



# INSTRUCTIONS FOR: IR THERMOMETER MODEL: VS902

Thank you for purchasing a Sealey product. Manufactured to a high standard this product will, if used according to these instructions and properly maintained, give you years of trouble free performance.



**IMPORTANT: PLEASE READ THESE INSTRUCTIONS CAREFULLY. NOTE THE SAFE OPERATIONAL REQUIREMENTS, WARNINGS & CAUTIONS. USE THE PRODUCT CORRECTLY AND WITH CARE FOR THE PURPOSE FOR WHICH IT IS INTENDED. FAILURE TO DO SO MAY CAUSE DAMAGE AND/OR PERSONAL INJURY AND WILL INVALIDATE THE WARRANTY. PLEASE KEEP INSTRUCTIONS SAFE FOR FUTURE USE.**

## 1. SAFETY INSTRUCTIONS

- WARNING!** Ensure Health & Safety, local authority, and general workshop practice regulations are adhered to when using this equipment.
- ✓ Familiarise yourself with the application and limitations of the product, as well as the specific potential hazards peculiar to the use of the thermometer.
- ✓ Keep the thermometer clean for best and safest performance.
- x **DO NOT** use equipment for any purpose other than that for which it is designed.
- x **DO NOT** allow untrained persons to operate the thermometer.
- ✓ When not in use, store in a safe, dry, childproof area.

### 1.2 LASER SAFETY

The VS902 utilises a Class II laser that emits low levels of visible radiation (i.e. wavelengths between 400 and 700 nanometres) which are safe for the skin but not inherently safe for the eyes. The Class II emission limit is set at the maximum level for which eye protection is normally afforded by natural aversion responses to bright light. Accidental eye exposure is therefore normally safe, although the natural aversion response can be overridden by deliberately staring into the beam, and can also be influenced by the use of alcohol or drugs.

- WARNING!** Do not look or stare into the laser beam as permanent eye damage could result.
- x **DO NOT** direct the laser beam at any person's (or animal's) eyes as eye damage could result.
- x **DO NOT** operate the thermometer when you are tired or under the influence of alcohol, drugs or intoxicating medication.
- ✓ Be aware that reflections of the laser beam from mirrors or other shiny surfaces can be as hazardous as direct eye exposure.



## 2. INTRODUCTION & SPECIFICATION

Revolutionary new way to tackle diagnosis of engine and vehicle faults. VS902 detects energy emission in the infrared spectrum and converts reading into a display of temperature. Features laser pointer to indicate area being sampled. Temperature is displayed on an LCD panel. Temperature can be shown in either °C or °F. Powered by 2 x CR2032 Lithium batteries (not included).

### 2.1 Specification

Range:	-33 to +250°C (-27 to +482°F)
Resolution:	0.1°C/0.1°F
Response time:	1 second
Infrared accuracy:	±2% of reading or 2°C (which ever is greater).
Field of view (D:S):	3:1 optics ratio (Distance Spot Ratio)
Emissivity:	0.95 default - adjustable from 0.10 to 1.00 emissivity
Laser	Class II
Battery life:	typically 40hrs (thermometer only)
Battery:	CR2032 x 2 (1 for thermometer + 1 for laser)
Display:	LCD
Dimensions:	22.5 x 60 x 104mm
Weight:	63 grams (including batteries)



## 3. OPERATION

- 3.1 To measure the surface temperature of an object/region, simply point the device at the object/region in question and press the Scan button. Partially depressing the Scan button will cause the thermometer to begin measuring the temperature; fully depressing the Scan button will cause the laser to operate also.
- 3.2 °C/°F MODE
  - 3.2.1 To change the display from °C to °F (or visa versa), firstly turn the unit on by pressing the Scan button. Now press the Mode button four times and the °C or °F symbol will begin flashing in the display. Now press the Scan button to select the desired scale. Press the Scan button once more to confirm the selection.
- 3.3 MINIMUM OR MAXIMUM MODE
  - 3.3.1 Using the Minimum mode, it is possible to determine the coolest temperature registered by the thermometer whilst the Scan button is depressed.
  - 3.3.2 First, press the Scan button to activate the unit. Now press the Mode button once to select the Minimum mode ("MIN" will flash on the display). Press the Scan button once to confirm this selection. The thermometer will now display the coolest temperature registered during a continuous press of the scan button. To deselect Minimum mode, press the Mode button once.
  - 3.3.3 Using the Maximum mode, it is possible to determine the highest temperature registered by the thermometer whilst the Scan button is depressed. Turn the unit on by pressing the Scan button. Press the Mode button twice to select Maximum mode ("MAX" will flash in the display). Press the Scan button once to confirm this selection. The thermometer will now display the highest temperature registered during a continuous press of the scan button. To deselect Maximum mode, press the Mode button once.
- 3.4 LOCK MODE
  - 3.4.1 The lock mode is for use when continuous monitoring of temperatures is required.
  - 3.4.2 Turn the unit on by pressing the Scan button. Press the mode button three times until "LOCK" flashes in the display. Now press the scan button to confirm this selection. The unit will now continuously display the temperature for up to 60mins or until the scan button is pressed again.

3.5 EMISSIVITY

3.5.1 The VS902 comes with a default emissivity of 0.95. This can be altered to a value between 0.10 (10E) and 1.00 (100E).

**NOTE:** Such alterations should only be carried out by experienced personnel.

Turn the unit on by pressing the Scan button. Press the mode button 5 times for emissivity function. "95E" will appear on the display. Press the scan button to adjust the emissivity value. Once the correct value is displayed, press the Mode button once more to confirm the settings and exit the setup screen.

**NOTE:** Non-contact infrared thermometers are not recommended for use in measuring the temperature of shiny or polished metals.

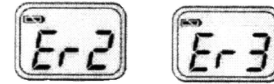
**IMPORTANT:** EMC/RFI - Readings may be affected if the unit is operated within a radio frequency electromagnetic field strength of approximately 3 volts per metre, but the performance of the instrument will not be permanently affected.

**4. LCD ERROR MESSAGES**

4.1 "Hi" or "Lo" will be displayed when the temperature being measured is outside the range of the instrument. "Hi" will be displayed when the temperature rises above +250°C and "Lo" when the temperature drops below -33°C.



4.2 "Er2" is displayed when the unit is exposed to rapid changes in ambient temperature. "Er3" is displayed when the ambient temperature of the unit exceeds 0°C and then again when it exceeds 50°C. In both cases allow a minimum of 30mins for the unit to stabilise and adapt to the working temperature.



4.3 For all other errors, a generic error message "Er" is displayed. In the event of this occurring, it will be necessary to reset the unit. To reset the unit, turn the instrument off, remove the battery and wait at least one minute. Now reinsert the battery and turn the unit on. Should the error message remain, contact your authorised Sealey dealer for assistance.



**5. BATTERIES**

5.1 The VS902 contains two separate batteries. The battery closer to the front of the unit (i.e. the laser emission/IR reception end) is for laser operation only. The other battery is for taking temperature measurements, meaning that the unit can still measure temperature effectively without the laser being operational.

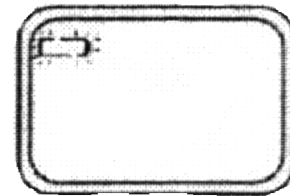
5.2 The VS902 incorporates a visual guide to the battery status (for the battery used by the thermometer only):



"Battery OK" - measurements are possible



"Battery Low" - battery needs replacing. Measurements are possible.



"Battery Exhausted" - measurements are not possible. Replace battery.

5.3 When the "Battery Low" symbol appears, the battery should be replaced immediately with a CR2032 lithium cell. The battery is located under the twist cover near the rear of the unit.

**NOTE:** It is important that the unit be turned **off** before the battery is replaced. A malfunction could occur if this precaution is not taken. Be sure to dispose of the battery safely and in accordance with local laws regarding potentially hazardous waste.

**6. STORAGE AND CLEANING**

6.1 The sensor lens should be kept clean at all times. Care should be taken when cleaning the lens - it is an extremely delicate piece of equipment. Use a cotton swab moistened with a little water or medical alcohol, allowing the lens to dry fully before attempting to use the unit.

**DO NOT** submerge any part of the VS902.

6.2 The VS902 should be stored between -20°C and +65°C.

**INFRARED LASER THERMOMETER**  
Model: VS902

EN 60825-1 Laser safety  
93/68/EEC CE Marking Directive

**Declaration of Conformity** We, the sole importer into the UK, declare that the product listed here is in conformity with the following standards and directives.



The construction file for this product is held by the Manufacturer and may be inspected, by a national authority, upon request to Jack Sealey Ltd.

Signed by Mark Sweetman 10th March 2004



For Jack Sealey Ltd. Sole importer into the UK of Sealey Professional Tools.

**NOTE:** It is our policy to continually improve products and as such we reserve the right to alter data, specifications and component parts without prior notice.

**IMPORTANT:** No liability is accepted for incorrect use of this product.

**WARRANTY:** Guarantee is 12 months from purchase date, proof of which will be required for any claim.

**INFORMATION:** Call 01284 757525 for our catalogue & promotions. Leave your full name, address & postcode.

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