# Enclosed Power Supplies

## TXL Series, 15–1000 Watt

### Features

- Compact metal case with screw terminal block
- Dual and triple output models with isolated outputs
- Universal input 85–264 VAC
- EMI/EMC compliance with EN 61000-6-3 and EN 61000-6-1
- Compliance to EN 61000-3-2 (PFC)
- Short circuit and overvoltage protection
- International safety approvals
- 3-year product warranty

The TRACOPOWER TXL series is a family of encased power supplies designed for a wide range of cost critical applications. With a low profile metal case and screw terminal block connection, they are easy to install in any equipment.
There are 64 models in this range with single, dual, and triple output voltages from 3.3 VDC to 48 VDC in 12 power ranges from 15 W to 1000 W. These power supplies have universal input and comply with European EMC standards and the Low Voltage Directive (LVD).

### Models with Single Output

| Order Code | Case Type | Output Power max. | Output Voltage nom. | Output Current max. |
|---|---|---|---|---|
| TXL 015-3.3S | B | 15 Watt | 3.3 VDC | 3.0 A |
| TXL 015-05S | | | 5 VDC | 3.0 A |
| TXL 015-12S | | | 12 VDC | 1.3 A |
| TXL 015-15S | | | 15 VDC | 1.0 A |
| TXL 015-24S | | | 24 VDC | 0.63 A |
| TXL 015-48S | | | 48 VDC | 0.32 A |
| TXL 025-3.3S | C | 25 Watt | 3.3 VDC | 6.0 A |
| TXL 025-05S | | | 5 VDC | 5.0 A |
| TXL 025-12S | | | 12 VDC | 2.1 A |
| TXL 025-15S | | | 15 VDC | 1.7 A |
| TXL 025-24S | | | 24 VDC | 1.1 A |
| TXL 025-48S | | | 48 VDC | 0.57 A |
| TXL 035-3.3S | D | 35 Watt | 3.3 VDC | 9.0 A |
| TXL 035-05S | | | 5 VDC | 7.0 A |
| TXL 035-12S | | | 12 VDC | 3.0 A |
| TXL 035-15S | | | 15 VDC | 2.4 A |
| TXL 035-24S | | | 24 VDC | 1.5 A |
| TXL 035-48S | | | 48 VDC | 0.8 A |
| TXL 050-05S | | 50 / 60 Watt | 5 VDC | 10.0 A |
| TXL 060-12S | | | 12 VDC | 5.0 A |
| TXL 060-15S | | | 15 VDC | 4.0 A |
| TXL 060-24S | | | 24 VDC | 2.5 A |

## Models with Single Output

| Order Code | Case Type | Output Power max. | Output Voltage nom. | Output Current max. |
|---|---|---|---|---|
| TXL 060-3.3S | E | 60 / 70 Watt | 3.3 VDC | 15.0 A |
| TXL 060-05S | | | 5 VDC | 12.0 A |
| TXL 070-12S | | | 12 VDC | 6.0 A |
| TXL 070-15S | | | 15 VDC | 4.8 A |
| TXL 070-24S | | | 24 VDC | 3.0 A |
| TXL 070-48S | | | 48 VDC | 1.5 A |
| TXL 100-3.3S | J | 100 Watt | 3.3 VDC | 23.0 A |
| TXL 100-05S | | | 5 VDC | 20.0 A |
| TXL 100-12S | | | 12 VDC | 8.5 A |
| TXL 100-15S | | | 15 VDC | 7.0 A |
| TXL 100-24S | | | 24 VDC | 4.3 A |
| TXL 100-48S | | | 48 VDC | 2.3 A |
| TXL 150-05S | L | 150 Watt | 5 VDC | 30.0 A |
| TXL 150-12S | | | 12 VDC | 12.5 A |
| TXL 150-24S | | | 24 VDC | 6.3 A |
| TXL 150-48S | | | 48 VDC | 3.2 A |
| TXL 230-12S | N | 230 Watt | 12 VDC | 19.2 A |
| TXL 230-24S | | | 24 VDC | 9.6 A |
| TXL 230-48S | | | 48 VDC | 4.8 A |
| TXL 350-24S | O | 350 Watt | 24 VDC | 14.7 A |
| TXL 350-48S | | | 48 VDC | 7.5 A |
| TXL 750-24S | P | 750 Watt | 24 VDC | 31.3 A |
| TXL 750-48S | | | 48 VDC | 15.8 A |
| TXL 1000-24S | Q | 1000 Watt | 24 VDC | 40.0 A |
| TXL 1000-48S | | | 48 VDC | 21.0 A |

## Models with Multiple Output

| Order Code | Case Type | Output Power max. | * Output1 (Main Output) | * Output 2 | * Output 3 |
|---|---|---|---|---|---|
| TXL 035-0512D | D | 35 Watt | +5 VDC/ 4.0 A | +12 VDC/ 2.5 A | |
| TXL 035-0524D | | | +5 VDC/ 4.0 A | +24 VDC/ 1.3 A | |
| TXL 035-1212D | | | +12 VDC/ 3.0 A | –12 VDC/ 1.5 A | |
| TXL 035-1515D | | | +15 VDC/ 2.4 A | –15 VDC/ 1.5 A | |
| TXL 060-0512DI | E | 60 Watt | 5 VDC/ 8.0 A | 12 VDC/ 4.0 A | |
| TXL 060-0524DI | | | 5 VDC/ 6.0 A | 24 VDC/ 2.2 A | |
| TXL 060-0521TI | | | 5 VDC/ 8.0 A | 12 VDC/ 3.5 A | 5 VDC/ 1.0 A |
| TXL 060-0522TI | | | 5 VDC/ 7.0 A | 12 VDC/ 3.5 A | 12 VDC/ 1.0 A |
| TXL 060-0533TI | | | 5 VDC/ 7.0 A | 15 VDC/ 3.0 A | 15 VDC/ 1.0 A |
| TXL 060-0534TI | | | 5 VDC/ 6.0 A | 12 VDC/ 1.5 A | 24 VDC/ 1.2 A |
| TXL 100-0512DI | J | 100 Watt | 5 VDC/ 12.0 A | 12 VDC/ 7.0 A | |
| TXL 100-0524DI | | | 5 VDC/ 12.0 A | 24 VDC/ 3.5 A | |
| TXL 100-0521TI | | | 5 VDC/ 12.0 A | 12 VDC/ 5.0 A | 5 VDC/ 1.5 A |
| TXL 100-0522TI | | | 5 VDC/ 12.0 A | 12 VDC/ 5.0 A | 12 VDC/ 1.5 A |
| TXL 100-0533TI | | | 5 VDC/ 12.0 A | 15 VDC/ 4.0 A | 15 VDC/ 1.5 A |
| TXL 100-0534TI | | | 5 VDC/ 12.0 A | 12 VDC/ 4.0 A | 24 VDC/ 2.0 A |

* Total power must not exceed specified max. output power

## Input Specifications

| | | | |
|---|---|---|---|
| Input voltage range | – nominal | | 100 – 240 VAC |
| | – AC range (universal input) | | 85 – 264 VAC for 15 to 350 Watt model |
| | | | 90 – 264 VAC for 750 & 1000 Watt models |
| | – DC range | | 120 – 375 VDC for 15 to 350 Watt model |
| | | | 127 – 375 VDC for 750 & 1000 Watt models |
| Input voltage frequency | | | 47 – 63 Hz |
| Input current (at full load) | | | Vin = 115 VAC / Vin = 230 VAC |
| | | TXL 015/025 models: | 0.50 A typ. / 0.22 A typ. |
| | | TXL 035 models: | 0.70 A typ. / 0.42 A typ. |
| | | TXL 060/070 models: | 1.00 A typ. / 0.60 A typ. |
| | | TXL 100 models: | 1.65 A typ. / 0.95 A typ. |
| | | TXL 150 models: | 2.10 A typ. / 1.10 A typ. |
| | | TXL 230 models: | 3.20 A typ. / 1.70 A typ. |
| | | TXL 350 models: | 3.30 A typ. / 1.70 A typ. |
| | | TXL 750 models: | 8.0 A typ. / 3.90 A typ |
| | | TXL 1000 models: | 11.0 A typ. / 5.0 A typ. |
| Input current (at no load) | | | Vin = 115 VAC / Vin = 230 VAC |
| | | TXL 015/025 models: | 10 mA typ. / 17 mA typ. |
| | | TXL 035 models: | 50 mA typ. / 55 mA typ. |
| | | TXL 230/350 models: | 115 mA typ. / 140 mA typ. |
| | | TXL 750 models: | 210 mA typ. / 220 mA typ. |
| | | TXL 1000 models: | 330 mA typ. / 350 mA typ. |
| | | other models: | 100 mA typ. / 80 mA typ. |
| Recommended circuit breaker (characteristic C) or slow blow fuse | | up to 70 Watt models: | 5 A |
| | | up to 350 Watt models: | 10 A |
| | | TXL 750 & 1000 Watt models: | 16 A |

## Output Specifications

| | | | |
|---|---|---|---|
| Output voltage adjustment range | | | ±10 %<br>– 35 Watt dual output models: range Vout 1–2<br>– other multi output models: Vout 1 |
| Regulation | – Input variation | | 1 % max. |
| | – Load variation (10–100%) | single output models: | 2 % max. |
| | | multiple output models: | 4 % max. for main output |
| | | | 6 % max. for output 2/3 (20–100 % load) |
| | – Minimum load on main output of multiple output models: (to provide the regulation on the auxilary outputs) | | 0.3 A for TXL 035<br>1.0 A for TXL 060<br>1.5 A for TXL 100 |
| Ripple and noise (20 MHz bandwidth) | | 3.3 VDC output | < 50 mV |
| | | Output 3 (on triple output models) | < 1.5 % of Vout |
| | | all other output voltages | < 1.0 % of Vout nom. |
| Output current limitation | | | 105 % – 150 % of Iout max. |
| Overload protection mode | | | Fold back, automatic recovery |
| Over voltage protection (only output 1) | | | 115 % – 140 % of Vout nom.<br>(depending on model) |
| Capacitive load, max. | | | www.tracopower.com/products/txl-capload.pdf |

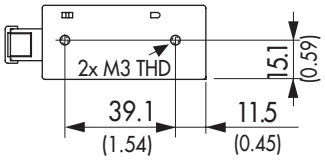
## General Specifications

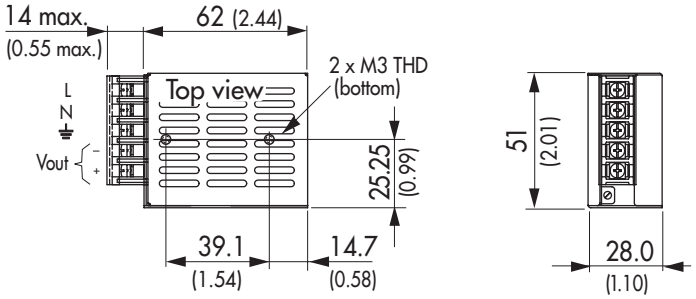
| | | | |
|---|---|---|---|
| Temperature ranges | – Operating | | –10°C to +70°C |
| | – Load derating above +45°C | | 2 %/°K (2.5 %/°K for TXL 120/230/1000) |
| | – Storage (non operating) | | –10°C to +75°C |
| Temperature coefficient | | | 0.02 %/°C |
| Efficiency | | | 70 – 84 % (depending on model) |
| Humidity (non condensing) | | | 85 % rel max. (non condensing) |
| Switching frequency | | | 50 kHz typ. (pulse width modulation) |
| Hold-up time | | | 20 ms min. |
| Isolation voltage (60 sec.) | – Input/Output | | 3'000 VAC |
| | – Input/Case | | 1'500 VAC |
| | – Output/Case | | 500 VAC |
| | – Output/Output | | |
| | | 60–100 Watt multiple output models: | 500 VAC (for all outputs of triple output models!) |
| | | 35 Watt dual output models: | outputs not isolated |
| Reliability /calculated MTBF (MIL-HDBK-217F, at +25°C typ., ground benign) | | | >250'000 h |
| Electromagnetic compatibility (EMC), Emissions | – Conducted input RI suppression | | EN 55022, class B, FCC part 15, level B |
| | – Harmonic current emissions | | IEC/EN 61000-3-2, class D (TXL 120/150/220) |
| | | | IEC/EN 61000-3-2, class A (others) |
| | – Flicker | | IEC/EN 61000-3-3 |
| Electromagnetic compatibility (EMC), Immunity | – Electrostatic discharge ESD | | IEC/EN 61000-4-2 4 kV / 8 kV |
| | – RF field immunity | | IEC/EN 61000-4-3 3 V/m |
| | – Electrical fast transients/burst immunity | | IEC/EN 61000-4-4 1 kV |
| | – Surge | | IEC/EN 61000-4-5 1 kV / 2 kV |
| | – Conducted RF | | IEC/EN 61000-4-6 3 V/m |
| | – Magnetic field | | IEC/EN 61000-4-8 3 A/m |
| | – Voltage dip | | IEC/EN 61000-4-11 |
| Safety standards | | | UL 60950-1, IEC/EN 60950-1 2nd edition |
| Safety approvals | – UL/cUL | | www.ul.com -> certifications -> File: e188913 |
| | – CB report | TXL 015 models: | www.tracopower.com/products/txl015-cb.pdf |
| | | TXL 025 models: | www.tracopower.com/products/txl025-cb.pdf |
| | | TXL 035 models: | www.tracopower.com/products/txl035-cb.pdf |
| | | TXL 060/070 models: | www.tracopower.com/products/txl060-cb.pdf |
| | | TXL 100 models: | www.tracopower.com/products/txl100-cb.pdf |
| | | TXL 150 models: | www.tracopower.com/products/txl150-cb.pdf |
| | | TXL 230 models: | www.tracopower.com/products/txl230-cb.pdf |
| | | TXL 350 models: | www.tracopower.com/products/txl350-cb.pdf |
| | | TXL 750 models: | www.tracopower.com/products/txl750-cb.pdf |
| | | TXL 1000 models: | www.tracopower.com/products/txl1000-cb.pdf |
| Environmental compliance | – Reach | | www.tracopower.com/products/txl-reach.pdf |
| | – RoHS | | RoHS directive 2011/65/EU |
| Casing material | | TXL 025/035 | nickel plated steel (chassis & cover) |
| | | TXL 50/60/70/100 | aluminium (chassis), nickel plated steel (cover) |
| | | others | aluminium (chassis & cover) |

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

## Case Dimensions

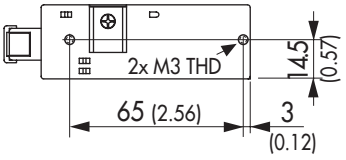
**Case B**

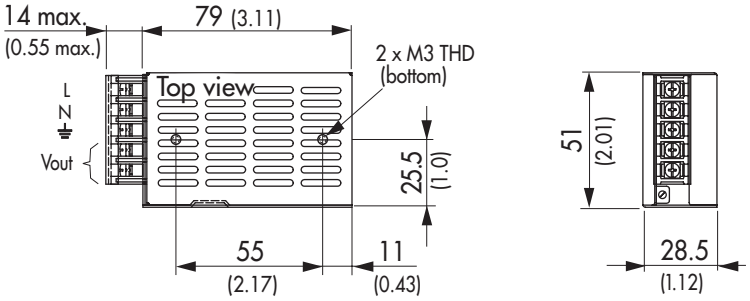



**Weight:** 0.13 kg (4.6 oz)

**Case C**

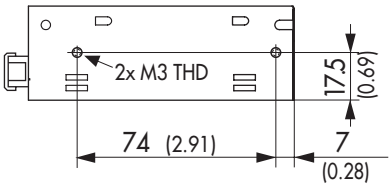


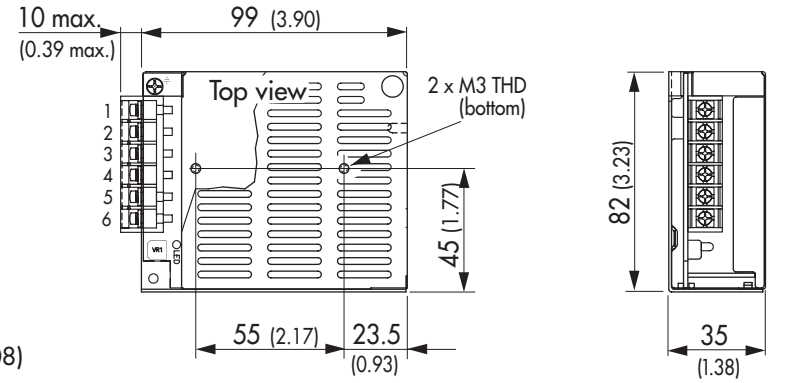




**Weight:** 0.19 kg (6.7 oz)

**Case D**

| Connection | | |
|---|---|---|
| | **single** | **dual** |
| **1** | AC L | AC L |
| **2** | AC N | AC N |
| **3** | AC FG | AC FG |
| **4** | –Vout | Common |
| **5** | +Vout | Vout 1 |
| **6** | No con. | Vout 2 |




**Weight:** 0.3 kg (10 oz)

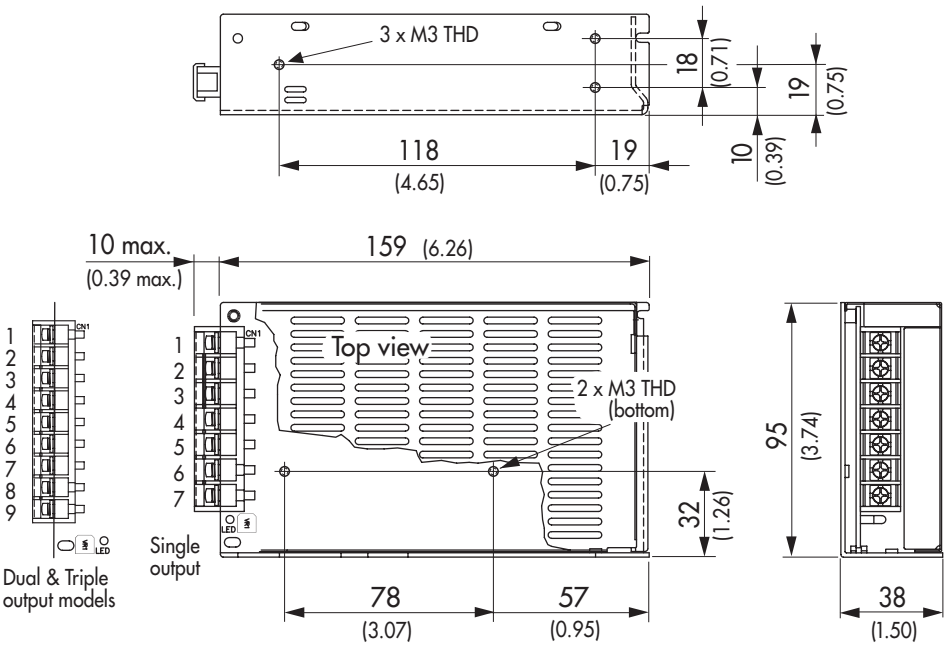
Max mounting screw penetration: 2.0 mm (0.08)

## Case Dimensions

### Case E

| Connection | | | |
|---|---|---|---|
| | Single | Dual | Triple |
| 1 | AC L | AC L | AC L |
| 2 | AC N | AC N | AC N |
| 3 | AC FG | AC FG | AC FG |
| 4 | –Vout | No con. | +Vout 3* |
| 5 | –Vout | No con | –Vout 3* |
| 6 | +Vout | –Vout 1 | –Vout 1 |
| 7 | +Vout | +Vout 1 | +Vout 1 |
| 8 | – | –Vout 2 | –Vout 2 |
| 9 | – | +Vout 2 | +Vout 2 |

* Opposite polarity for TXL 060-0534TI

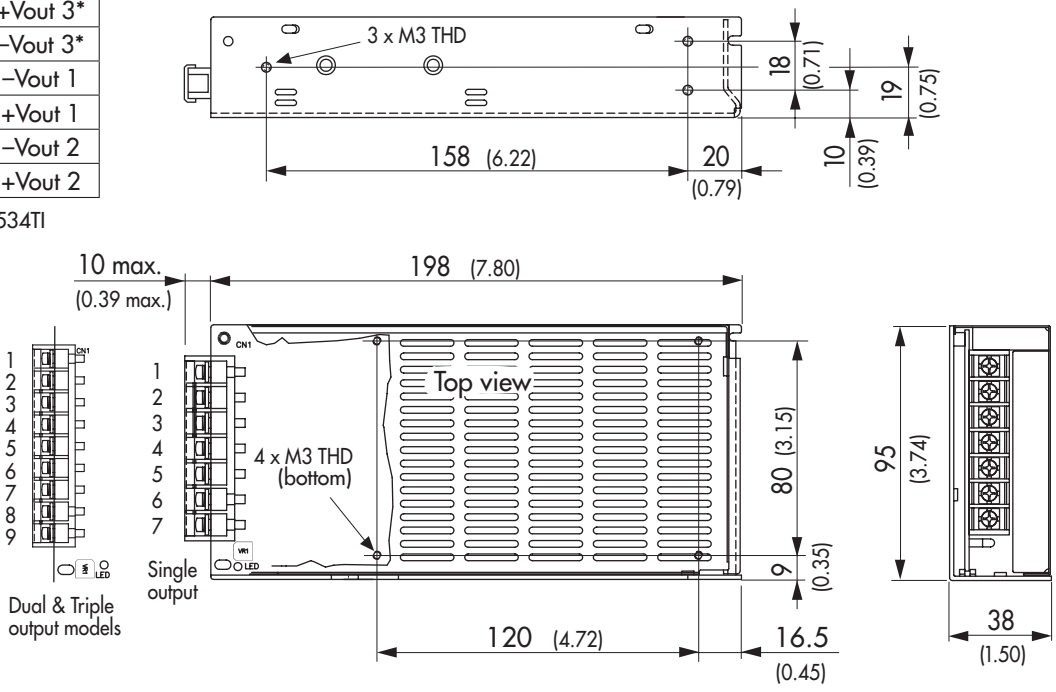



**Weight:** 0.7 kg (25 oz)

### Case J

| Connection | | | |
|---|---|---|---|
| | Single | Dual | Triple |
| 1 | AC L | AC L | AC L |
| 2 | AC N | AC N | AC N |
| 3 | AC FG | AC FG | AC FG |
| 4 | –Vout | No con. | +Vout 3* |
| 5 | –Vout | No con | –Vout 3* |
| 6 | +Vout | –Vout 1 | –Vout 1 |
| 7 | +Vout | +Vout 1 | +Vout 1 |
| 8 | – | –Vout 2 | –Vout 2 |
| 9 | – | +Vout 2 | +Vout 2 |

* Opposite polarity for TXL 100-0534TI

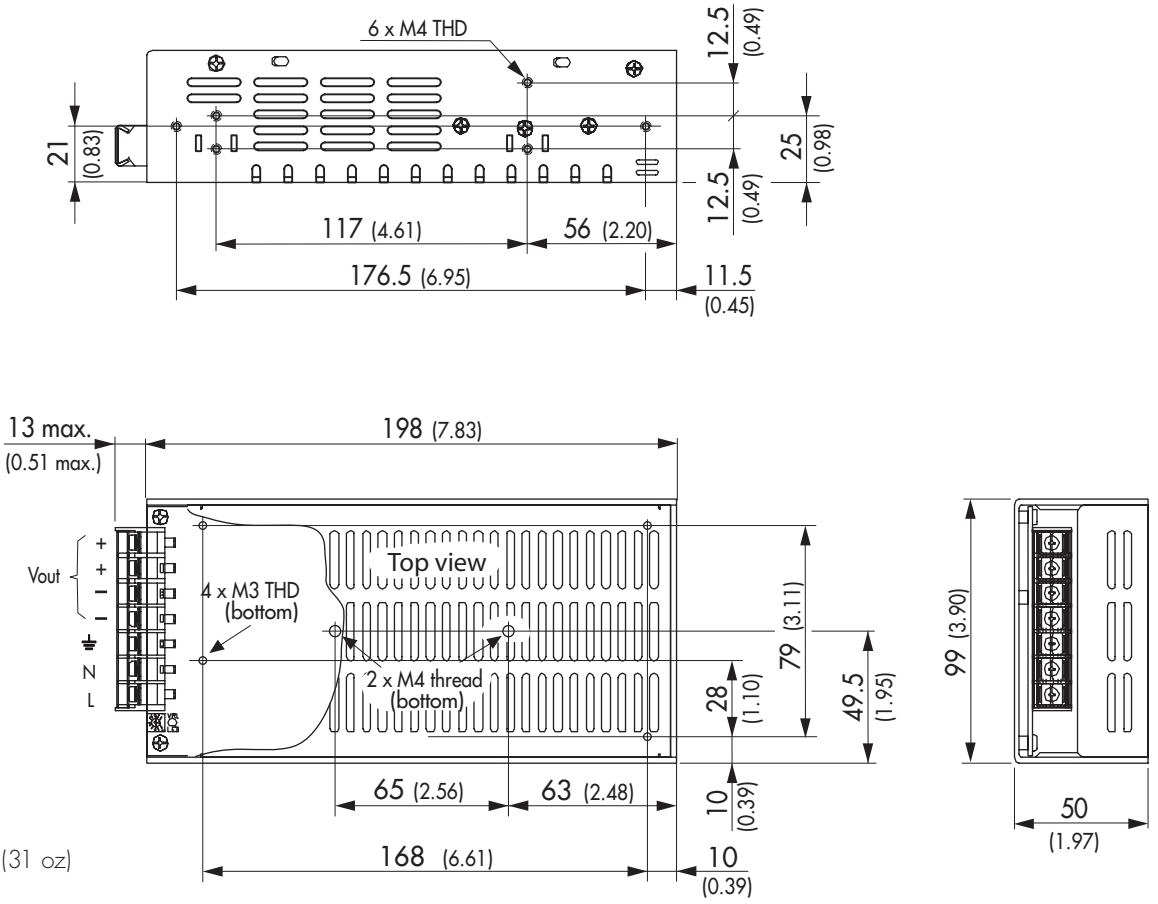



**Weight:** 0.8 kg (28 oz)

Max mounting screw penetration: 3.0 mm (0.12)

## Case Dimensions

**Case L**



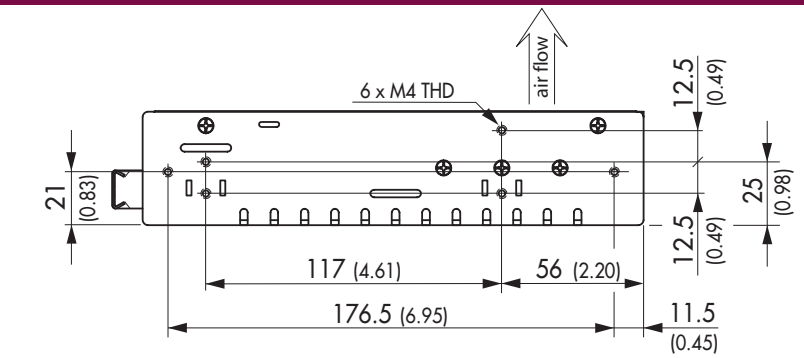

**Weight:** 0.89 kg (31 oz)

4x TXL-CMB chassis mount brackets included in shipment

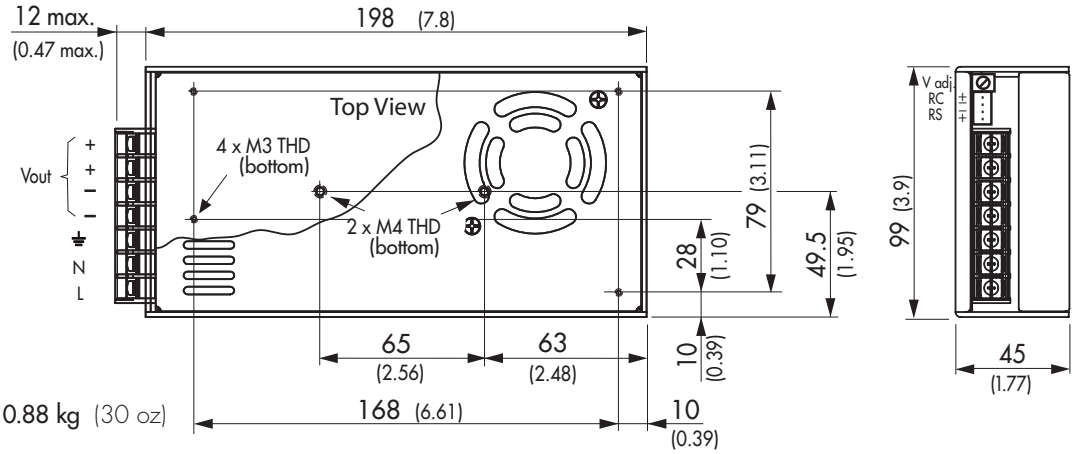
Max mounting screw penetration: 3.0 mm (0.12)

## Outline Dimensions

**Case N**



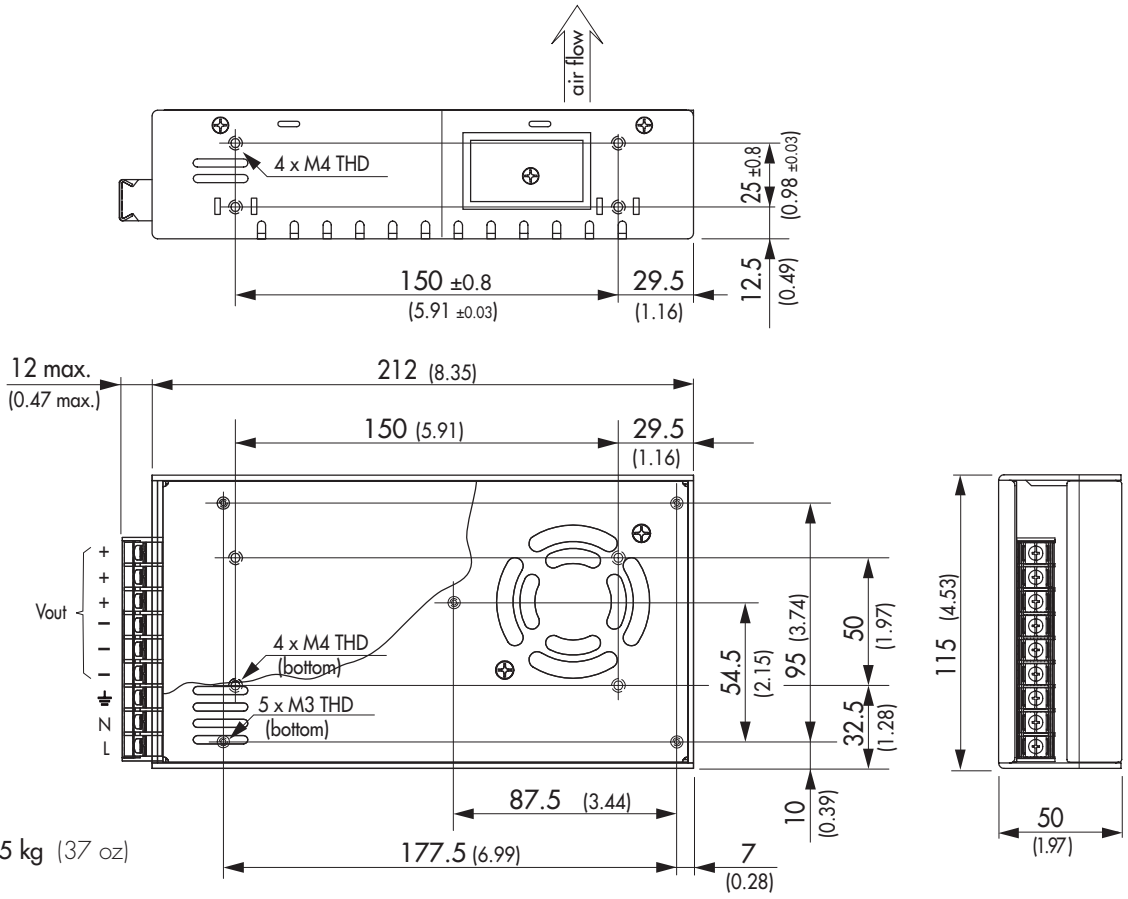

| Connector | |
|---|---|
| **RC** | Remote Control On/Off:<br>RC+/RC–: 0–0.7 V = On<br>3–10 V = Off. |
| **RS** | Remote Sense<br>Can be open or connected to the load under regard of polarity |




**Weight:** 0.88 kg (30 oz)

4x TXL-CMB chassis mount brackets included in shipment

**Case O**




**Weight:** 1.05 kg (37 oz)

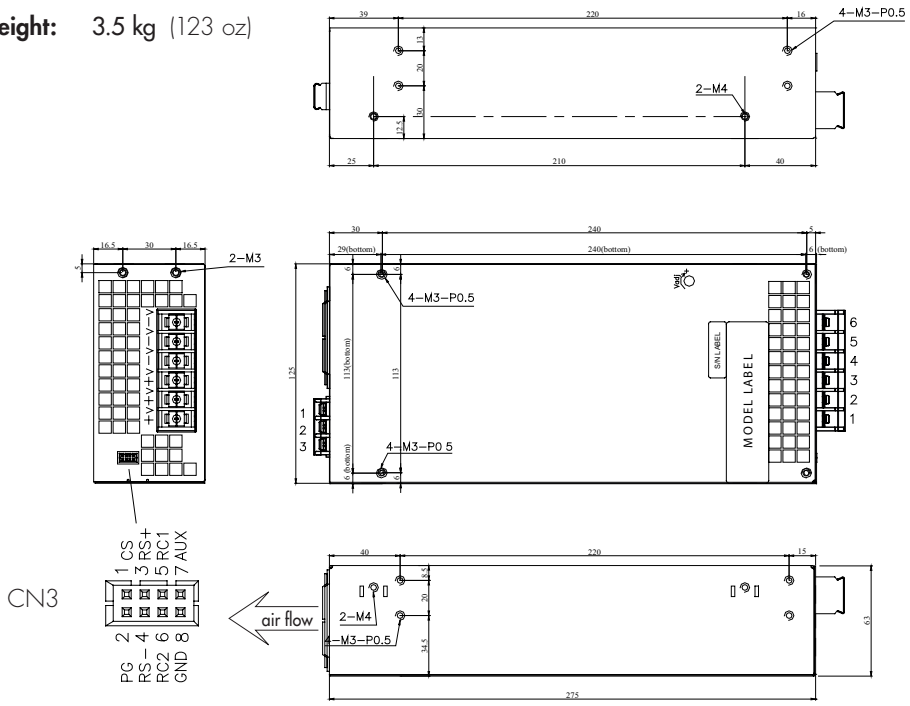
4x TXL-CMB chassis mount brackets included in shipment

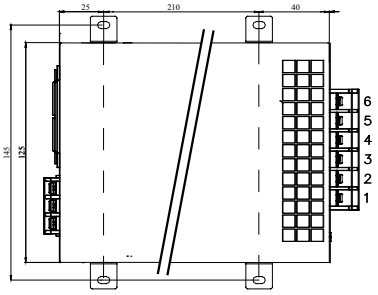
Max mounting screw penetration: 3.0 mm (0.12)

## Outline Dimensions

**Case P**

**Weight:** 3.5 kg (123 oz)



TXL-CMB chassis mount bracket set (4pcs) included in shipment. For dimensions see page 11.

Max mounting screw penetration: 3.0 mm (0.12)

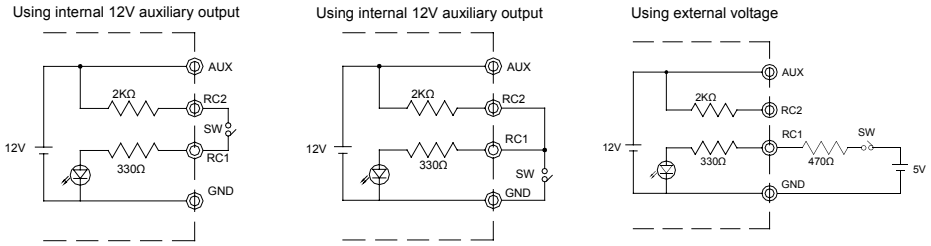
CN3 pin consideration:

Pin 1: Current sharing to interconnect up to 3 units at parallel operation
Max power = units x 0.9, max deviation of voltage adjustment among units =100mV
Pin 2: Power Good Signal. TTL (3mA max.): 0 – 1 VDC = DC-Off, 3.3 – 5.6 VDC = DC-OK
Pin 3/4: Remote sense to be connected at load side under regard of polarity
Pin 5/6: Remote control input RC1& RC2
Pin 7/8 Auxillary output 12VDC/0.1A for remote control function

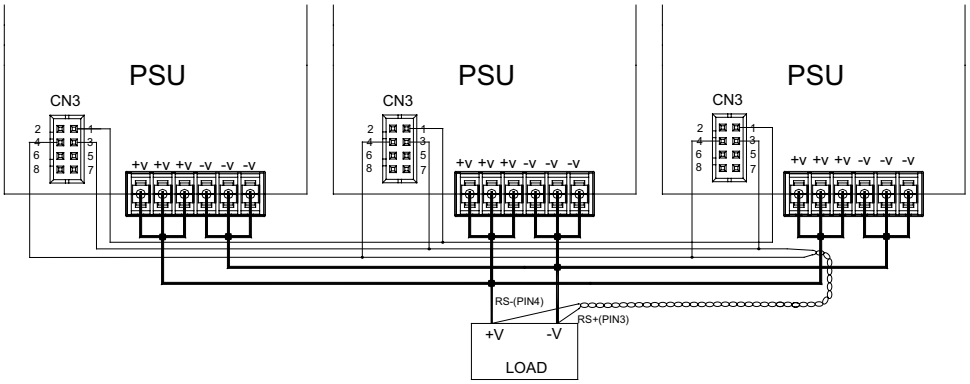
Mating connector:
Housing: HRS DF11-08DS-2C
Terminal: HRS DF11-EP22SCB

Mating cable with 500mm flyind leeds included!

Remote On/Off function:



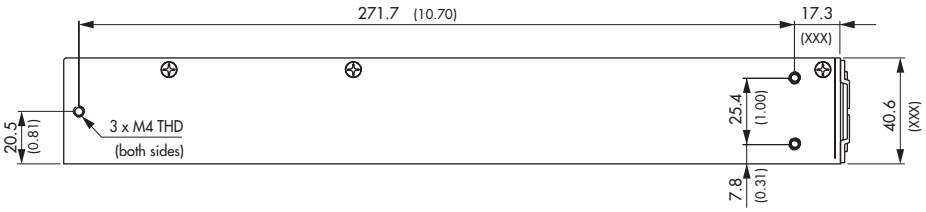

Parallel operation:

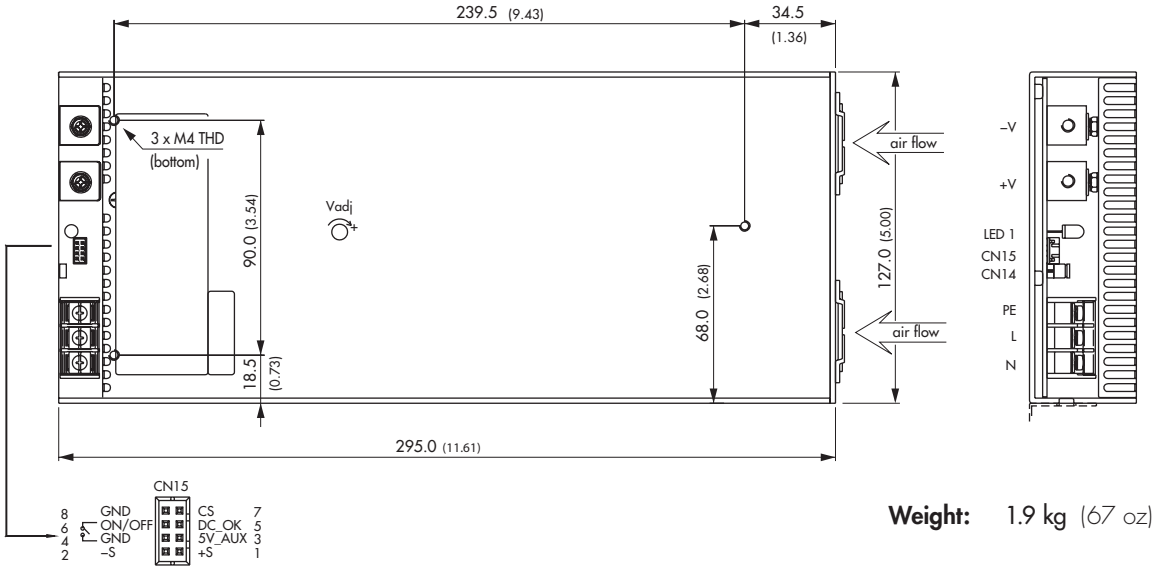



All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.

## Outline Dimensions

**Case Q**




**Weight:** 1.9 kg (67 oz)

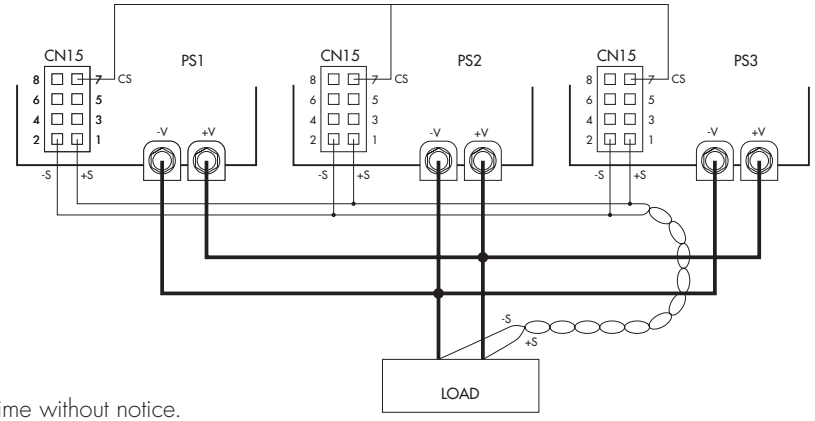
**Caution!** Max mounting screw penetration: 3.0 mm (0.12)

TXL-CMB1 chassis mount bracket set (4pcs) included in shipment. For dimensions see page 11.

Dimensions in [mm], () = Inch
Tolerances ±0.8 (±0.03)
Monting hole pich tolerances ±0.5 (±0.02)

CN14 Jumper on CN14 disables the Remote Off function
CN15 On/Off (pin 4 & 6): Contact closed = Power On, Contact open = Power Off
CN15 –S/+S (pin 1 & 2): Remote sense to be connected at load side under regard of polarity
CN15 5V Aux (pin 3 & 8): Auxiliary output 5 VDC / 0.5 A
CN15 DC–OK (pin 5 & 8): TTL signal (2.2 mA max.): 0 – 1 VDC = DC–Off, 3.3 – 5.6 VDC = DC–OK
CN15 CS (pin 7): Current Sharing to interconnect up to 4 units at parallel operation
Max power = units x 0.9, max deviation of voltage adjustment among units =100mV

Parallel operation:

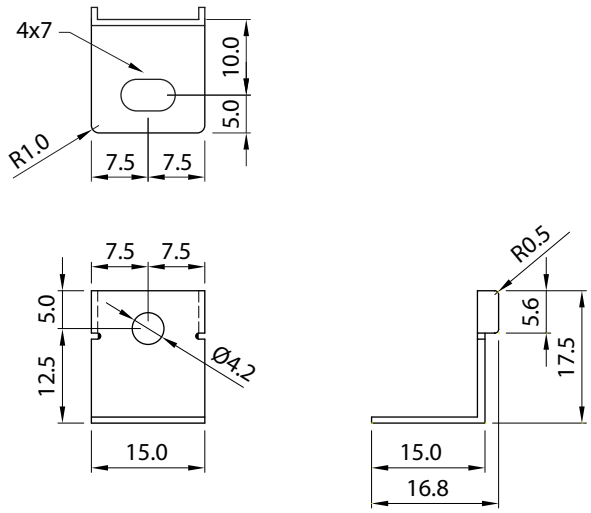


## Chassi Mount Brackets

The chassi mount brackets are bypacked along with the following models:

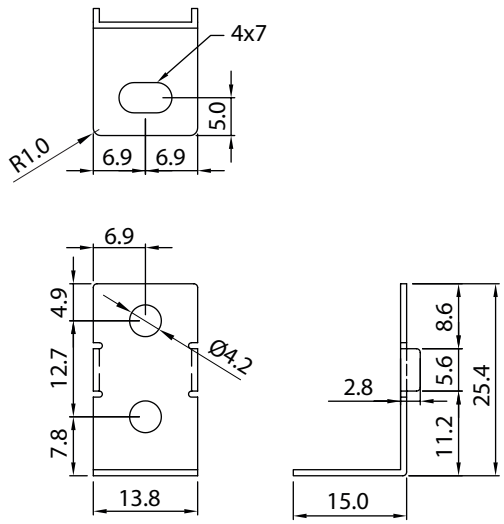
**Order code: TXL-CMB**
contains 4pcs brackets and screws

For series models:
- TXL 150; Case L
- TXL 230; Case N
- TXL 350; Case O
- TXL 750; Case P




**Order code: TXL-CMB1**
contains 4pcs brackets and screws

For series models:
- TXL 1000; Case Q




Note:
1. Material: S.P.C.C.
2. Thickness: 0.8mm
3. Treatment: Nickel plated
4. Unit: mm