TBB POWER

Version: A1.6

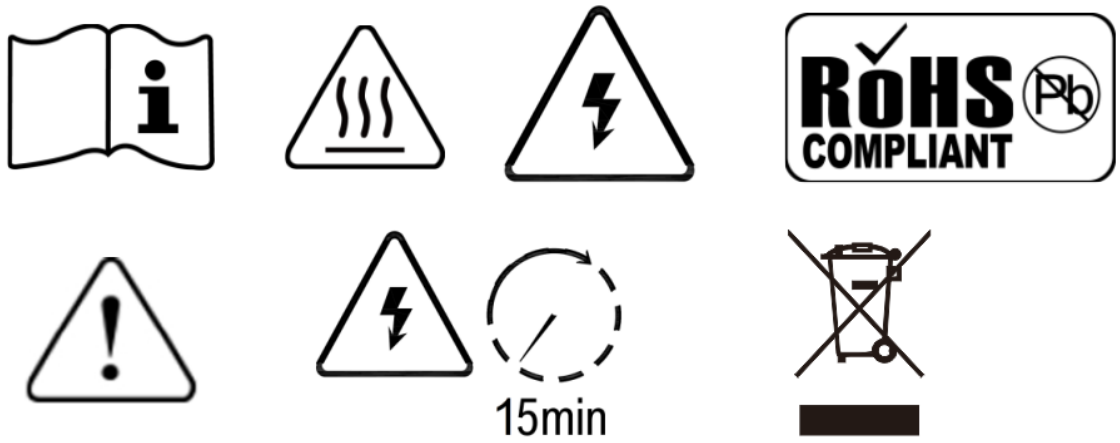
USER MANUAL

Pure Sine Wave Inverter

NH-LV Series



www.tbbpower.com



WARNING: HIGH VOLTAGE INSIDE

CAUTION: THE DC FUSE MUST HAVE BEEN

TURNED OFF BEFORE SERVICING

MADE IN CHINA

Disclaimer

Unless specifically agreed in writing, TBB POWER(XIAMEN)CO., LTD

- The manufacturer makes no warranty as to the accuracy, completeness, or suitability of any technical or other information provided in this manual or in any related documentation.
- The manufacturer assumes no responsibility or liability for any loss or damage, whether direct, indirect, incidental, or consequential, arising from the use of such information.
- TBB offers a standard warranty with its products, taking no responsibility for direct or indirect loss due to equipment failure.

About this Manual

This manual describes our product features and provides the installation procedure. This manual is for anyone intending to install our equipment.

General Instruction

Thank you for choosing our products. This manual applies to the NH Series Pure Sine Wave Inverter. This chapter contains important safety and operating instructions. Please read it carefully and keep this User Guide for future reference.

The inverter needs to be installed by professionals and please pay attention to the following points prior to installation:

Please check the input voltage or voltage of battery is same to the nominal input voltage of this inverter.

- Please connect negative terminal “-” of battery to “-” input of the inverter.
- Please connect positive terminal “+” of battery to “+” input of the inverter.
- Please use the shortest cable to connect and ensure a secure connection.
- While connecting, please secure the connection and avoid “electrical short” between positive terminal and negative terminal of battery, which will cause damage of battery.
- Inverter has high voltage inside. Only authorized electrician can open the case.
- This inverter IS NOT designed for use in any life-support or life-sustaining equipment.

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1. General Safety Instruction

1.1 Safety instruction

- Please observe all safety labels on the product, battery, and manual.

- As dangerous voltages and high temperature exist within the inverter, only qualified and authorized maintenance personnel are permitted to open and repair it.

- During equipment installation, operation, and maintenance, electrical safety regulations and relevant operating procedures must be strictly followed. Failure to do so may result in personal injury or equipment damage. The safety precautions mentioned in this manual are intended only as a supplement to the established safety standards.

- Any operation against safety requirement or against design, manufacture, safety standard are out of the manufacturer warranty.

1.2 General precaution

- Do not expose the inverter to water, high humidity, snow, dust, etc.

- DO NOT block off ventilation, otherwise the inverter will overheat.

- To reduce the risk of fire or electric shock, ensure that all cables are sized with the correct gauge for the application and that all connections are secure.

- Please do not put any flammable goods near inverter.

1.3 Precautions regarding battery operation

- If battery acid contacts skin or clothing, rinse immediately with soap and water. For eye exposure, flush with water for at least 20 minutes and seek medical help.

- No smoking or open flames near the TBB component or battery.

- DO NOT place the metal tool on the battery. Sparks and short circuit may cause an explosion.

- Remove metal jewelry (e.g., rings, bracelets) when handling batteries.

2. Instruction

2.1 Brief Instruction

2.1.1 General Description

NH Series High-Frequency Inverter is a pure sine wave inverter designed for mobile off-grid power applications such as RVs and work vehicles. When paired with lithium batteries, it offers a high-efficiency, high-power-density mobile energy storage solution. Its core functions include:

- Connects to a 12V auxiliary battery to invert and output pure sine wave AC power for AC loads.
- Connects to a 12V starter battery, enabling inverted pure sine wave AC output for AC loads when the vehicle engine is running.
- Bypass models: Automatically switches to bypass power supply when shore power is connected, with a transition time of less than 25ms between modes.

Feature Highlights:

- High-performance MCU and integrated digital control for both logic and power stages, supporting comprehensive self-diagnostics and fault detection.
- High-frequency isolation design ensures high efficiency, compact size, and lightweight construction—with no noise from bulky power-frequency transformers.
- Low-frequency ripple and low surge current on the battery side, protecting battery health.
- Per-cycle hardware-based current limiting design allows the inverter to withstand short-circuit surges, enhancing system adaptability and reliability.
- Smart, stepless fan speed control minimizes operating noise.
- Integrated communication interfaces (RS485, CAN, RV-C) with native RV-C protocol support.
- Built-in Bluetooth support the mobile APP (TBB Connection) monitoring.
- Starter battery functionality: Detects the vehicle alternator type via D+ signal and intelligently controls voltage-based power on/off.

2.1.2 Naming Rule

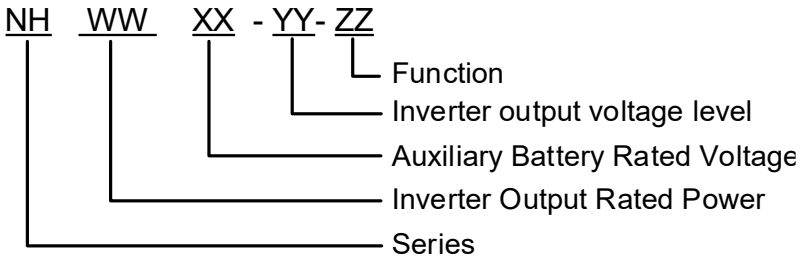


Table 2-1 Product Naming Codes and Descriptions

Field	Value	Description	
NH	NH	NH Series Pure Sine Wave Inverter	
WW	2000	Rated Inverter Output Power	2000W
	1500		1500W
XX	L	Rated Input Battery Voltage	12V
YY	LV	Rated Output Voltage 100V/120VAC	
ZZ	BYP	Bypass Model: Bypass Capability	
	N/A	Non-Bypass Model：Non-Bypass Capability	

2.2 Structural Appearance

2.2.1 Front View



Figure 2-1 Non-Bypass Model Front View



Figure 2-2 Bypass Model Front View

* The "PURE SINE WAVE INVERTER" marking on the front of the unit may appear in two different font styles. This cosmetic difference does not affect functionality.

PURE SINE WAVE INVERTER

PureSineWaveInverter

2.2.2 LED indicators

Table 2-2 LED indicators

Name	Color	Function
Status LED 	Green	Off – No power input Slow flashing – Standby with power input Fast flashing – Bypass mode active Solid on – Inverter operating normally
Fault LED 	Red	Off – No fault Fast flashing – Fault occurred

*Slow flashing is on for 0.5seconds and off for 1.5 seconds in a loop.
*Fast flashing is on for 0.5 seconds and off for 0.5 seconds in a loop.

* The Status and Fault indicators are available in two icon styles. This cosmetic difference does not affect functionality. The alternative version is shown below:

Status LED:  Fault LED: 

2.2.3 Terminal Overview

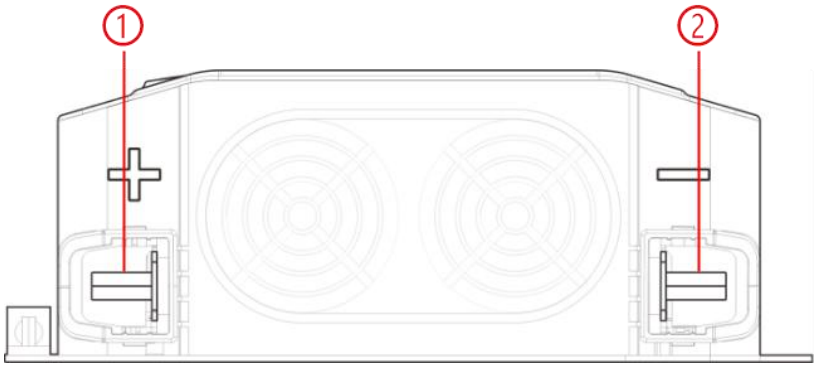


Figure 2-3 DC Side & Grounding Terminal

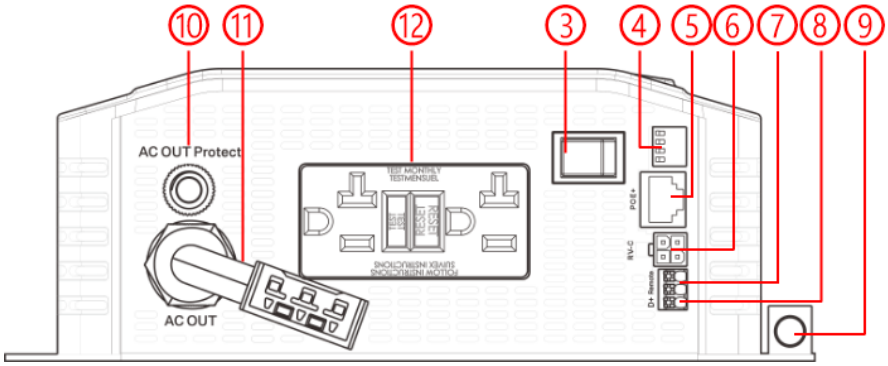


Figure 2-4 Non-Bypass Model AC Side Interface

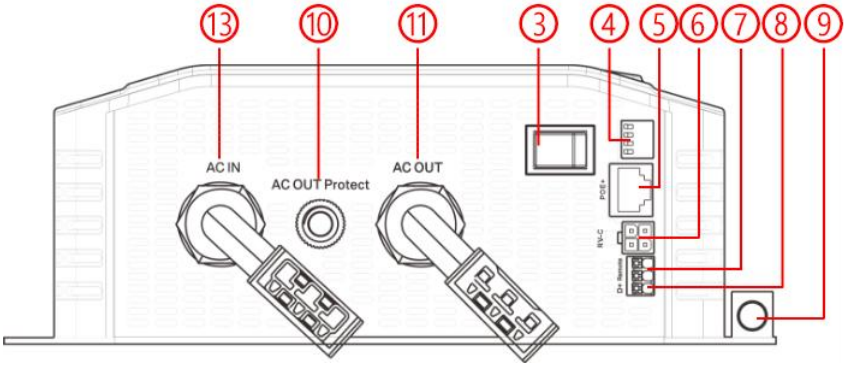


Figure 2-5 Bypass Model AC Side Interface

Table 2-3 Terminal Description

No.	Terminal Name	Description
①	+	12V Battery Positive
②	-	12V Battery Negative
③	Rocker Switch	Device Switch On/ Off
④	Dip-switch	See Table 2-4 Dip-switch Definition
⑤	POE+	Connects to external monitor or TBB system
⑥	RV-C	Connects to RV-C Network
⑦	Remote	Remote Switch Control
⑧	D+	Reserved
⑨	PE	Grounding

⑩	AC OUT Protect	AC Output Overload Breaker
⑪	AC OUT	AC output connector: WAGO 770-103. L: Live, PE: Ground, N: Neutral
⑫	GFCI	AC Output receptacle
⑬	AC IN	AC Input connector: WAGO 770-113. L: Live, PE: Ground, N: Neutral

Table 2-4 Dip-switch Definition

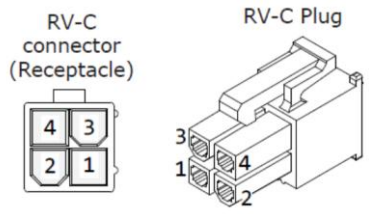
PIN & Position		Definition	Remark
PIN1	OFF	Battery Type-Lead	The default low voltage protection is 10.5V The default low voltage recovery is 11.5V
	ON	Battery Type-Lithium	The default low voltage protection is 11.5V The default low voltage recover is 12.5V
PIN2	OFF	Bootup to inverting mode	Operation mode selection
	ON	Bootup to Standby mode	
PIN3	OFF	Normal Mode	Continuous Power Output
	ON	ECO Mode	Smart Power Output by Load Status
PIN4	OFF	TBB CAN	For TBB system or the 3rd party system based on RV-C network
	ON	RV-C	

Note: The dip-switch status can also be modified via communication (external display or Bluetooth APP). Please set correctly based on the final configuration.

Table 2-5 POE+ PIN Definition

Port	PIN	Definition	Requirement
POE+	1	ON/OFF Switch (Dry-contact output controlled by hardware switch or system controller)	Standard RJ45 Port
	2		
	3	RS485_A	
	4	CAN-H	
	5	CAN-L	
	6	RS485_B	
	7	+12V_D (Non-isolated external power supply 3W)	
	8	0V_D (Non-isolated external power supply 3W)	

Table 2-6 RV-C PIN Definition

Port	PIN	Definition	Requirement
RV-C	1	CAN_H	
	2	CAN_L	
	3	/	
	4	/	

2.2.4 Enclosure Size

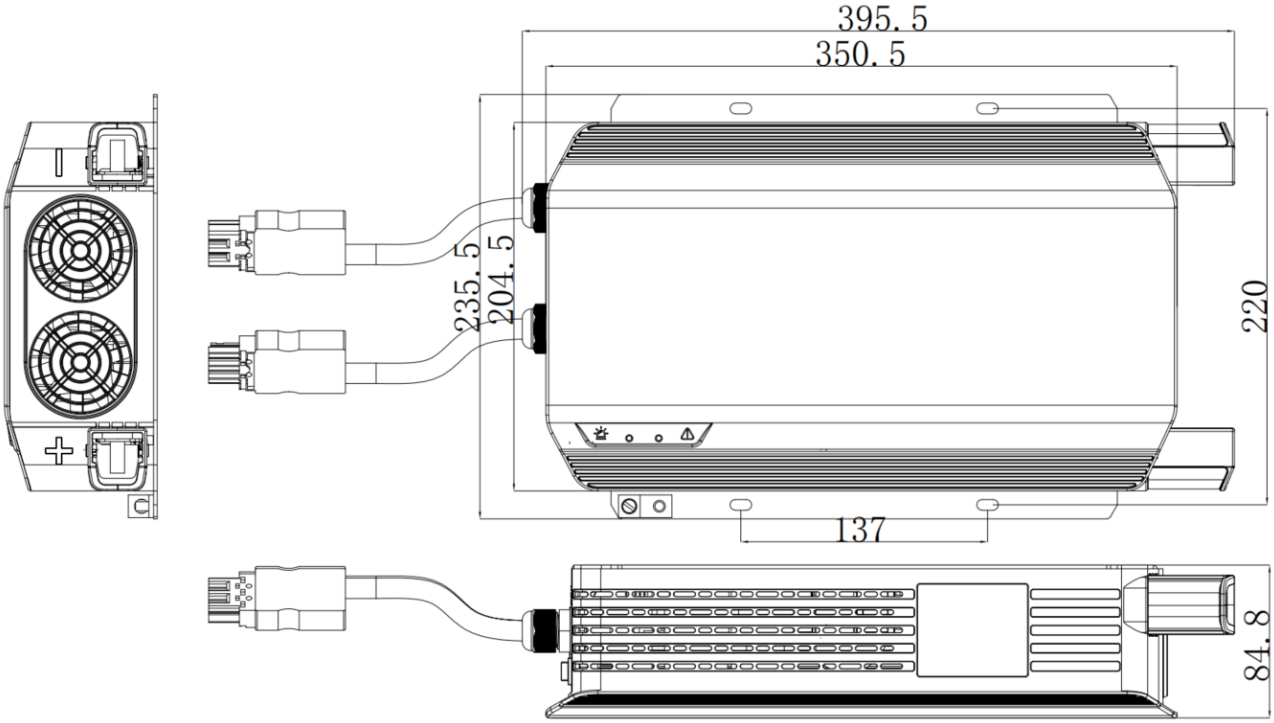


Figure2-6 NH Enclosure Size

2.3 Function

2.3.1 Multiple Power Control

The product supports multiple power control methods for various application scenarios, meeting the requirements of both auxiliary battery and starter battery applications. For interface details, refer to section 2.2.3 Terminal Introduction.

- **Dip-switch #2 ON**
  - If rocker switch off (O), and both dry contact of **POE+** & **Remote** port open = Inverter Off.
  - If rocker switch on (Ⅰ), or the dry contact of **POE+** port closed or the dry contact of **Remote** port closed = Inverter Standby.
    - The command from RV-C, CAN, or Bluetooth can change the inverter to invert.

- **Dip-switch #2 OFF**
  - If rocker switch off (O), and both dry contact of **POE+** & **Remote** port open = Inverter Off.
  - If rocker switch on (Ⅰ), or the dry contact of **POE+** port closed or the dry contact of **Remote** port closed = Inverter Inverting.
    - The command from RV-C, CAN, or Bluetooth can change the inverter to standby.

- **Remote Control:**

When the position is set to "O", the NH inverter's state can be changed either by connecting the **RNH** (optional) via the **POE+** port, or by shorting the **Remote dry contact**.

- **Smart Control via D+ signal (only equipped with 3 position rocker switch):**
  - When the position is set to "Ⅱ", the NH inverter will automatically enter Inverting/ Standby (based on the dip-switch #2 position) or OFF based on the presence of the D+ signal and voltage thresholds, making it ideal for starter battery applications to prevent battery drain.

Threshold values for automatic Inverting/ Standby or OFF are shown below:

Table 2-7 D+ Signal Smart Control Voltage Thresholds

	Inverting/ Standby Voltage	Turn-Off Voltage
Without D+ signal	13.3±0.1V	12.7±0.1V
With D+ signal input	10.5±0.1V	10±0.1V

Using the **RNH** connected to the **POE+** port, the user can also control inverter ON /OFF.



Figure 2-7 NH and RNH Connection Diagram

2.3.2 Inverter Function

The NH series outputs **pure sine wave AC** with a rated voltage of **120 VAC** and a rated frequency of **60 Hz**, offering the following advantages:

- Stable frequency and voltage with low ripple ensure a reliable operation of various equipment (**THD < 3%@13V**, resistive load).

- Strong load capacity: Designed to withstand up to twice the rated load for short durations, enhancing the ability to drive difficult inductive and capacitive loads.

- Low power consumption: High-frequency design ensures high efficiency and low no-load power loss.

2.3.3 ECO Mode

The NH-LV series supports enabling or disabling ECO mode via DIP switch or TBB Connection App settings.

When ECO mode is enabled, the inverter will automatically shut off its output when the AC load drops below 20W, thereby reducing no-load power consumption. Thereafter, the unit will deliver a 2-second pulse output every 10 seconds, until a load is reconnected and normal inverter output resumes.

Note: The 20W threshold is approximate and may vary. When ECO mode is active, loads below 20W will not trigger inverter output, even if connected.

2.3.4 AC Bypass Function

On models equipped with AC bypass, the inverter will automatically switch to bypass output when the AC input voltage falls within the acceptable operating range. The bypass function remains available even when the inverter is turned off.

Bypass Mode can be disabled through the TBB Connection mobile app or via CAN commands. When Bypass Mode is disabled, AC Bypass operation will remain inactive until Bypass Mode is re-enabled or the inverter is rebooted. Bypass is enabled by default at boot up.

When the AC input is disconnected or falls outside the operating voltage range, the inverter will revert to its previous state.

Supports up to 20A input/output current.

Switching time between inverter and bypass mode is less than 25ms.

2.3.5 System Integration Interfaces

- Built-in **RS485** communication.

- Built-in **CAN** communication for system-level monitoring or RV-C network.

2.3.6 Protection Functions

NH series integrates multiple hardware and software protection mechanisms to enhance reliability:

- Reverse Wiring Protection on AC Input and Output

When the inverter is in standby mode (no AC power output), it's protected against damage from accidental reverse wiring on the AC input and AC output. A fault alarm will be triggered to remind the end user to correct the wiring.

Warning: During inverter operation (in either invert mode or bypass mode), reversing the AC input and output connections will damage the device.

- Over-temperature Protection:

When the internal temperature is too high, the inverter shuts down its output. Output resumes automatically once the temperature returns to normal.

- Output Overload and Short Circuit Protection:

When the output load exceeds the rated capacity or a short circuit occurs, the inverter will automatically engage protection by shutting off the output. It will attempt to restore the output after 1 minute. If protection is triggered 3 times cumulatively within a 10-minute period, the inverter will cease automatic output recovery and requires a manual restart.

- DC Undervoltage Protection:

If the DC input voltage falls below the configured undervoltage threshold, the inverter will disable its output. To prevent nuisance trips, the voltage must remain below the threshold continuously for at least 30 seconds before the protection function is activated. However, if the DC input voltage drops below 10.0 V, the inverter will shut down immediately, regardless of the configured undervoltage protection setpoint.

- AC Undervoltage Protection:

When operating in Bypass mode, if the AC input voltage falls below 85 VAC for at least 2 seconds, the inverter will exit Bypass mode and return to its previous operating state, either Inverting or Standby mode.

3. Installation



Keep away from fire, avoid direct sunlight and rain; do not store flammable, explosive or corrosive gases or liquids in the working environment. Don't install in a working environment with metal conductive dust.

- Please install the equipment in a dry, clean, and cool location with good ventilation. The recommended operating temperature is 20–25°C, with relative humidity between 30% and 70%
- Operating temperature: -30～65°C
- Storage temperature: -40～70°C
- Cooling: Forced fan
- Relative humidity in operation: 5~95% without condensation.

3.1 Installation preparation

Please confirm whether the product has been damaged during transportation and whether the accessories are complete.

Table 3-1 Packing List

Item	Qty
NH Pure Sine Wave High-Frequency Inverter (Main Unit)	1
User Manual or QR code to access Manual	1
Certificate of Conformity	1
ST5 Screws	4
AC Input Connector: WAGO 770-103 (only for bypass models)	1
AC Output Connector: WAGO 770-113	1

The package includes the following components:

NH inverter main unit, user manual, certificate of conformity, screws and connectors.

During installation, the product should be transported to the installation site **before** removing the outer packaging. After unpacking, please verify that all components and accessories are complete before proceeding with installation.

3.2 Inverter Installation

- The NH series inverter supports both **horizontal** and **vertical** mounting.
- The NH series inverter features **forced-air cooling**. To ensure effective heat dissipation, sufficient wiring space must be reserved, and it is recommended that the installation area be equipped with ventilation holes to allow for air circulation. Refer to **Figure 2-6** for installation space and mounting hole positions. Maintain at least **100 mm** of clearance at the front and rear of the inverter for proper cooling (see **Figure 3-1**).

➢ After determining the mounting location and hole positions, secure the unit with **four screws**.

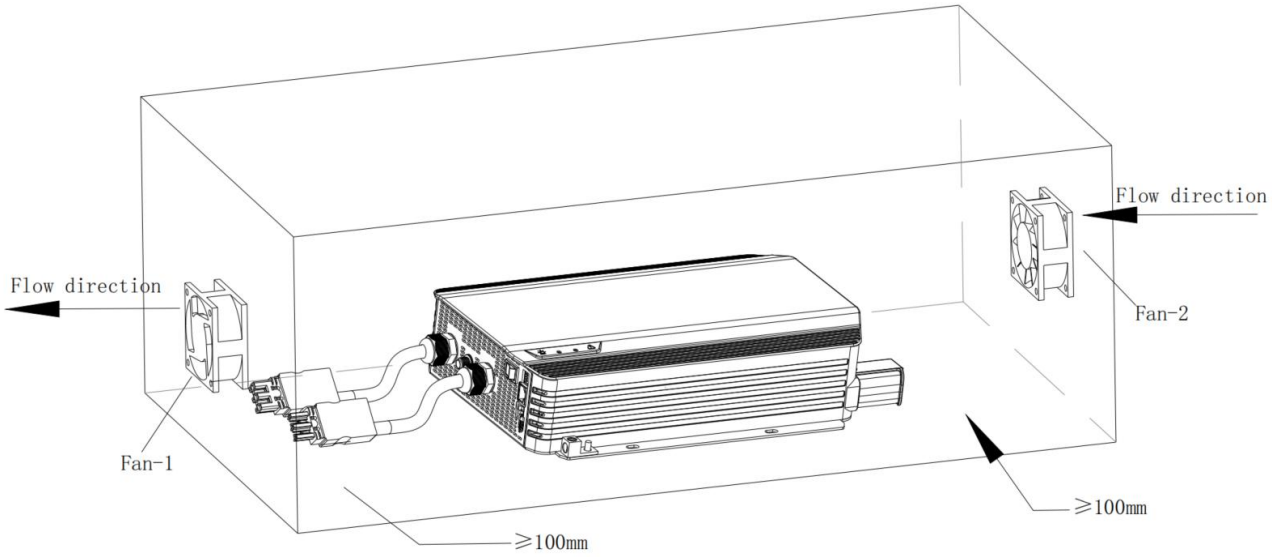


Figure 3-1 NH Installation Space Diagram

3.3 Wiring preparation

3.3.1 Prepare suitable circuit breakers

➢ Positive pole cables should be equipped with overcurrent protection devices such as DC fuses or DC circuit breakers at 125% of the nominal rated value.

➢ The withstand voltage of the DC circuit breaker on the battery side should be greater than 16V.

➢ The requirements of the circuit breaker type are as Table 3-2.

Table 3-2 Circuit Breakers Requirements

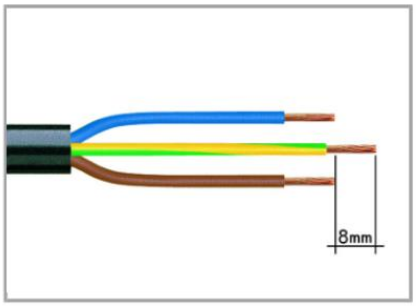
No.	Category	Model	Fuse/Breaker Specifications
1	Battery-side Fuse/Breaker	NH2000L-LV-BYP/NH2000L-LV	(1) Voltage rating must be > 16 VDC (2) Rated current must be ≥ 250A
		NH1500L-LV -BYP/NH1500L-LV	(1) Voltage rating must be > 16VDC (2) Rated current must be ≥ 187A
2	AC-side Breaker	NH2000L-LV -BYP/NH2000L-LV	(1) Voltage rating must be > 150VAC (2) Use appropriate breaker sized in accordance with wire size installed
		NH1500L-LV -BYP/NH1500L-LV	

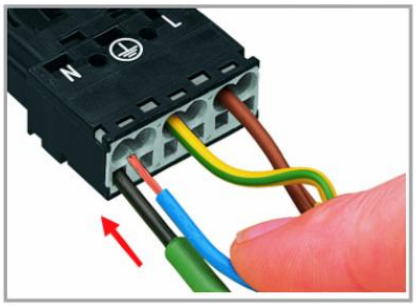
Note: The selection of the above circuit breakers or fuses must comply with the requirements of local laws and regulations.

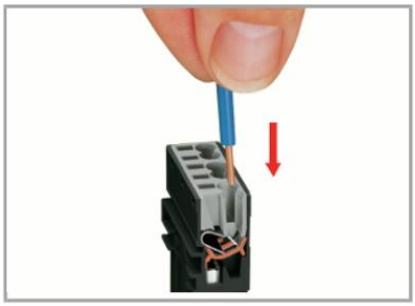
3.3.2 Wire preparation

➢ It is recommended to use cables with an insulation rating of at least Class Y (90°C).

➢ ON **bypass models**, the AC input and output use **WAGO connectors** (AC IN: WAGO 770-103, AC OUT: WAGO 770-113). The wiring method for WAGO terminals is as follows:







➢ 1. **Wire stripping length**:

- Outer insulation: 35 mm (2-pole), 55 mm (3–5 pole)
- Conductor: 9 mm
- Ground conductor: Extend an additional 8 mm

➢ 2. **For stranded conductors**:

- Use a **2.5 mm** flat-blade screwdriver to open the clamping unit
- Insert the stripped conductor until it reaches the backstop

➢ 3. **For solid conductors**:

- Insert directly until it reaches the backstop

➢ Users shall **select and prepare** AC/DC cables independently, including making proper terminals. To ensure electrical safety, the **minimum cable specifications** are shown in the table below:

Table 3-3 Recommended Minimum Cable Specifications

<table>
<tr><th rowspan="2">Port</th><th rowspan="2">Description</th><th colspan="4">Specifications</th><th rowspan="2">Applicable Model</th></tr>
<tr><th>Cable Size</th><th>Length</th><th>Color</th><th>Terminal Type</th></tr>
<tr><td rowspan="2">12V Battery</td><td>BAT-</td><td rowspan="2">70mm^2 (2/0 AWG)</td><td rowspan="2"><4m (<26ft total circuit length)</td><td>Black</td><td rowspan="2">Φ8 OT terminal</td><td rowspan="3">All Models</td></tr>
<tr><td>BAT+</td><td>Red</td></tr>
<tr><td>Chassis Ground</td><td>PE</td><td rowspan="5">3.3mm^2 (12 AWG)</td><td rowspan="5">/</td><td>Yellow & Green</td><td>Ground Terminal</td></tr>
<tr><td rowspan="3">AC Input</td><td>L</td><td>Black</td><td rowspan="3">WAGO 770-103</td><td rowspan="3">NH2000L-LV -BYP NH1500L-LV -BYP</td></tr>
<tr><td>PE</td><td>Yellow & Green</td></tr>
<tr><td>N</td><td>White</td></tr>
<tr><td rowspan="4">AC Output</td><td>L</td><td>Black</td><td rowspan="3">WAGO 770-113</td><td rowspan="3">All Models</td></tr>
<tr><td>PE</td><td>Yellow & Green</td></tr>
<tr><td>N</td><td>White</td></tr>
<tr><td colspan="5">GFCI</td><td>NH2000L-LV NH1500L-LV</td></tr>
</table>

3.4 Wiring

Before installation, verify that the voltage of the battery pack matches the DC input voltage of the inverter. If the voltage is incorrect, the inverter will not be covered under warranty.

Please check that the polarity of the DC input is correct. Reversed polarity will damage the inverter, and any damage caused by reverse polarity is not covered under warranty. Before making connections, ensure that a compliant circuit breaker is installed between the inverter and the battery, and that the breaker is in the OFF position.

Please check that the AC input and output cables are correctly connected. Incorrect wiring may damage the inverter, and any damage caused by wiring errors is not covered under warranty. Before making connections, ensure that compliant circuit breakers, meeting the requirements of Table 3-2, are installed on both the AC input and output sides, and that the breakers are in the OFF position.

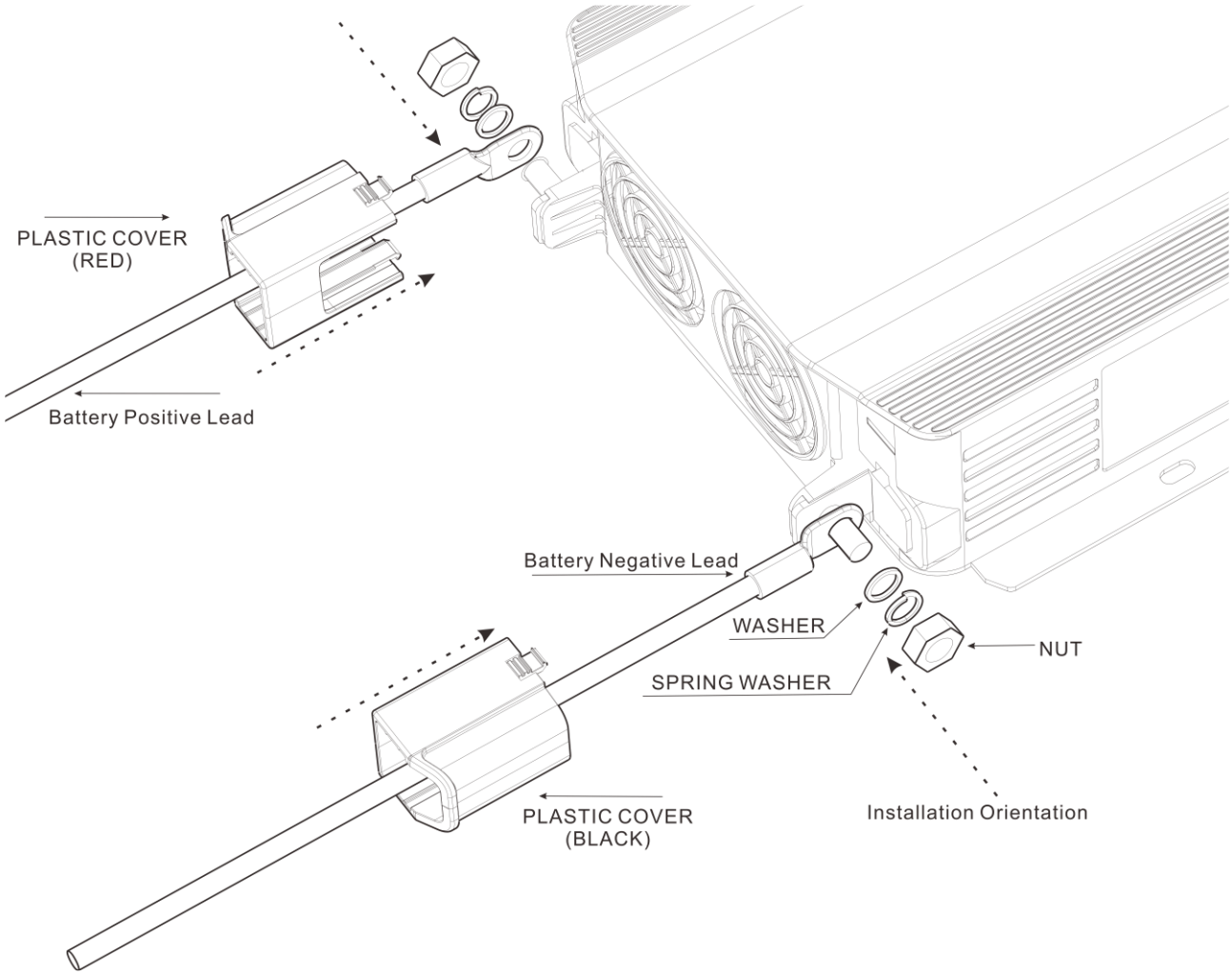


Figure 3-2 DC Cable Connection Diagram for NH

Wiring Instructions:

Step 1:

Remove the protective covers from the battery side positive and negative terminals of the inverter.

Step 2:

According to the polarity labels on the panel:

- Pass the **DC positive cable** through the **red terminal cover**,
- Pass the **DC negative cable** through the **black terminal cover**,
- Securely connect each cable to the respective **DC input terminals** to a recommended torque value of 12 N*m (9 ft*lbs).
- Reattach the terminal covers.

Step 3:

Depending on the model, use either **WAGO connectors** or **country-specific standard AC plugs** (refer to **Table 3-3**) to connect to **“AC IN”** and **“AC OUT”**. The AC cable connection should be secured within 3 inches of each WAGO connectors. **For NH2000-LV AC Output #2 and NH2000-LV-BYP AC output, all branch circuits must conform to NEC 70 code compliance with a GFCI installed up stream of all branch circuits.**

Step 4:

Case grounding connection with torque range 6-7 N*m (5 ft*lbs).

Step 5:

Connect the signal cables.

Step 6:

Clean the installation area.

Remove all unnecessary tools and materials.

Use a **vacuum cleaner** to clear out any metal filings, wire insulation scraps, or other debris.

Do not use air guns to clean the area, as metal debris generated during drilling may be blown into the inverter and cause damage when powered on.

4. Operation

4.1 Pre-startup inspection

Please follow the steps below to perform a pre startup check:

- The installation of the inverter meets all of the requirements above. The space meets the heat dissipation requirements.
- The cable layout is tidy, and the connection is tightly secured.
- The ground wire is firmly connected.
- Confirm again that the battery circuit breaker is in a disconnected state.
- Ensure that the cables are properly and securely connected.
- The installation space must be **clean, dry, and free of debris** (e.g., metal shavings, insulation scraps).

4.2 Power on and off

Step 1:

Close the battery-side circuit breaker.

Step 2:

Refer to **Section 2.3.1 Power ON/OFF Control** and select the appropriate method to power ON the inverter.

After self-test completes, the unit will enter **inverter mode** and begin normal operation.

4.3 Mobile APP Connection

The NH-LV series inverters come with built-in Bluetooth functionality, supporting communication with the mobile app "TBB Connection" via Bluetooth.

The TBB Connection app includes features such as real-time data display, inverter output settings, online firmware updates, “Low Voltage Protection Value” is user configurable (10.5-12.8Vdc) and “Low Voltage Recover Value (10.6-14Vdc) via the app setting page. The app can be found and downloaded on both Google Play and the App Store.



5. Troubleshooting

5.1 Routine Maintenance

This product is a forced-air-cooled inverter. Ensure that the air intake is free from obstructions and prevent foreign objects from being drawn into the unit. All maintenance must be carried out by qualified personnel. Avoid exposure to moisture, oily fumes, smoke, and steam in daily use, and keep the equipment clean.

5.2 Fault Check

- If **alarm or fault** occurs, you can check the status vie the **TBB Connection APP**.
- When a **fault** occurs, the **Fault LED** on the product panel will flash.

The following tables describe the fault and alarm codes:

5.2.1 Fault Codes

Flashing Times	Event Description	Troubleshooting
1	AC output short circuit protection	Check whether the AC output is short-circuited.
2	AC output overload protection	Check whether the AC output load exceeds the rated power.
3	AC output overcurrent protection	Check whether the AC output load exceeds the rated power.
4	Inverter internal overvoltage protection	Restart the inverter. If the issue persists, contact your distributor
5	Battery undervoltage protection	1. Check if battery voltage is too low. 2. If recurring, contact your distributor.
6	Battery overvoltage protection	1. Check if battery voltage is too high. 2. If recurring, contact your distributor.
7	Auxiliary power undervoltage	Restart the inverter. If the issue persists, contact your distributor.
8	Internal memory error	Restart the inverter. If the issue persists, contact your distributor.
9	Internal overtemperature	1. Check if ambient temperature is too high. 2. Ensure proper ventilation. 3. Confirm that the fan is functioning.
10	Internal low temperature	1. Check if ambient temperature is too low. 2. If normal, contact your distributor.
11	Internal sampling error	1. Check whether the AC input and AC output wiring is reversed. 2. Restart the inverter. If the issue persists, contact your distributor.

12	Internal power stage error	Restart the inverter. If the issue persists, contact your distributor.

5.2.2 Alarm Codes

Display Alarm Message	Description	Troubleshooting
Fan failure [ALM 002]	Fan abnormal	Fan is blocked or malfunctioning. Please contact your distributor.
Output overload alarm [ALM 003]	AC output load too high	AC load exceeds rated power. Please reduce the load promptly.
Device temperature is high [ALM 004]	Internal high temperature alarm	1. Check if ambient temperature is too high. 2. Ensure proper ventilation.
Input voltage is high [ALM 005]	AC input voltage too high	Check if the AC input voltage is too high.
Input over frequency [ALM 006]	AC input frequency too high	Check if the AC input frequency is too high.
Input under frequency [ALM 007]	AC input frequency too low	Check if the AC input frequency is too low.

6. Specifications

Model		NH1500L-LV	NH2000L-LV	NH1500L-LV-BYP	NH2000L-LV-BYP
DC Input	Nominal Battery Voltage	12V			
	Input Voltage Range	10~16.0VDC			
	Zero Load Current	≤1.2A@12V			
	ECO Mode Current	≤0.3A			
	Standby Consumption	<1W			
AC Output	Cont. Power@25°C	1500VA	2000VA	1500VA	2000VA
	Cont. Power @25°C	1500W	2000W	1500W	2000W
	Cont. Power @40°C	1350W	1800W	1350W	1800W
	Cont. Power @60°C	1200W	1550W	1200W	1550W
	Peak Power (2s)	3000W	4000W	3000W	4000W
	Power Factor cosΦ	1			
	Output Voltage	100/120VAC±3%			
	Output Frequency	50/60Hz±0.5%			
	Waveform	Pure Sine Wave (THD<3%@13V, resistive load)			
	Efficiency	Peak: 93%, Full Load: 88%			
	AC Output Terminal 1	GFCI		WAGO 770-103	
	AC Output Terminal 2	WAGO 770-103		None	
	Overload Protector	Yes			
	Ground Relay	Yes			
Bypass Output	AC IN Voltage/Frequency	N/A		AC 85~140V，45~65Hz	
	Transfer Time	N/A		<25ms	
	Bypass Current	N/A		20A	
	AC Input Terminal	N/A		WAGO 770-113	
External Interface	Power Switch	Rocker Switch			
	Remote Interface	D+, Remote Dry Contact			
	Communication Port	RJ45 (CAN/RS485), Mini-fit Jr. (RV-C)			
	Grounding	YES			
Others	Remote Control Panel	RNH (Optional)			
	Protection	Output short circuit / overload, Input overvoltage / undervoltage, over-temperature protection			
	Cooling Method	Forced air cooling			
	Noise Level	≤55db			
	IP Rating	IP20			
	Dimensions	395.5 x 235.5 x 84.8mm (15.6 x 9.3 x 3.3in)			
	Weight	3.0kg (6.6lbs)			
	Operating Temperature	-30°C ~65°C (derating above 30°C)			
	Storage Temperature	-40°C ~70°C			
	Humidity	5 ~ 95% RH			
Safety Standards		UL458 & CSA107.1			
EMC Standards		FCC Part 15 Class B			

TBB POWER

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