Product Datasheet

# 120W/48V Industrial DIN Rail Power Supply

## (GWS-DP120-48)


## OVERVIEW

GWS-DP120-48 is an economical 120W DIN rail power supply that conforms to German industrial standards. It is suitable for installation on TS-35/7.5, or TS-35/15 rails, using 90VAC to 264VAC input, and complies with the EN61000-3-2 standard Harmonic Current Specifications Specified by the European Union.

GWS-DP120-48 adopts a metal shell design to improve heat dissipation consumption. The working efficiency is as high as 90%, and the product can work in an ambient temperature of -40 degrees to 85 degrees under the condition of air circulation. It has a constant current mode overload protection function, suitable for a variety of inductive or capacitive load applications, complete protection functions, and compliance with relevant certifications for industrial control equipment, making it a very competitive power supply solution for industrial applications.

## FEATURE

- Meet EMC Standard
- 100% full load aging test
- Power Input: AC90-264V
- Operation temperature range: -40℃ to 85℃
- High efficiency, long life time and high reliability
- Support production for short circuit/over current/over voltage

## APPLICATION

- Factory automation
- Industrial Control System
- Electro-mechanical apparatus
- Semiconductor fabrication equipment

## TECHNICAL SPECIFICATION

| Model | GWS-DP120-48 |
|---|---|
| **Output** | |
| Group of Output | 1 |
| DC Voltage | 48VDC |
| Output Voltage Factory Setting | 48.00-48.2VDC (Vin: 220Vac / Load: 0A) |
| Output Rated Current | 2.5A |
| Output Current Range | 0-2.5A |
| Rated Output Power | 120W |
| Total Peak Output Power | 180W (sustainable time 10S/220VAC) |
| Peak Output Current | 3.7A (sustainable time 10S/220VAC) |
| Ripple Noise | Peak-to-peak value ≤100mV. (Measurement method: The terminal should be connected in parallel with 0.1uF and 47uF capacitors, and the measurement should be performed at a bandwidth of 20MHz) |
| Output Voltage Range | 47-56VDC |

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| Stabilized Voltage Precision | ±1% (@ 90-264VAC input, 100% load) |
| Line Regulation | ±0.5% (@ 90-264VAC input, 100% load) |
| Load Regulation | ±1% (@90-264VAC input, 0-100% load) |
| Output Start Time | <2S @ nominal input (100% load ) |
| Output Hold Time | >20ms @ 115VAC, >50ms @ 230VAC (100% load ) |
| Voltage Overshoot | ≤5.0% |
| **Input** | |
| Input Voltage Range | 90-264VAC |
| Input Rated Voltage Range | 100-240VAC |
| Frequency Range | 47Hz-63Hz |
| Rated Frequency | 50Hz/60Hz |
| Starting Voltage | 90VAC |
| Efficiency | >90.0% @115VAC, >91.0% @ 230VAC |
| Input Current | <2.20A @115VAC, <1.10A @ 230VAC |
| Start Inrush Current | <35A @ 115VAC& 230VAC |
| Power Factor | >0.99 @ 115VAC, >0.93 @ 230VAC |
| **Protection** | |
| Output Over Power | 144-180W Swing machine (Testing method: Increase the output current until enabling the protection. Protection mode:Swing machine, Self-recovery after over-power released.) |
| Output Over Voltage | 57-70V Swing machine (Short circuit the Pin1-2 of U8, swing machine. Output recovery to normal after removing the short circuit) Note: Do not use external voltage. |
| Output Over Current | 3-3.75A Swing machine (Testing method: Increase the output current until enabling the protection. Protection mode:Swing machine, Self-recovery after over-current released.) |
| Output Short Circuit | Use a copper wire with a sufficient cross-sectional area and a length of 15cm±5cm to directly short-circuit at the power output port, which can be short-circuited for a long time, and can be automatically restored after the short-circuit is eliminated. |

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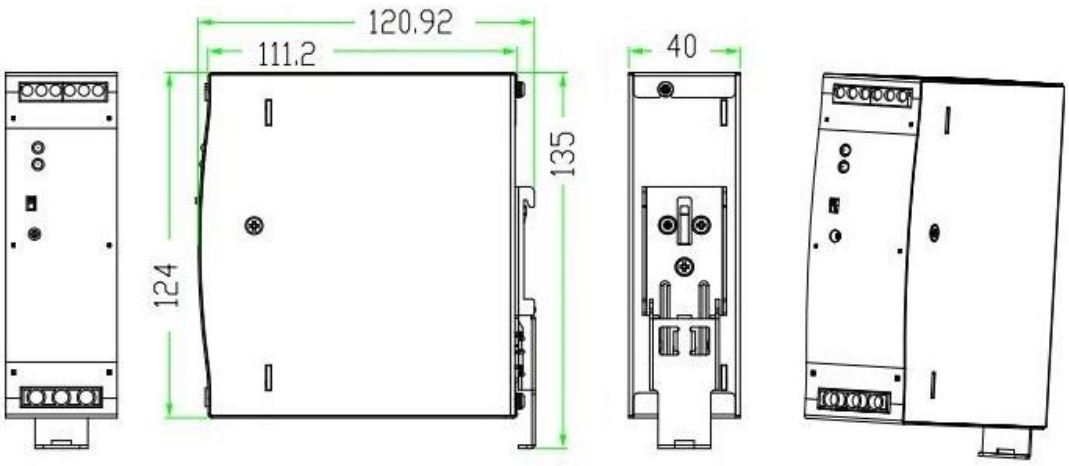
| **Operation Environment** | |
| Operation TEMP/ Humidity | -40℃ to 85℃, 20%-95%RH No condensing |
| Storage TEMP/ Humidity | -40℃ to 85℃, 10%-95%RH No condensing |
| Temperature Coefficient | ±0.03%/℃ (0-50℃) |
| Vibration | Frequency range 10-500Hz, acceleration 2G, each sweep cycle 10min. 6 sweep cycles along the X, Y, and Z axes |
| Impact | Acceleration 20G, duration 11ms, 3 shocks along X, Y, and Z axis each |
| Altitude | 2000m |
| **Safety and Electromagnetic Compatibility Standard** | |
| Security Standard | GB4943/EN62368-1 ■Reference □Certification |
| Dielectric Strength | Input—Output: 3KVAC/10mA, Input--Case:1.5KVAC/10mA Output---Case: 0.5KVDC/10mA , Time for each testing is 1min. |
| Ground Test | Test conditions: 32A/2 minutes, Ground impedance: <0.1 ohms. |
| Leakage Current | Input to ground ≤3.5mA, Input to output ≤0.25mA (Input 264VAC, Frequency 63Hz) |
| Insulation Resistance | Input-Output: 10M ohms |
| Conducted Disturbance | EN55022, EN55024, FCC PART 15 Class B |
| Radiated Interference | EN55022, EN55024, FCC PART 15 Class B |
| Harmaonic Current | EN61000-3-2 Class D |
| Conducted Disturbance | EN61000-4-6 Level 3 |
| Radiation Harassment | EN61000-4-3 Level 3 Class B |
| Power Frequency Harassment | EN61000-4-8 Level 3 |
| Static Harassment | EN61000-4-2 Level 4 Class B |
| Fast Burst | EN61000-4-4 Level 4 Class B |
| Lightning Strike (Surge) | EN61000-4-5 Level 4 Class B |
| Interrupted Fall | EN61000-4-11 |
| **Others** | |
| Dimension | 135*121*40mm |
| Warranty | 5 years |

## DIMENSION

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