



The PC73C-T and the PC73C-R are thermocouple and RTD measurement boards giving very stable and accurate measurements. They are ideal for precision laboratory and industrial applications. Exceedingly low noise levels of  $\pm 1$  count (or  $0.5^{\circ}\text{C}$  or less for J type thermocouples without averaging) have been achieved and performance standards are in excess of even stand-alone amplifiers. It is possible to connect a mixture of thermocouple types on the PC73C-T and 2/3/4 wire RTDs on the PC73C-R. Hardware consists of a PC plug-in board and an Auxilliary board which contains Cold Junction compensation and terminals. Wait-state generation has been incorporated on the PC73C which allows operation in very fast computers. The Digital Input / Output lines is an added feature on the PC73C boards and is connected to the PC Backplane via an auxilliary DB25 male connector. The digital inputs can be used as trigger lines to sample data or determine the states of switches, etc. The digital outputs have a 24mA driving capability and can thus be used to switch on a buzzer or alarm.

### Features

- ♦ 8 differential input channels for thermocouple or RTD sensors
- ♦ Use with K,J,E,T,B,R,S & N thermocouples + 100 Ohm or 1k Ohm RTDs
- ♦ Cold Junction compensation and screw term. block on auxilliary board
- ♦ Gains selectable from: 1, 10, 100, 200, 300, 500, 600, 700, 800
- ♦ 30 to 50Hz acquisition rate via polled I/O and Interrupts.

### Specifications

Input channels:	8 differential inputs & 1 Cold Junction Compensation Input
Resolution:	12bits + 1 sign, 1 in 8192
Total System Accuracy:	$\pm 1$ LSB depending on environment
Differential non-linearity:	$\pm 1/2$ LSB max
Quantization uncertainty:	$\pm 1/2$ LSB
Input Ranges:	$\pm 4.096\text{V}$ ; $\pm 40.95\text{mV}$ $\pm 409.5\text{mV}$ ; $\pm 20.475\text{mV}$ $\pm 13.65\text{mV}$ ; $\pm 8.910\text{mV}$ $\pm 6.827\text{mV}$ ; $\pm 5.851\text{mV}$
Gain Drift:	$\pm 30\text{ppm}/^{\circ}\text{C}$
Offset voltage:	Adjustable to 0 for each channel
Offset Drift:	$\pm 0.25\text{mV}/^{\circ}\text{C}$
Input Impedance:	1M Ohm/50pF (Off chan) 1M Ohm/200pF (On chan)
Address selection:	0 to 7FFh
Interrupt selection:	IRQ2 to IRQ7
I/O address location:	4 bytes
Digital I/O lines:	8 inputs, 8 outputs
Wait State Selection:	0, 1, 2, 4, 8
Operating Temperature:	0 to $55^{\circ}\text{C}$
Relative Humidity:	5% to 90% (non-condensing)
Storage Temperature:	$-55^{\circ}$ to $+150^{\circ}\text{C}$
Power requirements:	+5V: 500mA typ -5V: 30mA typ +12V: 100mA typ
Board Dimensions:	200mm x 103mm

### Ordering Information

Supplied with EDR Software and Internal Cable (IDC26 to DB25)

**PC37-T** Precision Thermocouple Board & Thermocouple Screw Terminal Board

**PC37-R** Precision Thermocouple Board & RTD Screw Terminal Board

View connector pinouts in Reference Section

### Optional Accessories

Refer to System Diagram in Reference Section

**ADPT-2526** via **IDC26** or **DB25MF** (Digital I/O)