GENESYS™ 7.5kW

EVALUATION

DATA

DWG: IA922-53-01		
APPD	CHK	DWG
Yaniv Nisinman 03/03/22	Barak Marmor 22/02/2022	Nour Darwesh 02/01/22

TDK-LAMBDA

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TERMINOLOGY USED

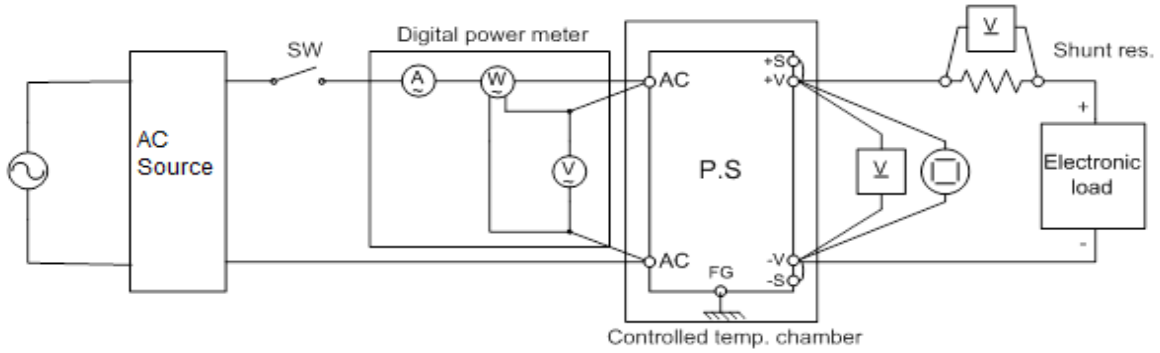
Definition

Vin	Input voltage
Vout	Output voltage
Iin	Input current
Iout	Output current
Ta	Ambient temperature
C.V	Constant voltage mode
C.C	Constant current mode

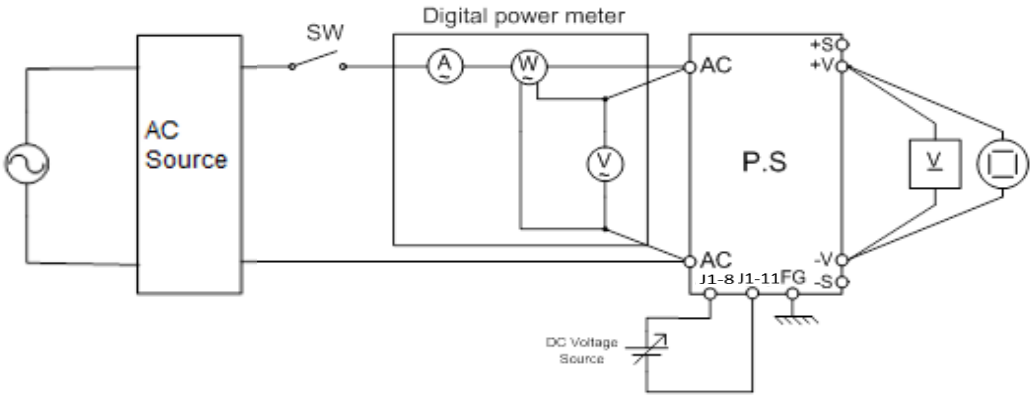
1. EVALUATION METHOD

1.1 Circuit used for determination

(1) Steady state data

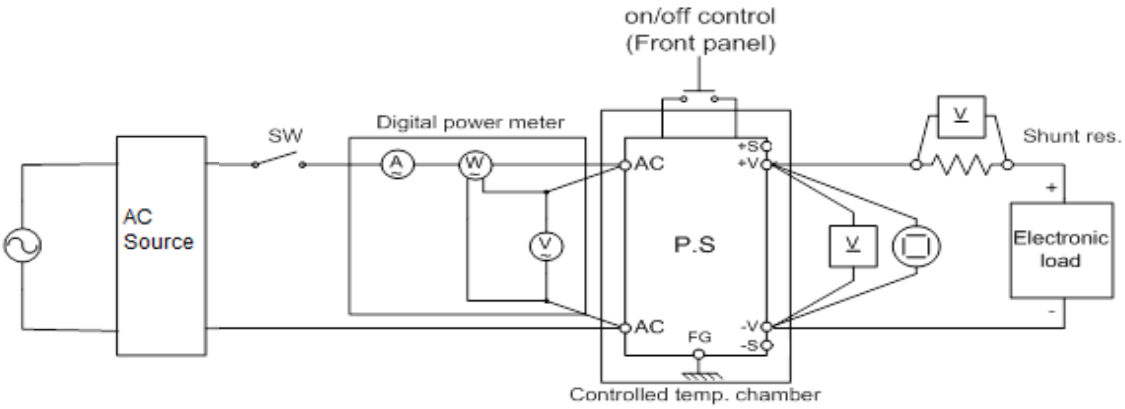


(2) Over voltage protection (OVP) characteristics

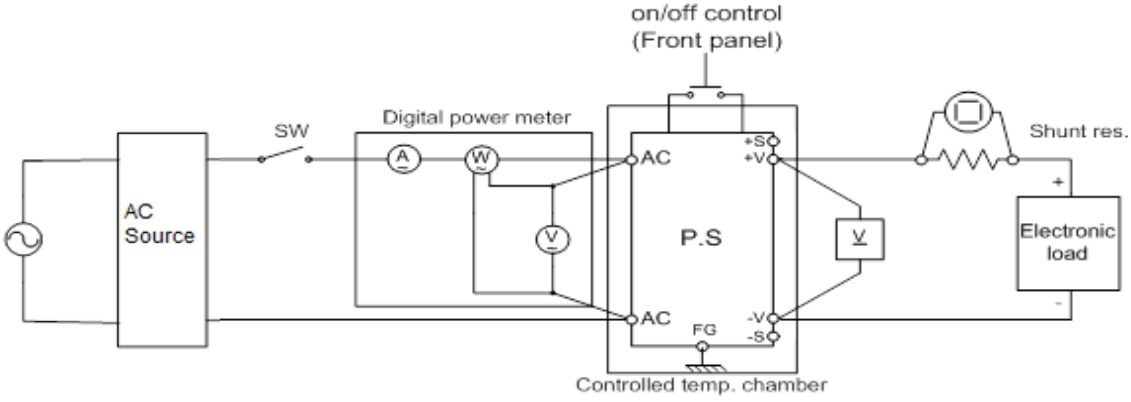


(3) Output rise/fall characteristics

Constant Voltage mode

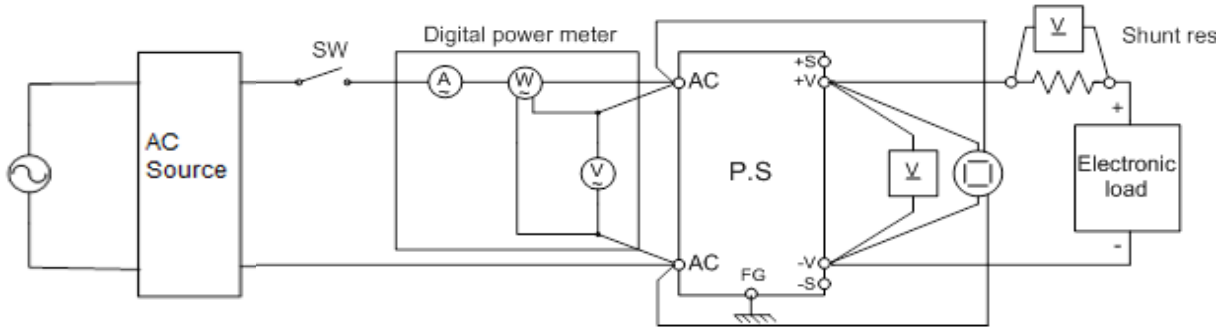


Constant Current mode

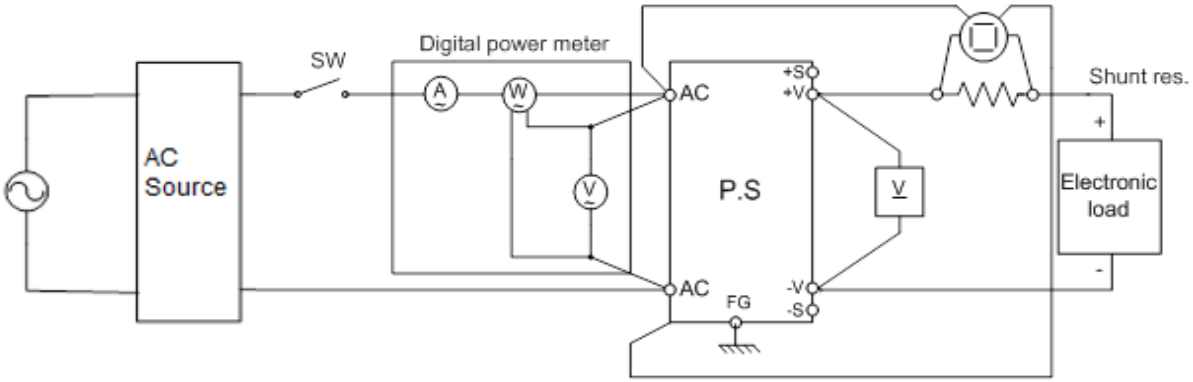


(4) Dynamic line response characteristics

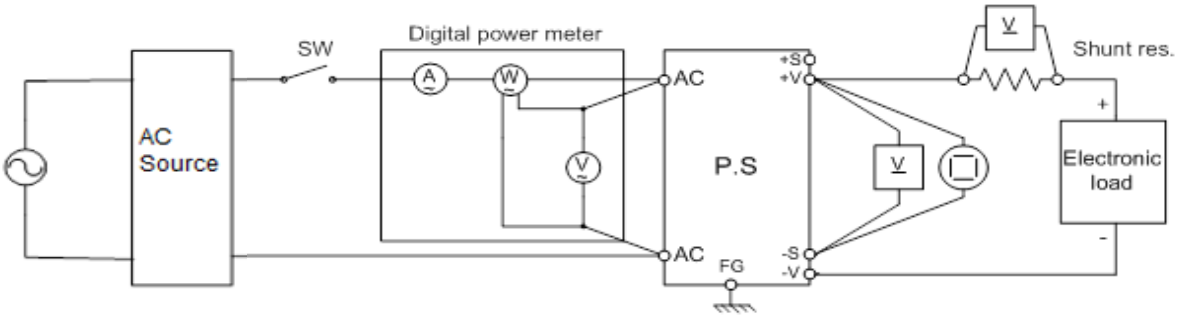
Constant Voltage mode



Constant Current mode

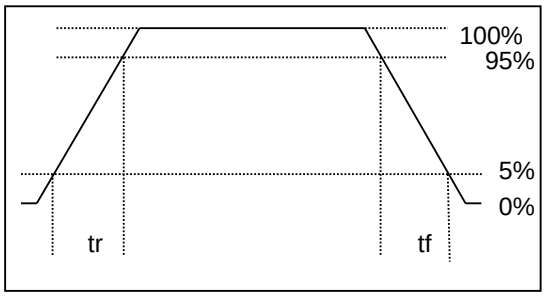


(5) Dynamic load response characteristics



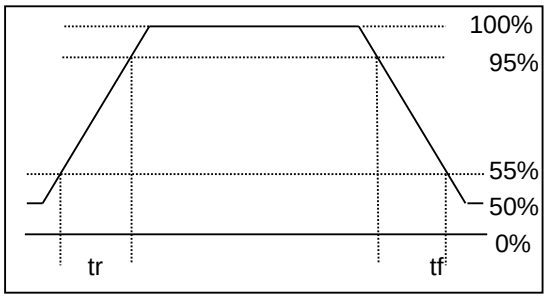
Output current waveform

Iout 0% <---> 100%



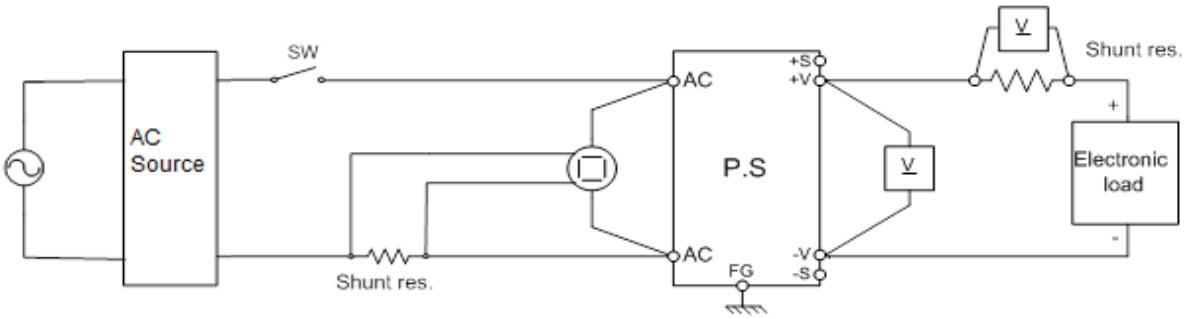
Output current waveform

Iout 50% <---> 100%



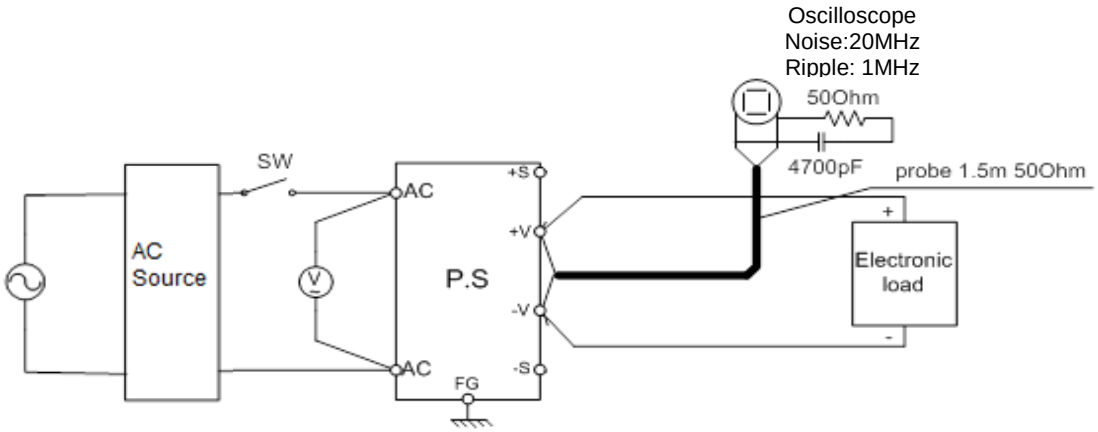
(6) Inrush current characteristics

Constant Voltage mode

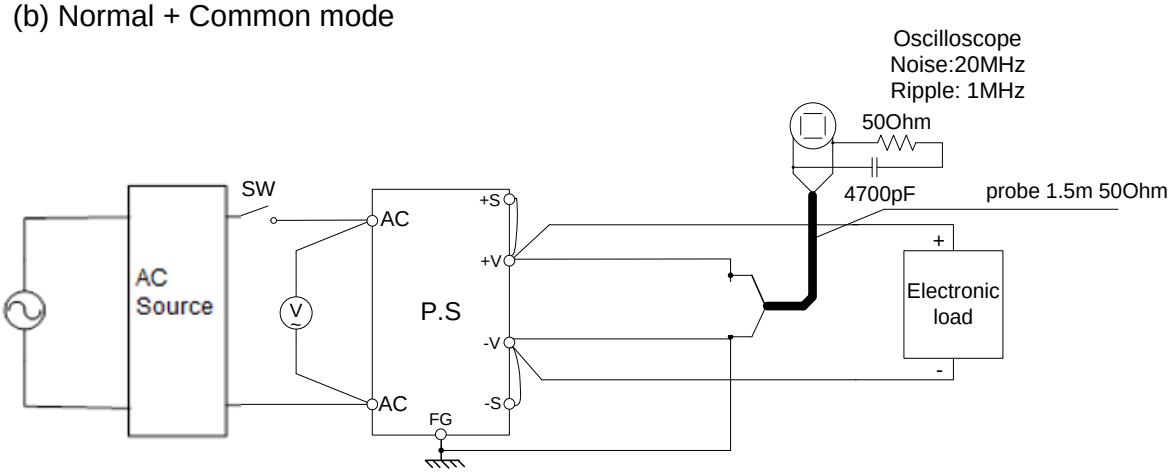


(7) Output ripple & noise waveform (20V to 300V models)

(a) Normal mode (JEITA Standard RC-9131A)

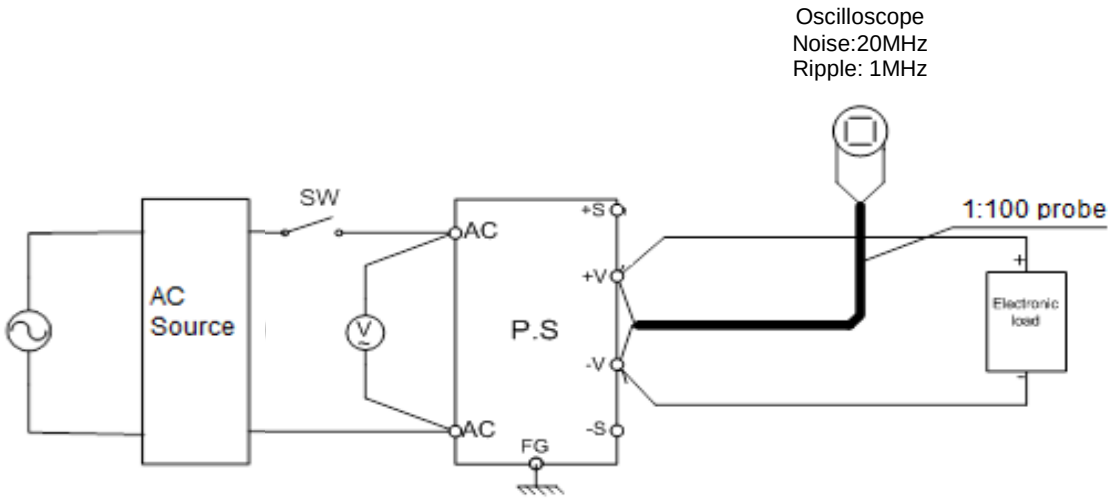


(b) Normal + Common mode

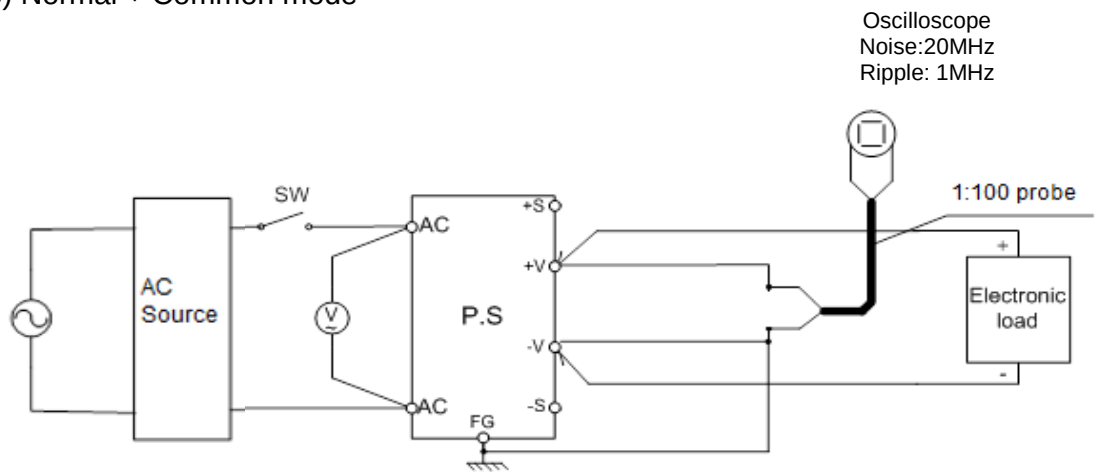


(8) Output ripple & noise waveform (600V to 1500V models)

(a) Normal mode



(b) Normal + Common mode



1.2 List of equipment used

	EQUIPMENT USED	MANUFACTURER	MODEL No.
1	Storage oscilloscope	YOKOGAWA	DLM2034
2	Storage oscilloscope	YOKOGAWA	DLM3034
3	Storage oscilloscope	YOKOGAWA	710120
4	Digital multimeter	AGILENT	34401A
5	Digital multimeter	KEITHLEY	2001
6	Digital multimeter	KEITHLEY	6500
7	Digital voltmeter	VITREK	4700
8	Digital power meter	YOKOGAWA	WT333E
9	AC source	PACIFIC	3150AFX
10	AC source	CHROMA	6590
11	Electronic load	ITECH	IT8018-2250-20
12	Electronic load	CHROMA	63224A
13	Electronic load	CHROMA	63206A
14	Electronic load	CHROMA	63208A
15	Controlled temp. chamber	THERMOTRON	SM-16-3800
16	Controlled temp. chamber	THERMOTRON	SE-600-6-6
17	Differential voltage probe	YOKOGAWA	701927
18	Current probe	YOKOGAWA	701929
19	Probe 1:10V (up to 300V models)	YOKOGAWA	701939
20	Probe 1:100V (up to 300V models)	YOKOGAWA	701945
21	Probe 1:100V (above 600V models)	YOKOGAWA	SS-0170R
22	Shunt	ISABELLA	RUG-Z
23	Transducer	LEM	IT700-SB
24	Transducer	LEM	IT200-S
25	Transducer	LEM	IT60-S
26	External voltage source	TDK	Z+ 36-24
27	Switching metrix (Analog/Res Prog)	National Instruments	ERB-24 / NI USB

2. CHARACTERISTICS

2.1 Steady state data

(1). Regulation - Line & Load, Temperature drift

G20-375

Conditions: Ta: 25°C

1. Regulation - Line & Load, C.V mode 3Φ208

	Vin						
Io	170VAC	200VAC	208VAC	230VAC	265VAC	Line Regulation	
0%	19.9992	19.9993	19.9993	19.9992	19.9993	0.1	0.001%
25%	19.9979	19.9980	19.9979	19.9979	19.9980	0.1	0.000%
50%	19.9967	19.9966	19.9967	19.9966	19.9966	0.1	0.000%
75%	19.9953	19.9953	19.9953	19.9954	19.9953	0.1	0.000%
100%	19.9940	19.9940	19.9940	19.9940	19.9939	0.1	0.000%
Load	5.2	5.3	5.3	5.2	5.4	ΔV(mV)	
Regulation	0.026%	0.027%	0.027%	0.026%	0.027%		

2. Regulation - Line & Load, C.V mode 3Φ480

	Vin									
Io	342VAC	380VAC	400VAC	415VAC	432VAC	460VAC	480VAC	520VAC	Line Regulation	
0%	19.9997	19.9997	19.9997	19.9998	19.9997	19.9997	19.9997	19.9997	0.1	0.000%
25%	19.9982	19.9982	19.9982	19.9982	19.9982	19.9983	19.9983	19.9983	0.1	0.000%
50%	19.9968	19.9968	19.9968	19.9968	19.9968	19.9968	19.9968	19.9968	0.0	0.000%
75%	19.9953	19.9953	19.9953	19.9953	19.9953	19.9953	19.9953	19.9953	0.0	0.000%
100%	19.9938	19.9938	19.9938	19.9938	19.9938	19.9938	19.9938	19.9938	0.0	0.000%
Load	5.9	5.9	5.9	6.0	5.9	5.9	5.9	5.9	ΔV(mV)	
Regulation	0.030%	0.030%	0.030%	0.030%	0.030%	0.030%	0.030%	0.030%		

3. Temperature drift, C.V mode

Conditions: Vin: 3Φ200V
Iout: 100%

Ta	0°C	25°C	50°C	Temp. Coefficient (0˚C~50˚C)			
Vout	19.99610	19.99533	19.99488	1.22	mV	1	ppm/˚C

(1). Regulation - Line & Load, Temperature drift

G100-75

Conditions: Ta: 25°C

1. Regulation - Line & Load, C.V mode 3Φ208

	Vin						
Io	170VAC	200VAC	208VAC	230VAC	265VAC	Line Regulation	
0%	100.0086	100.0085	100.0087	100.0088	100.0088	0.3	0.000%
25%	100.0080	100.0082	100.0083	100.0081	100.0080	0.3	0.000%
50%	100.0071	100.0075	100.0075	100.0075	100.0076	0.5	0.001%
75%	100.0059	100.0060	100.0062	100.0065	100.0066	0.7	0.001%
100%	100.0045	100.0047	100.0049	100.0050	100.0051	0.6	0.001%
Load	4.1	3.8	3.8	3.8	3.7	ΔV(mV)	
Regulation	0.004%	0.004%	0.004%	0.004%	0.004%		

2. Regulation - Line & Load, C.V mode 3Φ480

	Vin									
Io	342VAC	380VAC	400VAC	415VAC	432VAC	460VAC	480VAC	520VAC	Line Regulation	
0%	100.0038	100.0033	100.0035	100.0029	100.0033	100.0026	100.0028	100.0025	1.3	0.001%
25%	100.0006	100.0006	100.0007	100.0008	100.0006	100.0005	100.0005	100.0006	0.3	0.000%
50%	100.0010	100.0011	100.0007	100.0008	100.0008	100.0006	100.0008	100.0009	0.5	0.000%
75%	100.0001	100.0001	100.0001	100.0002	99.9999	100.0002	100.0002	100.0000	0.3	0.000%
100%	99.9983	99.9987	99.9983	99.9983	99.9988	99.9986	99.9984	99.9987	0.5	0.001%
Load	5.5	4.6	5.2	4.6	4.5	4.0	4.4	3.8	ΔV(mV)	
Regulation	0.005%	0.005%	0.005%	0.005%	0.004%	0.004%	0.004%	0.004%		

3. Temperature drift, C.V mode

Conditions: Vin: 3Φ200V
Iout: 100%

Ta	0°C	25°C	50°C	Temp. Coefficient (0˚C~50˚C)			
Vout	99.99542	100.0184	100.0367	41.28	mV	8	ppm/˚C

(1). Regulation - Line & Load, Temperature drift

G150-50

Conditions: Ta: 25°C

1. Regulation - Line & Load, C.V mode 3Φ208

	Vin						
Io	170VAC	200VAC	208VAC	230VAC	265VAC	Line Regulation	
0%	150.0055	150.0009	150.0043	150.0089	150.0015	8.0	0.005%
25%	150.0032	150.0042	150.0007	150.0035	150.0045	3.8	0.003%
50%	150.0063	150.0043	150.0023	150.0044	150.0060	4.0	0.003%
75%	150.0027	150.0014	150.0042	150.0018	150.0036	2.8	0.002%
100%	150.0006	149.9995	150.0006	150.0016	149.9975	4.1	0.003%
Load	5.7	4.8	3.7	7.3	8.5	ΔV(mV)	
Regulation	0.004%	0.003%	0.002%	0.005%	0.006%		

2. Regulation - Line & Load, C.V mode 3Φ480

	Vin									
Io	342VAC	380VAC	400VAC	415VAC	432VAC	460VAC	480VAC	520VAC	Line Regulation	
0%	149.9972	149.9991	149.9997	149.9981	150.0015	149.9973	149.9968	149.9962	5.3	0.004%
25%	149.9953	149.9965	149.9960	149.9976	149.9986	150.0008	149.9993	149.9960	5.5	0.004%
50%	150.0018	149.9941	149.9968	149.9944	150.0010	149.9974	150.0012	150.0002	7.7	0.005%
75%	149.9993	149.9966	149.9986	149.9985	150.0012	149.9972	149.9958	149.9976	5.4	0.004%
100%	149.9972	149.9971	149.9986	149.9972	150.0003	149.9981	149.9943	149.9997	6.0	0.004%
Load	6.5	5.0	3.7	4.1	2.9	3.6	6.9	4.2	ΔV(mV)	
Regulation	0.004%	0.003%	0.002%	0.003%	0.002%	0.002%	0.005%	0.003%		

3. Temperature drift, C.V mode

Conditions: Vin: 3Φ200V
Iout: 100%

Ta	0°C	25°C	50°C	Temp. Coefficient (0˚C~50˚C)			
Vout	149.9742	150.0007	150.0229	48.7	mV	6	ppm/˚C

(1). Regulation - Line & Load, Temperature drift

G600-12.5

Conditions: Ta: 25°C

1. Regulation - Line & Load, C.V mode 3Φ208

	Vin						
Io	170VAC	200VAC	208VAC	230VAC	265VAC	Line Regulation	
0%	600.0362	600.0422	600.0312	600.0326	600.0331	11.0	0.002%
25%	600.0357	600.0393	600.0350	600.0324	600.0346	6.9	0.001%
50%	600.0321	600.0296	600.0337	600.0331	600.0346	5.0	0.001%
75%	600.0295	600.0291	600.0286	600.0310	600.0249	6.1	0.001%
100%	600.0308	600.0252	600.0228	600.0211	600.0341	13.0	0.002%
Load	6.7	17.0	12.2	12.0	9.7	ΔV(mV)	
Regulation	0.001%	0.003%	0.002%	0.002%	0.002%		

2. Regulation - Line & Load, C.V mode 3Φ480

	Vin									
Io	342VAC	380VAC	400VAC	415VAC	432VAC	460VAC	480VAC	520VAC	Line Regulation	
0%	600.0741	600.0786	600.0748	600.0813	600.0681	600.0742	600.0717	600.0663	15.0	0.003%
25%	600.0726	600.0803	600.0698	600.0731	600.0804	600.0740	600.0825	600.0675	15.0	0.002%
50%	600.0818	600.0732	600.0750	600.0798	600.0799	600.0811	600.0760	600.0780	8.6	0.001%
75%	600.0731	600.0717	600.0785	600.0723	600.0707	600.0814	600.0810	600.0800	10.7	0.002%
100%	600.0782	600.0797	600.0780	600.0716	600.0776	600.0721	600.0655	600.0693	14.2	0.002%
Load	9.2	8.6	8.7	9.7	12.3	9.3	17.0	13.7	ΔV(mV)	
Regulation	0.002%	0.001%	0.001%	0.002%	0.002%	0.002%	0.003%	0.002%		

3. Temperature drift, C.V mode

Conditions: Vin: 3Φ200V
Iout: 100%

Ta	0°C	25°C	50°C	Temp. Coefficient (0˚C~50˚C)			
Vout	600.0393	600.0665	600.0670	27.7	mV	1	ppm/˚C

(1). Regulation - Line & Load, Temperature drift

G1500-5

Conditions: Ta: 25°C

1. Regulation - Line & Load, C.V mode 3Φ208

	Vin						
Io	170VAC	200VAC	208VAC	230VAC	265VAC	Line Regulation	
0%	1499.87	1499.87	1499.87	1499.87	1499.87	0	0.000%
25%	1499.86	1499.86	1499.86	1499.87	1499.86	10	0.001%
50%	1499.85	1499.86	1499.86	1499.86	1499.86	10	0.001%
75%	1499.85	1499.85	1499.85	1499.85	1499.86	10	0.001%
100%	1499.83	1499.84	1499.84	1499.84	1499.84	10	0.001%
Load	40	30	30	30	30	ΔV(mV)	
Regulation	0.003%	0.002%	0.002%	0.002%	0.002%		

2. Regulation - Line & Load, C.V mode 3Φ480

	Vin									
Io	342VAC	380VAC	400VAC	415VAC	432VAC	460VAC	480VAC	520VAC	Line Regulation	
0%	1500.24	1500.24	1500.24	1500.24	1500.24	1500.24	1500.23	1500.23	10	0.001%
25%	1500.24	1500.24	1500.24	1500.24	1500.24	1500.24	1500.23	1500.24	10	0.001%
50%	1500.24	1500.24	1500.24	1500.24	1500.24	1500.24	1500.24	1500.24	0	0.000%
75%	1500.23	1500.23	1500.23	1500.23	1500.23	1500.24	1500.24	1500.24	10	0.001%
100%	1500.20	1500.21	1500.21	1500.22	1500.22	1500.22	1500.22	1500.22	20	0.001%
Load	40	30	30	20	20	20	20	20	ΔV(mV)	
Regulation	0.003%	0.002%	0.002%	0.001%	0.001%	0.001%	0.001%	0.001%		

3. Temperature drift, C.V mode

Conditions: Vin: 3Φ200V
Iout: 100%

Ta	0°C	25°C	50°C	Temp. Coefficient (0˚C~50˚C)			
Vout	1500.13	1500.44	1500.81	680	mV	9	ppm/˚C

(1). Regulation - Line & Load, Temperature drift

G20-375

Conditions: Ta: 25°C

1. Regulation - Line & Load, C.C mode 3Φ208 (*)

	Vin						
Vo	170VAC	200VAC	208VAC	230VAC	265VAC	Line Regulation	
0%	374.9938	375.0002	375.0060	375.0096	375.0128	19.0	0.005%
25%	374.9616	374.9773	374.9895	374.9982	375.0025	40.9	0.011%
50%	374.9717	374.9864	374.9982	375.0053	375.0098	38.1	0.010%
75%	375.0320	375.0345	375.0381	375.0385	375.0385	6.5	0.002%
100%	375.0363	375.0406	375.0431	375.0436	375.0448	8.5	0.002%
Load	74.7	63.3	53.6	45.4	42.3	ΔI(mA)	
Regulation	0.020%	0.017%	0.014%	0.012%	0.011%		

2. Regulation - Line & Load, C.C mode 3Φ480 (*)

	Vin									
Io	342VAC	380VAC	400VAC	415VAC	432VAC	460VAC	480VAC	520VAC	Line Regulation	
0%	374.9711	374.9757	374.9803	374.9838	374.9875	374.9907	374.9935	374.9951	24.0	0.006%
25%	374.9255	374.9405	374.9513	374.9600	374.9663	374.9709	374.9757	374.9800	54.5	0.015%
50%	374.9282	374.9450	374.9545	374.9629	374.9686	374.9727	374.9765	374.9818	53.6	0.014%
75%	374.9936	374.9969	374.9977	374.9989	375.0000	375.0012	375.0031	375.0019	9.5	0.003%
100%	374.9982	375.0050	375.0066	375.0066	375.0081	375.0083	375.0099	375.0100	11.8	0.003%
Load	72.7	64.5	55.3	46.6	41.8	37.4	34.2	30.0	ΔI(mA)	
Regulation	0.019%	0.017%	0.015%	0.012%	0.011%	0.010%	0.009%	0.008%		

3. Temperature drift, C.C mode

Conditions: Vin: 3Φ200V
Iout: 100%

Ta	0°C	25°C	50°C	Temp. Coefficient (0˚C~50˚C)			
Io[A]	375.0385	375.0106	375.0488	38.2	mA	2	ppm/˚C

Notes:
(*) Not including load regulation thermal drift effect.

(1). Regulation - Line & Load, Temperature drift

G100-75

Conditions: Ta: 25°C

1. Regulation - Line & Load, C.C mode 3Φ208 (*)

	Vin						
Vo	170VAC	200VAC	208VAC	230VAC	265VAC	Line Regulation	
0%	74.9806	74.9796	74.9801	74.9805	74.9807	1.1	0.001%
25%	74.9798	74.9803	74.9799	74.9805	74.9798	0.7	0.001%
50%	74.9798	74.9806	74.9810	74.9806	74.9796	1.4	0.002%
75%	74.9802	74.9802	74.9800	74.9799	74.9800	0.3	0.000%
100%	74.9807	74.9808	74.9805	74.9805	74.9804	0.4	0.001%
Load	0.9	1.2	1.1	0.7	1.1	ΔI(mA)	
Regulation	0.001%	0.002%	0.001%	0.001%	0.001%		

2. Regulation - Line & Load, C.C mode 3Φ480 (*)

	Vin									
Io	342VAC	380VAC	400VAC	415VAC	432VAC	460VAC	480VAC	520VAC	Line Regulation	
0%	74.9770	74.9773	74.9774	74.9781	74.9780	74.9776	74.9763	74.9771	1.8	0.002%
25%	74.9773	74.9777	74.9779	74.9778	74.9770	74.9773	74.9781	74.9776	1.1	0.001%
50%	74.9786	74.9776	74.9775	74.9772	74.9772	74.9771	74.9773	74.9778	1.5	0.002%
75%	74.9773	74.9776	74.9768	74.9776	74.9772	74.9766	74.9774	74.9769	1.0	0.001%
100%	74.9772	74.9775	74.9770	74.9771	74.9772	74.9764	74.9769	74.9767	1.1	0.001%
Load	1.6	0.4	1.1	1.0	1.0	1.2	1.8	1.1	ΔI(mA)	
Regulation	0.002%	0.001%	0.001%	0.001%	0.001%	0.002%	0.002%	0.001%		

3. Temperature drift, C.C mode

Conditions: Vin: 3Φ200V
Iout: 100%

Ta	0°C	25°C	50°C	Temp. Coefficient (0˚C~50˚C)			
Io[A]	75.0033	74.9848	74.9945	18.5	mA	5	ppm/˚C

Notes:
(*) Not including load regulation thermal drift effect.

(1). Regulation - Line & Load, Temperature drift

G150-50

Conditions: Ta: 25°C

1. Regulation - Line & Load, C.C mode 3Φ208 (*)

	Vin						
Vo	170VAC	200VAC	208VAC	230VAC	265VAC	Line Regulation	
0%	50.0551	50.0553	50.0551	50.0549	50.0552	0.4	0.001%
25%	50.0540	50.0539	50.0538	50.0541	50.0541	0.3	0.001%
50%	50.0500	50.0502	50.0505	50.0510	50.0511	1.1	0.002%
75%	50.0460	50.0485	50.0489	50.0482	50.0489	2.9	0.006%
100%	50.0450	50.0459	50.0452	50.0453	50.0459	0.9	0.002%
Load	10.1	9.4	9.9	9.6	9.3	ΔI(mA)	
Regulation	0.020%	0.019%	0.020%	0.019%	0.019%		

2. Regulation - Line & Load, C.C mode 3Φ480 (*)

	Vin									
Io	342VAC	380VAC	400VAC	415VAC	432VAC	460VAC	480VAC	520VAC	Line Regulation	
0%	50.0389	50.0389	50.0388	50.0387	50.0386	50.0385	50.0386	50.0383	0.6	0.001%
25%	50.0370	50.0374	50.0374	50.0377	50.0376	50.0378	50.0378	50.0380	1.0	0.002%
50%	50.0324	50.0329	50.0331	50.0333	50.0334	50.0336	50.0336	50.0338	1.4	0.003%
75%	50.0254	50.0258	50.0261	50.0262	50.0266	50.0266	50.0267	50.0267	1.3	0.003%
100%	50.0221	50.0223	50.0225	50.0229	50.0228	50.0229	50.0233	50.0232	1.2	0.002%
Load	16.8	16.6	16.3	15.8	15.8	15.6	15.3	15.1	ΔI(mA)	
Regulation	0.034%	0.033%	0.033%	0.032%	0.032%	0.031%	0.031%	0.030%		

3. Temperature drift, C.C mode

Conditions: Vin: 3Φ200V
Iout: 100%

Ta	0°C	25°C	50°C	Temp. Coefficient (0˚C~50˚C)			
Io[A]	49.9673	50.0009	50.0804	113.1	mA	45	ppm/˚C

Notes:
(*) Not including load regulation thermal drift effect.

(1). Regulation - Line & Load, Temperature drift

G600-12.5

Conditions: Ta: 25°C

1. Regulation - Line & Load, C.C mode 3Φ208 (*)

	Vin						
Vo	170VAC	200VAC	208VAC	230VAC	265VAC	Line Regulation	
0%	12.5157	12.5156	12.5156	12.5155	12.5154	0.3	0.002%
25%	12.5154	12.5153	12.5152	12.5152	12.5152	0.2	0.002%
50%	12.5139	12.5137	12.5136	12.5135	12.5134	0.5	0.004%
75%	12.5142	12.5140	12.5138	12.5136	12.5134	0.8	0.006%
100%	12.5167	12.5161	12.5157	12.5155	12.5147	2.0	0.016%
Load	2.8	2.4	2.1	2.0	2.0	ΔI(mA)	
Regulation	0.022%	0.019%	0.017%	0.016%	0.016%		

2. Regulation - Line & Load, C.C mode 3Φ480 (*)

	Vin									
Io	342VAC	380VAC	400VAC	415VAC	432VAC	460VAC	480VAC	520VAC	Line Regulation	
0%	12.5153	12.5153	12.5152	12.5152	12.5153	12.5152	12.5152	12.5152	0.1	0.001%
25%	12.5149	12.5149	12.5149	12.5148	12.5148	12.5148	12.5148	12.5148	0.1	0.001%
50%	12.5132	12.5131	12.5131	12.5130	12.5130	12.5130	12.5130	12.5128	0.4	0.003%
75%	12.5134	12.5133	12.5132	12.5131	12.5130	12.5129	12.5128	12.5126	0.8	0.006%
100%	12.5148	12.5147	12.5146	12.5144	12.5143	12.5141	12.5141	12.5136	1.2	0.010%
Load	2.1	2.2	2.1	2.2	2.3	2.3	2.4	2.6	ΔI(mA)	
Regulation	0.017%	0.018%	0.017%	0.018%	0.018%	0.018%	0.019%	0.021%		

3. Temperature drift, C.C mode

Conditions: Vin: 3Φ200V
Iout: 100%

Ta	0°C	25°C	50°C	Temp. Coefficient (0˚C~50˚C)			
Io[A]	12.5089	12.5082	12.5078	1.2	mA	2	ppm/˚C

Notes:
(*) Not including load regulation thermal drift effect.

(1). Regulation - Line & Load, Temperature drift

G1500-5

Conditions: Ta: 25°C

1. Regulation - Line & Load, C.C mode 3Φ208 (*)

	Vin						
Vo	170VAC	200VAC	208VAC	230VAC	265VAC	Line Regulation	
0%	5.00434	5.00485	5.00441	5.00430	5.00405	0.80	0.016%
25%	5.00467	5.00437	5.00408	5.00461	5.00400	0.67	0.013%
50%	5.00410	5.00410	5.00424	5.00488	5.00407	0.81	0.016%
75%	5.00440	5.00419	5.00417	5.00409	5.00401	0.39	0.008%
100%	5.00439	5.00432	5.00410	5.00427	5.00406	0.33	0.007%
Load	0.57	0.75	0.33	0.79	0.07	ΔI(mA)	
Regulation	0.011%	0.015%	0.007%	0.016%	0.001%		

2. Regulation - Line & Load, C.C mode 3Φ480 (*)

	Vin									
Io	342VAC	380VAC	400VAC	415VAC	432VAC	460VAC	480VAC	520VAC	Line Regulation	
0%	5.00045	5.00042	5.00041	5.00040	5.00045	5.00040	5.00042	5.00041	0.05	0.001%
25%	5.00047	5.00040	5.00049	5.00040	5.00042	5.00046	5.00048	5.00040	0.09	0.002%
50%	5.00040	5.00049	5.00047	5.00040	5.00047	5.00043	5.00043	5.00043	0.09	0.002%
75%	5.00045	5.00040	5.00043	5.00040	5.00047	5.00049	5.00047	5.00040	0.09	0.002%
100%	5.00040	5.00044	5.00040	5.00040	5.00042	5.00049	5.00040	5.00047	0.09	0.002%
Load	0.07	0.09	0.09	0.00	0.05	0.09	0.08	0.07	ΔI(mA)	
Regulation	0.001%	0.002%	0.002%	0.000%	0.001%	0.002%	0.002%	0.001%		

3. Temperature drift, C.C mode

Conditions: Vin: 3Φ200V
Iout: 100%

Ta	0°C	25°C	50°C	Temp. Coefficient (0˚C~50˚C)			
Io[A]	5.00159	4.99889	4.99688	4.71	mA	19	ppm/˚C

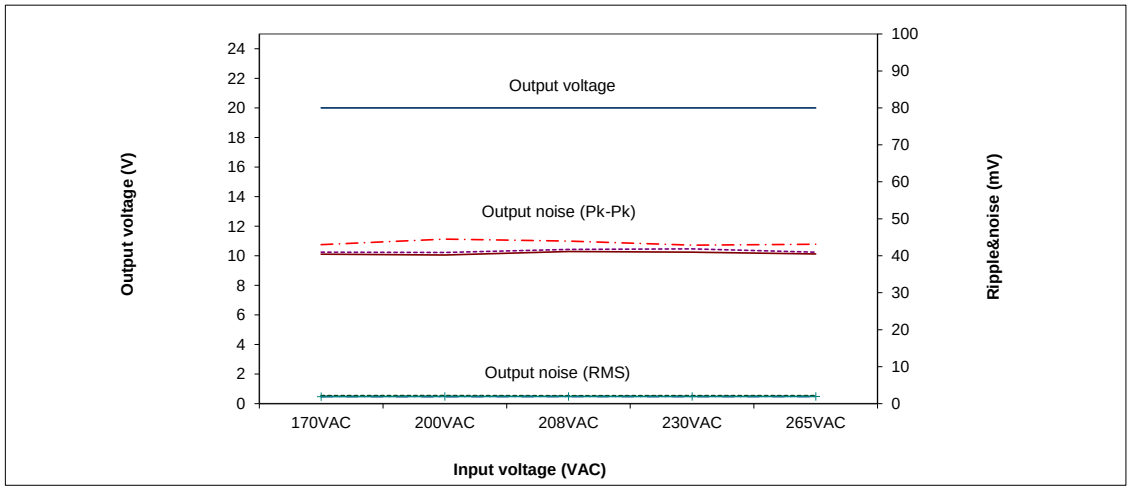
Notes:
(*) Not including load regulation thermal drift effect.

(2). Output voltage and ripple voltage vs. input voltage

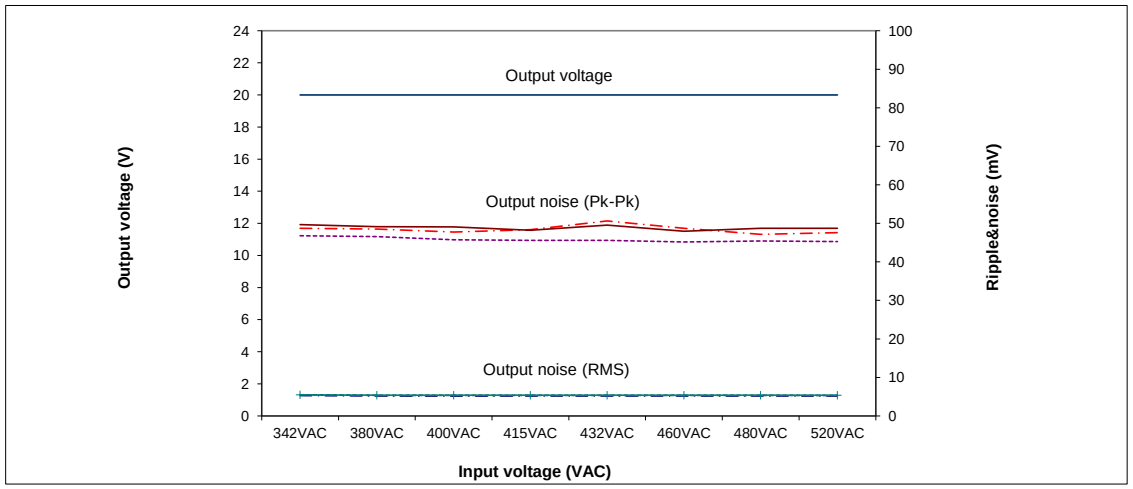
C.V mode

Conditions: Iout: 100%
Ta: 0°C
25°C
50°C

G20-375 3Φ208



G20-375 3Φ480

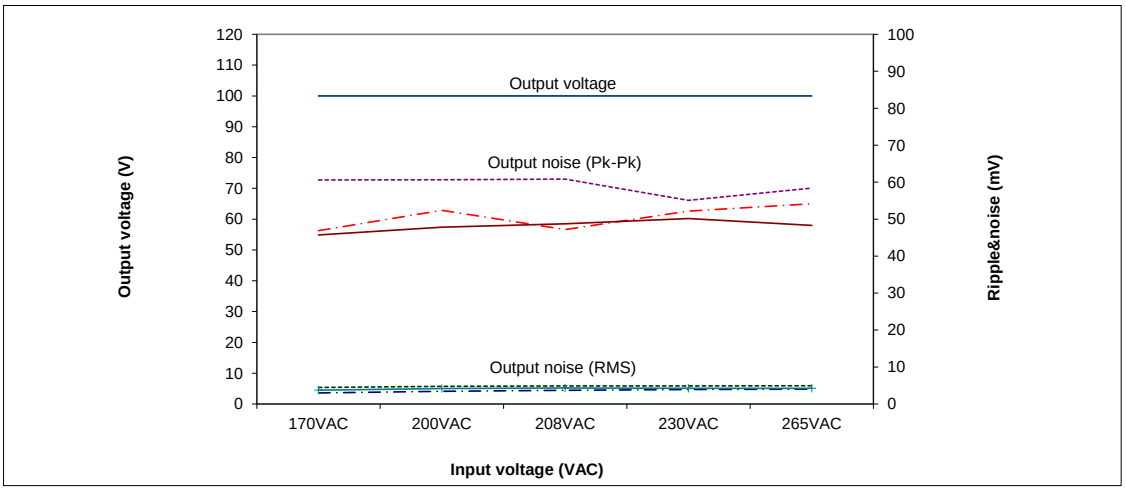


(2). Output voltage and ripple voltage vs. input voltage

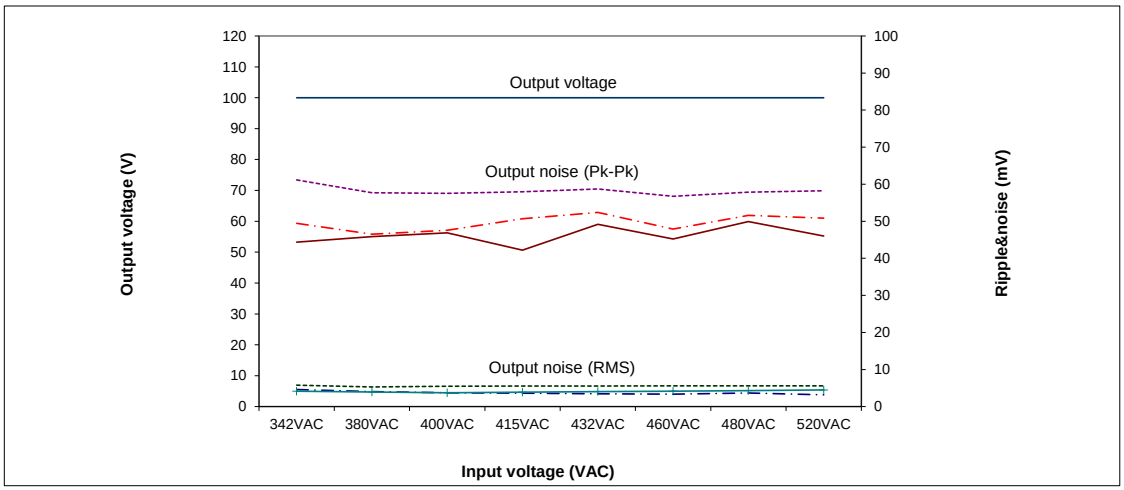
C.V mode

Conditions: Iout: 100%
Ta: 0°C
25°C
50°C

G100-75 3Φ208



G100-75 3Φ480

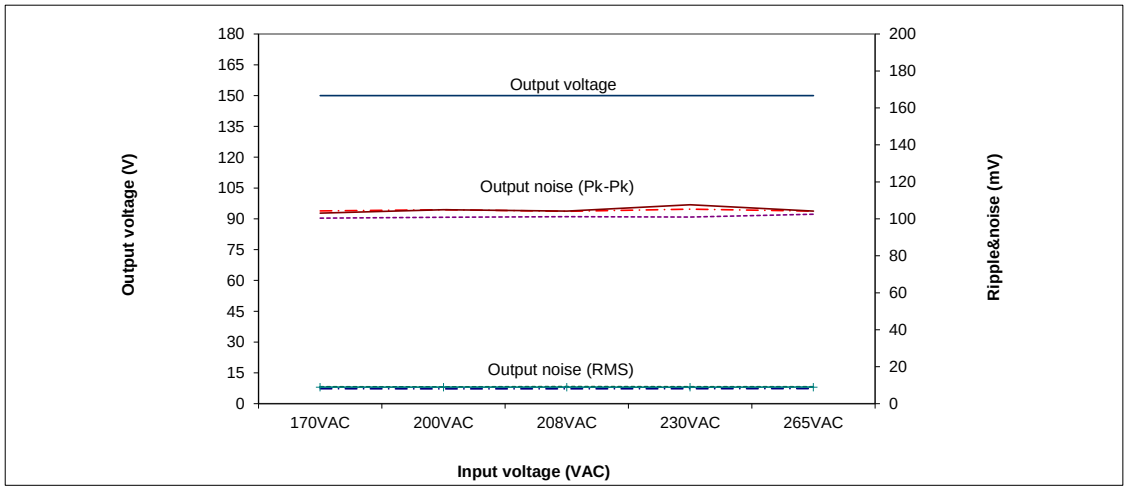


(2). Output voltage and ripple voltage vs. input voltage

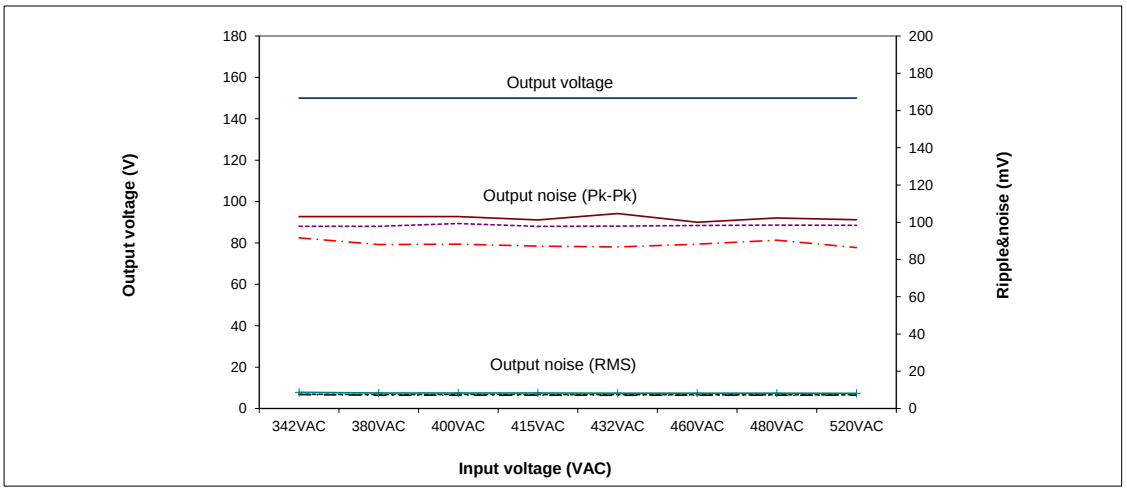
C.V mode

Conditions: Iout: 100%
Ta: 0°C
25°C
50°C

G150-50 3Φ208



G150-50 3Φ480

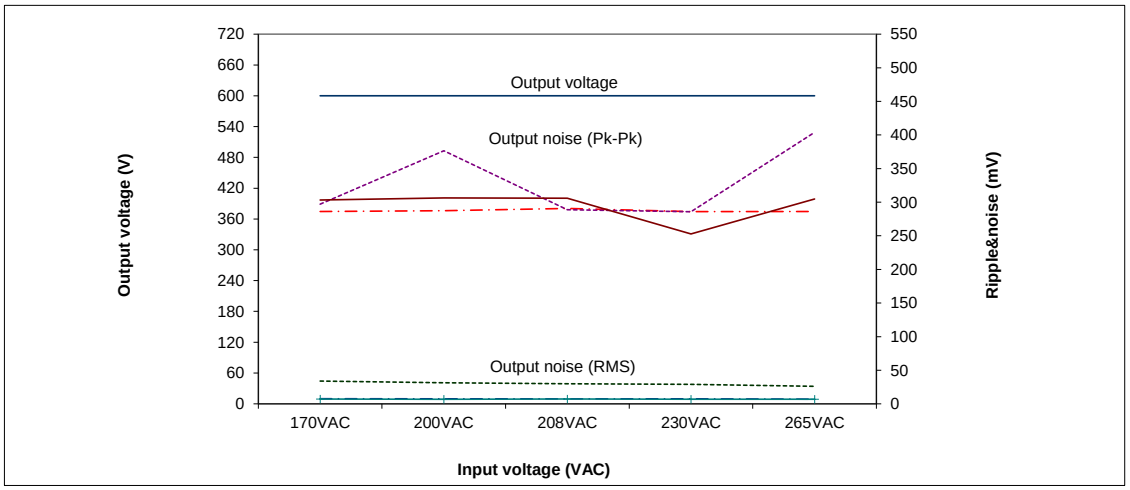


(2). Output voltage and ripple voltage vs. input voltage

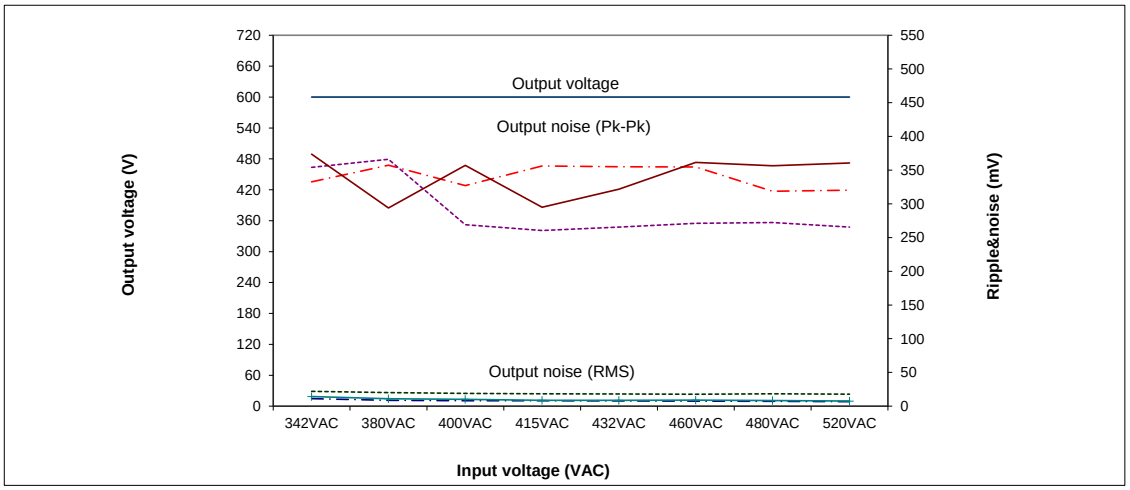
C.V mode

Conditions: Iout: 100%
Ta: 0°C
25°C
50°C

G600-12.5 3Φ208



G600-12.5 3Φ480

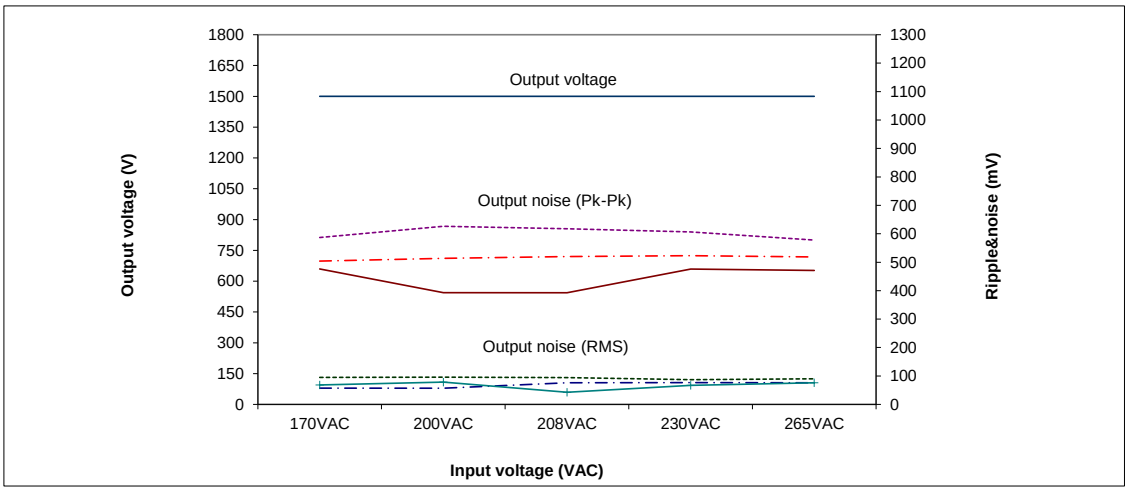


(2). Output voltage and ripple voltage vs. input voltage

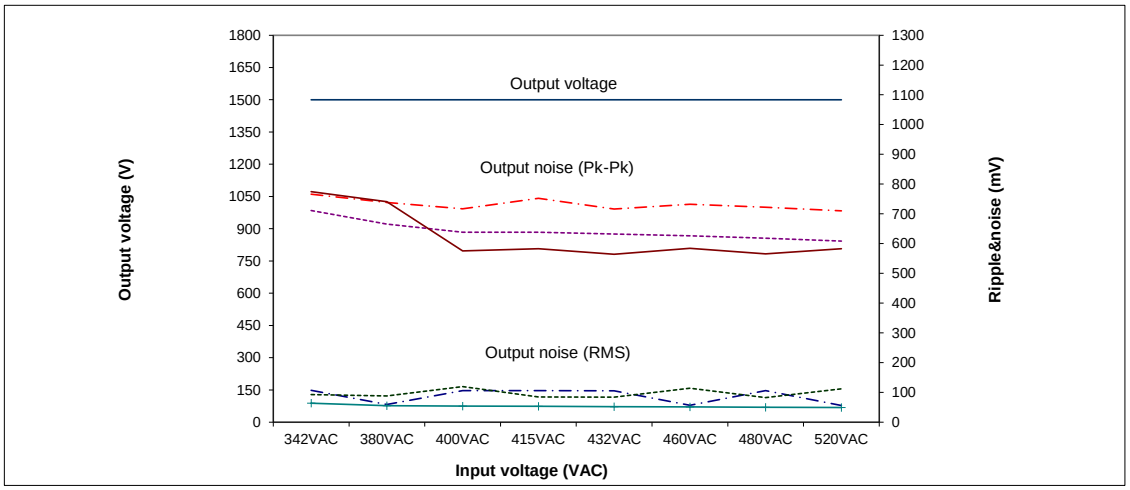
C.V mode

Conditions: Iout: 100%
Ta: 0°C
25°C
50°C

G1500-5 3Φ208



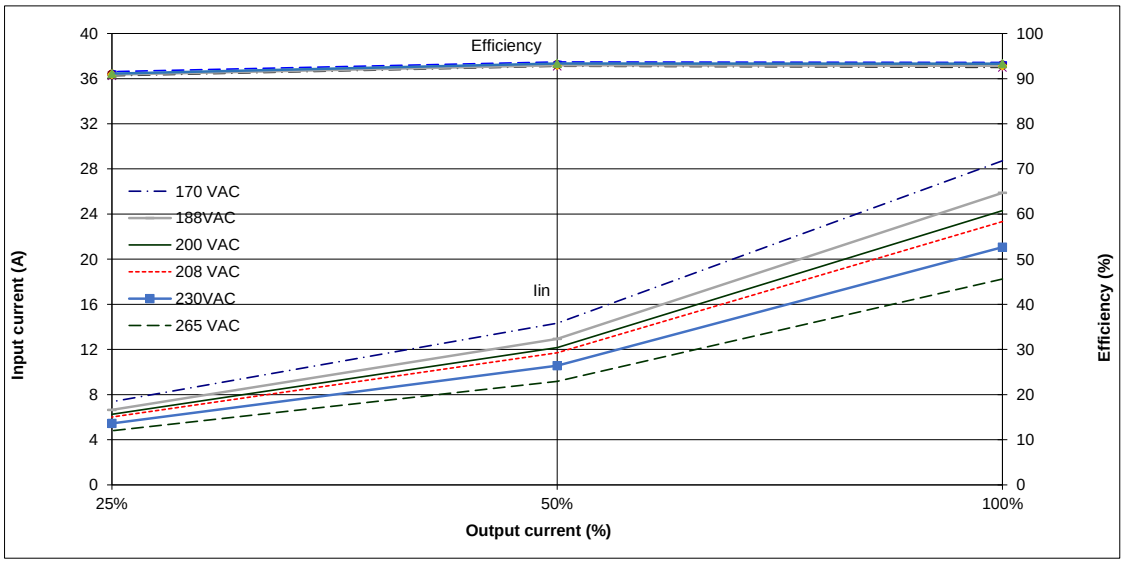
G1500-5 3Φ480



(3). Efficiency and Input current vs. Output current

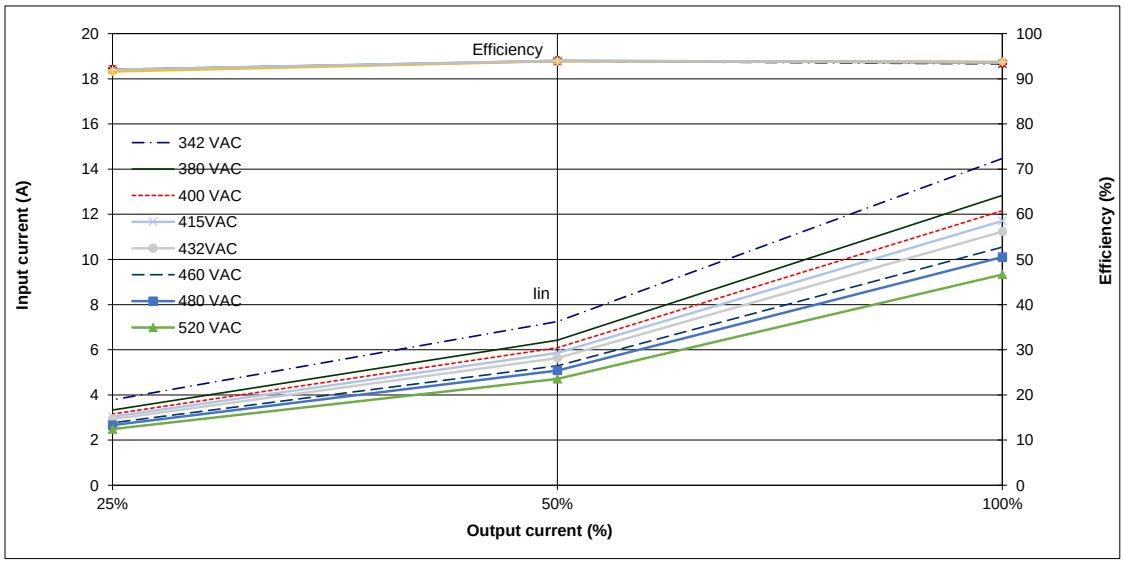
G20-375 3Φ208

Conditions: Vin: 170~265 VAC
Vout: 100%
Ta: 25°C



G20-375 3Φ480

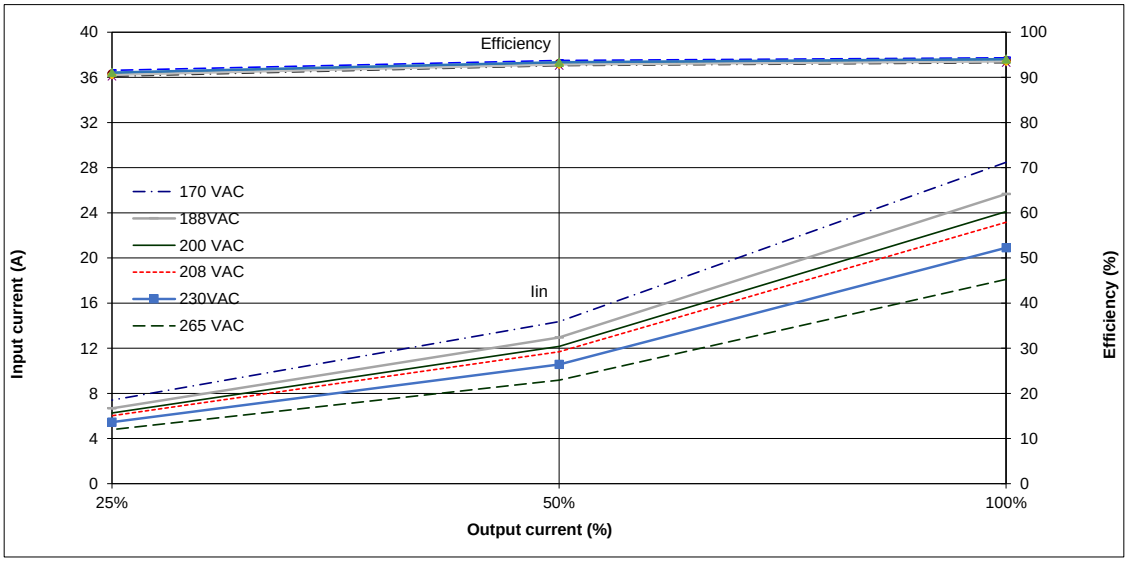
Conditions: Vin: 342~520 VAC
Vout: 100%
Ta: 25°C



(3). Efficiency and Input current vs. Output current

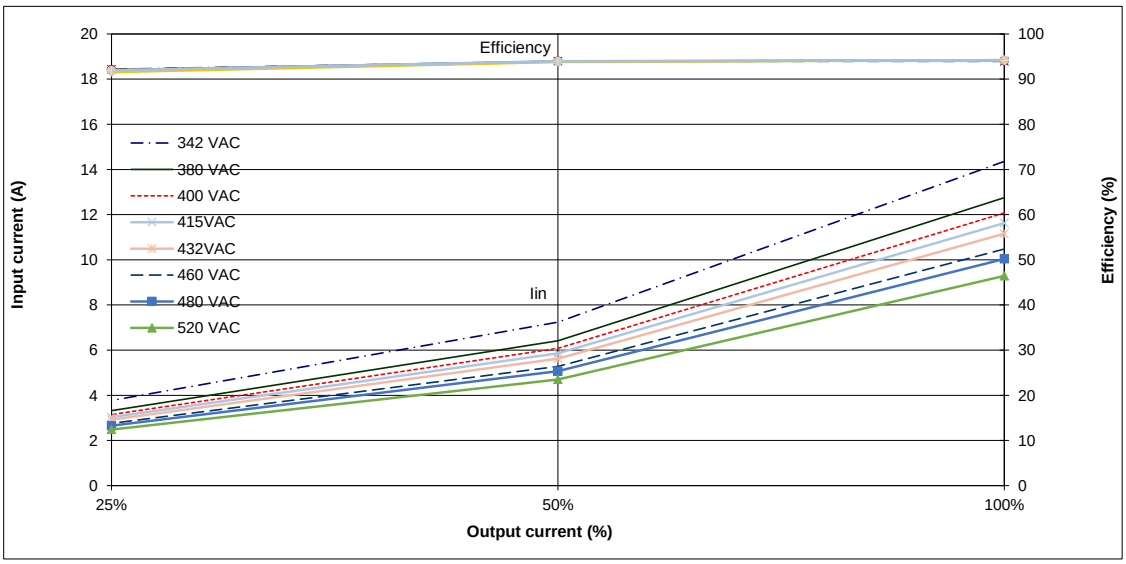
G100-75 3Φ208

Conditions: Vin: 170~265 VAC
Vout: 100%
Ta: 25°C



G100-75 3Φ480

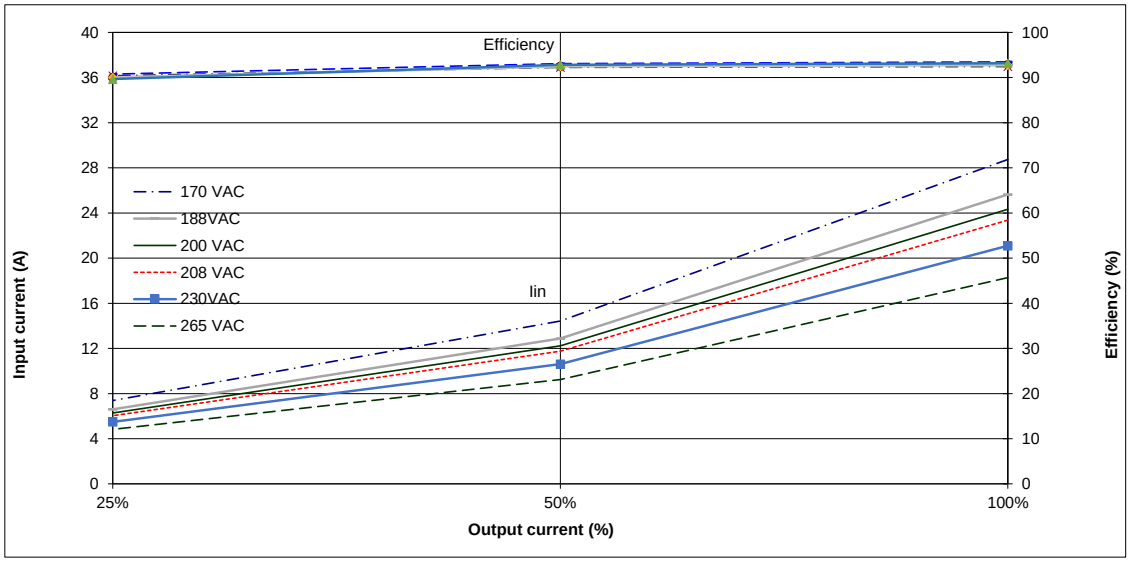
Conditions: Vin: 342~520 VAC
Vout: 100%
Ta: 25°C



(3). Efficiency and Input current vs. Output current

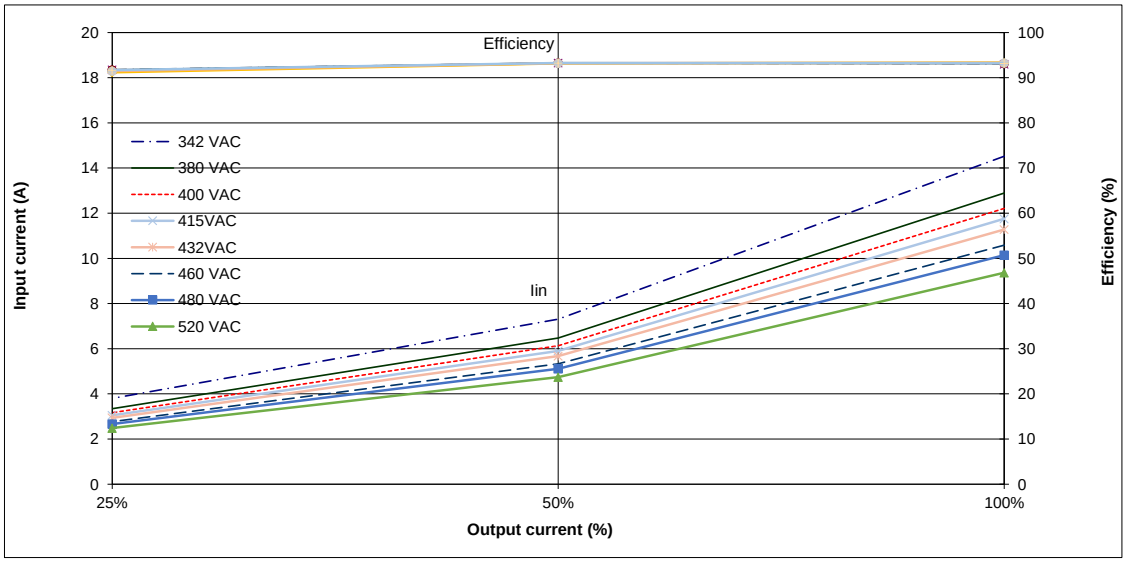
G150-50 3Φ208

Conditions: Vin: 170~265 VAC
Vout: 100%
Ta: 25°C



G150-50 3Φ480

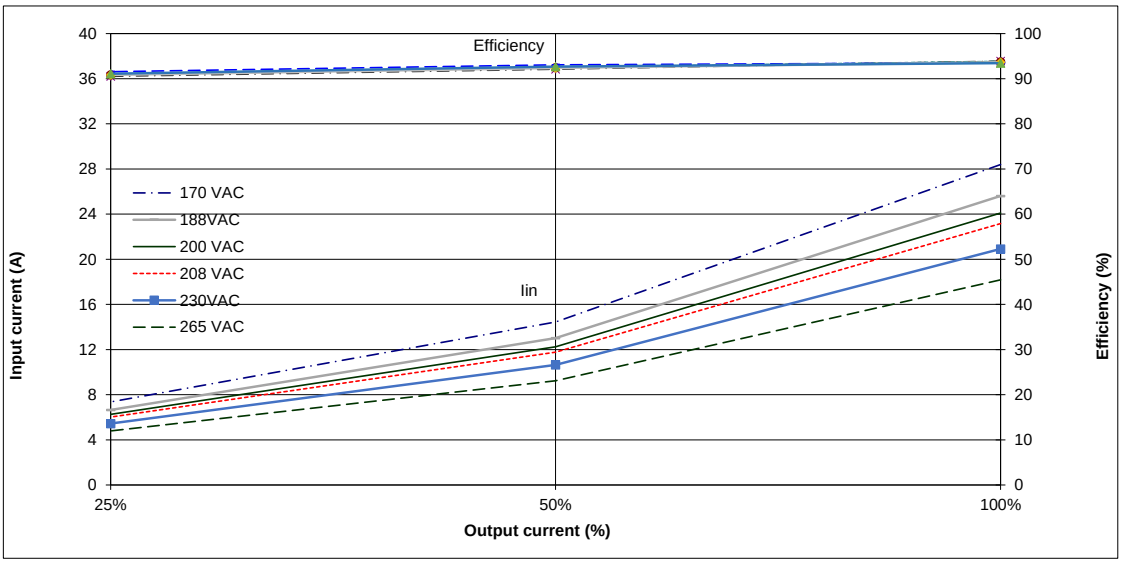
Conditions: Vin: 342~520 VAC
Vout: 100%
Ta: 25°C



(3). Efficiency and Input current vs. Output current

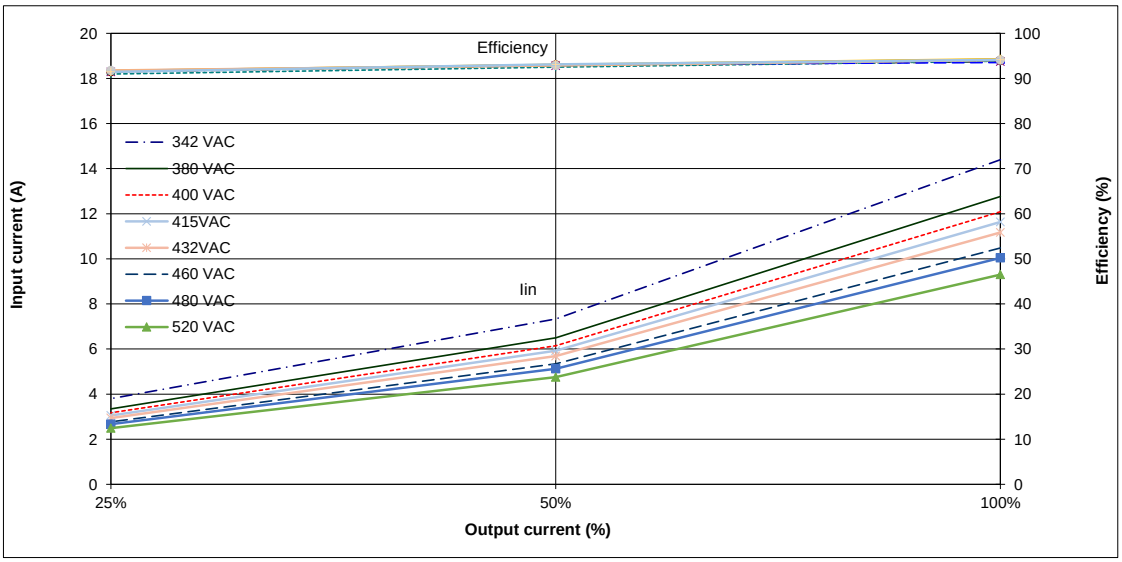
G600-12.5 3Φ208

Conditions: Vin: 170~265 VAC
Vout: 100%
Ta: 25°C



G600-12.5 3Φ480

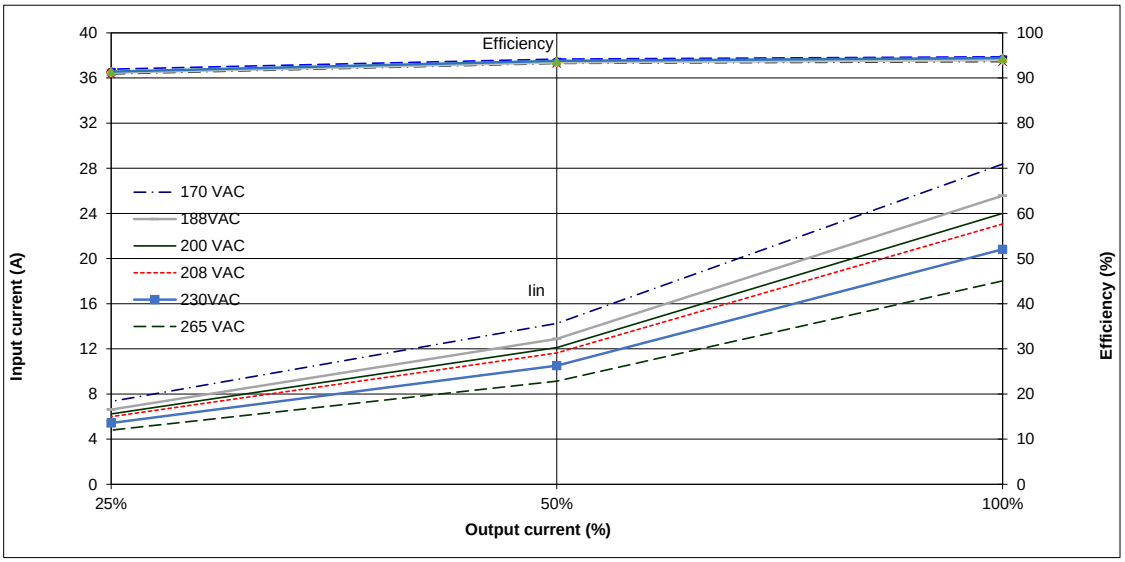
Conditions: Vin: 342~520 VAC
Vout: 100%
Ta: 25°C



(3). Efficiency and Input current vs. Output current

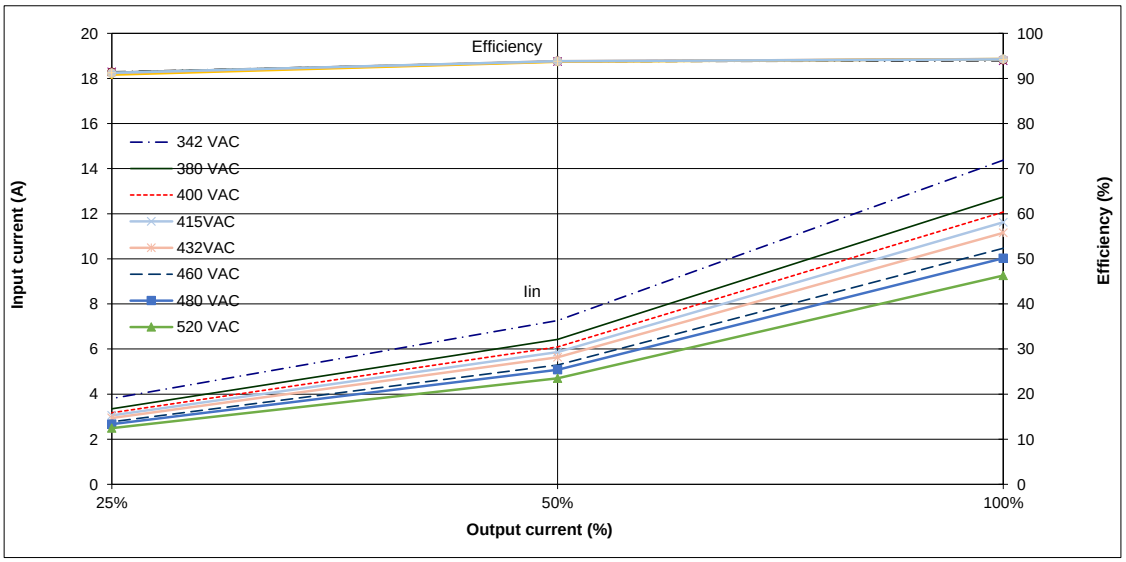
G1500-5 3Φ208

Conditions: Vin: 170~265 VAC
Vout: 100%
Ta: 25°C



G1500-5 3Φ480

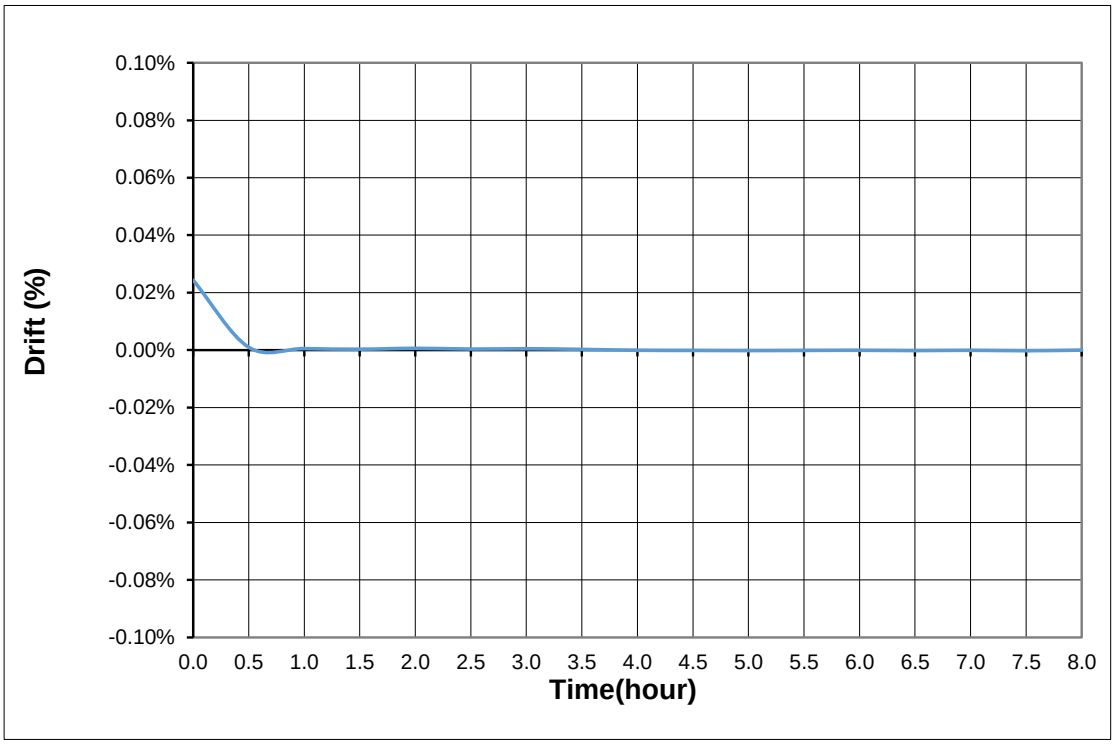
Conditions: Vin: 342~520 VAC
Vout: 100%
Ta: 25°C



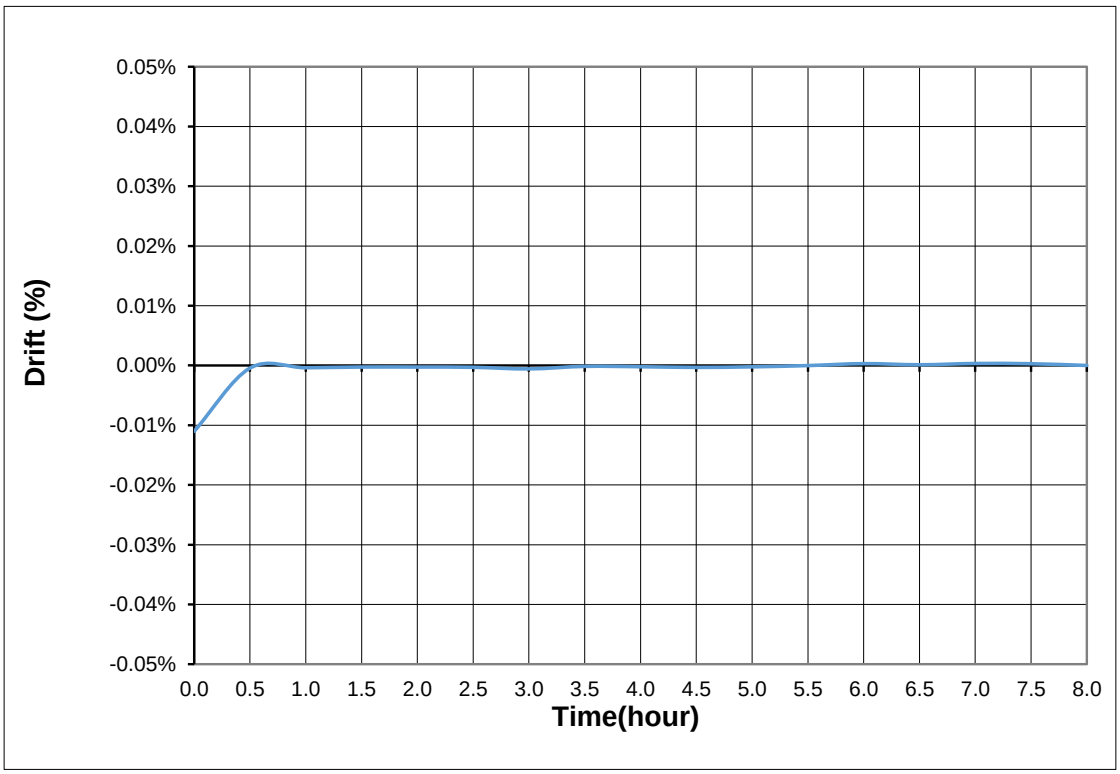
2.2 Warm up drift & stability

Conditions: Vset: 100%
Iout: 100%
Ta: 25°C

G20-375 C.V mode



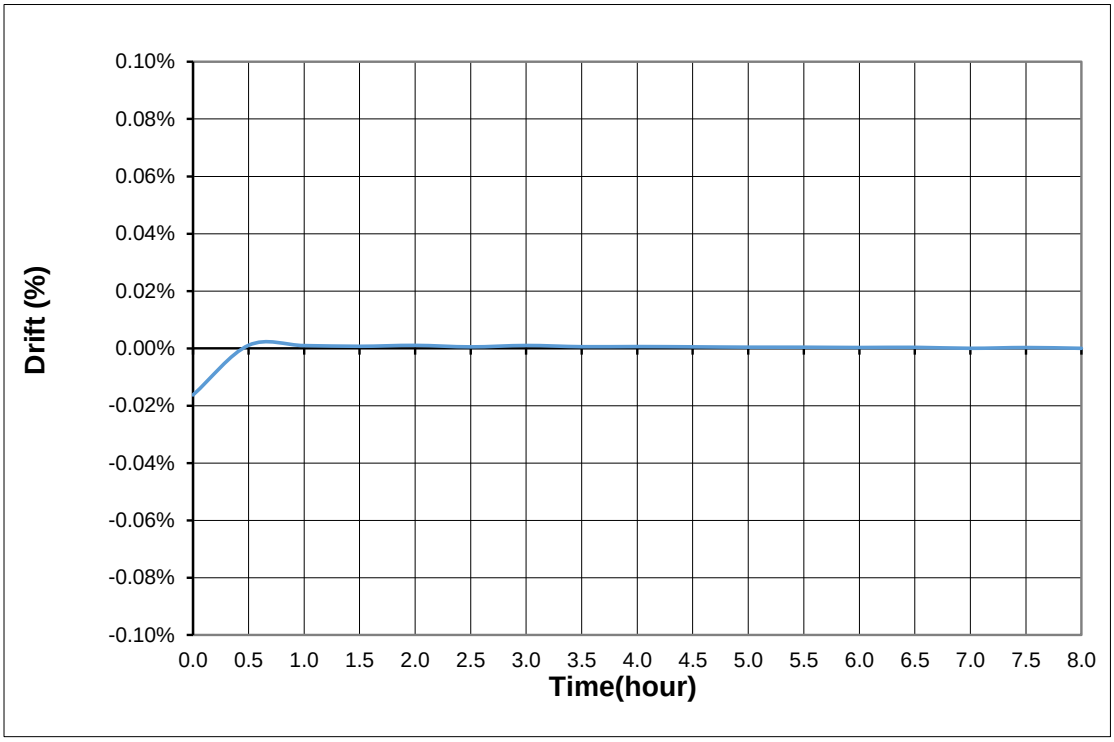
G20-375 C.C mode



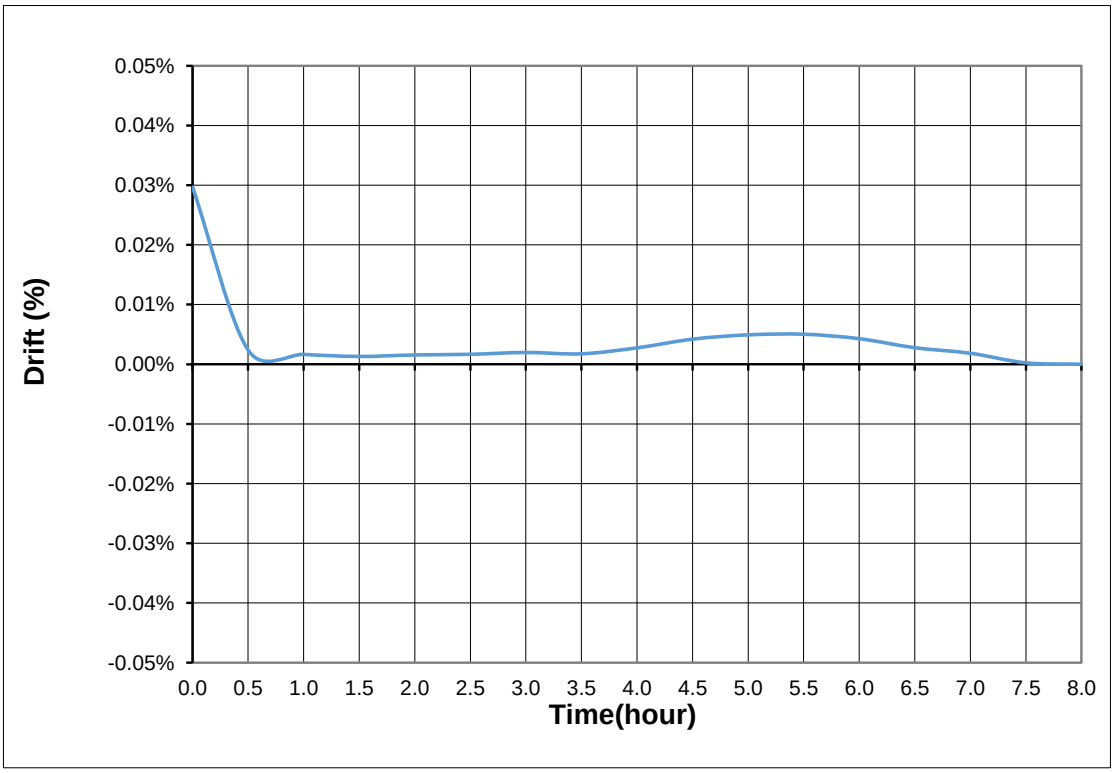
2.2 Warm up drift & stability

Conditions: Vset: 100%
Iout: 100%
Ta: 25°C

G100-75 C.V mode



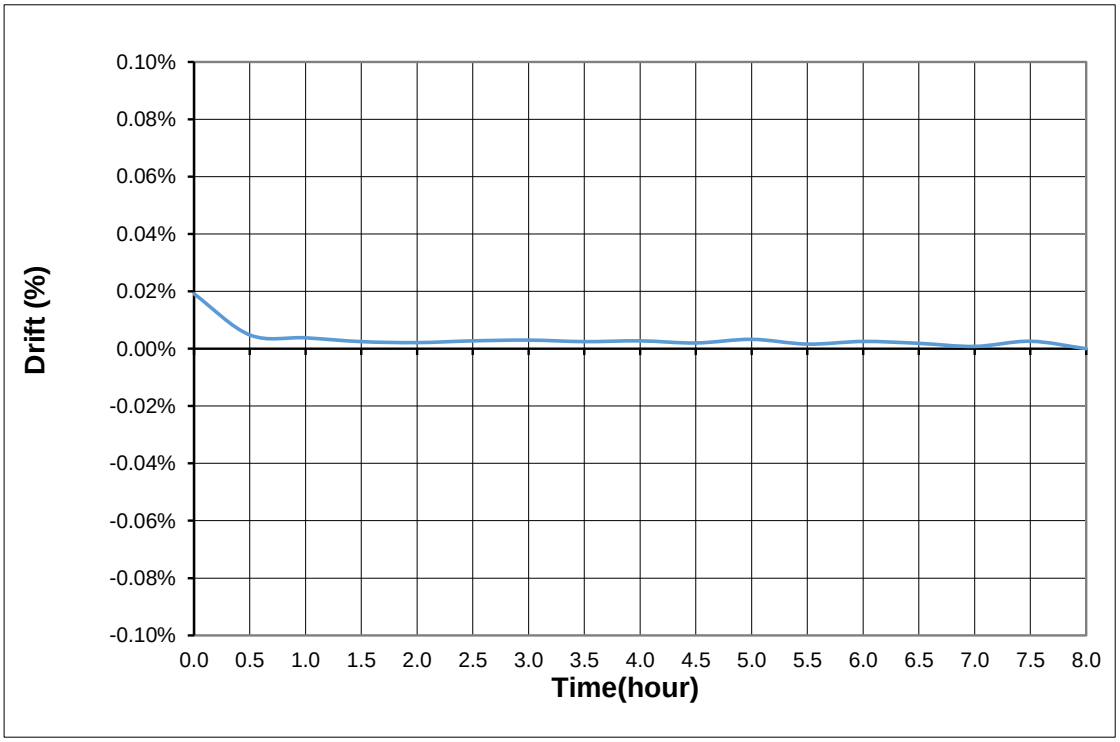
G100-75 C.Cmode



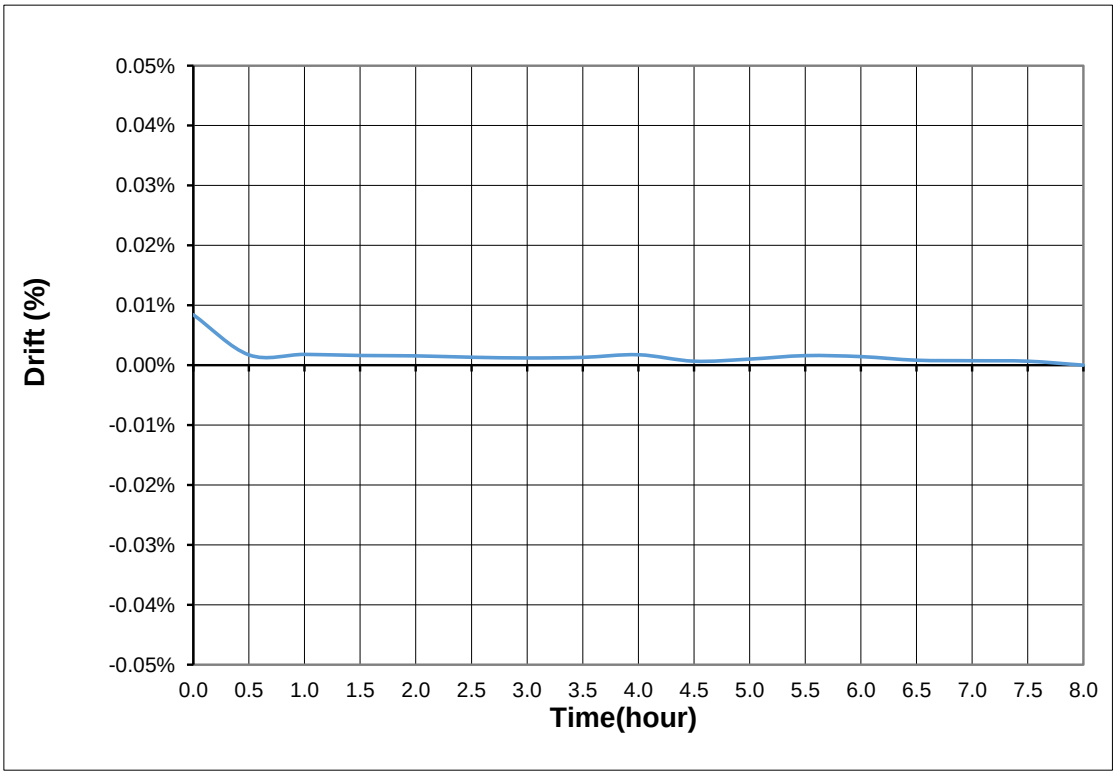
2.2 Warm up drift & stability

Conditions: Vset: 100%
Iout: 100%
Ta: 25°C

G150-50 C.V mode



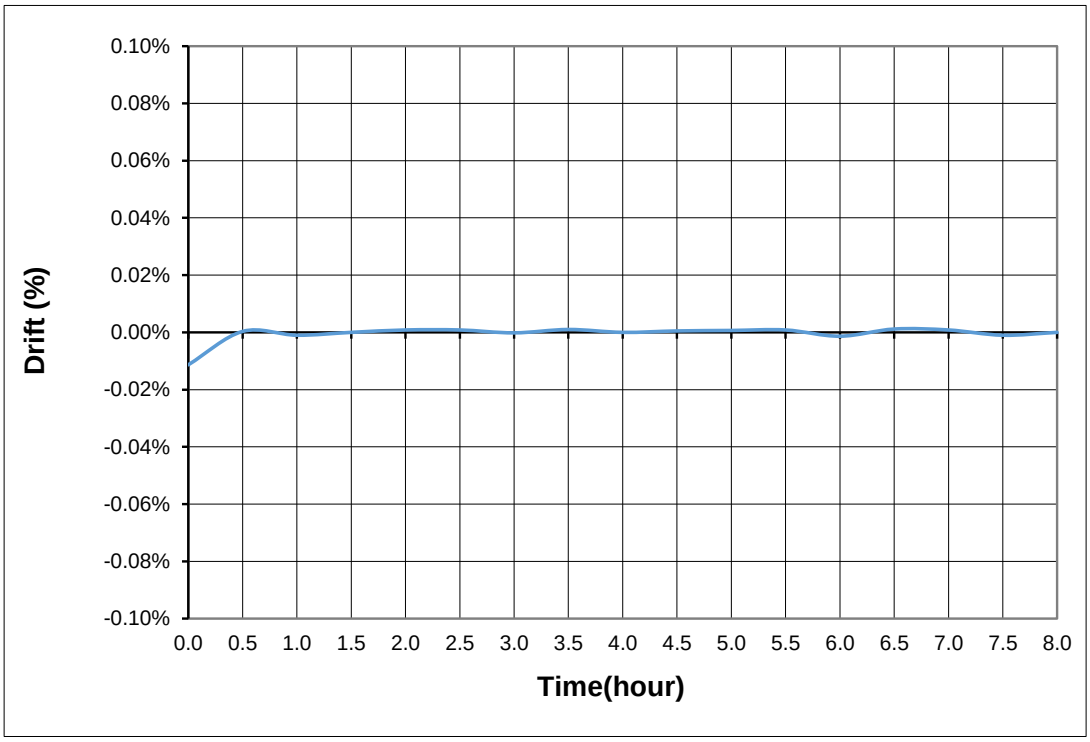
G150-50 C.C mode



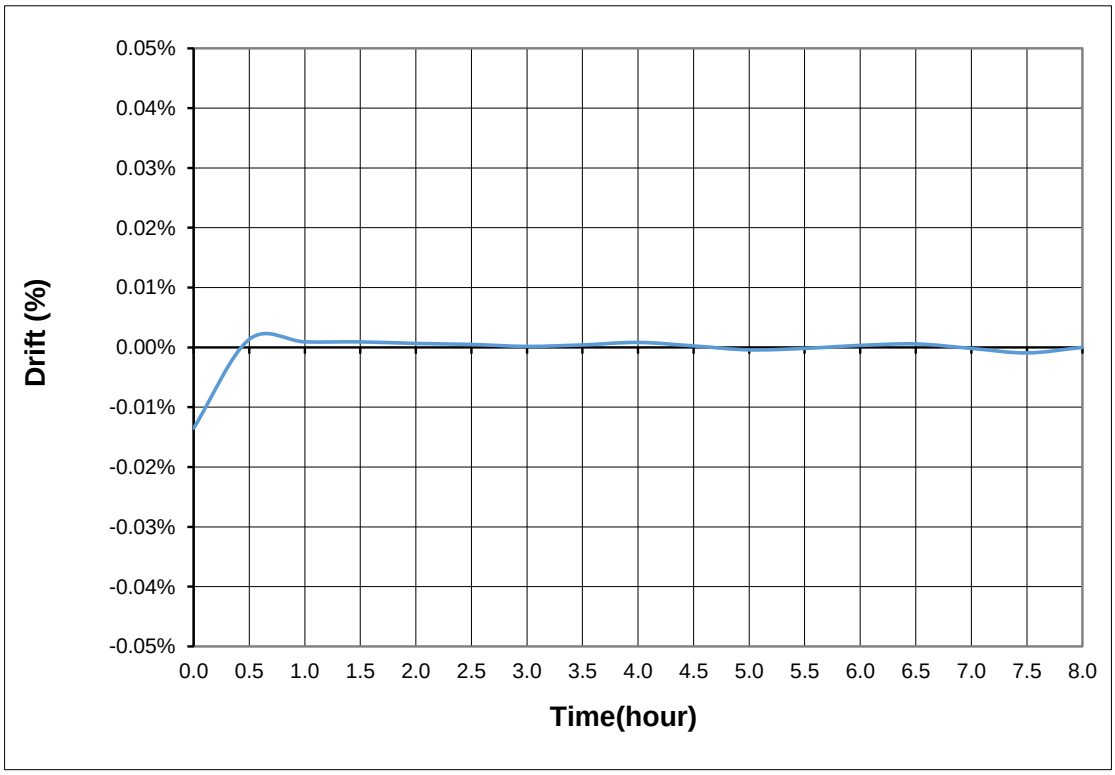
2.2 Warm up drift & stability

Conditions: Vset: 100%
Iout: 100%
Ta: 25°C

G600-12.5 C.V mode



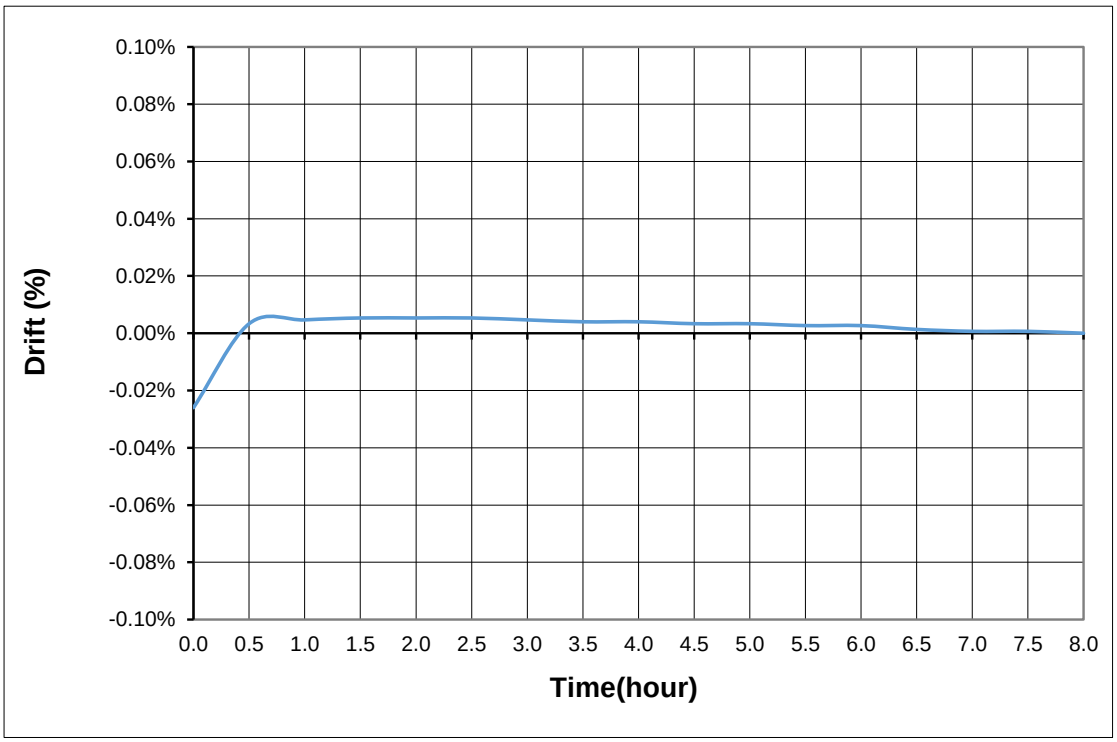
G600-12.5 C.C mode



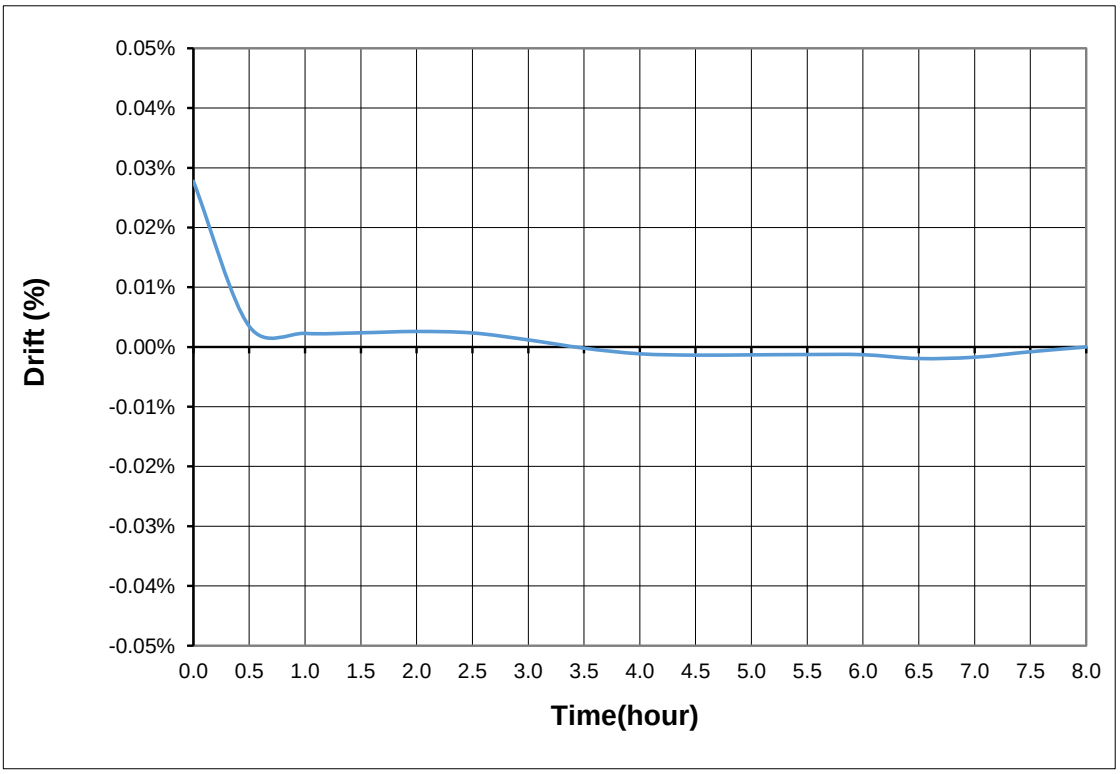
2.2 Warm up drift & stability

Conditions: Vset: 100%
Iout: 100%
Ta: 25°C

G1500-5 C.V mode



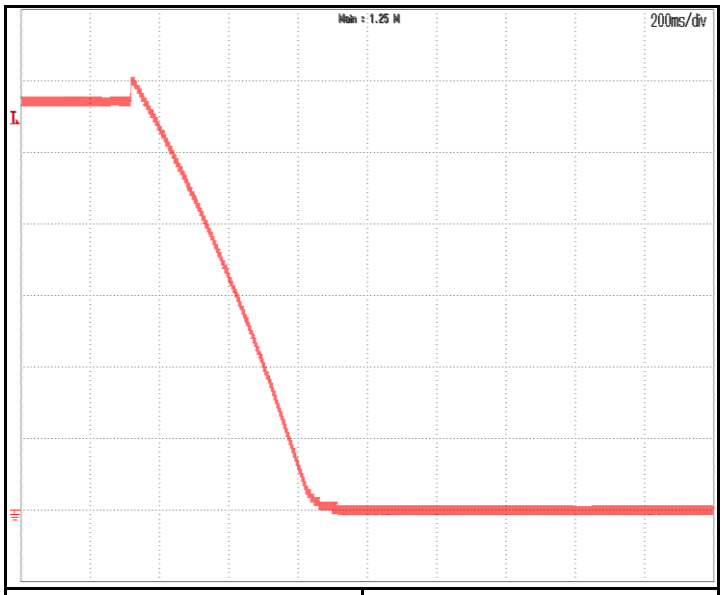
G1500-5 C.C mode



2.3 Over voltage protection (OVP) characteristic

Conditions: Vset: 100%
Iout: 0%
Ta: 25°C

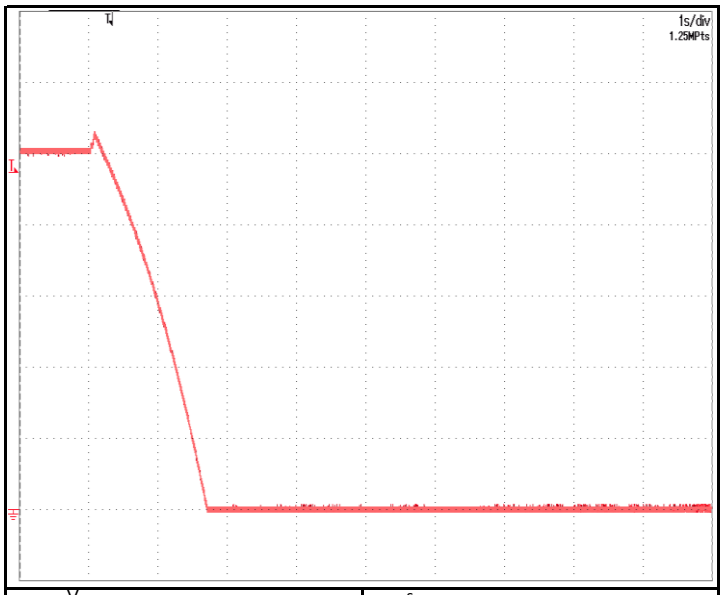
G20-375



3.5V/DIV	200ms/DIV

OVP setting: 21V

G100-75



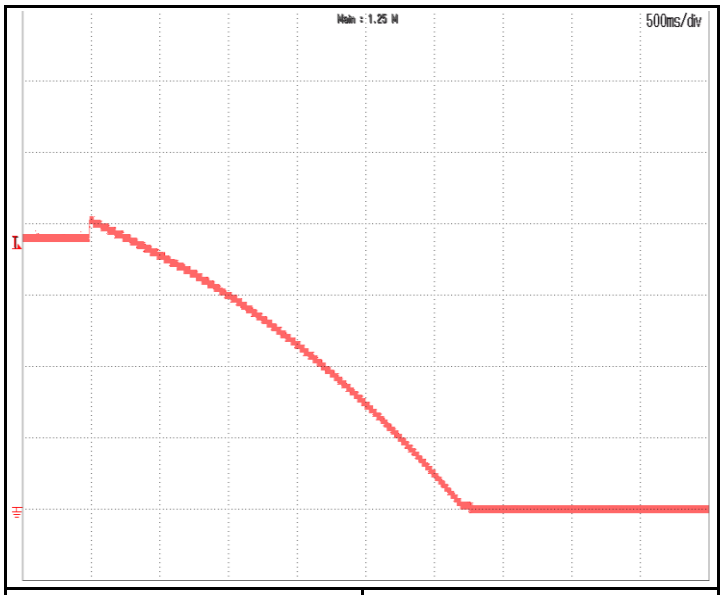
17.6V/DIV	1s/DIV

OVP setting: 105V

2.3 Over voltage protection (OVP) characteristic

Conditions: Vset: 100%
Iout: 0%
Ta: 25°C

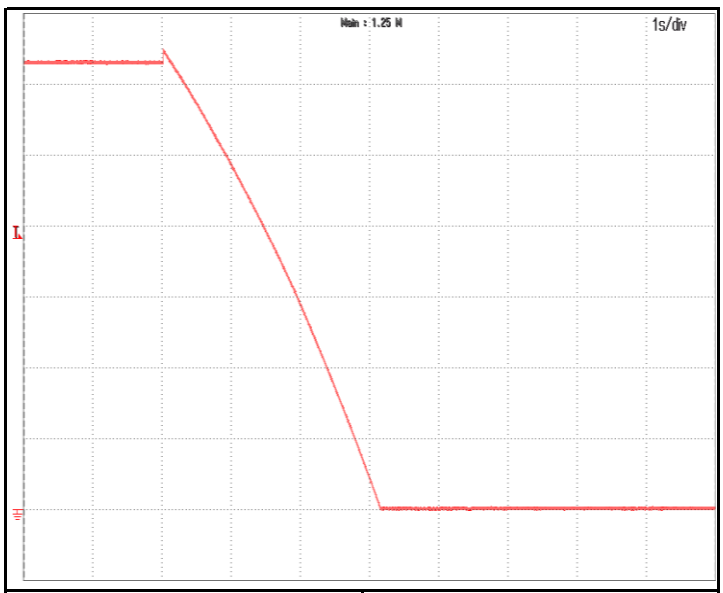
G150-50



40V/DIV	500mSec/DIV

OVP setting: 157.5V

G600-12.5

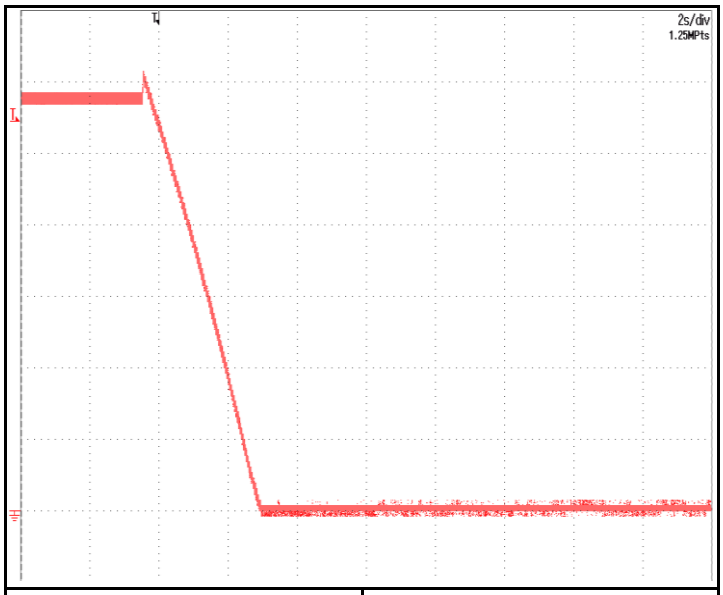


100V/DIV	1Sec/DIV

OVP setting: 630V

2.3 Over voltage protection (OVP) characteristic

Conditions: Vset: 100%
Iout: 0%
Ta: 25°C

G1500-5	
	
260V/DIV	2Sec/DIV

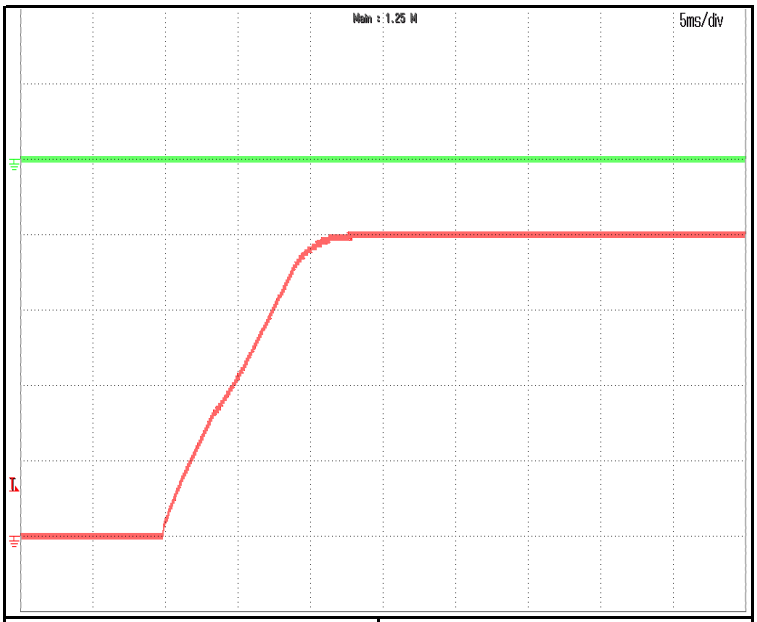
OVP setting: 1575V

2.4 ON/OFF Output rise characteristics

C.V mode

Conditions: Vin: Nominal
Vout: 100%
Iout: 0%
Iset: 105%
Ta: 25°C

G20-375

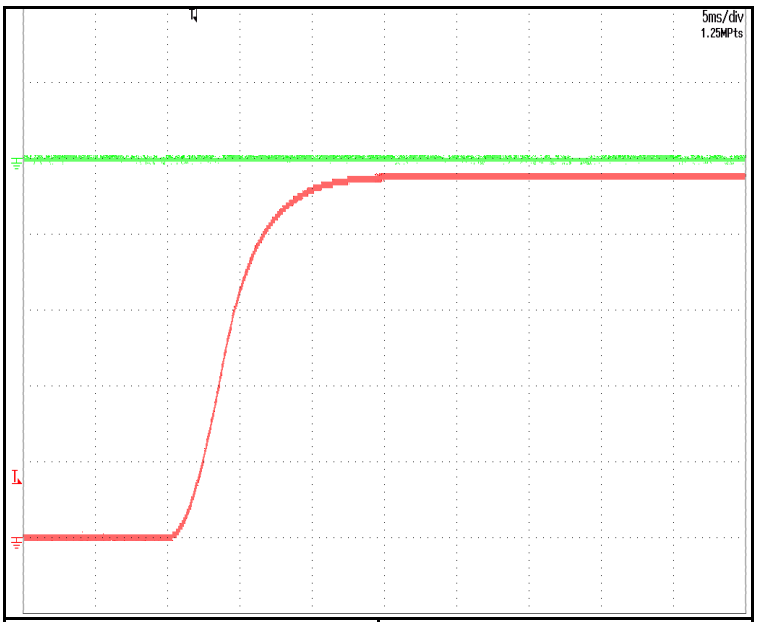


Iout

Vout

$5^{V}/_{DIV}$	$5^{ms}/_{DIV}$
$6^{A}/_{DIV}$	

G100-75



Iout

Vout

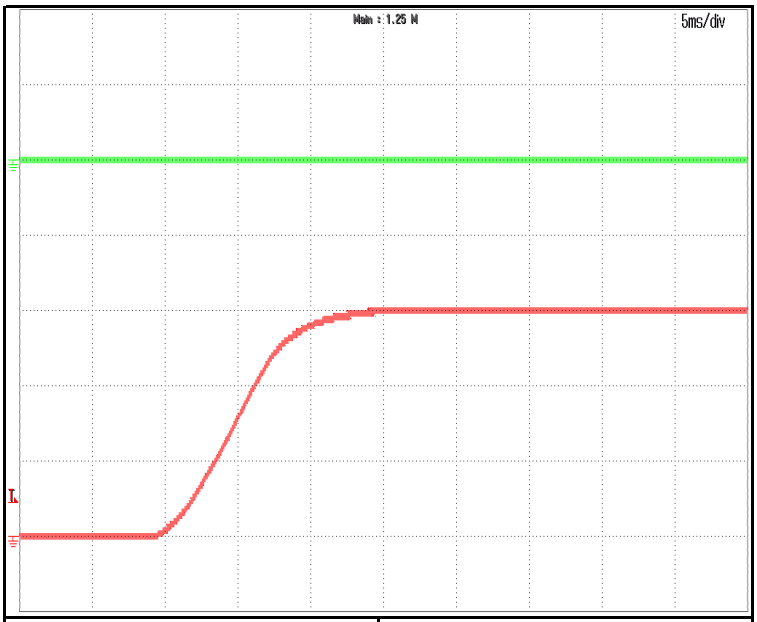
$21^{V}/_{DIV}$	$5^{ms}/_{DIV}$
$6^{A}/_{DIV}$	

2.4 ON/OFF Output rise characteristics

C.V mode

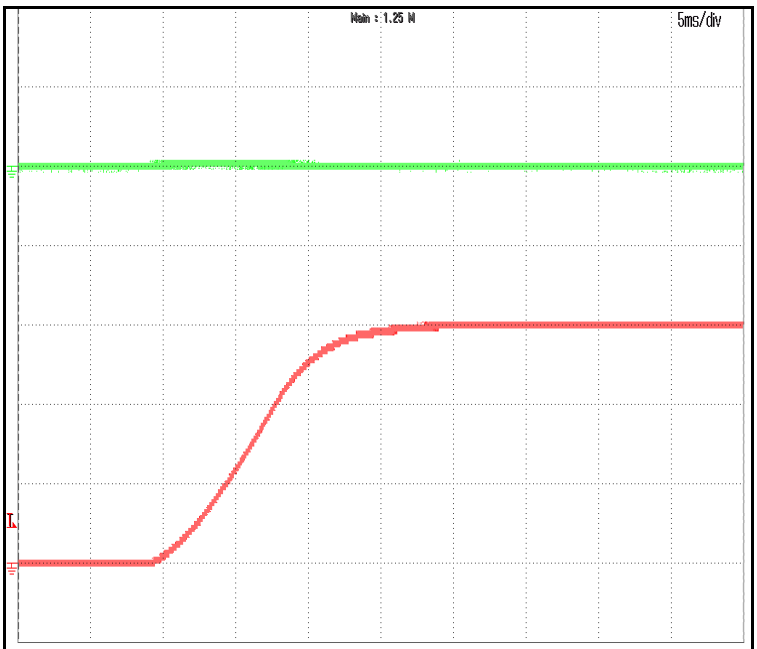
Conditions: Vin: Nominal
Vout: 100%
Iout: 0%
Iset: 105%
Ta: 25°C

G150-50



$50^{V}/_{DIV}$	$5^{ms}/_{DIV}$
$6^{A}/_{DIV}$	

G600-12.5



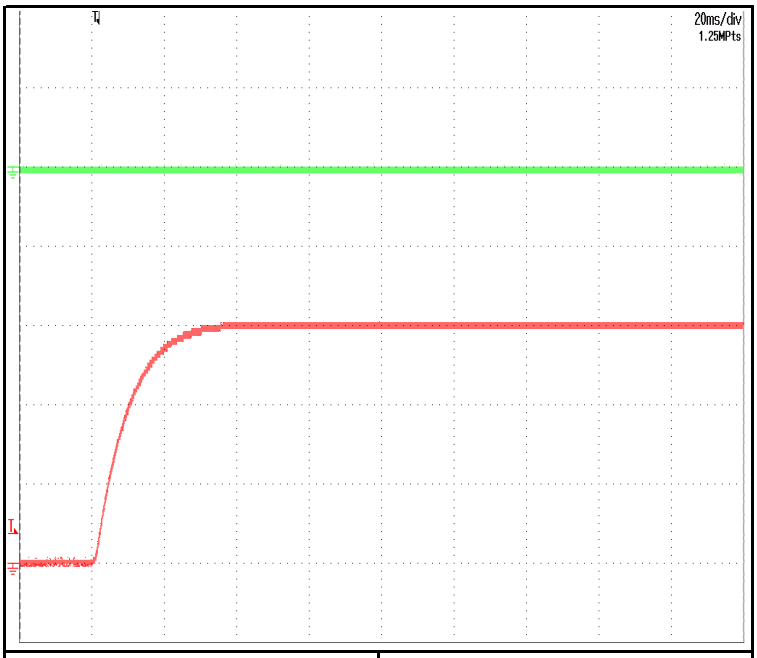
$200^{V}/_{DIV}$	$5^{ms}/_{DIV}$
$6^{A}/_{DIV}$	

2.4 ON/OFF Output rise characteristics

C.V mode

Conditions: Vin: Nominal
Vout: 100%
Iout: 0%
Iset: 105%
Ta: 25°C

G1500-5



Iout

Vout

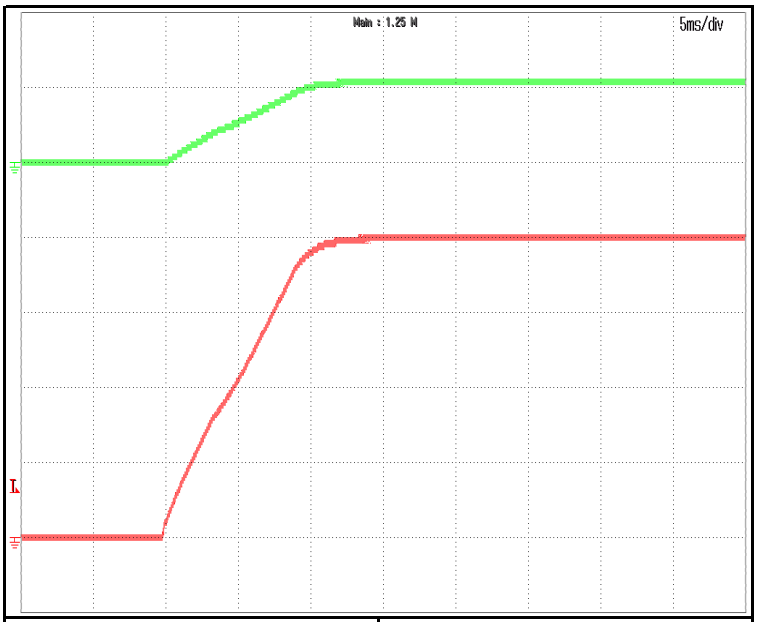
$500^{V}/_{DIV}$	$20^{ms}/_{DIV}$
$6^{A}/_{DIV}$	

2.4 ON/OFF Output rise characteristics

C.V mode

Conditions: Vin: Nominal
Vout: 100%
Iout: 100%
Iset: 105%
Load: CR
Ta: 25°C

G20-375

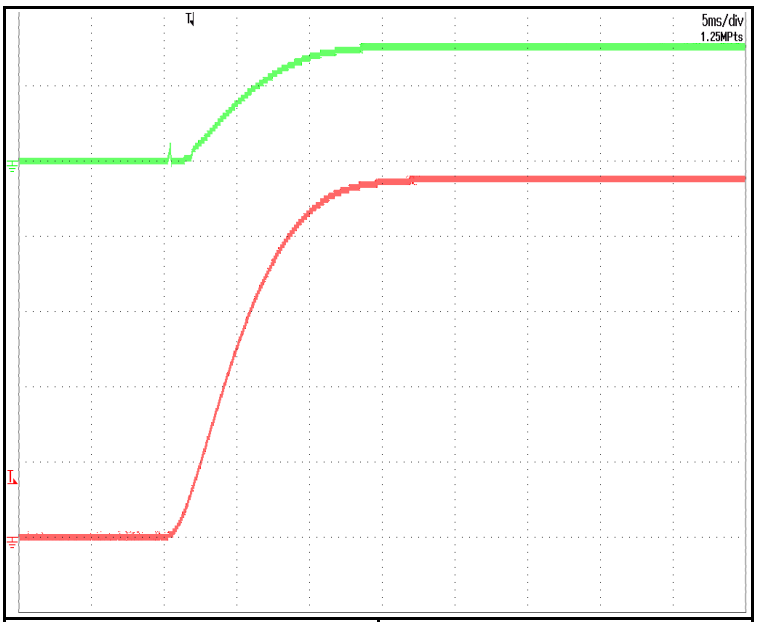


Iout

Vout

$5^{V}/_{DIV}$	$5^{ms}/_{DIV}$
$350^{A}/_{DIV}$	

G100-75



Iout

Vout

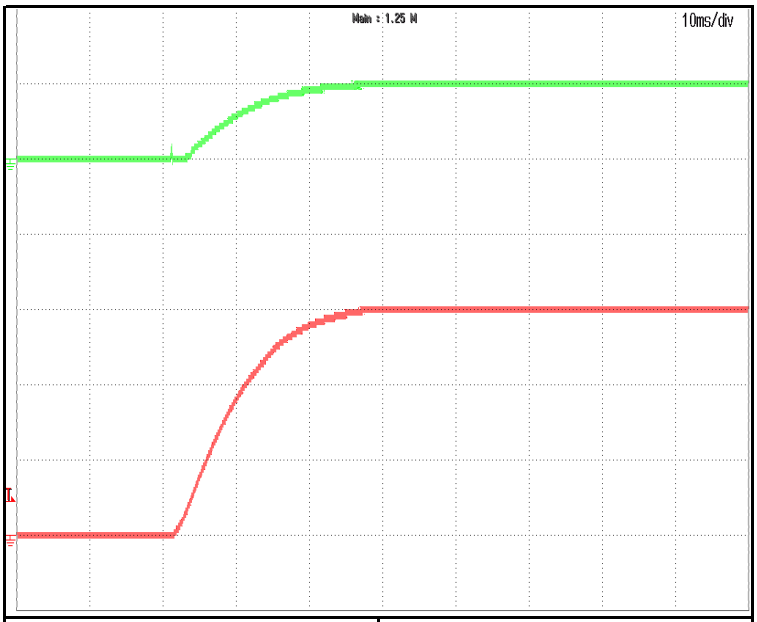
$21^{V}/_{DIV}$	$5^{ms}/_{DIV}$
$50^{A}/_{DIV}$	

2.4 ON/OFF Output rise characteristics

C.V mode

Conditions: Vin: Nominal
Vout: 100%
Iout: 100%
Iset: 105%
Load: CR
Ta: 25°C

G150-50

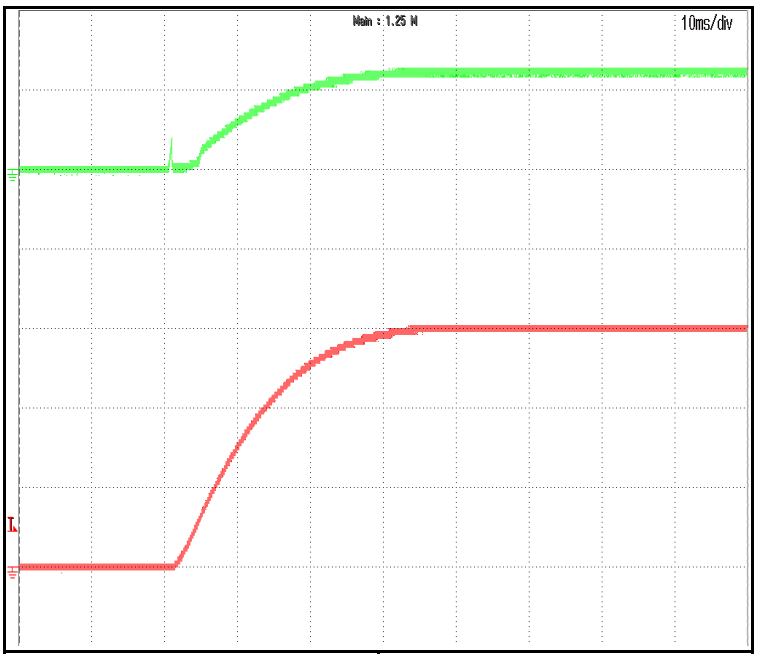


Iout

Vout

$50^{V}/_{DIV}$	$10^{ms}/_{DIV}$
$50^{A}/_{DIV}$	

G600-12.5



Iout

Vout

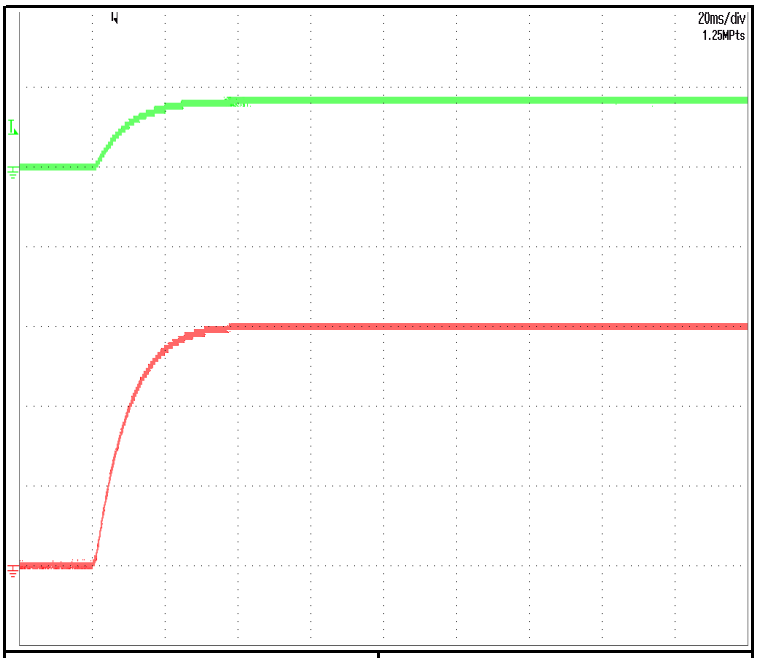
$200^{V}/_{DIV}$	$10^{ms}/_{DIV}$
$10^{A}/_{DIV}$	

2.4 ON/OFF Output rise characteristics

C.V mode

Conditions: Vin: Nominal
Vout: 100%
Iout: 100%
Iset: 105%
Load: CR
Ta: 25°C

G1500-5



Iout

Vout

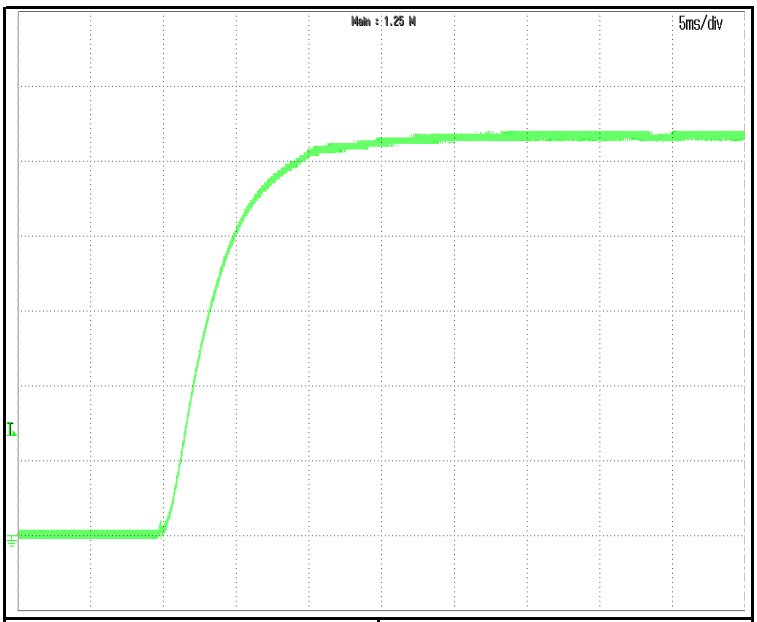
$500^{V}/_{DIV}$	$20^{ms}/_{DIV}$
$6^{A}/_{DIV}$	

2.4 ON/OFF Output rise characteristics

C.C mode

Conditions: Vin: Nominal
Vout: 100%
Iout: 100%
Vset: 105%
Load: CR
Ta: 25°C

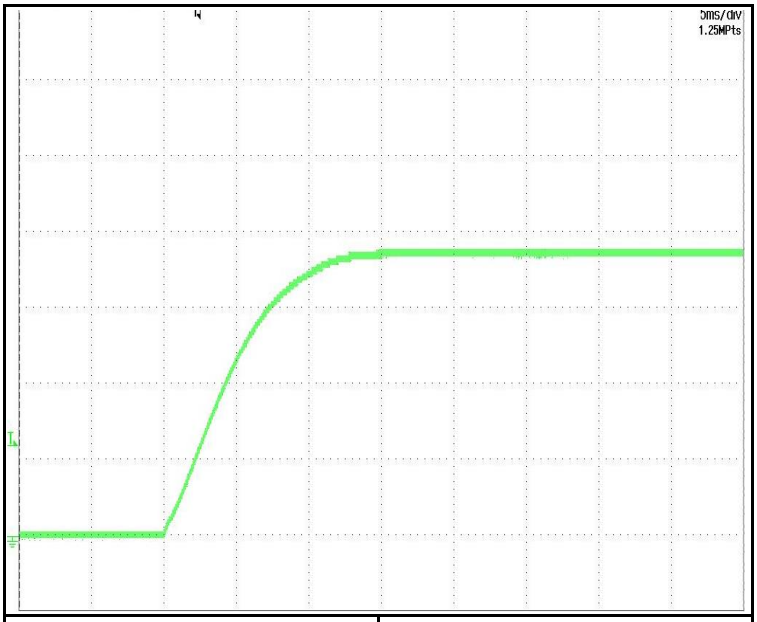
G20-375



Iout

70A/DIV	5ms/DIV

G100-75



Iout

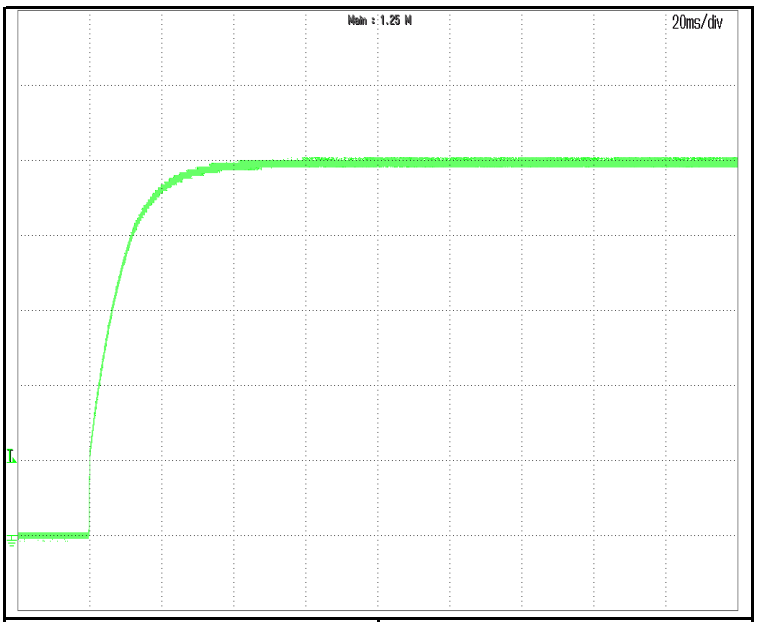
20A/DIV	5ms/DIV

2.4 ON/OFF Output rise characteristics

C.C mode

Conditions: Vin: Nominal
Vout: 100%
Iout: 100%
Vset: 105%
Load: CR
Ta: 25°C

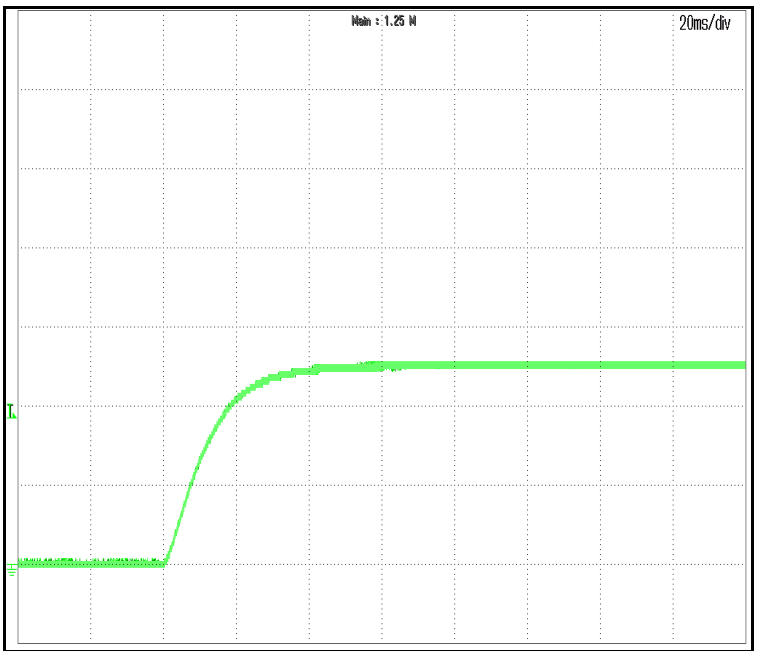
G150-50



Iout

$10^{A}/_{DIV}$	$20^{ms}/_{DIV}$

G600-12.5



Iout

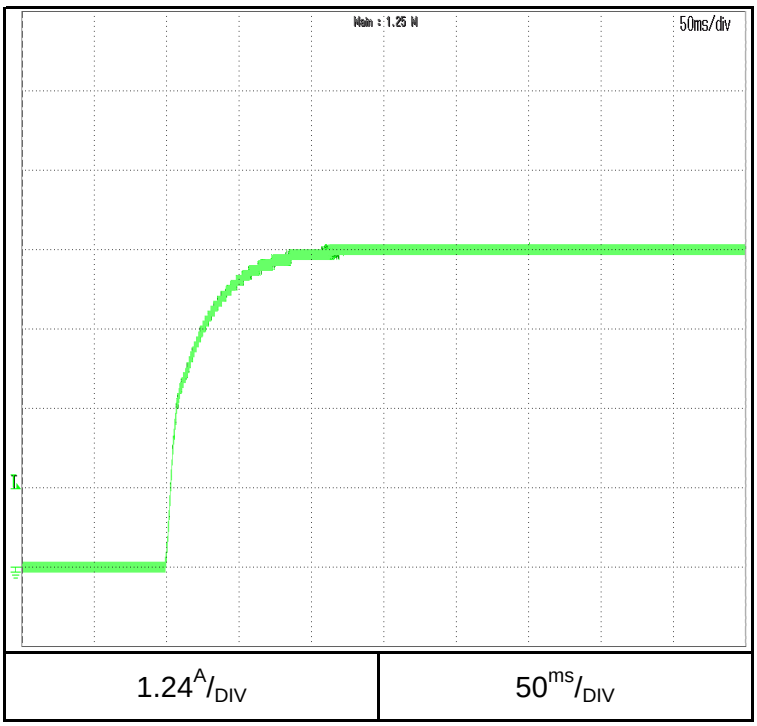
$5^{A}/_{DIV}$	$20^{ms}/_{DIV}$

2.4 ON/OFF Output rise characteristics

C.C mode

Conditions: Vin: Nominal
Vout: 100%
Iout: 100%
Vset: 105%
Load: CR
Ta: 25°C

G1500-5



Iout

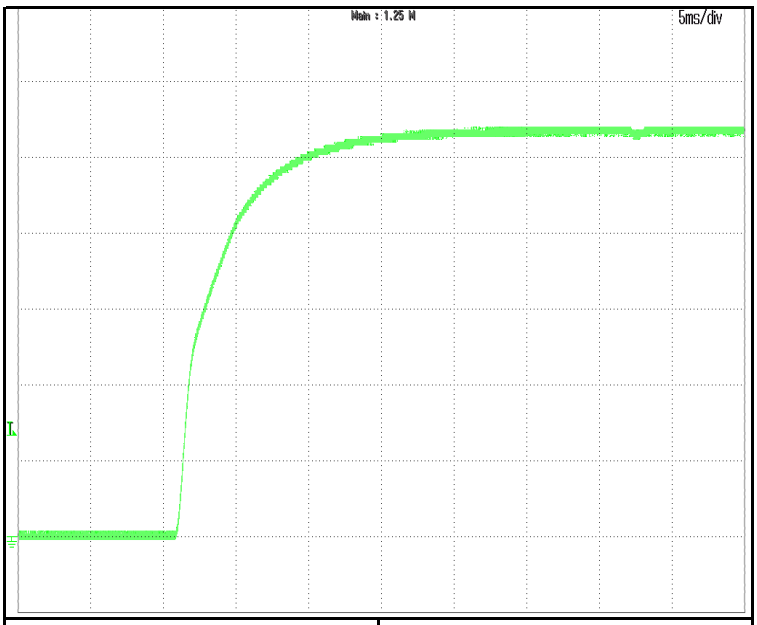
1.24A/DIV	50ms/DIV

2.4 ON/OFF Output rise characteristics

C.C mode

Conditions: Vin: Nominal
Iout: 100%
Vset: 105%
shorted output
Ta: 25°C

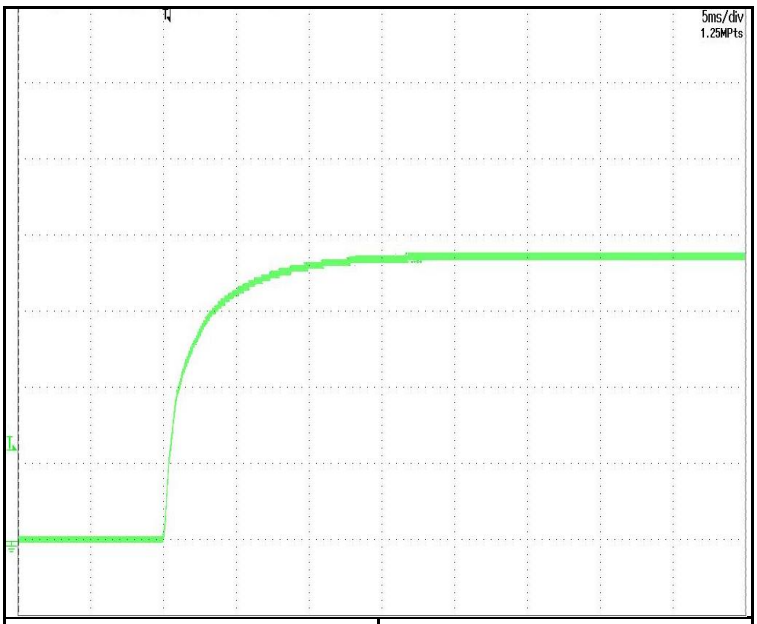
G20-375



Iout

$70^{A}/_{DIV}$	$5^{ms}/_{DIV}$

G100-75



Iout

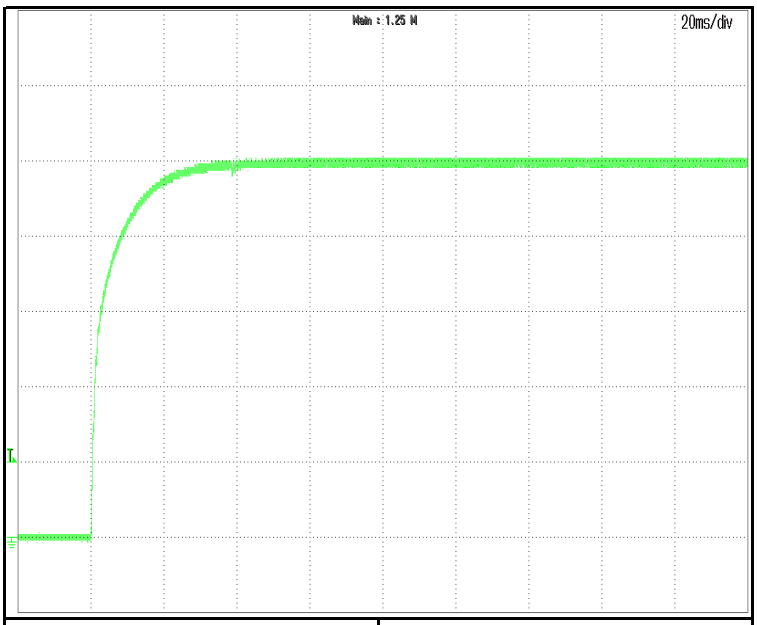
$20^{A}/_{DIV}$	$5^{ms}/_{DIV}$

2.4 ON/OFF Output rise characteristics

C.C mode

Conditions: Vin: Nominal
Iout: 100%
Vset: 105%
shorted output
Ta: 25°C

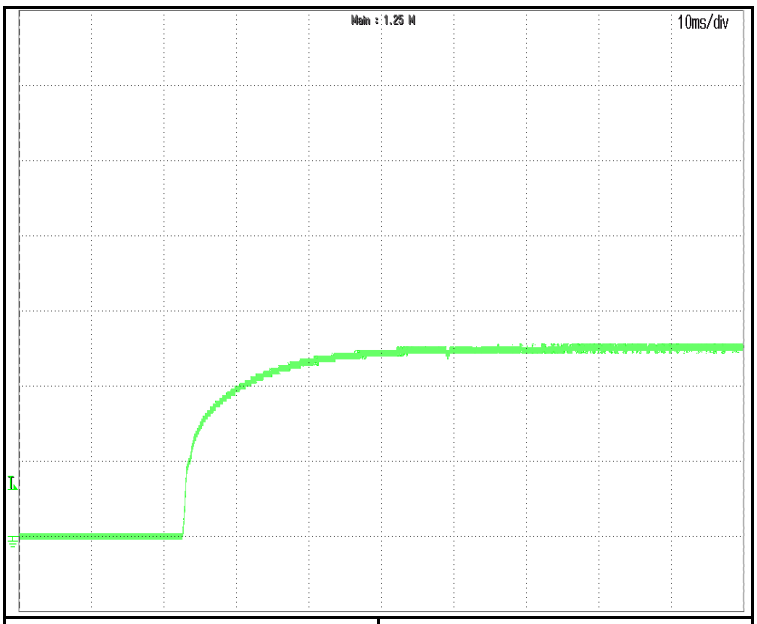
G150-50



Iout

$10^{A}/_{DIV}$	$20^{ms}/_{DIV}$

G600-12.5



Iout

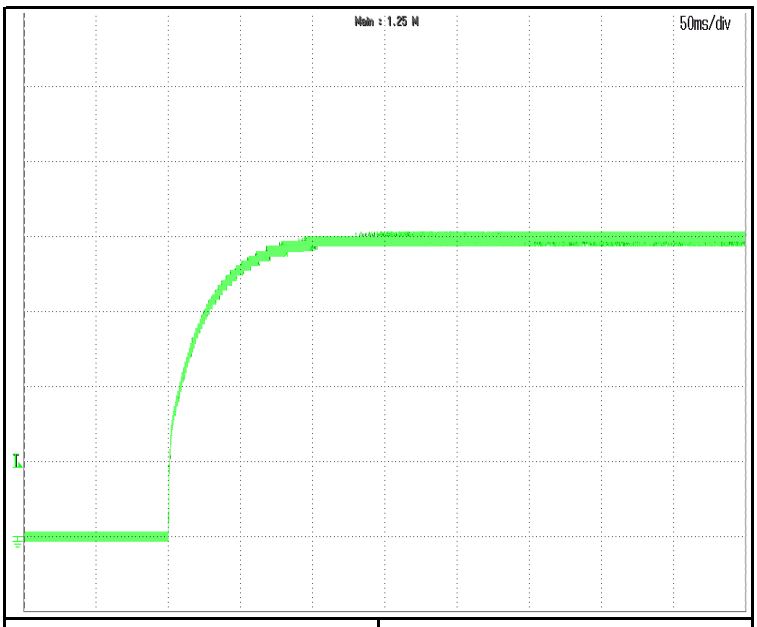
$5^{A}/_{DIV}$	$10^{ms}/_{DIV}$

2.4 ON/OFF Output rise characteristics

C.C mode

Conditions: Vin: Nominal
Iout: 100%
Vset: 105%
shorted output
Ta: 25°C

G1500-5



Iout

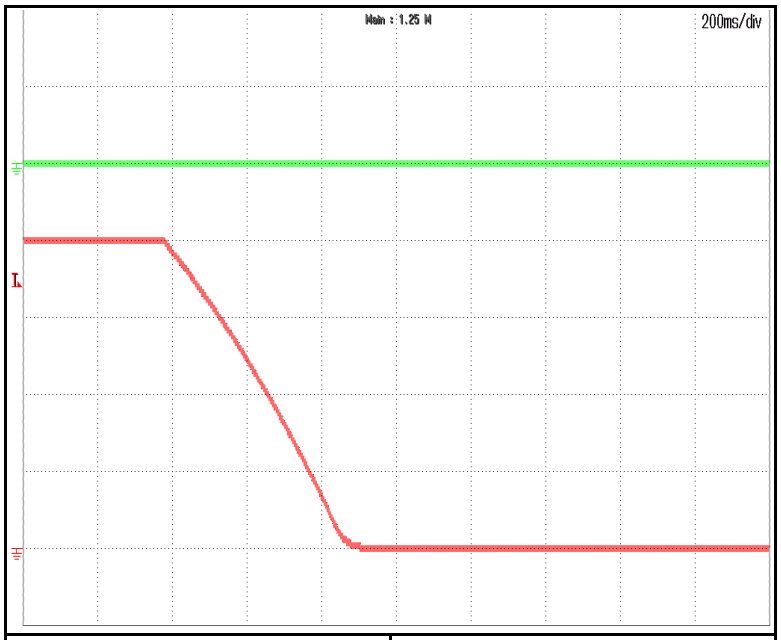
$1.24^{A}/_{DIV}$	$50^{ms}/_{DIV}$

2.5 ON/OFF Output fall characteristics

C.V mode

Conditions: Vin: Nominal
Vout: 100%
Iout: 0%
Ta: 25°C

G20-375

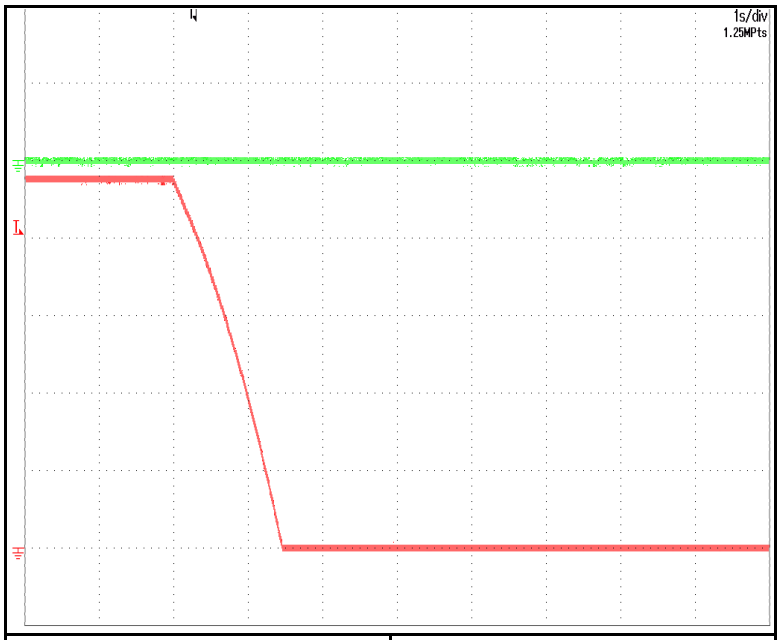


Iout

Vout

$5^{V}/_{DIV}$	$200^{ms}/_{DIV}$
$6^{A}/_{DIV}$	

G100-75



Iout

Vout

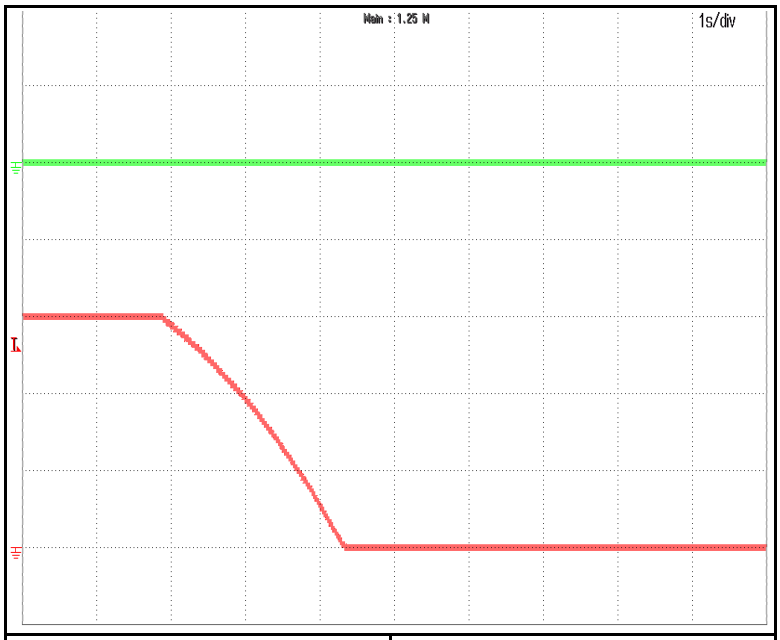
$21^{V}/_{DIV}$	$1^{Sec}/_{DIV}$
$6^{A}/_{DIV}$	

2.5 ON/OFF Output fall characteristics

C.V mode

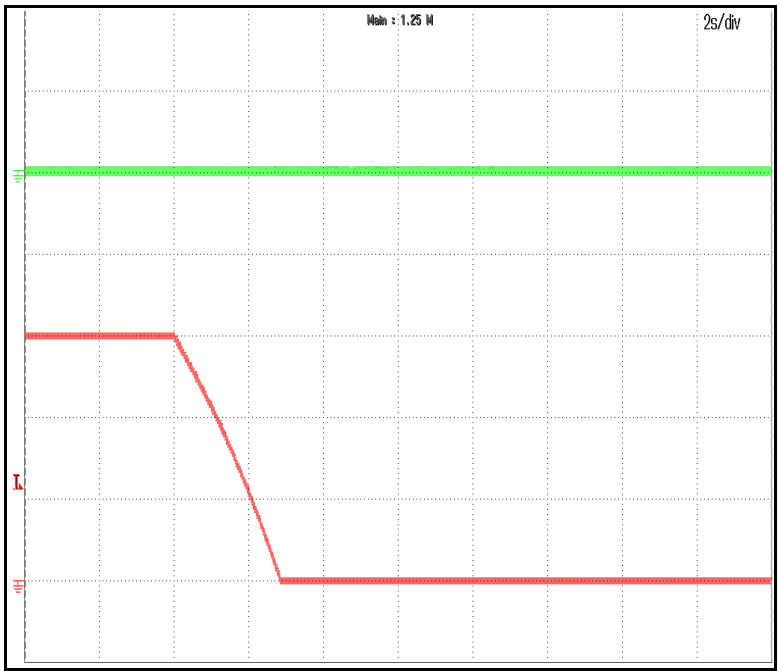
Conditions: Vin: Nominal
Vout: 100%
Iout: 0%
Ta: 25°C

G150-50



$50^{V}/_{DIV}$	$1^{Sec}/_{DIV}$
$6^{A}/_{DIV}$	

G600-12.5



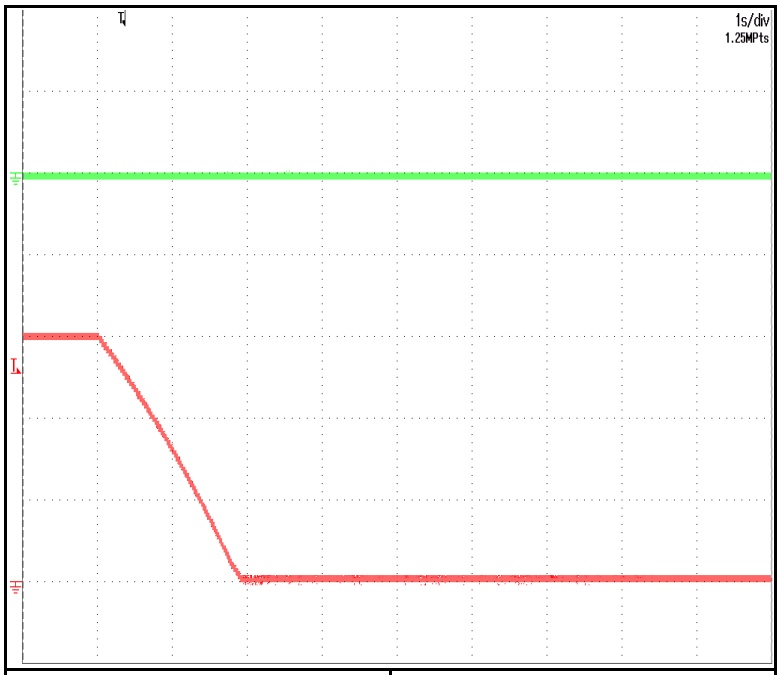
$200^{V}/_{DIV}$	$2^{Sec}/_{DIV}$
$6^{A}/_{DIV}$	

2.5 ON/OFF Output fall characteristics

C.V mode

Conditions: Vin: Nominal
Vout: 100%
Iout: 0%
Ta: 25°C

G1500-5



Iout

Vout

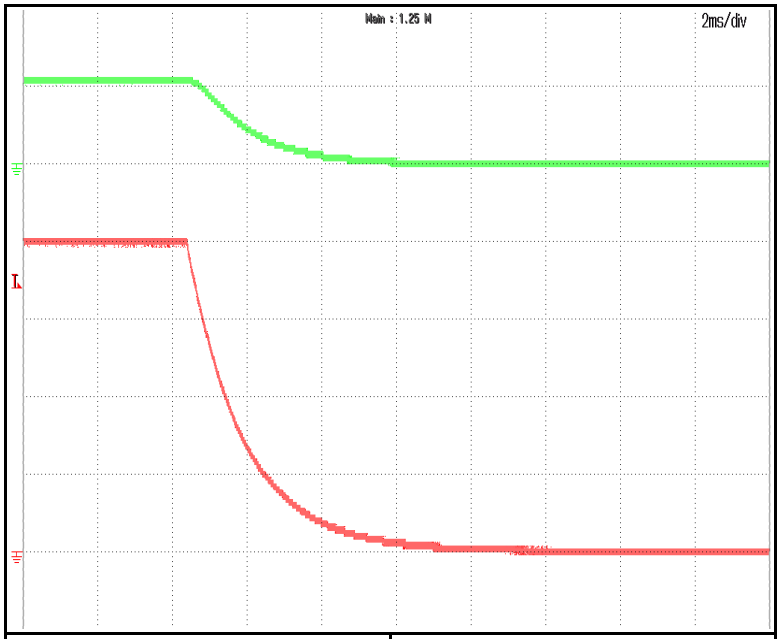
$500^{V}/_{DIV}$	$1^{Sec}/_{DIV}$
$6^{A}/_{DIV}$	

2.5 ON/OFF Output fall characteristics

C.V mode

Conditions: Vin: Nominal
Vout: 100%
Iout: 100%
Load: CR
Ta: 25°C

G20-375

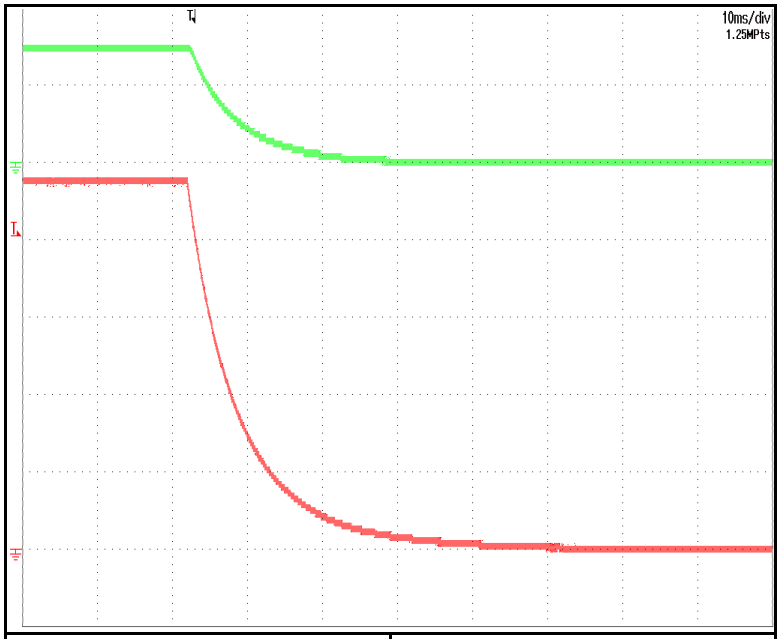


Iout

Vout

$5^{V}/_{DIV}$	$2^{ms}/_{DIV}$
$375^{A}/_{DIV}$	

G100-75



Iout

Vout

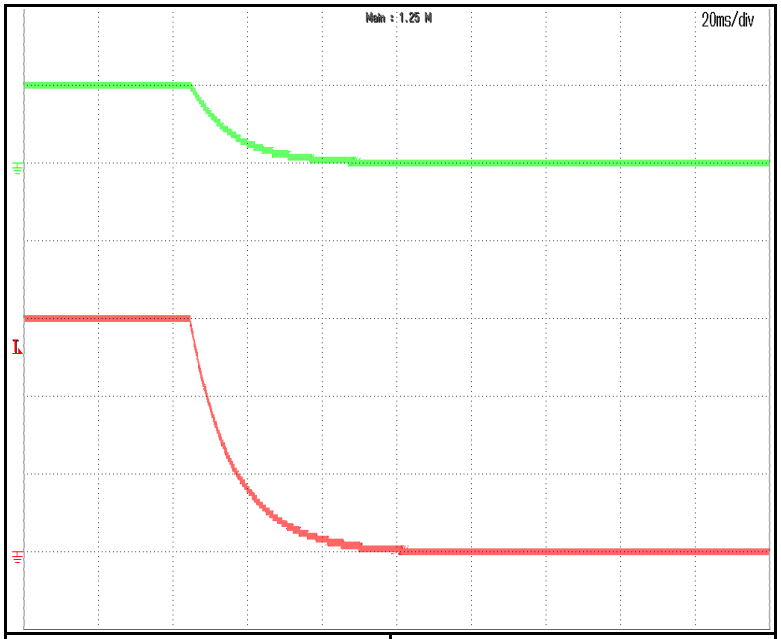
$21^{V}/_{DIV}$	$10^{ms}/_{DIV}$
$50^{A}/_{DIV}$	

2.5 ON/OFF Output fall characteristics

C.V mode

Conditions: Vin: Nominal
Vout: 100%
Iout: 100%
Load: CR
Ta: 25°C

G150-50

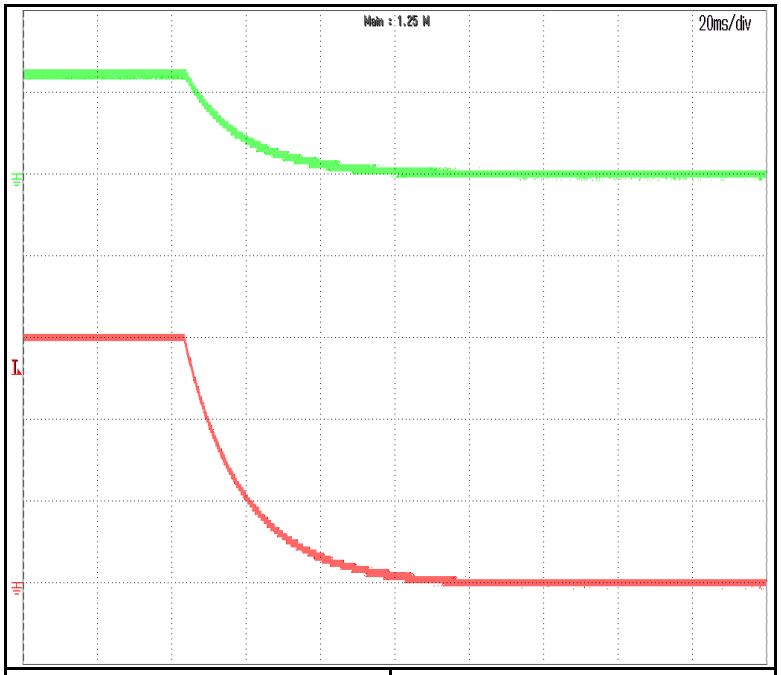


Iout

Vout

$50^{V}/_{DIV}$	$20^{ms}/_{DIV}$
$50^{A}/_{DIV}$	

G600-12.5



Iout

Vout

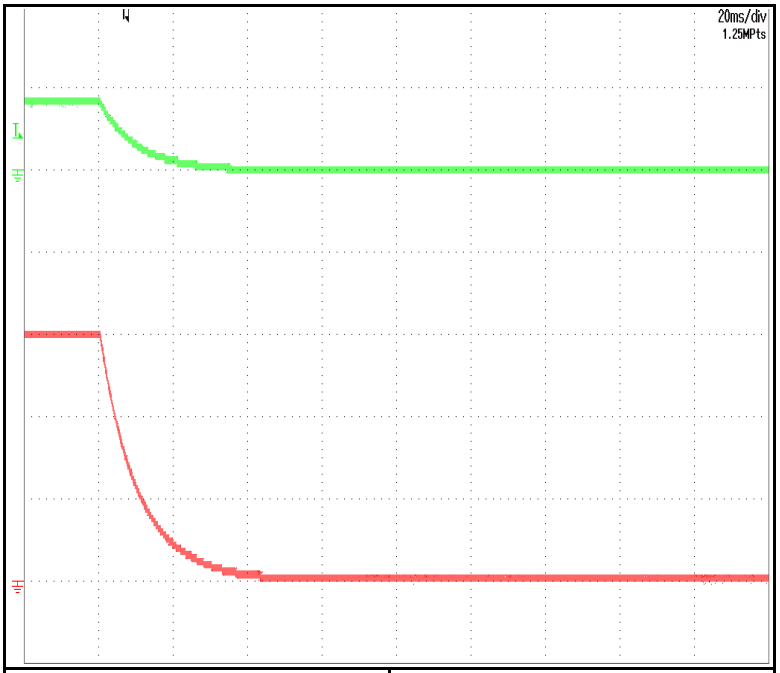
$200^{V}/_{DIV}$	$20^{ms}/_{DIV}$
$10^{A}/_{DIV}$	

2.5 ON/OFF Output fall characteristics

C.V mode

Conditions: Vin: Nominal
Vout: 100%
Iout: 100%
Load: CR
Ta: 25°C

G1500-5



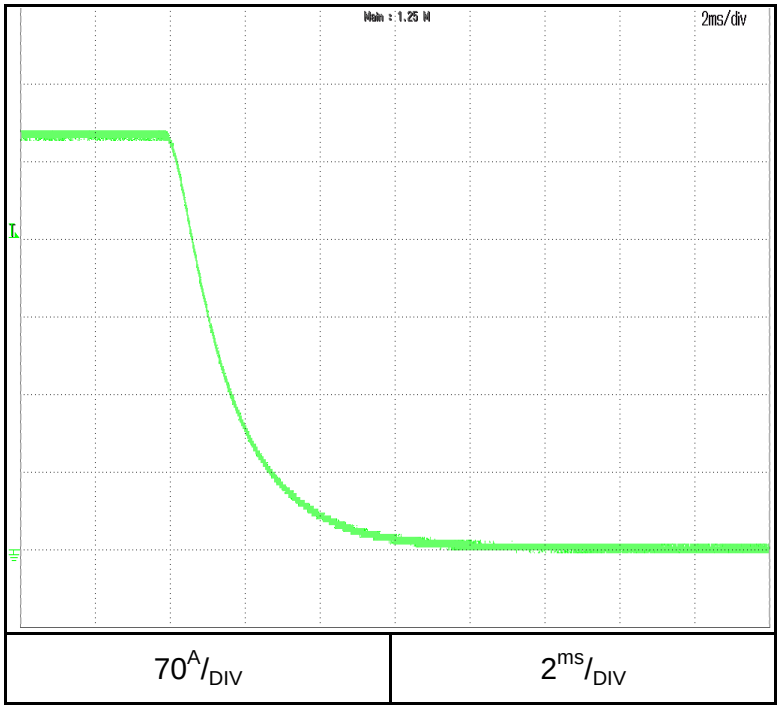
$500^{V}/_{DIV}$	$20^{ms}/_{DIV}$
$6^{A}/_{DIV}$	

2.5 ON/OFF Output fall characteristics

C.C mode

Conditions: Vin: Nominal
Vout: 100%
Iout: 100%
Load: CR
Ta: 25°C

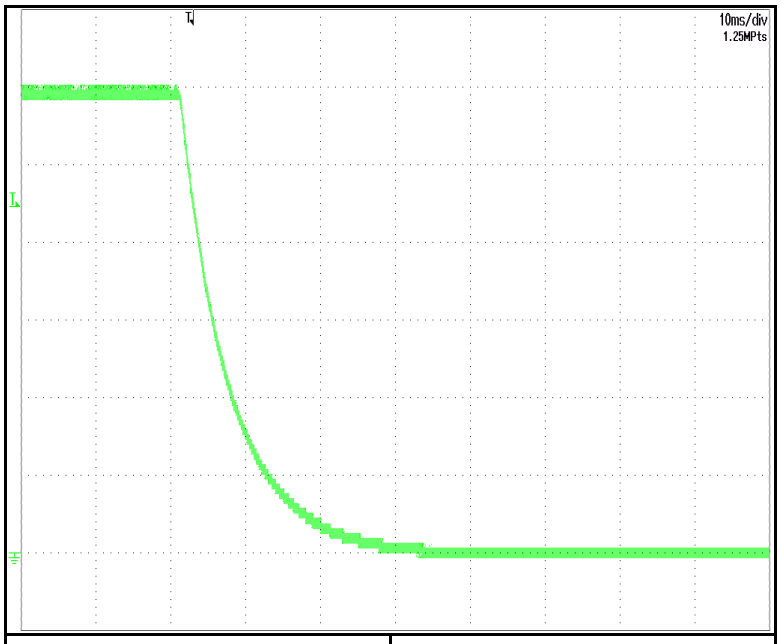
G20-375



Iout

$70^{A}/_{DIV}$	$2^{ms}/_{DIV}$

G100-75



Iout

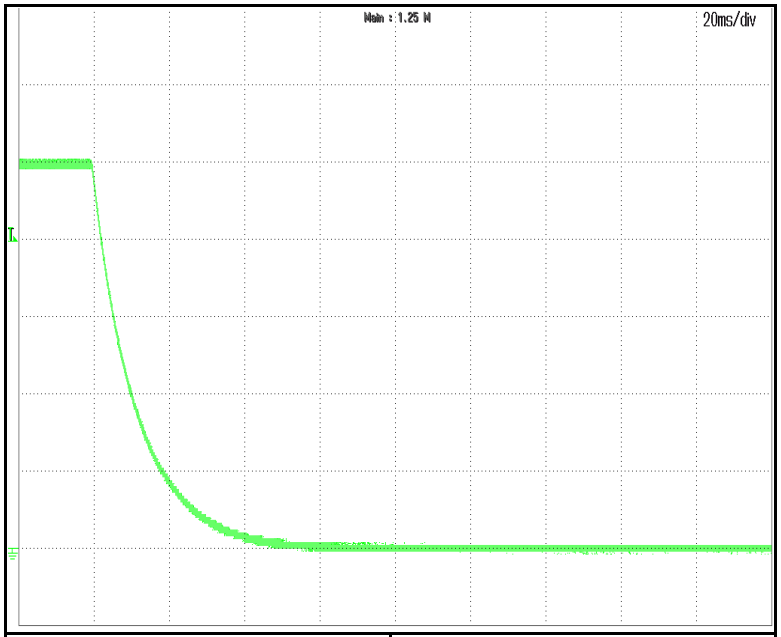
$12.6^{A}/_{DIV}$	$10^{ms}/_{DIV}$

2.5 ON/OFF Output fall characteristics

C.C mode

Conditions: Vin: Nominal
Vout: 100%
Iout: 100%
Load: CR
Ta: 25°C

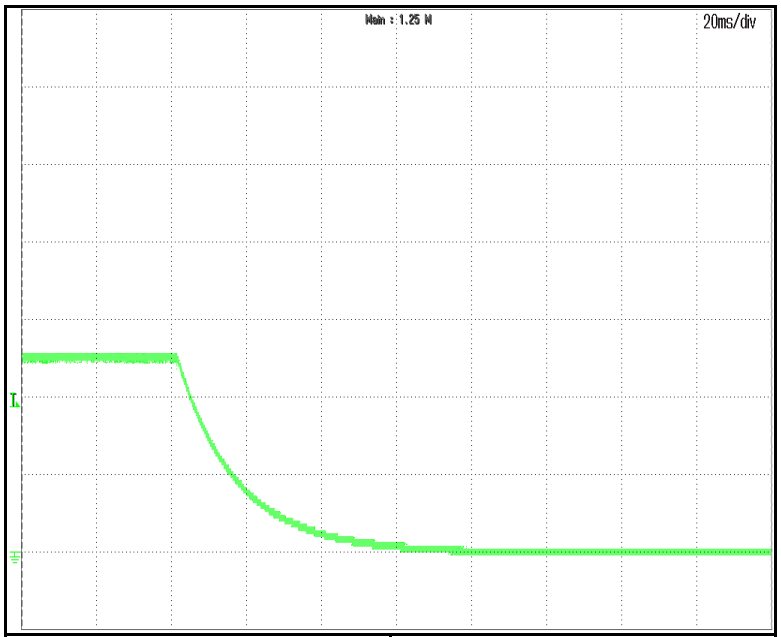
G150-50



Iout

$10^{A}/_{DIV}$	$20^{ms}/_{DIV}$

G600-12.5



Iout

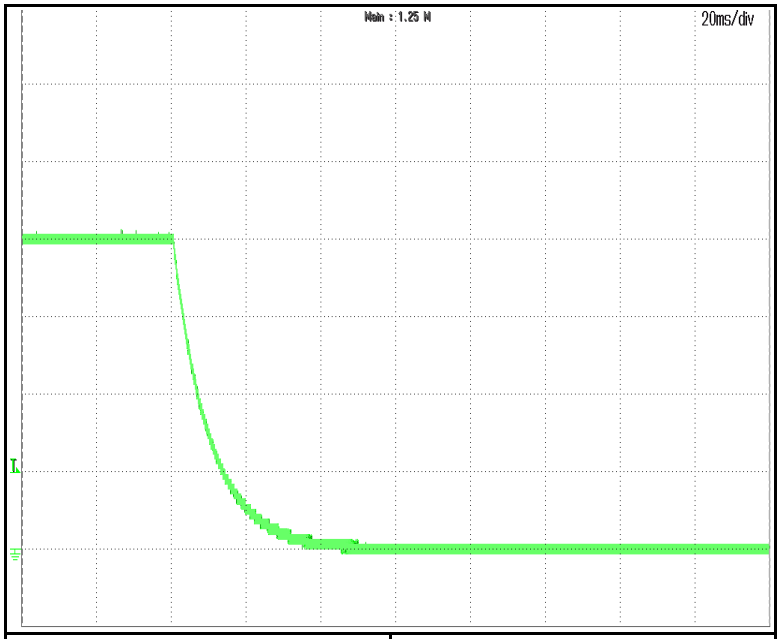
$5^{A}/_{DIV}$	$20^{ms}/_{DIV}$

2.5 ON/OFF Output fall characteristics

C.C mode

Conditions: Vin: Nominal
Vout: 100%
Iout: 100%
Load: CR
Ta: 25°C

G1500-5



Iout

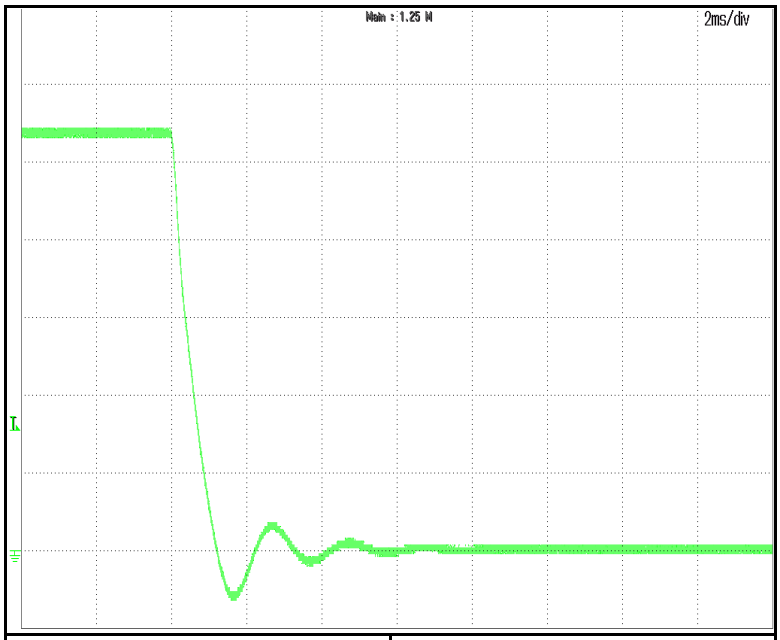
$1.24^{A}/_{DIV}$	$20^{ms}/_{DIV}$

2.5 ON/OFF Output fall characteristics

C.C mode

Conditions: Vin: Nominal
shorted output
Iout: 100%
Ta: 25°C

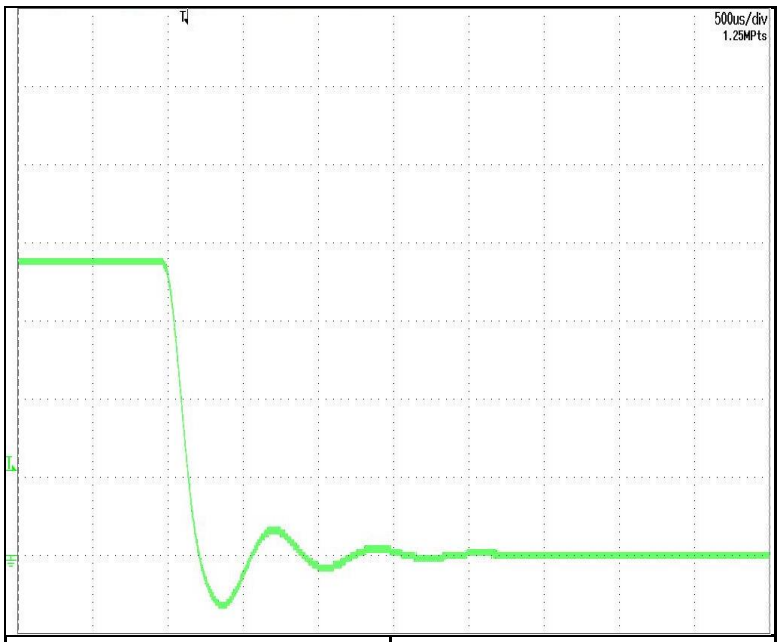
G20-375



Iout

$70^{A}/_{DIV}$	$2^{ms}/_{DIV}$

G100-75



Iout

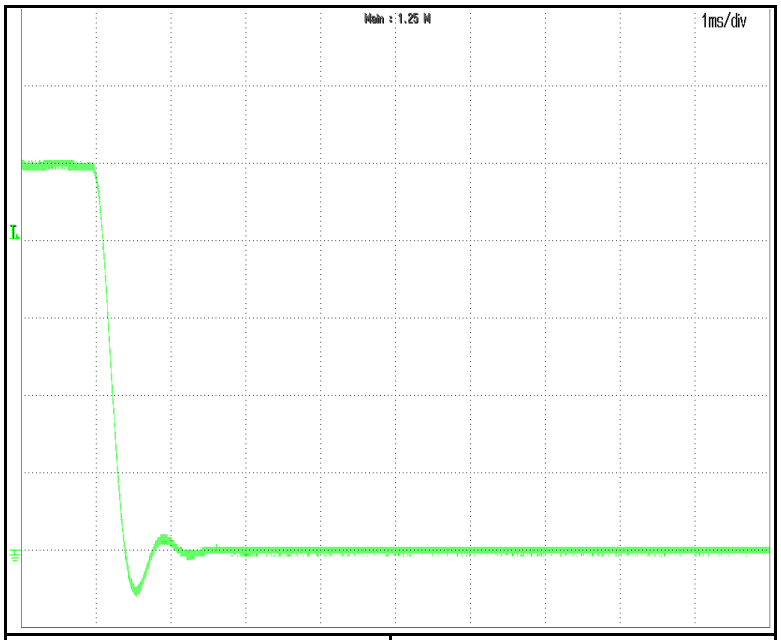
$20^{A}/_{DIV}$	$500u^{s}/_{DIV}$

2.5 ON/OFF Output fall characteristics

C.C mode

Conditions: Vin: Nominal
shorted output
Iout: 100%
Ta: 25°C

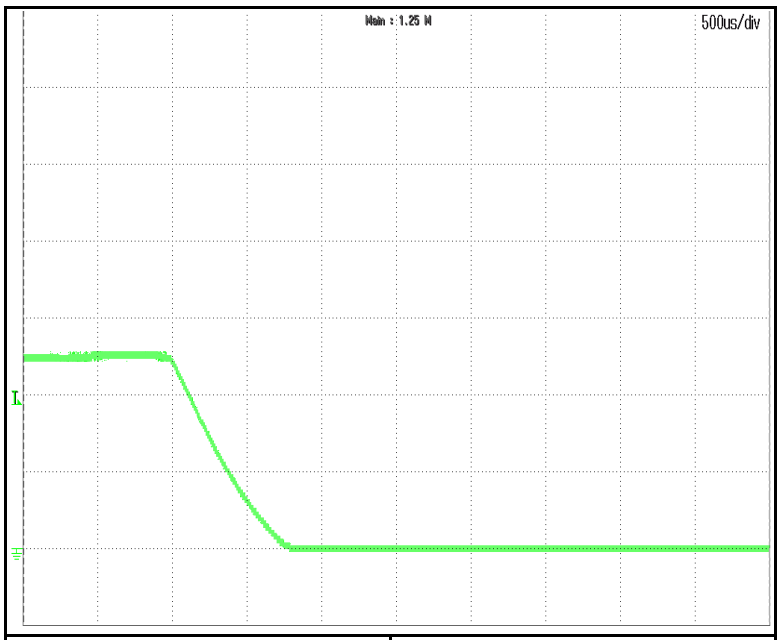
G150-50



Iout

$10^{A}/_{DIV}$	$1^{ms}/_{DIV}$

G600-12.5



Iout

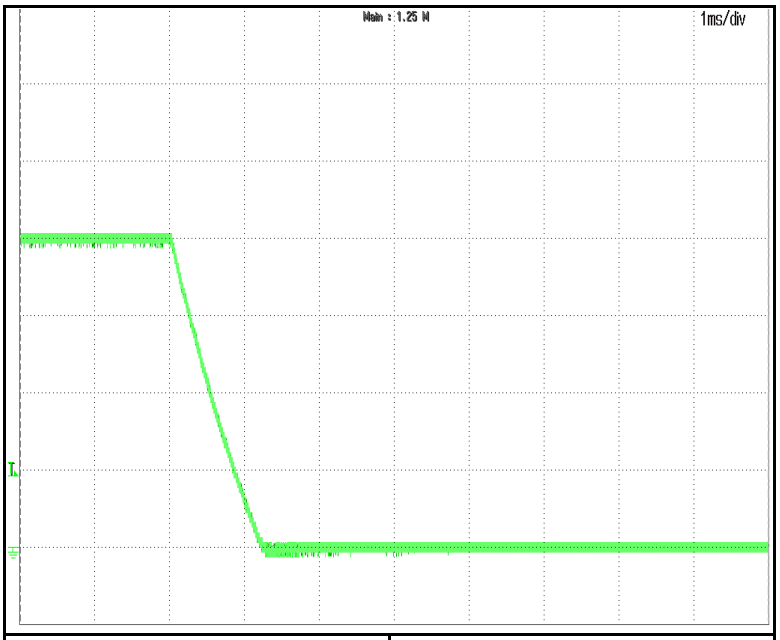
$5^{A}/_{DIV}$	$500u^{s}/_{DIV}$

2.5 ON/OFF Output fall characteristics

C.C mode

Conditions: Vin: Nominal
shorted output
Iout: 100%
Ta: 25°C

G1500-5



Iout

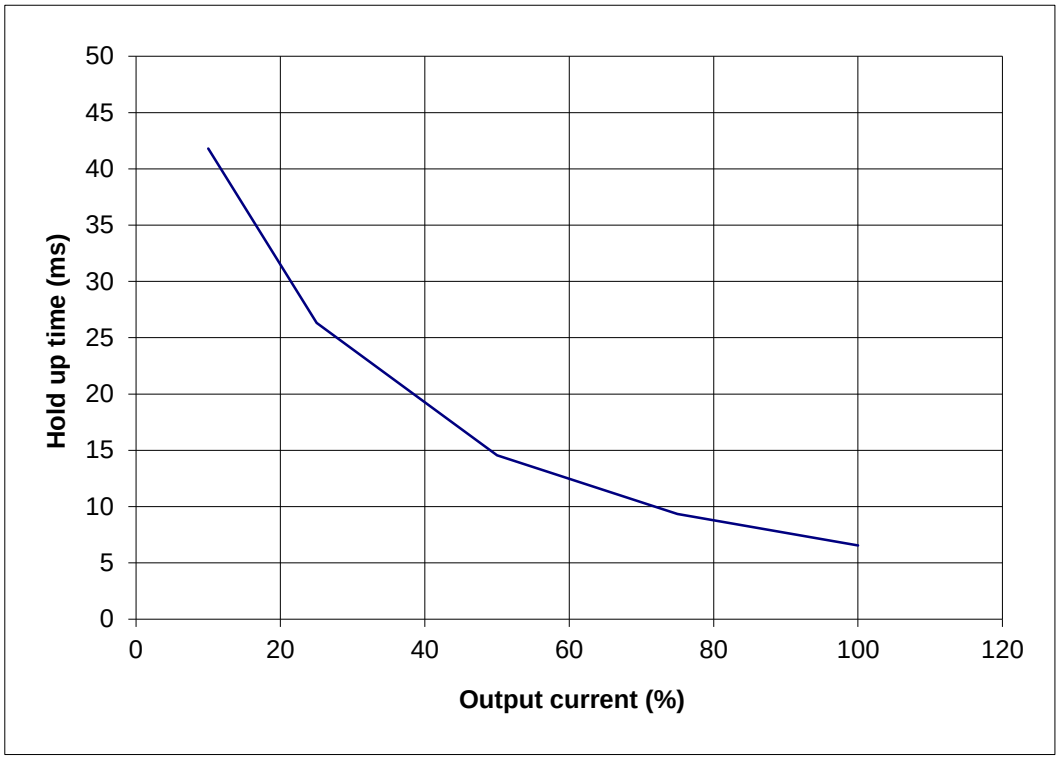
$1.24^{A}/_{DIV}$	$1^{ms}/_{DIV}$

2.6 Holdup time characteristics

Conditions: Vout: 100%
Ta: 25°C

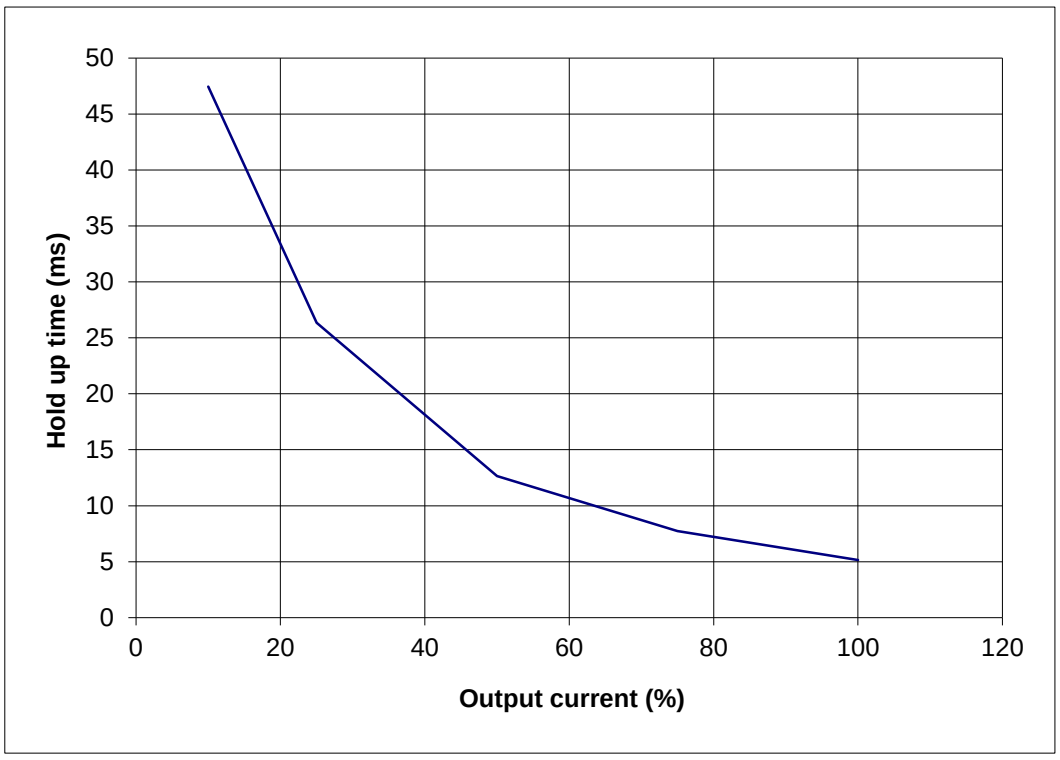
G20-375 3Φ208

Vin:200VAC



G20-375 3Φ480

Vin:400VAC

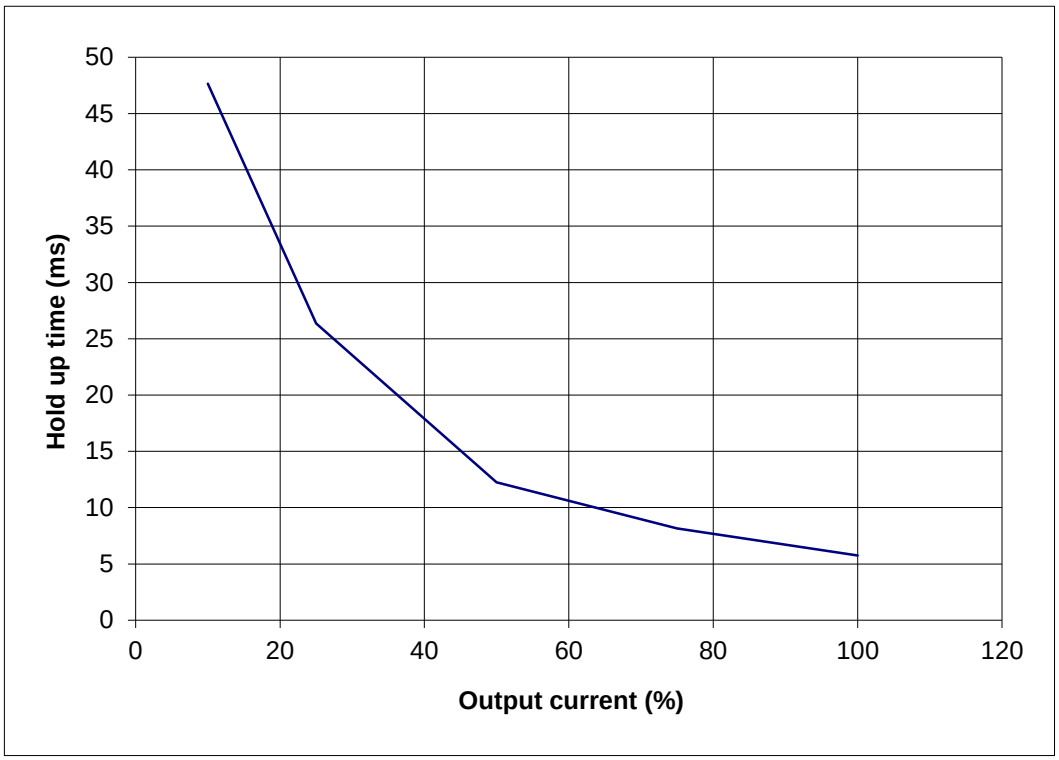


2.6 Holdup time characteristics

Conditions: Vout: 100%
Ta: 25°C

G20-375 3Φ480

Vin:480VAC

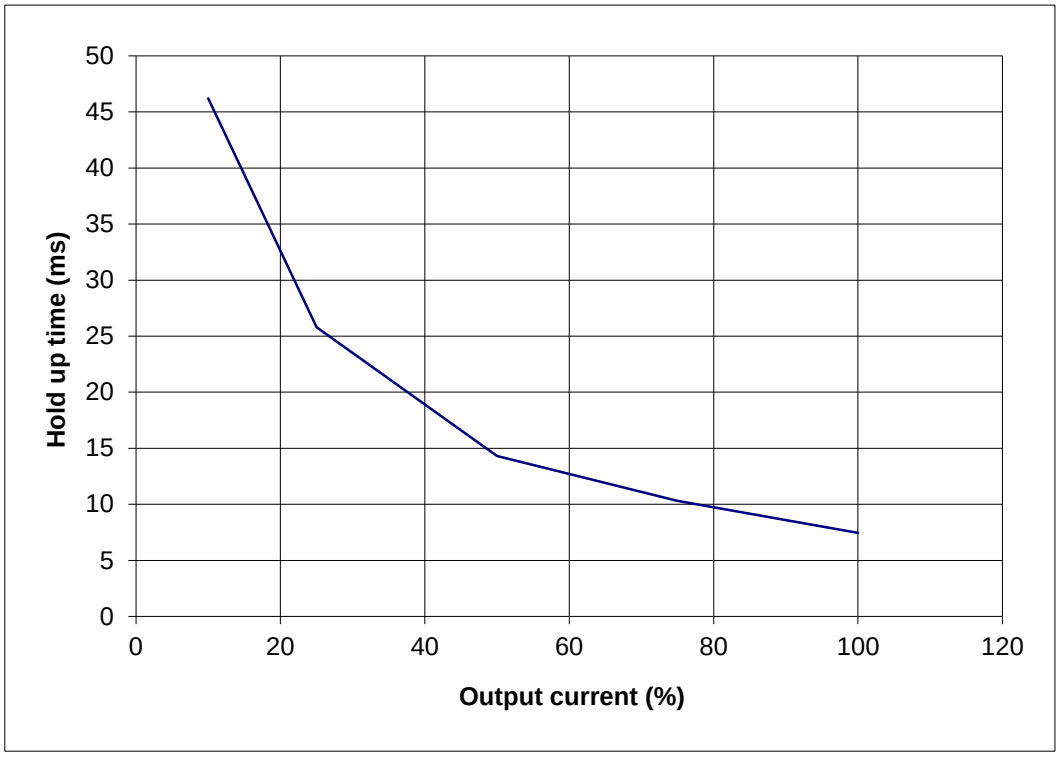


2.6 Holdup time characteristics

Conditions: Vout: 100%
Ta: 25°C

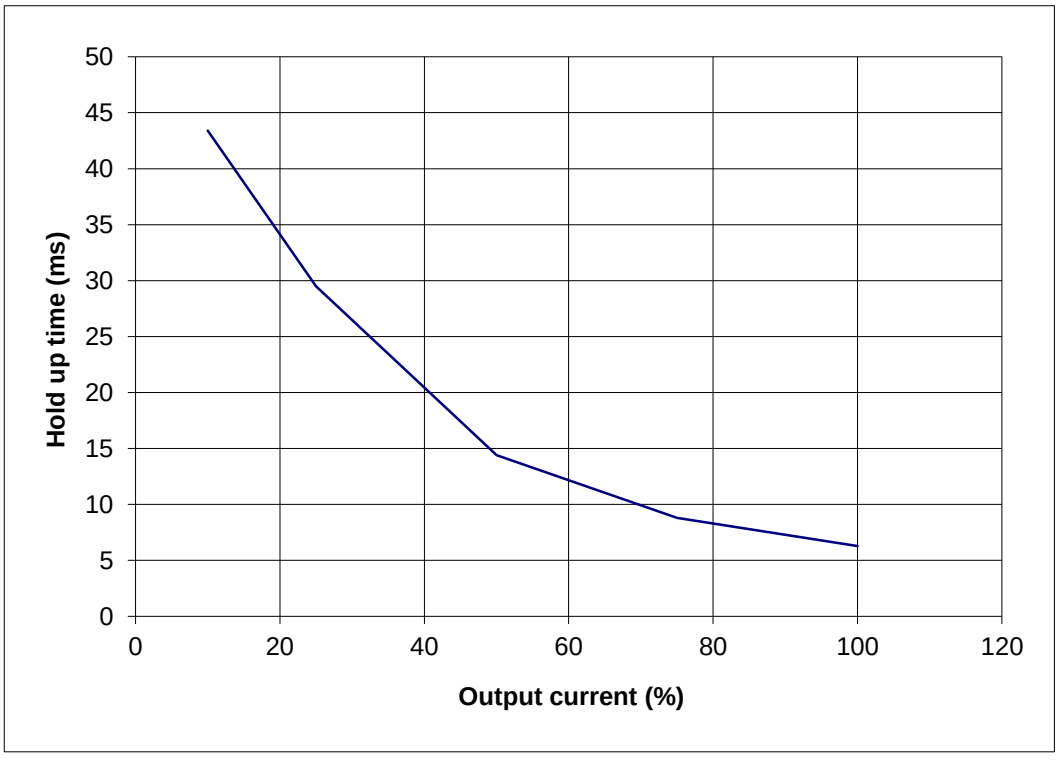
G100-75 3Φ208

Vin:200VAC



G100-75 3Φ480

Vin:400VAC

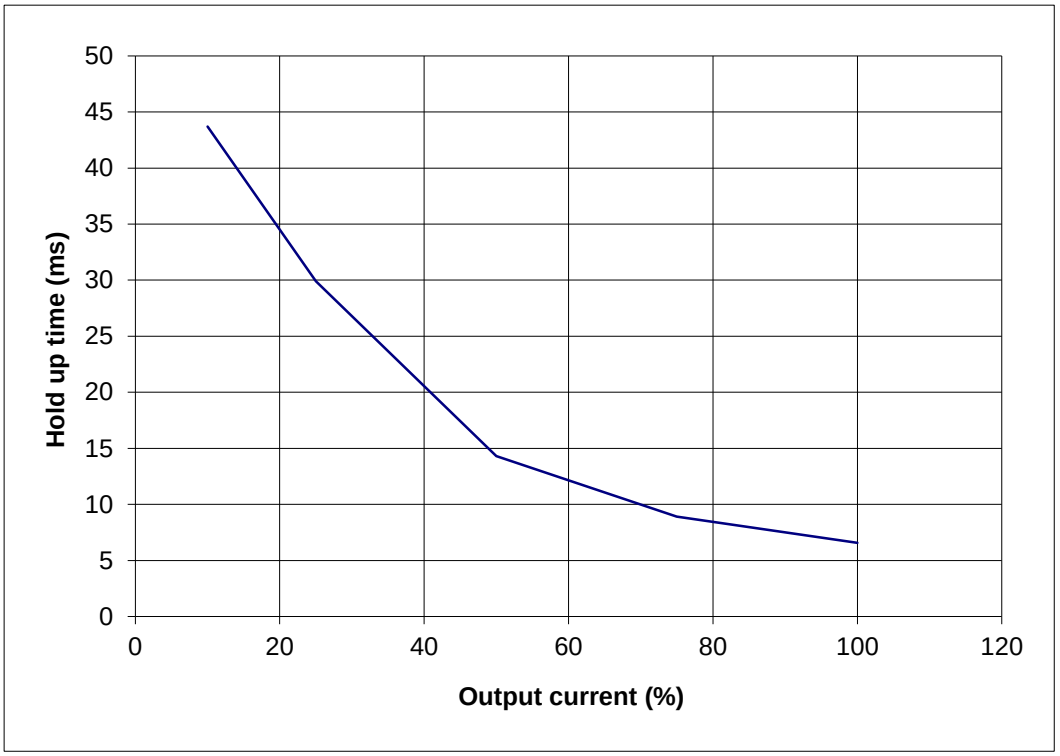


2.6 Holdup time characteristics

Conditions: Vout: 100%
Ta: 25°C

G100-75 3Φ480

Vin:480VAC

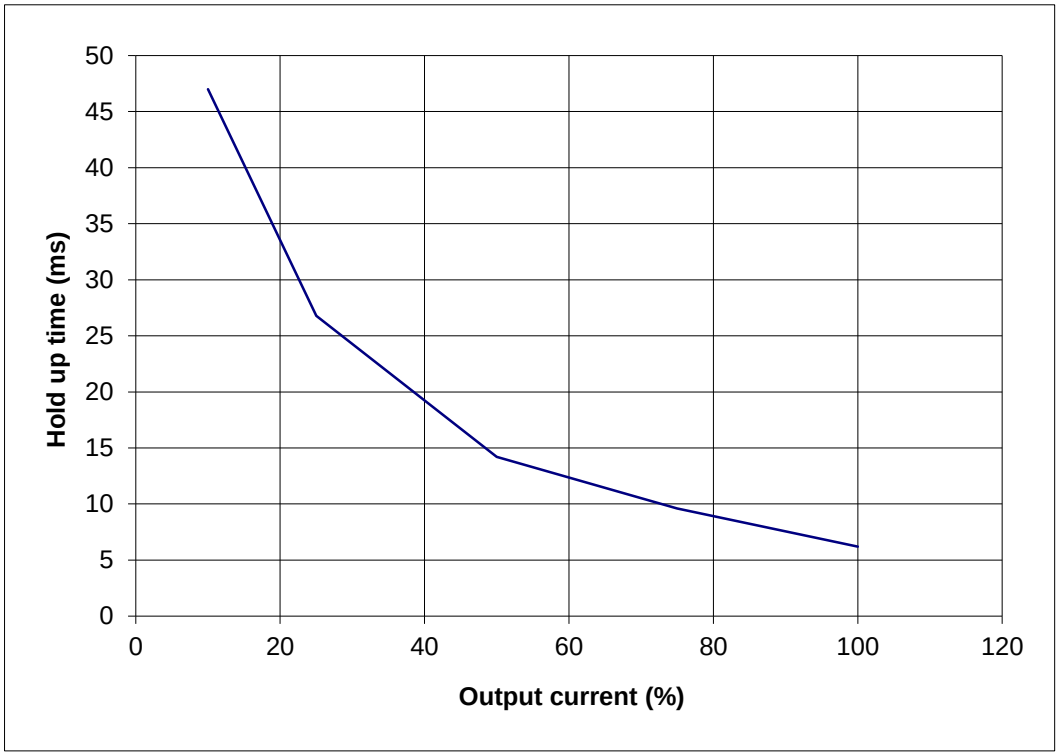


2.6 Holdup time characteristics

Conditions: Vout: 100%
Ta: 25°C

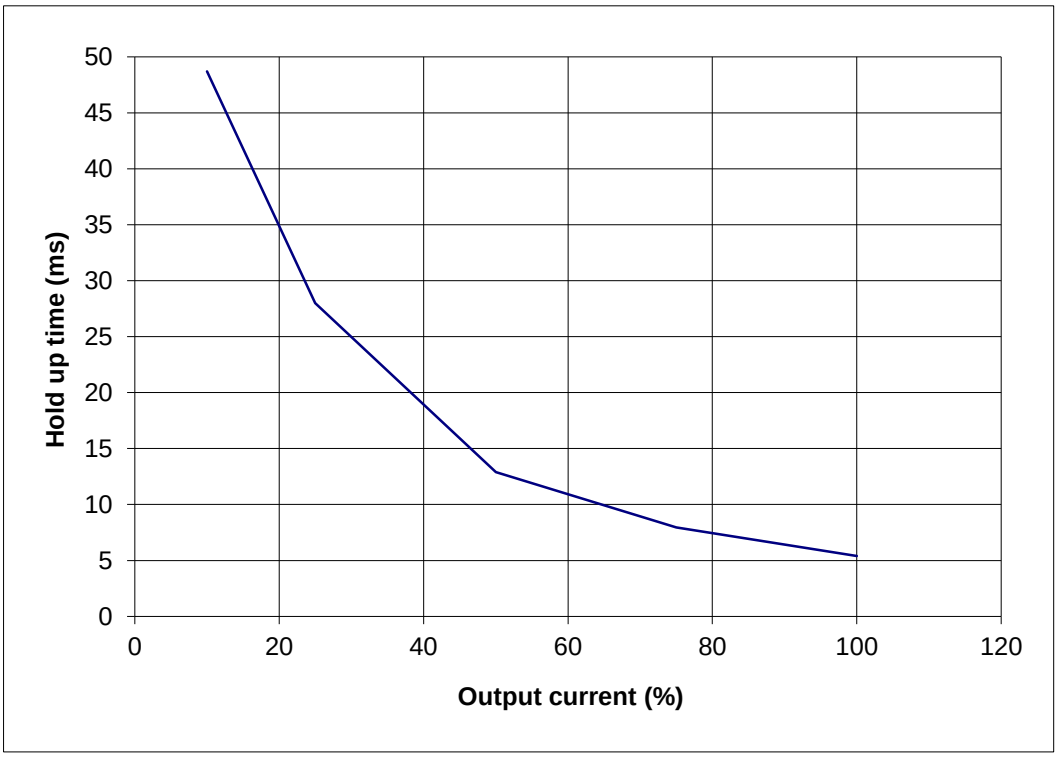
G150-50 3Φ208

Vin:200VAC



G150-50 3Φ480

Vin:400VAC

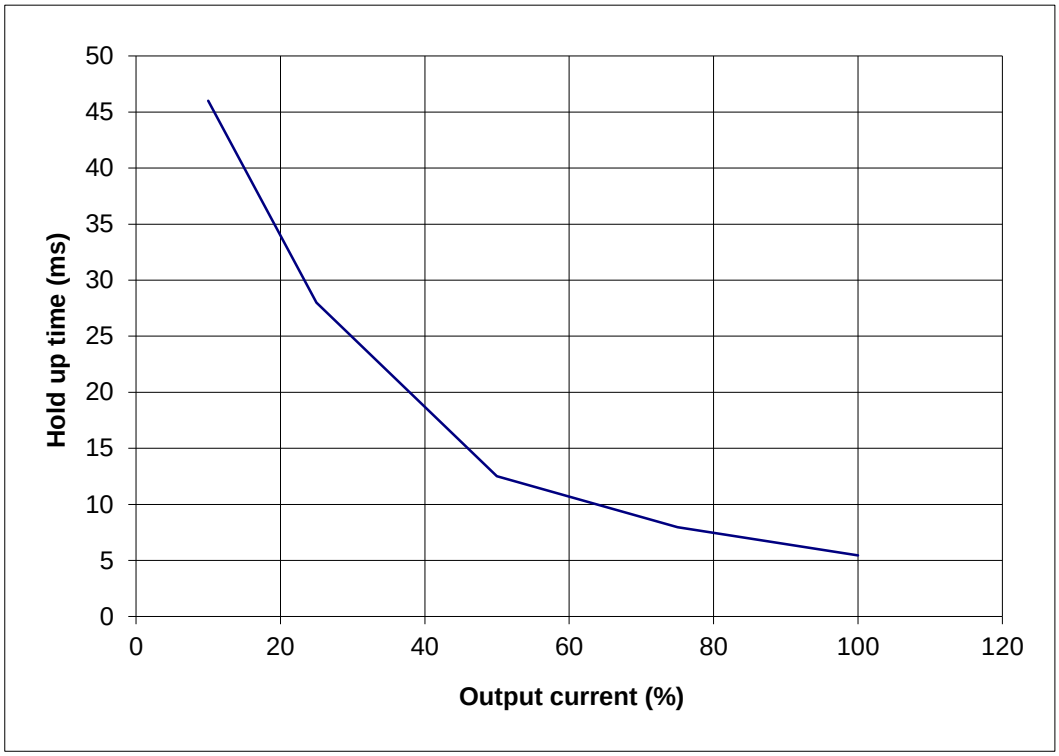


2.6 Holdup time characteristics

Conditions: Vout: 100%
Ta: 25°C

G150-50 3Φ480

Vin:480VAC

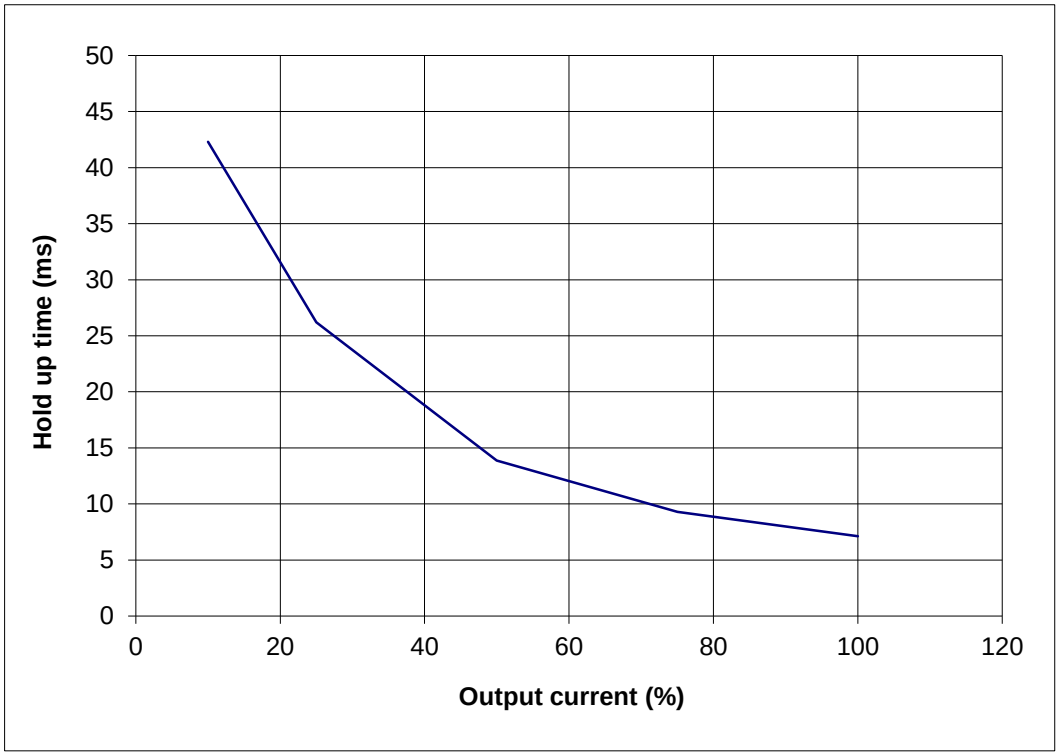


2.6 Holdup time characteristics

Conditions: Vout: 100%
Ta: 25°C

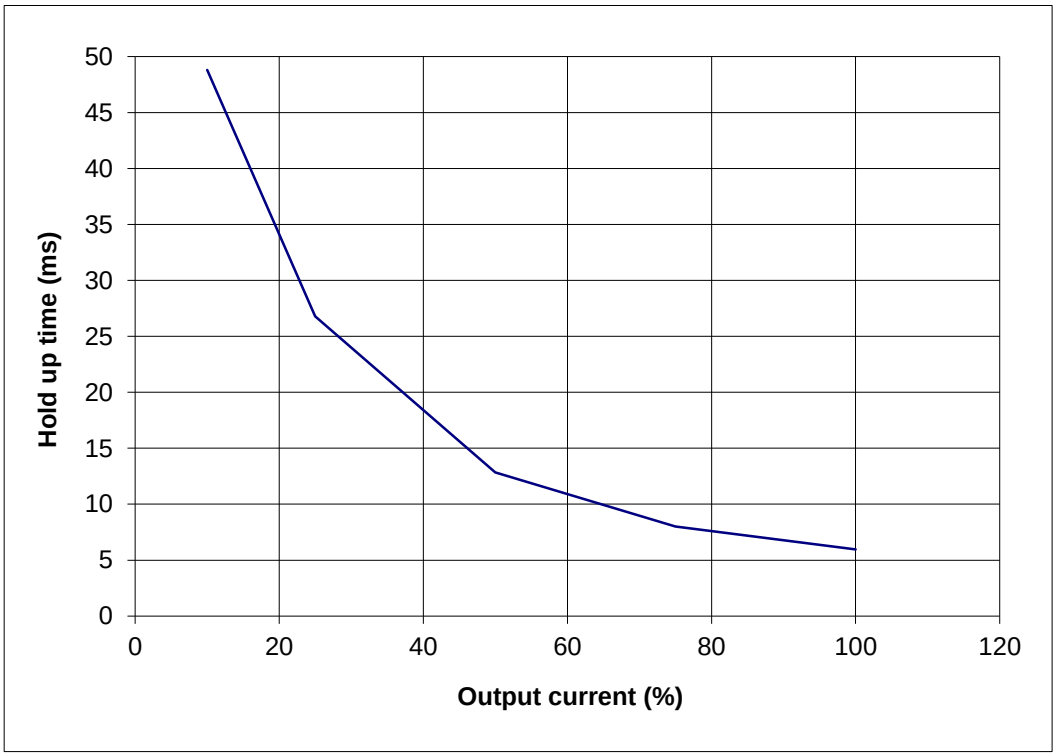
G600-12.5 3Φ208

Vin:200VAC



G600-12.5 3Φ480

Vin:400VAC

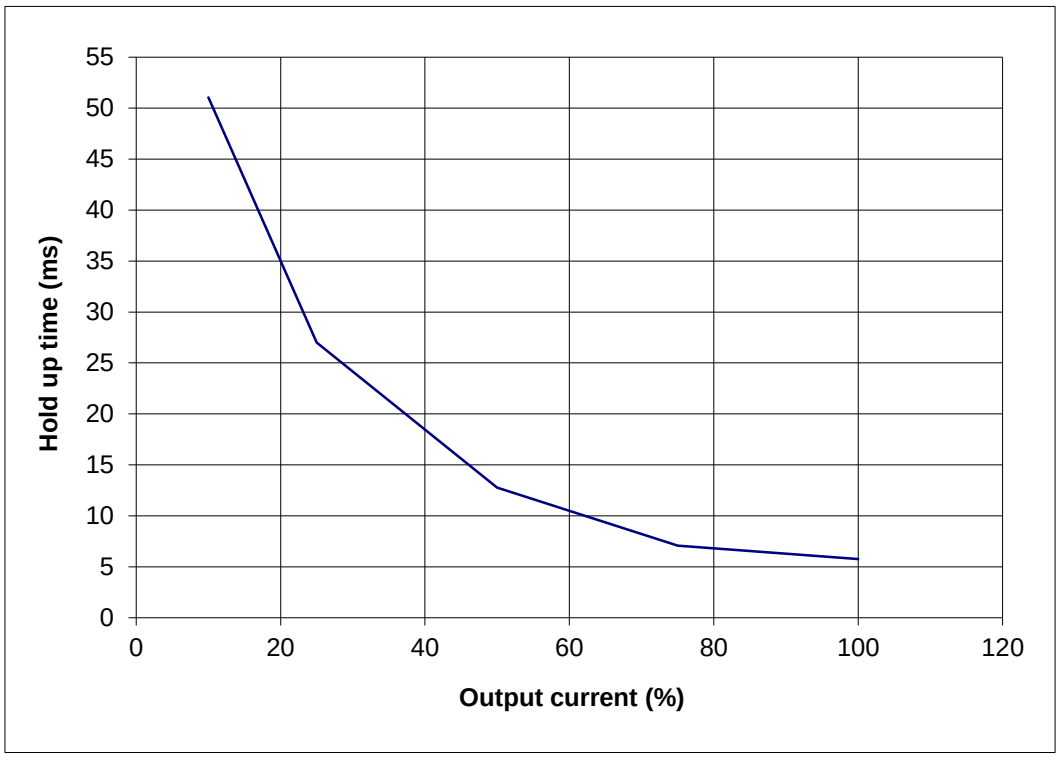


2.6 Holdup time characteristics

Conditions: Vout: 100%
Ta: 25°C

G600-12.5 3Φ480

Vin:480VAC

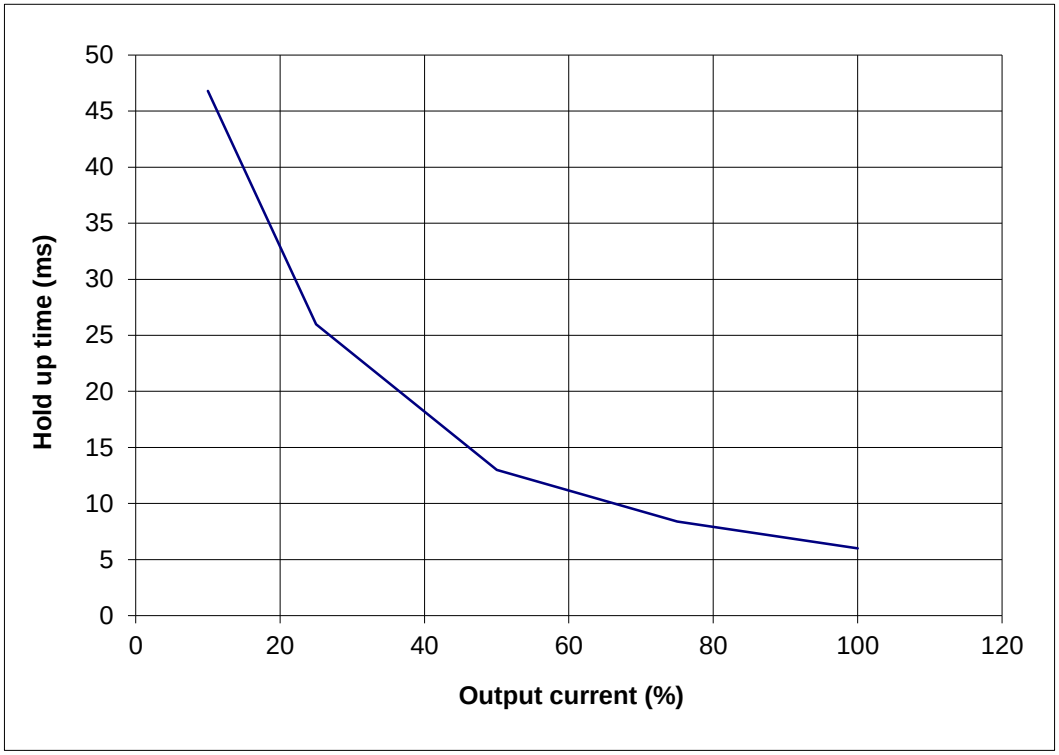


2.6 Holdup time characteristics

Conditions: Vout: 100%
Ta: 25°C

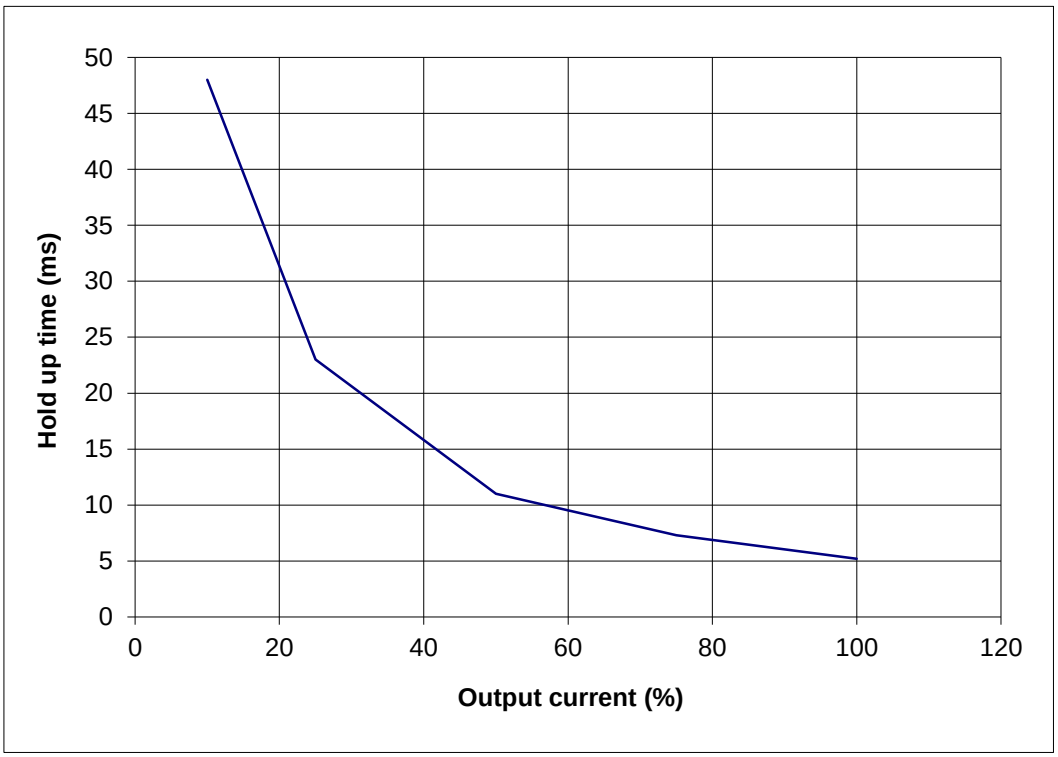
G1500-5 3Φ208

Vin:200VAC



G1500-5 3Φ480

Vin:400VAC

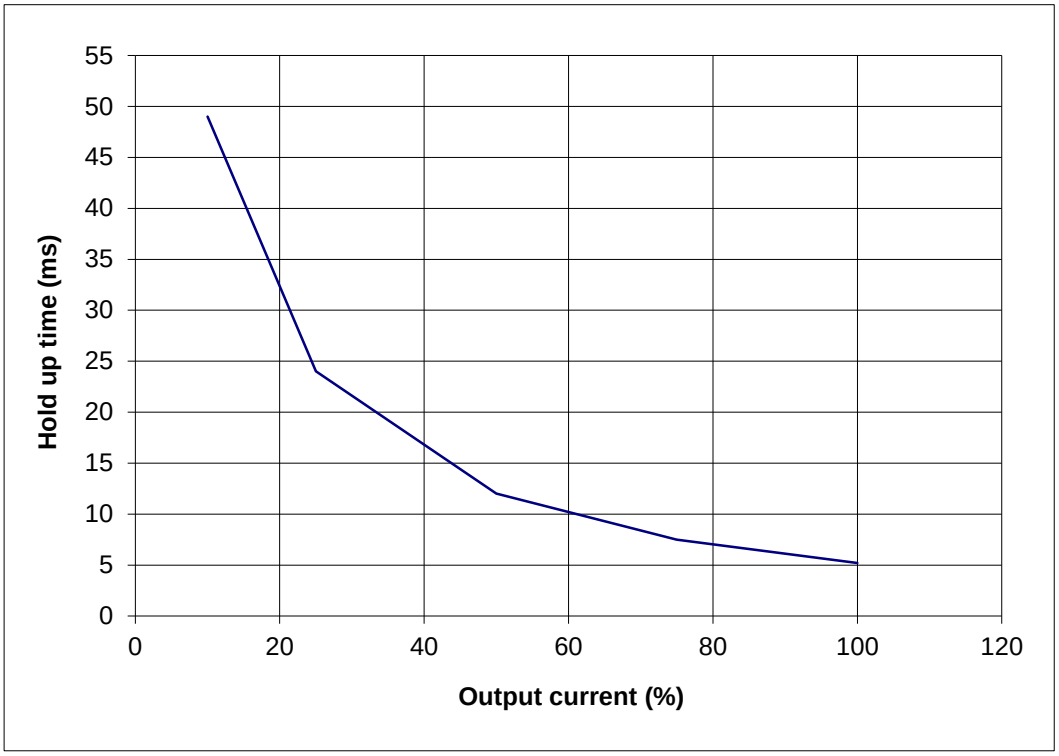


2.6 Holdup time characteristics

Conditions: Vout: 100%
Ta: 25°C

G1500-5 3Φ480

Vin:480VAC

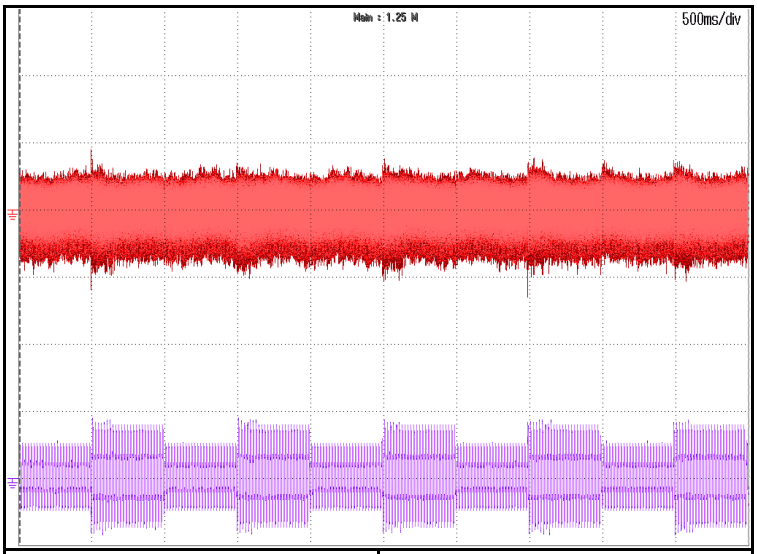


2.7 Dynamic line response characteristics

C.V mode

G20-375 3Φ208

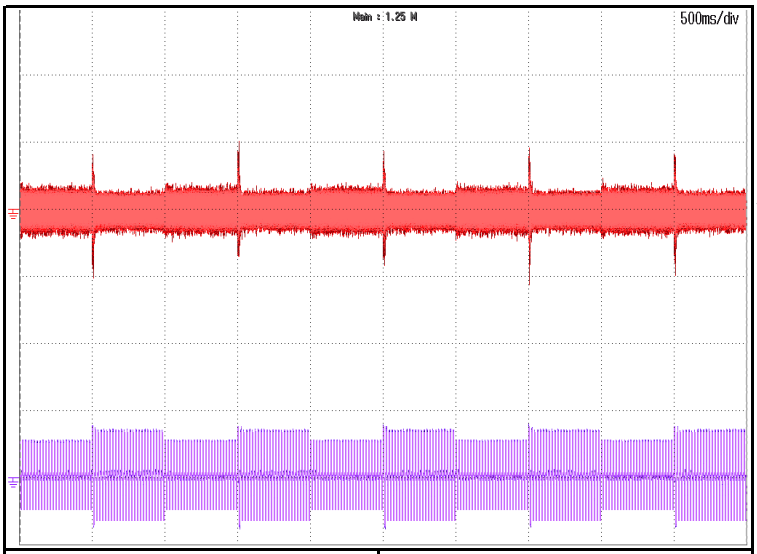
Conditions: Vout: 100%
Iout: 100%
Vin: 170↔265V
Ta: 25°C



Vout: $10^{mv}/_{DIV}$	$500^{ms}/_{DIV}$
Vin: $500^{v}/_{DIV}$	

G20-375 3Φ480

Conditions: Vout: 100%
Iout: 100%
Vin: 342↔460V
Ta: 25°C



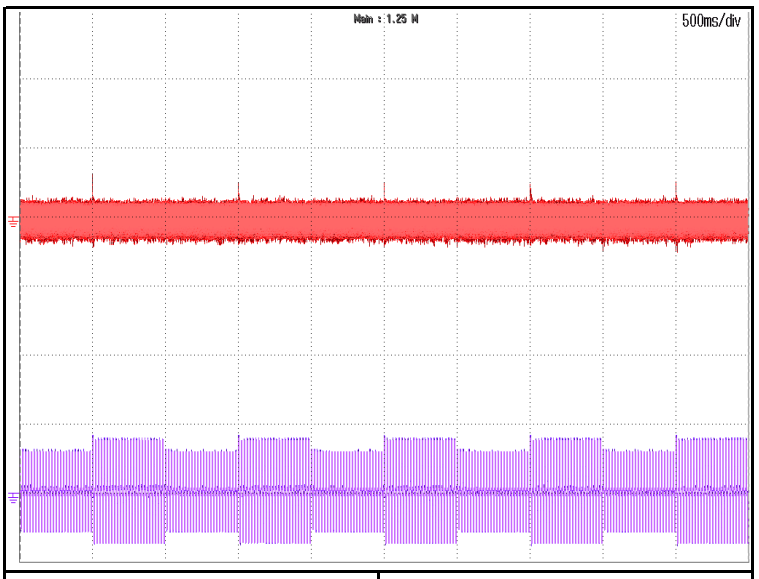
Vout: $20^{mv}/_{DIV}$	$500^{ms}/_{DIV}$
Vin: $1000^{v}/_{DIV}$	

2.7 Dynamic line response characteristics

C.V mode

G20-375 3Φ480

Conditions: Vout: 100%
Iout: 100%
Vin: 396↔528V
Ta: 25°C



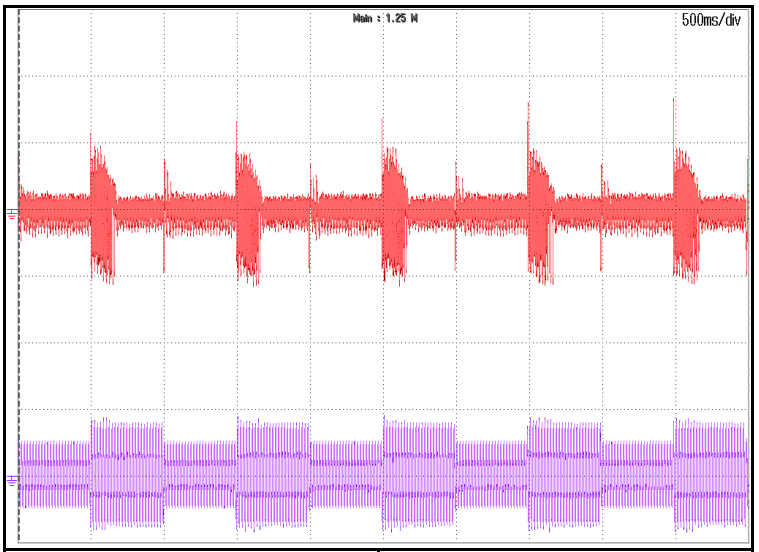
Vout: $20^{mv}/_{DIV}$	$500^{ms}/_{DIV}$
Vin: $1000^{v}/_{DIV}$	

2.7 Dynamic line response characteristics

C.C mode

G20-375 3Φ208

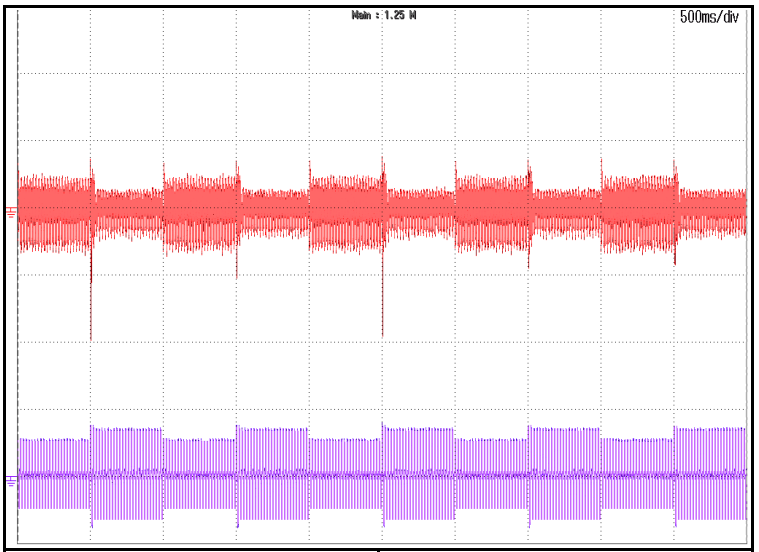
Conditions: Vout: 100%
Iout: 100%
Vin: 170↔265V
Ta: 25°C



Iout: 938m$^{A}/_{DIV}$	500$^{ms}/_{DIV}$
Vin: 500v/$_{DIV}$	

G20-375 3Φ480

Conditions: Vout: 100%
Iout: 100%
Vin: 342↔460V
Ta: 25°C



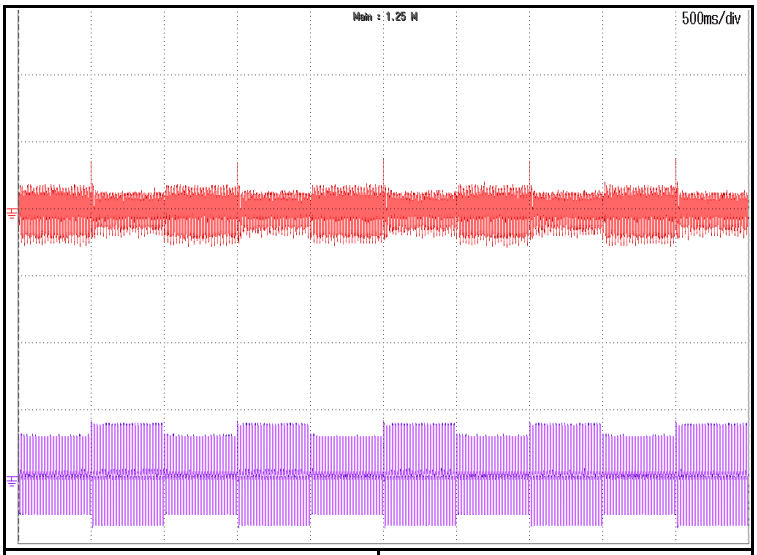
Iout: 938m$^{A}/_{DIV}$	500$^{ms}/_{DIV}$
Vin: 1000$^{v}/_{DIV}$	

2.7 Dynamic line response characteristics

C.C mode

G20-375 3Φ480

Conditions: Vout: 100%
Iout: 100%
Vin: 396↔528V
Ta: 25°C



Iout

Vin

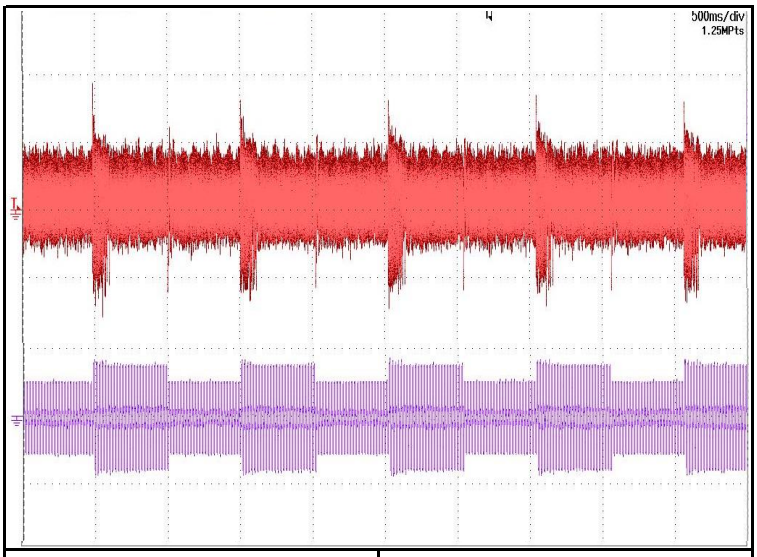
Iout: 938m$^{A}/_{DIV}$	500$^{ms}/_{DIV}$
Vin: 1000$^{v}/_{DIV}$	

2.7 Dynamic line response characteristics

C.V mode

G100-75 3Φ208

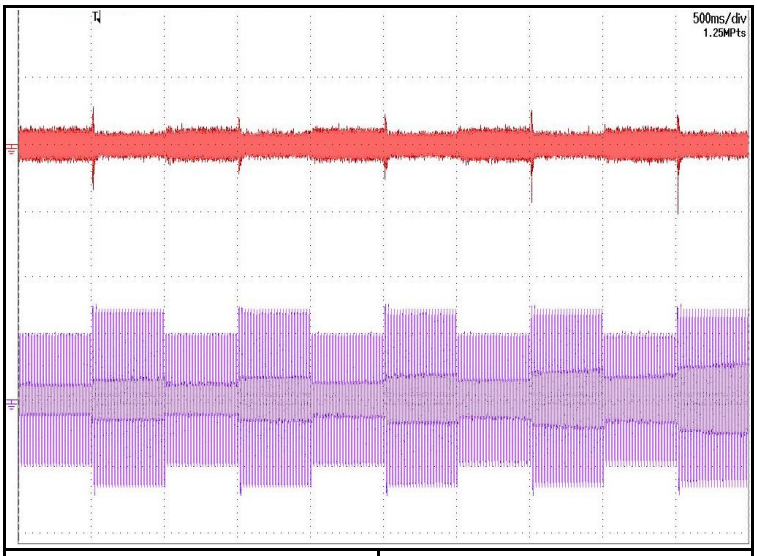
Conditions: Vout: 100%
Iout: 100%
Vin: 170↔265V
Ta: 25°C



Vout: $10^{mv}/_{DIV}$	$500^{ms}/_{DIV}$
Vin: $500^{v}/_{DIV}$	

G100-75 3Φ480

Conditions: Vout: 100%
Iout: 100%
Vin: 342↔460V
Ta: 25°C



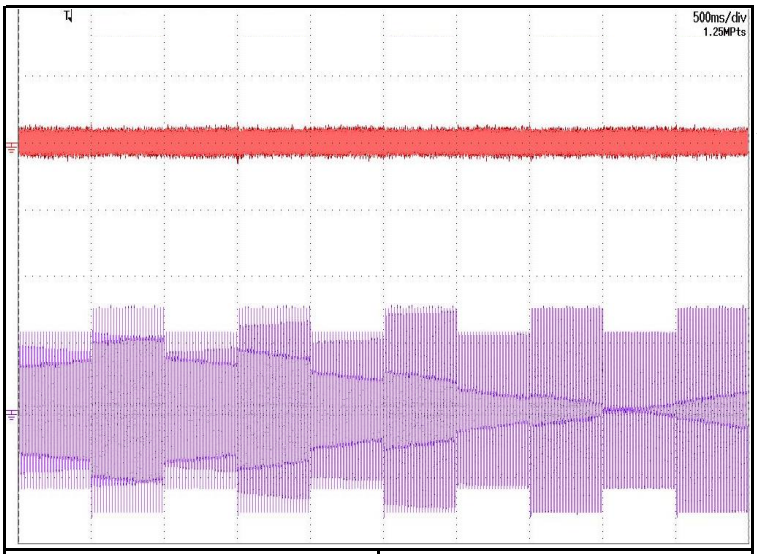
Vout: $50^{mv}/_{DIV}$	$500^{ms}/_{DIV}$
Vin: $500^{v}/_{DIV}$	

2.7 Dynamic line response characteristics

C.V mode

G100-75 3Φ480

Conditions: Vout: 100%
Iout: 100%
Vin: 396↔528V
Ta: 25°C



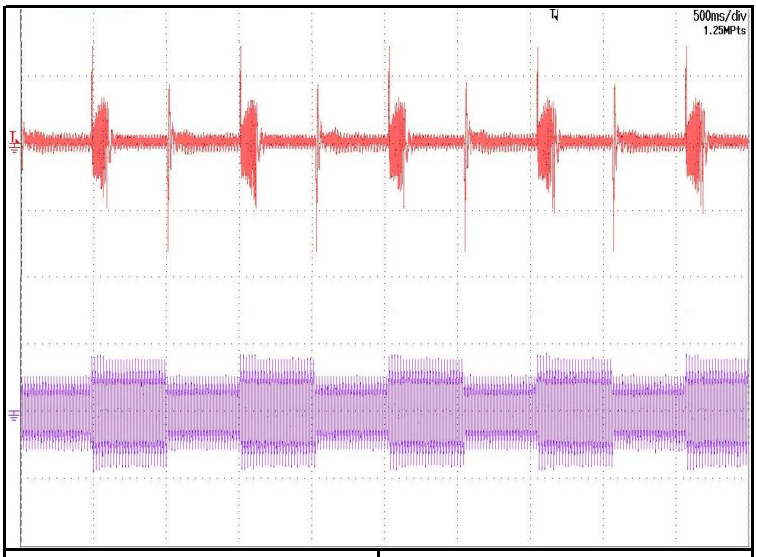
Vout: $50^{mv}/_{DIV}$	$500^{ms}/_{DIV}$
Vin: $500^{v}/_{DIV}$	

2.7 Dynamic line response characteristics

C.C mode

G100-75 3Φ208

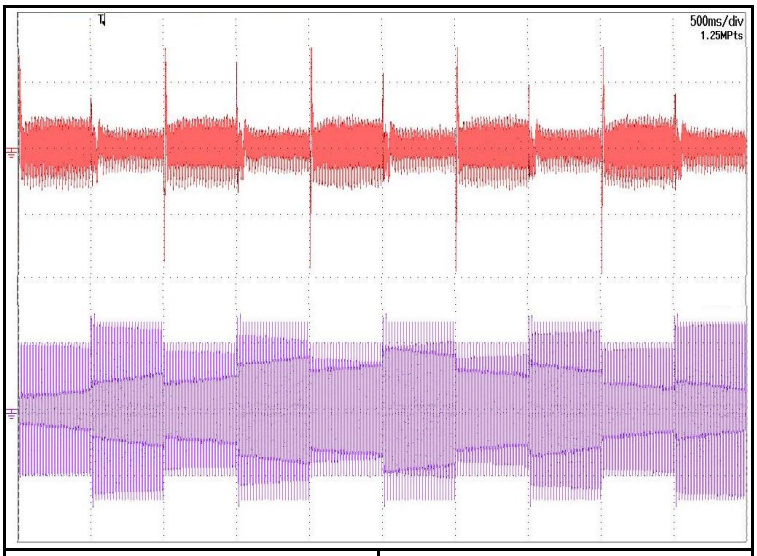
Conditions: Vout: 100%
Iout: 100%
Vin: 170↔265V
Ta: 25°C



Iout: 150m$^{A}/_{DIV}$	500$^{ms}/_{DIV}$
Vin: 500v/$_{DIV}$	

G100-75 3Φ480

Conditions: Vout: 100%
Iout: 100%
Vin: 342↔460V
Ta: 25°C



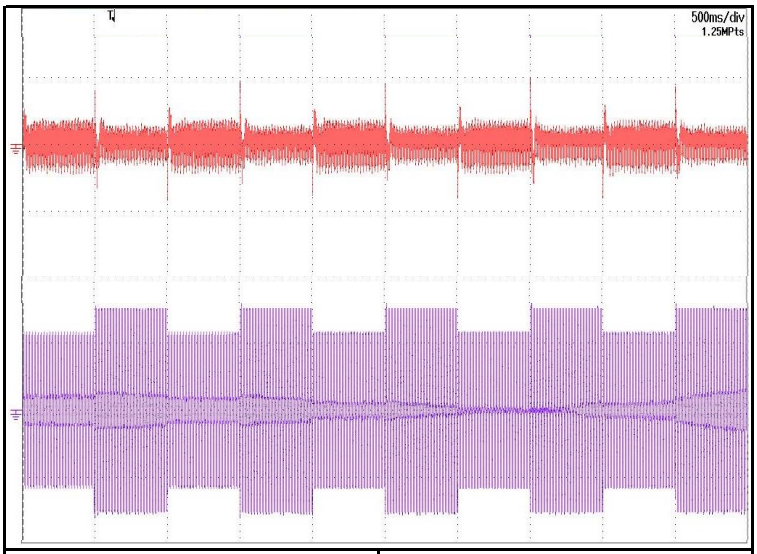
Iout: 75m$^{A}/_{DIV}$	500$^{ms}/_{DIV}$
Vin: 500v/$_{DIV}$	

2.7 Dynamic line response characteristics

C.C mode

G100-75 3Φ480

Conditions: Vout: 100%
Iout: 100%
Vin: 396↔528V
Ta: 25°C



Iout

Vin

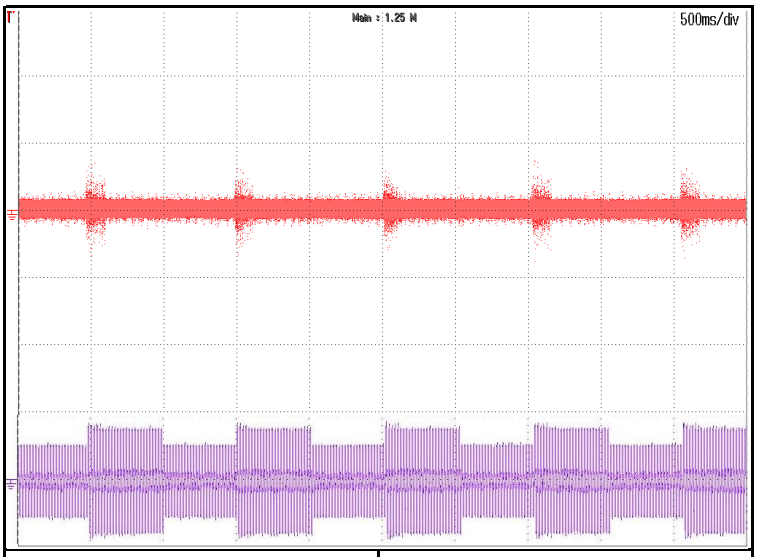
Iout: 75m$^{A}/_{DIV}$	500$^{ms}/_{DIV}$
Vin: 500v/$_{DIV}$	

2.7 Dynamic line response characteristics

C.V mode

G150-50 3Φ208

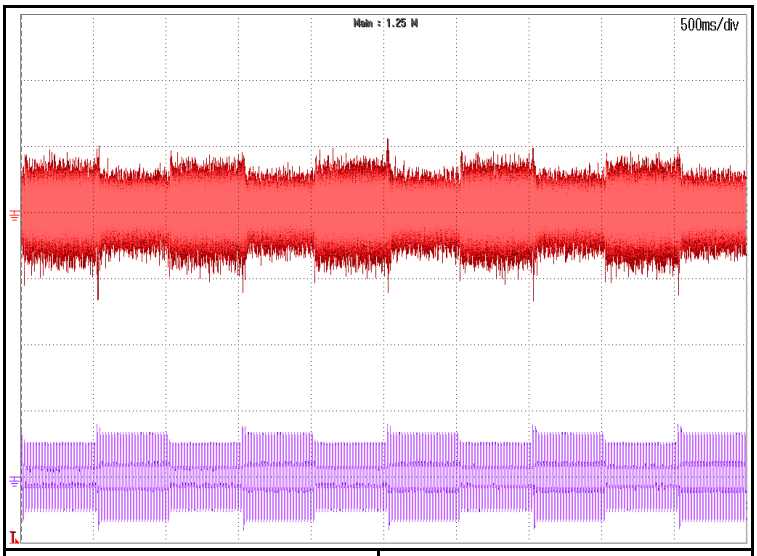
Conditions: Vout: 100%
Iout: 100%
Vin: 170↔265V
Ta: 25°C



Vout: 200mv/DIV	500ms/DIV
Vin: 500v/DIV	

G150-50 3Φ480

Conditions: Vout: 100%
Iout: 100%
Vin: 342↔460V
Ta: 25°C



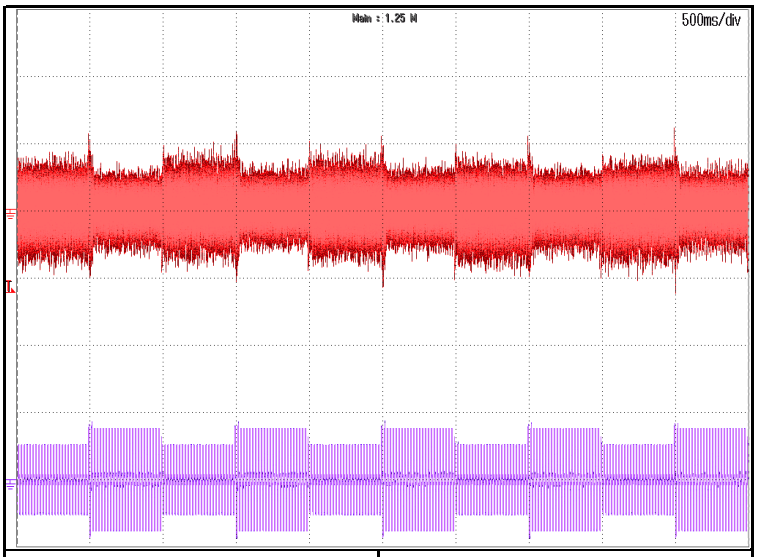
Vout: 20mv/DIV	500ms/DIV
Vin: 1000v/DIV	

2.7 Dynamic line response characteristics

C.V mode

G150-50 3Φ480

Conditions: Vout: 100%
Iout: 100%
Vin: 396↔528V
Ta: 25°C



Vout

Vin

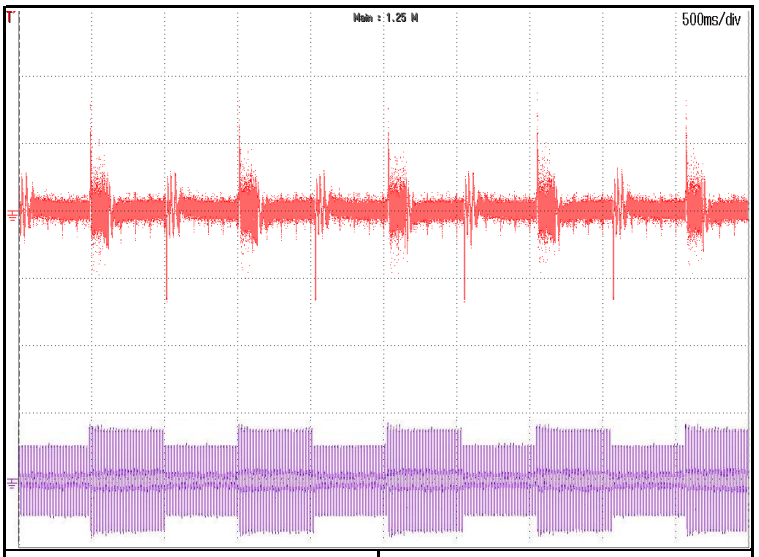
Vout: $20^{mv}/_{DIV}$	$500^{ms}/_{DIV}$
Vin: $1000^{v}/_{DIV}$	

2.7 Dynamic line response characteristics

C.C mode

G150-50 3Φ208

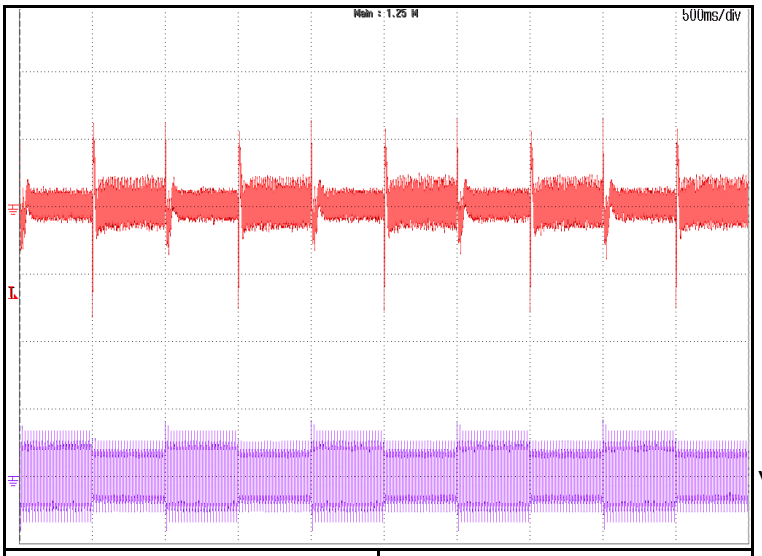
Conditions: Vout: 100%
Iout: 100%
Vin: 170↔265V
Ta: 25°C



Iout: 67m$^{A}/_{DIV}$	500$^{ms}/_{DIV}$
Vin: 500v/$_{DIV}$	

G150-50 3Φ480

Conditions: Vout: 100%
Iout: 100%
Vin: 342↔460V
Ta: 25°C



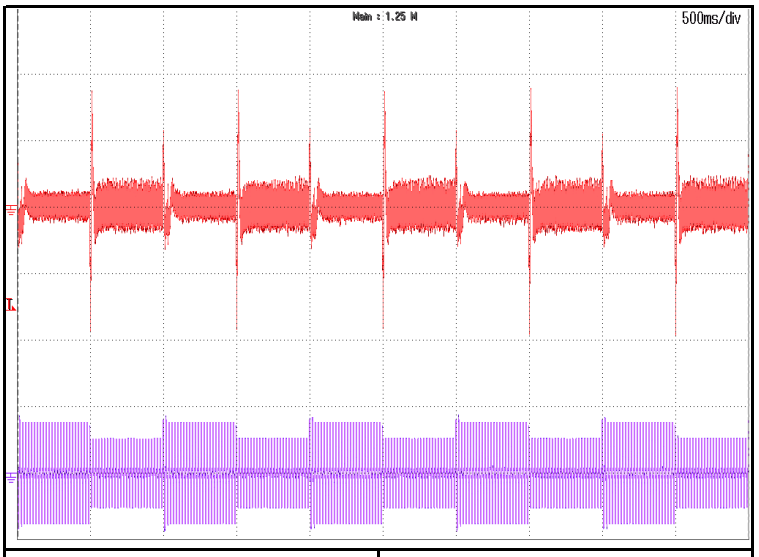
Iout: 33m$^{A}/_{DIV}$	500$^{ms}/_{DIV}$
Vin: 1000$^{v}/_{DIV}$	

2.7 Dynamic line response characteristics

C.C mode

G150-50 3Φ480

Conditions: Vout: 100%
Iout: 100%
Vin: 396↔528V
Ta: 25°C



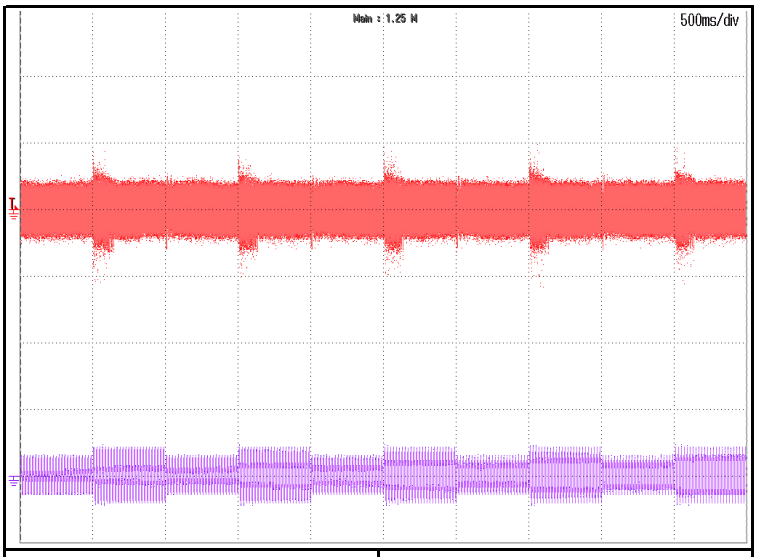
Iout: 33m$^{A}/_{DIV}$	500$^{ms}/_{DIV}$
Vin: 1000$^{v}/_{DIV}$	

2.7 Dynamic line response characteristics

C.V mode

G600-12.5 3Φ208

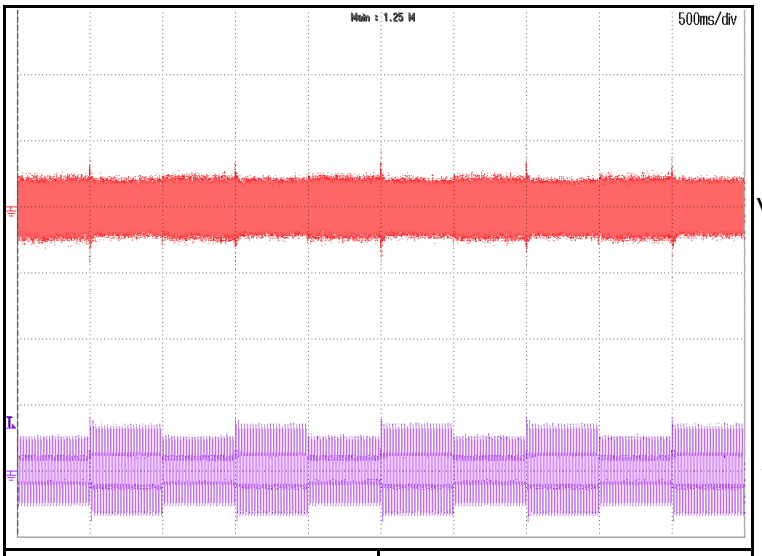
Conditions: Vout: 100%
Iout: 100%
Vin: 170↔265V
Ta: 25°C



Vout: 200mv/DIV	500ms/DIV
Vin: 1000v/DIV	

G600-12.5 3Φ480

Conditions: Vout: 100%
Iout: 100%
Vin: 342↔460V
Ta: 25°C



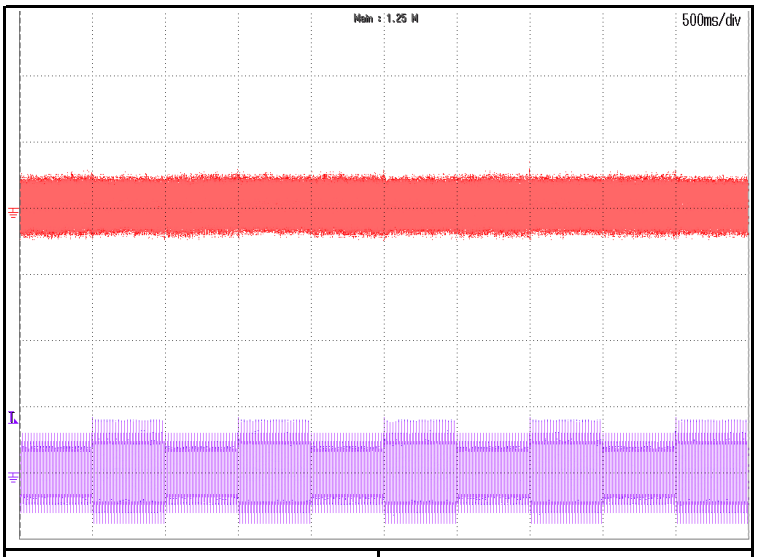
Vout: 200mv/DIV	500ms/DIV
Vin: 1000v/DIV	

2.7 Dynamic line response characteristics

C.V mode

G600-12.5 3Φ480

Conditions: Vout: 100%
Iout: 100%
Vin: 396↔528V
Ta: 25°C



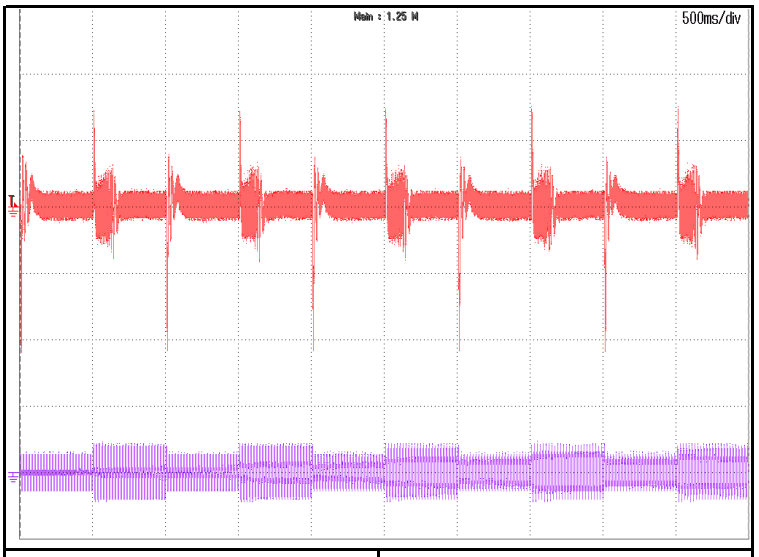
Vout: 200$^{mv}/_{DIV}$	500$^{ms}/_{DIV}$
Vin: 1000$^{v}/_{DIV}$	

2.7 Dynamic line response characteristics

C.C mode

G600-12.5 3Φ208

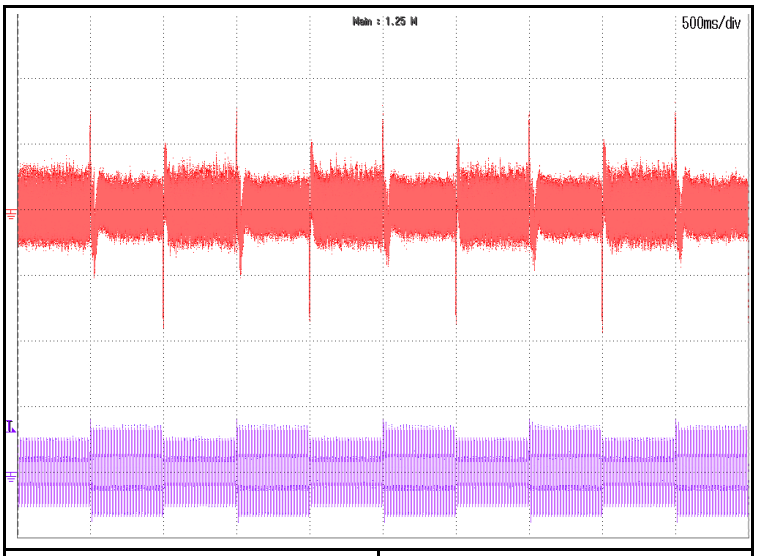
Conditions: Vout: 100%
Iout: 100%
Vin: 170↔265V
Ta: 25°C



Iout: 10.4$^{mA}/_{DIV}$	500$^{ms}/_{DIV}$
Vin: 1000v/$_{DIV}$	

G600-12.5 3Φ480

Conditions: Vout: 100%
Iout: 100%
Vin: 342↔460V
Ta: 25°C



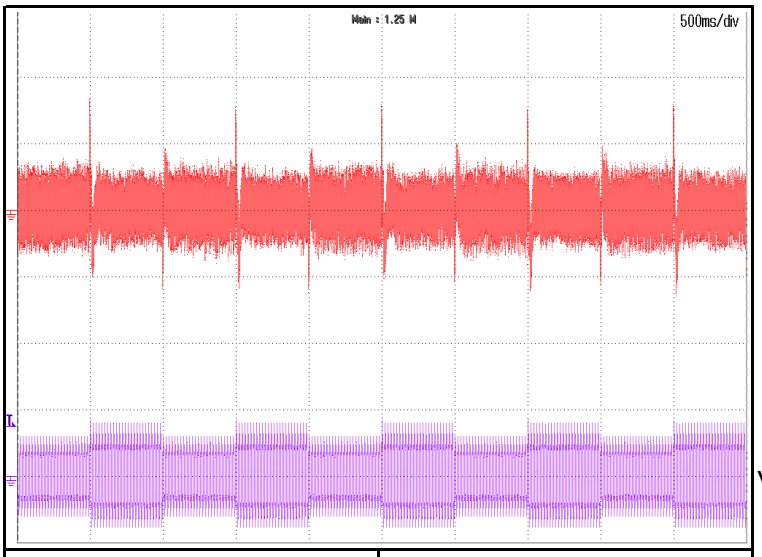
Iout: 4.1$^{mA}/_{DIV}$	500$^{ms}/_{DIV}$
Vin: 1000$^{v}/_{DIV}$	

2.7 Dynamic line response characteristics

C.C mode

G600-12.5 3Φ480

Conditions: Vout: 100%
Iout: 100%
Vin: 396↔528V
Ta: 25°C



Iout

Vin

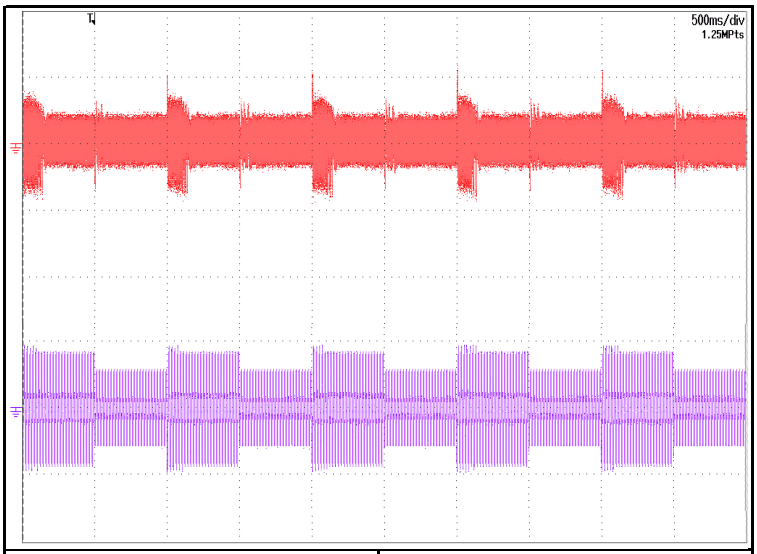
Iout: 4.1$^{mA}/_{DIV}$	500$^{ms}/_{DIV}$
Vin: 1000$^{V}/_{DIV}$	

2.7 Dynamic line response characteristics

C.V mode

G1500-5 3Φ208

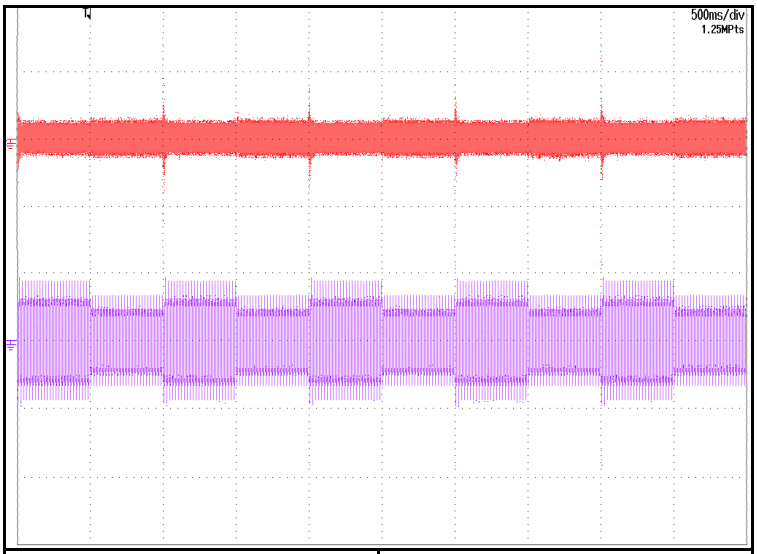
Conditions: Vout: 100%
Iout: 100%
Vin: 170↔265V
Ta: 25°C



Vout: 500mv/DIV	500ms/DIV
Vin: 450v/DIV	

G1500-5 3Φ480

Conditions: Vout: 100%
Iout: 100%
Vin: 342↔460V
Ta: 25°C



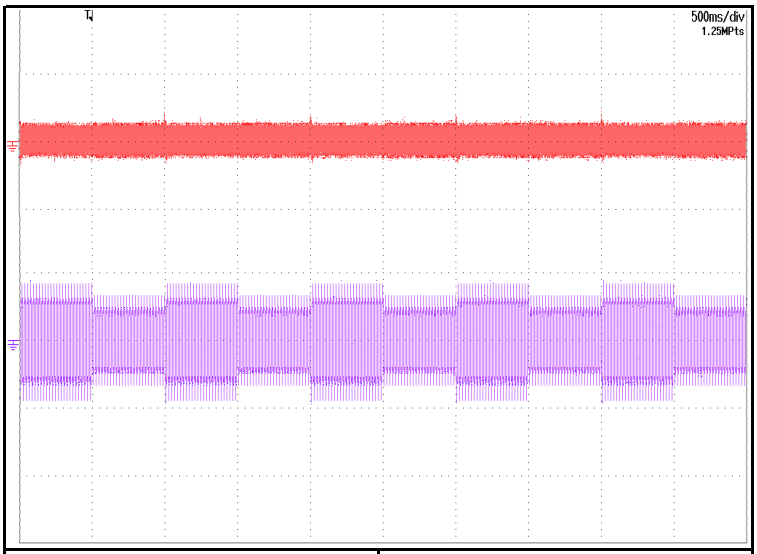
Vout: 1v/DIV	500ms/DIV
Vin: 780v/DIV	

2.7 Dynamic line response characteristics

C.V mode

G1500-5 3Φ480

Conditions: Vout: 100%
Iout: 100%
Vin: 396↔528V
Ta: 25°C



Vout

Vin

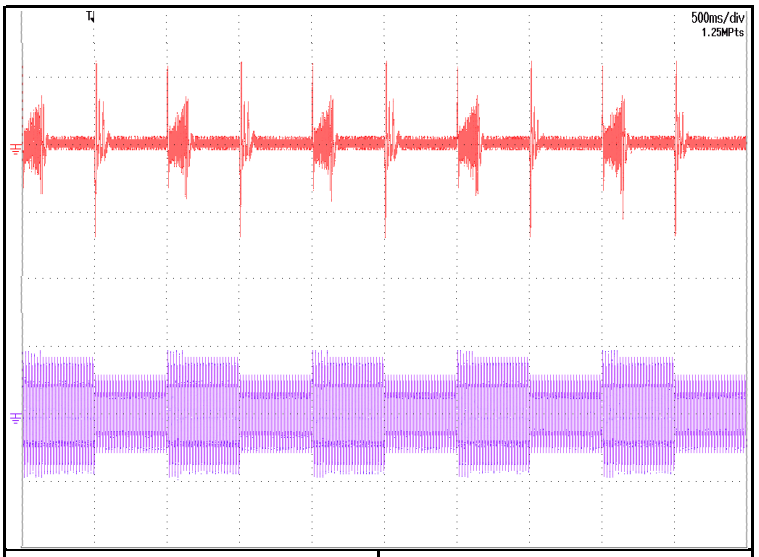
Vout: $1^{V}/_{DIV}$	$500^{ms}/_{DIV}$
Vin: $900^{V}/_{DIV}$	

2.7 Dynamic line response characteristics

C.C mode

G1500-5 3Φ208

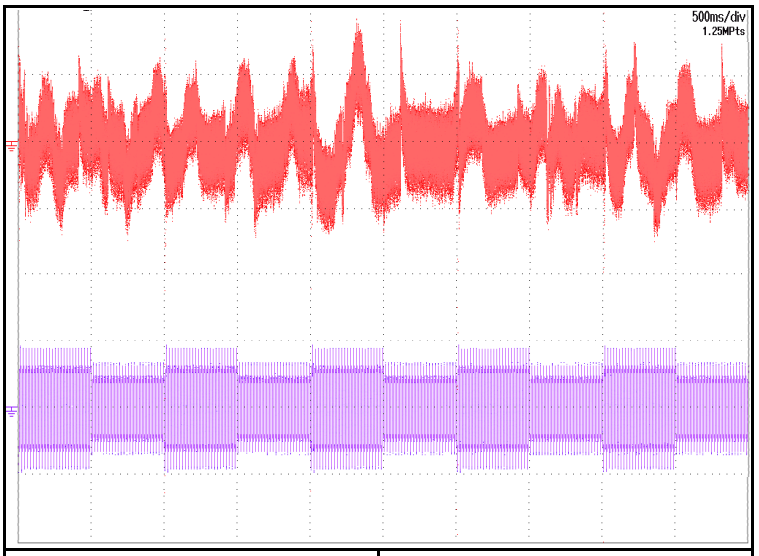
Conditions: Vout: 100%
Iout: 100%
Vin: 170↔265V
Ta: 25°C



Iout: 16.6mA/DIV	500ms/DIV
Vin: 450v/DIV	

G1500-5 3Φ480

Conditions: Vout: 100%
Iout: 100%
Vin: 342↔460V
Ta: 25°C



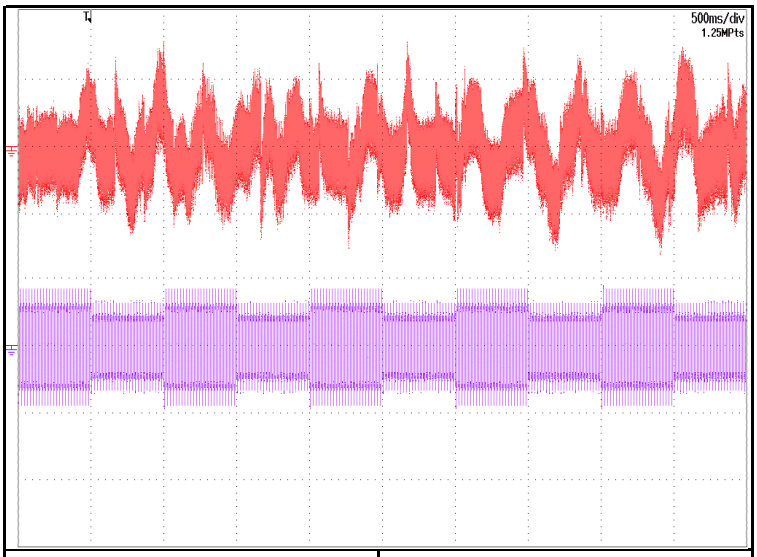
Iout: 1.7mA/DIV	500ms/DIV
Vin: 780V/DIV	

2.7 Dynamic line response characteristics

C.C mode

G1500-5 3Φ480

Conditions: Vout: 100%
Iout: 100%
Vin: 396↔528V
Ta: 25°C



Iout

Vin

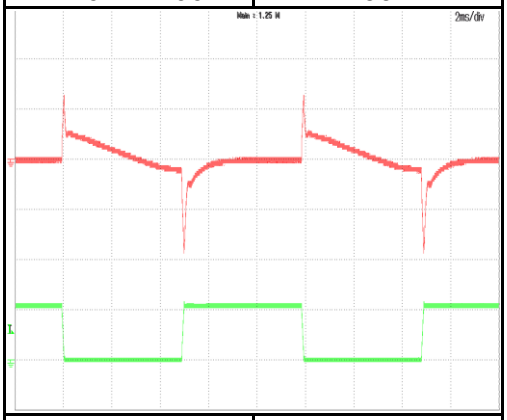
Iout: 3.3$^{mA}/_{DIV}$	500$^{ms}/_{DIV}$
Vin: 900$^{V}/_{DIV}$	

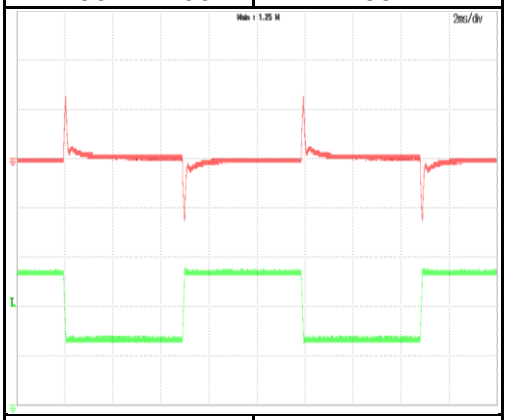
2.8 Dynamic load response characteristics

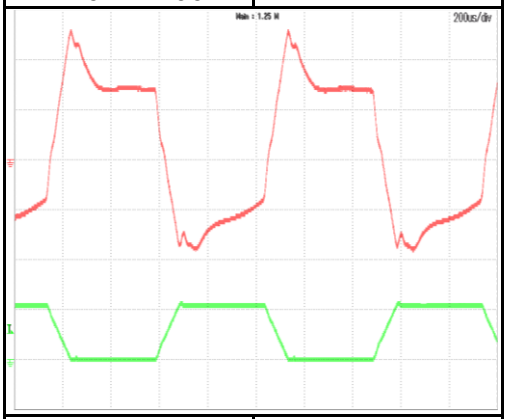
C.V mode

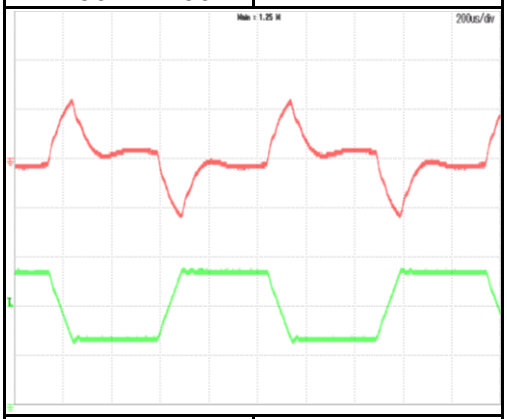
Conditions: Vin: Nominal
Vout: 100%
Ta: 25°C
Load current: tr=tf=100us

G20-375

Iout:0%↔100%	f:100Hz
	
$1^{V}/_{DIV}$	$2^{ms}/_{DIV}$
6.40%	$350^{A}/_{DIV}$
-9.40%	

Iout:50%↔100%	f:100Hz
	
$0.5^{V}/_{DIV}$	$2^{ms}/_{DIV}$
3.20%	$140^{A}/_{DIV}$
-3.20%	

Iout:0%↔100%	f:1KHz
	
$530m^{V}/_{DIV}$	$200^{us}/_{DIV}$
6.90%	$350^{A}/_{DIV}$
-4.95%	

Iout:50%↔100%	f:1KHz
	
$500^{mV}/_{DIV}$	$200^{us}/_{DIV}$
3.00%	$140^{A}/_{DIV}$
-3.00%	

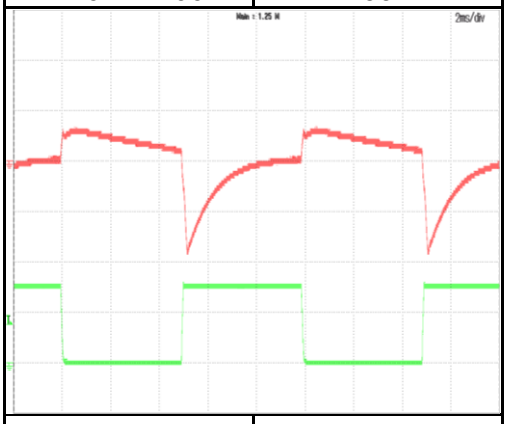
2.8 Dynamic load response characteristics

C.V mode

Conditions: Vin: Nominal
Vout: 100%
Ta: 25°C
Load current: tr=tf=100us

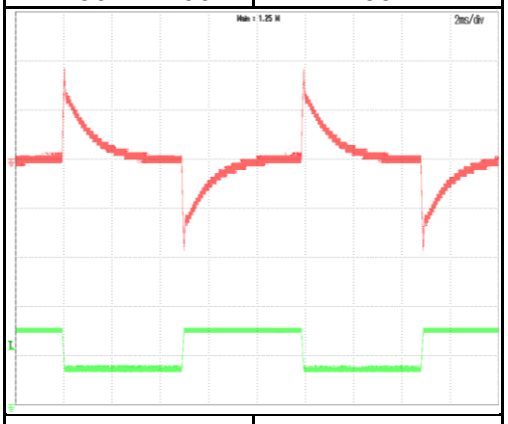
G100-75

Iout:0%↔100%	f:100Hz



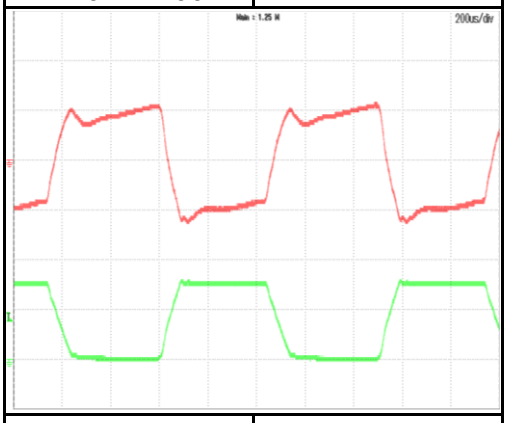
1.6V/DIV	2ms/DIV
1.12%	50A/DIV
-3.04%	

Iout:50%↔100%	f:100Hz



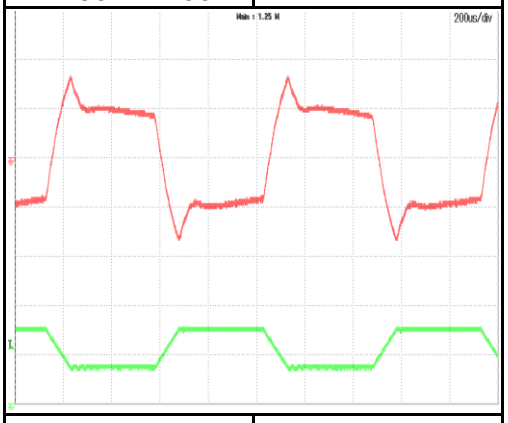
0.28V/DIV	2ms/DIV
0.52%	50A/DIV
-0.52%	

Iout:0%↔100%	f:1KHz



0.5V/DIV	200us/DIV
0.58%	50A/DIV
-0.64%	

Iout:50%↔100%	f:1KHz



0.2V/DIV	200us/DIV
0.34%	50A/DIV
-0.34%	

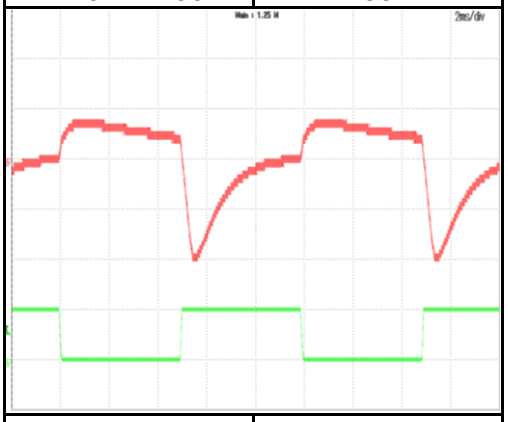
2.8 Dynamic load response characteristics

C.V mode

Conditions: Vin: Nominal
Vout: 100%
Ta: 25°C
Load current: tr=tf=100us

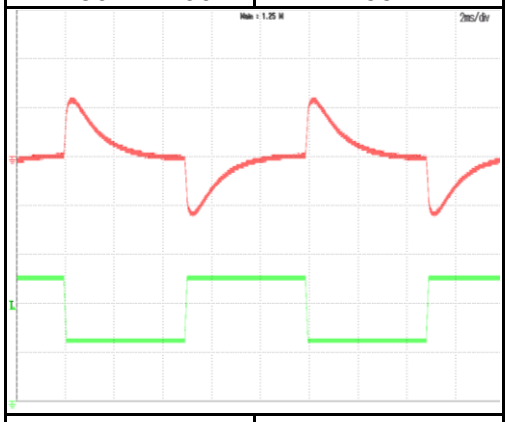
G150-50

Iout:0%↔100%	f:100Hz



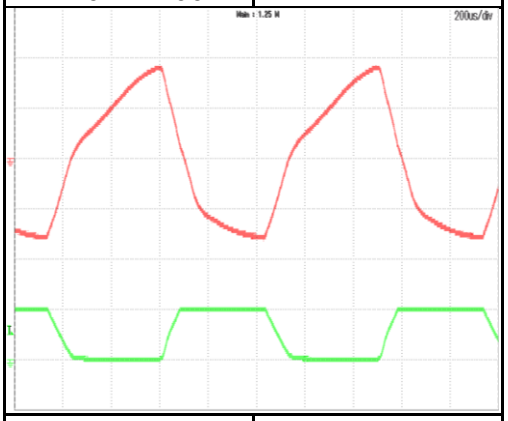
2.6V/DIV	2ms/DIV
1.30%	50A/DIV
-3.50%	

Iout:50%↔100%	f:100Hz



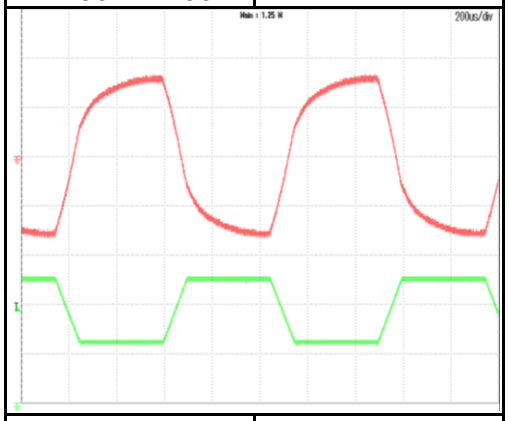
0.5V/DIV	2ms/DIV
0.40%	20A/DIV
-0.41%	

Iout:0%↔100%	f:1KHz



0.5V/DIV	200us/DIV
0.62%	50A/DIV
-0.55%	

Iout:50%↔100%	f:1KHz



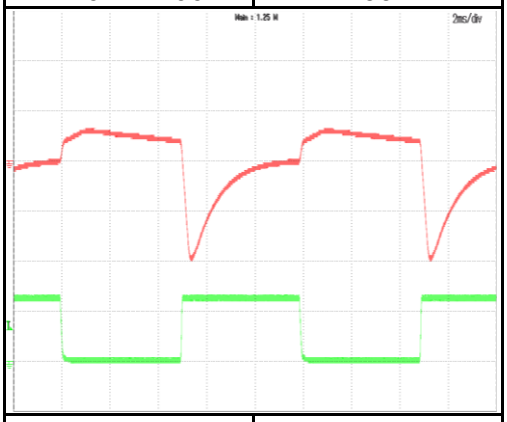
0.2V/DIV	200us/DIV
0.22%	20A/DIV
-0.22%	

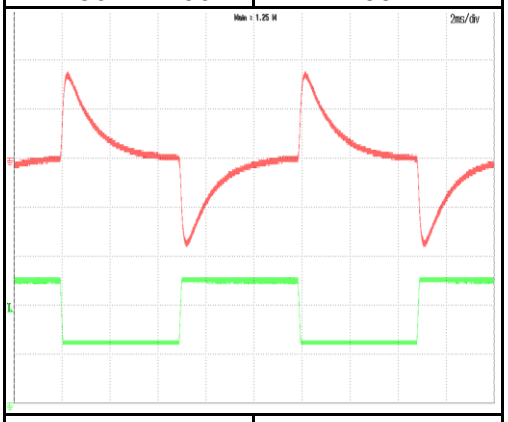
2.8 Dynamic load response characteristics

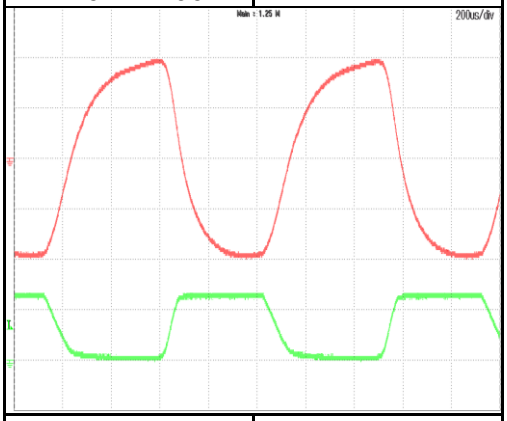
C.V mode

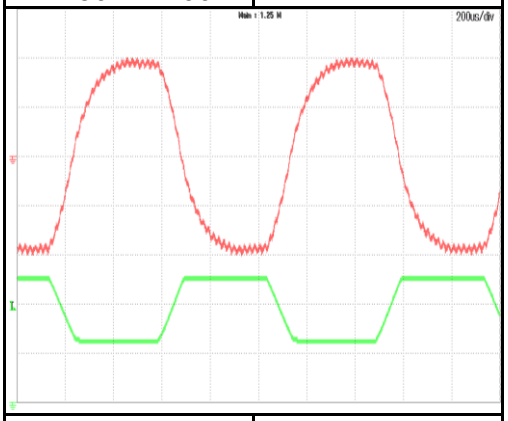
Conditions: Vin: Nominal
Vout: 100%
Ta: 25°C
Load current: tr=tf=100us

G600-12.5

Iout:0%↔100%	f:100Hz
	
5.5V/DIV	2ms/DIV
0.60%	10A/DIV
-1.83%	

Iout:50%↔100%	f:100Hz
	
1V/DIV	2ms/DIV
0.29%	5A/DIV
-0.30%	

Iout:0%↔100%	f:1KHz
	
1.1V/DIV	200us/DIV
0.36%	10A/DIV
-0.36%	

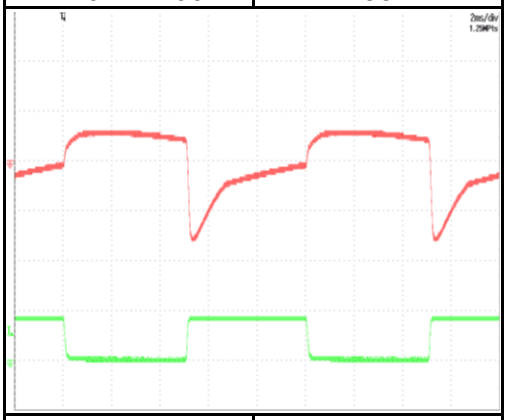
Iout:50%↔100%	f:1KHz
	
0.52V/DIV	200us/DIV
0.17%	5A/DIV
-0.18%	

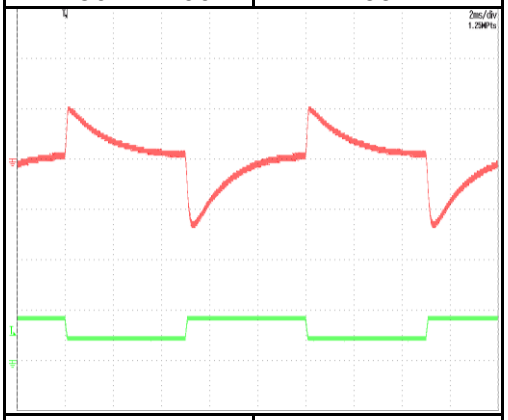
2.8 Dynamic load response characteristics

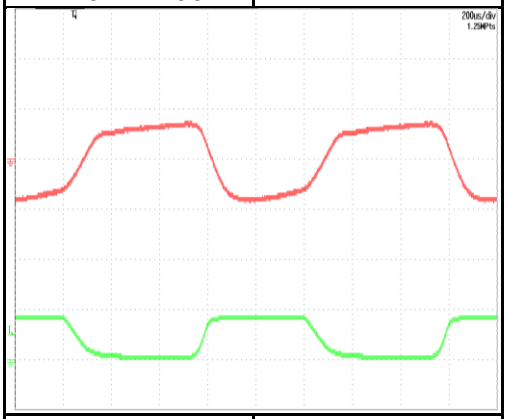
C.V mode

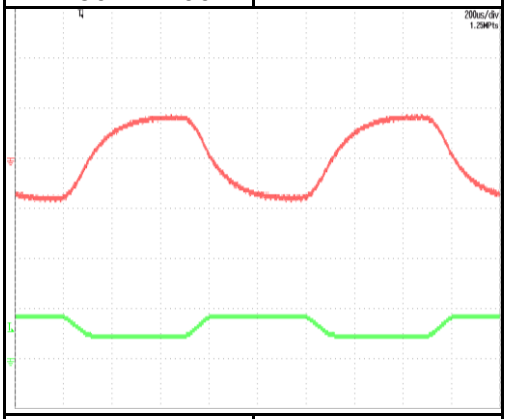
Conditions: Vin: Nominal
Vout: 70%(*)
Ta: 25°C
Load current: tr=tf=100us

G1500-5

Iout:0%↔100%	f:100Hz
	
$10^{V}/_{DIV}$	$2^{ms}/_{DIV}$
0.40%	$6^{A}/_{DIV}$
-1.10%	

Iout:50%↔100%	f:100Hz
	
$5^{V}/_{DIV}$	$2^{ms}/_{DIV}$
0.35%	$6^{A}/_{DIV}$
-0.45%	

Iout:0%↔100%	f:1KHz
	
$10^{V}/_{DIV}$	$200^{us}/_{DIV}$
0.51%	$6^{A}/_{DIV}$
-0.59%	

Iout:50%↔100%	f:1KHz
	
$5^{V}/_{DIV}$	$200^{us}/_{DIV}$
0.29%	$6^{A}/_{DIV}$
-0.29%	

Notes:
(*) Electronic load max dinamic voltage 1050V

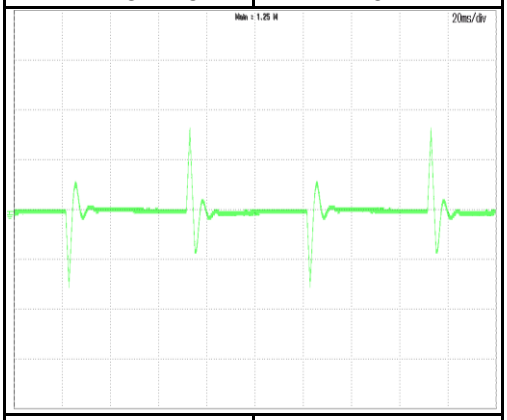
2.8 Dynamic load response characteristics

C.C mode

Conditions: Vin: Nominal
Ta: 25°C

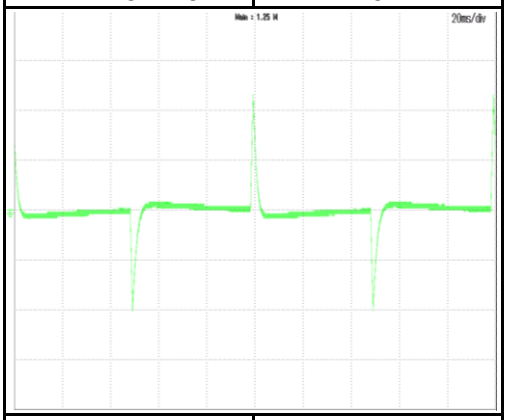
G20-375

Io=375A

Vout:18↔15V	f:10Hz
	
35A/DIV	20ms/DIV
	-14.19%

Iout

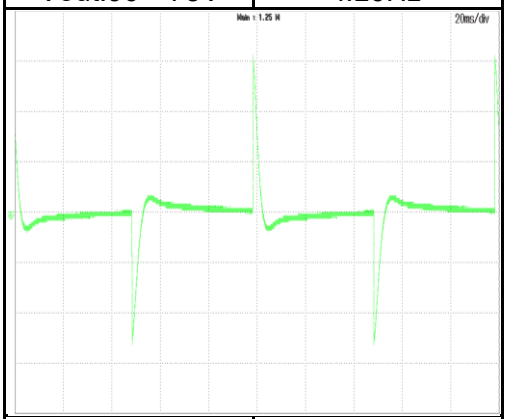
Io=187.5A

Vout:18↔15V	f:10Hz
	
14A/DIV	20ms/DIV
	-7.67%

Iout

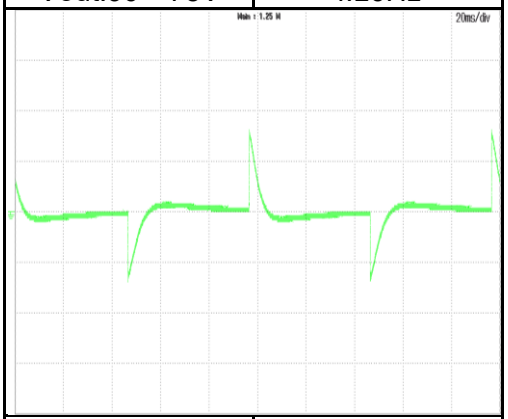
G100-75

Io=75A

Vout:90↔75V	f:10Hz
	
5A/DIV	20ms/DIV
	-17.90%

Iout

Io=37.5A

Vout:90↔75V	f:10Hz
	
5A/DIV	20ms/DIV
	-9.33%

Iout

2.8 Dynamic load response characteristics

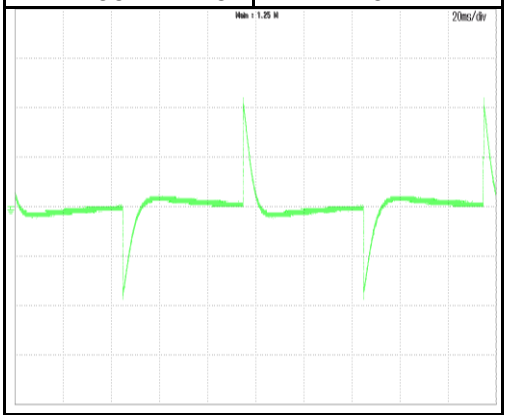
C.C mode

Conditions: Vin: Nominal
Ta: 25°C

G150-50

Io=50A

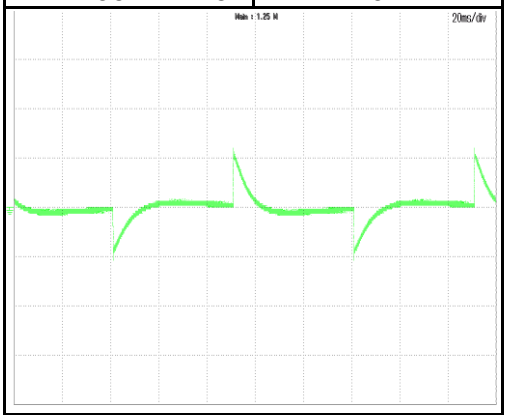
Vout:135↔112.5V	f:10Hz



$5^{A}/_{DIV}$	$20^{ms}/_{DIV}$
	-18.80%

Io=25A

Vout:135↔112.5V	f:10Hz

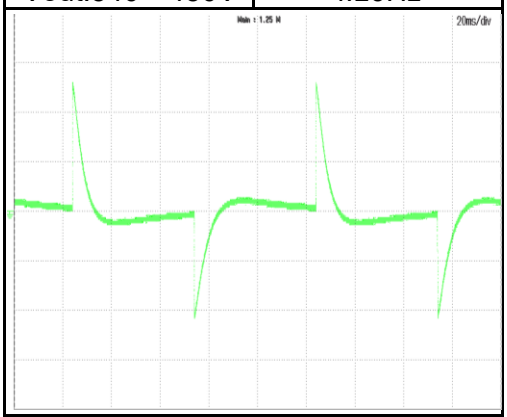


$5^{A}/_{DIV}$	$20^{ms}/_{DIV}$
	-10.80%

G600-12.5

Io=12.5A

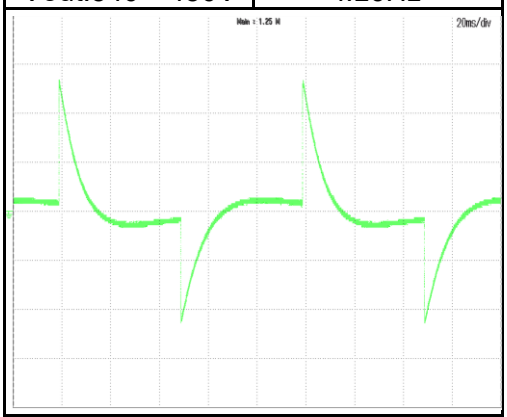
Vout:540↔450V	f:10Hz



$1^{A}/_{DIV}$	$20^{ms}/_{DIV}$
	-17.60%

Io=6.25A

Vout:540↔450V	f:10Hz



$0.5^{A}/_{DIV}$	$20^{ms}/_{DIV}$
	-9.12%

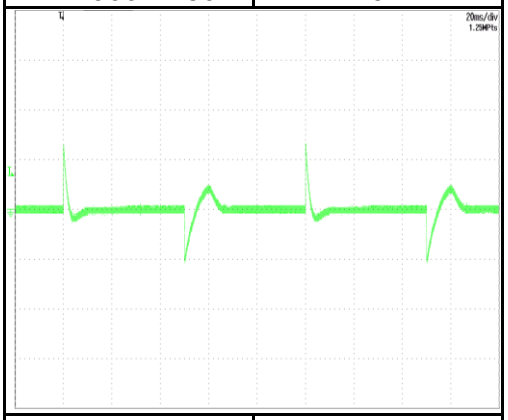
2.8 Dynamic load response characteristics

C.C mode

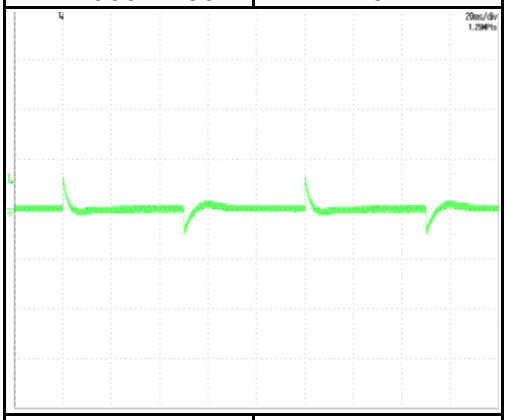
Conditions: Vin: Nominal
Ta: 25°C

G1500-5

Io=5A

Vout:900↔750V	f:10Hz
 Iout	
0.6A/DIV	20ms/DIV
	-12.96%

Io=2.5A

Vout:900↔750V	f:10Hz
 Iout	
0.6A/DIV	20ms/DIV
	-6.24%

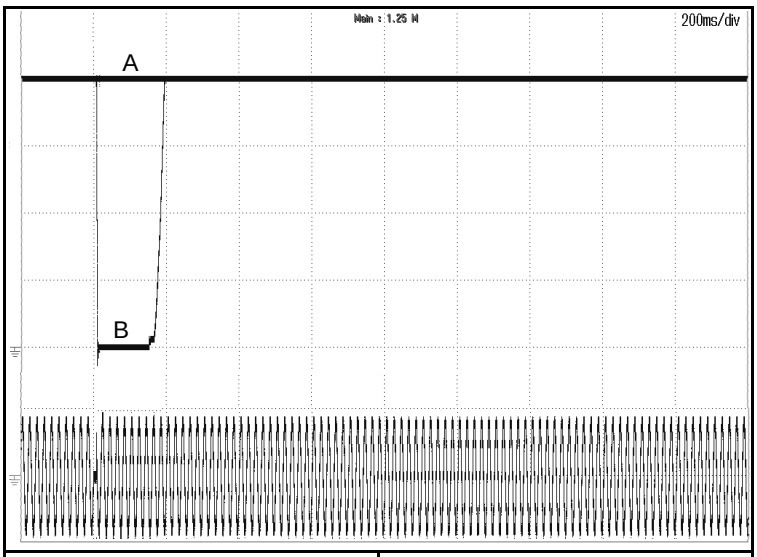
2.9 Response to brown-out characteristics

C.V mode

Conditions: Vout: 100%
Iout: 100%
Ta: 25°C

G20-375 3Φ208

Vin: 200VAC

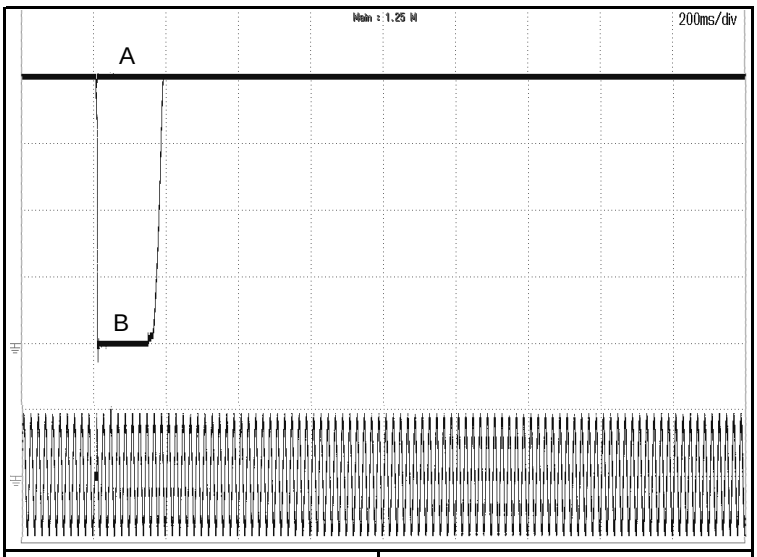


Brown-out time
A - 7ms
B - 10ms

Vout: $5^{V}/_{DIV}$	$200^{ms}/_{DIV}$
Vin: $340^{V}/_{DIV}$	

G20-375 3Φ480

Vin: 400VAC



Brown-out time
A - 6ms
B - 10ms

Vout: $5^{V}/_{DIV}$	$200^{ms}/_{DIV}$
Vin: $680^{V}/_{DIV}$	

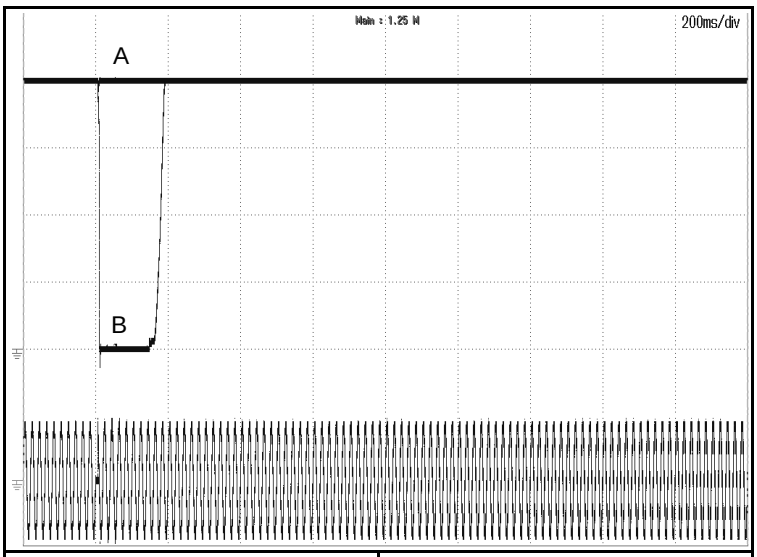
2.9 Response to brown-out characteristics

C.V mode

Conditions: Vout: 100%
Iout: 100%
Ta: 25°C

Vin: 480VAC

G20-375 3Φ480



Brown-out time
A - 6ms
B - 10ms

Vout: $5^{V}/_{DIV}$	$200^{ms}/_{DIV}$
Vin: $810^{V}/_{DIV}$	

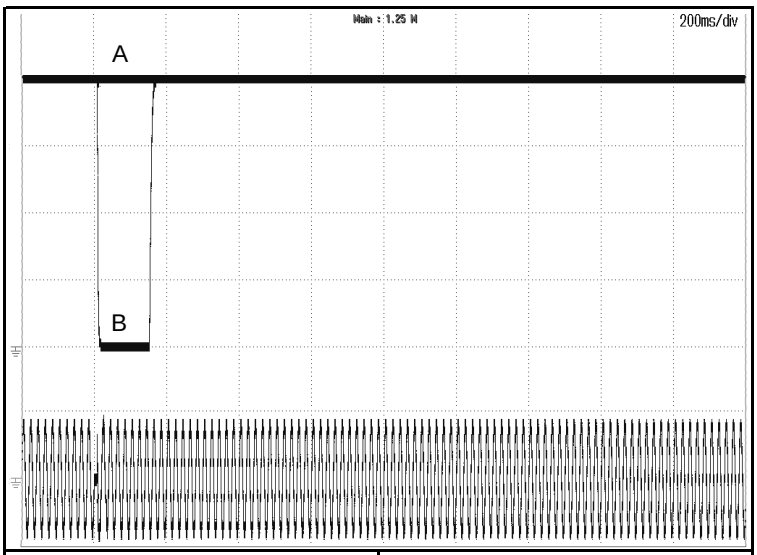
2.9 Response to brown-out characteristics

C.C mode

Conditions: Vout: 100%
Iout: 100%
Ta: 25°C

G20-375 3Φ208

Vin: 200VAC

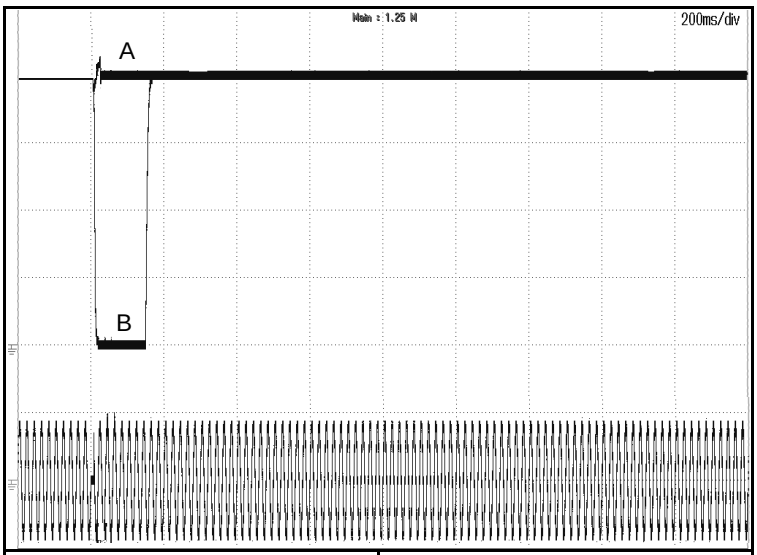


Brown-out time
A - 7ms
B - 10ms

Iout: 93.8$^{A}/_{DIV}$	200$^{ms}/_{DIV}$
Vin: 340$^{V}/_{DIV}$	

G20-375 3Φ480

Vin: 400VAC



Brown-out time
A - 7ms
B - 10ms

Iout: 93.8$^{A}/_{DIV}$	200$^{ms}/_{DIV}$
Vin: 680$^{V}/_{DIV}$	

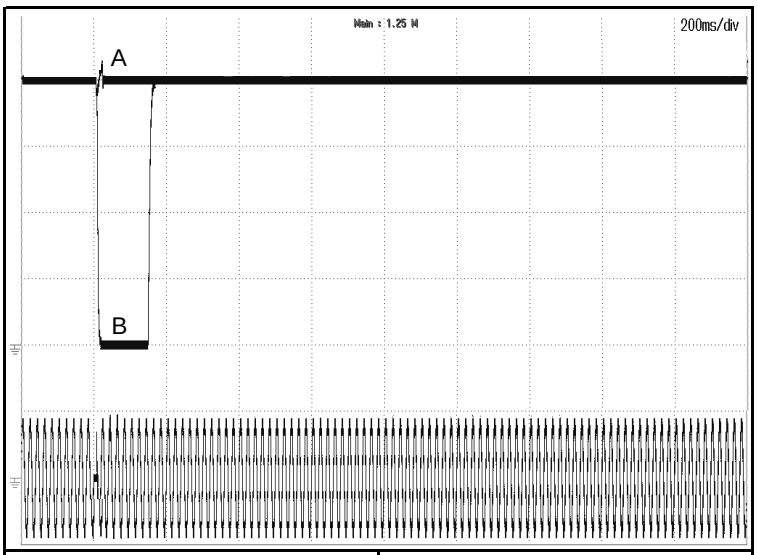
2.9 Response to brown-out characteristics

C.C mode

Conditions: Vout: 100%
Iout: 100%
Ta: 25°C

Vin: 480VAC

G20-375 3Φ480



Brown-out time
A - 7ms
B - 11ms

Iout: 93.8$^{A}/_{DIV}$	200$^{ms}/_{DIV}$
Vin: 810$^{V}/_{DIV}$	

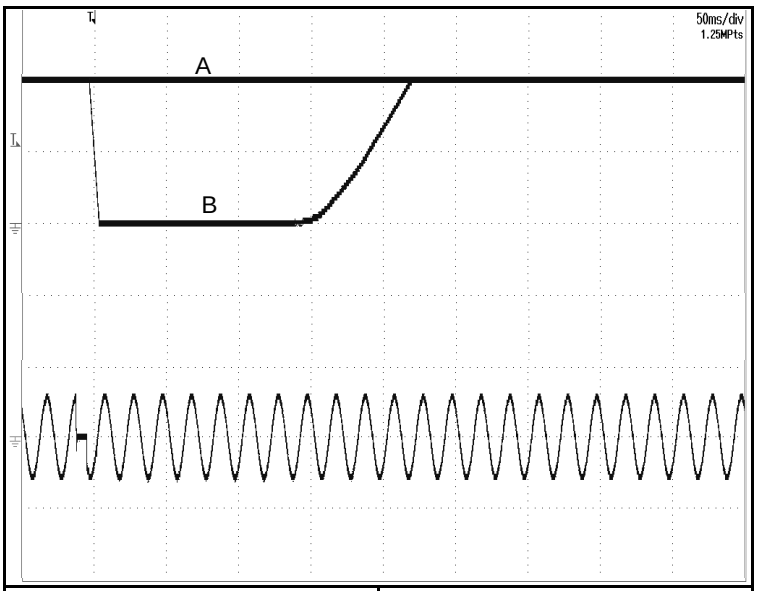
2.9 Response to brown-out characteristics

C.V mode

Conditions: Vout: 100%
Iout: 100%
Ta: 25°C

G100-75 3Φ208

Vin: 200VAC

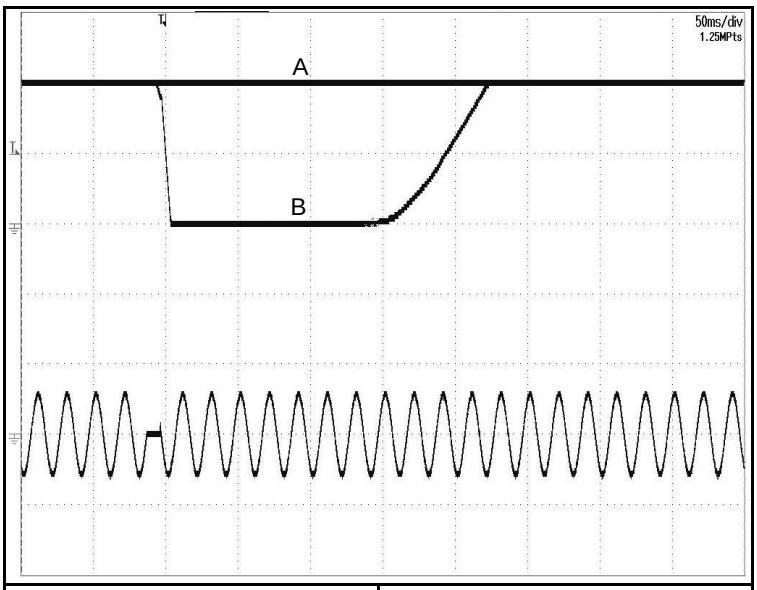


Brown-out time
A - 6.5ms
B - 7ms

Vout: 50 V/DIV	50 ms/DIV
Vin: 500 V/DIV	

G100-75 3Φ480

Vin: 400VAC



Brown-out time
A - 8.5ms
B - 9ms

Vout: 50 V/DIV	50 ms/DIV
Vin: 1000 V/DIV	

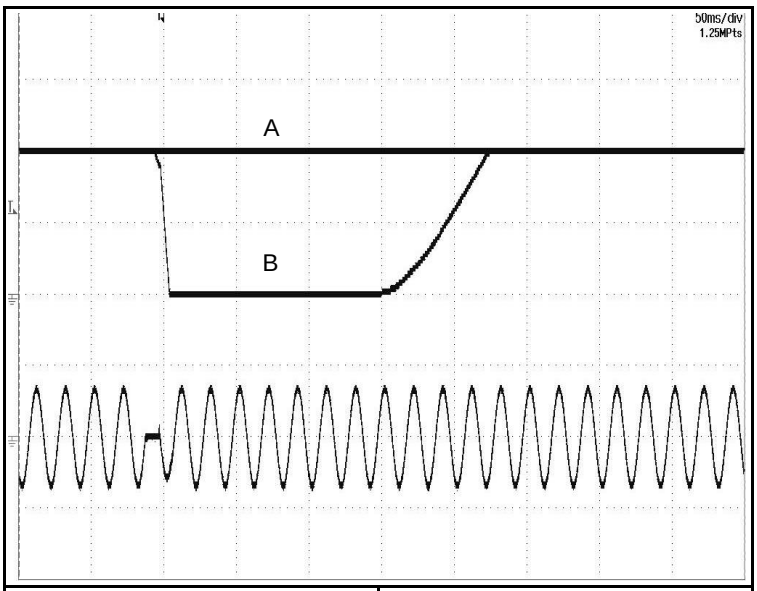
2.9 Response to brown-out characteristics

C.V mode

Conditions: Vout: 100%
Iout: 100%
Ta: 25°C

Vin: 480VAC

G100-75 3Φ480



← Vout: 100%

← Vout: 0V

← Vin

Brown-out time
A - 8.5ms
B - 9ms

Vout: 50 V/DIV	50 ms/DIV
Vin: 1000 V/DIV	

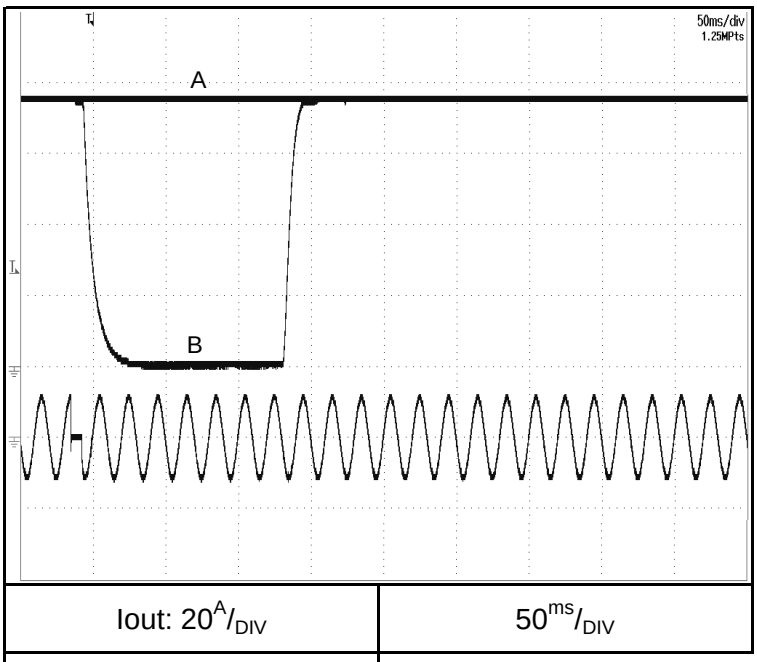
2.9 Response to brown-out characteristics

C.C mode

Conditions: Vout: 100%
Iout: 100%
Ta: 25°C

G100-75 3Φ208

Vin: 200VAC

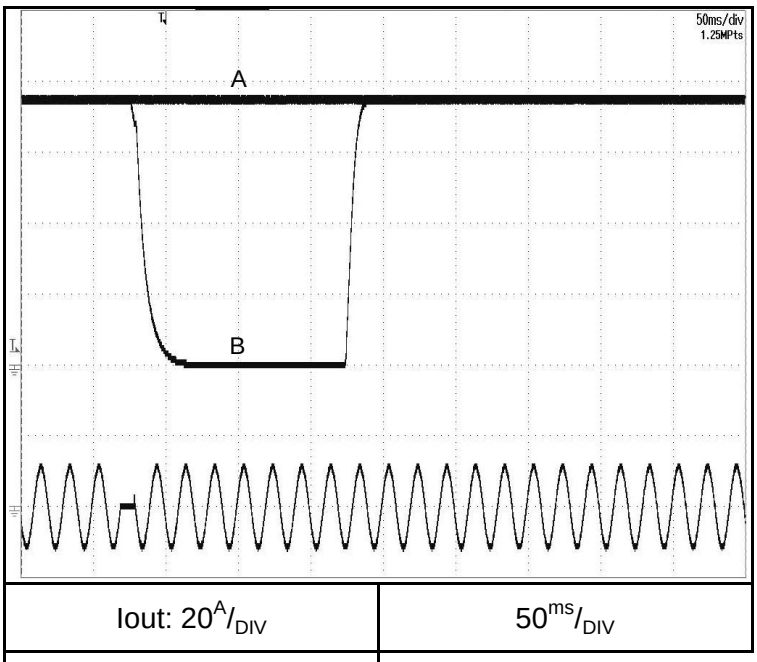


Brown-out time
A - 7ms
B - 7.5ms

Iout: $20^{A}/_{DIV}$	$50^{ms}/_{DIV}$
Vin: $500^{V}/_{DIV}$	

G100-75 3Φ480

Vin: 400VAC



Brown-out time
A - 8.5ms
B - 9ms

Iout: $20^{A}/_{DIV}$	$50^{ms}/_{DIV}$
Vin: $1000^{V}/_{DIV}$	

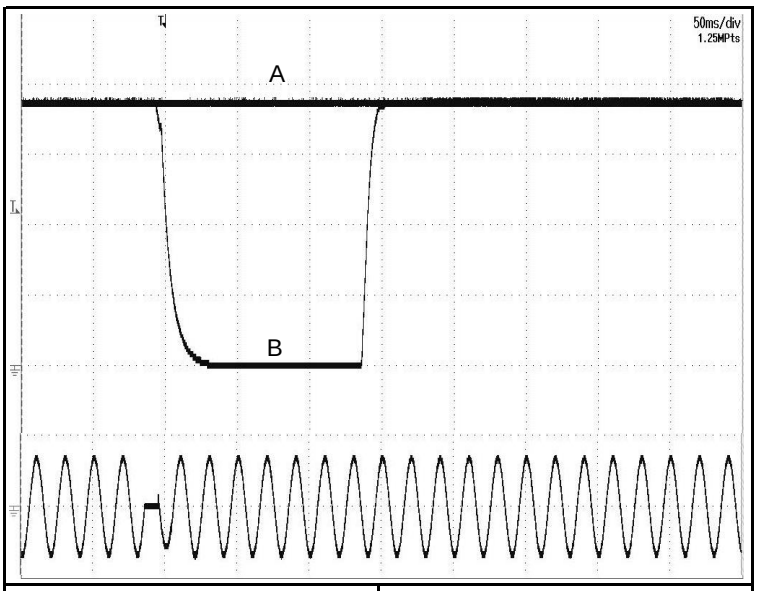
2.9 Response to brown-out characteristics

C.C mode

Conditions: Vout: 100%
Iout: 100%
Ta: 25°C

Vin: 480VAC

G100-75 3Φ480



← Iout: 100%

← Iout: 0A

← Vin

Brown-out time
A - 8.5ms
B - 9ms

Iout: $20^{A}/_{DIV}$	$50^{ms}/_{DIV}$
Vin: $1000^{V}/_{DIV}$	

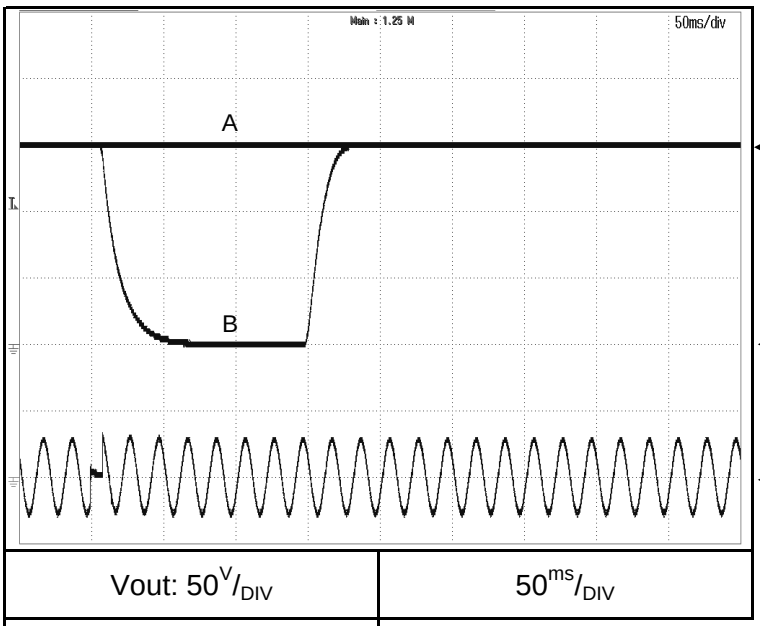
2.9 Response to brown-out characteristics

C.V mode

Conditions: Vout: 100%
Iout: 100%
Ta: 25°C

G150-50 3Φ208

Vin: 200VAC

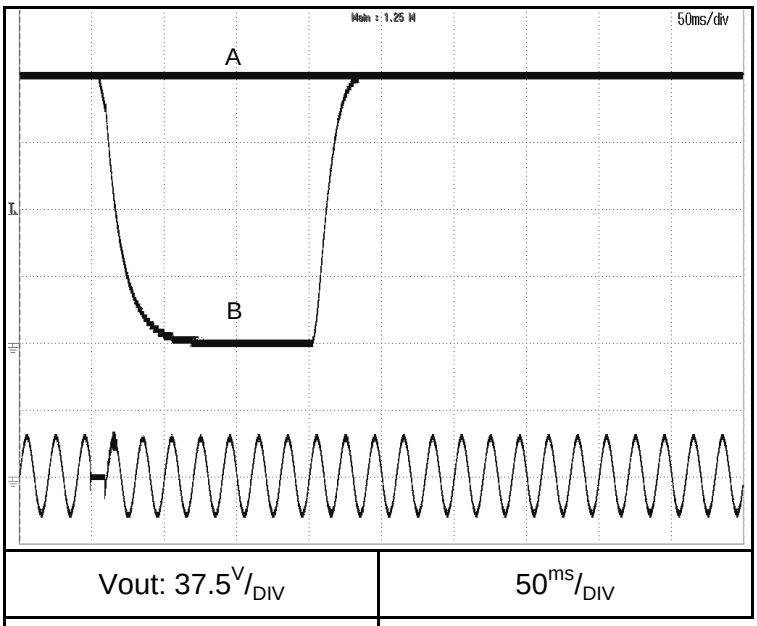


Brown-out time
A - 7ms
B - 8ms

Vout: 50 V/DIV	50 ms/DIV
Vin: 500 V/DIV	

G150-50 3Φ480

Vin: 400VAC



Brown-out time
A - 9ms
B - 10ms

Vout: 37.5 V/DIV	50 ms/DIV
Vin: 1000 V/DIV	

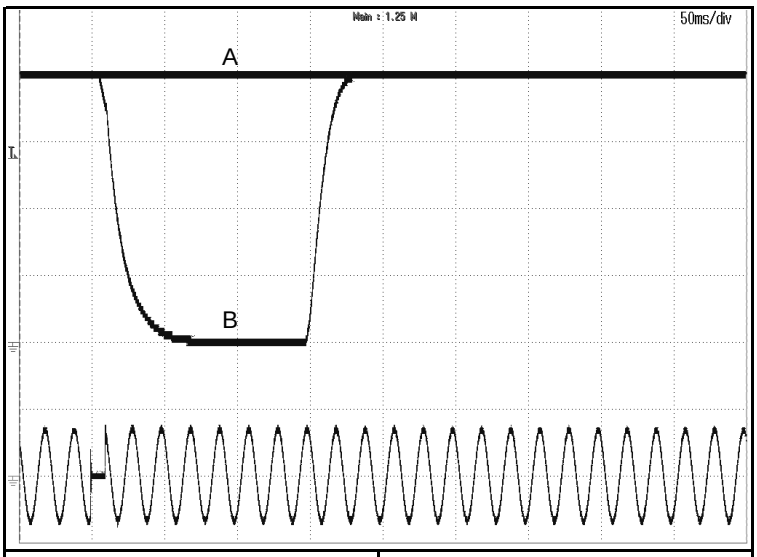
2.9 Response to brown-out characteristics

C.V mode

Conditions: Vout: 100%
Iout: 100%
Ta: 25°C

Vin: 480VAC

G150-50 3Φ480



Brown-out time
A - 9ms
B - 10ms

Vout: 37.5$^{V}/_{DIV}$	50$^{ms}/_{DIV}$
Vin: 1000$^{V}/_{DIV}$	

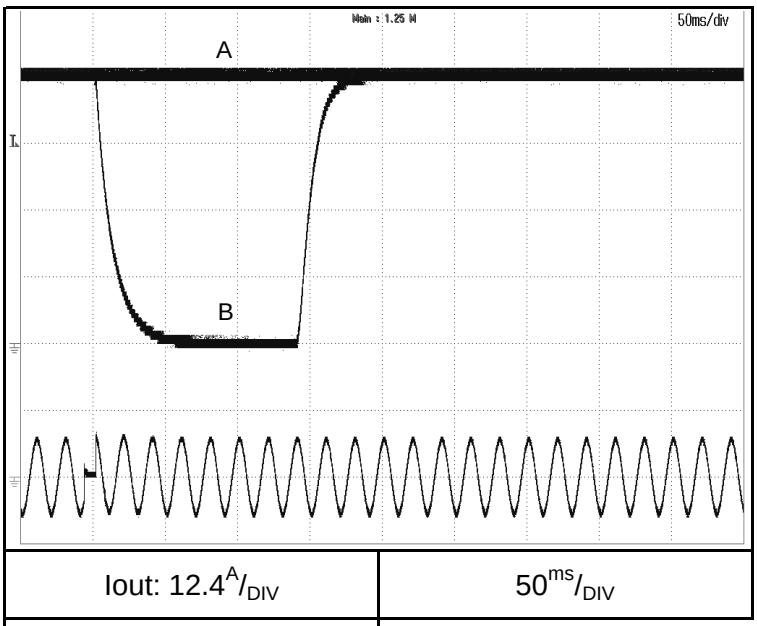
2.9 Response to brown-out characteristics

C.C mode

Conditions: Vout: 100%
Iout: 100%
Ta: 25°C

G150-50 3Φ208

Vin: 200VAC

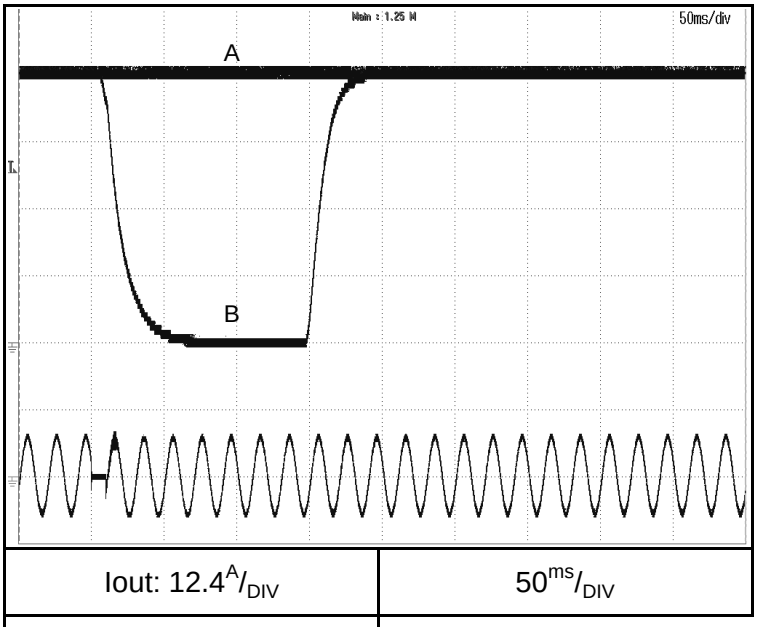


Brown-out time
A - 7ms
B - 8ms

Iout: 12.4A/DIV	50ms/DIV
Vin: 500V/DIV	

G150-50 3Φ480

Vin: 400VAC



Brown-out time
A - 9ms
B - 10ms

Iout: 12.4A/DIV	50ms/DIV
Vin: 1000V/DIV	

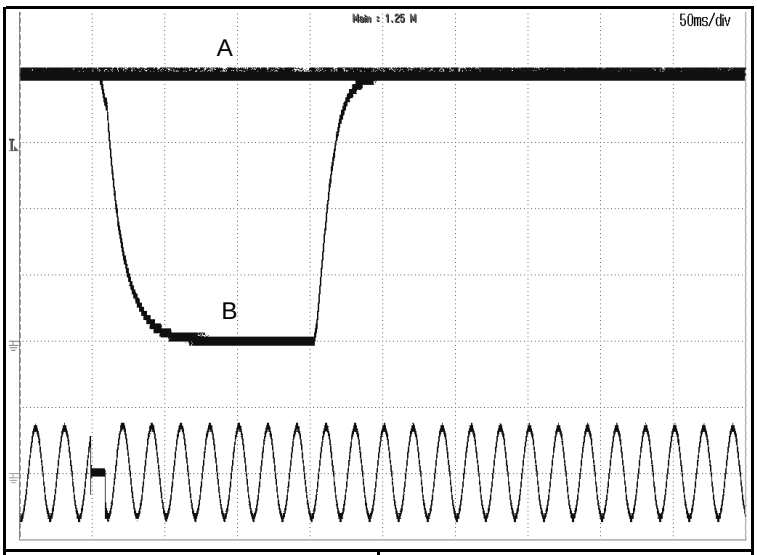
2.9 Response to brown-out characteristics

C.C mode

Conditions: Vout: 100%
Iout: 100%
Ta: 25°C

Vin: 480VAC

G150-50 3Φ480



Brown-out time
A - 9ms
B - 10ms

Iout: 12.4A/DIV	50ms/DIV
Vin: 1000V/DIV	

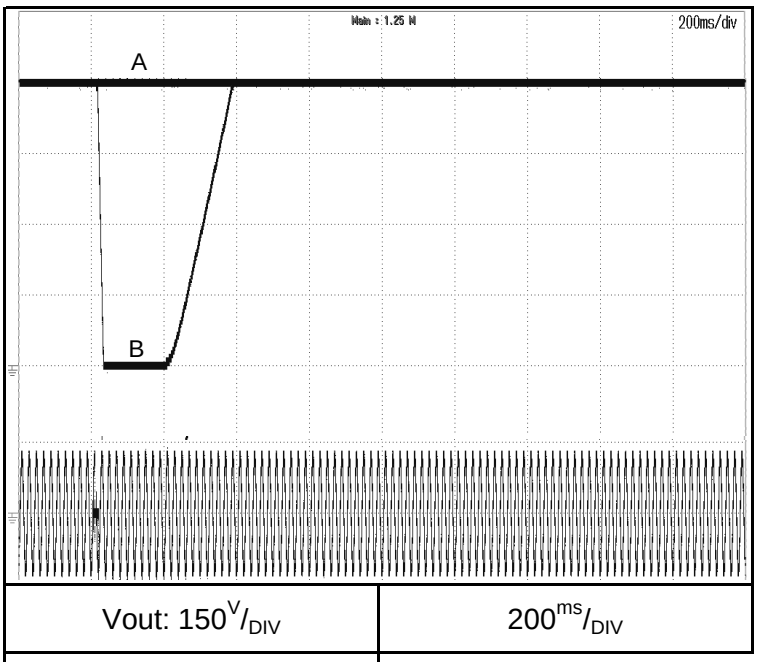
2.9 Response to brown-out characteristics

C.V mode

Conditions: Vout: 100%
Iout: 100%
Ta: 25°C

G600-12.5 3Φ208

Vin: 200VAC

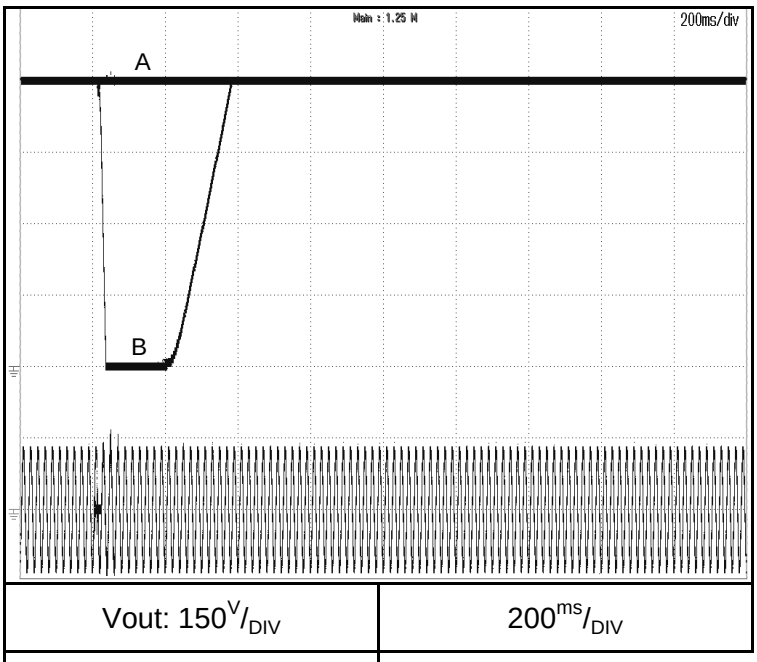


Brown-out time
A - 7ms
B - 12ms

Vout: 150V/DIV	200ms/DIV
Vin: 340V/DIV	

G600-12.5 3Φ480

Vin: 400VAC



Brown-out time
A - 7ms
B - 12ms

Vout: 150V/DIV	200ms/DIV
Vin: 680V/DIV	

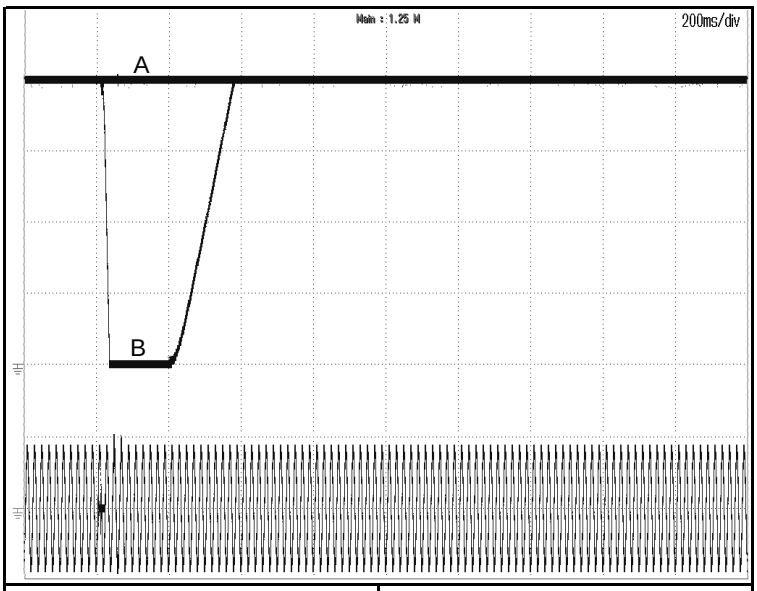
2.9 Response to brown-out characteristics

C.V mode

Conditions: Vout: 100%
Iout: 100%
Ta: 25°C

Vin: 480VAC

G600-12.5 3Φ480



Brown-out time
A - 7ms
B - 12ms

Vout: 150 V/DIV	200 ms/DIV
Vin: 810 V/DIV	

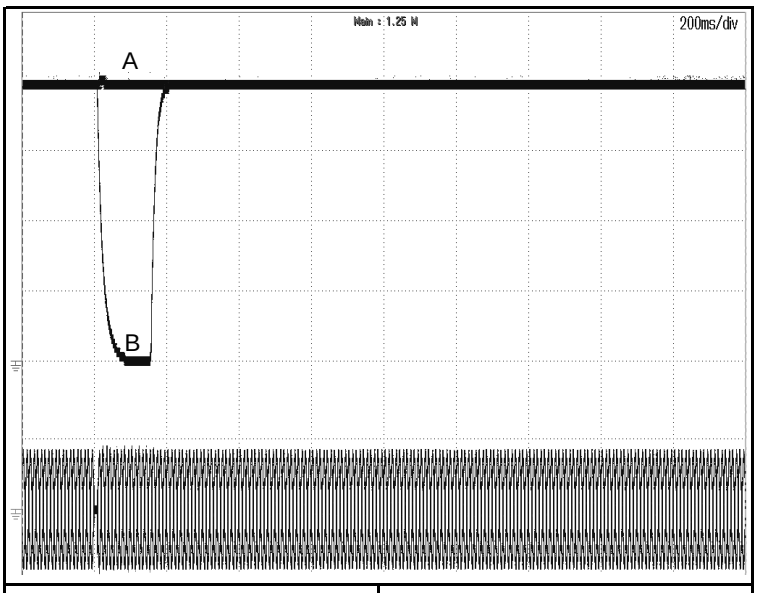
2.9 Response to brown-out characteristics

C.C mode

Conditions: Vout: 100%
Iout: 100%
Ta: 25°C

G600-12.5 3Φ208

Vin: 200VAC

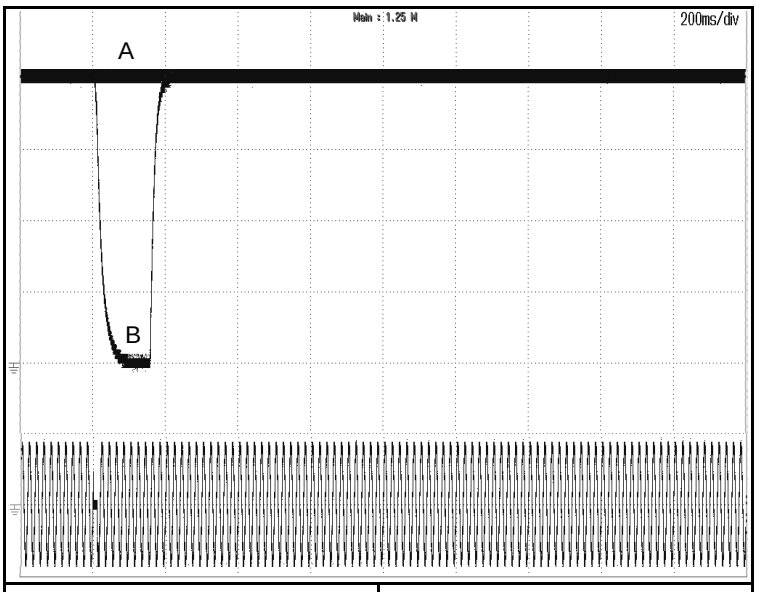


Brown-out time
A - 7ms
B - 8ms

Iout: 3.15$^{A}/_{DIV}$	200$^{ms}/_{DIV}$
Vin: 355$^{V}/_{DIV}$	

G600-12.5 3Φ480

Vin: 400VAC



Brown-out time
A - 9.5ms
B - 10ms

Iout: 3.1$^{A}/_{DIV}$	200$^{ms}/_{DIV}$
Vin: 680$^{V}/_{DIV}$	

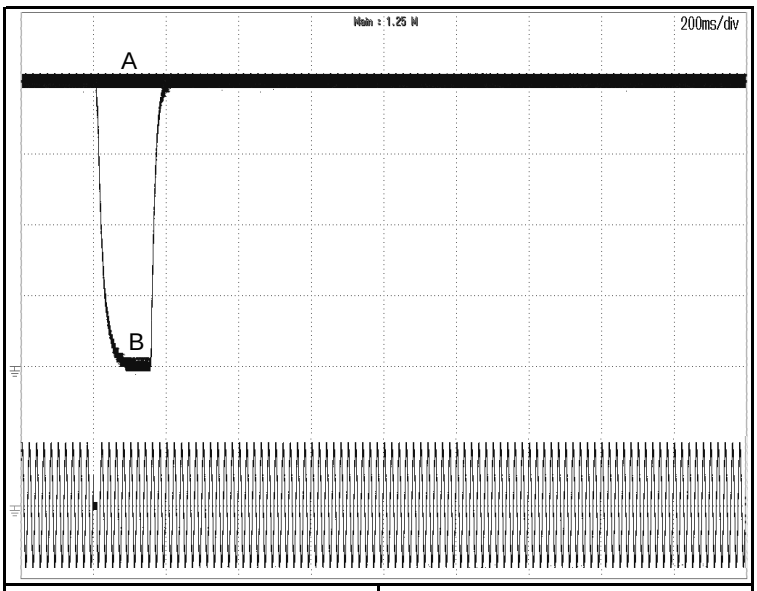
2.9 Response to brown-out characteristics

C.C mode

Conditions: Vout: 100%
Iout: 100%
Ta: 25°C

Vin: 480VAC

G600-12.5 3Φ480



Iout: 100%

Iout: 0A

Vin

Brown-out time
A - 9.5ms
B - 10ms

Iout: 3.1$^{A}/_{DIV}$	200$^{ms}/_{DIV}$
Vin: 810$^{V}/_{DIV}$	

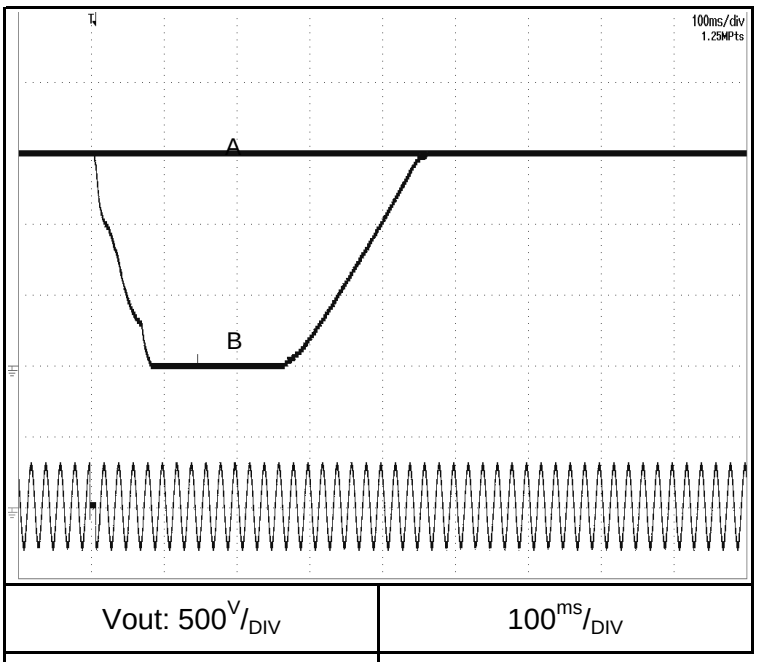
2.9 Response to brown-out characteristics

C.V mode

Conditions: Vout: 100%
Iout: 100%
Ta: 25°C

G1500-5 3Φ208

Vin: 200VAC

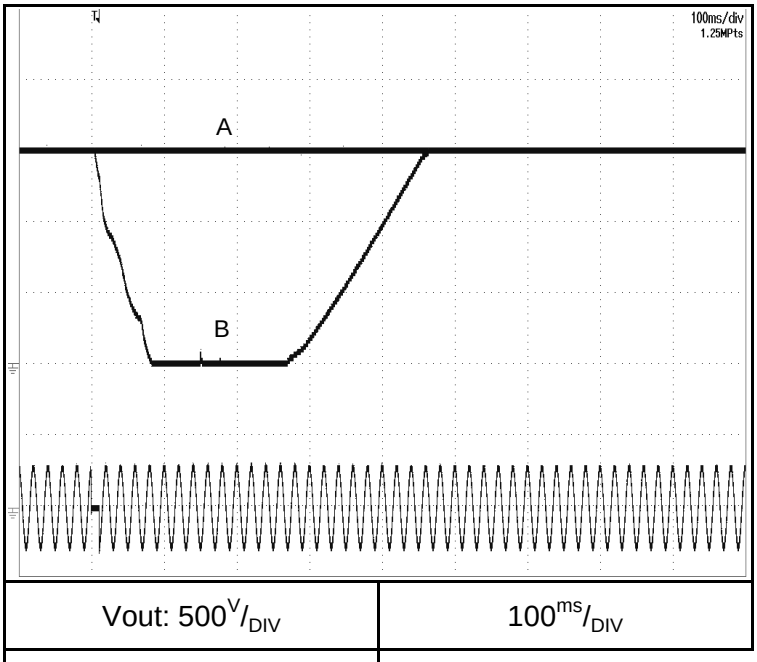


Brown-out time
A - 7ms
B - 8ms

Vout: 500V/DIV	100ms/DIV
Vin: 500V/DIV	

G1500-5 3Φ480

Vin: 400VAC



Brown-out time
A - 4ms
B - 11ms

Vout: 500V/DIV	100ms/DIV
Vin: 1000V/DIV	

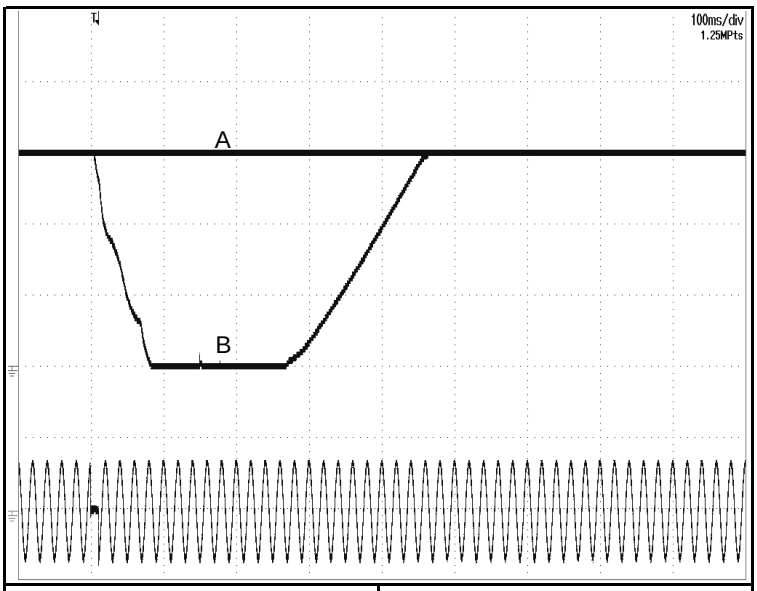
2.9 Response to brown-out characteristics

C.V mode

Conditions: Vout: 100%
Iout: 100%
Ta: 25°C

Vin: 480VAC

G1500-5 3Φ480



← Vout: 100%

← Vout: 0V

← Vin

Brown-out time
A - 4ms
B - 11ms

Vout: 500 V/DIV	100 ms/DIV
Vin: 1000 V/DIV	

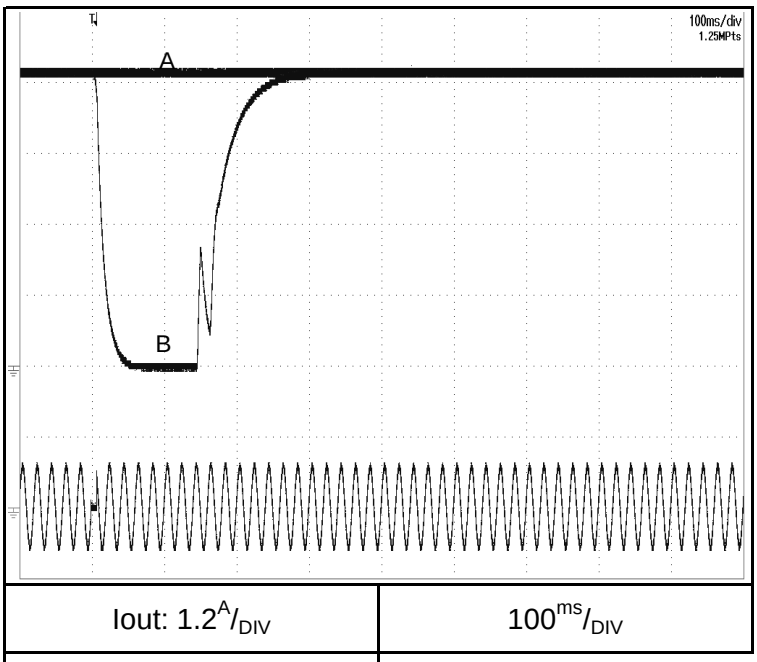
2.9 Response to brown-out characteristics

C.C mode

Conditions: Vout: 100%
Iout: 100%
Ta: 25°C

G1500-5 3Φ208

Vin: 200VAC

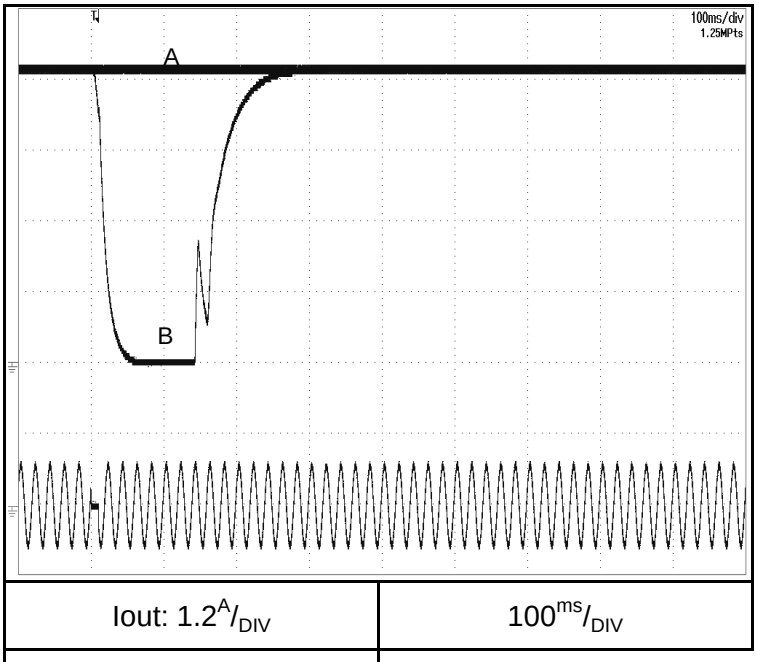


Brown-out time
A - 7ms
B - 8ms

Iout: 1.2$^{A}/_{DIV}$	100$^{ms}/_{DIV}$
Vin: 500$^{V}/_{DIV}$	

G1500-5 3Φ480

Vin: 400VAC



Brown-out time
A - 3ms
B - 10ms

Iout: 1.2$^{A}/_{DIV}$	100$^{ms}/_{DIV}$
Vin: 1000$^{V}/_{DIV}$	

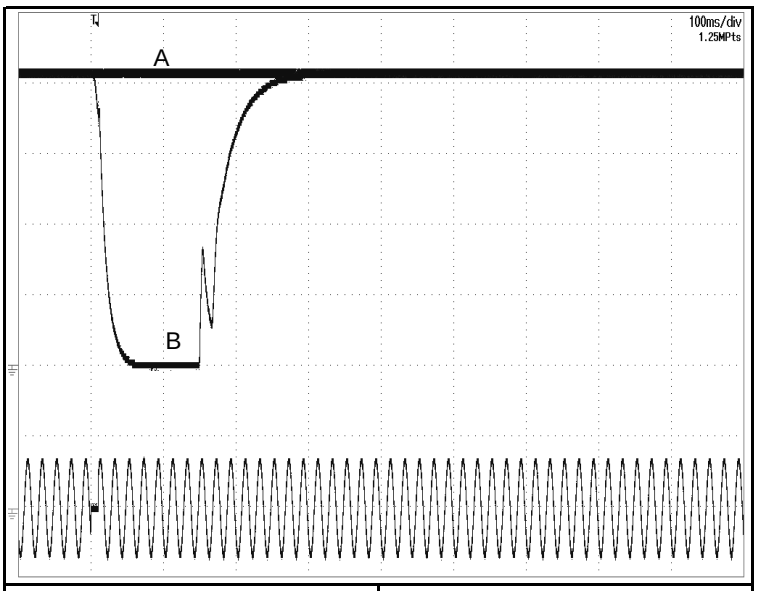
2.9 Response to brown-out characteristics

C.C mode

Conditions: Vout: 100%
Iout: 100%
Ta: 25°C

Vin: 480VAC

G1500-5 3Φ480



← Iout: 100%

← Iout: 0A

← Vin

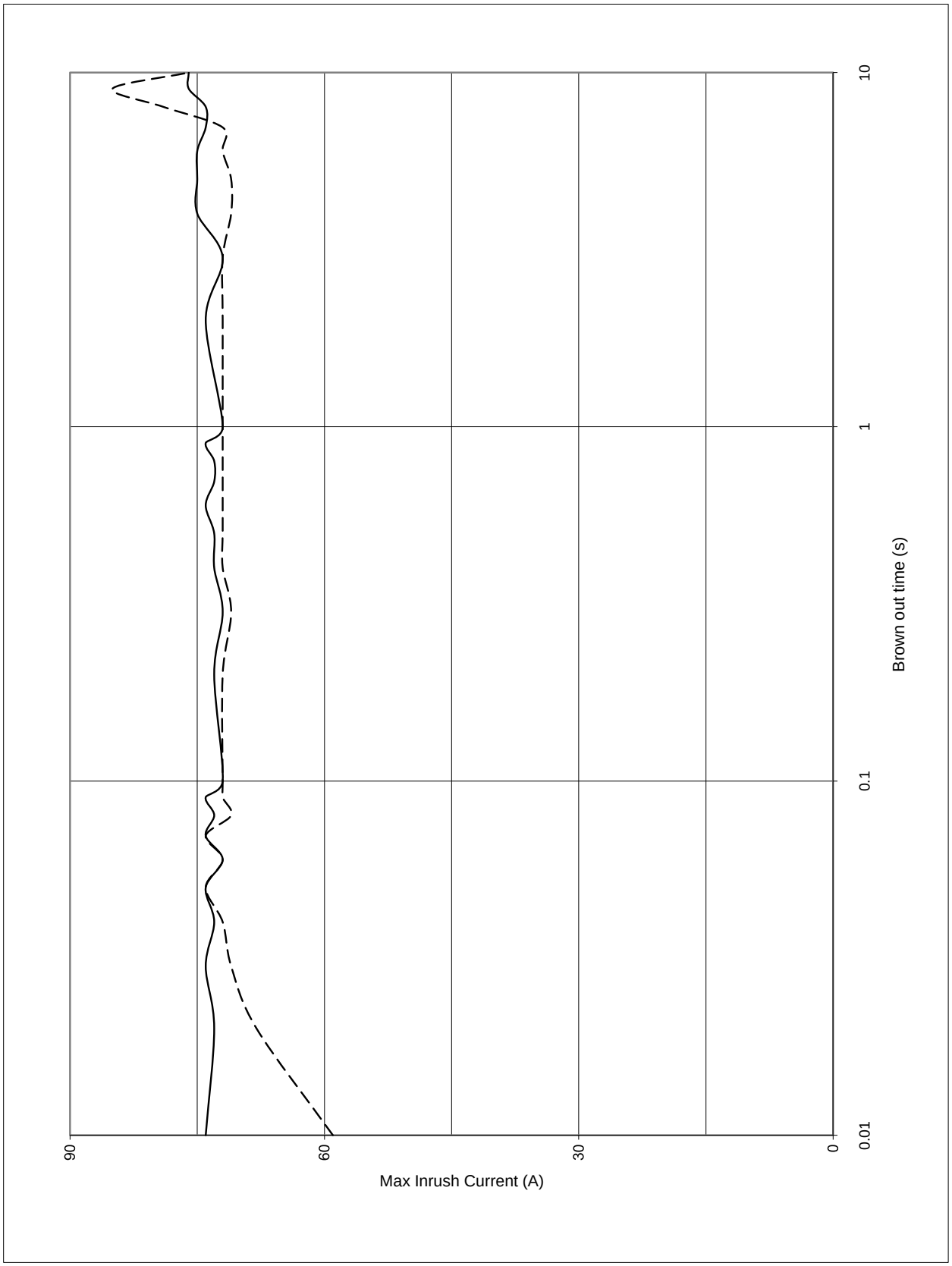
Brown-out time
A - 3ms
B - 10ms

Iout: 1.2$^{A}/_{DIV}$	100$^{ms}/_{DIV}$
Vin: 1000$^{V}/_{DIV}$	

2.10 Inrush Current Characteristics

Conditions: Vin: 200VAC
Vout: 100%
Iout: 0% -------
Iout: 100% ———
Ta: 25°C

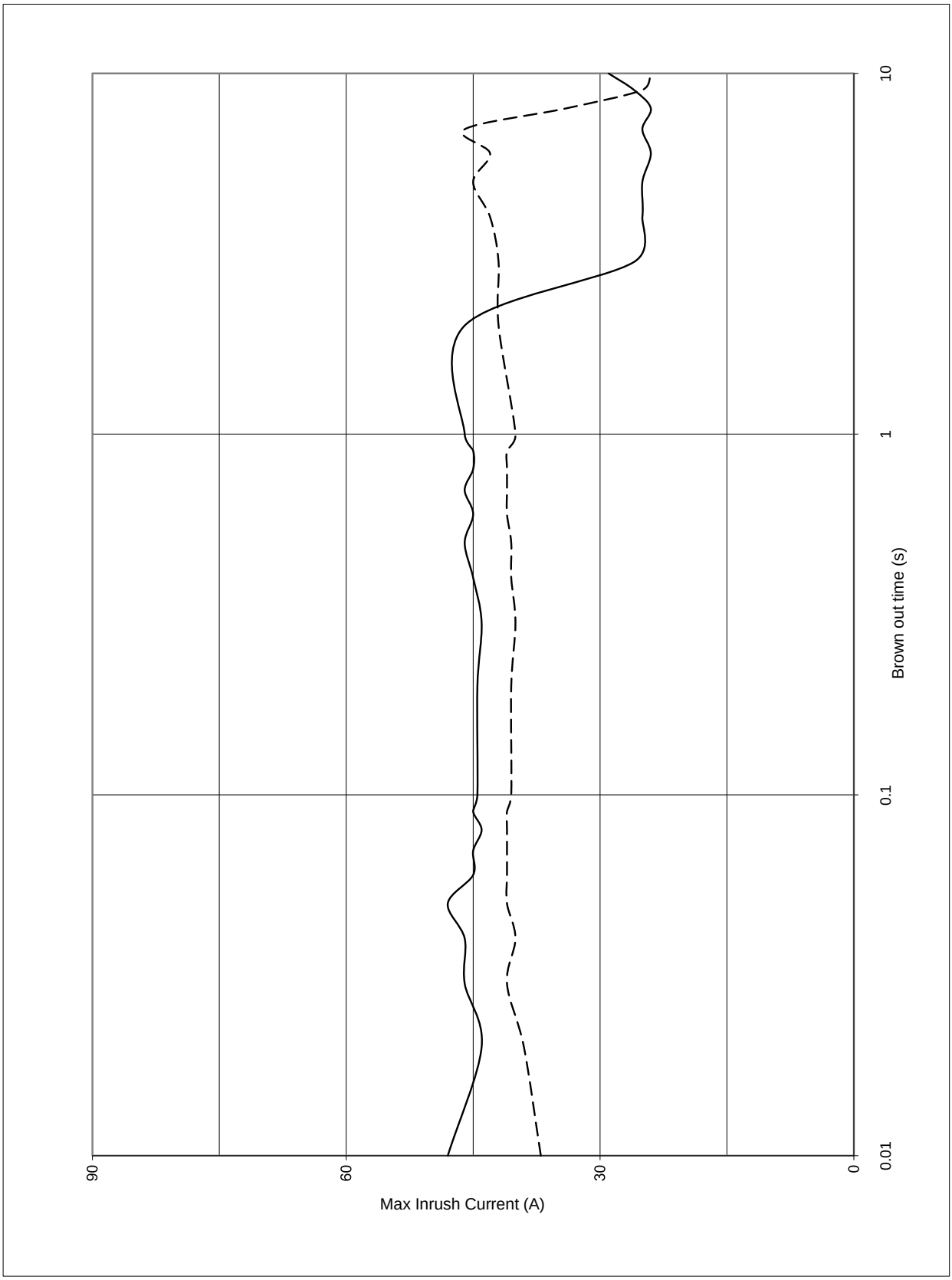
3Φ208 Input



2.10 Inrush Current Characteristics

Conditions: Vin: 400VAC
Vout: 100%
Iout: 0% -------
Iout: 100% ———
Ta: 25°C

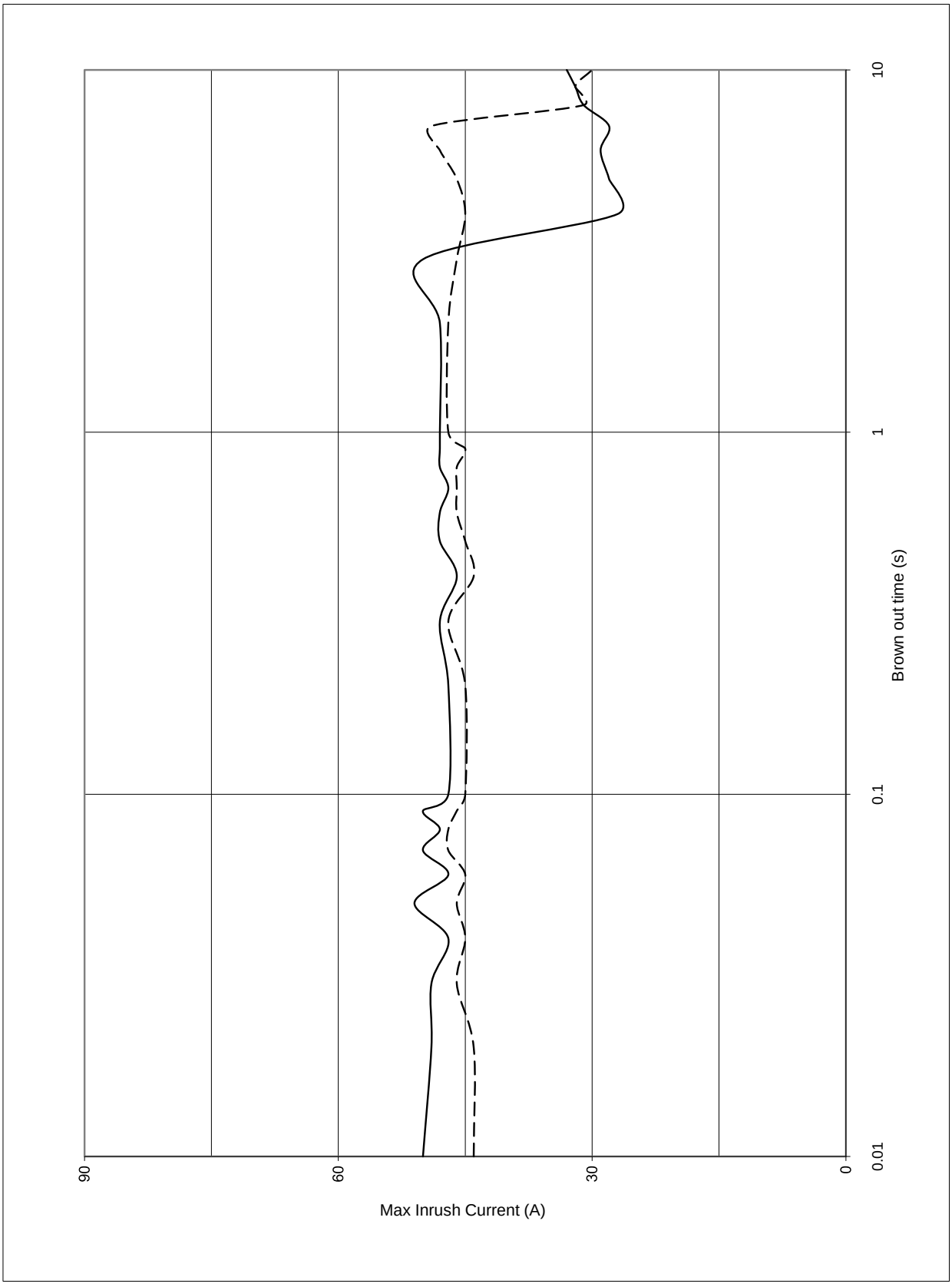
3Φ480 Input



2.10 Inrush Current Characteristics

Conditions: Vin: 480VAC
Vout: 100%
Iout: 0% -------
Iout: 100% ———
Ta: 25°C

3Φ480 Input



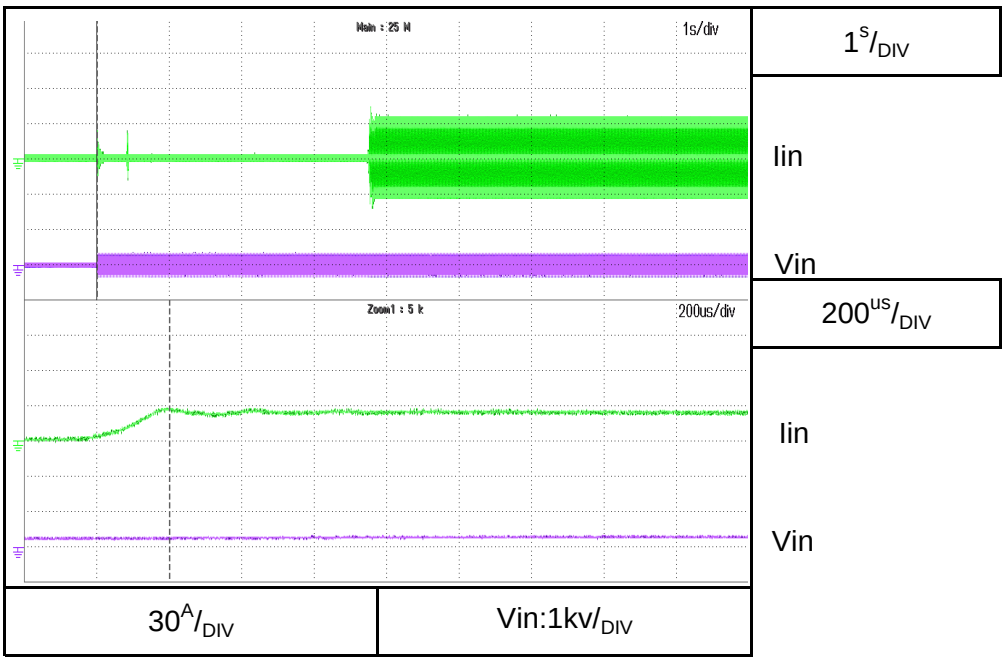
2.11 Inrush current waveform

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

3Φ208 Input

Switch on phase angle of input AC voltage

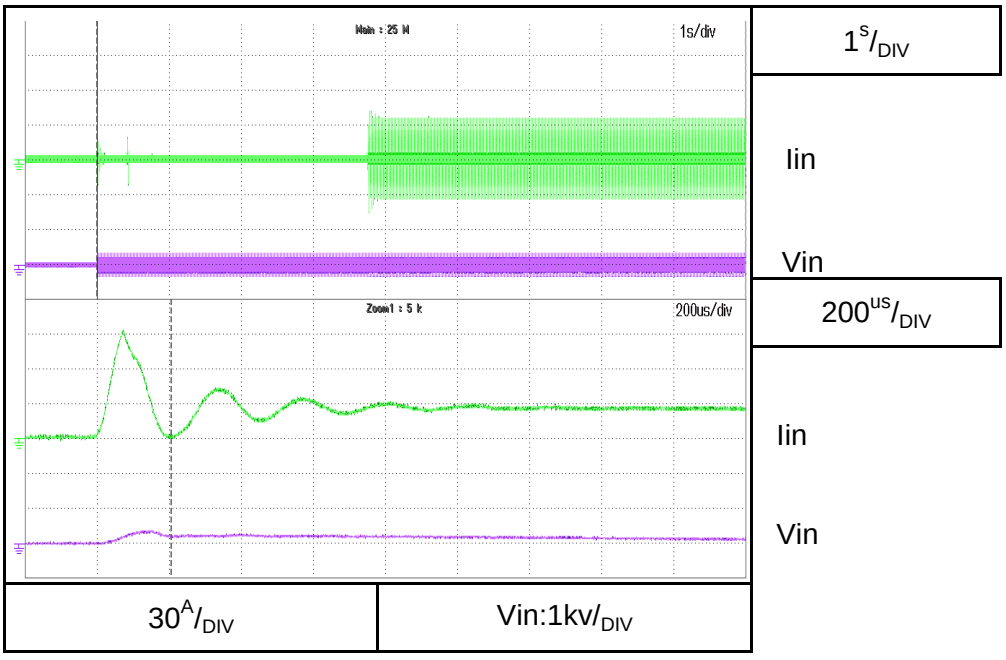
Φ=0˚



1S/DIV | 200US/DIV | 30A/DIV | Vin:1kv/DIV

Switch on phase angle of input AC voltage

Φ=90˚



1S/DIV | 200US/DIV | 30A/DIV | Vin:1kv/DIV

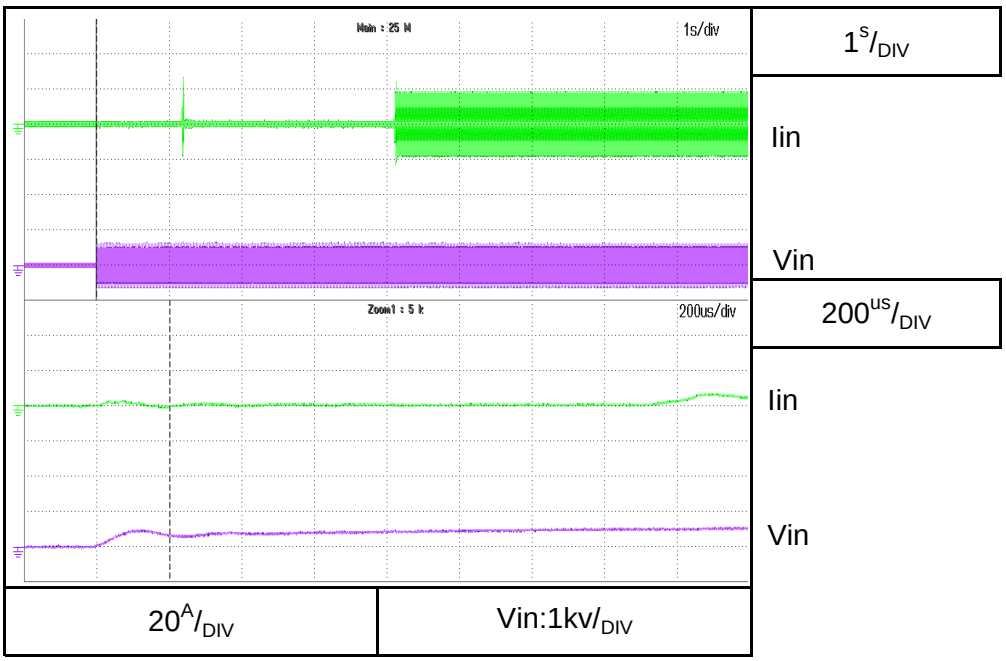
2.11 Inrush current waveform

Conditions: Vin: 400VAC
Vout: 100%
Iout: 100%
Ta: 25°C

3Φ480 Input

Switch on phase angle of input AC voltage

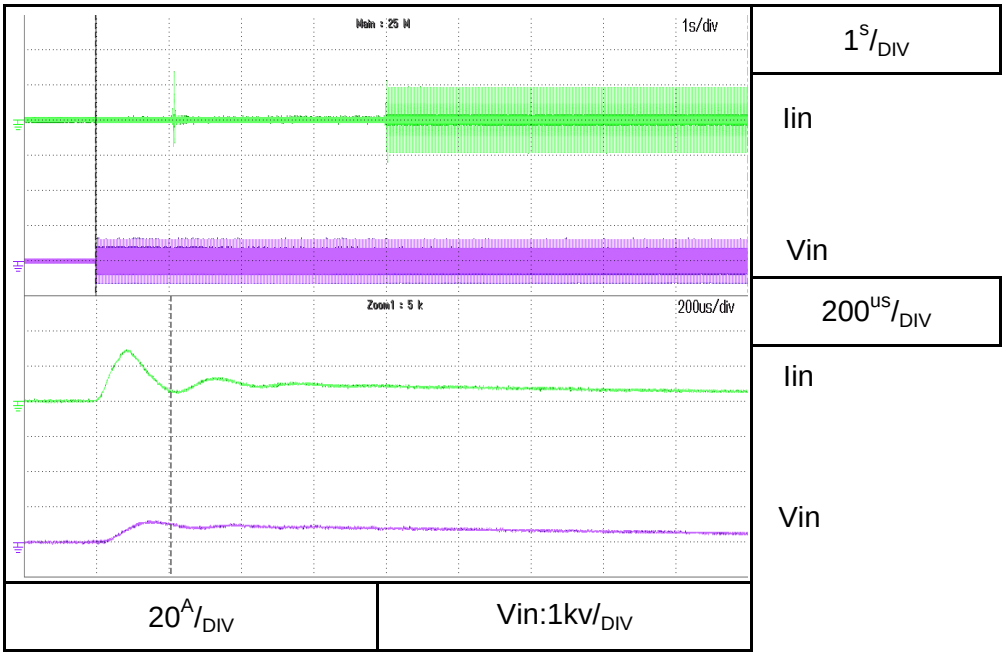
Φ=0˚



1S/DIV | 200US/DIV | 20A/DIV | Vin:1kv/DIV

Switch on phase angle of input AC voltage

Φ=90˚



1S/DIV | 200US/DIV | 20A/DIV | Vin:1kv/DIV

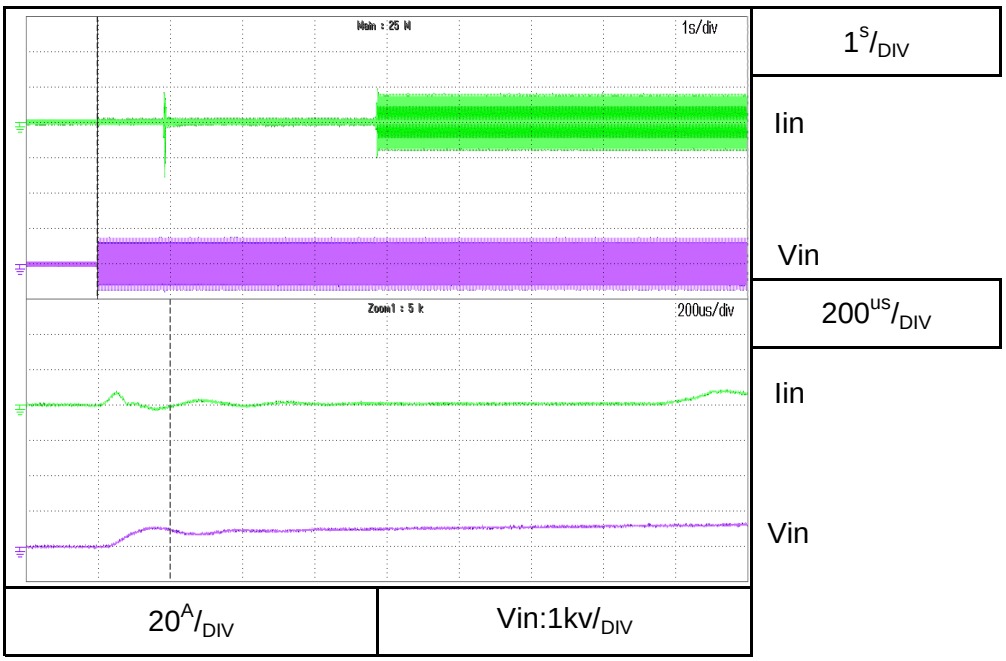
2.11 Inrush current waveform

Conditions: Vin: 480VAC
Vout: 100%
Iout: 100%
Ta: 25°C

3Φ480 Input

Switch on phase angle of input AC voltage

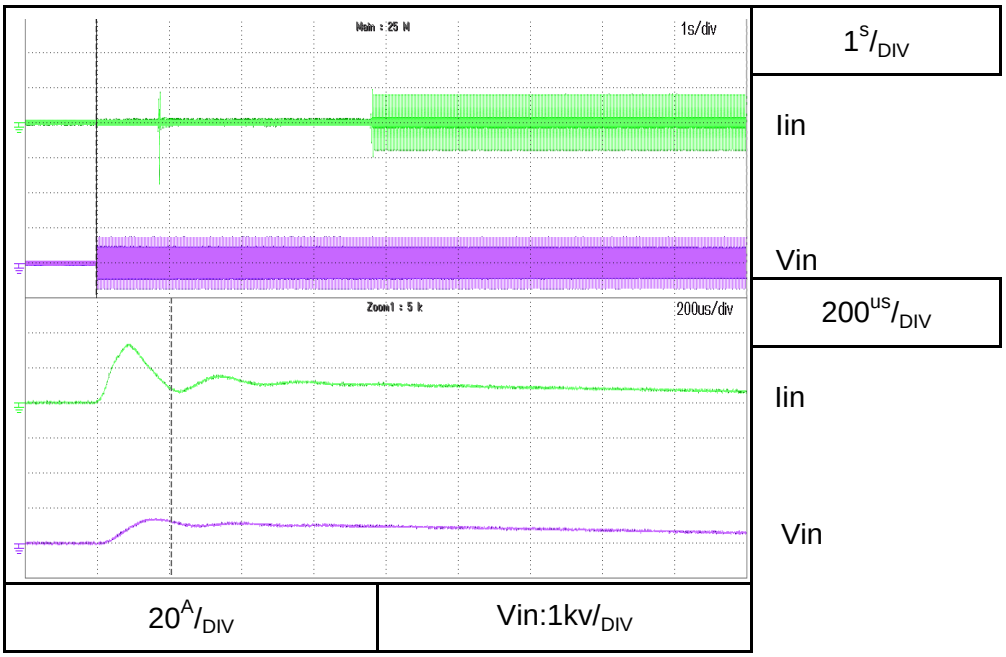
Φ=0˚



1S/DIV | 200US/DIV | 20A/DIV | Vin:1kv/DIV

Switch on phase angle of input AC voltage

Φ=90˚

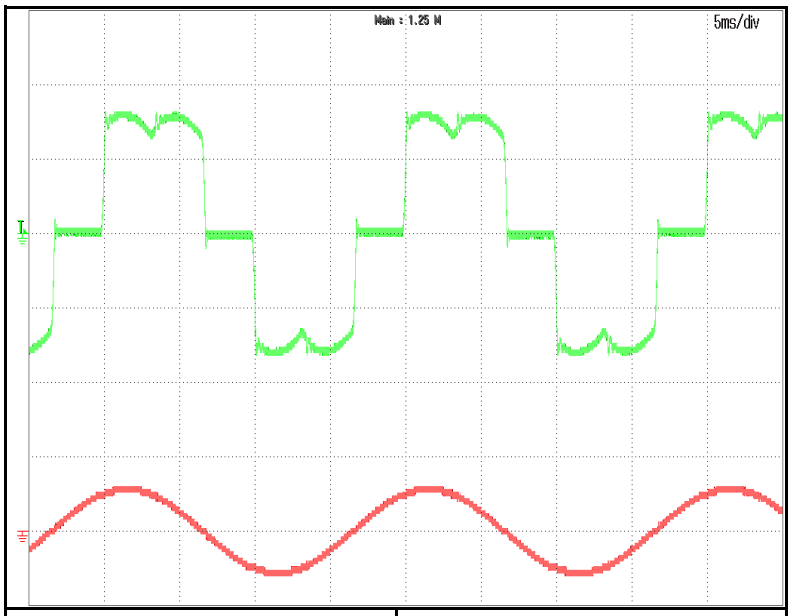


1S/DIV | 200US/DIV | 20A/DIV | Vin:1kv/DIV

2.12 Input current waveform

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

3Φ208 Input

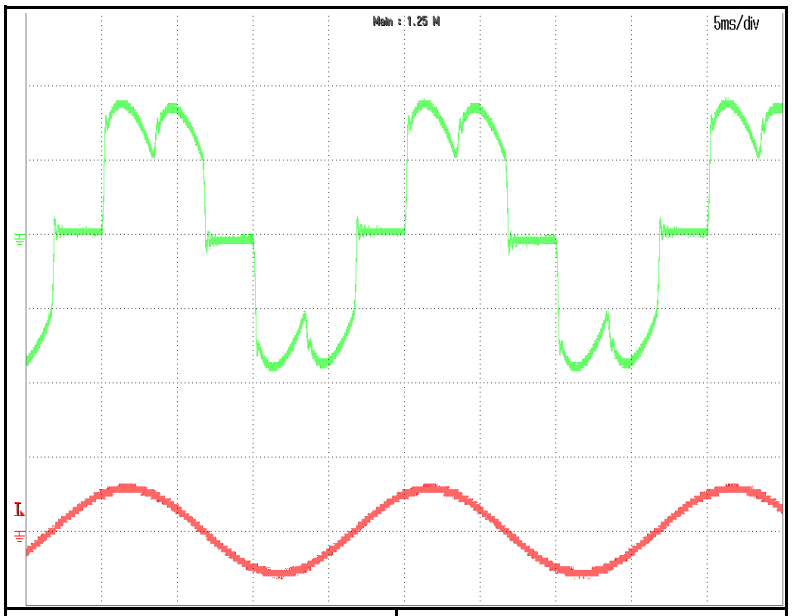


$20^{A}/_{DIV}$	$5^{ms}/_{DIV}$
$500^{V}/_{DIV}$	

2.12 Input current waveform

Conditions:
Vin: 400VAC
Vout: 100%
Iout: 100%
Ta: 25°C

3Φ480 Input

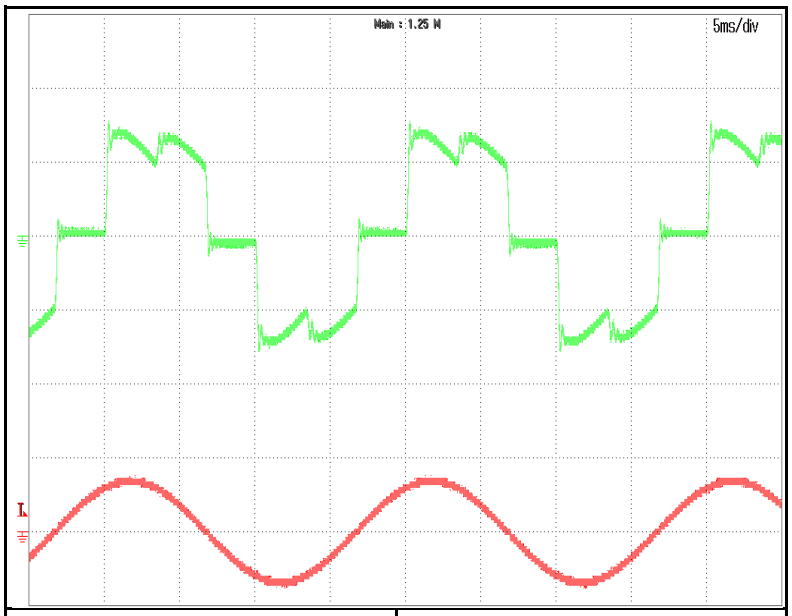


$10^{A}/_{DIV}$	$5^{ms}/_{DIV}$
$1000^{V}/_{DIV}$	

2.12 Input current waveform

Conditions:
Vin: 480VAC
Vout: 100%
Iout: 100%
Ta: 25°C

3Φ480 Input



$10^{A}/_{DIV}$	$5^{ms}/_{DIV}$
$1000^{V}/_{DIV}$	

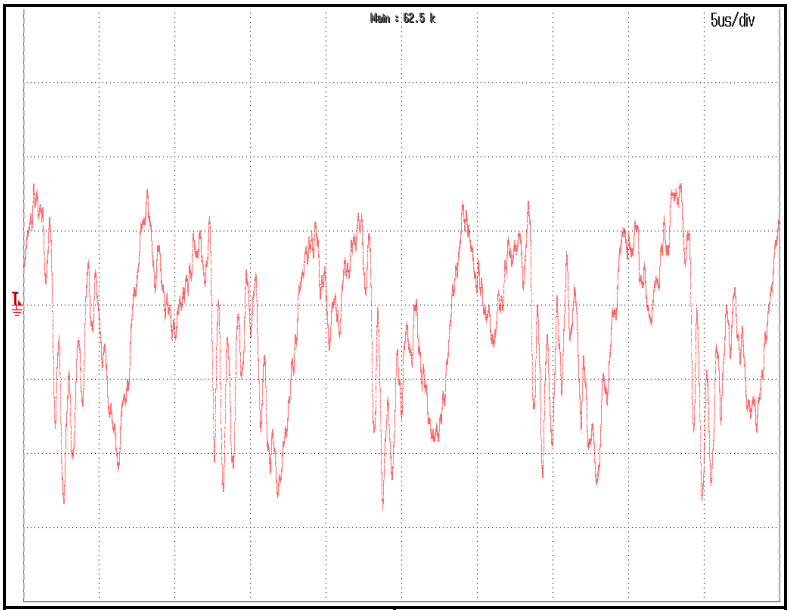
2.13 Output ripple & noise waveform

C.V mode

Conditions: Vout: 100%
Iout: 100%
Ta: 25°C

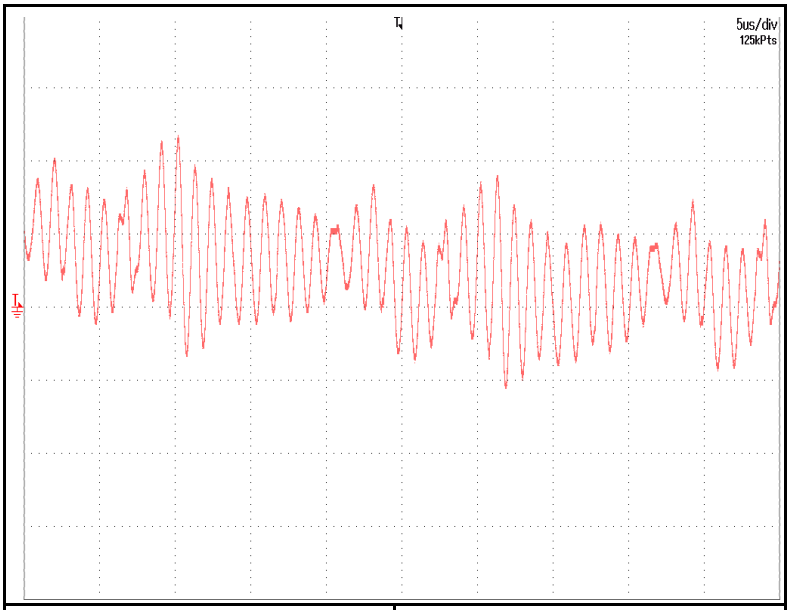
Normal Mode

G20-375



$5^{mV}/_{DIV}$	$5^{us}/_{DIV}$

G100-75



$5^{mV}/_{DIV}$	$5^{us}/_{DIV}$

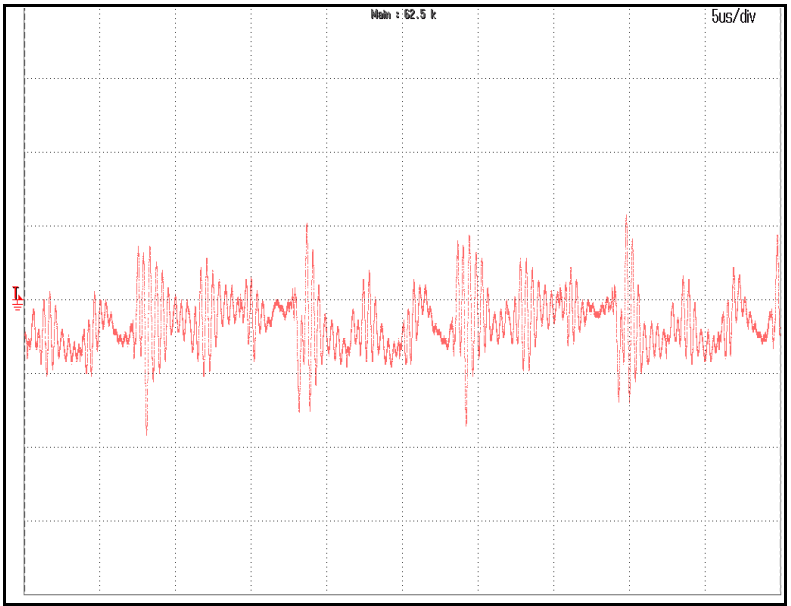
2.13 Output ripple & noise waveform

C.V mode

Conditions: Vout: 100%
Iout: 100%
Ta: 25°C

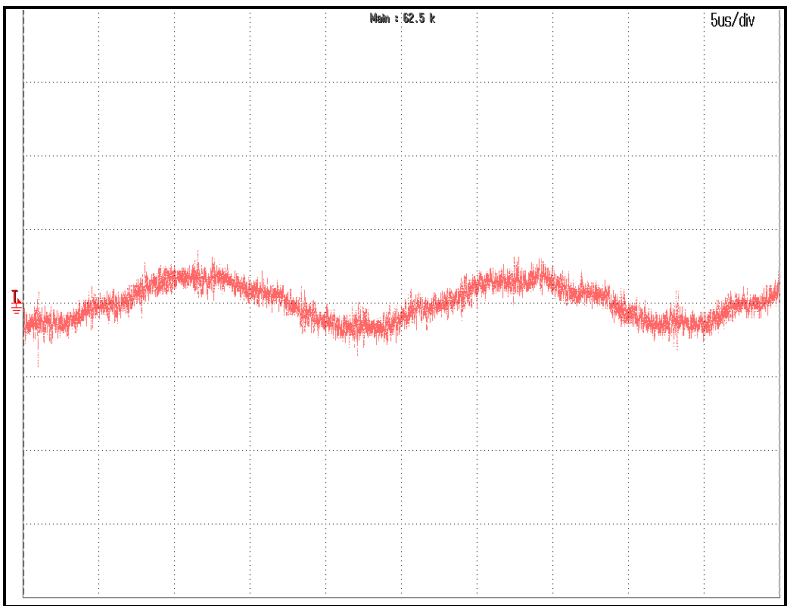
Normal Mode

G150-50



$5^{mV}/_{DIV}$	$5^{us}/_{DIV}$

G600-12.5



$200^{mV}/_{DIV}$	$5^{us}/_{DIV}$

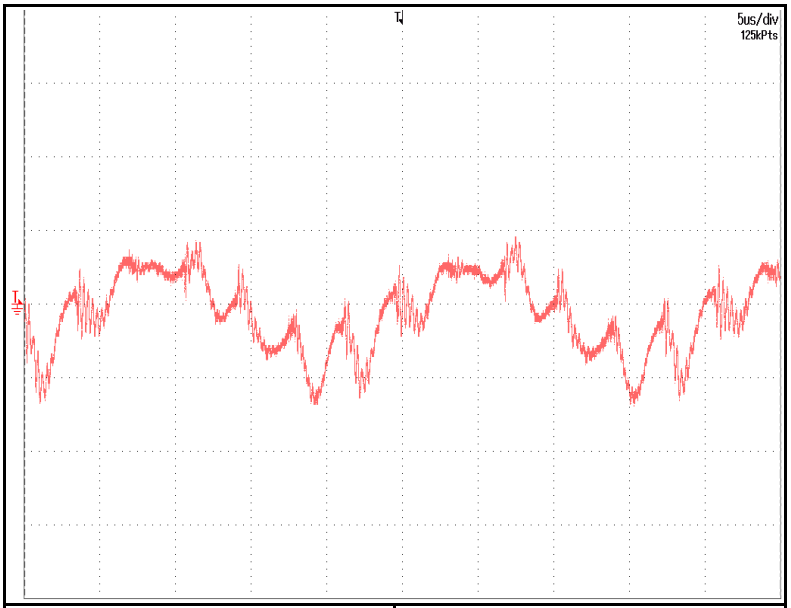
2.13 Output ripple & noise waveform

C.V mode

Conditions: Vout: 100%
Iout: 100%
Ta: 25°C

Normal Mode

G1500-5



$200^{mV}/_{DIV}$	$5^{us}/_{DIV}$