Industrial DC/DC-Converter

TCL Series, 24 Watt

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 Mounting on DIN-Rails
- Bracket for Wall Mounting included
- 3 Year Product Warranty

In the TCL range of DIN-rail power supplies are also 4 models available with DC-input voltage. The wide input ranges of 9.5-18 VDC resp. 18-75 VDC allows to operate these models 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. A further application for these converters is to isolate a specific load from the 24V bus voltage. A further application for these converters is to isolate a specific load from the 24V bus voltage. Easy installation is provided with snap-on mounting on the DIN-rail and detachable screw terminal block.

Models

Order code	Input voltage range	Output voltage	Output current max.	Efficiency typ.
TCL 012-124 DC	9.5 – 18.0 VDC	24 VDC	1.0A	t.b.a.
TCL 024-105 DC	18 – 75 VDC	5 VDC	5.0A	t.b.a.
TCL 024-112 DC		12 VDC	2.0A	t.b.a.
TCL 024-124 DC		24 VDC	1.0A	87 %

Input Specifications

Input power at no load		1.0 Watt max.
Start-up voltage / under voltage shut down	TCL 012 model: TCL 024 models:	8.4 VDC / 7.6 VDC 17.2 VDC / 15.7 VDC
Revers polarity protection		by internal fuse
Surge immunity		EN 61000-4-5, Level 3
Burst immunity		EN 61000-4-4, Level 4
Conducted noise (input)		EN 55011 class B, EN 55022 class B

Output Specifications

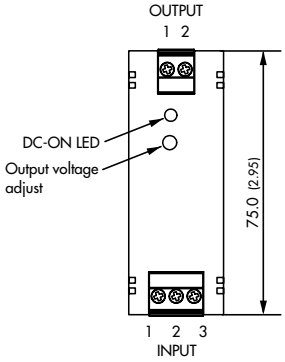
Output voltage adj. range	12 VDC model: 24 VDC model:	12.0...15.0 VDC 24.0...28.0 VDC
Regulation – Input variation Vin min. to Vin max. – Load variation 0...100%		±0.5% max ±0.5% max
Ripple and Noise (20MHz Bandwidth)		< 50 mV pk-pk
Electronic short circuit protection		current limitation at 110 % typ. (constant current, automatic recovery)
Overvoltage protection, triggerpoint	12 VDC model: 24 VDC model:	< 24 VDC < 42 VDC

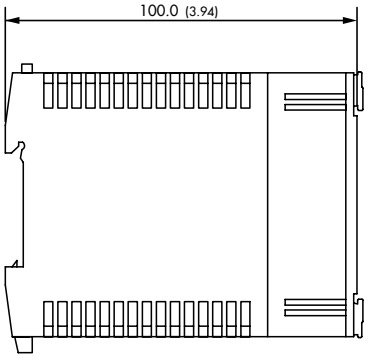
General Specifications

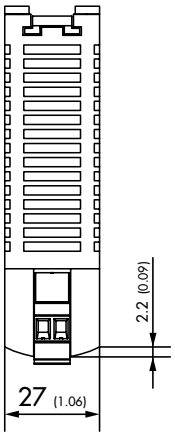
Temperature ranges	– Operating	– 10 °C...+70 °C max.
	– Storage (non operating)	– 25 °C...+85 °C
Temperature derating		1.5% /K above 50°C
Humidity (non condensing)		95 % rel. H max.
Temperature coefficient		0.02 % /K
Switching frequency		55 – 180 kHz depending on load (frequency modulation)
Isolation voltage (1 min.)	– Input / Output	1500 VDC
Reliability, calculated MTBF @ 25°C (according to IEC-1709)		>2.5 Mio h
Safety standards		IEC 60950, EN 60950 (output SELV), UL/cUL 60950, EN 60204
Safety approvals (pending)		UL/cUL 60950 recognized
		CB-report per IEC 60950
Electromagnetic compatibility (EMC), Emissions		EN 61000-6-3
Electromagnetic compatibility (EMC), Immunity		EN 61000-6-2
Safety class		degree of protection class 1
Case protection		IP 20 (IEC 60529)
Enclosure material		plastic FR2010-110C (UL 94V-0 rated)
Mounting		35 mm DIN-rails as per EN 50022-35x15/7.5 (snap-on with self-locking spring) bracket for wall-/chassis mounting included

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

Outline Dimensions mm (inches)



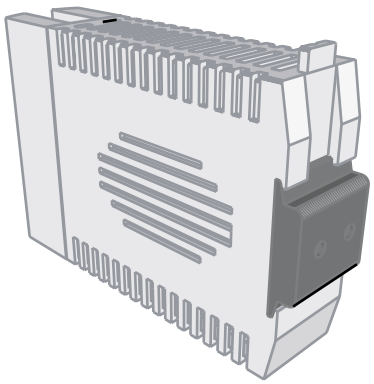




Output	Input
1 + Vout	1 Protective earth
2 – Vout	2 –Vin
	3 +Vin

Weight: 140g (4.9 oz)

Tolerances: ±0.5mm (±0.02)



Wall Mounting

Instead on a DIN-rail, the module can be easily mounted on a chassis or wall with help of a mounting bracket which is supplied as standard with the DC/DC-Converter.