

Technical data

Switching Power Supply

S8NR-S36024□

For the reference only
These data are out of guarantees
and just the results of our domestic test

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OMRON Corporation

Issued by	Checked by	Approved by
Yoshimaru	Watanabe	Okada

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ご参考用

Technical data				Model S8NR-S36024□		
No.	Item 試験項目	Test conditions 試験条件	Input voltage 入力電圧	Technical criteria/ Catalog value 製品規格値/カタログ値	Result 実力データ	Page
1	Input current 入力電流	Input : Rated input voltage Load : 100 %(15 A)	100 VAC	4 A typ.	3.95 A	7 / 17
			115 VAC	3.5 A typ.	3.42 A	
			200 VAC	2 A typ.	1.97 A	
			230 VAC	1.8 A typ.	1.74 A	
2	Efficiency 効率	Input : Rated input voltage Load : 100 %(15 A)	100 VAC	92 % typ.	92.3 %	8 / 17
			115 VAC	93 % typ.	92.8 %	
			200 VAC	94 % typ.	94.1 %	
			230 VAC	94 % typ.	94.3 %	
3	Power factor 力率	Input : Rated input voltage Load : 100 %(15 A)	100 VAC	0.9 min.	0.995	9 / 17
			115 VAC	0.9 min.	0.994	
			200 VAC	0.9 min.	0.976	
			230 VAC	0.9 min.	0.962	
4	Inrush current (for a Cold start at 25°C) 突入電流 (25°Cコールドスタート)	Input : Rated input voltage Load : 100 %(15A)	100 VAC	7 A typ.	7.1 A[0-p]	10 / 17
			115 VAC	8 A typ.	8.1 A[0-p]	
			200 VAC	14 A typ.	10.8 A[0-p]	
			230 VAC	16 A typ.	14.7 A[0-p]	
5	Leakage current リーク電流	Input : Rated input voltage Load : 100 %(15 A)	100 VAC	0.5 mA max.	0.18 mA	10 / 17
			200 VAC	1 mA max.	0.38 mA	
6	Conducted Emissions 雑音端子電圧	Input : 100 VAC/240 VAC Load : 100 %(15 A)	100 VAC	EN55011 Group 1 Class B	PASS	11 / 17
			240 VAC			

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7	Radiated Emissions 放射妨害電界強度	Input : 100 VAC/240 VAC Load : 100 %(15 A) (IO-Link Communication is not used.) Refer to Note 1	100 VAC	EN55011 Group 1 Class B	PASS	12 / 17
			240 VAC			
8	Input variation influence 静の入力変動	Input : Allowable input voltage Load : 100 %(15 A)	100 VAC	0.5 % max.	0.16%	13 / 17
			115 VAC		0.16%	
			200 VAC		0.16%	
			230 VAC		0.16%	
9	Load variation influence 静の負荷変動	Input : Allowable input voltage Load : 100 %(15 A) Refer to Note 2	100 VAC	4 % max.	0.08 %	13 / 17
			115 VAC		0.11 %	
			200 VAC		0.09 %	
			230 VAC		0.11 %	
10	Temperature variation influence 周囲温度変動	Input : Allowable input voltage Load : 100 %(15 A)	100 VAC	0.05 %/°C max.	0.0097 %/°C	14 / 17
			115 VAC		0.0117 %/°C	
			200 VAC		0.0111 %/°C	
			230 VAC		0.0110 %/°C	
11	Output voltage accuracy 定電圧精度	Input : Allowable input voltage Load : 100 %(15 A)	100 VAC	5 % max.	0.18 %	14 / 17
			115 VAC		0.17 %	
			200 VAC		0.13 %	
			230 VAC		0.12 %	
12	Dynamic load variation influence 動的負荷変動	Input : 100 VAC/240 VAC Load : 10A to 0 A and 0 A to 10 A (only 1 branch output)	100 VAC	±6 % max.	10 A to 0 A 1.84 %	15 / 17
			240 VAC		0 A to 10 A -3.09 %	
					10 A to 0 A 1.85 %	
					0 A to 10 A -3.07 %	

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13	Ripple noise リップルノイズ at 20 MHz of bandwidth	Input : Allowable input voltage Load : 100 %(15 A)	100 VAC	130 mVp-p max.	104 mVp-p	15 / 17
			115 VAC		106 mVp-p	
			200 VAC		94 mVp-p	
			230 VAC		98 mVp-p	
14	Startup time 起動時間	Input : Rated input voltage Load : 100 %(15 A)	100 VAC	2000 ms max.	1587 ms	16 / 17
			115 VAC		1597 ms	
			200 VAC		1593 ms	
			230 VAC		1590 ms	
15	Hold time 出力保持時間	Input : Rated input voltage Load : 100 %(15 A)	100 VAC	45 ms typ.	50 ms	17 / 17
			115 VAC		50 ms	
			200 VAC		50 ms	
			230 VAC		52 ms	
16	Overvoltage protection 過電圧保護	Input : Rated input voltage	100 VAC	130 % ~ 160 % of Rated output voltage 定格出力電圧の 130 % ~ 160 %	153.8 %	
			115 VAC		154.8 %	
			200 VAC		157.8 %	
			230 VAC		153.1 %	
17	Minimum startup voltage 最低動作電圧	Load : 100 %(15 A) Refer to Note 3	—	85 VAC max.	71.23 VAC	

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18	Insulation resistance 絶縁抵抗	Refer to Note 4	—	100 M Ω min.	100 M Ω min.	
19	Withstand voltage 耐電圧	Refer to Note 5	—	Must be free from any abnormality 異常ないこと	No damage it worked normally 異常なし	
20	Vibration resistance 耐振動	10 Hz to 55 Hz (1 cycle 1 minute) Acceleration about 5 G max., 0.42 mm half amplitude for 3 directions each 2 hours	100 VAC	Must be free from any abnormality 異常ないこと	No damage it worked normally 異常なし	
			115 VAC			
			200 VAC			
			230 VAC			
21	Shock resistance 耐衝撃	Acceleration about 15 G 6 directions each 3 times	100 VAC	Must be free from any abnormality 異常ないこと	No damage it worked normally 異常なし	
			115 VAC			
			200 VAC			
			230 VAC			

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Note 1	Radiated Emissions 放射妨害電界強度	When IO-Link Communication is used, the S8NR-S is Class A product. IO-Link 通信を使用する場合、本製品は Class A です。
Note 2	Load variation influence 静的負荷変動	The evaluation test was conducted by supplying 10 A to the target branch output, while adjusting the current on the other branch outputs so that the total output current reached the rated wattage. 測定対象の分岐出力に 10A を流し、トータル出力電流が定格となるよう他分岐出力に電流を流した状態で試験を実施。
Note 3	Minimum startup voltage 最低動作電圧	The input voltage when the output voltage become the value within output voltage accuracy by increasing the input voltage from zero gradually. 定格出力後、入力電圧を 0V から徐々に上げ出力電圧が定電圧精度内に入ったときの入力電圧。
Note 4	(Between all output terminals, all IO-Link Communication terminals, PE terminal and all input terminals) at 500VDC (出力端子一括,IO-Link 端子一括,⓪)-(入力端子一括)間 DC 500V	
Note 5	(Between all input terminals and PE terminal, all output terminals, all IO-Link Communication terminals) 2000 VAC for 1 minute / detection current 20 mA max. (入力端子一括)-(⓪,出力端子一括,IO-Link 端子一括)間 AC 2000V 1 分間 / カットオフ電流 20 mA 以下	

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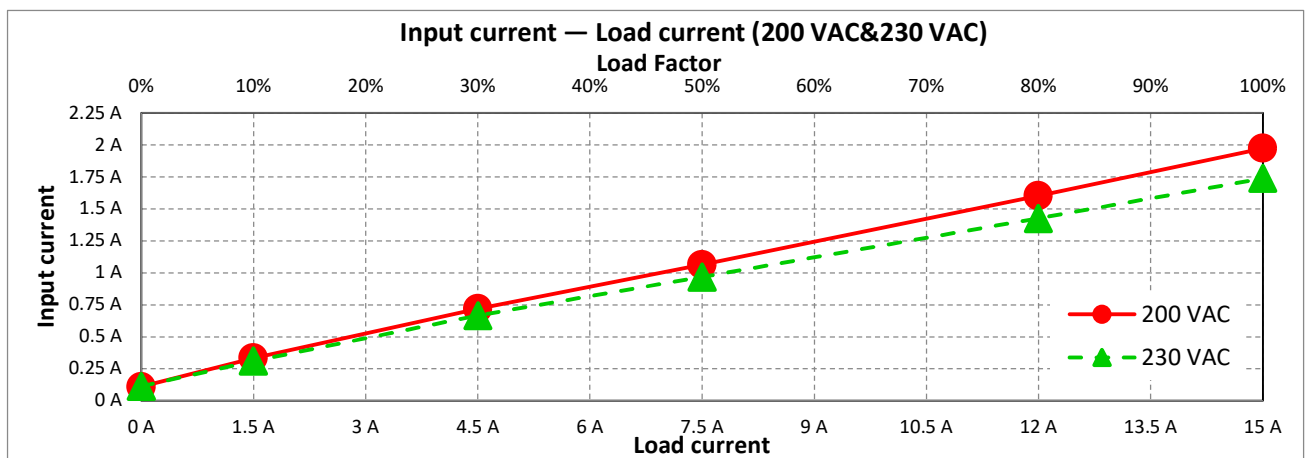
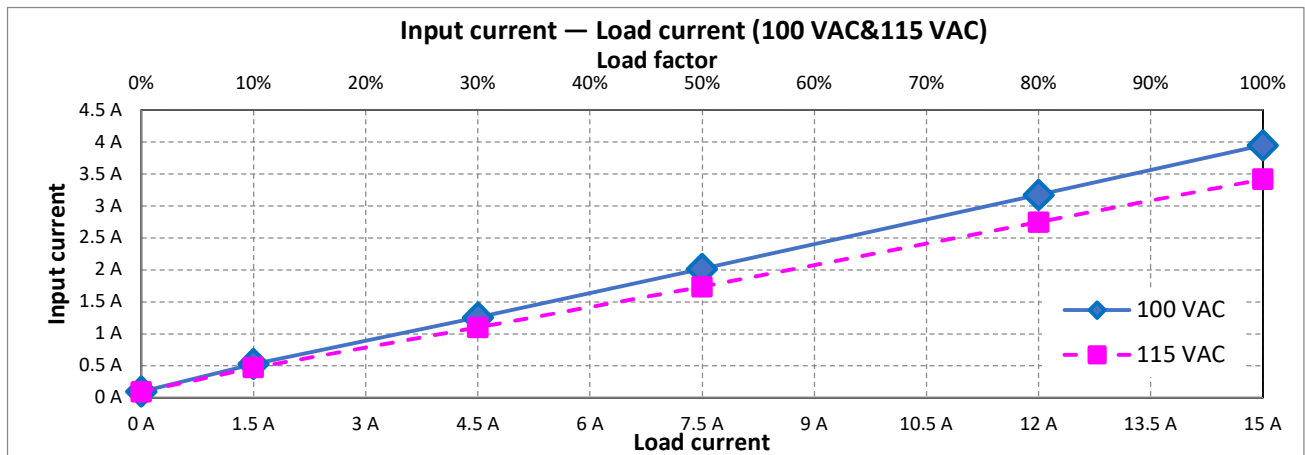
Model S8NR-S36024□

1

Input current
入力電流Input : Rated input voltage
Load : 100 % (15 A)Power resource conditions
Frequency : 50 Hz
The number of phases : (1 ϕ)
Ambient temperature : 25 °C

Input voltage	Load factor	0%	10%	30%	50%	80%	100%
	Load current	0 A	1.5 A	4.5 A	7.5 A	12 A	15 A
100 VAC	Input current	0.10 A	0.53 A	1.26 A	2.02 A	3.17 A	3.95 A
115 VAC		0.10 A	0.47 A	1.10 A	1.74 A	2.75 A	3.42 A
200 VAC		0.11 A	0.33 A	0.72 A	1.06 A	1.60 A	1.97 A
230 VAC		0.11 A	0.31 A	0.67 A	0.97 A	1.43 A	1.74 A

※ The above table describes a representative value of the measured data.
上表は、代表データを記載しています。



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Technical data

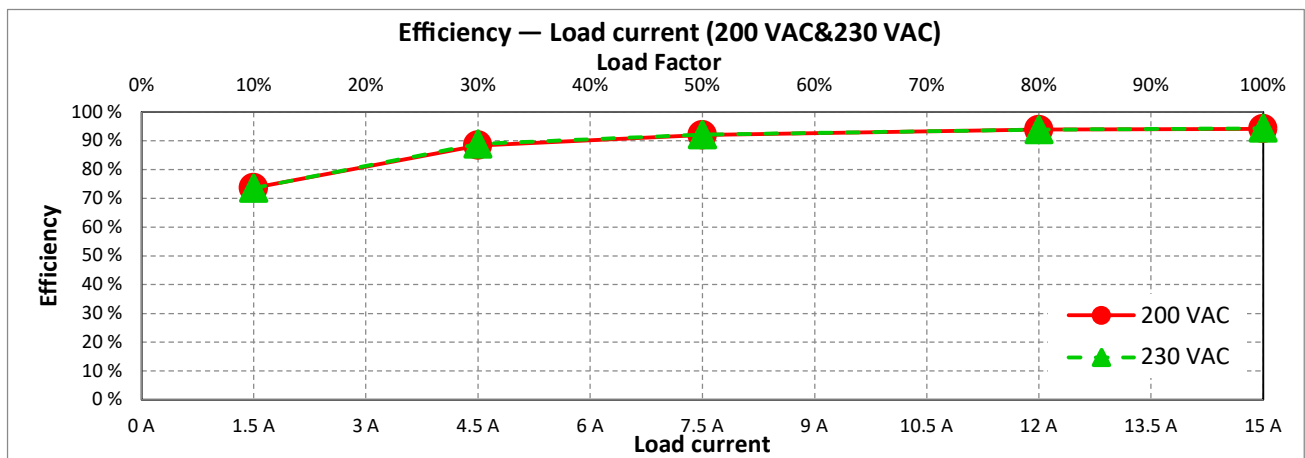
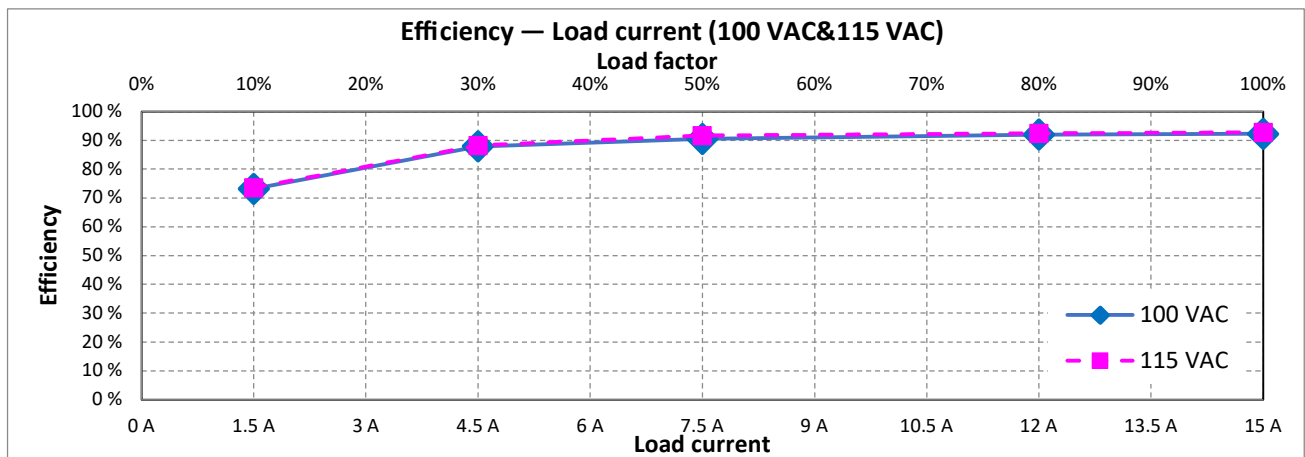
Model S8NR-S36024□

2

Efficiency
効率Input : Rated input voltage
Load : 100 %(15 A)Power resource conditions
Frequency : 50 Hz
The number of phases : (1 ϕ)
Ambient temperature : 25 °C

Input voltage	Load factor	10%	30%	50%	80%	100%
	Load current	1.5 A	4.5 A	7.5 A	12 A	15 A
100 VAC	Efficiency	73.2 %	87.9 %	90.5 %	92.0 %	92.3 %
115 VAC		73.6 %	88.2 %	91.7 %	92.5 %	92.8 %
200 VAC		73.7 %	88.4 %	92.0 %	93.9 %	94.1 %
230 VAC		73.6 %	88.9 %	92.2 %	93.8 %	94.3 %

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Technical data

Model S8NR-S36024□

3

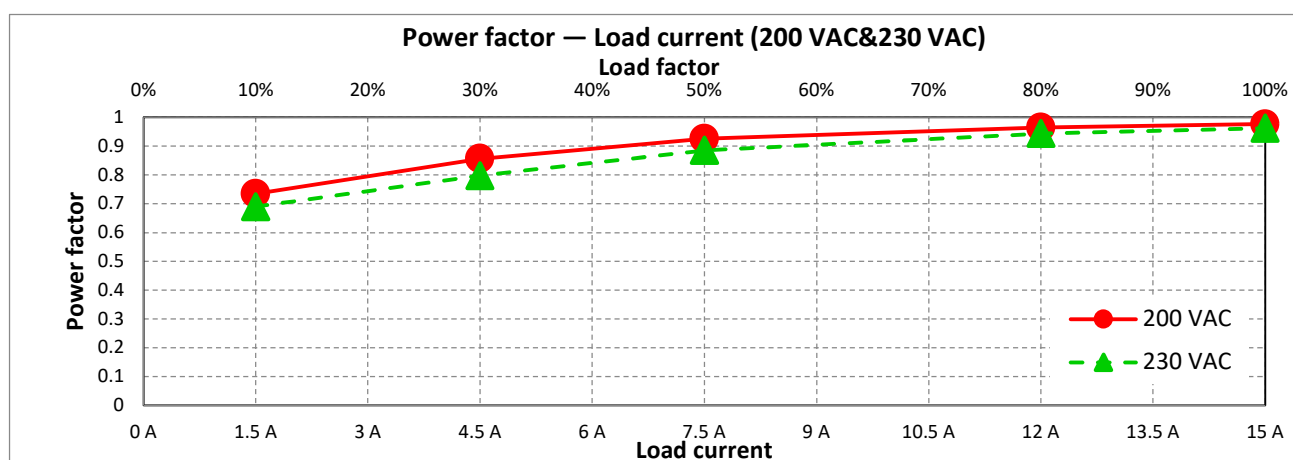
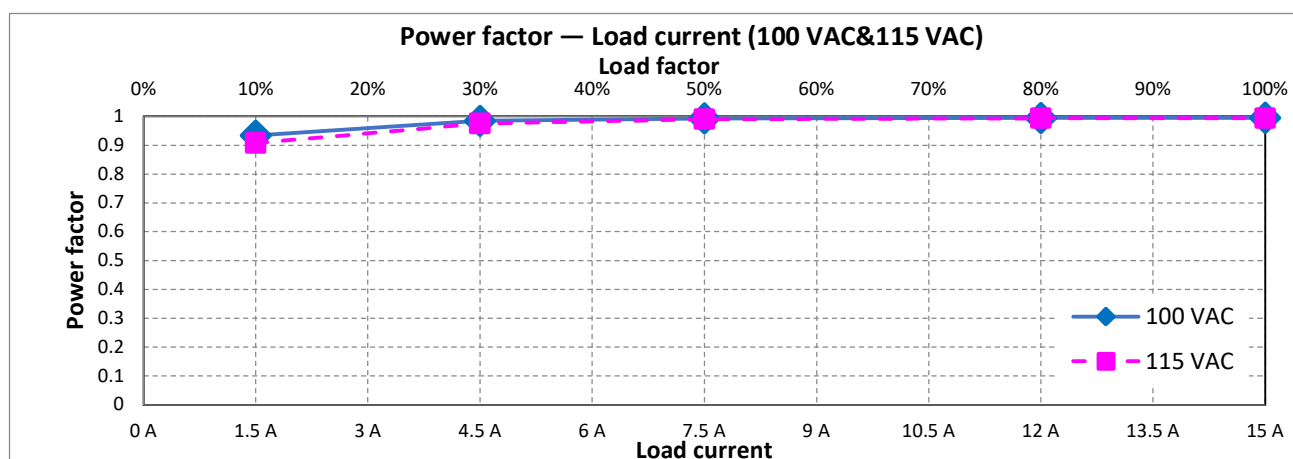
Power factor
力率

Input : Rated input voltage
Load : 100 %(15 A)

Power resource conditions
Frequency : 50 Hz
The number of phases : (1 ϕ)
Ambient temperature : 25 °C

Input voltage	Load factor	10%	30%	50%	80%	100%
	Load current	1.5 A	4.5 A	7.5 A	12 A	15 A
100 VAC	Power factor	0.934	0.984	0.992	0.994	0.995
115 VAC		0.908	0.975	0.990	0.994	0.994
200 VAC		0.734	0.856	0.926	0.965	0.976
230 VAC		0.690	0.798	0.885	0.943	0.962

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4

Inrush current(for a Cold start at 25°C)
突入電流(25°Cコールドスタート)

Input : Rated input voltage
Load : 100 %(15 A)

Power resource conditions
Frequency : 50 Hz
The number of phases : (1 φ)
Ambient temperature : 25 °C

Input voltage	100 VAC	115 VAC	200 VAC	230 VAC
Inrush current	7.1 A[0-p]	8.1 A[0-p]	10.8 A[0-p]	14.7 A[0-p]

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5

Leakage current
リーク電流

Input : Rated input voltage
Load : 100 %(15 A)

Power resource conditions
Frequency : -
The number of phases : (1 φ)
Ambient temperature : 25 °C

Power resource Frequency 50 Hz		Input voltage			
		100 VAC	115 VAC	200 VAC	230 VAC
Leakage current	L	0.17 mA	0.19 mA	0.32 mA	0.375 mA
	N	0.17 mA	0.18 mA	0.32 mA	0.37 mA

Power resource Frequency 60 Hz		Input voltage			
		100 VAC	115 VAC	200 VAC	230 VAC
Leakage current	L	0.18 mA	0.2 mA	0.38 mA	0.44 mA
	N	0.18 mA	0.2 mA	0.375 mA	0.43 mA

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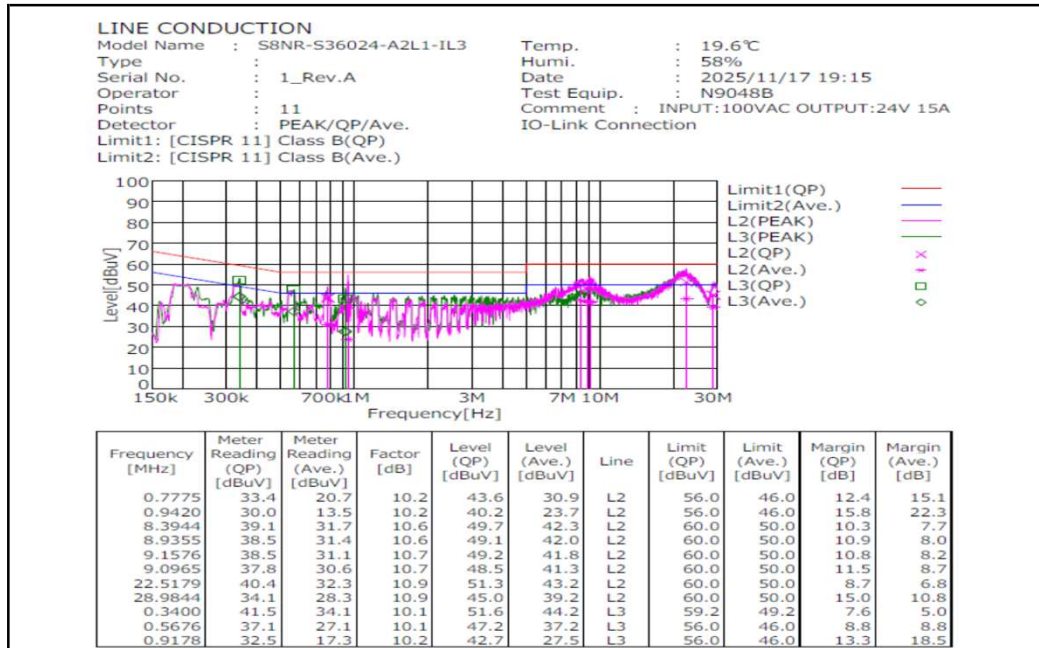
6

Conducted Emissions
雑音端子電圧

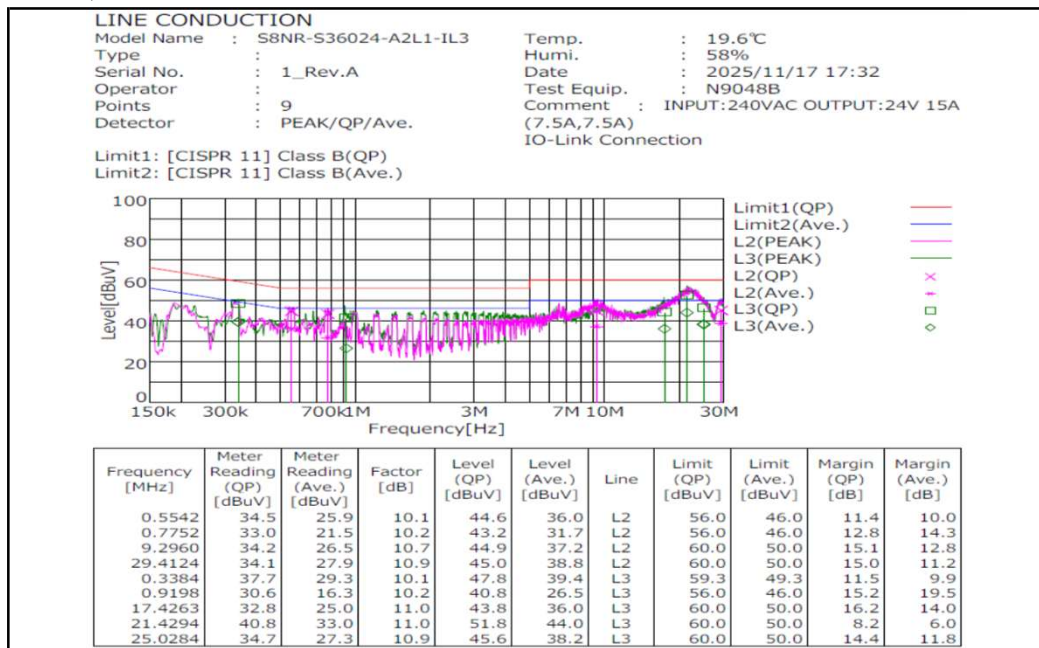
Input : 100 VAC/240 VAC
Load : 100 % (15 A)

Power resource conditions
Frequency : 50 Hz
The number of phases : (1 ϕ)
Ambient temperature : 25 °C

100 VAC/100 %



240 VAC/100 %



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8	Input variation influence 静的入力変動	Input : Allowable input voltage Load : 100 %(15 A)	Power resource conditions Frequency : 50 Hz The number of phases : (1 φ) Ambient temperature : 25 °C
9	Load variation influence 静的負荷変動	Input : Allowable input voltage Load : 100 %(15 A) Refer to Note 1	Power resource conditions Frequency : 50 Hz The number of phases : (1 φ) Ambient temperature : 25 °C

Input voltage Load	Output voltage				Input variation influence	
	85 VAC	100 VAC	230 VAC	264 VAC		
100% (15 A)	24.041 V	24.023 V	24.007 V	24.002 V	39 mV	0.16 % (at 100 VAC) 0.16 % (at 230 VAC)
0% (0 A)	24.044 V	24.043 V	24.034 V	24.030 V	14 mV	0.06 % (at 100 VAC) 0.06 % (at 230 VAC)
Load variation influence	3 mV	20 mV	27 mV	28 mV		
	0.01 %	0.08 %	0.11 %	0.12 %		

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10	Temperature variation influence 周囲温度変動	Input : Allowable input voltage Load : 100 %(15 A)	Power resource conditions Frequency : 50 Hz The number of phases : (1 φ) Ambient temperature : -
11	Output voltage accuracy 定電圧精度	Input : Allowable input voltage Load : 100 %(15 A)	Power resource conditions Frequency : 50 Hz The number of phases : (1 φ) Ambient temperature : 25 °C

Ambient temperature	Input voltage Load	Output voltage			
		85 VAC	100 VAC	230 VAC	264 VAC
-25 °C	100% (15 A)	23.908 V	23.871 V	23.882 V	23.885 V
	0% (0 A)	23.932 V	23.919 V	23.925 V	23.928 V
25 °C	100% (15 A)	24.041 V	24.023 V	24.007 V	24.002 V
	0% (0 A)	24.044 V	24.043 V	24.034 V	24.030 V
70 °C	58.3% (8.75 A)	24.130 V	24.138 V	24.135 V	24.137 V
	0% (0 A)	24.097 V	24.095 V	24.092 V	24.094 V

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Temperature variation influence(-25 ~ 70 °C) : 0.0117 %/°C
Output voltage accuracy : 0.18 %

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12

Dynamic load variation influence
動的負荷変動

Input : 100 VAC/240 VAC
Load : 10 A to 0 A and 0 A to 10 A
(only 1 branch output)

Power resource conditions
Frequency : 50 Hz
The number of phases : (1 ϕ)
Ambient temperature : 25 °C

Input voltage	Load	Voltage influence	Recovery time	Influence
100 VAC	10 A to 0 A	441 mV	488.0 ms	1.84 %
	0 A to 10 A	-740 mV	354.0 ms	-3.09 %
240 VAC	10 A to 0 A	445 mV	390.0 ms	1.85 %
	0 A to 10 A	-736 mV	390.0 ms	-3.07 %

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13

Ripple noise
リップルノイズ

Input : Allowable input voltage
Load : 100 %(15 A)

Power resource conditions
Frequency : 50 Hz
The number of phases : (1 ϕ)
Ambient temperature : 25 °C

Input voltage Load	Ripple noise			
	100 VAC	115 VAC	200 VAC	230 VAC
100% (15 A)	104 mVp-p 0.43 %	106 mVp-p 0.44 %	94 mVp-p 0.39 %	98 mVp-p 0.41 %
0% (0 A)	76 mVp-p 0.32 %	88 mVp-p 0.37 %	78 mVp-p 0.32 %	86 mVp-p 0.36 %

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14

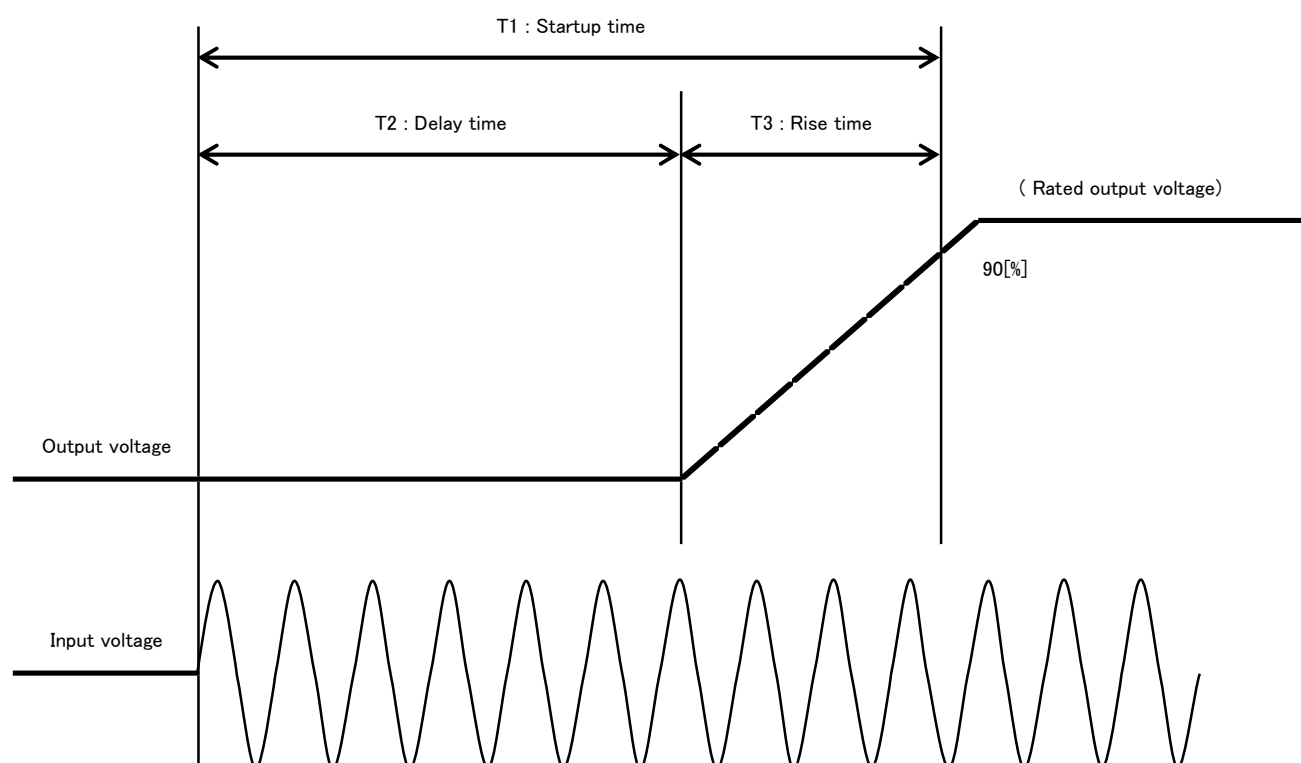
Startup time
起動時間

Input : Rated input voltage
Load : 100 %(15 A)

Power resource conditions
Frequency : 50 Hz
The number of phases : (1 ϕ)
Ambient temperature : 25 °C

Input voltage	T1 : Startup time	T2 : Delay time	T3 : Rise time
100 VAC	1587 ms	1596 ms	60.0 μ s
115 VAC	1597 ms	1544 ms	68.0 μ s
200 VAC	1593 ms	1632 ms	56.8 μ s
230 VAC	1590 ms	1452 ms	68.8 μ s

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15

Hold time
出力保持時間

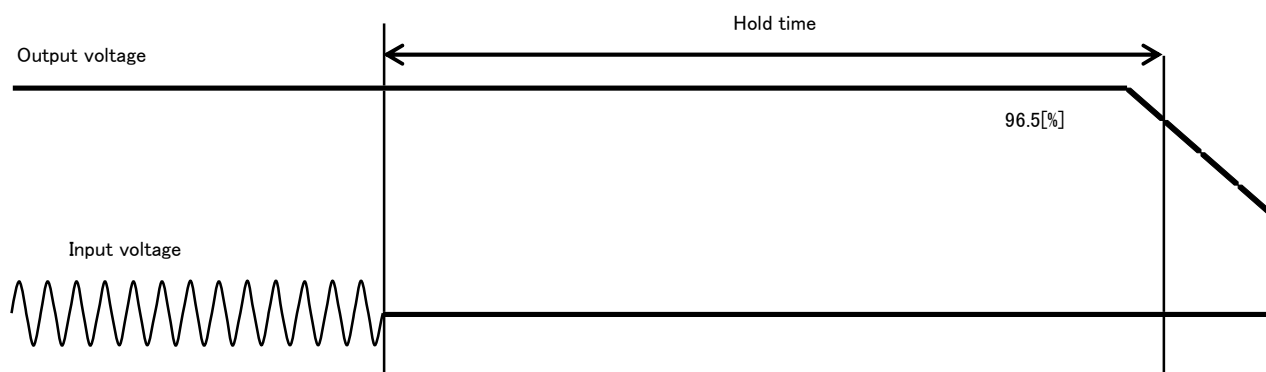
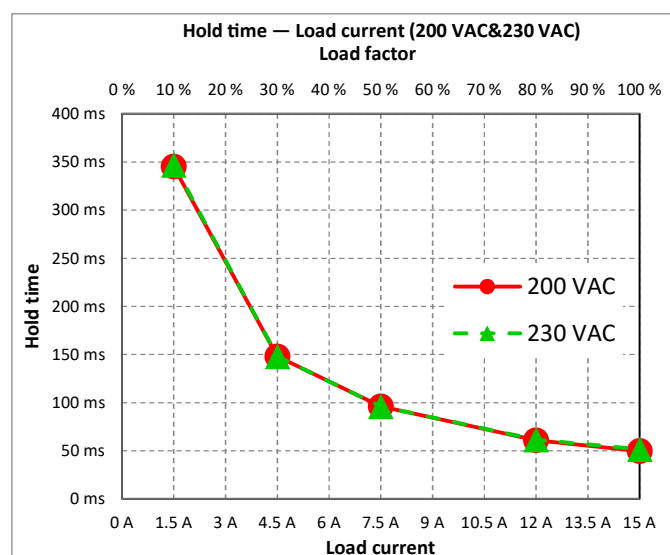
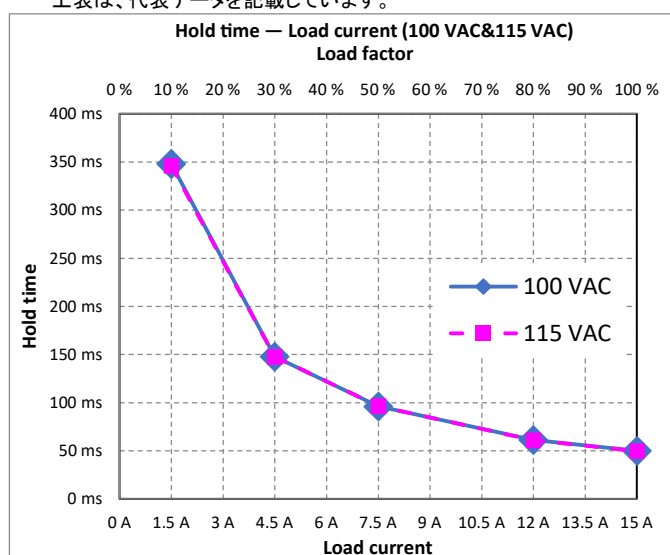
Input : Rated input voltage
Load : 100 %(15 A)

Power resource conditions
Frequency : 50 Hz
The number of phases : (1 ϕ)
Ambient temperature : 25 °C

Input voltage	Load factor	10 %	30 %	50 %	80 %	100 %
	Load current	1.5 A	4.5 A	7.5 A	12 A	15 A
100 VAC	Hold time	348 ms	148 ms	96 ms	61 ms	50 ms
115 VAC		346 ms	148 ms	96 ms	61 ms	50 ms
200 VAC		345 ms	148 ms	96 ms	61 ms	50 ms
230 VAC		347 ms	148 ms	96 ms	62 ms	52 ms

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