

## Zero crossing detector

This circuit provides a zero-crossing signal and a d.c. output. Diode  $D_1$  is the only semiconductor which has to withstand the full mains reverse voltage. Positive going half cycles forward bias  $D_1$ , which allows  $C_1$  to charge up to 14V via  $D_3$ . Negative half cycles forward bias  $D_2$  which turns  $Tr_1$  on and

passes current to the output from  $C_1$ . The output is about 1V less on negative half cycles and is given by  $(V_{D3} + V_{sat Tr1})$  less than  $V_z$ .

R. J. Torrens,  
Scientronics,  
Huntingdon.

