产 品 承 认 书

Product Approval Sheet

产品型号 Product Model	BCF-500D53.5+12IP
版本 Version	S01
变更原因&内容 Reason change & Content	
最终判定 Final Approval	1、 该产品规格经双方确认无误，达成一致，自双方签字或盖章之日起生效； 2、 该产品的规格认定以此产品承认书为准；

供应商 Vender	客户 Customer
名称：东莞市北斗星电子科技有限公司 地址：广东省东莞市常平镇金美科技园 6 栋 电话： 0769-8189 8201 邮编： 523560 确认代表人（或被授权人）： *Aniu*	产品名称： 产品料号： 名称： 地址： 电话： 邮编： 确认代表人（或被授权人）：

■Feature ：

- ●Global AC input：90～264Vac
- ●Ultra wide working temperature range (-15℃～55℃)
- ●Built - in active PFC function, PF>0.96
- ●Dual output, completely isolated, not affecting each other
- ●Protection functions: input overvoltage / undervoltage, output overcurrent//overvoltage/undervoltage/short/alarm functions
- ●Poor compatibility, common mode 6KV lightning surge protection
- ●High efficiency, long life and high reliabilityr
- ●With current sharing function/Support hot plug

■Specifications ★Pictures for your reference

Model note 1		BCF-500D53.5+12IP	
Output	Rated voltage	V1	V2
		12V	-53.5V
	Rated current	10.0A	7.0A
	Rated output current range	0~10.0A	0～7.0A
	Rated output power	120W	
	Ripple note 2	<120mV	<540 mV
	Adjustable output range	/	/
	Voltage accuracy	±3.0%	±2.0%
	Start-up time	≤3S (230Vac input, Full load)	
	Hold-up time	≥20mS(230Vac input, Full load)	≥10mS(230Vac input, Full load)
	Overshoot	<5.0%	
	Dynamic characteristics	10%-100%Load:10%Vp-p 10%-50%Load: 5%Vp-p 50%-100%Load: 5%Vp-p	
Input	Voltage range	90Vac~264Vac	
	Rated voltage	100Vac~240Vac / 47Hz~63Hz	
	Starting voltage	80-90Vac	
	Efficiency	≥90% @ 220Vac ; ≥88% @100Vac	
	Input current (Max.)	6.5A/90VAC,2.6A/230VAC	
	Power factor	＞0.96@220Vac,Fullload ＞0.98@110Vac,Fullload	
	Start-up Inrush Current	<40A@220Vac Cold start	
Protection	Input undervoltage protection	≦75vac when the input voltage is lower than the undervoltage protection point, the power supply turns off the output	
	Input undervoltage recovery	≦ 85vac, after the input voltage rises above the undervoltage recovery point, the power supply can automatically return to normal operation, and the return difference is ≧ 5V	
	Input Overvoltage Protection	≧When the input voltage of 275VAC is higher than the overvoltage protection point, the power supply turns off the output	
	Input overvoltage recovery	≧ 265vac when the input voltage drops below the overvoltage recovery point, the power supply can automatically resume normal operation, and the return difference is ≧ 5V	
	OPP	V1：110%~180%，Downtime self-recovery；V2：115%~220%，Swing self-recovery；V1 & V2 don't affect each other	
	OVP	12V: 13.5-15v / - 53.5v: 57-60v (90-264VAC) output is locked. (when locked, the power supply can not produce dangerous phenomena such as fire, smoke and electric shock. It can not be tested with external voltage. After the module is locked, the AC input needs to be turned off. After the discharge is completed, power on again. If the overvoltage is eliminated, the normal output can be restored.)	
	OCP	V1：110%~180%，Downtime self-recovery； V2：115%~220%，Swing self-recovery；V1 &V2 don't affect each other	
	Output short circuit protection	V1&V2： Long Time ,Downtime self-recovery，V1 &V2 don't affect each other	
	OTP	When the ambient temperature exceeds 60℃, Swing self-recovery； V1 &V2 don't affect each	

	Current-sharing accuracy of V2	When the load is 20% - 60%, the current sharing error is less than 30%. When the load is greater than 60%, the current sharing error is less than 10%. 7a corresponds to 2.8V ± 0.2V,	
	Fan fault protection	Through power in case of fan failure_ GOOD_ 12V pin outputs fault signal, but does not turn off the power output	
Work environment	Working Tem. & humidity note 3	-15℃~55℃; 10%~95%RH No condensing	
	Storage Tem. & humidity	-25℃~85℃; 10%~95%RH No condensing	
	Vibration	10 ~ 500Hz, 2G 10min./1cycle, period for60min. each along X,Y, Z axes	
	To attack	20G/11mS pulse ,3 times at each X,Y,Z axes	
	Altitude	3000m	
Safety & EMC	Safety standards	GB4943/EN60950/IEC62368 ■ Reference ☐Authentication	
	Leakage current	P-S≤0.25Ma P-PE≤3.5mA	
	Insulation strength	Primary-Secondary: 3.0KVac/10mA/ 1min	
		Primary-PE: 1.5KVac/10mA/ 1min	
		SecondaryV2-PE: 500Vac/10mA/ 1min	
		SecondaryV1-PE: 500Vac/10mA/ 1min	
	Insulation impedance	Atroom temperature and humidity	Primary-Secondary: ≥50M ohms@500Vdc
			Primary-PE: ≥50M ohms@500Vdc
			Secondary-PE: ≥50M ohms@500Vdc
		Constant umid: temperature 40 ℃ + 2 ℃, humidity of 93% plus or minus 3%	Primary-Secondary: ≥2M ohms@500Vdc
			Primary-PE: ≥2M ohms@500Vdc
			Secondary-PE: ≥2M ohms@500Vdc
	Harmaonic current	EN61000-3-2,-3	
	EMI	EN55022 Class A	
		EN55022 Class A	
	EMS	ESD	IEC61000-4-2： level 4; (Contact discharge ±8KV, air discharge ±15KV, criterion A)
		CS	IEC61000-4-6 CLASS A
		EFT	IEC61000-4-4 level4, CLASS A
		Surge immunity	IEC61000-4-5, (2KV for differential mode and 4KV for common mode)
		DIPS	IEC61000-4-11, CLASS A
Other	Dimensions	211mm*100mm*40.9mm(error ± 0.25mm)	
	Connection	Input: 3-core socket Output: +54V——16S + 04p bent plug +12V——16S + 04p bent plug	
	Cooling way	Forced air cooling (for corresponding load characteristics, see the derating curve)	
Reliability	MTBF	200,000Hrs AT 25℃, MIL-217 Method 2 Components Stress Method	
Note	Note 1: If not specified, all parameters are tested at 15min at room temperature. Note 2 Ripple noise is measured using 12# twisted pair capacitors connected in parallel at 0.1uf and 10uF at 20MHz bandwidth. Note 3. For practical application, please refer to the derating curve, positioning diagram and installation instructions in detail.		

■ PG signal

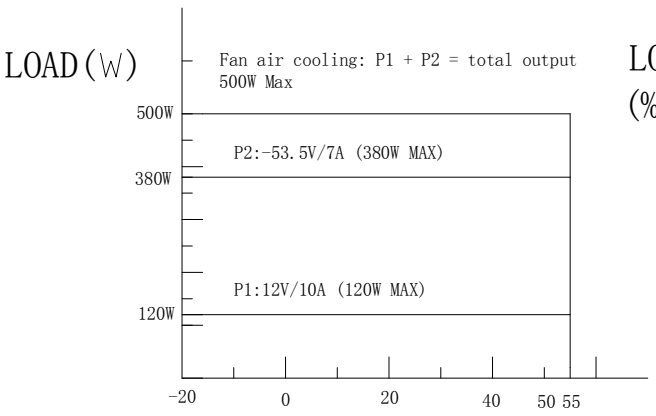
Signal name	Signal definition
POWER_GOOD_12V	12V normal / fault of power supply (normal: low resistance with com, abnormal: high resistance with com, including power supply fan status)
INPUT-STATE	Power input voltage status signal (normal: low resistance with com, abnormal: high resistance with COM)
POWER_GOOD_-53.5V	-53.5v normal / fault of power supply (normal: low resistance with com, abnormal: high resistance with COM)

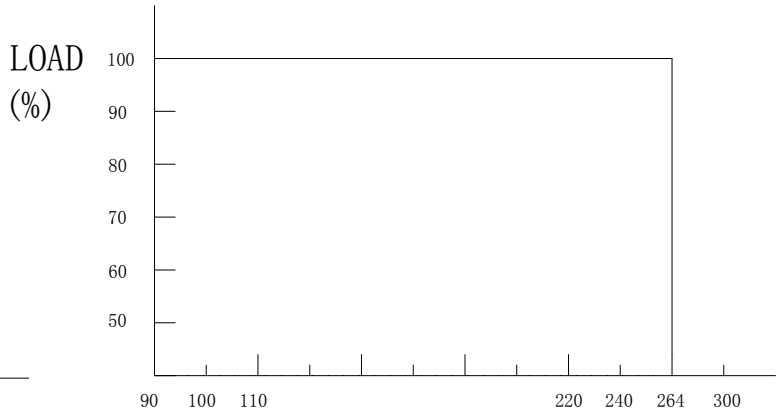
■Indicator light and status description:

1.Detailed definition of panel indicator alarm signal

Indicator definition	Indicator Status	Function description
Input	The green light is always on	The input voltage is normal (Note: as long as the AC input is normal, whether the panel switch is closed or not, the input indicator is always green)
	The red light is always on	Abnormal input voltage (undervoltage or overvoltage)
	Extinguish	No voltage input or poor contact of power line
Output	The green light is always on	Output normal
	The red light is always on	Abnormal output (abnormal power supply fan, output overvoltage, output current limiting, output short circuit, over temperature protection)
	Extinguish	There is no voltage input, the power line is in poor contact and the power supply is damaged

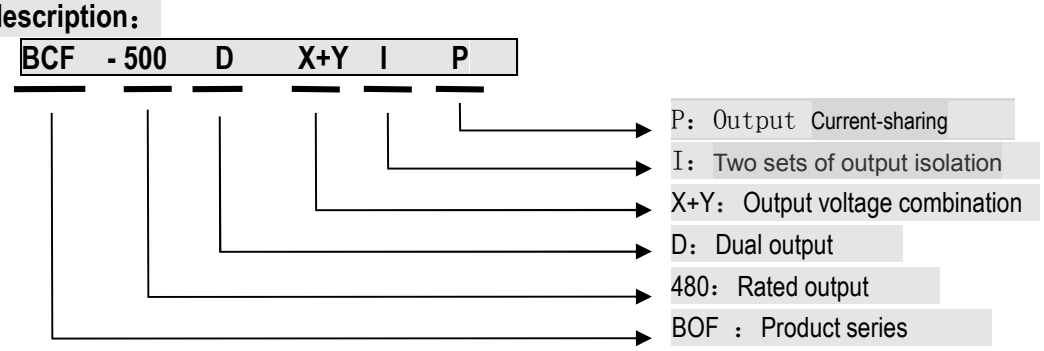
■ Derating Curve:





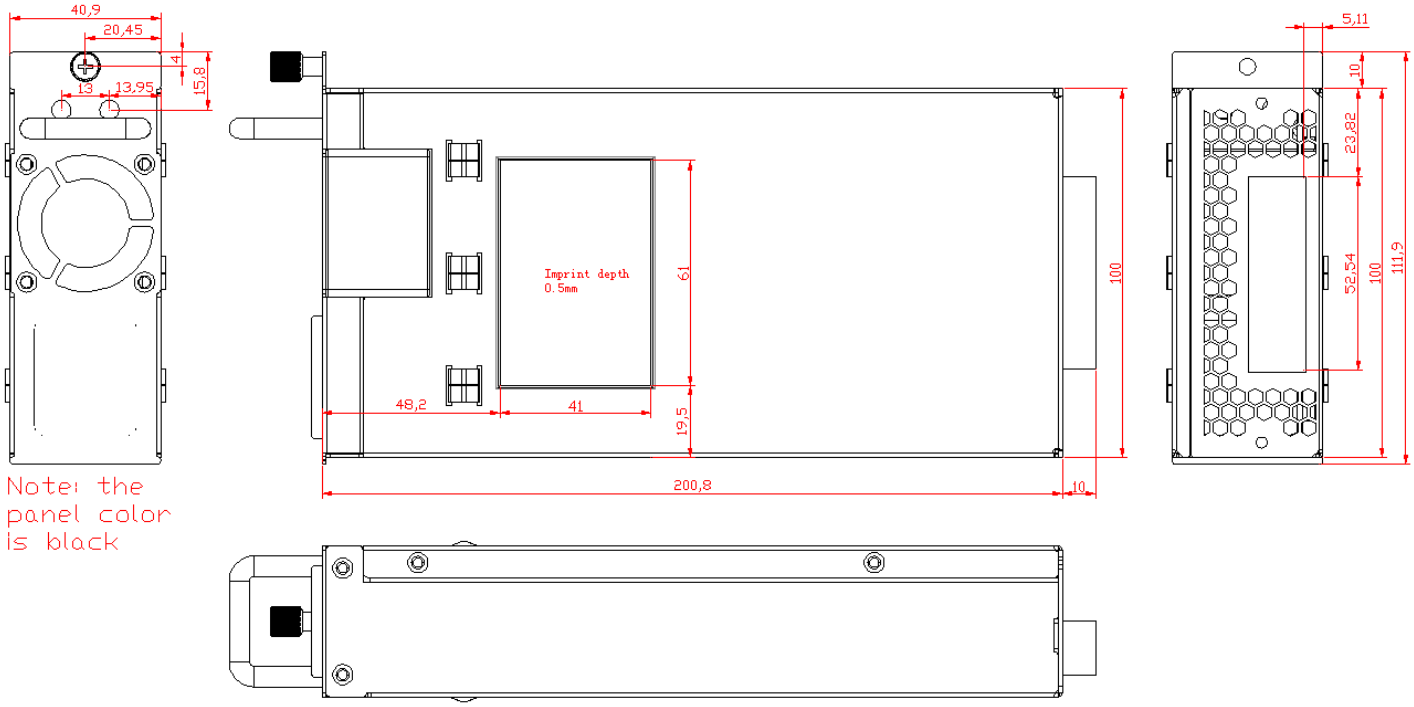
Fan air cooling	100Vac~240Vac / 47Hz~63Hz -53.5V 7.0A+12V 10A 500W

■ Specification code description：

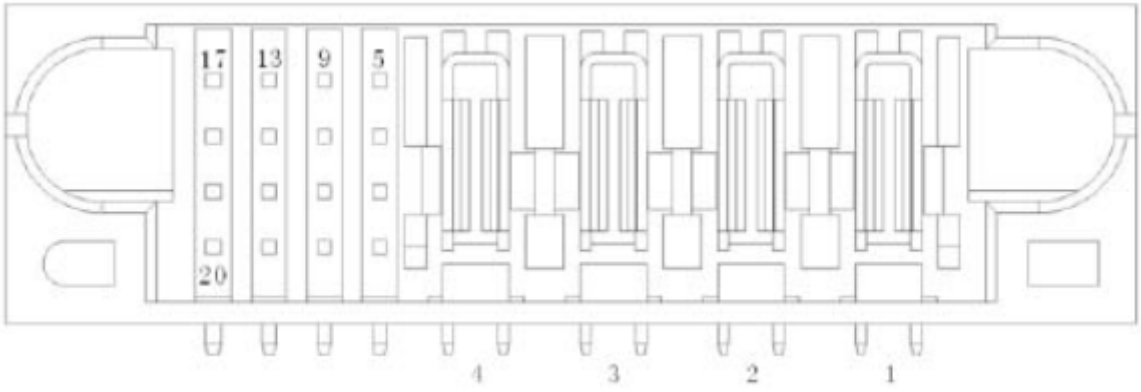


■ Mechanical： The position of panel components is for reference only

Unit: mm

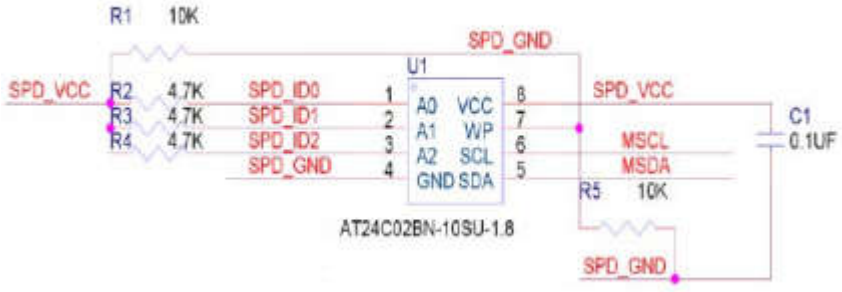


■ Outline drawing of power output connector:



■Pin definition of power module output connector:

Pin position	function	definition
1	-53.5	-53.5
2	-53.5_GND	-53.5_GND
3	12V_GND	12V_GND
4	12V	12V
5	POWER_GOOD_12V	12V normal / fault of power supply (normal: low resistance with com, abnormal: high resistance with com, including power supply fan status)
6	INS	The power plug-in signal is short circuited with com inside the power supply
7	PG_12V	This pin is useless

8	P_-53.5V	-53.5v current sharing+
9	COM	COM is connected with 12V inside the device_ GND short circuit
10	P_12V	This pin is useless
11	INPUT-STATE	Power input voltage status signal (normal: low resistance with com, abnormal: high resistance with COM)
12	PG_-53.5V	-53.5v current sharing-
13	POWER_GOOD_-53.5V	- 53.5v normal / fault of power supply (normal: low resistance with com, abnormal: high resistance with COM)
14	SPD_VCC	
15	SPD_GND	
16	SPD_ID0	
17	SPD_ID1	
18	SPD_ID2	
19	MSCL	
20	MSDA	

■ Product installation and instruction：

1、 Refer to the mechanical to select the appropriate installation. If necessary， the diameter of the kelly wire is no less than AWG #18
2、 Make the electrical connection is correct, to avoid damage to the SPS or equipment : Input & Output, Ac & DC, Positive & negative, Input Voltage Range.
3、 Do not touch circuit board to avoid electric shock when SPS is working. Do not touch to avoid heat in three minutes after working. Do not touch the soldering side.
4、 Let it work at ventilated conditions to improve reliability. Do not make it ON/OFF too quickly . Any condition is out of the rated range, please contact FAE for suggestion.
5、 If the SPS works abnormally, do not open to repair except professional, contact FAE for support

■ Packaging, transportation, storage：

1、 Package:
Unless customer's special demand, Product name, model, manufacturer logo in the box; Date of production can be traced back.
2、 Transport:
Product packaging is suitable for road, railway, air shipping and sea shipping, etc. Be to civilized handling, waterproof, anti-fall, and to avoid severe impact
3、 Storage:
Do not disassemble or take off the packing box when the product is not in use. Keep 20cm away from ground, and 50cm away from Wall, heat source and air inlet. The storage temperature and relative humidity shall be in accordance with the specifications， and Avoid strong mechanical vibration, shock and strong magnetic field. If the storage period is more than two years, it should be tested again before use.

Reference standard：

1、 GB4943/EN60950：Safety of Information Technology Equipment
2、GB2324：Basic environmental testing procedures for electric and electronic products
3、 EN55022/ EN55024： Information technology equipment – Radio disturbance characteristics - Limits and methods of measurement
4、IEC61000-4：Electromagnetic compatibility (EMC) test and measurement techniques
5、IEC 61000-6-1 ： Standard and measurement of electromagnetic immunity for residential, commercial and light industrial environments
6、IEC 61000-6-2 ： Standard and measurement of electromagnetic immunity for products used in industrial environment
7、GB 17625.1-1998： The limits for the harmonic current from low-voltage electrical and electronic equipment (equipment input current≤16A per phase)
8、GB/T 17626： Electromagnetic compatibility testing and measurement techniques
9、GB/T14714：General specification for switching power supply of micro computer system equipment
10、PYW Enterprise standard

■ Statement

Class A statement

Warning

This is a class A product, which may cause radio interference in living environment.
In this case, it may be necessary for users to take practical measures against their interference.