参考資料

COSEL

TEST DATA OF TUNS1200F28

Regulated DC Power Supply
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COSEL CO.,LTD.

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Item	Input Current (by Load Current)
Object	———————

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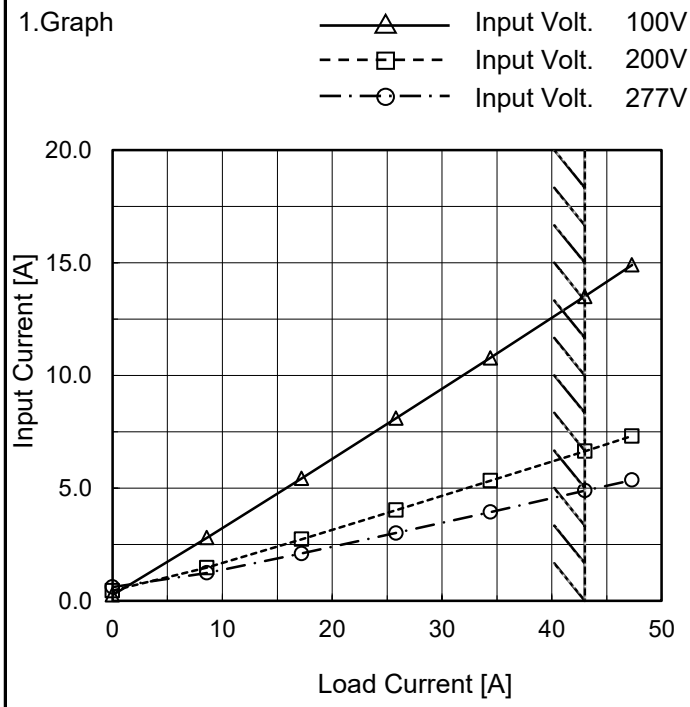

Note: Slanted line shows the range of the rated load current.

2.Values

Load Current [A]	Input Current [A]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 277[V]
0.0	0.256	0.451	0.610
8.6	2.801	1.471	1.234
17.2	5.430	2.731	2.098
25.8	8.100	4.020	3.009
34.4	10.780	5.330	3.940
43.0	13.510	6.640	4.890
47.3	14.910	7.310	5.360
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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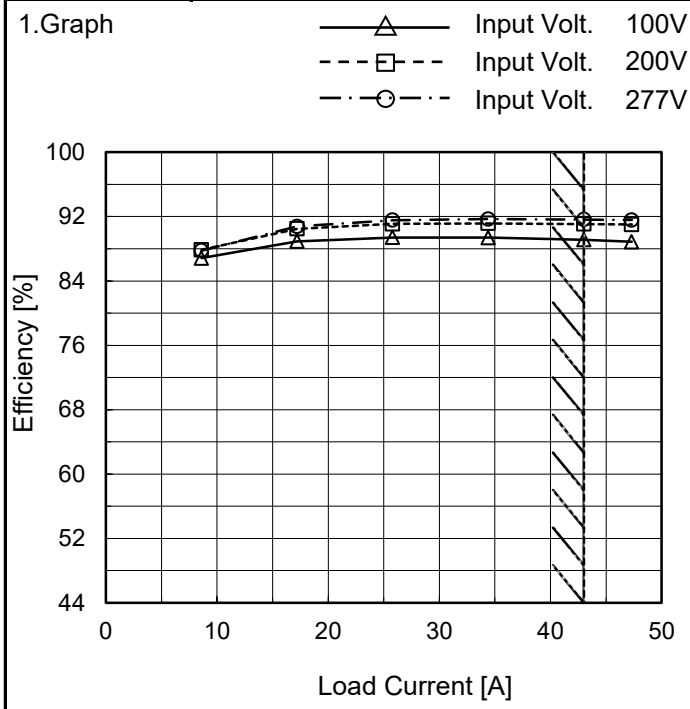
Model	TUNS1200F28
Item	Efficiency (by Load Current)
Object	————————

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. 277[V]
0.0	-	-	-
8.6	86.8	87.9	87.8
17.2	88.9	90.5	90.8
25.8	89.4	91.1	91.6
34.4	89.4	91.2	91.7
43.0	89.1	91.1	91.6
47.3	88.9	91.0	91.6
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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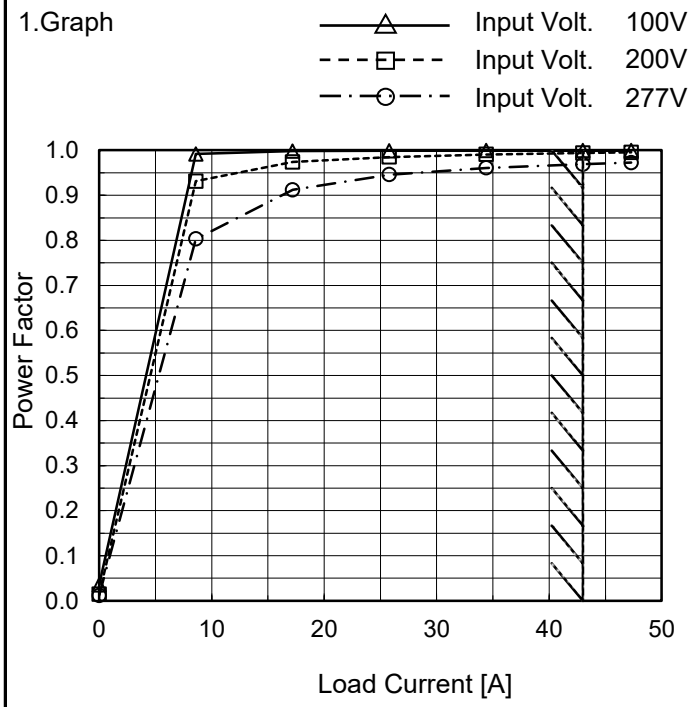
Model	TUNS1200F28
Item	Power Factor (by Load Current)
Object	————————

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. 277[V]
0.0	0.035	0.014	0.012
8.6	0.992	0.931	0.803
17.2	0.998	0.974	0.912
25.8	0.999	0.985	0.946
34.4	0.999	0.991	0.961
43.0	0.999	0.994	0.969
47.3	0.999	0.995	0.972
--	-	-	-
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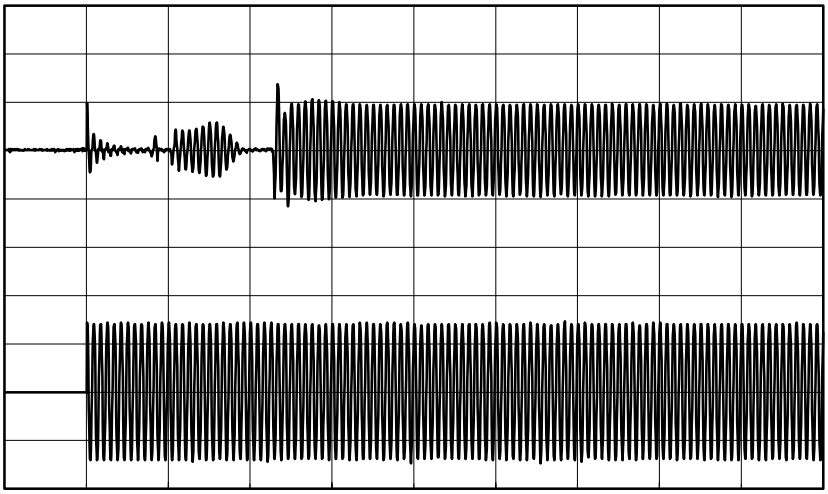
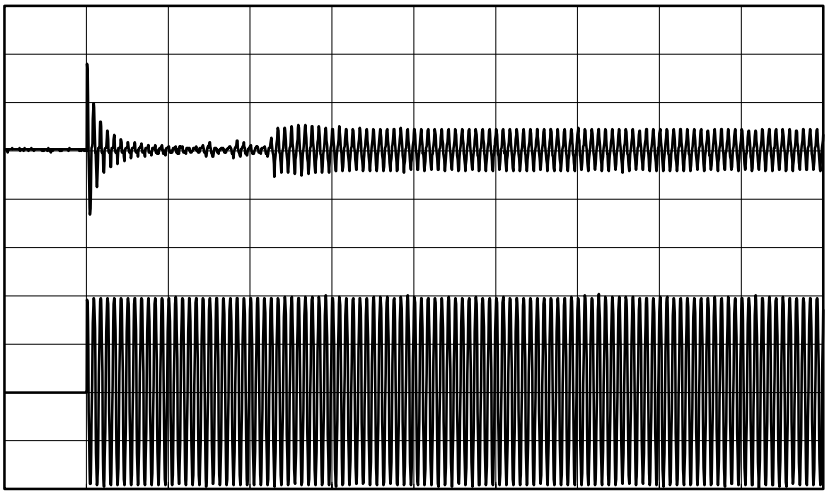
Model	TUNS1200F28	
Item	Inrush Current	Temperature 25°C Testing Circuitry Figure A
Object	————————	



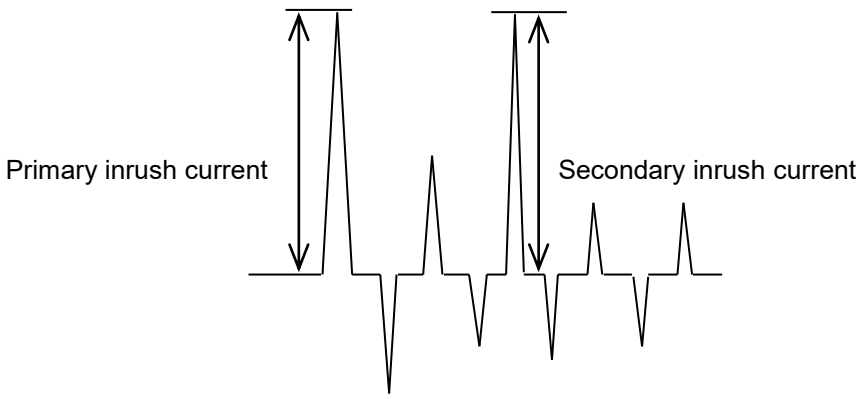
Input Voltage 100 V
Frequency 60 Hz
Load 100 %

Primary inrush current :
19.7 A
Secondary inrush current :
27.5 A



Input Voltage 277 V
Frequency 60 Hz
Load 100 %

Primary inrush current :
35.8 A
Secondary inrush current :
11.0 A



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Model	TUNS1200F28	
Item	Leakage Current	Temperature 25°C Testing Circuitry Figure B
Object	――――――――――	

1.Results

[mA]

Standards	Testing Circuitry	Measuring Method	Input Volt.			Note
			100 [V]	200 [V]	240 [V]	
IEC60601-1	Figure B	Both phases	0.16	0.36	0.44	Operation
		One of phases	0.29	0.62	0.75	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.

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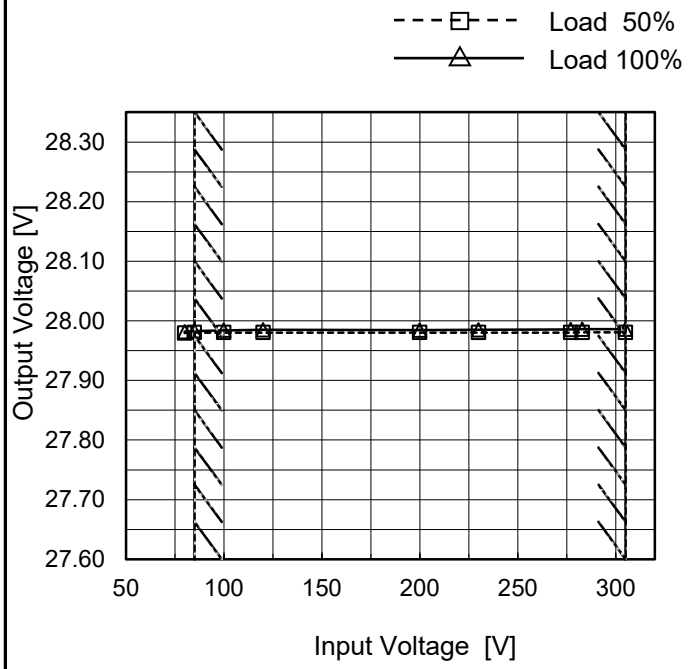
Model	TUNS1200F28
Item	Line Regulation
Object	+28V43A

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%
80	27.980	27.982
85	27.980	27.983
100	27.980	27.984
120	27.980	27.985
200	27.980	27.984
230	27.980	27.985
277	27.980	27.985
283	27.981	27.986
305	27.981	27.986

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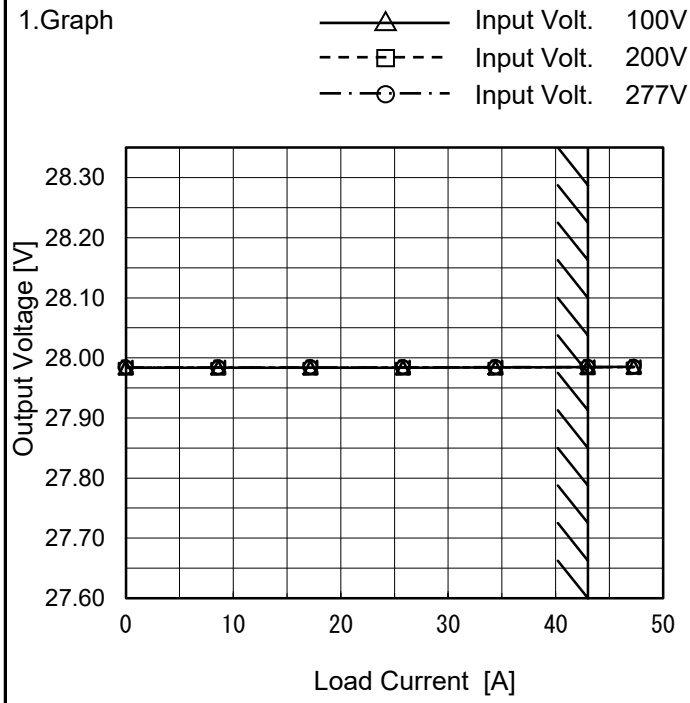
Model	TUNS1200F28
Item	Load Regulation
Object	+28V43A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

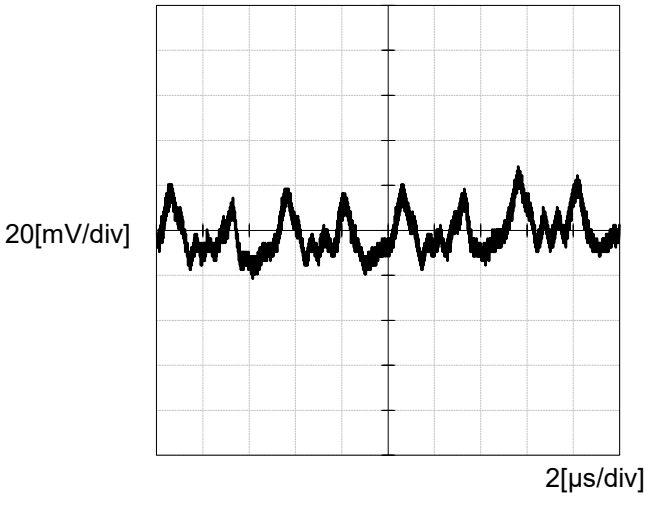
Load Current [A]	Output Voltage [V]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 277[V]
0.0	27.984	27.984	27.984
8.6	27.984	27.984	27.984
17.2	27.984	27.984	27.984
25.8	27.984	27.984	27.984
34.4	27.984	27.984	27.984
43.0	27.985	27.984	27.985
47.3	27.985	27.985	27.985
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

Item	Ripple-Noise
Object	+28V43A

Temperature 25°C
Testing Circuitry Figure C

1.Graph

Input Voltage 200V
Load 100%



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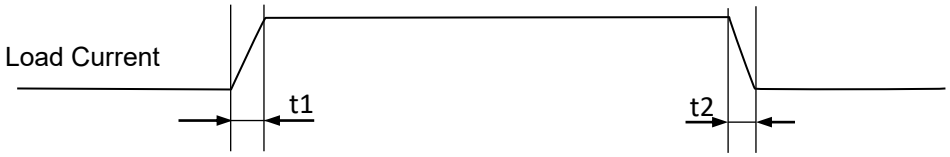
Model	TUNS1200F28
Item	Dynamic Load Response
Object	+28V43A

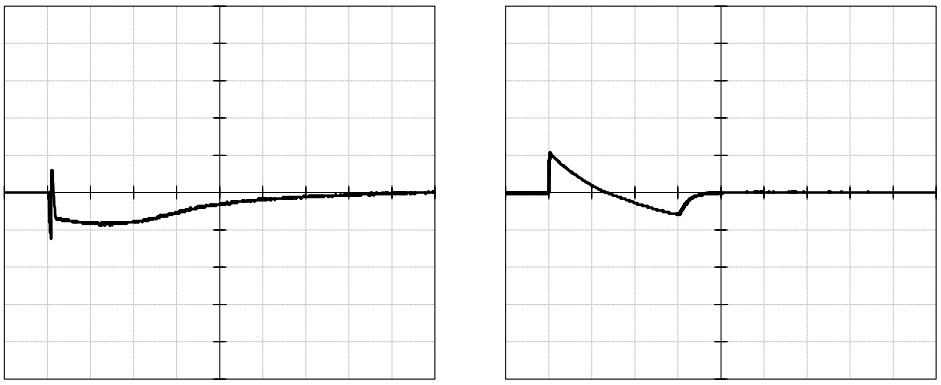
Temperature 25°C
Testing Circuitry Figure A

Input Volt. 100 V
Cycle 1000 ms

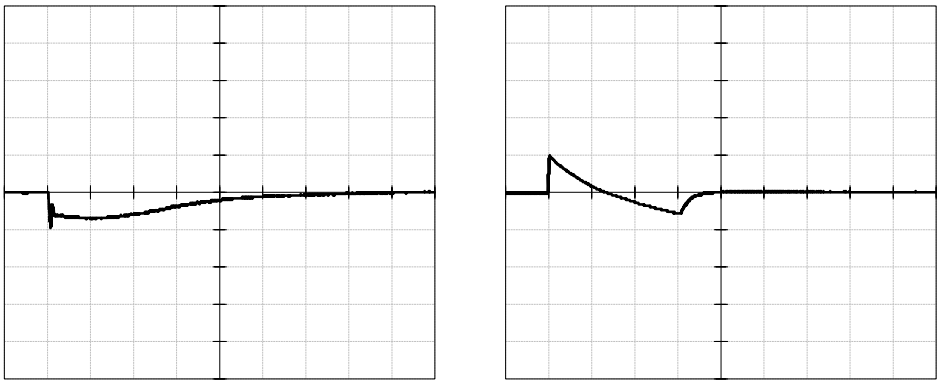
Response. t1=t2=50µs. Typ



Load 0%(0A) ←→
Load 100%(43A)



Load 0%(0A) ←→
Load 50%(21.5A)



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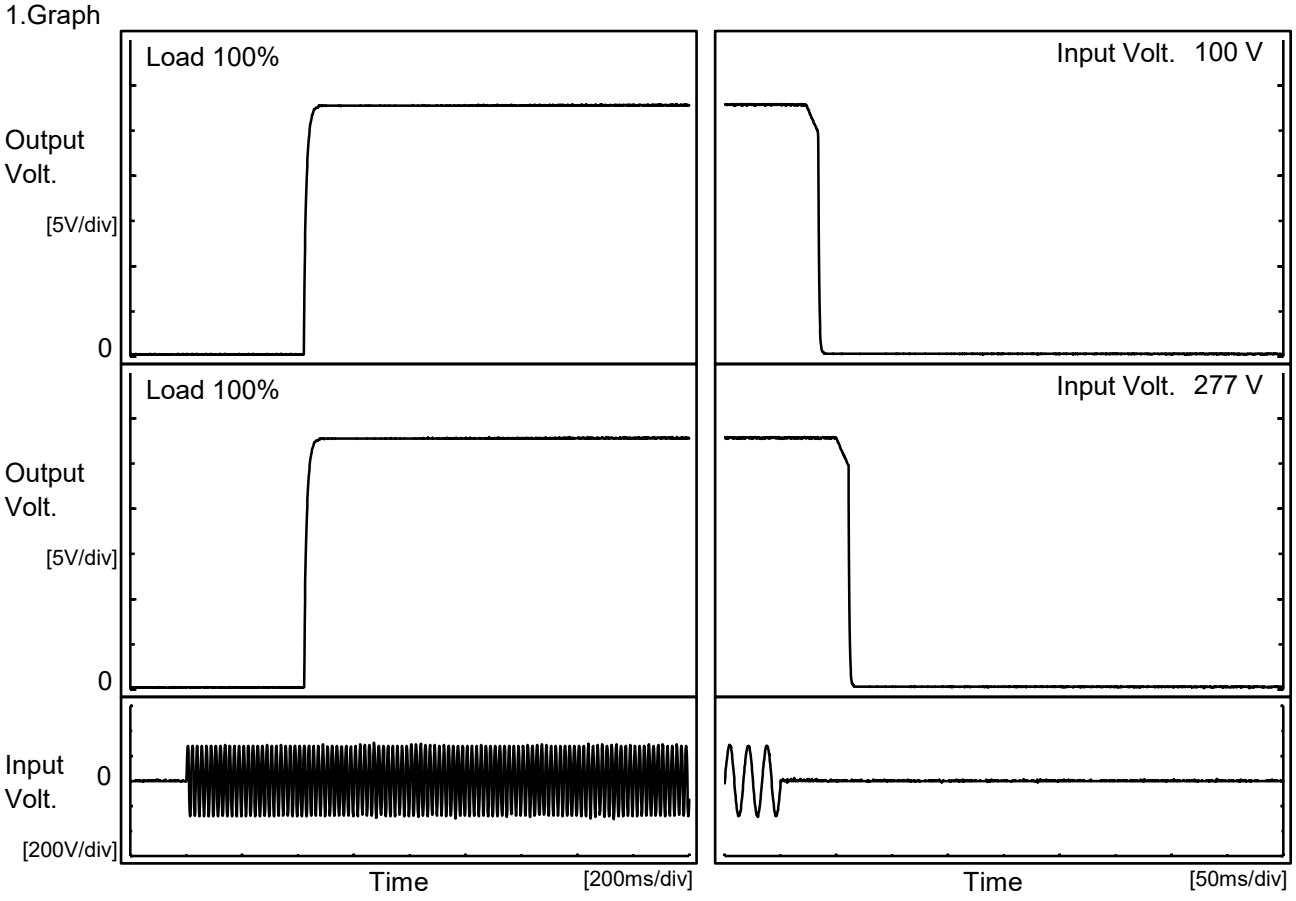
Model	TUNS1200F28	
Item	Rise and Fall Time	Temperature 25°C Testing Circuitry Figure A
Object	+28V43A	

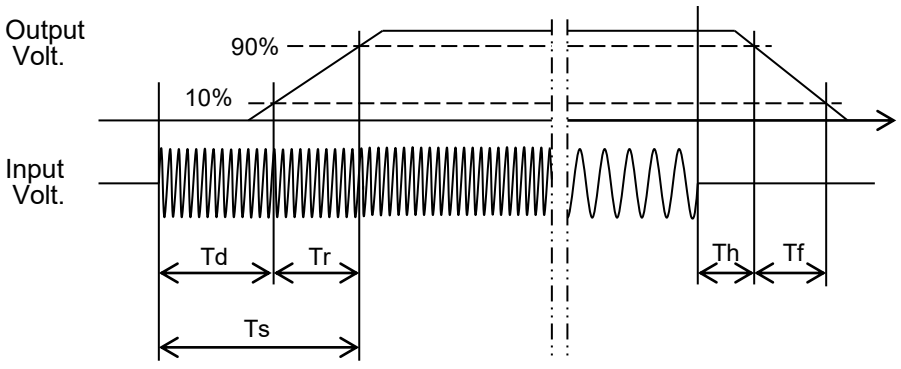
1.Graph



2.Values

[ms]

Input Volt. \ Time	Td	Tr	Ts	Th	Tf
100 V	420.0	23.0	443.0	31.8	4.0
277 V	421.0	23.0	444.0	58.8	4.0



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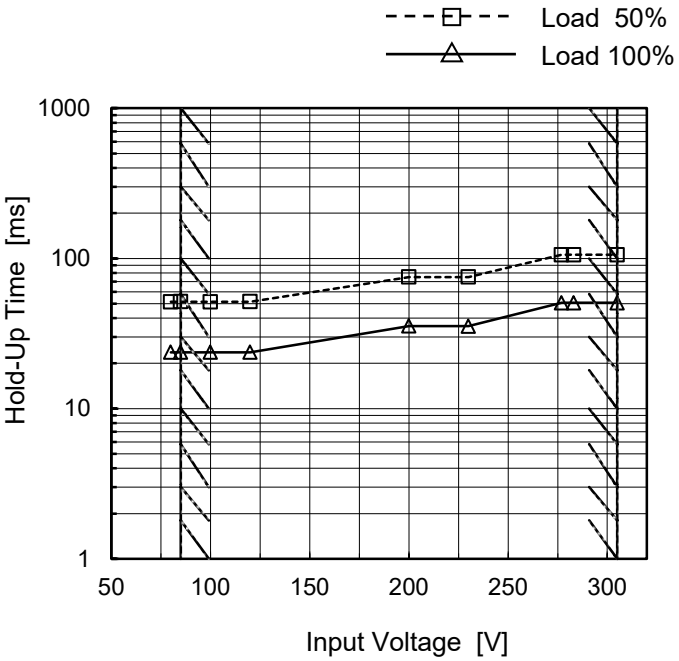
Model	TUNS1200F28
Item	Hold-Up Time
Object	+28V43A

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%
80	51	24
85	52	24
100	51	24
120	52	24
200	75	36
230	75	35
277	106	51
283	106	51
305	106	51

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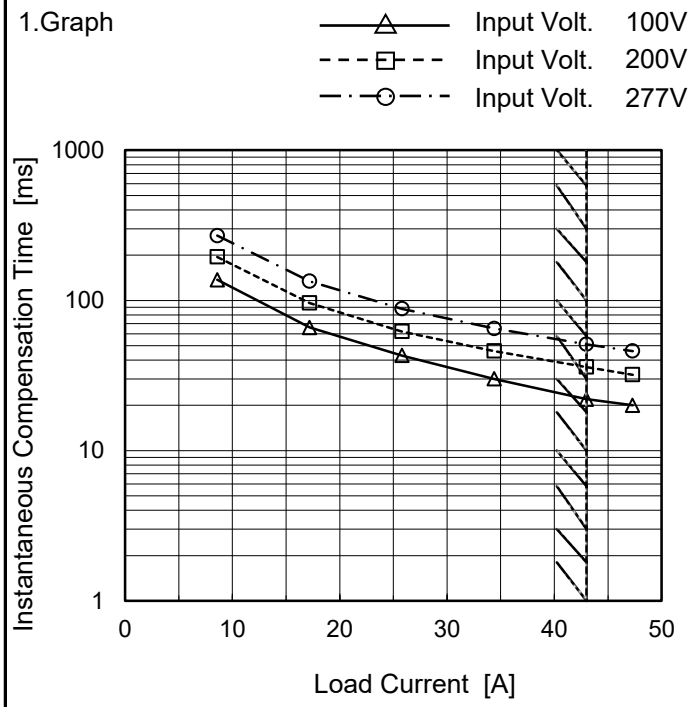
Model	TUNS1200F28
Item	Instantaneous Interruption Compensation
Object	+28V43A

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. 277[V]
0.0	-	-	-
8.6	137	195	270
17.2	66	96	134
25.8	43	62	88
34.4	30	46	65
43.0	22	36	51
47.3	20	32	46
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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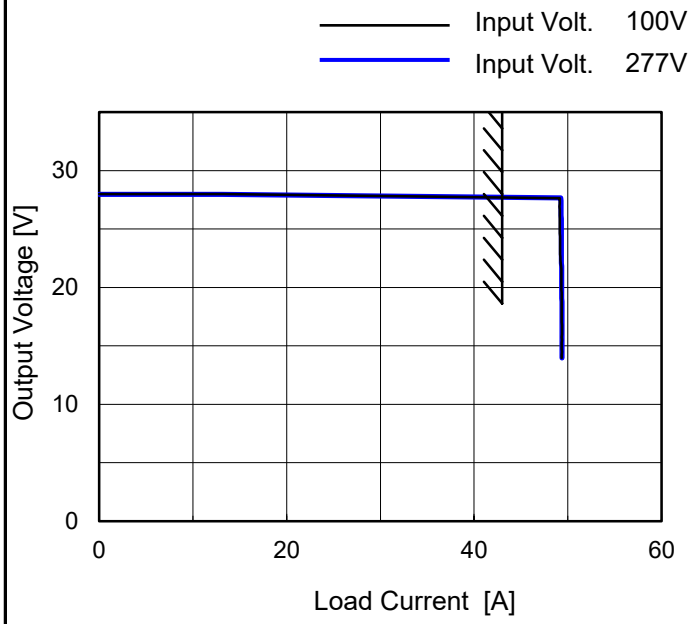
Model	TUNS1200F28
Item	Overcurrent Protection
Object	+28V43A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

Hiccup mode activates when the output voltage is from 14 to 0V.

2.Values

Output Voltage [V]	Load Current [A]	
	Input Volt. 100[V]	Input Volt. 277[V]
26.6	49.12	49.16
25.2	49.13	49.19
22.4	49.19	49.30
19.6	49.32	49.33
16.8	49.35	49.36
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

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Model	TUNS1200F28	
Item	Ambient Temperature Drift	Testing Circuitry Figure A
Object	+28V43A	

1.Values

Load 100%

Ambient Temperature[℃]	Output Voltage [V]		
	Input Volt. 100V	Input Volt. 200V	Input Volt. 277V
-40	27.884	27.885	27.887
25	27.985	27.984	27.985
85	28.046	28.045	28.044
90	28.051	28.050	28.050

Item	Minimum Input Voltage for Regulated Output Voltage	Testing Circuitry Figure A
Object	+28V43A	

1.Values

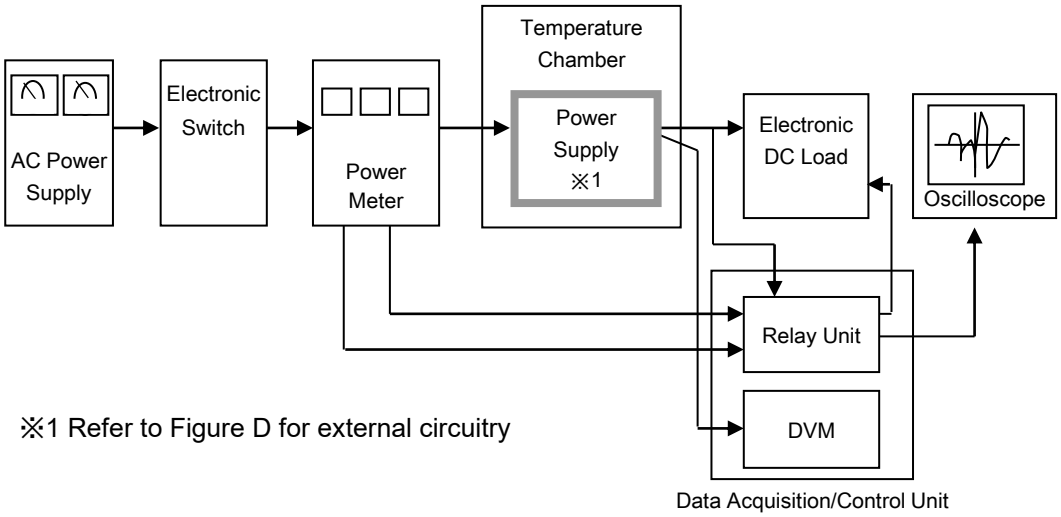
Ambient Temperature[℃]	Input Voltage [V]	
	Load 50%	Load 100%
-40	68	76
25	70	76
85	69	77
90	69	77

Item	Overvoltage Protection	Testing Circuitry Figure A
Object	+28V43A	

1.Values

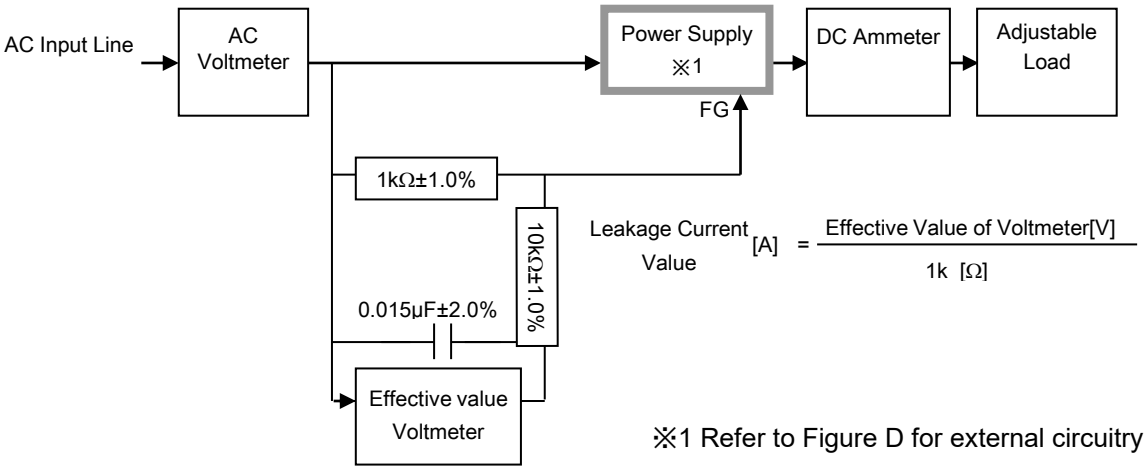
Load 0%

Ambient Temperature[℃]	Operating Point [V]	
	Input Volt. 100V	Input Volt. 277V
-40	36.16	36.16
25	36.45	36.46
85	36.57	36.57
90	36.57	36.57



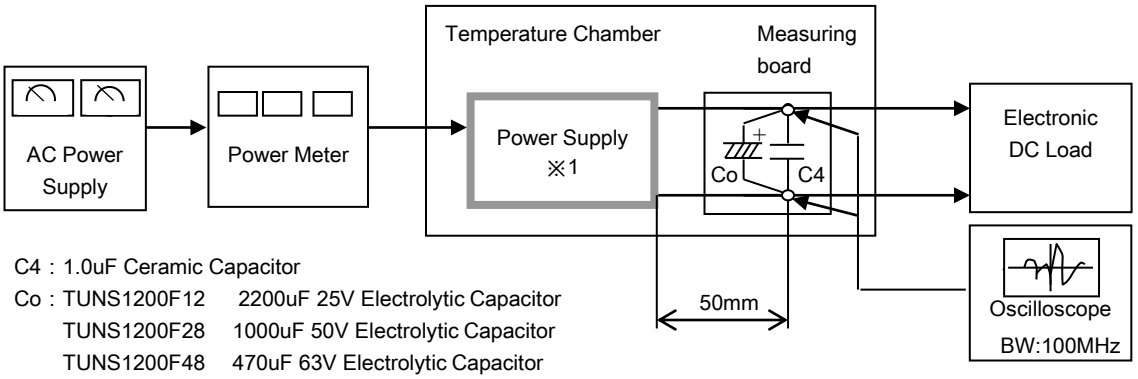
※1 Refer to Figure D for external circuitry

Figure A



※1 Refer to Figure D for external circuitry

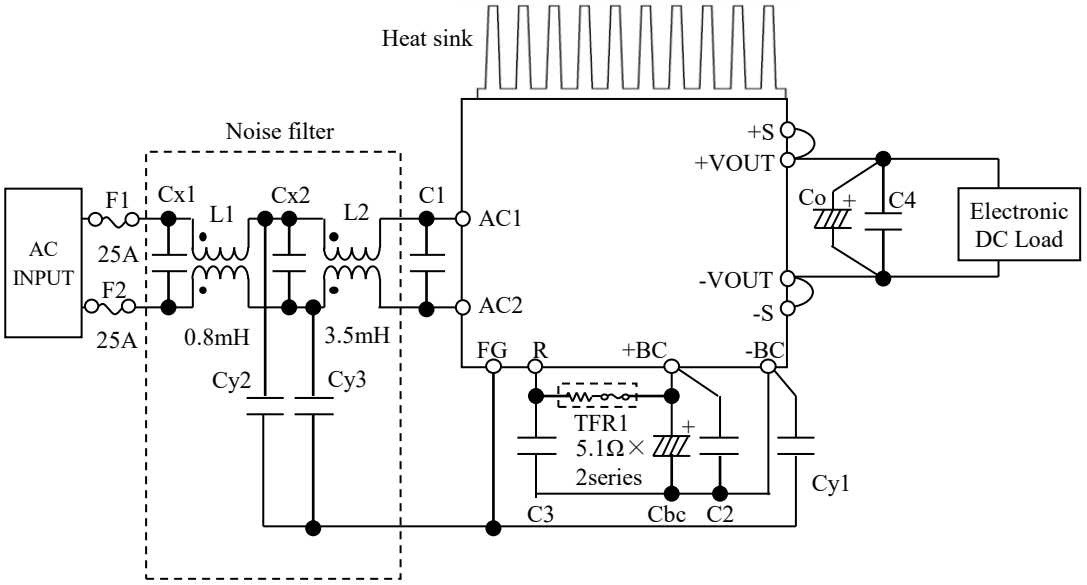
Figure B (IEC60601-1)



C4 : 1.0uF Ceramic Capacitor
Co : TUNS1200F12 2200uF 25V Electrolytic Capacitor
TUNS1200F28 1000uF 50V Electrolytic Capacitor
TUNS1200F48 470uF 63V Electrolytic Capacitor

※1 Refer to Figure D for external circuitry

Figure C



L1 : SCR25-200-1R7A008JH
L2 : SC15-E350H
Cx1,Cx2 : 1.5uF 310V Film Capacitor
Cy1 : 2200pF 400V
Cy2,Cy3 : 1500pF 400V
C1 : 1.5uF 310V Film Capacitor × 2parallel
C2,C3 : 1.0uF 630V Film Capacitor × 2parallel
C4 : 1.0uF Ceramic Capacitor
Cbc : 470uF 450V Electrolytic Capacitor × 3parallel (0≦Ta≦85℃)
470uF 450V Electrolytic Capacitor × 6parallel (-40≦Ta＜0℃)
Co : TUNS1200F12 2200uF 25V Electrolytic Capacitor (0≦Ta≦85℃)
2200uF 25V Electrolytic Capacitor × 3parallel (-40≦Ta＜0℃)
TUNS1200F28 1000uF 50V Electrolytic Capacitor (0≦Ta≦85℃)
1000uF 50V Electrolytic Capacitor × 3parallel (-40≦Ta＜0℃)
TUNS1200F48 470uF 63V Electrolytic Capacitor (0≦Ta≦85℃)
470uF 63V Electrolytic Capacitor × 3parallel (-40≦Ta＜0℃)

Ta：Ambient Temp.

Figure D