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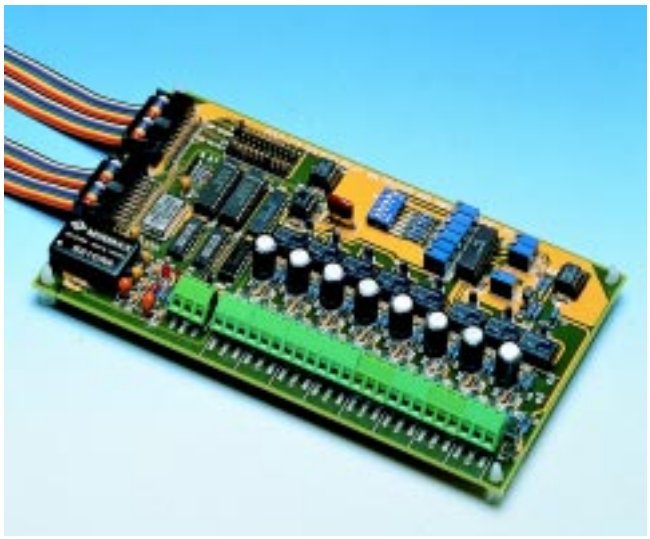
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# PCLD-779

## Relay Isolated Multiplexer and Amplifier Board



## Introduction

The PCLD-779 offers convenient front-end signal conditioning and channel multiplexing for the analog input of any PC-LabCard DAS card. It multiplexes up to eight differential input channels to one A/D input channel.

The PCLD-779 is designed for the customer who requires precision, low-level signal measurement and isolation for industrial applications like multichannel thermocouple measurement. Its design incorporates capacitor coupling and relay multiplexing for over 1000 $V_{DC}$ of channel-to-channel and input-to-output isolation.

The board features a high-grade instrument amplifier with six switch-selectable gains of x1, x10, x50, x100, x200 and x1000. This lets you acquire accurate voltage measurements over a wide range of signal levels.

The PCLD-779 is also equipped with its own cold-junction sensing circuit (CJC). The CJC lets you take direct temperature measurements from thermocouple transducers. A wide variety of thermocouples are supported by the PCLD-779 via software compensation and linearization.

## Applications

- Multichannel thermocouple measurement
- Low-level signal measurement
- Front-end signal conditioning
- General purpose amplifier with isolation
- Low-cost alternative to 5B modules

## Features

- Greater than 1000 $V_{DC}$ channel-to-channel and input-to-output isolation
- Multiplexes up to eight differential inputs to one A/D input channel
- High-grade instrument amplifier with switch-selectable gains of x1, x10, x50, x100, x200 and x1000
- On-board CJC for direct thermocouple measurement
- Built-in conditioning circuit for signal filtering
- Open-thermocouple detection circuit

## Specifications

- **Input channels**: 8 isolated differential inputs
- **Input range**: -2 V to +5 V
- **Amplifier characteristics**:

| Gain | CMRR | Nonlinearity |
|---|---|---|
| 1000 | 125 dB | 0.005% FSR |
| 100 | 125 dB | 0.005% FSR |
| 10 | 110 dB | 0.007% FSR |
| 1 | 90 dB | 0.015% FSR |

- **Input bandwidth**: 4 Hz max.
- **Input impedance**: 10 MΩ
- **Input overvoltage protection**: -5 V and +35 V max. continuous
- **Output range**: ±10 V max.
- **Output current**: 20 mA max.
- **Min. channel switching time**: 10 msec. with break-before-make
- **Max. channel scanning rate**: 100 readings/second (multichannel) 50 readings/second (single channel)
- **Isolation voltage**: > 1000 $V_{DC}$ channel-to-channel and from input to output
- **Relay**: Life expectancy: > $10^8$ cycles Contact resistance: < 30 mΩ
- **CJC output**: +24.4 mV/°C (0 V @ 0° C)
- **Connectors**: 20-pin flat-cable connectors
- **Power consumption**: +5 V @ 65 mA max. +12 V @ 120 mA max.
- **Dimensions**: 205 mm (L) x 114 mm (W) (8.1" x 4.5")

## Ordering Information

❑ **PCLD-779:**
Relay Isolated Multiplexer and Amplifier Board, user's manual, utility disk and two 1-meter 20-pin flat cables (P/N PCL-10120-1)





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