



#### ■ Features :

- AC input range selected by switch
- Built-in passive PFC function compliance to EN61000-3-2
- With AC ON-OFF switch
- 3 poles AC inlet with fuse holder
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Charger type can be selected (Optional)
- Charger for lead-acid batteries
- 2 color LED loading indicator
- Open frame models available (Without safety approval)
- Low cost, High reliability
- 2 years warranty



S:Power Supply  
A:Voltage detector  
B:Current detector

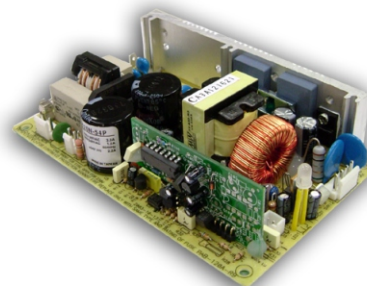
P:With PFC  
N:None PFC

P A - 120 P - 13 C

□:O.D.M. number

P:Open P.C.B.  
C:With case

13:13.8V  
27:27.6V  
54:55.2V



#### SPECIFICATION

| MODEL                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | PA/PB-120□-13□                                                                                                                                                                                                                             | PA/PB-120□-27□ | PA/PB-120□-54□ |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------|
| OUTPUT                   | DC VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 13.8V                                                                                                                                                                                                                                      | 27.6V          | 55.2V          |
|                          | RATED CURRENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 7.2A                                                                                                                                                                                                                                       | 4.3A           | 2.2A           |
|                          | CURRENT RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0 ~ 7.2A                                                                                                                                                                                                                                   | 0 ~ 4.3A       | 0 ~ 2.2A       |
|                          | RATED POWER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 99.36W                                                                                                                                                                                                                                     | 118.68W        | 121.44W        |
|                          | LED INDICATED                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | PA series voltage 105%±1% ↓ : RED / 105%±1% ↑ :GREEN<br>PB series load 46%±10% ↓ : GREEN / 46%±10% ↑ :RED                                                                                                                                  |                |                |
| INPUT                    | VOLTAGE RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 88 ~ 132VAC / 176 ~ 264VAC selected by switch      248 ~ 370VDC                                                                                                                                                                            |                |                |
|                          | FREQUENCY RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 47 ~ 63Hz                                                                                                                                                                                                                                  |                |                |
|                          | POWER FACTOR (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | >0.65 (with PFC series)                                                                                                                                                                                                                    |                |                |
|                          | EFFICIENCY (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 73%                                                                                                                                                                                                                                        | 79%            | 79%            |
|                          | AC CURRENT (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 3A/115VAC    1.5A/230VAC                                                                                                                                                                                                                   |                |                |
|                          | INRUSH CURRENT (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | COLD START 25A/115VAC    50A/230VAC                                                                                                                                                                                                        |                |                |
|                          | LEAKAGE CURRENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <1.5mA / 240VAC                                                                                                                                                                                                                            |                |                |
| PROTECTION               | OVERLOAD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 90 ~ 110% rated output power<br>Protection type : Constant current limiting, recovers automatically after fault condition is removed                                                                                                       |                |                |
|                          | OVER VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 15 ~ 17V                                                                                                                                                                                                                                   | 30 ~ 35V       | 60 ~ 66V       |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Protection type : Hiccup mode, recovers automatically after fault condition is removed                                                                                                                                                     |                |                |
|                          | OVER TEMPERATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | RTH2≥70℃ ±10℃ detect on RTH2 thermistor<br>Protection type : Shut down o/p voltage, recovers automatically after temperature goes down                                                                                                     |                |                |
| ENVIRONMENT              | WORKING TEMP.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | -10 ~ +45℃ (Refer to "Derating Curve")                                                                                                                                                                                                     |                |                |
|                          | WORKING HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 20 ~ 90% RH non-condensing                                                                                                                                                                                                                 |                |                |
|                          | STORAGE TEMP., HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | -20 ~ +85℃, 10 ~ 95% RH                                                                                                                                                                                                                    |                |                |
|                          | TEMP. COEFFICIENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | ±0.05%/℃ (0 ~ 45℃)                                                                                                                                                                                                                         |                |                |
|                          | VIBRATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes                                                                                                                                                                               |                |                |
| SAFETY & EMC<br>(Note 4) | SAFETY STANDARDS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | UL60950-1, TUV EN60950-1, EN60335, EN60335-1, EN60335-2-29 approved                                                                                                                                                                        |                |                |
|                          | WITHSTAND VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | I/P-O/P:3KVAC    I/P-FG:2.0KVAC    O/P-FG:0.5KVAC                                                                                                                                                                                          |                |                |
|                          | ISOLATION RESISTANCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃ / 70% RH                                                                                                                                                                                  |                |                |
|                          | EMC EMISSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Compliance to EN55032 (CISPR32) Class B, EN61000-3-2,-3                                                                                                                                                                                    |                |                |
|                          | EMC IMMUNITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, light industry level, criteria A                                                                                                                                                          |                |                |
| OTHERS                   | MTBF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 149.6K hrs min.    MIL-HDBK-217F (25℃)                                                                                                                                                                                                     |                |                |
|                          | DIMENSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | PCB Type:144*90*33mm    External case type:180*96*49mm (L*W*H)                                                                                                                                                                             |                |                |
|                          | PACKING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | External case type: 1.1Kg; 16pcs / 17.9Kg / 1.47CUFT(without PFC)    1.24Kg; 16pcs / 20.1Kg / 1.47CUFT(with PFC)<br>PCB Type                    : 0.36Kg; 36pcs / 14Kg / 1.64CUFT(without PFC)    0.5Kg; 36pcs / 19Kg / 1.64CUFT(with PFC) |                |                |
| NOTE                     | 1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.<br>2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.<br>3. Tolerance : includes set up tolerance, line regulation and load regulation.<br>4. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives.<br>5. With PFC I/P range: 95~132VAC/190~264VAC.<br>6. For open P.C.B. WITH 17.8CFM min. Forced air. |                                                                                                                                                                                                                                            |                |                |

## Mechanical Specification

Case No. PS-120A Unit:mm

CASE:

Output cable length=183cm±5cm

| Pin No. | Assignment   |
|---------|--------------|
| 1       | DC OUTPUT +V |
| 2,3     | DC OUTPUT -V |

PCB:

AC Input Connector (CN1) : JST B3P-VH or equivalent

| Pin No. | Assignment | Mating Housing        | Terminal                       |
|---------|------------|-----------------------|--------------------------------|
| 1       | AC/L       | JST VHR or equivalent | JST SVH-21T-P1.1 or equivalent |
| 2       | No Pin     |                       |                                |
| 3       | AC/N       |                       |                                |

DC Output Connector (CN3) : JST B4P-VH or equivalent

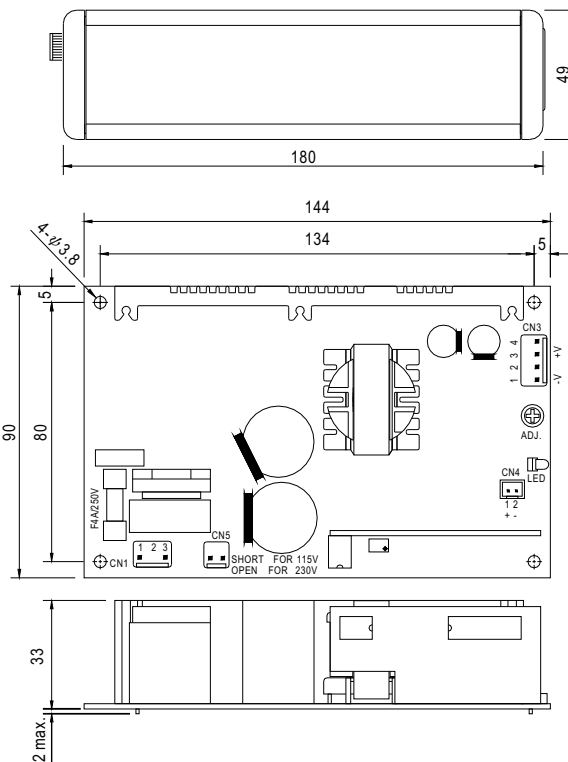
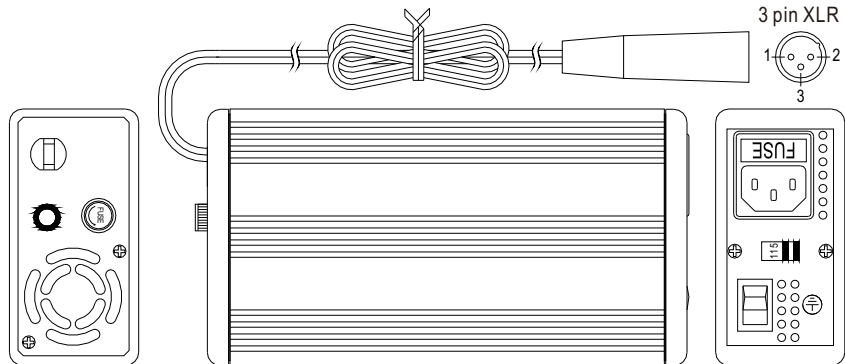
| Pin No. | Assignment | Mating Housing        | Terminal                       |
|---------|------------|-----------------------|--------------------------------|
| 1,2     | -V         | JST VHR or equivalent | JST SVH-21T-P1.1 or equivalent |
| 3,4     | +V         |                       |                                |

12VDC FAN Output Connector (CN4) : JST B2B-XH or equivalent

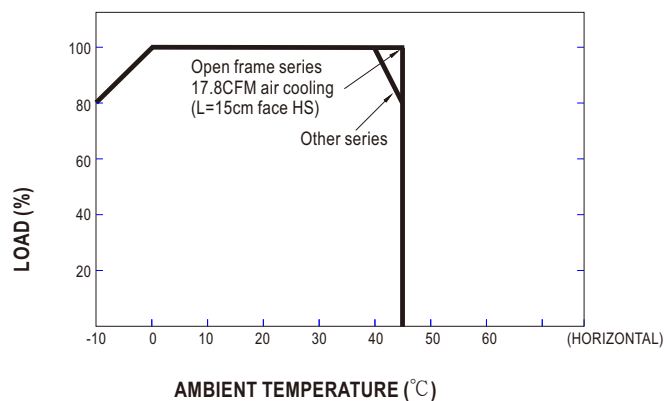
| Pin No. | Assignment | Mating Housing        | Terminal                        |
|---------|------------|-----------------------|---------------------------------|
| 1       | +V         | JST XHP or equivalent | JST SXH-001T-P0.6 or equivalent |
| 2       | -V         |                       |                                 |

115/230V selected by switch Connector (CN5) : JST B2P-VH or equivalent

| Switch | Assignment | Mating Housing        | Terminal                       |
|--------|------------|-----------------------|--------------------------------|
| 115V   | Short      | JST VHR or equivalent | JST SVH-21T-P1.1 or equivalent |
| 230V   | Open       |                       |                                |



## Derating Curve



## Charging Curve

