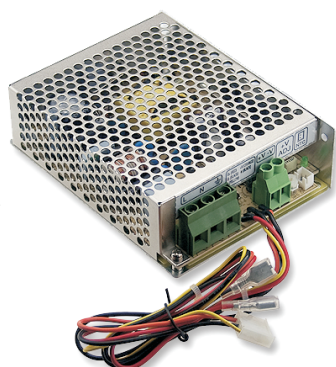




#### ■ Features :

- Universal AC input/Full range
- Protections: Short circuit / Overload / Over voltage / Battery polarity protections (by fuse)
- Cooling by free air convection
- LED indicator for power on
- No load power consumption <0.75W
- 100% full load burn-in test
- 2 years warranty

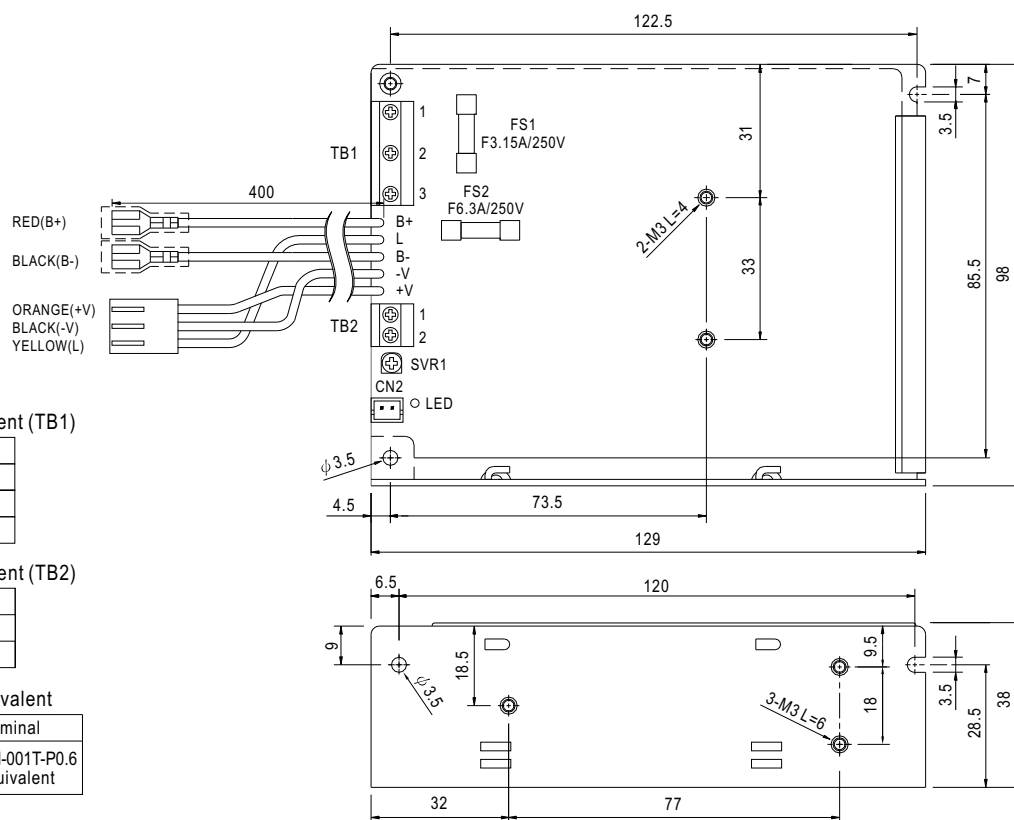


#### SPECIFICATION

| MODEL                                |                                             | SCP-50-12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | SCP-50-24                     |
|--------------------------------------|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| OUTPUT                               | DC VOLTAGE                                  | 13.8V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 27.6V                         |
|                                      | RATED CURRENT                               | 3.6A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 1.8A                          |
|                                      | CURRENT RANGE                               | 0 ~ 3.6A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0 ~ 1.8A                      |
|                                      | PEAK 5S <small>Note.6</small>               | 4.3A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 2.2A                          |
|                                      | RATED POWER                                 | 49.7W                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 49.7W                         |
|                                      | RIPPLE & NOISE (max.) <small>Note.2</small> | 120mVp-p                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 200mVp-p                      |
|                                      | VOLTAGE ADJ. RANGE                          | +15,-5%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | +15,-5%                       |
|                                      | VOLTAGE TOLERANCE <small>Note.3</small>     | ±2.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | ±1.0%                         |
|                                      | LINE REGULATION <small>Note.4</small>       | ±1.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | ±1.0%                         |
|                                      | LOAD REGULATION <small>Note.5</small>       | ±2.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | ±1.0%                         |
|                                      | SETUP, RISE TIME                            | 500ms, 30ms/230VAC    1200ms, 30ms/115VAC at full load                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                               |
|                                      | HOLD UP TIME (Typ.)                         | 50ms/230VAC    16ms/115VAC at full load                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                               |
| INPUT                                | VOLTAGE RANGE                               | 85 ~ 264VAC    120 ~ 370VDC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                               |
|                                      | FREQUENCY RANGE                             | 47 ~ 63Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                               |
|                                      | EFFICIENCY(Typ.)                            | 81%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 85%                           |
|                                      | AC CURRENT (Typ.)                           | 1.1A/115VAC    0.65A/230VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                               |
|                                      | INRUSH CURRENT (Typ.)                       | COLD START 45A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                               |
|                                      | LEAKAGE CURRENT                             | <2mA / 240VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               |
| FUNCTION                             | TEMP. COMPENSATION                          | By NTC (not provide with the power supply)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                               |
|                                      | OUTPUT VOLTAGE SENSOR                       | L=output voltage <sup>+0.7</sup> <sub>-0</sub> V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                               |
| PROTECTION                           | OVERLOAD                                    | 4.3 ~ 5.8A rated output power                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 2.2 ~ 2.9A rated output power |
|                                      |                                             | Protection type : Hiccup mode, recovers automatically after fault condition is removed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                               |
|                                      | OVER VOLTAGE                                | 16.6 ~ 19.3V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 33.1 ~ 38.5V                  |
| ENVIRONMENT                          |                                             | Protection type : Shut down o/p voltage, re-power on to recover                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                               |
|                                      | WORKING TEMP.                               | -20 ~ +60°C (Refer to output load derating curve)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                               |
|                                      | WORKING HUMIDITY                            | 20 ~ 90% RH non-condensing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                               |
|                                      | STORAGE TEMP., HUMIDITY                     | -40 ~ +85°C, 10 ~ 95% RH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                               |
|                                      | TEMP. COEFFICIENT                           | ±0.03%/°C (0 ~ 45°C)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                               |
| SAFETY & EMC <small>(Note 7)</small> | VIBRATION                                   | 10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                               |
|                                      | SAFETY STANDARDS                            | UL60950-1, CB(IEC60950-1) approved                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                               |
|                                      | WITHSTAND VOLTAGE                           | I/P-O/P:3KVAC    I/P-FG:1.5KVAC    O/P-FG:0.5KVAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                               |
|                                      | ISOLATION RESISTANCE                        | I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25°C / 70% RH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                               |
|                                      | EMI CONDUCTION & RADIATION                  | Compliance to EN55022 (CISPR22) Class B                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                               |
|                                      | HARMONIC CURRENT                            | Compliance to EN61000-3-2,-3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                               |
| OTHERS                               | EMS IMMUNITY                                | Compliance to EN61000-4-2, 3, 4, 5, 6, 8, 11, ENV50204, EN55024, EN61000-6-1, light industry level, criteria A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                               |
|                                      | MTBF                                        | 495.7K hrs min.    MIL-HDBK-217F (25°C)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                               |
|                                      | DIMENSION                                   | 129*98*38mm (L*W*H)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                               |
|                                      | PACKING                                     | 0.45Kg; 30pcs/14.5Kg/0.95CUFT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               |
| NOTE                                 |                                             | 1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C 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. Line regulation is measured from low line to high line at rated load.<br>5. Load regulation is measured from 0% to 100% rated load.<br>6. 33% Duty cycle maximum within every 15 seconds. Average output power should not exceed the rated power.<br>7. 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. |                               |

## Mechanical Specification

Case No. 903 Unit:mm



### Terminal Pin No. Assignment (TB1)

| Pin No. | Assignment |
|---------|------------|
| 1       | AC/L       |
| 2       | AC/N       |
| 3       | FG $\perp$ |

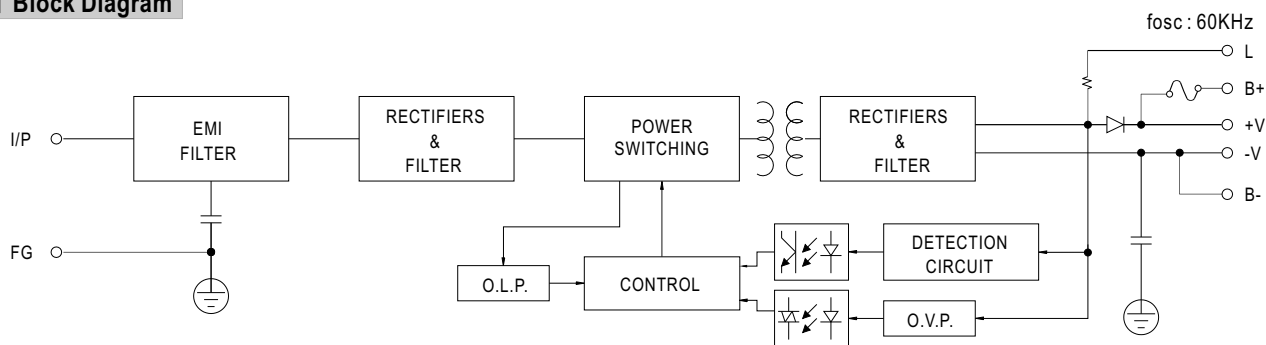
### Terminal Pin No. Assignment (TB2)

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

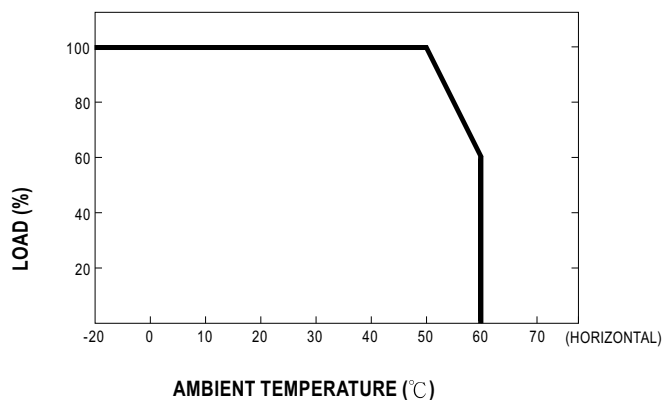
### CN2 : JST B2B-XH or equivalent

| Mating Housing        | Terminal                        |
|-----------------------|---------------------------------|
| JST XHP or equivalent | JST SXH-001T-P0.6 or equivalent |

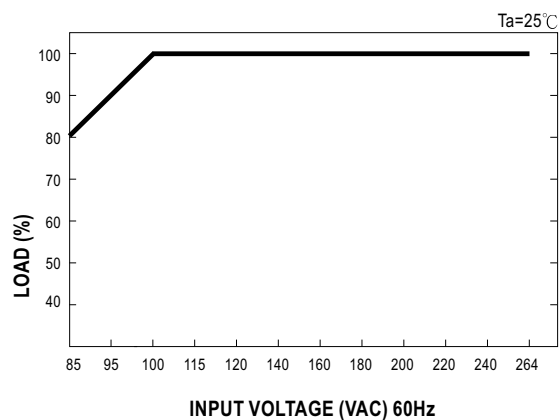
## Block Diagram



## Derating Curve



## Output Derating VS Input Voltage



## ■ Function Description

### 1.B+,B-

Connect the battery : B+ connected to battery positive.  
B- connected to battery negative.

### 2.L

Output voltage detection, detection output voltage or battery voltage ( if battery is used).  
L=output voltage  $^{+0.7}_{-0}$  V.

### 3.+V,-V

Output voltage. Can't connect the battery.

### 4.CN2

Temperature sensor can be connected to the unit to allow temperature compensation of the charging voltage.

If the sensor is not used, the charger still works normally.

Reference example:

Connect 100K $\Omega$  Thermistor(THINKING) on NTC. Adjust VR to cause the output voltage is normally voltage. The output voltage will change along with the temperature change.

|           | Ta :0℃    | Ta :25℃   | Ta :50℃   |
|-----------|-----------|-----------|-----------|
| SCP-50-12 | 14.4±0.2V | 13.8±0.1V | 13.2±0.2V |
| SCP-50-24 | 29.3±0.4V | 27.6±0.2V | 26.4±0.4V |

