



Making Your Job More Enjoyable

Leak Detector VML-2

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PREFACE

Dear customers:

Congratulations, and thank you for purchasing the brand-new “Value” products.

For proper use of the product, please read carefully the operation manual.

After you have read the entire operation manual, we suggest that you should appropriately keep it with the leak detector or in a place easy to access for future consultation in the course of operation.

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WARNING

- When you entering a closed room for leak detection, there may be anoxia in the room. The closed space must be ventilated, to avoid personal injury;
- Strictly prohibit the use of this equipment at gasoline, natural gas, propane or other combustible gases.
- Any detergent or isopropanol will damage the sensor. Make sure there is no water droplet, water vapor, oil, grease, dust and other forms of contaminants on the sensor's surface.

1. Introduction

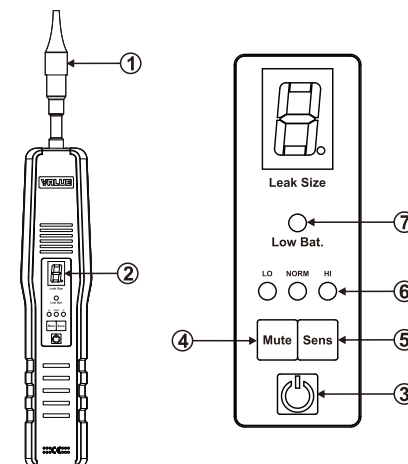
The VML-2 features a long life solid electrolyte semiconductor sensor technology that is designed to detect more current and difficult HFC refrigerants such as R-134a, R-410a, R-404a, R-407c , and R507 in addition to the new HFO-1234yf and all HCFC (R-22) and CFC (R-12) refrigerants including SNAP approved hydrocarbon blends.

The VML-2's digital leak size indicator takes the guess work out of whether or not to repair a small leak. The digital display is in dependent from the audio alarm and sensitivity level ,allowing the precise pinpointing of the leak source.

The VML-2 does not require rechargeable batteries.

1.1 Buttons and Indicator lamps

- Sensor
- Digital Leak Size Indicator
- Power On/Off Button
- Audio Mute Button
- Sensitivity Level Button
- Sensitivity Level
- Low Battery Indicator



1.2 FEATURES

• Unique numeric leak size indicator	• Long life stable sensor	• Audio mute function	• True mechanical pump
• 3 adjustable sensitivity levels	• Automatic calibration and reset to surroundings	• Uses 4AA alkaline batteries	• Low battery indicator
• Design conforms to EN14624	• CE Certified		

1.3 EN14624:2020 Test Specifications

	R134a	R1234yf
Static detection limit	1 g/a	1 g/a
Dynamic detection limit	2 g/a	1 g/a
Minimum detection time	Approximately one second	
Recovery time	21.2 s	15.1 s
Dynamic detection limit in contaminated environment	20 g/a	25 g/a
Calibration frequency	Annual check with calibrated leak standard	

2. Functions

2.1 Low Battery Indicator

Replace the 4 AA Alkaline batteries when the red LED on the control panel is lit. Follow battery installation instructions under Maintenance section.

2.2 Audio Mute Function

To silence or mute the audio beep and alarm signal, press the MUTE button. To restore the audio sound, press the MUTE button again.

(Note: a few seconds are required to restore sound if the mute button is pressed in rapid succession.)

2.3 Adjusting Sensitivity Levels

The Leak Detector will default to the NORM sensitivity level automatically once the unit comes out of the warm up cycle and the green LED will turn on.

To change sensitivity levels, press the SENS once for HI sensitivity (red LED will turn on) and again for LO sensitivity (yellow LED will turn on).

2.4 Product Specifications

Model	VML-2	Battery Life	4-6 hours continuous
Name	Leak Detector, Refrigerant Gas	Warm up time	<20seconds
Sensitivity	See table above	Probe length	43cm (17 inches)
Sensor Life	>300 hours	Numerical Display	7 segment digital display(1to9)
Response Time	Instantaneous	Weight	0.38 kg
Power Supply	4 AA Alkaline batteries		

2.5 Leak Size Indicator

The digital leak size indicator remains off normally but once leakage is detected, a number from 1-9 will be displayed for all HFC and HCFC refrigerants regardless of the sensitivity setting.

The number will continue to increase or decrease depending on the amount of refrigerant sensed. The maximum value will be displayed once the leak source has been located. The table below can be used to approximate the size of leakage:

Maximum displayed	Leak Size(oz/yr)
1-3	< 0.1
4-6	0.1 to 0.5
7-9	>0.5

3. Operating Instructions

3.1 TURN ON/OFF

Press the ON/OFF button once to turn on and again to turn off.

 Note: Hold button down for approximately 1 second to turn unit off.

3.2 WARM UP

The detector automatically starts heating the sensor. During the heating cycle, the digital leak size indicator will flash 0 and the detector will sound a slow "beep".

 Note: Warm up is usually less than 20seconds.

3.3 READY

The detector is ready to begin searching for leakages when the flashing 0 stops and the green sensitivity LED turns on. The audio "beep" will increase in frequency.

3.4 SEARCHING

When searching for leakages, move the sensor tip along A/C lines and fittings not further away than 9.5 mm and not faster than 75 mm/sec. If the detector alarms, make smaller sweeps back and forth until the leakage source can be pinpointed.

 Note:

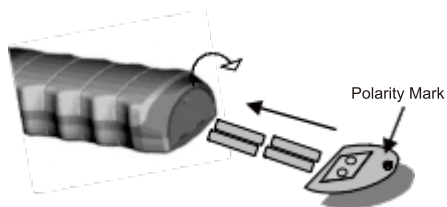
- ① During detection, there shall be some pressure (≥50 psi) in the system and the operation shall be performed in relatively static air condition. If there is wind, leaked refrigerant gas can be quickly diluted or be blown away from the leaking source, thus affect the accuracy of detection. Additionally, before detection, use a fan to blow off the suspected leaked refrigerant gas in the system in case it may affect the accuracy of detection.
- ② VML-2 only responds to changes in leakage concentration. The alarm will re-set automatically if the sensor tip is held at the leak source.

4. Maintenance

4.1 Batteries

Install Batteries

Remove screw located at rear end and pull down the hinged battery door to open as shown, below always insert all four batteries into the battery compartment in the same direction. Note polarity mark on the inside of the battery door for proper battery orientation.



4.2 Sensor

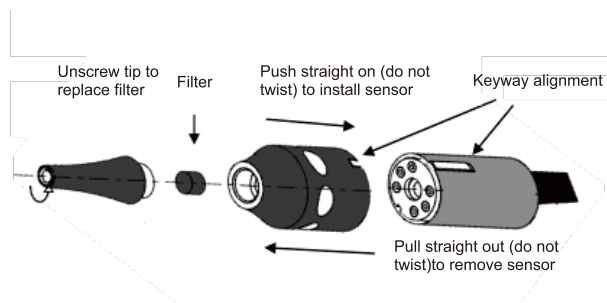
4.2.1 Replace Filter

Unscrew sensor tip as shown below to replace filter. Replace filter whenever it becomes visibly dirty or every 2 to 3 months depending on use.

4.2.2 Replace Sensor

Remove sensor by pulling out of socket. Install the new sensor by aligning the keyway notch in sensor cover with the raised keyway on sensor socket holder (see figure below).

⚠ Note: Do not force sensor into socket. Misalignment can damage the sensor pins.



⚠ Important:

The instrument's software is designed to alert the user if the sensor is dislodged or defective. If the sensor is not fully inserted into the six-pin socket, or if it is defective, the instrument will not come out of the "Warm Up" mode for proper operation when the power button is turned on. Additionally, if the instrument becomes unstable during its operation, it is an indication that the sensor may be defective or dislodged.

Correct Disposal of this product:

This marking indicates that this product should not be disposed with other household wastes throughout the EU. To prevent possible harm to the environment or human health from uncontrolled waste disposal, recycle it responsibly to promote the sustainable reuse of material resources. To return your used device, please use the return and collection systems or contact the retailer where the product was purchased. They can take this product for environmental safe recycling.

