1500W True Sine Wave DC-AC Inverter with Solar Charger   # TN-1500 series

■ Features :
- True sine wave output (THD<3%)
- High surge power up to 3000W
- U.P.S. mode and energy saving mode (selectable)
- High efficiency up to 91%
- Power ON-OFF switch
- Standby saving mode can be selectable
- Front panel indicator for operation status
- Thermostatically controlled cooling fan
- Protections: Bat. low alarm / Bat. low shutdown / Over voltage / Over temp. / Output short / Input polarity reverse / Overload / AC circuit breaker
- Application : Home appliance, power tools, office and portable equipment, vehicle and yacht ...etc.
- Built-in solar / AC charger
- Optional monitoring software
- 3 years warranty

SPECIFICATION

MODEL		TN-1500-112☐	TN-1500-124☐	TN-1500-148☐	TN-1500-212☐	TN-1500-224☐	TN-1500-248☐
OUTPUT	RATED POWER (Typ.)	1500W					
	MAXIMUM OUTPUT POWER (Typ.)	1725W for 180 sec. / 1875W for 10 sec. / surge power 3000W for 30 cycles					
	AC VOLTAGE	Factory setting set at 110VAC			Factory setting set at 230VAC		
		100 / 110 / 115 / 120VAC selectable by setting button S.W			200 / 220 / 230 / 240VAC selectable by setting button S.W		
	FREQUENCY	60±0.1Hz 50/60Hz selectable by setting button S.W			50±0.1Hz 50/60Hz selectable by setting button S.W		
	WAVEFORM Note.2	True sine wave (THD<3%) at rated input voltage					
	AC REGULATION (Typ.)	±3.0%					
	TRANSFER TIME (Typ.)	10ms inverter←→by pass					
	SAVING MODE (Typ.)	Default disabled. Load≦5W will be changed to standby mode					
	FRONT PANEL INDICATOR	Battery voltage level, output load level, saving mode, fault and operation status					
INPUT	BAT. VOLTAGE	12V	24V	48V	12V	24V	48V
	VOLTAGE RANGE (Typ.)Note.3,6	10.5 ~ 15VDC	21 ~ 30VDC	42 ~ 60VDC	10.5 ~ 15VDC	21 ~ 30VDC	42 ~ 60VDC
	DC CURRENT (Typ.) Note.5	150A	75A	37.5A	150A	75A	37.5A
	NO LOAD DISSIPATION	≦18W @ standby saving mode					
	OFF MODE CURRENT DRAW	≦1mA					
	EFFICIENCY (Typ.) Note.2	87%	89%	89%	88%	90%	91%
	BATTERY TYPES	Open & sealed Lead Acid					
BATTERY INPUT PROTECTION	FUSE	40A*5	30A*3	30A*2	40A*5	30A*3	30A*2
	BAT. LOW ALARM	11.3±4%	22.5±4%	45±4%	11.3±4%	22.5±4%	45±4%
	BAT. LOW SHUTDOWN	10.5±4%	21±4%	42±4%	10.5±4%	21±4%	42±4%
	REVERSE POLARITY	By internal fuse open					
OUTPUT PROTECTION	OVER TEMPERATURE	82℃±5℃	82℃±5℃	96℃±5℃	68℃±5℃	68℃±5℃	68℃±5℃
		Protection type : Shut down o/p voltage, re-power on to recover ; by internal RTH3 detect on heatsink of power transistor					
	OUTPUT SHORT	Protection type : Shut down o/p voltage, re-power on to recover					
	OVER LOAD (Typ.)	105 ~ 115% load for 180 sec., 115% ~ 125% load for 10 sec.					
		Protection type : Shut down o/p voltage, re-power on to recover					
	CIRCUIT BREAKER	20A			10A		
	GFCI PROCTECTION	Optional (Only type F)			None		
ENVIRONMENT	WORKING TEMP. Note.1	0 ~ +40℃ @ 100% load ; 60℃ @ 50% load					
	WORKING HUMIDITY	20% ~ 90% RH non-condensing					
	STORAGE TEMP., HUMIDITY	-30 ~ +70℃ / -22 ~ +158°F, 10 ~ 95% RH					
	VIBRATION	10 ~ 500Hz, 3G 10min./1cycle, 60min. each along X, Y, Z axes					
SAFETY & EMC	SAFETY STANDARDS	UL458 (only for "GFCI" receptacle-Type F) None					
	LVD	None			EN60950-1		
	WITHSTAND VOLTAGE	Bat I/P - AC I/P:3.0KVAC Bat I/P - AC O/P:3.0KVAC AC O/P - FG:1.5KVAC					
	EMC EMISSION	Compliance to FCC class A			Compliance to EN55022 class B, 72/ 245/ CEE, 95/ 54/ CE, E-Mark		
	EMC IMMUNITY	None			Compliance to EN61000-4-2,3,4,5,6,8,11		
AC CHARGER	CHARGE CURRENT (Typ.)	5.5A	2.7A	1.35A	5.5A	2.7A	1.35A
	CHARGE VOLTAGE	14.3V±4%	28.5V±4%	57V±4%	14.3V±4%	28.5V±4%	57V±4%
SOLAR CHARGER	MAX OPEN CIRCUIT VOLTAGE	25V	45V	75V	25V	45V	75V
	CHARGE CURRENT (max.)	30A					
	CHARGE VOLTAGE	14.3V±4%	28.5V±4%	57V±4%	14.3V±4%	28.5V±4%	57V±4%
OTHERS	CONTROL WIRING	RJ11 -RS232 (Option)					
	DIMENSION	420*220*88mm (L*W*H)					
	PACKING	6.85Kg; 2pcs/15.7Kg/1.61CUFT					
NOTE		1.Output derating capacity referenced by curve 1. 2.THD and Efficiency is tested by 1000W, linear load at 13V, 26V, 52V input voltage. 3.Input derating capacity referenced by curve 2. 4.All parameters not specified above are measured at rated load, 25℃ of ambient temperature. 5.DC current is tested by 1500W, linear load at 13V, 26V, 52V input voltage. 6.The tolerance of each voltage value by models is:112/212→±0.5V;124/224→±1V;148/248→±2V					

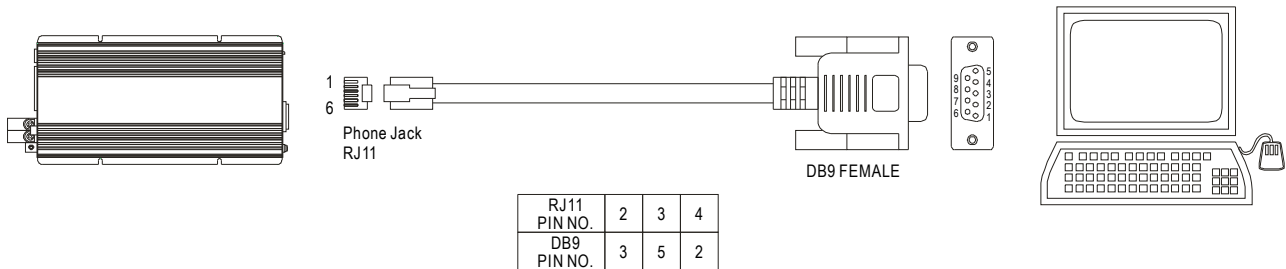■ **Instructions for TN-1500 monitoring software**

1. Installation of TN-1500 unit and PC

1
6

Phone Jack
RJ11

DB9 FEMALE

RJ11 PIN NO.	2	3	4
DB9 PIN NO.	3	5	2

Figure 1

2. Explanation of Monitoring Manu

2.1 Main Page

Inverter TN V.1.1

Setting Statistics R.C. Power off Pause   Exit
  1   2   3   4

Solar Charge

ACCharge   100   INVERTER   100
                    0   0
                  Battery   Loading

Battery Voltage 54.1 V   O/P Voltage 110 V
                                                O/P Frequency 60.0 Hz
                        Internal Temperature 16.0 ℃

ACIn   Bypass
        Utility Voltage 0.0 V   TN-1500-143

                                                    ● Poweron
StartDate 2007/12/07 03:13:33 PM   ● Remote off
ResetDate 2007/12/21 01:40:56 PM   ● Battery low
                                        6   ● Battery usedup
                                                    ● Standby saving mode
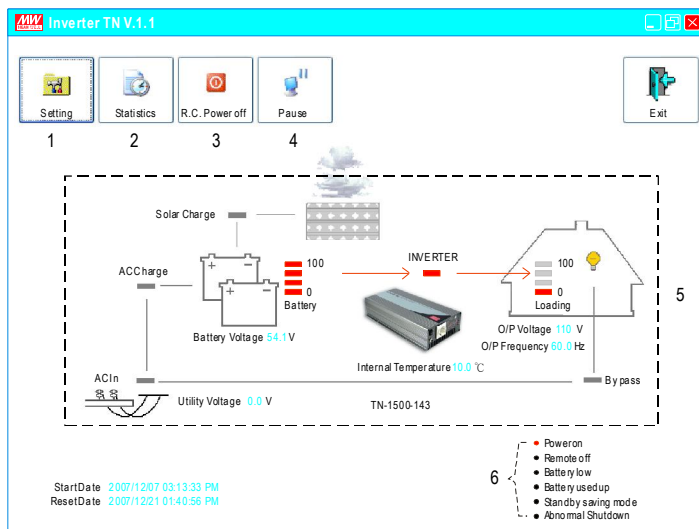   ● Abnormal Shutdown

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Figure 2

1. Setting: Adjustment for output voltage, charging related voltage, frequency, and operation mode. Please refer to Figure 3 for details.

2. Statistics: Calculate for the percentage of operating period for each operation mode. Please refer to Figure 4 for details.

3. R.C. Power off: Power can be turned ON or OFF at the remote location.

4. Pause: Stop refreshing the page of monitoring software.

5. Status of unit: Indicating current operating status of TN-1500.

6. Signals that display current condition of the unit.

2.2 Setting Page

MW Inverter Setting

File Name	D:\TN_110RR\20071205\REV\TN_110RR\TNF\TN_1K5_512.TNF
Model name	TN-1500-212
Manufacture	MeanWell
Series Number	LOC-1234567890
Revision	REV:1.10
Date Of Manu.	06/23/2007

I/O Type   212

Voltage   230   V

Frequency   50   Hz

Stand-by saving mode   ● On   ○ Off

UPS mode   ● On

Energy saving mode   ○ On

Equalization Volt.   14.3   V   13.5 ~ 15.0V

Floating Volt.   13.3   V   13.0 ~ 13.5V

Alarm Volt.   11.3   V   11.0 ~ 11.5V

Shutdown Volt.   10.5   V   10.0 ~ 11.0V   1

Comm Ports   1   Bauds Rate   9600

Read   Write   Lead   Exit
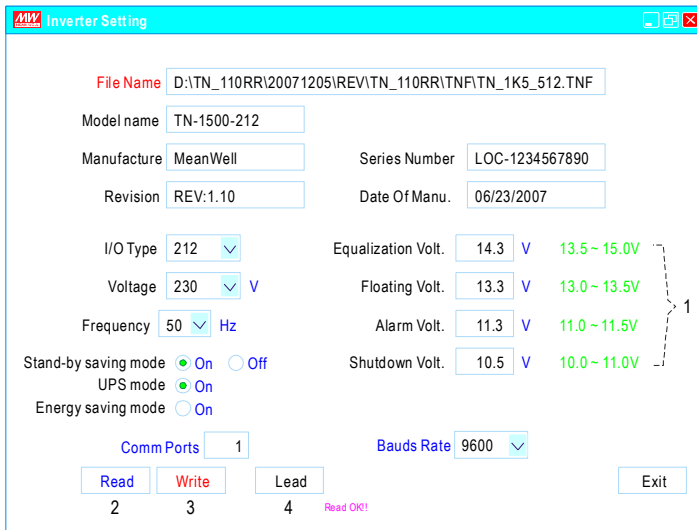 2   3   4   Read OK!!

Figure 3

1. User can adjust the settings based on the characteristics of batteries been used: Equalization Voltage, Floating Voltage, Alarm Voltage, and Shut-down Voltage. UPS Mode / Energy Saving Mode selection and AC output voltage and frequency can also be set in this page.
2. Read: Read current settings of the unit.
3. Write: Write the revised setting into the unit.
4. Load: Load in factory default settings.

2.3 Statistic Page

MW Inverter Setting

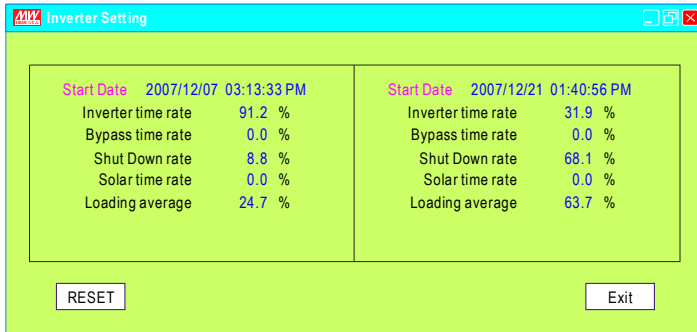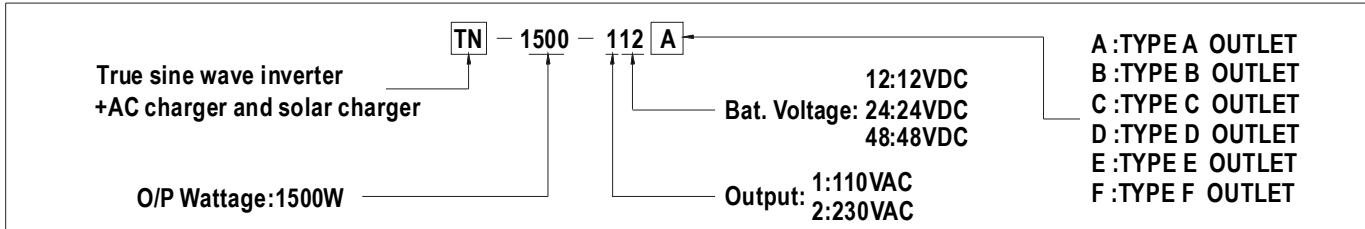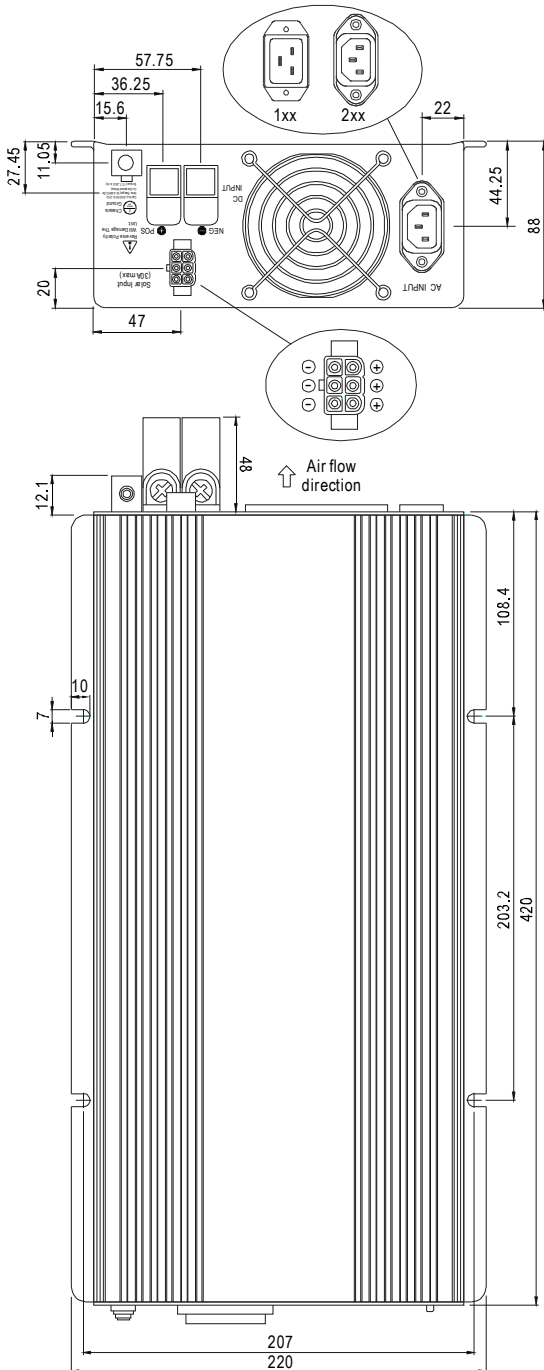|			
Start Date	2007/12/07 03:13:33 PM	Start Date	2007/12/21 01:40:56 PM
Inverter time rate	91.2 %	Inverter time rate	31.9 %
Bypass time rate	0.0 %	Bypass time rate	0.0 %
Shut Down rate	8.8 %	Shut Down rate	68.1 %
Solar time rate	0.0 %	Solar time rate	0.0 %
Loading average	24.7 %	Loading average	63.7 %

RESET   Exit

Figure 4

1. Start Date: Date that installing the monitoring software.
2. Reset Date: Date that resetting the statistics. The Start Date will not be influenced by resetting the statistics or turning off the unit.
3. Inverter time rate: Operating period of "Inverter Mode" represents how many percent of the whole operating period.
4. Bypass time rate: Operating period of "Bypass Mode" (energy provides directly by the utility) represents how many percent of the whole operating period.
5. Shut down rate: Percentage of time period that the unit is under the condition of shut down.
   * Inverter time rate + Bypass time rate + Shut down rate = 100%
6. Solar time rate: Percentage of time period that the solar charger is functioning after turning on the TN-1500 unit.
7. Loading average: Average loading after turning on the TN-1500 unit.

TN — 1500 — 112 A

True sine wave inverter
+AC charger and solar charger

O/P Wattage:1500W

Bat. Voltage: 12:12VDC
24:24VDC
48:48VDC

Output: 1:110VAC
2:230VAC

A :TYPE A OUTLET
B :TYPE B OUTLET
C :TYPE C OUTLET
D :TYPE D OUTLET
E :TYPE E OUTLET
F :TYPE F OUTLET

■ AC Output Receptacles (optional)

Receptacle type						
	TYPE-A	TYPE-B	TYPE-C	TYPE-D	TYPE-E	TYPE-F
Country	USA	EUROPE	AUSTRALIA	U.K	JAPAN	GFCI
Certificate	FC	(E13) CE	(E13) CE	(E13) CE	FC	cULus (Expect for 48V input) FC

■ Mechanical Specification

Unit:mm

57.75
36.25
15.6
27.45
11.05
1xx 2xx
22
44.25
88
20
47
DC INPUT
POS NEG
Solar Input (30A max.)
AC INPUT
48
Air flow direction
12.1
10
7
108.4
203.2
420
207
220

■ Derating Curve

LOAD (%) vs AMBIENT TEMPERATURE (℃)
CURVE 1

LOAD (%) vs BATTERY INPUT VOLTAGE (V)
10.5VDC 11.5VDC 15VDC (HORIZONTAL)
21VDC 23VDC 30VDC
42VDC 46VDC 60VDC
CURVE 2

Type-A

Type-B