

INSTALLATION INSTRUCTIONS

TCL-DC Series Industrial DC-DC Converter

Order Code	DC-Input Voltage Range	Output Power max.	Output	* Output Voltage Adjustment Range	recommended Circuit breaker (Characteristic C)
TCL 012-124 DC	9.5 - 18Vdc	24 Watt	24.0Vdc / 1.0A	24.0 - 28.0Vdc	6 – 16A
TCL 024-105 DC	18 - 75Vdc	24 Watt	5.0VDC / 5.0A	5.0 – 5.25Vdc	
TCL 024-112 DC			12.0VDC / 2.0A	12.0 – 15.0Vdc	
TCL 024-124 DC			24.0VDC / 1.0A	24.0 – 28.0Vdc	
TCL060-112 DC	18 - 75Vdc 4.0-1.0A	60 Watt	12.0VDC / 5.0A	12.0 – 15.0VDC	
TCL 060-124 DC			24.0VDC / 2.5A	24.0 – 28.0VDC	

* Adjustable by potentiometer with a screwdriver.

Input current:	@ V _{in} = 12Vdc		Power Consumption	@ V _{in} = 12Vdc	
	I _{out} = 0%	I _{out} = 100%		I _{out} = 0%	I _{out} = 100%
➤ TCL 012-1xx DC	80mAmax	2.5Amax	➤ TCL 012-1xx DC	0.96Watt typ.	30Watt typ.
Input current:	@ V _{in} = 24Vdc	@ V _{in} = 48Vdc	Power Consumption	@ V _{in} = 24Vdc	@ V _{in} = 48Vdc
	I _{out} = 0% / 100%	I _{out} = 0% / 100%		I _{out} = 0% / 100%	I _{out} = 0% / 100%
➤ TCL 024-1xx DC	80mA / 1.3A max	60mA / 0.7A max	➤ TCL 024-1xx DC	1.92W / 31.2W typ.	2.88W / 33.6W typ.
➤ TCL 060-112 DC	31mA / 2.9A max	19mA / 1.4A max	➤ TCL 060-112 DC	0.74W / 69.5W typ.	0.89W / 68.8W typ.
➤ TCL 060-124 DC	45mA / 3.1A max	25mA / 1.54A max	➤ TCL 060-124 DC	1.08W / 74.4W typ.	1.2W / 74.0W typ.

General:

Operating temperature range: Natural Air Convection Cooling	-10°C – +70°C max 14°F – +158°F max
Output Power Derating:	above +50°C → 1.5%/K above 122°F → 1.5%/K above +40°C → 2.0%/K → TCL 060-112DC & TCL060-124DC only above 104°F → 2.0%/K → TCL 060-112DC & TCL060-124DC only
Storage temperature range:	-25°C – +85°C max -13°F – +185°F max
Parallel Operation:	No parallel operation
Connections:	Screw type plug-in connector (standard). Recommended tightening torque 0.5 to 0.7Nm (4.5 to 6.2lb.in.)
Wiring:	0.21mm ² - 3.16mm ² (AWG 24 - 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-dc.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 the source in compliance with national regulations.
 - ❖ By use of stranded wires, all strands must be fastened in the terminal blocks.
 - ❖ Input 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 or additionally fused and must be connected with the correct polarity.
 - ❖ Sufficient cooling must be ensured.
- **Never work on the DC/DC converter 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 converter until at least 5 minutes after it has been disconnected from the input source 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 converter 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 converter 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 the user may not replace it. 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.