5KW True Sine Wave Inverter with AC Charger / UPS

NTN-5K series



AC output side



DC input side



User's Manual Click Me

Video Click Me

IEC62368-1 BS EN/EN62368-1 UL62368-1 TPTC004 AS/NZS 62368.1

Household Railway Car Use Marine Network Telecom

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 synohronized 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℃~+70℃ 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

GTIN CODE

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

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℃ 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

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SPECIFICATION

MODEL NO.			NTN-5K-224 ☐	NTN-5K-248 ☐	NTN-5K-2380 ☐
			☐ =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		
			200 / 220 / 230 / 240Vac selectable by DIP S.W		
	FREQUENCY		Default setting set at 50±0.1Hz		
			50/60Hz selectable by DIP S.W		
	WAVEFORM (Note. 1)		True sine wave (THD<3%)		
	AC REGULATION		±3.0% at rated input voltage		
DC INPUT	DC VOLTAGE		24Vdc	48Vdc	380Vdc
	VOLTAGE RANGE (Typ.)		19 ~ 33Vdc	38 ~ 66Vdc	280 ~ 430Vdc
	DC CURRENT (Typ.)		240A	120A	16A
	NO LOAD DISSPATION (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		
			<25W		
	POWER OFF CURRENT DRAW		≦2mA		
	EFFICIENCY (Typ.) (Note. 1)		91%	93%	94.5%
	BATTERY TYPES		Lead Acid or li-ion		
PROTECTION DC INPUT	LOW	ALARM	22±0.5Vdc	44±1Vdc	300±5Vdc
		SHUTDOWN	19±0.5Vdc	38±1Vdc	280±5Vdc
		RESTART	25±0.5Vdc	50±1Vdc	335±5Vdc
	HIGH	ALARM	31±0.5Vdc	62±1Vdc	420±5Vdc
		SHUTDOWN	33±0.5Vdc	66±1Vdc	430±5Vdc
		RESTART	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
PROTECTION 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		
	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, 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/EN61000-3-12	Class A
			Voltage Flicker	BS EN/EN61000-3-11	-----
	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/EN61000-4-34	>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.
2. All parameters not specified above are measured at 25Vdc/50Vdc/400Vdc input and 25℃ of ambient temperature and set to factory setting.
3. The tolerance of each voltage value by models is: 224→±0.5V; 248→±1V; 2380→±5V.
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 https://www.meanwell.com//Upload/PDF/EMI_statement_en.pdf)
5. Saving mode only activates when the unit is used independently and the RPL switch is in the ON position.
6. During withstand voltage and isolation resistance testing, the screw "A" shall be temporarily removed, and shall be installed back after the testing.

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SPECIFICATION

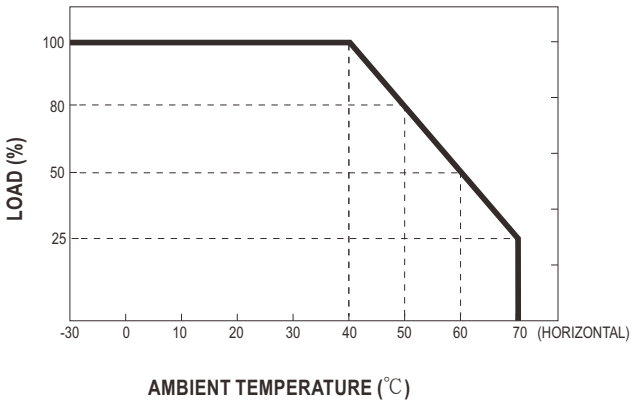
MODEL NO.			**NTN-5K-124□**	**NTN-5K-148□**	
			□ =Blank, CAN		
AC OUTPUT	**RATED POWER(Continuous)**		4000W		
	OVER RATED POWER(3 Min.)		4600W		
	PEAK POWER(10 Sec.)		5600W	6000W	
	SURGE POWER(30 Cycles)		7000W	8000W	
	AC VOLTAGE		Default setting set at 110VAC		
			100 / 110 / 115 / 120Vac selectable by DIP S.W		
	FREQUENCY		Default setting set at 60±0.1Hz		
			50/60Hz selectable by DIP S.W		
	WAVEFORM (Note. 1)		True sine wave (THD<3%)		
	AC REGULATION		±3.0% at rated input voltage		
DC INPUT	**DC VOLTAGE**		24Vdc	48Vdc	
	VOLTAGE RANGE (Typ.)		19 ~ 33Vdc	38 ~ 66Vdc	
	DC CURRENT (Typ.)		200A	100A	
	NO LOAD DISSPATION (Typ.)	**NON-SAVING 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**			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**			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	

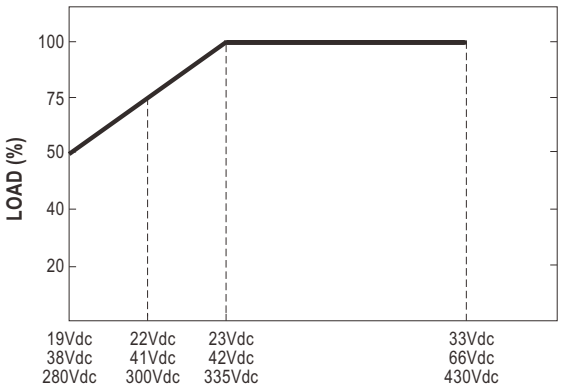
NOTE

1.Efficiency, AC regulation and THD are tested by 75% load, linear load at 25Vdc/50Vdc input voltage.
2.All parameters not specified above are measured at 25Vdc/50Vdc input and 25℃ of ambient temperature and set to factory setting.
3.The tolerance of each voltage value by models is: 124→±0.5V; 148→±1V.
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 https://www.meanwell.com//Upload/PDF/EMI_statement_en.pdf)
5.Saving mode only activates when the unit is used independently and the RPL switch is in the ON position.
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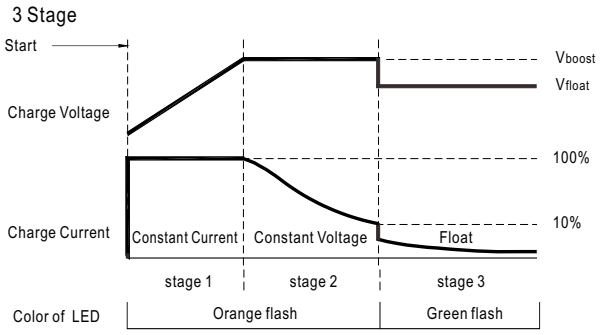
■ DERATING CURVE





■ CHARGING CURVE

◎ Default 3 stage charging curve

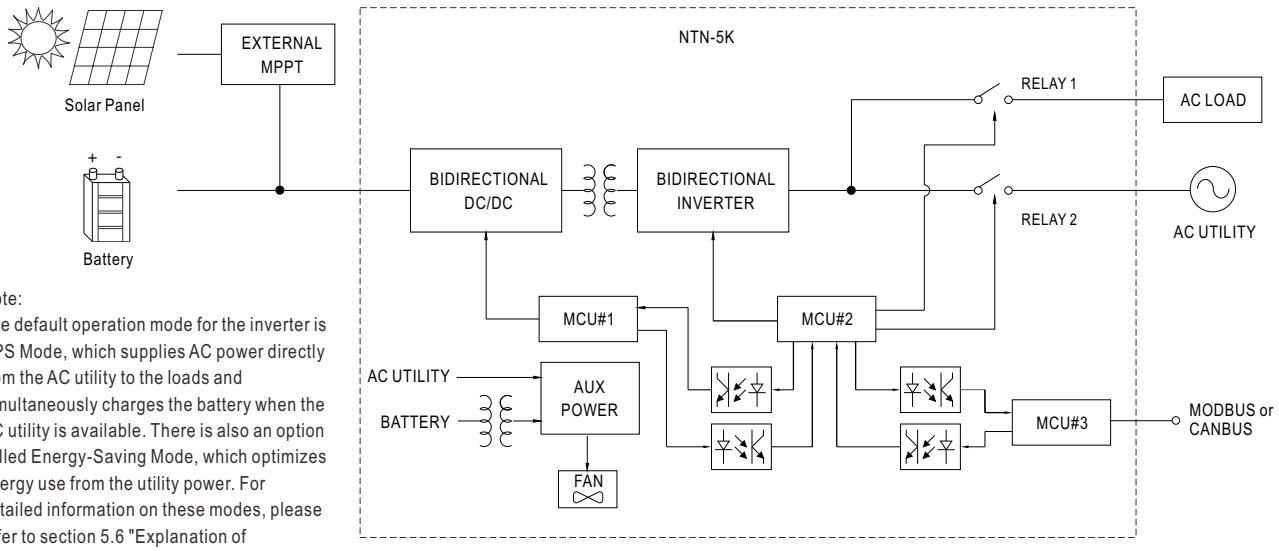


◎ Embedded 3 stage charging curves

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

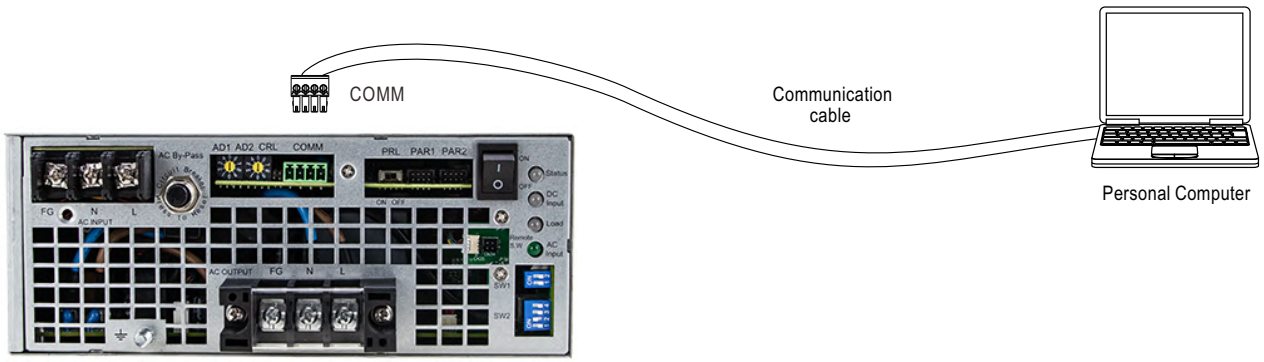


Note:
The default operation mode for the inverter is UPS Mode, which supplies AC power directly from the AC utility to the loads and simultaneously charges the battery when the AC utility is available. There is also an option called Energy-Saving Mode, which optimizes energy use from the utility power. For detailed information on these modes, please refer to section 5.6 "Explanation of Operating Logic" in the manual.

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■ Function Manual

1.Support MODBus / CANBus Communication

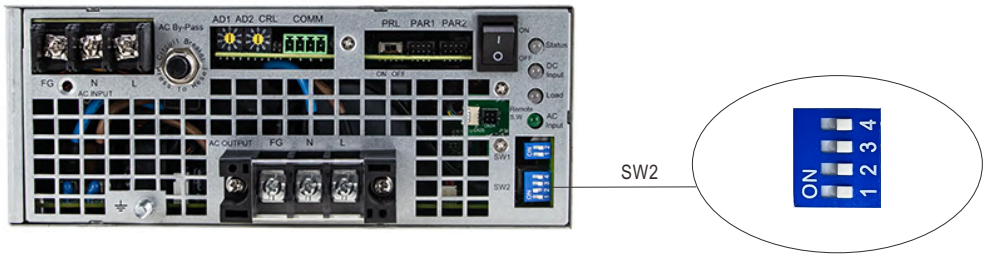


※ Please refer to the user manual for detailed instructions.

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		

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



◎3Ø 4-wire / Y

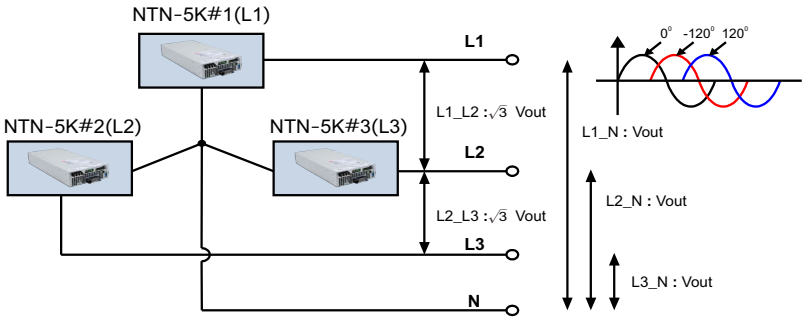


Fig 4.1

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)

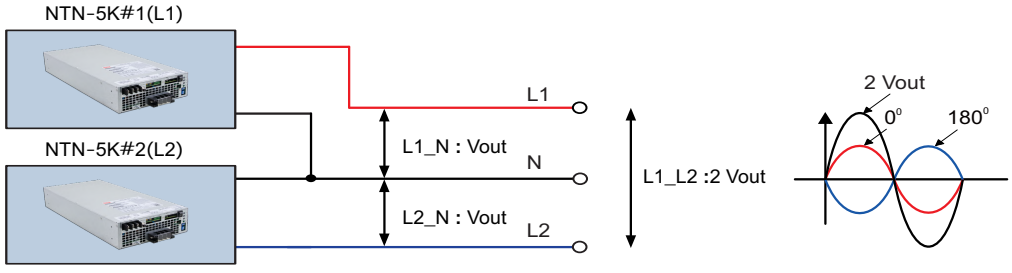


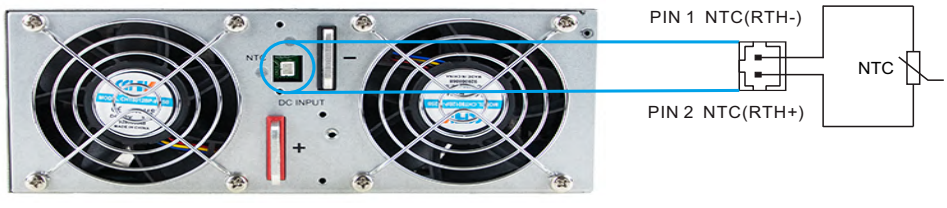
Fig 4.2

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℃.
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.



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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

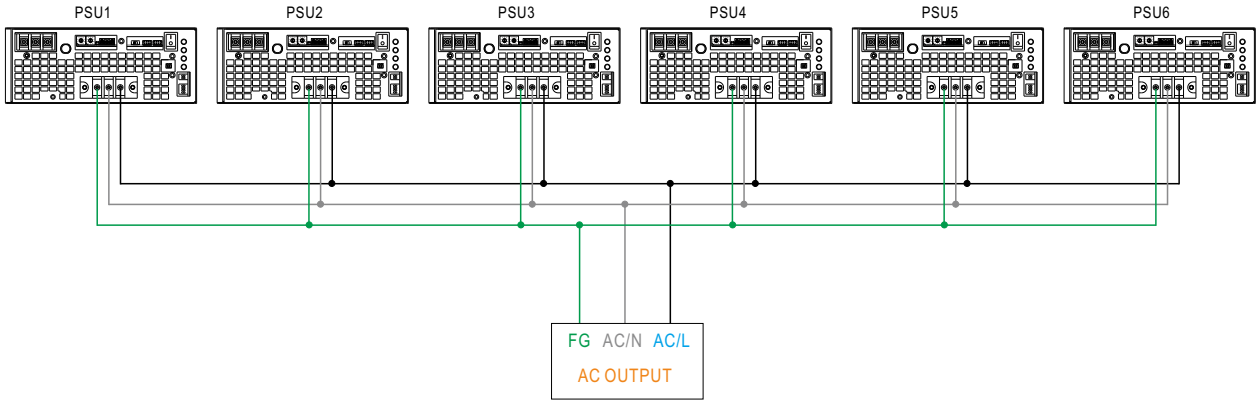
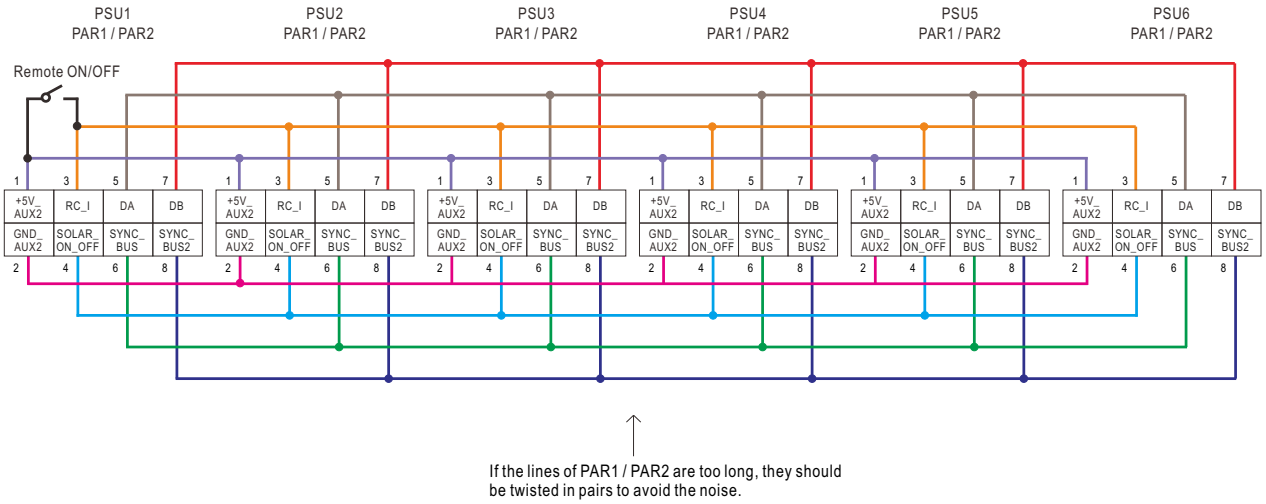


Fig 6.1



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■ LED STATUS

Normal work:

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

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

Load	Green	Orange	Red
Inverter Mode	<40% load	40~80% load	>80% load
Bypass Mode	<40% load	40~80% load	>80% load

	Green	-----	-----
AC Input	Utility OK Utility error Utility disconnected	-----	-----

Abnormal status :

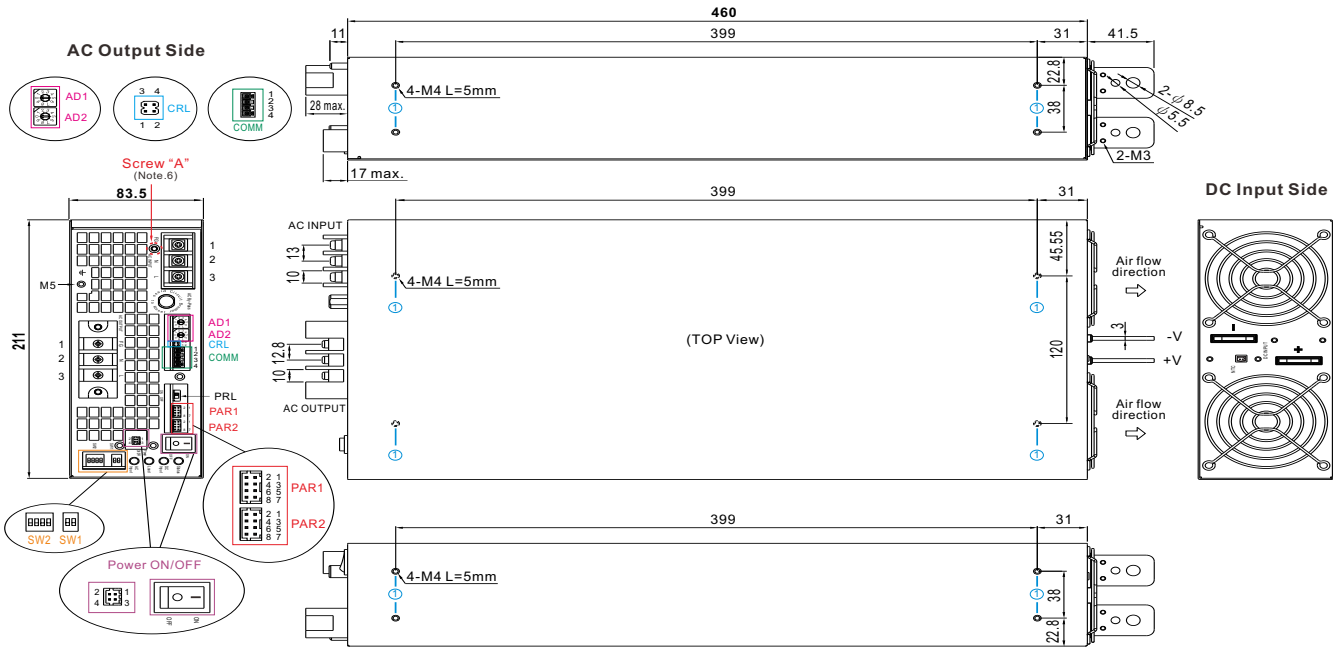
LED Indicator	Abnormal Indication
Status ● **DC Input** ○ **Load** ☀	Output overload or AC output short circuit
Status ● **DC Input** ☀ **Load** ○	Abnormal DC voltage
Status ● **DC Input** ☀ **Load** ☀	Over temperature or Fan lock
Status ☀ **DC Input** ○ **Load** ○	Inverter fail

● Light
○ Light off
☀ Flash

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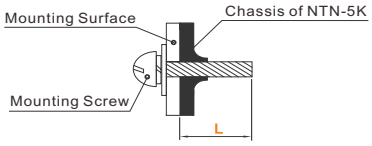
MECHANICAL SPECIFICATION

(Unit: mm , tolerance ±0.5mm) Case No.223



※ Mounting Instruction

Hole No.	Recommended Screw Size	MAX. Penetration Depth L	Recommended mounting torque
①	M4	5mm	7~10Kgf-cm



※ Terminal Pin No. Assignment

Pin No.	Assignment	AC input	AC output	Maximum mounting torque
1	FG	1 2 3	1 2 3	18Kgf-cm
2	AC/N			
3	AC/L			

※ AC IN Connector Pin No. Assignment (COMM):

Pin No.	Function	Description
1	GND-AUX	Auxiliary voltage output GND.
2	D+/CANH	For MODBus model: Data line used in MODBus interface.(Note)
		For CANBus model: Data line used in CANBus interface.(Note)
3	D-/CANL	For MODBus model: Data line used in MODBus interface.(Note)
		For CANBus model: Data line used in CANBus interface.(Note)
4	+5V_AUX	Auxiliary voltage output, 4.5~5.5V, referenced to GND-AUX (pin1)

Note: Isotated signal,referenced to GND_AUX

※ Control Pin No. Assignment (CRL):



Pin No.	Function	Description
1,3	RL	Short: Termination resistors(120Ω) For MODBus/CANBus communication, please use Jumper (pin1,3)
2,4	NC	No need to communicate, please use Jumper (pin2,4)

※ AD1,AD2 switch for MODBus/CANBus interface address setting, please refer to the user manual for more details

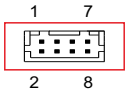
※ Control Pin No. Assignment (Power ON/OFF) : HRS DF11-04DP-2DS or equivalent



Mating Housing	HRS DF11-04DS or equivalent
Terminal	HRS DF11-**SC or equivalent

Pin No.	Function	Description
1,2,3,4	Power ON/OFF	The unit can be completely turned ON/OFF by dry contact between Pin 1,2 & 3,4 Power ON : Short Pin1 to 2 and Pin3 to 4 ; Power OFF : Pin1 ~ Pin4 open.

※ Control Pin No. Assignment (PAR1,PAR2) : HRS DF11-08DP-2DS or equivalent



Mating Housing	HRS DF11-08DS or equivalent
Terminal	HRS DF11-**SC or equivalent

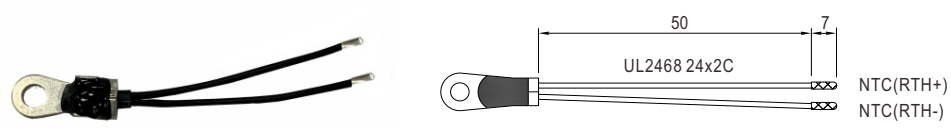
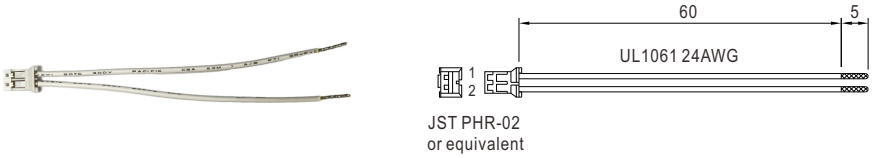
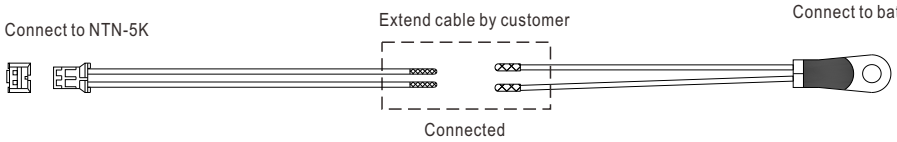
Pin No.	Function	Description
1	+5V_AUX2	Auxiliary voltage output, 4.5~5.5V, referenced to GND_AUX2 (pin2). (Only for REMOTE ON-OFF)
2	GND_AUX2	Auxiliary voltage output GND_AUX2 (pin2).
3	REMOTE ON/OFF	The AC output of the unit can be turned ON/OFF by dry contact between Remote ON/OFF and +5V_AUX2. (Note) Short : AC output ON ; Open : AC output OFF
4	SOLAR_ON_OFF	External MPPT charger control, referenced to GND_AUX2 (pin2).
5	DA	Data line used for parallel control.
6	SYNC_BUS	Signal for parallel operation.
7	DB	Data line used for parallel control.
8	SYNC_BUS2	Signal for parallel operation.

Note: Isotated signal,referenced to GND_AUX2

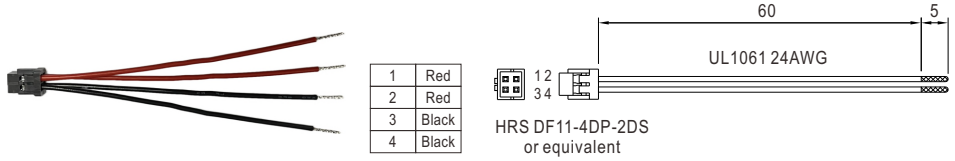
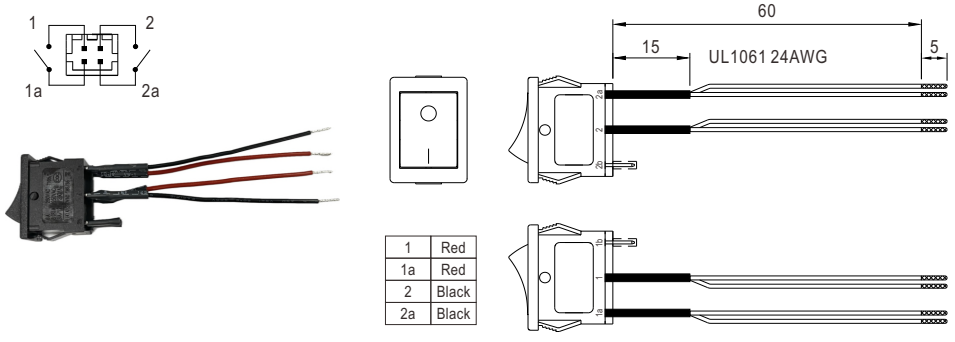
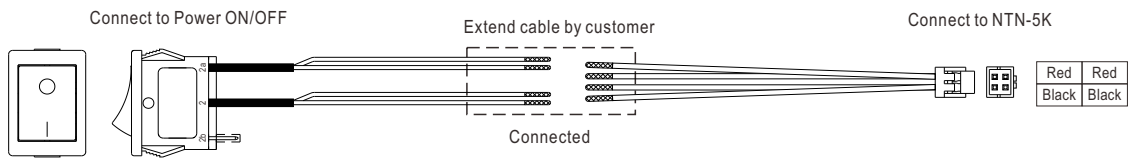
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■ Accessory List

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

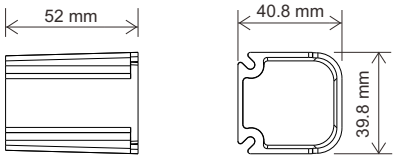
	Item	Quantity
①	NTC sensor wire 	1
②	NTC mating wire 	1
	Connection Diagram	
		

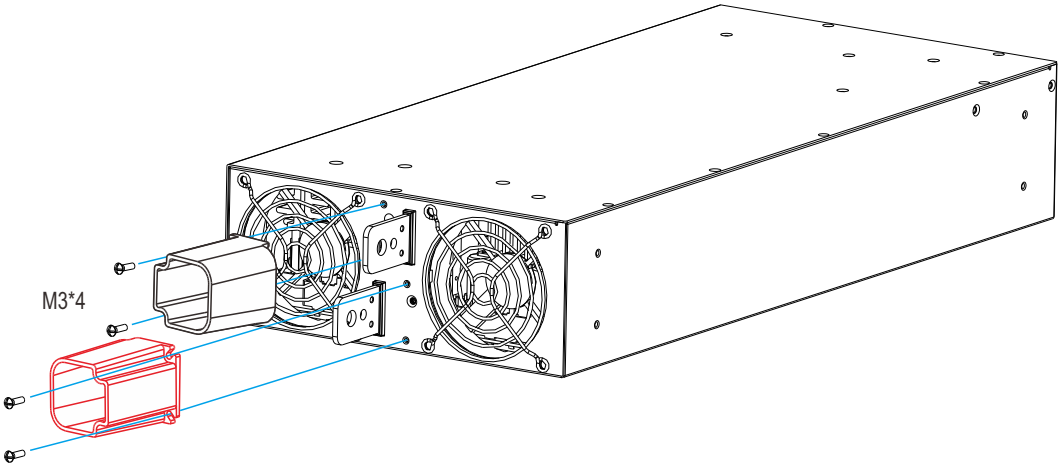
※ Power ON/OFF mating along with NTN-5K (Standard accessory)

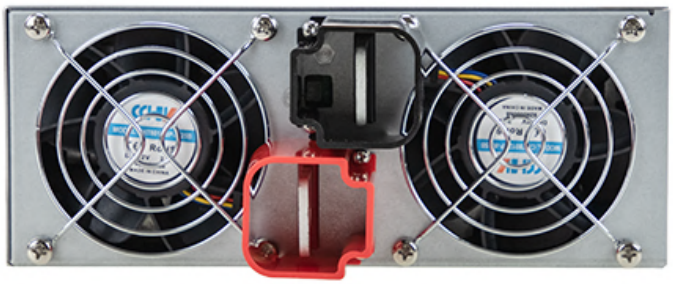
	Item	Quantity
①	Power ON/OFF mating wire 	1
②	Power ON/OFF mating wire 	1
	Connection Diagram	
		

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

Item			Quantity
①			1
②			1
③			4



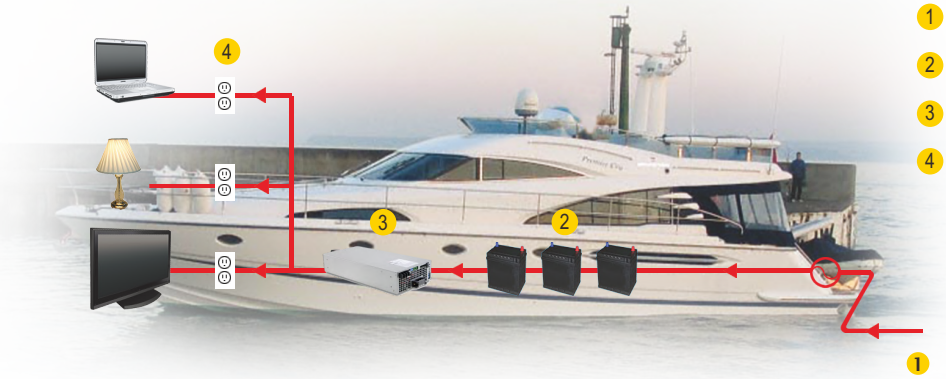


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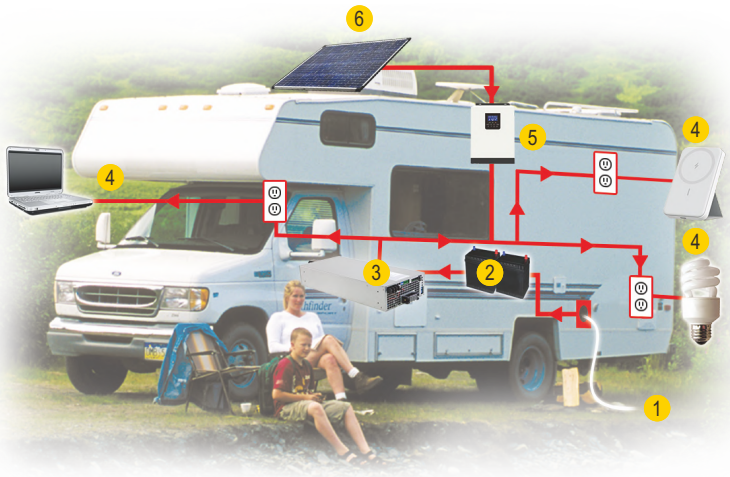
■ TYPICAL APPLICATION



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



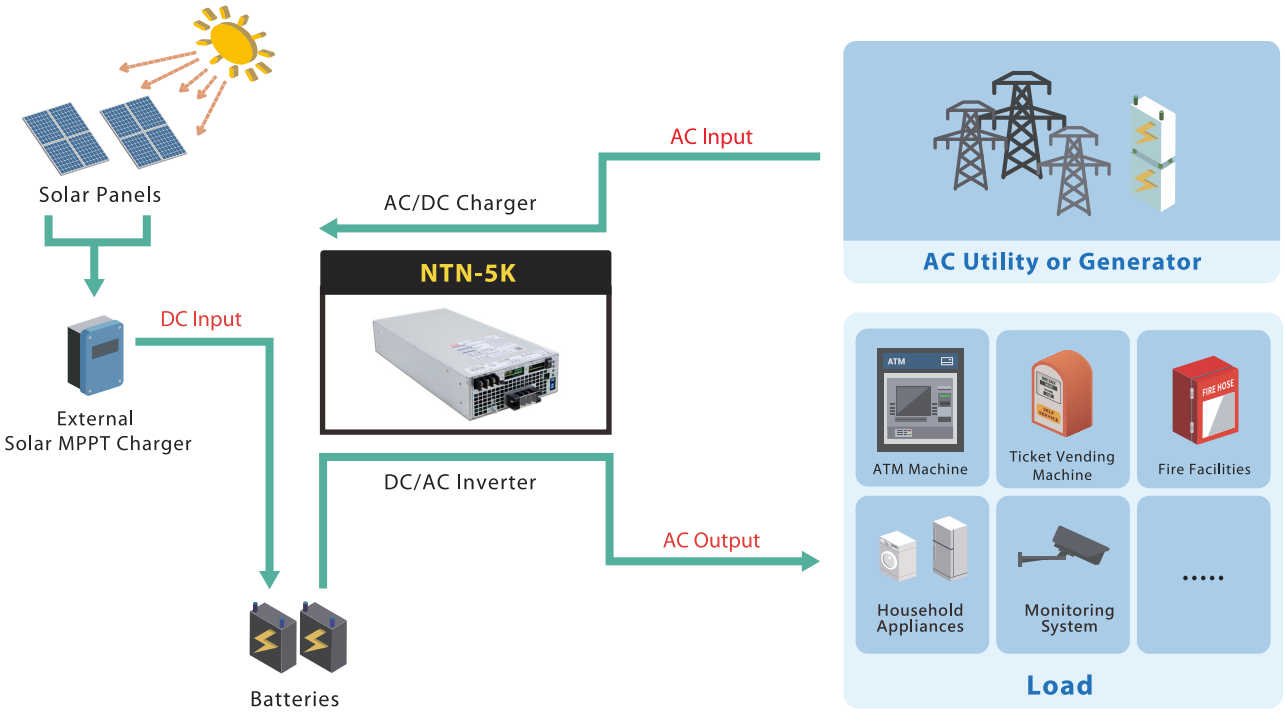
1 Utility Input (Shore)
2 Battery Bank
3 Off-Grid DC/AC Inverter (NTN series)
4 AC Outlet



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)

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■ SYSTEM CONFIGURATION



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

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