

**NOBÜ**

*Home automation for digital living.™*

# **N12WTS**

Fanless Inwall Touch Screen PC  
with 12.1" TFT LCD

## **User's Manual**



### **NOBU, LLC.**

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## **Safety Instructions**

1. Always read the safety instructions carefully.
2. Keep this User's Manual for future reference.
3. Keep this equipment away from humidity.
4. Lay this equipment on a reliable flat surface before initial configuration.
5. The openings on the case are for air convection hence they help protect the equipment from overheating. **DO NOT COVER THE OPENINGS.**
6. Make sure the voltage of the power source to be used with the N12WTS is between 90-264VAC.
7. Be sure to follow all precautions listed on the Temporary Power Cord reference sheet included with the N12WTS.
8. It is recommended to disconnect the power source before inserting any add-on card or module.
9. All cautions and warnings on the equipment should be noted.
10. Never pour any liquid into the openings. Liquid can cause damage or electrical shock. When cleaning screen or bezel never apply fluids of any kind directly onto the unit. See Maintenance section of this manual.
11. If any of the following situations arise, get the equipment checked by Nobu service personnel:
  - The power terminal is damaged
  - Liquid has penetrated into the equipment
  - The equipment has been exposed to moisture
  - The equipment is not functioning properly according to the User's Manual.
  - The equipment has been dropped and/or damaged
  - If the equipment has obvious signs of damage
12. Do not leave this equipment in an environment unconditioned such as in temperatures above 60° C (140°F), it may damage the equipment.

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## **Package Contents**

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- 1 x N12WTS Inwall Touchscreen PC with Brushed Aluminum Bezel
- 1 x RFKT12 Mounting Bracket
- 1 x Temporary Power Cord
- 1 x Mounting Screws (4)
- 1 x Software License COA (Certificate of Authenticity) with Operating System CD
- 1 x Motherboard Driver Utilities CD
- 1 x N12WTS User's Manual CD
- 1 x Nobu Welcome Documentation

If any of these items are missing or damaged upon delivery, contact your distributor or sales representative immediately.

# The N12WTS

The N12WTS is a fully functional inwall touchscreen PC with all the necessary input/output ports to control any subsystem or automation hardware in your home. The N12WTS has the following I/O ports as seen in Figure 1.2 : USB 2.0, Firewire 1394, 1 RCA port (S/PDIF or Composite TV-Out) S-Video, Ethernet 10/100Mb/s, Serial RS232, VGA Out, Compact Flash type I/II, PCMCIA type I/II, PS/2 keyboard & mouse, and Audio line out/line in/mic.



**Figure 1.2** I/O Ports

The unit comes preconfigured with Windows XP Professional and all necessary drivers from the motherboard driver CD. For home control applications the user has the option to install their favorite flavor of home control software which will provide the custom, intuitive, button-type interface or interactive voice recognition for controlling the hardware within the home.

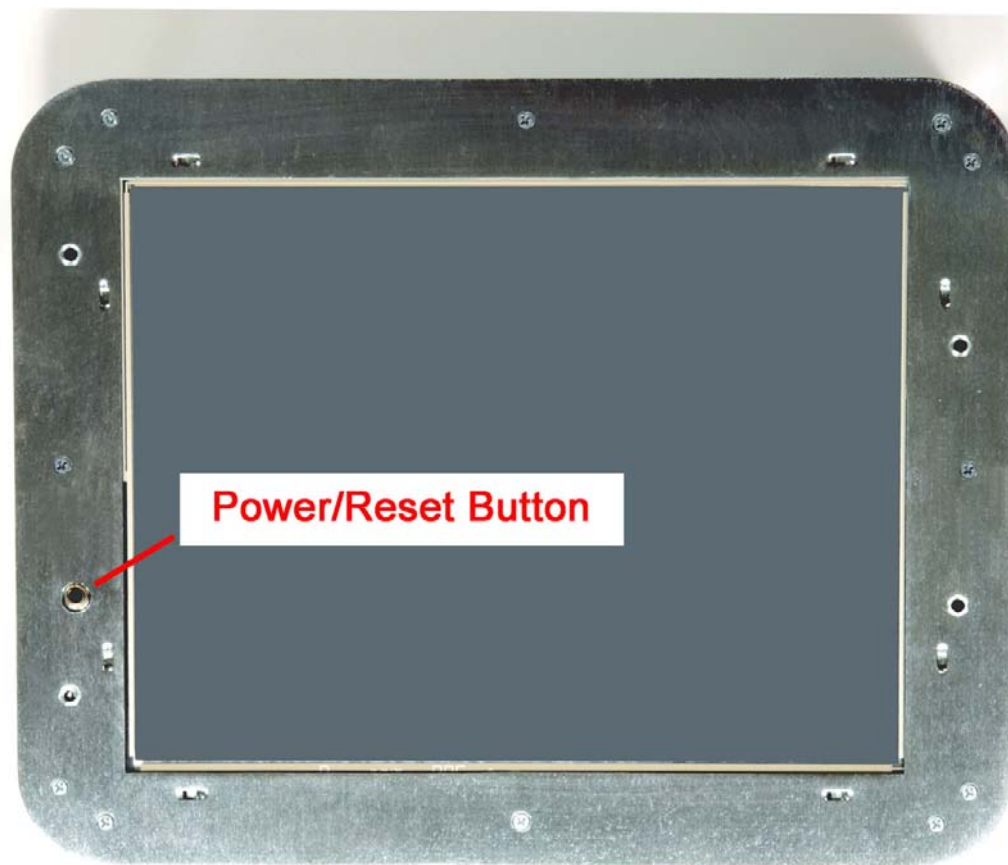
The N12WTS requires only a small amount of power. It is powered by an internal 60 watt power supply with standard AC input wired directly to the unit with standard interior home grade 12 or 14-gauge wire. (see Figure 1.7) The power supply is universal; it can accept 90-264VAC.

The unit does not need a dedicated circuit, special grounding, special ventilation, or any other special treatment except that it should be handled carefully and stay as dry as possible. The ventilation slots on the casing of the unit should **not** be blocked or covered except by what is normally covered by the mounting bracket. The unit mounts flush to the wall with the exception of the slightly raised brushed aluminum bezel which slides onto the face after installation.

The N12WTS communicates with most automation devices by TCP/IP. Numerous hardware devices exist in the marketplace to convert TCP/IP to the protocol required by the specific device. For example, Smarthome™ provides the Powerline™ IP which converts IP datagrams to X10 signals which can be used to control lighting, HVAC, cameras, gates, garage doors, etc.

The I/O ports on top of the unit can be used at the creative discretion of the integrator/installer. Every day new uses and configurations are being applied with the N12WTS. For more information or creative ideas please see the Nobu website: <http://www.nobu-usa.com/examples.htm> .

## Power/Reset Button



**Figure 1.25** Power Button

The Power button is shown in the illustration above. This button can also reset the PC when held down for 5 seconds.



## Temporary Power Cord

The included power cable is for configuring the NOBU Touchscreen PC prior to installation only. The installation of this NOBU unit should be performed by a licensed/certified electrician.

**CAUTION:**

The cable consists of (3) 18 gauge wires stripped ½” from end. Connect the wires to the corresponding terminals inside the power compartment on the PC **BEFORE** plugging the cord into a live outlet. Unplug the cord from outlet **BEFORE** removing the wires from the power terminals. **Please use extreme caution during this portion of setup.**

**Black** = **HOT**  
**White** = **NEUTRAL**  
**Green** = **GROUND**



<b>Category</b>	3 conductor plastic original equipment cords
<b>Shielding</b>	unshielded
<b>Jacket Color</b>	Grey
<b>Length Feet</b>	6'
<b>Length Meters</b>	1.83
<b>Temperature Rating</b>	60°C
<b>Color Coding</b>	North America
<b>AWG Stranding</b>	18 (41x34)
<b>Nominal OD Inch</b>	0.246
<b>Nominal OD millimeter</b>	6.25
<b>Rating</b>	1250 Watts,10A-125V



**Figure 1.3** Temporary Power Cord

# Installation

**WARNING:**

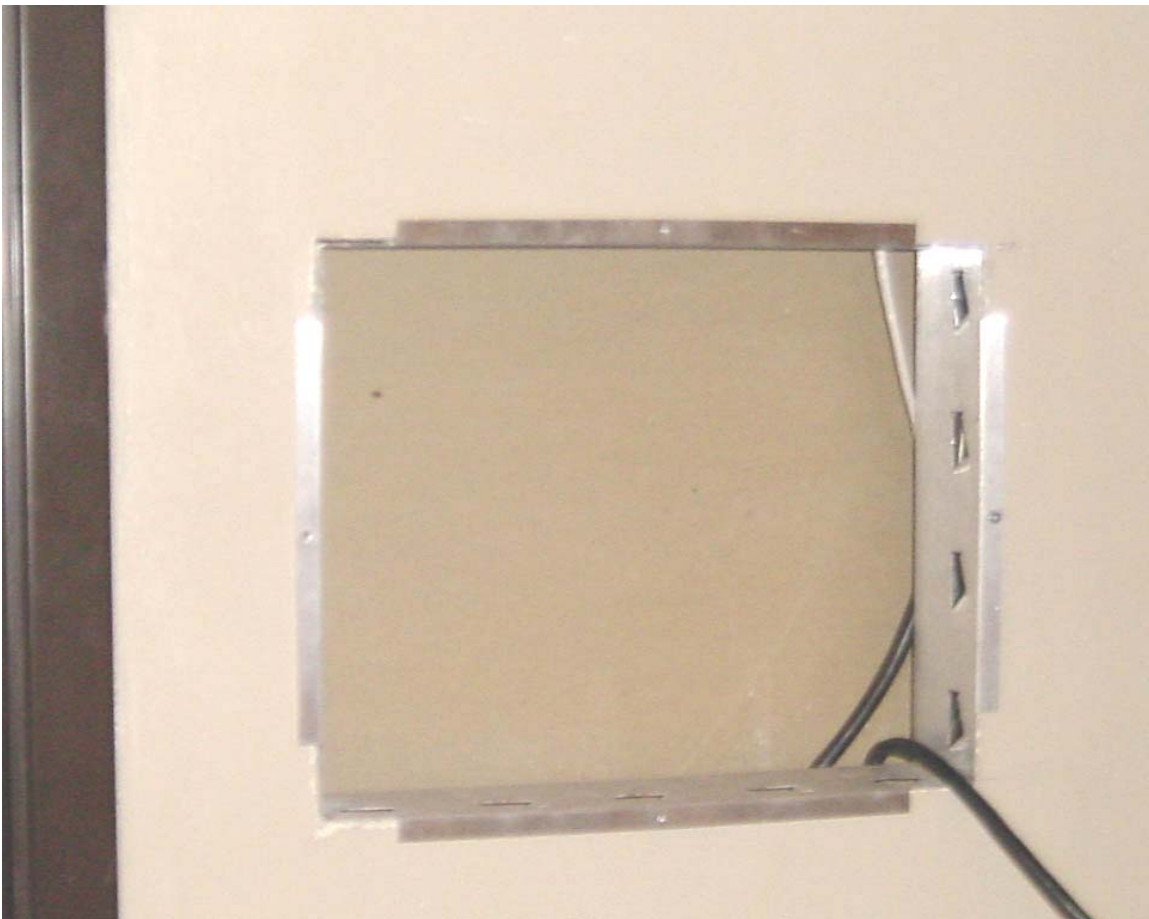
**The unit should be installed by a licensed electrician. Installation by anyone other than a licensed electrician will void the limited warranty.**

There are some factors to consider when choosing a location for installation of the N12WTS. The unit should not be installed where it will receive direct sunlight during any portion of the day. It should not be installed where it will receive significant levels of vibration (i.e. in the wall area below or near a staircase). A licensed electrician should determine an installation location that is feasible, legal, and safe to run power and other cabling to. The installation process is surprisingly simple. The N12WTS fits into any standard interior wall with a simple mounting bracket supplied with the unit.



**Figure 1.4** Mounting Bracket

A rectangular hole should be cut in the wall corresponding to the size of the bracket. It is easiest to trace the outer diameter of the bracket with a pencil for proper sizing. Once the hole has been cut, slide the bracket into the wall opening. The bracket can be screwed onto a stud or can be secured by bending the numerous perforated metal tabs. The tabs are more than sufficient to secure the unit in place.



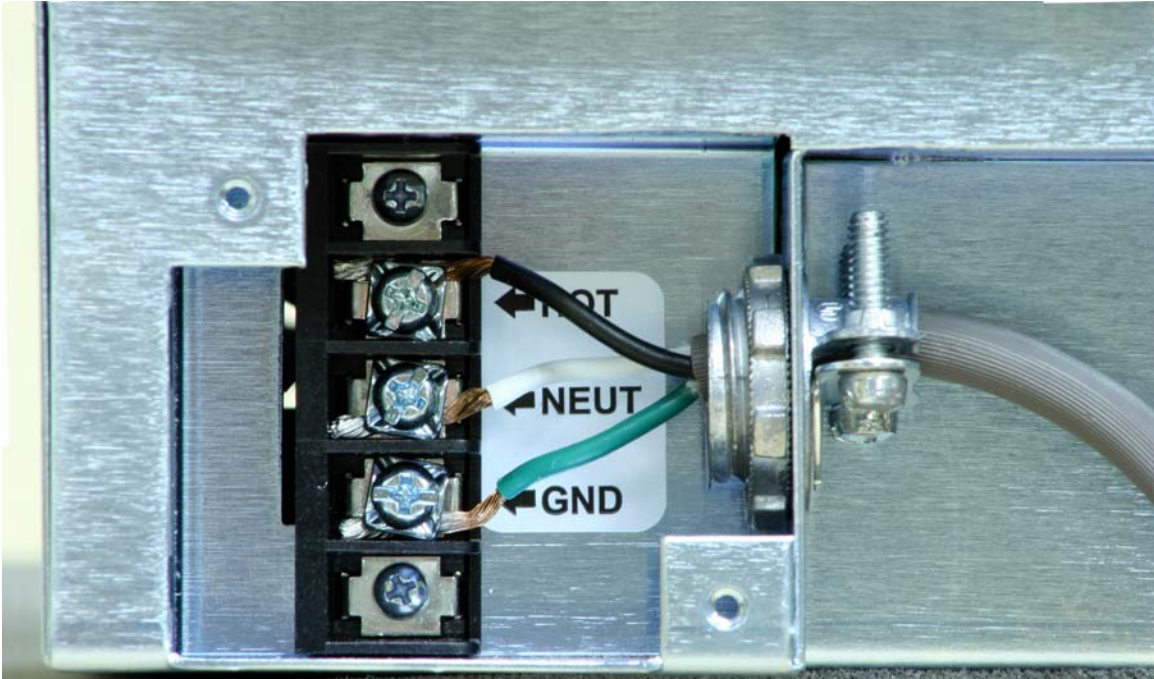
**Figure 1.5** Bracket secured into wall

Once the bracket is secured, any necessary cables/modules should be connected to the N12WTS such as: power, CAT5 ethernet, microphone, S-Video out, USB wireless mouse/keyboard, PCMCIA wireless card, etc.

**CAUTION: The power to the corresponding electrical circuit and/or all structural power should be safely turned off before connecting the 110/220v bare wire to the terminal block on the top of the N12WTS (see Figure 1.6 & 1.7.) Installation should only be performed by a licensed electrician. Installation by an unlicensed person will void the warranty.**



**Figure 1.6** Connect cables



**Figure 1.7** Power Terminal Block

Once all of the necessary cables have been properly connected the N12WTS slides into the mounting bracket and should be securely attached to the bracket with the 4 small mounting screws provided. The aluminum bezel slides onto the front face of the unit last.





**Figure 1.8** Finished installation

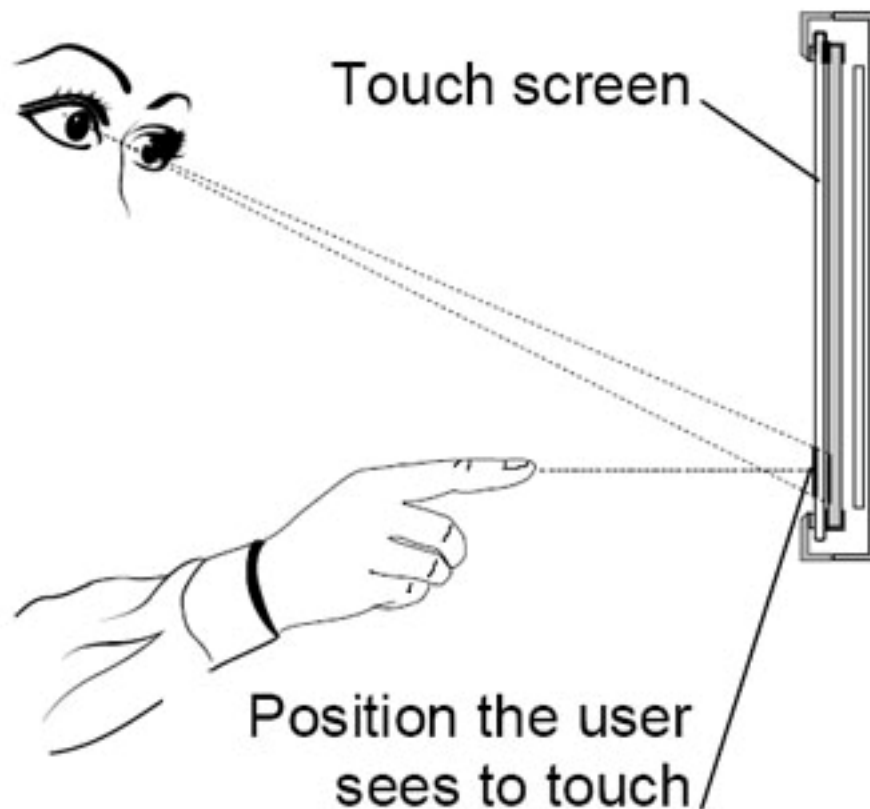


**Figure 1.9** Finished installation

The following information was taken in part from the *3M Profile Sensor Planning Guide (October 2001)*

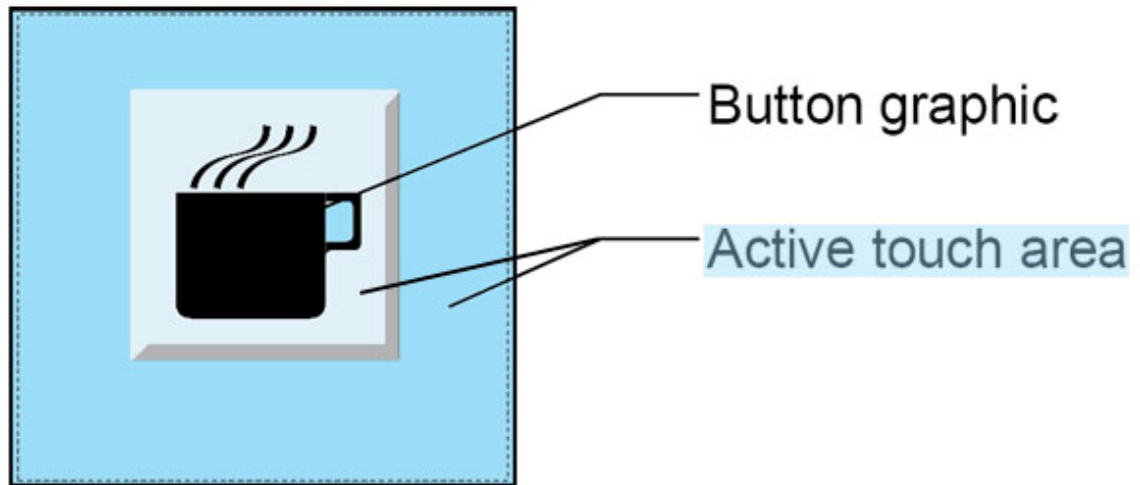
## Touch Application Design:

With any touch application, the design can be crucial to the usability of the final product. Clear icons, bright contrasting colors, large buttons, and simple layouts will go a long way towards the success of your installation. Parallax, the effect of a target object appearing in different positions when looked at from different angles, is a common problem in touch applications. The combination of the touch screen in front of the display and differing heights of users can cause parallax. When designing your touch system software application, use the following guidelines to help reduce the effects of parallax.

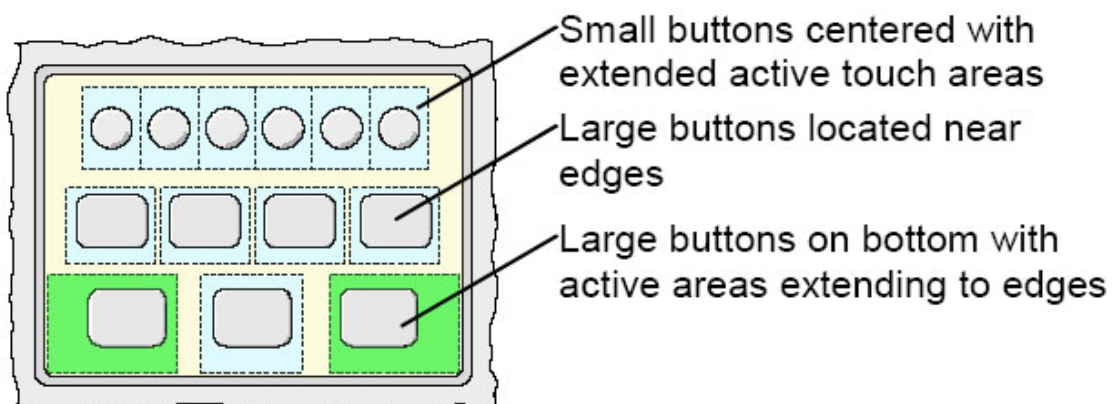




- Design large buttons to facilitate touch. Remember that a fingertip is much larger than a cursor.



- Design larger active border areas for buttons. For example, if the button graphic is 1" X 1" the active touch area behind it could be 2" X 2". Also consider the target system's screen resolution when selecting graphics and sizing buttons.
- Keep buttons away from the edges and corners of the screen. If this is impossible, make sure the active touch areas extend to the outer edges of the viewing area.



- Place buttons horizontally whenever possible. One size does not fit all! Consider the varying heights of users when designing the application.

# Maintenance

The N12WTS requires very little maintenance. From time to time it may be necessary to clean the screen or brushed aluminum bezel.

## Screen

All resistive touch screens from Nobu include a proprietary hardcoated polyester on the front surface of the screen that is substantially harder and more abrasion-resistant than uncoated touch screens. According to claims made by the touchglass manufacturer the touch screen surface finish is unaffected by exposure to the following chemicals for a period of one hour at 22 degrees C, 45% relative humidity. ASTM-F-1598-95.

Tea, Coffee, Ketchup , Mustard, Vinegar, Beer, Coca-Cola, Red Wine, Cooking Oil Wisk Laundry Detergent, Fantastik All Purpose Cleaner, Joy Dishwashing Liquid, Windex, Formula 409 Cleaner, Clorox Bleach (5.25%), Hydrogen Peroxide (3%), Lysol, Ethyl Alcohol, Isopropyl Alcohol Acetone, Methyl Ethyl Ketone (MEK), Toluene, Concentrated Hydrochloric Acid, Naptha, Mineral Spirits, Gasoline, 10W30 Motor Oil, Diesel Fuel, Transmission Fluid, Brake Fluid, Antifreeze, Hydraulic Oil.

Typically, isopropyl alcohol and water solution ratio of 50:50 is the best cleaning agent for your touch screen. You can also use straight isopropyl alcohol. As with any electronics, be sure to spray the cleaner onto a soft cloth and **NOT** directly onto the touch screen. It is important to avoid using any caustic chemicals on the touch screen. Be sure to follow solvent manufacturer's precautions and directions for use when using solvents.

Although the touchglass may withstand the above mentioned substances for a short period of time, the touchglass is **NOT** indestructible. It may still break and/or scratch if it is not treated with care and respect.

## **Aluminum Bezel**

The bezel is made from aluminum. Thus it can be very sensitive to chemical damage as well as scratches and dents. The bezel should be removed from the face of the unit before cleaning. The bezel should be cleaned with normal dish soap and water with a soft sponge. If a stronger cleaning solution is needed, then isopropyl alcohol can be used with a soft cloth. Over time with normal use, the bezel may become scratched and need to be resurfaced. This service can be performed at the Nobu factory for a small charge or can be done by the owner with the appropriate abrasive materials which are also available from Nobu.

## **Case**

Over time some dust may collect near or on the I/O ports on the top of the unit. The unit can be cleaned with compressed canned air or dusted with a light brush. The unit should be disconnected from any power source before cleaning.

# Limited Warranty

Nobu, LLC. warrants this Product to be free from defects in material and workmanship and, subject to the conditions set forth below, agrees to repair or replace (at Nobu's sole option) any part of the enclosed unit which proves defective for a period of ninety (90) days from the date of the first consumer purchase. Spare parts are warranted for thirty (30) days. Replacement parts or unit may be new or refurbished and will meet specifications of the original parts or unit.

This warranty gives you specific legal rights and you may also have other rights, which vary from state to state. This warranty is limited to the original purchaser of the Product and is not transferable. This warranty covers only Nobu-supplied components. Service required as a result of third party components is not covered under this warranty. In order to be covered under this warranty, the Product must have been purchased from a Nobu Authorized Dealer or directly from Nobu. Proof of purchase will be required by Nobu to substantiate date of purchase. Such proof of purchase must be an original bill of sale or receipt containing name and address of seller, purchaser, and the serial number of the product.

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- Non-Nobu branded and Solution Provider Direct products and accessories
- Products with missing or altered tamper-evident seals or serial numbers
- Products for which Nobu has not received payment.

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- Servicing not authorized by Nobu
- Usage that is not in accordance with product instructions
- Failure to follow the product instructions or failure to perform preventive maintenance
- Problems caused by using accessories, parts, or components not supplied by Nobu

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