



#### ■ Features :

- True sine wave output (THD<3%)
- High surge power up to 6000W
- U.P.S. mode and energy saving mode (selectable)
- High efficiency up to 92%
- 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 and connection cable (MW order No.: DS-TN-1500)
- 3 years warranty



#### SPECIFICATION

| MODEL                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | TN-3000-112                                                                    | TN-3000-124 | TN-3000-148 | TN-3000-212                                                     | TN-3000-224 | TN-3000-248 |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|-------------|-------------|-----------------------------------------------------------------|-------------|-------------|
| OUTPUT                   | RATED POWER (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                | 3000W                                                                          |             |             |                                                                 |             |             |
|                          | MAXIMUM OUTPUT POWER (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                       | 3450W for 180 sec. / 4500W for 10 sec. / surge power 6000W 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                                                                                                                                                                                                                                                                                                                                                                                                                                                          | True sine wave (THD<3%) at rated input voltage                                 |             |             |                                                                 |             |             |
|                          | AC REGULATION (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                              | ±3%                                                                            |             |             |                                                                 |             |             |
|                          | 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.4                                                                                                                                                                                                                                                                                                                                                                                                                                          | 300A                                                                           | 150A        | 75A         | 300A                                                            | 150A        | 75A         |
|                          | NO LOAD DISSIPATION (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                        | ≤ 10W @ standby saving mode                                                    |             |             |                                                                 |             |             |
|                          | OFF MODE CURRENT DRAW (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                      | ≤ 1mA                                                                          |             |             |                                                                 |             |             |
|                          | EFFICIENCY (Typ.) Note.1                                                                                                                                                                                                                                                                                                                                                                                                                                          | 88%                                                                            | 90%         | 91%         | 89%                                                             | 91%         | 92%         |
|                          | BATTERY TYPES                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Open & sealed lead acid battery                                                |             |             |                                                                 |             |             |
| BATTERY INPUT PROTECTION | FUSE                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 40A*12                                                                         | 40A*6       | 20A*6       | 40A*12                                                          | 40A*6       | 20A*6       |
|                          | BAT. LOW ALARM Note.6                                                                                                                                                                                                                                                                                                                                                                                                                                             | 11.3V                                                                          | 22.5V       | 45V         | 11.3V                                                           | 22.5V       | 45V         |
|                          | BAT. LOW SHUTDOWN Note.6                                                                                                                                                                                                                                                                                                                                                                                                                                          | 10.5V                                                                          | 21V         | 42V         | 10.5V                                                           | 21V         | 42V         |
|                          | REVERSE POLARITY                                                                                                                                                                                                                                                                                                                                                                                                                                                  | By internal fuse open                                                          |             |             |                                                                 |             |             |
| OUTPUT PROTECTION        | OVER TEMPERATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 90℃±5℃                                                                         | 85℃±5℃      | 85℃±5℃      | 80℃±5℃                                                          | 75℃±5℃      | 75℃±5℃      |
|                          | OUTPUT SHORT                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Protection type : Shut down o/p voltage, re-power on to recover                |             |             |                                                                 |             |             |
|                          | OVER LOAD (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Protection type : Shut down o/p voltage, re-power on to recover                |             |             |                                                                 |             |             |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 105 ~ 115% load for 180 sec., 115% ~ 150% load for 10 sec.                     |             |             |                                                                 |             |             |
|                          | CIRCUIT BREAKER                                                                                                                                                                                                                                                                                                                                                                                                                                                   | AC output: 40A, AC receptacle:15A                                              |             |             | AC output: 20A, AC receptacle: 15A                              |             |             |
|                          | GFCI PROTECTION                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Optional (Only type F)                                                         |             |             | None                                                            |             |             |
| ENVIRONMENT              | WORKING TEMP. Note.2                                                                                                                                                                                                                                                                                                                                                                                                                                              | 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 STANDARDS                                                                                                                                                                                                                                                                                                                                                                                                                                                  | UL458 (only for Type G)                                                        |             |             | None                                                            |             |             |
| SAFETY & EMC             | 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          |             |             |                                                                 |             |             |
|                          | ISOLATION RESISTANCE                                                                                                                                                                                                                                                                                                                                                                                                                                              | Bat I/P - AC O/P, Bat I/P - FG, AC O/P - FG: 100M ohms / 500VDC / 25℃ / 70% RH |             |             |                                                                 |             |             |
|                          | EMC EMISSION                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Compliance to FCC class A                                                      |             |             | Compliance to EN55022 class A, 72/ 245/ CEE, 95/ 54/ CE, E-Mark |             |             |
|                          | EMC IMMUNITY                                                                                                                                                                                                                                                                                                                                                                                                                                                      | None                                                                           |             |             | Compliance to EN61000-4-2,3,4,5,6,8,11                          |             |             |
|                          | CHARGE CURRENT (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                             | 25A                                                                            | 12A         | 6A          | 25A                                                             | 12A         | 6A          |
| AC CHARGER               | CHARGE VOLTAGE Note.6                                                                                                                                                                                                                                                                                                                                                                                                                                             | 14.3V                                                                          | 28.5V       | 57V         | 14.3V                                                           | 28.5V       | 57V         |
| SOLAR PANEL              | MAX OPEN CIRCUIT VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                          | 25V                                                                            | 45V         | 75V         | 25V                                                             | 45V         | 75V         |
|                          | SHORT CIRCUIT CURRENT (max.)                                                                                                                                                                                                                                                                                                                                                                                                                                      | 30A                                                                            |             |             |                                                                 |             |             |
| OTHERS                   | CONTROL WIRING                                                                                                                                                                                                                                                                                                                                                                                                                                                    | RJ11 -RS232 (Option)                                                           |             |             |                                                                 |             |             |
|                          | DIMENSION                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 466.8*283.5*100mm (L*W*H)                                                      |             |             |                                                                 |             |             |
|                          | PACKING                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 12.9Kg; 1pcs/14Kg/1.98CUFT                                                     |             |             |                                                                 |             |             |
| NOTE                     | 1.Efficiency is tested by 2100W, linear load at 13V, 26V, 52V input voltage.<br>2.Output derating capacity referenced by curve 1.<br>3.Input derating capacity referenced by curve 2.<br>4.DC current is tested by 3000W, linear load at 12V, 24V, 48V input voltage.<br>5.All parameters not specified above are measured at rated load, 25℃ of ambient temperature.<br>6.The tolerance of each voltage value by models is:112/212→±0.5V;124/224→±1V;148/248→±2V |                                                                                |             |             |                                                                 |             |             |

## ■ Instructions for TN-3000 monitoring software

### 1. Installation of TN-3000 unit and PC

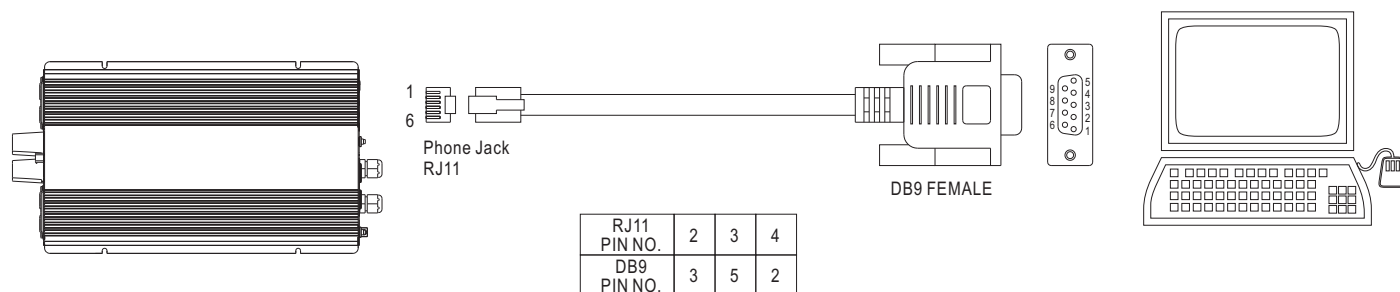


Figure 1

### 2. Explanation of Monitoring Manu

#### 2.1 Main Page

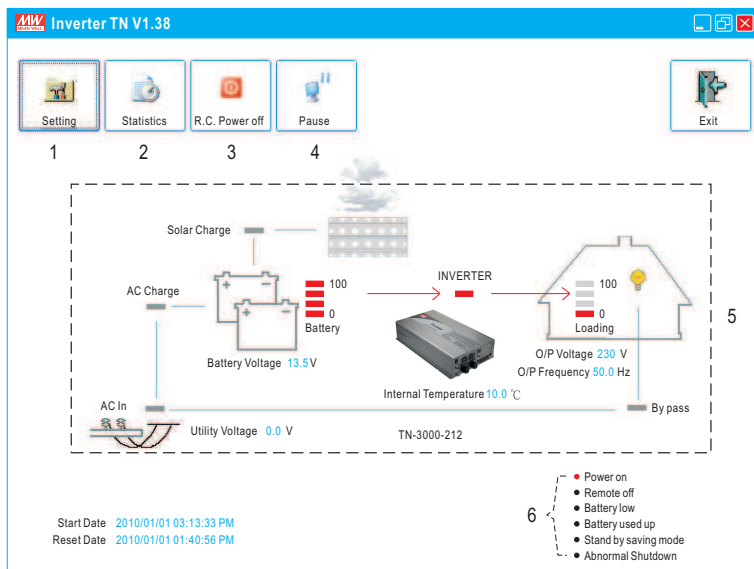
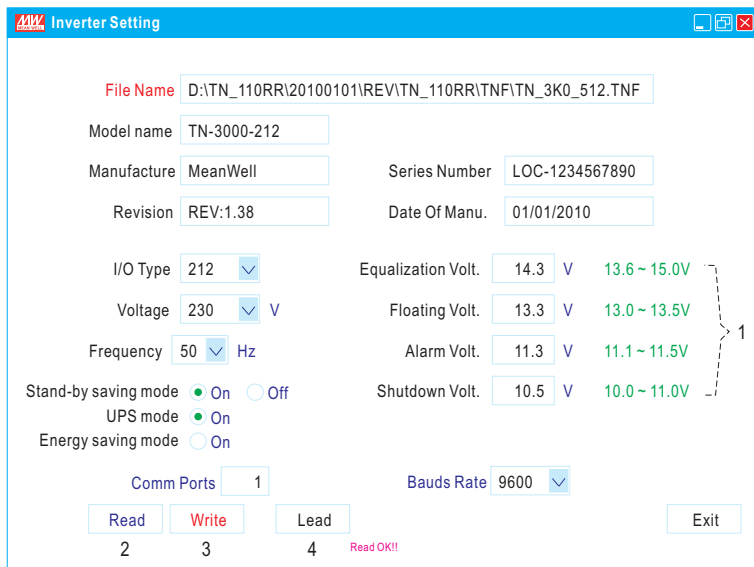


Figure 2

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-3000.
6. Signals that display current condition of the unit.

## 2.2 Setting Page



File Name: D:\TN\_110RR\20100101\REV\TN\_110RR\TNF\TN\_3K0\_512.TNF

Model name: TN-3000-212

Manufacture: MeanWell Series Number: LOC-1234567890

Revision: REV:1.38 Date Of Manu.: 01/01/2010

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 13.6 ~ 15.0V

Floating Volt.: 13.3 V 13.0 ~ 13.5V

Alarm Volt.: 11.3 V 11.1 ~ 11.5V

Shutdown Volt.: 10.5 V 10.0 ~ 11.0V

Comm Ports: 1 Bauds Rate: 9600

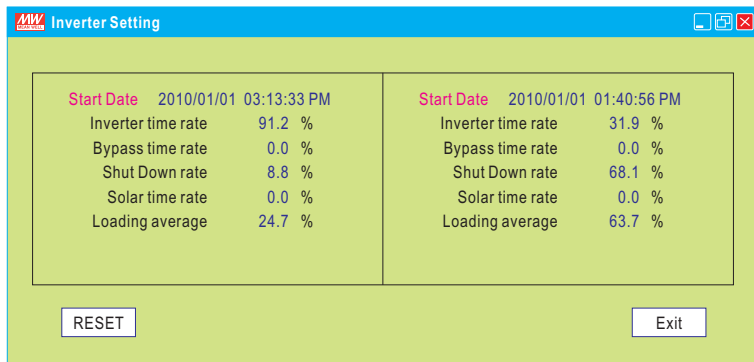
Read Write Lead Exit

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



Start Date 2010/01/01 03:13:33 PM

Inverter time rate 91.2 %

Bypass time rate 0.0 %

Shut Down rate 8.8 %

Solar time rate 0.0 %

Loading average 24.7 %

Start Date 2010/01/01 01:40:56 PM

Inverter time rate 31.9 %

Bypass time rate 0.0 %

Shut Down rate 68.1 %

Solar time rate 0.0 %

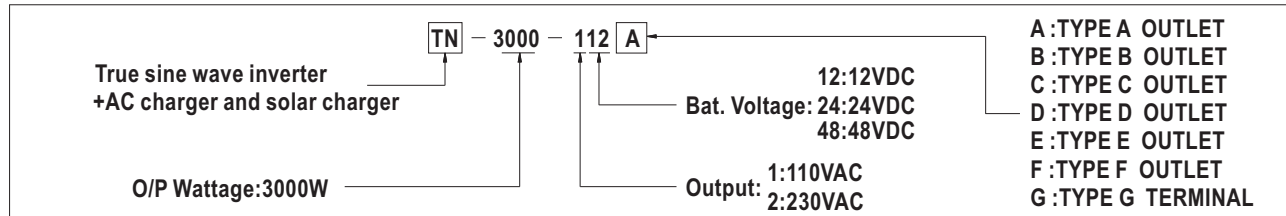
Loading average 63.7 %

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.  

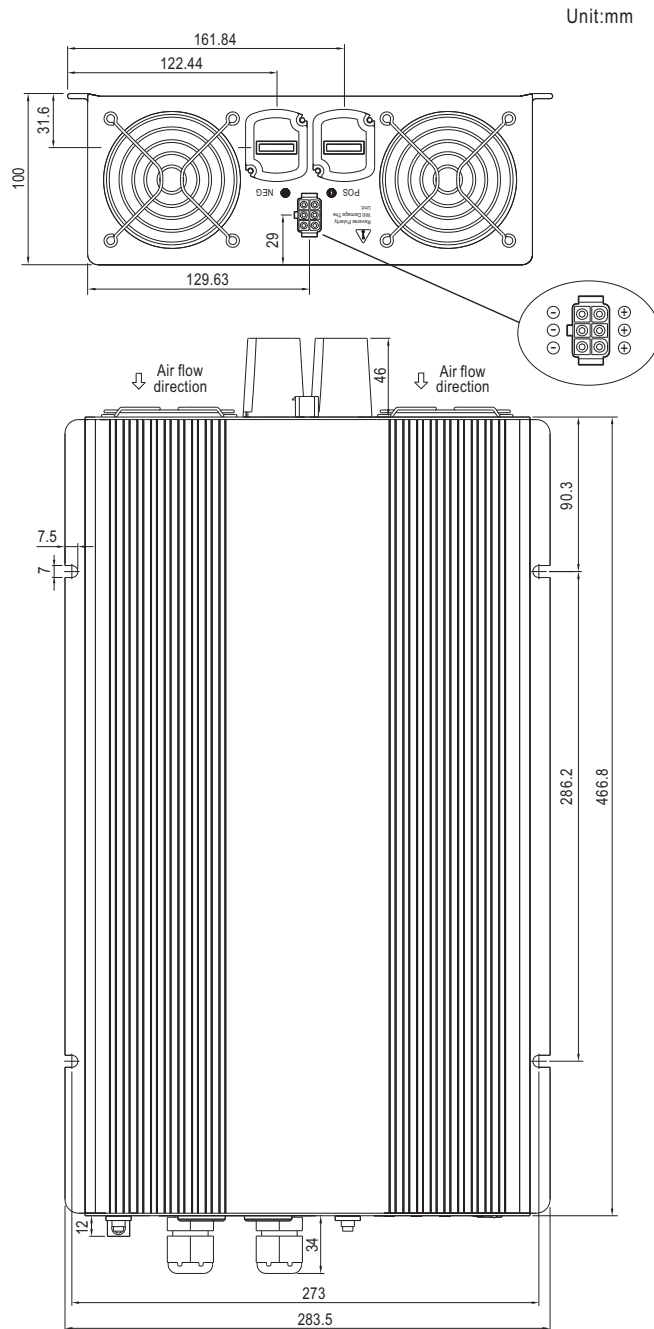
$$\text{Inverter time rate} + \text{Bypass time rate} + \text{Shut down rate} = 100\%$$
6. Solar time rate: Percentage of time period that the solar charger is functioning after turning on the TN-3000 unit.
7. Loading average: Average loading after turning on the TN-3000 unit.



### AC Output Receptacle (optional)

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

### Mechanical Specification



### Derating Curve

