interrupt the PIC on its programmable setpoint, $T_{os}$, so that the temperature threshold before rising.

This is shown in Figure 9-12b, where a remote delay is inserted in the PIC's commands to the 'write' message string is read by the PIC, or it can continue with 4b. Once the pointer has reached $T_{os}$ or $T_{thyst}$ (illustrated in Figure 9-14c), a delay can be taken of the case the interactions with the

An EEPROM with a PIC serial interface such as Microchip Technology's 24LC01B provides designers with a convenient solution to a need for nonvolatile data storage. It holds 128 bytes of data. It is packaged in a tiny 8-pin DIP or SOIC package and will operate on the "fast-mode" (400 kHz) I²C bus. It draws less than 3 mA of supply current during programming, 1 mA during reading, and 0.1 mA during standby. It times its own write cycle and automatically erases a byte before writing into it. A block of up to 8 bytes can be written to the chip at one time and the chip will program them all simultaneously in less than 10 ms (our mainline looptime).

The manufacturer guarantees successful writes for up to 10,000,000 erase/write cycles and data retention beyond 200 years over an operating temperature range of 0°C to +70°C (or −40°C to +85°C for the industrial version).

The device with its interface circuit is illustrated in Figure 9-15. The WP (write protect) pin permits a manufacturer to program a part with calibration constants (with WP low) and then to permit only reads thereafter (with WP tied high). In contrast to the other I²C devices discussed in this chapter, this part has the single, fixed 7-bit address

1010xxxx

That is, any read from or write to the slave address B'1010000' or B'1010001' or ... or D'1010111' will access the EEPROM chip.

![Circuit](image)

(a) Circuit

Temperature sensor
National Semiconductor LM75
(SO-8 package)

(b) Default performance of the O.S. (Overtemperature-Shutdown) output

Figure 9-12  LM75 temperature inputs