

INSTALLATION INSTRUCTIONS

TCL Series Industrial Power Supply

Order Code *	Rated Input Voltage Range	Operational Input Voltage Range	Output Power max.	Output	** Output Voltage Adjustment Range	Recommended Circuit Breaker
TCL 024-105	Universal Input 100 – 240Vac 50 / 60Hz 85 – 250Vdc	85 – 264Vac 47 - 63Hz	20 Watt	5.0VDC / 4.0A	5.0 – 5.25VDC	(Characteristic C) 5A
TCL 024-112			24 Watt	12.0VDC / 2.0A	12.0 – 16.0VDC	
TCL 024-124 (C)				24.0VDC / 1.0A	24.0 – 28.0VDC	
TCL 060-112 (H) (C) (CH)			48 Watt	12.0VDC / 4.0A	12.0 – 15.0VDC	
TCL 060-124 (H) (C) (CH)		85 – 375Vdc	60 Watt	24.0VDC / 2.5A	24.0 – 28.0VDC	
TCL 060-148 (H) (C) (CH)				48.0VDC / 1.25A	48.0 – 56.0VDC	
TCL 120-112 (H) (C) (CH)			96 Watts	12.0VDC / 8.0A	12.0 – 15.0VDC	
TCL 120-124 (H) (C) (CH)			120 Watt	24.0VDC / 5.0A	24.0 – 28.0VDC	
TCL 240-124	100 - 115Vac / 220 - 240Vac 50 / 60Hz Auto Selection	85 - 132Vac / 187 - 264Vac 47 - 63Hz	240 Watt	24.0VDC / 10.0A	24.0 – 28.0VDC	(Characteristic C) 10A

* EN 61000-3-2 (PFHC → Power Factor Harmonic Current) Class A will be met with standard units

** Adjustable by potentiometer with a screwdriver.

Input current:	@ Vin = 115VAC	@ Vin = 230VAC	Power Consumption	@ Vin = 115VAC	@ Vin = 230VAC
➤ TCL 024	0.7A max	0.4A max	➤ TCL 024	28 Watt typ.	27 Watt typ.
➤ TCL 060	1.4A max	0.8A max	➤ TCL 060	71 Watt typ.	68 Watt typ.
➤ TCL 120	2.4A max	1.2A max	➤ TCL 120	137 Watt typ.	133 Watt typ.
➤ TCL 240	5.9A typ.	2.3A typ.	➤ TCL 240	274 Watt typ.	272 Watt typ.

Output Signals:

Output Voltage nominal	12.0 / 15.0 VDC	24.0 VDC	48.0 VDC
Output Voltage threshold (DC is OK)	9.0 ... 11.0 V	18.0 ... 22.0 V	36.0 ... 44.0 V
DC OK Signal Voltage	11.0 V ±1.0V	22.0 V ±2.0V	44.0 V ±4.0V
DC OK Signal Current	60 mA	30 mA	15 mA
Load characteristic	Resistive or Inductive	Resistive or Inductive	Resistive or Inductive

General:

Operating temperature range:	-10°C – +70°C / 14°F – +158°F max (Natural Air Convection Cooling)				
Output Power Derating:	Up to 30°C / 86°F at Input 85...93VAC / 85...130VDC	Above 30°C / 86°F at input 85...93VAC / 85...130VDC	Above 40°C / 104°F at input 93...132VAC / 130...187VDC	Above 50°C / 122°F at input 187...264VAC / 265...375VDC	
TCL 024-105	30%	30% + 1.3%/K	1.1%/K	3.8%/K	
TCL 024-112	20%	20% + 1.3%/K	1.1%/K	1.7%/K	
TCL 024-124 (C)	20%	20% + 1.3%/K	1.1%/K	1.7%/K	
TCL 060-112 (H) (C) (CH)	15%	15% + 1.3%/K	1.1%/K	2.7%/K	
TCL 060-124 (H) (C) (CH)	15%	15% + 1.3%/K	1.1%/K	2.4%/K	
TCL 060-148 (H) (C) (CH)	15%	15% + 1.3%/K	1.1%/K	3.2%/K	
TCL 120-112 (H) (C) (CH)	15%	15% + 1.3%/K	1.1%/K	1.7%/K	
TCL 120-124 (H) (C) (CH)	15%	15% + 1.3%/K	1.3%/K	3%/K	
TCL 240-124	At Input of 85...100VAC		At Input 100...132VAC	At Input 187...264VAC	
	Up to 30°C / 86°F	Above 30°C / 86°F	Above 60°C / 140°F	Above 40°C / 104°F	Above 40°C / 104°F
	16%	16% + 0.8%/K	40% + 3%/K	2%/K	1.7%/K
Storage temperature range:	-25°C – +85°C / -13°F – +185°F max				
Parallel Operation:	Up to 5 power supplies possible (standard unit) except TCL 240-124 → cannot be paralleled				
Connections:	➤ Screw type plug-in connector (standard). Recommended tightening torque 0.5 to 0.7Nm (4.5 to 6.2lb.in.) ➤ Spring-clamp connector (option C)				
Wiring:	➤ Screw-type connector → 0.75mm ² - 3.16mm ² (AWG 18 - AWG 12) ➤ Spring-clamp connector → 0.75mm ² - 3.16mm ² (AWG 18 - AWG 12)				
Case material:	Grey plastic → FR2010-110C (PC-ABS V0)				

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's office or from the product datasheet, which can be downloaded, from the Internet at <http://tracopower.com/products/tcl.pdf>.
- The mains supply voltage connection, must be in accordance to IEC 62103, EN 50178 and IEC 60364, VDE 100.
- 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 (VDE0100 and EN50178).
 - ❖ By use of stranded wires, all strands must be fastened in the terminal blocks.
 - ❖ Power supply and mains cables must be sufficiently fused.
 - ❖ Degree of protection I 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 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.
- **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 at the end of its service life.