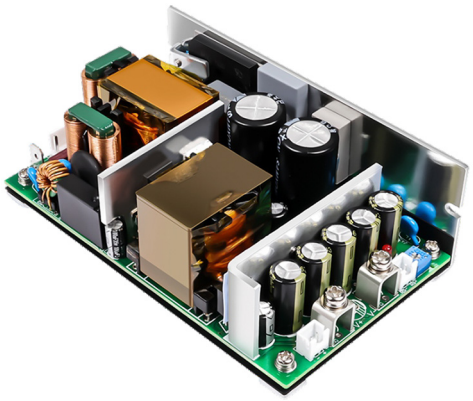
# TPS-GSH600S Series

## Single Output Open Frame Power Supply



## Features

- Aluminum enclosure L×W×H：127×76.2×40mm
- Natural convection：320W
- Forced convection：600W(24V 25CFM)
- Wide input voltage range：100-264VAC
- Active PFC function
- LED indicator for operational status
- -25℃~+70℃ operational temperature
- Insulation voltage：3750VAC
- High liability, long lifespan, 3-year warranty
- Input undervoltage protection, output short circuit protection, overcurrent, overvoltage protection, overtemperature protection

This series is a 600W AC-input switch-mode power supply with an input voltage range of 100-264VAC, providing output voltages of 24V, 27V, 36V, and 48V. With efficiency reaching up to 94%, it operates reliably in environments ranging from -25°C to +70°C. This series includes comprehensive protection features, complies with international safety standards, and is suitable for industrial automation machinery, industrial control systems, communication equipment, LED applications, smart home systems, electronic instruments, and medical devices.

## Specifications

| Model | Cooling Method | Output Power* | Rated Output Voltage/ Current(Vo/Io) | Input Voltage Range | Efficiency (Typ.)* | Output Voltage Adjustable Range ADJ(V) | Max Capacitive Load at Room Temperature |
|---|---|---|---|---|---|---|---|
| TPS-GSH600S-24V | Natural Cooling | 192W | 24V/8A | 100~176VAC/ 141~250VDC | 92% | 22-27V | 6000μF |
| | Forced Convection | 360w | 24V/15A | | 91% | | |
| | Air Cooling | 320W | 24V/13.34A | 176~264VAC/ 250~370VDC | 95% | | |
| | Forced Convection | 600W | 24V/25A | | 94% | | |
| TPS-GSH600S-24V | Natural Cooling | 192W | 27V/7.12A | 100~176VAC/ 141~250VDC | 92% | 24-29V | 5000μF |
| | Forced Convection | 360w | 27V/13.34A | | 91% | | |
| | Air Cooling | 320W | 27V/11.85A | 176~264VAC/ 250~370VDC | 95% | | |
| | Forced Convection | 600W | 27V/22.22A | | 94% | | |
| TPS-GSH600S-36V | Natural Cooling | 192W | 36V/5.34A | 100~176VAC/ 141~250VDC | 92% | 33-39V | 3000μF |
| | Forced Convection | 360W | 36V/10A | | 91% | | |
| | Air Cooling | 320W | 36V/8.89A | 176~264VAC/ 250~370VDC | 95% | | |
| | Forced Convection | 600W | 36V/16.67A | | 94% | | |
| TPS-GSH600S-48V | Natural Cooling | 192W | 48V/4A | 100~176VAC/ 141~250VDC | 92% | 44-54V | 2000μF |
| | Forced Convection | 360W | 48V/7.5A | | 91% | | |
| | Air Cooling | 320W | 48V/6.67A | 176~264VAC/ 250~370VDC | 95% | | |
| | Forced Convection | 600W | 48V/12.5A | | 94% | | |

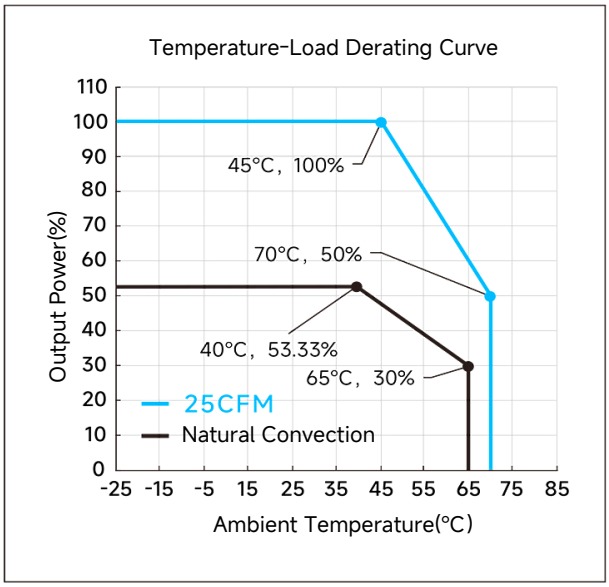
**Notes**

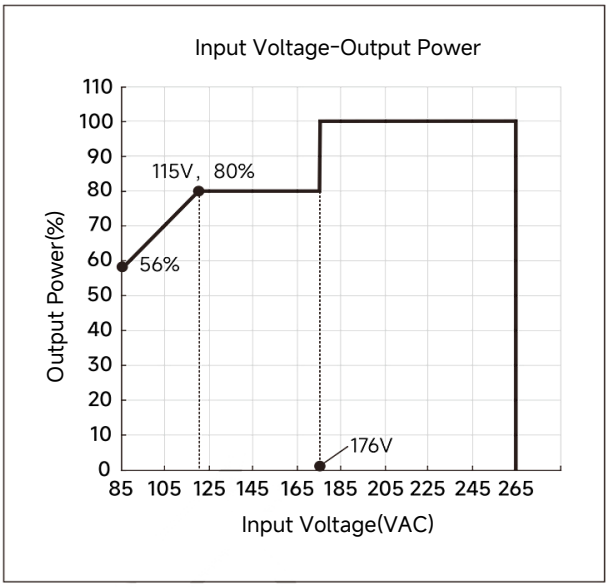
1. * Under any steady-state condition, the total output power must not exceed the rated total power. When output voltage is adjusted upward, total output power must not exceed the rated output power. If output voltage exceeds the rated voltage by more than 5%, output power must be reduced to 80% of the rated power. When output voltage is adjusted downward, output current must not exceed the rated output current.
2. *Efficiency testing conditions: 25°C ambient temperature, input at 230VAC; for full-load efficiency testing, the fan should be powered by an external source, so the fan's power consumption is not included in the input power measurement

## Electrical Specifications

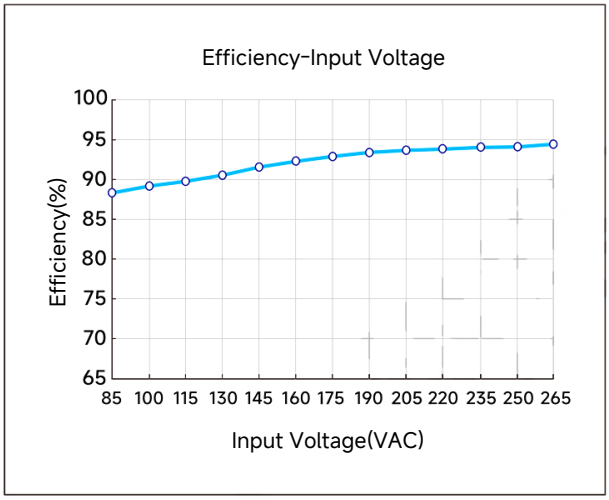
| Item | | | TPS-GSH600S-24V | TPS-GSH600S-27V | TPS-GSH600S-36V | TPS-GSH600S-48V |
|---|---|---|---|---|---|---|
| Output | Rated voltage | | 24V | 27V | 36V | 48V |
| | Current range(Natural cooling) | | 0-13.34A | 0-11.85A | 0-8.89A | 0-6.67A |
| | Current range(25CFM Fan cooling) | | 0-25A | 0-22.22A | 0-16.67A | 0-12.5A |
| | Output power(Natural cooling) | | 320W | 320W | 320W | 320W |
| | Output power(25CFM Fan cooling) | | 600W | 600W | 600W | 600W |
| | Efficiency(115VAC/230VAC,typ) | | 92%/94% | 92%/94% | 92%/94% | 92%/94% |
| | Efficiency(115VAC/230VAC,Min) | | 90%/92% | 90%/92% | 90%/92% | 90%/92% |
| | Ripple voltage | | <200mVp-p | <200mVp-p | <300mVp-p | <300mVp-p |
| | Voltage adjustment range(adjustable resistor) | | 22~27V | 24~29V | 33~39V | 44~54V |
| | Voltage accuracy | | ±1% | | | |
| | Voltage overshoot | | <10% | | | |
| | Line regulations | | ±0.5% | | | |
| | Load regulation | | ±1% | | | |
| | Start-up time | | 1S(typ.) | | | |
| | Rise time | | 8ms(typ.) | | | |
| | Hold time | | >10ms,14ms(typ.)115/230VAC,full load | | | |
| Input | Rated voltage | | 100-240VAC | | | |
| | Voltage range | | 100-264VAC(Refer to the input voltage derating curve) | | | |
| | Input frequency | | Rated frequency50/60Hz,operating range47-63Hz | | | |
| | Power factor | | >0.98(full load115/230Vac) | | | |
| | Input current(Max) | | 6A/115VAC,3A/230VAC | | | |
| | No-load power consumption(Max) | | <2W | | | |
| | Inrush current(Max) | | Cold start： 30A/120VAC,60A240VAC | | | |
| | Leakage current(Max) | | 0.25mA/240VAC | | | |
| Protection | Input undervoltage protection | | 60-85VAC | | | |
| | Output overcurrent protection | | 110%-180% of the rated output current, hiccup mode, auto-recovery | | | |
| | Output overvoltage protection | | 110%-125% of rated output voltage, output shut down, auto-recovery after restart | | | |
| | Output short-circuit protection | | Hiccup mode, auto-recovery after short is removed | | | |
| | Overtemperature protection | Primary | Output shuts off, automatic recovery after temperature decreases | | | |
| | | Secondary | turn off output; when the temperature decreases, restart to restore operation | | | |
| Environmental Parameters | Operating temperature & Humidity | | -25~+70°C,20%~90%RH non-condensing(refer to temperature derating curve for use) | | | |
| | Storage temperature & Humidity | | -40~+85°C,10%-95%RH | | | |
| | Temperature coefficient | | ±0.03%/°C | | | |
| Safety EMC | Safety standards | | MEET IEC62368,GB4943.1 | | | |
| | EMC | | CISPR32/EN55032 CLASS B,EN61000-4-2/3/4/6 CLASS B | | | |
| | Lightning surge protection | | IEC/EN61000-4-5,line to line ±2KV,line to ground ±2KV | | | |
| | Withstand voltage | | IVP-O/P:3750VAC,I/P-FG:1500VAC,O/P-FG:500V | | | |
| | Insulation resistance | | I/P-O/P,I/P-FG,O/P-FG: >100M Ohm/500VDC | | | |
| Other | Fan Auxiliary Power | | Voltage: 4V±15%, current: 0.3A(voltage changes proportionally with output voltage adjustment) | | | |
| | Remote sense | | When RS+ and RS- are connected to the client, they provide remote voltage compensation. If remote voltage compensation is not required, RS+ and RS- should be left floating and must not be shorted. | | | |
| | Dimensions | | L×W×H： 127×76.2×40mm | | | |
| | Weight | | 480±20g | | | |
| Notes | 1. *Unless otherwise specified, all typical values are measured at 230VAC and 25°C.<br>2. *Ripple and noise testing method: connect a 0.1μF ceramic capacitor and a 47μF electrolytic capacitor in parallel at the output, using an oscilloscope with a 20MHz bandwidth. | | | | | |

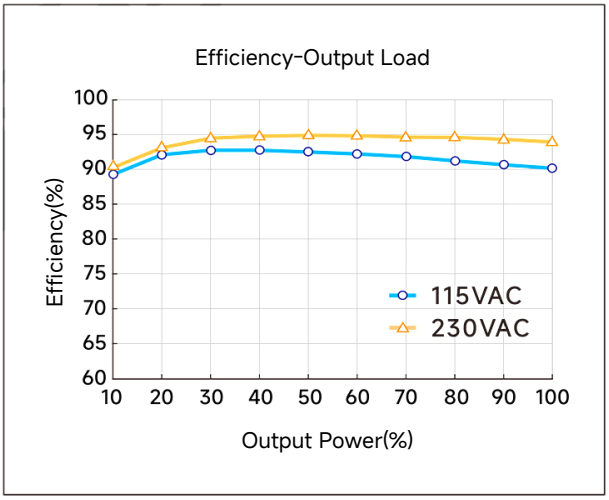
## Product Characteristic Curve

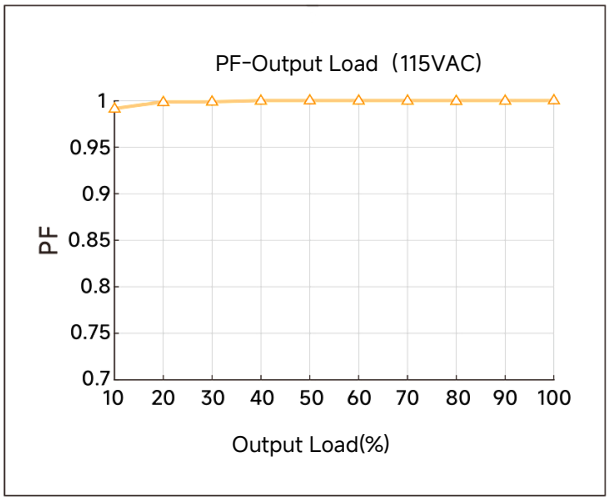


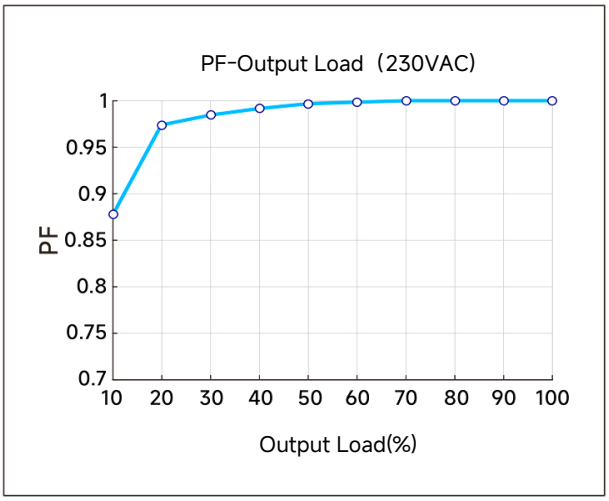




Note: For input voltage 85-115VAC, the input voltage should be derated based on the temperature derating.

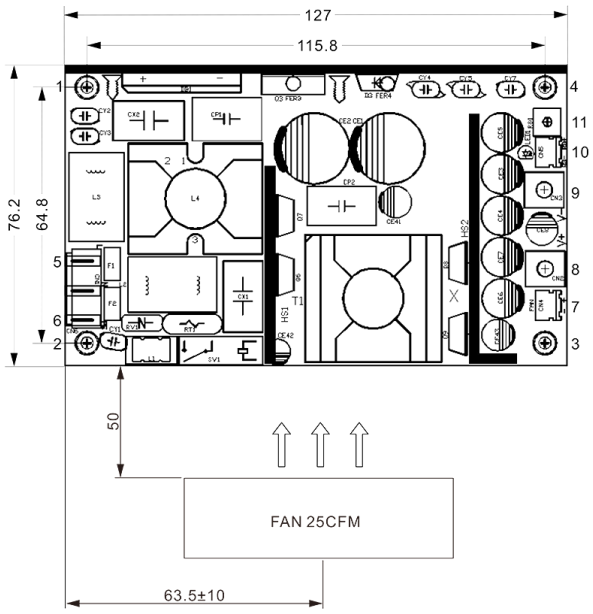


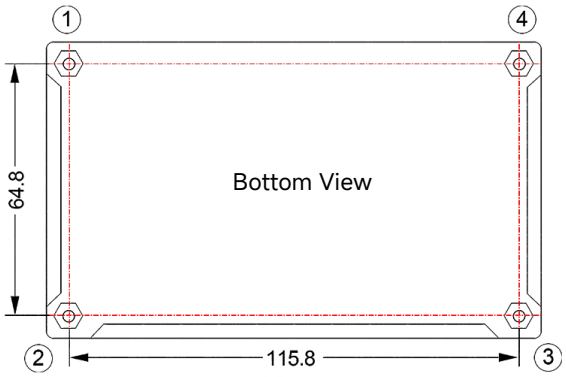



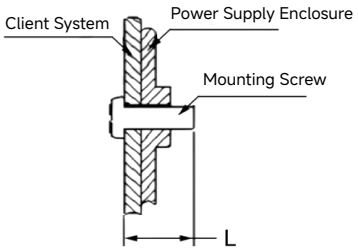



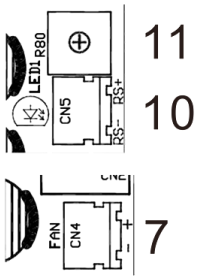



## Mechanical Dimensions



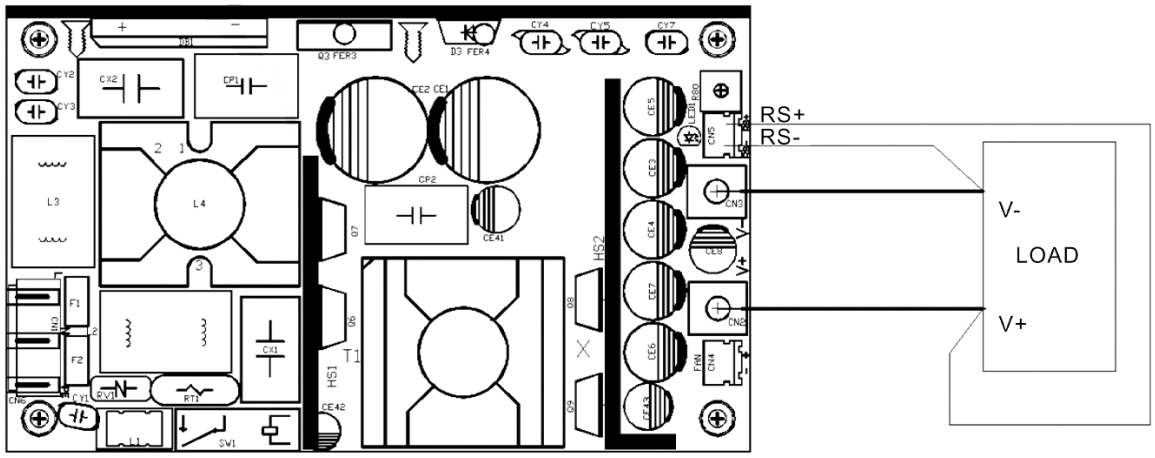




| No. | Function | Client Connector |
|---|---|---|
| 1,2,3,4 | Mounting Hole Position | M3 screw, bottom mount |
| 5 | Input Terminal | JST SVH-21T-P1.1 or equivalent |
| 6 | Ground Terminal | JST SPS-21T-250 or equivalent |
| 7 | Fan Terminal | XH2.54-2P male connector or equivalent |
| 8 | Output Positive | |
| 9 | Output Negative | |
| 10 | Remote Sensing Terminal | XH2.54-2P male connector or equivalent |
| | | |

| Mounting position | Screw specification | L (recommended) | Torque (Max) |
|---|---|---|---|
| ①~④ | M3 | 2MM | 0.4N·m |

Additional Aluminum Plate Installation Instructions:To comply with the derating curve, under natural cooling conditions, the power supply must be installed on an aluminum plate (or a chassis with an equivalent surface area). Aluminum Plate Specifications: 300 × 300 × 2 mm.
Heat Dissipation Optimization: The surface of the aluminum plate must be smooth or coated with thermal grease to enhance heat conduction.The power supply must be mounted tightly against the aluminum plate, positioned at the center of the plate.




Notes:

1. RS+ and RS- must not be shorted or connected in reverse, as this will damage the power supply.
2. When using remote sensing, ensure that the wire voltage drop includes the voltage drop of both positive and negative output terminals. This voltage drop should not exceed 1V. To reduce voltage drop, use thicker or shorter cables as necessary.
3. If remote sensing is not used, the signal terminals must be connected using dual wires to the load to maintain proper functionality.

This electronic device must not be disposed of in the household waste at the end of its service life. For your return, there are free collection points for electrical appliances and, if necessary, additional points of acceptance for the reuse of the devices in your area.The addresses an be obtained from your city or cummunal administration. If the old electrical or electronic device contains personal data, you are esponsible for deleting it before you return it. Further information: www.elektrogesetz.de