



Making Your Job More Enjoyable

Digital Manifold Gauge  
VRM2-0101i



VALUE Mechanical & Electrical Products CO., LTD  
Add: Jiulong Avenue, Western Industrial District, Wenling, Zhejiang, China  
Tel: +86-576-86191959 Fax: +86-576-86191957  
Email: value@worldvalue.cn www.worldvalue.cn

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NAVTEK™  
High-end Series

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## Safety Instruction

### 1. Safety Guide

- 1.1 Do not use the product in dangerous places or on a moving object.
- 1.2 Only qualified service personnel should maintain and repair this product.
- 1.3 If the product gets external collision or falls to the ground, it may be damaged or cause damage of refrigerant hoses. It is recommended to check up the manifold gauge and hoses.
- 1.4 Wear safety glasses and gloves to avoid gas or liquid contact with eyes and skin.

### 2. Environmental Protection

- 2.1 Dispose used batteries according to local recycling laws.
- 2.2 Avoid release of refrigerant in open air.

## Product Performance

### 1. Application

- 1.1 This gauge has been designed to maintain and repair HVAC systems. The product is intended to be used by trained technicians.
- 1.2 It is an integration of traditional manifold gauge with electronics to digitally display the system pressure and temperature.
- 1.3 Suitable for use of non-corrosive refrigerants, water, alcohols.
- 1.4 Not suitable for ammonia as a refrigerant.
- 1.5 Not suitable for applications with anti-explosion requirements.

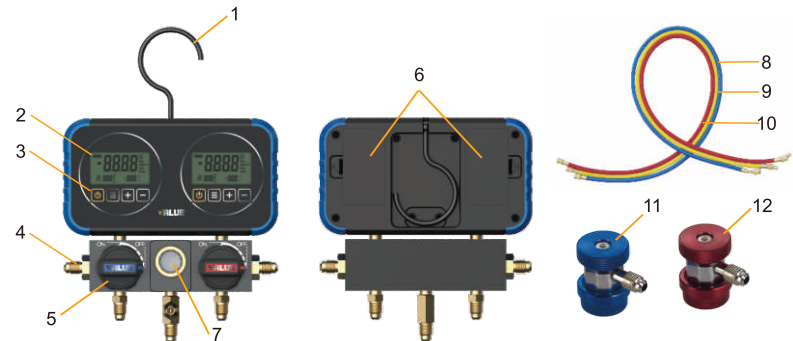
## 2. Specifications

Supportive Unit	Pressure display: bar, psi, Kpa, Mpa, kgf/cm <sup>2</sup>
	Temperature display: °C, °F
	Vacuum display: inHg
Sensor	Pressure sensor×2(Built in )
Refresh rate	1s
Testing medium	R-22, R-134a, R-1234yf, R-290, R-404a, R-407C, R-410A, R-32, R-507A
Connection	3×1/4" SAE
Pressure scale	0~50 bar, 0~720 psi, 0~5000 KPa, 0~5 Mpa, 0~51 kgf/cm <sup>2</sup>
	Vacuum scale: -29.9~0 inHg
Environment humidity	10~90% RH
Maximum overload pressure	75 bar, 7500 Kpa, 7.5 Mpa, 1087 psi, 76.5 kgf/cm <sup>2</sup>
Resolution	0.1 psi, 0.1 bar, 1 Kpa, 0.001 Mpa, 0.1 kgf/cm <sup>2</sup>
	Vacuum resolution: 0.1 inHg
Measure precision (At 22°C / 72°F)	Pressure: ±2 psi, ±0.2 bar, ±20 Kpa, ±0.02 Mpa, ±0.2 kgf/cm <sup>2</sup>
	Vacuum: ±1 inHg

Unsuitable medium	Ammonia(R-717)and ammoniac refrigerant.
Environment requirement	Operation temperature: -10~50°C
	Storage temperature: -20~60°C
Shell	Material: ABS /PC/ TPE
	Size: 157×165×63 mm
	Weight: 893 g
Power	2×9V LR dry battery
Display	LCD display with backlight

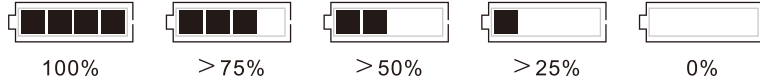
## Description

### 1. Basic function



1. Folding hook, easy to hang and transport.
2. LCD display.

Battery capacity:



### 3. Control Keys

Button	Function	Button	Function
	Power		Increase button
	Menu		Decrease button

4. Four 1/4" connectors (1 on the left side and 3 on the bottom, on the right side is a dead 5/16" parking port). The central connector on the bottom is a 2-way connector with 1/4" and 5/16" connector sizes, to be connected to a refrigerant container or recovery equipment.
5. Two control valves are on the front of the gauge.
6. Battery box is on the back of the gauge.
7. Sight glass allows you to observe the flow of refrigerant.

### Initial Setup

1. Place the battery into the battery compartment (two 9V LR dry battery)  
Attention:  
Remove the battery if you do not intend to use the device for a long time.
2. Starting  
Press for about 2 seconds, the gauge will power on and goes into operation.  
Press to turn the backlight on or off. The backlight will automatically turn off after 3 minutes of no action.  
Press to turn it on.  
Press for 4 seconds to shut down.
3. Menu
  - 3.1. Press to start setting process by choosing the type of refrigerant, pressure unit and temperature unit. It's a rotation switch, Press to select the refrigerant type, press again, goes to select the pressure unit, press the third time, to select the temperature unit.

### 3.2. Setting process

Button Function	
Symbol	Function
	Changing options
	Confirm the current selection

When enter into the setting mode, the selected type (i.e. Refrigerant Type, or Pressure Unit, or Temperature Unit) will flash. Select the desired type by pressing or button. Press to confirm.

Setting mode will be automatically cancelled if no action for 20 seconds.

Adjustable specification	
Selection Types	Note
R-22, R-134a, R-1234yf, R-290, R-404a, R-407C, R-410A, R-32, R-507A	9 optional refrigerants
psi, bar, Kpa, Mpa, kgf/cm <sup>2</sup>	5 optional pressure units
°C, °F	2 optional temperature units

#### Note:

There is only one measuring unit for vacuum level display, which is inHg. Once the system is under vacuum, the gauge will automatically detect it and the display will show "inHg" as the measurement unit.

#### 4. Control valve operation:

The control valve of the digital gauge is the same as the traditional mechanical gauge. Once connected to the HVAC system with the refrigerant hoses, open the control valve, the refrigerant will get through the valve and the gauge will measure the refrigerant pressure.

Open the control valve: turn the knob 90 degrees anticlockwise, accordingly to label on the gauge.

Close the control valve: turn the knob 90 degrees clockwise.

**Operation Instruction**

**1. Preparation**

1.1 Starting the gauge

Press for about 2 seconds.

With the control valves closed, connect the refrigerant hoses.

1.1.1 Connect the lower left connector to Blue hose, and lower right connector to Red hose.

1.1.2 Connect Yellow hose to the middle connector.

1.1.3 The other side of the hoses should be connected to corresponding equipment.

Warning:

The refrigerant hoses could be damaged if the gauge are dropped or impacted by external collision. Please inspect the gauge and hoses for visible or concealed damages.

1.2 Refrigerant Setting

1.2.1 Press

The setting menu is activated, press until the refrigerant setting flashes.

1.2.2 Refrigerant setting:

Button Function	
Symbol	Function
	Changing the type of refrigerant
	Confirm the current selection

For example, setting R-32 refrigerant:

1. Press button until R-32 shows up.
2. Press to confirm the setting.

Attention:

Refrigerant R-1234yf will be shown as R-922B in menus, due to limited digits in the LCD Display.

**2. Preparation for pressure measuring**

Warning:

- 2.1 High or low temp and high pressure refrigerants may cause injury to human.
- 2.2 Wear safety glasses and gloves for protection.
- 2.3 Make sure the gauge is properly secured before use.
- 2.4 The hoses should be in good condition and connected correctly before using. It is not recommended to tighten the hoses by tools to avoid damage to the treads of the hoses.
- 2.5 Pay extra attention to avoid risks when measuring the pressure of refrigerants.

Pressure Measuring

1. Take the steps mentioned above.
2. Open the valves.
3. Read the display on the screen.

Attention:

The reading will be flashing and shows OL when the pressure exceeds maximum 50 bar.

**3. Zeroing operation**

Warning:

Due to temperature and pressure changes, the digital gauge could require zeroing prior to operation.

1. Press and choose the mode of operation as described above.
2. Open all input ports to ensure that the air pressure outside and inside the gauge is the same.
3. Press and at the same time. Display should show 0.0.

**Maintenance**

**1. Gauge Cleaning**

Use a wet cloth to clean the surface of the gauge if necessary.

Attention:

You can use mild detergent to clean the surface, but do not use strong alkaline or acid detergents.

**2. Copper Connections Cleaning**

A wet cloth can be used to clean the connections.

**3. Hose Condition**

Check hoses condition every time prior to use and change it if necessary.

**4. Valve Cleaning**


Open the valves and blow out dirt and impurities by compressed air.

**5. Battery Replacement**

1. Power off the gauge.
2. Open the battery box cover.
3. Remove the old battery and replace with a new battery (pay attention to the battery polarity!).
4. Power on the gauge to check if the new battery works well.
5. Close the battery box.

**Service**

**1. Troubleshooting**

Problems	Possible reasons
 blink	Battery low and change it.
Digital gauge shut off automatically	1. Low battery 2. No operation in 15 minutes
Displays OL	1. Exceeds maximum range 2. Damage of sensor
Displays ERP FAIL	Memory error
Fail to find R-1234yf	Couldn't display R-1234YF because of limits of the LCD display, Choose R-922B

**2. Warranty**

1. The warranty period is 1 year from the date of sales.
2. Consumables such as refrigerant hoses are not covered by this warranty.
3. Damages caused by human factors are not covered by warranty.
4. Defective product during the warranty period will be repaired or replaced for free.