

## INSTALLATION INSTRUCTIONS

### TCL Series Industrial Power Supply

Order Code *	AC-Input Voltage Range	Output Power max.	Output	** Output Voltage Adjustment Range	recommended Circuit breaker (Characteristic C)
TCL 024-105 (H) (C) (CH)	Universal Input 100 - 240Vac 85VAC – 264Vac 50 / 60Hz 85 – 375Vdc	20 Watt	5.1VDC / 4.0A	5.0 – 5.25VDC	5A
TCL 024-112 (H) (C) (CH)		24 Watt	12.0VDC / 2.0A	12.0 – 16.0VDC	
TCL 024-124 (H) (C) (CH)		60 Watt	24.0VDC / 1.0A	24.0 – 28.0VDC	
TCL 060-112 (H) (C) (CH)			12.0VDC / 4.0A	12.0 – 15.0VDC	
TCL 060-124 (H) (C) (CH)		120 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)		240 Watt	12.0VDC / 8.0A	12.0 – 15.0VDC	
TCL 120-124 (H) (C) (CH)			24.0VDC / 5.0A	24.0 – 28.0VDC	
TCL 240-124 (C)	100 - 115Vac / 220 - 240Vac 85 - 132Vac / 187 - 264Vac 50 / 60Hz Auto Selection	240 Watt	24.0VDC / 10.0A	24.0 – 28.0VDC	

\* 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	3.3A typ.	1.7A 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: Natural Air Convection Cooling	-10°C – +70°C max 14°F – +158°F max
Output Power Derating:	above +50°C → 1.7%/K at an input voltage of 187...264VAC or 265...375VDC above 122°F → 1.7%/K at an input voltage of 187...264VAC or 265...375VDC above +40°C → 1.1%/K at an input voltage of 93...132VAC or 130...187VDC above 104°F → 1.1%/K at an input voltage of 93...132VAC or 130...187VDC above +30°C → 1.3%/K at an input voltage of 85...93VAC or 85...130VDC above 86°F → 1.3%/K at an input voltage of 85...93VAC or 85...130VDC
Output Power Derating of TCL 240-124	200 Watt max up to 30°C / above 30°C → 1.3%/K and above 60°C → 8.63%/K at an input voltage of 85...93VAC 200 Watt max up to 86°F / above 86°F → 1.3%/K and above 140°F → 8.63%/K at an input voltage of 85...93VAC above 40°C → 4%/K at an input voltage of 93...132VAC above 104°F → 4%/K at an input voltage of 93...132VAC above 50°C → 6%/K at an input voltage of 187...264VAC above 122°F → 6%/K at an input voltage of 187...264VAC
Storage temperature range:	-25°C – +85°C max -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 → 0.21mm <sup>2</sup> - 3.16mm <sup>2</sup> (AWG 24 - AWG 12) ➤ Spring-clamp connector → 0.08mm <sup>2</sup> - 3.16mm <sup>2</sup> (AWG 28 - 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 power supplies are constructed in accordance with the safety requirements of IEC/EN60950-1, UL60950-1 and UL508. They are approved (BG-mark) in accordance with EN60950-1, EN50178, EN61558-2-8 and fulfil the requirements of the Low Voltage Directive (LVD). They are UL and cUL approved in accordance to UL60950-1 (recognised) and UL508 (listed).
- 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.