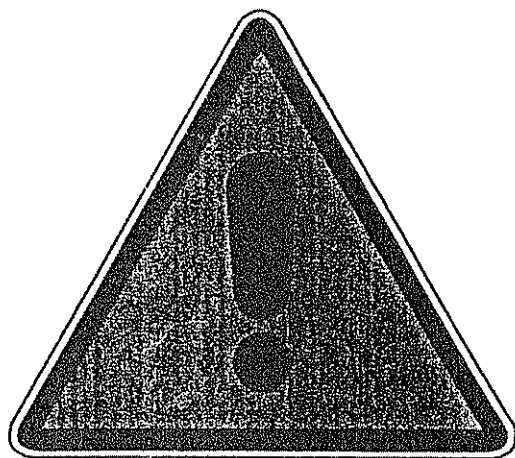


Kane-May
LS1
Operator Manual

Contents

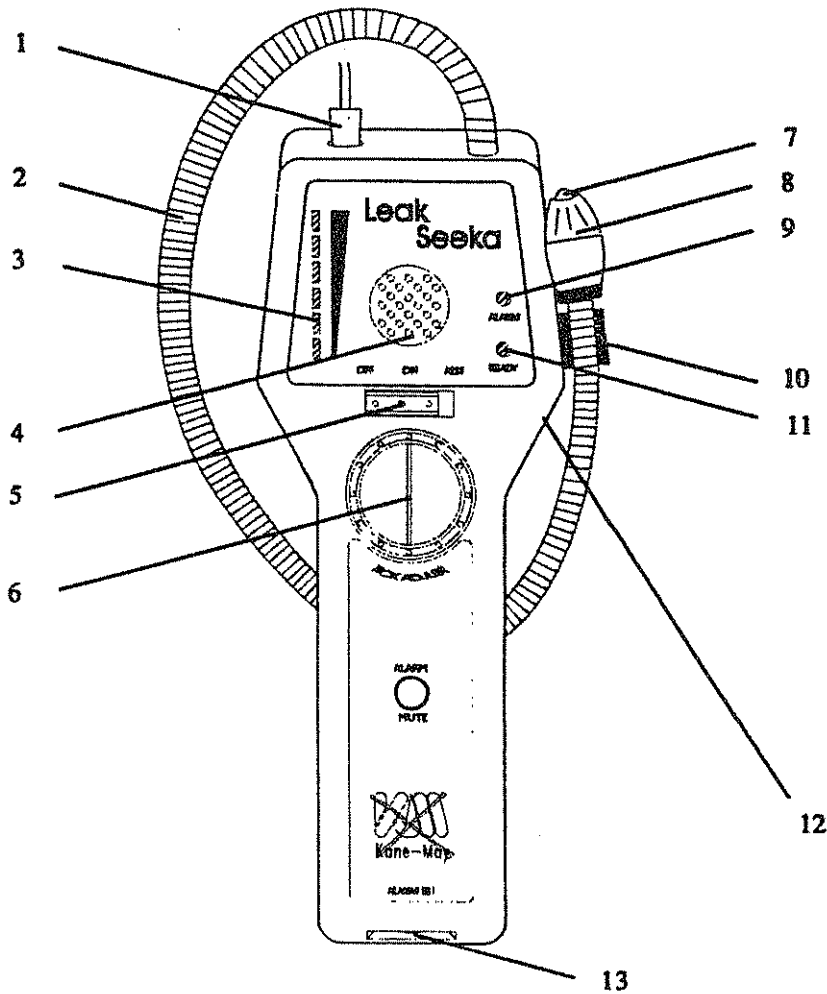
1. Product Features
2. General Description
3. Electromagnetic Compatibility
4. Operating Instructions
 - Basic operation
 - Finding a leak
 - Alarm indication
 - Setting the alarm
 - Hints and tips
5. Battery Replacement
6. Specifications
7. Warranty

Caution



The LeakSeeka-1 LS-1 instrument is factory calibrated for methane in air. The alarm will be set off when the gas concentration in the air approaches the "ALARM" set point. The "ALARM" set point is adjustable by the user for any gas concentration within the range of 0% to 40% of the lower explosive limit (LEL). The "ALARM" response in the presence of any other gas will be different.

1. Product Features



- | | |
|----------------------------|----------------------------|
| 1. Earphone Jack | 8. Sensor cover |
| 2. Gooseneck | 9. Alarm light |
| 3. Level indicator | 10. Gooseneck Clip |
| 4. Audible Alarm | 11. Power On light (ready) |
| 5. Off/On/Alarm Switch | 12. Battery Compartment |
| 6. Level "Tick" Adjustment | 13. Alarm Set |
| 7. Tip light | |

2. General Description

The LeakSeeka LS-1 is an advanced state-of-the-art leak detector capable of detecting many combustible and toxic gases.

A partial list of these gases is:

Acetone
Ammonia
Carbon Monoxide

Alcohol
Butane
Halon

Petrol
Hydrogen Sulphide
Industrial Solvents
Lacquer Thinners
Propane
Refrigerants
Natural Gas

Jet Fuel
Smoke
Methane
Naphtha

3. Electromagnetic Compatibility

The European Council Directive 89/336/EEC requires that electronic equipment does not generate electromagnetic disturbances that exceed defined levels and has an adequate level of immunity to enable it to be operated as intended. The specific standards applicable to this product are detailed in the appendices.

Since there are many electrical products in use that pre-date this Directive and may emit electromagnetic radiation in excess of the standards defined in the Directive there may be occasions where it would be appropriate to check the analyser prior to use. The following procedure should be adopted:

Go through the normal start up sequence in the location where the equipment is to be used.

Switch on all localised electrical equipment that might be capable of causing interference.

Check that all readings are as expected. (A level of disturbance in the readings is acceptable). If not adjust the position of the instrument to minimise interference or switch off, if possible, the offending equipment for the duration of the test.

N.B. Maximum cable lengths must be less than 3 metres.

At the time of writing this manual (February 1999) Kane International Ltd is not aware of any field based situation where such interference has ever occurred and this advice is only given to satisfy the requirements of the Directive.

4. Operating Instructions

BASIC OPERATION

1. Turn the instrument on in a non-contaminated atmosphere by moving the OFF/ON/ALARM slide switch to "ON" or "ALARM".
2. The green "READY" light will always be on when the batteries have sufficient power to run the LS1. If the 'READY' light flashes then the batteries need to be replaced.
3. During warm-up it is normal but not required that the ticking sound increases and all lights on the 'LEVEL INDICATOR' are ON. The "ALARM" light may also flash for a short time.
4. The ticking rate will slowly decrease and lights on the 'LEVEL INDICATOR' will go off. The time required for this could take up to several minutes depending on the duration of time since the instrument was last used. (Normally approximately 15 seconds).
5. Turn the "LEVEL ADJUST" until ONLY the first green light on the 'LEVEL INDICATOR' is ON, this will also give a slow uniform ticking sound.

FINDING A LEAK

6. Move the sensor head along area to be checked. Lights on the 'LEVEL INDICATOR' will illuminate and the tick rate will increase as a higher concentration of gas is detected. The lights will change from green to yellow and ultimately red
7. If the last red light is illuminated turn the 'LEVEL ADJUST' so that the lights start to go out. This resets the LS1 for the higher concentration and allows stronger leaks to be detected.
8. Again move the sensor head until stronger concentrations of gas are found. Reset for higher concentrations as required.
9. If the first green light on the 'LEVEL INDICATOR' goes out and the tick rate reduces then you are moving away from the leak source.

ALARM INDICATION (only works with switch set to "ALARM")

10. The Alarm is pre-set at approximately 0.5% gas (10% of L.E.L.) with the potentiometer in the locked position. If gas at the sensing head rises above this level then a two tone sound will be heard and the "ALARM" light will flash. This indicates a potentially hazardous atmosphere.
11. Note: If the instrument is in an area where high gas concentrations are present, the "ALARM" may not stop. The unit may still detect any higher gas levels in a normal manner.
12. To continue searching for a leak while the unit is alarming press the "MUTE" button or slide the switch to "ON", this disables the alarm facility. The 'LEVEL INDICATOR' and ticking sound will continue to work as detailed in BASIC OPERATION.
13. The 'LEVEL INDICATOR' and tick rate are independent of the alarm, which is calibrated to the appropriate gas concentration.

SETTING THE ALARM

14. Turn on to "ALARM" for ten minutes to warm up.
15. Insert the sensor into a clean, closed container filled with the level of gas to be detected (i.e. in the factory we set to 0.5% dry methane-air). This gas can be in the range 0-2% methane in air or an equivalent desired gas i.e. propane.
16. Rotate the "ALARM SET" adjustment until the "ALARM" light JUST comes on.
17. Remove the sensor from the gas for 1 minute then re-insert to verify the adjustment.

If the unit cannot be calibrated using this procedure, it should be returned to Kane International or an authorised distributor for repair.

HINTS AND TIPS

18. The earphone can be plugged into the unit if there is high background noise or the operator does not want to disturb other people. Inserting the earphone disables the speaker.
19. If the lights do not light or go out and the audio does not work, this is an indication that the batteries need replacing.
20. The unit will respond to some leak finding solutions (soap). Use your LeakSeeka LS-1 first!
21. If the sensor is overexposed to some gases, the unit may take an extended period of time to return to a steady condition.
22. To increase battery life, turn the unit "OFF" when not in use.

5. Battery Replacement

If the 'READY' light fails to light or flashes the batteries need replacing. Remove the battery cover on the back of the instrument by pressing in the catch. Replace the batteries with 4 AA-size alkaline batteries.

Note: When replacing batteries observe polarity markings in the battery compartment. A fresh set of alkaline batteries should operate the unit for approximately 8 hours.

6. Specifications

Power Supply	Four AA-sized Alkaline Batteries
Sensitivity	<50 ppm methane
Sensor	Solid-State
Level indicator	Six LEDs moving from green at low concentration through yellow to red. Level is adjustable and hence does not give concentration reading.
Alarm	Visual and audio at approximately 10 % of L.E.L. with an absolute maximum of 40% L.E.L. for methane. Can be calibrated for other concentrations or gases.
Warm-up	Approximately 1 min.
Response Time	Less than 2 seconds (to 40% L.E.L.)
Recovery Time	Less than 4 seconds (from 40% L.E.L.)
Duty Cycle	Continuous
Battery life	Approximately 12 hours
Dimensions	80 x 220 x 60 mm
Weight	450g
Probe Length	400mm
Accessories	Carry Case Alkaline Batteries Instruction Manual
<u>Operation Environment</u>	
Temperature	0-50°C
Humidity	10% - 90% RH non-condensing

7. Warranty

All Kane-May instruments include batteries and carry a 12 months warranty, covering any manufacturing defects and component failures. The warranty applies to all Kane-May products world-wide.

In line with our policy of continuous development we reserve the right to alter any part of our product specification without prior notice.



Thank you for reading this data sheet.

For pricing or for further information, please contact us at our UK Office, using the details below.



UK Office

Keison Products,

P.O. Box 2124, Chelmsford, Essex, CM1 3UP, England.

Tel: +44 (0)330 088 0560

Fax: +44 (0)1245 808399

Email: sales@keison.co.uk

Please note - Product designs and specifications are subject to change without notice. The user is responsible for determining the suitability of this product.