

Features

- Ultracompact Plastic Case
- Connection by Cage Clamps Terminals or Plug-in Screw Terminals
- Reliable snap-on Mounting on DIN-Rails
- Universal Input 85-264 VAC, 50/60 Hz
- Models with 12, 24 and 48VDC Output
- Output Voltage adjustable
- Power Good Signal
- Low Ripple and Noise
- Overload and Short-circuit Protection
- Parallel Operation possible
- Worldwide Safety Approvals
- 3 Year Product Warranty



The TRACOPOWER TCL series are a new generation of switching power supplies with an excellent price/performance ratio. With tightly regulated output voltage and high immunity against electrical disturbances on the mains they provide a reliable power source for sensitive loads in industrial process controls, machine tools and other equipment exposed to a critical industrial environment. Compact size, light weight, easy snap-on mounting on DIN-rails and the choice of two connection terminal versions are other features of these power supplies. The TCL series complies with all major safety standards for Europe (EN60950, EN50178), North America (UL/cUL60950, UL508C listed) or elsewhere in the world (CB-Report per IEC60950).

Models

Ordercode	Input Voltage Range	Output Power max.	*Output Voltage nom.	Output Current max.	Connection	
TCL 024-124	85-264 VAC Universal input 50 / 60 Hz	24 W	24 VDC	1.0 A	Plug-in Screw Terminals	
TCL 060-112 TCL 060-124 TCL 060-148		60 W	12 VDC 24 VDC 48 VDC	4.0 A 2.5 A 1.25 A		
TCL 120-112 TCL 120-124		120 W	12 VDC 24 VDC	8.0 A 5.0 A		
TCL 024-124C			24 W	24 VDC	1.0 A	Cage-Clamps
TCL 060-112C TCL 060-124C TCL 060-148C		60 W	12 VDC 24 VDC 48 VDC	4.0 A 2.5 A 1.25 A		
TCL 120-112C TCL 120-124C		120 W	12 VDC 24 VDC	8.0 A 5.0 A		

*Output adjustable

Input Specifications

Input voltage range	85...264 VAC / 85...375 VDC	
output derating at operation between 85...93VAC/85...130VDC:	15% for TCL 60 / 120 models 20% for TCL 24 models	
Input frequency	47 – 63 Hz	
Harmonic limits	EN610000-3-2 Class A	
Input current at full load (typ.)	115 VAC	230 VAC
	TCL 24 models	0.35 A
	TCL 60 models	0.2 A
	TCL 120 models	1.2 A
		0.6 A
		2.0 A
		1.0 A
Recommended circuit breaker (characteristic C) or slow blow fuse	TCL 24 models	5.0 A
	TCL 60 models	5.0 A
	TCL 120 models	10.0 A

Output Specifications

Output voltage adj. range (pot.meter on frontpanel)	12 VDC models	12 – 15 VDC
	24 VDC models	24 – 28 VDC
	48 VDC models	48 – 56 VDC
Output regulation (10 to 90% load variation)	2.5% (1% for TCL 60-112)	
Ripple and Noise (20MHz Bandwidth)	< 50 mV pk-pk	
Electronic short circuit protection	current limitation at 120 % typ. (constant current, automatic recovery TCL 24 models: foldback, automatic recovery)	
Parallel operation	output current characteristic suitable for parallel operation of max. 5 units	
Overvoltage protection, triggerpoint	12 / 24 VDC models	< 40 VDC
	48 VDC models	< 60 VDC
Hold-up time	115 VAC	230 VAC
	min. 15 ms	min. 125 ms
Power good signal (TCL 60 & TCL 120 only)	trigger point	output signal (reference to – Vout)
	12 VDC models	>11V 11.0 V ±1.0V / 60 mA max.
	24 VDC models	>22V 22.0 V ±2.0V / 30 mA max.
	48 VDC models	>44V 44.0 V ±4.0V / 15 mA max.

General Specifications

Temperature ranges	– Operating	– 10 °C...+70 °C max.
	– Storage (non operating)	– 25 °C...+ 85 °C
Temperature derating	at 93...132 VAC or 130...187 VDC operation	1.1% /K above 40°C
	at 187...264 VAC or 265...375 VDC operation	1.7% /K above 50°C
	at 85...130 VDC operation	1.3% /K above 30°C

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

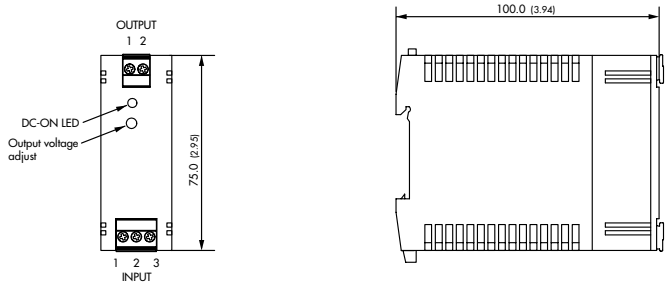
General Specifications

Humidity (non condensing)		95 % rel. H max.
Temperature coefficient		0.02 % /K
Switching frequency		55 – 180 kHz depending on load (frequency modulation)
Efficiency		88% typ.
Isolation		according to IEC/EN 60950, UL 60950, UL 508, EN 50178, EN 60204, EN 61558-2-8
Reliability, calculated MTBF @ 25°C (according to IEC-1709)	TCL 24 models TCL 60 models TCL 120 models	>2.68 Mio h >2.94 Mio h >1.62 Mio h
Safety standards		IEC 60950, EN 60950 (output SELV), UL 60950, UL 508, EN 50178, EN 60204, EN 61558-2-8. - NEC class 2 (TCL 60 models only)
Safety approvals (TCL 24 models pending)		UL/cUL 60950 recognized, File E181381 UL 508C listed, File E210002 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 (snap-on with self-locking spring) or wall mounting (adaptor included in the product)
Options		output characteristic for battery charging on request

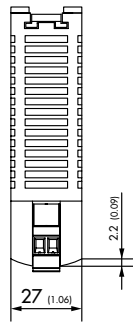
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Outline Dimensions mm (inches)

TCL 24



Weight: 140g (4.9 oz)



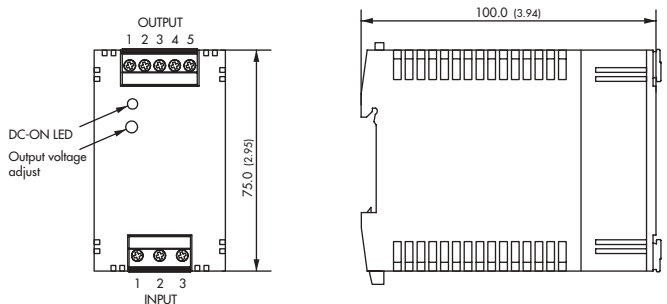
Output

- 1 +Vout
- 2 -Vout

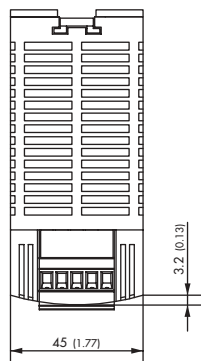
Input

- 1 AC Ground
- 2 Neutral
- 3 Live

TCL 60



Weight: 265g (9.4 oz)



Output

- 1 +Vout
- 2 +Vout
- 3 -Vout
- 4 -Vout
- 5 Power Good

Input

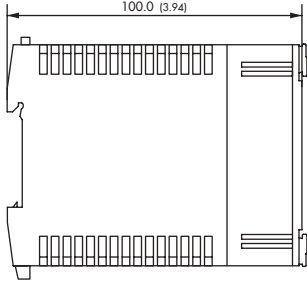
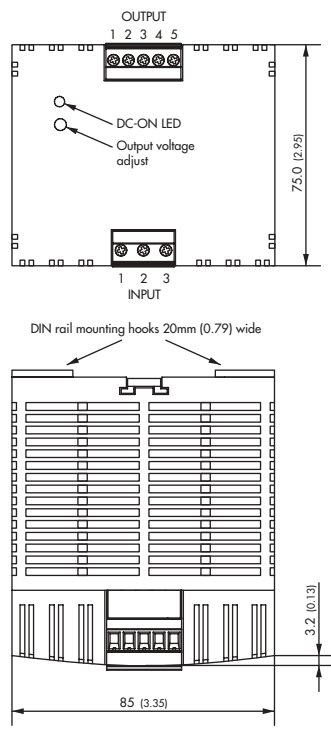
- 1 AC Ground
- 2 Neutral
- 3 Live

() = inches Tolerances: $\pm 0.5\text{mm}$ (± 0.02)

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

Outline Dimensions mm (inches)

TCL 120



Weight: 440g (15.5 oz)

Output		Input	
1	+Vout	1	AC Ground
2	+Vout	2	Neutral
3	-Vout	3	Live
4	-Vout		
5	Power Good		

() = inches Tolerances: ±0.5mm (±0.02)

Specifications can be changed without notice