

## H29164 Benchmark d.c. Millivoltmeter

NFU151f

### Purpose

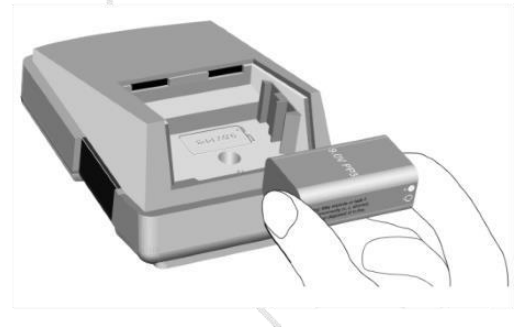
Digital voltmeter: 0 to  $\pm 1999$  millivolts d.c.

One of a range of digital instruments specially designed for educational applications. The units provide the user with accurate measurement of a range of physical quantities.

### Apparatus details

#### Fitting the battery

All Benchmark units require 9V PP3 type batteries. Open the battery compartment by pressing the battery cover at the top end of the case. This releases the battery cover catch, allowing the cover to be lifted. Check the polarity, press the battery into place and replace the cover.

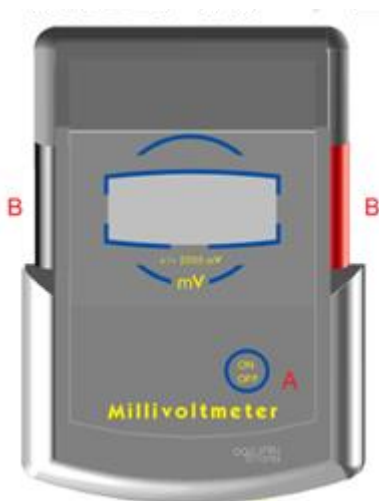


#### Auto Switch-off

To help prolong battery life, all Benchmark instruments incorporate automatic switch-off. All the electrical meters switch off after 50 minutes. The instruments may be reactivated by pressing the ON/OFF keypad. They may also be switched off manually before this time by pressing the same keypad.

### Operating procedures

All meters are switched on by pressing the ON/OFF keypad (A). They are connected into the circuit under investigation via their 4mm sockets (B) in the usual way, ensuring that the voltages involved are within the range of the chosen meter or meters.



The d.c. meters will accept inputs of either polarity. If this polarity corresponds with the black (-) and red (+) input sockets, the display will simply show the figures. If the input polarity is reversed in relation to the input sockets, the figures will be preceded by a minus sign.

There are two a.c. meters in the range which can be used to measure alternating current and voltages.

#### Specification: d.c. Millivoltmeter

Range:	$\pm 1999\text{mV d.c. only}$
Overload capacity:	$\pm 100\text{V}$
Input impedance:	$10\text{M}\Omega$
Accuracy:	$\pm 1\%$ of full scale

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## *Display:*

3.5 digit liquid crystal

13mm characters

Low battery and polarity indication.



## *Internal battery:*

9V type PP3 or equivalent

Expected battery life 5000 hours from alkaline PP3.



## *Automatic Switch-Off:*

Operates after approximately 50 minutes.



## *Dimensions:*

130 x 92 x 55mm (length x width x depth)



## **The Benchmark range**

d.c. Ammeter	H27726
d.c. Milliammeter	H29097
d.c. Microammeter	H29139
d.c. Voltmeter	H27763
d.c. Millivoltmeter	H29164
a.c. Ammeter	H28342
a.c. Voltmeter	H29954
Coulombmeter	H29723
Stopclock	H28603

## **Safety advice**

For your safety, this product should be used in accordance with these instructions; otherwise, the protection provided may be impaired.

This unit is intended for use in DRY conditions. Avoid spillage of water and other liquids on to the unit. There is no specific requirement for insulation of external circuits as they cannot become hazardous live, as a result of connection to this unit

## **Disclaimer**

If the equipment is used in a way not specified by Philip Harris, then the protection provided may be impaired.

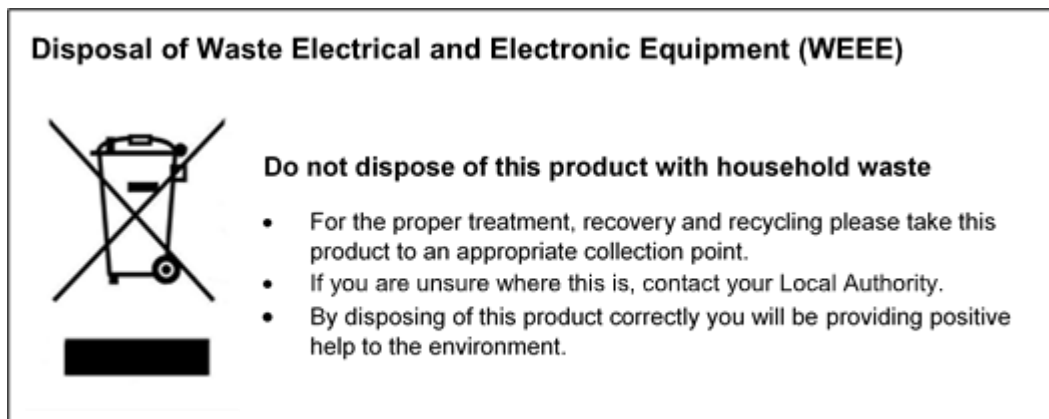
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## Warranty, repairs and spare parts

The product is guaranteed for a period of one year from the date of delivery to the customer. This warranty does not apply to defects resulting from the action of a user such as misuse, improper wiring, any operations outside of its specification, improper maintenance or repair, or unauthorized modification.

Our liability is limited to repair or replacement of the product. Any failure during the warranty period should be referred to Customer Services.

In the event of a fault, the product should be referred to the Philip Harris recommended repair agent.



Philip Harris Education, 2 Gregory Street, Hyde, Cheshire, SK14 4RH

Orders and Information      Tel: 0845 120 4521

Fax: 0800 138 8881

Repairs                      Tel: 0845 120 3211

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Website: [www.philipharris.co.uk](http://www.philipharris.co.uk)

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