



Features

- ◆ For industrial, office and residential applications
- ◆ Ultracompact plastic housing
- ◆ Connection by spring clamp terminals or detachable screw terminal block
- ◆ Reliable snap-on mounting on DIN-rails
- ◆ Adaptor for wall mounting
- ◆ Universal input 85–264 VAC, 50/60 Hz
- ◆ Models with 5, 12, 24 & 48 VDC output
- ◆ Output voltage adjustable
- ◆ Power OK signal
- ◆ Low ripple and noise
- ◆ Overload and short-circuit protection
- ◆ Parallel operation possible
- ◆ Worldwide safety approvals
- ◆ Redundancy module
- ◆ 3-year product warranty



The TRACOPOWER TCL series is a family of DIN-rail 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 difficult 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 (EN60950-1, EN50178), North America (UL/cUL 60950, UL 508C listed) or elsewhere in the world (CB-Report).

Models

| Order Code | Input Voltage Ranges | Output Power max. | *Output Voltage nom. | Output Current max. | Connection | |
|--------------|---------------------------------------------|-------------------|----------------------|---------------------|-------------------------------------|--------|
| TCL 024–105 | 85 – 264 VAC Universal Input 50/60 Hz | 24 W | 5.1 VDC | 4.0 A | Detachable screw terminal blocks | |
| TCL 024–112 | | | 12 VDC | 2.0 A | | |
| TCL 024–124 | | | 24 VDC | 1.0 A | | |
| TCL 060–112 | | 85 – 375 VDC | 60 W | 12 VDC | | 4.0 A |
| TCL 060–124 | | | | 24 VDC | | 2.5 A |
| TCL 060–148 | | | | 48 VDC | | 1.25 A |
| TCL 120–112 | | 85 – 375 VDC | 120 W | 12 VDC | | 8.0 A |
| TCL 120–124 | 24 VDC | | | 5.0 A | | |
| TCL 240–124 | 85–132/187–264 VAC | 240 W | 24 VDC | 10.0 A | | |
| TCL 024–124C | 85 – 264 VAC Universal Input 50/60 Hz | 24 W | 24 VDC | 1.0 A | | |
| TCL 060–112C | | | 60 W | 12 VDC | 4.0 A | |
| TCL 060–124C | | | | 24 VDC | 2.5 A | |
| TCL 060–148C | | 48 VDC | | 1.25 A | | |
| TCL 120–112C | | 85 – 375 VDC | 120 W | 12 VDC | 8.0 A | |
| TCL 120–124C | | | | 24 VDC | 5.0 A | |

* adjustable

Input Specifications

| | | |
|------------------------------------------------------------------|-------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| Input voltage range | | 85–264 VAC/85–375 VDC |
| | TCL 240 model: | 85–132/187–264 VAC autoselect (no DC input) |
| Output derating | – at operation between 85...93 VAC/85...130 VDC | 15% for TCL 060 & TCL 120 20% for TCL 024-112 & TCL 024-124 & TCL 240 30% for TCL 024-105 |
| Input frequency | | 47–63 Hz |
| Harmonic limits | | EN 61000-3-2, Class A |
| Input current at full load (typ.) (115 VAC / 230 VAC) | TCL 024 models: TCL 060 models: TCL 120 models: TCL 240 model: | 0.35 A / 0.2 A 1.2 A / 0.6 A 2.0 A / 1.0 A 3.3 A / 1.7 A |
| Recommended circuit breaker (characteristic C or slow blow fuse) | | 5.0 A |

Output Specifications

| | | |
|------------------------------------------------------------------|----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| Output voltage adjustable range (potentiometer on frontpanel) | 5.1 VDC model: 12 VDC models: 24 VDC models: 48 VDC models: | 5.0 – 5.25 VDC 12 – 15 VDC (12 - 16 VDC for TCL 024-112) 24 – 28 VDC 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 (not for TCL 240-124) |
| Overvoltage protection, trigger point | 5.1 VDC model: 12/24 VDC models: 48 VDC models: | <6.5 VDC <40 VDC <60 VDC |
| Hold-up time (115 VAC / 230 VAC) | | min. 15 ms / min. 125 ms |
| Power OK signal (TCL 60 & TCL 120 only) | | trigger point output signal (reference to – Vout) |
| | 12 VDC models: 24 VDC models: 48 VDC models: | >11V 11.0 V ±1.0 V / 60 mA max. >22V 22.0 V ±2.0 V / 30 mA max. >44V 44.0 V ±4.0 V / 15 mA max. |

General Specifications

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

General Specifications

| | |
|------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Reliability, calculated MTBF at +25°C (according to IEC-1709) | TCL 024 models: >2.68 Mio h TCL 060 models: >2.94 Mio h TCL 120 models: >1.62 Mio h (TCL 240 tbd.) |
| Safety standards | <ul style="list-style-type: none"> - Information technology equipment - Industrial control equipment - Electronic equipment for power installation - Electrical equipment for machines - Safety transformers for SMPS - Limited power source |
| Safety approvals | <ul style="list-style-type: none"> - CB test certificate (IEC 60950-1) - UL approval - UL approval - CSA certification - BG certificate (by SIQ) |
| Environmental compliance | <ul style="list-style-type: none"> - Reach - RoHS |
| Electromagnetic compatibility (EMC), emissions | |
| Electromagnetic compatibility (EMC), immunity | |
| Safety class | |
| Case protection | |
| Enclosure material | |
| Mounting | |
| Options | |
| Installation instructions | |

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

TCL-REM240 Redundancy Module

This module enables redundant operation of any two TCL models by decoupling the 2 power supplies. It can also be used to separate sensitive loads from the main power source.



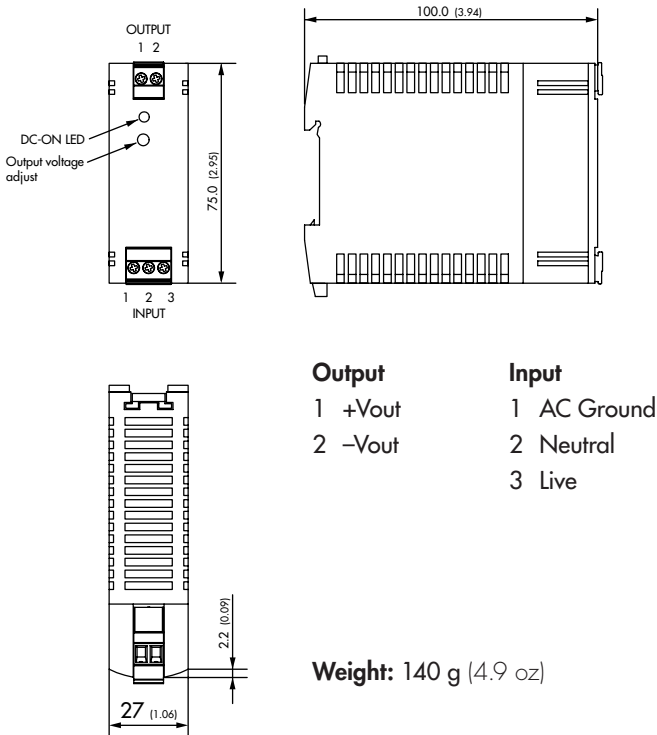
| Order Code | Nominal Input Voltage | Input Voltage Range | Max Power per Input | Output Voltage | Output Current max. |
|------------|-----------------------|---------------------|---------------------|--------------------|---------------------|
| TCL-REM240 | 5...48 VDC | 5...60 VDC | 200 W | $V_{in} - 0.9$ VDC | 8 A |

Specifications

| | |
|-------------------------------|----------------------------------------------------------------------------------------------------------------|
| Operating temperature | -10°C to +70°C max. (14°F ... +158°F) derating above +40°C (104°F): 1.5 %/K |
| Electromagnetic compatibility | in correspondence to connected units (no internal switching device) |
| Dimensions | same as model TCL 024 (see page 4) |
| Connection | detachable screw terminal block |
| Installation instructions | www.tracopower.com/products/tcl-rem-inst.pdf |

Case Dimensions

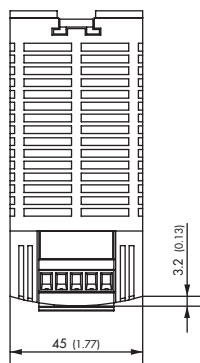
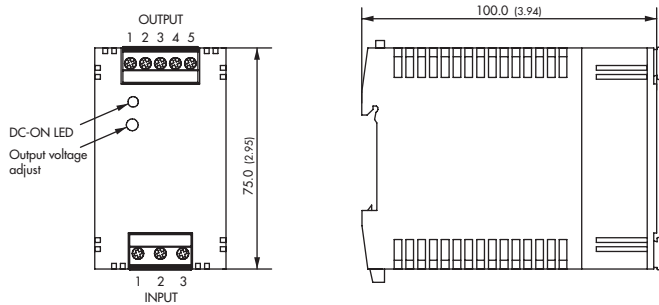
TCL 024 and TCL-REM240 models



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

Case Dimensions

TCL 60 models



Output

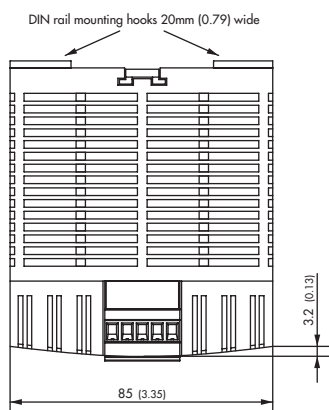
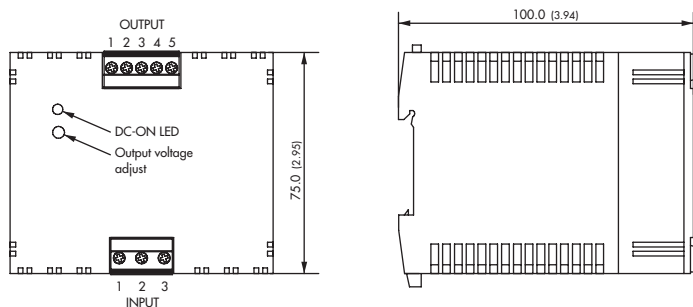
- 1 +Vout
- 2 +Vout
- 3 -Vout
- 4 -Vout
- 5 Power OK

Input

- 1 AC Ground
- 2 Neutral
- 3 Live

Weight: 265 g (9.4 oz)

TCL 120 models



Output

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

Input

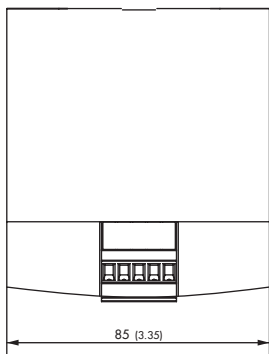
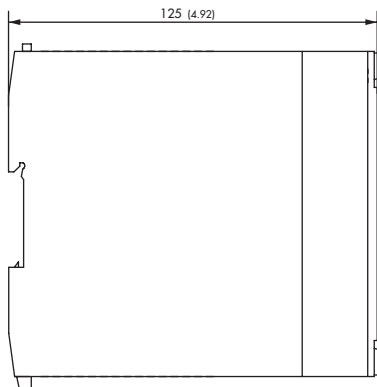
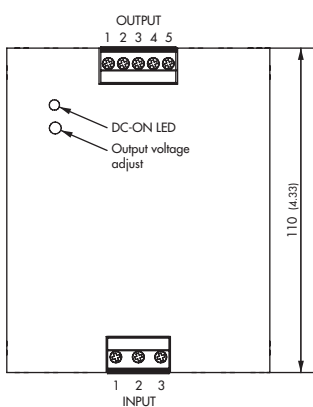
- 1 AC Ground
- 2 Neutral
- 3 Live

Weight: 440 g (15.5 oz)

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

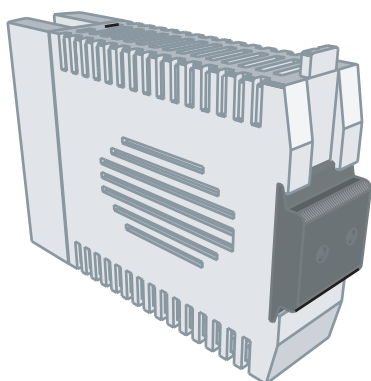
Case Dimensions

TCL 240 model



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

Weight: 950 g (33.5 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 power supply

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

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- Защиту от снятия компонента с производства.
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