



450W High Reliable True Sine Wave DC-AC Power Inverter

NTS-450 series



DC input side



User's Manual



Video



AC output side



IEC62368-1 BS EN/EN62368-1



TPTC004



AS/NZS 62368.1



Features

- Compact size and light weight
- True sine wave output (THD<3%)
- High surge power up to 900W
- Temperature controlled cooling fan
- AC output voltage and frequency selectable by DIP S.W
- No load dissipation <1.5W max. at standby saving mode
- -25°C~+70°C wide operating temperature
- Power ON-OFF remote control
- Front panel indicator for operation status
- 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
- Carry handle accessory available(Order NO.: DS-Carry handle, sold separately)
- Conformal coating
- 3 years warranty

Applications

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

Description

NTS-450 is a 450W highly reliable 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, high quality fan with low acoustic noise, 900W peak power, adjustable AC output voltage and frequency, -25~+70°C wide operating temperature range, complete protections features, and etc. combined with batteries, the NTS-450 is suitable for use in residential, commercial, marine, automobile, mine, construction site, 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, electromechanical tool, communication equipment, power distribution cabinet, outdoor camping equipment, marine AC power, factory equipment, and etc.

Model Encoding

NTS - 450 - 1 12 US

- NTS - Series name
- 450 - Rated wattage
- 1 - AC output voltage (1: 100/110/115/120Vac, 2:200/220/230/240Vac)
- 12 - DC input voltage (12: 12Vdc, 24: 24Vdc, 48: 48Vdc)
- US - AC output socket (Type US, EU, CN, AU, UK, UN, GFCI outlet)



SPECIFICATION

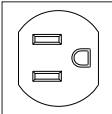
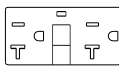
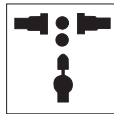
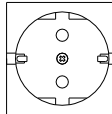
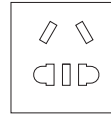
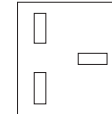
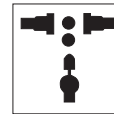





MODEL NO.		NTS-450-112□		NTS-450-124□		NTS-450-148□		NTS-450-212□		NTS-450-224□		NTS-450-248□			
		□ = US, GFCI, UN						□ = EU, CN, AU, UK, UN							
AC OUTPUT	RATED POWER(Continuous)		450W												
	OVER RATED POWER(3 Min.)		517.5W												
	PEAK POWER(10 Sec.)		675W												
	SURGE POWER(30 Cycles)		900W												
	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												
	FRONT PANEL LED		Please refer to page5												
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.)		50A		25A		14A		50A		25A		14A		
	NO LOAD DISSPATION (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												
EFFICIENCY (Typ.)		Note.1 88%		91%		91%		90%		93%		93%			
BATTERY TYPES		Lead Acid or li-ion													
PROTECTION	DC INPUT	FUSE (Internal)		40A*2		40A*1		10A*2		40A*2		40A*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												
	GFCI PROTECTION		Design refer to UL458 (Only for "GFCI" AC socket , by request)				None								
FUNCTION			REMOTE CONTROL		Power ON-OFF remote control by front panel dry contact connector (by RELAY); Open : Normal work ; Short , Remote off										
ENVIRONMENT	WORKING TEMP.		-25 ~ +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, Dekra BS EN/EN62368-1, E13, EAC TP TC 004 approved; Design refer to AS/NZS 62368.1 (Please refer to next page "AC output socket" table for more details) ; Design refer to UL458 (By request)												
	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(expect for Type-UN)								Class A				
			BS EN/EN55032(CISPR32) for 212, 224, 248 only(expect for Type-UN)								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 3, 8KV air ; Level 2, 4KV contact				
Radiated		BS EN/EN61000-4-3								Level 2 , 3V/m					
Magnetic Field		BS EN/EN61000-4-8								Level 1 , 1A/m					
OTHERS	MTBF		281.3K hrs min. Telcordia TR/SR-332 (Bellcore) ; 85K hrs min. MIL-HDBK-217F (25℃)												
	DIMENSION		210*130*55mm (L*W*H)												
	PACKING		1.3Kg; 8pcs/ 11.4Kg/ 1.74CUFT												
NOTE		1. Efficiency, AC regulation and THD are tested by 450W, 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 http://www.meanwell.com) ※ Product Liability Disclaimer : For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx													



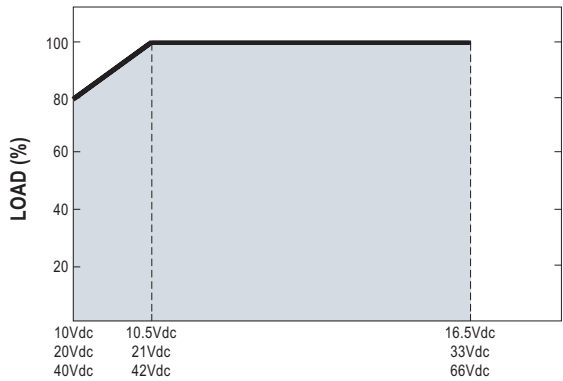
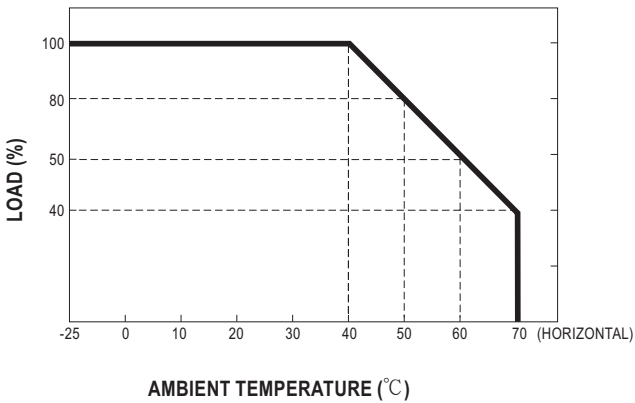
450W High Reliable True Sine Wave DC-AC Power Inverter

NTS-450 series

■ AC Output Socket

MODEL NO.	NTS-450-112	NTS-450-124	NTS-450-148	NTS-450-212	NTS-450-224	NTS-450-248		
Socket type								
	TYPE-US	TYPE-GFCI	TYPE-UN	TYPE-EU	TYPE-CN	TYPE-UK	TYPE-AU	TYPE-UN
	Standard	Optional	Standard	Standard	Standard	Optional	Optional	Standard
Country	USA	USA	UNIVERSAL	EUROPE	CHINA	U.K	AUSTRALIA	UNIVERSAL
Certificate			None					

■ DERATING CURVE

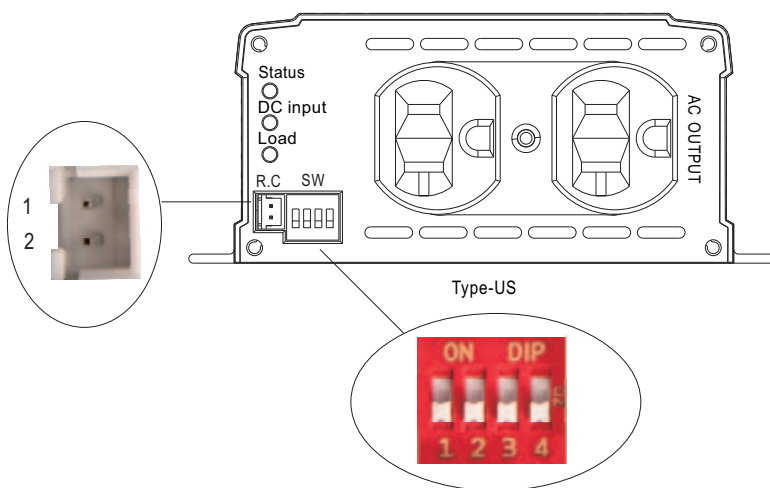


Remote ON-OFF Control

Remote ON-OFF	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 on the panel.



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		



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■ 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

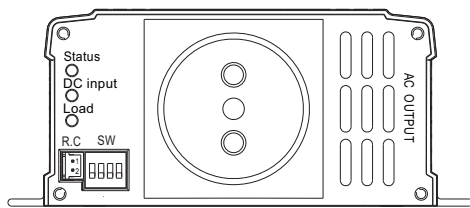
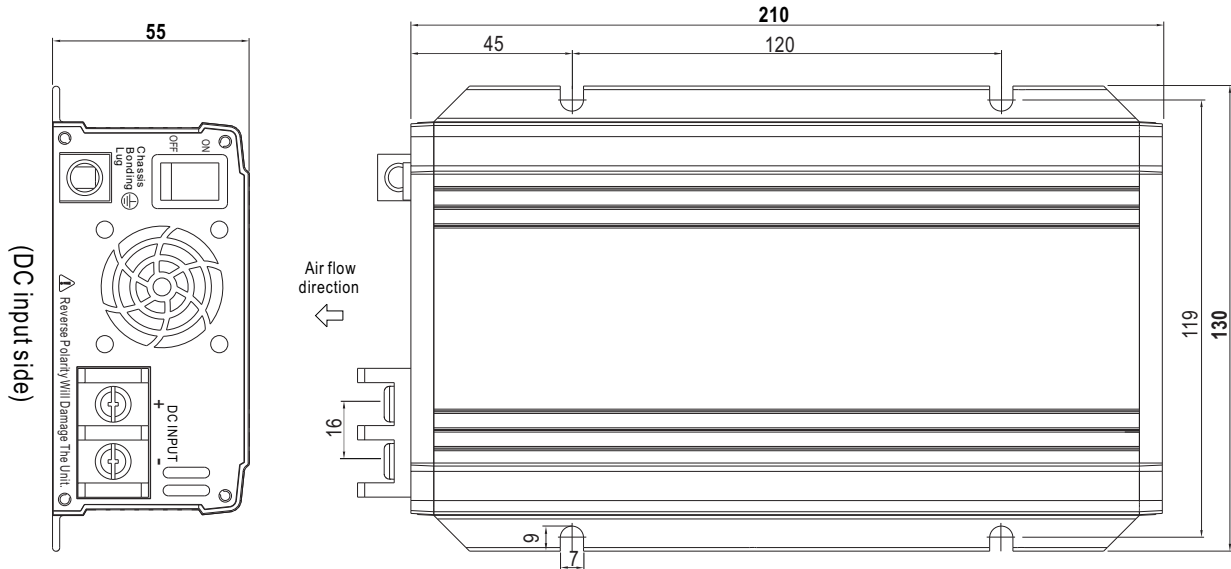
Abnormal status :

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

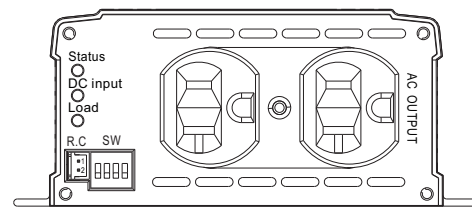
- Light
○ Light off
● Flash

MECHANICAL SPECIFICATION

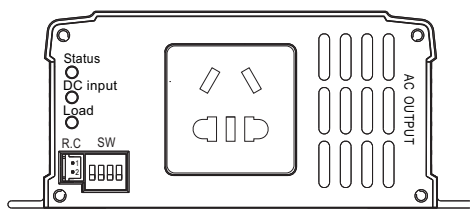
Unit:mm



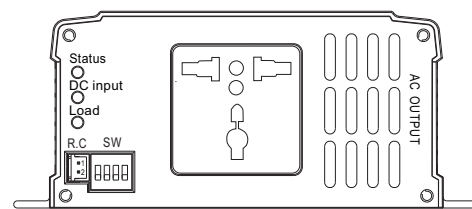
Type-EU



Type-US



Type-CN



Type-UN

(AC output side)

R.C Connector : JST B-XH or equivalent

Remote Control	Mating Housing	Terminal
Pin 1,2 Open: Normal work	JST XHP or equivalent	JST SXH-001T or equivalent
Pin 1,2 Short: Remote off		






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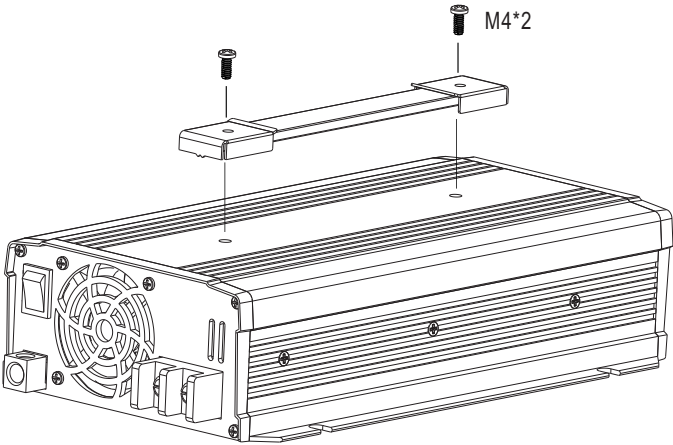
NTS-450 series

■ Accessory List

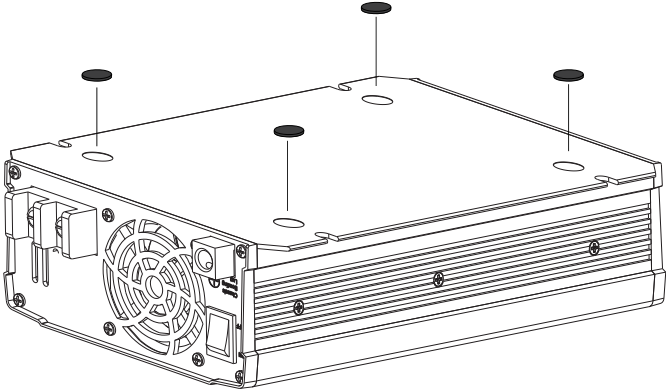
※ Carry handle (Optional accessory, Power inverter and Pull handle should ordered seperately)

MW's Order No.	Item		Quantity
DS-Carry Handle	①	Handle 	1
	②	Foot pad 	4
	③	Screw 	2

① Handle



② Foot pad



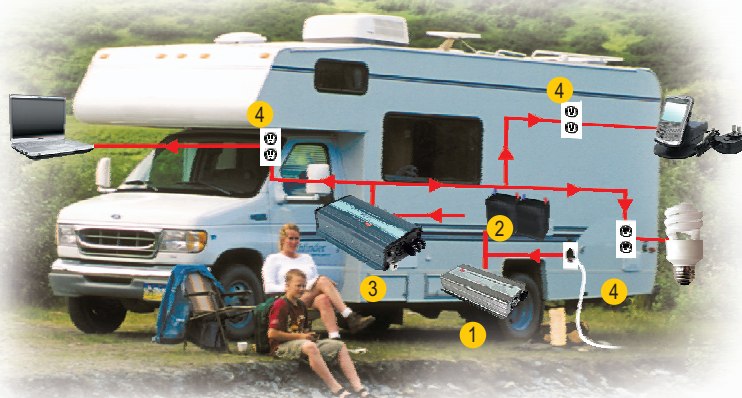
TYPICAL APPLICATION



- 1 Battery Bank
- 2 Off-Grid DC/AC Solar Inverter (NTS series)
- 3 AC Outlet



- 1 Utility Input (Shore)
- 2 AC/DC Battery Charger (PB/NPB/NPP series)
- 3 Battery Bank
- 4 Off-Grid DC/AC Power Inverter (NTS series)
- 5 AC Outlet



- 1 AC/DC Battery Charger (PB/NPB/NPP series)
- 2 Battery Bank
- 3 Off-Grid DC/AC Inverter (NTS series)
- 4 AC Outlet

INSTALLATION MANUAL

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