

---

# LEVEL MEASURING SET

## OSCAR 250

---

### CONTENTS

Introduction.  
Operation.  
General.  
Warranty.



No contractual terms which may be contained in this booklet shall apply to products supplied through RS. All orders accepted by RS are accepted subject to the Conditions of Sale and (where applicable) the Servicing Conditions contained in the current RS catalogue.

5851



Seaward Electronic Ltd.  
Bracken Hill, South West Industrial Estate,  
Peterlee, Co. Durham. England.  
Telephone: (091) 5863511. Fax: (091) 5860227

---

## **INTRODUCTION**

The Oscar 250 is a versatile, easy to use dB meter and oscillator, specially designed for fault location and line-up of speech and data carrying networks. This compact, hand held instrument incorporates only two controls, and was produced to allow widespread allocation in the field with minimum of operator training.

The instrument is available with two receive versions, having receiver terminations of either 600 ohms and 900 ohms, or 600 ohms and THROUGH (17k ohms approx). The terminated positions provide a DC path for line hold or wetting.

The SEND circuit incorporates its own matching transformer with direct coupling to the circuit under test. The Oscar 250 receiver is designed for use with a transmit unit of another Oscar or a signal generator such as that provided by the Seaward PT250 Oscillator.

## **LAYOUT**

Contained in a rugged hand held case with 4mm sockets at the top of the enclosure, a 3½ digit liquid crystal display, a central rotary switch, a frequency select rocker switch and a battery compartment which is located at the lower end of the instrument.

The terminals are marked SEND and RECEIVE.

The display of the Oscar 250 is scaled in dB and autoranges in two scales to give optimum resolution. The display also includes a low battery warning which is indicated by the symbol BAT.

A central rotary control enables the operator to switch the unit on and select either of the two levels of oscillator send and either of the two receiver terminations. When the instrument is not in use, the rocker switch near the base of the unit offers a choice of transmission frequency. (Non standard versions clearly show the output frequency to avoid confusion.)

## **OPERATION**

### **Signal Level Measuring**

1. Using suitable test leads, connect the instrument to the circuit under test and insert the leads into sockets marked RECEIVE and coloured black.
2. Rotate the rotary switch and select the desired input impedance for the measurement.
3. The liquid crystal display will now indicate the received signal level which will be displayed in dB. The display will autorange to select the most suitable scale and the negative bar sign will appear on the left hand side of the display to indicate a negative figure.
4. If the symbol BAT appears on the display, the instruments battery requires replacement. To ensure accuracy of reading, it is advisable that the batteries are replaced immediately by one of a similar type. (See battery replacement section.)

## **Tone Sending**

1. Using suitable test leads, connect the circuit to the appropriate red sockets marked SEND. Select the desired send frequency by moving the rocker switch near the base of the instrument.
2. Rotate the central rotary switch to the required signal level, normally - 10dB or 0dB. Ensure that the corresponding receiver termination position required is retained.
3. Signal output is through an internal matching transformer providing a DC path of about 85 ohms.
4. The SEND circuit is protected by an internal 100mA fuse which is not replaceable by the operator. The unit should be returned for rectification if this fuse is believed to have failed.

## **NOTE**

BEFORE CONNECTING THE OSCAR 250 TO ANY CIRCUIT, ALWAYS ENSURE THAT NO DANGEROUS VOLTAGE IN EXCESS OF 50 VOLTS DC IS PRESENT, NOR THAT CURRENTS EXCEEDING 100mA CAN FLOW IF SHORT CIRCUITED.  
ALWAYS SWITCH THE INSTRUMENT OFF AFTER USE.

## **GENERAL CARE AND BATTERY REPLACEMENT**

The Oscar 250 is a precision instrument and should be treated as such. Always:

1. Ensure that the test leads and the terminals are in good condition.
2. Keep the instrument clean and dry.
3. Avoid excessive temperature variations.
4. Replace the battery when BAT appears on the display.
5. Storage under high temperature, high humidity conditions should be kept to a minimum.

### **Battery Replacement**

When the BAT symbol appears on the display, the battery should be replaced as soon as possible. The battery is located at the lower end of the instrument and is exposed by unclipping the cover, or on some units by unscrewing the fixing screw.

Replacement batteries should be of the ALKALINE type that is a 9V PP3 e.g. type IEC number 6LF22. After checking correct polarity, insert the battery and firmly replace the cover.

If the instrument is not in regular use, the battery should be removed and stored separately to avoid damage by leaking electrolyte.

## **GENERAL**

Size: 180mm x 90mm x 40mm  
Weight: Approx 650 gms.  
Connections: Red and black 4mm sockets  
Battery type: Alkaline 9V PP3 IEC No 6LF22 or similar.

**Send Circuits****Send Levels:**

Standard 0dB – 10dB  
Optional:

**Send Frequencies:**

Standard 800Hz 1600Hz  
Optional:

**Receiver Circuit**

3½ digit autoranging liquid display.  
Range + 10dB to – 50dB.  
Frequency range 100Hz – 20kHz at – 50dB  
Frequency range 100Hz – 200Hz at 0dB

**Receiver termination:**

600 ohms; THROUGH (17K ohms)  
Optional:

**Seaward reserve the right to alter specification without notice.**

**WARRANTY AND REPAIR**

Should this instrument require repair or calibration within the UK it should be returned to:

Seaward Electronic Limited  
Bracken Hill  
South West Industrial Estate  
Peterlee  
Co. Durham  
SR8 2JJ  
England  
Telephone 091 5863511 Fax 091 5860227

**Overseas**

If the instrument owner resides outside the UK, he may either return the instrument directly to Seaward at Peterlee, or to his local sales agent, a list of whom can be obtained from Seaward. It is important that a copy of the invoice and packing note are sent by airmail to clear the product through customs.

Estimated repair charges (where appropriate) and freight charges will be advised to the owner before work is commenced.