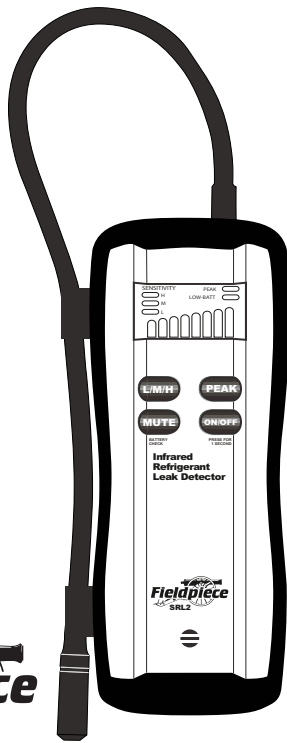


# Infrared Refrigerant Leak Detector

## Model: SRL2



## OPERATOR'S MANUAL

### Operation

#### ON/OFF Protection

To turn on/off the SRL2 press and hold the ON/OFF button for one second. This slight delay protects against inadvertent pressing. If you forget to turn it off, it will automatically go off in 10 minutes.

#### LED Bar Graph Display

The eight segment LED display indicates the degree of change in refrigerant concentration. 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 their respective LED.

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 SRL2 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.

### Description

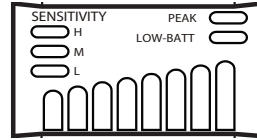
The SRL2 uses infrared optics to create a portable refrigerant leak detector technology that has a superior combination of sensitivity, speed, sensor life, battery life, portability, and ease of use.

Gas is pumped through the tip of the wand into the sensor within the SRL2 body. The sensor detects changes in concentration, not absolute concentration, making it easy to detect leaks even in areas with refrigerant in the air.

The SRL2 detects leaks as small as 0.1 oz/year, which exceeds the toughest SAE J1627 standards. The SRL2 comes with wall and car charger for its ultra-compact Lithium-ion battery which powers the SRL2 for 8hrs of continuous operation before a recharge is needed. That's long enough to last your entire workday.

Unlike many leak detectors, oil vapor does not trigger the SRL2.

The SRL2 has variable sensitivity settings, keeping 'nuisance tripping' to a minimum. A quick and automatic 30 second self-calibration upon power-up ensures optimal performance. A built in replaceable filter blocks moisture and harmful particulates. The SRL2 also has a mute button and a peak hold function.



#### Peak Button

The PEAK function holds the highest change in concentration achieved while continuing to detect leaks. Press PEAK to toggle this function on and off. Turning the PEAK function off will clear the peak change. The PEAK LED will light when PEAK function is on.

#### Turbo Mode

The TURBO function is an additional 4th sensitivity that pushes the SRL2 to its highest possible sensitivity. This feature is activated by pressing the PEAK button four times in succession, and can only be activated while on the high(H) sensitivity level.

When in the TURBO mode the first green LED on SRL2 will strobe, and the audio detection sound will be a solid tone.

To exit the TURBO mode, press the PEAK button again four times in succession, or switch from high(H) to one of the other sensitivities levels.

Beware: While in TURBO mode the SRL2 is extremely sensitive and will more easily trigger on abrupt or violent motions as well as very small changes in refrigerant levels. Handle with care when in TURBO mode.

#### Leak Detection Procedure

Keep the SRL2 away from any areas of potential refrigerant leakage until the warm-up and calibration period is over. The warm-up and calibration

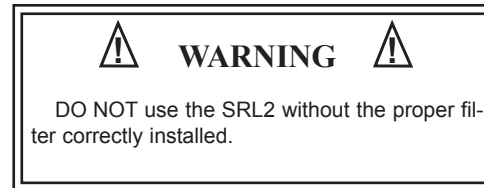
### Quick Tips

1. Keep the wand tip moving past suspected leak locations.
2. Once a leak is detected, sweep the wand back over to pinpoint.
3. To pinpoint larger leaks adjust sensitivity.

### Filter Assessment & Replacement

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

You can order from a distributor extra bags of replacement parts (model RFL2) are available from Fieldpiece. Model RFL2 contains 10 filters and 5 O-rings.



sequence lasts about 30 seconds after ON/OFF is pressed. Allow the SRL2 to fully warm-up before using to avoid false triggering. On startup, meter defaults to high sensitivity.

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 SRL2 detects changes in concentration of refrigerant, not the absolute concentration of refrigerant. This lets the user easily detect leaks in places that may have refrigerant in the air, such as a refrigerator leaking into an enclosed space. Because the SRL2 detects change, there is a specific "double-pass" method used to find leaks.

1. The tip of the wand should be fairly close to the line. You may need to be within 1/4" (0.63cm) 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. Once the SRL2 indicates a change in concentration, note the spot on the line and keep the tip moving past the potential leak to refresh the air space within the SRL2 with clean air. (Note: If the SRL2 wand moves through a very high concentration of refrigerant, you may need to use in

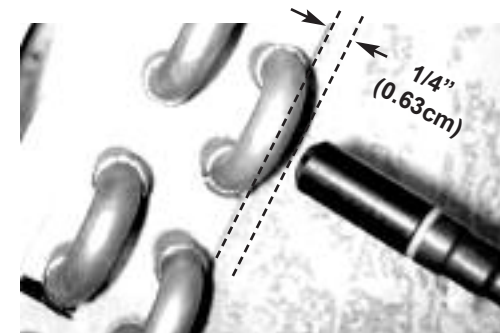
### Comparing Leak Detectors

Fieldpiece has two leak detectors. 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 instrument, 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.

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 disadvantages are that the sensor becomes less sensitive over life, eventually needing replacement and it is more sensitive to some refrigerants than others.

fresh air for 4 seconds before moving to step 4 in order to clear the refrigerant within the SRL2.)

4. Return the tip back to, and past, the spot first indicated. When the SRL2 indicates a second change, note the spot on the line. The source of the leak will be near the midpoint between the two noted spots of indication.
5. Very high concentrations of refrigerant can cause an overload which can take a few seconds to clear.



SRL2 testing an A-coil in an evaporator, 1/4" from the line.

## Lithium Battery Care

The SRL2 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 140°F (60°C).
2. Do not charge the battery in or nearby 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. Replace 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 known to be compatible with the SRL2: Fuji Film: NP-120, PENTAX: DLI-7, RICON: DB-43

## Specifications

**Sensing element:** Enhanced infrared photo optics

**Sensor life:** 10 years

**Refrigerants:** HFC, CFC, HCFC, and blends

**Sensitivity:** Min (Stationary): 0.1oz/yr (3g/yr)

Max (Stationary): >1.05oz/yr (>30g/yr)

Min (In motion): 0.18oz/yr (5g/yr)

Max (In motion): >1.05oz/yr (>30 g/yr)

After exposure to (50g/yr): 0.1 oz/yr (3g/yr)

In poluted environment: 0.1 oz/yr (3g/yr)

**Response time:** 1 second

**Recovery time:** ~4 seconds

**Auto off:** 10 minutes after no activity

**Battery:** 3.7VDC(nominal), rechargeable lithium ion user-replaceable battery.

**Battery life:** 8 hours continuous use prior to needing a charge. Degradation (30%) after 500 charge/discharge cycles or two years, whichever comes first.

**Low battery LED:** Lights when approximately 1 hour of battery life remains.

**Charge time:** Less than 4 hours (either charger)

**Operating environment:** 32°F (0°C) to 104°F (40°C) at <75%RH (non-condensing)

**Storage environment:** <80%RH meter and batt. For 80% battery recovery:

-4°F (-20°C) to 140°F (60°C) less than 1 month

-4°F (-20°C) to 113°F (45°C) less than 3 months

-4°F (-20°C) to 68°F (20°C) less than 1 year

## Charging

Two chargers are included with the SRL2. 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.
3. To recharge the SRL2, plug one end of the charger into the top of the SRL2 and the other into the power source. LOW-BATT will blink while charging until the battery is fully charged. When the SRL2 battery is fully charged, LOW-BATT turns off.
4. Charge within operating environment specified in the Specifications section in 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

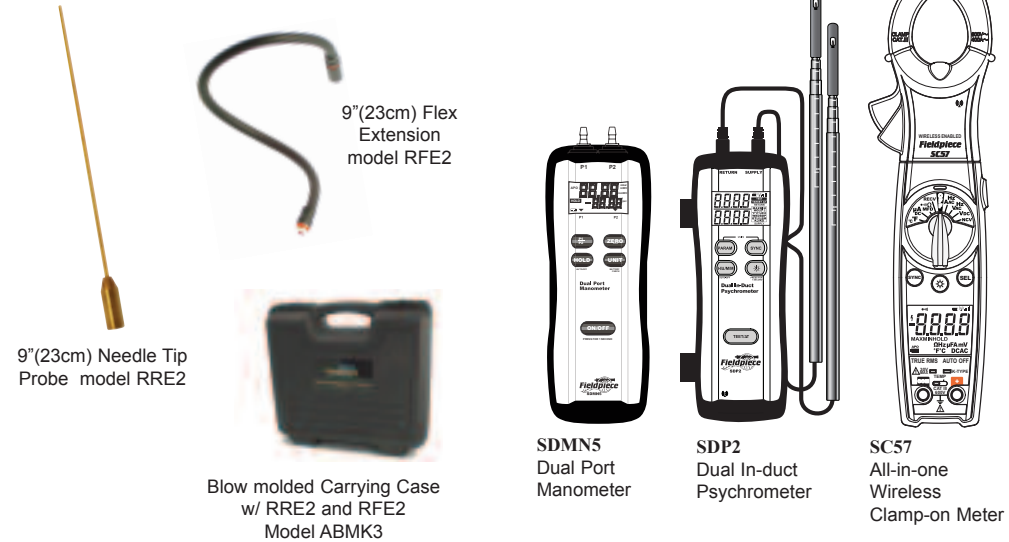
The battery should have a 40%-50% charge during prolonged storage of a month or longer. See Specifications section in this manual for proper storage environment.

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" (65cm). The blow molded case, model holds accessories and chargers.

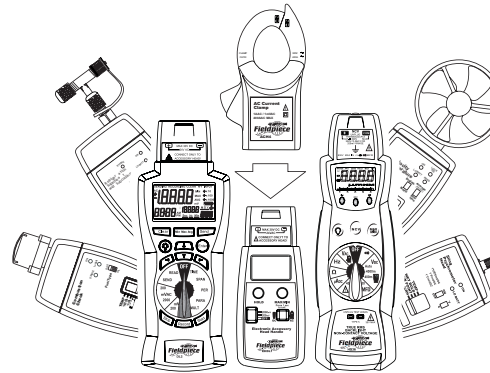
All accessories shown are included with the SR2K7.



## Notice of Compliance

This instrument complies with the specifications for an indicating, locating leak detector as described by the european standard EN 14624, EN 14624 (2005) with the assumption that the speed specification in section 7.2 should read as "2.0 cm/s" as was indicated to us by A. Beatrix Alke, project manager of Deutsches Institut fur Normung.

## 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 ASLS2 leads.

## Standalones from Fieldpiece

The SRL2 refrigerant leak detector is designed for HVAC/R technicians. Here are some other standalone products from Fieldpiece Instruments.

## 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.

Return any defective SRL2 to Fieldpiece for warranty service along with proof of purchase. Contact Fieldpiece for out of warranty repair charges.

**Fieldpiece**  
Designed in USA  
MADE IN TAIWAN