Installation Manual

- **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, UDP, 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
ENP-120 / 180 / 240 / 360	M2.6	4-5
NSP-75 / 100	M3	4-5
NES-015 QP-100 / 150 RD-035 RQ-050 / 065 / 085 / 125 RS-015 / 025 RT-050 / 065 / 085 / 125 TP-075 / 100 / 150 USP-150	M3	6-8
DPU-3200 HRP-075 / 100 / 150/ 150N / 150N3 / 200 HRPG-150 / 200 HSP-250 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 NSP-150 / 200 / 320(7.5V~60V) / 1600 / 3200 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 / 600 / 1600 SE-100 / 200 / 350	M3.5	8-10

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SP-075 / 100 / 150 / 200 / 240 / 320 SPV-150 / 300		
HEP-600 HRP-300 / 300N / 300N3 / HRPG-300 MSP-300 RSP-750 / 1000 / 1500 / 2000 / 2400 / 3000 RST-5000 / 10000 / 7K5 / 15K SE-450 / 1000 / 1500 SP-480 / 750 SPV-1500 USP-500	M4	10-12
ERP-350 HDP-190 / 240 NEL-200 / 300	#6	8-10

Series \ Terminal Screw	Input		Output	
	Screw Size	Suggested Torque	Screw Size	Suggested Torque
UDP-200 / 300 / 400	M3	4-5kgf-cm	M3.5	6-8 kgf-cm
UHP-200(R) / 350(R)	M3	5kgf-cm	M3.5	8 kgf-cm
UHP-500(R) / 750 / 1000	M3	5kgf-cm	M4	10-12kgf-cm
HSP-150 / 200 /300 HSN-200 / 300	M3	6-8kgf-cm	M3.5	8-10 kgf-cm
HRP-450 / 600 / 600N / 600N3 HRPG-450 / 600 MSP-450 / 600 / 1000 SE-600	M3.5	6-8kgf-cm	M4	10-12 kgf-cm
NSP-320(5V) / RSP-500	M3.5	8-10kgf-cm	M4	10-12 kgf-cm
NSP-500(5~15V)	M3.5	8-10kgf-cm	M5	10-12 kgf-cm
NSP-500(24V~60V)	M3.5	8-10kgf-cm	M4	10-12 kgf-cm
NSP-750	M3.5	8-10kgf-cm	M5	10-12 kgf-cm
LRS-1200	M3.5	8-10kgf-cm	M5	10-12 kgf-cm
UHP-200A	M3.5	13kgf-cm	M3.5	8 kgf-cm
HEP-600 / 1000	M4	10-12kgf-cm	M4	10-12kgf-cm
RST-7K5-L	M4	10-12kgf-cm	M5	10-12 kgf-cm
CSP-3000	M4	10-12kgf-cm	M6	13kgf-cm
NEL-400	#6	8-10kgf-cm	M3	8-10 kgf-cm

（6）Torque can be various due to different enclosure materials , please refer to the following chart.

A Recommend torque for aluminium material：

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 material：

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.

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（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

(8-1) Wiring in a single-phase electricity system

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

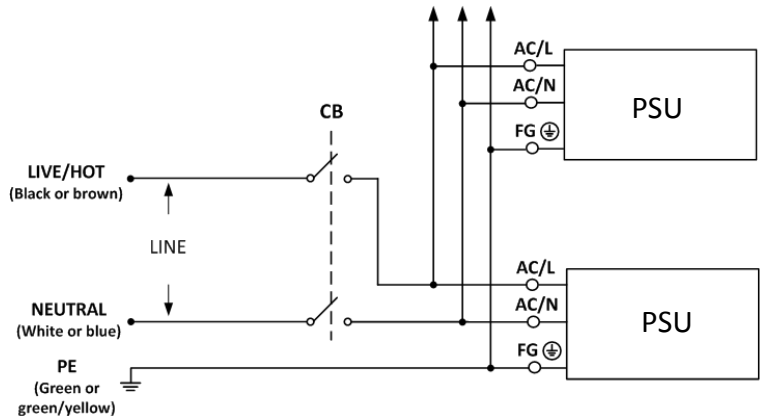
	North America	European Harmonized
Live and ACL	Black	Brown
Neutral and ACN	white	Blue
PE and FG (Class I only)	Green	Green/yellow

（a）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.

（b）Connect the ACL wire (black or brown) of the power supply to Live (black or brown).

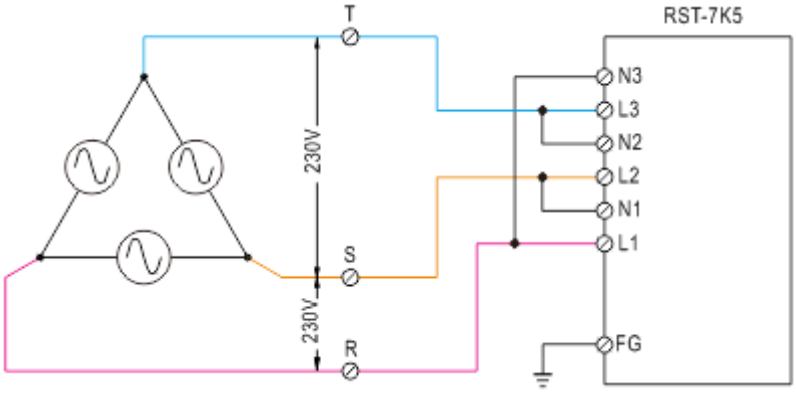
（c）Connect the ACN wire (white or blue) of the power supply to Neutral (white or blue).

（d）Make sure all wires are secured to prevent poor contact.

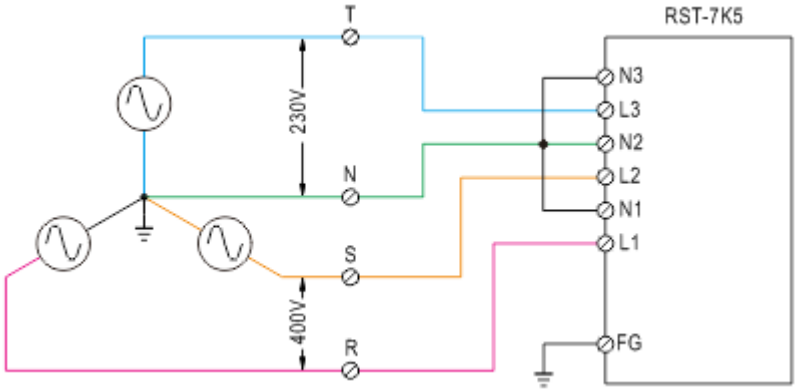


(8-2) Wiring in a three phase electricity system

(a) 3Φ 3-wire/Δ 230VAC



(b) 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 temperature 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 in accordance with EMC regulations and the related test reports are available by request. Since they are 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.operation.

（8）For BSMI-certified models, should comply with the requirement of CNS15936 (EMI):

(a) flammability of V1 or above is required for surrounding equipment;

(b) for models certified as Class A equipment, should not be installed or used in a residential environment to avoid electromagnetic interference.

（9）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.



High Touch Current





"WARNING-HIGH LEAKAGE CURRENT-Earth connection essential connecting supply"

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（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."

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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 11364-2024, 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 (PBDEs)	Bis(2-ethylhexyl) phthalate (DEHP)	Dibutyl phthalate (DBP)	Dibutyl phthalate (DBP)	Diisobutyl phthalate (DIBP)
PCB and its components	X	O	O	O	O	O	O	O	O	O
Metal structure parts	X	O	O	O	O	O	O	O	O	O
Plastic structure parts	O	O	O	O	O	O	O	O	O	O
Accessories	O	O	O	O	O	O	O	O	O	O
Cables	X	O	O	O	O	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.

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Declaration of China VOC 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'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

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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)