TPS3000 Series

3200W 3-Phase Input Industrial Power Supplies

https://product.tdk.com/en/power/tps www.emea.lambda.tdk.com/tps















The TPS3000 series industrial AC-DC power supplies offer output power up to 3,200W in a 2U high package with 3 phase supply input. Features include voltage and current programming, remote on/off, remote sense, a standby supply, PMBus™ communication, built in ORing FET and wide operating temperature range of -40°C to +70°C. The TPS3000 is also designed to meet MIL-STD-810F vibration and shock.

Features	Benefits
• 400/440/480Vac (Nominal) 3 Phase Delta or Wye	Global Use
Fully Regulated, Wide Range Voltage Adjustment	Versatile Application
Voltage and Current Programming	Flexible Control and Adjustment
-40°C (start up) to +70°C Operation	Suitable for Rugged Environments
• 92% Typical Efficiency	Less Energy Used
PMBus™ Communication	Remote Output Programming and Monitoring
Built in ORing FET for Parallel Operation	Suitable for N + 1 Redundancy

Model Selector						
Model	Nominal Output Voltage (V)	Adjustment Range (V) (4)	Maximum Current (A)	Maximum Power (W)	Max Current (A) (3)	Maximum Power (W) (3)
TPS3000-24	24	19.2 - 28.5	125	3000	133.3	3200
TPS3000-48	48	38.4 - 56.5	66.7	3200	66.7	3200

^{*}Wider range adjustment as stated on the UL safety files are possible, although some parameters might not meet some of the listed specifications.

Specifications		
Model		TPF3000
Input		
Input Voltage range	Vac	350 - 528, Delta or Wye 3 phase
Input Frequency	Hz	47 - 63Hz
Input Current (At nominal Vin)	Α	6 per phase (steady state)
Inrush Current at 400-480Vac (Cold Start)	Α	<15 per phase (excluding initial filter capacitor charging <2ms)
Dropped Phase Power	W	Output Power 1290; output power increases with input voltage
Leakage Current	mA	<3
Power Factor (400-480Vac)	-	0.92 typical at rated load, nominal Vin
Harmonics	-	Not applicable
Hold Up Time (typ)	ms	>10 at 80% of rated current, nominal input/output voltage
Efficiency (Typical)	%	92
Conducted & Radiated EMI	-	EN55022 Class A, FCC part 15 Class-A
Safety Agency Certifications	-	IEC/UL/CSA/EN62368-1, 60950-1, CE Mark
Voltage Dips	-	SEMI F47-0706



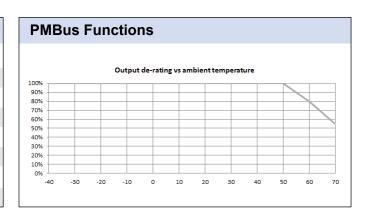
Immunity				
Test	Standard	Test Level	Criteria	Notes
ESD	EN61000-4-2	±8 kV air discharge, ±4 kV contact discharge	В	
Radiated Susceptibility	EN61000-4-3	3 V/m from 80-1000 MHz (80% AM at 1kHz)	A	
Electrical Fast Transient Burst	EN61000-4-4	Power line pulses of ± 1 kV; I/O line pulses of ± 0.5 kV	В	
Surge	EN61000-4-5	±2kV common mode, ±1kV differential mode	В	See Immunity Data
Conducted Susceptibility	EN61000-4-6	3 Vrms, 150 kHz - 80 MHz (80% AM at 1kHz)	A	
Magnetic fields	EN61000-4-8	Inductive loop at 50 Hz to 1 amp (rms) per meter	A	
Voltage Dips and Input Interruptions	EN61000-4-11	Voltage Dips of 30% and >95%; Interruptions of >95%.	B&C	



Specifications			
Model	lel TPS3000		
Output			
Line Regulation	%	<0.25	
Load Regulation	%	<0.5	
Total Regulation	%	<1.75	
Warm Up Drift	%	<0.15	
Temperature Stability	-	0.05% of rated Vout for 8hrs after 30min warmup. Constant line, load, & temp.	
Temperature Coefficient	ppm/°C	200	
Ripple & Noise (pk-pk) (Max) (2)	mV	24V model: 130, 48V model: 260	
Minimum Load	Α	0.5 minimum	
Overcurrent Protection	%	Adjustable (70-105 of maximum rated current). Constant current style.	
Overvoltage Protection	%	115 of output voltage set point (tracking). Cycle AC or use the remote on/off to reset	
Overtemperature Protection	-	Internal thermostat. Automatic reset	
Fan Fail	-	Blocked or fan failure detection. Cycle AC input or use PMBus to reset	
Remote Sense	-	Compensates for a total of 1V cable drop	
Remote On/Off	-	Enable or Inhibit (switch selectable)	
Voltage Programming	-	0 - 5V external voltage adjusts the output from Vout max to Vout min	
Overcurrent Programming	-	0 - 5V external voltage adjusts the current limit from lout max to lout min	
DC Good	-	Open Collector, max sink current 5mA, ON when output is above 85 to 95% of output set point (tracking)	
AC Fail	-	Open Collector, max. sink current 5mA; ON when AC input is above 340Vac and unit is enabled	
Dropped Phase Warning (2)	-	Open collector, max. sink current 5mA; OFF (open) normal operation; strobing when input phase missing.	
Standby Voltage	-	11.2 - 12.5V, 0.3A (200mVp-p ripple and noise)	
Indicators	-	Green LEDs indicates DC is OK and AC is ON. Blinking red/green during dropped phase (Load >20%)	
Parallel Operation	-	Single wire current share, 10% accuracy up to 8 units. Power derated 10% of rated.	
Series Operation	-	See installation manual	
Environmental			
Operating Temperature (-40°C start-up)	l °C	-10 to +50, derate 2%/C from 50°C to 60°C, and 2.5%/C from 60 to 70	
		(At <-10C a 20 min warm-up is needed)	
Storage Temperature	°C	-40 to +85	
Humidity (non condensing)	%RH	10 - 90	
Cooling	-	Internal variable speed fan	
Altitude	m	4,000	
Withstand Voltage (For 1 minute)	-	Input to Ground 2,000Vac, Input to Output 3,000Vac, Output to Ground 500Vdc	
Isolation Resistance	ΜΩ	>100 at 25°C, 70%RH	
Vibration	-	MIL-STD-810F, Method 514.5, Proc I, Category 4, 10	
Shock	-	MIL-STD-810F, Method 516.5, Procedure I, IV & VI	
Other		, , , , , , , ,	
Weight (Typ)	g	3,700	
Size (WxHxD)	mm	107 x 85 x 324 (excluding output busbars)	
Size (WxHxD)	Inches	4.21 x 3.35 x 12.76 (excluding output busbars)	
MTBF - Telcordia SR-332 issue 3	Hours	180,000. Method 1, Ground Benign, 25C, nominal input	
Warranty	Years	3	

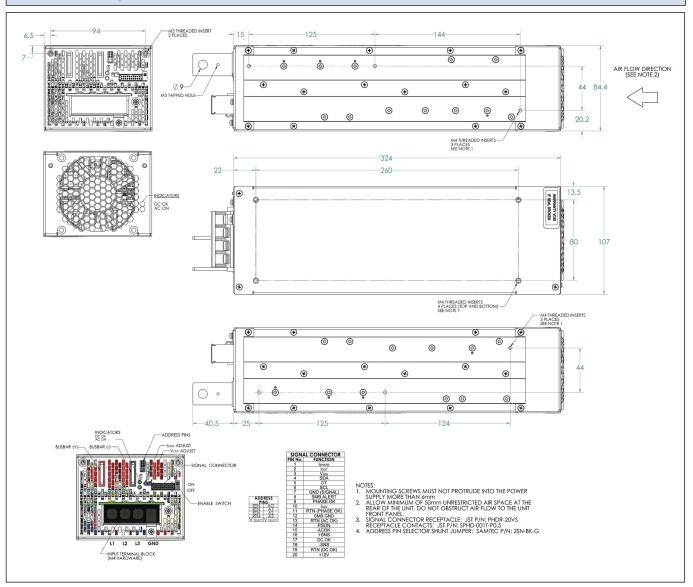


PMBus Functions Output Voltage Monitoring Output Current Monitoring Internal Temperature Monitoring Remote On/Off Programming Remote Voltage Programming Remote Overcurrent Programming Fault Clearing Reading Manufacturing Related Data



- (1) Typical, 75-100% at rated current
- (2) See website for detailed specifications, test methods and installation manual
- (3) Rating at nominal output voltage only
- (4) A minimum load of 0.5A is required to maintain regulation and ripple spec throughout the output voltage adjustment range.

Outline Drawing







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