



## 250W High Reliable Built-in Type True Sine Wave DC-AC Power Inverter NTS-250P series



(DC input side)



(AC output side)

User's Manual



Video



### Features

- Compact size and light weight
- True sine wave output (THD<3%)
- High surge power up to 500W
- Fanless design, cooling by free air convention
- AC output voltage and frequency selectable by DIP S.W
- No load dissipation <1.5W max. at standby saving mode
- -20°C ~+70°C wide operating temperature
- Power ON-OFF remote control
- Protections :  
Input : Reverse polarity / DC low alarm / DC low shutdown / Over voltage  
Output : Short circuit / Overload / Over temp.
- Battery over discharge protection (Low voltage disconnect)
- Suitable for lead-acid or li-ion batteries
- Support Tx/Rx for monitoring power inverter status
- Conformal coating
- 3 years warranty

### Applications

- Mobile device
- Home and office appliance
- Portable equipment
- Vehicle
- Yacht
- Off-grid solar power system
- Wireless network
- Telecom or datacom system

### Description

NTS-250P is a 250W highly reliable built-in type off-grid true sine wave DC-AC power inverter. Its key features include: digital design with MCU control, streamlined control circuitry that quickly responds to environmental changes and improves reliability, compact size, light weight, fanless quiet design, 500W peak power, adjustable AC output voltage and frequency, -20~+70°C wide operating temperature range, built-in remote ON/OFF control, low no-load power consumption (energy saving mode < 1.5W max.), complete protection features, and etc. Combined with batteries, the NTS-250P is suitable for use in residential, commercial, marine, automobile, and remote areas with no access to utility power, and the output can be used to power fans, TV, radio, phone charger, PC/laptop, lighting, outdoor camping equipment, marine AC power, and etc.

### Model Encoding

NTS - 250 P - 1 12

- DC input voltage (12: 12Vdc, 24: 24Vdc, 48: 48Vdc)
- AC output voltage (1: 100/110/115/120Vac, 2:200/220/230/240Vac)
- PCB built-in type
- Rated wattage
- Series name



## 250W High Reliable Built-in Type True Sine Wave DC-AC Power Inverter NTS-250P series

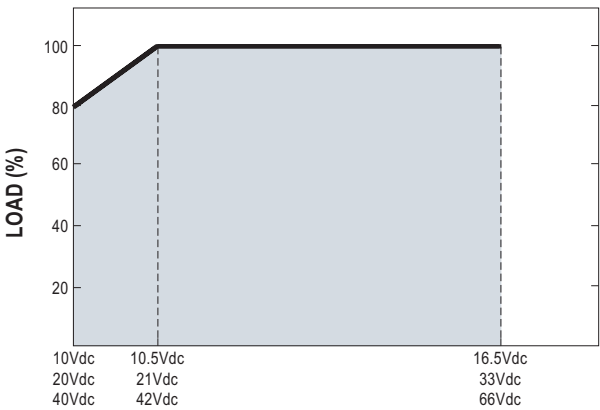
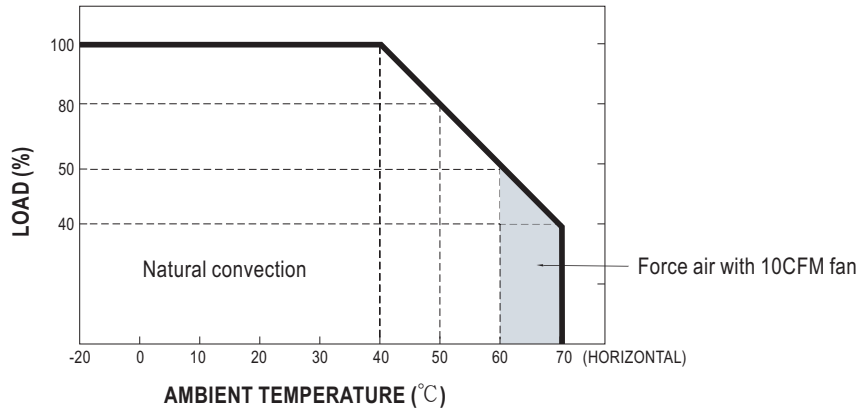
### SPECIFICATION

MODEL NO.			NTS-250P-112	NTS-250P-124	NTS-250P-148	NTS-250P-212	NTS-250P-224	NTS-250P-248	
AC OUTPUT	RATED POWER(Continuous)		250W						
	OVER RATED POWER(3 Min.)		287.5W						
	PEAK POWER(10 Sec.)		375W						
	SURGE POWER(30 Cycles)		500W						
	AC VOLTAGE		Default setting set at 110VAC 100 / 110 / 115 / 120Vac selectable by DIP S.W			Default setting set at 230VAC 200 / 220 / 230 / 240Vac selectable by DIP S.W			
	FREQUENCY		Default setting set at 60Hz±0.1Hz 50/60Hz selectable by DIP S.W			Default setting set at 50Hz±0.1Hz 50/60Hz selectable by DIP S.W			
	WAVEFORM      Note.1		True sine wave (THD<3%)						
	AC REGULATION		±3.0% at rated input voltage						
LED STATUS		Please refer to page3							
DC INPUT	DC VOLTAGE		12V	24V	48V	12V	24V	48V	
	VOLTAGE RANGE (Typ.)		10 ~ 16.5Vdc	20 ~ 33Vdc	40 ~ 66Vdc	10 ~ 16.5Vdc	20 ~ 33Vdc	40 ~ 66Vdc	
	DC CURRENT (Typ.)		25A	13A	7A	25A	13A	7A	
	NO LOAD DISSIPATION (Typ.)	Non-Saving mode	10W	10W	12W	10W	10W	12W	
		Saving mode	Default disable, ≤1.2W ~ 1.5W by models @ auto detec AC output load ≤10W will be changed to saving mode						
			1.2W	1.3W	1.5W	1.2W	1.3W	1.5W	
	OFF MODE CURRENT DRAW		<1mA at battery ~DC input must be disconnected						
	EFFICIENCY (Typ.)      Note.1		91%	91%	92%	92%	93%	93%	
BATTERY TYPES		Lead Acid or Li-ion							
PROTECTION	DC INPUT	FUSE(Internal)		30A*2	30A*1	10A*2	30A*2	30A*1	10A*2
		LOW	ALARM	11±0.3Vdc	22±0.5Vdc	44±1Vdc	11±0.3Vdc	22±0.5Vdc	44±1Vdc
			SHUTDOWN	10±0.3Vdc	20±0.5Vdc	40±1Vdc	10±0.3Vdc	20±0.5Vdc	40±1Vdc
			RESTART	12.5±0.3Vdc	25±0.5Vdc	50±1Vdc	12.5±0.3Vdc	25±0.5Vdc	50±1Vdc
		HIGH	ALARM	15.5±0.3Vdc	31±0.5Vdc	62±1Vdc	15.5±0.3Vdc	31±0.5Vdc	62±1Vdc
			SHUTDOWN	16.5±0.3Vdc	33±0.5Vdc	66±1Vdc	16.5±0.3Vdc	33±0.5Vdc	66±1Vdc
			RESTART	15±0.3Vdc	30±0.5Vdc	60±1Vdc	15±0.3Vdc	30±0.5Vdc	60±1Vdc
	BAT. POLARITY		By internal fuse open						
	AC OUTPUT	OVER TEMPERATURE		Protection type : Shut down o/p voltage, re-power on to recover					
		OUTPUT SHORT		Protection type : Shut down o/p voltage, re-power on to recover					
		OVER LOAD (Typ.)		105 ~ 115% load for 180 sec., 115% ~ 150% load for 10 sec. Protection type : Shut down o/p voltage, re-power on to recover					
	FUNCTION		REMOTE CONTROL		Power ON-OFF remote control by front panel dry contact connector (by RELAY), Open : Normal work ; Short : Remote off				
		Tx/Rx		Support Tx/Rx for monitoring power inverter status					
ENVIRONMENT	WORKING TEMP.		-20 ~ +70℃(Refer to "Derating curve")						
	WORKING HUMIDITY		20% ~ 90% RH non-condensing						
	STORAGE TEMP., HUMIDITY		-30 ~ +70℃ / -22 ~ +158°F, 10 ~ 95% RH non-condensing						
	VIBRATION		10 ~ 500Hz, 3G 10min./1cycle, 60min. each along X, Y, Z axes						
SAFETY & EMC (Note.4)	SAFETY STANDARDS		CB IEC62368-1 for all models, E13, EAC TPTC004 for NTS-250P-212/224/248 approved Design refer to BS EN/EN62368-1, AS/NZS 62368.1 for NTS-250P-212/224/248						
	WITHSTAND VOLTAGE		DC I/P - AC O/P:3.0KVac    AC O/P - FG:1.5KVac						
	EMC EMISSION	Parameter		Standard			Test Level / Note		
		Radiated		FCC for 112,124,148 only			Class A		
				BS EN/EN55032(CISPR32) for 212,224,248 only			Class A		
		Harmonic Current		BS EN/EN61000-3-2			-----		
			Voltage Flicker		BS EN/EN61000-3-3		-----		
	EMC IMMUNITY			BS EN/EN55024, BS EN/EN55035					
		Parameter		Standard			Test Level / Note		
		ESD		BS EN/EN61000-4-2			Level 4, 15KV air ; Level 4, 8KV contact		
Radiated		BS EN/EN61000-4-3			Level 3, 10V/m				
Magnetic Field		BS EN/EN61000-4-8			Level 4, 30A/m				
OTHERS	MTBF		279K hrs min.    Telcordia TR/SR-332 (Bellcore) ;    84K hrs min.    MIL-HDBK-217F (25℃)						
	DIMENSION		186*100.5*32mm (L*W*H)						
	PACKING		0.75Kg; 18pcs/ 14.5Kg/ 1.01CUFT						
NOTE		1.Efficiency, AC regulation and THD are tested by 250W, linear load at 12.5Vdc/25Vdc/50Vdc input voltage. 2.All parameters not specified above are measured at rated load, 25℃ of ambient temperature and set to factory setting. 3.Internal pre-start circuit, the setup time is 8s. 4.The power supply is considered as an independent unit, but the final equipment still need to re-confirm that the whole system complies with the EMC directives. For guidance on how to perform these EMC tests, please refer to "EMI testing of component power supplies." (as available on <a href="http://www.meanwell.com">http://www.meanwell.com</a> ) ※ Product Liability Disclaimer : For detailed information, please refer to <a href="https://www.meanwell.com/serviceDisclaimer.aspx">https://www.meanwell.com/serviceDisclaimer.aspx</a>							



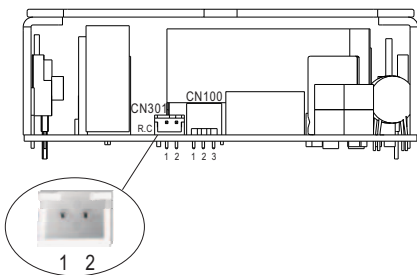
250W High Reliable Built-in Type True Sine Wave DC-AC Power Inverter **NTS-250P series**

■ DERATING CURVE



■ Remote ON-OFF Control

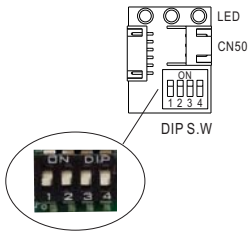
Remote ON-OFF (CN301 PIN1,2)	AC Output Status
Open	power inverter ON
Short	power inverter OFF



■ AC output voltage, Frequency, Power saving mode selectable by DIP SW

Output Voltage and Frequency Setting Factory settings are either 110Vac/60Hz or 230Vac/50Hz, users are able to adjust the voltage and frequency, through the DIP switch of position 1,2,3,4.

AC Output Voltage, Frequency, Power saving mode selectable by DIP SW			
SW1	SW2	SW3	SW4
OFF	OFF : 100Vac or 200Vac	ON : 50Hz	ON : Saving mode
OFF	ON : 110Vac or 220Vac		
ON	OFF : 115Vac or 230Vac	OFF: 60Hz	OFF: Non-Saving mode
ON	ON : 120Vac or 240Vac		



■ Support Tx/Rx for monitoring power inverter status

Users can monitor the status of the power inverter through Tx/Rx, and can modify the input and output parameters set internally.

**■ LED STATUS**

Normal work:

	Green	Orange	Red
Status	● Inverter OK	● Remote off ● Saving mode	● Abnormal Status (See below table)

	Green	Orange	Red
DC Input	● 12.5~15.5Vdc ● 25~31Vdc ● 50~62Vdc	● 11~12.5Vdc ● 22~25Vdc ● 44~50Vdc	● <11Vdc or >15.5Vdc ● <22Vdc or >31Vdc ● <44Vdc or >62Vdc

	Green	Orange	Red
Load	● <40% load	● 40~80% load	● >80% load

Abnormal status :

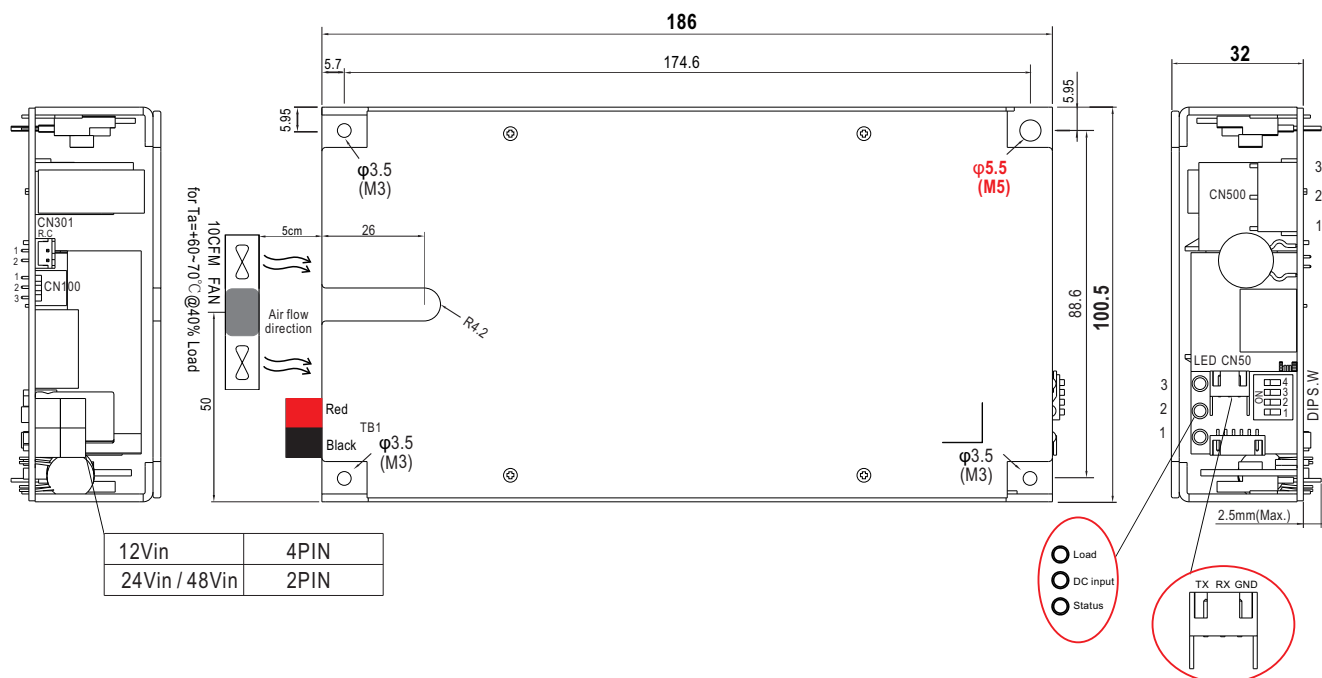
LED Indicator	Abnormal Indication
Status ● DC Input ○ Load ●	Output overload or AC output short circuit
Status ● DC Input ● Load ○	Abnormal DC voltage
Status ● DC Input ● Load ●	Over temperature or Fan lock
Status ● DC Input ○ Load ○	Inverter fail

- Light
- Light off
- Flash

## 250W High Reliable Built-in Type True Sine Wave DC-AC Power Inverter NTS-250P series

## MECHANICAL SPECIFICATION

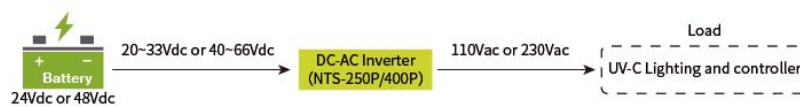
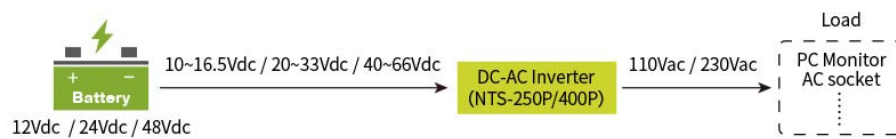
Unit:mm



Pin	Pin No.	Description		Terminal	Mating Housing
TB1	Red	Connect to +		261G2-LPBK or equivalent	1327FP or equivalent
	Black	Connect to -			1327G6FP or equivalent
CN500	1	Output AC/L		JST SVH-21T-P1.1 or equivalent	JST VHR or equivalent
	2	Output AC/N			
	3	FG			
CN301	1	Pin 1,2 Open: Inverter Normal work		JST SXH-001T or equivalent	JST XHP or equivalent
	2	Pin 1,2 Short: Inverter Remote off			
CN50	1	Signal GND		CHYAO SHIUNN JS-2001-TX or equivalent	CHYAO SHIUNN JS-2001 or equivalent
	2	UART-RX			
	3	UART-TX			
CN100	1	Fan supply +V	12V/0.4A max.		
	2	Fan supply -V			
	3	PWM signal for Fan speed control			
DIP SW		Please refer to page3 for more detail			

Suggested Fan model: CCHV CHT4012BH-W20D 4020B

## TYPICAL APPLICATION



## INSTALLATION MANUAL

Please refer to : <http://www.meanwell.com/manual.html>