

# USER MANUAL

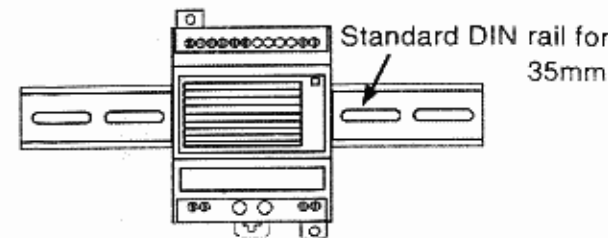
The user manual of the SP-AS/AL Series Switch Power Supply



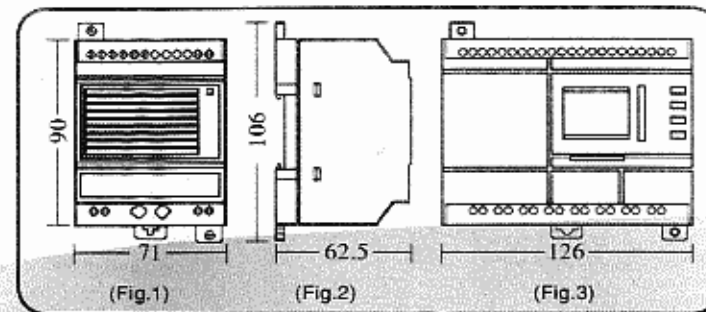
## I. Introduction and Installation Dimensions

The SP-AS/AL Series Switch Power have many features: being mini-sized, light weight, high efficiency, good reliability and so on. In special, it has the remote control and UPS function.

- SP-AS Series: SP-05AS (5V/6A)  
 SP-12AS (12V/3A)  
 SP-24AS (24V/1.5A)  
 71mm×106mm×65mm
- SP-AL Series: SP-05AL (5V/10A)  
 SP-12AL (12V/6A)  
 SP-24AL (24V/3A)  
 126mm×106mm×65mm



(can be used DIN rail installed)

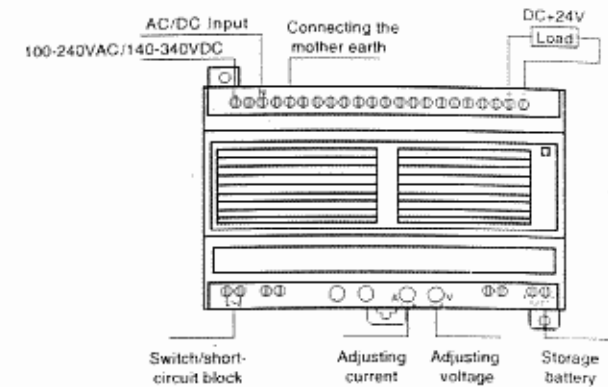


## II. Features

- EMI filter condenser
- Input frequency: 47-63Hz
- Output voltage stability:  $\pm 0.5\%$
- Can be used for DIN rail mounting (EN50022-35)
- Wide range voltage input (100-240VAC/140-340VDC)
- Ripple voltage tolerance range (85-264VAC/120-370VDC)
- Output voltage fine adjustment range (-5% +10%, adjusting potentiometer V)
- Have the function of soft-start (to limit the peak current of start and the pressure of the voltage to the components)
- The current of the load can be roughly adjusted (Means the maximum protective current of the load, adjusting potentiometer A)
- Effective: >75%
- Insulation voltage endurance: >1.5KV
- Power supply output with the LED indicator
- Ripple:  $\leq 150\text{mVp-p}$
- Have the short circuit and over-load protection (short circuit protection means miss-connect the output voltage in short, after disconnect, the output will be renew. Over-load protection: 105%-135%)
- With the UPS function. ( External-connected battery, provide with the UPS by the power supply and the battery)
- With the remote control function ( By the switch control the having and non-having of the output voltage)
- With the over heat protection function ( the main control CMOS chip stops output when the temperature is beyond 135°C and the output will renew automatically when the temperature reduces)

## III. Using Methods: ( Taking SP-24A as example)

### 1. General operation:



(Fig.3.1 General application)

### Operation Step:

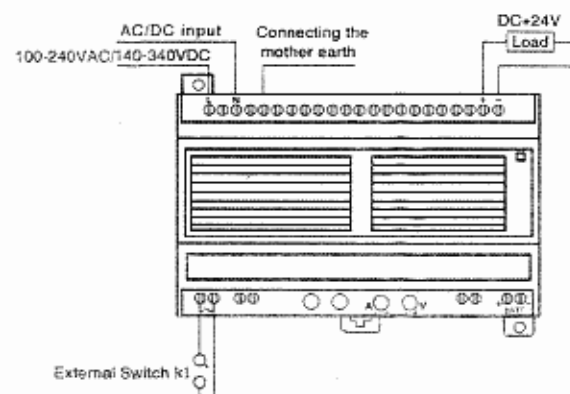
- Twist firmly the short-circuit block of the switch terminal (If the switch / short-circuit is off, the switch power has no output)
- Adjusting potentiometer (A) and rotate it to the end clockwise
- Connect the power (100-240VAC/140-340VDC)
- Adjusting potentiometer(V) to make the voltage of the output terminal be +24VDC
- Connect the load in the output terminal (pay attention to the straight polarity and the negative polarity and that the maximum working current must be  $\leq 3\text{A}$ )

### 2. Remote Control:

Attn: Externally-Connect the switch terminal, remote the switch to control output voltage having or non-having

### Operation step:

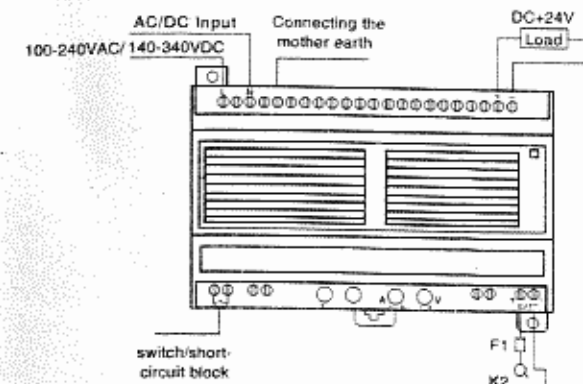
- Remove the short circuit block from the switch terminal and replace it with a switch k1
- Adjusting potentiometer (A) and rotate it to the end clockwise
- Connect the power (100-240VAC/140-340VDC)
- Adjust potentiometer(V) to make the voltage of the output terminal be +24VDC (Close the switch k1)
- Load (the working current  $\leq 3\text{A}$ )
- Close the switch k1, no voltage output



(Fig 3.2 Remote Control application)

### 3. Using UPS Function:

Attn: If the load can provide with UPS voltage methods, then you can use this function



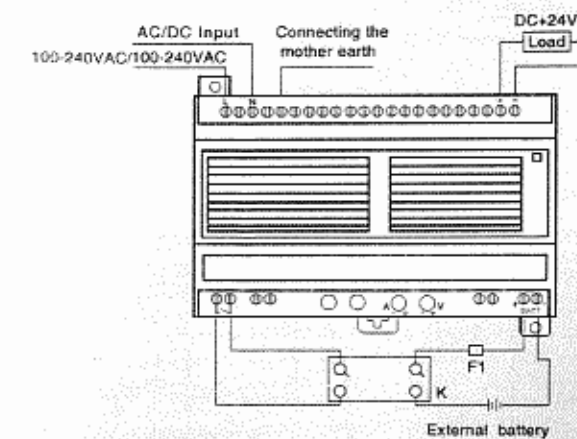
(Attn: the connection of the positive and negative pole)  
 (Fig 3.3 UPS application)

### Operation Step:

- Twist firmly the short circuit block of the switch terminal (If the switch / short-circuit block is off, the switch power have no output)
- Adjusting potentiometer (A) and rotate it to the end clockwise
- Connect the power (100-240VAC/140-340VDC)
- Adjusting potentiometer(V) to make the voltage of the output terminal be +24VDC (Due to SP-12AS/AL to make the output voltage be 12V)
- Disconnect the AC/DC power wire
- Connect the switch and fuse wire and the battery according to the positive pole and negative pole marked on the crust

### 4. Using Remote Control and UPS simultaneously

Attn: Using remote control and UPS simultaneously, the using method is combined by the method 2 and method 3 as below:



(Attn: the connection of the positive and negative pole)  
 (Fig3.4: Using Remote and UPS simultaneously application)

### 5. Specification:

| Type                           | SP-05AS               | SP-12AS | SP-24AS | SP-05AL          | SP-12AL | SP-24AL |
|--------------------------------|-----------------------|---------|---------|------------------|---------|---------|
| Voltage                        | 5V                    | 12V     | 24V     | 5V               | 12V     | 24V     |
| Current                        | 6A                    | 3A      | 1.5A    | 10A              | 6A      | 3A      |
| Dimension (W×H×D)              | 71mm×106mm×65mm       |         |         | 126mm×106mm×65mm |         |         |
| Garut voltage                  | 100-240VAC/140-340VDC |         |         |                  |         |         |
| Ripple voltage tolerance range | 85-264VAC/120-370VDC  |         |         |                  |         |         |
| Input frequency                | 47-63Hz               |         |         |                  |         |         |
| Output voltage Stability       | $\pm 0.5\%$           |         |         |                  |         |         |
| Ripple                         | 150mVp-p              |         |         |                  |         |         |
| Operation Temperature          | -25°C ~ +70°C         |         |         |                  |         |         |
| Efficiency                     | > 75%                 |         |         |                  |         |         |