参考資料

TEST DATA OF LHP300F-30-Y

Regulated DC Power Supply
April 5, 2021

Approved by : Junya Kaneda
Design Manager

Prepared by : Yasushi Fukumura
Design Engineer

COSEL CO.,LTD.

COSEL

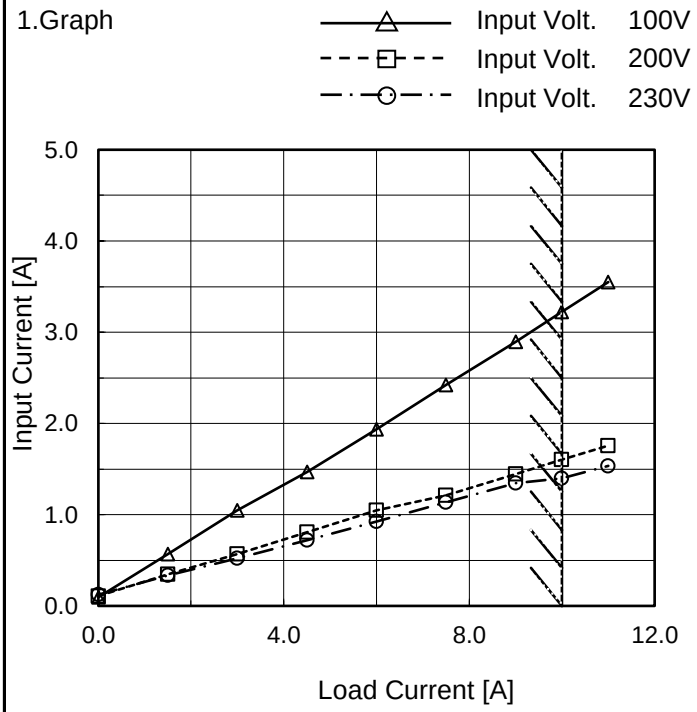
CONTENTS

COSEL

Model	LHP300F-30-Y
Item	Input Current (by Load Current)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated load current.

2.Values

Load Current [A]	Input Current [A]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.0	0.096	0.109	0.124
1.5	0.570	0.346	0.334
3.0	1.048	0.571	0.520
4.5	1.466	0.807	0.720
6.0	1.937	1.050	0.926
7.5	2.419	1.213	1.136
9.0	2.895	1.445	1.347
10.0	3.221	1.601	1.401
11.0	3.550	1.757	1.535
--	-	-	-
--	-	-	-

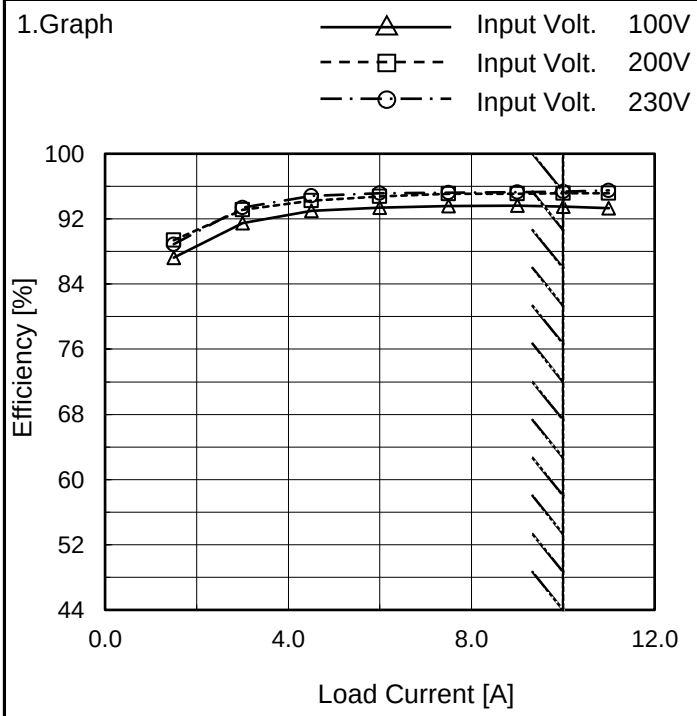
BC-11717

COSEL

Model	LHP300F-30-Y
Item	Efficiency (by Load Current)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated load current.

2.Values

Load Current [A]	Efficiency [%]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.0	-	-	-
1.5	87.2	89.4	88.9
3.0	91.5	93.1	93.4
4.5	93.0	94.2	94.8
6.0	93.4	94.8	95.1
7.5	93.6	95.1	95.2
9.0	93.6	95.1	95.3
10.0	93.5	95.1	95.4
11.0	93.3	95.1	95.5
--	-	-	-
--	-	-	-

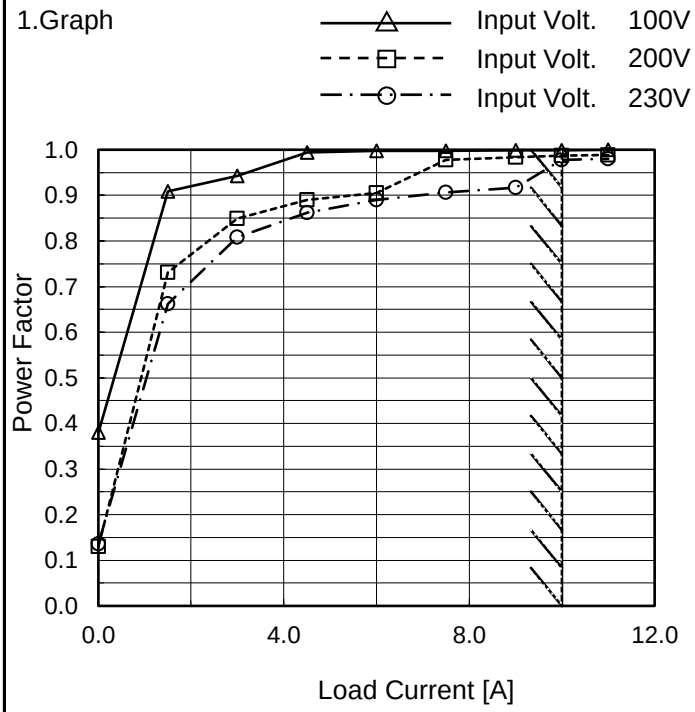
BC-11717

COSEL

Model	LHP300F-30-Y
Item	Power Factor (by Load Current)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



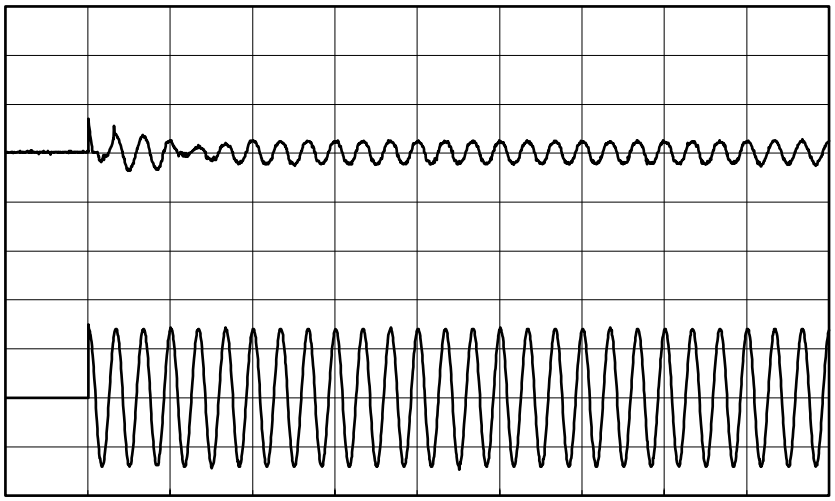
Note: Slanted line shows the range of the rated load current.

2.Values

Load Current [A]	Power Factor		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.0	0.380	0.130	0.136
1.5	0.909	0.731	0.662
3.0	0.943	0.849	0.808
4.5	0.995	0.890	0.862
6.0	0.997	0.906	0.890
7.5	0.998	0.978	0.906
9.0	0.998	0.984	0.916
10.0	0.998	0.987	0.978
11.0	0.999	0.989	0.980
--	-	-	-
--	-	-	-

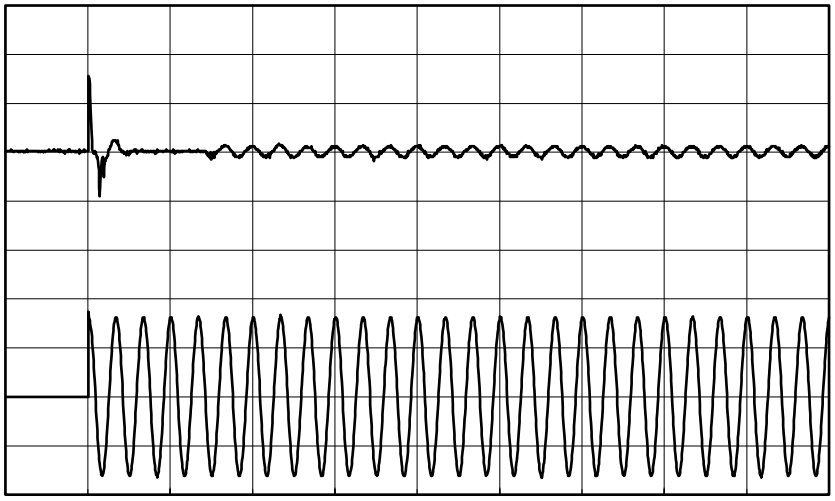
COSEL

Model	LHP300F-30-Y		
Item	Inrush Current	Temperature	25°C
		Testing Circuitry	Figure A
Object	———————		



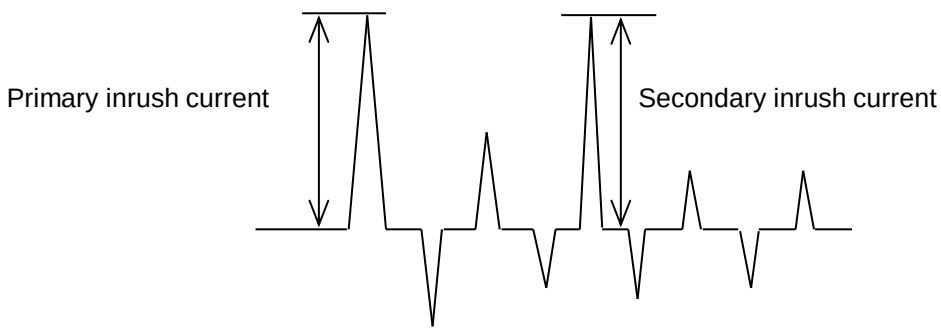
Input Voltage 100 V
Frequency 60 Hz
Load 100 %

Primary inrush current :
14.0 A
Secondary inrush current :
5.6 A



Input Voltage 230 V
Frequency 60 Hz
Load 100 %

Primary inrush current :
31.0 A
Secondary inrush current :
3.8 A



COSEL

Model	LHP300F-30-Y		
Item	Leakage Current	Temperature	25°C
		Testing Circuitry	Figure C
Object	———————————		

1.Results

[mA]

Standards	Testing Circuitry	Measuring Method	Input Volt.			Note
			100 [V]	230 [V]	240 [V]	
DEN-AN	Figure C-1	Both phases	0.14	0.35	0.37	Operation
		One of phases	0.27	0.65	0.69	Stand by
IEC62368-1	Figure C-2	Both phases	0.14	0.35	0.36	Operation
		One of phases	0.27	0.65	0.68	Stand by
	Figure C-3	Both phases	0.14	0.35	0.37	Operation
		One of phases	0.26	0.65	0.69	Stand by

The value for "One of phases" is the reference value only.

2.Condition

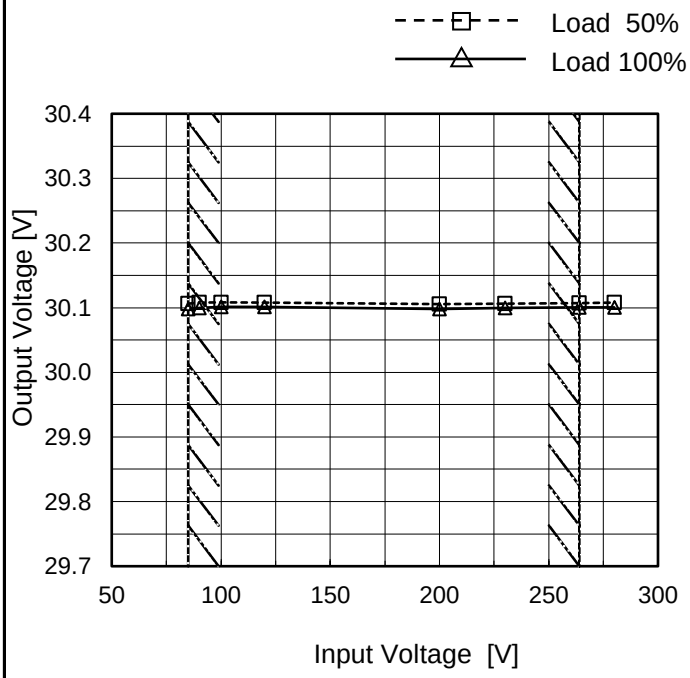
Leakage current value is concluded after measuring both phases of AC input and by choosing the larger one.

COSEL

Model	LHP300F-30-Y
Item	Line Regulation
Object	+30V10A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated input voltage.

2.Values

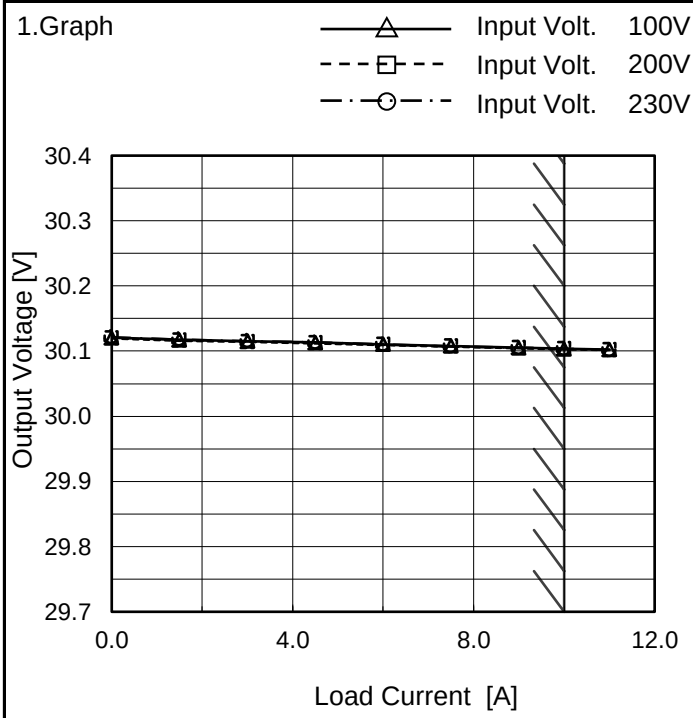
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
85	30.107	30.098
90	30.108	30.099
100	30.108	30.101
120	30.108	30.101
200	30.106	30.098
230	30.107	30.100
264	30.107	30.100
280	30.108	30.101
--	-	-

COSEL

Model	LHP300F-30-Y
Item	Load Regulation
Object	+30V10A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated load current.

2.Values

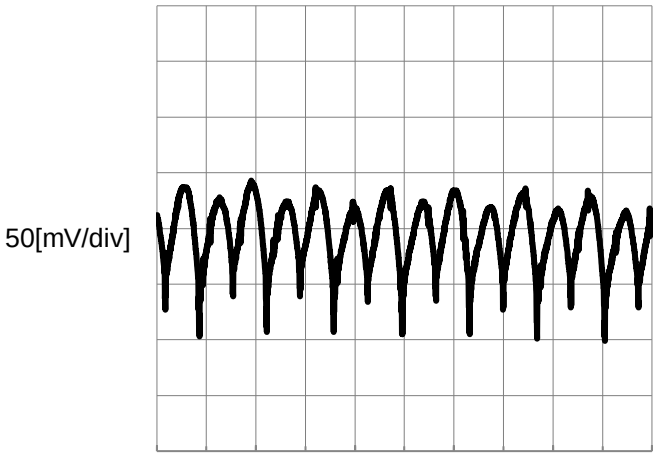
Load Current [A]	Output Voltage [V] Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.0	30.121	30.120	30.121
1.5	30.118	30.116	30.118
3.0	30.115	30.114	30.115
4.5	30.113	30.112	30.113
6.0	30.111	30.110	30.110
7.5	30.108	30.107	30.107
9.0	30.105	30.105	30.105
10.0	30.104	30.103	30.104
11.0	30.102	30.102	30.102
--	--	--	--
--	--	--	--

Item	Ripple-Noise
Object	+30V10A

Temperature 25°C
Testing Circuitry Figure B

1.Graph

Input Voltage 230V
Load 100%



BC-11717

COSEL

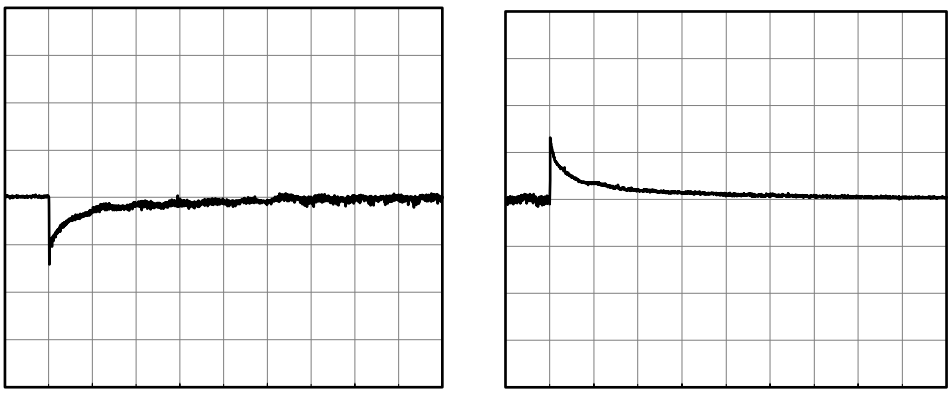
Model	LHP300F-30-Y	
Item	Dynamic Load Response	Temperature 25°C Testing Circuitry Figure A
Object	+30V10A	

Input Volt. 230 V

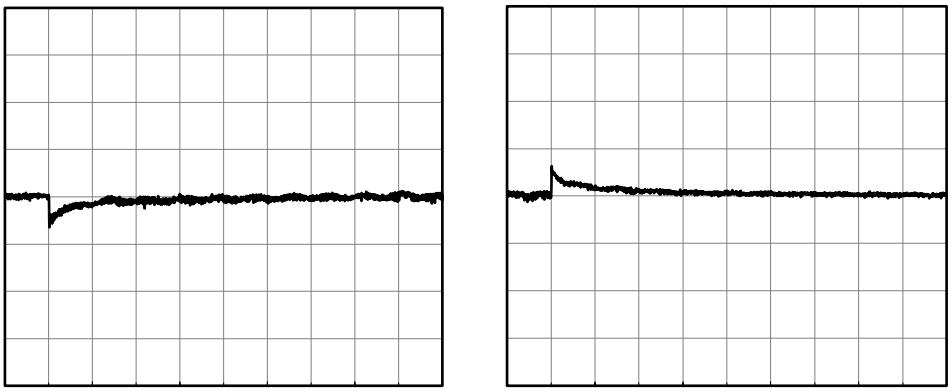
Cycle 1000 ms

Response. t1=t2=50μs. Typ

Load 0%(0A) ←→
Load 100%(10A)



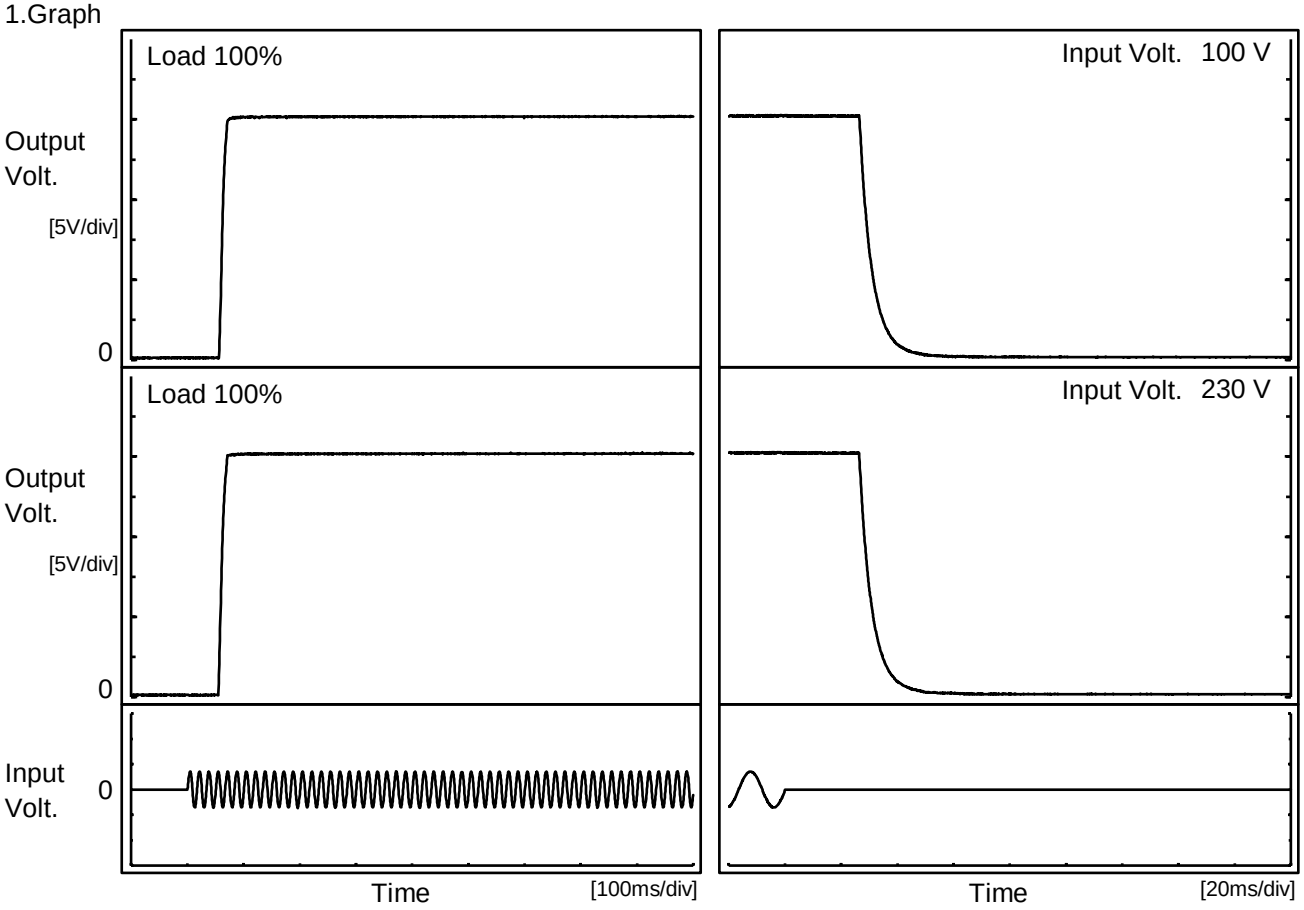
Load 50%(5A) ←→
Load 100%(10A)



COSEL

Model	LHP300F-30-Y	
Item	Rise and Fall Time	Temperature 25°C Testing Circuitry Figure A
Object	+30V10A	

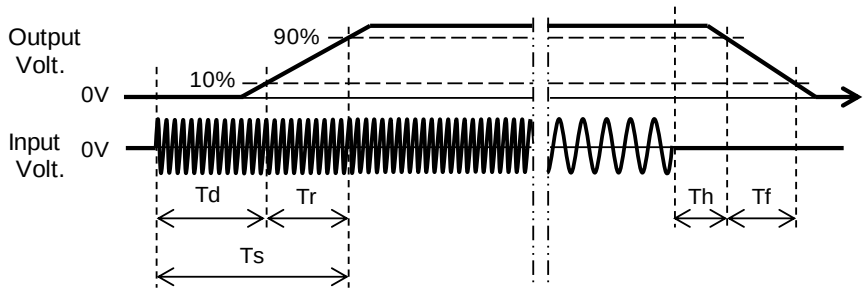
1.Graph



2.Values

[ms]

Input Volt. \ Time	Td	Tr	Ts	Th	Tf
100 V	58.0	11.0	69.0	26.9	10.1
230 V	57.0	11.0	68.0	26.9	10.0

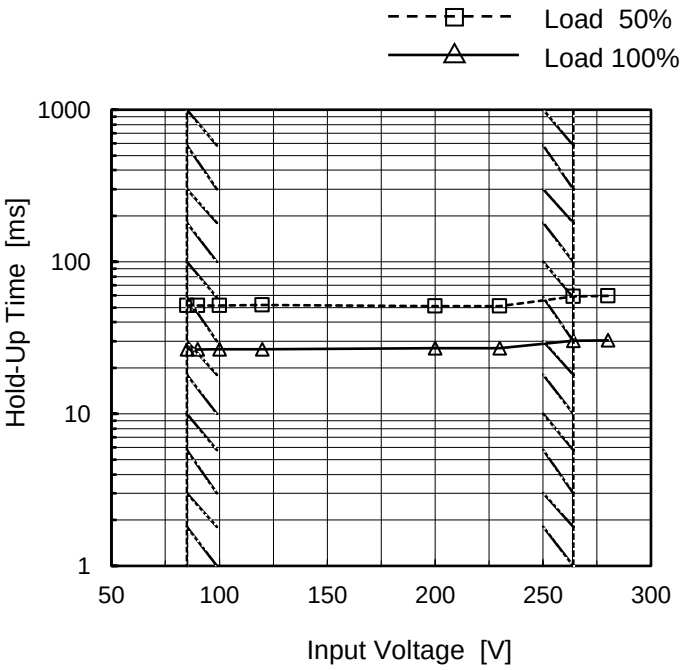


COSEL

Model	LHP300F-30-Y
Item	Hold-Up Time
Object	+30V10A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



This duration covers from Shut-off of input voltage to the moment when output voltage descends to the rated range of voltage accuracy.
Note: Slanted line shows the range of the rated input voltage.

2.Values

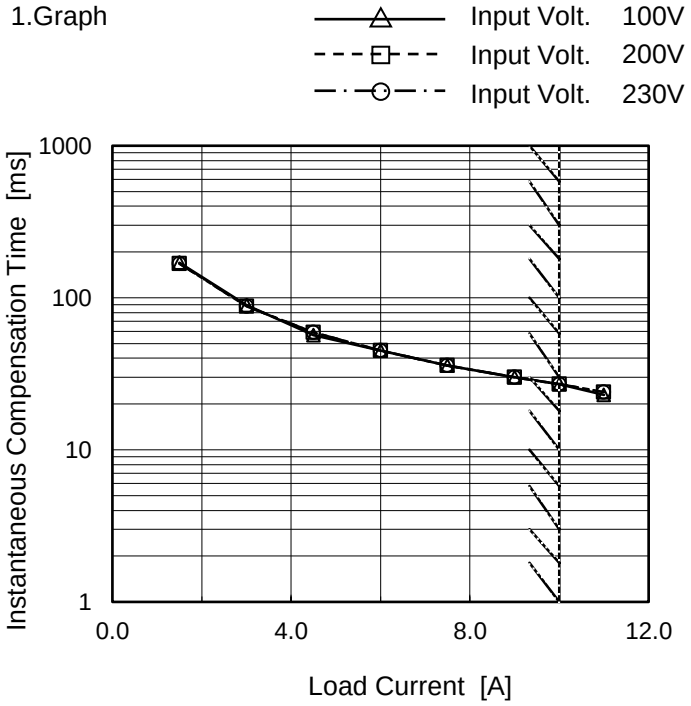
Input Voltage [V]	Hold-Up Time [ms]	
	Load 50%	Load 100%
85	52	27
90	52	27
100	52	27
120	52	27
200	51	27
230	51	27
264	59	30
280	60	30
--	-	-

COSEL

Model	LHP300F-30-Y
Item	Instantaneous Interruption Compensation
Object	+30V10A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated load current.

2.Values

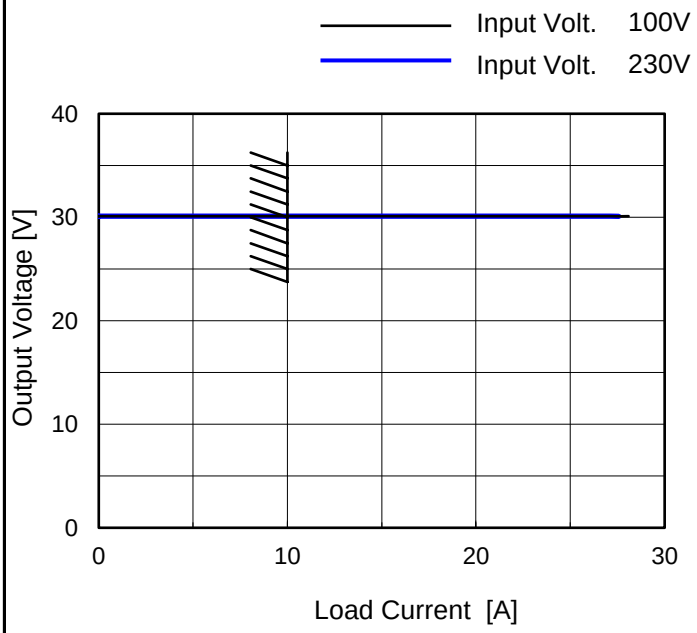
Load Current [A]	Time [ms] Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.0	-	-	-
1.5	170	168	168
3.0	89	88	88
4.5	57	59	59
6.0	45	45	45
7.5	36	36	36
9.0	30	30	30
10.0	27	27	27
11.0	23	24	24
--	-	-	-
--	-	-	-

COSEL

Model	LHP300F-30-Y
Item	Overcurrent Protection
Object	+30V10A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated load current.

Overcurrent protection is Hiccup mode.

2.Values

Output Voltage [V]	Load Current [A]	
	Input Volt. 100[V]	Input Volt. 230[V]
30	28.09	28.08
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	LHP300F-30-Y	
Item	Ambient Temperature Drift	Testing Circuitry Figure A
Object	+30V10A	

1.Values

Load 100%

Ambient Temperature[℃]	Output Voltage [V]		
	Input Volt. 100V	Input Volt. 200V	Input Volt. 230V
-10	29.986	29.986	29.986
25	30.095	30.094	30.095
50	30.159	30.159	30.159

Item	Minimum Input Voltage for Regulated Output Voltage	Testing Circuitry Figure A
Object	+30V10A	

1.Values

Ambient Temperature[℃]	Input Voltage [V]	
	Load 50%	Load 100%
-10	74	75
25	74	75
50	75	75

Item	Overvoltage Protection	Testing Circuitry Figure A
Object	+30V10A	

1.Values

Load 0%

Ambient Temperature[℃]	Operating Point [V]	
	Input Volt. 100V	Input Volt. 230V
-10	37.44	37.44
25	38.44	38.56
50	39.38	39.38

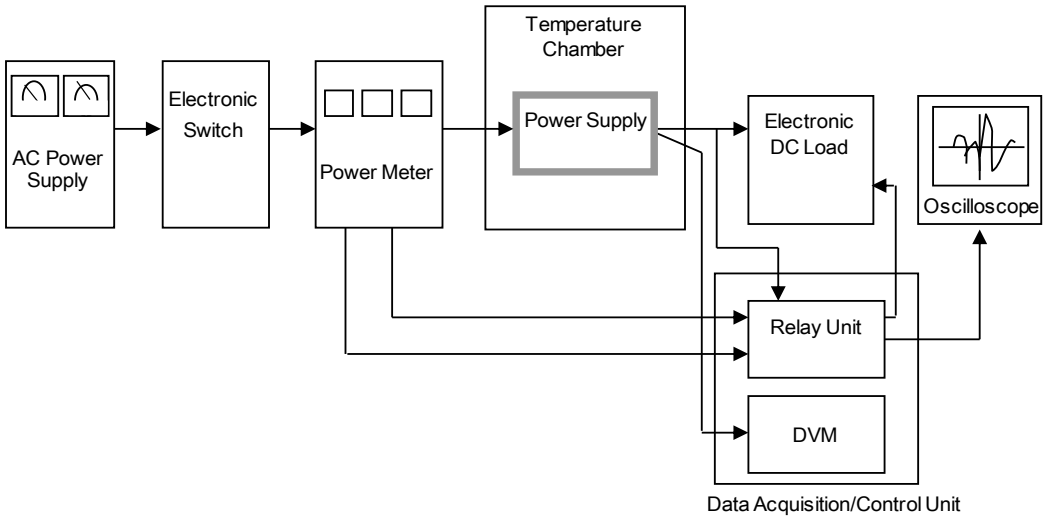
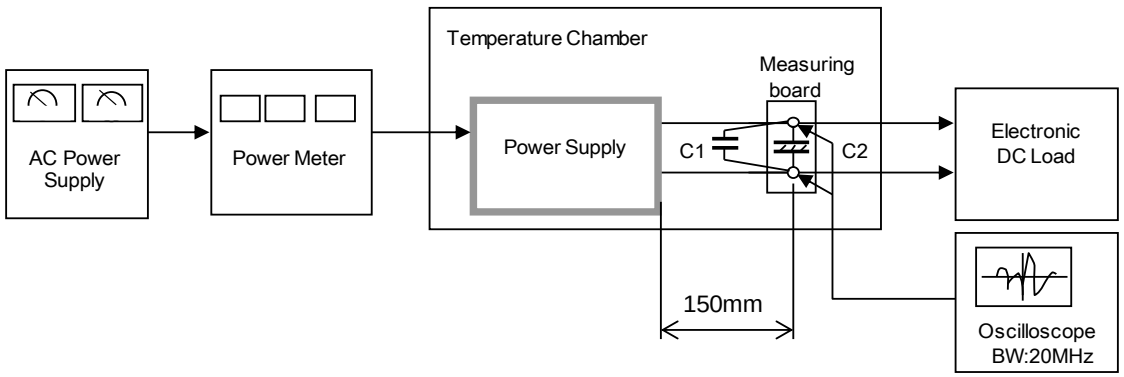


Figure A



C1= 0.1 μF
(Ceramic capacitor)

C2= 22 μF
(Electrolytic capacitor)

Figure B

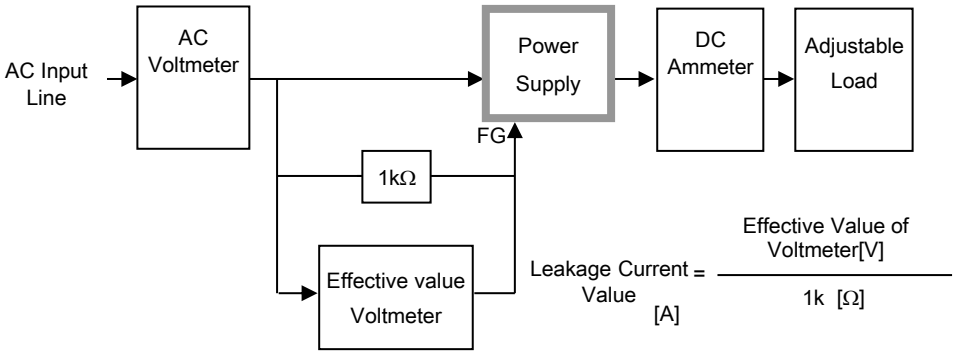


Figure C-1 (DEN-AN)

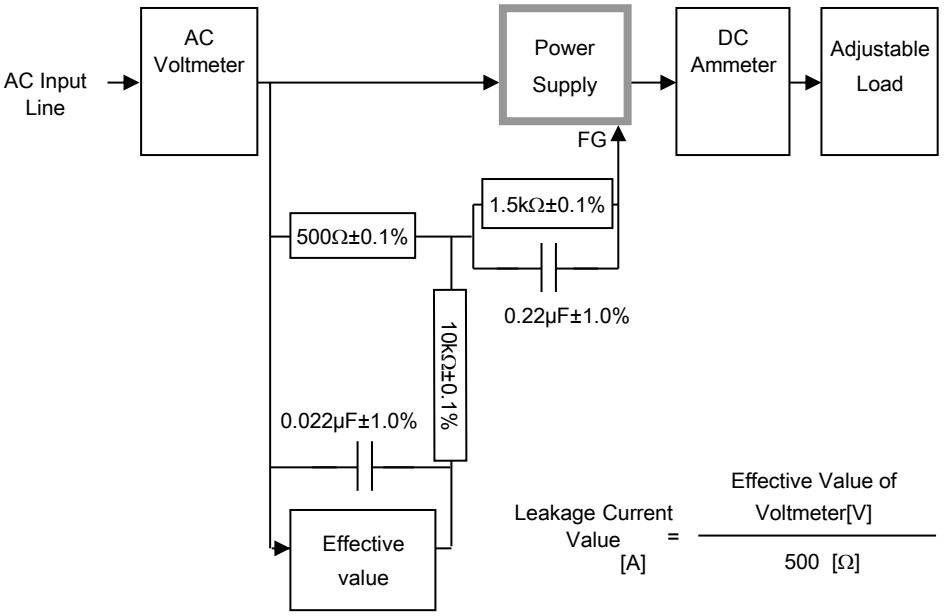


Figure C-2 (IEC62368-1 refer to IEC60990 Fig.4)

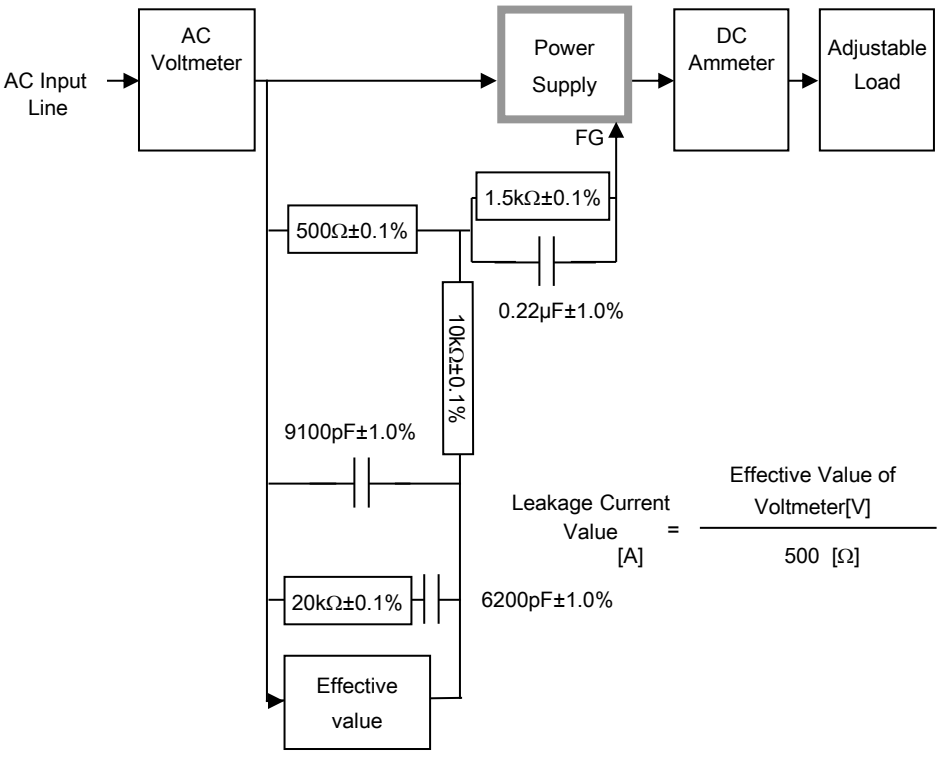


Figure C-3 (IEC62368-1 refer to IEC60990 Fig.5)