



### 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 TMT 10112 TMT 10115 TMT 10124		10 Watt	5 VDC/2000 mA 12 VDC/840 mA 15 VDC/670 mA 24 VDC/420 mA
TMT 15105 TMT 15112 TMT 15115 TMT 15124	TMT 15105C TMT 15112C TMT 15115C TMT 15124C	15 Watt	5 VDC/3000 mA 12 VDC/1250 mA 15 VDC/1000 mA 24 VDC/625 mA
TMT 30105 TMT 30112 TMT 30115 TMT 30124	TMT 30105C TMT 30112C TMT 30115C TMT 30124C	30 Watt	5 VDC/6000 mA 12 VDC/2500 mA 15 VDC/2000 mA 24 VDC/1250 mA
TMT 50105 TMT 50112 TMT 50115 TMT 50124 TMT 50148	TMT 50105C TMT 50112C TMT 50115C TMT 50124C TMT 50148C	50 Watt	5 VDC/9000 mA 12 VDC/4200 mA 15 VDC/3400 mA 24 VDC/2300 mA 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 TMT 15215	TMT 15212C TMT 15215C	15 Watt	+12 VDC/625 mA +15 VDC/500 mA	-12 VDC/625 mA -15 VDC/500 mA	
TMT 30212 TMT 30215 TMT 30252 TMT 30522 TMT 30515 TMT 30503 TMT 30505	TMT 30212C TMT 30215C TMT 30252C TMT 30522C TMT 30515C		30 Watt	+12 VDC/1250 mA +15 VDC/1000 mA +5 VDC/3000 mA <sup>1)</sup> +5 VDC/3000 mA <sup>1)</sup> +5 VDC/3000 mA <sup>1)</sup> +3.3 VDC/6000 mA <sup>2)</sup> +5 VDC/5000 mA <sup>3)</sup>	-12 VDC/1250 mA -15 VDC/1000 mA +12 VDC/1200 mA <sup>4)</sup> +12 VDC/1000 mA <sup>5)</sup> +15 VDC/500 mA +5 VDC/1500 mA <sup>5)</sup> +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 - range	115 / 230 VAC 85 – 264 VAC 85 – 370 VDC below 110 VDC: 1.2%/V output power derating
Input frequency		47 – 63 Hz
Input current full load		115 VAC / 230 VAC 10 watt models: 210 mA / 140 mA typ. 15 watt models: 280 mA / 180 mA typ. 30 watt models: 570 mA / 360 mA typ. 50 watt models: 870 mA / 540 mA typ.
Inrush current		115 VAC / 230 VAC 24 A / 36 A
External input fuse required (recommended values)		10–15 watt models: 1.0 A slow blow 30 watt models: 2.0 A slow blow 50 watt models: 3.15 A slow blow

### Output Specifications

Voltage set accuracy		±2 %
Regulation	- Input variation - Load variation	20 mV max. single output models (0–100%): 50 mV max. 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) 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 15/50 watt models: 25 ms / 130 ms min. 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. -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 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 IEC/EN 61000-4-2, 8 kV/8 kV IEC/EN 61000-4-3, 3 V/m IEC/EN 61000-4-4, 2 kV IEC/EN 61000-4-5, 1 kV/2 kV IEC/EN 61000-4-6, 10 V/m IEC/EN 61000-4-8, 3 A/m 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, CSA-C22.2 No. 60950-1-03 UL/cUL 508 (chassis mount version only) IEC/EN 60601-1, 3rd edition 2 x MOOP, 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> <a href="http://www.ul.com">www.ul.com</a> -> certifications -> File: e188913 <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, 10 – 55Hz, 1 oct. / min, 30 min. 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> 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:  $\pm 1.0$  ( $\pm 0.04$ )  
Pin pitch tolerance:  $\pm 0.5$  ( $\pm 0.02$ )  
Mounting hole tolerance:  $\pm 0.5$  ( $\pm 0.02$ )

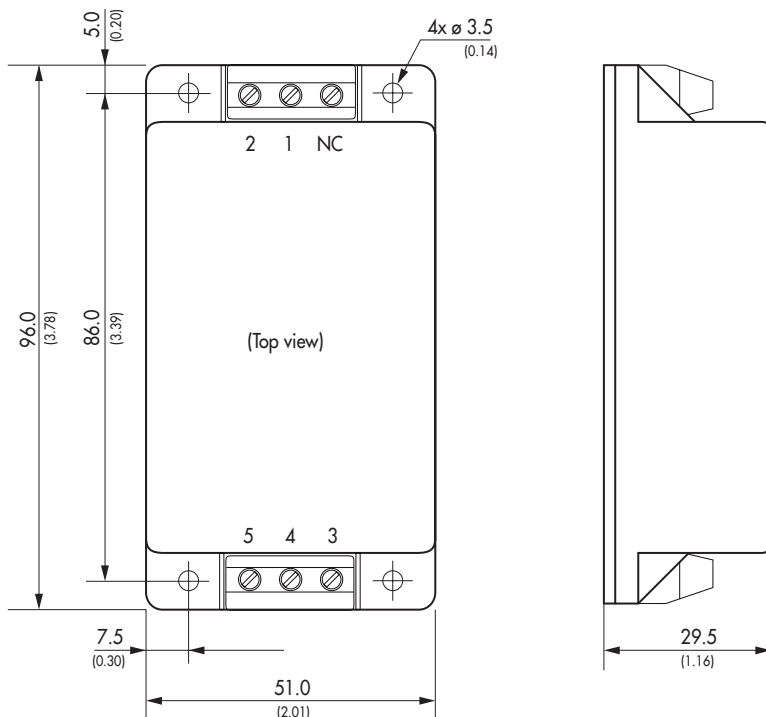
**Outline Dimensions**

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)



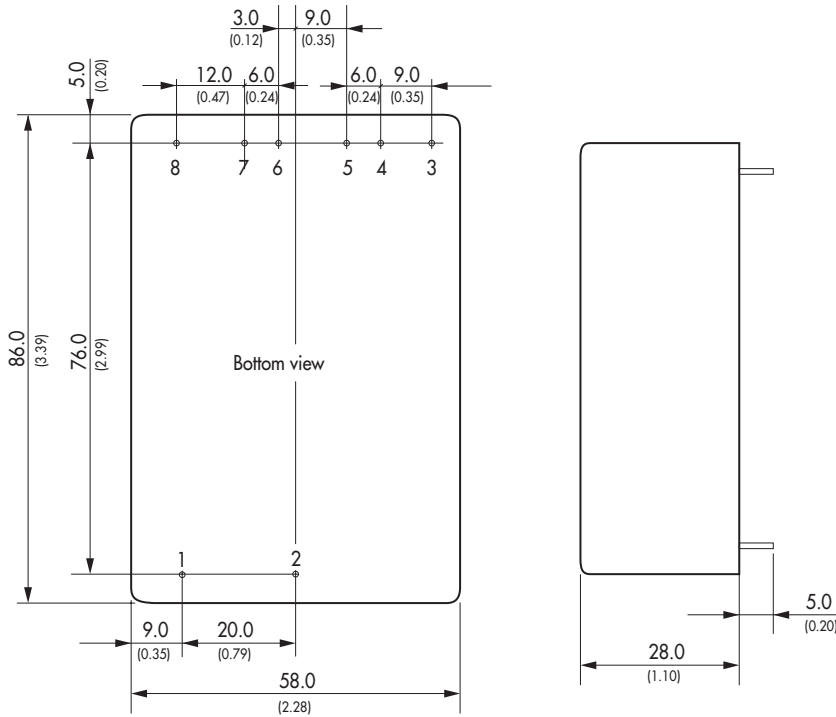
Connection		
Pin	Single	Dual
1	AC in	AC in
2	AC in	AC in
3	-V out	-V out
4	No pin/con	Common
5	+V out	+V out

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

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

**Outline Dimensions**

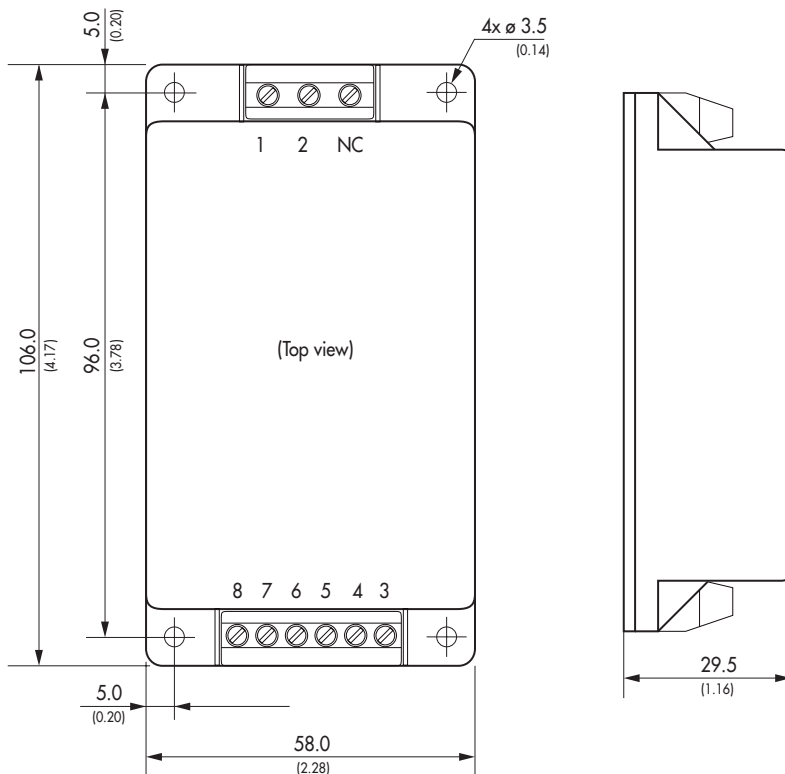
TMT 30 triple output models and TMT 30252 (solder pins)



**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:  $\pm 1.0$  ( $\pm 0.04$ )  
Pin pitch tolerance:  $\pm 0.5$  ( $\pm 0.02$ )  
Mounting hole tolerance:  $\pm 0.5$  ( $\pm 0.02$ )

**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:  $\pm 1.0$  ( $\pm 0.04$ )  
Pin pitch tolerance:  $\pm 0.5$  ( $\pm 0.02$ )  
Mounting hole tolerance:  $\pm 0.5$  ( $\pm 0.02$ )

**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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