MEAN WELL RSP Enclosed Type Switching Power Supply

MEAN WELL RSP Enclosed Type Switching Power Supply Instruction Manual

Contents

MEAN WELL RSP Enclosed Type Switching Power Supply

Product Information

Specifications:

- **Product Type:** Enclosed Type Switching Power Supply
- **Families:** CSP, DPU, ENP, ERP, G3, HDP, HEP, HRP, HRP-N, HRP-N3, HRPG, HSP, LRS, MSP, NED, NEL, NES, NSP, PSP, PSPA, QP, RS, RSP, RST, SE, SP, SPV, TP, UHP, USP

Product Usage Instructions

Introduction:
Enclosed type switching power supplies come with a metal or plastic case to cover the internal PCB. They are designed to be installed within the end system’s case. These power supplies are categorized into two groups based on the presence of a built-in fan and their rated power or design.

Installation:

1. Before starting any installation or maintenance work, disconnect the system from the utility to prevent accidental reconnection.
2. Maintain sufficient insulation distance between mounting screws and internal power supply components. Refer to the case drawing in the specifications for the maximum length of mounting screws.
3. Operating under non-standard orientations or high ambient temperatures may increase internal component temperatures, requiring a de-rating in output current. Check the specification sheets for optimal mounting positions and de-rating information.
4. Ensure that fans and ventilation holes remain unobstructed. Maintain a clearance of 10-15 cm if the adjacent device generates heat.

Input and Output Terminal:
Refer to the following table for terminal screw size and suggested torque values based on the product series.

Series	Terminal Screw	Screw Size	Suggested Torque

Torque Recommendations:
Torque values may vary due to different materials. Refer to the provided chart for recommended torque values based on screw sizes.

FAQ:

- **Q: Can I install the power supply without a built-in fan in a high-temperature environment?**
  A: Operating an enclosed power supply without a built-in fan in high ambient temperatures may require de-rating in output current. Refer to the specification sheets for guidance on optimal operating conditions.
- **Q: How do I ensure proper ventilation for the power supply?**
  A: Keep the fans and ventilation holes unobstructed, and maintain a clearance of 10-15 cm when adjacent devices generate heat to ensure proper cooling of the power supply.

Type: Enclosed Type Switching Power Supply (Families: CSP, DPU, ENP, ERP, G3, HDP, HEP, HRP, HRP-N, HRP-N3, HRPG, HSP, LRS, MSP, NED, NEL, NES, NSP, PSP, PSPA, QP, RS, RSP, RST, SE, SP, SPV, TP, UHP, USP)

Introduction

Enclosed type switching power supplies possess a metal or plastic case for covering their internal PCB and will be installed inside the case of the end system. Mean Well's enclosed type power supplies include 2 different groups of power supplies, with built-in fan and without built-in fan, depending on their rated power or design concept.

Installation

1. Before any installation or maintenance work, please disconnect your system from the utility. Ensure that it can't be re-connected inadvertently!
2. Keep enough insulation distance between mounting screws and internal components of power supplies. Please refer to case drawing on specifications to receive the maximum length of mounting screw.
3. Mounting orientations other than standard orientation or operate under high ambient temperature may increase the internal component temperature and will require a de-rating in output current. Please refer to the specification sheets to receive the optimum mounting position and information about the de-rating curve.
4. Fans and ventilation holes must be kept free from any obstructions. Also a 10-15 cm clearance must be kept when the adjacent device is a heat source.
5. Input and Output terminal

Terminal Screw Series	Screw Size	Suggested Torque
RSP-750 / 1000 / 1500 / 2000 / 2400 / 3000 SE-450 / 1000 / 1500 HEP-600 HRP-300 HRP-300N HRP-300N3 HRPG-300 MSP-300 SP-480 SP-750 SPV-1500 USP-500 RST-5000 RST-10000 RST-7K5 RST-15K	M4	10-12
HRP-075 / 100 / 150/ 150N / 150N3 / 200 HRPG-150 / 200 LRS-035 / 050 / 075 / 100 / 150 / 150F / 200 / 350 / 450 / 600 MSP-100 / 200 NED-035 / 050 / 075 / 100 NET-035 / 050 / 075 NES-025 / 035 / 050 / 075 / 100 / 150 / 200 / 350 QP-200 / 320 / 375 RD-050 / 065 / 085 / 125 RID-050 / 065 / 085 / 125 RS-035 / 050 / 075 / 100 / 150 RSP-075 / 100 / 150 / 200 / 320 SP-075 / 100 / 150 / 200 / 240 / 320 SPV-150/300 NSP-1600 / 3200 DPU-3200 RSP-1600 SE-100 / 200 / 350 HSP-250 PSP-600	M3.5	8-10
RD-035 RT-050 / 065 / 085 / 125 RQ-050 / 065 / 085 / 125 TP-075 / 100 / 150 QP-100 / 150 RS-015 / 025 NES-015 USP-150	M3	6-8
ERP-350 HDP-190 / 240	#6	8-10
NEL-200 / 300		
ENP-120 / 180 / 240 / 360	M2.6	4-5

Terminal Screw Series	Input		Output	
	Screw Size	Suggested Torque	Screw Size	Suggested Torque
RST-7K5-L	M4	10-12kgf-cm	M5	10-12
HRP-450 / 600 / 600N / 600N3 HRPG-450 / 600 MSP-450 / 600 / 1000 SE-600	M3.5	6-8kgf-cm	M4	10-12
HSP-150 / 200 /300 HSN-200 / 300	M3	6-8kgf-cm	M3.5	8-10
RSP-500	M3.5	8-10kgf-cm	M4	10-12
NEL-400	#6	8-10kgf-cm	M3	8-10
UHP-200(R) / 350(R)	M3	5kgf-cm	M3.5	8
UHP-200A	M3.5	13kgf-cm	M3.5	8
CSP-3000	M4	10-12kgf-cm	M6	13kgf-cm
UHP-500(R) / 750 / 1000	M3	5kgf-cm	M4	10-12kgf-cm
HEP-600 / 1000	M4	10-12kgf-cm	M4	10-12kgf-cm

6. Torque can be various due to different material, please refer to the following chart.
   - **A.** Recommend torque for aluminum:

Size of screw (Imperial units)	Recommend torque (kgf-cm)
3-56	2.3±20%
4-40	3.0±20%
4-48	3.3±20%
5-40	4.5±20%
5-44	4.7±20%
6-32	5.6±20%
6-40	6.3±20%
8-32	10.4±20%
8-36	10.8±20%

Size of screw (Metric Units)	Recommend torque (kgf-cm)
M2.5	2.2±20%
M3	4.1±20%
M3.5	6.5±20%
M4	9.7±20%
M5	19.5±10%
M6	33.1±10%
M7	55.3±10%
M8	80.6±10%

- **B.** Recommend torque for iron:

Size of screw (Imperial units)	Recommend torque (kgf-cm)
3-56	5.0±20%
4-40	6.9±20%
4-48	7.0±20%
5-40	9.4±20%
5-44	9.9±20%
6-32	12.0±20%
6-40	13.4±20%
8-32	21.8±20%
8-36	23.0±20%

Size of screw (Metric Units)	Recommend torque (kgf-cm)
M2.5	4.6±20%
M3	8.8±20%
M3.5	13.7±20%
M4	20.4±20%
M5	41.1±10%
M6	69.1±10%
M7	117.5±10%
M8	169.4±10%

If above mentioned is not enough due to special application, Nylok Blue Patch screw is recommend, and extra torque can be added if needed.

7. Recommended wires are shown as below.

AWG	18	16	14	12	10	8
Rated Current of Equipment (Amp)	6A	6-10A	10-16A	16-25A	25-32A	32-40A
Cross-section of Lead(mm^2)	0.75	1.00	1.5	2.5	4	6
Note: Current each wire carries should be de-rated to 80% of the current suggested above when using 5 or more wires connected to the unit.						

Make sure that all strands of each stranded wire enter the terminal connection and the screw terminals are securely fixed to prevent poor contact.

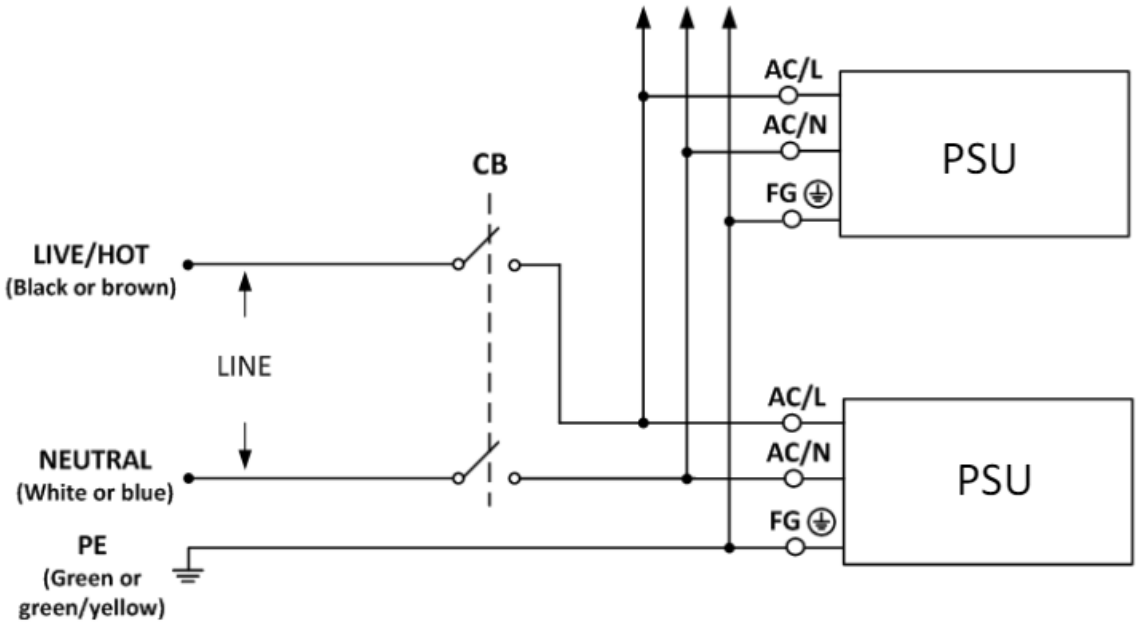
8. **Wiring configuration**
   - **Wiring in a single-phase electricity system.**

	North America	European Harmonized
Live and ACL	Black	Brown
Neutral and ACN	white	Blue
PE and FG (Class I only)	Green	Green/yellow

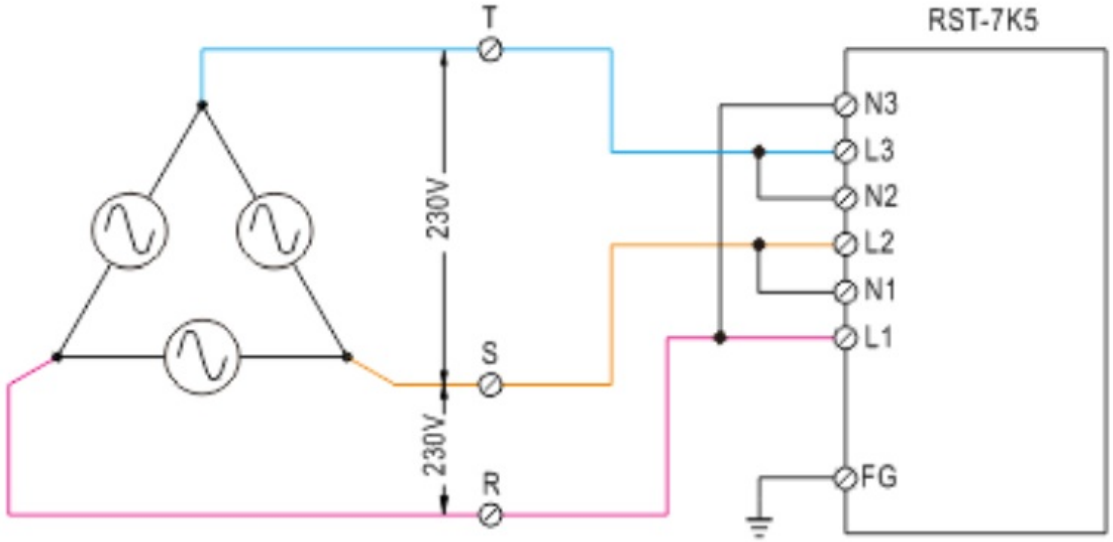
Wiring: The wire color will vary by country, please refer to the table below.

- Connect the FG wire (green or green/yellow) of the power supply to PE (green or green/yellow), this step can be skipped when the unit is marked class II, ungrounded.
- Connect the ACL wire (black or brown) of the power supply to Live (black or brown).

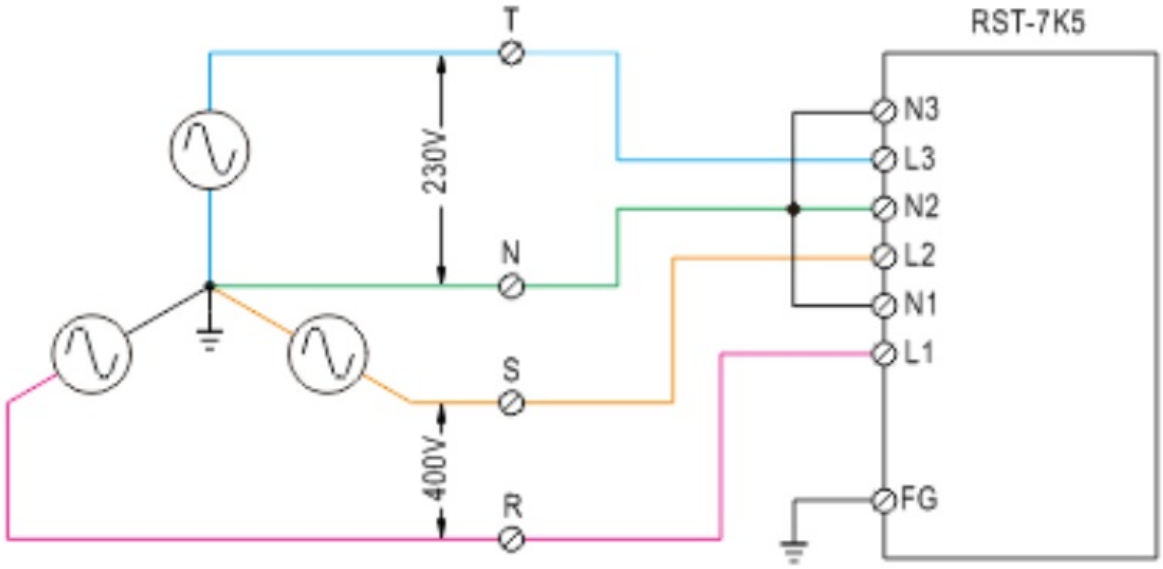
- Connect the ACN wire (white or blue) of the power supply to Neutral (white or blue).
- Make sure all wires are secured to prevent poor contact.



- **(8-2) Wiring in a three-phase electricity system.**
  - 3Φ 3-wire/Δ 230VAC



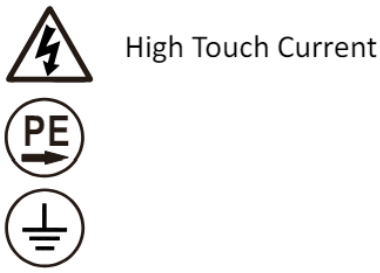
  - 3Φ 4-wire/Y 400VAC



9. For other information about the products, please refer to www.meanwell.com for details.

Warning / Caution

1. Risk of electrical shock and energy hazard. All failure should be examined by a qualified technician. Please do not remove the case of the power supply by yourself!
2. Please do not install power supplies in places with high moisture or near the water.
3. Please do not install power supplies in places with high ambient temperatures or near fire source. The maximum ambient temperature please refer to their specifications.
4. Output current and output wattage must not exceed the rated values on specifications.
5. The ground(FG) must be connected to earth ground.
6. All MW's PSUs are designed by EMC regulations and the related test reports are available by request. Since they belong to component power supplies and will be installed inside system enclosure, when they are integrated into a system, the EMC characteristics of the end system must be re-verified again.
7. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
   - **(a)** This device may not cause harmful interference, and
   - **(b)** this device must accept any interference received, including interference that may cause undesired operation.
8. For series of NES, PSP, PSPA, RD, RSP, RS and SE that certified with CNS14336-1/CNS13438, flammability of V1 or above is required for surrounding equipment and operation of this equipment in a residential environment could cause radio interference.
9. For series of LRS and NSP-1600 that certified with CNS15598-1/CNS15936, flammability of V1 or above is required for surrounding equipment and operation of this equipment could cause electromagnetic interference, avoiding installing in residential environments.
   For RST-7K5/15K series that might generate high leakage current in delta connection (Δ), please specify the leakage current value and add the warning signs below on the final system and its instruction manual.



   "WARNING-HIGH LEAKAGE CURRENT-Earth connection essential connecting supply"
10. "This equipment complies with IEC 61000-3-12 provided that the short-circuit power Ssc is greater than or equal to 1.1MW at the interface point between the user's supply and the public system. It is the responsibility of the installer or user of the equipment to ensure, by consultation with the distribution network operator if necessary, that the equipment is connected only to a supply with a short-circuit power Ssc greater than or equal to 1.1MW."

Declaration of China RoHS Conformity

In order to reduce the impacts on the environment and take the more responsibility for protecting the earth, MEAN WELL is confirming and announcing the conformity to China RoHS, an Administrative Measures for the Restriction of the Use of Hazardous Substances in Electrical and Electronic Products.

Environment Friendly Use Period Label

- Observing SJT 11364-2014, Marking for the Restricted Use of Hazardous Substances in Electronic and Electrical Products
- Observing SJ/Z 11388-2009, General Guidelines of Environment-friendly Use Period of Electronic Information Products Appendix B, adopting table look-up to verify the Environment Friendly Use Period

Names and Contents of Hazardous Substances Lists

Part Name	Hazardous Substances					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent chromium (Cr^{6+})	Polybrominated biphenyls (PBB)	Polybrominated diphenyl ethers (PBDE)
PCB and its components	X	O	X	O	O	O
Metal structure parts	X	O	O	O	O	O
Plastic structure parts	O	O	O	O	O	O
Accessories	O	O	O	O	O	O
Cables	X	O	O	O	O	O
O: The concentration of the hazardous substances within the homogeneous material of that product is less than the concentration limits set by GB/T 26572-2011. X: The concentration of the hazardous substances within the homogeneous material of that product is over the concentration limits set by GB/T 26572-2011; however, it follows the standard advised by 2011/65/EU.						

In order to reduce the impacts on the environment and take the more responsibility for protecting the earth, MEAN WELL is confirming and announcing the conformity to China's Standardization Administration Releases VOC Standards

Standard No.	**Name of the Standard**
GB 30981-2020	**Limit of harmful substances of industrial protective coatings**
GB 33372-2020	**Limits for volatile organic compounds content in adhesive**
GB 38507-2020	**Limits for volatile organic compounds (VOCs) In printing ink**
GB 38508-2020	**Limits for volatile organic compounds content in cleaning agents**

Declaration of Five PBT TSCA Conformity

In order to reduce the impacts on the environment and take the more responsibility for protecting the earth, MEAN WELL hereby confirms that MEAN WELL product series comply with Use and Risk Management for Five PBT Chemicals under TSCA section 6(h).

CAS No.	Substance Name
1163-19-5	Decabromodiphenyl ether (DecaBDE)
68937-41-7	Phenol, isopropylated, phosphate (3:1) PIP (3:1)
732-26-3	2,4,6-Tris (tert-butyl) phenol (2,4,6-TTBP)
133-49-3	Pentachlorothiophenol (PCTP)
87-68-3	Hexachlorobutadiene (HCBD)

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Documents / Resources

	MEAN WELL RSP Enclosed Type Switching Power Supply [pdf] Instruction Manual RSP Enclosed Type Switching Power Supply, RSP, Enclosed Type Switching Power Supply, Type Switching Power Supply, Switching Power Supply, Power Supply, Supply

References

- User Manual