

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 5 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 060-124 DC | 18 – 75 VDC | 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: TCL 024 & TCL 060 models: | 8.4 VDC / 7.6 VDC 17.2 VDC / 15.7 VDC |
| Reverse polarity protection | | by internal fuse |
| Efficiency | | 86 % typ. |

Output Specifications

| | | |
|---------------------------------------|---|--|
| Output voltage adj. range | 5 VDC model: 12 VDC model: 24 VDC models: | 5.0 – 5.25 VDC 12.0 – 15.0 VDC 24.0 – 28.0 VDC |
| Regulation | – Input variation V_{in} min. to V_{in} max. – Load variation 0...100% | 0.5 % max 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: 12 VDC model: 24 VDC models: | <6.5 V <24 V <42 V |

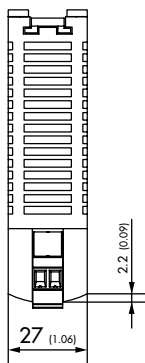
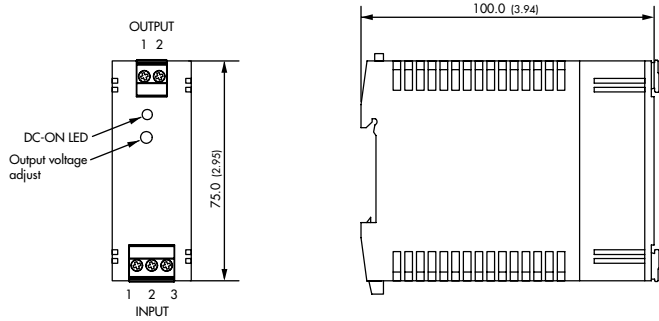
General Specifications

| | | |
|--|--|---|
| Temperature ranges | – Operating – Storage (non operating) | –25°C to +70°C max. –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 MTTF @+25°C (according to IEC 61709) | | >2.5 Mio h |
| Safety standards | | IEC/EN 60950-1 (output SELV), UL/cUL 60950-1, EN 60204 |
| Safety approvals | – UL approval – CB report – GS certification | www.ul.com -> certifications UL 508C listed, CSA C22.2 No. 14 File E210002 (TCL 060-124DC pending) IEC 60950-1 (TCL 012 & TCL 024 model pending) www.tracopower.com/products/tcl060dc_cb.pdf www.tracopower.com/products/tcl060dc_gs.pdf |
| Electromagnetic compatibility (EMC), emissions | – Conducted RI suppression on input – Radiated RI suppression | EN 61000-6-3 EN 55022 class B EN 55022 class B |
| Electromagnetic compatibility (EMC), immunity | – Electrostatic discharge (ESD) – Radiated RF field immunity – Electrical fast transient / burst immunity – Surge immunity – Immunity to conducted RF disturbances | EN 61000-6-2 EN 61000-4-2 4 kV / 8 kV EN 61000-4-3 10 V/m EN 61000-4-4 Level 3 EN 61000-4-5 Level 3 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 |

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



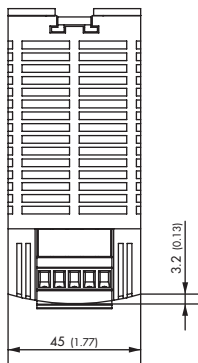
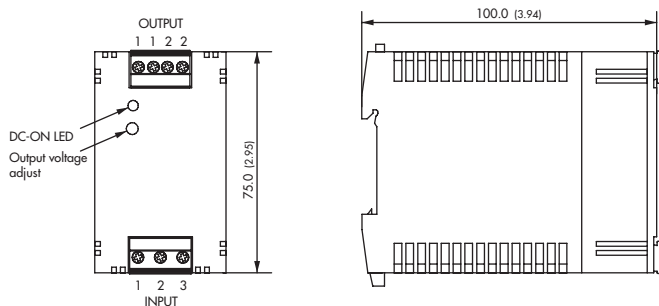
| Output | Input |
|----------|--------------------|
| 1 + Vout | 1 Protective earth |
| 2 - Vout | 2 -Vin |
| | 3 +Vin |

Weight: 140g (4.9 oz)

Wall Mounting Bracket

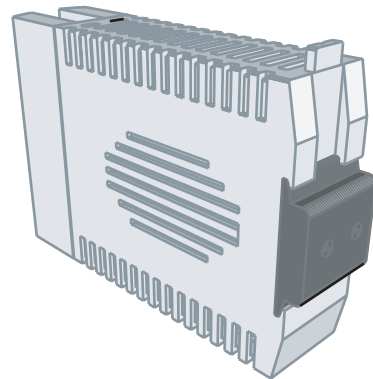
Instead on a DIN-rail, the modules can be also mounted on a chassis or wall with help of a mounting bracket which is supplied as standard with each Converter

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)

Specifications can be changed any time without notice.