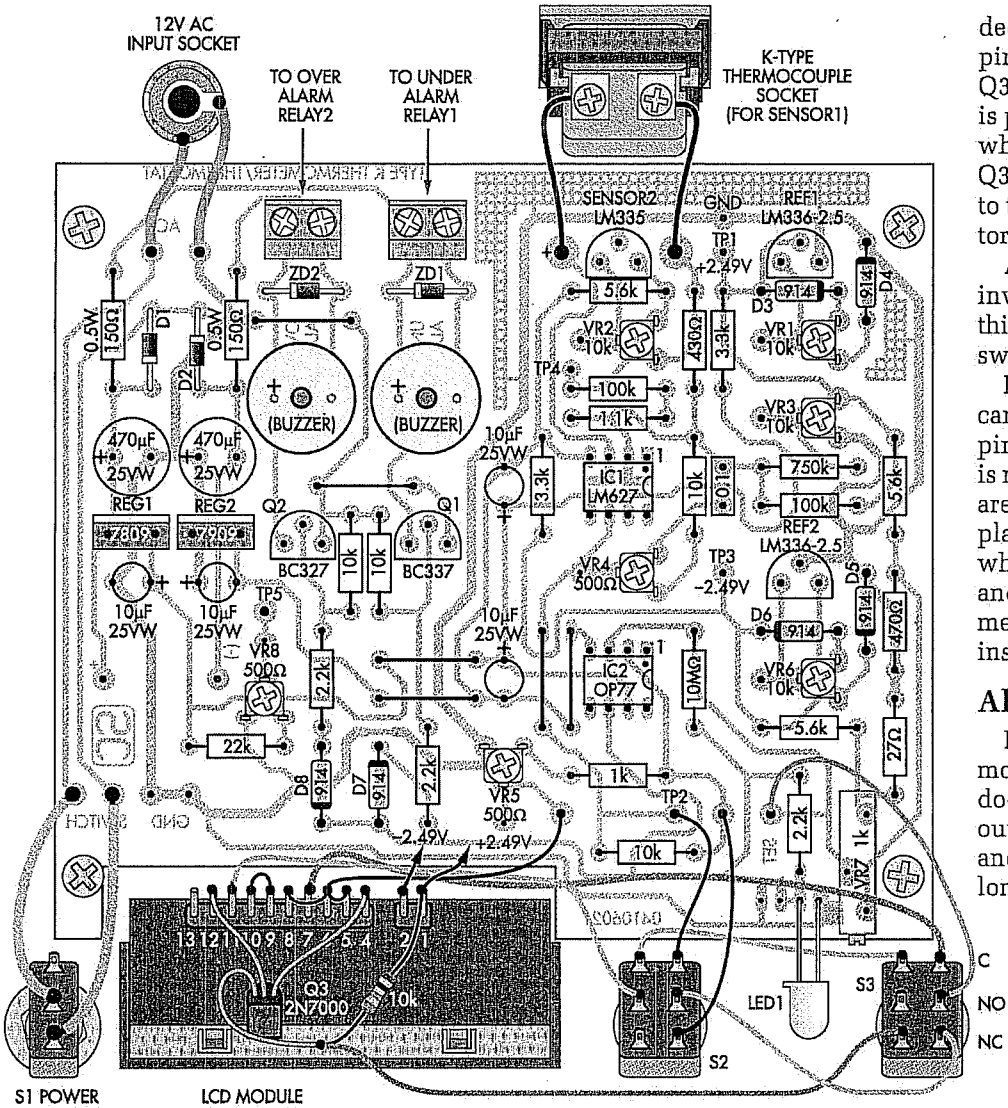

Fig.4: follow this wiring diagram to build the Digital Thermometer/Thermostat but note that only one buzzer is installed in the positions indicated (see text). Note also that PC stakes are installed at all external wiring positions and at the test points (TP). Q3 and its associated 10kΩ resistor can be omitted for panel meters with a decimal point driver pin (see Fig.8).

decimal points (in this case, DP2 at pin 12). When the voltage goes high, Q3 switches on and the drain voltage is pulled to the -1V level. Conversely, when the backplane signal goes low, Q3 switches off and the drain is pulled to the +2.49V supply via a 10kΩ resistor.

As a result, the drain voltage is an inversion of the backplane signal and this drives decimal point DP1 via range switch S2b and Set switch S3b.

Note that while the decimal point can be displayed by connecting its pin directly to the positive supply, it is not a recommended practice. There are a couple of reasons for this: first, it places a DC voltage on the segment which can shorten the life of the LCD; and second, the decimal point segment would appear rather washed out instead of fully black.

Alternative LCD panel meter

By contrast, the alternative LCD module from Altronics (Cat. Q-0571) does include a decimal point drive output (pin 10). This means that Q3 and its associated 10kΩ resistor are no longer required if the Altronics module is used. Instead, the decimal point driver output at pin 10 is connected directly to the NC contact of switch S3b.

Fig.8 shows how the Altronics module is used. Note the different pin numbering.

Power supply

Power for the circuit is derived from a 12V AC plugpack. Its output is rectified using D1 and D2 to give nominal

Table 2: Resistor Colour Codes

☐	No.	Value	4-Band Code (1%)	5-Band Code (1%)
☐	1	10MΩ	brown black blue brown	brown black black green brown
☐	1	750kΩ	violet green yellow brown	violet green black orange brown
☐	2	100kΩ	brown black yellow brown	brown black black orange brown
☐	1	22kΩ	red red orange brown	red red black red brown
☐	6	10kΩ	brown black orange brown	brown black black red brown
☐	3	5.6kΩ	green blue red brown	green blue black brown brown
☐	2	3.3kΩ	orange orange red brown	orange orange black brown brown
☐	3	2.2kΩ	red red red brown	red red black brown brown
☐	1	1.1kΩ	brown brown red brown	brown brown black brown brown
☐	1	1kΩ	brown black red brown	brown black black brown brown
☐	1	470Ω	yellow violet brown brown	yellow violet black black brown
☐	1	430Ω	yellow orange brown brown	yellow orange black black brown
☐	2	150Ω	brown green brown brown	brown green black black brown
☐	1	27Ω	red violet black brown	red violet black gold brown