hilmor®

Wireless
Vacuum Gauge
Operation and Maintenance Instructions

Model

1950217

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INTRODUCTION

It is important to read the entire instruction manual carefully for a complete understanding of the hilmor® Wireless Vacuum Gauge features, limitations, and specifications before use. hilmor® products are designed and manufactured to be used by trained and licensed HVAC/R technicians. Incorrect use may result in accidents, injuries or death. Refer to page 3 for safety precautions.

The hilmor® Wireless Vacuum Gauge come with a two-year limited warranty. Visit *hilmor.com/registration* to register the gauge and activate the warranty.

The hilmor® Wireless Vacuum Gauge offers the ability to replace the remote sensor if the original one gets contaminated. This manual should also be referred to when changing out the remote vacuum sensor.

The serial number can be found on the product label located on the backside of both the Handheld Display and Remote Sensor unit.

hilmor® Wireless Vacuum Gauge Replacement Sensor part number: 1950219

SAFETY/LIMITED WARRANTY

SAFETY PRECAUTIONS:

- To prevent personal injury, please read the operating manual carefully and operate only as instructed.

- Wear safety glasses, gloves and all other recommended safety gear when working with refrigerants. Contact with refrigerants may cause injury. Please see any warnings associated with refrigerants.

LIMITED WARRANTY:

- The hilmor® Wireless Vacuum Gauge has a 2-year limited warranty from the purchase date.

- Product must be registered at ***hilmor.com/registration*** to activate the warranty.

- Warranty service claims are subject to authorized inspection for product defects. If found defective, hilmor will repair or replace registered products within warranty period.

- Often, a returned hilmor® Wireless Vacuum Gauge can be serviced with field maintenance, such as cleaning or replacing the remote sensor or making minor adjustments found in the Troubleshooting section of this manual. If the problem persists, contact hilmor Technical Support at 1-800-642-0010 or visit the hilmor website, ***hilmor.com***.

CERTIFICATIONS

FC

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 of the device.

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.

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

IC

This device complies with Industry Canada license-exempt RSS standard(s). 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 present appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisee aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioelectrique subi, meme si le brouillage est susceptible d'en compromettre le fonctionnement.

QUICK START GUIDE

+ Install batteries into Handheld Display and Remote Sensor.

+ Power On Handheld Display and Remote Sensor.

+ Handheld Display and Remote Sensor will sync automatically: observe reading on Handheld Display.

+ Connect Remote Sensor to Valve Core Removal Tool or Refrigerant Hose using Female-Female Adaptor if needed.

+ Pull vacuum to desired vacuum reading.

Quick Change-Out Guide for Replacement Sensor:

+ Purchase the hilmor® Wireless Vacuum Gauge Replacement Sensor.

+ Unscrew the 2 flathead screws on the back of the Remote Sensor.

+ Disconnect the 2 white plugs that connect the Remote Sensor to the Replacement Sensor.

+ Plug in the new Replacement Sensor and gently tuck the wires into the Remote Sensor body.

+ Screw the door back on to the Remote Sensor to secure the Replacement Sensor.

+ Turn on the Handheld Display to automatically sync.

WIRELESS VACUUM GAUGE COMPONENTS

Remote Sensor

SYNC Indicator Light

Power/SYNC Button

Remote Sensor Transmitter

Replacement Vacuum Sensor

1/4" Male Fitting

1/4" Female-to-Female Adapter

Handheld Display

LCD Screen
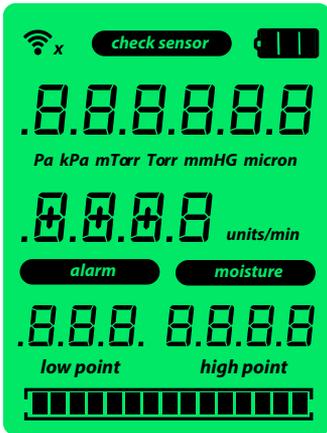
Power/Backlight Button

Function Button

Up/Down Arrows

SCREEN & BUTTON LAYOUTS

SCREEN ICONS

Icon	Label
	Sync / Signal Strength
check sensor	**Check Sensor – Connection Lost**
	Battery Level
.8.8.8.8.8.8	**Pressure Reading**
Pa kPa mTorr Torr mmHG micron	**Units of Vacuum**
.8.8.8.8 units/min	**Rate of Change**
alarm	**Alarm ON**
moisture	**Moisture Detected**
.8.8.8. low point	**Alarm Set Value - Low**
8.8.8.8 high point	**Alarm Set Value - High**
	Vacuum Progress Bar

Screen display:

.8.8.8.8.8.8

Pa kPa mTorr Torr mmHG micron

.8.8.8.8 units/min

alarm   moisture

.8.8.8. 8.8.8.8

low point   high point

BUTTONS

Power/Backlight Button	⏻	
		Scroll Up
Function Button	Fn	
		Scroll Down

TECHNICAL SPECIFICATIONS

Part Number		**1950217**
Replacement Sensor Part Number		**1950219**
Batteries	Handheld Display	AA Alkaline (3)
	Remote Sensor	AAA Alkaline (3)
Wireless Range		33 Feet unobstructed
Remote Sensor Connection Fitting		1/4" male flare
Adapter Accessory		1/4" 45˚ Flare Female x 1/4" 45˚Flare Female
Acuracy		+/- 5% of reading +/- 10 microns
Resolution		5 to 2,000 microns - 1 micron 2,000 to 5,000 microns - 100 microns 5,000 to 10,000 microns - 250 microns 10,000 to ATM - 1,000 microns
Units		micron, mTorr, Torr, mmHg, mBar, kPa and Pa
Operating Temperature		-20˚C to 50˚C, -4˚F to 122˚F
Operating Humidity		Up to 75% relative humidity
Temperature Compensation Range		0˚C to 50˚C , 32˚F to 122˚F
Max Momentary Overpressure		300 PSI
Refresh Rate		Every 0.5 seconds
Set Point Alarm		User Programmable - See Advanced Settings
Power Management		Sleep Mode and configurable backlight - See Advanced Settings
Battery Life		80 hours without backlight
Dimensions	Handheld Display	2.95" x 4.62" .90"
	Remote Sensor	2.20" x 5.7" 1.5"
Weight	Hand Held Display	9 oz.
	Remote Sensor Unit	4.8 oz.

OPERATING INSTRUCTIONS

BATTERIES:

1. Use a flat head screwdriver to open the battery compartment on the backside of both the Handheld Display and Remote Sensor.

2. Install (3) AA Alkaline batteries into the Handheld Display according to polarity.

3. Install (3) AAA Alkaline batteries into Remote Sensor according to polarity.

4. Re-secure Handheld Display and Remote Sensor battery doors.

POWER ON:

1. Press power button on Handheld Display and Remote Sensor.

2. Confirm sync has been established by observing a pressure reading on Handheld Display and by viewing signal strength icon.

VACUUM GAUGE SYSTEM CONNECT:

Connect Remote Sensor to Valve Core Removal Tool side flare or Refrigerant Hose using Female-Female Adaptor if needed (included).

Best Practices:

• Minimize the number of hoses and fitting connections (including manifold) to reduce leaks.

• Use hilmor® Valve Core Removal Tool accessory port as close as possible to the system for more accurate readings.

TO CHANGE THE UNIT OF MEASURE ON THE HANDHELD DISPLAY:

1. Hold down the Function button to open menu.

2. Press Function button to navigate to unIt submenu.

3. Press arrow button to change unit of measure: micron, mTorr, Torr, mmHg, mBar, kPa and Pa.

4. Hold down Function button to save and exit.

OPERATING INSTRUCTIONS CONT.

Moisture Function

When the vacuum pump is blanked off to observe vacuum level and the pressure is below 1,000 microns, moisture detection feature will activate automatically. If the feature detects moisture the handheld unit will display the moisture icon and beep 3 times. If the pressure rises above 2,000 microns the feature is deactivated.

REPLACEMENT SENSOR

To change out the Replacement Sensor:

1. Remove the batteries from the Remote Sensor.

2. Purchase the hilmor® Wireless Vacuum Gauge Replacement Sensor (1950219).

3. Unscrew the 2 flathead screws on the back of the Remote Sensor to remove the door.

   Note - these are captive screws, designed so that they cannot fall out and be lost.

4. Gently remove the replaceable sensor from the Remote Sensor housing and disconnect the wires.

5. Plug the new Replacement Sensor in by carefully connecting the male ends of the white plugs to the female white plugs on the Remote Sensor Transmitter. Gently tuck the colored wires inside of the Remote Sensor body.

6. Re-attach the 2 flathead screws to secure the Replacement Sensor.

7. The Replacement Sensor has been pre-calibrated by hilmor, so it does not need any calibration.

8. Make sure the Handheld Display is powered on and the new Remote Sensor should auto-sync.

ADVANCED SETTINGS

High And Low Pressure Point Alarms

To set high and low alarm values:

1. Hold down Function button to open menu.
2. Press Function button to navigate to H Po or L Po submenu.
3. Press arrow button to scroll through desired alarm.
4. Hold down Function button to save and exit.

Backlight

To adjust backlight settings:

1. Hold down Function button to open menu.
2. Press Function button to scroll to the BL submenu.
3. Use arrow buttons to select backlight condition: ON, 1 minute, 5 minute, 10 minute, or OFF.
4. Hold down Function button to save and exit.
5. Note – while the backlight is ON, press the SYNC button to toggle on or off from the home screen.

Sound

To turn sound on/off:

1. Hold down Function button to open menu.
2. Press Function button to scroll to the BEEP submenu.
3. Use arrow buttons to select ON or OFF.
4. Hold down Function button to save and exit.

MAINTENANCE

Battery Replacement: Replace batteries as needed. Battery indicator will show when level is low. Connection between Handheld Display and Remote Sensor may also be lost when battery level is low.

Cleaning the Sensor area:

1. Remove batteries from the Remote Sensor unit.
2. Use tweezers to carefully remove the fabric filter element.
3. Fill the opening halfway with denatured alcohol.
4. Cover the opening and shake Remote Sensor unit for about 15 to 30 seconds, allowing the alcohol to clean the sensor.
5. Dry the sensor cavity by draining onto clean cloth.
6. Repeat process at least three times for best results.
7. Re-install batteries.

Notes:

Do not attempt to clean with cotton swab or other similar products.

After contamination, cleaning the vacuum gauge sensor using the above procedure may improve sensor accuracy but, for most accurate reading, replace suspect sensors.

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TROUBLESHOOTING

Issue	Potential Cause	Solution
Failure to Achieve Proper Vacuum	One of the unused inlet fitting caps is loose	Tighten all caps securely
	O-Rings on Hoses, Vacuum Pump or Adapter is damaged	Replace O-Rings
	Insufficient or Contaminated Oil	Add new hilmor vacuum pump oil to proper level
	System Leak	Pressure check the system for leaks
	Vacuum Pump performance issue	Choose the correct CFM and vacuum pump for the system
No Measurements displaying on Handheld	Contaminated or Damaged Sensor	Clean or replace remote sensor
	Power issue	Restart Handheld and Remote Sensor
	SYNC Lost - Remote Sensor will flash quickly & handheld "No SYNC" icon is displayed	Ensure remote sensor & handheld are within 33ft. Range unobstructed. If this does not solve the problem, replace batteries
	Low Battery - LED indicator will flash	Replace Batteries
Erratic Readings	Contaminated or Damaged Sensor	Check sensor filter for discoloration. Clean or replace if necessary
	Sensor damaged from over-pressurization	Replace remote sensor
If these procedures do not correct the issue, contact your nearest hilmor distributor or call hilmor® Technical Support at 1-800-642-0010		

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