

Double Conversion On-line Parallel System from 1KVA to 20KVA

Titan series are designed for modular and Parallel Redundancy

Today Titan series delivers high-performance pure sinewave and redundant power protection solution. It is a double-conversion online single or three-phase parallel system which is available from 1KVA to 20KVA. Single phase input incorporates Titan 1K / Titan 2K /Titan 3K / Titan 6K / Titan10K, and also three phase input consists of Titan 3C10K / 3C15K / 3C20K as well. An exclusive feature N+X parallel redundancy offers from Titan 6K / Titan 10K / 3C10K / 3C15K / 3C20K which is easy to maintain and expand capacity. Titan series makes use of the unique AC to DC conversion circuitry to detect the electricity current and voltage output of utility power supply. The current is input via the high frequency PWM to maintain uniform wave form and phase in line with the voltage, so as to attain high input power factor over 95% and avoid generating comparatively significant harmonic interference on the power network.

Features

- Microprocessor Control Guarantees High Reliability.
- N + X Parallel Redundancy & Capacity Expansion for Titan 6K / Titan 10K / 3C10K / 3C15K / 3C20K.
- Communication Ports Selectable: Smart RS-232 and Intelligent Slot for AS-400, and SNMP card.
- Optional External Battery Socket Available for Extended Backup Time.
- Cold Start Function.
- Auto Self-Testing System While Turning on the UPS.
- Tower and Rack Mount Available.
- Modular Design available for Titan 1K / Titan 2K / Titan 3K.
- Maintenance Bypass Switch, DSP Technology Application, and Two-Step Battery Charging Mode available for Titan 6K / Titan 10K / 3C10K / 3C15K / 3C20K.



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∞ N + X Parallel Redundancy & Capacity Expansion for Titan 6K / Titan 10K / 3C10K / 3C15K / 3C20K

This technology uses a series of UPS's operating in parallel. N represents the minimum UPS number that the total load needs; X represents the redundant UPS number, i.e. the fault UPS number that the system can handle simultaneously. The bigger of X is, the higher reliability of the power system is. For occasions where reliability is highly depended on, N+X is the optimal mode. As long as the UPS is equipped with standard parallel cables, up to 3 UPSs can be connected in parallel to realize output power sharing and power redundancy. In case one unit fails or be shut down for maintenance, the power is still operating without any interrupting to supply the load. Then the total load will be automatically transferred to the remaining units. For example, if the total load is closed to 20KVA, the user only installs three Titan 10K connecting in parallel. If any one is failure, there is no interruption for any replacement. Thus, the obvious benefits are flexibility and reduced complexity as comparing to general 1+1 redundant system.



* User Friendly - Only a 25 pin one to one shield cable required for Parallel Redundant.

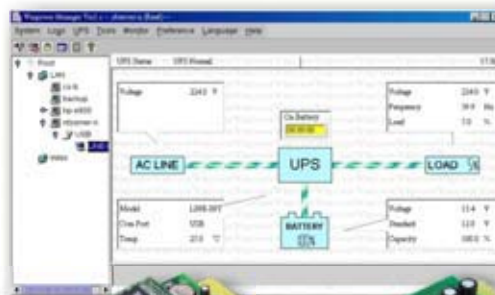


∞ Microprocessor Control & DSP Technology

Titan 6K / Titan 10K / 3C10K / 3C15K / 3C20K adopts DSP technology. DSP is applied to replace bulky transformers, relays and mechanical bypass switches with smaller, more intelligent functional equivalents. DSP implementations also facilitate other design benefits, including increased power efficiency and power density smaller product footprint with less weight.

∞ Communication Ports

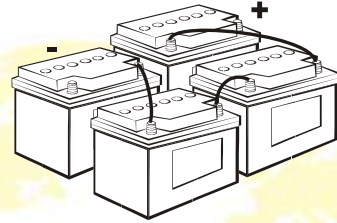
Titan series offers three different communication ports for user selection: RS-232, SNMP slot and AS-400 slot. The communication ports transmit both utility power and the status of UPS system, and providing to control the operation of computer or servers with proprietary command sequence to monitor the utility power and UPS status and to control the UPS output. If the power is failure or sensing an abnormal condition, the software will broadcast a warning message. Then the UPS system will be shut down automatically.



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☞ Extended Backup Time

Long Backup models are allowed to connect external batteries to get prolonged backup time. It is particularly suitable for use in areas where power supply is consistently in shortage.



☞ Modular Design

Titan 1-3KVA is the modular design UPS. There are many small modular boards on the Power Board. They are Fan module, Charger module, Power Supply module, DC-DC module, PFC module and PWM Driver module etc. The modular design would help technicians easily to maintain and repair the UPS and the product quality will be more reliable.

☞ Cold Start Function

The unique Cold Start Function elaborates the emergency standby capability of UPS to a sufficient extent.

☞ Auto Self-Testing System

When the UPS is powered on, it immediately performs an inspection of the components such as the inverter and the battery as well as the load, so as to detect any problem in time to avoid causing any negligence or loss.

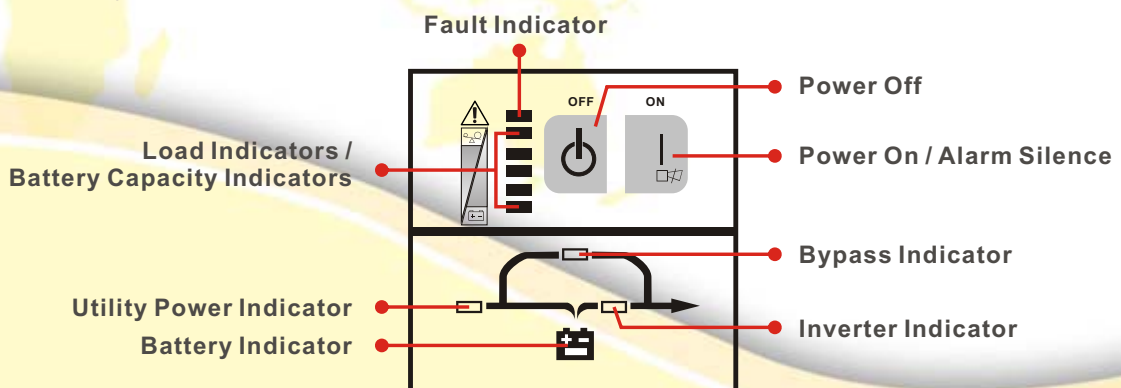
☞ Two-step Charging System

Two steps external charger boards are applying to the Titan 6KVA to 20KVA. The intelligent two-step charger will help to reduce the charging time than the cheaper constant voltage charger.

☞ Tower and Rack Mount Available

The tower-designed models occupy the minimum footprint. And the rack mount models are ideal for rack-optimized servers for Titan 1K(S) / Titan 2K(S) / Titan 3K(S), 6K.

☞ LED Display



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☞ TITAN 220V/230V/240V On-Line UPS Specification

MODEL		TITAN-1K	TITAN-1KS*	TITAN-2K	TITAN-2KS*	TITAN-3K	TITAN-3KS*	
CAPACITY	VA/W	1000VA/700W		2000VA/1400W		3000VA/2100W		
INPUT	Base on load percentage (100%-80% / 80%-70% / 70%-60% / 60%-0%)							
	Voltage Range	Low Line Transfer	160VAC/140VAC/120VAC/110VAC ± 5VAC					
		Low Line Comeback	175VAC ± 5VAC					
		High Line Transfer	300VAC ± 5VAC					
		High Line Comeback	285VAC ± 5VAC					
	Frequency Range	46Hz ~ 54Hz						
	Phase	Single phase with ground						
Power Factor	≥ 0.95							
OUTPUT	Voltage	220VAC/230VAC/240VAC						
	Voltage Regulation	±2%						
	Frequency (Synchronized range)	46-54Hz						
	Frequency (Battery Mode)	50 ± 0.2 Hz						
	Current Crest Ratio	3:1						
	Harmonic Distortion	Tower Case	≤3% THD (Line ar Load) ≤6% THD (Non-Linear Load)		≤4% THD (Line ar Load) ≤7% THD (Non-Linear Load)			
		Rack Case	≤4% THD (Line ar Load) ≤7% THD (Non-Linear Load)					
Output Waveform	Pure Sinewave							
EFFICIENCY	To AC Mode	85%		85%		88%		
	To Battery Mode	83%		83%		83%		
BATTERY	Tower Case	Battery Type	12V/7.2Ah	Depending on the capacity of external batteries	12V/7.2Ah	Depending on the capacity of external batteries	12V/7.2Ah	Depending on the capacity of external batteries
		Numbers of Batteries	3		8		8	
		Backup Time (Full Load)	>5 minutes		>9 minutes		>5 minutes	
		Recharge Time	5 hours to 90%	5 hours to 90%	5 hours to 90%			
		Charging Current (Max.)	1.0A	7A	1.0A	9.6A	1.0A	9.6A
		Charging Voltage	41.1Vdc±0.6V		110Vdc±0.4V			
	Rack Case	Battery Type	12V/7.2Ah	Depending on the capacity of external batteries	12V/7.2Ah	Depending on the capacity of external batteries	12V/7.2Ah	Depending on the capacity of external batteries
		Numbers of Batteries	3		8		8	
		Backup Time (Full Load)	>5 minutes		>9 minutes		>5 minutes	
		Charging Current (Max.)	1.0A	7A	1.0A	9.6A	1.0A	9.6A
		Charging Voltage	41.1Vdc±0.6V		110Vdc±0.4V			
		TRANSFER TIME	AC to DC	Zero				
	Inverter to Bypass	2.5ms (Typical)						
INDICATOR	Status	Load Level / Battery Level / Battery Mode / AC Mode / Bypass Mode / Fault						
AUDIBLE ALARM	Battery Mode	Sounding every 4 seconds						
	Low Battery	Sounding every second						
	Overload	Sounding twice every second						
	Fault	Continuously Sounding						
DIMENSION	Tower Case (DxWxH) mm	400x145x220			460x192x340			
	Rack Case (DxWxH) mm	UPS Case	482.6x450x87 (w. battery)			482.6x450x87		
		Battery Pack	482.6x450x87			482.6x450x87		
EIGHT W	Tower Case	14 kgs	7 kgs	34.5 kgs	15 kgs	35.5 kgs	16 kgs	
	Rack Case	16.3 kgs (w. battery)		10.3 kgs	11.5 kgs	11.2 kgs	12.3 kgs	
ENVIRONMENT	Operating Temperature	0-40°C						
	Relative Humidity	20-90% (NON-CONDENSING)						
	Noise Level	<45dB @ 1 Meter			<50dB @ 1 Meter			
INTERFACE	Smart RS-232	Software supports Windows 98/NT/2000/XP/2003/ME, Linu x, Sun Solaris, IBM Aix, Compaq True64, SGI IRIX, FreeBSD, HP-UX, and MAC						
	SNMP (option)	Power management from SNMP manager and web browser						

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MODEL			TITAN- 6K	TITAN-6KS*	TITAN-10K	TITAN-10KS*	TITAN-3C10K*	TITAN-3C15K*	TITAN-3C20K*		
CAPACITY	VA/W		6000VA/4200W		10000VA/7000W		10000VA/7000W	15000VA/10500W	20000VA/14000W		
INPUT	Base on load percentage (100%-80% / 80%-70% / 70%-60% / 60%-0%)										
	Voltage Range	Low Line Transfer	176VAC ± 3VAC				304VAC ± 3VAC				
		Low Line Comeback	185VAC ± 3VAC				322VAC ± 3VAC				
		High Line Transfer	276VAC ± 3VAC				478VAC ± 3VAC				
		High Line Comeback	266VAC ± 3VAC				461VAC ± 3VAC				
	Frequency Range	46Hz ~ 54Hz				46Hz ~ 54Hz					
	Phase	Single phase with ground				Three phase with ground					
Power Factor	≥0.98				≥0.95						
OUTPUT	Voltage		220VAC/230VAC/240VAC								
	Voltage Regulation		± 1%								
	Frequency (Synchronized range)		46-54Hz								
	Frequency (Battery Mode)		50 ± 0.05 Hz								
	Current Crest Ratio		3:1								
	Harmonic Distortion	Tower Case	≤2% THD (Line ar Load) ≤6% THD (Non-Linear Load)								
		Rack Case	4% THD (Linear Load) 7% THD (Non-Linear Load)	N/A							
	Output Waveform		Pure Sinewave								
EFFICIENCY	To AC Mode		>88%								
	To Battery Mode										
BATTERY	Tower Case	Battery Type	12V/7.2Ah	Depending on the capacity of external batteries	12V/9Ah	Depending on the capacity of external batteries					
		Numbers of Batteries	20		20						
		Backup Time (Full Load)	8 minutes		5 minutes						
		Recharge Time	7 hours to 90%		8 hours to 90%						
		Charging Current (Max.)	2A		4.2A					2A	4.2A
		Charging Voltage	274Vdc±1V								
	Rack Case	Battery Type	12V/7.2Ah	N/A							
		Numbers of Batteries	20								
		Backup Time (Full Load)	>8 minutes								
		Charging Current (Max.)	2A								
		Charging Voltage	274Vdc±0.5V								
	TRANSFER TIME	AC to DC		Zero							
		Inverter to Bypass		Zero							
INDICATOR	Status		Load Level / Battery Level / Battery Mode / AC Mode / Bypass Mode / Fault								
AUDIBLE ALARM	Battery Mode		Sounding every 4 seconds								
	Low Battery		Sounding every second								
	Overload		Sounding twice every second								
	Fault		Continuously Sounding								
DIMENSION	Tower Case (DxWxH) mm		570x260x717								
	Rack Case (DxWxH) mm	UPS Case	600x482.6x132	N/A							
		Battery Pack	600x482.6x132								
EIGHT W	Tower Case		90 kgs	35 kgs	93 kgs	38 kgs	38.5 kgs	55 kgs	55 kgs		
	Rack Case		18.3 kgs	N/A							
ENVIRONMENT	Operating Temperature		0-40°C								
	Relative Humidity		20-90% (NON-CONDENSING)								
	Noise Level		<55dB @ 1 Meter				<60dB @ 1 Meter				
INTERFACE	Smart RS-232		Software supports Windows 98/NT/2000/XP/2003/ME, Linux, Sun Solaris, IBM AIX, Compaq True64, SGI IRIX, FreeBSD, HP-UX, and MAC								
	SNMP (option)		Power management from SNMP manager and web browser								