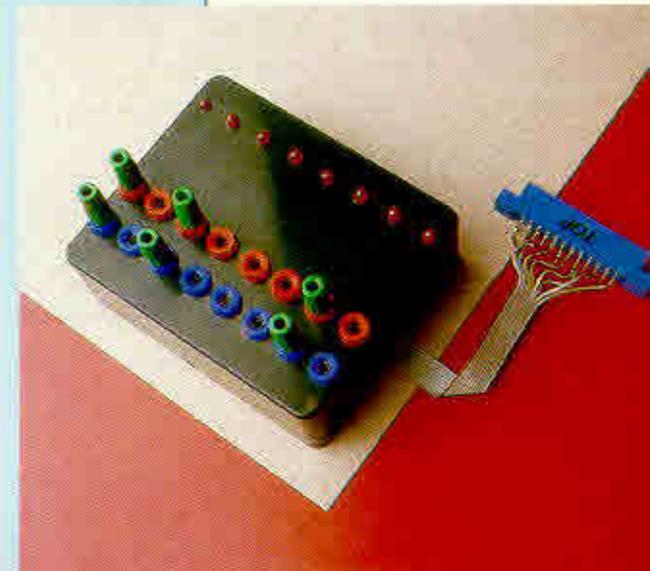


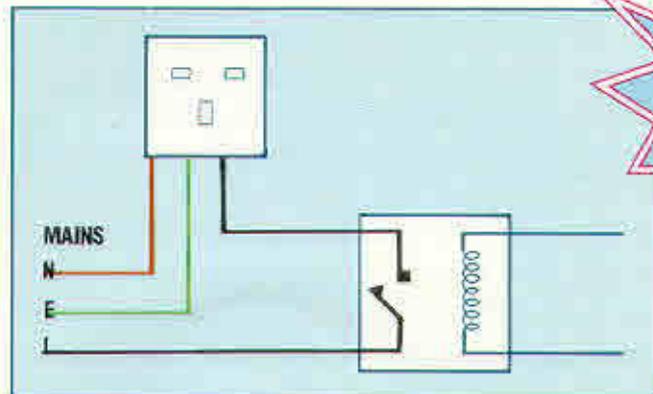
## The Buffer Box

The buffer box is the first, and most important, device in the user port system. The circuitry protects the computer's I/O chips from attempts to draw too much current from a data pin or apply an input voltage. In addition it accepts a DC or AC input from a transformer, in the range 5 to 21v and regulates it. This voltage input is added as an extra pair of lines on the system bus for use by other parts of the system. With the buffer box connected, inputs can be made to the user port; the eight red sockets corresponding to the eight data lines, the black sockets providing a separate earth for each data line. To give an external indication of the state of each data line, a series of eight LEDs are mounted on the box. Each LED lights if the corresponding data line goes low. (See pages 523 and 546 for a fuller explanation.)



## The Mains Relay

The transformer voltage can be made to switch a mains voltage by using a mains relay. This unit plugs into the mains and one of the four lines of the output box. Setting a bit high in the data register switches the transformer feed to the corresponding output socket, which in turn switches the mains feed to the three-way mains socket. We can therefore control mains appliances from the computer. (See page 646.)



### WARNING!

This is a very simple project, but anything involving mains power demands care and respect.

- Disconnect power sources before you start work.
- Check all connections and insulations with a multimeter.
- Avoid all short cuts.