MEAN WELL NTS-300 Series Sine Wave Output DC-AC Inverter Installation Guide

Contents

MEAN WELL NTS-300 Series Sine Wave Output DC-AC Inverter

300W High Reliable True Sine Wave DC-AC Power Inverter

NTS-300 Series

Features

- Compact size and lightweight
- True sine wave output (THD<3%)
- High surge power up to 600W
- Fanless design
- AC output voltage and frequency selectable by DIP S.W
- No load dissipation <1.5W max. at standby saving mode
- -25°C~+65°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.: 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-300 is a 300W 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, 600W peak power, adjustable AC output voltage and frequency, -25°C~+65°C wide operating temperature range, complete protections features, and etc. Combined with batteries, the NTS-300 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 – 300 – *1 12 US*

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

Specifications

Model No.	NTS-300-112	NTS-300-124	NTS-300-148	NTS-300-212	NTS-300-224	NTS-300-248
Rated Power (Continuous)	300W	300W	300W	300W	300W	300W
Over Rated Power (3 min)	450W	450W	450W	450W	450W	450W
Surge Power (30 cycles)	600W	600W	600W	600W	600W	600W

AC Output Socket

Model No.	NTS-300-112	NTS-300-124	NTS-300-148	NTS-300-212	NTS-300-224	NTS-300-248
Socket Type	TYPE-US	TYPE-GFCI	TYPE-UN	TYPE-EU	TYPE-CN	TYPE-UK
Country	USA	USA	UNIVERSAL	EUROPE	CHINA	U.K
Certificate	CB, FC, DEKRA	CB, FC	None	CB, FC, DEKRA	CB, FC, DEKRA	CB, FC, DEKRA

Derating Curve

The derating curve shows the load percentage against ambient temperature. The load decreases as the temperature increases beyond a certain point.

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.

LED Status

Status	Green	Orange	Red
Normal Work	System check, Inverter O K	Remote off, Saving mode	Abnormal Status
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
Load	<40% load	40~80% load	>80% load

Mechanical Specification
Dimensions and layout for installation are provided in the diagrams.

Accessory List
Carry handle (Optional accessory, Power inverter and Pull handle should be ordered separately)

MW's Order No.	Item	Quantity
	Handle	1
	Foot pad	4
	Screw	2

Typical Application
Illustrations show the inverter used in various settings such as homes, boats, and RVs, indicating connections to battery banks and AC outlets.

Installation Manual
For detailed installation instructions, visit: **http://www.meanwell.com/manual.html**

FAQ

1. **What is the peak power of the NTS-300 inverter?**

   The peak power is 600W.

2. **What protections does the inverter offer?**

   It offers protections against reverse polarity, DC low alarm/shutdown, over voltage, short circuit, overload, and over temperature.
3. **Is the inverter suitable for outdoor use?**

   Yes, it is suitable for use in remote areas with no access to utility power.
4. **Can the output voltage and frequency be adjusted?**

   Yes, they can be adjusted using the DIP switch on the panel.

300W High Reliable True Sine Wave DC-AC Power Inverter

User's Manual

Video

IEC62368-1 BS EN/EN62368-1 TPTC004 AS/NZS 62368.1

Please refer to page3 for more details.

Features

- Compact size and light weight
- True sine wave output (THD<3%)
- High surge power up to 600W

Fanless design

- AC output voltage and frequency selectable by DIP S.W
- No load disspation <1.5W max. at standby saving mode -250&+650C wide operating temperature
- Power ON-OFF remote control
- Front panel indicator for operation status

Protections :

- Input : Reverse polarity / DC low alarm / DC low shutdown / Overvoltage
- 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.: Carry handle, sold separately
- Conformal coating
- 3 years warranty

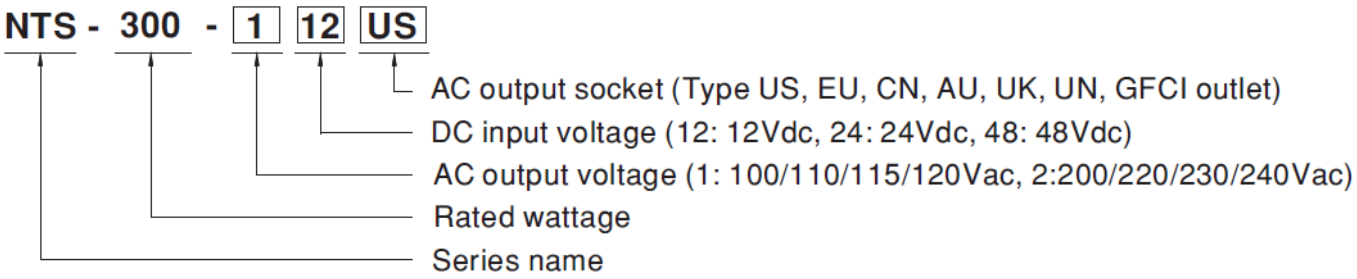
Applications

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

GTIN CODE
MW Search: **https://www.meanwell.com/serviceGTIN.aspx**

Description
NTS-300 is a 300W 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, 600W peak power, adjustable AC output voltage and frequency, -2++650 wide operating temperature range, complete protections features, and etc. combined with batteries, the NTS-300 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



SPECIFICATION

MODEL NO.	NTS-300-112	NTS-300-124	NTS-300-148	NTS-300-212	NTS-300-224	NTS-300-248
	= US, GFCI, UN			EU, CN, AU, UK, UN		

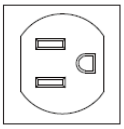
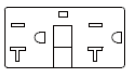
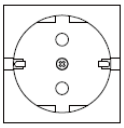
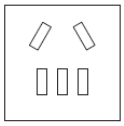
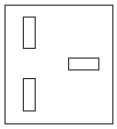
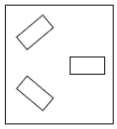
AC OUTPUT	**RATED POWER(Continuous)**	300W					
	OVER RATED POWER(3 Min.)	345W					
	PEAK POWER(10 Sec.)	450W					
	SURGE POWER(30 Cycles)	600W					
	AC VOLTAGE	Default setting set at 110VAC			Default setting set at 230VAC		
		100 / 110 / 115 / 120Vac selectable by DIP S.W			200 / 220 / 230 / 240Vac selectable by DIP S.W		
	FREQUENCY	Default setting set at 60Hz±0.1Hz			Default setting set at 50Hz±0.1Hz		
		50/60Hz selectable by DIP S.W			50/60Hz selectable by DIP S.W		
	WAVEFORM **Note.1**	True sine wave (THD<3%)					
	AC REGULATION	±3.0% at rated output 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.)	30A	15A	8A	30A	15A	8A
	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					

		EFFICIENCY (Typ.) Note.1		90%	92%	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					
		GFCI PROCTECTION		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					
ENVIRON		**WORKING TEMP.**		-25 ~ +65℃(Refer to “Derating curve”)					
		WORKING HUMIDITY		20% ~ 90% RH non-condensing					

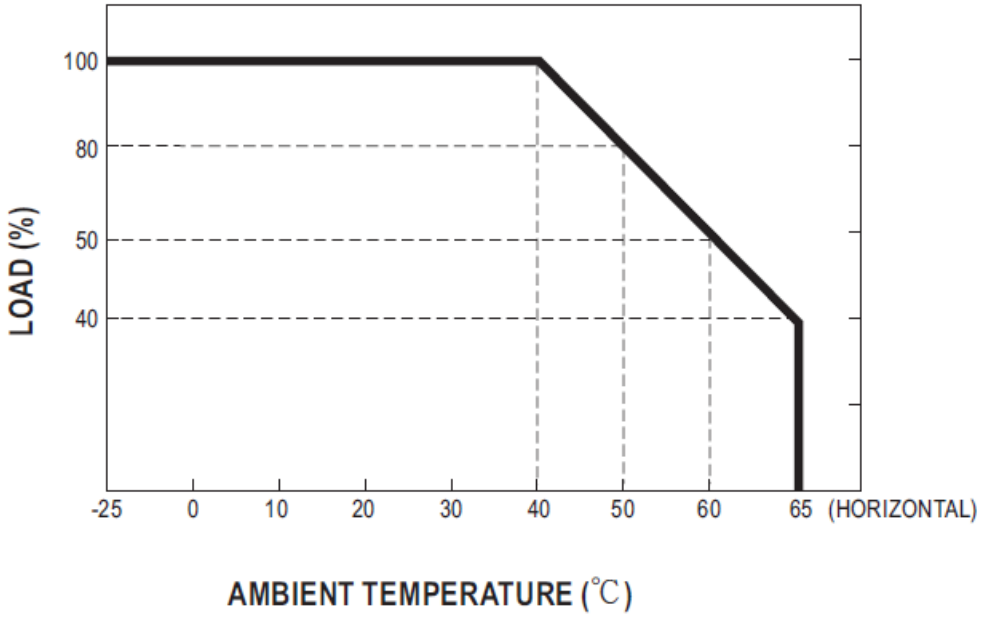
<table>
<tr><td rowspan="2">MENT</td><td>STORAGE TEMP., HUMIDITY</td><td colspan="4">-30 ~ +70℃ / -22 ~ +158oF, 10 ~ 95% RH non-condensing</td></tr>
<tr><td>VIBRATION</td><td colspan="4">10 ~ 500Hz, 3G 10min./1cycle, 60min. each along X, Y, Z axes</td></tr>
<tr><td rowspan="11">SAFETY & EMC (Note.4)</td><td>SAFETY STANDARDS</td><td colspan="4">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)</td></tr>
<tr><td>WITHSTAND VOLTAGE</td><td colspan="4">DC I/P – AC O/P:3.0KVac AC O/P – FG:1.5KVac</td></tr>
<tr><td rowspan="4">EMC EMISSION</td><td>Parameter</td><td colspan="2">Standard</td><td>Test Level / Note</td></tr>
<tr><td rowspan="2">Radiated</td><td colspan="2">FCC for 112,124,148 only(expect for Type-UN)</td><td>Class A</td></tr>
<tr><td colspan="2">BS EN/EN55032(CISPR32) for 212,224,248 only(expect for Type-UN)</td><td>Class A</td></tr>
<tr><td>Harmonic Current</td><td colspan="2">BS EN/EN61000-3-2</td><td>——</td></tr>
<tr><td>Voltage Flicker</td><td colspan="2">BS EN/EN61000-3-3</td><td>——</td></tr>
<tr><td rowspan="5">EMC IMMUNITY</td><td colspan="4">BS EN/EN55024, BS EN/EN55035</td></tr>
<tr><td>Parameter</td><td colspan="2">Standard</td><td>Test Level / Note</td></tr>
<tr><td>ESD</td><td colspan="2">BS EN/EN61000-4-2</td><td>Level 3, 8KV air ; Level 2, 4KV contact</td></tr>
<tr><td>Radiated</td><td colspan="2">BS EN/EN61000-4-3</td><td>Level 2, 3V/m</td></tr>
<tr><td>Magnetic Field</td><td colspan="2">BS EN/EN61000-4-8</td><td>Level 1, 1A/m</td></tr>
<tr><td rowspan="3">OTHERS</td><td>MTBF</td><td colspan="4">845.6K hrs min. Telcordia TR/SR-332 (Bellcore) ; 85.3K hrs min. MIL-HDBK-217F (25°C)</td></tr>
<tr><td>DIMENSION</td><td colspan="4">210*130*55mm (L*W*H)</td></tr>
<tr><td>PACKING</td><td colspan="4">1.3Kg; 8pcs/ 11.4Kg/ 1.74CUFT</td></tr>
</table>

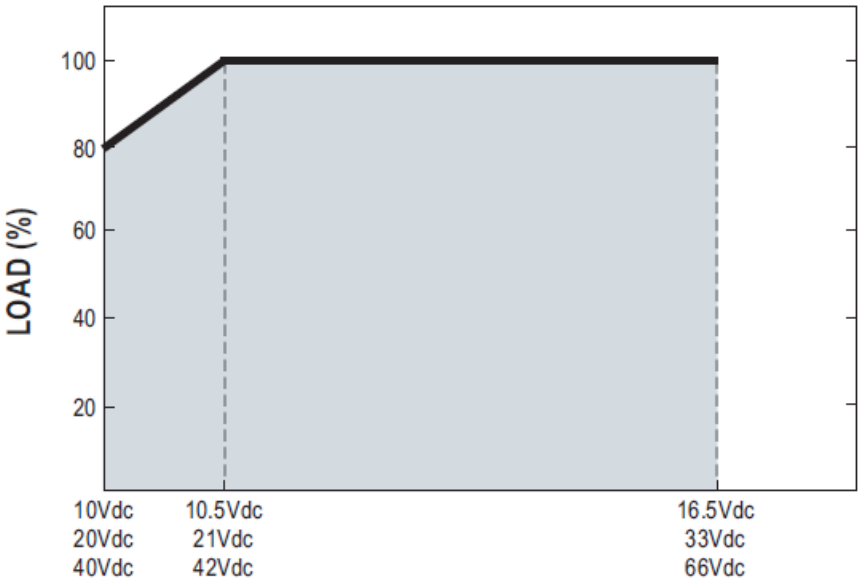
NOTE	1. Efficiency, AC regulation and THD are tested by 300W, linear load at 12.5Vdc/25Vdc/50Vdc input voltage. 2. All parameters not specified above are measured at rated load, 25°C of ambient temperature and set to factory setting. 3. Internal pre-start circuit, the setup time is 8s. 4. The power supply is considered as an independent unit, but the final equipment still need to 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 **https://www.meanwell.com//Upload/PDF/EMI_statement_en.pdf** Product Liability Disclaimer For detailed information, please refer to **https://www.meanwell.com/serviceDisclaimer.aspx**

AC Output Socket

MODEL NO.	NTS-300-112☐	NTS-300-124☐	NTS-300-148☐	NTS-300-212☐	NTS-300-224☐	NTS-300-248☐		
Socket type								
	TYPE-US	TYPE-GFCI	TYPE-UN	TYPE-EU	TYPE-CN	TYPE-UK	TYPE-AU	TYPE-UN
	In Stock	By request	In Stock	In Stock	In Stock	By request	By request	In Stock
Country	USA	USA	UNIVERSAL	EUROPE	CHINA	U.K	AUSTRALIA	UNIVERSAL
Certificate	CB FC DEKRA	CB FC	None	CB E13 DEKRA EAC CE UKCA			CB E13 DEKRA EAC CE UKCA	E13 EAC

DERATING CURVE



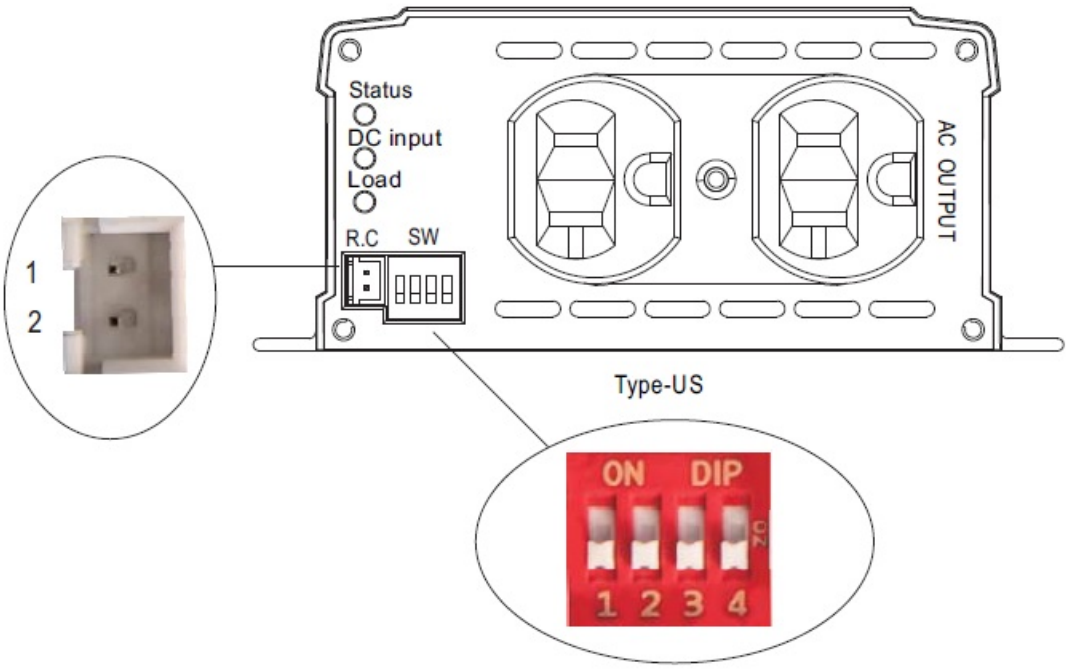


Remote ON-OFF Control

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		

LED STATUS

Normal work

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

DC Input	Green	Orange	Red
	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

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

Abnormal status

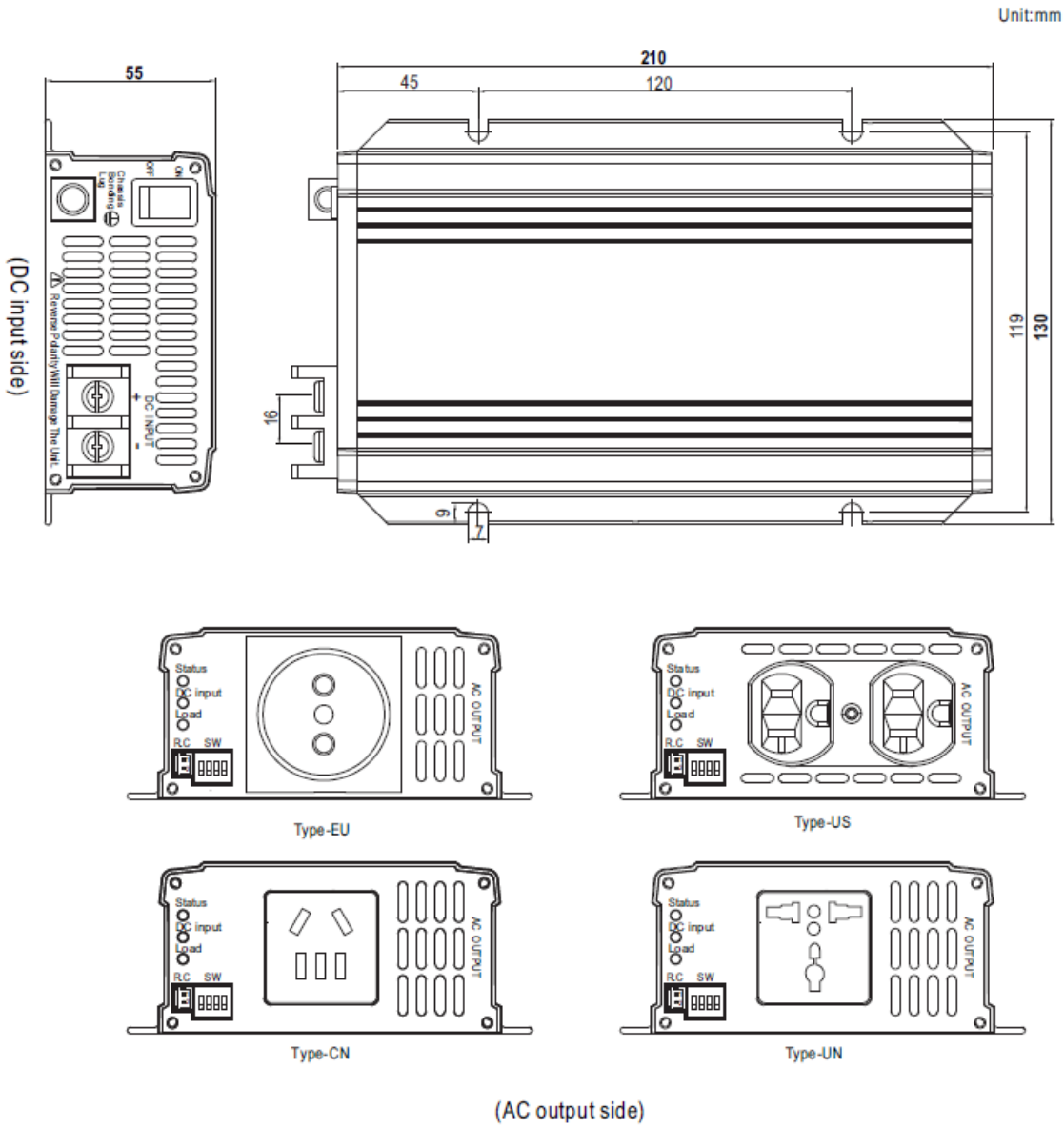
LED Indicator	Abnormal Indication
Status ● DC Input ○ Load ☀	Output overload or AC output short circuit
Status ● DC Input ☀ Load ○	Abnormal DC voltage
Status ● DC Input ☀ Load ☀	Over temperature or Fan lock
Status ☀ DC Input ○ Load ○	Inverter fail

● Light

○ Light off

☀ Flash

MECHANICAL SPECIFICATION

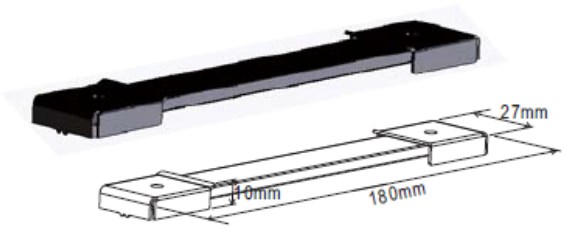


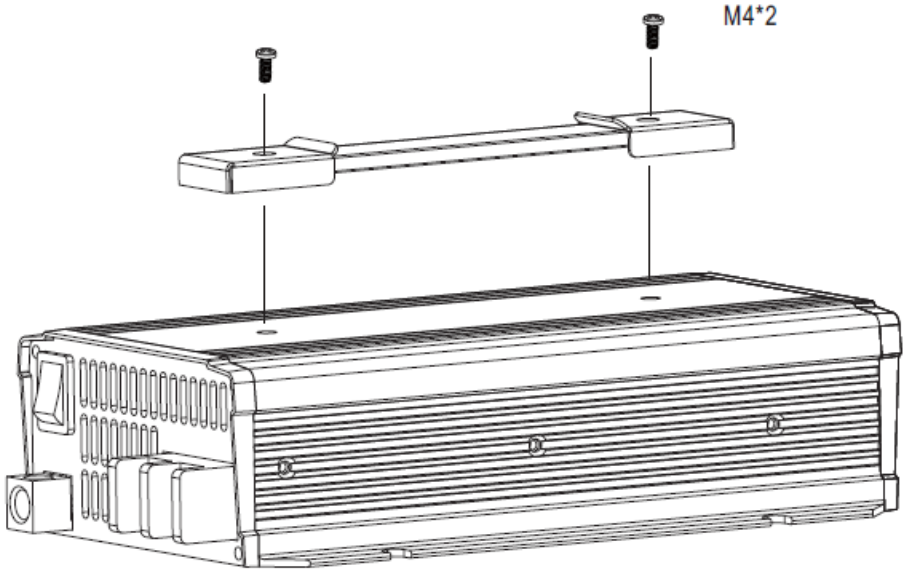
R.C Connector : JST B-XH or equivalent

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

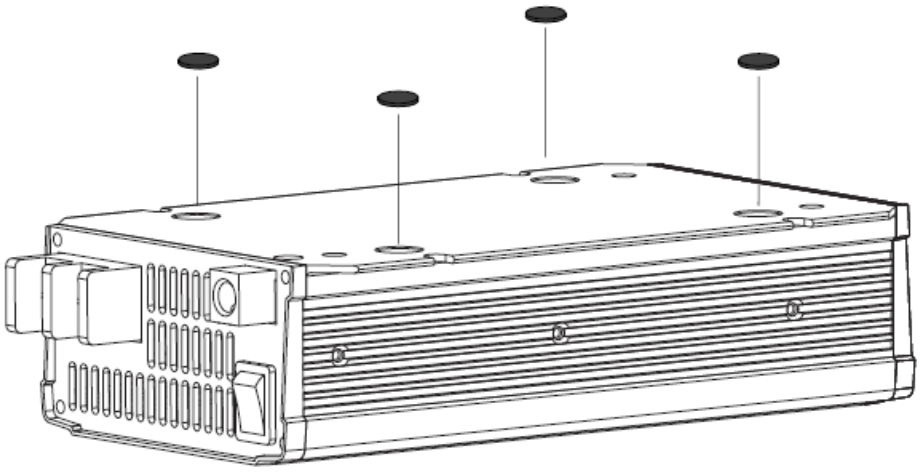
Accessory List

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

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

1. Handle
2. 

Foot pad

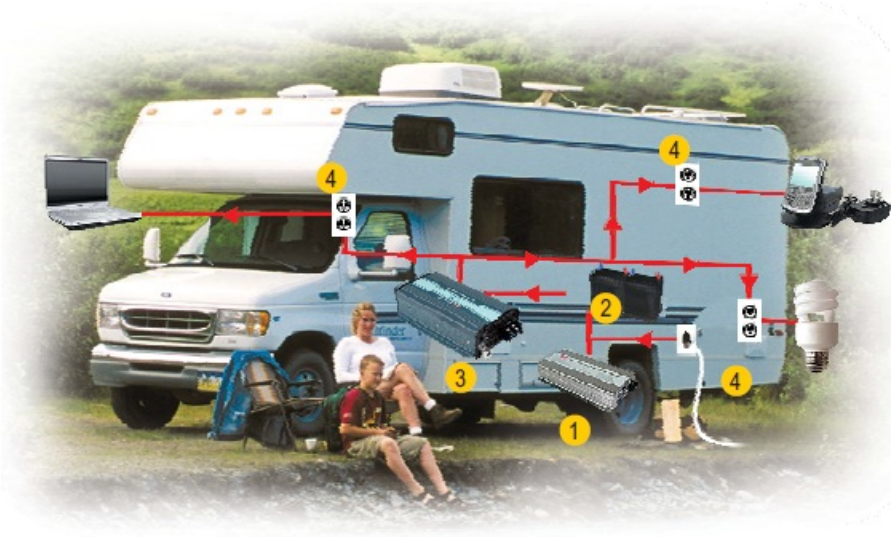


TYPICAL APPLICATION

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

1. Utility Input (Shore)1
2. AC/DC Battery Charger (PB/NPB/NPP series)
3. Battery Bank

   Off-Grid DC/AC
4. 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

File Name:NTS-300-SPEC 2024-02-23

Documents / Resources

	MEAN WELL NTS-300 Series Sine Wave Output DC-AC Inverter [pdf] Installation Guide NTS-300 Series Sine Wave Output DC-AC Inverter, NTS-300 Series, Sine Wave Output DC-AC Inverter, Output DC-AC Inverter, DC-AC Inverter, Inverter

References

- User Manual