



AC output side



DC input side



User's Manual



Video



IEC62368-1 BS EN/EN62368-1



UL62368-1



TPTC004



AS/NZS 62368.1



## Features

- Combining AC/DC charger, DC/AC Inverter, AC by-pass & support external MPPT solar charger
- AC utility charger up to 4520W
- UPS function (AC by-pass) without interruption, transfer time <10ms
- True sine wave output (THD<3%)
- High surge power up to 10KW
- Parallel synchroized operation up to 30KW (5+1 unit)
- Temperature controlled cooling fan
- AC output voltage and frequency selectable by DIP S.W
- 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)
- 30°C ~+70°C wide operating temperature
- Suitable for lead-acid or li-ion batteries
- Support MODBus-RTU(RS-485) or CANBus protocol communication
- Graphical user interface controller CMU2E/CMU2E-R for status monitoring and control
- Conformal coating
- 5 years warranty

## Applications

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

## Description

NTN-5K is a 5KW highly reliable off-grid true sine wave DC-AC power inverter with built-in AC charger and UPS function(AC by-pass). 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, 10KW peak power, adjustable AC output voltage and frequency, -30~+70°C wide. Operating temperature range, complete protection features, and etc. Combined with batteries, the NTN-5K 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, induction stove, air conditioner, electromechanical tool, communication equipment, power distribution cabinet, outdoor camping equipment, marine AC power, factory equipment, and etc.

## Model Encoding

**NTN - 5K - 2 24**

Communication protocol option

DC input voltage (24: 24Vdc, 48: 48Vdc, 380: 380Vdc)

AC output voltage (1:100/110/115/120Vac, 2:200/220/230/240Vac)

Rated wattage

Series name

| Type  | Communication Protocol | Note     |
|-------|------------------------|----------|
| Blank | MODBus protocol        | In Stock |
| CAN   | CANBus protocol        | In Stock |

## GTIN CODE

MW Search: <https://www.meanwell.com/serviceGTIN.aspx>



## 5KW True Sine Wave Inverter with AC Charger / UPS

## NTN-5K series

## SPECIFICATION

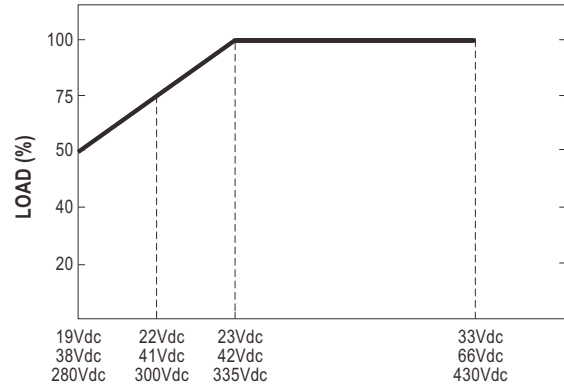
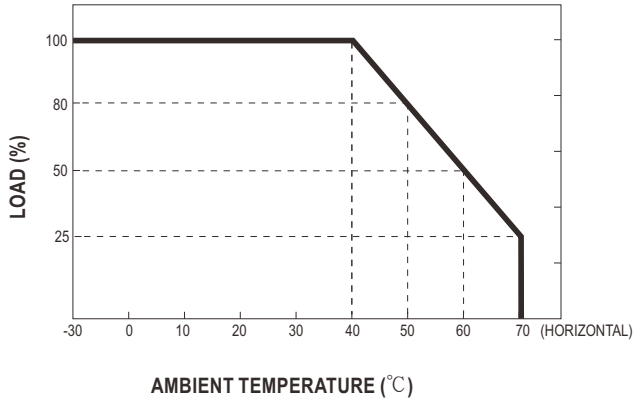


| MODEL NO.                      |                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | NTN-5K-224 <input type="checkbox"/>                                                                          |                                                                                                                       | NTN-5K-248 <input type="checkbox"/> |                                                            | NTN-5K-2380 <input type="checkbox"/> |                       |  |
|--------------------------------|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|-------------------------------------|------------------------------------------------------------|--------------------------------------|-----------------------|--|
|                                |                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <input type="checkbox"/> =Blank, CAN                                                                         |                                                                                                                       |                                     |                                                            |                                      |                       |  |
| AC OUTPUT                      | RATED POWER(Continuous)        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 5000W                                                                                                        |                                                                                                                       |                                     |                                                            |                                      |                       |  |
|                                | OVER RATED POWER(3 Min.)       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 5750W                                                                                                        |                                                                                                                       |                                     |                                                            |                                      |                       |  |
|                                | PEAK POWER(10 Sec.)            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 7000W                                                                                                        |                                                                                                                       | 7500W                               |                                                            |                                      |                       |  |
|                                | SURGE POWER(30 Cycles)         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 8000W                                                                                                        |                                                                                                                       | 10000W                              |                                                            |                                      |                       |  |
|                                | AC VOLTAGE                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Default setting set at 230VAC<br>200 / 220 / 230 / 240Vac selectable by DIP S.W                              |                                                                                                                       |                                     |                                                            |                                      |                       |  |
|                                | FREQUENCY                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Default setting set at 50 ± 0.1Hz<br>50/60Hz selectable by DIP S.W                                           |                                                                                                                       |                                     |                                                            |                                      |                       |  |
| WAVEFORM (Note. 1)             |                                | True sine wave (THD<3%)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                              |                                                                                                                       |                                     |                                                            |                                      |                       |  |
| AC REGULATION                  |                                | ± 3.0% at rated input voltage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                              |                                                                                                                       |                                     |                                                            |                                      |                       |  |
| DC INPUT                       | DC VOLTAGE                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 24Vdc                                                                                                        |                                                                                                                       | 48Vdc                               |                                                            | 380Vdc                               |                       |  |
|                                | VOLTAGE RANGE (Typ.)           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 19 ~ 33Vdc                                                                                                   |                                                                                                                       | 38 ~ 66Vdc                          |                                                            | 280 ~ 430Vdc                         |                       |  |
|                                | DC CURRENT (Typ.)              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 240A                                                                                                         |                                                                                                                       | 120A                                |                                                            | 16A                                  |                       |  |
|                                | NO LOAD DISSIPATION (Typ.)     | NON-SAVING MODE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2.5A                                                                                                         |                                                                                                                       | 1.4A                                |                                                            | 0.2A                                 |                       |  |
|                                |                                | SAVING MODE (Note. 5)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Default disable, auto detect AC output load ≤ 10W will be changed to saving mode<br><25W                     |                                                                                                                       |                                     |                                                            |                                      |                       |  |
|                                | POWER OFF CURRENT DRAW         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | ≤ 2mA                                                                                                        |                                                                                                                       |                                     |                                                            |                                      |                       |  |
|                                | EFFICIENCY (Typ.) (Note. 1)    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 91%                                                                                                          |                                                                                                                       | 93%                                 |                                                            | 94.5%                                |                       |  |
|                                | BATTERY TYPES                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Lead Acid or li-ion                                                                                          |                                                                                                                       |                                     |                                                            |                                      |                       |  |
| PROTECTION                     | DC INPUT                       | ALARM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 22 ± 0.5Vdc                                                                                                  |                                                                                                                       | 44 ± 1Vdc                           |                                                            | 300 ± 5Vdc                           |                       |  |
|                                |                                | SHUTDOWN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 19 ± 0.5Vdc                                                                                                  |                                                                                                                       | 38 ± 1Vdc                           |                                                            | 280 ± 5Vdc                           |                       |  |
|                                |                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 25 ± 0.5Vdc                                                                                                  |                                                                                                                       | 50 ± 1Vdc                           |                                                            | 335 ± 5Vdc                           |                       |  |
|                                |                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 31 ± 0.5Vdc                                                                                                  |                                                                                                                       | 62 ± 1Vdc                           |                                                            | 420 ± 5Vdc                           |                       |  |
|                                |                                | SHUTDOWN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 33 ± 0.5Vdc                                                                                                  |                                                                                                                       | 66 ± 1Vdc                           |                                                            | 430 ± 5Vdc                           |                       |  |
|                                |                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 30 ± 0.5Vdc                                                                                                  |                                                                                                                       | 60 ± 1Vdc                           |                                                            | 400 ± 5Vdc                           |                       |  |
|                                | REVERSE POLARITY               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | No damage, re-power on to recover after fault condition is removed                                           |                                                                                                                       |                                     |                                                            |                                      | By internal fuse open |  |
|                                | AC OUTPUT                      | OVER TEMPERATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                              | Shut down o/p voltage, recovers automatically after temperature goes down                                             |                                     |                                                            |                                      |                       |  |
|                                |                                | OUTPUT SHORT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                              | Shut down o/p voltage, re-power on to recover                                                                         |                                     |                                                            |                                      |                       |  |
|                                |                                | OVER LOAD (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                              | 105 ~ 115% load for 180 sec., 115% ~ 140% load for 10 sec.                                                            |                                     | 105 ~ 115% load for 180 sec., 115% ~ 150% load for 10 sec. |                                      |                       |  |
|                                |                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                              | Protection type : Shut down o/p voltage, re-power on to recover                                                       |                                     |                                                            |                                      |                       |  |
| CIRCUIT BREAKER                |                                | 35A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                              |                                                                                                                       |                                     |                                                            |                                      |                       |  |
| FUNCTION                       |                                | REMOTE CONTROL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                              | Set remote ON/OFF control by front panel dry contact connector(by RELAY), Open : AC output OFF ; Short : AC output ON |                                     |                                                            |                                      |                       |  |
|                                |                                | COMMUNICATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                              | MODBus-RTU (RS-485) / CANBus                                                                                          |                                     |                                                            |                                      |                       |  |
| AC UPS MODE                    | AC INPUT RANGE                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 200/220/230/240Vac ± 16%, recover ± 13%                                                                      |                                                                                                                       |                                     |                                                            |                                      |                       |  |
|                                | FREQUENCY RANGE                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 45 ~ 65Hz                                                                                                    |                                                                                                                       |                                     |                                                            |                                      |                       |  |
|                                | TRASFER TIME(Typ.)             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 10ms inverter → AC by pass                                                                                   |                                                                                                                       |                                     |                                                            |                                      |                       |  |
| AC CHARGER                     | BOOST CHARGE VOLTAGE           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Default 28.8Vdc                                                                                              |                                                                                                                       | Default 57.6Vdc                     |                                                            | Default 400Vdc                       |                       |  |
|                                | FLOAT CHARGE VOLTAGE           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Default 27.6Vdc                                                                                              |                                                                                                                       | Default 55.2Vdc                     |                                                            | Default 385Vdc                       |                       |  |
|                                | CHARGE VOLTAGE RANGE           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 20 ~ 30Vdc                                                                                                   |                                                                                                                       | 40 ~ 60Vdc                          |                                                            | 290 ~ 400Vdc                         |                       |  |
|                                | CONSTANT CURRENT               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 135A                                                                                                         |                                                                                                                       | 70A                                 |                                                            | 11.3A                                |                       |  |
|                                | MAX. CHARGE POWER              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 4050W                                                                                                        |                                                                                                                       | 4200W                               |                                                            | 4520W                                |                       |  |
|                                | TEMPERATURE COMPENSATION       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | By external NTC                                                                                              |                                                                                                                       |                                     |                                                            |                                      |                       |  |
|                                | POWER FACTOR (Typ.)            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | PF>0.98/230VAC at full load                                                                                  |                                                                                                                       |                                     |                                                            |                                      |                       |  |
|                                | EFFICIENCY (Typ.)              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 91%                                                                                                          |                                                                                                                       | 93%                                 |                                                            | 94%                                  |                       |  |
|                                | AC CURRENT (Typ.)              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 25A/230VAC                                                                                                   |                                                                                                                       |                                     |                                                            |                                      |                       |  |
|                                | INRUSH CURRENT (Typ.)          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 50A/230VAC                                                                                                   |                                                                                                                       |                                     |                                                            |                                      |                       |  |
| ENVIRONMENT                    | LEAKAGE CURRENT(Peak)          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 4.7mA/264VAC                                                                                                 |                                                                                                                       |                                     |                                                            |                                      |                       |  |
|                                | WORKING TEMP.                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | -30 ~ +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, UL62368-1, CSA C22.2 No. 62368-1, TUV BS EN/EN62368-1, AS/NZS 62368.1, EAC TP TC 004 approved |                                                                                                                       |                                     |                                                            |                                      |                       |  |
|                                | WITHSTAND VOLTAGE (Note. 6)    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | DC I/P - AC: 3.0KVAC AC - FG: 1.5KVAC                                                                        |                                                                                                                       |                                     |                                                            |                                      |                       |  |
|                                | ISOLATION RESISTANCE (Note. 6) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | DC I/P - AC O/P, DC I/P - FG, AC O/P - FG: 100M ohms / 500VDC / 25℃ / 70% RH                                 |                                                                                                                       |                                     |                                                            |                                      |                       |  |
|                                | EMC EMISSION                   | Parameter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Standard                                                                                                     |                                                                                                                       | Test Level / Note                   |                                                            |                                      |                       |  |
|                                |                                | Radiated                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | BS EN/EN55032(CISPR32), FCC                                                                                  |                                                                                                                       | Class A                             |                                                            |                                      |                       |  |
|                                |                                | Conducted                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | BS EN/EN55032(CISPR32), FCC                                                                                  |                                                                                                                       | Class A                             |                                                            |                                      |                       |  |
|                                |                                | Harmonic Current                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | BS EN/EN61000-3-2                                                                                            |                                                                                                                       | Class A                             |                                                            |                                      |                       |  |
|                                |                                | Voltage Flicker                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | BS EN/EN61000-3-3                                                                                            |                                                                                                                       | -----                               |                                                            |                                      |                       |  |
|                                | EMC IMMUNITY                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                              | BS EN/EN55035, EN61000-6-2                                                                                            |                                     |                                                            |                                      |                       |  |
|                                |                                | 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 3                                                                                                               |                                     |                                                            |                                      |                       |  |
| EFT / Burst                    |                                | BS EN/EN61000-4-4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                              | Level 3                                                                                                               |                                     |                                                            |                                      |                       |  |
| Surge                          |                                | BS EN/EN61000-4-5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                              | Level 4, 2KV/Line-Line 4KV/Line-Earth                                                                                 |                                     |                                                            |                                      |                       |  |
| Conducted                      |                                | BS EN/EN61000-4-6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                              | Level 3                                                                                                               |                                     |                                                            |                                      |                       |  |
| Magnetic Field                 |                                | BS EN/EN61000-4-8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                              | Level 4                                                                                                               |                                     |                                                            |                                      |                       |  |
| Voltage Dips and Interruptions |                                | BS EN/EN61000-4-11                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                              | >95% dip 0.5 periods, 30% dip 25 periods, >95% interruptions 250 periods                                              |                                     |                                                            |                                      |                       |  |
| OTHERS                         |                                | MTBF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                              | 200.9K hrs min. Telcordia TR/SR-332 (Bellcore) ; 17.8K hrs min. MIL-HDBK-217F (25℃)                                   |                                     |                                                            |                                      |                       |  |
|                                | DIMENSION                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 460*211*83.5mm (L*W*H)                                                                                       |                                                                                                                       |                                     |                                                            |                                      |                       |  |
|                                | PACKING                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 10.5Kg; 1pcs/ 10.5Kg/ 1.25CUFT                                                                               |                                                                                                                       |                                     |                                                            |                                      |                       |  |
| NOTE                           |                                | 1.Efficiency, AC regulation and THD are tested by 75% load, linear load at 25Vdc/50Vdc/400Vdc input voltage.<br>2.All parameters not specified above are measured at 25Vdc/50Vdc/400Vdc input and 25℃ of ambient temperature and set to factory setting.<br>3.The tolerance of each voltage value by models is: 224 → ± 0.5V; 248 → ± 1V; 2380 → ± 5V.<br>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."<br>(as available on <a href="https://www.meanwell.com/Upload/PDF/EMI_statement_en.pdf">https://www.meanwell.com/Upload/PDF/EMI_statement_en.pdf</a> )<br>5.Saving mode only activates when the unit is used independently and the RPL switch is in the ON position.<br>6.During withstand voltage and isolation resistance testing, the screw "A" shall be temporarily removed, and shall be installed back after the testing.<br>※ Product Liability Disclaimer : For detailed information, please refer to <a href="https://www.meanwell.com/serviceDisclaimer.aspx">https://www.meanwell.com/serviceDisclaimer.aspx</a> |                                                                                                              |                                                                                                                       |                                     |                                                            |                                      |                       |  |

## SPECIFICATION

|                       |                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                              |                                                                                                                                                       |         |  |
|-----------------------|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--|
| MODEL NO.             |                             | NTN-5K-124 <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                              | NTN-5K-148 <input type="checkbox"/>                                                                                                                   |         |  |
|                       |                             | <input type="checkbox"/> =Blank, CAN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                              |                                                                                                                                                       |         |  |
| AC OUTPUT             | RATED POWER(Continuous)     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 4000W                                                                                        |                                                                                                                                                       |         |  |
|                       | OVER RATED POWER(3 Min.)    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 4600W                                                                                        |                                                                                                                                                       |         |  |
|                       | PEAK POWER(10 Sec.)         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 5600W                                                                                        | 6000W                                                                                                                                                 |         |  |
|                       | SURGE POWER(30 Cycles)      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 7000W                                                                                        | 8000W                                                                                                                                                 |         |  |
|                       | AC VOLTAGE                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Default setting set at 110VAC<br>100 / 110 / 115 / 120Vac selectable by DIP S.W              |                                                                                                                                                       |         |  |
|                       | FREQUENCY                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Default setting set at 60±0.1Hz<br>50/60Hz selectable by DIP S.W                             |                                                                                                                                                       |         |  |
|                       | WAVEFORM (Note. 1)          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | True sine wave (THD<3%)                                                                      |                                                                                                                                                       |         |  |
|                       | AC REGULATION               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ±3.0% at rated input voltage                                                                 |                                                                                                                                                       |         |  |
| DC INPUT              | DC VOLTAGE                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 24Vdc                                                                                        | 48Vdc                                                                                                                                                 |         |  |
|                       | VOLTAGE RANGE (Typ.)        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 19 ~ 33Vdc                                                                                   | 38 ~ 66Vdc                                                                                                                                            |         |  |
|                       | DC CURRENT (Typ.)           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 200A                                                                                         | 100A                                                                                                                                                  |         |  |
|                       | NO LOAD DISSPATION (Typ.)   | NON-LOADING MODE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2.5A                                                                                         | 1.4A                                                                                                                                                  |         |  |
|                       |                             | SAVING MODE (Note. 5)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Default disable, auto detect AC output load≤10W will be changed to saving mode               |                                                                                                                                                       |         |  |
|                       |                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <25W                                                                                         |                                                                                                                                                       |         |  |
|                       | POWER OFF CURRENT DRAW      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ≤2mA                                                                                         |                                                                                                                                                       |         |  |
|                       | EFFICIENCY (Typ.) (Note. 1) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 89%                                                                                          | 91%                                                                                                                                                   |         |  |
| BATTERY TYPES         |                             | Lead Acid or li-ion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                              |                                                                                                                                                       |         |  |
| PROTECTION            | DC INPUT                    | LOW                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ALARM                                                                                        | 22±0.5Vdc                                                                                                                                             | 44±1Vdc |  |
|                       |                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | SHUTDOWN                                                                                     | 19±0.5Vdc                                                                                                                                             | 38±1Vdc |  |
|                       |                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | RESTART                                                                                      | 25±0.5Vdc                                                                                                                                             | 50±1Vdc |  |
|                       |                             | HIGH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | ALARM                                                                                        | 31±0.5Vdc                                                                                                                                             | 62±1Vdc |  |
|                       |                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | SHUTDOWN                                                                                     | 33±0.5Vdc                                                                                                                                             | 66±1Vdc |  |
|                       |                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | RESTART                                                                                      | 30±0.5Vdc                                                                                                                                             | 60±1Vdc |  |
|                       | REVERSE POLARITY            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | No damage, re-power on to recover after fault condition is removed                           |                                                                                                                                                       |         |  |
|                       | AC OUTPUT                   | OVER TEMPERATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                              | Shut down o/p voltage, recovers automatically after temperature goes down                                                                             |         |  |
|                       |                             | OUTPUT SHORT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                              | 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                                                                                       |         |  |
|                       |                             | CIRCUIT BREAKER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                              | 50A                                                                                                                                                   |         |  |
| FUNCTION              |                             | REMOTE CONTROL COMMUNICATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                              | Set remote ON/OFF control by front panel dry contact connector(by RELAY), Open : AC output OFF ; Short : AC output ON<br>MODBus-RTU (RS-485) / CANBus |         |  |
| AC UPS MODE           | AC INPUT RANGE              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 100/110/115/120Vac±16%, recover±13%                                                          |                                                                                                                                                       |         |  |
|                       | FREQUENCY RANGE             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 45 ~ 65Hz                                                                                    |                                                                                                                                                       |         |  |
|                       | TRASFER TIME(Typ.)          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 10ms inverter → AC by pass                                                                   |                                                                                                                                                       |         |  |
| AC CHARGER            | BOOST CHARGE VOLTAGE        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Default 28.8Vdc                                                                              | Default 57.6Vdc                                                                                                                                       |         |  |
|                       | FLOAT CHARGE VOLTAGE        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Default 27.6Vdc                                                                              | Default 55.2Vdc                                                                                                                                       |         |  |
|                       | CHARGE VOLTAGE RANGE        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 20 ~ 30Vdc                                                                                   | 40 ~ 60Vdc                                                                                                                                            |         |  |
|                       | CONSTANT CURRENT            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 120A                                                                                         | 60A                                                                                                                                                   |         |  |
|                       | MAX. CHARGE POWER           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 3600W                                                                                        | 3600W                                                                                                                                                 |         |  |
|                       | TEMPERATURE COMPENSATION    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | By external NTC                                                                              |                                                                                                                                                       |         |  |
|                       | POWER FACTOR (Typ.)         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | PF>0.98/115VAC at full load                                                                  |                                                                                                                                                       |         |  |
|                       | EFFICIENCY (Typ.)           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 89%                                                                                          | 91%                                                                                                                                                   |         |  |
|                       | AC CURRENT (Typ.)           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 20A/110VAC                                                                                   |                                                                                                                                                       |         |  |
|                       | INRUSH CURRENT (Typ.)       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 25A/110VAC                                                                                   |                                                                                                                                                       |         |  |
| LEAKAGE CURRENT(Peak) |                             | 4.7mA/264VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                              |                                                                                                                                                       |         |  |
| ENVIRONMENT           | WORKING TEMP.               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | -30 ~ +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, UL62368-1, CSA C22.2 No. 62368-1, TUV BS EN/EN62368-1, EAC TP TC 004 approved |                                                                                                                                                       |         |  |
|                       | WITHSTAND VOLTAGE           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | DC I/P - AC:3.0KVAC AC - FG:1.5KVAC                                                          |                                                                                                                                                       |         |  |
|                       | ISOLATION RESISTANCE        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | DC I/P - AC O/P, DC I/P - FG, AC O/P - FG: 100M ohms / 500VDC / 25℃ / 70% RH                 |                                                                                                                                                       |         |  |
|                       | EMC EMISSION                | Parameter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Standard                                                                                     | Test Level / Note                                                                                                                                     |         |  |
|                       |                             | Radiated                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | FCC                                                                                          | Class A                                                                                                                                               |         |  |
|                       |                             | Conducted                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | FCC                                                                                          | Class A                                                                                                                                               |         |  |
| OTHERS                | MTBF                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 200.9K hrs min. Telcordia TR/SR-332 (Bellcore) ; 17.8K hrs min. MIL-HDBK-217F (25℃)          |                                                                                                                                                       |         |  |
|                       | DIMENSION                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 460*211*83.5mm (L*W*H)                                                                       |                                                                                                                                                       |         |  |
|                       | PACKING                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 10.5Kg; 1pcs/ 10.5Kg/ 1.25CUFT                                                               |                                                                                                                                                       |         |  |
| NOTE                  |                             | 1.Efficiency, AC regulation and THD are tested by 75% load, linear load at 25Vdc/50Vdc input voltage.<br>2.All parameters not specified above are measured at 25Vdc/50Vdc input and 25℃ of ambient temperature and set to factory setting.<br>3.The tolerance of each voltage value by models is: 124→±0.5V; 148→±1V.<br>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="https://www.meanwell.com/Upload/PDF/EMI_statement_en.pdf">https://www.meanwell.com/Upload/PDF/EMI_statement_en.pdf</a> )<br>5.Saving mode only activates when the unit is used independently and the RPL switch is in the ON position.<br>※ Product Liability Disclaimer : For detailed information, please refer to <a href="https://www.meanwell.com/serviceDisclaimer.aspx">https://www.meanwell.com/serviceDisclaimer.aspx</a> |                                                                                              |                                                                                                                                                       |         |  |

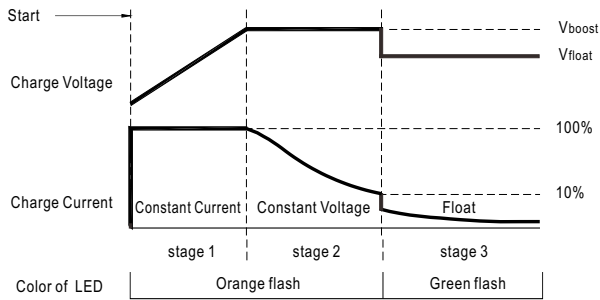
## DERATING CURVE



## CHARGING CURVE

☉ Default 3 stage charging curve

3 Stage

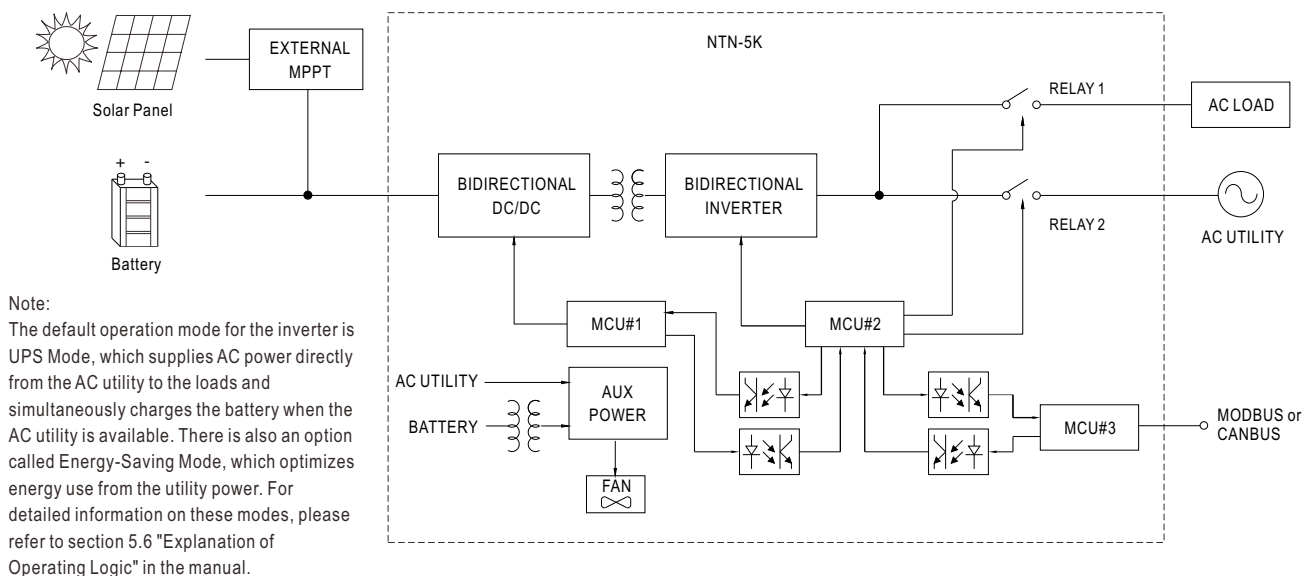


☉ Embedded 3 stage charging curves

| MODEL  | Vboost          | Vfloat  | C.C        | Adjustable by MODBus / CANBus |
|--------|-----------------|---------|------------|-------------------------------|
| 124    | Default 28.8Vdc | 27.6Vdc | 120A max.  | 20~30Vdc                      |
| 224    |                 |         | 135A max.  |                               |
| 148    | Default 57.6Vdc | 55.2Vdc | 60A max.   | 40~60Vdc                      |
| 248    |                 |         | 70A max.   |                               |
| 380Vdc | Default 400Vdc  | 385Vdc  | 11.3A max. | 290~400Vdc                    |

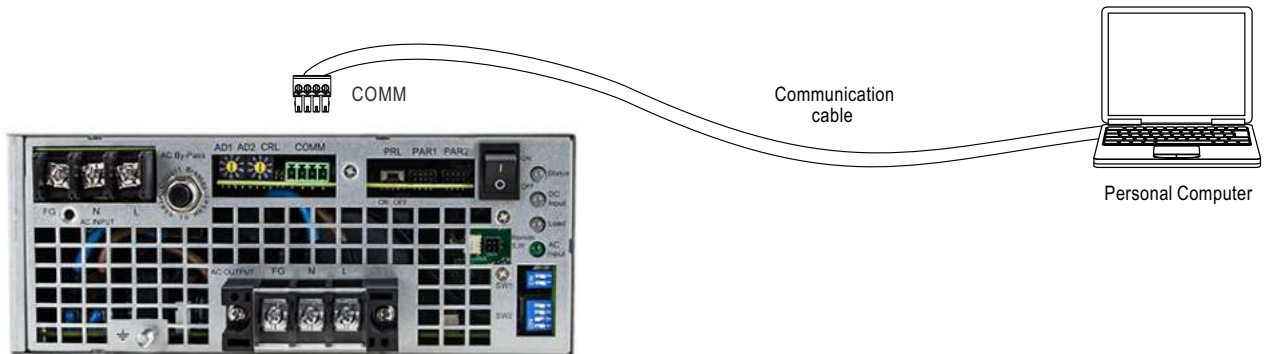
☉ Suitable for lead-acid batteries (flooded, Gel and AGM) or li-ion

## BLOCK DIAGRAM



## Function Manual

### 1.Support MODBus / CANBus Communication



※ Please refer to the user manual for detailed instructions.

### 2.Remote ON/OFF Control

| PAR1/PAR2 | Remote ON/OFF | AC Output Status |
|-----------|---------------|------------------|
| Pin1:3    | Short         | AC output ON     |
| Pin1:3    | Open          | AC output OFF    |

### 3.AC Output Voltage、Frequency、Power saving mode selectable by DIP SW



AC Output Voltage、Frequency、Power saving mode selectable by DIP SW

| S1  | S2                     | S3        | S4                   |
|-----|------------------------|-----------|----------------------|
| 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  |           |                      |

#### 4.3Ø 4W and 1Ø 3W AC output Voltage connection selectable by DIP SW



◎3Ø 4-wire / Y

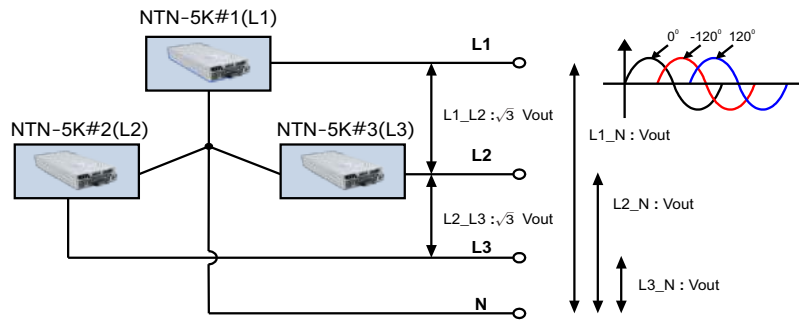


Fig 4.1

| S1  | S2  | AC output phase |
|-----|-----|-----------------|
| OFF | OFF | L1, 0°          |
| OFF | ON  | L2, -120°       |
| ON  | OFF | L3, +120°       |

Note: Please refer to 5.3 Three-phase 4-wire output on page 23 of the user manual for detailed instructions.

◎1Ø 3-wire(Split phase system only supports 124 and 148)

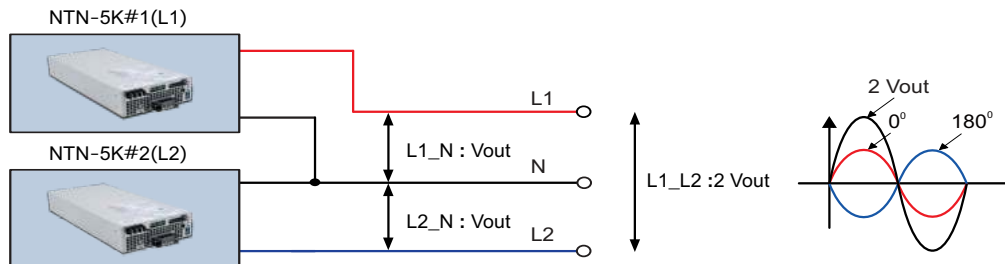


Fig 4.2

| S1  | S2  | AC output phase |
|-----|-----|-----------------|
| OFF | OFF | L1, 0°          |
| ON  | ON  | L2, +180°       |

Note: Please refer to 5.4 Single-phase 3-wire Output on page 27 of the user manual for detailed instructions.

#### 5.Temperature compensation(3 stage only)

Temperature compensation function to prolong battery life for lead-acid batteries. Temperature compensation range is 0 ~ 40°C.

The battery temperature sensor comes along with the charger can be connected to the unit to allow temperature compensation of the charging voltage. If the sensor is not used, the charger works normally.



## 6.AC Output Parallel Function

NTN-5K has the built-in active current sharing function and can be connected in parallel, up to 6 units, to provide higher AC output power as exhibited below :

※ The inverter should be paralleled using short and large diameter wiring and then connected to the load.

※ The total output current must not exceed the value determined by the following equation:

Maximum output current at parallel operation = (Rated current per unit) x (Number of unit) x 95% ; when parallel unit less than 6.

※ PAR1/PAR2, PRL Function pin connection

| Parallel | PSU1 |     | PSU2 |     | PSU3 |     | PSU4 |     | PSU5 |     | PSU6 |     |
|----------|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|
|          | PAR1 | PRL | PAR1 | PRL | PAR1 | PRL | PAR1 | PRL | PAR1 | PRL | PAR1 | PRL |
| 1 unit   | X    | ON  | —    | —   | —    | —   | —    | —   | —    | —   | —    | —   |
| 2 unit   | V    | ON  | V    | ON  | —    | —   | —    | —   | —    | —   | —    | —   |
| 3 unit   | V    | ON  | V    | OFF | V    | ON  | —    | —   | —    | —   | —    | —   |
| 4 unit   | V    | ON  | V    | OFF | V    | OFF | V    | ON  | —    | —   | —    | —   |
| 5 unit   | V    | ON  | V    | OFF | V    | OFF | V    | OFF | V    | ON  | —    | —   |
| 6 unit   | V    | ON  | V    | OFF | V    | OFF | V    | OFF | V    | OFF | V    | ON  |

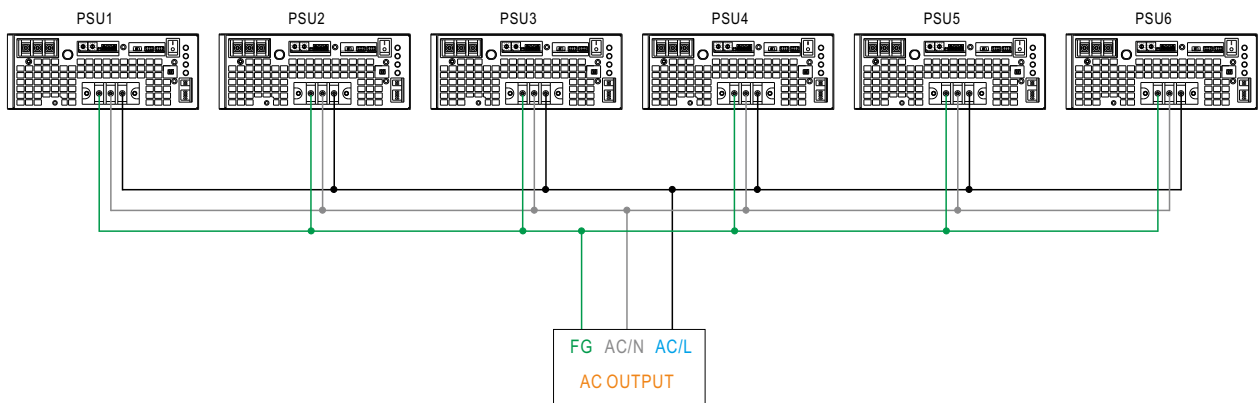
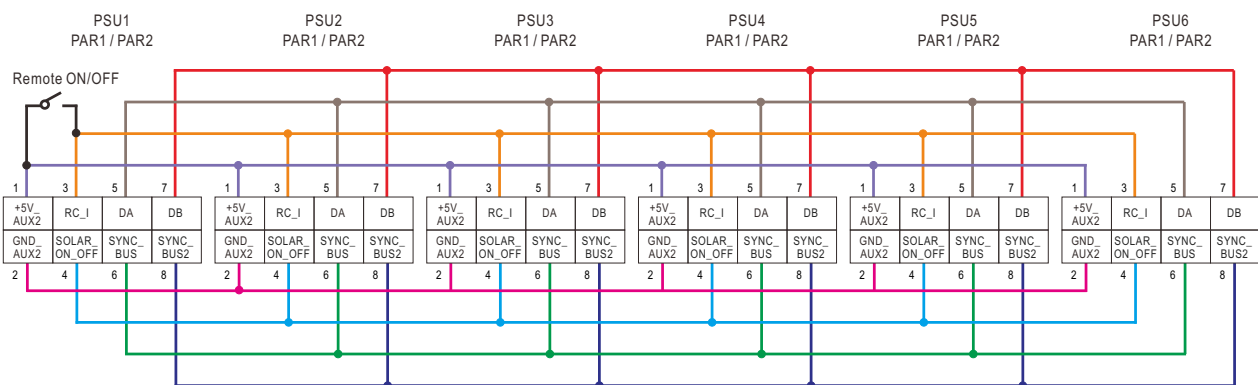


Fig 6.1



If the lines of PAR1 / PAR2 are too long, they should be twisted in pairs to avoid the noise.

**LED STATUS**

Normal work:

|               | Green                                                                                                                                                                                           | Orange                                                                                                                                                                                        | Red                                                                                                                      |
|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| <b>Status</b> |  Inverter OK<br> System check |  Remote off<br> Saving mode |  Abnormal Status<br>(See below table) |

|                 | Green                                                                                                                                                                                                                                                                                                                                                                                  | Orange                                                                                                                                                                                                                                                                                                                                                                                 | Red                                                                                                                                                                                                                                                                                                                    |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>DC Input</b> |  25~31Vdc<br> 50~62Vdc<br> 335~420Vdc<br> Maintain |  22~25Vdc<br> 44~50Vdc<br> 300~335Vdc<br> Charging |  <22Vdc or >31Vdc<br> <44Vdc or >62Vdc<br> <300Vdc or >420Vdc |

| Load                 | Green                                                                                       | Orange                                                                                        | Red                                                                                           |
|----------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| <b>Inverter Mode</b> |  <40% load |  40~80% load |  >80% load |
| <b>Bypass Mode</b>   |  <40% load |  40~80% load |  >80% load |

|                 | Green                                                                                                                                                                                                                                                                                                           | Orange | Red   |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-------|
| <b>AC Input</b> |  Utility OK<br> Utility error<br> Utility disconnected | -----  | ----- |

Abnormal status :

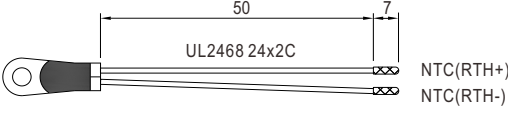
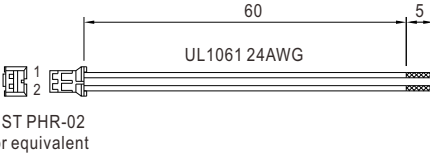
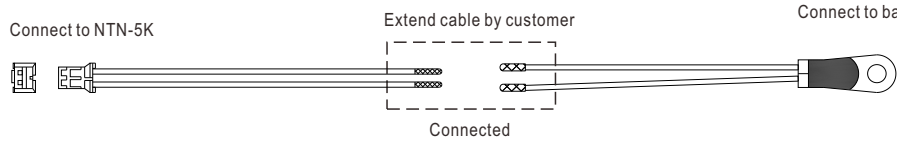
| LED Indicator                                                                                                                                                                                                                                                                                               | Abnormal Indication                        |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| <b>Status</b> <br><b>DC Input</b> <br><b>Load</b>  | Output overload or AC output short circuit |
| <b>Status</b> <br><b>DC Input</b> <br><b>Load</b>  | Abnormal DC voltage                        |
| <b>Status</b> <br><b>DC Input</b> <br><b>Load</b>  | Over temperature or Fan lock               |
| <b>Status</b> <br><b>DC Input</b> <br><b>Load</b>  | Inverter fail                              |

-  Light
-  Light off
-  Flash

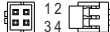
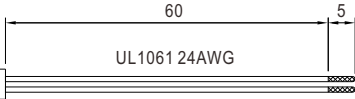
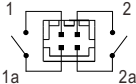
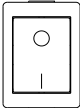
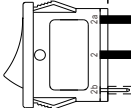
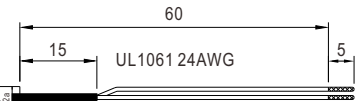
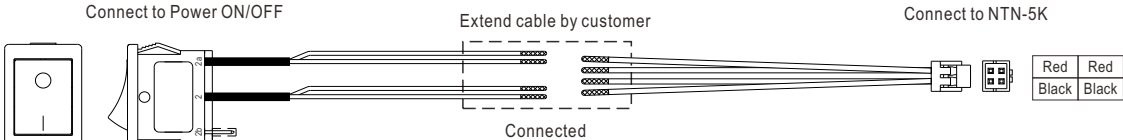


### ■ Accessory List

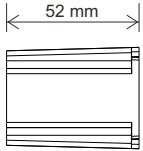
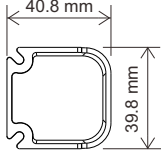
※ NTC Sensor mating along with NTN-5K (Standard accessory)

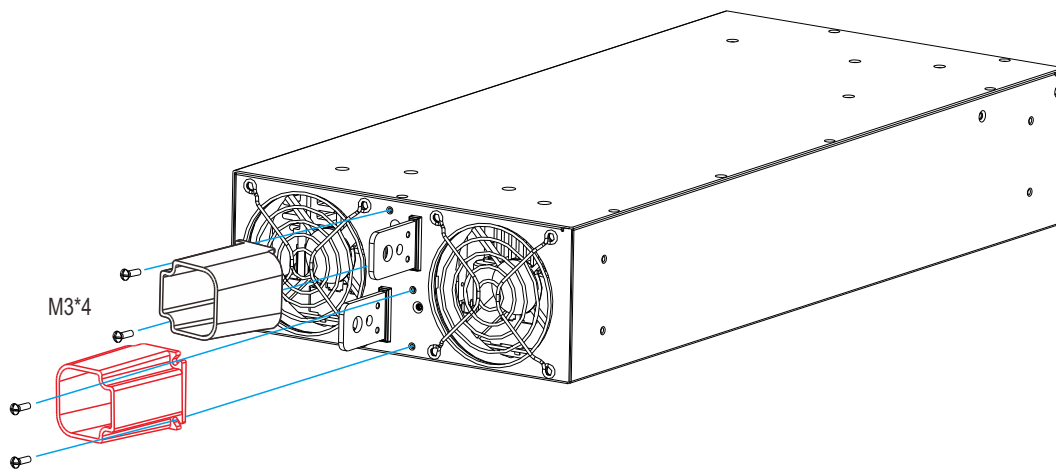
| Item                                                                                                          |                                                                                                                                                                                             | Quantity |
|---------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| ①                                                                                                             | <p>NTC sensor wire</p>   | 1        |
| ②                                                                                                             | <p>NTC mating wire</p>   | 1        |
| <p>Connection Diagram</p>  |                                                                                                                                                                                             |          |

※ Power ON/OFF mating along with NTN-5K (Standard accessory)

| Item                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Quantity |     |    |     |   |       |    |       |   |
|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-----|----|-----|---|-------|----|-------|---|
| ①                                                                                    | <p>Power ON/OFF mating wire</p>  <table border="1"><tr><td>1</td><td>Red</td></tr><tr><td>2</td><td>Red</td></tr><tr><td>3</td><td>Black</td></tr><tr><td>4</td><td>Black</td></tr></table>  <p>HRS DF11-4DP-2DS<br/>or equivalent</p>                                                                                                                                  | 1        | Red | 2  | Red | 3 | Black | 4  | Black | 1 |
| 1                                                                                    | Red                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |     |    |     |   |       |    |       |   |
| 2                                                                                    | Red                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |     |    |     |   |       |    |       |   |
| 3                                                                                    | Black                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |          |     |    |     |   |       |    |       |   |
| 4                                                                                    | Black                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |          |     |    |     |   |       |    |       |   |
| ②                                                                                    | <p>Power ON/OFF mating wire</p>    <table border="1"><tr><td>1</td><td>Red</td></tr><tr><td>1a</td><td>Red</td></tr><tr><td>2</td><td>Black</td></tr><tr><td>2a</td><td>Black</td></tr></table>   | 1        | Red | 1a | Red | 2 | Black | 2a | Black | 1 |
| 1                                                                                    | Red                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |     |    |     |   |       |    |       |   |
| 1a                                                                                   | Red                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |     |    |     |   |       |    |       |   |
| 2                                                                                    | Black                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |          |     |    |     |   |       |    |       |   |
| 2a                                                                                   | Black                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |          |     |    |     |   |       |    |       |   |
| Connection Diagram                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |          |     |    |     |   |       |    |       |   |
|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |          |     |    |     |   |       |    |       |   |

※ Terminal protector mating along with NTN-5K (Standard accessory)

| Item |                                                                                                                                                                                                                                                         | Quantity |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| ①    |    | 1        |
| ②    |                                                                                                                                                                        | 1        |
| ③    |                                                                                                                                                                        | 4        |



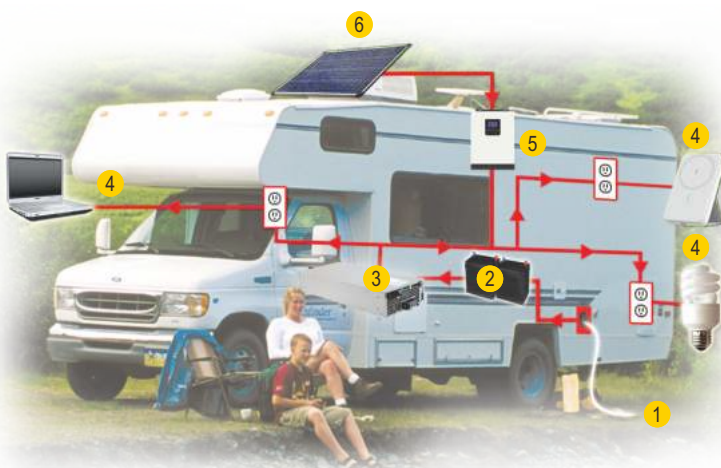
## TYPICAL APPLICATION



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

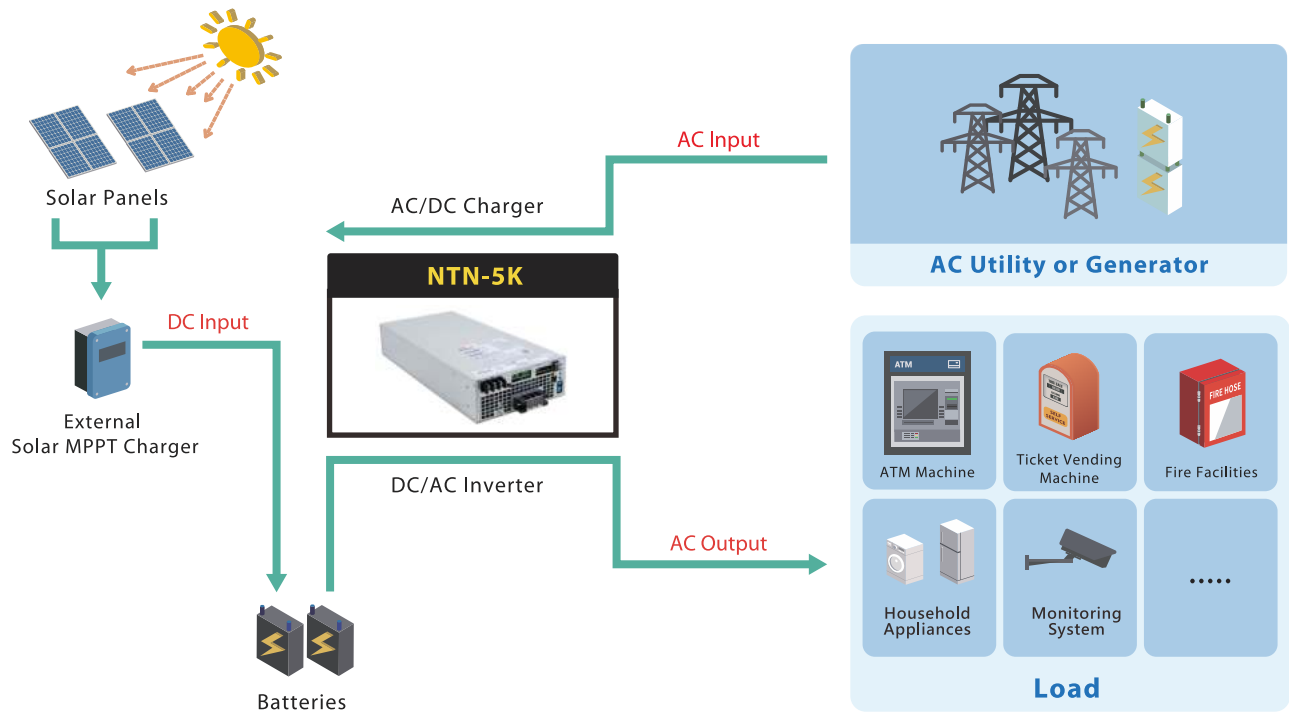


- 1 Utility Input (Shore)
- 2 Battery Bank
- 3 Off-Grid DC/AC Inverter (NTN series)
- 4 AC Outlet



- 1 Utility Inlet
- 2 Battery Bank
- 3 Off-Grid DC/AC Inverter (NTN series)
- 4 AC Outlet
- 5 MPPT Charger (External)
- 6 Solar Panel (External)

## SYSTEM CONFIGURATION



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