UPC2100 Sensor Interface Card

- **Direct Sensor Input to Your PC**
- **16-bit Resolution, 100 KHz Conversion Rate**
- **16 Input Channels, For PCI Expansion Slot**
- **Accepts Any Mix or Combination of Sensor Inputs**
  Thermocouples, RTDs
  Strain Gages, LVDTs, VR Sensors
  Potentiometers, DC Volts
- **Software Included**
- **Compatible with C++ & Visual Basic**

The UPC2100 PCI Sensor Interface card provides real-world data acquisition and control for your PC. Up to 16 sensor inputs in any mix or combination are accepted by the UPC2100. **No external signal conditioning is required.** The UPC2100 includes configuration and data acquisition software and is compatible with VB and C++ programming environments.

Thermocouples, RTDs, strain gages, LVDTs, potentiometers, VR sensors and low-level DC voltages are wired directly to the UPC card in any mix or combination of single-ended or differential input types. All required excitation, amplification and linearization is provided by the UPC card. The card features 10 stages of gain with 16 bits of resolution, programmable channel-by-channel. An innovative dual-conversion scheme provides outstanding zero offset correction for low-level measurements.

The UPC2100 provides polynomial linearization for thermocouples and RTD's. Scale and offset factors can be applied to all inputs. The UPC2100 produces a floating-point value for all readings, directly in engineering units.

Software for the UPC2100 includes a GUI configuration utility that allows the user to set sensor type, gain range, channel, and all other input parameters. The configuration can be saved to non-volatile memory on the card so that The UPC2100 can be used in embedded applications.

Easy Sense 2100 data acquisition software is also included so that the user may record and sensor data to a spreadsheet or ASCII file in real time.

The UPC2100 is compatible with Visual basic and C++ programming environments. All required dll drivers are included on the UPC2100 CD.

UPC2100 Advantages

- **Direct Sensor Input**
- **No External Signal Conditioning Needed**
- **Sensor Excitation Included**
- **On-Board TC, RTD Linearization**
- **Works with VB, C++**
- **All Cables and Terminal Blocks Included**

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UPC2100 Specifications

General Specifications -

Available I/O:
16 single-ended inputs which can be paired as differential inputs in any mix or combination. One additional input for thermocouple cold-junction compensation.

I/O Connections:
50 pin ribbon cable connects analog input terminal block to board edge connector.

Environmental:
0 to +70C, 95% RH, non-condensing

Power Required:
+5 Vdc @ 1.2 A, +12 @ 0.45 A

Computer Interface:
PCI Expansion Slot

I/O Specifications -

Thermocouples:
Types J, K, E, T & S, linearized in C. Typical resolution 0.05 C.

RTD:
Pt 391, Pt392 and Pt385 alpha, linearized –200 to +850C. 2, 3 or 4-wire configurations. Excitation from internal current source supplied. Typical resolution, 0.05C

Strain Gages:
Typically 350 Ohm. Full bridge configuration. Partial bridges completed on terminal block. Sensitivity to +/-4 mV/V FS. Precision excitation provided.

LVDT/RVDT/VR:
4 mV/V to 2.6 V/V in 10 binary ranges. 2.5 VAC @ 5 KHz sine wave excitation provided.

Voltages:
+/-20 mV to +/-10.24 Vdc FS single-ended or differential input in 10 binary ranges.

Resistances:
20 Ohms to 150K Ohms, full scale

Sensor Excitation:
Integral +5 Vdc for strain gages, (0.4 A maximum), current source for RTDs, 1.0 mA nominal per channel @ 5 vdc. 2.5 VAC @ 5 KHz sine wave carrier for LVDT and VR sensors.

Input Protection:
Over-Voltage to +/-25 Vpk (power off), or +/-40 Vpk (power on). Typical static discharge of 4 KV is survived.

Common Mode:
+/-10 V

Crosstalk:
-115 db or better

Resolution:
16 bits

Averaging:
Programmable rolling average for each channel

Conversion Rate:
50,000 or 100,000 conversions per second, spread over active inputs.

System Accuracy:
Total system error 0.02% FS. Range tempco typically 50 ppm/C. Offset zero tempco typically 0.15 uV/C

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