



Empowering you to work smarter

# NRS2A

## Smart Refrigerant Scale

### User Manual



**NAVAC Inc.**  
[www.NavacGlobal.com](http://www.NavacGlobal.com)  
Tel/Fax: +1 877 MY-NAVAC  
+1 877 696 2822  
MADE IN PRC



Failure to follow warnings could  
result in death or serious injury.

**SAVE THIS MANUAL  
FOR FUTURE REFERENCE**

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## FCC Regulatory Compliance:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.



## Warning

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

## RF Exposure Compliance:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

## IC Regulatory Compliance:

This device complies with Industry Canada's licence-exempt RSSs. Operation is subject to the following two conditions:

- (1) This device may not cause interference; and
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux

conditions suivantes :

- (1) l'appareil ne doit pas produire de brouillage;
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment.

Cet équipement est conforme aux limites d'exposition au rayonnement du CI établies pour un environnement non contrôlé.

## I. Product Introduction

In order to correctly use this product, please carefully read this instruction manual in full prior to use, especially the Notes and Warnings.

The NRS2A is a wireless smart e-Scale developed with NAVAC's advanced technology and innovative design concepts. It is primarily used for the installation and maintenance of HVAC systems, allowing precise refrigerant weight settings for charging systems, recovering refrigerant from existing systems, and issuing warning alerts upon completion. The scale is FCC and IC certified.

Designed with service technicians in mind, the NRS2A features a magnesium alloy cast scale plate for enhanced durability, while its lightweight design and storage bag improve portability. The handheld keypad is designed for ease of operation, providing convenient control and interaction with the scale.



## Note

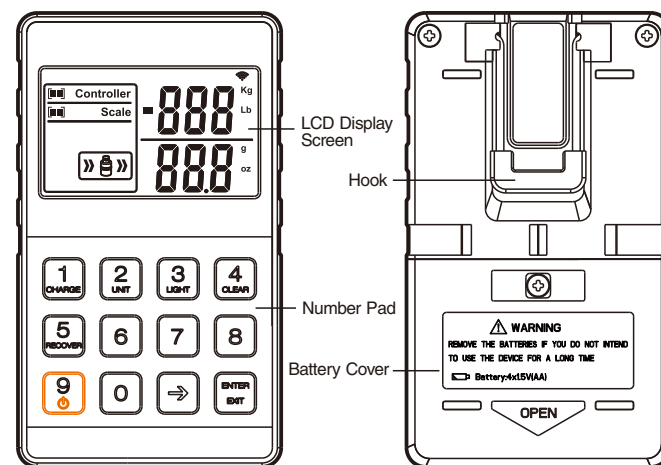
The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications. Such modifications may void the user's authority to operate the device.

## II. Functional Parameters

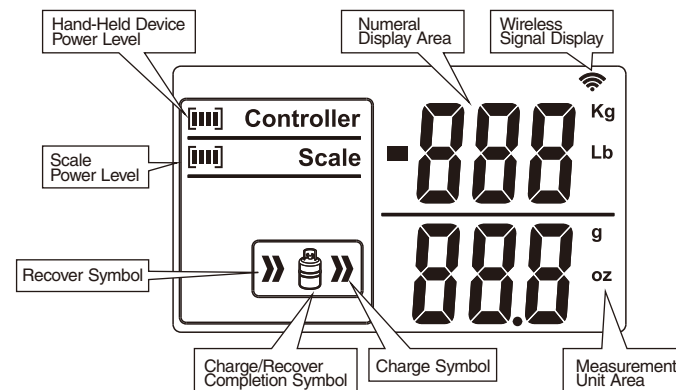
|                  |                            |
|------------------|----------------------------|
| Model            | NRS2A                      |
| Maximum Weight   | 220 lbs                    |
| Resolution       | 0.2 oz                     |
| Accuracy         | 0.05% F.S.                 |
| Power Source     | 4xAA, 4xAAA                |
| Work Environment | 14~104 °F                  |
| Scale Dimensions | 8.25"x10.2"                |
| Weight           | 4.3 lbs                    |
| Bluetooth Range  | 100 ft (30m) line of sight |

## III. Product Description

## 1. Diagram

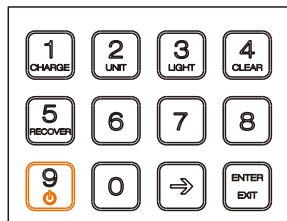


## 2. LCD Display Screen Description



## IV. Operating Instructions

## 1. Button Function Description



| No. | Button | Function Description                                                                                                                         |
|-----|--------|----------------------------------------------------------------------------------------------------------------------------------------------|
| 1   |        | Combo button: Numeric button 1 and Charge button.                                                                                            |
| 2   |        | Combo button: Numeric button 2 and Measurement unit switch button.                                                                           |
| 3   |        | Combo button: Numeric button 3 and backlight On/Off button, The backlight automatically turns off after 30 seconds of inactivity by default. |
| 4   |        | Combo button: Numeric button 4 and Clear button.                                                                                             |
| 5   |        | Combo button: Numeric button 5 and Recover button.                                                                                           |
| 6   |        | Numeric button 6                                                                                                                             |
| 7   |        | Numeric button 7                                                                                                                             |
| 8   |        | Numeric button 8                                                                                                                             |
| 9   |        | Combo button: Numeric button 9 and Power On/Off button                                                                                       |
| 10  |        | Numeric button 0.                                                                                                                            |
| 11  |        | Shift button.                                                                                                                                |
| 12  |        | Combo button: Enter and Exit button.                                                                                                         |
| 13  |        | Power button                                                                                                                                 |
| 14  |        | Wireless synchronous communication key                                                                                                       |

**Note:**

The numeric buttons are functional only in Charge or Recovery modes, while the remaining buttons are used for other functions. Once pairing is successfully established, pressing and holding the power On/Off button on the handheld device will power off both units.

## 2. Operating Instructions for Specific Functions

## 2.1 Start-Up Mode

The hand-held keypad and scale are pre-linked. Press the power button on the keypad to turn on both the keypad and the scale. When linked, the blue wireless connection light remains steady, and the LCD screen displays the wireless signal and power status. The scale is now in standard weighing mode.

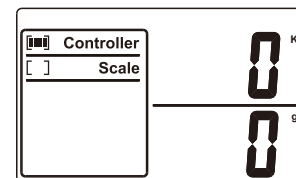
**Note:**

- The hand-held keypad automatically shuts down after 5 minutes if it fails to connect to the scale. If connection succeeds, the scale will turn off automatically if the weight on the scale does not change within 30 minutes. The scale restarts and displays the actual weight if the weight on the scale changes by more than 4.4 lbs.
- Overweight alarm warning: The LCD screen displays "OL" when the weight exceeds the maximum range, and the buzzer will sound in order to alert you that you may damage the electronic scale. Remove the excess weight from the scale immediately to prevent damage.
- If the keypad and scale fail to sync, follow the Bluetooth synchronization method described in Section 2.7.

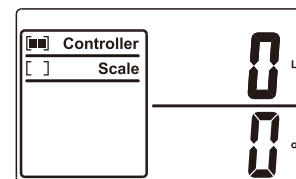
## 2.2 Measurement Unit Setting

With measurement unit setting, you can switch between kg + grams and lbs. + oz.

- After turning on the hand-held device, the LCD screen displays the default unit: kg + g:



- Depending on the different requirements, press the key, and the weighing unit will switch to lbs + oz, which will be displayed as below:



## 2.3 BackLight Setting

You can turn the backlight on or off as needed. The default setting is no light. Press the button to turn the light on, and press it again to turn it off. The light stays on for 30 seconds. After 30 seconds the light will turn off automatically if the scale is not in use.

## 2.4 Clear Setting

In the standard weighing mode, pressing , the weight value of the item on the scale will be set to zero.

The scale automatically resets to "0" if the weight on the scale is less than 4.4 lbs or changes by more than 4.4 lbs, without affecting actual weight data.

Note:

While using the Clear program, ensure the vessel on the scale is in weight normal range, and the weight does not exceed the measuring range of the scale.

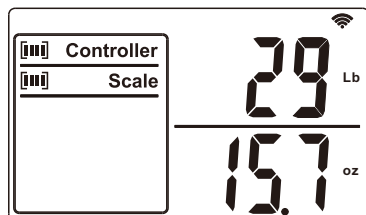
## 2.5 Charge Mode Operation

This function allows users to rapidly and safely add refrigerant to the system. After entering "Charge" mode, input the desired charge value and begin charging. The minimum charge amount is 1.8 oz.

a. Turn on the scale.

b. Place the refrigerant container on the scale.

Wait until the reading stabilizes, displaying the total weight of the container. For example, if the container's total weight is 29 lbs + 15.7 oz, the display will show:



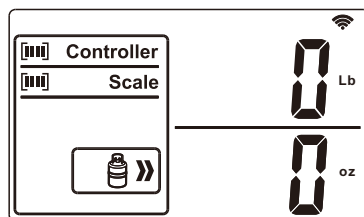
c. Activate the "Charge" function.

Press the , and the LCD screen will display the "Charge" function symbol. Enter the net weight of the refrigerant to be added. After pressing the ENTER button , the net weight to be charged will be displayed.

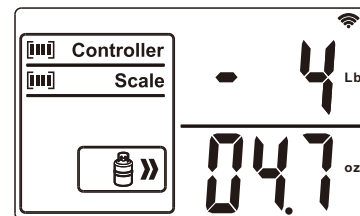
Example:

If you want to add 4 lbs + 6.5 oz of refrigerant:

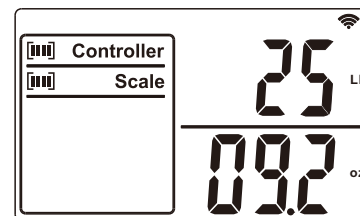
- First, press the .
- Next, enter the value "0-0-4-0-6-5" on the number pad according to the flashing prompt on the LCD.
- Finally, press ENTER button , and the display will show: 4 lbs 6.5 oz



- d. After entering Charge mode,  the charge symbol  will begin to flash. When the remaining charge volume reaches 1.8 oz, the scale will sound an alarm, and the Charging/Recovery Complete  symbol will begin to flash, indicating that the charging process is about to finish. The following will be displayed:



- e. When the charge weight reaches the preset amount, charging is complete. At this point, you need to manually terminate the system charging and press the  to silence the alarm. The LCD screen will then display the gross weight of the refrigerant container.



### Note:

If you make an error while entering the charge input value, press the  to move the flashing cursor to the digit that needs to be corrected. Re-enter the correct value to adjust the charging weight.

After the hand-held device starts up, the charging default is set to 0. Pressing Charge again will display the measurement of the last charge. You can reset the charging weight at this time.

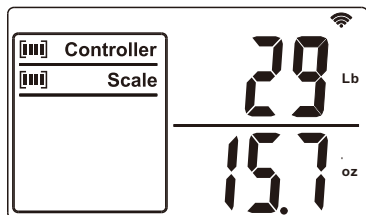
## 2.6 Recover Mode Operation

This function allows users to rapidly and safely recover refrigerant from the system. After entering Recover mode, input the recover value to start recovery process. The recovery volume must be at least 1.8 oz .

a. Turn on the scale.

b. Place the refrigerant container on the scale.

Wait until the reading stabilizes, displaying the total weight of the container. For example, if the container's total weight is 29 lbs + 15.7 oz, the display will show:



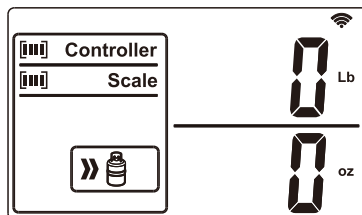
c. Activate the Recover function.

Press the Recover button , and the LCD screen will display the recover symbol. Enter the desired net recovery value, then press Enter . At this point, the net weight of refrigerant recovered into the container will be displayed.

Example:

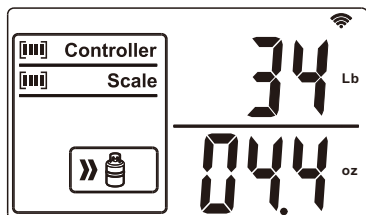
To recover 4 lbs + 6.5 oz of refrigerant:

- First, press the Recover button .
- Enter "0-0-4-0-6-5" on the keypad according to the flashing prompt on the LCD screen.
- Then press Enter , and the display will show:



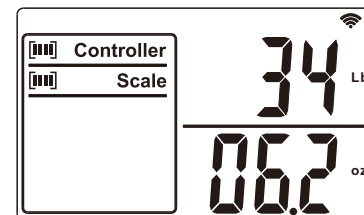
d. Recovery progress and alarm notification.

After entering Recover mode,  the recovery symbol will begin to flash. When the remaining recovery volume reaches 1.8 oz, the scale will sound an alarm, and the Charge/Recover Complete symbol  will flash, indicating the recovery process is almost complete. The display will show:



e. Completing the recovery process.

When the recovered weight reaches the preset recovery amount, recovery is complete. You can manually stop the recovery process by pressing  the Stop button, which will also silence the alarm. At this point, the LCD screen will display the gross weight of the refrigerant container.



#### Note:

- If you make an error during the recovery input process, press the Shift button  to move the flashing cursor to the incorrect digit. Re-enter the correct value to adjust the recovery weight.
- Upon startup, the default mode is Charge with a weight of 0. Press Recover to switch to recovery mode. The last recovery amount will be displayed, and you can modify it as needed.

#### Warnings:

- The recovered refrigerant volume must not exceed 80% of the total capacity of the refrigerant container.
- Over-filling recovery vessels is extremely dangerous and must be avoided!

### 2.7 Bluetooth Synchronization Setup

a. Turn on the scale.

Press and hold the power button on the scale for 1 second  to turn it on. The sync light will begin to flash.

b. Enter the synchronization program on the handheld keypad.

With the handheld keypad powered off, press the buttons in the following sequence: ENTER button , , , , .

- The handheld device will enter the sync program. The LCD screen will display a sync indicator , and the alarm will buzz.
- Synchronization will be completed within 1 minute. Once complete, the LCD will display a , and the alarm will buzz for 2 seconds.
- The new MAC address will be saved, and the handheld keypad will turn off automatically.

#### Note:

- If synchronization is not completed within 1 minute, the handheld device will remain out of sync. It will retain the previous MAC address, and the device will turn off automatically.
- If synchronization fails three consecutive times, contact technical support for assistance.

### 2.8 Instruction

If the scale becomes inaccurate due to a severe impact, it must be recalibrated. Please return the scale to NAVAC or an authorized distributor for repair and calibration.

## V. Maintenance

## 1. Cleaning the Scale:

Use only a moist cloth and a small amount of cleaning fluid to clean the scale's surface. Avoid using chemical solvents as they may damage the product.

## 2. Repair and Warranty:

For repairs, contact an authorized NAVAC dealer. Opening the device by an individual or a non-authorized company will void the warranty.

## 3. Power and Battery Management:

Turn off the scale after use. If the scale will be idle for an extended period, remove the battery to prevent damage.

## 4. Storage Guidelines:

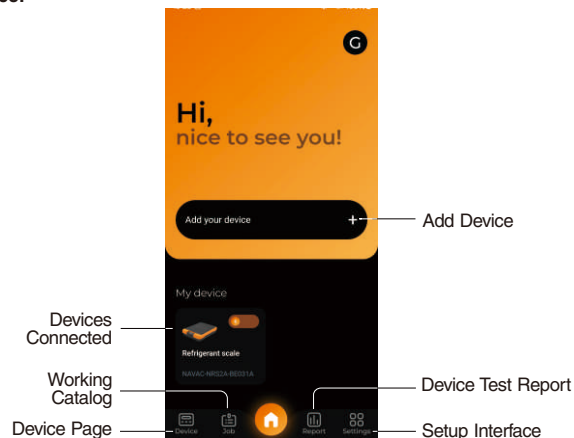
Store the scale in a dry, cool, and non-magnetized location. Avoid exposure to moisture, high temperatures, or strong magnetic fields.

## VI. Accessory List

| Ref No. | Part Name                                | Qty |
|---------|------------------------------------------|-----|
| 1       | Scale (scale plate and hand held device) | 1   |
| 2       | User Manual                              | 1   |
| 3       | 1.5V AA Alkaline Battery                 | 4   |
| 4       | 1.5V AAA Alkaline Battery                | 5   |
| 5       | Bag                                      | 1   |

## VII. Page Introduction

## Main Interface:



## Device Page:

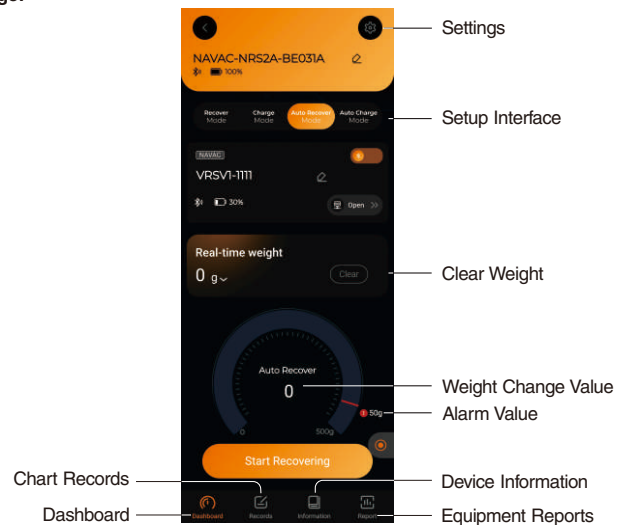
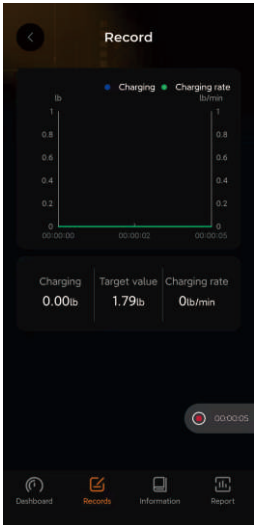


Chart Record:



Device Information:

The 'Device Information' interface shows the following details:

- Mac Address: FC:8F:36:BE:03:1A
- Added Date: 2025-01-21 10:35:43
- Additional information: >

A red circular button with a play icon and a timer '00:00:10' is located at the bottom right.

Choose Refrigerant:

The 'Choose Refrigerant' interface displays a list of refrigerant options. R11 is selected, indicated by a checkmark in a circle.

- R11 (Selected)
- R1123
- R113
- R114
- R115
- R1150
- R116
- R12
- R1216
- R1224ydZ
- R123
- R1233ZD
- R1233zdE

A red circular button with a play icon and a timer '00:00:10' is located at the bottom right.

Setup Interface:

The 'Settings' interface includes the following sections:

- Mode:** Scale, Recover, Charge, Auto Recover (Selected), Auto Charge. *Selection of Setting Mode*
- Select Unit:** g. *Weight Unit Selection*
- Target value:** 500 g. *Target Weight Setting*
- Set alarm value of remaining tank capacity:** 50 g. *Residual Alarm Value Setting*
- History Setting:** Last Setup. unit: g, mode: Auto Recover, Set target/alarm value of remaining tank capacity: 500/450. *Historical Setting Parameters List*

A red circular button with a play icon and a timer '00:00:10' is located at the bottom right.