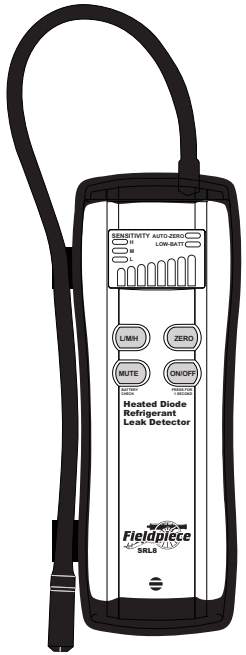
Heated Diode Refrigerant Leak Detector Model: SRL8



Fieldpiece

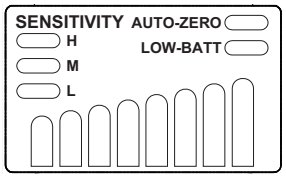
OPERATOR'S MANUAL

Description

The SRL8 uses a tin dioxide semiconducting gas detector (heated diode) and microprocessor to create a highly sensitive portable refrigerant leak detector technology with superior battery life, portability, and ease of use.

Gas is pumped through the tip of the wand into the sensor at the base of the snoot. The sensor chemically reacts with any refrigerant in the incoming gas, sending a mV signal into a microprocessor controlled circuit.

The SRL8 can detect leaks smaller than 0.1 oz/year, which exceeds the toughest SAE J1627 standards. The SRL8 comes with wall and car charger for its ultra-compact Li-ion battery which powers the SRL8 for 15 hours of continuous operation before a recharge is needed. That's long enough to last your entire workday.



The SRL8 has variable sensitivity settings, to give you the sensitivity you need while eliminating 'nuisance tripping'. A quick, automatic 30 second self-calibration upon power-up ensures optimal performance.

A built in replaceable filter blocks moisture and harmful particulates. The SRL8 also has manual and automatic "Zeroing" function to ensure the best sensitivity possible by canceling out background contamination. Use the MUTE button to silence the detector's audio indicators when needed.

Operation

ON/OFF Protection

To turn on/off the SRL8 press and hold the ON/OFF button for one second. This slight delay protects against inadvertent powering on or off, conserving battery life. If you forget to turn the SRL8 off, it will automatically turn off after 10 minutes of inactivity.

LED Bar Graph Display

The eight segment LED display indicates the concentration of refrigerant detected. As the concentration of refrigerant in the air increases so does the number of lit bars on the display.

L/M/H Button (Sensitivity)

Set the sensitivity level by pressing the L/M/H button. Low (L), medium (M), or high (H) sensitivity will be indicated by the respective LEDs.

The higher the concentration of refrigerant in the ambient air, the lower the sensitivity setting should be to minimize false trips.

MUTE Button and Battery check

Pressing the MUTE button toggles the sound of the SRL8 on and off. In addition, holding the MUTE button down for one second will display the remaining percent of battery charge on the LED bar graph.

ZERO Button and Auto-Zeroing function

The SRL8 has two zeroing modes, manual and automatic, which are indicated by the "Auto-Zero" LED being off or on respectively. These modes allow the user to achieve the best sensitivity possible by setting the baseline signal equal to any background contamination.

The SRL8 defaults to the automatic zeroing mode when turned on. In automatic mode, the SRL8 will zero itself to the ambient environment every two seconds if not triggered. Zeroing is indicated by a quick double flash of the "Auto-Zero" LED.

To switch between the auto and manual zeroing modes hold the ZERO button down for one second. The "Auto-Zero" LED will no longer be lit when in manual mode. To manually zero the SRL8 in this mode, simply press the ZERO button in a non-contaminated environment. The SRL8 will indicate successful zeroing by a quick double flash of the "Auto-Zero" LED.

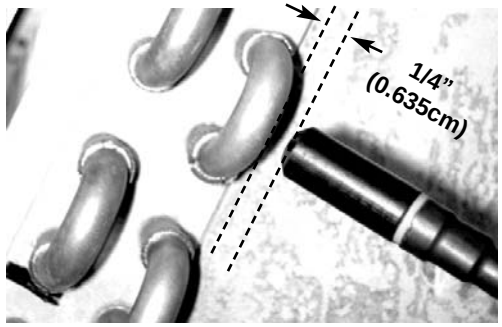
Leak Detection Procedure

Keep the SRL8 away from any areas of potential refrigerant leakage until the warm-up and calibration period is over. The warm-up and calibration sequence lasts about 30 seconds after ON/OFF is pressed. Allow the SRL8 to fully warm-up before using. On startup, meter defaults to high sensitivity and auto-zeroing.

The most likely points for refrigerant leaks are at the soldered joints in refrigerant lines and changes in cross section or direction of these lines.

The SRL8 detects concentration of refrigerant. The zeroing function lets the user easily detect leaks in places that may have refrigerant in the air, such as a refrigerator leaking into an enclosed space. When detecting:

1. The tip of the snoot should be fairly close to the line. You may need to be within 1/4" (0.64cm) of a small leak to detect it. In this case, using a second hand to guide the tip along refrigerant lines may be helpful.
2. Keep the tip moving along refrigerant lines at a rate of 1-3 inches per second.
3. As the SRL8 detects a leak its alarm will sound and the LED bar graph will light up. As you move the snoot closer to the point of the leak, more LEDs light up as the concentration increases. (Note: If the SRL8 wand moves through a very high concentration of refrigerant, you may need to wait for the SRL8 to re-zero or manually zero it in order to let the sensor readjust, before moving to step 4.)
4. Once the maximum refrigerant concentration is located, allow the meter to zero away from the leak. Then do a second sweep of the suspected leak point, to verify its location.



SRL8 testing an A-coil, 1/4" (0.64cm) from the line.

Filter Assessment & Replacement

The filter blocks moisture and other contaminants from the sensor. When it gets wet, it constricts flow of air, and the filter should be replaced. Unscrew the sensor tip and replace the white filter so that the rounded end is at the tip of the wand. Use only the Fieldpiece supplied filter.

Extra filters can be ordered from a distributor. Model RFL2 contains 10 filters and 5 O-rings.

Installing and Replacing Sensor

Replacement sensors (model RHD1) can be ordered for the SRL8. To install or replace the sensor, make sure the unit is turned off. Then, unscrew the snoot on the SRL8 and if replacing gently pull the sensor from the base.

Warning

The sensor may be hot after use.

Carefully insert the new sensor and replace snoot. The sensor can be inserted in two different configurations, either of which will allow the SRL8 to function correctly.

If no sensor is installed or the installed sensor is broken when the unit is turned on an alarm will sound and the unit will turn off.

Caution

DO NOT use the SRL8 without the proper filter correctly installed. Doing so may result in damage to the instrument.

Quick Tips

1. To pinpoint larger leaks, adjust sensitivity.
2. Make sure the SRL8 is zeroing between detections. Look for the double flash of the auto-zero LED.

Comparing Leak Detectors

Fieldpiece has two leak detectors. The SRL8 uses a heated diode sensor. The heated diode's advantage is that it detects absolute concentration levels so it can be held on a leak and will continue to beep. It is also initially very sensitive. Its major disadvantages are that the sensor becomes less sensitive over life, eventually needing replacement and it is more sensitive to some refrigerants than others.

The SRL2 uses an infrared (IR) sensor. It detects a CHANGE in concentration, so the wand must keep moving. The main advantages of the Fieldpiece IR sensor are that its sensitivity will remain the same over the life of the instrument, the sensor will last the lifetime of the instru ment, it will not trigger on humidity or on oil, and it has nearly the same sensitivity to most refrigerants.The main disadvantage of infrared sensors is their sensitivity to mechanical disturbances.

Lithium Battery Care

The SRL8 contains a very powerful lithium ion battery. For a long battery life and safe operation, you must observe the following:

Cautions

1. Do not expose the battery to temperatures higher than 140ºF (60ºC).
2. Do not charge the battery in or near heated places such as fire, hot vehicles, or direct sunlight.
3. Do not solder directly on battery.
4. Do not expose the battery to direct impact or throw it.
5. Do not get the battery wet.
6. Do not deform or pierce the battery in any way.
7. If there is any battery leakage, do not touch the battery. In the case that electrolyte gets into the eyes, flush with fresh water, do not rub, and see a physician immediately.
8. Send in for replacement immediately if there is any deformity, bad smell, color change, or other abnormality.
9. The battery is user-replaceable and can be purchased at most electronic stores. The following batteries are compatible with the SRL8: Fuji Film: NP-120, PENTAX: DLI-7, RICON: DB-43

Charging

Two chargers are included with the SRL8. The AC charger plugs into a wall outlet, and the car charger plugs into a car cigarette lighter DC plug.

1. The battery is partially charged when packaged. Fully charge the battery before first use.
2. The LOW-BATT LED will light red when the battery is low. Charge can be checked at any time the unit is on with the Battery Check function (See Operation section).
3. To recharge the SRL8, plug one end of the charger into the top of the SRL8 and the other into the power source. LOW-BATT will blink while charging until the battery is fully charged. When the SRL8 battery is fully charged, LOW-BATT turns off.
4. Charge within operating environment specified in the Specifications section of this manual.
5. Avoid frequent full discharges. Several partial discharges with frequent recharges are better for lithium-ion batteries. Unlike nickel-based batteries they have no charge memory and do not need to be discharged before charging.

Storage

The battery should have a 40%-50% charge during prolonged storage of a month or longer. See Specifications section of this manual for proper storage environment.

Battery life is dramatically reduced if the battery is stored fully charged and/or at high temperatures.

Included Equipment

Use model RRE2 when detecting in tight spaces, such as through a condenser grille. Model RFE2 extends the wand to 25.5". The blow molded case, model holds accessories and chargers.

All accessories shown are included with the SRL8.

9" (23cm) needle tip model RRE2

9"(23cm) Flex Extension model RFE2

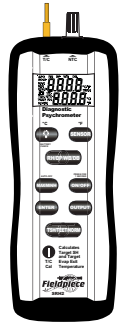
Sensor model RHD1

Blow Molded Carrying Case w/ RRE2 and RFE2 Model ABMK3

Standalones from Fieldpiece

The SRL8 Heated diode refrigerant leak detector is designed for HVAC/R technicians. Here are some other standalone products from Fieldpiece Instruments.

SSX34
Superheat and Subcooling for A/C and Refrigeration



SRH2
Diagnostic Psychrometer

SC77
All-in-one Expandable Clamp-on Meter

Specifications

Sensing element: Heated Diode
Sensor life: 5 years (typical)
Refrigerants: HFC, CFC, HCFC, and blends
Sensitivity: Min (Stationary): 0.03 oz/yr (1g/yr)
Max (Stationary): >6 oz/yr (>180g/yr)
Min (In motion): 0.1 oz/yr (3g/yr)
Max (In motion): >6 oz/yr (>180 g/yr)
After exposure to (50g/yr): 0.1 oz/yr (3g/yr)
In poluted environment: 0.1 oz/yr (3g/yr)
Response time: 0.5 to 1 second
Recovery time: ~9 seconds
Auto off: 10 minutes after no activity
Battery: 3.7VDC(nominal), 1800mAh rechargeable lithium ion (model NP-120) replaceable battery.
Battery life: 15 hours continuous use prior to needing a charge. Degradation (30%) after 500 charge/discharge cycles or two years, whichever comes first
Low battery LED: Illuminated when approximately 1 hour of battery life remains
Charge time: approximately 4 hours @ 450mA
Operating environment: 32ºF (0°C) to 104ºF (40°C) at <75%RH (non-condensing)
Weight: 15.2 oz (0.43kg)
Storage environment: <80%RH meter and batt.
For 80% battery recovery:
-4ºF (-20°C) to 140ºF (60°C) less than 1 month
-4ºF (-20°C) to 113ºF (45°C) less than 3 months
-4ºF (-20°C) to 68ºF (20°C) less than 1 year

Notice of Compliance

This instrument complies with the specifications for an indicating, locating leak detector as described by the european standard EN 14624, approved by CEN on Febuary 21st 2005.

More Products From Fieldpiece

Modular Expandability

Modular expandability is ability for accessory heads and meters to change configurations to match the various needs of an HVAC/R technician.

Accessory heads (the sensors) send out a mV signal, which represents the value of the measurement, to whatever meter is attached to it. Heads can attach directly to the top of a Stick meter, DL3 data logger, or EHDL1. They can also plug into any meter with mV ranges using ADLS2 leads.

Warranty and Service

The product is warranted to the original purchaser against defects in material or workmanship for a period of one (1) year from the date of purchase. During the warranty period, Fieldpiece Instruments will, at its option, replace or repair the defective unit.

This warranty does not apply to defects resulting from abuse, neglect, accident, unauthorized repair, alteration, or unreasonable use of the instrument. Any implied warranty arising out of the sale of Fieldpiece's products including but not limited to implied warranties of merchantability and fitness for purpose are limited to the above. Fieldpiece shall not be liable for incidental or consequential damages.

Contact Fieldpiece for an RMA# if returning any defective SRL8 for warranty service. Include the defective instrument along with proof of purchase. Contact Fieldpiece for out of warranty repair charges.

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