ZWS15C

EVALUATION DATA

型式データ

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2. 特性データ Characteristics

使用記号 Terminology used

定義 Definition

Vin ‥‥‥入力電圧 Input voltage
Vout ‥‥‥出力電圧 Output voltage
Iin ‥‥‥入力電流 Input current
Iout ‥‥‥出力電流 Output current
Ta ‥‥‥周囲温度 Ambient temperature
f ‥‥‥周波数 Frequency

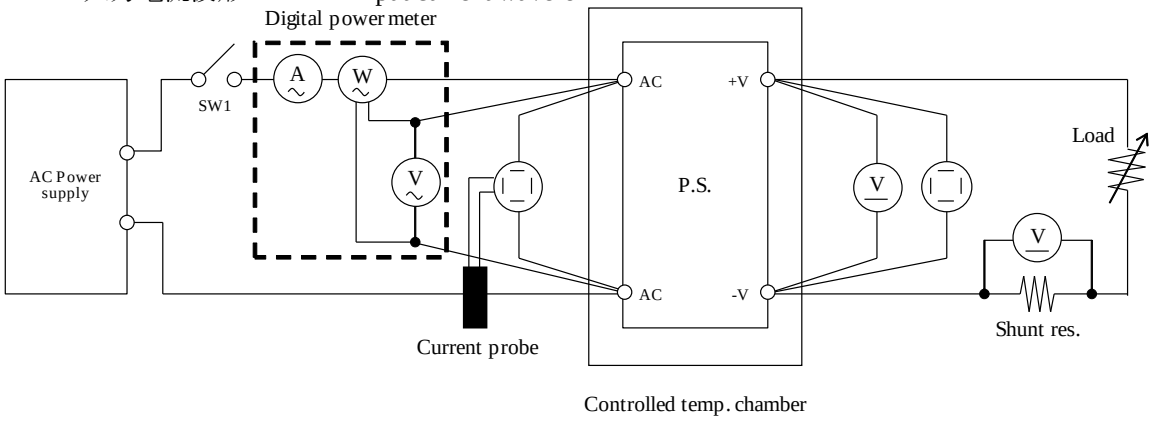
※ 当社測定条件における結果であり、参考値としてお考え願います。
Test results are reference data based on our measurement condition.

1. 測定方法 Evaluation Method

1-1. 測定回路 Circuit used for determination

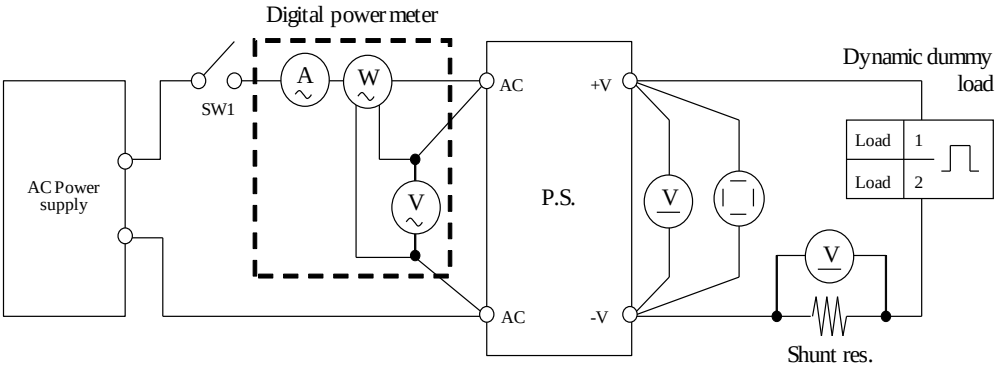
測定回路1 Circuit 1 used for determination

- 静特性 Steady state data
- 通電ドリフト特性 Warm up voltage drift characteristics
- 出力保持時間特性 Hold up time characteristics
- 出力立ち上がり特性 Output rise characteristics
- 出力立ち下がり特性 Output fall characteristics
- 過電流保護特性 Over current protection (OCP) characteristics
- 過電圧保護特性 Over voltage protection (OVP) characteristics
- 入力電圧瞬停特性 Response to brown out characteristics
- 入力電流波形 Input current waveform

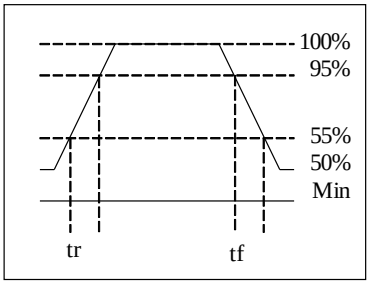


測定回路2 Circuit 2 used for determination

- 過渡応答(負荷急変)特性 Dynamic load response characteristics

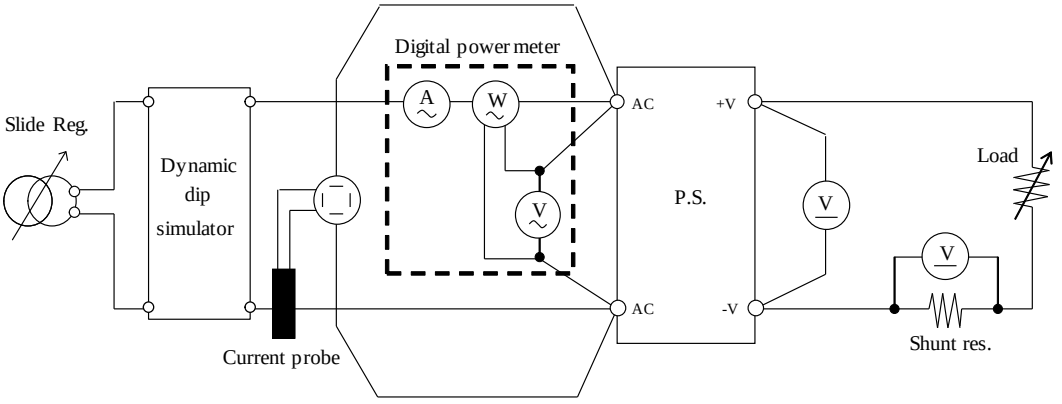


Output current waveform
Iout 50% <==> 100%



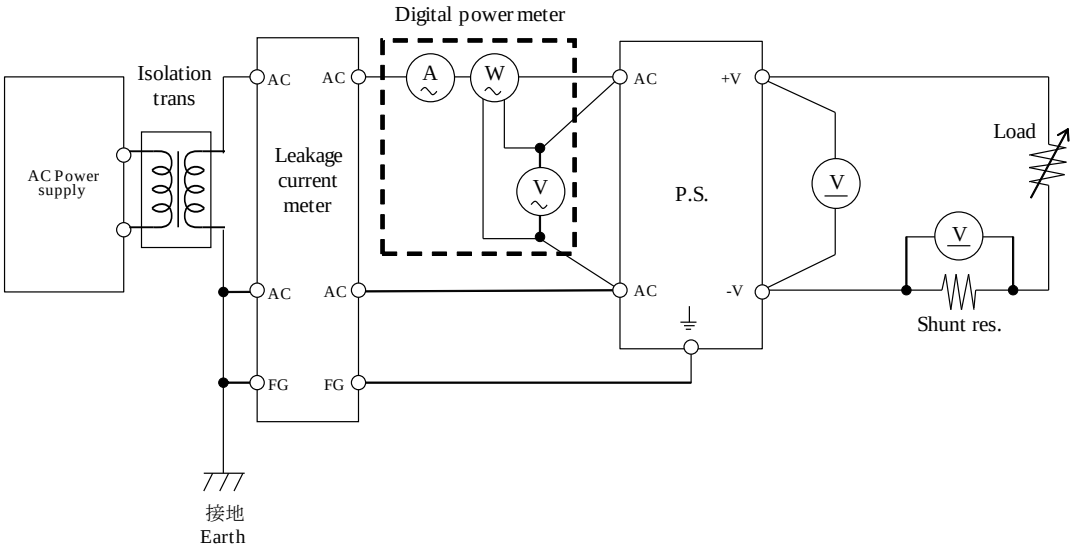
測定回路3　Circuit 3 used for determination

- 入力サージ電流（突入電流）波形　Inrush current waveform



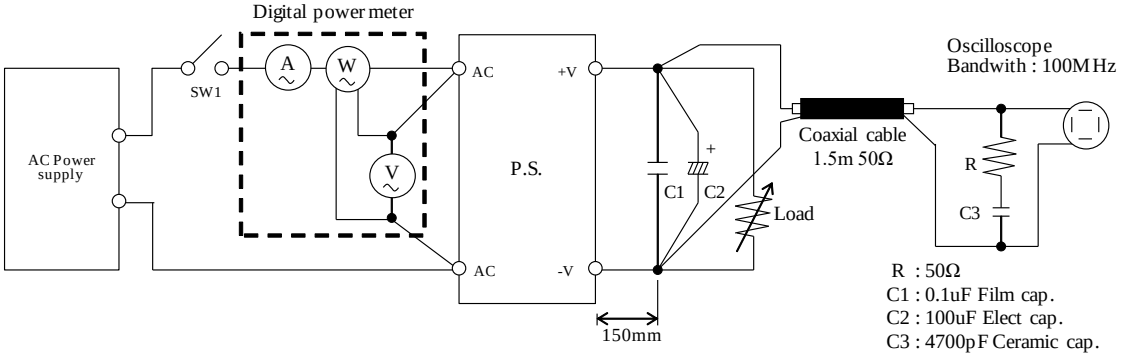
測定回路4　Circuit 4 used for determination

- リーク電流特性　Leakage current characteristics



測定回路5　Circuit 5 used for determination

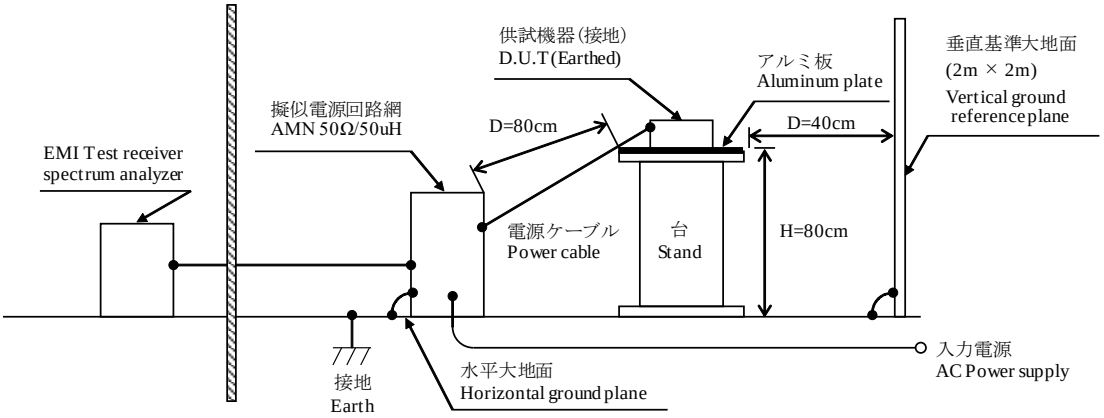
- 出力リップル、ノイズ波形　Output ripple and noise waveform



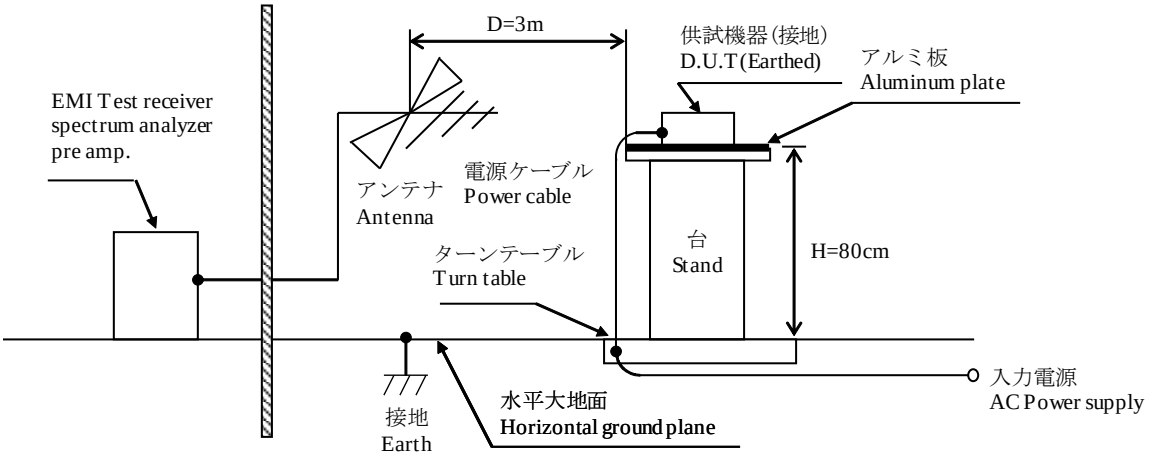
測定構成　Configuration used for determination

- EMI特性　Electro-Magnetic Interference characteristics

(a) 雑音端子電圧（帰還ノイズ）　Conducted Emission



(b) 雑音電界強度（放射ノイズ）　Radiated Emission



1-2. 使用測定機器 List of equipment used

	EQUIPMENT USED	MANUFACTURER	MODEL NO.
1	DIGITAL STORAGE OSCILLOSCOPE	YOKOGAWA ELECT.	DLM3054
2	DIGITAL MULTIMETER	AGILENT	34970A
3	DIGITAL POWER METER	YOKOGAWA ELECT.	WT210
4	CURRENT PROBE	TEKTRONIX	TPC312 / TP305A
5	CURRENT AMP	TEKTRONIX	TCPA300
6	DYNAMIC DUMMY LOAD	CHROMA	63103A
7	CVCF	CHROMA	6530
8	CVCF	CHROMA	61603
9	CVCF	KIKUSUI	PCR2000W / PCR1000LE
10	CONTROLLED TEMP. CHAMBER	ESPEC	SU-261 / SU-262
11	EMI TEST RECEIVER / SPECTRUM ANALYZER	ROHM & SCHWARZ	ESCI / ESR3
12	LISN	ROHM & SCHWARZ	ENV216
13	ANTENNA	SCHWARZBECK	VULB 9168
14	PRE-AMPLIFIER	EMCI	EMC9135 (EMCI)
15	DUMMY LOAD	FUTABA	RAGR SERIES
16	LEAKAGE CURRENT METER	EXTECH	7611

2. 特性データ Characteristics

2-1. 静特性 Steady state data

(1) 入力・負荷・温度変動／出力起動・遮断電圧

Regulation - line and load, Temperature drift / Start up voltage and Drop out voltage

5V

1. Regulation - line and load　　Condition Ta : 25 °C

Iout \ Vin	85VAC	100VAC	200VAC	265VAC	Line regulation	
0%	5.005V	5.010V	5.009V	5.002V	8mV	0.160%
50%	5.006V	5.006V	5.006V	5.006V	0mV	0.000%
Full load	5.006V	5.006V	5.006V	5.006V	0mV	0.000%
Load regulation	1mV	4mV	3mV	4mV		
	0.020%	0.080%	0.060%	0.080%		

2. Temperature drift　　Conditions Vin : 100 VAC
Iout : 100 %

Ta	-10°C	+25°C	+50°C	Temperature stability	
Vout	5.000V	5.006V	5.005V	6mV	0.120%

3. Start up voltage and Drop out voltage　　Conditions Ta : 25 °C
Iout : 100 %

Start up voltage (Vin)	67VAC
Drop out voltage (Vin)	47VAC

12V

1. Regulation - line and load　　Condition Ta : 25 °C

Iout \ Vin	85VAC	100VAC	200VAC	265VAC	Line regulation	
0%	11.963V	11.962V	11.963V	11.962V	1mV	0.008%
50%	11.964V	11.964V	11.964V	11.964V	0mV	0.000%
Full load	11.963V	11.963V	11.963V	11.963V	0mV	0.000%
Load regulation	1mV	2mV	1mV	2mV		
	0.008%	0.017%	0.008%	0.017%		

2. Temperature drift　　Conditions Vin : 100 VAC
Iout : 100 %

Ta	-10°C	+25°C	+50°C	Temperature stability	
Vout	11.954V	11.963V	11.955V	9mV	0.075%

3. Start up voltage and Drop out voltage　　Conditions Ta : 25 °C
Iout : 100 %

Start up voltage (Vin)	69VAC
Drop out voltage (Vin)	53VAC

24V

1. Regulation - line and load　　Condition Ta : 25 °C

Iout \ Vin	85VAC	100VAC	200VAC	265VAC	Line regulation	
0%	23.998V	23.988V	23.997V	23.994V	10mV	0.042%
50%	23.989V	23.989V	23.989V	23.989V	0mV	0.000%
Full load	23.989V	23.989V	23.988V	23.988V	1mV	0.004%
Load regulation	9mV	1mV	9mV	6mV		
	0.038%	0.004%	0.038%	0.025%		

2. Temperature drift　　Conditions Vin : 100 VAC
Iout : 100 %

Ta	-10°C	+25°C	+50°C	Temperature stability	
Vout	23.974V	23.989V	23.964V	25mV	0.104%

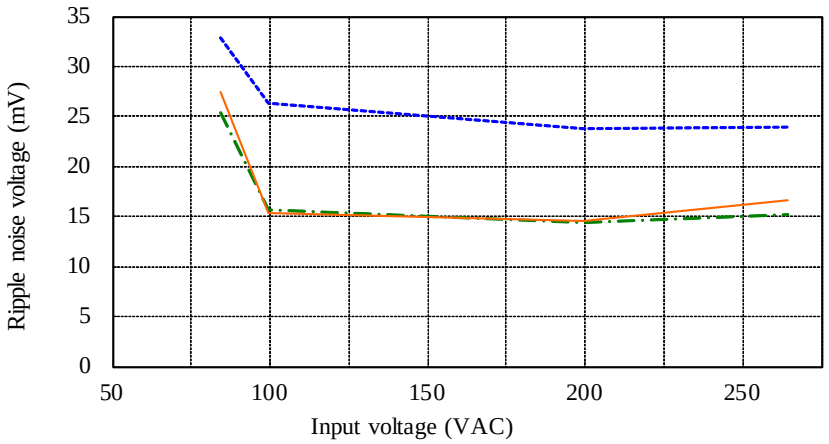
3. Start up voltage and Drop out voltage　　Conditions Ta : 25 °C
Iout : 100 %

Start up voltage (Vin)	68VAC
Drop out voltage (Vin)	48VAC

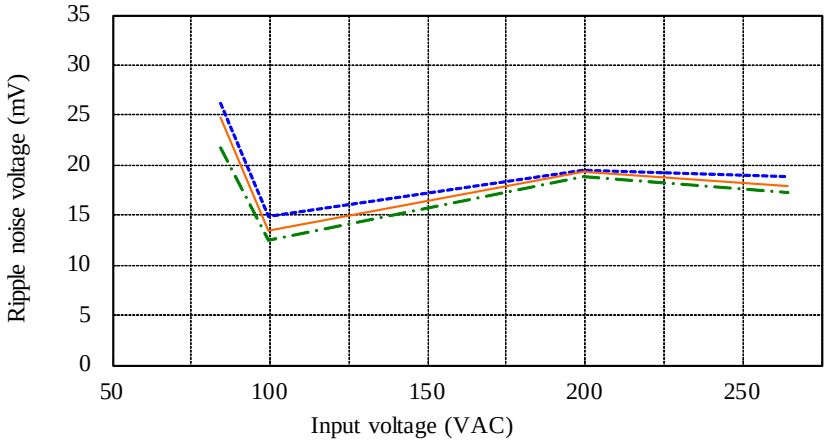
(2) リップルノイズ電圧対入力電圧　Ripple noise voltage vs. Input voltage

Conditions　Iout： 100 %
Ta： -10 °C
25 °C
50 °C

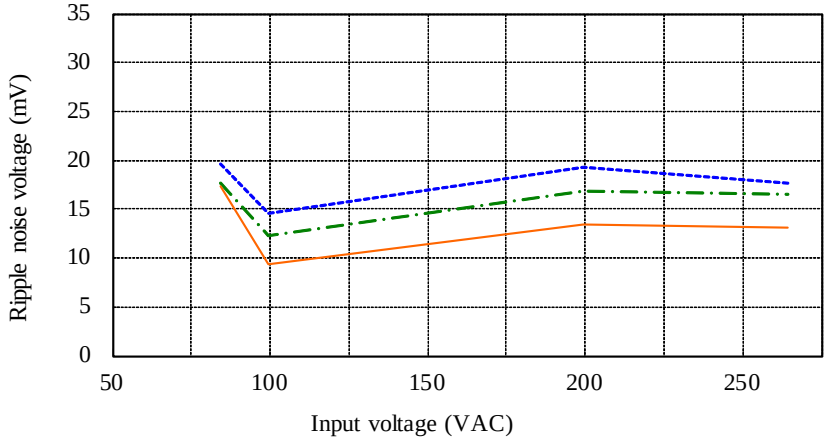
5V



12V



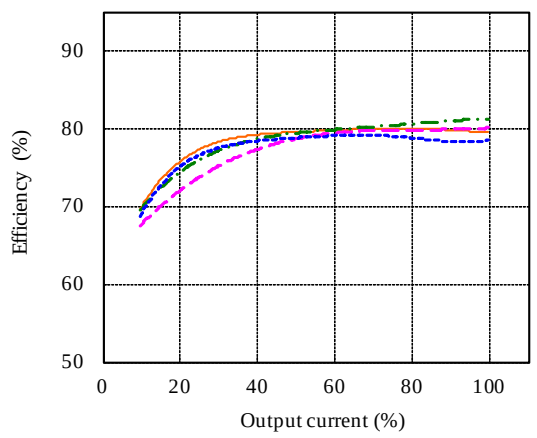
24V

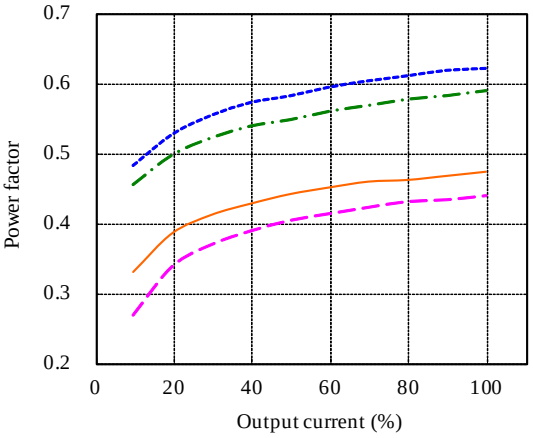


(3) 効率・力率対出力電流　Efficiency and Power factor vs. Output current

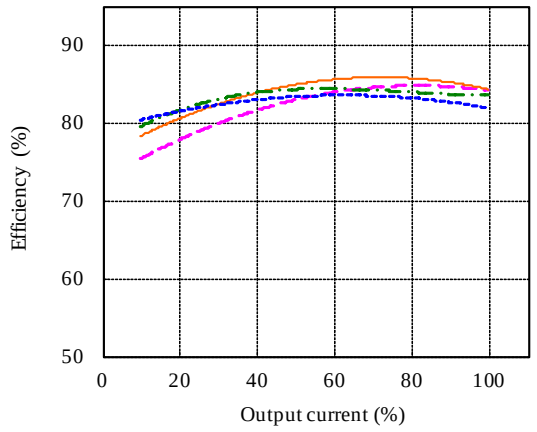
Conditions　Vin：　85 VAC
100 VAC
200 VAC
265 VAC
Ta：　25 °C

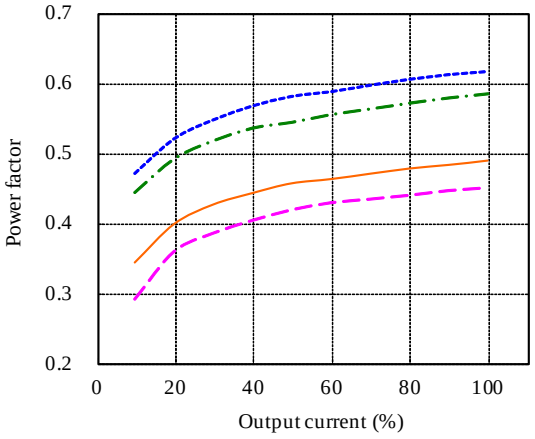
5V



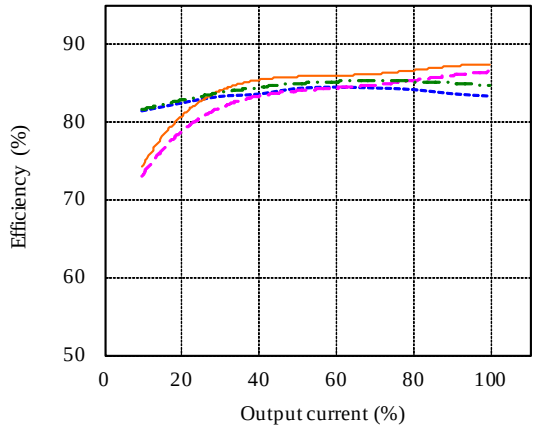


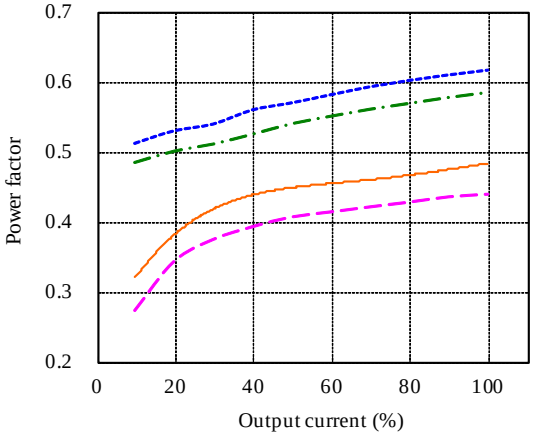
12V





24V



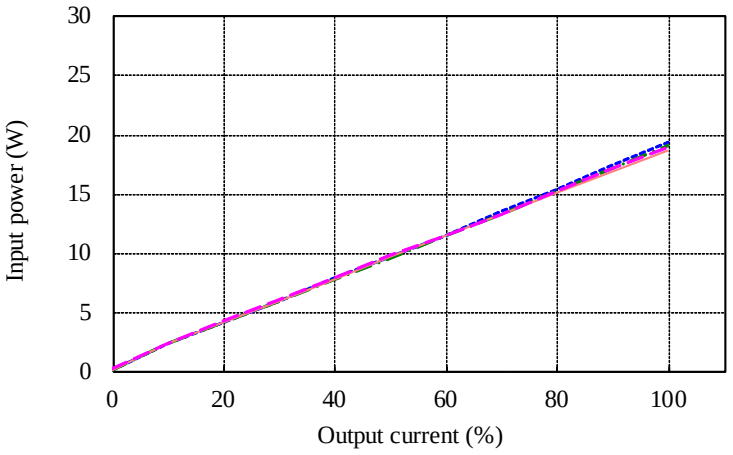


(4) 入力電力対出力電流 Input power vs. Output current

Conditions Vin : 85 VAC
100 VAC
200 VAC
265 VAC
Ta : 25 °C

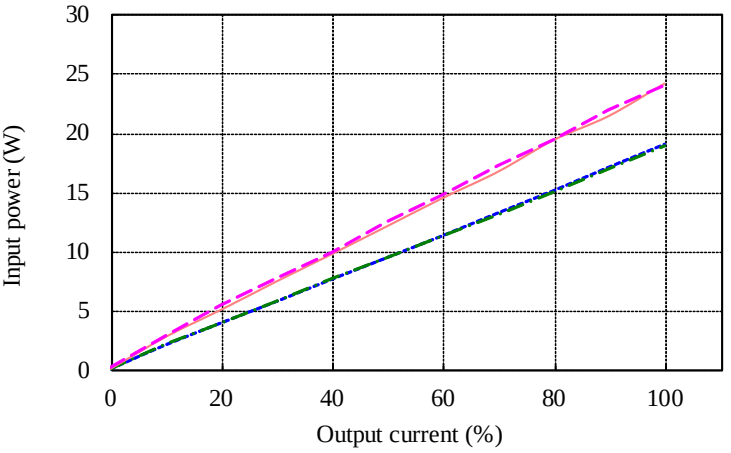
5V

Vin	Input power
	Iout : 0%
85VAC	0.1W
100VAC	0.1W
200VAC	0.1W
265VAC	0.1W



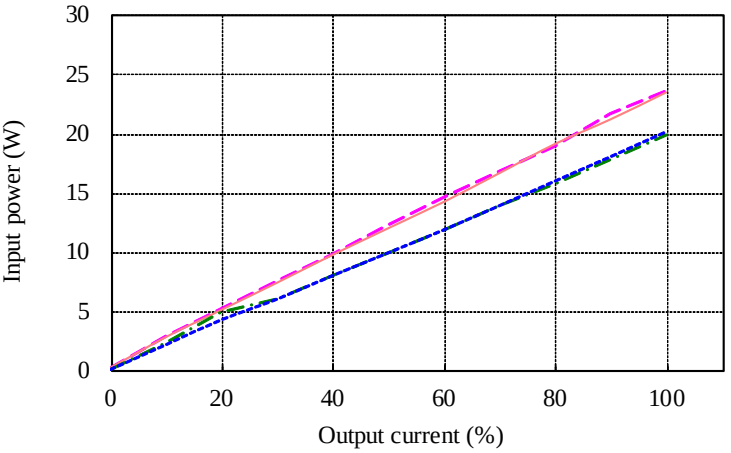
12V

Vin	Input power
	Iout : 0%
85VAC	0.1W
100VAC	0.1W
200VAC	0.1W
265VAC	0.1W



24V

Vin	Input power
	Iout : 0%
85VAC	0.1W
100VAC	0.1W
200VAC	0.1W
265VAC	0.2W

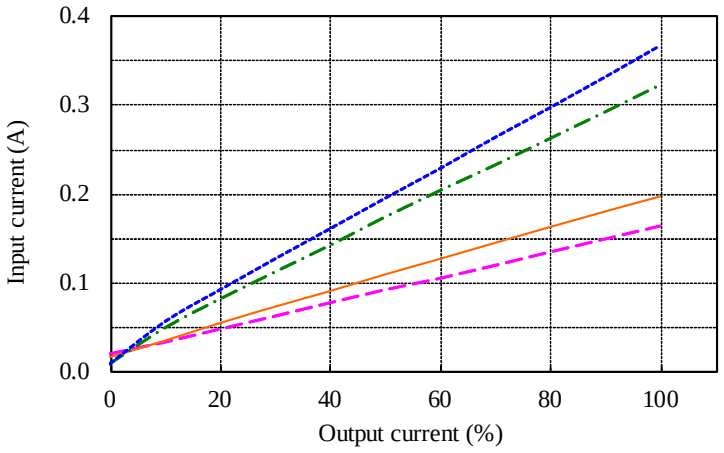


(5) 入力電流対出力電流 Input current vs. Output current

Conditions Vin : 85 VAC
100 VAC
200 VAC
265 VAC
Ta : 25 °C

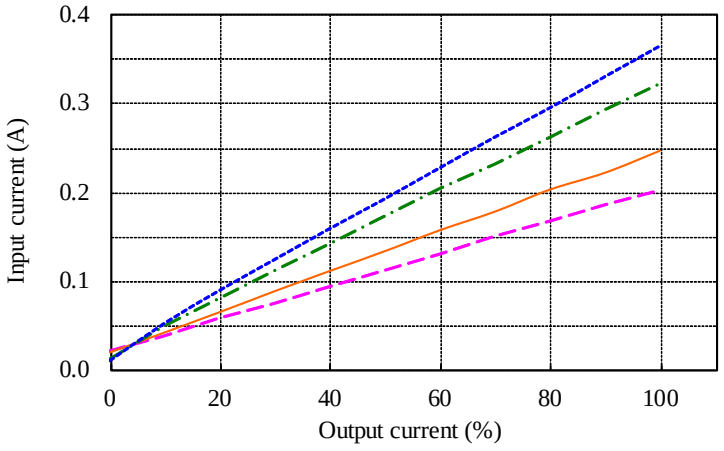
5V

Vin	Input current
	Iout : 0%
85VAC	0.01A
100VAC	0.01A
200VAC	0.01A
265VAC	0.02A



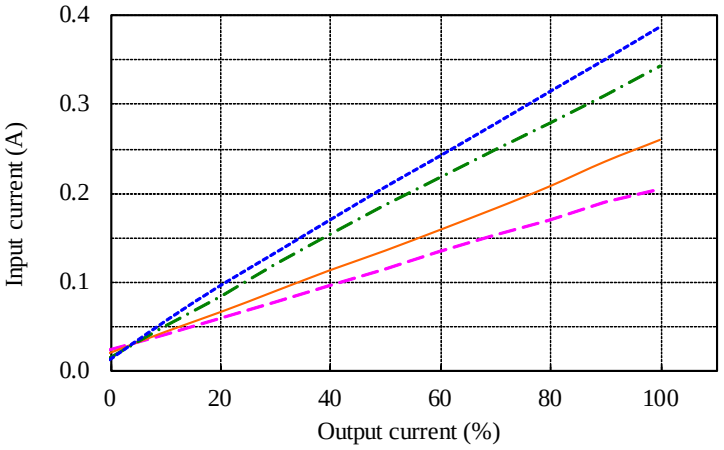
12V

Vin	Input current
	Iout : 0%
85VAC	0.01A
100VAC	0.01A
200VAC	0.02A
265VAC	0.02A



24V

Vin	Input current
	Iout : 0%
85VAC	0.01A
100VAC	0.01A
200VAC	0.02A
265VAC	0.02A

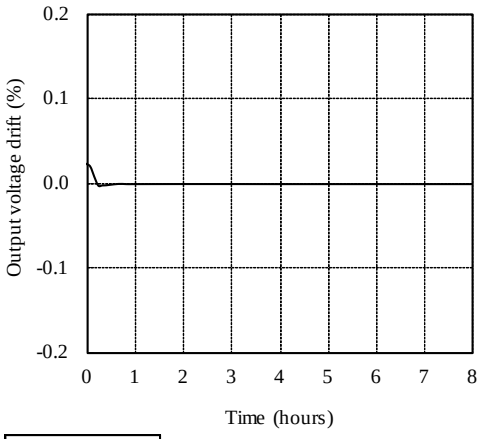


2-2. 通電ドリフト特性

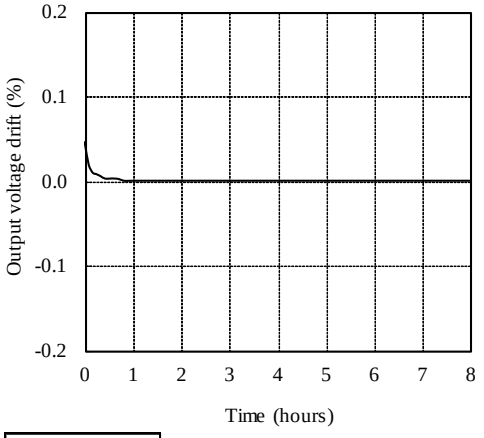
Warm up voltage drift characteristics

Conditions Vin : 100 VAC
Iout : 100 %
Ta : 25 °C

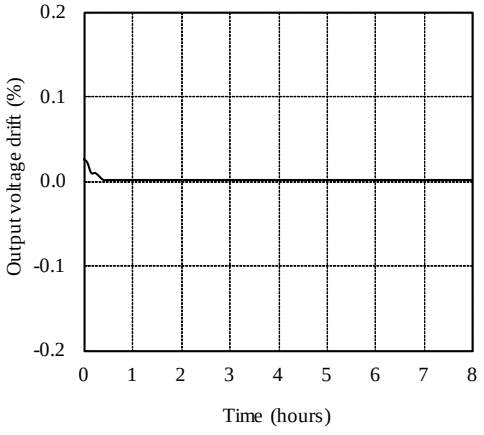
5V



12V



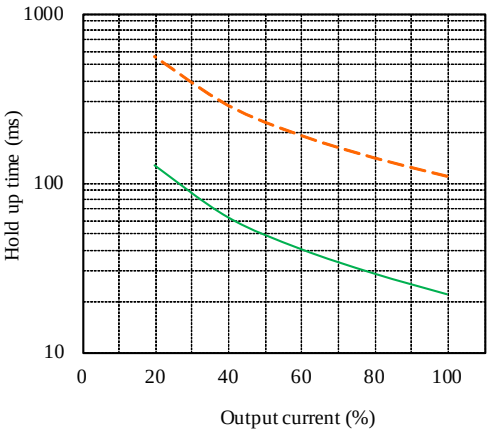
24V

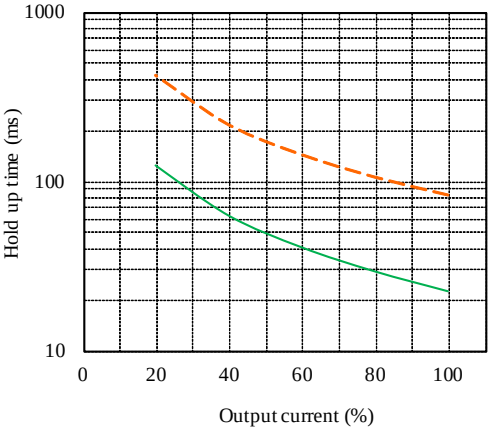


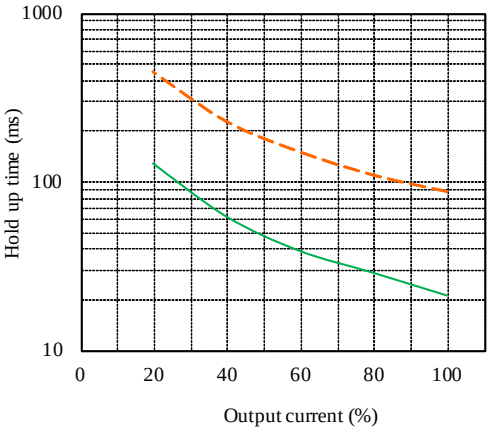
2-3. 出力保持時間特性

Hold up time characteristics

Conditions Vin : 100 VAC
200 VAC
Ta : 25 °C



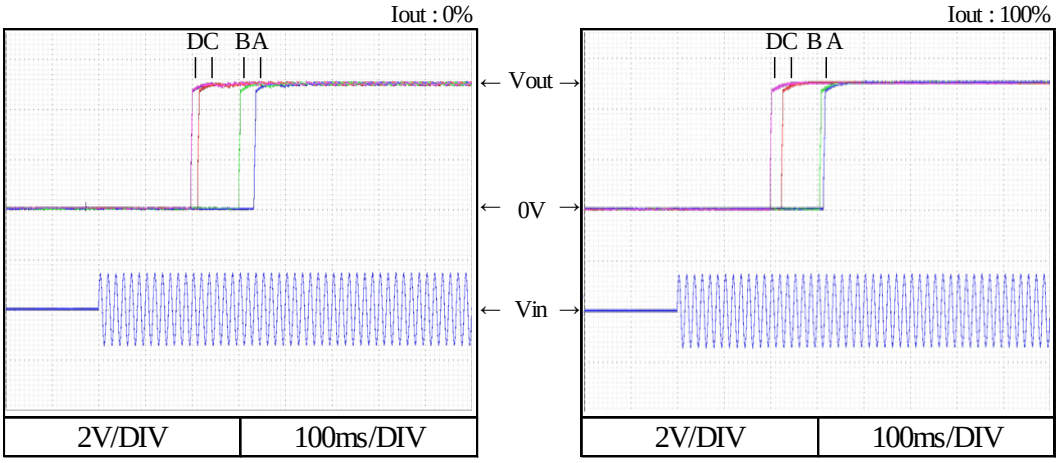




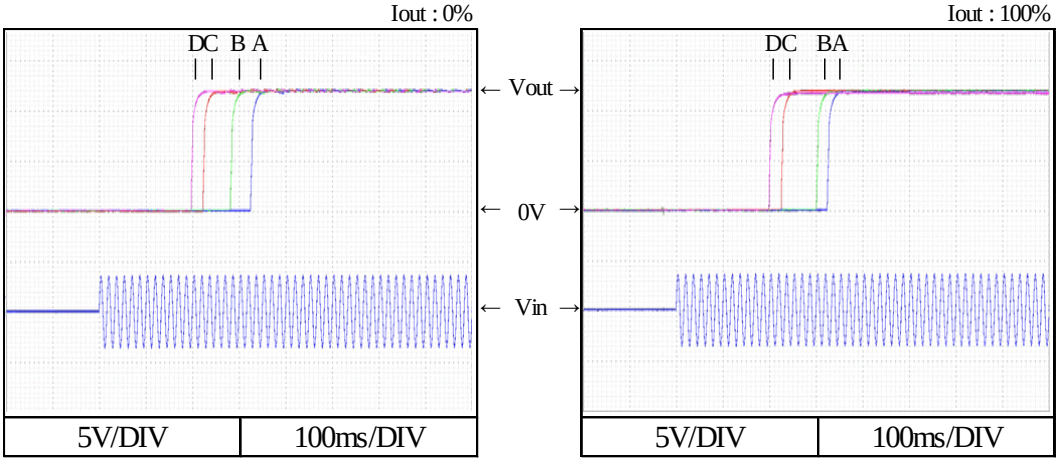
2-4. 出力立ち上がり特性 Output rise characteristics

Conditions Vin : 85 VAC (A)
100 VAC (B)
200 VAC (C)
265 VAC (D)
Ta : 25 °C

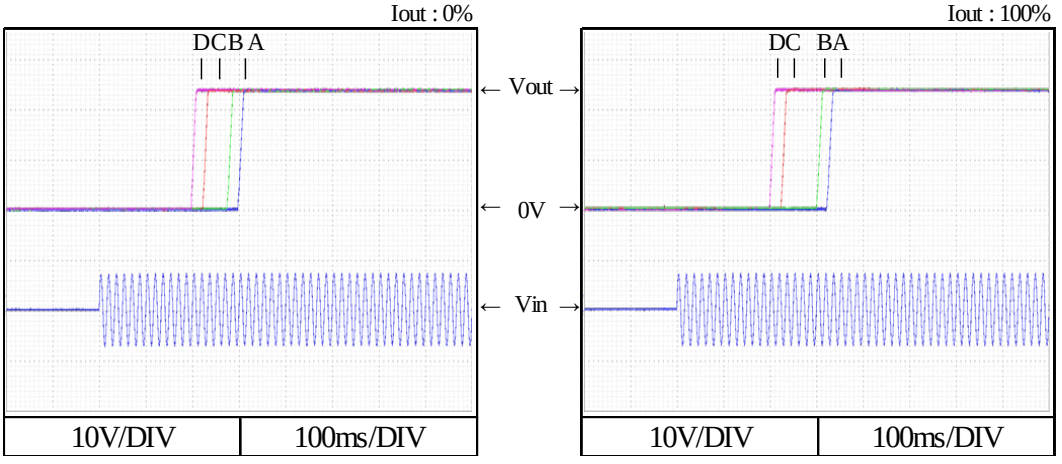
5V



12V



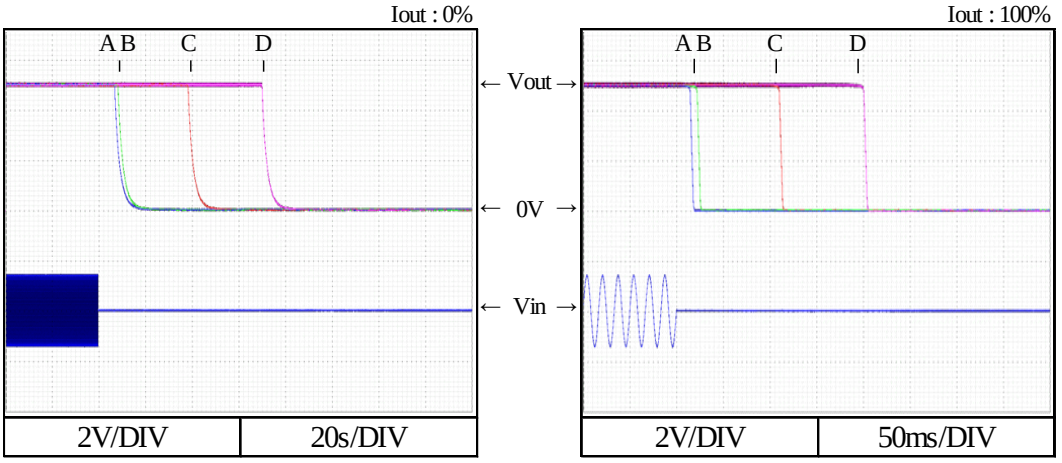
24V



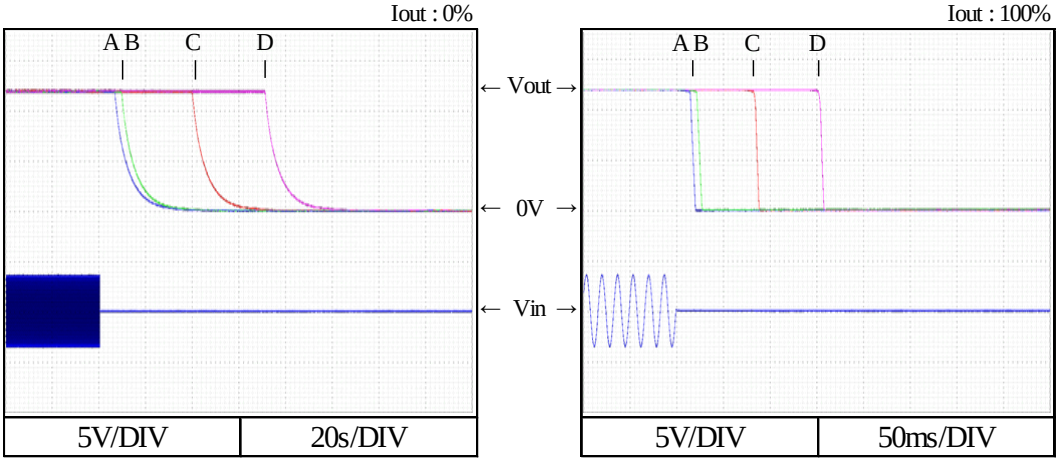
2-5. 出力立ち下がり特性 Output fall characteristics

Conditions Vin : 85 VAC (A)
100 VAC (B)
200 VAC (C)
265 VAC (D)
Ta : 25 °C

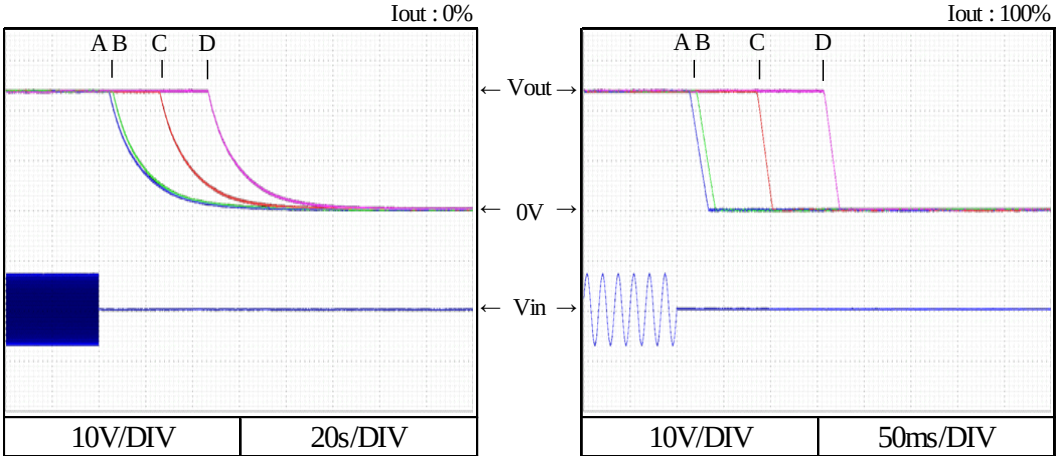
5V



12V



24V

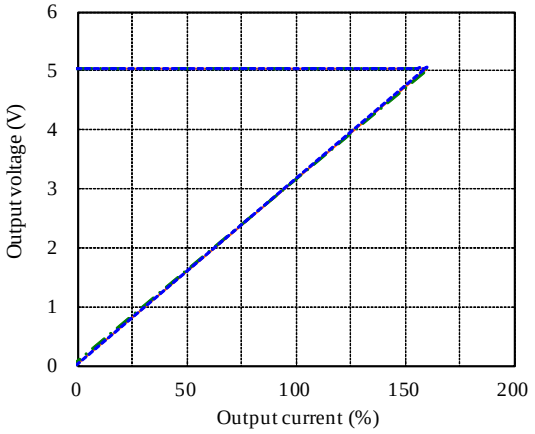


2-6. 過電流保護特性

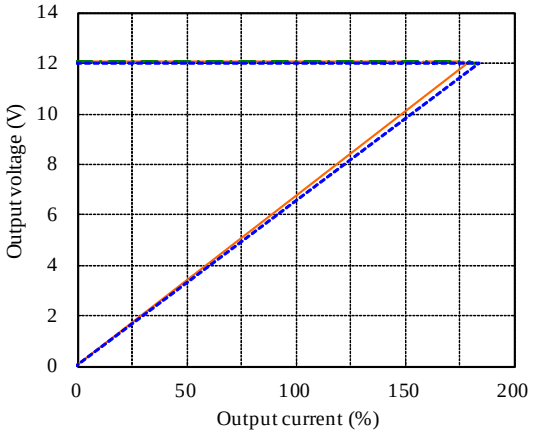
Over current protection (OCP) characteristics

Conditions Vin : 100 VAC
Ta : -10 °C
25 °C
50 °C

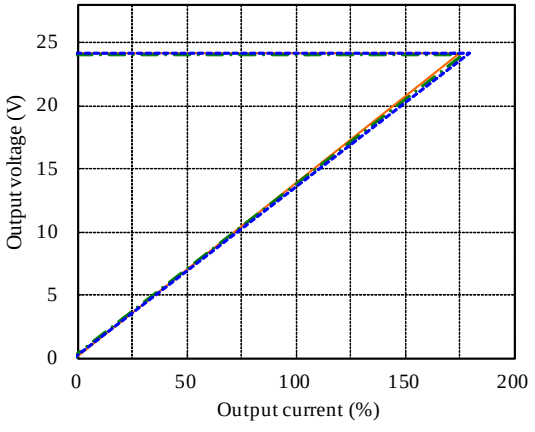
5V



12V



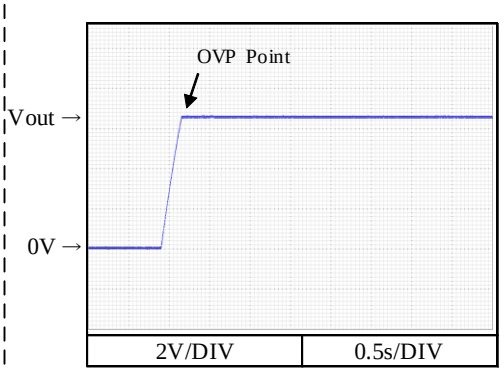
24V

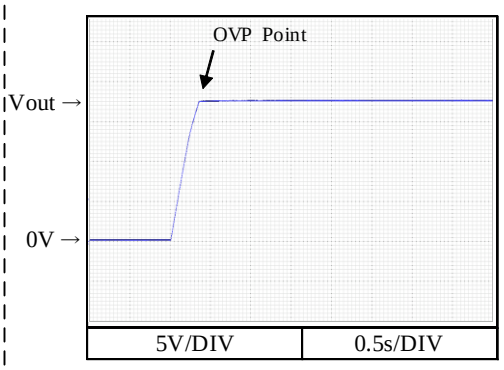


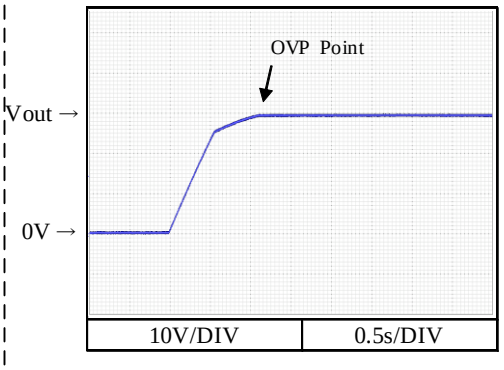
2-7. 過電圧保護特性

Over voltage protection (OVP) characteristics

Conditions Vin : 100 VAC
Iout : 0 %
Ta : 25 °C



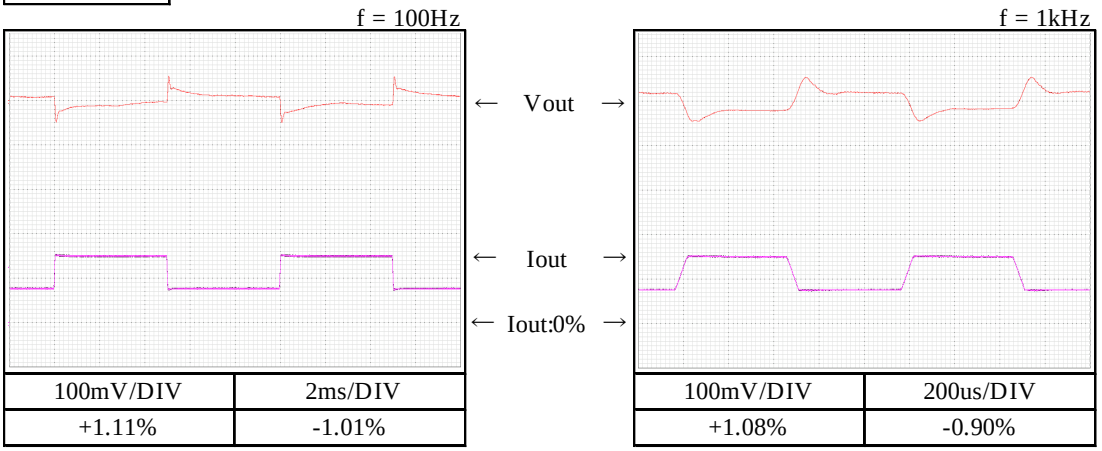




2-8. 過渡応答(負荷急変)特性 Dynamic load response characteristics

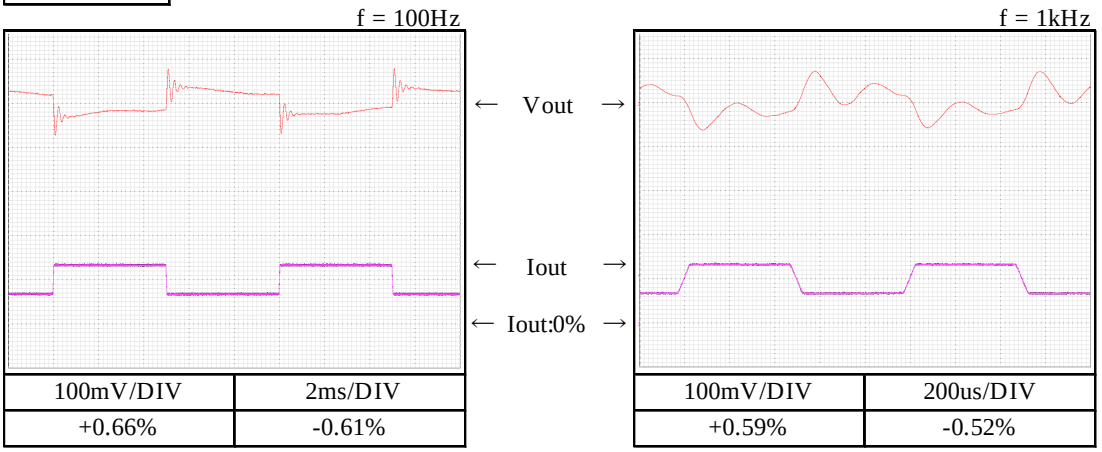
Conditions Vin : 100 VAC
Iout : 50 % ↔ 100 %
(tr = tf = 50us)
Ta : 25 °C

5V



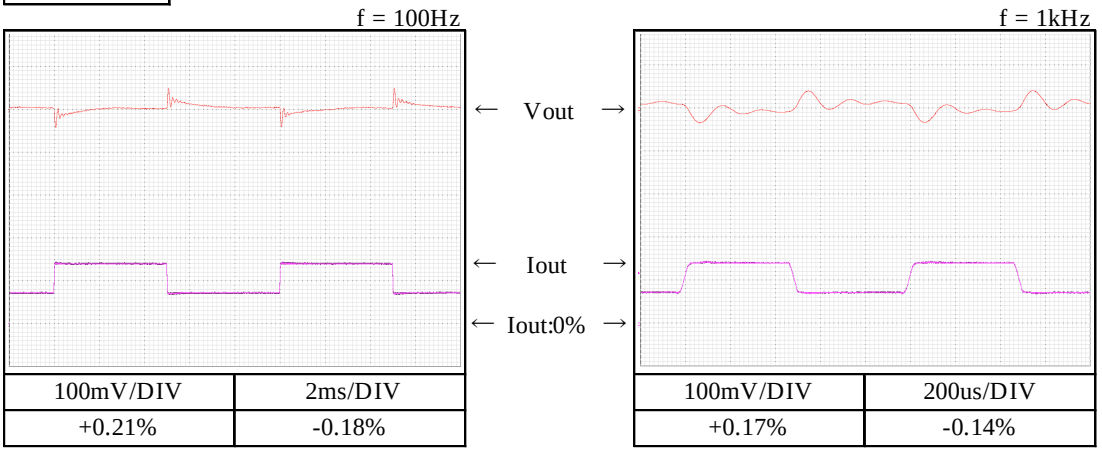
100mV/DIV	2ms/DIV	100mV/DIV	200us/DIV
+1.11%	-1.01%	+1.08%	-0.90%

12V



100mV/DIV	2ms/DIV	100mV/DIV	200us/DIV
+0.66%	-0.61%	+0.59%	-0.52%

24V



100mV/DIV	2ms/DIV	100mV/DIV	200us/DIV
+0.21%	-0.18%	+0.17%	-0.14%

2-9. 入力電圧瞬停特性 Response to brown out characteristics

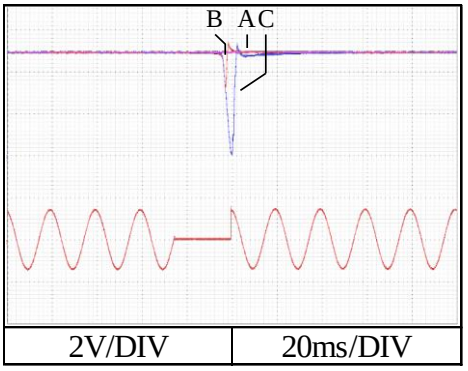
Conditions Ta : 25 °C
Iout : 100 %

瞬停時間 Interruption time

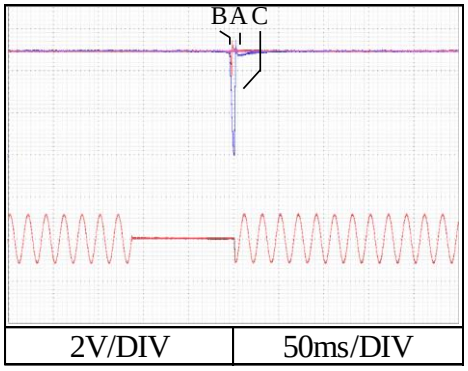
A : 出力電圧が低下なし Output voltage does not drop.
B : 出力電圧が0Vまで低下しない Output voltage drop down not reaching 0V.
C : 出力電圧が0Vまで低下 Output voltage drops until 0V.

5V

Vin : 100VAC
A = 17ms, B = 22ms, C = 26ms

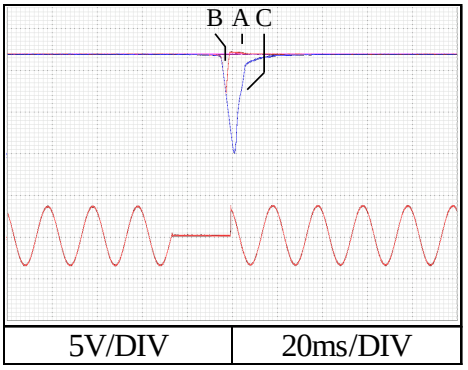


Vin : 200VAC
A = 104ms, B = 111ms, C = 114ms

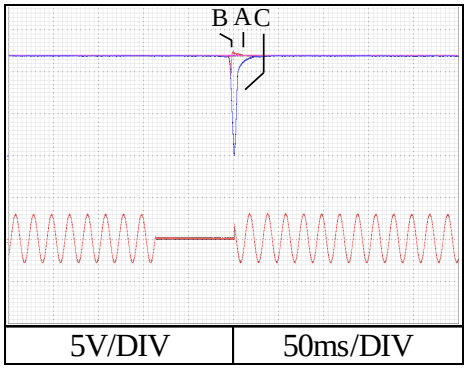


12V

Vin : 100VAC
A = 18ms, B = 23ms, C = 27ms



Vin : 200VAC
A = 80ms, B = 85ms, C = 86ms



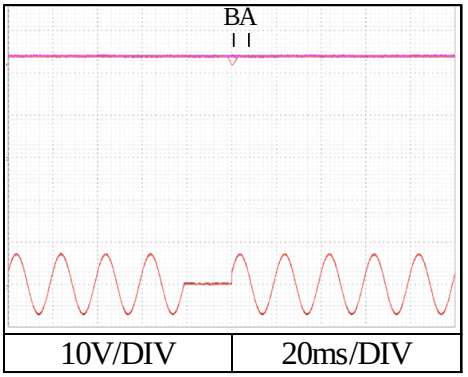
Conditions Ta : 25 °C
Iout : 100 %

瞬停時間 Interruption time

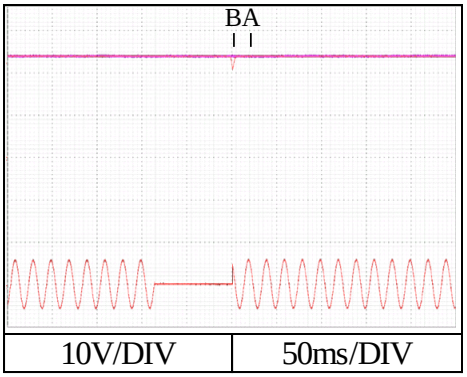
A : 出力電圧が低下なし Output voltage does not drop.
B : 出力電圧が0Vまで低下しない Output voltage drop down not reaching 0V.
C : 出力電圧が0Vまで低下 Output voltage drops until 0V.

24V

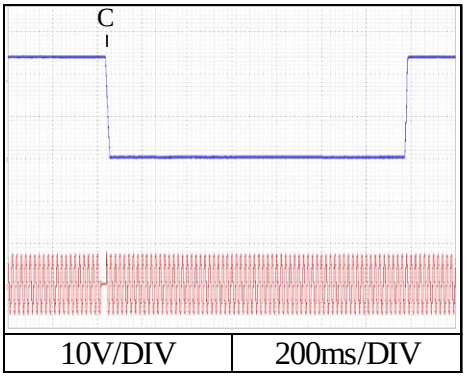
Vin : 100VAC
A = 19ms, B = 23ms



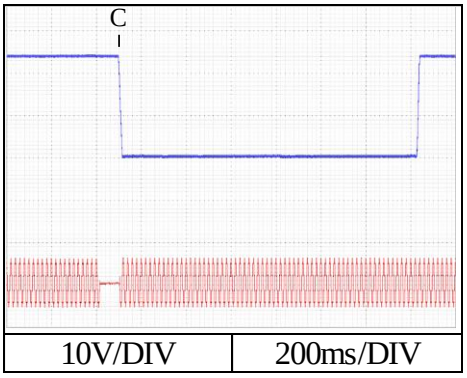
Vin : 200VAC
A = 84ms, B = 88ms



Vin : 100VAC
C = 24ms



Vin : 200VAC
C = 89ms



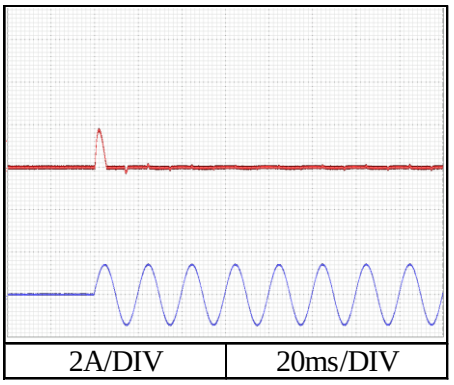
2-10. 入力サージ電流(突入電流)波形 Inrush current waveform

24V

Conditions Vin : 100 VAC
Iout : 100 %
Ta : 25°C

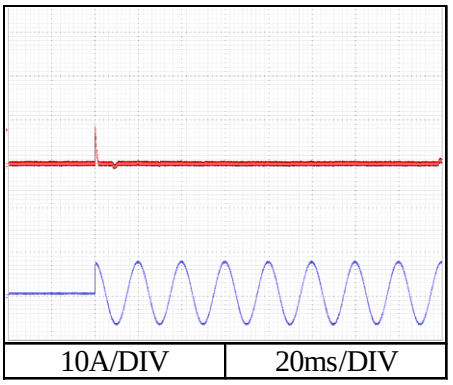
Switch on phase angle of input AC voltage

ϕ = 0°



Switch on phase angle of input AC voltage

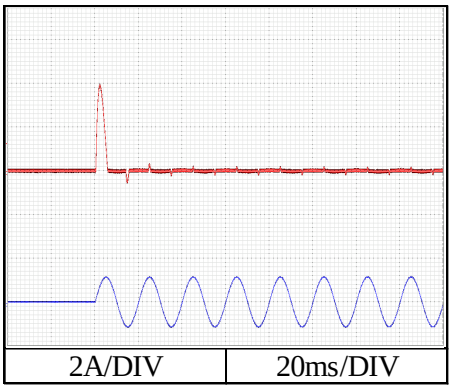
ϕ = 90°



Conditions Vin : 200 VAC
Iout : 100 %
Ta : 25°C

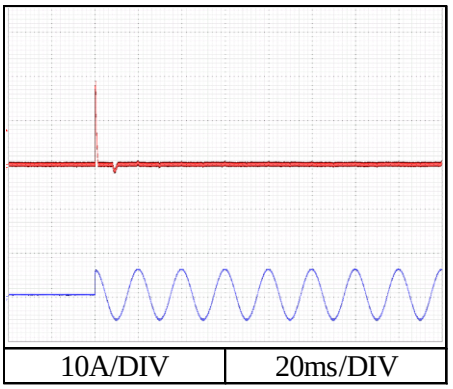
Switch on phase angle of input AC voltage

ϕ = 0°



Switch on phase angle of input AC voltage

ϕ = 90°

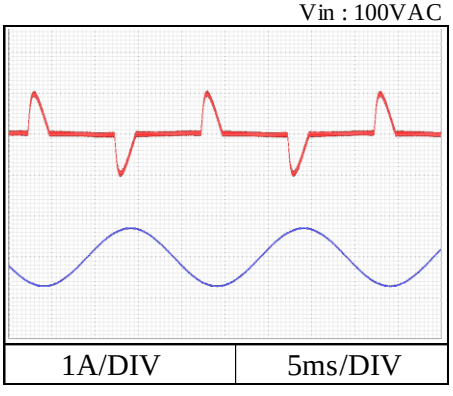


2-11. 入力電流波形 Input current waveform

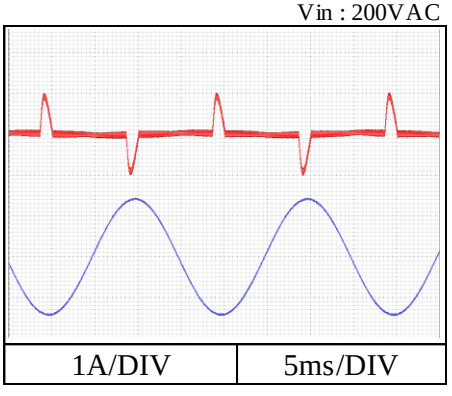
Conditions Iout : 100
Ta : 25°C

24V

Vin : 100VAC



Vin : 200VAC

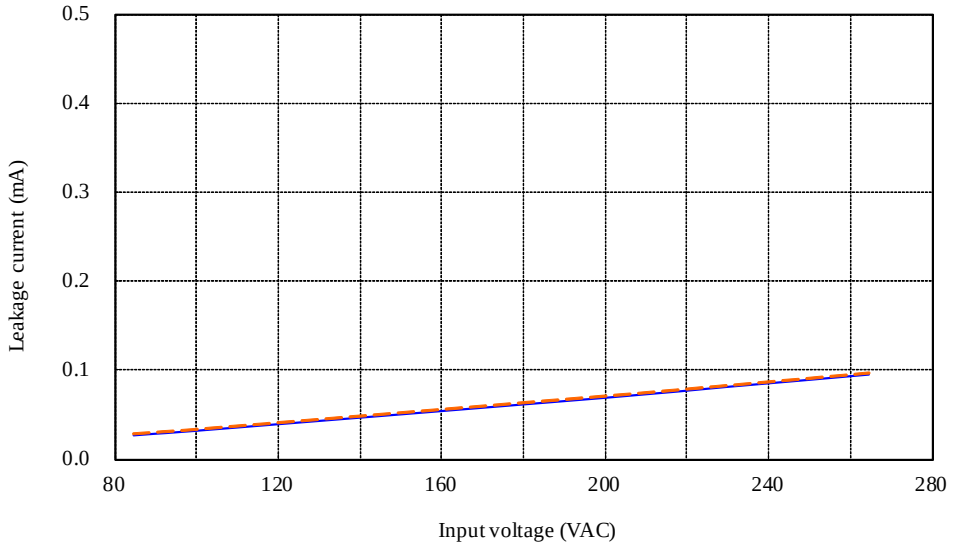


2-12. リーク電流特性 Leakage current characteristics

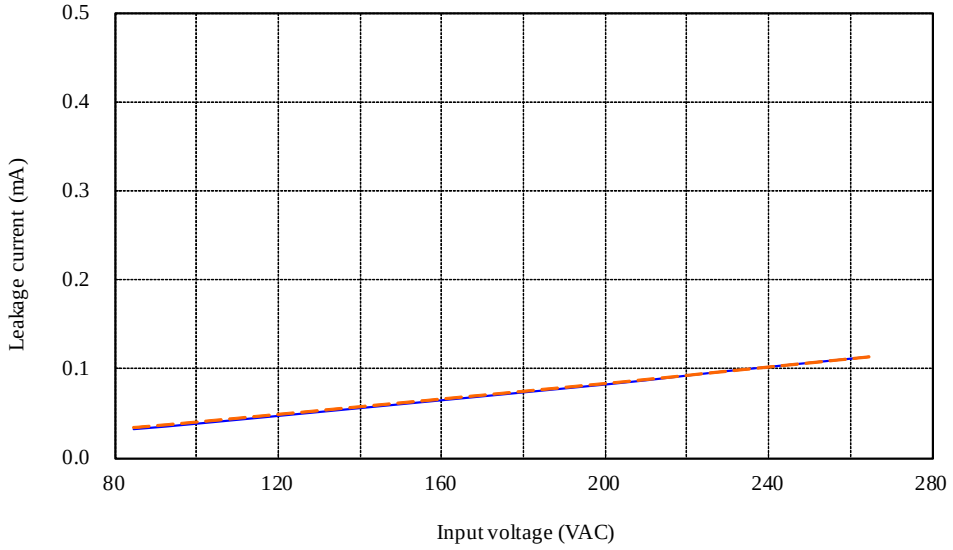
Conditions Iout : 0 %
100 %
Ta : 25°C
Equipment used : 7611(EXTECH)

24V

f : 50 Hz



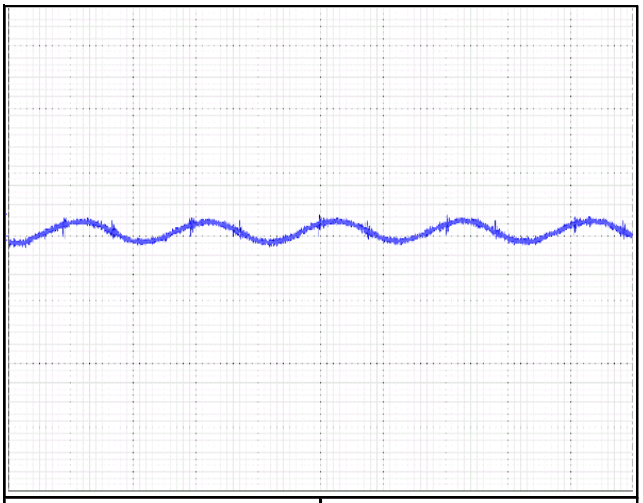
f : 60 Hz



2-13. 出力リップル、ノイズ波形 Output ripple and noise waveform

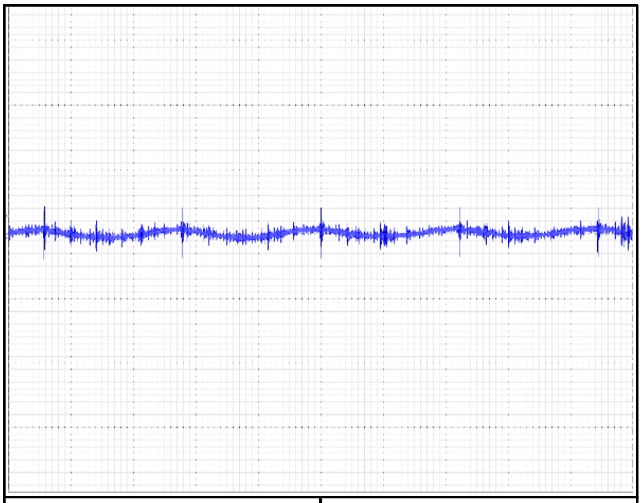
Conditions Vin： 100 VAC
Iout： 100 %
Ta： 25°C

5V



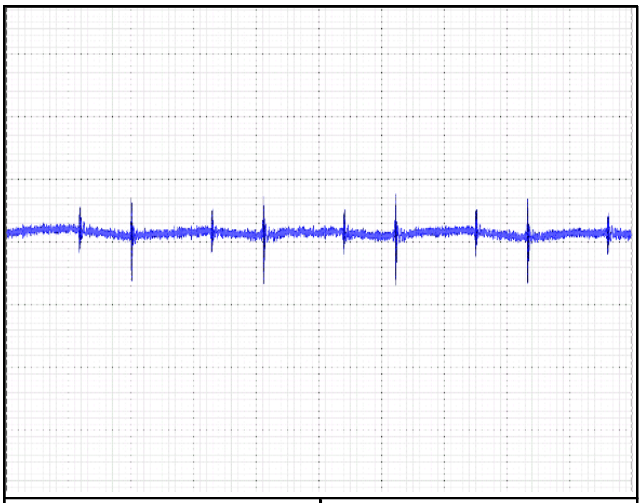
10mV/DIV	5μs/DIV

12V



10mV/DIV	5μs/DIV

24V



5mV/DIV	5μs/DIV

2-14. EMI特性 Electro-Magnetic Interference characteristics

Conditions Vin : 100 VAC
Iout : 100 %
Ta : 25°C
Isolation Class : Class I (L,N,FG)

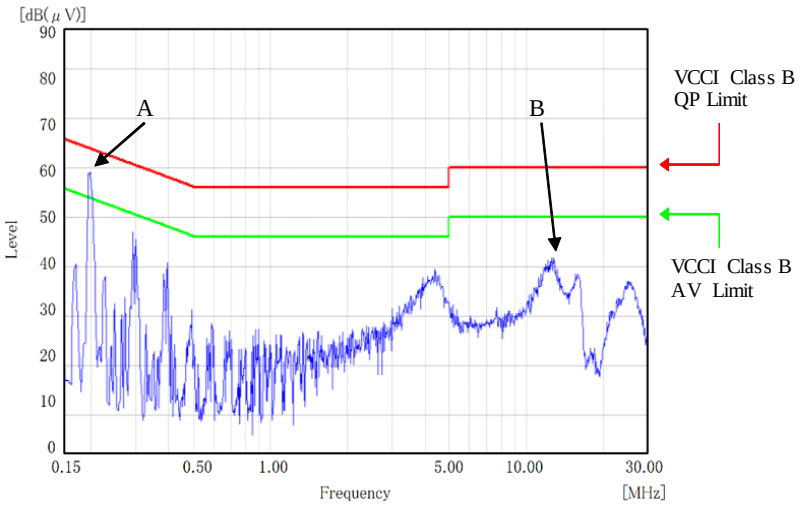
雑音端子電圧
Conducted Emission

5V

Ref. Data	Point A (198KHz) Limit (dB)	Measure (dB)
QP	63.7	57.0
AV	53.7	43.4

Ref. Data	Point B (12MHz) Limit (dB)	Measure (dB)
QP	60.0	36.2
AV	50.0	25.4

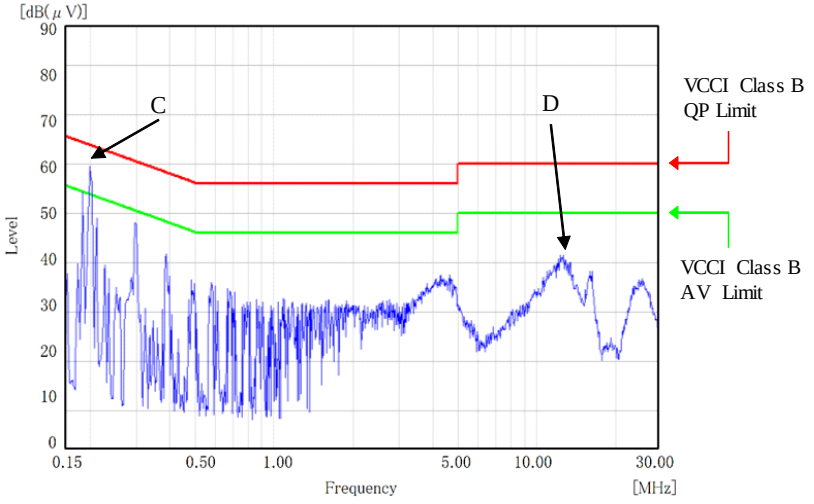
Phase : N



Ref. Data	Point C (198KHz) Limit (dB)	Measure (dB)
QP	63.7	58.2
AV	53.7	45.0

Ref. Data	Point D (12MHz) Limit (dB)	Measure (dB)
QP	60.0	35.6
AV	50.0	24.7

Phase : L



EN55011-B,EN55032-B,FCC-Bの限界値はVCCI class Bの限界値と同じ
Limit of EN55011-B,EN55032-B,FCC-B are same as its VCCI class B.
表示はピーク値
Indication is peak values.

Conditions Vin : 100 VAC
Iout : 100 %
Ta : 25°C
Isolation Class : Class I (L,N,FG)

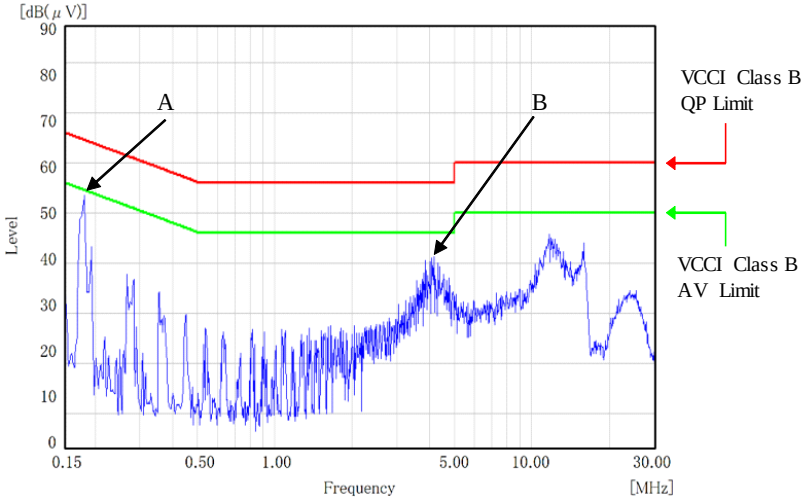
雑音端子電圧
Conducted Emission

12V

Ref. Data	Point A (182KHz) Limit (dB)	Measure (dB)
QP	64.4	53.0
AV	54.4	41.9

Ref. Data	Point B (4.2MHz) Limit (dB)	Measure (dB)
QP	56.0	35.0
AV	46.0	16.5

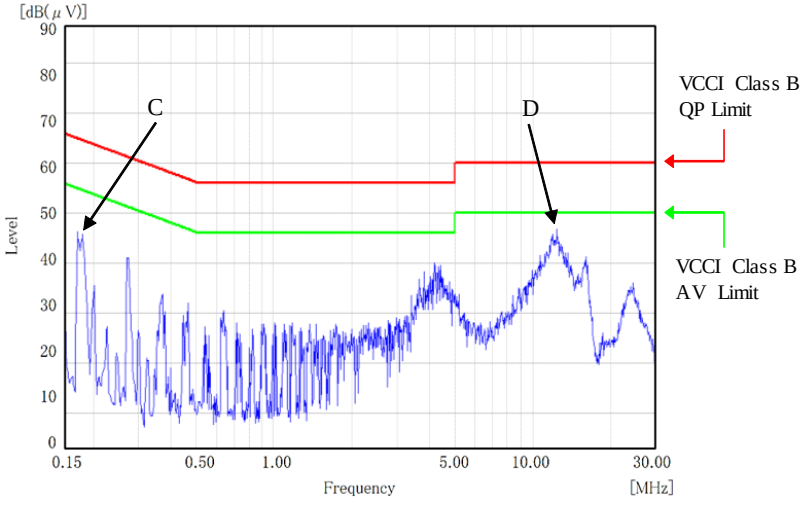
Phase : N



Ref. Data	Point C (182KHz) Limit (dB)	Measure (dB)
QP	64.4	53.6
AV	54.4	42.8

Ref. Data	Point D (12MHz) Limit (dB)	Measure (dB)
QP	60.0	40.3
AV	50.0	28.4

Phase : L



EN55011-B,EN55032-B,FCC-Bの限界値はVCCI class Bの限界値と同じ
Limit of EN55011-B,EN55032-B,FCC-B are same as its VCCI class B.
表示はピーク値
Indication is peak values.

Conditions Vin : 100 VAC
Iout : 100 %
Ta : 25°C
Isolation Class : Class I (L,N,FG)

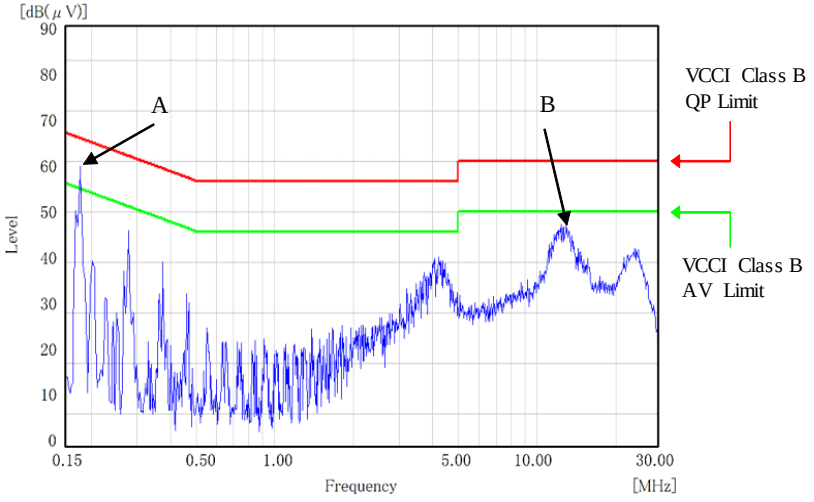
雑音端子電圧
Conducted Emission

24V

Ref. Data	Point A (182KHz) Limit (dB)	Measure (dB)
QP	64.4	57.1
AV	54.4	44.0

Ref. Data	Point B (12MHz) Limit (dB)	Measure (dB)
QP	60.0	41.1
AV	50.0	29.1

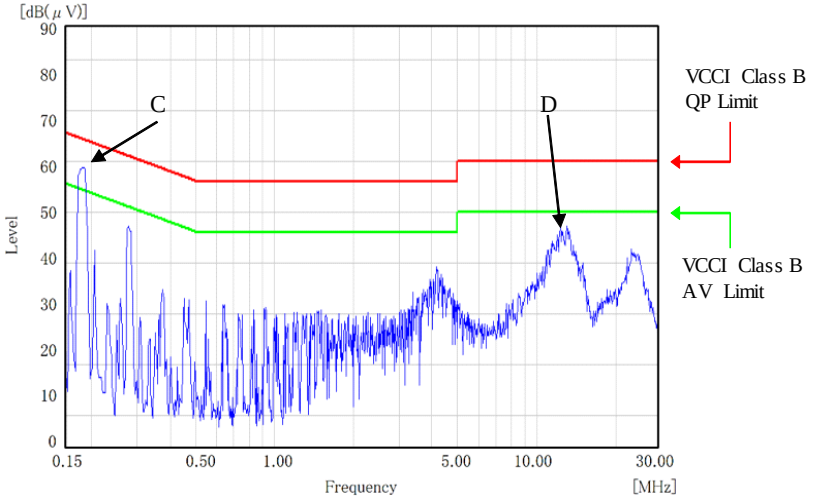
Phase : N



Ref. Data	Point C (186KHz) Limit (dB)	Measure (dB)
QP	64.2	58.4
AV	54.2	46.9

Ref. Data	Point D (13MHz) Limit (dB)	Measure (dB)
QP	60.0	40.5
AV	50.0	29.0

Phase : L



EN55011-B,EN55032-B,FCC-Bの限界値はVCCI class Bの限界値と同じ
Limit of EN55011-B,EN55032-B,FCC-B are same as its VCCI class B.
表示はピーク値
Indication is peak values.

Conditions Vin : 230 VAC
Iout : 100 %
Ta : 25°C
Isolation Class : Class I (L,N,FG)

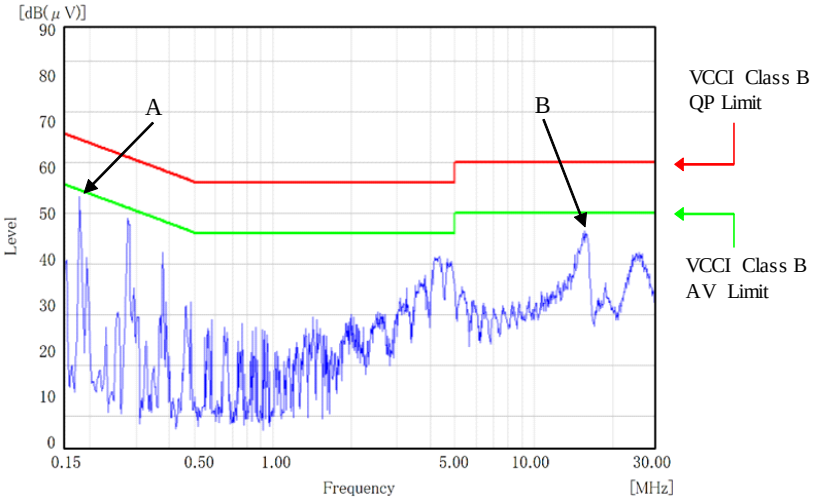
雑音端子電圧
Conducted Emission

5V

Ref. Data	Point A (182KHz) Limit (dB)	Measure (dB)
QP	64.4	50.4
AV	54.4	31.3

Ref. Data	Point B (15MHz) Limit (dB)	Measure (dB)
QP	60.0	41.7
AV	50.0	31.1

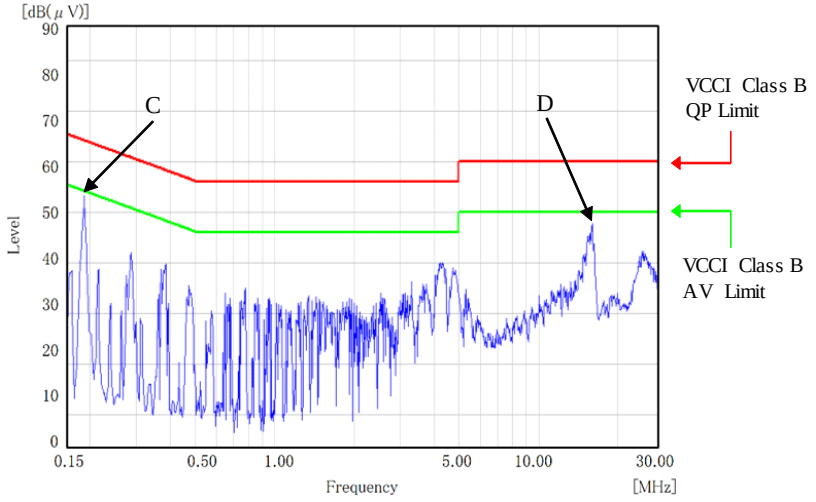
Phase : N



Ref. Data	Point C (190KHz) Limit (dB)	Measure (dB)
QP	64.0	54.6
AV	54.0	40.6

Ref. Data	Point D (15MHz) Limit (dB)	Measure (dB)
QP	60.0	42.7
AV	50.0	32.5

Phase : L



EN55011-B,EN55032-B,FCC-Bの限界値はVCCI class Bの限界値と同じ
Limit of EN55011-B,EN55032-B,FCC-B are same as its VCCI class B.
表示はピーク値
Indication is peak values.

Conditions Vin : 230 VAC
Iout : 100 %
Ta : 25°C
Isolation Class : Class I (L,N,FG)

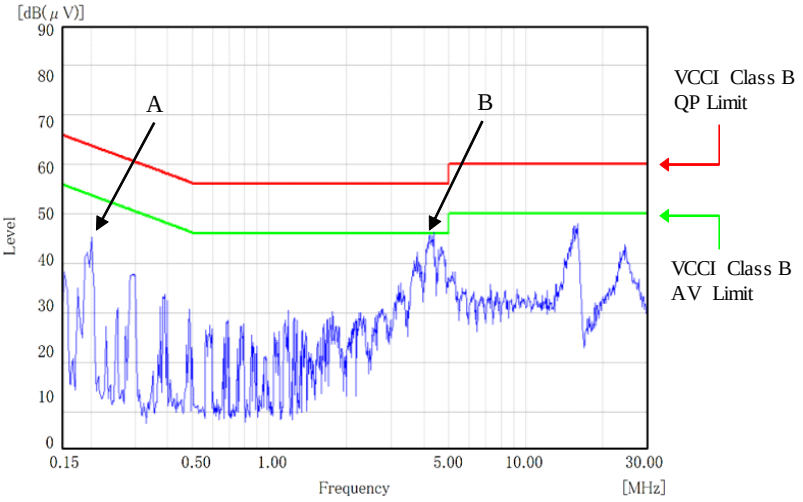
雑音端子電圧
Conducted Emission

12V

Ref. Data	Point A (202KHz) Limit (dB)	Measure (dB)
QP	63.5	44.3
AV	53.5	27.4

Ref. Data	Point B (4.2MHz) Limit (dB)	Measure (dB)
QP	56.0	41.7
AV	46.0	22.4

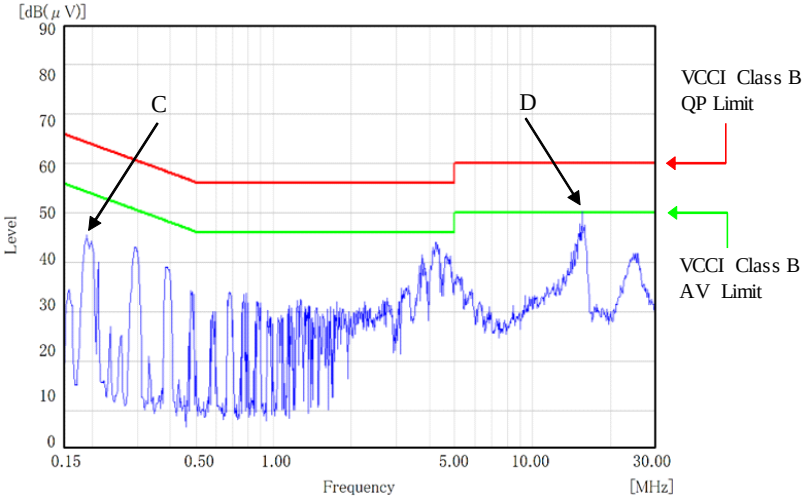
Phase : N



Ref. Data	Point C (190KHz) Limit (dB)	Measure (dB)
QP	64.0	52.7
AV	54.0	39.0

Ref. Data	Point D (15.6MHz) Limit (dB)	Measure (dB)
QP	60.0	41.5
AV	50.0	30.9

Phase : L



EN55011-B,EN55032-B,FCC-Bの限界値はVCCI class Bの限界値と同じ
Limit of EN55011-B,EN55032-B,FCC-B are same as its VCCI class B.
表示はピーク値
Indication is peak values.

Conditions Vin : 230 VAC
Iout : 100 %
Ta : 25°C
Isolation Class : Class I (L,N,FG)

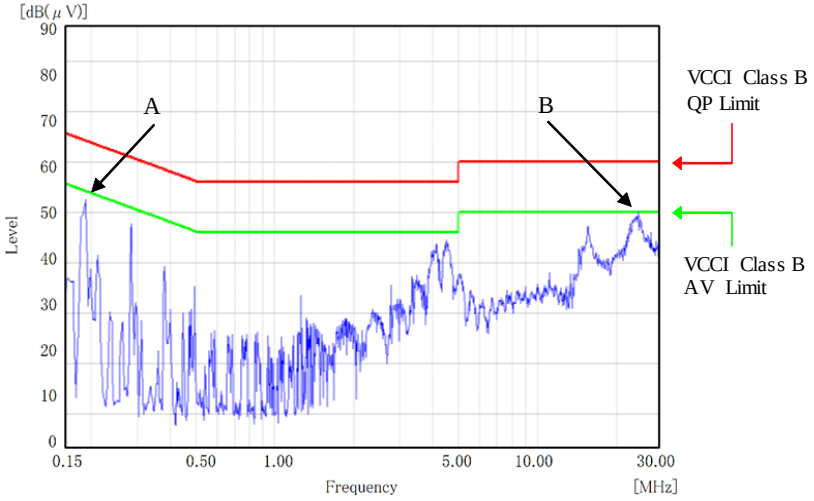
雑音端子電圧
Conducted Emission

24V

Ref. Data	Point A (190KHz) Limit (dB)	Measure (dB)
QP	64.0	53.2
AV	54.0	39.0

Ref. Data	Point B (24MHz) Limit (dB)	Measure (dB)
QP	60.0	43.9
AV	50.0	35.6

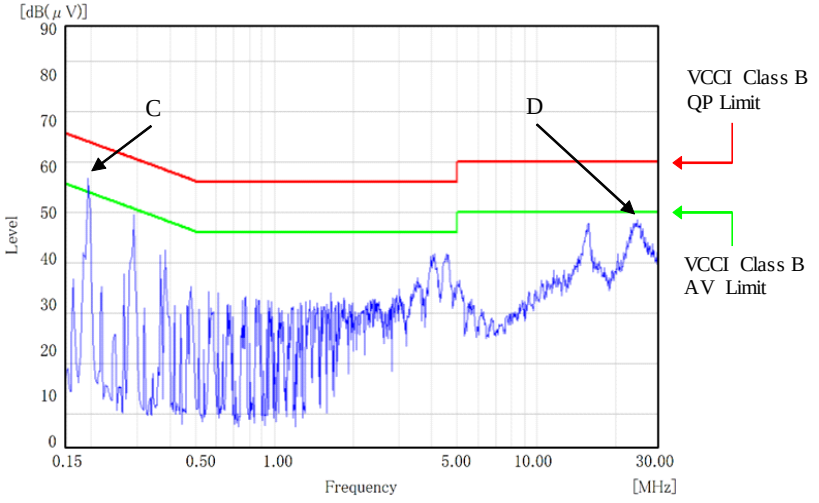
Phase : N



Ref. Data	Point C (194KHz) Limit (dB)	Measure (dB)
QP	63.9	54.9
AV	53.9	41.8

Ref. Data	Point D (24MHz) Limit (dB)	Measure (dB)
QP	60.0	43.1
AV	50.0	34.5

Phase : L



EN55011-B,EN55032-B,FCC-Bの限界値はVCCI class Bの限界値と同じ
Limit of EN55011-B,EN55032-B,FCC-B are same as its VCCI class B.
表示はピーク値
Indication is peak values.

Conditions Vin : 100 VAC
Iout : 100 %
Ta : 25°C
Isolation Class : Class II (L,N)

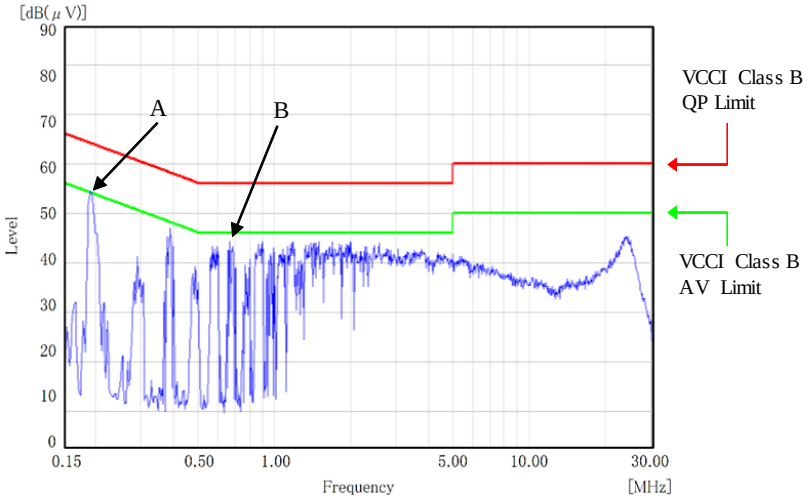
雑音端子電圧
Conducted Emission

5V

Ref. Data	Point A (190KHz) Limit (dB)	Measure (dB)
QP	64.0	52.2
AV	54.0	37.8

Ref. Data	Point B (686KHz) Limit (dB)	Measure (dB)
QP	56.0	41.5
AV	46.0	28.1

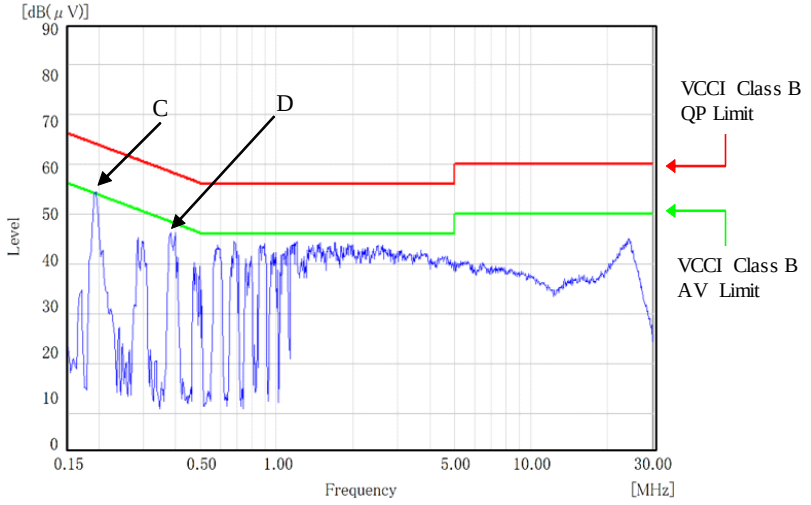
Phase : N



Ref. Data	Point C (194KHz) Limit (dB)	Measure (dB)
QP	63.9	52.3
AV	53.9	39.6

Ref. Data	Point D (398KHz) Limit (dB)	Measure (dB)
QP	57.9	44.4
AV	47.9	34.5

Phase : L



EN55011-B,EN55032-B,FCC-Bの限界値はVCCI class Bの限界値と同じ
Limit of EN55011-B,EN55032-B,FCC-B are same as its VCCI class B.
表示はピーク値
Indication is peak values.

Conditions Vin : 100 VAC
Iout : 100 %
Ta : 25°C
Isolation Class : Class II (L,N)

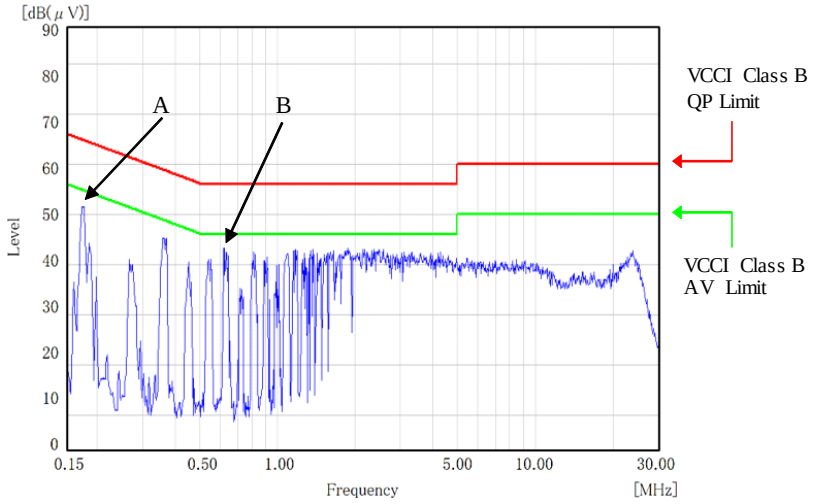
雑音端子電圧
Conducted Emission

12V

Ref. Data	Point A (174KHz) Limit (dB)	Measure (dB)
QP	64.8	49.7
AV	54.8	33.1

Ref. Data	Point B (622KHz) Limit (dB)	Measure (dB)
QP	56.0	41.2
AV	46.0	30.0

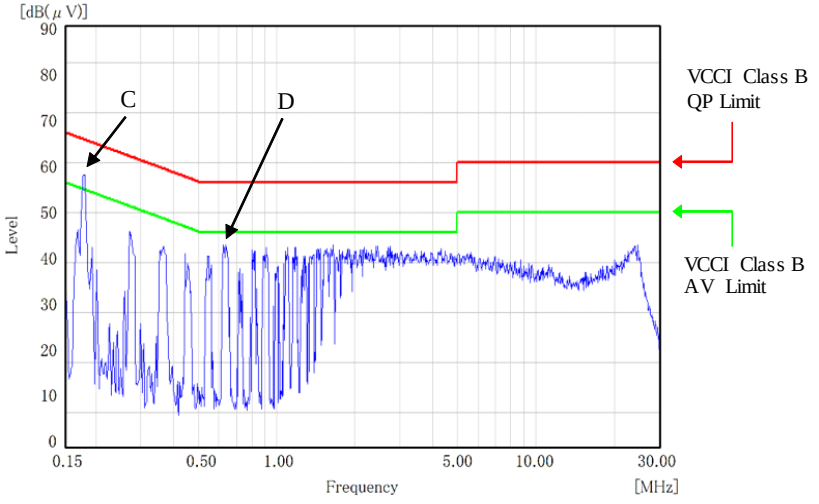
Phase : N



Ref. Data	Point C (186KHz) Limit (dB)	Measure (dB)
QP	64.4	55.6
AV	54.4	44.8

Ref. Data	Point D (622KHz) Limit (dB)	Measure (dB)
QP	56.0	41.4
AV	46.0	27.7

Phase : L



EN55011-B,EN55032-B,FCC-Bの限界値はVCCI class Bの限界値と同じ
Limit of EN55011-B,EN55032-B,FCC-B are same as its VCCI class B.
表示はピーク値
Indication is peak values.

Conditions Vin : 100 VAC
Iout : 100 %
Ta : 25°C
Isolation Class : Class II (L,N)

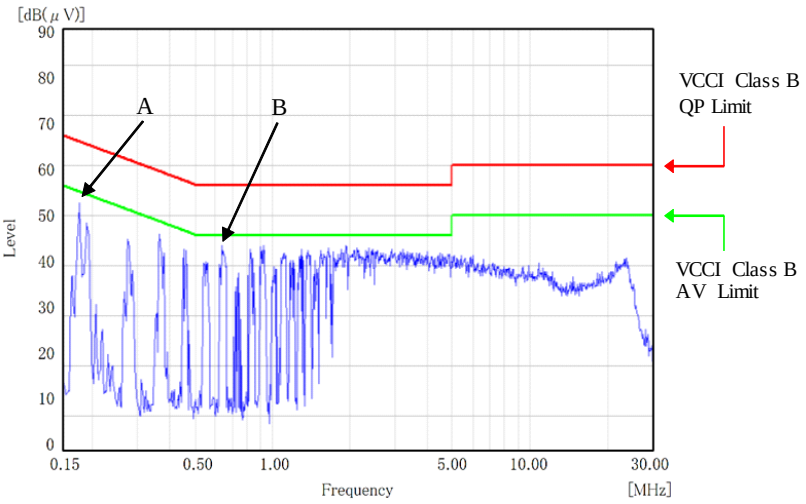
雑音端子電圧
Conducted Emission

24V

Ref. Data	Point A (178KHz) Limit (dB)	Measure (dB)
QP	64.6	52.9
AV	54.6	37.6

Ref. Data	Point B (634KHz) Limit (dB)	Measure (dB)
QP	56.0	41.9
AV	46.0	31.8

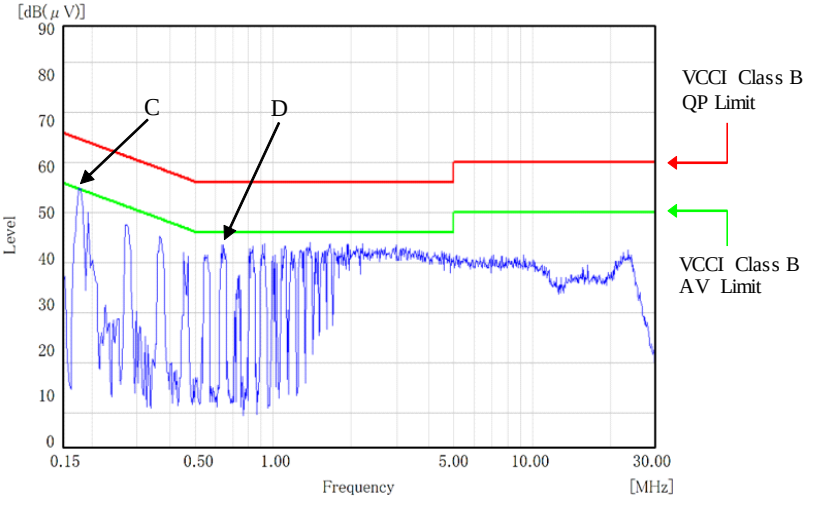
Phase : N



Ref. Data	Point C (178KHz) Limit (dB)	Measure (dB)
QP	64.6	53.6
AV	54.6	37.0

Ref. Data	Point D (646KHz) Limit (dB)	Measure (dB)
QP	56.0	41.6
AV	46.0	32.4

Phase : L



EN55011-B,EN55032-B,FCC-Bの限界値はVCCI class Bの限界値と同じ
Limit of EN55011-B,EN55032-B,FCC-B are same as its VCCI class B.
表示はピーク値
Indication is peak values.

Conditions Vin : 230 VAC
Iout : 100 %
Ta : 25°C
Isolation Class : Class II (L,N)

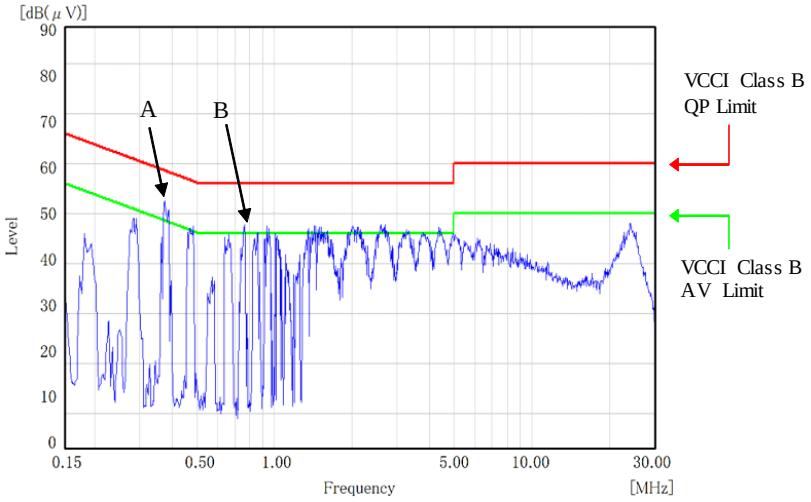
雑音端子電圧
Conducted Emission

5V

Ref. Data	Point A (374KHz) Limit (dB)	Measure (dB)
QP	58.4	49.9
AV	48.4	42.2

Ref. Data	Point B (766KHz) Limit (dB)	Measure (dB)
QP	56.0	45.4
AV	46.0	33.8

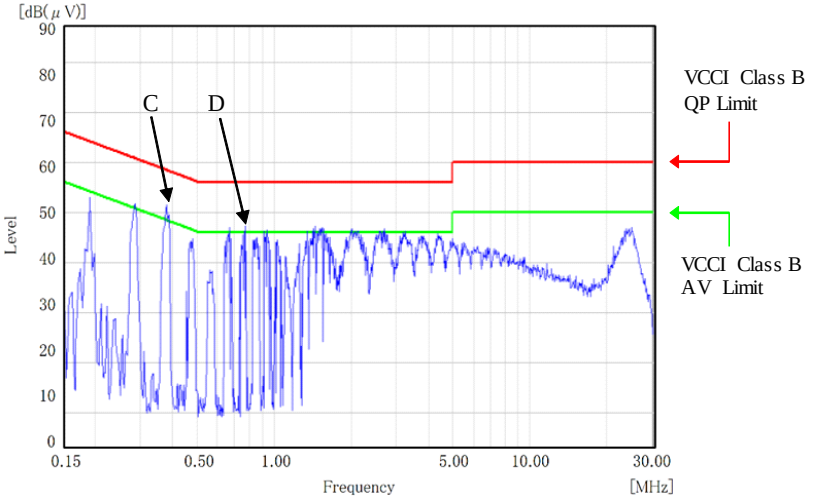
Phase : N



Ref. Data	Point C (378KHz) Limit (dB)	Measure (dB)
QP	58.3	49.0
AV	48.3	41.8

Ref. Data	Point D (770KHz) Limit (dB)	Measure (dB)
QP	56.0	45.2
AV	46.0	32.2

Phase : L



EN55011-B,EN55032-B,FCC-Bの限界値はVCCI class Bの限界値と同じ
Limit of EN55011-B,EN55032-B,FCC-B are same as its VCCI class B.
表示はピーク値
Indication is peak values.

Conditions Vin : 230 VAC
Iout : 100 %
Ta : 25°C
Isolation Class : Class II (L,N)

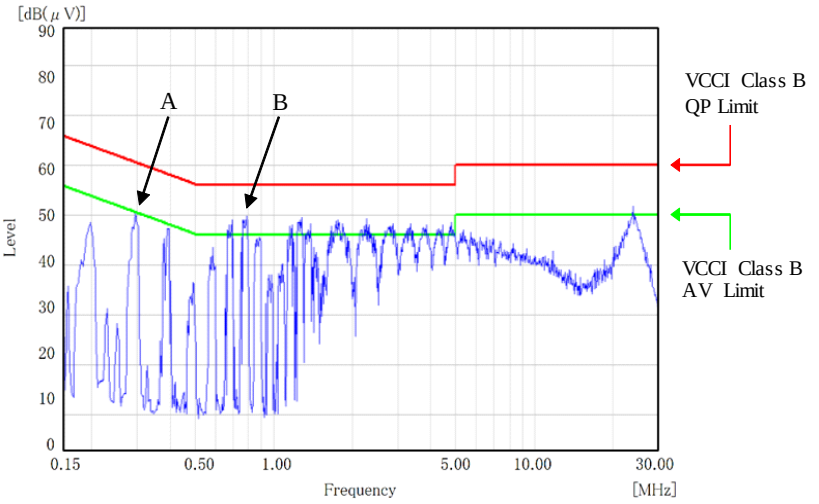
雑音端子電圧
Conducted Emission

12V

Ref. Data	Point A (294KHz) Limit (dB)	Measure (dB)
QP	60.4	51.9
AV	50.4	44.1

Ref. Data	Point B (790KHz) Limit (dB)	Measure (dB)
QP	56.0	47.5
AV	46.0	34.7

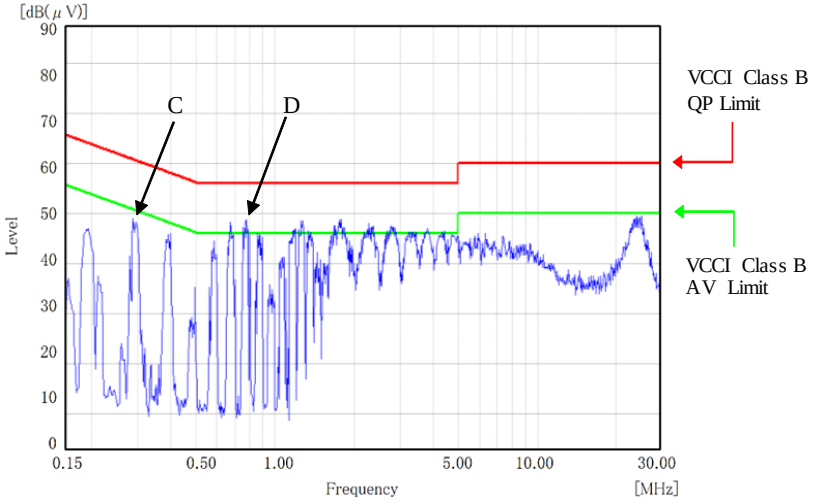
Phase : N



Ref. Data	Point C (286KHz) Limit (dB)	Measure (dB)
QP	60.6	50.6
AV	50.6	41.6

Ref. Data	Point D (778KHz) Limit (dB)	Measure (dB)
QP	56.0	46.4
AV	46.0	34.7

Phase : L



EN55011-B,EN55032-B,FCC-Bの限界値はVCCI class Bの限界値と同じ
Limit of EN55011-B,EN55032-B,FCC-B are same as its VCCI class B.
表示はピーク値
Indication is peak values.

Conditions Vin : 230 VAC
Iout : 100 %
Ta : 25°C
Isolation Class : Class II (L,N)

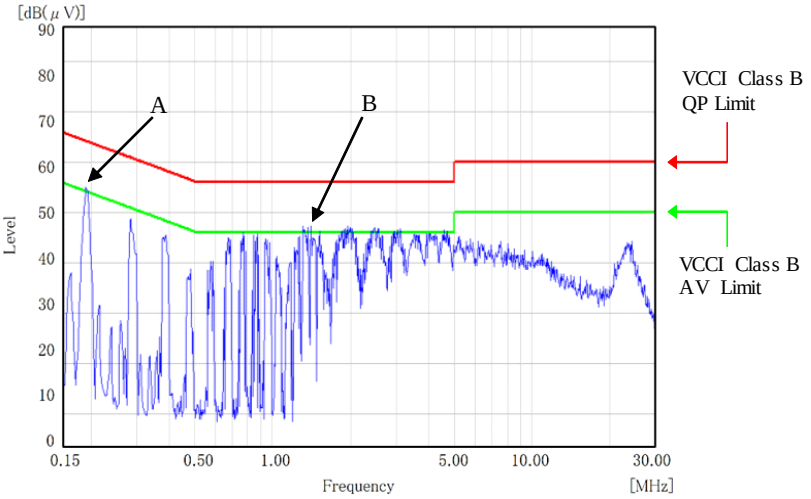
雑音端子電圧
Conducted Emission

24V

Ref. Data	Point A (190KHz) Limit (dB)	Measure (dB)
QP	64.0	54.5
AV	54.0	44.6

Ref. Data	Point B (1.4MHz) Limit (dB)	Measure (dB)
QP	56.0	44.6
AV	46.0	28.7

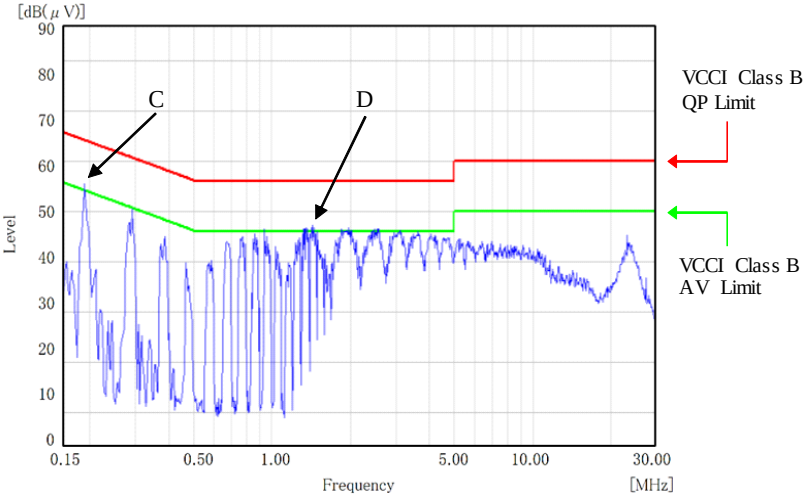
Phase : N



Ref. Data	Point C (190KHz) Limit (dB)	Measure (dB)
QP	64.0	53.7
AV	54.0	42.9

Ref. Data	Point D (1.3MHz) Limit (dB)	Measure (dB)
QP	56.0	43.7
AV	46.0	29.2

Phase : L



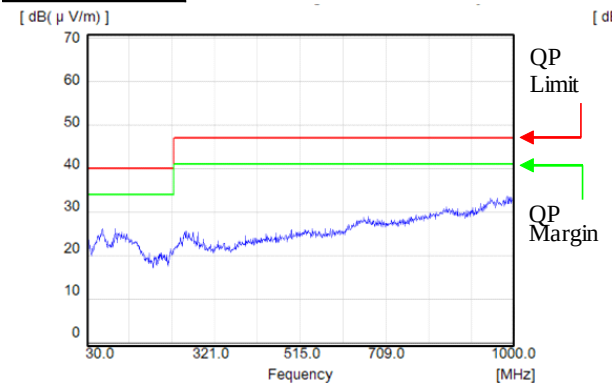
EN55011-B,EN55032-B,FCC-Bの限界値はVCCI class Bの限界値と同じ
Limit of EN55011-B,EN55032-B,FCC-B are same as its VCCI class B.
表示はピーク値
Indication is peak values.

Conditions Vin : 100 VAC
Iout : 100 %
Ta : 25°C
Isolation Class : Class I
(L,N,FG)

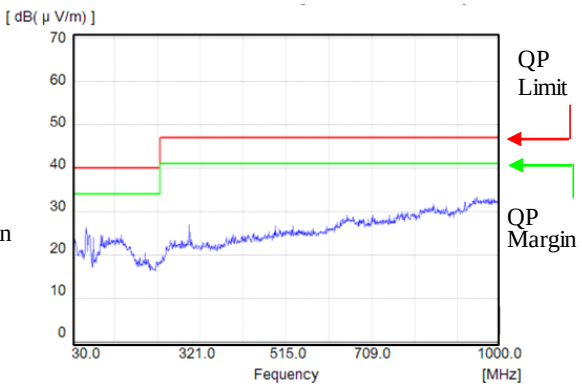
雑音電界強度
Radiated Emission

5V

HORIZONTAL

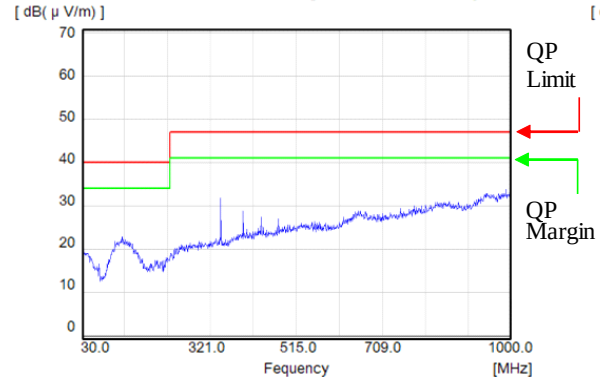


VERTICAL

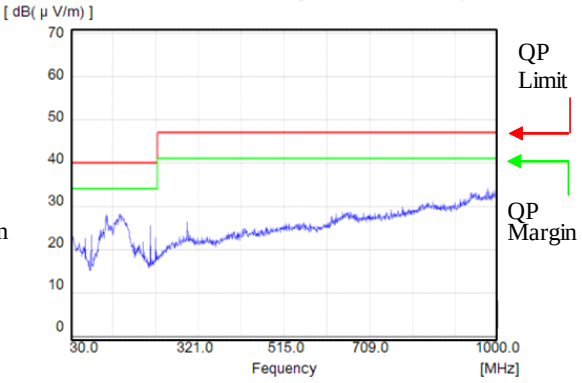


12V

HORIZONTAL

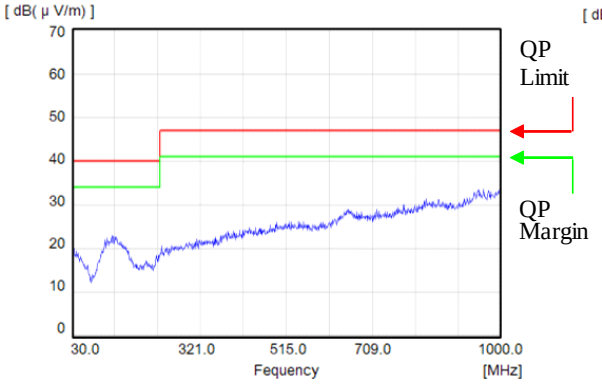


VERTICAL

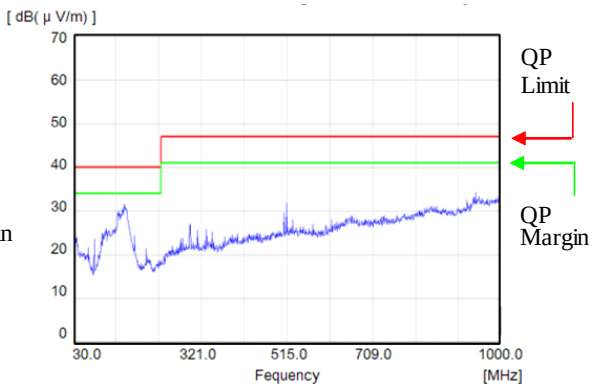


24V

HORIZONTAL



VERTICAL



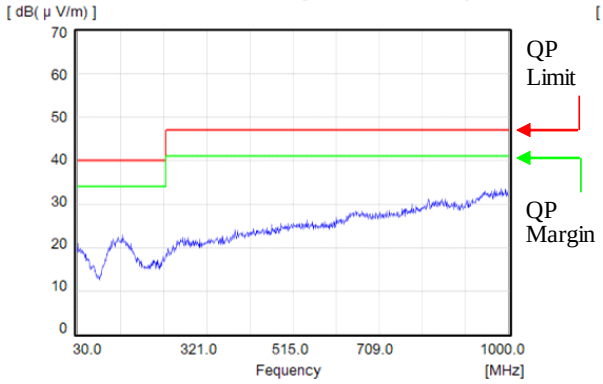
EN55011-B,EN55032-Bの限界値はVCCI class Bの限界値と同じ
Limit of EN55011-B,EN55032-B are same as its VCCI class B.
表示はピーク値
Indication is peak values.

Conditions Vin : 230 VAC
Iout : 100 %
Ta : 25°C
Isolation Class : Class I
(L,N,FG)

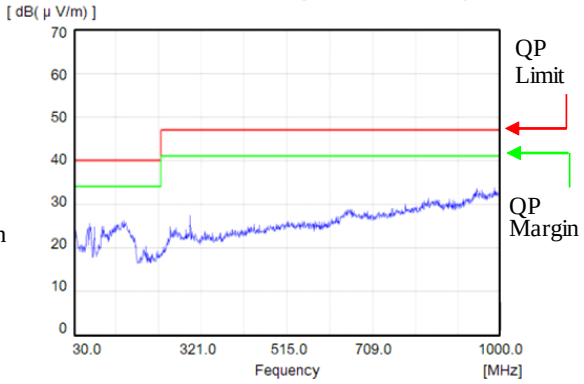
雑音電界強度
Radiated Emission

5V

HORIZONTAL

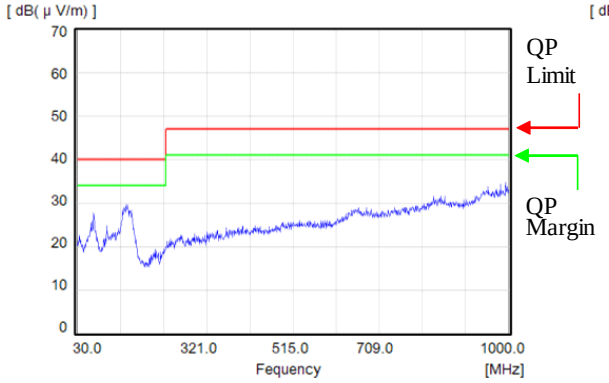


VERTICAL

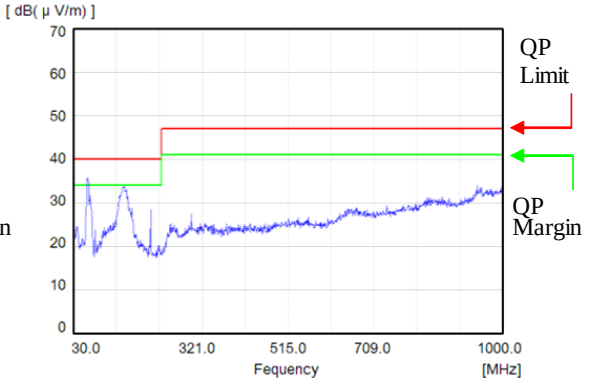


12V

HORIZONTAL

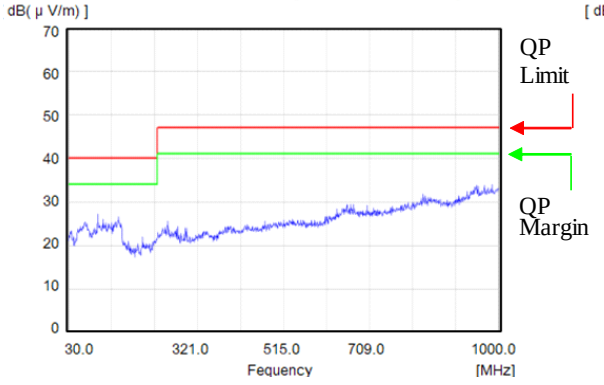


VERTICAL

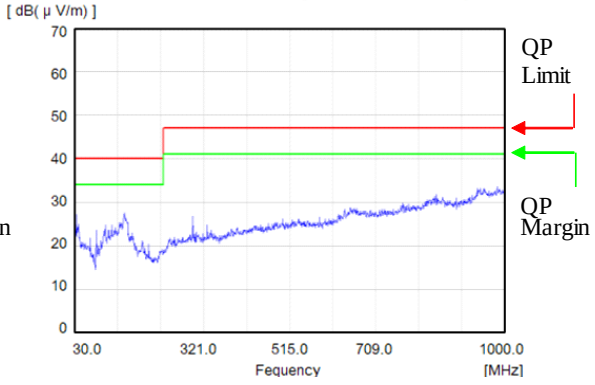


24V

HORIZONTAL



VERTICAL



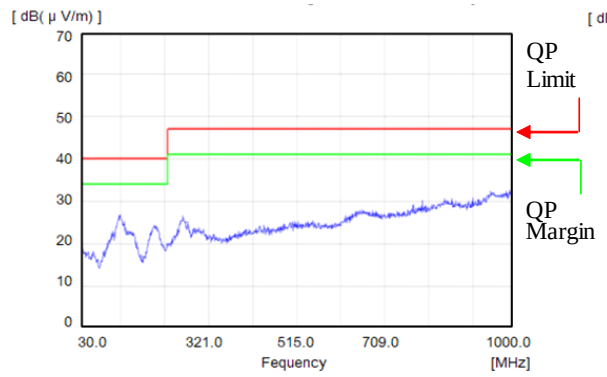
EN55011-B,EN55032-Bの限界値はVCCI class Bの限界値と同じ
Limit of EN55011-B,EN55032-B are same as its VCCI class B.
表示はピーク値
Indication is peak values.

Conditions Vin : 100 VAC
Iout : 100 %
Ta : 25°C
Isolation Class : Class II
(L,N)

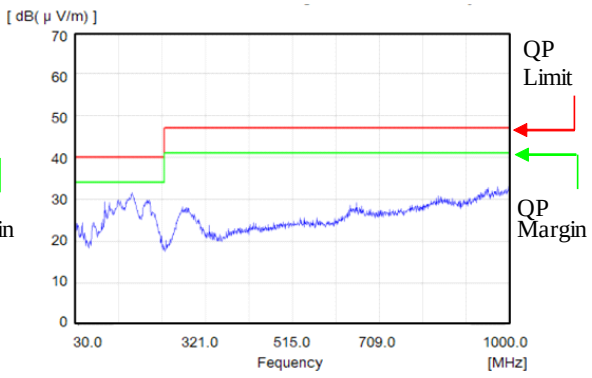
雑音電界強度
Radiated Emission

5V

HORIZONTAL

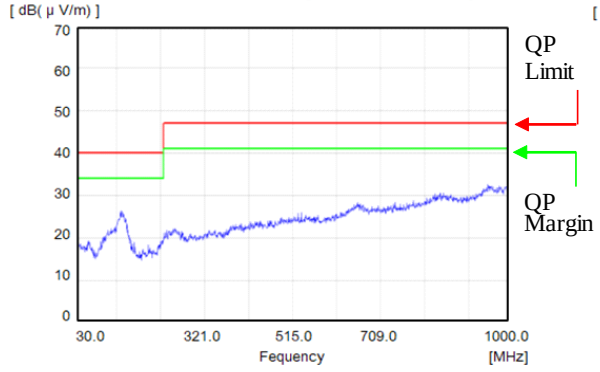


VERTICAL

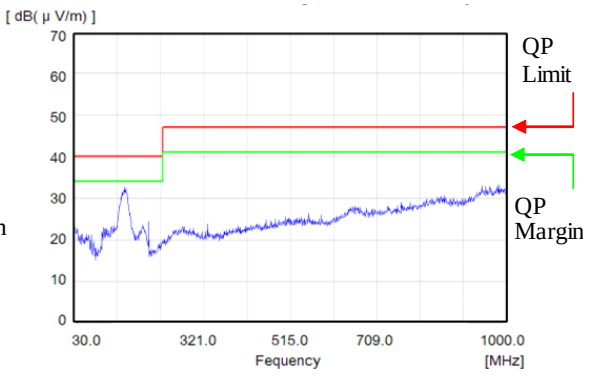


12V

HORIZONTAL

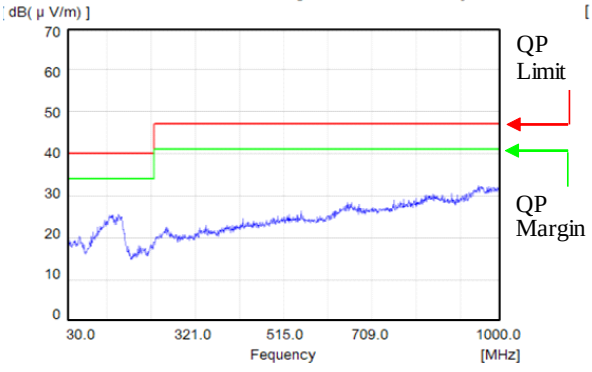


VERTICAL

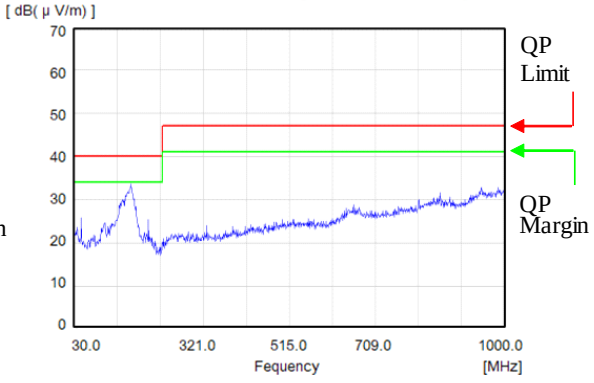


24V

HORIZONTAL



VERTICAL



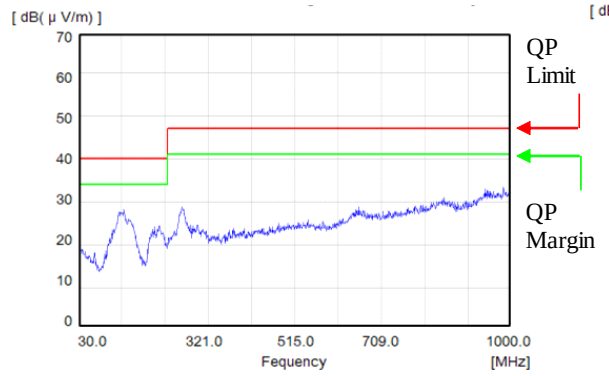
EN55011-B,EN55032-Bの限界値はVCCI class Bの限界値と同じ
Limit of EN55011-B,EN55032-B are same as its VCCI class B.
表示はピーク値
Indication is peak values.

Conditions Vin : 230 VAC
Iout : 100 %
Ta : 25°C
Isolation Class : Class II
(L,N)

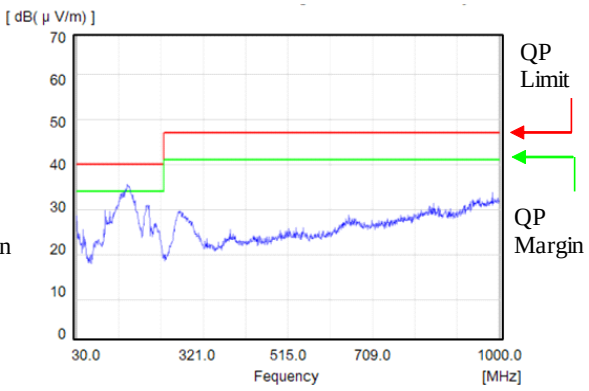
雑音電界強度
Radiated Emission

5V

HORIZONTAL

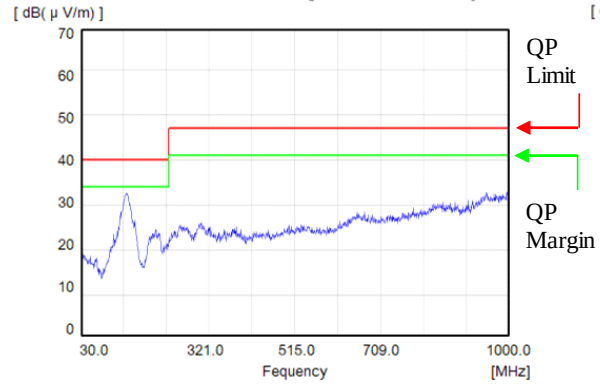


VERTICAL

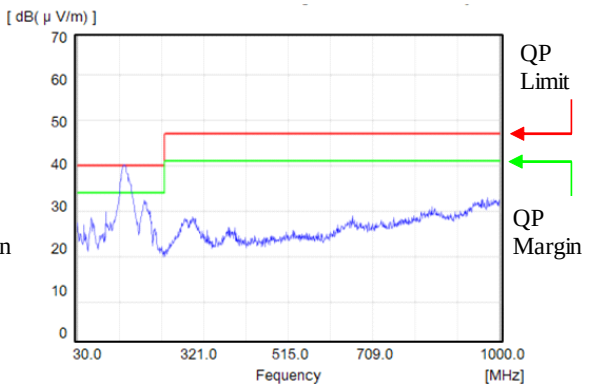


12V

HORIZONTAL

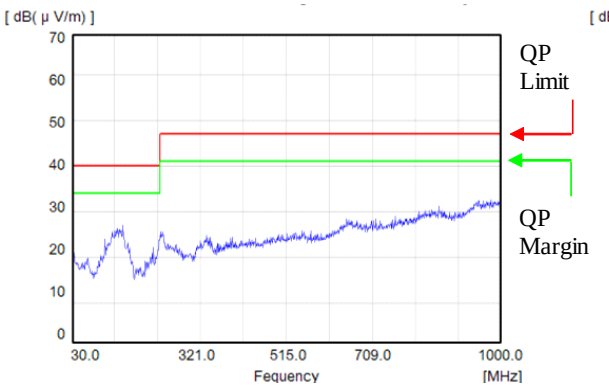


VERTICAL

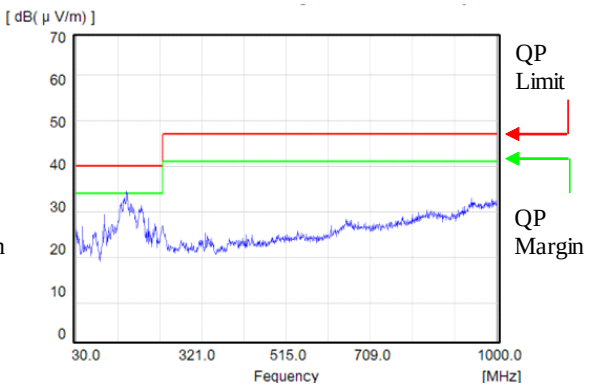


24V

HORIZONTAL



VERTICAL



EN55011-B,EN55032-Bの限界値はVCCI class Bの限界値と同じ
Limit of EN55011-B,EN55032-B are same as its VCCI class B.
表示はピーク値
Indication is peak values.