

## Power supply (SMPS)

## TPS/EPS 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.
- Please install an appropriate protective circuit on the outside if malfunction or an incorrect operation may be a cause of leading to a serious accident.
- 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.
- Please do not disassemble, manufacture, reform and repair this equipment. It leads to abnormality of movement, electric shock, and fire.
- 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 parts. 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 debris materials and dust place
  - Volatile and flammable substances place
  - High humid place
  - lots of vibration and shock place

## Suffix code

## ■ TPS series

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, 350W, 450W	
Number of output voltage	S	1 output		
	D	2 output (Only for 30W, 50W, 75W)		
Output voltage classification	5	5 V DC (220W, 350W, 450W are excluded)		1 output (Single Output)
	12	12 V DC		
	15	15 V DC (350W, 450W are excluded)		
	24	24 V DC		
	48	48 V DC (15W, 30W, 50W, 75W, 100W, 150W, 220W are excluded)		2 output (Dual Output)
	2405	CH1 : 24 V DC / CH2 : 5 V DC		
	2412	CH1 : 24 V DC / CH2 : 12 V DC		
	2424	CH1 : 24 V DC / CH2 : 24 V DC		

## ■ EPS series (Economy)

Model	Code	Information
EPS-	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	EPS Power supply (Enclosed Type)
Power output	15	15W, 30W, 50W, 150W
Number of output voltage	S	1 output
Output voltage classification	5	5 V DC (150 W are excluded)
	12	12 V DC
	15	15 V DC (150 W are excluded)
	24	24 V DC
	48	48 V DC

## 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 100 ~ 240 V AC (50 ~ 60Hz)	Manual-select input 100 ~ 120 / 200 ~ 240 V AC (50 ~ 60Hz)
TPS/EPS series	TPS-15S, TPS-30S, TPS-50S, TPS-75S, TPS-450S TPS-30D, TPS-50D, TPS-75D EPS-15S, EPS-30S, EPS-50S	TPS-100S, TPS-150S, TPS-220S, TPS-350S, EPS-150S

## ■ Instant maximum output power

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

## ■ Adjustable Output voltage

Output voltage can be adjustable by adjustable resistance inside of the product.  
(more than  $\pm 5$  % of rated output voltage)

## ■ Limited Inrush Current

This product has inrush current limit circuit but it should be considered carefully when selection of the external switch or fuse.

## ■ Short-Circuit Protection

When the output terminals shorted, the output is blocked. After eliminating the reason of short, voltage is output automatically.

## ■ Over-Voltage Protection

When the output voltage is reached at 115 to 140 % of the rated voltage. Blocking the current flow to protect the outside of the connected equipment and system.

## ■ Over-Current Protection

When the output current exceeds the rated capacity, activate this protection to stop output. After eliminating the reason of over-current, the output voltage is restored automatically.

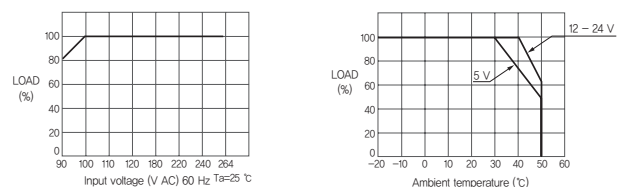
## ■ Over-Temperature Protection

When PWM controller junction temperature reaches to 135 ~ 140 °C, this protection automatically stops switching to prevent components damage due to overheating.

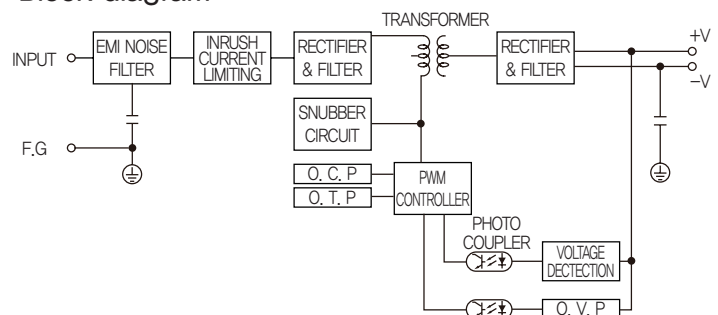
## ■ Ripple Noise

Wiring should be shortened to reduce induction noise. Please use after reducing ripples noise sufficiently.

## Derating curve



## Block diagram



## Product's wiring

## ■ Input terminal

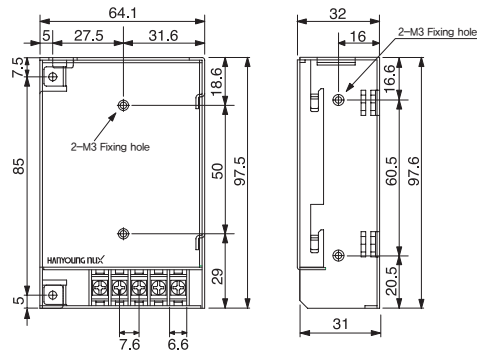
- L(Live)/N(Neutral) : AC input Terminal.
- F,G(Frame Ground) : As an earth terminal, it is used to protect electric shock accident and improve the electromagnetic interference.

## ■ Output terminal

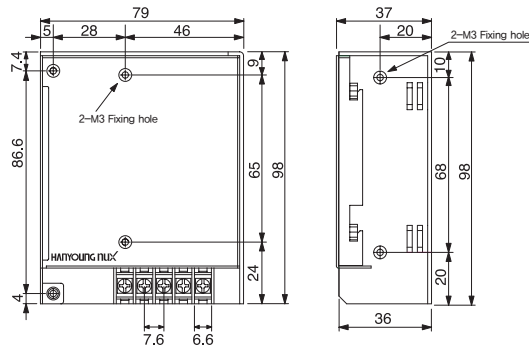
- (+) / (-) : It is a DC output terminal. Please pay a careful polarity on connecting
- ※ When output of GND is mutually short circuited, output of terminals would be short circuited each other.
- ※ Please make sure to ask us when you have any question before using the product.
- ※ Please make sure to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

## Dimension

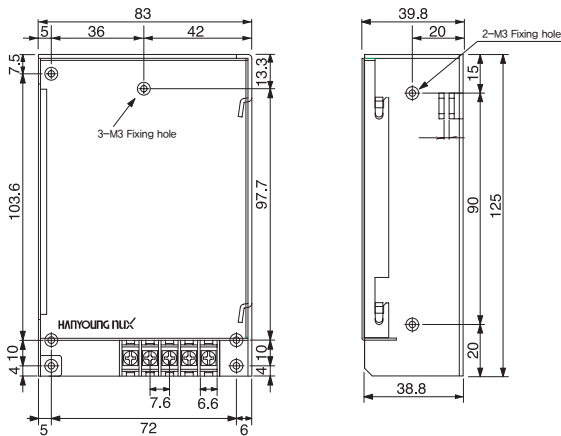
### ■ TPS-15S / EPS-15S



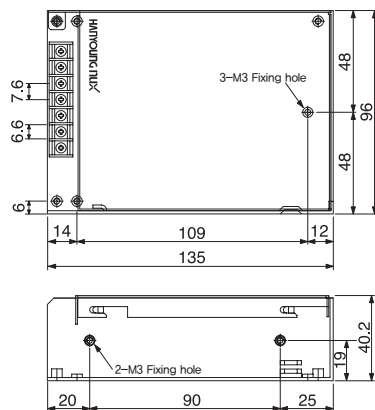
### ■ TPS-30S / EPS-30S



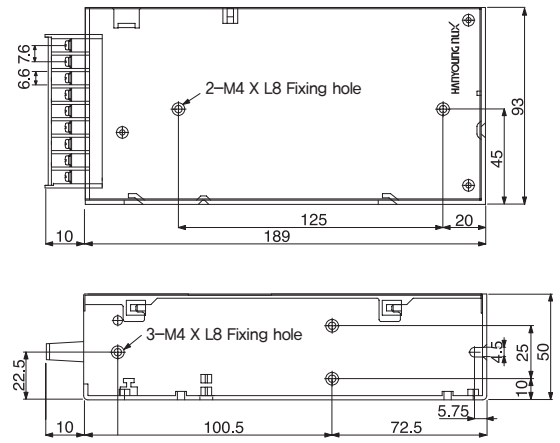
### ■ TPS-50S / EPS-50S / TPS-30D / TPS-75D



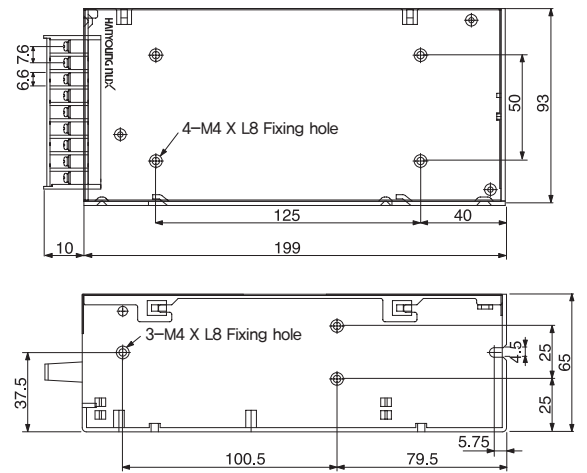
### ■ TPS-75S / TPS-50D



### ■ TPS-100S / EPS-150S



### ■ TPS-150S / 220S



### ■ TPS-350S / 450S

