



### Features

- ◆ Ultra compact, low profile plastic case
- ◆ Single-, dual- and triple output models
- ◆ 2 package versions:
  - Screw terminal block for chassis mount
  - Solder pins for direct PCB mount
- ◆ DIN-rail mount adaptor (optional)
- ◆ Universal input 85-264 VAC, 47-440 Hz
- ◆ Protection class II
- ◆ IEC/EN/UL 60950-1 approval, CB-report
- ◆ Short circuit and overload protection
- ◆ 3-year product warranty



The TMP series AC/DC Power Modules is a new range of fully encapsulated power supplies in an ultra-compact module. They feature easy chassis mounting with screw terminal block connection or direct PCB mounting with solder pins.

Full compliance with International safety standards for industrial control equipment qualifies the products for worldwide markets.

These power supplies offer a cost effective solution for many space critical applications in commercial and industrial electronic equipment.

### Single Output Models 7 to 15 Watt

Order code		Output power max.	Output	
PCB-mount with solder pins	Chassis mount with screw terminal block			
TMP 07103		4.6 W	3.3 VDC / 1400 mA	
TMP 07105			5.0 VDC / 1400 mA	
TMP 07112			7 W	12 VDC / 585 mA
TMP 07115			15 VDC / 465 mA	
TMP 07124			24 VDC / 290 mA	
TMP 10103		6.6 W	3.3 VDC / 2000 mA	
TMP 10105			5.0 VDC / 2000 mA	
TMP 10112			10 W	12 VDC / 830 mA
TMP 10115			15 VDC / 665 mA	
TMP 10124			24 VDC / 415 mA	
TMP 15105	TMP 15105C	15 W	5 VDC / 3000 mA	
TMP 15112	TMP 15112C		12 VDC / 1250 mA	
TMP 15115	TMP 15115C		15 VDC / 1000 mA	
TMP 15124	TMP 15124C		24 VDC / 625 mA	
TMP 15148	TMP 15148C		48 VDC / 310 mA	

30 & 60 Watt and multi output models see next page ->

**Single Output Models 30 to 60 Watt**

Order code		Output power max.	Output
PCB-mount with solder pins	Chassis mount with screw terminal block		
TMP 30105	TMP 30105C	30 W	5 VDC / 6000 mA
TMP 30112	TMP 30112C		12 VDC / 2500 mA
TMP 30115	TMP 30115C		15 VDC / 2000 mA
TMP 30124	TMP 30124C		24 VDC / 1250 mA
TMP 30148	TMP 30148C		48 VDC / 625 mA
TMP 60105	TMP 60105C	51 W	5.1 VDC / 10'000 mA
TMP 60112	TMP 60112C	60 W	12 VDC / 5000 mA
TMP 60115	TMP 60115C		15 VDC / 4000 mA
TMP 60124	TMP 60124C		24 VDC / 2500 mA
TMP 60136	TMP 60136C		36 VDC / 1665 mA
TMP 60148	TMP 60148C		48 VDC / 1250 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				
TMP 10212		10 Watt	+12 VDC/380 mA	-12 VDC/380 mA	
TMP 10215			+15 VDC/300 mA	-15 VDC/300 mA	
TMP 15212	TMP 15212C	15 Watt	+12 VDC/650 mA	-12 VDC/650 mA	
TMP 15215	TMP 15215C		+15 VDC/500 mA	-15 VDC/500 mA	
TMP 15252	TMP 15252C		5.0 VDC/1500 mA	12 VDC/625 mA	
TMP 15512	TMP 15512C		5.0 VDC/2000 mA	+12 VDC/200 mA	-12 VDC/200 mA
TMP 15515	TMP 15515C		5.0 VDC/2000 mA	+15 VDC/150 mA	-15 VDC/150 mA
TMP 30212	TMP 30212C	30 Watt	+12 VDC/1300 mA	-12 VDC/1300 mA	
TMP 30215	TMP 30215C		+15 VDC/1000 mA	-15 VDC/1000 mA	
TMP 30252	TMP 30252C		5.0 VDC/3000 mA <sup>1)</sup>	12 VDC/1250 mA <sup>4)</sup>	
TMP 30512	TMP 30512C		5.0 VDC/3000 mA <sup>1)</sup>	+12 VDC/600 mA <sup>5)</sup>	-12 VDC/600 mA <sup>5)</sup>
TMP 30515	TMP 30515C		5.0 VDC/3000 mA <sup>1)</sup>	+15 VDC/500 mA <sup>6)</sup>	-15 VDC/500 mA <sup>6)</sup>
TMP 30522	TMP 30522C		5.0 VDC/3000 mA <sup>1)</sup>	+12 VDC/1000 mA <sup>7)</sup>	-12 VDC/250 mA <sup>9)</sup>
TMP 30316	TMP 30316C		3.3 VDC/4000 mA <sup>2)</sup>	+5.0 VDC/1500 mA <sup>8)</sup>	+12 VDC/250 mA <sup>9)</sup>
TMP 30317	TMP 30317C		5.0 VDC/4500 mA <sup>3)</sup>	+3.3 VDC/1000 mA <sup>7)</sup>	+12 VDC/250 mA <sup>9)</sup>

Peak current: <sup>1)</sup>4500 mA <sup>2)</sup>5300 mA <sup>3)</sup>6000 mA <sup>4)</sup>1800 mA <sup>5)</sup>900 mA <sup>6)</sup>750 mA <sup>7)</sup>1500 mA <sup>8)</sup>2000 mA <sup>9)</sup>500 mA  
 Total load not to exceed 30 Watt.

**Input Specifications**

Input voltage	– nominal – range	100 – 240 VAC 85 – 264 VAC (universal input) 120 – 370 VDC (not for TMP 60 models)
Input frequency		47 – 400 Hz 47 – 63 Hz for TMP 60 models

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

**Input Specifications**

Input current at full load (115 VAC / 230 VAC)	7 W models: 150 mA / 100 mA typ. 10 W models: 200 mA / 130 mA typ. 15 W models: 300 mA / 190 mA typ. 30 W models: 550 mA / 330 mA typ. 60 W models: 1050 mA / 670 mA typ.
Input current at no load (115 VAC / 230 VAC)	15 mA / 20 mA typ.
Inrush current (< 2ms, cold start at 115 VAC / 230 VAC)	7 – 10 W models: 10 A / 20 A 15 W models: 15 A / 30 A 30 W models: 20 A / 40 A 60 W models: 30 A / 50 A
External input fuse required (recommended value)	7 – 30 W models: 1.5 A slow blow other models: 3.0 A slow blow

**Output Specifications**

Voltage set accuracy	±2 % max.
Regulation	<ul style="list-style-type: none"> <li>– Input variation: 1 % max.</li> <li>– Load variation: <ul style="list-style-type: none"> <li>single output models (10–100%): 1 % max.</li> <li>dual output models balanced load (10–100%): 2.5 % max.</li> <li>dual output models unbalanced load (20/100%): 5.0 % max.</li> <li>triple output models main output (10–100%): 1.0 % max.</li> <li>triple output models auxiliary outputs (10–100%): 4.0 % max.</li> </ul> </li> </ul>
Minimum load	<ul style="list-style-type: none"> <li>single an dual output models: 10 % of rated max. current</li> <li>triple output models main output: 10 % of rated max. current</li> <li>triple output models auxiliary outputs: 20 % of rated max. current</li> </ul> <p>operation at lower load condition will not damage these power supplies, however, they may not meet all listed specifications.</p>

Max. capacitive load [ $\mu$ F]		Model series				
Output:		TMP 07	TMP 10	TMP 15	TMP 30	TMP 60
Single output models:	3.3 VDC	2200	3900	-	-	-
	5.0 / 5.1 VDC	2200	3300	3900	8000	8000
	12 / 15 VDC	1000	2200	2200	3900	3900
	24 VDC	680	1000	1000	1500	1500
	36 VDC	-	-	-	-	1000
	48 VDC	-	-	680	1000	800
Dual output models:	5 VDC	-	-	2000	3900	-
	+12 / -12 / +15 / -15 VDC	-	1000	1500	1500	-
Triple output models:	3.3 / 5.0 VDC	-	-	2200	2200	-
	+12 / -12 / +15 / -15 VDC	-	-	1500	1500	-

Ripple and noise (20MHz bandwidth)	3.3 VDC & 5.0 VDC outputs: 1.8% of Vout [mVpk-pk] other outputs: 1.3% of Vout [mVpk-pk]
Overload protection by current limit	120% – 180% of Inom, fold back, automatic recovery (long term overload condition may cause damage to the power supply)
Overvoltage protection by Zehner diode (main output only)	120% of Vout typ.
Rise time	200 ms typ.
Hold-up time	20 ms typ.

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

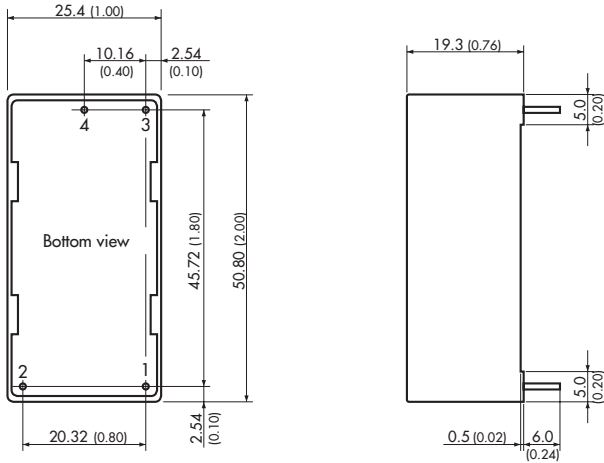
**General Specifications**

Temperature ranges	– Operating – Storage (non-operating)	–25°C to +70°C –40°C to +85°C
Power derating		3.75 %/K above +50°C 2.5 %/K above +40°C for TMP 60105(C)
Temperature coefficient		0.02 %/K
Humidity (non-condensing)		95 % rel. H max.
Efficiency		78 % typ.
Switching frequency		100 kHz typ. (fixed)
Isolation voltage (60 sec.)	– Input/Output	3'000 VAC
Isolation resistance	– Input/Output	100 MΩhm (at 500 VDC)
Electromagnetic compatibility (EMC), Emissions		EN 61000-6-3: 2007 EN 61204-3: 2000, class A EN 55022, level B, FCC Part 15 level B
Electromagnetic compatibility (EMC), Immunity	– Electrostatic discharge ESD – RF field susceptibility – Electrical fast transient / burst immunity input – Electrical fast transient / burst immunity output – Surge immunity line – neutral – Surge immunity output – Immunity to conducted RF disturbances – Mains voltage dips and interruptions	EN 61000-6-2: 2005 EN 61204-3: 2000, class A EN 61000-4-2    8 kV / 4 kV, criteria B EN 61000-4-3    10 V/m, criteria A EN 61000-4-4    ±2 kV, criteria B EN 61000-4-4    ±2 kV, criteria B EN 61000-4-5,    ±1 kV, criteria B EN 61000-4-5    ±0.5 kV, criteria B EN 61000-4-6    10 V, criteria B EN 61000-4-11   30 % 10 ms, criteria B 60 % 100 ms, criteria C 95 % 5000 ms, criteria C
EMC test certificates		<a href="http://www.tracopower.com/products/tmp-emc.pdf">www.tracopower.com/products/tmp-emc.pdf</a>
Protection class II		to IEC/EN 60536
Safety standards	– Information technology equipment	IEC/EN 60950-1, UL 60950-1
Safety approvals (TMP 60 models pending)	– CB certificate for IEC 60950-1 – UL approvals for UL 60950-1	<a href="http://www.tracopower.com/products/tmp-cb.pdf">www.tracopower.com/products/tmp-cb.pdf</a> <a href="http://www.ul.com">www.ul.com</a> -> certifications -> File: E188913
Reliability /calculated MTBF (MIL-HDBK-217F, at 25 °C, ground benign)	TMP 07 models: TMP 10 models: TMP 15 models: TMP 30 models: TMP 60 models:	>330'000 h >300'000 h >280'000 h >250'000 h >125'000 h
Case material		plastic resin + fiberglass (UL 94V-0 rated)

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

**Outline Dimensions**

TMP 07 models for PCB mount:

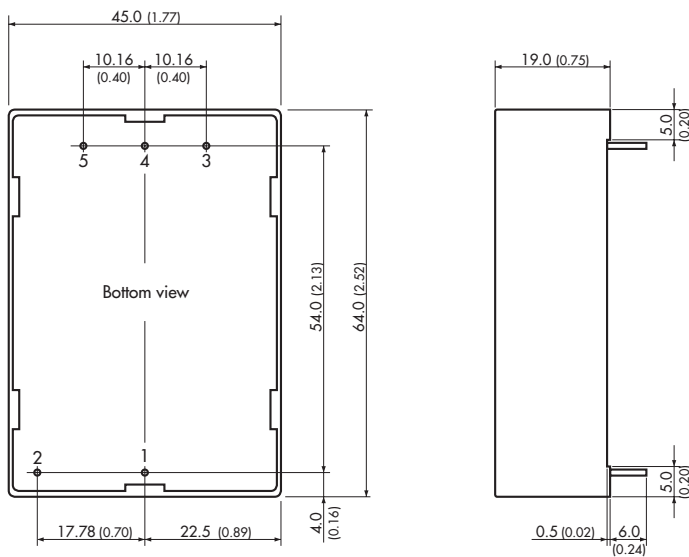


Pin-Out	
Pin	Single
1	AC (N)
2	AC (L)
3	+Vout
4	-Vout

Pin diameter: 1.0 (0.04)

Weight: 44 g (1.55 oz)

TMP 10 models for PCB mount:



Pin-Out		
Pin	Single	Dual
1	AC (N)	AC (N)
2	AC (L)	AC (L)
3	-Vout	Vout 2
4	ntc	com.1/2
5	+Vout	Vout 1

(ntc = not to connect)

Pin diameter: 1.0 (0.04)

Weight: 92 g (3.25 oz)

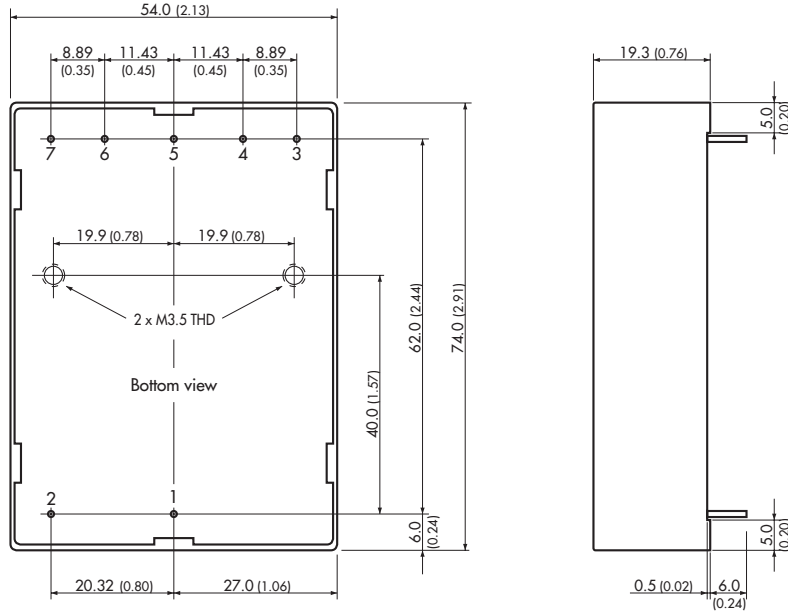
Dimensions in [mm], ( ) = Inches

Case tolerances: ±0.5 (0.02)

Pin pitch tolerance: ±0.25 (0.01)

**Outline Dimensions**

TMP 15 models for PCB mount:

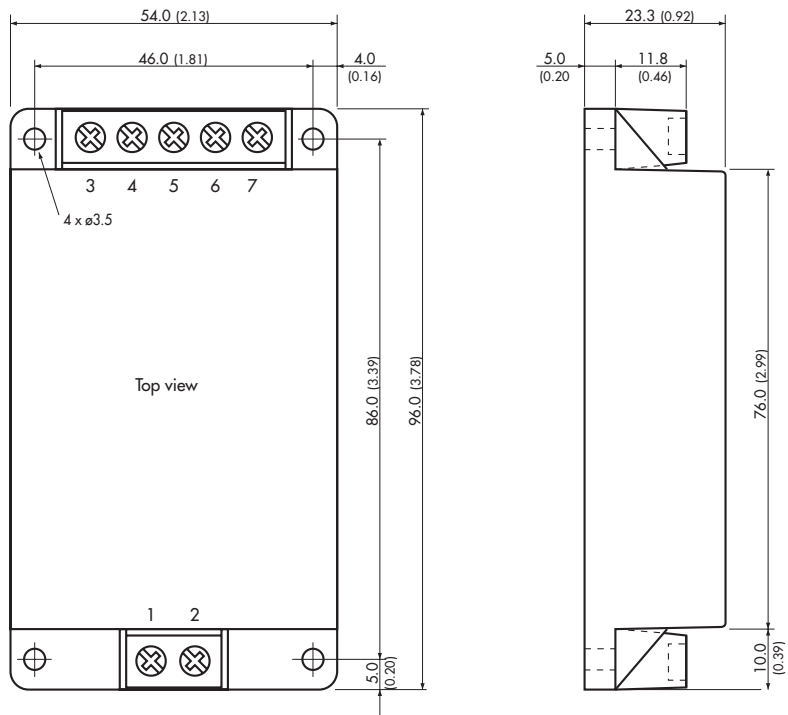


Pin-Out				
Pin	Single	Dual sym.	Dual asym.	Triple
1	AC (N)			
2	AC (L)			
3	no pin			Vout 3
4	-Vout	Vout 2	-Vout 2	com.2/3
5	no pin	com.1/2	+Vout 2	Vout 2
6	+Vout	Vout 1	-Vout 1	-Vout 1
7	no pin		+Vout 1	+Vout 1

Pin diameter: 1.0 (0.04)

Weight: 114 g (4.02 oz)

TMP 15 models for chassis mount:



Connection				
Pin	Single	Dual sym.	Dual asym.	Triple
1	AC (N)			
2	AC (L)			
3	not to connect			Vout 3
4	-Vout	Vout 2	-Vout 2	com.2/3
5	ntc	com.1/2	+Vout 1	Vout 2
6	+Vout	Vout 1	-Vout 1	-Vout 1
7	not to connect		+Vout 1	+Vout 1

(ntc = not to connect)

Weight: 162 g (5.71 oz)

Dimensions in [mm], ( ) = Inches

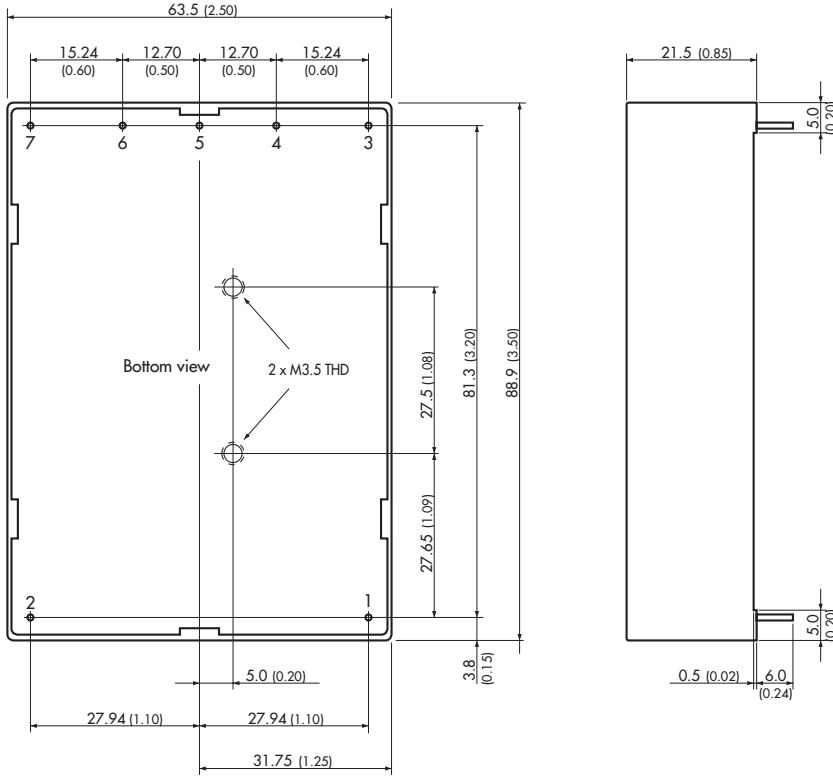
Case tolerances: ±0.5 (0.02)

Pin pitch tolerance: ±0.25 (0.01)

Mounting hole tolerance: ±0.25 (0.02)

**Outline Dimensions**

TMP 30 models for PCB mount:



Pin diameter: 1.0 (0.04)  
Weight: 177 g (6.24 oz)

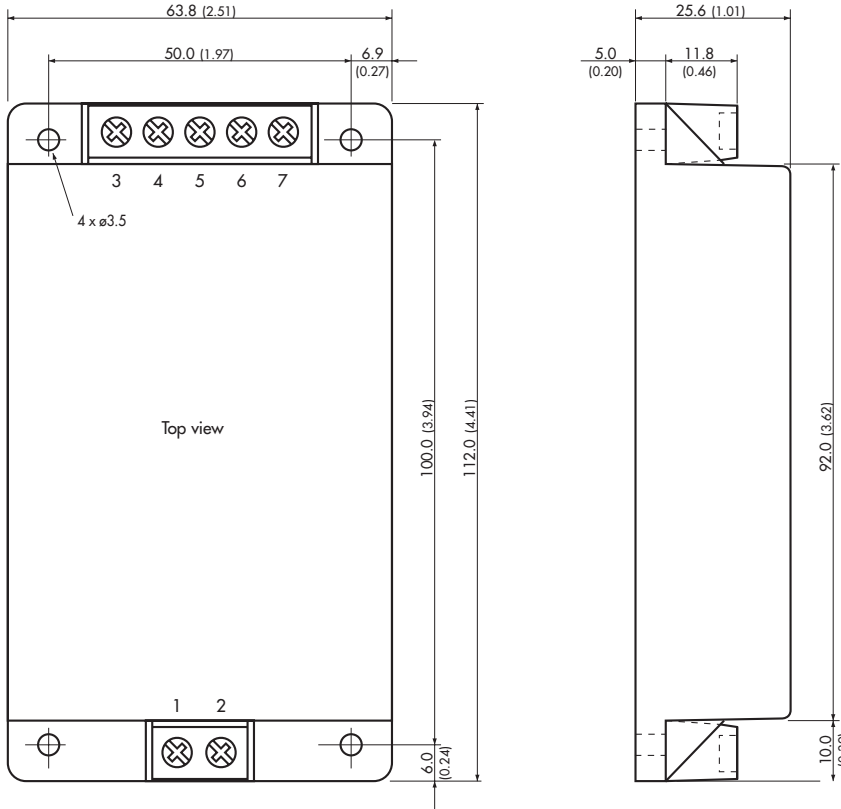
Pin-Out				
Pin	Single	Dual sym.	Dual asym.	Triple
1	AC (N)			
2	AC (L)			
3	+Vout	Vout 1	+Vout 2	Vout 2
4	no pin		+Vout 1	+Vout 1
5	-Vout	com. 1/2	-Vout 2	com 2/3
6	no pin		-Vout 1	-Vout 1
7	ntc	Vout 2	ntc	Vout 3

(ntc = not to connect)

Dimensions in [mm], ( ) = Inches  
Case tolerances: ±0.5 (0.02)  
Pin pitch tolerance: ±0.25 (0.01)  
Mounting hole tolerance: ±0.25 (0.02)

**Outline Dimensions**

TMP 30 models for chassis mount:



Weight: 191 g (6.74 oz)

Connection				
Pin	Single	Dual sym.	Dual asym.	Triple
1	AC (N)			
2	AC (L)			
3	+Vout	Vout 1	+Vout 2	Vout 2
4	not to connect		+Vout 1	+Vout 1
5	-Vout	com.1/2	-Vout 2	com 2/3
6	not to connect		-Vout 1	-Vout 1
7	ntc	Vout 2	ntc	Vout 3

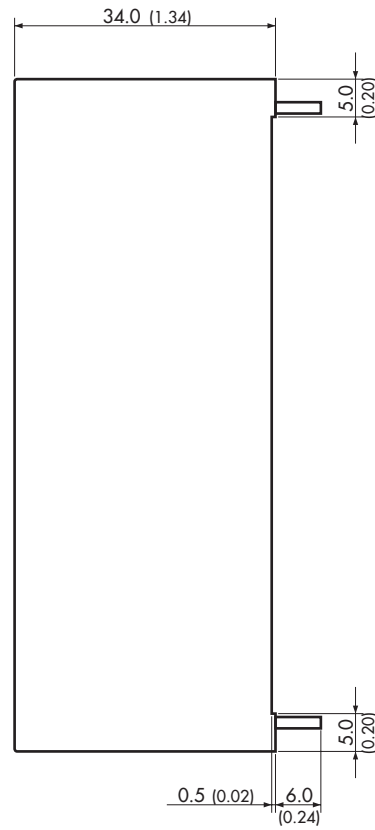
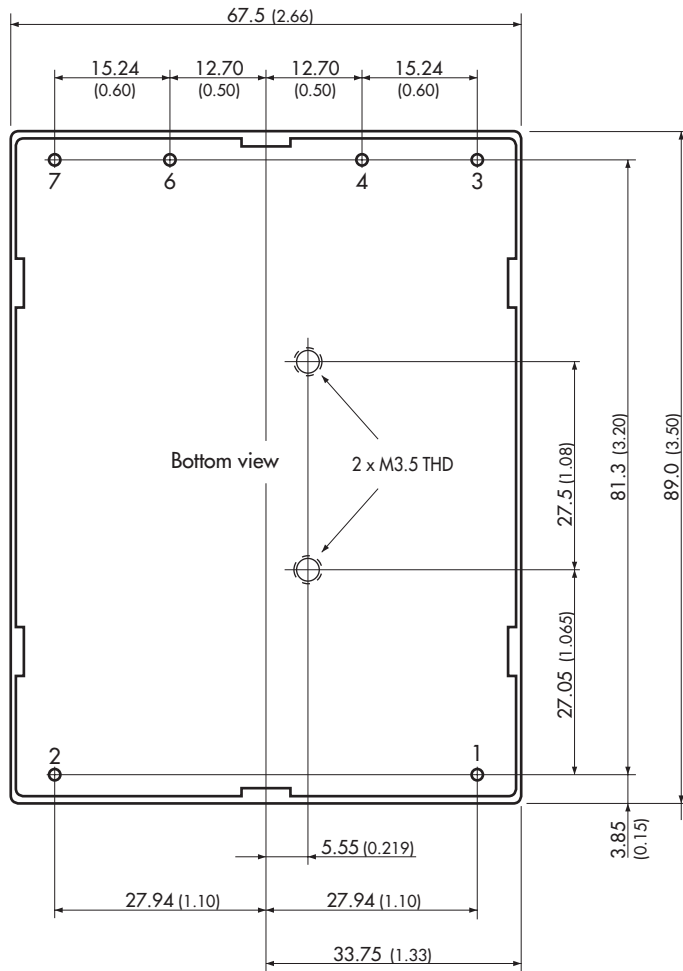
(ntc = not to connect)

Dimensions in [mm], ( ) = Inches  
Case tolerances: ±0.5 (0.02)  
Mounting hole tolerance: ±0.25 (0.02)



**Outline Dimensions**

TMP 60 models for PCB mount:



Pin diameter: 2.0 (0.08)

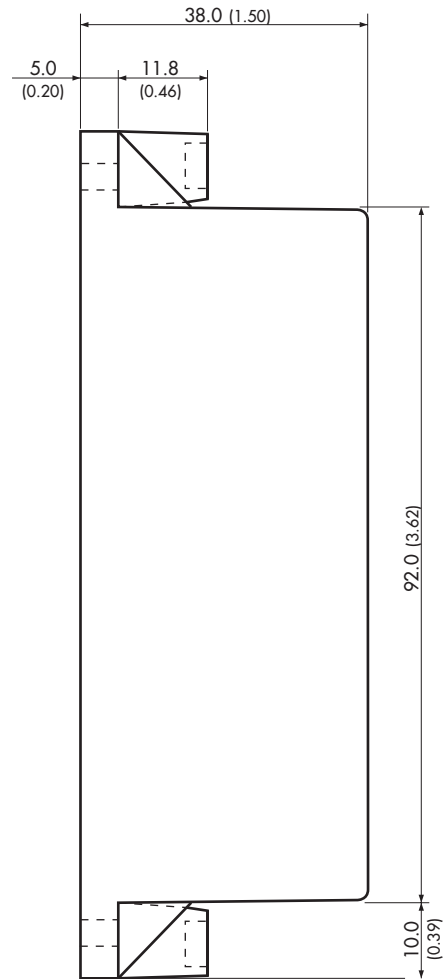
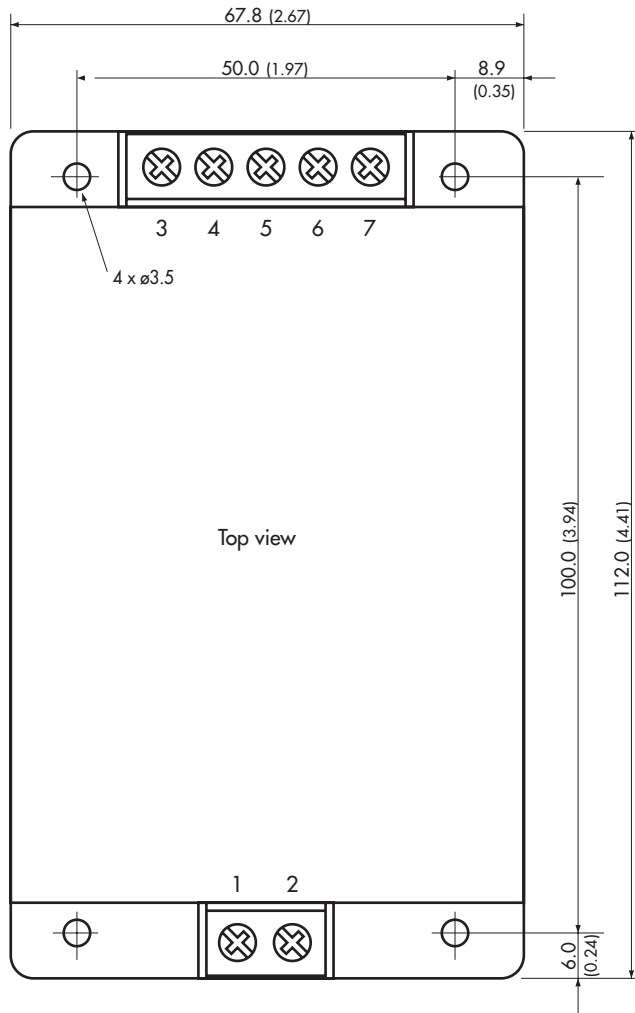
Weight: 345 g (12.17 oz)

Pin-Out	
Pin	Single
1	AC (N)
2	AC (L)
3	no pin
4	+Vout
6	-Vout
7	no pin

Dimensions in [mm], ( ) = Inches  
Case tolerances: ±0.5 (0.02)  
Pin pitch tolerance: ±0.25 (0.01)  
Mounting hole tolerance: ±0.25 (0.02)

**Outline Dimensions**

TMP 60 models for chassis mount:



Weight: 357 g (12.95 oz)

Connection	
Pin	Single
1	AC (N)
2	AC (L)
3	ntc
4	+Vout
5	ntc
6	-Vout
7	ntc

(ntc = not to connect)

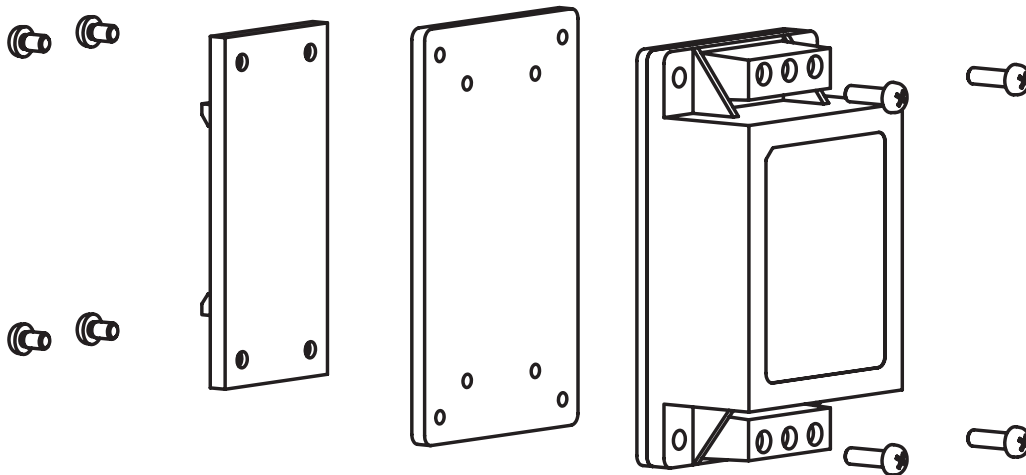
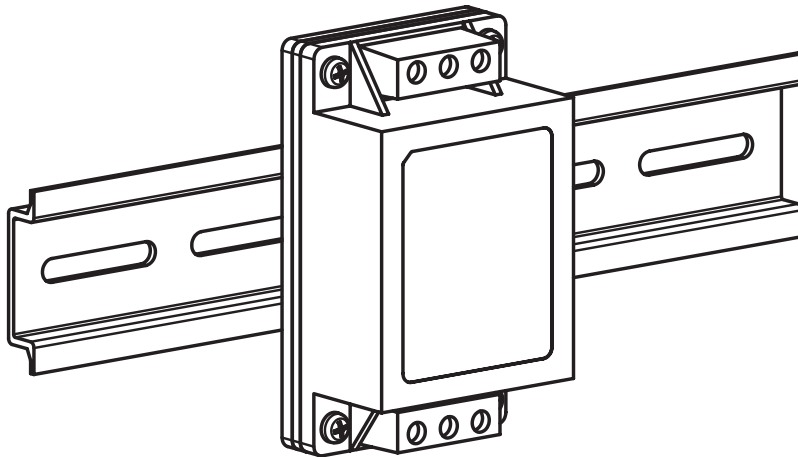
Dimensions in [mm], ( ) = Inches

Case tolerances: ±0.5 (0.02)

Mounting hole tolerance: ±0.25 (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
TMP-MK1	TMP 15xxxC
TMP-MK2	TMP 30xxxC & TMP 60xxxC

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

Specifications can be changed any time without notice.