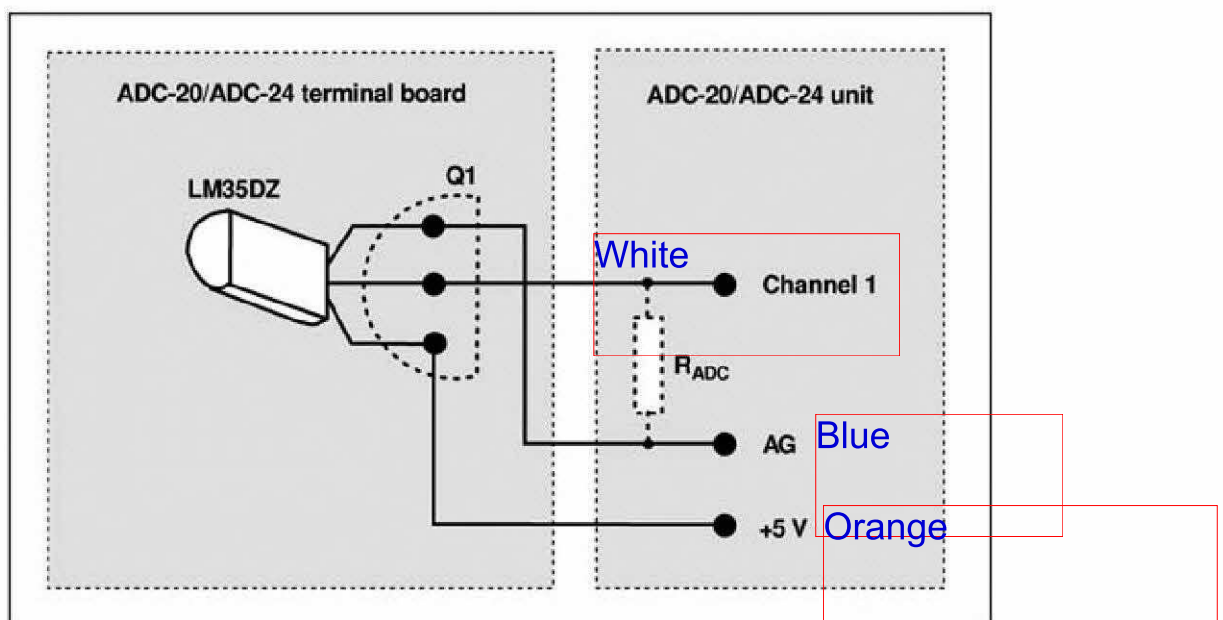## 2.5     Temperature

### 2.5.1    Introduction

If you use the ADC-20/ADC-24 Terminal Board and ADC-20 or ADC-24 with a suitable sensor and the Picolog software, you can measure temperatures accurately. There are three methods of measuring temperature, each using one of the following sensors:

- LM35DZ integrated circuit sensor
- Precision thermistor
- Thermocouple used with AD595 integrated circuit

Note: If you require several temperature sensors, Pico Technology's USB TC-08 thermocouple interface is a better product to use, as you can plug up to eight thermocouples into it simultaneously.

### 2.5.2    LM35DZ IC



**Temperature sensor circuit with LM35 IC**

The LM35DZ IC is a combined precision temperature sensor and signal conditioner supplied in a three-pin TO92-style package. Of the three devices, this is the easiest to connect to the ADC. The device measures temperatures in the range 0°C to +100°C and includes the electronics required to convert temperatures to a linear voltage of 10 mV/°C. The diagram below shows how to connect this device to the terminal board.

Fit the LM35 to the terminal board in position Q1. To convert the voltage to a temperature reading, use PicoLog's scaling equation facility. Set the scaling equation to: X * 100. For more information, see PicoLog's electronic manual (PLW044.PDF in your Pico Technology installation directory).