



### Features

- ◆ Ultra compact, fully encapsulated plastic case
- ◆ Single-, dual- and triple output models
- ◆ 2 package styles:
  - with screw terminal block for chassis mount
  - with solder pins for PCB mount
- ◆ DIN-rail mount adaptor (option)
- ◆ Universal Input 85-264VAC, 50/60Hz
- ◆ Protection class II
- ◆ Approved to IEC/UL 60950-1 and IEC/UL 60601-1 medical safety standard 2 x MOOP
- ◆ UL 508 listed (chassis mount version)
- ◆ EMI according to EN 55022, class B and FCC level B
- ◆ Short circuit and overload protection
- ◆ Lead-free design – RoHS compliant
- ◆ 3-year product warranty



The TMT series power modules are AC/DC power supplies in an ultra compact fully encapsulated module. They feature easy installation with screw terminals and optional DIN-rail mounting adaptor or direct PCB mounting with solder pins. Compliance with international safety standards including UL 508 listing qualify these products for worldwide markets. For application in medical instrumentation, the modules are also approved to the EN/UL 60601-1 safety standard.

High reliability is provided by use of industrial quality grade components and conservative temperature specifications. These AC/DC modules offer an interesting power supply solution for many space critical applications in commercial and industrial electronic equipment.

### Single Output Models

| Order Code  |  | Output Power max. | Output 1  |
|---|--|-------------------|---|
| PCB-Mount with Solder Pins                                    | Chassis Mount with Screw Terminal Block                            |                   |   |
| TMT 10105<br>TMT 10112<br>TMT 10115<br>TMT 10124              |  | 10 Watt           | 5 VDC/2000 mA<br>12 VDC/840 mA<br>15 VDC/670 mA<br>24 VDC/420 mA                      |
| TMT 15105<br>TMT 15112<br>TMT 15115<br>TMT 15124              | TMT 15105C<br>TMT 15112C<br>TMT 15115C<br>TMT 15124C               | 15 Watt           | 5 VDC/3000 mA<br>12 VDC/1250 mA<br>15 VDC/1000 mA<br>24 VDC/625 mA                    |
| TMT 30105<br>TMT 30112<br>TMT 30115<br>TMT 30124              | TMT 30105C<br>TMT 30112C<br>TMT 30115C<br>TMT 30124C               | 30 Watt           | 5 VDC/6000 mA<br>12 VDC/2500 mA<br>15 VDC/2000 mA<br>24 VDC/1250 mA                   |
| TMT 50105<br>TMT 50112<br>TMT 50115<br>TMT 50124<br>TMT 50148 | TMT 50105C<br>TMT 50112C<br>TMT 50115C<br>TMT 50124C<br>TMT 50148C | 50 Watt           | 5 VDC/9000 mA<br>12 VDC/4200 mA<br>15 VDC/3400 mA<br>24 VDC/2300 mA<br>48 VDC/1150 mA |

### Dual- and Triple Output Models

| Order Code  |  | Output Power max. | Output 1                         | Output 2   | Output 3   |
|---|--|-------------------|----------------------------------|--|--|
| PCB-Mount with Solder Pins  | Chassis Mount with Screw Terminal Block                            |                   |                                  |  |  |
| TMT 15212<br>TMT 15215  | TMT 15212C<br>TMT 15215C   | 15 Watt           | +12 VDC/625 mA<br>+15 VDC/500 mA | -12 VDC/625 mA<br>-15 VDC/500 mA   |  |
| TMT 30212<br>TMT 30215<br>TMT 30252<br>TMT 30522<br>TMT 30515<br>TMT 30503<br>TMT 30505 | TMT 30212C<br>TMT 30215C<br>TMT 30252C<br>TMT 30522C<br>TMT 30515C |                   | 30 Watt                          | +12 VDC/1250 mA<br>+15 VDC/1000 mA<br>+5 VDC/3000 mA <sup>1)</sup><br>+5 VDC/3000 mA <sup>1)</sup><br>+5 VDC/3000 mA <sup>1)</sup><br>+3.3 VDC/6000 mA <sup>2)</sup><br>+5 VDC/5000 mA <sup>3)</sup> | -12 VDC/1250 mA<br>-15 VDC/1000 mA<br>+12 VDC/1200 mA <sup>4)</sup><br>+12 VDC/1000 mA <sup>5)</sup><br>+15 VDC/500 mA<br>+5 VDC/1500 mA <sup>5)</sup><br>+3.3 VDC/1000 mA <sup>6)</sup> |

Peak current: <sup>1)</sup> 4500 mA <sup>2)</sup> 7500 mA <sup>3)</sup> 6000 mA <sup>4)</sup> 1800 mA <sup>5)</sup> 2000 mA <sup>6)</sup> 1500 mA <sup>7)</sup> 500 mA  
<30 sec. 10 % duty cycle max, total load not to exceed 30 Watt.

### Input Specifications

|   |                      |   |
|---|----------------------|---|
| Input voltage                                     | - nominal<br>- range | 115 / 230 VAC<br>85 – 264 VAC<br>85 – 370 VDC<br>below 110 VDC: 1.2%/V output power derating  |
| Input frequency                                   |                      | 47 – 63 Hz  |
| Input current full load                           |                      | 115 VAC / 230 VAC<br>10 watt models: 210 mA / 140 mA typ.<br>15 watt models: 280 mA / 180 mA typ.<br>30 watt models: 570 mA / 360 mA typ.<br>50 watt models: 870 mA / 540 mA typ. |
| Inrush current                                    |                      | 115 VAC / 230 VAC<br>24 A / 36 A  |
| External input fuse required (recommended values) |                      | 10–15 watt models: 1.0 A slow blow<br>30 watt models: 2.0 A slow blow<br>50 watt models: 3.15 A slow blow   |

### Output Specifications

|                                      |                                       |  |
|--------------------------------------|---------------------------------------|--|
| Voltage set accuracy                 |                                       | ±2 %   |
| Regulation                           | - Input variation<br>- Load variation | 20 mV max.<br>single output models (0–100%): 50 mV max.<br>dual and triple output models (min. load 10%): 500 mV max.                                      |
| Ripple and noise (20MHz bandwidth)   |                                       | 150 mVpk-pk max.   |
| Overload protection by current limit |                                       | >105 % I <sub>nom</sub> (I <sub>peak</sub> of triple output models)<br>automatic recovery (long term short circuit operation may cause damage to the unit) |
| Capacitive load                      |                                       | 10'000 µF max.   |
| Rise time                            |                                       | 200 ms typ.  |
| Hold-up time                         |                                       | 115 VAC / 230 VAC<br>15/50 watt models: 25 ms / 130 ms min.<br>other models: 17 ms / 93 ms min.  |

**General Specifications**

|  |   |  |
|--|---|--|
| Temperature ranges                                       | <ul style="list-style-type: none"> <li>- Operating</li> <li>- Storage (non operating)</li> </ul>  | -25°C to +50°C max.<br>-25°C to +85°C  |
| Derating   |   | 5 %/K above +40°C  |
| Temperature coefficient                                  |   | 0.02 %/K   |
| Humidity (non condensing)                                |   | 85 % rel. H max.   |
| Efficiency   |   | 83 % typ.  |
| Switching frequency                                      |   | 100 kHz typ. (fixed)   |
| Isolation voltage  | - Input/Output  | 4'000 VAC  |
| Isolation resistance                                     | - Input/Output  | 100 MOhm (500 VDC)   |
| Isolation capacitance                                    | - Input/Output  | 4'700 pF   |
| Electromagnetic compatibility (EMC), Emissions           |   | EN 55022, level B, FCC Part 15 level B<br>UL/EN 60601-1-2 (for medical equipment)  |
| Electromagnetic compatibility (EMC), Immunity            | <ul style="list-style-type: none"> <li>- Electrostatic discharge ESD</li> <li>- RF field susceptibility</li> <li>- Electrical fast transients / bursts on mains line</li> <li>- Surge</li> <li>- Immunity to conducted RF disturbances</li> <li>- Power frequency field immunity</li> <li>- Voltage sags</li> </ul> | IEC/EN 60601-1-2<br>IEC/EN 61000-4-2, 8 kV/8 kV<br>IEC/EN 61000-4-3, 3 V/m<br>IEC/EN 61000-4-4, 2 kV<br>IEC/EN 61000-4-5, 1 kV/2 kV<br>IEC/EN 61000-4-6, 10 V/m<br>IEC/EN 61000-4-8, 3 A/m<br>IEC/EN 61000-4-11  |
| Protection class   |   | class II (in closed cabinets)  |
| Safety standards   | <ul style="list-style-type: none"> <li>- Information technology equipment</li> <li>- Industrial control equipment</li> <li>- Medical equipment</li> </ul>   | IEC/EN 60950-1, UL 60950-1,<br>CSA-C22.2 No. 60950-1-03<br>UL/cUL 508 (chassis mount version only)<br>IEC/EN 60601-1, 3rd edition 2 x MOOP,<br>UL 60601-1  |
| Safety approvals   | <ul style="list-style-type: none"> <li>- CB certificates</li> <li>- UL approvals for UL 60950-1 and UL 60601</li> <li>- UL approval for UL 508</li> </ul>   | <a href="http://www.tracopower.com/products/tmt-cb.rar">www.tracopower.com/products/tmt-cb.rar</a><br><a href="http://www.ul.com">www.ul.com</a> -> certifications -> File: e188913<br><a href="http://www.ul.com">www.ul.com</a> -> certifications -> File: e322109 |
| Reliability, calculated MTBF, at +25°C acc. to IEC 61709 |   | >1.8 Mio h.  |
| Environment  | <ul style="list-style-type: none"> <li>- Vibration</li> <li>- Shock</li> </ul>  | 3 axes, sine sweep, 0.5 mm,<br>10 – 55Hz, 1 oct. / min, 30 min.<br>20 g (3 directions each 3 times)  |
| Environmental compliance                                 | <ul style="list-style-type: none"> <li>- Reach</li> <li>- RoHS</li> </ul>   | <a href="http://www.tracopower.com/products/tmt-reach.pdf">www.tracopower.com/products/tmt-reach.pdf</a><br>RoHS directive 2011/65/EU  |
| Soldering temperature                                    |   | 265°C max. / 10 sec.   |

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

**Outline Dimensions**

**TMT 10 models**



| Connection |        |
|------------|--------|
| Pin        |        |
| 1          | AC in  |
| 2          | AC in  |
| 3          | -V out |
| 4          | +V out |

**Weight: 52 g (1.8 oz)**

**TMT 15 models with solder pins**

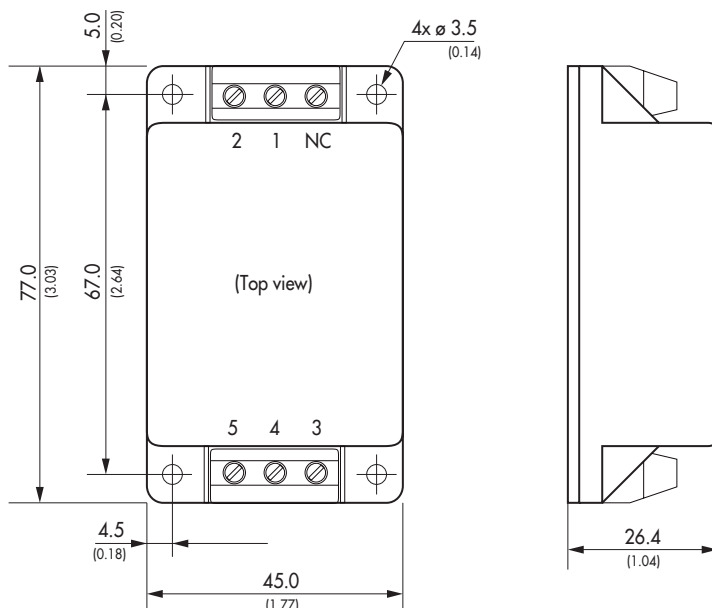


**Weight: 75 g (2.6 oz)**

| Connection |            |        |
|------------|------------|--------|
| Pin        | Single     | Dual   |
| 1          | AC in      | AC in  |
| 2          | AC in      | AC in  |
| 3          | -V out     | -V out |
| 4          | No pin/con | Common |
| 5          | +V out     | +V out |

Pin diameter: 1.0 (0.04)

**TMT 15C models with screw terminal block**

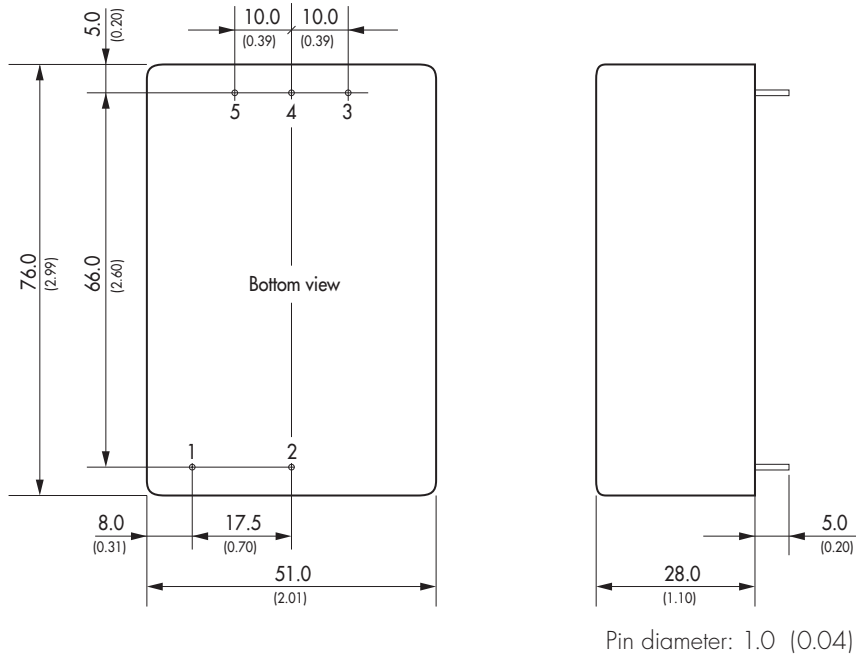


**Weight: 90 g (3.2oz)**

Dimensions in [mm], ( ) = Inches  
Case tolerances: ±1.0 (±0.04)  
Pin pitch tolerance: ±0.5 (±0.02)  
Mounting hole tolerance: ±0.5 (±0.02)

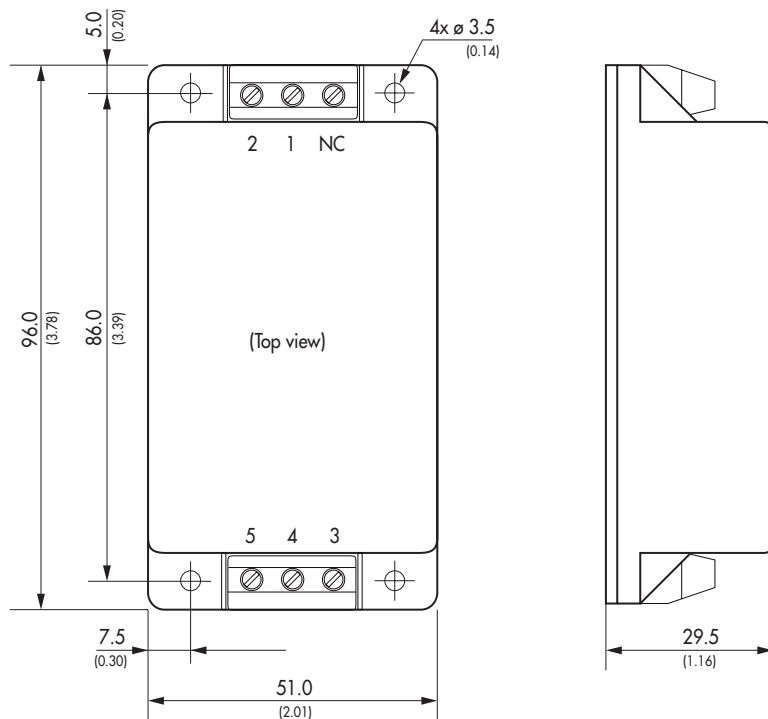
**Outline Dimensions**

TMT 30 single output models and TMT 30212 & TMT 30215 (solder pins)



**Weight:** 165 g (5.8 oz)

TMT 30C single output models and TMT 30212C & TMT 30215C (screw terminal block)



| Connection |            |        |
|------------|------------|--------|
| Pin        | Single     | Dual   |
| 1          | AC in      | AC in  |
| 2          | AC in      | AC in  |
| 3          | -V out     | -V out |
| 4          | No pin/con | Common |
| 5          | +V out     | +V out |

**Weight:** 180 g (6.3 oz)

Dimensions in [mm], ( ) = Inches  
Case tolerances: ±1.0 (±0.04)  
Pin pitch tolerance: ±0.5 (±0.02)  
Mounting hole tolerance: ±0.5 (±0.02)

**Outline Dimensions**

TMT 30 triple output models and TMT 30252 (solder pins)



**Weight: 200 g (7.1 oz)**

Pin diameter: 1.0 (0.04)

TMT 30C triple output models and TMT 30252C (screw terminal block)



**Connection**

| Pin | Dual        | Triple   |
|-----|-------------|----------|
| 1   | AC in       | AC in    |
| 2   | AC in       | AC in    |
| 3   | No pin/con. | -V out 3 |
| 4   | No pin/con. | +V out 3 |
| 5   | -V out 2    | -V out 2 |
| 6   | +V out 2    | +V out 2 |
| 7   | -V out 1    | -V out 1 |
| 8   | +V out 1    | +V out 1 |

**Weight: 220 g (7.8 oz)**

Dimensions in [mm], ( ) = Inches  
Casing tolerances: ±1.0 (±0.04)  
Pin pitch tolerance: ±0.5 (±0.02)  
Mounting hole tolerance: ±0.5 (±0.02)

**Outline Dimensions**

**TMT 50 models with solder pins**



**Weight: 245 g (8.6 oz)**

Pin diameter: 1.0 (0.04)

| Connection |        |
|------------|--------|
| Pin        | Single |
| 1          | AC in  |
| 2          | AC in  |
| 3          | -V out |
| 4          | +V out |

**TMT 50C models with screw terminal block**



**Weight: 295 g (10.4 oz)**

Dimensions in [mm], ( ) = Inches  
Case tolerances: ±1.0 (±0.04)  
Pin pitch tolerance: ±0.5 (±0.02)  
Mounting hole tolerance: ±0.5 (±0.02)

**DIN-Rail Mounting Kit**

Adapter for mounting on DIN-rails as per EN 50022-35 (snap-on mounting)



| DIN-Rail Mounting Kit |   |
|-----------------------|---|
| Order Code            | For Models                              |
| TMT-MK1               | TMT 15xxxC                              |
| TMT-MK2               | TMT 30xxxC single & $\pm 12/\pm 15$ VDC |
| TMT-MK3               | For triple and dual asymmetric output   |
| TMT-MK5               | TMT 50xxxC                              |

Kit contains interface plate, DIN-rail clip and necessary screws.

Specifications can be changed without notice! Make sure you are using the latest documentation, downloadable at [www.tracopower.com](http://www.tracopower.com)



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