

## Features

- 4"x2" miniature size
- Universal AC input / Full range
- EMI Class B for both Class I (with FG) and Class II (without FG) configuration
- No load power consumption < 0.3W
- High efficiency up to 91%
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Cooling by free air convection for 84W and 120W with 10CFM forced air
- Built-in 12V/0.5A fan supply
- LED indicator for power on
- 3 years warranty

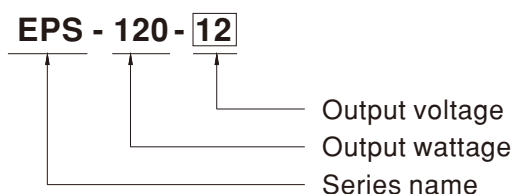
## Applications

- Industrial automation machinery
- Industrial control system
- Mechanical and electrical equipment
- Electronic instruments, equipments or apparatus

## Description

EPS-120 is a 120W highly reliable green PCB type power supply with a high power density on the 4" by 2" footprint. It accepts 80~264VAC input and offers various output voltages between 12V and 48V. The working efficiency is up to 91% and the extremely low no load power consumption is down below 0.3W. EPS-120 is able to be used for both Class I (with FG) and Class II (no FG) system design. EPS-120 has the complete protection functions; it is complied with the international safety regulations such as TUV EN60950-1, UL60950-1 and IEC60950-1. EPS-120 series serves as a high price-to-performance power supply solution for various industrial applications.

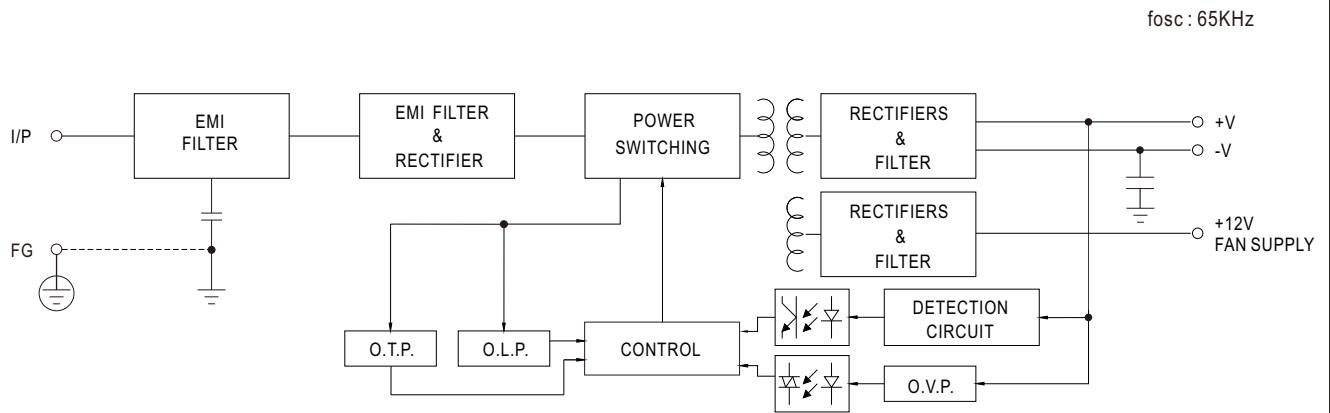
## Model Encoding



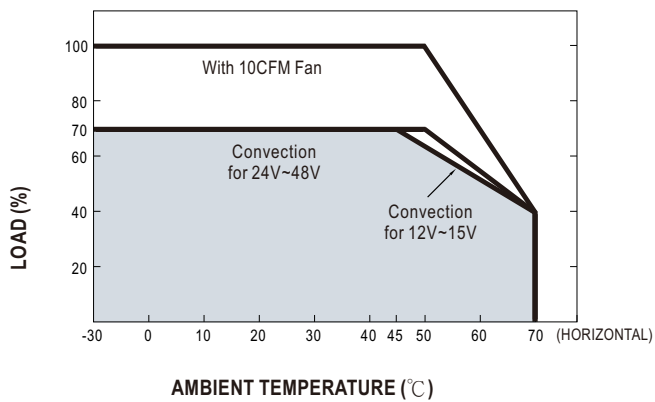
**SPECIFICATION**

| MODEL                                   |  |   | EPS-120-12   | EPS-120-15   | EPS-120-24   | EPS-120-27   | EPS-120-48   |
|---|--|---|--|--------------|--------------|--------------|--------------|
| OUTPUT                                  | DC VOLTAGE   |   | 12V  | 15V          | 24V          | 27V          | 48V          |
|   | CURRENT  | 10CFM   | 10A  | 8A           | 5A           | 4.5A         | 2.5A         |
|   |  | Convection  | 7.0A   | 5.6A         | 3.5A         | 3.15A        | 1.75A        |
|   | RATED POWER  | 10CFM   | 120W   | 120W         | 120W         | 121.5W       | 120W         |
|   |  | Convection  | 84W  | 84W          | 84W          | 85W          | 84W          |
|   | RIPPLE & NOISE (max.) <small>Note.2</small>  |   | 120mVp-p   | 120mVp-p     | 150mVp-p     | 150mVp-p     | 200mVp-p     |
|   | VOLTAGE ADJ. RANGE   |   | 11.4~12.6V   | 14.3~15.8V   | 22.8~25.2V   | 25.6 ~ 28.4V | 45.6 ~50.4V  |
|   | VOLTAGE TOLERANCE <small>Note.3</small>  |   | ± 2.0%   | ± 2.5%       | ± 1.0%       | ± 1.0%       | ± 1.0%       |
|   | LINE REGULATION  |   | ± 0.5%   | ± 0.5%       | ± 0.5%       | ± 0.5%       | ± 0.5%       |
|   | LOAD REGULATION  |   | ± 1.0%   | ± 1.0%       | ± 1.0%       | ± 1.0%       | ± 1.0%       |
|   | SETUP, RISE TIME   |   | 500ms, 30ms/230VAC      500ms, 30ms/115VAC at full load  |              |              |              |              |
| HOLD UP TIME (Typ.)                     |  | 50ms/230VAC      10ms/115VAC at full load                       |  |              |              |              |              |
| INPUT                                   | VOLTAGE RANGE <small>Note.4</small>  |   | 80 ~ 264VAC  | 113 ~ 370VDC |              |              |              |
|   | FREQUENCY RANGE  |   | 47 ~ 63Hz  |              |              |              |              |
|   | EFFICIENCY (Typ.)  |   | 88%  | 88.5%        | 90%          | 90%          | 91%          |
|   | AC CURRENT (Typ.)  |   | 2.1A/115VAC      1.2A/230VAC   |              |              |              |              |
|   | INRUSH CURRENT (Typ.)  |   | COLD START 30A/115VAC      60A/230VAC  |              |              |              |              |
|   | LEAKAGE CURRENT  |   | <0.75mA / 240VAC   |              |              |              |              |
| PROTECTION                              | OVERLOAD   |   | 115~150% rated output power  |              |              |              |              |
|   |  |   | Protection type : Hiccup mode, recovers automatically after fault condition is removed         |              |              |              |              |
|   | OVER VOLTAGE   |   | 13.2 ~ 15.6V   | 16.5 ~ 19.5V | 26.4 ~ 31.2V | 29.7 ~ 35V   | 52.8 ~ 62.4V |
|   |  |   | Protection type : Shut down o/p voltage, re-power on to recover                                |              |              |              |              |
| OVER TEMPERATURE                        |  | Protection type : Shut down o/p voltage, re-power on to recover |  |              |              |              |              |
| FUNCTION                                | FAN SUPPLY   |   | 12V@0.5A for driving a fan ; tolerance -15% ~ +10%   |              |              |              |              |
| ENVIRONMENT                             | WORKING TEMP.  |   | -30 ~ +70℃ (Refer to "Derating Curve")   |              |              |              |              |
|   | WORKING HUMIDITY   |   | 20 ~ 90% RH non-condensing   |              |              |              |              |
|   | STORAGE TEMP., HUMIDITY  |   | -40 ~ +85℃, 10 ~ 95% RH  |              |              |              |              |
|   | TEMP. COEFFICIENT  |   | ± 0.03%/℃ (0 ~ 50℃)  |              |              |              |              |
|   | VIBRATION  |   | 10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes                                   |              |              |              |              |
| SAFETY & EMC<br><small>(Note 5)</small> | SAFETY STANDARDS   |   | UL60950-1, TUV EN60950-1, IEC60950-1 approved  |              |              |              |              |
|   | WITHSTAND VOLTAGE  |   | I/P-O/P:3KVAC    I/P-FG:2KVAC    O/P-FG:0.5KVAC  |              |              |              |              |
|   | ISOLATION RESISTANCE   |   | I/P-O/P, I/P-FG:100M Ohms / 500VDC / 25℃ / 70% RH  |              |              |              |              |
|   | EMC EMISSION   |   | Compliance to EN55022 (CISPR22) Class B, EN61000-3-2,-3  |              |              |              |              |
|   | EMC IMMUNITY   |   | Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, EN61000-6-2, heavy industry level, criteria A |              |              |              |              |
| OTHERS                                  | MTBF   |   | 653.5Khrs min.    MIL-HDBK-217F (25℃)  |              |              |              |              |
|   | DIMENSION  |   | 101.6*50.8*29mm (L*W*H)  |              |              |              |              |
|   | PACKING  |   | 0.15Kg; 72pcs/11.8Kg/0.82CUFT  |              |              |              |              |
| 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. Derating may be needed under low input voltages. Please check the derating curve for more details.<br>5. The power supply is considered a component which will be installed into a final equipment. All the EMC tests are been executed by mounting the unit on a 360mm*360mm metal plate with 1mm of thickness. The final equipment must be re-confirmed that it still meets EMC directives. For guidance on how to perform these EMC tests, please refer to "EMI testing of component power supplies."<br>(as available on <a href="http://www.meanwell.com">http://www.meanwell.com</a> ) |   |  |              |              |              |              |

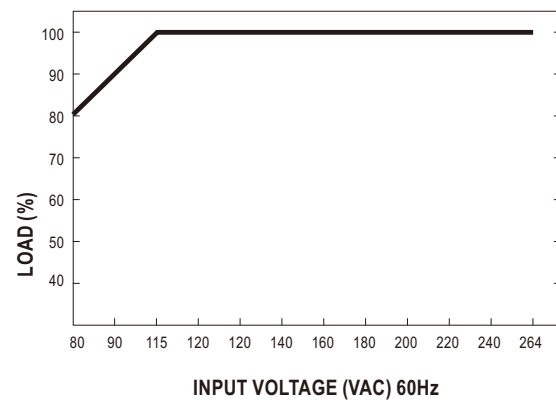
## Block Diagram



## Derating Curve

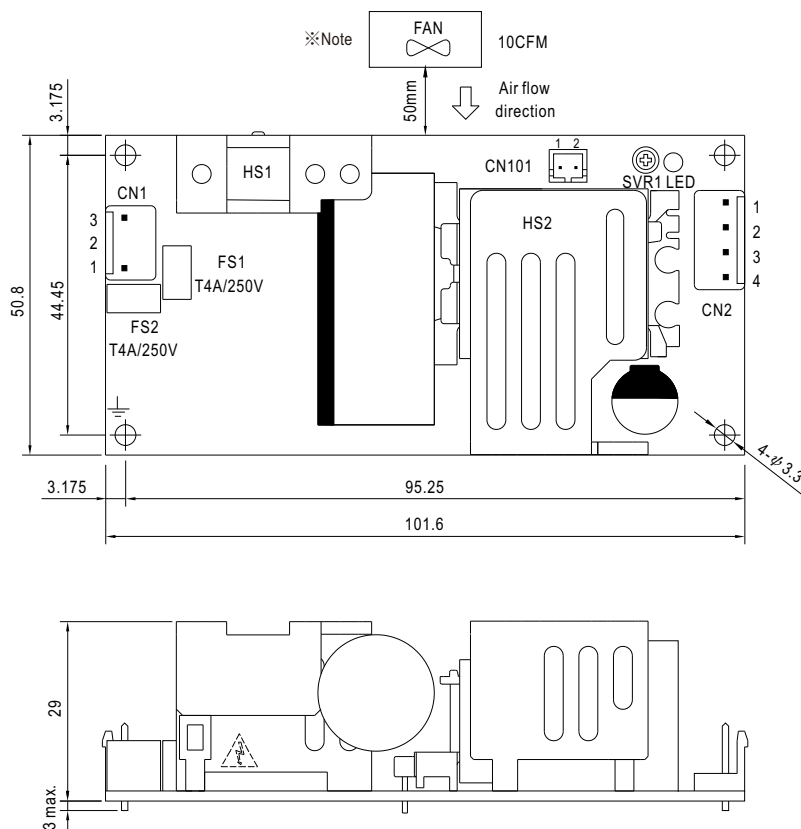


## Output Derating VS Input Voltage



## Mechanical Specification

Unit:mm



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

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

⏏ : Grounding required



- 1.HS1,HS2 cannot be shorted.
- 2.HS1 must have safety isolation distance with system case.

DC Output Connector (CN2) : 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         |                       |                                |

FAN Connector(CN101) : JST B2B-PH-K-S or equivalent

| Pin No. | Assignment | Mating Housing          | Terminal                         |
|---------|------------|-------------------------|----------------------------------|
| 1       | DC COM     | JST PHR-2 or equivalent | JST SPH-002T-P0.5S or equivalent |
| 2       | +12V       |                         |                                  |

※Note : 1. The FAN SUPPLY is designed to serve as the source of the additive external fan for the cooling of the power supply, enabling the full load delivery and assuring the best life span of the product. Please do not use this FAN SUPPLY to drive other devices.

2.The PCB type(Blank type)model delivers EMI Class B for both conducted emission and radiated emission for the power supply, when configured into either Class I (with FG) or Class II (without FG) system.

## Installation Manual

Please refer to : <http://www.meanwell.com/webnet/search/InstallationSearch.html>

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