

## Test Data

Model Number: eNSP4-500P-SA0-H1V

Model Name: Nonstop Power Supply

Option: BS13A-EC400/422F

INPUT: 85V – 264V AC, 50 / 60 Hz

OUTPUT: 3.3 V 11.5 A (20 A<sub>max</sub>, 30 A<sub>peak</sub>)  
5 V 16.0 A (22 A<sub>max</sub>, 33 A<sub>peak</sub>)  
12 V 18.0 A (22 A<sub>max</sub>, 30 A<sub>peak</sub>)  
-12 V 0.5 A  
5 V<sub>Sb</sub> 2.0 A (2.5 A<sub>peak</sub>)

Maximum continuous output power: 350W

Peak output power: 500.5W

Approved by : Kazuo Imai (QA manager)  
Designed by : Naoki Yamamoto (R&D engineer)  
Tested by : M. Hagata (Evaluation test engineer)

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Model	eNSP4-500P-SA0-H1V																																											
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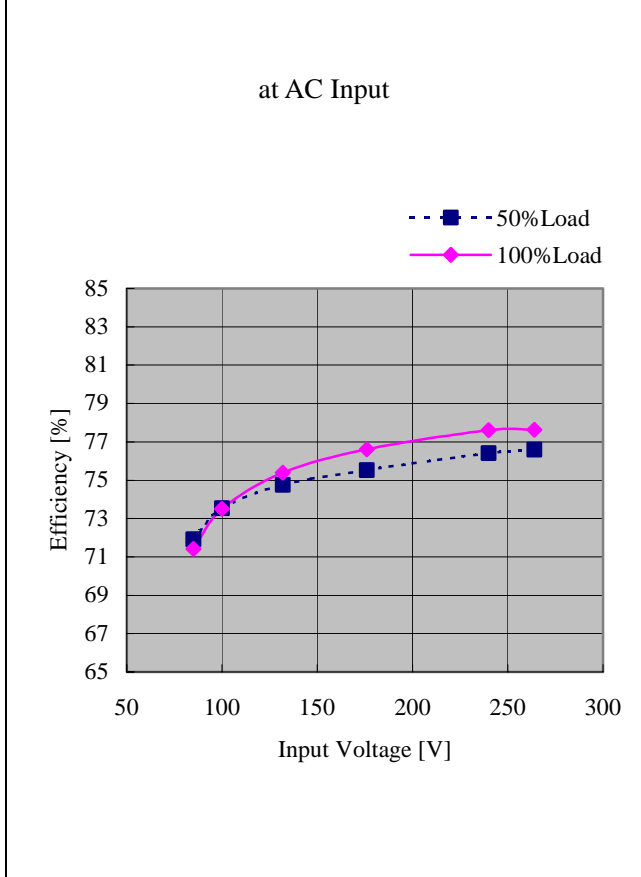
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Item	Input Current (by Load Power)			
at AC Input				
at AC Input				
Load Power [W]	Input Current [A rms]			
	Input Voltage 85V AC	Input Voltage 100V AC	Input Voltage 240V AC	Input Voltage 264V AC
0.0	0.33	0.28	0.20	0.19
87.5	1.58	1.31	0.58	0.55
175.0	2.90	2.39	1.03	0.93
262.5	4.27	3.57	1.47	1.35
350.0	5.71	4.74	1.91	1.75

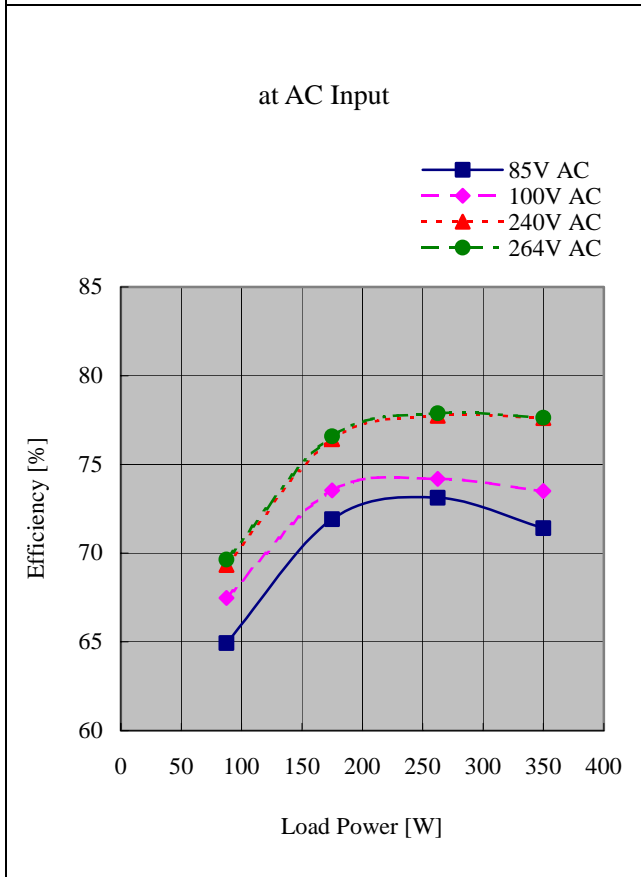
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Load Power [W]	Input Power [W]			
	Input Voltage 85V AC	Input Voltage 100V AC	Input Voltage 240V AC	Input Voltage 264V AC
0.0	27.10	25.19	23.32	24.76
87.5	131.23	131.82	126.89	126.86
175.0	239.83	239.74	230.03	229.89
262.5	358.76	353.91	337.57	337.13
350.0	489.05	477.23	449.83	447.96

Model	eNSP4-500P-SA0-H1V
Item	Efficiency



at AC Input

Input Voltage [V]	Efficiency [%]	
	50% Load	100% Load
85V AC	71.91	71.41
100V AC	73.54	73.51
132V AC	74.76	75.39
176V AC	75.53	76.61
240V AC	76.42	77.62
264V AC	76.59	77.63



at AC Input

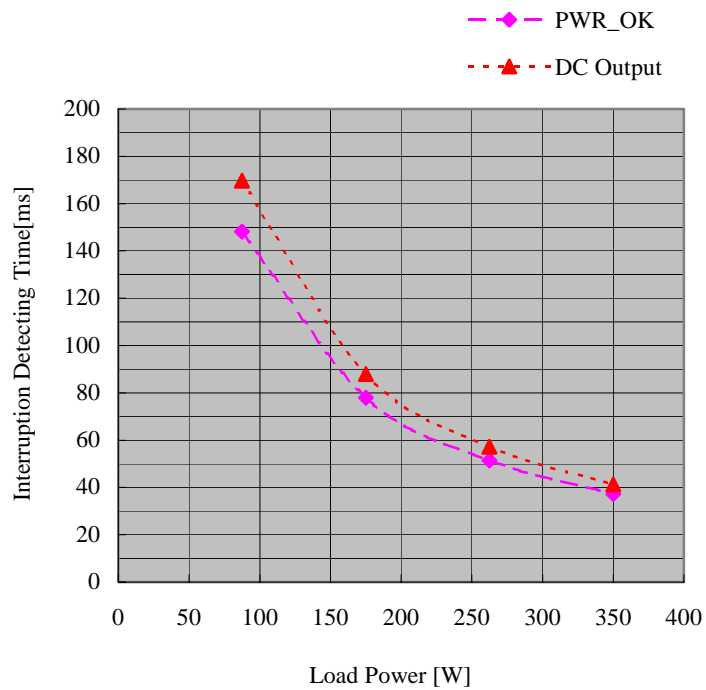
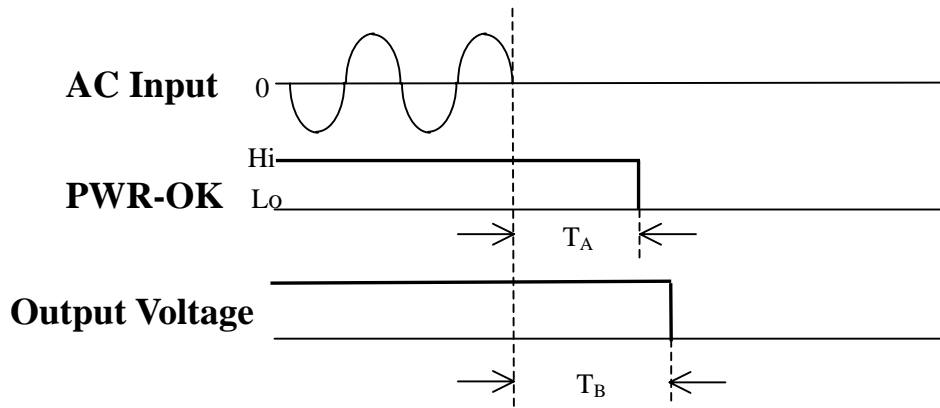
Load Power [W]	Efficiency [%]			
	Input Voltage 85V AC	Input Voltage 100V AC	Input Voltage 240V AC	Input Voltage 264V AC
87.5	64.93	67.48	69.34	69.63
175.0	71.91	73.54	76.42	76.59
262.5	73.13	74.19	77.74	77.89
350.0	71.41	73.51	77.62	77.63



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Model	eNSP4-500P-SA0-H1V
Item	Instantaneous Interruption Compensation (by Load Power)

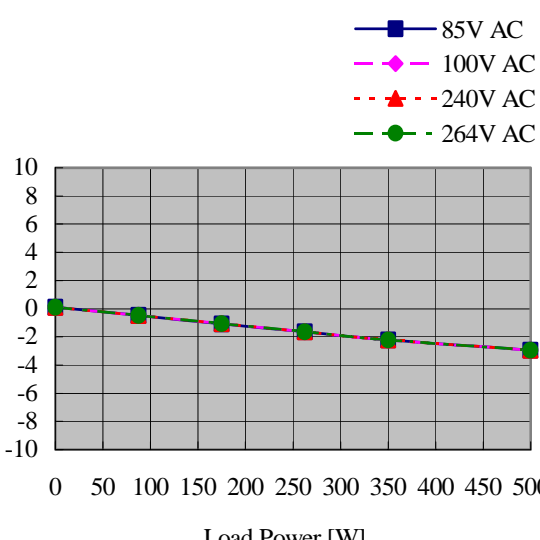
at AC Input (85V / 100V / 240V / 264V)



Load Power [W]	Interruption Detecting Time (ms)	
	PWR-OK T <sub>A</sub>	DC Output T <sub>B</sub>
87.5	148.2	169.7
175.0	77.9	87.9
262.5	51.4	57.3
350.0	37.2	41.3

Model	eNSP4-500P-SA0-H1V																																																
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<b>V1:3.3V 11.5A</b>																																																	
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		Load Condition  <table border="1"> <thead> <tr> <th rowspan="2">Load Power [W]</th> <th colspan="5">Load Current [A]</th> </tr> <tr> <th>3.3V</th> <th>5V</th> <th>12V</th> <th>-12V</th> <th>5Vs</th> </tr> </thead> <tbody> <tr> <td>0.0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>87.5</td> <td>2.88</td> <td>4.0</td> <td>4.5</td> <td>0.13</td> <td>0.5</td> </tr> <tr> <td>175.0</td> <td>5.75</td> <td>8.0</td> <td>9.0</td> <td>0.25</td> <td>1.0</td> </tr> <tr> <td>262.5</td> <td>8.63</td> <td>12.0</td> <td>13.5</td> <td>0.38</td> <td>1.5</td> </tr> <tr> <td>350.0</td> <td>11.5</td> <td>16.0</td> <td>18.0</td> <td>0.5</td> <td>2.0</td> </tr> <tr> <td>500.0</td> <td>11.5</td> <td>16.0</td> <td>18.0</td> <td>0.5</td> <td>2.5</td> </tr> </tbody> </table>	Load Power [W]	Load Current [A]					3.3V	5V	12V	-12V	5Vs	0.0	0	0	0	0	0	87.5	2.88	4.0	4.5	0.13	0.5	175.0	5.75	8.0	9.0	0.25	1.0	262.5	8.63	12.0	13.5	0.38	1.5	350.0	11.5	16.0	18.0	0.5	2.0	500.0	11.5	16.0	18.0	0.5	2.5
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Model	eNSP4-500P-SA0-H1V
Item	Ripple / Noise Voltage Test

[Test conditions]

Ambient temperature: -5 , 25 , 45 , 65

Input voltage: 85V, 100V, 240V, 264V AC

Load: Rated load (At 65 , the derating factor (70%) specified for 60 is applied to this test.)

Temp	AC Input voltage	CH1 3.3V		CH2 5V		CH3 12V	
		Ripple (mV)	Noise (mV)	Ripple (mV)	Noise (mV)	Ripple (mV)	Noise (mV)
-5	85 V	10.0	17.7	11.8	22.4	80.2	88.1
	100 V	9.8	17.1	11.2	22.3	80.0	88.0
	240 V	9.3	14.5	9.9	19.0	80.1	88.7
	264 V	9.2	14.3	10.1	17.7	80.0	86.5
25	85 V	8.9	14.1	13.9	21.1	60.7	66.9
	100 V	8.0	11.9	11.4	19.5	60.7	67.4
	240 V	7.3	11.4	11.1	18.3	62.8	67.7
	264 V	7.4	11.0	11.2	16.8	61.5	67.6
45	85 V	9.2	13.7	15.1	21.4	56.9	62.3
	100 V	7.9	12.7	11.5	18.2	56.7	63.1
	240 V	7.5	11.1	11.0	17.2	57.5	63.2
	264 V	7.3	11.0	11.4	16.3	57.1	63.4
65	85 V	6.1	12.4	6.6	12.3	17.2	24.8
	100 V	6.0	12.0	6.6	12.4	16.8	25.9
	240 V	5.4	9.3	5.7	9.4	16.6	22.5
	264 V	5.4	9.2	6.1	9.9	16.3	22.0
Specification		≤50	≤100	≤50	≤100	≤120	≤170
Judgment		PASS		PASS		PASS	

Temp	AC Input voltage	CH4 -12V		CH5 5Vsb	
		Ripple (mV)	Noise (mV)	Ripple (mV)	Noise (mV)
-5	85 V	32.6	40.0	12.2	33.1
	100 V	33.1	37.8	11.9	33.8
	240 V	32.5	37.2	11.2	26.6
	264 V	33.4	37.3	11.1	22.3
25	85 V	14.7	19.7	9.6	16.4
	100 V	15.1	16.8	9.9	27.7
	240 V	14.2	19.1	9.4	23.5
	264 V	16.3	19.7	8.5	20.6
45	85 V	14.9	17.7	8.9	24.4
	100 V	12.7	17.8	8.8	25.0
	240 V	12.9	16.3	8.2	22.3
	264 V	15.1	18.7	8.3	19.6
65	85 V	4.6	8.3	3.5	16.8
	100 V	4.4	8.2	5.4	16.4
	240 V	4.1	6.6	4.6	10.9
	264 V	3.9	6.4	3.0	9.8
Specification		≤120	≤170	≤50	≤100
Judgment		PASS		PASS	

Model	eNSP4-500P-SA0-H1V
Item	Over-Current Protection

[Test conditions]

Ambient temperature: -5 , 25 , 45 , 65

Input voltage: 85V, 100V, 240V, 264V AC

Load: All loads other than measurement channel are set to the ratings.

At 65 , the derating factor (70%) specified for 60 is applied to this test.

Temperature	AC input voltage	CH1: 3.3V	CH2: 5V	CH3: 12V
-5	85 V	38.57 A	42.08 A	39.30 A
	100 V	37.92 A	41.70 A	39.29 A
	240 V	37.92 A	41.74 A	39.29 A
	264 V	37.91 A	41.74 A	39.29 A
25	85 V	37.93 A	41.10 A	38.62 A
	100 V	37.26 A	41.06 A	37.96 A
	240 V	37.26 A	41.10 A	37.96 A
	264 V	36.80 A	41.06 A	37.96 A
45	85 V	37.93 A	40.43 A	37.96 A
	100 V	37.26 A	41.10 A	37.30 A
	240 V	37.25 A	41.10 A	37.30 A
	264 V	37.25 A	40.65 A	37.29 A
65	85 V	39.83 A	43.00 A	37.69 A
	100 V	40.63 A	43.03 A	37.95 A
	240 V	41.06 A	42.41 A	37.30 A
	264 V	41.06 A	43.03 A	37.30 A
Specification		≥ 31A	≥ 34A	≥ 31A
Judgment		PASS	PASS	PASS

Temperature	AC input voltage	CH4: -12V	CH5: 5Vsb
-5	85 V	1.20 A	3.24 A
	100 V	1.20 A	3.23 A
	240 V	1.20 A	3.23 A
	264 V	1.20 A	3.23 A
25	85 V	1.10 A	3.12 A
	100 V	1.10 A	3.14 A
	240 V	1.10 A	3.14 A
	264 V	1.10 A	3.13 A
45	85 V	1.00 A	3.05 A
	100 V	1.00 A	3.07 A
	240 V	1.00 A	3.07 A
	264 V	1.00 A	3.07 A
65	85 V	0.90 A	2.93 A
	100 V	0.90 A	2.96 A
	240 V	0.90 A	2.97 A
	264 V	0.90 A	2.97 A
Specification		Short-circuit protection	
Judgment		PASS	PASS

Model	eNSP4-500P-SA0-H1V
Item	Over-Voltage Protection

[Test conditions]

Ambient temperature: -5 , 25 , 45 , 65

Input voltage: 100V, 240V AC

Load: Minimum load

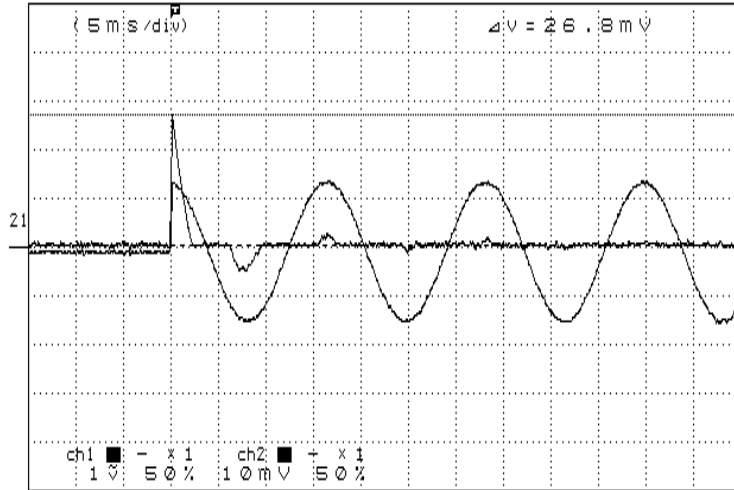
Temperature	Input voltage	CH1 3.3 V	CH2 5 V	CH3 12 V
-5	100V AC	4.05 V	6.47 V	14.74 V
	240V AC	4.05 V	6.47 V	14.74 V
25	100V AC	3.95 V	6.33 V	14.88 V
	240V AC	4.00 V	6.33 V	14.88 V
45	100V AC	3.90 V	6.27 V	14.88 V
	240V AC	3.90 V	6.27 V	14.88 V
65	100V AC	3.86 V	6.13 V	14.85 V
	240V AC	3.86 V	6.13 V	14.85 V
Specification		3.76 - 4.3V	5.74 - 7.0V	13.4 - 15.6V
Judgment		PASS	PASS	PASS



Model	eNSP4-500P-SA0-H1V
Item	Inrush Current

## Inrush Current Waveforms

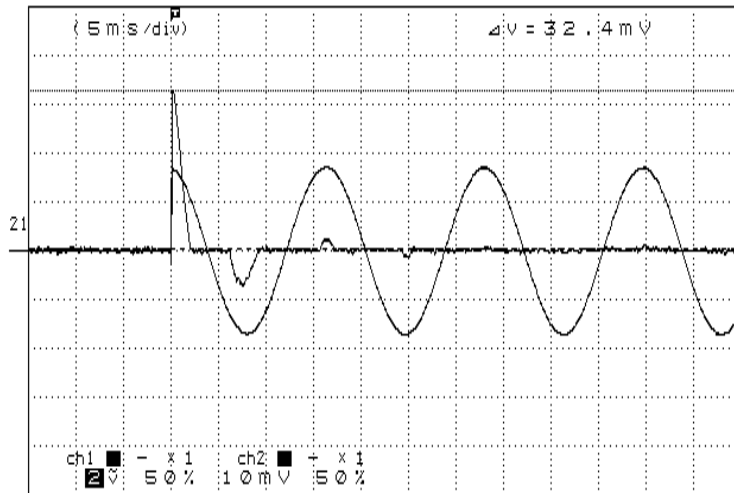
\* MEM \* trig:SINGLE CH1 leve ↑ 54% - 2%  
 5ms x1 csr:↓ A&B A:CH2 B:CH2



CH1 CH2 CH3 CH4

DATA 1	
CH1	Measuring Point: AC Input Voltage
	Range: 100V/DIV
CH2	Measuring Point: AC Input Current
	Range: 10A/DIV
Sweep time	5ms/DIV
Conditions	Input: 100V AC, 60Hz Load: Rated Load
Note: Inrush Current: 26.8A	

\* MEM \* trig:SINGLE CH1 leve ↑ 54% - 2%  
 5ms x1 csr:↓ A&B A:CH2 B:CH2



↓ ↑

DATA 2	
CH1	Measuring Point: AC Input Voltage
	Range: 200V/DIV
CH2	Measuring Point: AC Input Current
	Range: 20A/DIV
Sweep time	5ms/DIV
Conditions	Input: 240V AC, 60Hz Load: Rated Load
Note: Inrush Current: 64.8A	

Model	eNSP4-500P-SA0-H1V
Item	Dynamic Load Response

**[Test Conditions]**

Ambient Temperature                    25±5°C (Room Temperature)  
 Input Voltage                            100V AC  
 Load-change repetition rate        50 Hz – 10 kHz (No capacitive load)

Note 1: Test limits are derived from the specified DC output voltage accuracy.  
 Note 2: V<sub>m</sub> is measured voltage

Table 1. +5 V DC Output transient response result

Test Item	Rated Load ≅ 11.2 A	Test limits	Judgment
Voltage variance	High: 120 mV Low: - 116mV	+200 mV ≥ V <sub>m</sub> ≥ -200 mV	PASS
Load-change repetition rate from 50Hz to 10kHz.	Normal	No failure and damages.	PASS

Table 2. +3.3 V DC Output transient response result

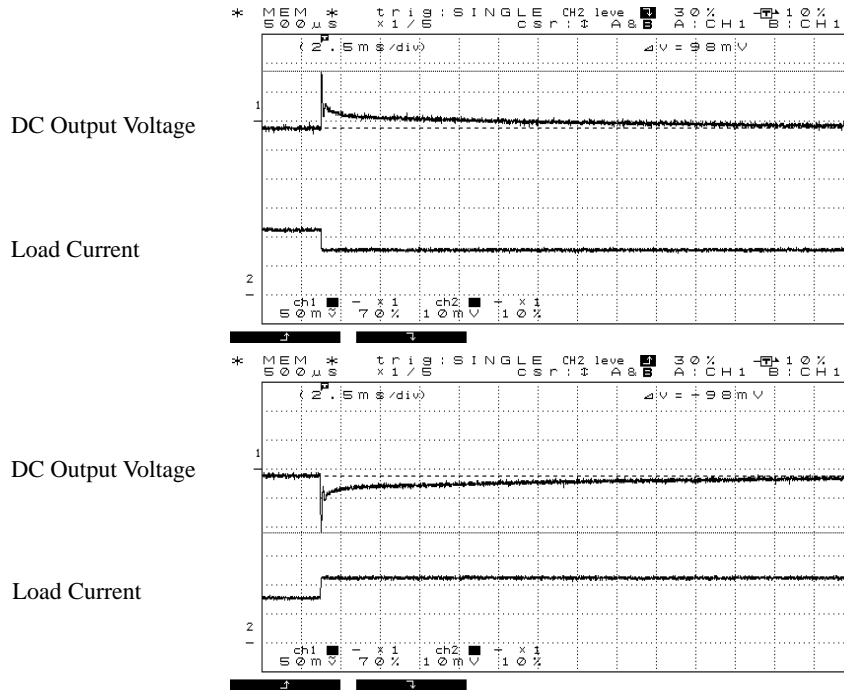
Test Item	Rated Load ≅ 8.05 A	Test limits	Judgment
Voltage variance	High: 98 mV Low: -98 mV	+132 mV ≥ V <sub>m</sub> ≥ -132 mV	PASS
Load-change repetition rate from 50Hz to 10kHz.	Normal	No failure and damages.	PASS

Table 3. +12 V DC Output transient response result

Test Item	Rated Load ≅ 9 A	Test limits	Judgment
Voltage variance	High: 86 mV Low: -88 mV	+600 mV ≥ V <sub>m</sub> ≥ -600 mV	PASS
Load-change repetition rate from 50Hz to 10kHz.	Normal	No failure and damages.	PASS

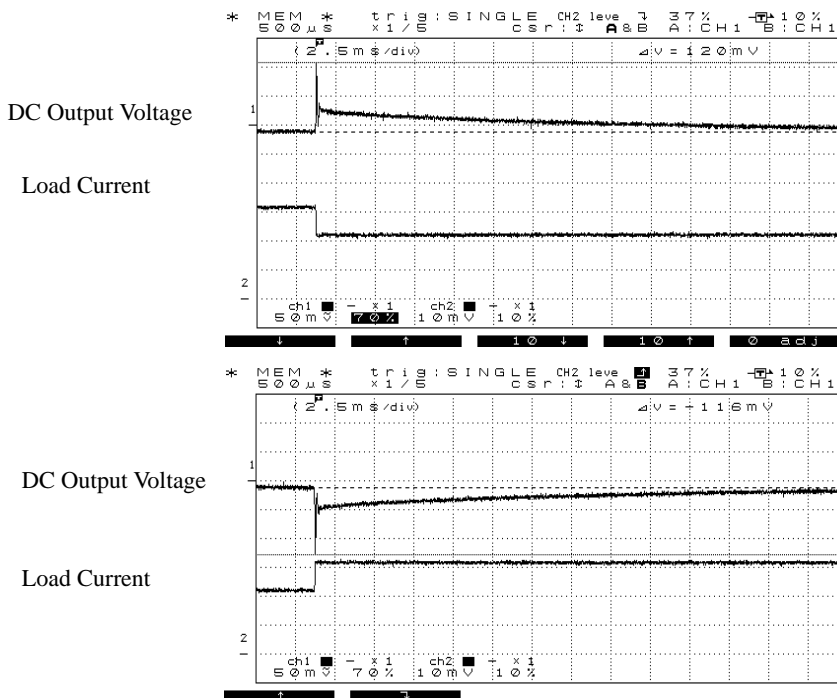
Model	eNSP4-500P-SA0-H1V
Item	Dynamic Load Response

(CH1) +3.3V DC output response waveforms



Waveform 1	
CH1	Measuring Point: DC Output Voltage Range: 100mV/DIV
CH2	Measuring Point: DC Output Current Range: 5A/DIV
Sweep time	500 μ s/DIV
Condition	Input: 100V AC Load: Rated Load (Other output)
Note: Rated Load $\approx$ 8.05 A	

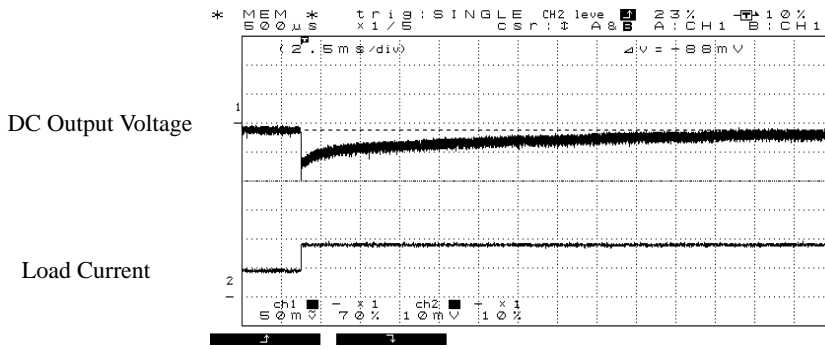
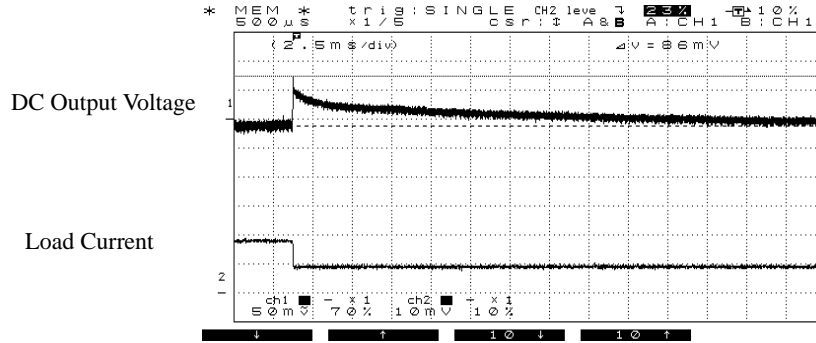
(CH2) +5V DC output response waveforms



Waveform 2	
CH1	Measuring Point: DC Output Voltage Range: 100mV/DIV
CH2	Measuring Point: DC Output Current Range: 5A/DIV
Sweep time	500 μ s/DIV
Condition	Input: 100 V AC Load: Rated Load (Other output)
Note: Rated Load $\approx$ 11.2 A	

Model	eNSP4-500P-SA0-H1V
Item	Dynamic Load Response

(CH3) +12V DC output response waveforms



Waveform 3	
CH1	Measuring Point: DC Output Voltage
	Range: 100mV/DIV
CH2	Measuring Point: DC Output Current
	Range: 5A/DIV
Sweep time	500 µs/DIV
Condition	Input: 100 V AC Load: Rated Load (other output)
Note: Rated Load $\approx$ 9 A	

Model	eNSP4-500P-SA0-H1V																																																																																			
Item	12V Cross Regulation																																																																																			
		<table border="1"> <thead> <tr> <th rowspan="2">12V Load Current</th> <th colspan="5">12V Voltage Value [V]</th> </tr> <tr> <th>5V 0A</th> <th>5V 8A</th> <th>5V 16A</th> <th>5V 22A</th> <th>5V 33A</th> </tr> </thead> <tbody> <tr> <td>0A</td> <td>12.058</td> <td>12.046</td> <td>12.032</td> <td>12.025</td> <td>12.007</td> </tr> <tr> <td>9A</td> <td>12.032</td> <td>12.020</td> <td>12.008</td> <td>11.998</td> <td>11.981</td> </tr> <tr> <td>18A</td> <td>12.004</td> <td>11.992</td> <td>11.979</td> <td>11.970</td> <td>11.952</td> </tr> <tr> <td>22A</td> <td>11.940</td> <td>11.939</td> <td>11.938</td> <td>-</td> <td>-</td> </tr> <tr> <td>30A</td> <td>11.887</td> <td>11.887</td> <td>11.887</td> <td>-</td> <td>-</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th rowspan="2">12V Load Current</th> <th colspan="5">Fluctuation Value [%]</th> </tr> <tr> <th>5V 0A</th> <th>5V 8A</th> <th>5V 16A</th> <th>5V 22A</th> <th>5V 33A</th> </tr> </thead> <tbody> <tr> <td>0A</td> <td>0.48</td> <td>0.38</td> <td>0.27</td> <td>0.21</td> <td>0.06</td> </tr> <tr> <td>9A</td> <td>0.27</td> <td>0.17</td> <td>0.07</td> <td>-0.02</td> <td>-0.16</td> </tr> <tr> <td>18A</td> <td>0.03</td> <td>-0.07</td> <td>-0.17</td> <td>-0.25</td> <td>-0.40</td> </tr> <tr> <td>22A</td> <td>-0.50</td> <td>-0.51</td> <td>0.52</td> <td>-</td> <td>-</td> </tr> <tr> <td>30A</td> <td>-0.94</td> <td>-0.94</td> <td>-0.94</td> <td>-</td> <td>-</td> </tr> </tbody> </table>	12V Load Current	12V Voltage Value [V]					5V 0A	5V 8A	5V 16A	5V 22A	5V 33A	0A	12.058	12.046	12.032	12.025	12.007	9A	12.032	12.020	12.008	11.998	11.981	18A	12.004	11.992	11.979	11.970	11.952	22A	11.940	11.939	11.938	-	-	30A	11.887	11.887	11.887	-	-	12V Load Current	Fluctuation Value [%]					5V 0A	5V 8A	5V 16A	5V 22A	5V 33A	0A	0.48	0.38	0.27	0.21	0.06	9A	0.27	0.17	0.07	-0.02	-0.16	18A	0.03	-0.07	-0.17	-0.25	-0.40	22A	-0.50	-0.51	0.52	-	-	30A	-0.94	-0.94	-0.94	-	-
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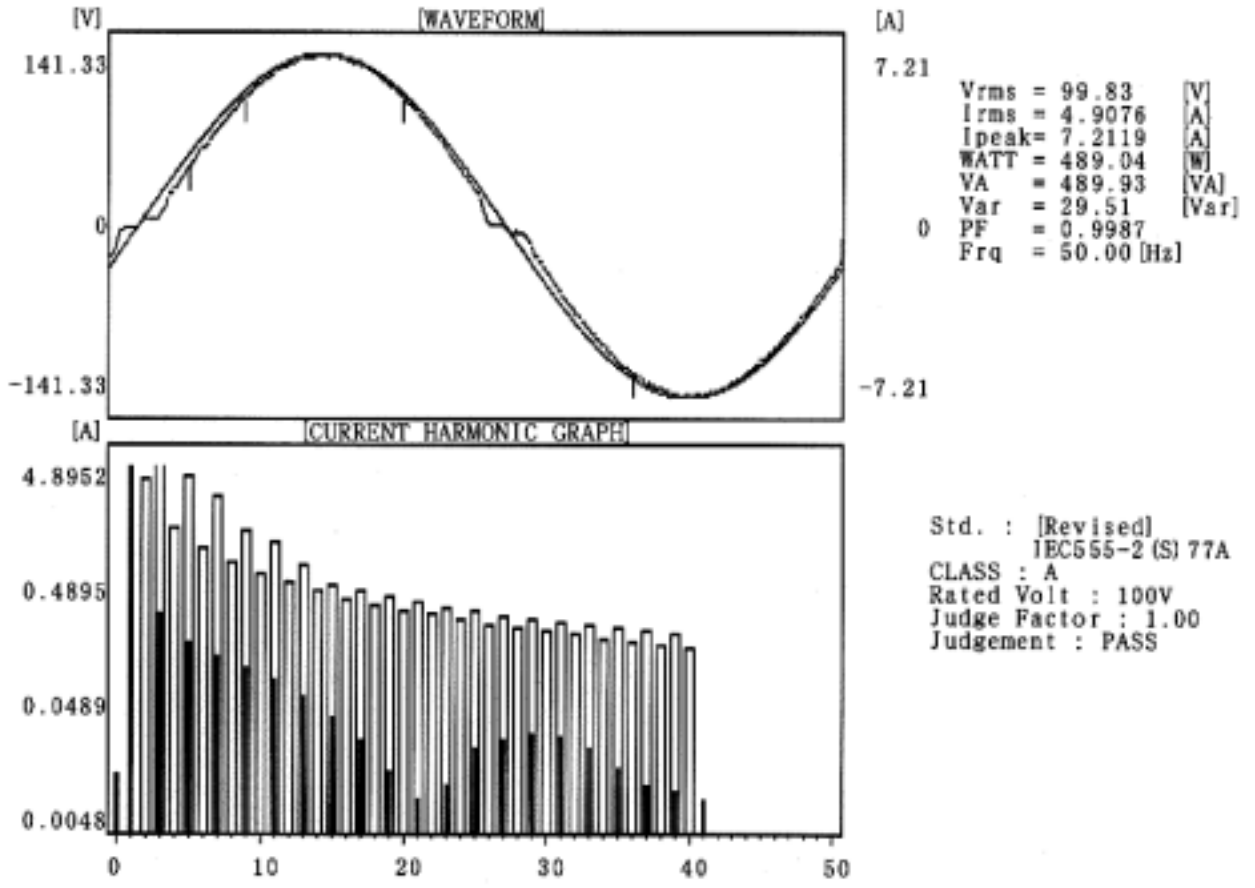
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Model	eNSP4-500P-SA0-H1V
Item	AC Harmonic Current

[Test Conditions]

Ambient temperature: 25' ± 5 (Room Temperature)  
 Input voltage: 100V AC, 50 Hz  
 Load: Rated load  
 Measuring Instrument: MP701 (Keisoku Giken)



Std. : [Revised]  
 IEC555-2 (S) 77A  
 CLASS : A  
 Rated Volt : 100V  
 Judge Factor : 1.00  
 Judgement : PASS

[CURRENT HARMONIC DATA]

No	(A)	No	(A)	No	(A)	No	(A)
00	0.0101	13	0.0436	26	0.0023	39	0.0073
01	4.8952	14	0.0025	27	0.0192	40	0.0016
02	0.0034	15	0.0302	28	0.0023	41	0.0061
03	0.2103	16	0.0025	29	0.0220	42	0.0016
04	0.0028	17	0.0194	30	0.0020	43	0.0025
05	0.1244	18	0.0025	31	0.0204	44	0.0023
06	0.0025	19	0.0105	32	0.0023	45	0.0032
07	0.0935	20	0.0013	33	0.0161	46	0.0016
08	0.0023	21	0.0062	34	0.0023	47	0.0045
09	0.0754	22	0.0013	35	0.0115	48	0.0020
10	0.0023	23	0.0082	36	0.0013	49	0.0027
11	0.0592	24	0.0023	37	0.0079		
12	0.0023	25	0.0164	38	0.0025		

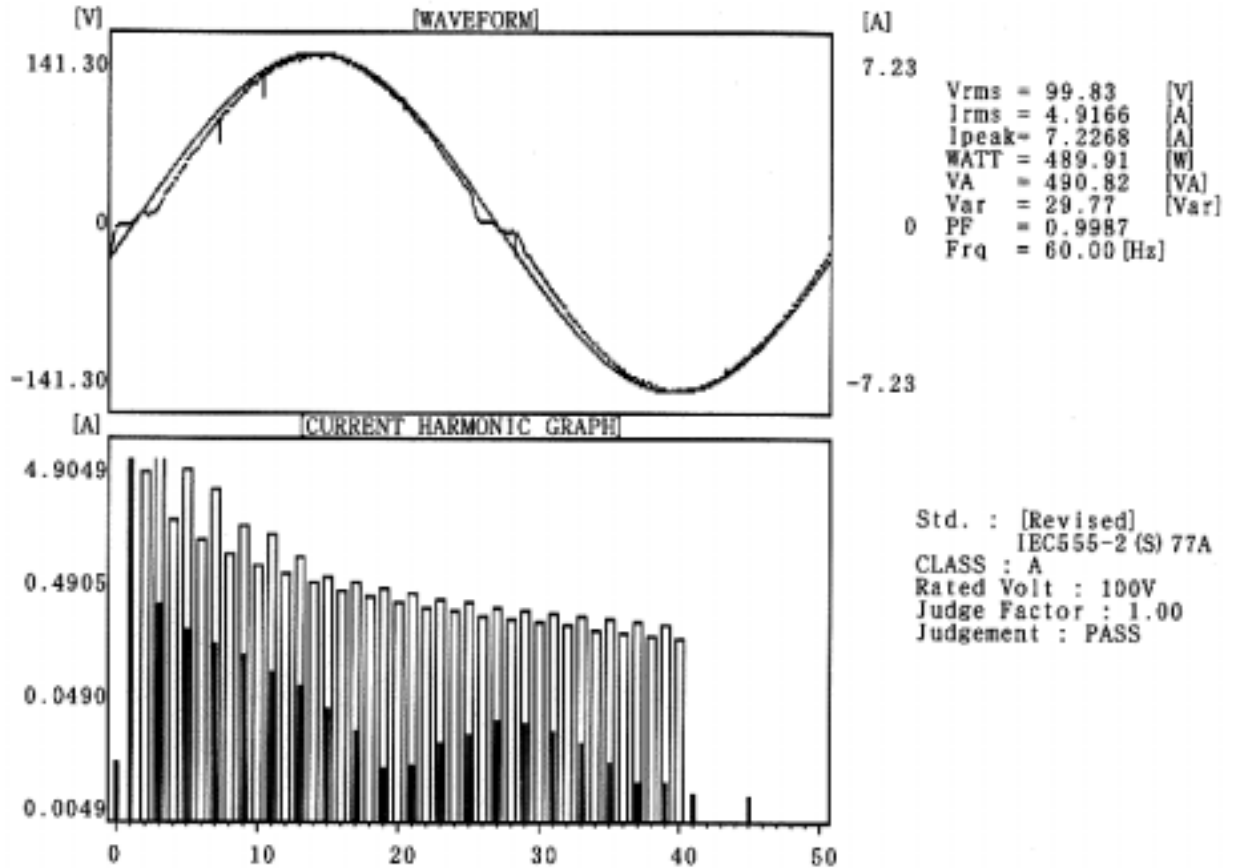
Fig.1 AC Harmonic Current test data

Judgment: PASS

Model	eNSP4-500P-SA0-H1V
Item	AC Harmonic Current

### [Test Conditions]

Ambient temperature: 25' ± 5 (Room Temperature)  
 Input voltage: 100V AC, 60Hz  
 Load: Rated load  
 Measuring Instrument: MP701 (Keisoku Giken)



Vrms = 99.83 [V]  
 Irms = 4.9166 [A]  
 Ipeak = 7.2268 [A]  
 WATT = 489.91 [W]  
 VA = 490.82 [VA]  
 Var = 29.77 [Var]  
 PF = 0.9987  
 Frq = 60.00 [Hz]

Std. : [Revised]  
 IEC555-2 (S) 77A  
 CLASS : A  
 Rated Volt : 100V  
 Judge Factor : 1.00  
 Judgement : PASS

[CURRENT HARMONIC DATA]

No	(A)	No	(A)	No	(A)	No	(A)
00	0.0101	13	0.0428	26	0.0009	39	0.0070
01	4.9049	14	0.0025	27	0.0229	40	0.0020
02	0.0039	15	0.0285	28	0.0009	41	0.0055
03	0.2103	16	0.0020	29	0.0213	42	0.0016
04	0.0028	17	0.0179	30	0.0020	43	0.0038
05	0.1262	18	0.0023	31	0.0186	44	0.0023
06	0.0028	19	0.0091	32	0.0025	45	0.0053
07	0.0963	20	0.0020	33	0.0152	46	0.0023
08	0.0000	21	0.0097	34	0.0006	47	0.0048
09	0.0774	22	0.0019	35	0.0102	48	0.0023
10	0.0023	23	0.0145	36	0.0013	49	0.0025
11	0.0586	24	0.0013	37	0.0067		
12	0.0025	25	0.0173	38	0.0013		

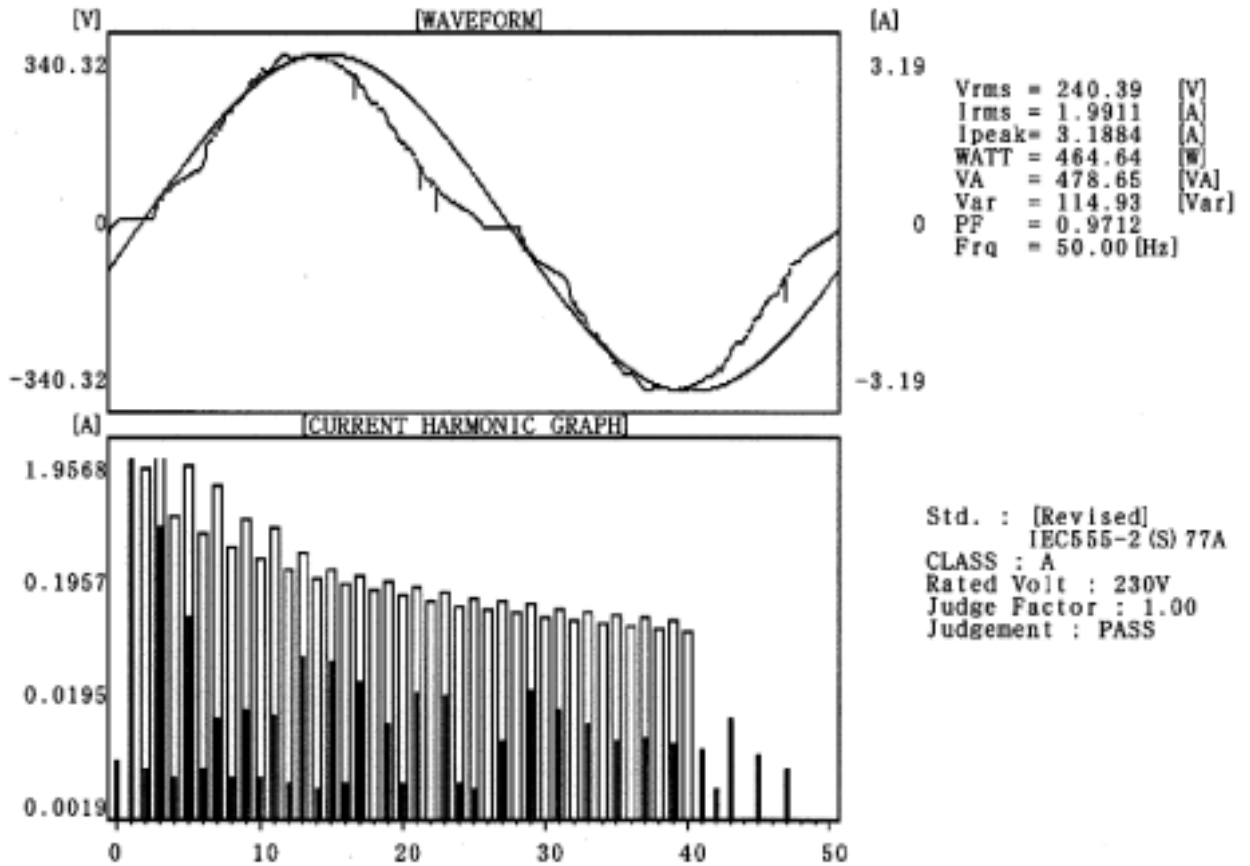
Fig.2 AC Harmonic Current test data

Judgment: PASS

Model	eNSP4-500P-SA0-H1V
Item	AC Harmonic Current

### [Test Conditions]

Ambient temperature: 25' ± 5 (Room Temperature)  
 Input voltage: 240V AC, 50Hz  
 Load: Rated load  
 Measuring Instrument: MP701 (Keisoku Giken)



(A)

3.19

Vrms = 240.39 [V]  
 Irms = 1.9911 [A]  
 Ipeak = 3.1884 [A]  
 WATT = 464.64 [W]  
 VA = 478.65 [VA]  
 Var = 114.93 [Var]  
 PF = 0.9712  
 Frq = 50.00 [Hz]

Std. : [Revised]  
 IEC555-2 (S) 77A  
 CLASS : A  
 Rated Volt : 230V  
 Judge Factor : 1.00  
 Judgement : PASS

[CURRENT HARMONIC DATA]

No	(A)	No	(A)	No	(A)	No	(A)
00	0.0040	13	0.0303	26	0.0013	39	0.0055
01	1.9568	14	0.0023	27	0.0059	40	0.0000
02	0.0034	15	0.0264	28	0.0013	41	0.0049
03	0.3495	16	0.0026	29	0.0155	42	0.0023
04	0.0028	17	0.0181	30	0.0006	43	0.0091
05	0.0638	18	0.0016	31	0.0105	44	0.0006
06	0.0034	19	0.0079	32	0.0020	45	0.0043
07	0.0091	20	0.0026	33	0.0082	46	0.0006
08	0.0028	21	0.0150	34	0.0006	47	0.0033
09	0.0107	22	0.0020	35	0.0058	48	0.0006
10	0.0028	23	0.0139	36	0.0006	49	0.0016
11	0.0097	24	0.0026	37	0.0063		
12	0.0026	25	0.0023	38	0.0013		

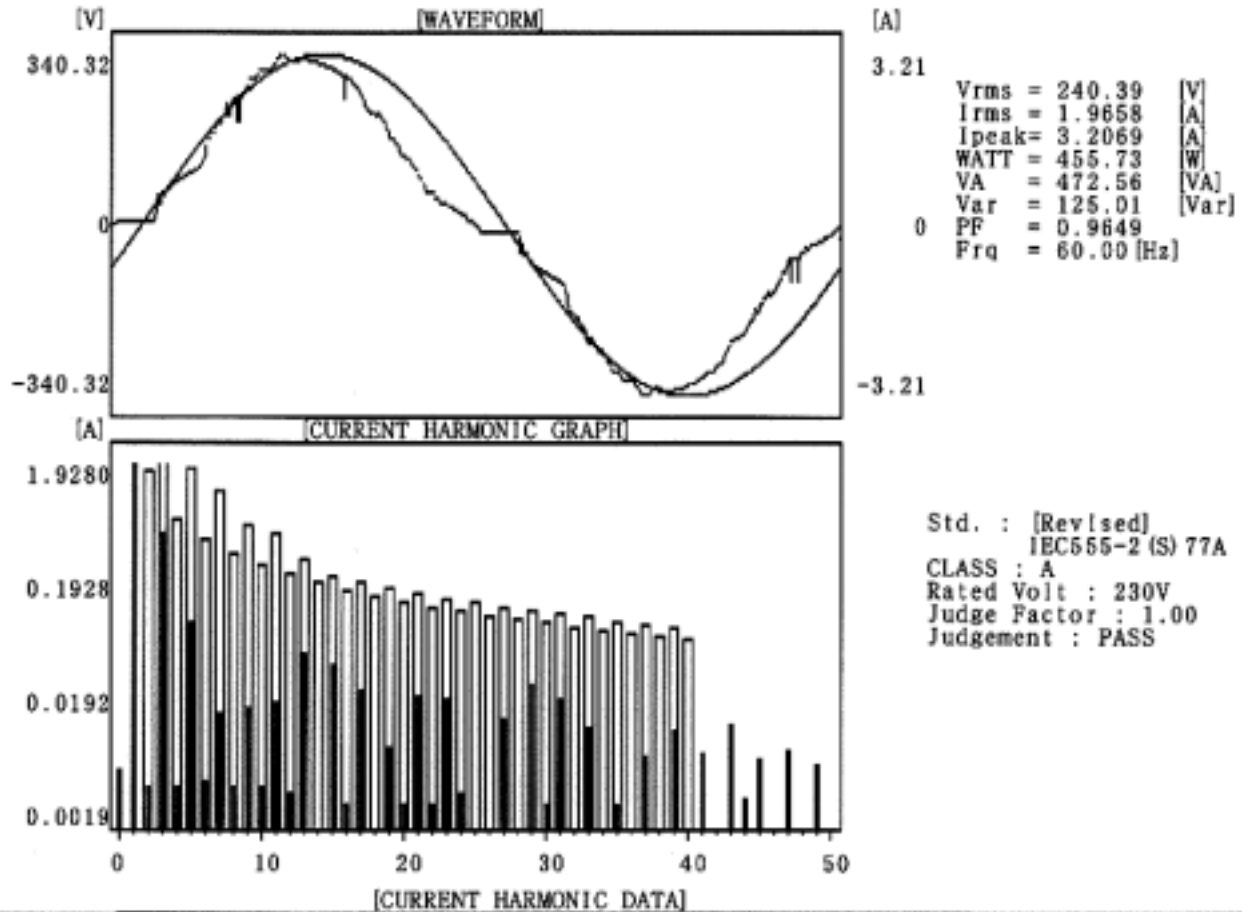
Fig.3 AC Harmonic Current test data

Judgment: PASS

Model	eNSP4-500P-SA0-H1V
Item	AC Harmonic Current

### [Test Conditions]

Ambient temperature:  $25 \pm 5$  (Room Temperature)  
 Input voltage: 240V AC, 60Hz  
 Load: Rated load  
 Measuring Instrument: MP701 (Keisoku Giken)



No	(A)	No	(A)	No	(A)	No	(A)
00	0.0040	13	0.0374	26	0.0013	39	0.0082
01	1.9280	14	0.0013	27	0.0103	40	0.0016
02	0.0028	15	0.0286	28	0.0016	41	0.0055
03	0.3539	16	0.0020	29	0.0199	42	0.0013
04	0.0028	17	0.0182	30	0.0020	43	0.0096
05	0.0657	18	0.0006	31	0.0151	44	0.0023
06	0.0032	19	0.0062	32	0.0006	45	0.0049
07	0.0115	20	0.0020	33	0.0088	46	0.0006
08	0.0028	21	0.0164	34	0.0016	47	0.0058
09	0.0130	22	0.0020	35	0.0020	48	0.0006
10	0.0028	23	0.0150	36	0.0000	49	0.0045
11	0.0144	24	0.0026	37	0.0051		
12	0.0026	25	0.0016	38	0.0016		

Fig.4 AC Harmonic Current test data

Judgment: PASS

Model	eNSP4-500P-SA0-H1V
Item	Leakage Current

[Test Conditions]

Ambient temperature     $25^{\circ} \pm 5$  (Room Temperature)  
 Input voltage            100V and 200V AC, 60Hz  
 Load                      Rated load, Minimum load  
 Measuring Instrument   YEW.TYPE 3226 or equivalent (Input resistance: 1k )

[Test results]

Input voltage	Rated load	Minimum load
100V AC	0.34mA	0.29mA
200V AC	0.56mA	0.54mA

Specification:  $\leq 0.5\text{mA}$  (AC100V),  $\leq 1.0\text{mA}$  (AC200V)

Judgment :    PASS

Model	eNSP4-500P-SA0-H1V
Item	Line Noise Tolerance

[Test Conditions]

Ambient temperature	25° ± 5 (Room Temperature)
Input Voltage	100V AC
Load	Rated load
Applied Noise Voltage	± 2000V
Repetitive Cycle	30 - 100Hz
Pulse Width	100, 1000ns

Measuring Instrument: INS420 (Noise Laboratory Co.,Ltd.)

[Test results]

Normal mode	Pulse width and polarity			
	100ns		1000ns	
	Polarity +	Polarity -	Polarity +	Polarity -
	✓	✓	✓	✓
Common mode R Phase	Pulse width and polarity			
	100ns		1000ns	
	Polarity +	Polarity -	Polarity +	Polarity -
	✓	✓	✓	✓
Common mode S Phase	Pulse width and polarity			
	100ns		1000ns	
	Polarity +	Polarity -	Polarity +	Polarity -
	✓	✓	✓	✓

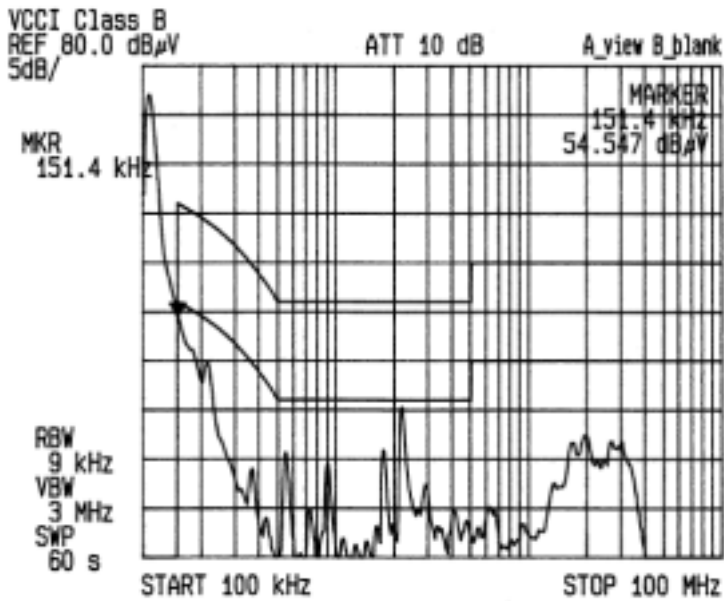
Symbol notes      ✓ Normal  
                              ✕ Power Supply Breakdown

Judgment: PASS

Model	eNSP4-500P-SA0-H1V
Item	Conducted Emission

[Test conditions]

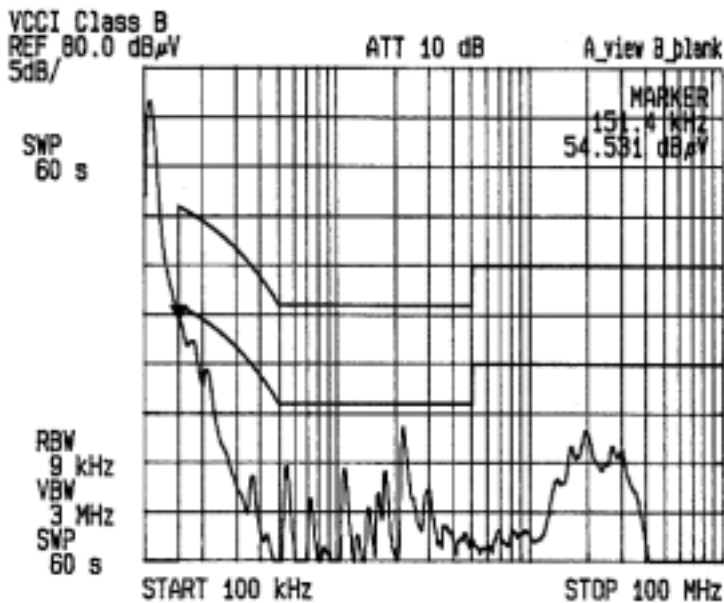
Temperature 25 ° ± 5 Room Temperature  
 Input 100V AC  
 Load Rated Load  
 Measuring Point L-FG, N-FG  
 Measuring Instrument R3261A (Advantest)



QP Spec

AV Spec

Temp: 25 ° ± 5
Input: 100V AC, 60Hz
Load: Rated load
Phase: L
Measured mode: QP
Spec: VCCI Class B
Test result: 54.547 dBuV (at 151.4kHz)
Judgment: PASS



QP Spec

AV Spec

Temp: 25 ° ± 5
Input: 100V AC, 60Hz
Load: Rated load
Phase: N
Measured mode: QP
Spec: VCCI Class B
Test result: 54.531 dBuV (at 151.4kHz)
Judgment: PASS

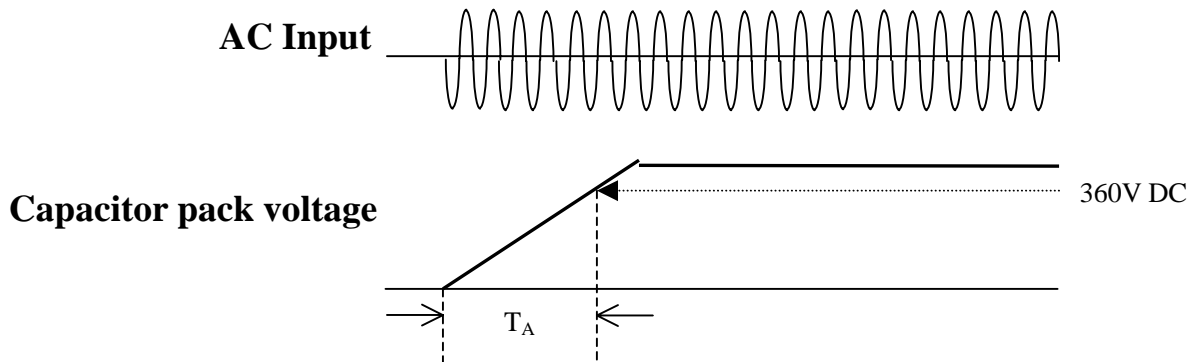
Model	eNSP4-500P-SA0-H1V
Item	Charge time verification test

**Objective:**

This test verifies that the charge time required for the voltage across the hold-up capacitor to reach 360 V is within specification (less than 120 s) when the BS13A-EC400/422F is charged with the eNSP4-500P series.

**Test conditions:**

Ambient temperature: -5 , 25 , 65  
 Charging device: eNSP4-500P-SA0-H1V



**Test results:**

Temperature	-5	25	65
Measured charge time ( $T_A$ )	46 s	55 s	81 s
Specification	$\leq 120$ s		
Judgment	PASS	PASS	PASS

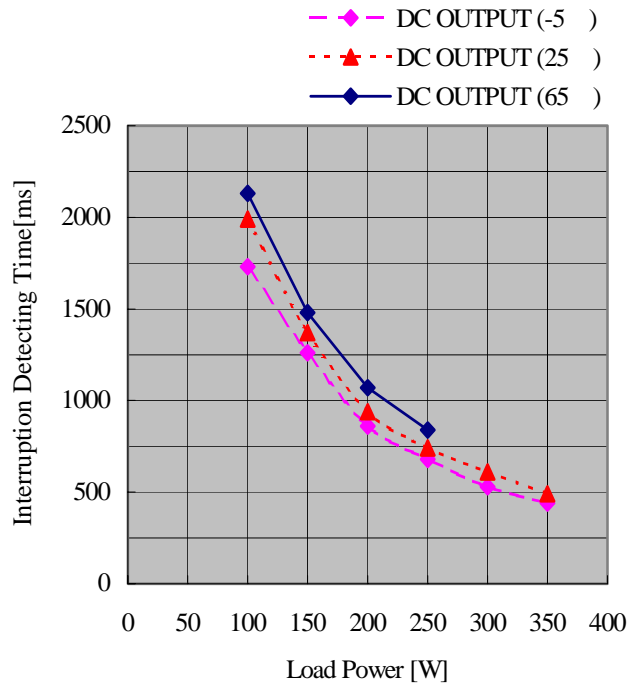
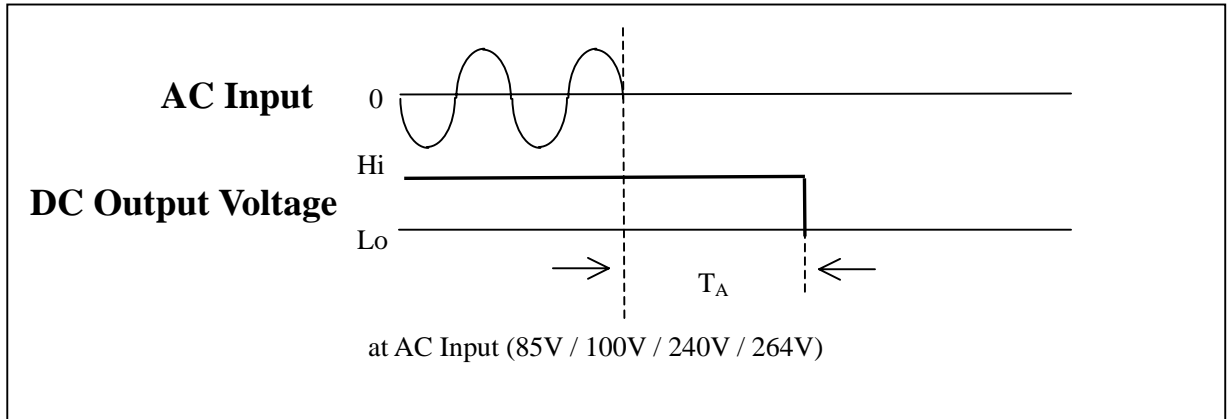


Model	eNSP4-500P-SA0-H1V
Item	Backup time verification test (by Load Power)

### Test Conditions:

Ambient temperature: -5 , 25 , 65

Note: At 65 , the derating factor (70%) specified for 60 is applied to this test.



Load Power [W]	Interruption Detecting Time (ms)		
	DC OUTPUT (-5 ) T <sub>A</sub>	DC OUTPUT (25 ) T <sub>A</sub>	DC OUTPUT (65 ) T <sub>A</sub>
100	1730	1990	2130
150	1260	1290	1480
200	860	940	1070
250	680	740	840
300	530	610	-
350	440	490	-