

Test Data

Model Number: UZP-150-12

Model Name: DC POWER SUPPLY

INPUT: 85V – 264V AC, 50 / 60 Hz

OUTPUT: 12 V 12.5A (33.4 A_{peak})

Minimum load : 0W

Rated load : 150W

Peak output power: 400.8W

Approved by : *T. Kobayashi* (QA manager)
Designed by : *Kazuhiko Yamada* (R&D engineer)
Tested by : *Hiroaki Watanabe* (Evaluation test engineer)

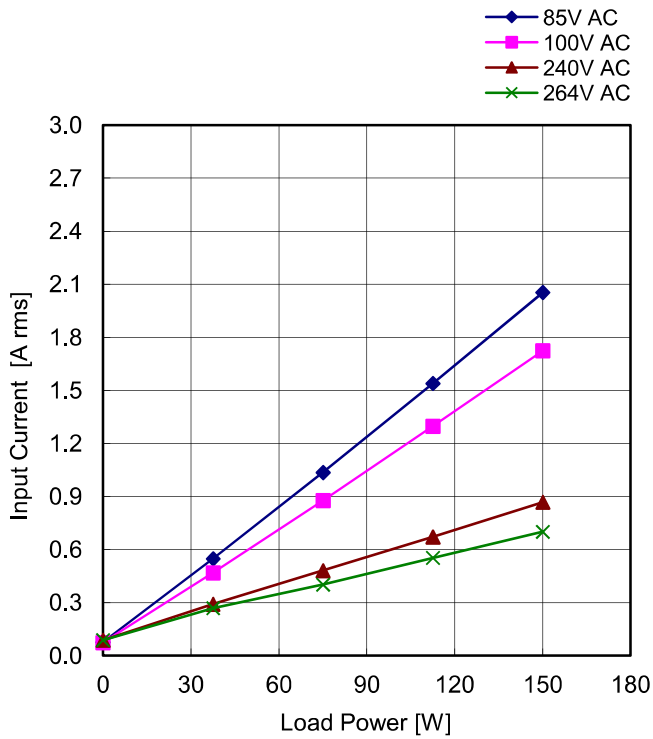
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Model UZP-150-12

Temperature: 25°C

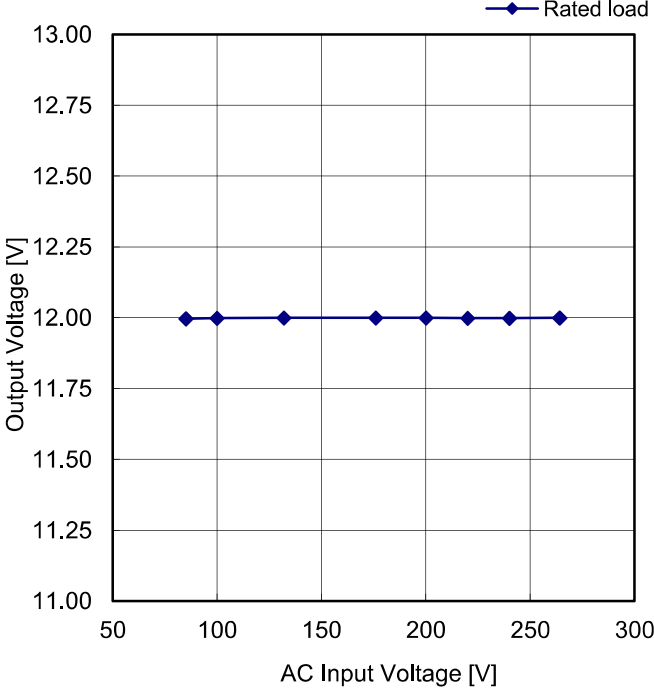
Item Input Current (by Load Power)



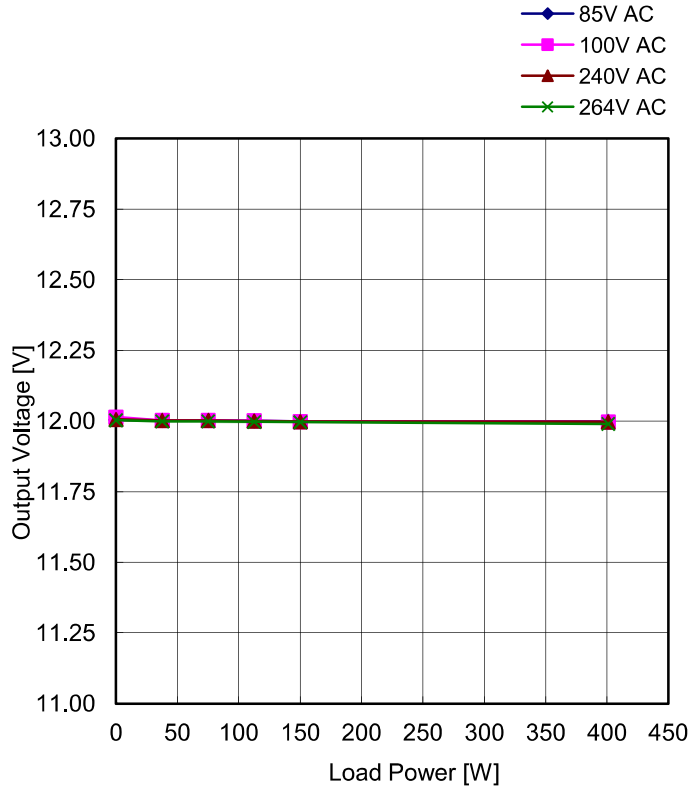
Load Power [W]	Input Current [A rms]			
	Input Voltage 85V AC	Input Voltage 100V AC	Input Voltage 240V AC	Input Voltage 264V AC
0.0	0.08	0.08	0.09	0.09
37.5	0.55	0.47	0.29	0.27
75.0	1.04	0.88	0.48	0.40
112.5	1.54	1.30	0.67	0.55
150.0	2.05	1.72	0.87	0.70

Model	UZP-150-12	Temperature: 25°C																														
Item	Efficiency																															
<p>■ Efficiency(by Input Voltage)</p> <table border="1"> <thead> <tr> <th>AC Input Voltage [V]</th> <th>50% Load</th> <th>Rated Load</th> </tr> </thead> <tbody> <tr><td>85</td><td>85.85</td><td>86.10</td></tr> <tr><td>100</td><td>86.73</td><td>87.45</td></tr> <tr><td>132</td><td>87.94</td><td>88.91</td></tr> <tr><td>176</td><td>88.77</td><td>90.20</td></tr> <tr><td>200</td><td>89.24</td><td>90.68</td></tr> <tr><td>220</td><td>89.56</td><td>90.94</td></tr> <tr><td>240</td><td>89.84</td><td>91.27</td></tr> <tr><td>264</td><td>90.16</td><td>91.60</td></tr> </tbody> </table>				AC Input Voltage [V]	50% Load	Rated Load	85	85.85	86.10	100	86.73	87.45	132	87.94	88.91	176	88.77	90.20	200	89.24	90.68	220	89.56	90.94	240	89.84	91.27	264	90.16	91.60		
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Model	UZP-150-12	Temperature: 25°C																		
Item	Line Regulation																			
 <p>The graph displays the line regulation performance of the UZP-150-12 power supply at a rated load. The x-axis represents the AC Input Voltage in Volts (V), ranging from 50V to 300V. The y-axis represents the Output Voltage in Volts (V), ranging from 11.00V to 13.00V. A single data series, labeled 'Rated load', shows that the output voltage remains constant at approximately 12.00V across the entire input voltage range from 85V to 264V.</p>		<table border="1"> <thead> <tr> <th>AC Input Voltage [V]</th> <th>Output Voltage [V]</th> </tr> </thead> <tbody> <tr> <td>85</td> <td>11.996</td> </tr> <tr> <td>100</td> <td>11.998</td> </tr> <tr> <td>132</td> <td>11.999</td> </tr> <tr> <td>176</td> <td>11.999</td> </tr> <tr> <td>200</td> <td>11.999</td> </tr> <tr> <td>220</td> <td>11.998</td> </tr> <tr> <td>240</td> <td>11.998</td> </tr> <tr> <td>264</td> <td>11.999</td> </tr> </tbody> </table>	AC Input Voltage [V]	Output Voltage [V]	85	11.996	100	11.998	132	11.999	176	11.999	200	11.999	220	11.998	240	11.998	264	11.999
AC Input Voltage [V]	Output Voltage [V]																			
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132	11.999																			
176	11.999																			
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220	11.998																			
240	11.998																			
264	11.999																			

Model	UZP-150-12	Temperature: 25°C
Item	Load Regulation	

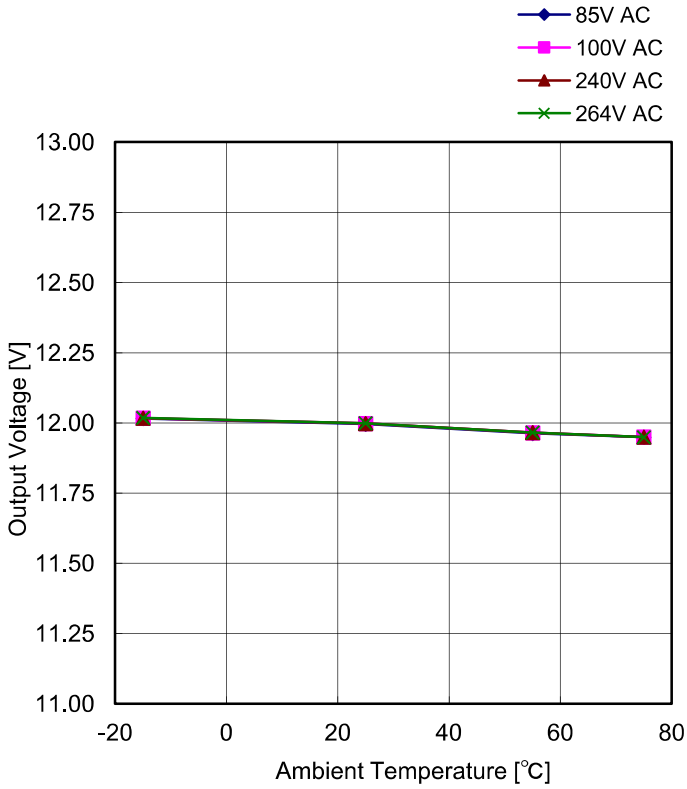


Load Power [W]	Output Voltage [V]			
	Input Voltage 85V AC	Input Voltage 100V AC	Input Voltage 240V AC	Input Voltage 264V AC
0.0	12.005	12.014	12.006	12.003
37.5	12.002	12.002	12.002	11.999
75.0	12.002	12.002	12.002	11.999
112.5	12.001	12.001	12.000	11.997
150.0	11.999	11.998	11.998	11.996
400.8	11.999	11.997	11.997	11.990

Load Power [W]	Load Condition	
	Load Current [A]	
0.0	12V	
37.5	0.00	
75.0	3.13	
112.5	6.25	
150.0	9.38	
400.8	12.50	
	33.40	

Model UZP-150-12

Item Ambient Temperature Drift



Ambient Temp. (°C)	Output Voltage [V]			
	Input Voltage 85V AC	Input Voltage 100V AC	Input Voltage 240V AC	Input Voltage 264V AC
-15	12.016	12.017	12.017	12.018
25	11.996	11.998	11.998	11.999
55	11.963	11.965	11.966	11.966
75	11.949	11.950	11.950	11.949

Load Condition

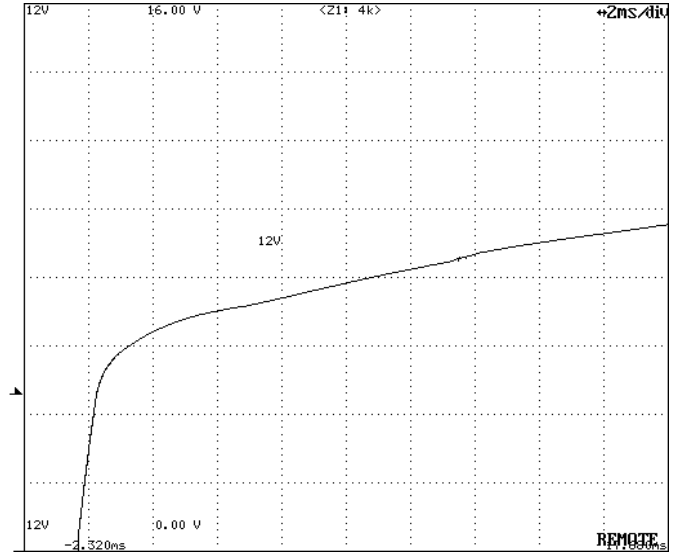
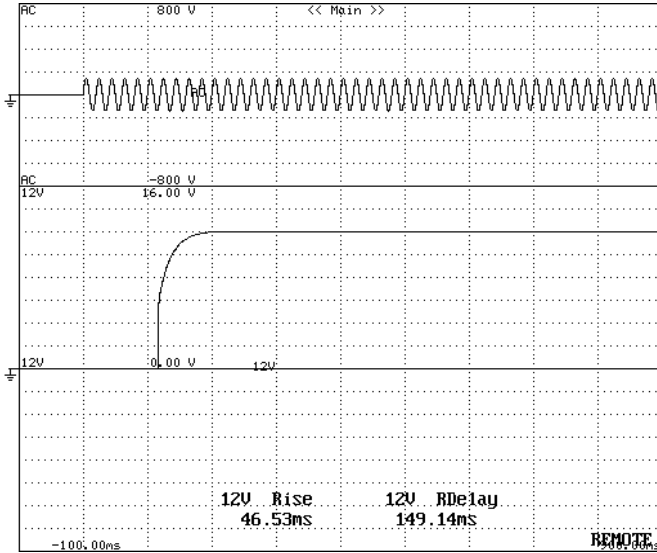
Ambient Temp. (°C)	Load Current [A]
	12V
-15	12.50
25	12.50
55	12.50
75	7.50

Model	UZP-150-12	Temperature: 25°C
Item	Output Rise Characteristics (at AC Power ON)	

Input: 100V AC
Load: Rated Load

Timebase Range: 100ms/div

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



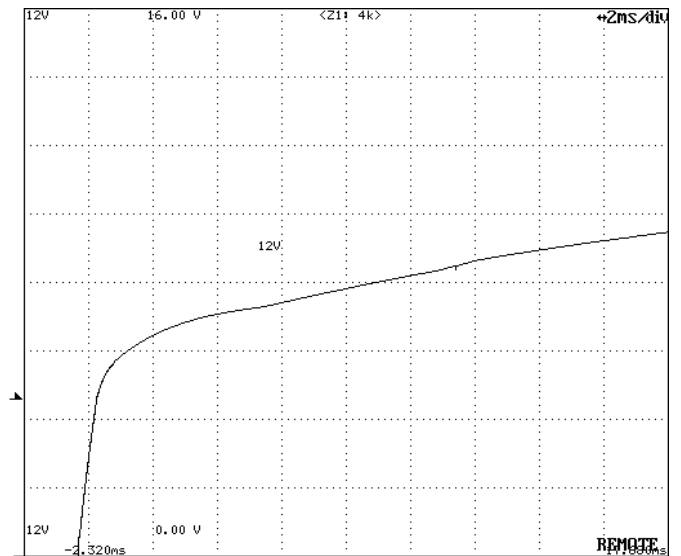
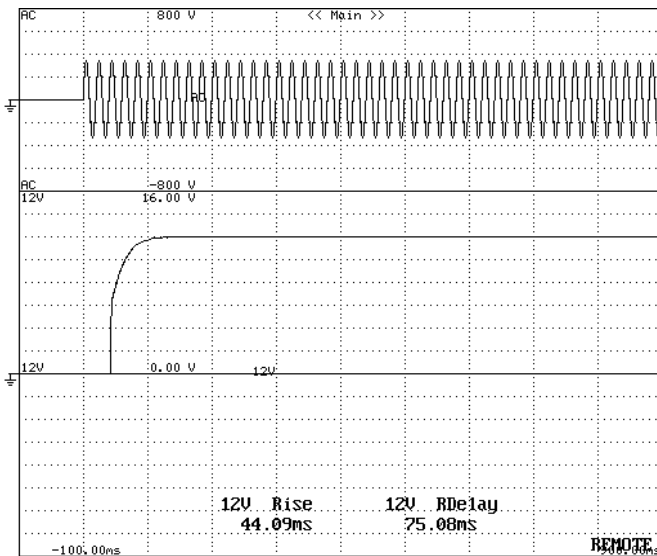
All Output Start-up Sequence

12V DC Output Rise Characteristics

Input: 240V AC
Load: Rated Load

Timebase Range: 100ms/div

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



All Output Start-up Sequence

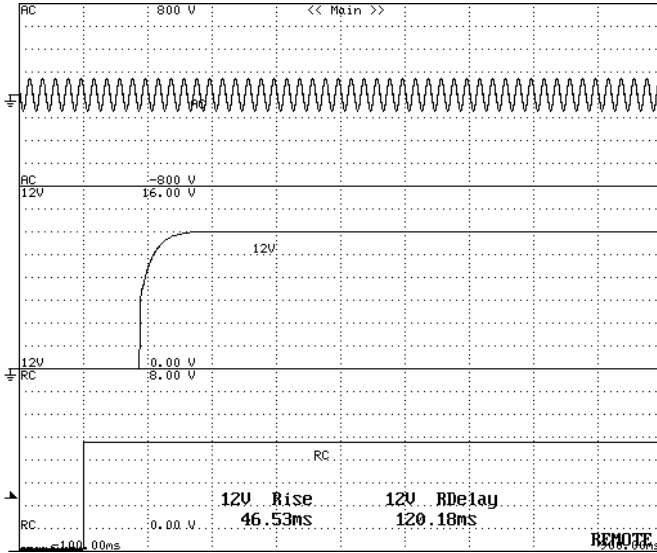
12V DC Output Rise Characteristics

Model	UZP-150-12	Temperature: 25°C
Item	Output Rise Characteristics (at Remote ON)	

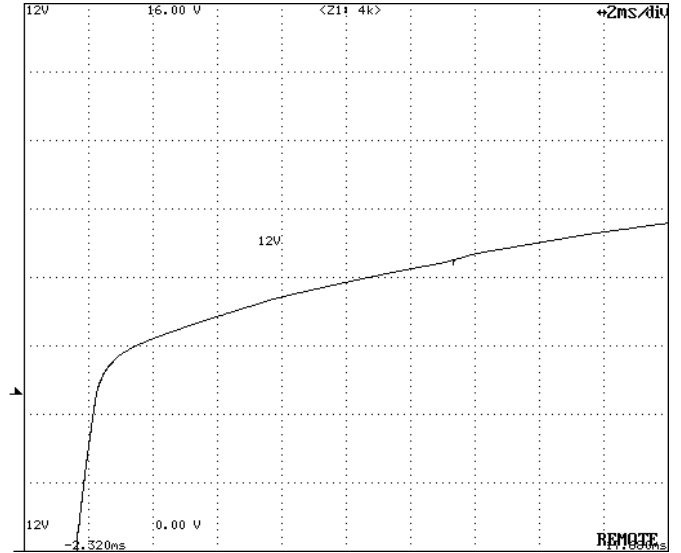
Input: 100V AC
Load: Rated Load

Timebase Range: 100ms/div

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



All Output Start-up Sequence

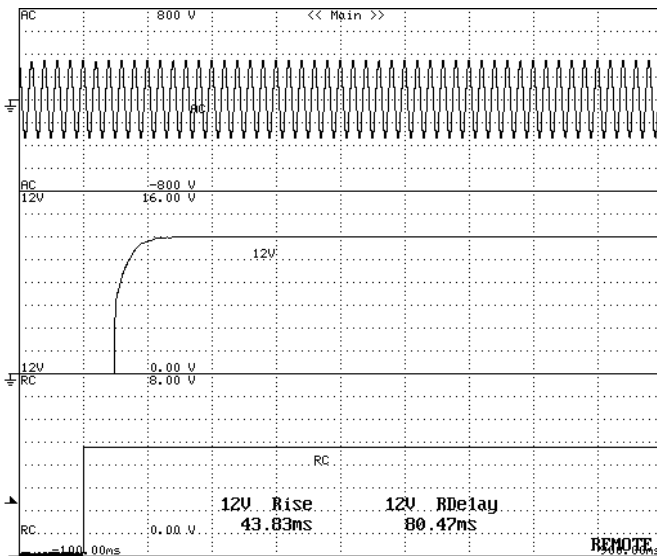


12V DC Output Rise Characteristics

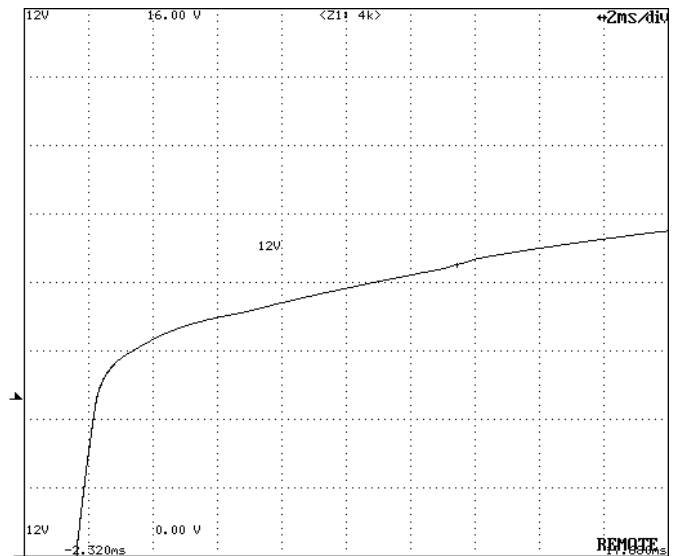
Input: 240V AC
Load: Rated Load

Timebase Range: 100ms/div

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



All Output Start-up Sequence

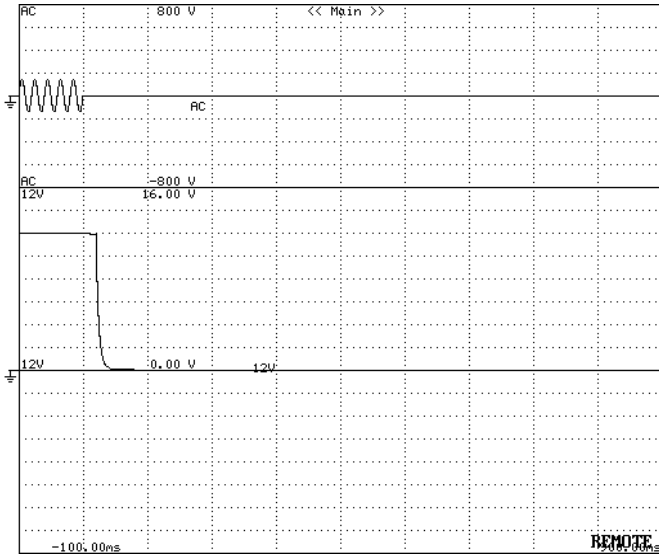


12V DC Output Rise Characteristics

Model	UZP-150-12	Temperature: 25°C
Item	Output Fall Characteristics (at AC Power OFF)	

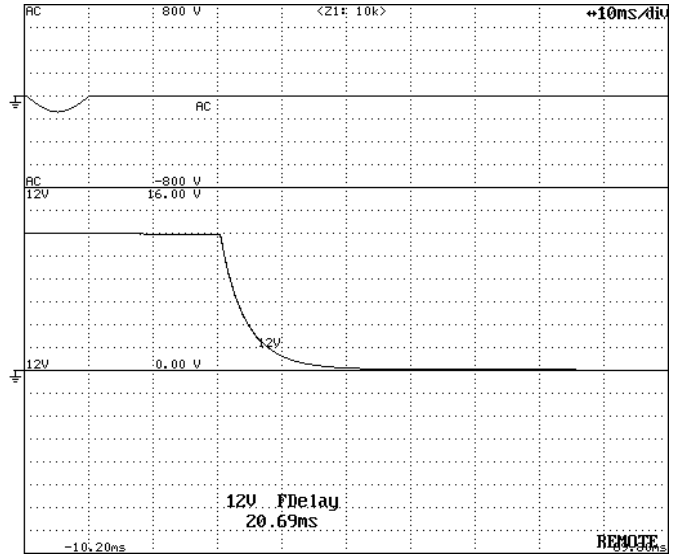
Input: 100V AC
Load: Rated Load

Timebase Range: 100ms/div



Output Fall Characteristics

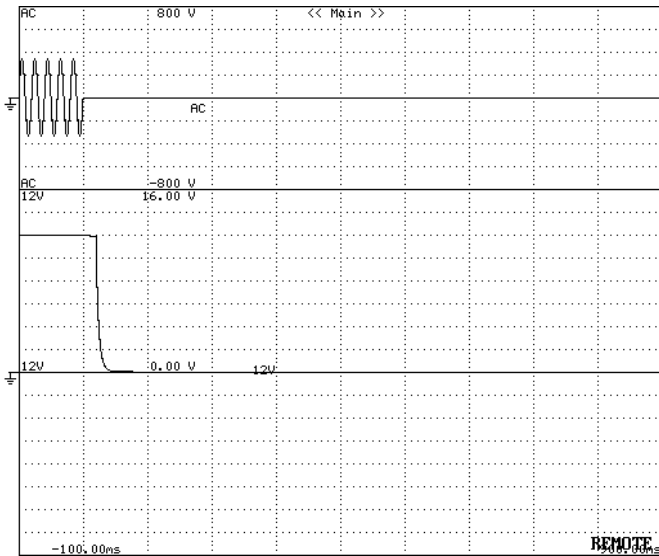
Timebase Range: 10ms/div



Output Fall Characteristics (magnification)

Input: 240V AC
Load: Rated Load

Timebase Range: 100ms/div



Output Fall Characteristics

Timebase Range: 10ms/div

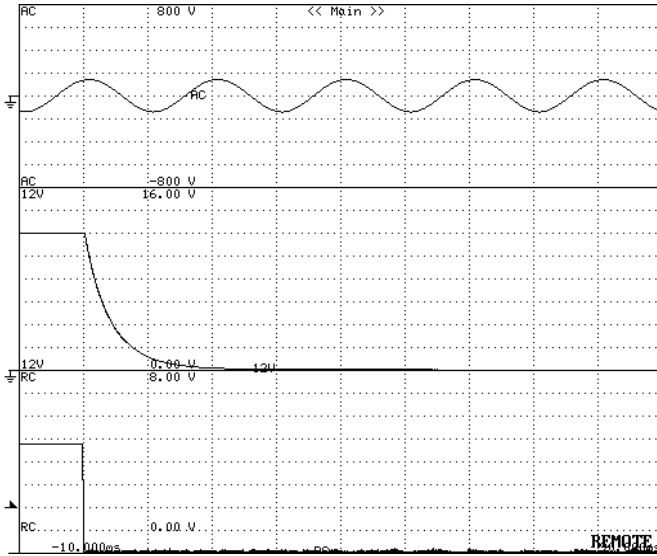


Output Fall Characteristics (magnification)

Model	UZP-150-12	Temperature: 25°C
Item	Output Fall Characteristics (at Remote OFF)	

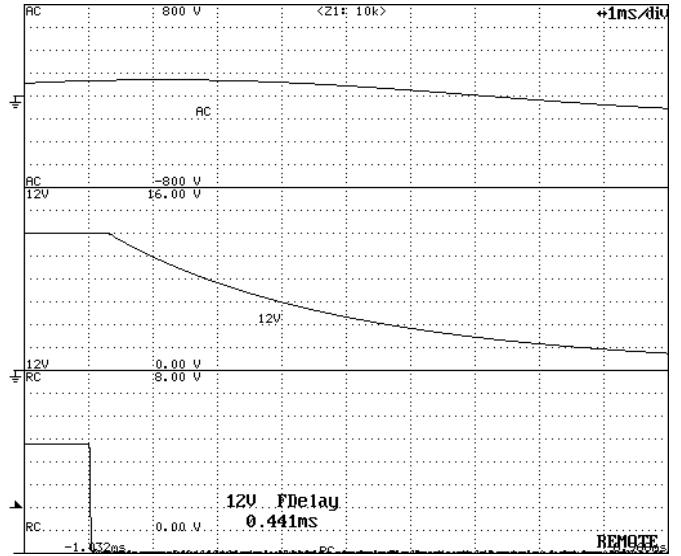
Input: 100V AC
Load: Rated Load

Timebase Range: 10ms/div



Output Fall Characteristics

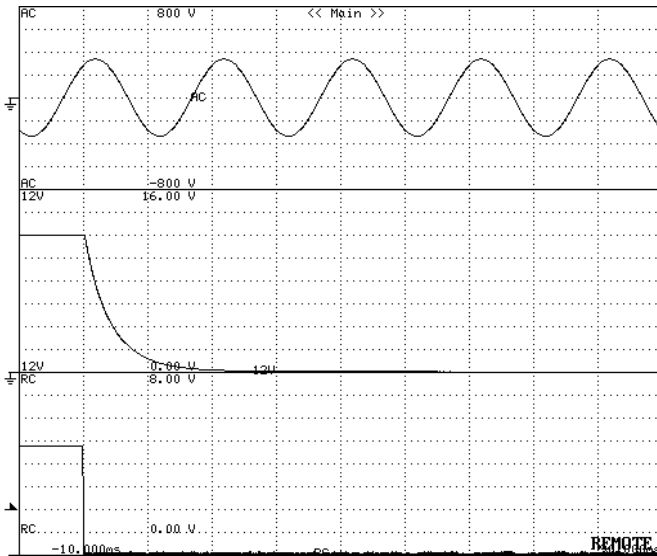
Timebase Range: 1ms/div



Output Fall Characteristics (magnification)

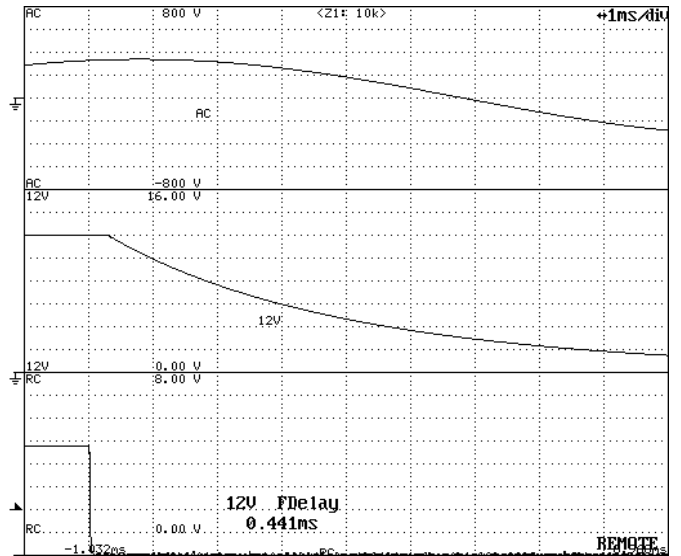
Input: 240V AC
Load: Rated Load

Timebase Range: 10ms/div



Output Fall Characteristics

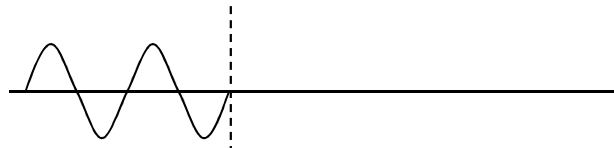
Timebase Range: 1ms/div



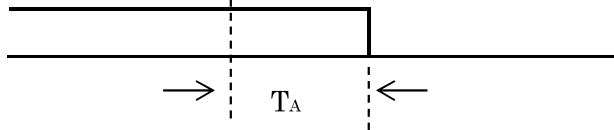
Output Fall Characteristics (magnification)

Model	UZP-150-12	Temperature: 25°C
Item	Instantaneous Interruption Compensation (by Load Power)	

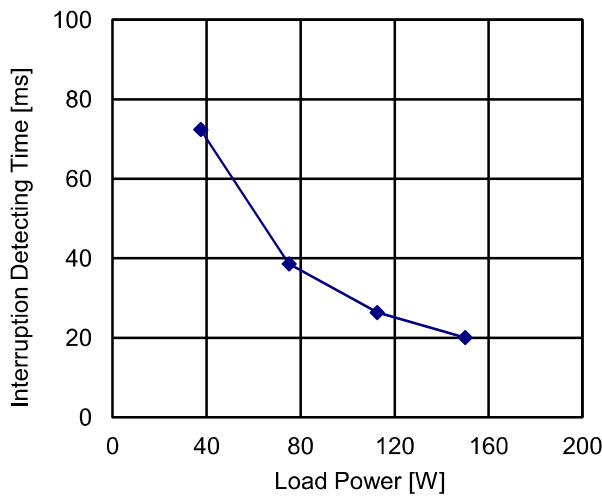
Input Voltage



Output Voltage

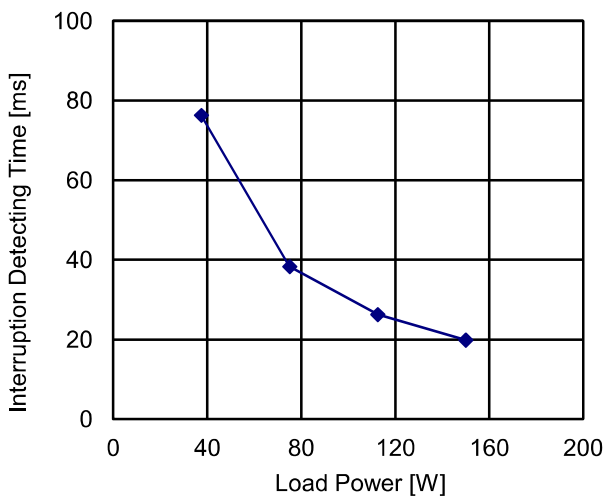


Input Voltage:100V AC



Load Power [W]	Interruption Detecting Time [ms]
	Output Voltage
	T _A
37.5	72.4
75.0	38.6
112.5	26.4
150.0	20.1

Input Voltage:240V AC

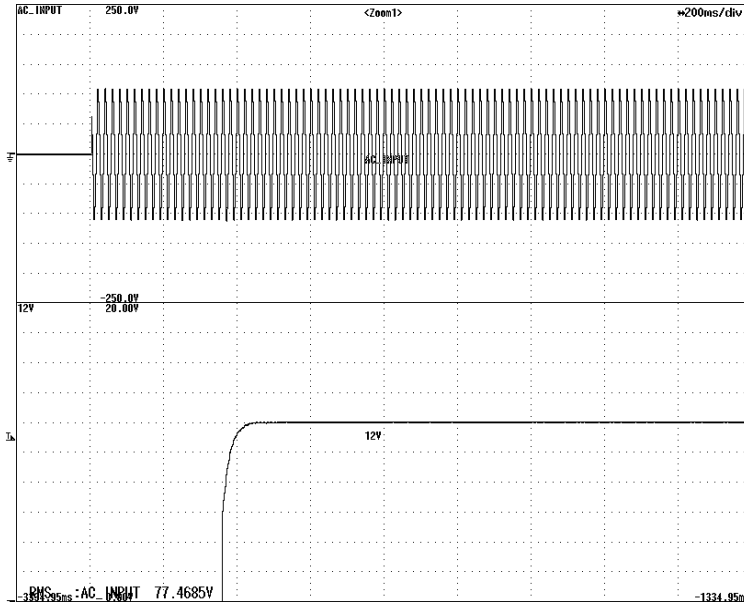


Load Power [W]	Interruption Detecting Time [ms]
	Output Voltage
	T _A
37.5	76.3
75.0	38.3
112.5	26.3
150.0	19.9

Model	UZP-150-12	Temperature: 25°C
Item	Start-Up Voltage	

**Timebase Range: 200ms/div
Load: Rated Load**

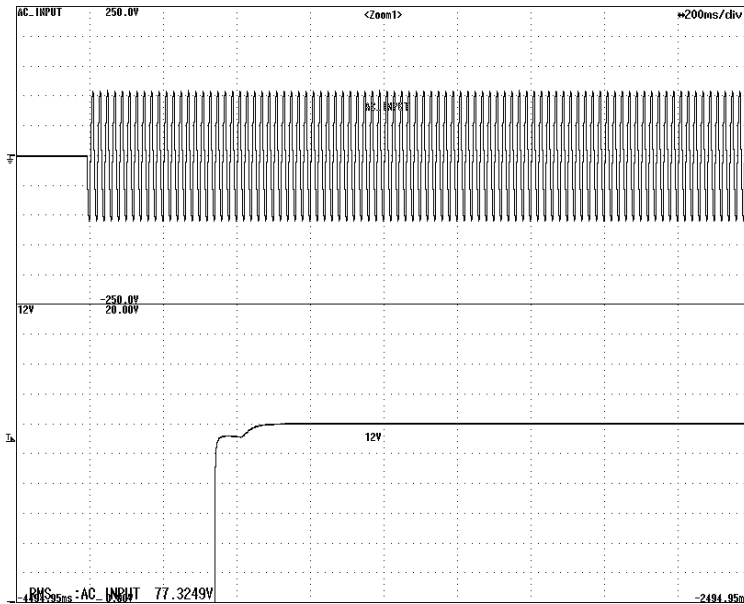
AC Input



Start-up Voltage: 77.5V AC

**Timebase Range: 200ms/div
Load: Minimum Load**

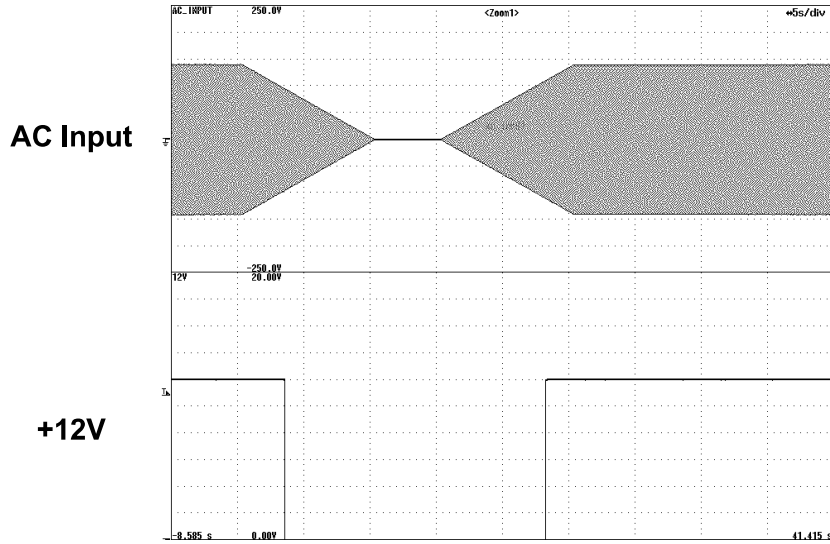
AC Input



Start-up Voltage: 77.3V AC

Model	UZF-150-12	Temperature: 25°C
Item	Input Voltage Sweep Up/Down	

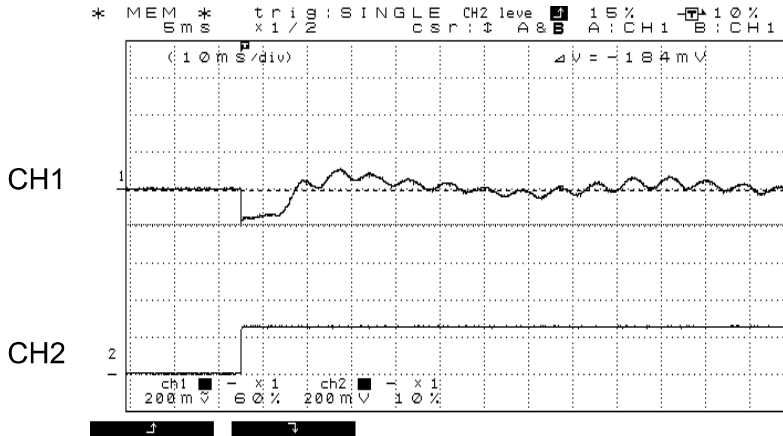
**Timebase Range: 5s/div
Load: Rated Load**



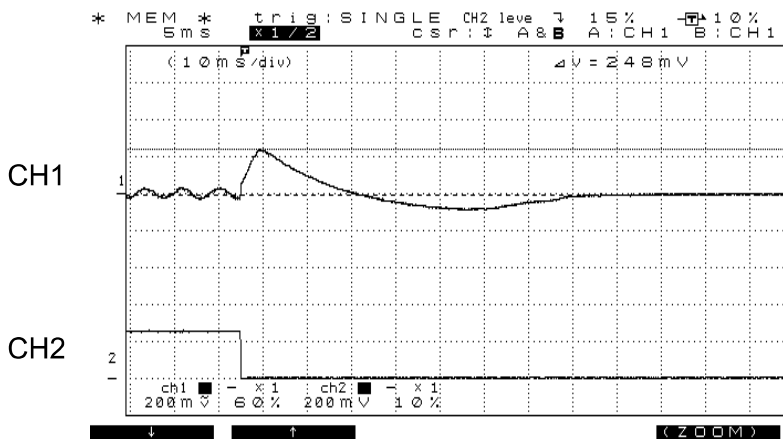
Sweep Rate: 10Vave/sec

Model	UZP-150-12	Temperature: 25°C
Item	Dynamic Load Response	

+12V DC Output Transient Response Waveforms

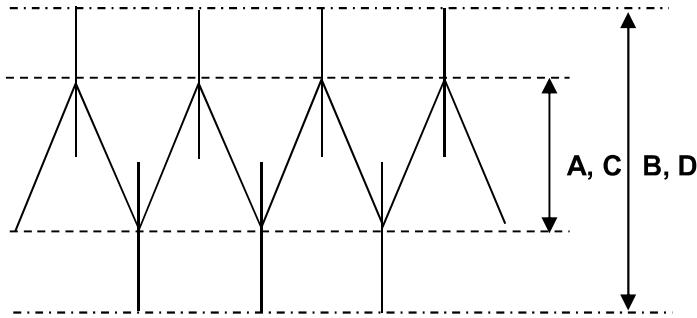


Waveform 1	
CH1	Measuring Point: DC Output Voltage
	Vertical Sensitivity: 200mV/div
CH2	Measuring Point: DC Output Current
	Vertical Sensitivity: 10A/div
Timebase Range	10ms/div
Condition	Input: 100V AC
Note: Minimum load(0A) → Rated Load(12.5A)	



Waveform 2	
CH1	Measuring Point: DC Output Voltage
	Vertical Sensitivity: 200mV/div
CH2	Measuring Point: DC Output Current
	Vertical Sensitivity: 10A/div
Timebase Range	10ms/div
Condition	Input: 100V AC
Note: Rated Load(12.5A) → Minimum load(0A)	

Model	UZP-150-12	Load: Rated Load
Item	Ripple / Noise Voltage	

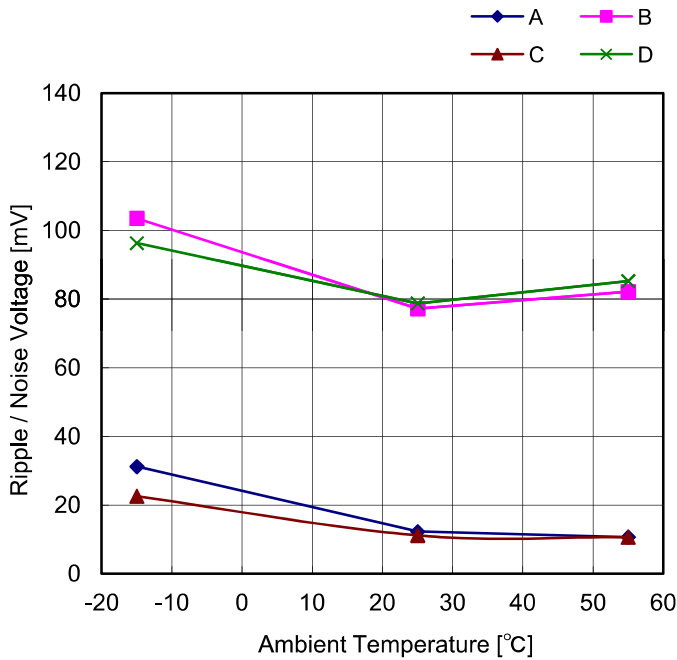


at 100V AC

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

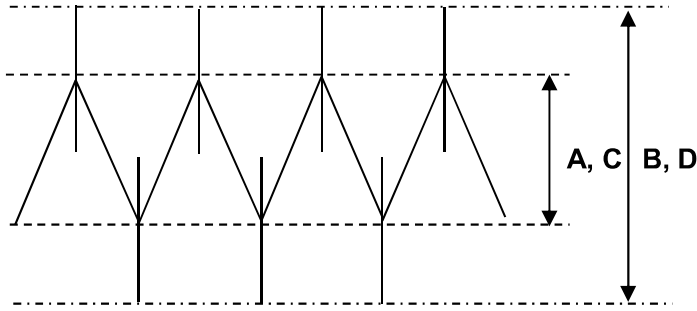
at 240V AC

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



Ambient Temp. [°C]	Ripple / Noise Voltage [mV]			
	A	B	C	D
-15	31.2	103.5	22.6	96.3
25	12.2	77.2	11.1	78.7
55	10.6	82.1	10.6	85.2

Model	UZP-150-12	Temperature : 25°C
Item	Ripple / Noise Voltage	

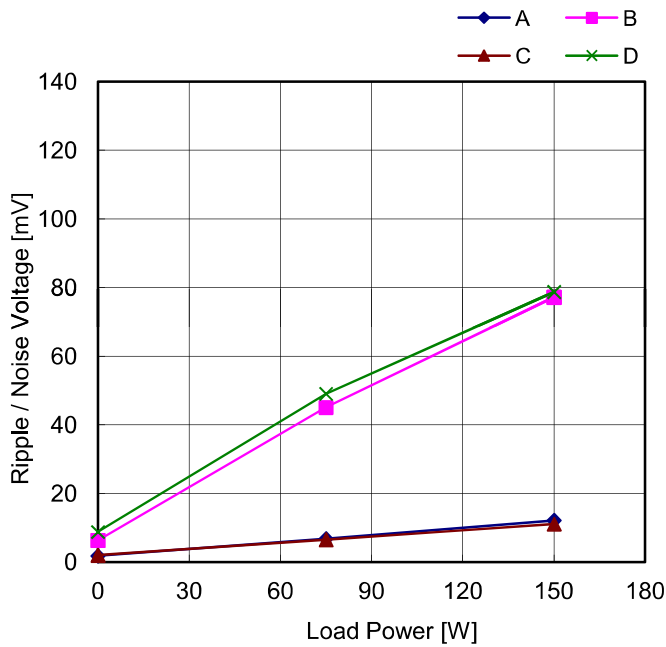


at 100V AC

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

at 240V AC

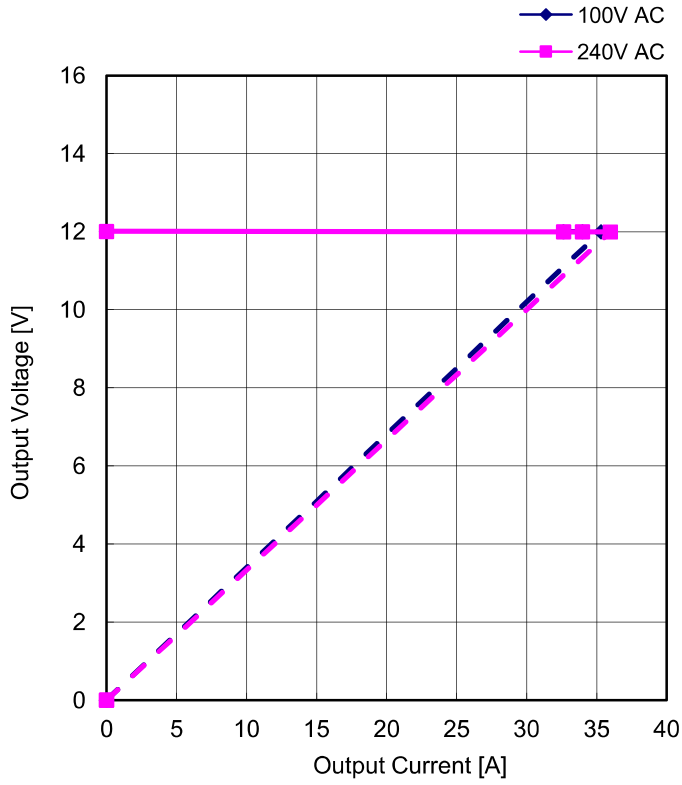
C: Ripple Voltage (mVP-P)
D: Noise Voltage (mVP-P)



Load Power [W]	Ripple / Noise Voltage [mV]			
	A	B	C	D
0	1.8	6.3	2.0	8.8
75.0	6.8	45.1	6.5	49.1
150.0	12.2	77.2	11.1	78.7

Model	UZP-150-12	Temperature: 25°C
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	12.01	0.00	12.01
32.61	12.00	32.61	12.00
33.96	12.00	33.96	12.00
35.28	12.00	35.97	12.00

Model	UZP-150-12	Load: Minimum Load
Item	Over-Voltage Protection	

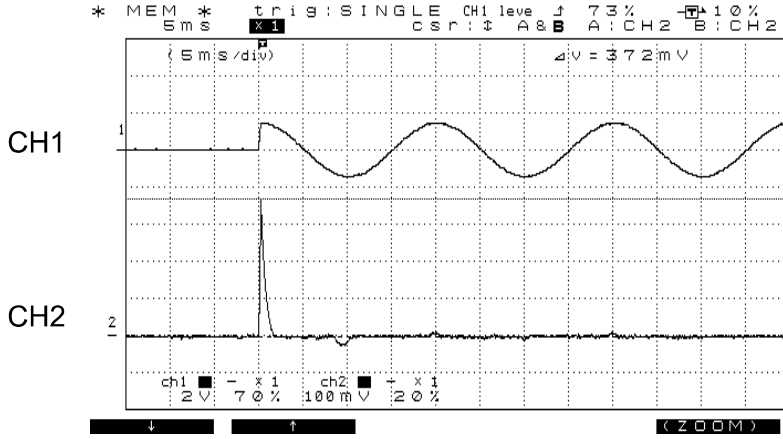
Legend:
◆ 100V AC
■ 240V AC

Ambient Temp. [°C]	100V AC [V]	240V AC [V]
-15	13.84	13.90
25	14.21	14.21
55	14.45	14.44
75	14.60	14.60

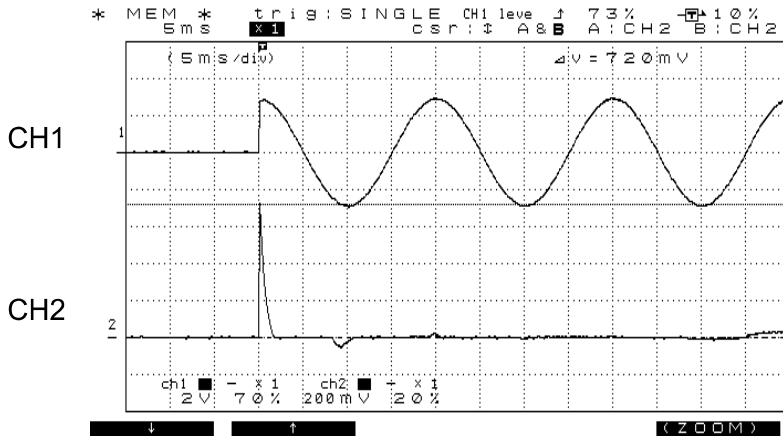
Ambient Temp. [°C]	Output Voltage [V]	
	100V AC	240V AC
-15	13.84	13.90
25	14.21	14.21
55	14.45	14.44
75	14.60	14.60

Model	UZP-150-12	Temperature: 25°C
Item	Inrush Current	Load: Rated Load

Inrush Current Waveforms



Waveform 1	
CH1	Measuring Point: AC Input Voltage
	Range: 200V/div
CH2	Measuring Point: AC Input Current
	Range: 5A/div
Timebase Range	5ms/div
Condition	Input: 100V AC Load: Rated Load
Note: Inrush Current: 18.6A	



Waveform 2	
CH1	Measuring Point: AC Input Voltage
	Range: 200V/div
CH2	Measuring Point: AC Input Current
	Range: 10A/div
Timebase Range	5ms/div
Condition	Input: 200V AC Load: Rated Load
Note: Inrush Current: 36.0A	

Model	UZP-150-12	Load: Rated Load																																				
Item	Leakage Current																																					
<table border="1"> <thead> <tr> <th>AC Input Voltage [V]</th> <th>Leakage Current [mA]</th> </tr> </thead> <tbody> <tr><td>85</td><td>0.04</td></tr> <tr><td>100</td><td>0.05</td></tr> <tr><td>132</td><td>0.07</td></tr> <tr><td>176</td><td>0.09</td></tr> <tr><td>200</td><td>0.10</td></tr> <tr><td>220</td><td>0.11</td></tr> <tr><td>240</td><td>0.12</td></tr> <tr><td>264</td><td>0.14</td></tr> </tbody> </table>		AC Input Voltage [V]	Leakage Current [mA]	85	0.04	100	0.05	132	0.07	176	0.09	200	0.10	220	0.11	240	0.12	264	0.14	<table border="1"> <thead> <tr> <th>AC Input Voltage [V]</th> <th>Leakage Current [mA]</th> </tr> </thead> <tbody> <tr><td>85</td><td>0.04</td></tr> <tr><td>100</td><td>0.05</td></tr> <tr><td>132</td><td>0.07</td></tr> <tr><td>176</td><td>0.09</td></tr> <tr><td>200</td><td>0.10</td></tr> <tr><td>220</td><td>0.11</td></tr> <tr><td>240</td><td>0.12</td></tr> <tr><td>264</td><td>0.14</td></tr> </tbody> </table>	AC Input Voltage [V]	Leakage Current [mA]	85	0.04	100	0.05	132	0.07	176	0.09	200	0.10	220	0.11	240	0.12	264	0.14
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