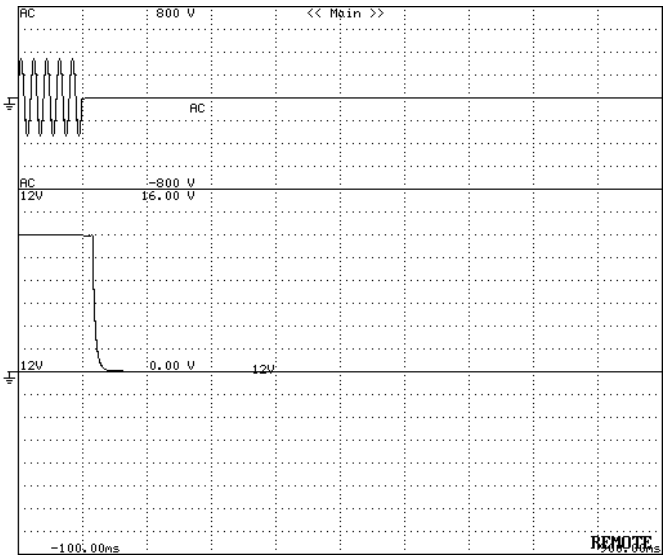
Timebase Range: 10ms/div



Output Fall Characteristics (magnification)

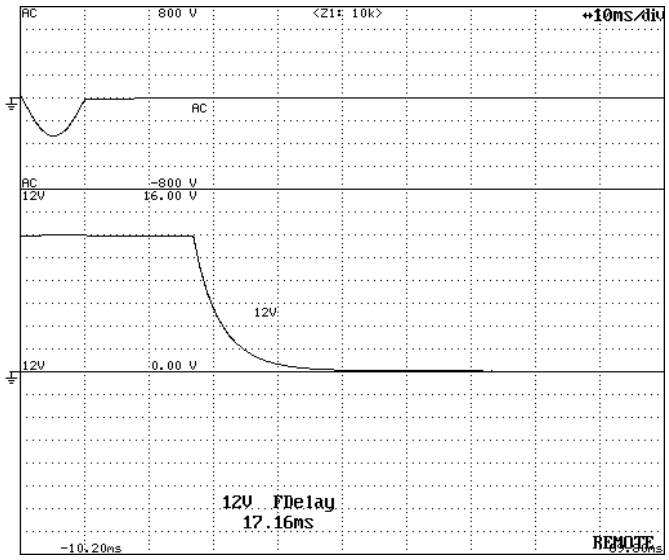
Input: 240V AC
Load: Rated Load

Timebase Range: 100ms/div



Output Fall Characteristics

Timebase Range: 10ms/div

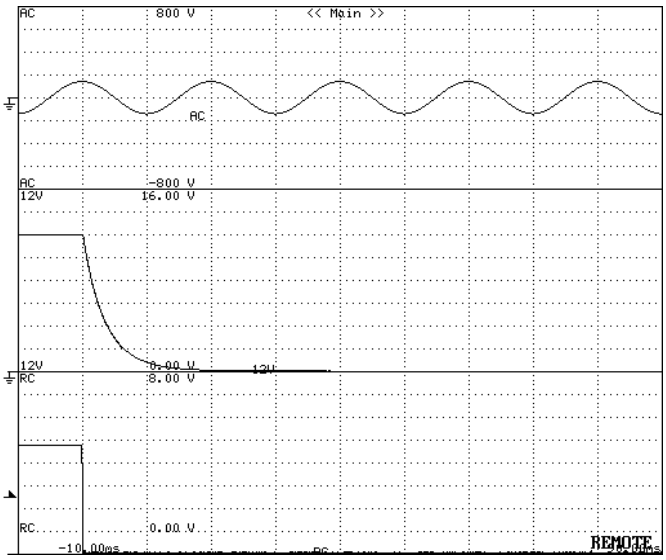


Output Fall Characteristics (magnification)

Model	UZP-120-12-JBH	Temperature: 25℃
Item	Output Fall Characteristics (at Remote OFF)	

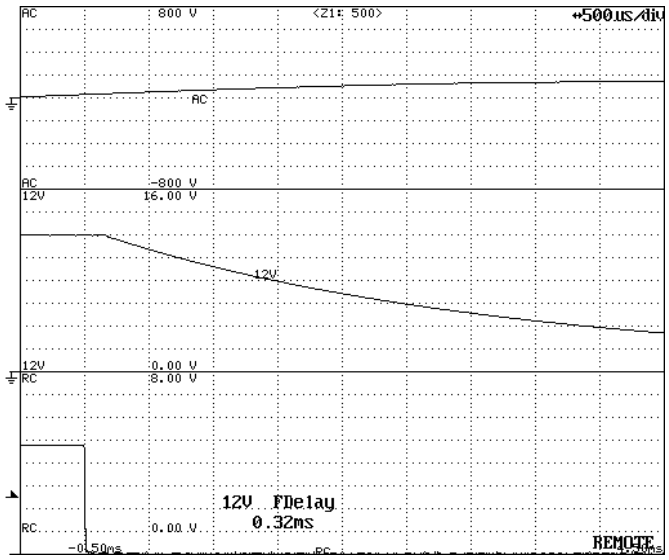
Input: 100V AC
Load: Rated Load

Timebase Range: 10ms/div



Output Fall Characteristics

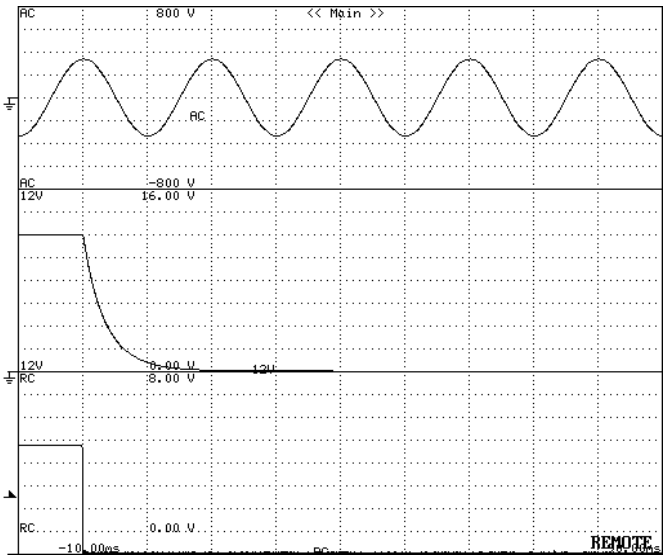
Timebase Range: 500 μ s/div



Output Fall Characteristics (magnification)

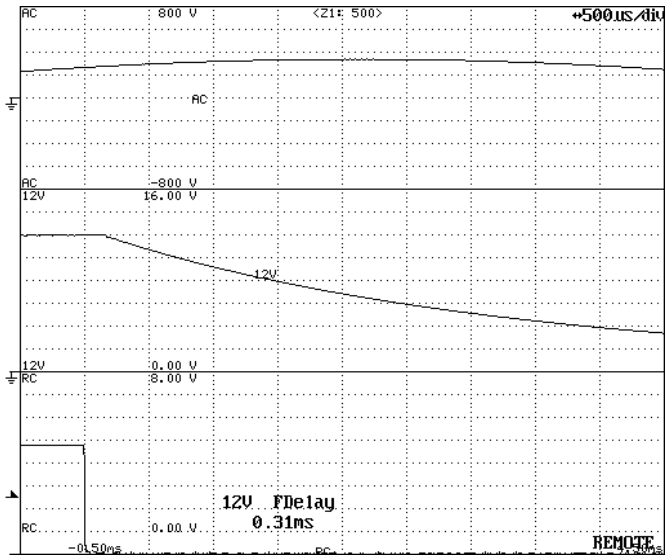
Input: 240V AC
Load: Rated Load

Timebase Range: 10ms/div



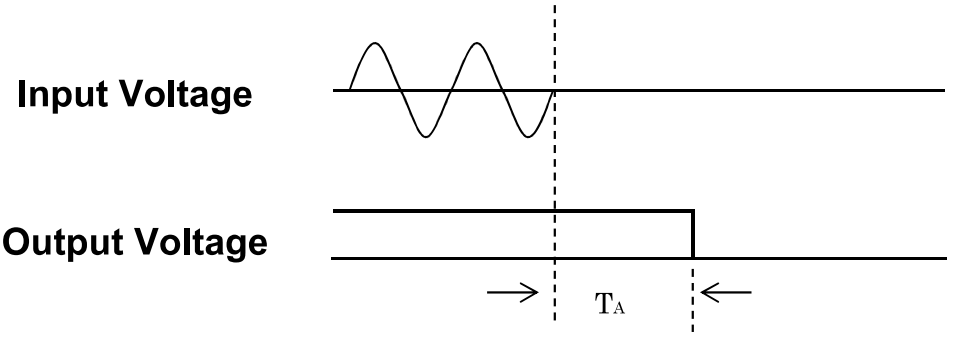
Output Fall Characteristics

Timebase Range: 500 μ s/div

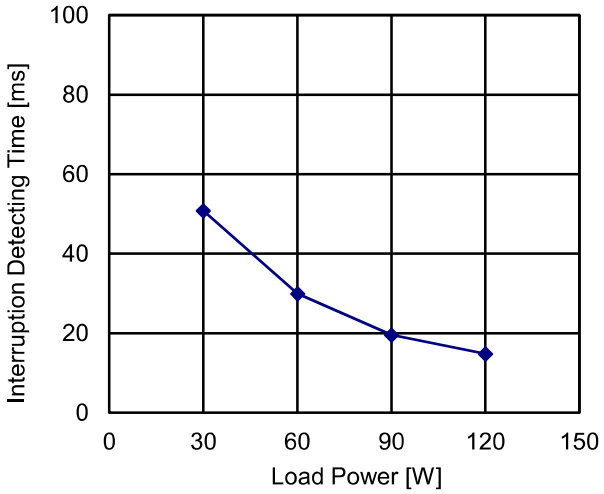


Output Fall Characteristics (magnification)

Model	UZP-120-12-JBH	Temperature: 25℃
Item	Instantaneous Interruption Compensation (by Load Power)	

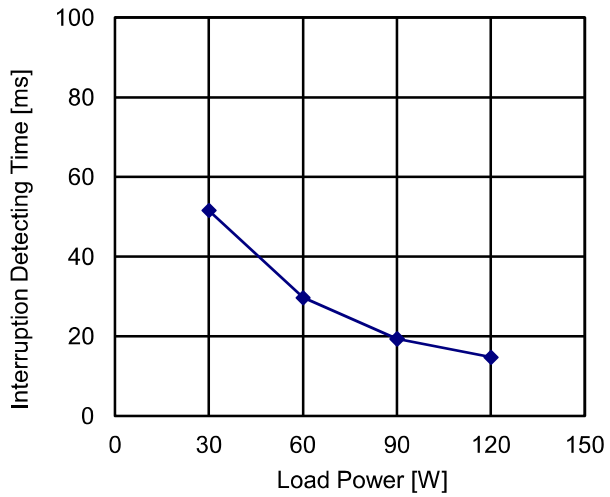


Input Voltage:100V AC



Load Power [W]	Interruption Detecting Time [ms]
	Ouput Voltage
	TA
30.0	50.8
60.0	29.9
90.0	19.6
120.0	14.8

Input Voltage:240V AC



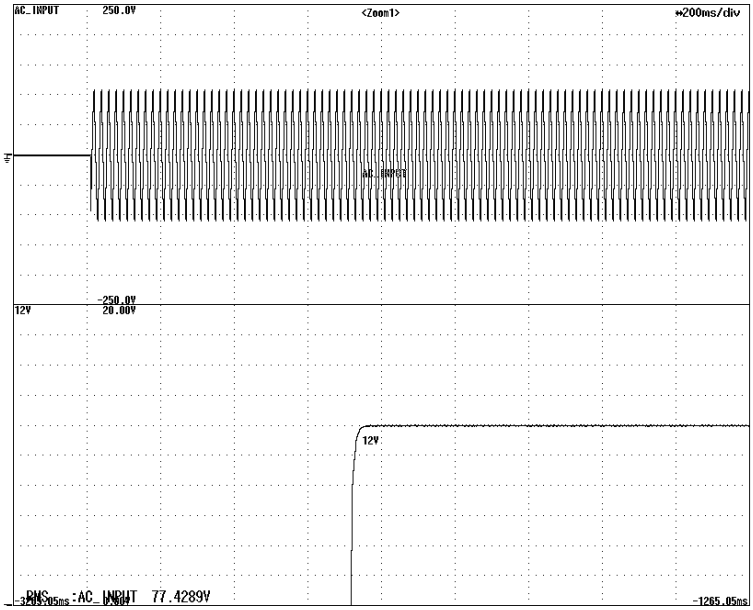
Load Power [W]	Interruption Detecting Time [ms]
	Ouput Voltage
	TA
30.0	51.7
60.0	29.7
90.0	19.4
120.0	14.8

Model	UZP-120-12-JBH	Temperature: 25℃
Item	Start-Up Voltage	

Timebase Range: 200ms/div
Load: Rated Load

AC Input

+12V

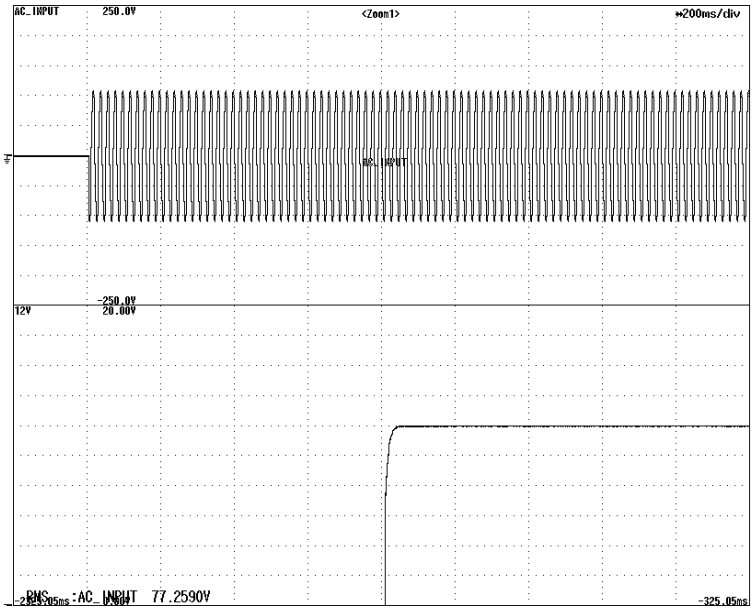


Start-up Voltage: 77.4V AC

Timebase Range: 200ms/div
Load: Minimum Load

AC Input

+12V



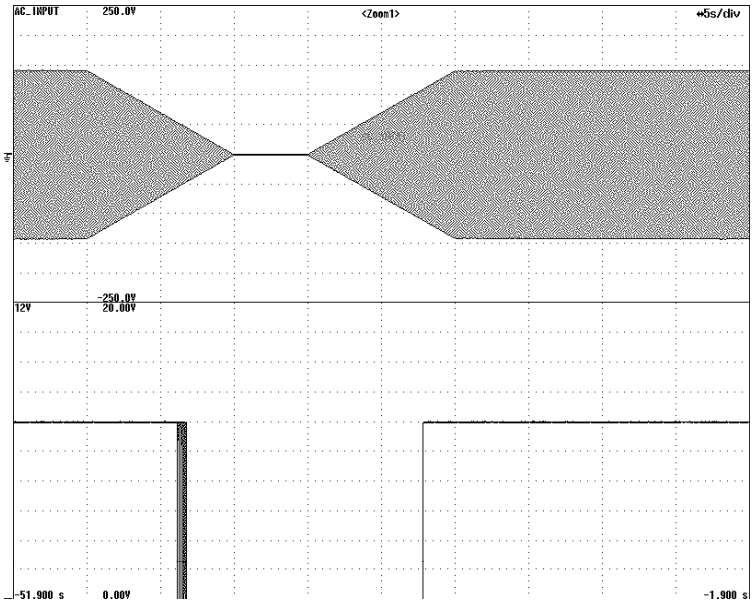
Start-up Voltage: 77.3V AC

Model	UZP-120-12-JBH	Temperature: 25℃
Item	Input Voltage Sweep Up/Down	

Timebase Range: 5s/div
Load: Rated Load

AC Input

+12V



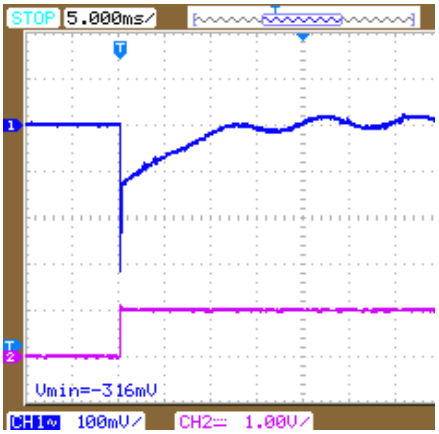
Sweep Rate: 10Vave/sec

Model	UZP-120-12-JBH	Temperature: 25℃
Item	Dynamic Load Response	

+12V DC Output Transient Response Waveforms

CH1

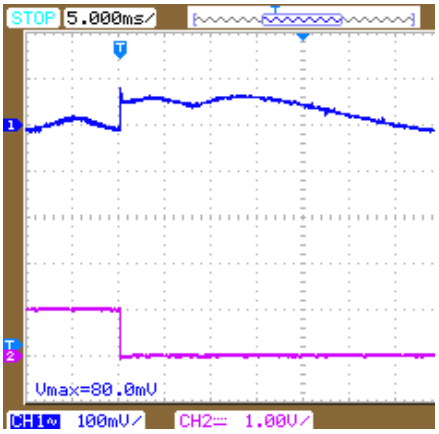
CH2



Waveform 1	
CH1	Measuring Point: DC Output Voltage
	Vertical Sensitivity: 100mV/div
CH2	Measuring Point: DC Output Current
	Vertical Sensitivity: 5A/div
Timebase Range	5ms/div
Condition	Input: 100V AC
Note: Minimum load(0A) → Rated Load(10A)	

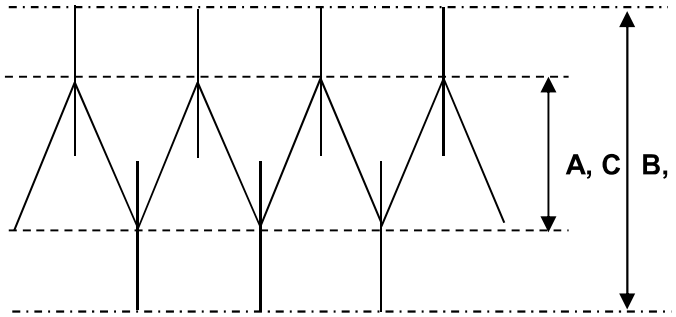
CH1

CH2



Waveform 2	
CH1	Measuring Point: DC Output Voltage
	Vertical Sensitivity: 100mV/div
CH2	Measuring Point: DC Output Current
	Vertical Sensitivity: 5A/div
Timebase Range	5ms/div
Condition	Input: 100V AC
Note: Rated Load(10A) → Minimum load(0A)	

Model	mUZPT-120-12-JB0	Load: Rated Load
Item	Ripple / Noise Voltage	

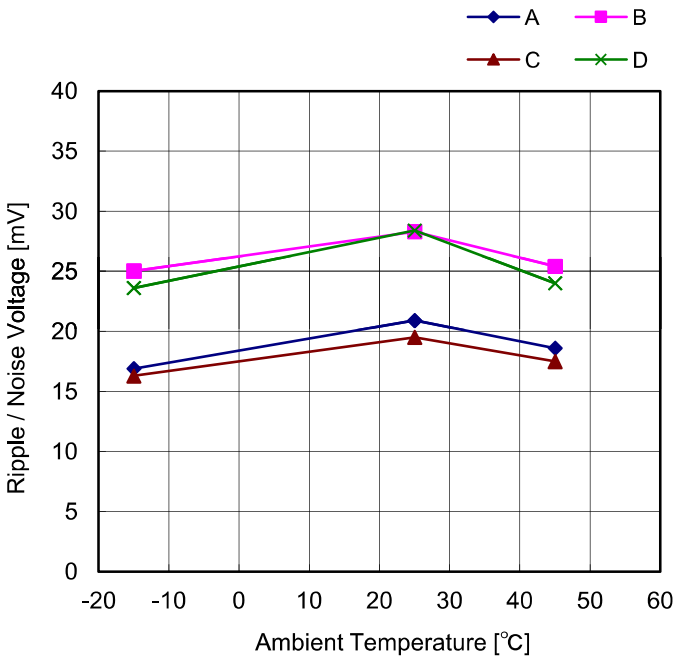


at 100V AC

A: Ripple Voltage (mV_{P-P})
B: Noise Voltage (mV_{P-P})

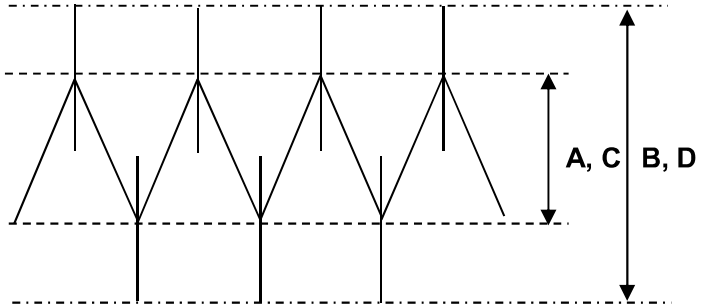
at 240V AC

C: Ripple Voltage (mV_{P-P})
D: Noise Voltage (mV_{P-P})



Ambient Temp. [℃]	Ripple / Noise Voltage [mV]			
	A	B	C	D
-15	16.9	25.0	16.3	23.6
25	20.9	28.3	19.5	28.4
45	18.6	25.4	17.5	24.0

Model	UZP-120-12-JBH	Temperature : 25℃
Item	Ambient Temperature Drift	

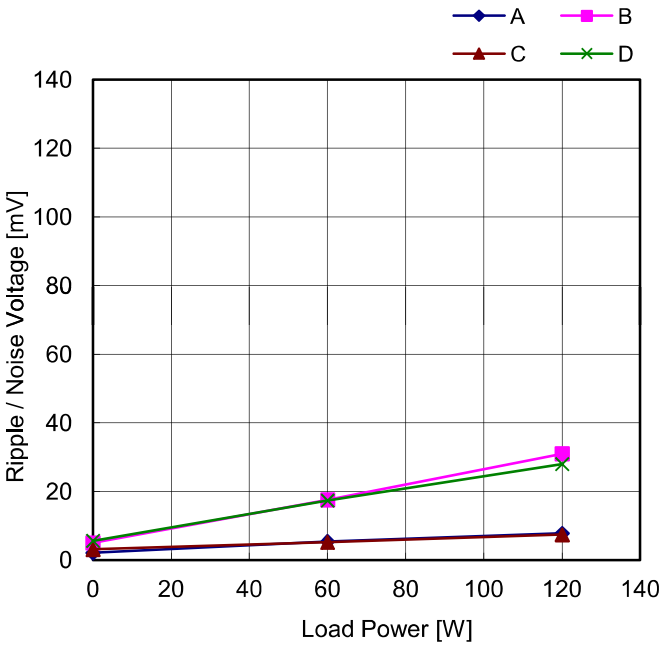


at 100V AC

A: Ripple Voltage (mVP-P)
B: Noise Voltage (mVP-P)

at 240V AC

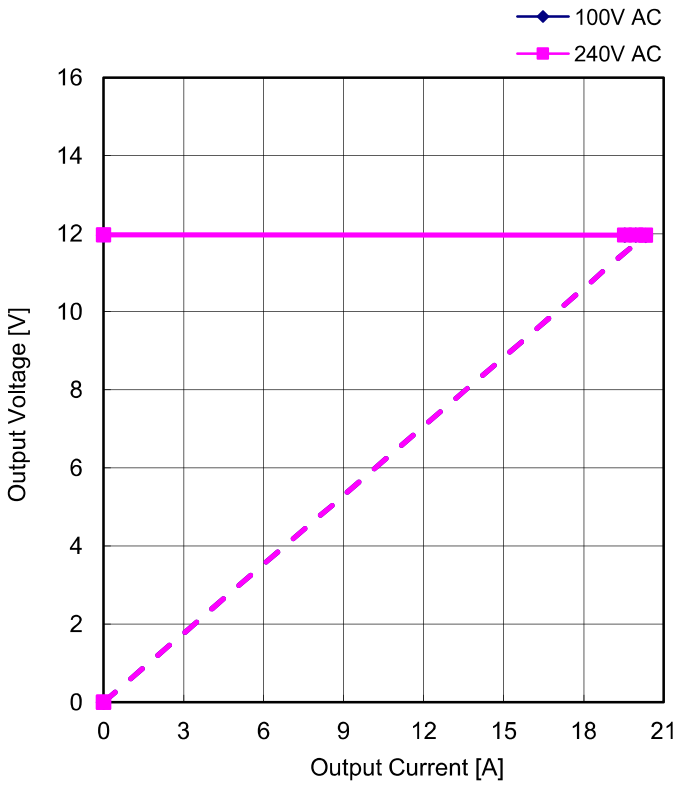
C: Ripple Voltage (mVP-P)
D: Noise Voltage (mVP-P)



Load Power [W]	Ripple / Noise Voltage [mV]			
	A	B	C	D
0	2.1	5.0	3.1	5.6
60.0	5.4	17.6	5.2	17.4
120.0	7.8	31.0	7.4	28.0

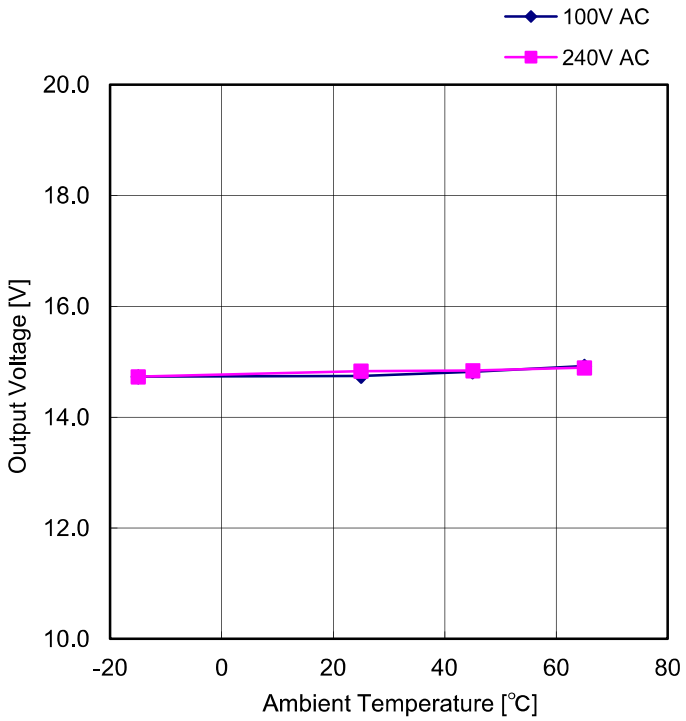
Model	UZP-120-12-JBH	Temperature: 25℃
Item	Over-Current Protection	

V-I Characteristics of 12V O.C.P



Input Voltage: 100V AC		Input Voltage: 240V AC	
Output Current [A]	Output Voltage [V]	Output Current [A]	Output Voltage [V]
0.00	11.97	0.00	11.98
19.54	11.97	19.54	11.97
19.96	11.97	19.96	11.97
20.32	11.96	20.32	11.96

Model	UZP-120-12-JBH	Load: Minimum Load
Item	Over-Voltage Protection	



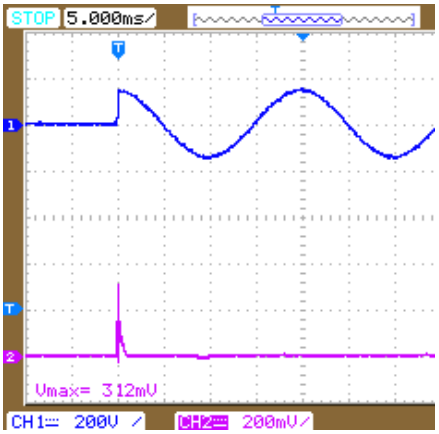
Ambient Temp. [°C]	Output Voltage [V]	
	100V AC	240V AC
-15	14.73	14.73
25	14.74	14.83
45	14.82	14.84
65	14.92	14.89

Model	UZP-120-12-JBH	Temperature: 25℃
Item	Inrush Current	Load: Rated Load

Inrush Current Waveforms

CH1

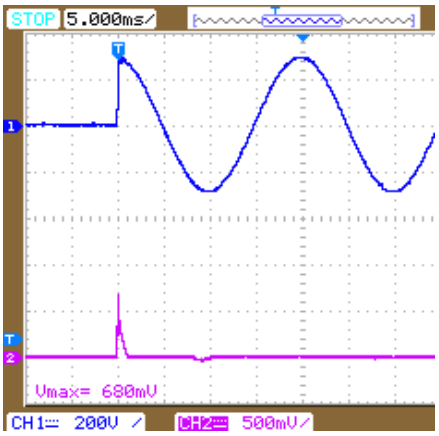
CH2



Waveform 1	
CH1	Measuring Point: AC Input Voltage
	Range: 200V/div
CH2	Measuring Point: AC Input Current
	Range: 10A/div
Timebase Range	5ms/div
Condition	Input: 100V AC
	Load: Rated Load
Note: Inrush Current: 15.6A	

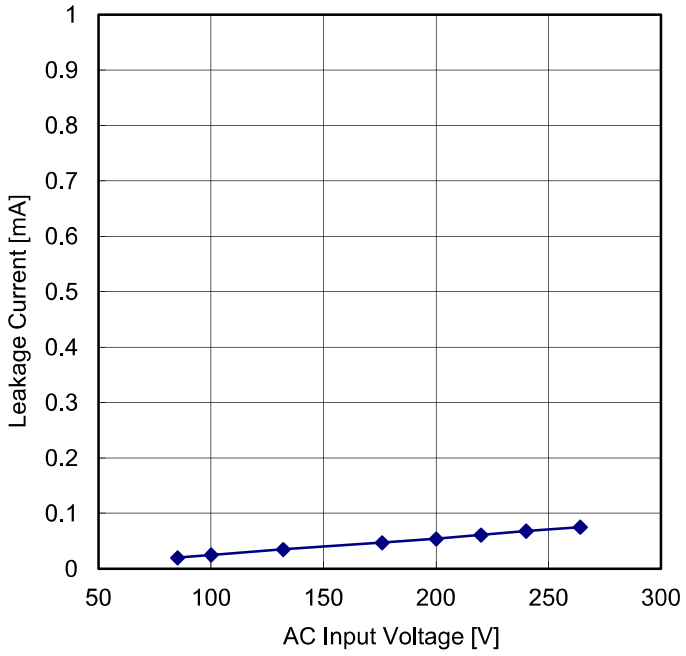
CH1

CH2



Waveform 2	
CH1	Measuring Point: AC Input Voltage
	Range: 200V/div
CH2	Measuring Point: AC Input Current
	Range: 25A/div
Timebase Range	5ms/div
Condition	Input: 200V AC
	Load: Rated Load
Note: Inrush Current: 34.0A	

Model	UZP-120-12-JBH	Load: Rated Load
Item	Leakage Current	



AC Input Voltage [V]	Leakage Current [mA]
85	0.02
100	0.03
132	0.04
176	0.05
200	0.05
220	0.06
240	0.07
264	0.08