# APOLLO

## Model No. AUP-X-300B-P4 Uninterrupted Switching Power Supply

# **Technical Information**

## **1. APOLLO USPS Characteristic**

Item	APOLLO USPS AUP-X-300B-P4		
Capacity	300W		
Input Voltage	115 or 230VAC or 115/230VAC selected		
Input Frequency	60/50Hz		
Input Power Factor	0.65		
Surge Protection	Yes		
Output AC Voltage	115 or 230VAC		
Output DC Current	+ 12 V / 10 A		
	+ 5 V / 20 A	Total output power is	
	+3.3 V / 15A	150W.	
	-12 V / 2.0A		
	-5 V / 0.4A		
	+5V Stand By / 0.75A		
Weight	5 KGs (with BP5C-2425 battery Pack )		
Dimension	USPS Main body :		
	ATX Power Supply Case		
	150 x 145 x 86 mm		
Battery Pack and type	BP-5C 210 x 145 x 42 m	m <sup>3</sup> , 2.8KGs	
Dimension	Lead Acid (Maintenance	free) 24V/2.5Ah	
	PL25-12 / 178 x 35 x 61 mm3 ( Per Unit )		
Designed	MOSFET IC with copyright Hybride IC design		
Inrush Current	50A for 110VAC, 25A for 230VAC Full load		
Over Voltage protection	Yes		
Over Power Protection	Yes >105%~135%		

### **UPS Mode / Function Specification**

Capacity	500VA	
AC Output Voltage (To monitor)	115VAC / 230VAC	
AC Output Waveform	Step Sine Wave	
AC Input Voltage Transfer Point	From Normal to backup : 85V / 170 VAC	
( Undervolt ) Half Load	From backup to normal : 95V / 190VAC	
AC Input Voltage Transfer Point	Protection by FUSE	
( Overvolt )		
Transfer time	0 ms for DC output(computer)	
System backup time	10 minutes for longer backup time can use other	
(Backup for a PC system)	battery pack	
Recharge time	10~15 hours	
Battery Voltage monitoring	LED display, Buzzer	

SAFTY : UL, c-UL(CSA), CE APPROVED.

## 2. Input Characteristics:

: 90~130 or 180~260VAC, single phase.
: 47 Hz to 63 Hz.
: 6.5A Max. @ 115VAC or 3.5A Max. @230VAC, Full load.
: At 130/264 VAC, Full load condition, no damage occur, input
fuse shall not blow.
: 65% Min. at nominal line input fill load.

## 3. Output Characteristics:

DC	Line & Frequency	Load Regulation	Ripple & Noise mV P-P (Max.)
	Regulation		
+12V	+/-5%	+/-5%	120/240
+5V	+/-5%	+/-5%	100/200
+3.3V	+/-5%	+/-5%	100/200
-12V	+/-5%	+/-10%	120/240
-5V	+/-5%	+/-10%	120/240

#### **Static Output Characteristics:**

Note: 1. Noise Test : Noise Bandwidth is from DC to 10Mhz

2. Add 0.1uF/10uF capacitor at output connector terminals for ripple & noise measurements.

#### **Time Chat**



Battery Low signal will not to be sent.

(A) ② Turn On Computer Power System, the conditions of each point are as below:
 ① AC Line Normal

③ Battery / DC support normal

④ 5VSB output normal

<sup>6</sup> Remote On/Off stay in HI condition, it's also in standby mode.

When active Remote On, <sup>(5)</sup> DC O/P will up and <sup>(8)</sup> PG delay for 200~350ms then it also up, then the computer go into normal operation.

- (B) If the AC Line has any changing, but timing shorter than 20ms. Then, it won't effect to DC outputs and all signals are as normal.
- (C) If the AC line brown out than 20ms, then all points will be affected. (For Red line shows without UPS backup) (5) (6) (8) UPS monitoring signal will send AC Fail, Hi to PC system through RS-232 port, meanwhile all of DC outputs are backup by Battery Pack to keep stabile outputs for PC system without any interrupted.

- (D) If the AC recover, then all signals will be recover to normal, too.
- (E) and (F) are repeat above procedures.
  If ③ DC INPUT (Battery Pack) voltage drop to 21.5 ± 0.5V, then ⑩ will send a signal "Battery Low" to PC system.
  If ③ DC INPUT voltage drop to 18.5 ± 0.5V, then ⑩ will send a signal
  - ⑦ "Shut Down" to PC system

#### **Dynamic Output Characteristics:**

Rise time : 100ms Max. at nominal line full load.

Hold up time : 16ms Min. for +5V output at nominal line full load.

Transient Overshoot : 10% Max. of steady state after load change of 25% within the

range of 50% to 100% of full load.

Temperature coefficient : 0.03% per°C/Max.

#### Min. Load

DC Output	+12V	+5V	+3.3V	+5Vsb
Current	0.5A	ЗA	1A	0.1A

#### Over Voltage Protection (O.V.P.)

When the major output voltage are over OVP as below. The USPS will auto shutdown.

DC Output	+12VDC	+5VDC	+3.3VDC
OVP	15.0	6.5	4.2

#### Over-Load Protection (O.L.P.)

For over-load, **SPS** load over105%~135% will auto-shutdown.

#### **Short Circuit Protection**

**USPS** can protect all DC outputs on the switching power supply if short circuit is happened.

## 4. Environment

: 0°C to 50°C, linear departing to 50% load at 70°C.
v : 20% to 90%.
$:-20^{\circ}C$ to $+60^{\circ}C$ .
: 5% to 95%
: Operate properly at any altitude between 0 to 10,000 ft.
: 40,000 feet.
: 0.38 m/m, 5-55-5 Hz, 7 minutes per cycle; 30 minutes

 $\label{eq:starsest} \begin{array}{ll} & \mbox{for each axis}(X,Y,Z) \\ \mbox{Burn-In} & : 45^{\circ}\mbox{C} \mbox{ max. Load 24 hours.} \\ \mbox{M.T.B.F.} & : 50,000 \mbox{ hr.} \end{array}$ 

## **5. Dimension** AUP-X-300B-P4 USPS Main Body



#### CABLE PIN ASSIGNMENT

CABEL	COLOR	Assignment	CABEL	COLOR	Assignment
( <b>D</b> 4)	BLACK	GND		BLACK	GND
(P4)	RED	+24VDC	(P10)	ORANGE	+3.3VDC
(P5)	RAINBOW	LED		RED	+5VDC
	GREEN	Pin 2 (AC Fail)	( <b>D</b> 11)	BLACK	GND
	ORANGE	Pin 4 (GND)	(P11)	YELLOW	+12VDC
(P7)	YELLOW	Pin 5 (Bat. Low)			
	RED	Pin 6 (Shutdown)			
	BROWN	Pin 7 (GND)			





#### **BP-5C** Panel



BATTERY PACK : BP-5C

#### **BP-5C LED Indication and Alarm Table**

Utility States	LED Inductor state		r state	Buzzer state
Normal		Â.	Ą	
Blackout, UPS On	4	Γŧ	Ą	Beep Beep Beep
(24~21.5V)				(3 seconds Interval)
Battery Low	1	Ā	Ą	Beep
(21.5~18.5V)				( sounds quickly and short )
AC Normal / Battery Fail		<u>к</u>	4	



#### Battery Pack Inside connection

#### **BATTERY Specification**

Specifications

Nominal Voltage		12V	
Rated (201	Capacity hour rate)	2.5 Ah	
Dimensions	Total Height (with terminals) Height Length Width	2.60 inches ( 66 mm) 2.40 inches ( 61 mm) 7.01 inches (178 mm) 1.38 inches ( 35 mm)	
We	ight	Approx. 1.76 lbs (800g)	







#### Characteristics

Voltage) Stand		Voltage 14.0~14.5V / 12V 77TF(25°C)		
Charge Cycle		Initial Charg Current less than 0.9 A Voltage 14.6~15.0V / 12V 77*F(25*C)		
Self-Discharge 77ºF (25°C)		Capacity after 3 month storage Capacity after 6 month storage Capacity after 9 month storage	91% 80% 82%	
Capacity affected by Temperature (20hour rate)		104"F ( 40°C) 77"F ( 25°C) 32"F ( 0°C) 57"F (15°C)	102% 100% 80% 62%	
internal Resistance		Full Charged Battery 77°F(25°C)	36m.Q	
		1.5 hour discharge to 10.5V	1.24	
Capacity* 77'F (25'C)		20 hour rate ( 125 mA) 10 hour rate ( 245 mA) 5 hour rate ( 400 mA) 1 hour rate ( 1630 mA)	2.50Ah 2.45Ah 2.00Ah 1.63Ah	

Discharging Current & Discharge Duration Tir-\*



 The above data are average values, and can be obtained within 3 charge / discharge cycles. These are not minimum values.

#### RUPS Backup Utility Hardware Configuration

Pin	Normal	Active	
2	High (1.7~1.8V)	7~1.8V) Low (0V)	
5	High (1.7~1.8V)	Low (0V)	
6	Low (0V)	+12V input	

(1) Pin Assignment of Pin 256

- Pin ②: Normal High (1.7V~1.8V), the LED PF (**Green**) is ON. If AC failure, it will change to LOW (0V) and LED PF will OFF.
- Pin (5) : Normal High (1.7V~1.8V), the LED BL (**Red**) is ON. If Battery low (21.5VDC), it will change to LOW (0V)and LED BL will OFF.
- Pin <sup>(6)</sup>: Normal Low (0V), the LED SD (**Yellow**) is ON. If AC failure and UPS is working, if it get a High Voltage (+12VDC) signal then the UPS can be shutdown.



#### <u>Remark :</u>

All of information are only for reference, the correct information will be confirm again with customer.