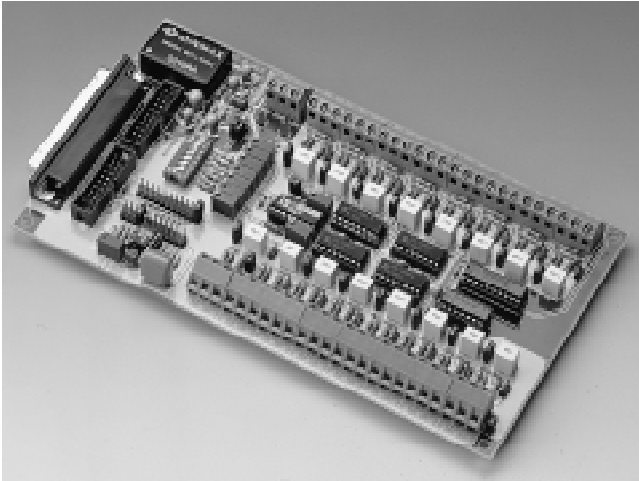


PCLD-789D

Amplifier and Multiplexer Board



Features

- Multiplexes 16 differential inputs to one A/D input
- Expands a PC-LabCard's analog inputs to 128 channels
- High-grade instrumentation amplifier provides switch selectable gains of 1, 2, 10, 50, 100, 200, 1000
- On-board cold-junction compensation circuits for direct thermocouple measurement
- Built-in signal conditioning functions include filter, attenuator and current shunt
- Second connectors on-board allow daisy chaining
- Screw-clamp terminal blocks permit easy and reliable connections

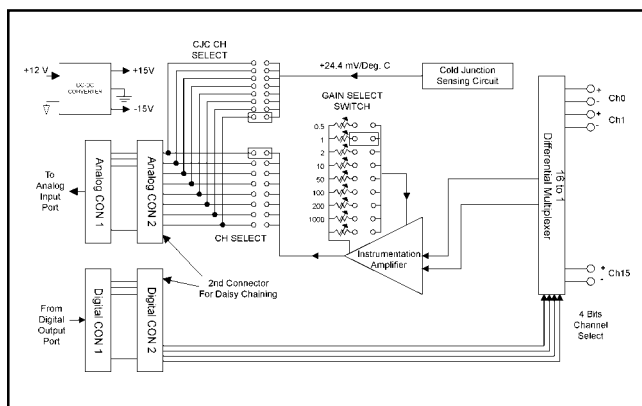
Introduction

The PCLD-789D is a front-end signal conditioning and channel multiplexing daughterboard for use with PC-LabCard analog input ports. It multiplexes 16 differential input channels into a single A/D converter input channel. You can cascade up to ten PCLD-789Ds, allowing a single data acquisition card to access 160 analog input channels.

The PCLD-789D has DB-37 and 20-pin flat-cable connectors and lets your PCL-818L or PCL-818HD access up to 128 channels without using an additional digital output cable to select channels.

The PCLD-789D uses a high-grade instrumentation amplifier that provides switch-selectable gains of 1, 2, 10, 50, 100, 200 and 1000. This amplifier lets you accurately measure low-level signals with your PC-LabCard.

The board also contains a cold-junction sensing circuit that allows direct temperature measurement from thermocouple transducers. A wide variety of thermocouples are supported with software compensation and linearization.



Block diagram

Applications

- Channel expansion
- Low level signal measurement
- Thermocouple measurement
- Signal amplification and conditioning

Specifications

- **Input channels:** 16 differential
- **Input range:** ± 10 V maximum, depending on the selected gain
- **Output range:** ± 10 V maximum
- **Input conditions:**

Gains	CMRR	Nonlinearity	Setting Time
1000	125 dB	0.005% FSR	75 μ sec.
100	115 dB	0.005% FSR	15 μ sec.
10	105 dB	0.007% FSR	15 μ sec.
1	85 dB	0.015% FSR	15 μ sec.

- **Overvoltage protection:** ± 30 V continuous
- **Cold-junction compensation:** $+24.4$ mV/ $^{\circ}$ C, 0 V at 0° C
- **Power consumption:** $+5$ V @ 30 mA maximum
 $+12$ V @ 80 mA maximum
- **Connectors for digital and analog buses:**
One DB-37 connector, two 20-pin flat-cable connectors for daisy chaining
- **Dimensions:** 205 mm (L) x 114 mm (W) (8.1" x 4.5")

Ordering Information

- **PCLD-789D:**
Amplifier and Multiplexer Board with DB-37 connector and 20-pin flat-cable connectors.
Includes DB-37 and 20-pin flat-cable assemblies.