STARVIEW ASIA

TECH FOR A BETTER WORLD

SWITCHING POWER SUPPLY

SA-PS300

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Content

1. Overview

The power supply was designed for LED display: small size, high efficiency, stability, and reliability. Power supply has input undervoltage, output current limiting, output short circuit protection. Power supply will apply with high rectification which greatly improves the power efficiency,can reach 90.0% above, saving energy consumption.

2. Main Electrical Specification

Output Power (W)	Rated Input Voltage (Vac)	Output voltage (Vdc)	Output Current (A)	Voltage Tolerance	Ripple & Noise (mVp-p)
200	110 ÷ 240 VAC, 50/60Hz	+5. 0	0-40	±2%	≤150

3. Reference standards and norms

3.1 GB / T 2423.1-2011 electric and electronic products, environmental testing, Part 2: Test methods / test A: low-temperature GB/T 2423.1-2011

3.2 GB / T 2423.2-2011 electric and electronic products, environmental testing, Part 2: Test Methods / Test B: high-temperature GB/T 2423.2-2011

3.3 GB / T 2423.3-1993 electric and electronic products environmental testing procedures - Test Ca: Damp heat test method; GB/T 2423.3-1993

3.4 GB / T 2423.4.1993 electric and electronic products environmental testing procedures - Test Db: Damp heat test method; GB/T 2423.4.1993

3.5 GB / T 2423.5-1995 electric and electronic products, environmental testing, Part 2: Test Methods / Test Ea and guidance: Shock; GB/T 2423.5-1995

3.6 GB / T 2423.6-1995 electric and electronic products, environmental testing, Part 2: Test Methods / Test Ea and guidance: Bump; GB/T 2423.6-1995

3.7 GB / T 2423.8-1995 electric and electronic products, environmental testing, Part 2: Test Methods / Test Ed: Free fall; GB/T 2423.8-1995

3.8 GB / T 2423.10-1995 electric and electronic products, environmental testing, Part 2: Test Methods / Test Fc and guidance: Vibration (sinusoidal) ; GB/T 2423.10-1995

3.9 GB / T 2423.11-1997 electric and electronic products, environmental testing, Part 2: Test Methods / Test Fd: Random vibration wide band - General requirements; GB/T 2423.11-1997

3.10 GB / T 2423.22-2002 electric and electronic products, environmental testing, Part 2: Test N: temperature change; GB/T 2423.22-2002

4. Environmental conditions

No.	Item	Specifications	Units	Remarks
4.1	Working temperature	-30 - 70	℃	
4.2	Storage temperature	-40 - 80	℃	
4.3	Working humidity	10 - 90, non condensing	%	Note 1
4.4	Storage humidity	10 - 90, non condensing	%	
4.5	Cooling mode	Ventilation cooling		
4.6	Atmospheric pressure	80 - 106	Kpa	
4.7	Altitude	3000	M	

4.8	Vibration	10-55Hz 19.6m/S²(2G),20 minutes each along X,Y and Z axis.		
4.9	Shock	49m/S²(5G), 20 once each X,Y and Z axis.		

Note 1: Please add the new requirement when the power supply will be used for high humidity condition.

5. Electrical Characteristics

5.1. Input Electrical characteristics

No.	Item	Specifications	Units	Remarks
5.1.2	Input voltage range	110 ÷ 240	Vac	
5.1.3	Input frequency range	47 – 63	Hz	
5.1.4	Efficiency	≥90 (Vin=220Vac)	%	Full load (room temperature) Note 3
5.1.6	Maximum input current	≤5.0	A	
5.1.7	Inrush current	≤60	A	

Note 2: Meanings of rated input voltage and the input voltage range: the rated input voltage is the international general appellation, the highest voltage of rated input voltage float upwards 10%,is the input voltage upper limit, the maximum value, the minimum voltage of rated input voltage float downward 10%, is the input voltage lower limit, the minimum value. Rated input voltage range of 200-240 is corresponding to 180-264. The two terms are not contradictor, essence is consistent, uniform, only two different terms.

Note 3: Efficiency:Terminal output voltage multiplied by the output current, and then divided by the AC input voltage, divided by the AC input current, divided by the power factor: efficiency=terminal output voltage X output current / (the AC input voltage X AC input current X power factor).

5.2. Output Electrical Characteristics

No.	Item	Specifications	Units	Remarks
5.2.1	Output rating voltage	+5.0	Vdc	
5.2.2	Output current range	0—40	A	
5.2.3	Output voltage range	4.9-5.1	Vdc	
5.2.4	Voltage regulation accuracy	±1%	V_0	
5.2.5	Load regulation accuracy	±1%	V_0	
5.2.6	Voltage Tolerance	±2%	V_0	
5.2.7	Ripple and noise	≤150	mVp-p	Full load;20MHz, 104+10uF NOTE 3
5.2.8	Power output delay	≤2500	ms	NOTE 4
5.2.9	Hold up time	≥10	ms	Vin=220Vac NOTE5
5.2.10	Output voltage rise time	≤150	ms	NOTE 6
5.2.11	Off overshoot	±10%	V_0	
5.2.12	Output dynamic	Voltage changes less than ± 5% VO; dynamic response time ≤ 250us		LOAD 25%-50%, 50%-75%

Note 3: Ripple & noise test: Ripple & noise bandwidth is set to 20MHz, use a 0.10uF ceramic capacitor in parallel with a 10.0uF electrolytic capacitor at output connector for ripple & noise measurements.

Note 4: The power delay time measured is when AC power on to 90% of specified output voltage observed on the channel.

Note 5: The hold-up time measured is when AC power off to 90% of specified output voltage observed on the channel.

Note 6: The rise time measured is when the output voltage rise from 10% to 90% of specified output Vout observed on

5.3. Protection Features

No.	Item	Specifications	Units	Remarks
5.3.3	Output current limit protection point	44 - 60 Hiccup mode, recovers automatically after fault condition is removed	A	
5.3.4	Output short circuit protection	Protectable Hiccup mode, recovers automatically after fault condition is removed	A	
5.3.5	Overload	110~140% rated output power Protection type: Hiccup mode, recovers automatically after fault condition is removed	A	
5.3.6	Over voltage	5.75 ~ 6.75V Protection type :Shut down O/P voltage, re-power on to recover	A	
5.3.7	Over temperature	Protection type: Shut down O/P voltage, recovers automatically after temperature goes down	A	

5.4. Other features

No.	Item	Specifications	Units	Remarks
5.4.1	MTBF	≥50,000	H	
5.4.2	Leakage current	＜1.0mA(Vin=220Vac)		GB8898-2001 9.1.1

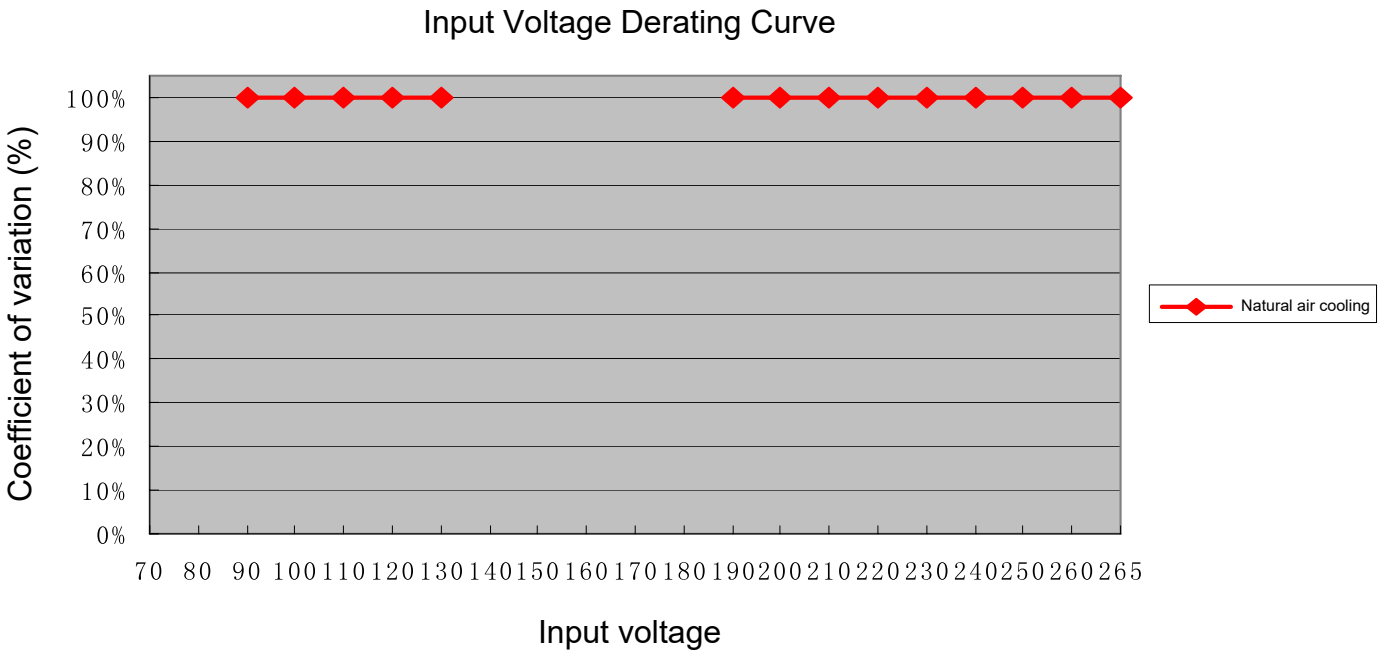
6. Safety features

No.	Item		Test conditions	Standard/SPEC
6.1	Withstand voltage	Input-Output	3000Vac/10mA/1min	No flashover, no breakdown
		Input-PE	1500Vac/10mA/1min	No flashover, no breakdown
		Output-PE	500Vac/10mA/1min	No flashover, no breakdown
6.2	Insulation Resistance	Input-Output	DC500V	10MΩ Min
		Input-PE	DC500V	10MΩ Min
		Output-PE	DC500V	10MΩ Min

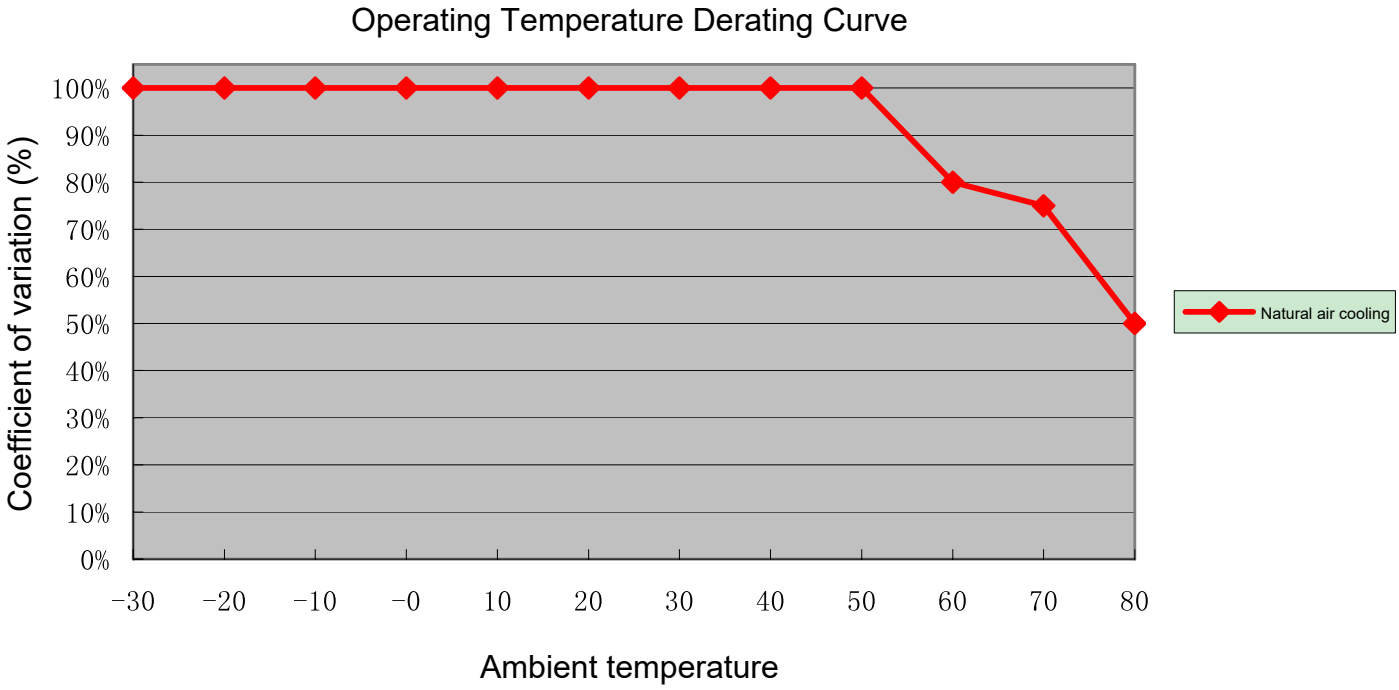
Note: Input line (all L&N) should be shorted; and all output should be shorted.

7. Derating guidline:

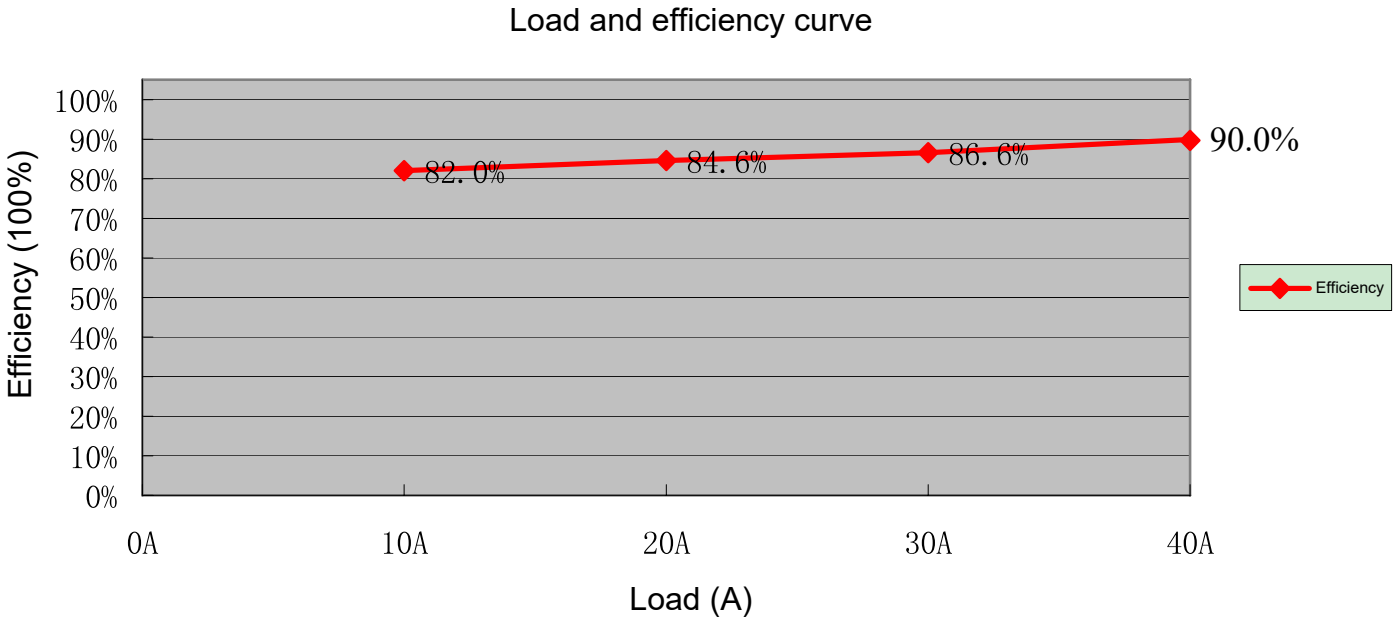
7.1 Input voltage derating guidline.



7.2 Operate temperature derating guidline.



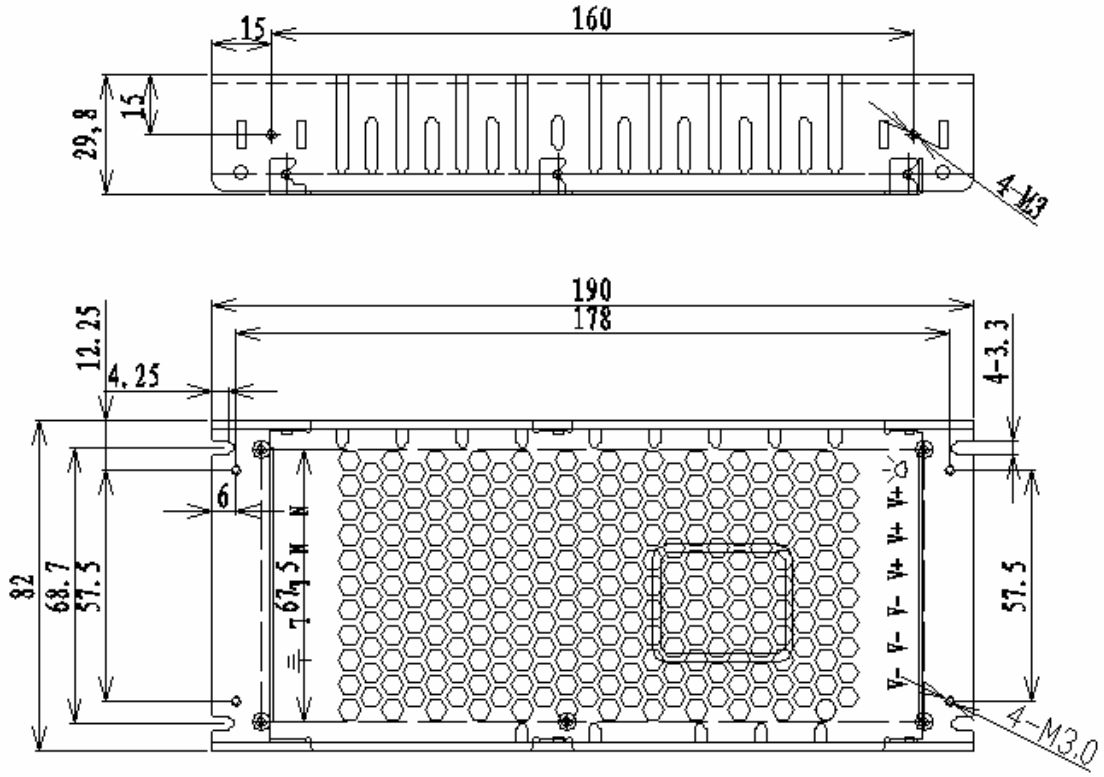
7.3 Effi & load guidline:



8. The definition of mechanical properties and connectors (Units: mm)

8.1. Dimensions
(L)190 x (W)82 x (H)30

8. 2. Installation hole size:



8.3. Pin connection.

8.3.1 Input connection CON1: 3PIN 9.6mm

Input connection model: 300V 20A

NO.	NO.	Define.
1	PIN1	NEUTRAL
2	PIN2	NEUTRAL
3	PIN3	LINE
4	PIN4	LINE
3	PIN5	EARTH

Note: Face the connection from left to right.

The connector screw torque is 8-10Kgf.cm

8.3.2 output connection CON2: 4PIN 8.2mm

Output connection model: 300V 20A

NO.	NO.	Define.
1	PIN1	GND
2	PIN2	GND
3	PIN3	GND
4	PIN4	+5.0VDC
5	PIN5	+5.0VDC
6	PIN6	+5.0VDC

Note: Face the connection from left to right.

The connector screw torque is 8-10Kgf.cm

9. Weight, packaging, transport and storage.

9.1. Weight.

9.1.1. Everyone weight is 417.5G.

9.1.2 One box have 20 units, total weight is 10.8KG. the dimensions of the box: LXWXH (units: mm):

(L)49 x (W)39.5 x (H)12 cm

9.2 Packing

Box has the product name, model number, manufacturer ID, the manufacturers certificate of quality inspection department, manufacturing date; the box with an attachment list.

9.3 Transportation

Suitable for cars, boats, aircraft transport, transport should be awnings, sun protection, loading and unloading of civilization.

9.4 storage

Product is not used which should be stor ed in the box, warehouse temperature -20°C - +80°C, relative humidity of 10% - 90%, the warehouse does not allow any harmful gases, flammable, explosive and corrosive products of chemicals, and strong mechanical vibration, shock and strong magnetic field, package box should be at least 20cm high from the ground, away from the wall, heat, window or air intake at least 40cm, under specified conditions in the storage period is generally one year, more than one year should be re-tested.