```
// Program supplied by MMS-e as is and has no warranty implied or otherwise.
// Accuracy will depend on the speed of the processor used.

// TEMP SENSOR SMT160-30
// Sensor connected to P1.0 = TSENSOR
// Temp = ((pulse/period) - 0.32) / 0.0047)
//-----------------------------------------------------

void SMT160()
{       unsigned int tperiod = 0;
        unsigned int tpulse = 0;
        signed int t = 0;

        EA = 0;                                         // disable all interrupt

        if (TSENSOR == 0) {
                        while (TSENSOR == 0){
                                                        }
                      }
        else {
                while (TSENSOR == 1)
                                        {
                                        }
                while (TSENSOR == 0)
                                        {
                                        }
            }

   // always start counting at the start of a HIGH pulse

        while (TSENSOR == 1) tpulse++;                  // count HIGH pulse
        while (TSENSOR == 0) tperiod++;                 // count LOW pulse
        EA = 1;                                         // enable all interrupts

        // Lcd_XY (5,2); Lcd_DisplayValue (tpulse,6,0);     // Display HIGH count
        // Lcd_XY (5,3); Lcd_DisplayValue (tperiod,6,0);    // Display LOW count

        tperiod = tperiod + tpulse;                     // Period = low + high count
        t = ((tpulse*100)/tperiod);
        t = (t - 32);
        t = ((t * 100) / 47);

        Lcd_XY (5,4); Lcd_DisplayValue (t,2,0);         // Display Temp in Celsius
}
```

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