

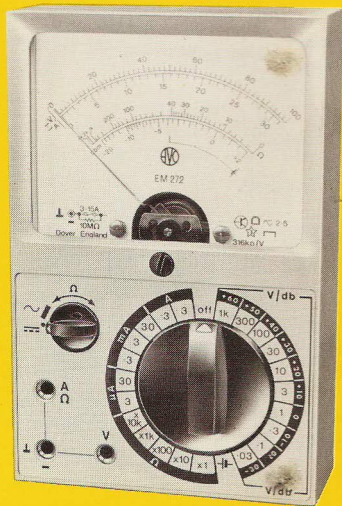


# **AVOMETER**

## **Model EM 272**

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### **Operating Instructions**



# SPECIFICATION

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## Ranges

A.C./D.C. Voltage	30mV, 100mV, 300mV, 1V, 3V, 10V, 30V, 100V, 300V and 1 000V f.s.d.
A.C./D.C. Current	3 $\mu$ A, 30 $\mu$ A, 300 $\mu$ A, 3mA, 30mA, 300mA, and 3A f.s.d.
Resistance	1 $\Omega$ —4k $\Omega$ , 0—40k $\Omega$ , 0—400k $\Omega$ , 0—4M $\Omega$ and 0—40M $\Omega$ . Mid-scale values 40 $\Omega$ , 400 $\Omega$ , 4k $\Omega$ , 40k $\Omega$ , and 400k $\Omega$ .
Decibels	—50dB to +60dB in 10dB steps (0 dB level at 0.778V on the 1V range corresponding to 1 mW into 600 $\Omega$ .)

## Accuracy

(20°C and 50Hz a.c.)

A.C./D.C. Voltage ranges	$\pm$ 2.5% of f.s.d. (all ranges above 30mV). $\pm$ 5% of f.s.d. (30mV range only). all up to approx. 1kHz on a.c.
A.C./D.C. Current Ranges	$\pm$ 2.5% of f.s.d. (all ranges).
Resistance	$\pm$ 5% at centre scale.

## Bandwidth

(relative to 50Hz)

A.C. Voltage Ranges	$\pm$ 5% up to 20kHz (all ranges up to 100V f.s.d.). $\pm$ 5% up to 5kHz (300 and 1 000V ranges).
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A.C. Current Ranges

$\pm 5\%$  to 20kHz (all ranges).

Measurement at low frequencies is only limited by the effect of needle flicker.

### AC/DC Input Characteristics

Voltage Ranges

Impedance 316k  $\Omega$ /V up to a maximum of 10M  $\Omega$ .

Current Ranges

Maximum voltage drop between 120mV and 600mV at instrument terminals (see page 7).

### Overload Protection

A.C. and D.C. Voltage Ranges

Prolonged overload could cause slight deterioration of accuracy.

260V r.m.s. on all ranges up to 10V f.s.d.

1,000V r.m.s. on 30V range and above.

A.C. and D.C. Current Ranges

Typically 10 times full scale deflection but not exceeding 10A. The possibility of accidental damage on these ranges is reduced by the provision of a separate socket for current measurements. All ranges fused at 3.15A.

### Temperature Effect

Operating Range

0 to 40°C.

Storage Range

-40°C to +70°C.

Temperature Co-efficient

Less than  $\pm 0.1\%/^{\circ}\text{C}$  on all ranges over 30mV.

### Mechanical Shock

Will withstand a shock up to 40g.

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## SPECIFICATION

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### Batteries

One 15V battery type B154 (IEC 10F15).

Typical life 1 000 hours.

One 1.5V cell type HP7 (IEC R6) for resistance measurements only.

Battery check facility provided.

### Dimensions

146 × 95 × 57mm (5.75 × 3.75 × 2.25 in.) approx.

### Weight

450 g (15½ oz) approx. with batteries.

### Fuse Link

3.15A (ceramic) 20 × 5 mm. 25413-280  
(IEC 127 Sh 1)

### WARNING

When measuring voltage on live circuits, make sure that the meter is **NOT** switched to a current (Amps) or resistance (Ohms) range. This mistake can cause injury to the operator.

## GENERAL DESCRIPTION

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The AVO EM272 Electronic Multimeter is an inexpensive, pocket sized, multirange instrument, using a conventional meter movement with a solid state current amplifier to give a high input impedance, wide frequency response and low battery consumption.

The multimeter is extremely simple to use, with only two controls. A single range switch selects all the ranges and also provides a Battery Check position. The AC/DC Function switch is combined with the Ohms Set Zero control. No electrical Set Zero is required, but mechanical zero adjustment is provided.

Three sockets are provided for input connections. One is common, one is used for voltage inputs and the other for current or resistance measurements.

The instrument is housed in a rugged, shockproof moulded case.

### WARNING

THE INSTRUMENT WILL CONTINUE TO INDICATE AFTER THE FUSE HAS FAILED, BECAUSE A HIGH VALUE RESISTOR IS CONNECTED ACROSS THE FUSEHOLDER.

This is intentional and acts as a safeguard, preventing operators from wrongly assuming a circuit to be 'dead' when in fact it is 'live'.

The reading is not accurate. When the meter is connected to voltages between 30V and 1000V only half the true voltage will be indicated. Below 30 volts the indication will be rather less than half. Care should be exercised therefore, particularly when checking mains circuits above 200V a.c.

