



## **DUCTER® D007**

- Four terminal, low resistance measurement
- Internal rechargeable cells, 20 Ah total capacity, with built-in charger unit and continuous battery condition indication
- Test current up to 10 A

# Low Resistance Ohmmeter

## **DESCRIPTION**

The DUCTER® D007 Low Resistance Ohmmeter is an analogue ohmmeter for measuring low resistances at a high test current, in laboratory or field applications. The portable test set is suitable for measurements down to  $1\ \mu\Omega$  at 10 A d.c. It uses the four terminal measurement principle and test leads with duplex hand spikes are provided for making the current and potential connections to the item under test. Alternative types of test leads are available.

The instrument will measure up to 10  $\Omega$ . This resistance span is divided into six ranges, each of which are selected by a six-position rotary switch. The lowest range is 0 to 100  $\mu\Omega$  and the minimum value that can be read from the scale is  $1\ \mu\Omega$ . The readings are given directly in ohms, on an Evershed Cross-coils ohmmeter, with the units of measurement and the value of the test current indicated by the range switch. An amplifier-assisted meter deflecting circuit, with input diodes for overload protection, gives a high sensitivity for the measurements.

Each instrument is individually calibrated and variations in the test current or battery condition will be compensated automatically with no loss of accuracy. An adjuster is provided for setting the meter electrical zero. The direction of the test current can easily be reversed by the operation of a switch; therefore, differences in reading caused by temperature, etc., can be eliminated from a measurement. The condition of the battery is monitored continuously during use so that the

operator can easily see when recharging is required.

The D007 is completely self-contained in a strong hardwood case fitted with a detachable protective cover. The battery-powered unit incorporates the rechargeable cells and the charging circuit within the case. A space is also provided for storing the duplex hand spike test leads.

## **APPLICATIONS**

Instruments that accurately measure low resistance and give the result directly are invaluable in many applications. The DUCTER® D007 Low Resistance Ohmmeter is stable, accurate and reliable, and is equally suited to precision laboratory applications and to field servicing work.

## **Example Uses**

- Commissioning and maintaining substation equipment, where measurements can be made on such things as busbar joints, switch and circuit breaker contact resistance, fuse resistance, cold lap-welded joints in aluminium earthing strip and earth bonding
- Testing transformer and motor windings
- Maintaining overhead transmission lines (where "hot" joints can be tested before and after their remaking or recompression)
- Bond testing aircraft frames, including the bonding of electronic dischargers and fuel tanks

- Testing earth bonds in mines
- Rail bond testing where a rail is used as part of a communication system or for power transmission
- Testing the integrity of lightning conductors

## **Other Models**

Certain applications require specific test current levels. Different test currents can be provided on other DUCTER® and BIDDLE™ instruments, namely BT51, D201, D203 and DLRO® Low Resistance Ohmmeters, with test currents ranging from 1 to 100 A.

Tests conducted with the D007 conform to the U.K. Mines and Quarries Act 1954 Conductance Tests. (The instrument is not recommended for use in explosive atmospheres.)

## **FEATURES AND BENEFITS**

- Four terminal, low resistance measurement
- Internal rechargeable cells, 20 A-hour total capacity, with built-in charger unit and continuous battery condition indication
- Test current up to 10 A.
- Reading shown on linear analogue scale,  $1\ \mu\Omega$  maximum sensitivity
- Evershed Cross-coils ohmmeter movement with amplifier-assisted deflection
- Overload protection provided by diodes on amplifier input

**SPECIFICATIONS**

**Ranges**

Resistance Range	Lowest Reading	Test Current (approx)
0 to 100 $\mu\Omega$	1 $\mu\Omega$	10 A
0 to 1 m $\Omega$	10 $\mu\Omega$	10 A
0 to 10 m $\Omega$	100 $\mu\Omega$	1 A
0 to 100 m $\Omega$	1 m $\Omega$	1 A
0 to 1 $\Omega$	10 m $\Omega$	1 A
0 to 10 $\Omega$	100 m $\Omega$	0,1 A

**Movement**

Evershed Cross-coils ohmmeter with amplifier-assisted deflecting coil

**Accuracy**

1% of full scale deflection on all ranges

**Protection**

Overload protection by diodes on amplifier input

**Fuse**

1 ampere ceramic HBC IEC 127/1, 20 x 5 mm, protection on a.c. supply

**Power Supply**

Rechargeable NiCad battery mounted internally (with own 110/240 volt, 50/60 Hz charger), 20 Ah total capacity

**Safety**

The instrument meets the requirements for IEC 10101-1 (1992), EN61010-1 (1993).

The instrument is intended for use with non powered circuits only.

**Dimensions**

280 H x 400 W x 192 D mm  
11 H x 15,75 W x 7,75 D in.

**Weight**

11,1 kg (24,5 lb)

**ORDERING INFORMATION**

Item Qty	Order Code.	Optional Accessories	Order Code
Low Resistance Ohmmeter.....	D007	Test leads with single hand spikes, 1,8 m (6 ft)	6130-516
<b>Included Accessories</b>		Test leads with duplex hand spikes,	
Mains power supply lead		6,0 m [20 ft] (2 used).....	6111-023
Test leads with duplex hand spikes, 2,5 m (8 ft).....	6111-022	9,0 m [30 ft] (2 used).....	6111-024
Operating instruction book		Four terminal lead set with clip connectors.....	6110-220