

Features

- ◆ Ultra-wide input voltage range
- ◆ Output voltage adjustable
- ◆ Overload and short circuit protection
- ◆ Low ripple and noise
- ◆ I/O isolation 1500 VDC
- ◆ Compact, slim plastic case
- ◆ Reliable snap-on mount on DIN-rail
- ◆ Bracket for wall mount included
- ◆ 3-year product warranty



In the TCL range of DIN-rail power supplies are 6 models for DC input voltage available. The wide input ranges of 9.5–18 VDC resp. 18–75 VDC means these models can be operated from all popular DC supply voltage systems.

With tightly regulated output voltage these DC/DC converters provide a reliable power source for sensitive loads in industrial process controls, factory automation and other equipment exposed to a critical industrial environment. Further applications for these converters are isolation of a specific load or refreshing the 24 V bus voltage. Easy installation is provided with snap-on mounting on DIN-rails and detachable screw terminal block.

Models

Order Code	Input Voltage Range	Output Voltage	Output Current max.
TCL 012-124 DC	9.5 – 18.0 VDC	24 VDC	1.0 A
TCL 024-105 DC	18 – 75 VDC	5 VDC	5.0 A
TCL 024-112 DC		12 VDC	2.0 A
TCL 024-124 DC		24 VDC	1.0 A
TCL 060-112 DC	18 – 75 VDC	12 VDC	5.0 A
TCL 060-124 DC		24 VDC	2.5 A

Input Specifications

Input power at no load	1.0 Watt max.
Start-up voltage/under voltage shut down	TCL 012 model: 8.4 VDC / 7.6 VDC TCL 024 & TCL 060 models: 17.2 VDC / 15.7 VDC
Reverse polarity protection	by internal fuse
Efficiency	86 % typ.

Output Specifications

Output voltage adj. range	5 VDC model: 5.0 – 5.25 VDC 12 VDC models: 12.0 – 15.0 VDC 24 VDC models: 24.0 – 28.0 VDC
Regulation	– Input variation Vin min. to Vin max. 0.5 % max – Load variation 0...100% 0.5 % max
Ripple and noise (20 MHz bandwidth)	<50 mV pk-pk
Electronic short circuit protection	current limitation at 110 % typ. (constant current, automatic recovery)
Overvoltage protection, trigger point	5 VDC model: <6.5 V 12 VDC models: <24 V 24 VDC models: <42 V

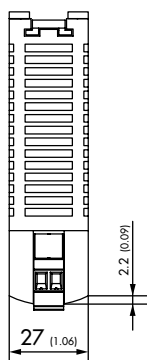
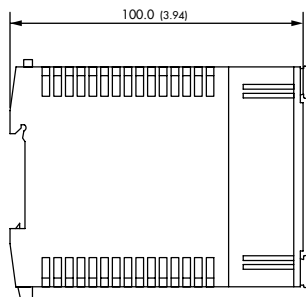
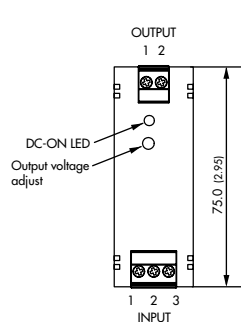
General Specifications

Temperature ranges	– Operating –25°C to +70°C max. – Storage (non operating) –25°C to +85°C
Temperature derating	1.5 %/K above +50°C
Humidity (non condensing)	95 % rel. H max.
Temperature coefficient	0.02 %/K
Switching frequency	55 – 180 kHz depending on load (frequency modulation)
Isolation voltage (1 min.)	– Input/Output 1500 VDC
Reliability, calculated MTBF at +25°C (according to IEC 61709)	>2.5 Mio h
Safety standards	– Information technology equipment IEC 60950-1, EN 60950-1 (output SELV), UL Std. 60950-1 (2nd Edition) +Am1:2011, CAN/CSA-C22.2 No. 60950-1-07 +Am1:2011 – Industrial control equipment UL 508 – Electronic equipment for power installation EN 50178 – Electrical equipment for machines EN 60204
Safety approvals	– CB test certificate (IEC 60950-1) www.tracopower.com/products/tcl-cb.pdf – UL approval www.ul.com -> certifications – CSA certification UL 508C listed, CSA C22.2 No.14 File e210002 – GS certification UL 60950-1, CSA 60950-1-03 www.tracopower.com/products/tcl-csa.pdf www.tracopower.com/products/tcl060dc_gs.pdf
Electromagnetic compatibility (EMC), emissions	EN 61000-6-3 – Conducted RI suppression on input EN 55022 class B – Radiated RI suppression EN 55022 class B
Electromagnetic compatibility (EMC), immunity	EN 61000-6-2 – Electrostatic discharge (ESD) EN 61000-4-2 4 kV / 8 kV – Radiated RF field immunity EN 61000-4-3 10 V/m – Electrical fast transient / burst immunity EN 61000-4-4 Level 3 – Surge immunity EN 61000-4-5 Level 3 – Immunity to conducted RF disturbances EN 61000-4-6 10 Vrms
Case protection	IP 20 (IEC 60529)
Enclosure material	plastic FR2010-110C (UL 94V-0 rated)
Mounting	DIN-rails as per EN 50022-35x15/7.5 (snap-on with self-locking spring) bracket for wall/chassis mount included
Installation instructions	www.tracopower.com/products/tcl-dc-inst.pdf

All specifications valid at nominal input voltage, full load and +25 °C after warm-up time unless otherwise stated.

Case Dimensions

TCL 012 and TCL 024 models



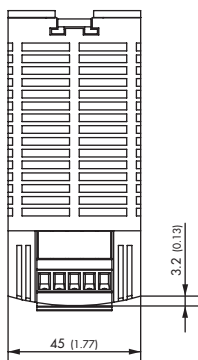
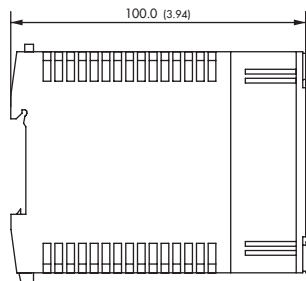
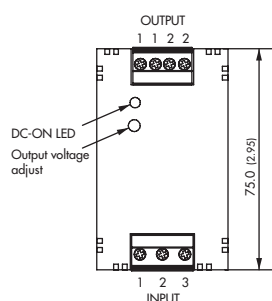
Output	Input
1 + Vout	1 Protective earth
2 - Vout	2 -Vin
	3 +Vin

Weight: 140g (4.9 oz)

Wall Mounting Bracket

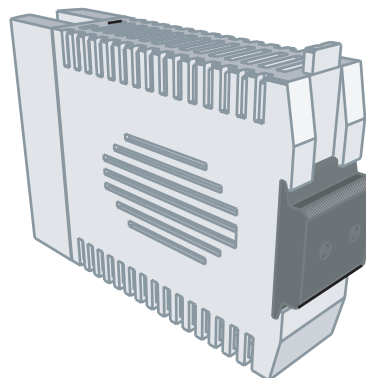
Instead on a DIN-rail, the modules can be also mounted on a chassis or wall with help of a mounting bracket which is supplied as standard with each Converter

TCL 060 model



Output	Input
1 + Vout	1 Protective earth
2 - Vout	2 -Vin
	3 +Vin

Weight: 265 g (9.4 oz)



Dimensions in [mm], () = Inch
Tolerances: ± 0.5 (± 0.02)