



### 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<br>Universal Input<br>50/60 Hz | 24 W              | 5.1 VDC              | 4.0 A               | Detachable screw<br>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<br>Universal Input<br>50/60 Hz | 24 W              | 24 VDC               | 1.0 A               | Spring clamp<br>terminals           |        |
| 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<br>20% for TCL 024-112 & TCL 024-124 & TCL 240<br>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:<br>TCL 060 models:<br>TCL 120 models:<br>TCL 240 model: | 0.35 A / 0.2 A<br>1.2 A / 0.6 A<br>2.0 A / 1.0 A<br>3.3 A / 1.7 A                               |
| Recommended circuit breaker (characteristic C or slow blow fuse) |   | 5.0 A   |

### Output Specifications

|  |  |   |
|--|--|---|
| Output voltage adjustable range<br>(potentiometer on frontpanel) | 5.1 VDC model:<br>12 VDC models:<br>24 VDC models:<br>48 VDC models: | 5.0 – 5.25 VDC<br>12 – 15 VDC (12 - 16 VDC for TCL 024-112)<br>24 – 28 VDC<br>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.<br>(constant current, automatic recovery<br>TCL 24 models: foldback, automatic recovery) |
| Parallel operation   |  | output current characteristic suitable for<br>parallel operation of max. 5 units<br>(not for TCL 240-124)                 |
| Overvoltage protection, trigger point                            | 5.1 VDC model:<br>12/24 VDC models:<br>48 VDC models:                | <6.5 VDC<br><40 VDC<br><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<br>(reference to – Vout)   |
|  | 12 VDC models:<br>24 VDC models:<br>48 VDC models:                   | >11V      11.0 V ±1.0 V / 60 mA max.<br>>22V      22.0 V ±2.0 V / 30 mA max.<br>>44V      44.0 V ±4.0 V / 15 mA max.      |

### General Specifications

|                           |  |  |
|---------------------------|--|--|
| Temperature ranges        | – Operating<br>– Storage (non operating)   | –10°C to +70°C max.<br>–25°C to +85°C                          |
| Temperature derating      | – at 187...264 VAC or 265...375 VDC operation<br>– at 93...132 VAC or 130...187 VDC operation<br>– at 85...130 VDC operation | 1.7 %/K above 50°C<br>1.1 %/K above 40°C<br>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<br>(frequency modulation)       |
| Efficiency                |  | 88 % typ.  |

**General Specifications**

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



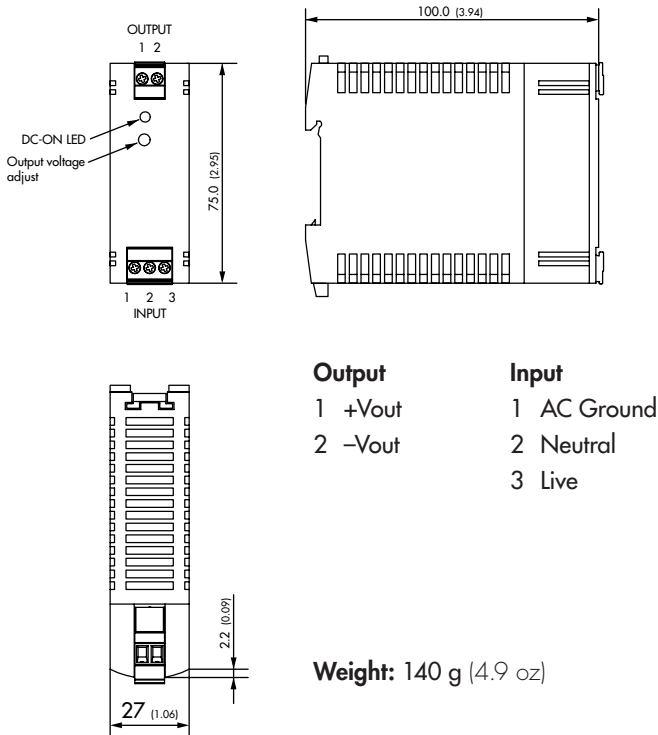
| Order Code | Nominal Input Voltage | Input Voltage Range | Max Power per Input | Output Voltage     | Output Current max. |
|------------|-----------------------|---------------------|---------------------|--------------------|---------------------|
| TCL-REM240 | 5...48 VDC            | 5...60 VDC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

**Specifications**

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

**Case Dimensions**

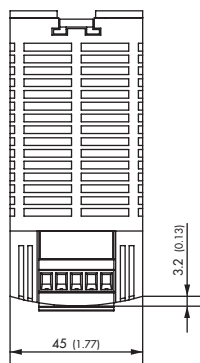
TCL 024 and TCL-REM240 models



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

**Case Dimensions**

**TCL 60 models**



**Output**

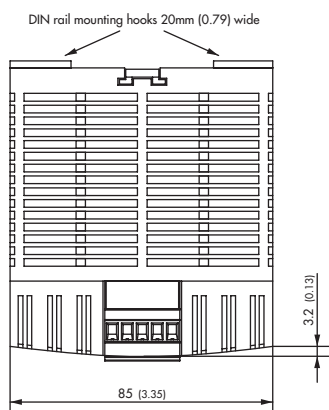
- 1 +Vout
- 2 +Vout
- 3 -Vout
- 4 -Vout
- 5 Power OK

**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:  $\pm 0.5$  mm ( $\pm 0.02$ )

**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)



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

**Телефон:** 8 (812) 309 58 32 (многоканальный)

**Факс:** 8 (812) 320-02-42

**Электронная почта:** [org@eplast1.ru](mailto:org@eplast1.ru)

**Адрес:** 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.