

### Features 200% Peak Power!

- ◆ 3-phase input 3AC 400V or 3AC 500V
- ◆ 200 % boost power for up to 5 seconds
- ◆ Alternative to AC Transformers
- ◆ Fully regulated 24 VDC output with 10 A, 20A or 40A
- ◆ Rugged metal case design qualified for harsh industrial environment
- ◆ High efficiency >92%
- ◆ Operating temperature range: -25°C to +60°C (full power)
- ◆ Overload and over temperature protection
- ◆ Power good signal, remote On/Off
- ◆ Industrial safety approvals
- ◆ Cost effective design
- ◆ 3-year product warranty



The TRACOPOWER TSP-3P series of high performance DIN-rail power supplies offers an economical solution for to generate a regulated DC voltage from three-phase mains networks. The smart design achieves a very high efficiency at ultra compact size and very competitive cost. The series provides models with 240, 480 and 960 Watt output power all with additional power reserve of up to 200%. This high peak power guarantees a reliable start-up of loads with high inrush currents such as motors, valves and other industrial loads. In many applications these switching power supplies can also replace mains transformers with rectifiers.

Models				
Order Code	Output Power (nom.)	Input Voltage (nom.)	Output Voltage (nom.)	*Output Current (nom.)
TSP 240-124-3PAC400	240 W	3 AC 400 V	24 VDC	10 A
TSP 240-124-3PAC500		3 AC 500 V	24 VDC	10 A
TSP 480-124-3PAC400	480 W	3 AC 400 V	24 VDC	20 A
TSP 480-124-3PAC500		3 AC 500 V	24 VDC	20 A
TSP 960-124-3PAC400	960 W	3 AC 400 V	24 VDC	40 A
TSP 960-124-3PAC500		3 AC 500 V	24 VDC	40 A

\* 200% peak current for up to 5 sec.

**Input Specifications**

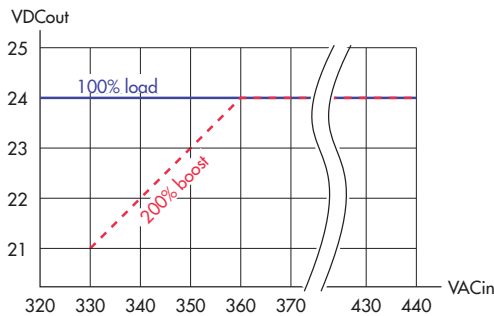
Input voltage range	star-net configuration (2-phase operation not possible) 400 VAC models: 320 – 440 VAC 500 VAC models: 400 – 550 VAC (derating below 410 VAC see graph 2)
Input voltage frequency	47 – 63 Hz
Harmonic limits	EN 61000-3-2, Class B (for <16 A per phase)
Power factor	>0.8 at full load
Recommended circuit breaker,	6.0 A characteristic B

**Output Specifications**

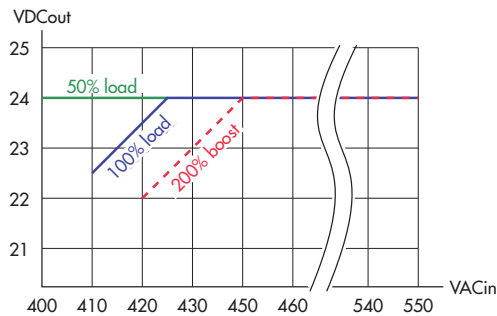
Output voltage:	24 VDC (fixed)
Regulation – Input / load variation	1 % max. + voltage drop at low input voltage and/or boost power, see graph 1 & 2
Boost power – max. current – duty cycle – max. cycle time – input voltage requirements	200% of nominal output current <10% 5 sec limited by timer (automatic restart after 30 sec.) see graph 1 & 2
Ripple and noise (20MHz bandwidth) – nominal operation – boost power operation	100 mV pk-pk typ. up to 750 mV pk-pk
Rise time	200 ms typ.
Current limitation	at 230% of nominal output current, constant current
Overtemperature protection	switch off at overtemperature (automatic restart)
Power back immunity	35 VDC continuous, 40 VDC for one second

**Output Power Derating**

Graph 1: 400 VAC input models



Graph 2: 500 VAC input models



**General Specifications**

Temperature range – Full power operation – Max. operating – Start up – In accordance to UL508	–25°C to +60°C (–13°F to +140°F) 70°C (158°F), 2.5 %/K derating above 60°C (140°F) –40°C (–40°F) –25°C to +40°C (–13°F to +104°F)
Cooling	convection cooling, no internal fan
Humidity (non condensing)	95 % rel. H max.
Reliability, calculated MTTF	tbid
Isolation	according to IEC/EN 60950-1, UL 60950-1, UL 508
Class of protection	safety class I (IEC 536)
Degree of protection	IP 20 (IEC/EN 60529)

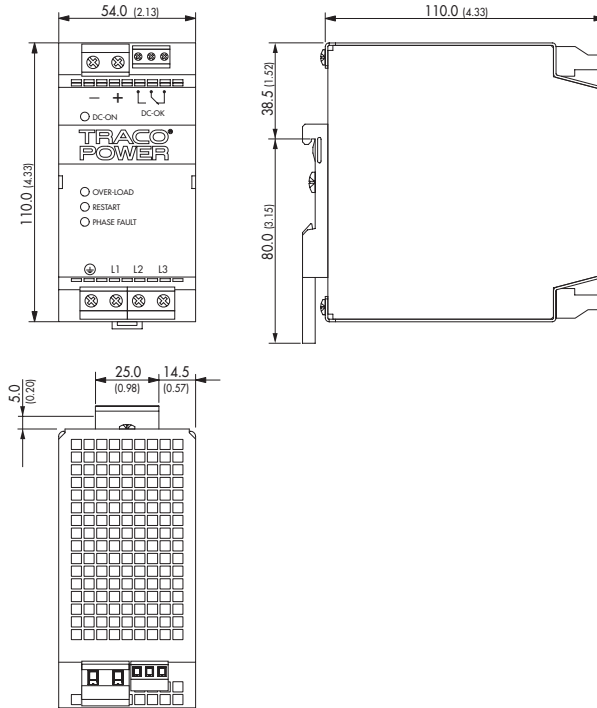
**General Specifications**

Electromagnetic compatibility (EMC), Emissions	EN 61000-6-3 – Conducted RI suppression on input – Radiated RI suppression	EN 55011 class B, EN 55022 class B, EN 55011 class B, EN 55022 class B,
Electromagnetic compatibility (EMC), Immunity	EN 61000-6-2 – Electrostatic discharge (ESD) – Radiated RF field immunity – Electrical fast transient burst immunity input burst immunity output – Surge immunity L – L L – PE + Output – - Output + Output – PE - Output – PE – Immunity to conducted RF disturbances – Mains voltage dips and interruptions	IEC / EN 61000-4-2 8 kV / 15 kV IEC / EN 61000-4-3 10 V/m IEC / EN 61000-4-4 4 kV IEC / EN 61000-4-4 2 kV IEC / EN 61000-4-5 2 kV IEC / EN 61000-4-5 4 kV IEC / EN 61000-4-5 0.5 kV IEC / EN 61000-4-5 0.5 kV IEC / EN 61000-4-5 0.5 kV IEC / EN 61000-4-6 10 V IEC / EN 61000-4-11 criteria tba criteria tba criteria tba criteria tba criteria tba criteria tba criteria tba criteria tba criteria tba
Safety standards	– Information technology equipment – Industrial control equipment – Electrical equipment for machines – Electronic equipment for power installations – Safety of power transformers	IEC/EN 60950-1, UL 60950-1 UL 508 EN 60204 EN 50178 EN 61558-2-8
Safety approvals and certifications	– CB report – UL approvals	for IEC/EN 60950-1 (pending) UL 60950-1 rec. File: E181381, UL 508C listed File: E210002 <a href="http://www.ul.com">www.ul.com</a> -> <a href="#">certifications</a> (entry pending)
Status signals	– DC-OK relay contact  – DC-OK indication – Phase error indication  – Overload / Overtemperature  – Automatic restart indication	DC OK = contact closed at >20...22 VDC rated: 30 VDC/1.0 A for 24 VDC models green LED at >20...22 VDC red blinking LED if one or two phases are missing (function only if earth is connected) red LED on at >100% nominal load (5 sec. count down for boost power is activated) red blinking LED at temperature shut down (manual restart required - mains disconnect for 5 sec) red blinking LED during overload recovery periode
Environment	– Vibration acc. IEC 60068-2-6; – Shock acc. IEC 60068-2-27	0.075 mm / 10 – 55 Hz, 11ms / 15 g
Enclosure material		aluminium (chassis) / stainless steel (cover)
Mounting	– DIN-rail mounting  – Wall mounting (option)	for DIN-rails as per EN 50022-35x15/7.5 (snap-on with self-locking spring) with wall mounting bracket - see page 6
Connection		screw terminals
Installation instructions (documentation pending)		<a href="http://www.tracopower.com/products/tsp3p-inst.pdf">www.tracopower.com/products/tsp3p-inst.pdf</a>

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

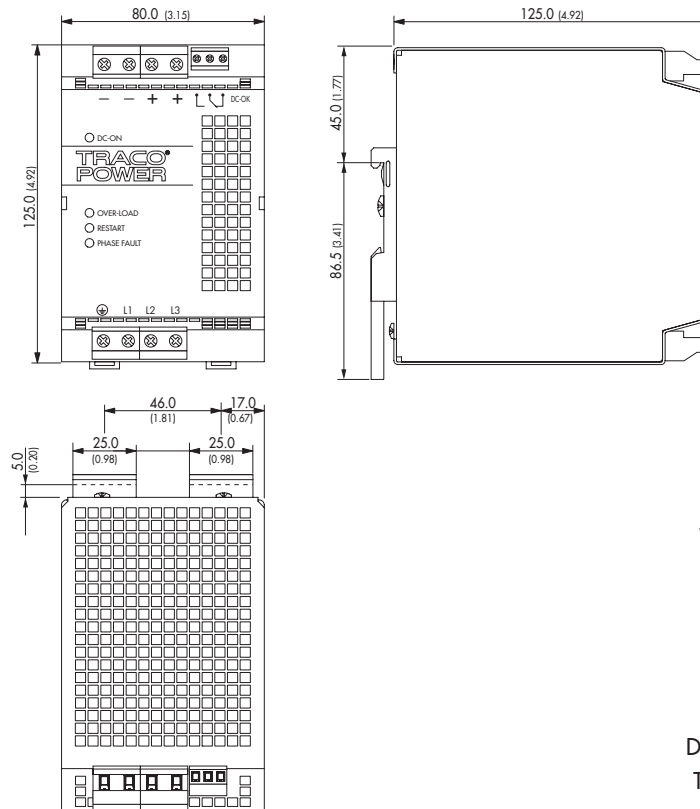
**Outline Dimensions**

**240 Watt models**



**Weight:** 575 g (1.27 lb)

**480 Watt models**

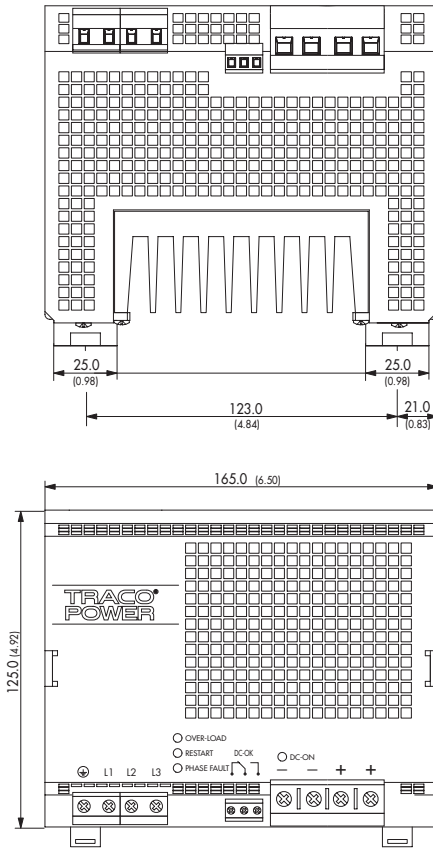


**Weight:** 1.05 kg (2.31 lb)

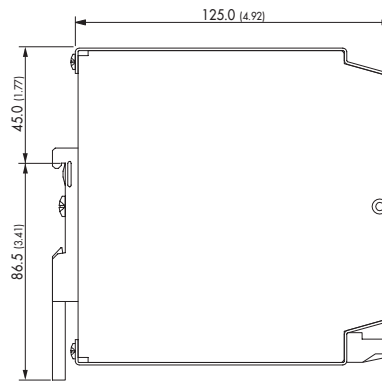
Dimensions in [mm], ( ) = Inch  
Tolerances:  $\pm 0.5$  mm ( $\pm 0.02$ )

**Outline Dimensions**

960 Watt models



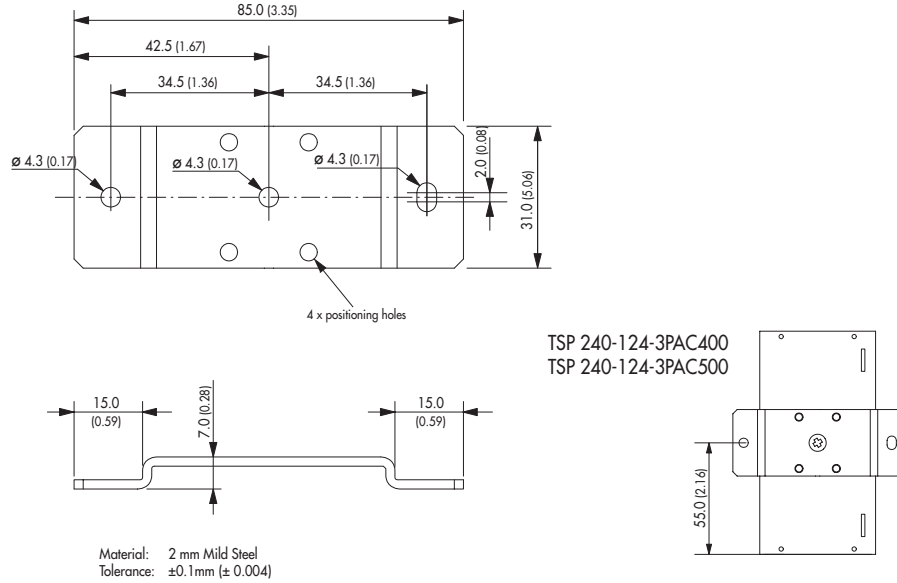
**Weight: 2.35 kg (5.19 lb)**



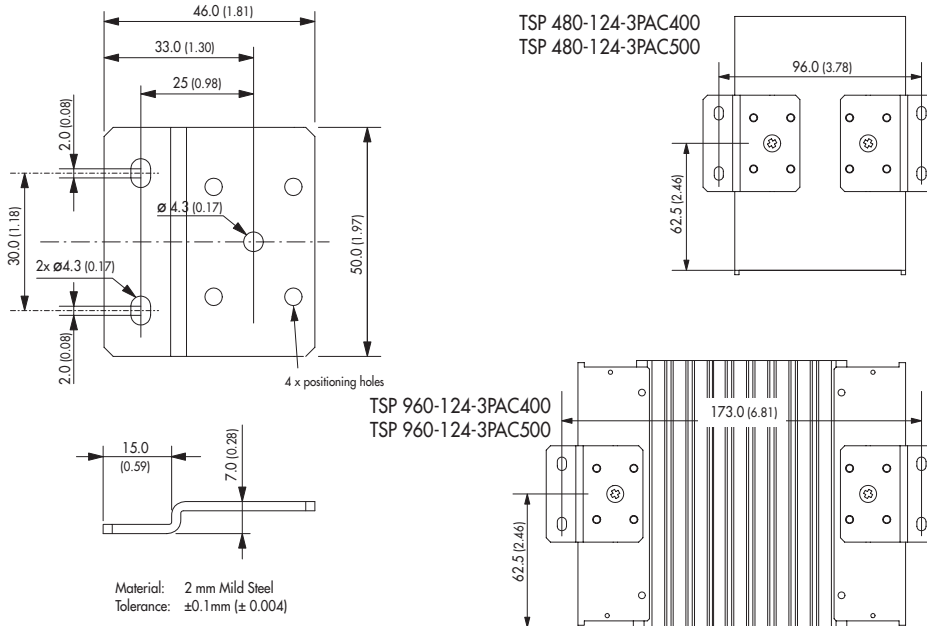
Dimensions in [mm], ( ) = Inch  
Tolerances:  $\pm 0.5$  mm ( $\pm 0.02$ )

TSP-WMK Wall Mounting Bracket		
Order code	For models	Content of kit
TSP-WMK01	240 W	1 bracket <b>type A</b>
TSP-WMK02	480 W & 960 W	2 brackets <b>type B</b>

**Type A:**



**Type B:**



Dimensions: [mm] ( ) = Inch

Specifications can be changed any time without notice.