

Power supply (SMPS)

# TPS series

## INSTRUCTION MANUAL

Thank you for purchasing HANYOUNG product.  
Please check whether the product is the exactly same as you ordered.  
Before using the product, please read this instruction manual carefully.  
Please keep this manual where you can view at any time

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## Safety information

Before using the product, please read the safety information thoroughly and use it properly. Alerts declared in the manual are classified to Danger, Warning and Caution by their criticality

	<b>DANGER</b>	DANGER indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury
	<b>WARNING</b>	WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury
	<b>CAUTION</b>	CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury

### Danger

Do not touch or contact the input terminals because they cause electric shock.

### Warning

- The contents of this manual may be changed without prior notification.
- This product doesn't have power switch so it should be installed separately outside.
- Prior to using this product, accordingly the capacity of required purpose should be considered.
- To prevent electric shock or malfunction of product, do not supply the power until the wiring is completed.
- Do not use this product which required flammable and explosive gas in an area.
- To prevent electric shock or malfunction of product, do not supply the power until the wiring is completed.
- Please turn off the power when mounting / dismantling of the product. This is a cause of electric shock, malfunction, or failure.
- To prevent deflection or malfunction of this product, supply proper power voltage in accordance with the rating.
- Please use this product after installing in the panel to prevent electrical shock.

### Caution

- Please use this product within 100 % of the rated output to prevent damage or trouble.
- This product should be used on only the indicated rated input voltage.
- The capacity of the voltage and current is depending on the type of the wiring cable so this product should be connected in an appropriate connectable wire.
- The ground terminal must be installed on to prevent electric shock or electromagnetic wave.
- Foreign materials can be damage or malfunction in case of entering into the product.
- Blowing fuse in inside of the product can cause chain damage or malfunction to the other devices. Thus, repair should be required promptly.
- This product has a certain level of leakage current. So it should be used with extreme caution when using multiple units in parallel because the sum of the leakage current is larger value.
- Please be cautious in high voltage in inside of the product to prevent electrical shock.
- Please do not use it at the following locations for the safety and reliability of the product.
  - Easy to reach to water and fire place
  - High ambient temperature and non-ventilated place
  - lots of foreign materials and dust place
  - Volatile and flammable substances place
  - High humid place
  - lots of vibration and shock place

## Suffix code

Model	Code	Information
TPS-	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	TPS Power supply (Enclosed Type)
Power output	15	15W, 30W, 50W, 75W, 100W, 150W, 220W
Number of output voltage	S	1 output
	D	2 output
Output voltage classification	24	24 V DC
	15	15 V DC
	12	12 V DC
	5	5 V DC
	2424	CH1 : 24 V DC / CH2 : 24 V DC
2412	CH1 : 24 V DC / CH2 : 12 V DC	
2405	CH1 : 24 V DC / CH2 : 5 V DC	
		S (1output) Only
		D (2output) Only

## Function

### Rated input voltage

The product's input voltage is set at 220 V AC (50 - 60 Hz) when shipping it out from our company. Free power supply product works in 100 - 240 V AC 50 - 60 Hz even though it does not select input voltage.

input voltage	Free voltage	Manual-select input
	100 - 240 V AC (50 - 60Hz)	100 - 120 / 200 - 240 V AC (50 - 60Hz)
TPS series	TPS-15S, TPS-30S, TPS-50S TPS-75S, TPS-50D	TPS-100S, TPS-150S, TPS-220S

### Instant maximum output voltage

The product's instant maximum output voltage can work up to rating's 130 % (220 V AC input Standard)

### Adjustable Output voltage

The output voltage of the variable resistor inside the product can be a variable (more than  $\pm 5\%$  of rated output voltage)

### Limited rush current

Limited rush current circuit is inside of the product but it should be considered carefully when selection of the external switch or fuse.

### Short-Circuit Protection Function

When output short happens, blocked circuit protects circuit and device. After Eliminating the root of short happening, automatically voltage outputs.

### Over-Voltage Protection

When the output voltage is reached at 115 to 140 % of the rated voltage, blocking the flow of current protects the outside of the connected equipment and systems.

### Over-Current Protection

When the output current exceeds the rated capacity, activated this protection stops output. After Eliminating the root, automatically output voltage is restored.

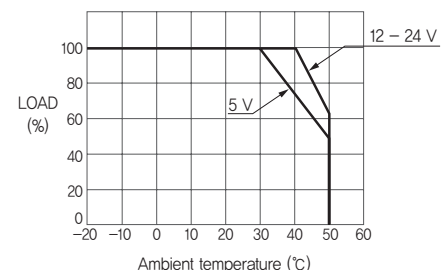
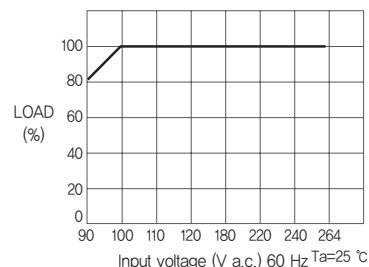
### Over-Temperature Protection

This protection automatically stops switching to prevent components damaged due to overheating when PWM controller junction temperature reaches to 135 ~ 140 °C

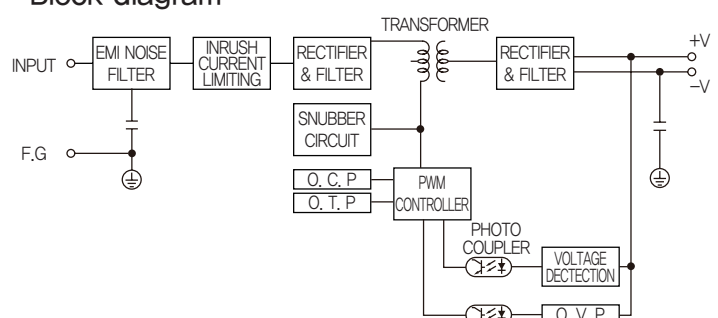
### Ripple Noise

Wiring should be shortened to reduce internal noise. Please use after reducing ripple noises sufficiently.

## Derating curve



## Block diagram



## Product's wiring

### ■ Input terminal

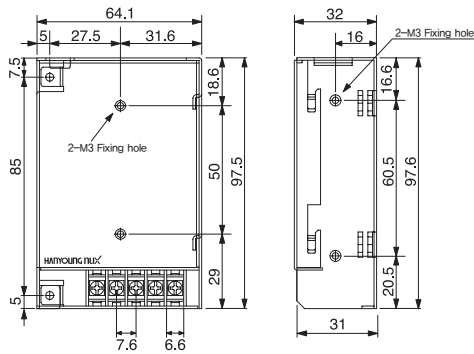
- L(Live)/N(Neutral): Alternating (AC) Input Terminal.
- F.G(Frame Ground) : As an earth terminal, it is used to protect electric shock accident and improve the electromagnetic interference.

### ■ Output terminal

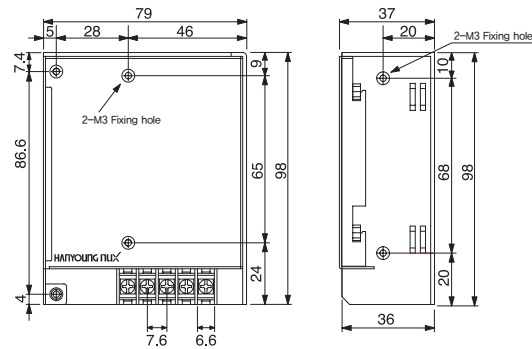
- (+) / (-) : It is a direct current (DC) output terminal. Please pay a careful attention on connecting
- ※ When output of GND is mutually short circuited, output of terminals would be short circuited each other.
- ※ Please make sure to ask us when you have any question before using the product.
- ※ Please make sure to check about the terminal's existence and connection method because they are different depending on the types of model.

## Dimension

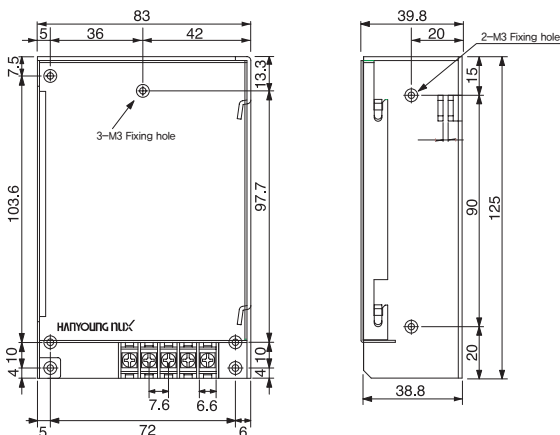
### ■ TPS-15S



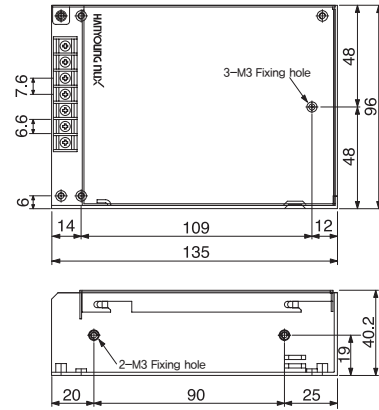
### ■ TPS-30S



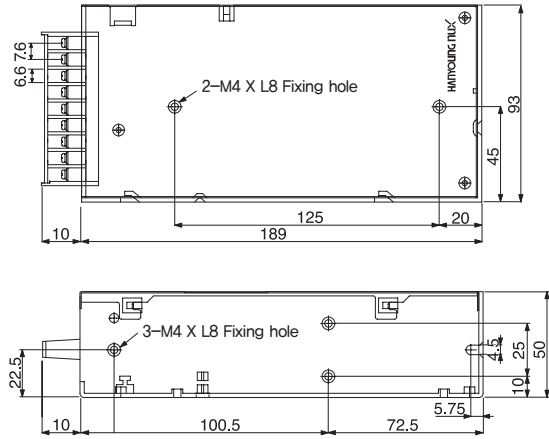
### ■ TPS-50S



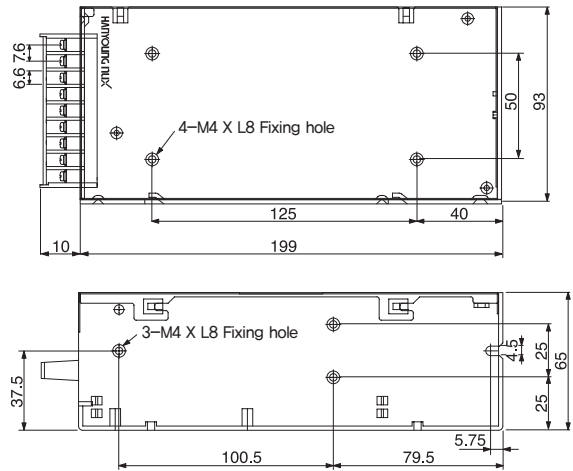
### ■ TPS-75S / TPS-50D



### ■ TPS-100S



### ■ TPS-150S



### ■ TPS-220S

