

A new addition to the ALBA system – a low voltage Joule and Watt Meter

In past issues of Physics Education I commented on the ALBA Interface and Logger, the ALBA Ranger Ultrasonic Measuring device and the ALBA Power-Energy-Cost meter. Now djb microtech ltd., the producer of the ALBA range, has made a Joule-Watt Meter for low voltage d.c. devices which replicates most of what the Power-Energy-Cost meter did for mains devices.



Figure 1 Investigating a drill on/off load with the ALBA Joule and Watt Meter

The Joule and Watt Meter connects to the two analogue DIN sockets on the interface and datalogger to sense voltage and current. Two power input sockets can connect to d.c. sources up to 16V, 3A and the output sockets to the device under investigation. When one wishes to use one or two additional sensors which would usually be connected to the two analogue DIN sockets, an Input Extension Unit has been made available to allow this. In Figure 1 the effect of placing a mini-drill under/not under a load was being examined.

The display of information is onto a computer and choices are available of Voltage, Current, Power and Total Energy meters, graphs of each of these against Time and a table recording such data. All can be displayed, or just a selection of them. Figure 2 shows the complete array although the table would need to be scrolled or enlarged to show all its data. Datalogging intervals from 2ms to 10min can be selected. Readings can be recorded continuously or a number up to a maximum of 65000. Smoothing of the data plot is also available.

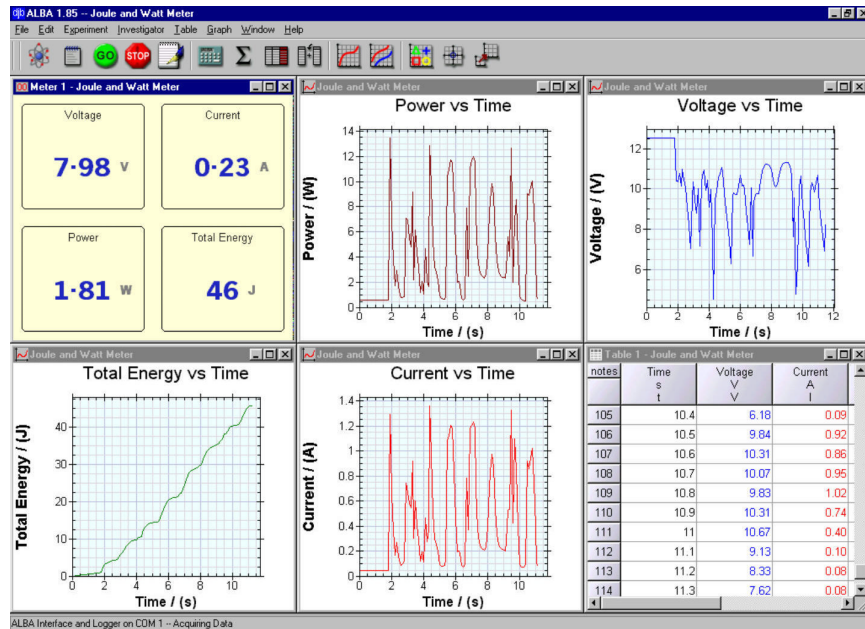


Figure 2 Screen display from Joule and Watt Meter

For students this can be used with their computers or, for demonstration purposes, connected via a computer to a digital projector for whole class display. This is an excellent addition to an already excellent range.

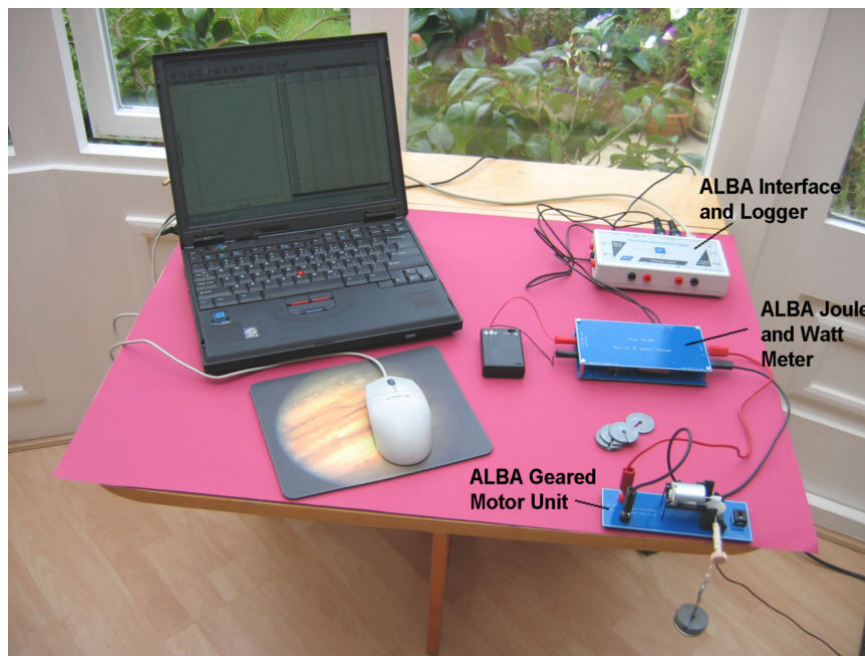


Figure 3 Investigating the efficiency of a geared motor with the ALBA Joule and Watt Meter

On Software Disk 5 djv microtech Ltd. has provided pre-programmed activities to measure the efficiency of a motor (Figure 3) and to determine the specific heat capacity of a liquid and a metal with the Joule and Watt Meter. However, this

same software provides the option to design one's own activities with this device. This same disk has various other new activities: 'Current in a bulb at switch-on', 'Half-life thickness', 'SHM-Force Constant' an application for the Ranger, 'Force and Motion', 'Lift – Force and Motion', 'Weight component down a slope', and 'Wheatstone Bridge – unbalanced'.

Since my last reviews many enhancements have been made to the already excellent ALBA software, a host of new activities have been designed to now total over one hundred, and many new sensors and associated equipment has been produced. If you have not seen what is available of recent times then it is well worth a further look on the website.

Rating: ** excellent**

Price:

ALBA Joule and Watt Meter A1-1075.00 £49.50; ALBA Input Extension Unit G1-1000.50 £13.50; ALBA Software Disk 5 Single User £46.00 and Site-wide £101.00. All plus VAT and pp.

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