Making Your Job More Enjoyable

Wireless Refrigerant Scale
NRS2i01
User Manual

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

**SAVE THIS MANUAL
FOR FUTURE REFERENCE**

Dear customer:

We are very happy that you have decided to purchase one of the all new NAVAC series of products.

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

⚠ Note

The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user authority to operate the equipment.

⚠ 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.

CONTENT

Product introduction

NRS2i01 is a wireless smart e-Scale that is supported by NAVAC's advanced technology and all new design concepts. Its primary use is for installation and maintenance of HVAC systems, to set exact refrigerant weights for charging systems, and when recovering refrigerant from existing systems, and issue warning alerts when finished. It is approved and has FCC, IC and RED certifications.

The product was designed primarily from the perspective of the service technician. It is a magnesium alloy cast scale plate design, and the storage bag makes it light and easy for users to carry. The hand-held scale keypad design makes it easy for users to both retrieve and store. The internal storage compartment for remote keypad inside the scale provides better protection and a longer life for the keypad device.
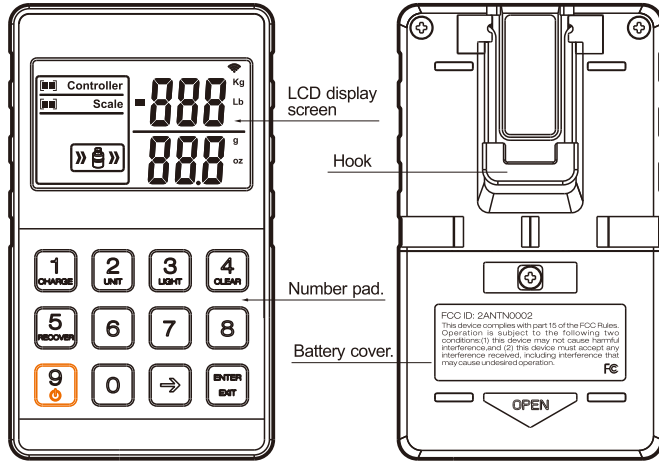
Functional parameters

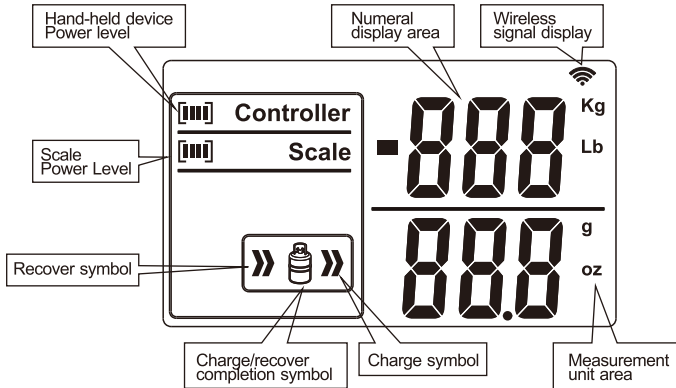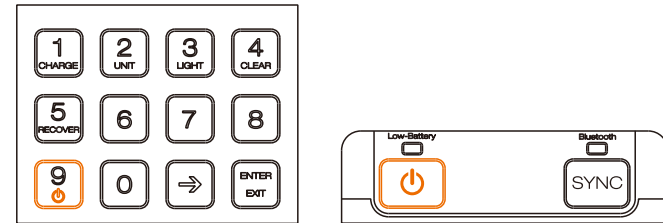| Model	NRS2i01
Maximum weight	220Lb
Resolution	0.2oz
Accuracy	0.05%
Power source	4×AA, 4×AAA
Work environment	14~104 ℉
Scale dimensions	8.25x10.2
Weight	3.3 lbs
Wireless broadcast distance	32.8 feet, it recommended that normal weighing within 16.4 feet, function operation within 9.8 feet

Product description

1. Diagram

Scale Platform

Storage Compartment

Control panel

Base

Scale Keypad

LCD display screen

Hook

Number pad.

Battery cover.

FCC ID: 2ANTN0002
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.

OPEN

2. LCD Display Screen Description

Hand-held device Power level

Scale Power Level

Recover symbol

Numeral display area

Wireless signal display

Controller

Scale

Kg
Lb

g

oz

Charge/recover completion symbol

Charge symbol

Measurement unit area

Operating instructions

1. Button function description

Low-Battery   Bluetooth

SYNC

No.	Button	Function description
1	1 CHARGE	Combo button: Numeric button 1 and Charge button.
2	2 UNIT	Combo button: Numeric button 2 and Measurement unit switch button.
3	3 LIGHT	Combo button: Numeric button 3 and Back light On/Off button, Automatically close after 30 seconds by default
4	4 CLEAR	Combo button: Numeric button 4 and Clear button.
5	5 RECOVER	Combo button: Numeric button 5 and Recover button.
6	6	Numeric button 6
7	7	Numeric button 7
8	8	Numeric button 8
9	9	Combo button: Numeric button 9 and Power On/Off button
10	0	Numeric button 0.
11	⇒	Shift button.
12	ENTER EXIT	Combo button: Enter and Exit button.
13	⏻	Power button
14	SYNC	Wireless synchronous communication key

Note:

The numeric buttons can only be used in Charge or Recovery modes, the remaining are all function buttons. Once successful pairing is established, pressing and holding the hand-held device power On/Off button will switch off both units.

2. Operating instructions for specific functions

2.1. Start-up mode

Hand-held keypad and scale have passed a sync test before leaving the factory. Switch on the keypad by pressing the power key. This will turn on both the keypad and scale. When it successfully links with the scale, the blue wireless connection indicator light stays on, and both wireless signal indication and power are displayed on the LCD screen. The scale is now in standard weighing mode.
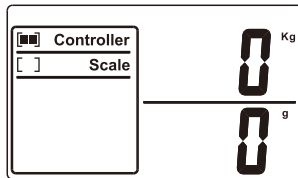
Note:

1. The hand-held keypad will be automatically shut down after 5 minutes if it fails to connect the scale. If connection succeeds, the scale will turn off automatically if the weight on the scale does not change within 10 minutes. The scale will restart and actual weight will be displayed when the weight on the scale more changes more than 4.4 lbs.
2. Overweight alarm warning: the LCD screen display "OL" as if weight exceeds the maximum weight 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.
3. If the keypad and scale fail to synch, please verify that the last four digits of the serial numbers on both units are the same. If they are different, please call our office for guidance.
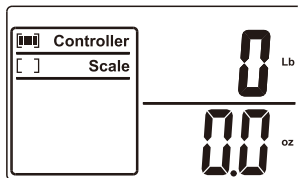
2.2. Measurement unit setting

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

1. After switching on the hand-held device, the LCD display will be as follows (the default unit is kg +g):

```
┌─────────────────────────────┐
│  ▣▣ Controller        Kg    │
│  [ ]  Scale        ┌──       │
│                    │  │      │
│                    └──       │
│                    ┌──  g    │
│                    │  │      │
│                    └──       │
└─────────────────────────────┘
```

2. Depending on the different requirements, press the 2 key, and the weighing unit will switch to Lb + oz, which will be displayed as bellow:

```
┌─────────────────────────────┐
│  ▣▣ Controller        Lb    │
│  [ ]  Scale        ┌──       │
│                    │  │      │
│                    └──       │
│                    ┌─┐┌─┐ oz │
│                    │ ││ │    │
│                    └─┘└─┘    │
└─────────────────────────────┘
```

2.3. Back-light setting

You can turn on/off the back-light, based on different conditions. The default setting is no light. Press the 3 button in order to switch on the light, and press it again to switch it off. The light stays

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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 4, the weight value of the item on the scale will be set to zero. Pressing ENTER, will return from Clear mode, and display the actual weight of the item.

The scale zeros off automatically and data display goes to "0" if weight on the scale is less than 4.4 lbs, or more than 4.4 lbs without making any changes to output with actual weight data.
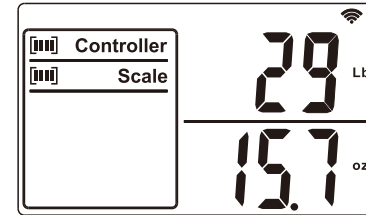
Note:

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.
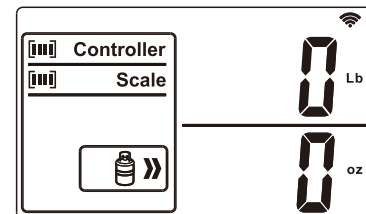
2.5. Charge mode operation

The user can use this function to rapidly and safely add refrigerant to the system. After entering the "Charge" mode, enter the charge value, and start charging. The minimum charge amount is 1.8 oz.

1. Switch on the scale.
2. Place the refrigerant container on the scale, and wait until the reading stabilizes, displaying total weight of the container. For example, if the container's total weight is 29Lb+15.7oz, the display will be as follows:

```
┌─────────────────────────────┐
│ [▥] Controller        ╲≈╱   │
│                             │
│ [▥]   Scale     ┌─┐┌─┐  Lb  │
│                 ┌─┘│ │       │
│                 └─┐└─┘       │
│                 ───────────  │
│                 ┌─┐┌─┐       │
│                 │ └┘ │  oz   │
│                 └─┐┌─┘       │
│                 └─┘└─┘.      │
└─────────────────────────────┘
```

3. Press 1 and the LCD screen will display the "Charge" function sign. Then enter the net weight of the refrigerant to be added, and after pressing the ENTER button, the net weight to be charged will be displayed. For example, if you want to add 4lbs+6.5oz of refrigerant, first press 1, then enter "0-0-4-0-6-5" on the number pad based on the LCD flash figure, then press ENTER. The following will be displayed.

```
┌─────────────────────────────┐
│ [▥] Controller        ╲≈╱   │
│                             │
│ [▥]   Scale            Lb   │
│                    ┌──       │
│                    │  │      │
│                    └──       │
│  ┌────────┐        ┌── oz    │
│  │ 🍶 》  │        │  │      │
│  └────────┘        └──       │
└─────────────────────────────┘
```

4. After entering Charge mode, **》** of the charge symbol [🔋》] will begin to flash. When the charge volume is down to the last 1.8oz, the scale will begin to sound an alarm, and Charging/Recovery Complete Sign [🔋] will begin to flash, indicating to the user that charging is about to finish. The following will be displayed:
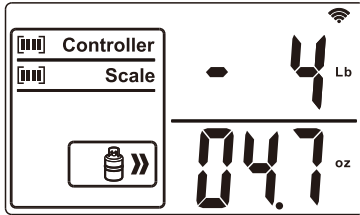
5. When the charge weight reaches the set charge amount, charging is complete, then you will manually terminate the system charging, and press [⊡] and the alarm stops. At this point the LCD screen will display the gross weight of the refrigerant container.
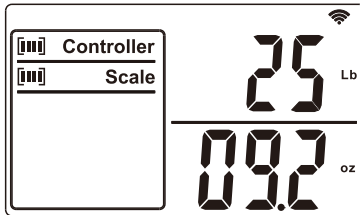
Note:

During the charge input entering process, if there is an input error need to be re-entered, you only need to press the shift button [→], to move the flashing figure to the position of the figure to be corrected. Re-enter the correct figure to complete the correction of the charging weight.

Charging default is 0 after hand held start-up, and press again "charge" 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 .

1. Switch on the scale.
2. Place the refrigerant container on the scale and wait until the reading stabilizes, displaying the total weight of the container. For example, if the total weight of the container is 29 lbs+15.7oz, the

display will be as follows:
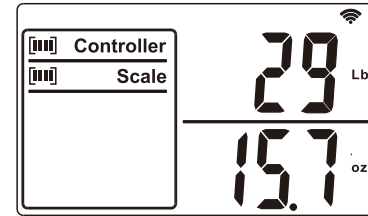
3. Press the recover button [5] and the LCD screen will display the recover symbol. Enter the net value you wish to recover, and press Enter [ENTER]. At this point the net weight of refrigerant recovered to the container from the system will be displayed. For example, if you want to recover 4 lbs+6.5oz of refrigerant, first press the recover button [5], then enter "0-0-2" via the key pad in accordance with the flashing number on the LCD display screen, before pressing [ENTER]. The display will be as follows:
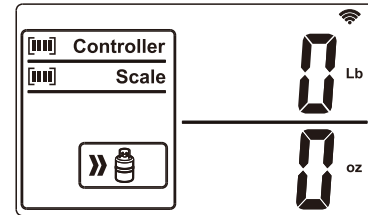
4. After entering Recover mode, **》** of the recover symbol [🔋》] will begin to flash. When the recover weight is down to 1.8oz left to go, the scale will begin to issue an alarm sound, and the charge/recover completion symbol [🔋] will begin to flash, telling the user that the recover is about to finish. The display is as follows:
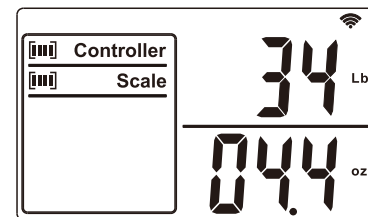
5. When the recovered weight reaches the pre-set recovery weight, recovery is completed, and you can manually end system recovery by pressing [SET], and the alarm will stop. At this point the LCD screen will display the gross weight of the refrigerant container.
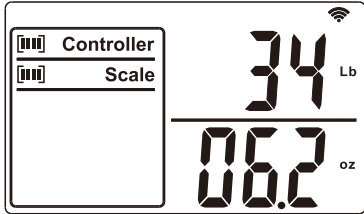
Note:
During the recover input entering process, if there is an input error needed to be re-entered, you only need to press the shift button [→], to move the flashing figure to the position of the figure to be corrected and re-enter the amount to correct the recovery weight.
When turning on the scale, the default is in charging and the default is 0 at start-up, press again to display "recover" and amount of the last recovery will be displayed. You can then change to the required amount to be removed from the system.

Warning:
The recovered refrigerant volume cannot exceed 80% of the total capacity of the refrigerant container. Over-filling recovery vessels is extremely dangerous!

2.7. Bluetooth Synchronization Setup

If the handheld keypad or scale needs to be changed, you will need to synchronize the Bluetooth connection as follows:
1. On the SCALE press and hold 1 second [⏻] to turn on only the scale, then the sync light will flash.
2. With the handheld keypad OFF, press in [ENTER SET], [→], [2], [4], [5] sequence, then the handhold device enters sync program, the LCD will show ● ● ● and the alarm will buzz. The sync will be done within 1 minute, and the LCD will display bCC, the alarm will buzz for 2 seconds. It will save the new MAC address and the handheld keypad will turn off automatically.

Note:
If the sync is not done within 1 minute, the handhold device is still out of sync. It will keep the previous MAC address, and the handheld device turns off automatically. If synchronization fails three consecutive times, please call for technical support.

2.8. Instruction

If the scale needs to be calibrated due to inaccuracy caused by severe impact, please return to NAVAC or an authorized distributor for repair.

Maintenance

1. Only use a moist cloth and a small amount of cleaning fluid when cleaning the surface of the scale. Avoid using chemical solvents to wipe the product.
2. If repair is required, contact a NAVAC dealer company. Once the device is opened by an individual or non-authorized company, we will no longer provide warranty.
3. After finishing usage, promptly turn off the scale. When left idle for long-periods, promptly remove the battery.
4. Do not store the scale in moist, high-temperature or magnetized locations.

Accessory list

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　4
5. Bag　1