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Ver. No.: Y2025M05

VALUE®

VALUE Creates Value

Making Your Job More Enjoyable

Smart Refrigerant Scale

VRS2A

VALUE • Quality Assurance

CE

CONTENT

Making Your Job More Enjoyable VALUE

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 VRS2A is a wireless smart e-Scale developed with VALUE'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 VRS2A 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.

Warning

This device 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 device generates, uses, and can emit 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 device does cause harmful interference to radio or television reception, which can be determined by turning the device 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.

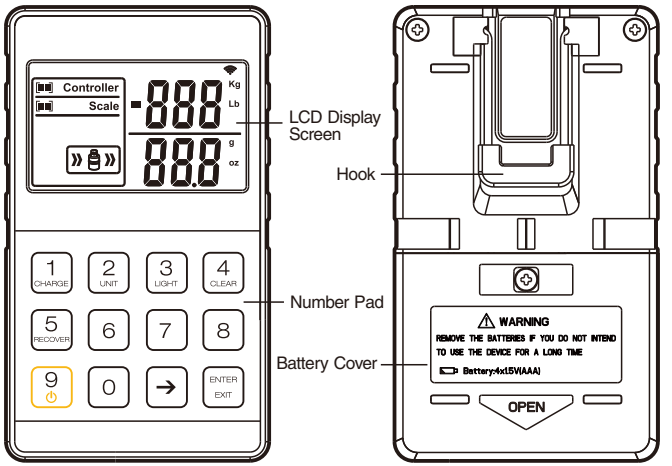
- Increase the separation between the device and the receiver.
- Connect the device to an outlet on a different circuit than the one the receiver is connected to.
- Consult the dealer or an experienced radio/TV technician for assistance.

II. Functional Parameters

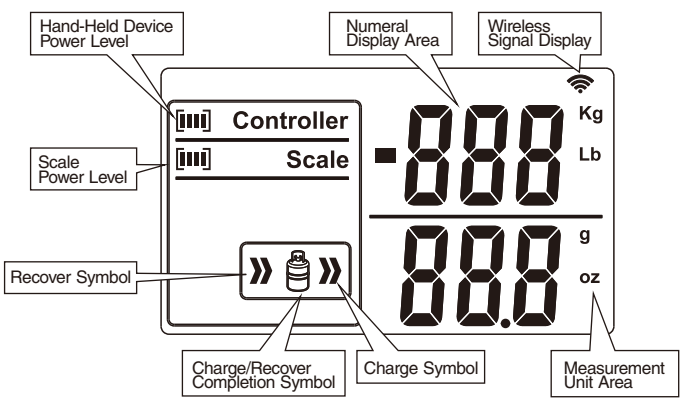
Model	VRS2A
Location	Indoor/Outdoor
Altitude	≤5000 m
Environmental Conditions	Humidity in the opera tingarea: ≤75% RH
Maximum Weight	220 lbs
Resolution	0.2 oz
Accuracy	0.05% F.S.
Power Source	4×AA, 4×AAA
Work Environment	14~104 °F
Scale Dimensions	8.25"x10.2"
Weight	4.3 lbs
Bluetooth Range	100 ft (30m) line of sight

III. Product Description

1. Diagram

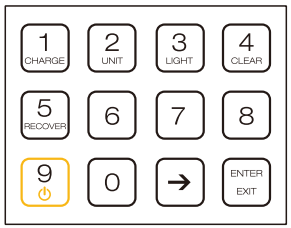


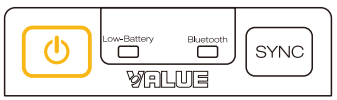
2. LCD Display Screen Description



IV. Operating Instructions

1. Button Function Description





No.	Button	Function Description
1	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 backlight On/Off button, The backlight automatically turns off after 30 seconds of inactivity 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 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:

a. 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.

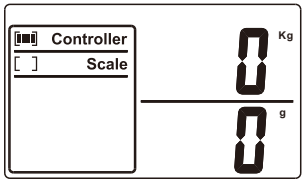
b. Overweight alarm warning: The LCD screen displays "OL" when the weight exceeds the maximum range, and the buzzer will sound in order to alert you that you may damage the electronic scale. Remove the excess weight from the scale immediately to prevent damage.

c. If the keypad and scale fail to sync, follow the Bluetooth synchronization method described in Section 2.7.

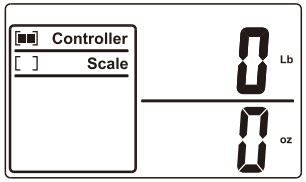
2.2 Measurement Unit Setting

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

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



b. Depending on the different requirements, press the 2 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 3 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 [4 CLEAR], 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:

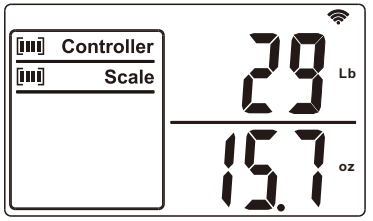
While using the Clear program, ensure the vessel on the scale is in weight normal range, and the weight does not exceed the measuring range of the scale.

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.

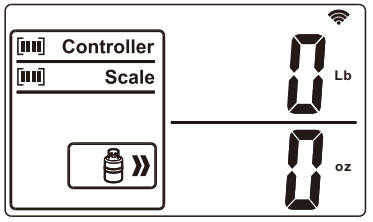
a. Turn on the scale.

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:

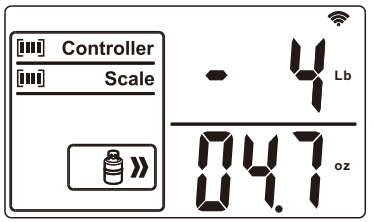


c. Activate the “Charge” function.
Press the [1 CHARGE], and the LCD screen will display the “Charge” function symbol. Enter the net weight of the refrigerant to be added. After pressing the ENTER button [ENTER SET], the net weight to be charged will be displayed.
Example:
If you want to add 4 lbs + 6.5 oz of refrigerant:

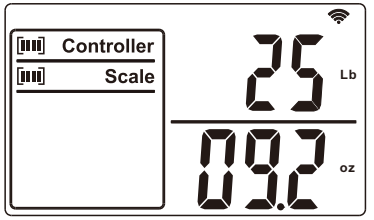
- First, press the [1 CHARGE].
- Next, enter the value “0-0-4-0-6-5” on the number pad according to the flashing prompt on the LCD.
- Finally, press ENTER button [ENTER SET], and the display will show:4 lbs 6.5 oz



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.

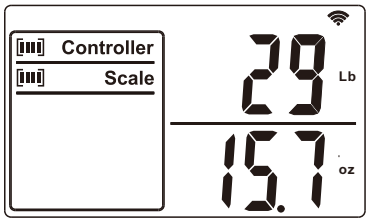
After the hand-held device starts up, the charging default is set to 0. Pressing Charge again will display the measurement of the last charge. You can reset the charging weight at this time.

2.6 Recover Mode Operation

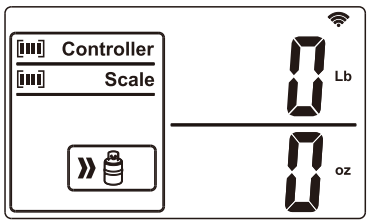
This function allows users to rapidly and safely recover refrigerant from the system. After entering Recover mode, input the recover value to start recovery process. The recovery volume must be at least 1.8 oz .

a. Turn on the scale.

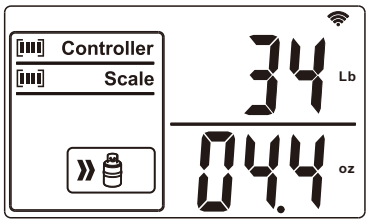
b. Place the refrigerant container on the scale.
Wait until the reading stabilizes, displaying the total weight of the container. For example, if the container's total weight is 29 lbs + 15.7 oz, the display will show:



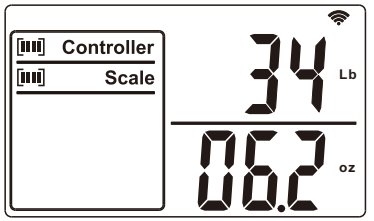
c. Activate the Recover function.
Press the Recover button [5], and the LCD screen will display the recover symbol. Enter the desired net recovery value, then press Enter [ENTER]. At this point, the net weight of refrigerant recovered into the container will be displayed.
Example:
To recover 4 lbs + 6.5 oz of refrigerant:
- First, press the Recover button [5].
- Enter "0-0-4-0-6-5" on the keypad according to the flashing prompt on the LCD screen.
- Then press Enter [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 [ENTER] 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 [ENTER], [→], [2], [4], [5].
- 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 "brC", 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.

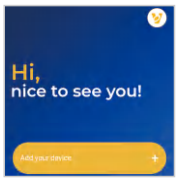
VI. Accessory List

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	4
5	Bag	1

VII. Page Introduction

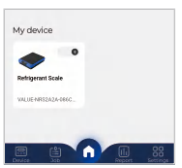
1. Connecting the Device

1.1 Turn on your phone's Bluetooth and power on your device. On the main interface, tap the "+" icon next to "Add Your Device" to start searching for devices.



1.2 Locate the target device to be connected, tap the "+" in the upper right corner, and wait for the connection to be established.

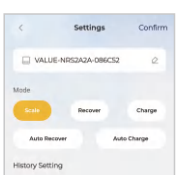
1.3 Once successfully connected, tap the device icon to access the device interface.



1.4 After the first successful connection, subsequent connections only require turning on the device. When the corresponding product box under "My Devices" changes from gray to bright, tap " " to successfully establish the connection.

2. Device Main Interface

2.1 After entering the device main interface, functional modes can be selected through the tab bar, or functional parameters can be set through the settings page (after setting the corresponding mode parameters, click Confirm or automatically jump to the function page). Functional modes include: Weighing Mode, Recovery Mode, Charging Mode, Auto Recovery Mode, Auto Charging Mode.



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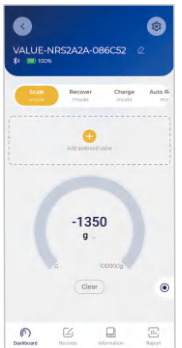
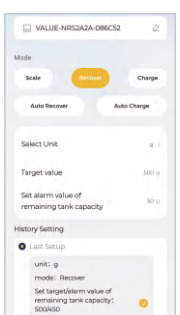
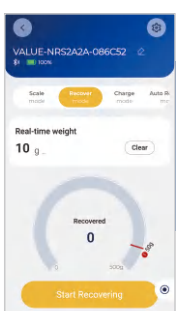
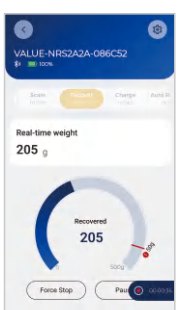


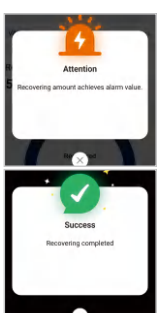
2. 2 Weighing Mode displays weight in real time and supports weight unit switching: click the arrow below the weight value to select the corresponding unit; Tare function: click Zero to achieve tare.

2.3 Recovery Mode is used for refrigerant recovery. In the Recovery Mode settings page, select weight unit and fill in recovery target value and alarm value; when performing refrigerant recovery operation, the recovery function page will display the refrigerant recovery amount in real time. When the remaining amount reaches the alarm value, a pop-up window will appear with an alert sound; when recovery is completed, a pop-up window will also prompt the end of recovery.

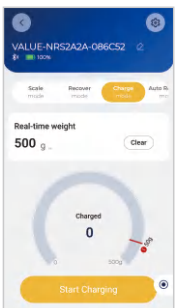


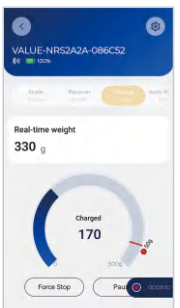


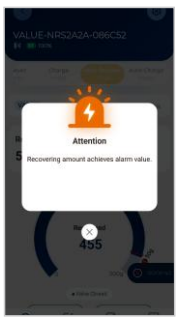


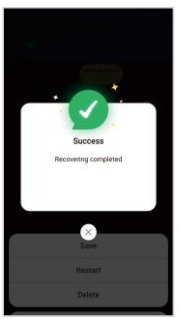


2.4 Charging Mode is used for refrigerant charging. In the Recovery Mode settings page, select weight unit and fill in charging target value and alarm value; when performing refrigerant charging operation, the charging function page will display the refrigerant charging amount in real time. When the remaining amount reaches the alarm value, a pop-up window will appear with an alert sound; when charging is completed, a pop-up window will prompt the end of charging.

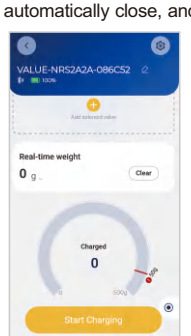


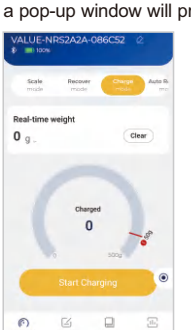


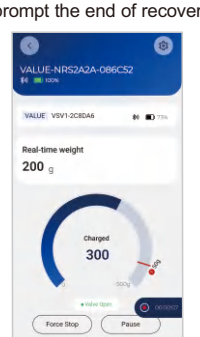


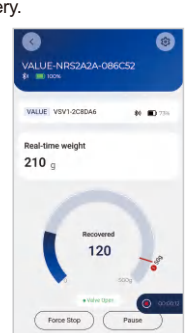


2.5 Auto Recovery Mode is used for automatic refrigerant recovery. In the Auto Recovery Mode settings page, select weight unit and fill in recovery target value and alarm value; before operation, valves need to be added. Click Start to perform refrigerant recovery, and the app will automatically open the valves; the Auto Recovery function page will display the refrigerant recovery amount in real time. When the remaining refrigerant recovery amount is 100g, the app controls the valves for pulse switching; when the remaining amount reaches the alarm value, a pop-up window will appear with an alert sound; when recovery is completed, the valves will automatically close, and a pop-up window will prompt the end of recovery.

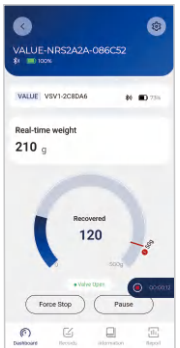




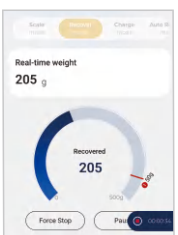


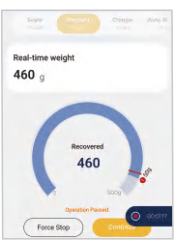


2.6 Auto Charging Mode is used for automatic refrigerant charging. In the Auto Charging Mode settings page, select weight unit and fill in charging target value and alarm value; before operation, valves need to be added. Click Start to perform refrigerant charging, and the app will automatically open the valves; the Auto Charging function page will display the refrigerant charging amount in real time. When the remaining refrigerant charging amount is 100g, the app controls the valves for pulse switching; when the remaining amount reaches the alarm value, a pop-up window will appear with an alert sound; when charging is completed, the valves will automatically close, and a pop-up window will prompt the end of charging.

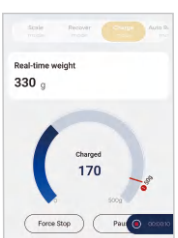


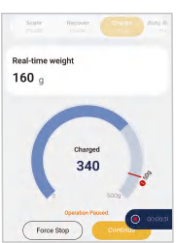
2.7 Recovery/Charging/Auto Recovery/Auto Charging functions have pause function. For example, when replacing cylinders, the operation can be paused. In automatic mode, forced exit will automatically control valve closure. After cylinder replacement is completed, click Continue to resume the previous charging or recovery process.



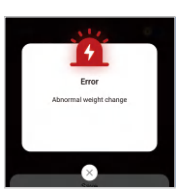


2.8 Recovery/Charging/Auto Recovery/Auto Charging functions have forced exit function. Click the Forced Exit button to exit the charging or recovery process. In automatic mode, forced exit will automatically control valve closure.



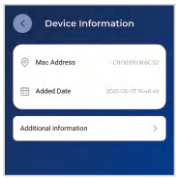


2.9 Auto Recovery/Auto Charging functions have abnormal weight prompt function: during automatic charging or recovery process, if the recovery amount or charging amount remains abnormally unchanged, the app will pop up a window to prompt abnormal weight, automatically close the valves, and end the process.



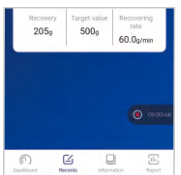
3. Device Information

3.1 Tap “Info” from the bottom navigation bar to access the device information page, where you can view device's relevant details.



4. Data Recording

4.1 Tap “Record” from the bottom navigation bar to access the data recording interface. Tap “ ◉ ” to start recording data, and tap “ ■ ” to stop the recording and generate a report.

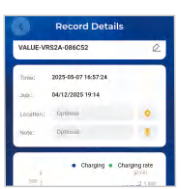


5. Viewing Test Reports

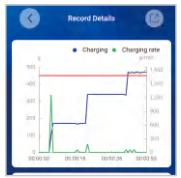
5.1 Tap “Report” from the bottom navigation bar to view the current device’s test reports.

5.2 Tap “ 📊 ” on the home page to view test reports for all devices.

5.3 Select the desired test report to open the report page, then tap the “Share” button. A pop-up window will prompt you to select the file type and interval for the test report.



5.4 Once the file type and interval are confirmed, a data table will be automatically generated. Tap "↗" in the upper right corner to share the test report.



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