TRACO POWER

INSTALLATION INSTRUCTIONS

TSP Series Industrial Power Supply

Order Code	* AC-Input Voltage Range	Output Power max.	** Output	*** Output Voltage Adjustment Range	recommended Circuit breaker (Characteristic B)
TSP 070-112	85VAC – 263VAC Universal Input 50 / 60Hz	72 Watt	12.0VDC / 6.0A	12.0 – 14.0VDC	6 - 16A
TSP 090-124		90 Watt	24.0VDC / 3.75A	24.0 – 28.0VDC	
TSP 090-124N		90 Watt	24.0VDC / 3.75A	24.0 – 28.0VDC	
TSP 090-148		96 Watt	48.0VDC / 2.00A	48.0 – 56.0VDC	
TSP 140-112	115VAC / 230VAC Autorange 85VAC – 132VAC 187VAC – 264VAC 50 / 60Hz	144 Watt	12.0VDC / 12.0A	12.0 – 14.0VDC	
TSP 180-124		180 Watt	24.0VDC / 7.5A	24.0 – 28.0VDC	
TSP 180-148		192 Watt	48.0VDC / 4.00A	48.0 – 56.0VDC	
TSP 360-124		360 Watt	24.0VDC / 15.0A	24.0 – 28.0VDC	10 - 16A
TSP 360-148		360 Watt	48.0VDC / 7.50A	48.0 – 56.0VDC	
TSP 600-124		600 Watt	24.0VDC / 25.0A	24.0 – 28.0VDC	16 – 25A
TSP 600-148		600 Watt	48.0VDC / 12.5A	48.0 – 56.0VDC	

* Observe output current derating at operation below an input voltage of 110VAC

** Maximum output current at $V_{out\ nom}$

*** Adjustable by potentiometer with a screwdriver.

Input current:	@ Vin=115VAC	@ Vin=230VAC	**Power Consumption**	@ Vin=115VAC	@ Vin=230VAC
➢ TSP 070	2.0A typ.	1.0A typ.	➢ TSP 070	95 Watt typ.	93 Watt typ.
➢ TSP 090	2.1A typ.	1.0A typ.	➢ TSP 090	106 Watt typ.	105 Watt typ.
➢ TSP 140	2.5A typ.	1.4A typ.	➢ TSP 140	175 Watt typ.	173 Watt typ.
➢ TSP 180	2.8A typ.	1.5A typ.	➢ TSP 180	209 Watt typ.	207 Watt typ.
➢ TSP 360	5.0A typ.	2.5A typ.	➢ TSP 360	425 Watt typ.	412 Watt typ.
➢ TSP 600	10.0A typ.	5.0A typ.	➢ TSP 600	690 Watt typ.	670 Watt typ.

Operating temperature range: Natural Air Convection Cooling	-25°C – +70°C max -13°F – +158°F max	
Output Power Derating: above +40°C up to +60°C [above 104°F up to 140°F]	TSP 070-112 ➔ 0.5 W/K TSP 090-124(N) ➔ 1.5 W/K TSP 090-148 ➔ 1.8 W/K TSP 140-112 ➔ 3.0 W/K TSP 180-124 ➔ 3.0 W/K	TSP 180-148 ➔ 3.6 W/K TSP 360-124 ➔ 6.0 W/K TSP 360-148 ➔ 6.0 W/K TSP 600-124 ➔ 6.0 W/K TSP 600-148 ➔ 6.0 W/K
above +60°C up to +70°C [above 140°F up to 158°F]	TSP 070-112 ➔ 2.0 W/K TSP 090-124(N) ➔ 2.0 W/K TSP 090-148 ➔ 2.0 W/K TSP 140-112 ➔ 4.0 W/K TSP 180-124 ➔ 4.0 W/K	TSP 180-148 ➔ 4.0 W/K TSP 360-124 ➔ 8.0 W/K TSP 360-148 ➔ 8.0 W/K TSP 600-124 ➔ 16.0 W/K TSP 600-148 ➔ 12.0 W/K
Storage temperature range:	-25°C – +85°C max -13°F – +185°F max	
Parallel Operation:	Up to 5 power supplies possible. User selectable standard mode and parallel mode by jumper on PCB.	
Connections:	Screw type terminal COMBICON. Recommended tightening torque 0.5 to 0.6Nm	
Case material:	Aluminium (chassis) and Zinc-plated steel (cover)	

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Safety Instructions:

- Before installation read these instructions carefully and completely. This installation instruction cannot account for every possible condition of installation, operation or maintenance. Further information can be obtained from your local distributor office or from the product datasheet, which can be downloaded from our website: http://www.tracopower.com/products/tsp.pdf. More detailed information you will find at our Instruction Manual which can also be downloaded from our website: http://www.tracopower.com/products/tsp_manual.pdf.
- These power supplies are constructed in accordance with the safety requirements of IEC/EN/UL60950, UL508, EN60204, EN50178, EN61558-2-8, IEC/EN/UL60079-15 (Protection Type "n" Class I, Zone 2, AEX nC II T4 U) and SEMI F47. They are approved (BG-mark) in accordance with EN60950, EN50178 and fulfil the requirements of the Low Voltage Directive (LVD). They are UL and cUL approved by CSA in accordance to UL60950 (recognised), UL508 (listed) and UL60079-15.

  TSP xxx-1xxEX version models are also certified to ATEX 94/9/EC (category 3; EEX nC II T4 U) directive.
- Before any installation, maintenance or modification work ensure that the main switch is switched off and prevented from being switched on again. Non-observance, touching of any live components or improper handling of this power supply can result in death, severe personal injury or substantial property damage. Proper and safe operation is dependent on proper storage, handling, installation and operation.
- Compliance with the relevant national regulations (in the USA, Europe and other countries) must be ensured. Before operation is started the following conditions must be ensured:
  - Connection to mains supply in compliance with national regulations (e.g. VDE0100 and EN50178).
  - By use of stranded wires, all strands must be fastened in the terminal blocks. (Potential danger of contact with the case)
  - Power supply and mains cables must be sufficiently fused.
  - Degree of protection = I according to IEC536.The non-fused protective earth connection must be connected to the FG terminal (Protection Class I).
  - All output wires must be rated for the power supply output current and must be connected with the correct polarity.
  - Sufficient cooling must be ensured.
- ***Never work on the power supply if power is supplied!*** Risk of electric arcs and electrical shock, which can cause death, severe personal injury or substantial property damage.
- **Warning:** Hazardous voltages and components storing a very substantial amount of energy are present in this power supply during normal operating conditions. However, these are inaccessible. Improper handling may result in an electric shock or serious burns! ***Do not open the power supply until at least 5 minutes after it has been disconnected from the mains on all poles.***
  - Only trained personnel may open the power supply.
  - Do not introduce any objects into the power supply. The output voltage adjustment potentiometer may only be actuated using an insulated screwdriver.
  - Keep away from fire and water

Installation Instructions:

- This power supply is designed for professional indoor systems. In operation the power supply must not be accessible. It may be installed and put into service by qualified personnel only.
- Do not operate without PE connection! To comply with EMC and safety standards (CE mark, approvals) the power supply must be operated only if PE terminal is connected to the non-fused earth conductor.
- The correct mounting position for optimal cooling performance must be observed. ***Do not cover any ventilation holes.*** Leave a free space of minimum 50mm (2in.) above and below the power supply. Observe power derating.
- The internal fuse is not accessible, as it may not be replaced by the user. If this internal fuse has blown, the power supply has most properly an internal defect and, for safety reasons, must be shipped to the local distributor. In case this internal fuse has to be replaced in the field, replace only with same type and rating of fuse for continued protection against risk of fire.
- **Note:** *This unit contains an automatic input voltage selection switch. Do not change the input voltage from 110/115Vac to 230/240Vac without disconnecting the input supply line first.*
- ***Recycling:*** The unit contains elements that are suitable for recycling, and components that need special disposal. You are therefore requested to make sure that the power supply will be recycled environment friendly at the end of its service life.