



Introduction

The PCL-812PG is a multifunction analog and digital I/O card that features the five most desired measurement and control functions for PC/AT and compatible systems: A/D conversion, D/A conversion, digital input, digital output and counter/timer. This half-size card neatly packages 16 12-bit analog input channels, two 12-bit analog output channels, 16 digital input channels, 16 digital output channels and a programmable counter/timer.

In addition to all the features listed above, the PCL-812PG offers the convenience of programmable analog input ranges, where the analog input range can be switched by software commands instead of DIP switches. The PCL-812PG also delivers convenience and maximum resolution for applications that need different gains for different channels or different gains for different stages of a process.

Comprehensive software support, numerous I/O options and a wide range of available daughterboards make the PCL-812PG ideal for industrial applications that require a combination of analog and digital I/O.

Specifications

Analog Input

- **Channels:** 16 single-ended
- **A/D converter:** 12-bit, 25 ms conversion time
- **Input range (V, software programmable):** ± 10 , ± 5 , ± 2.5 , ± 1.25 , ± 0.625 , ± 0.3125
- **Trigger mode:** Software, pacer or external trigger
- **Data transfer:** Program controlled, interrupt 2 ~ 7, 9 ~ 12, 14, 15 or DMA (Channel 1 or 3) for single channel scan
- **Accuracy:** 0.01% of reading ± 1 LSB
- **Common mode rejection:** 60 dB typical
- **Input impedance:** > 10 MW
- **Overvoltage:** Continuous ± 30 V_{DC} max.

Analog Output

- **Channels:** Two double-buffered 12-bit channels
- **D/A range (in V):** 0 ~ 5, 0 ~ 10 w/internal reference; ± 10 V max. with external AC or DC reference (accuracy for output above ± 9 V may vary depending on power supply used)

Features

- 16 single-ended 12-bit analog input channels
- Two 12-bit analog output channels
- Programmable sampling rate of up to 30 kHz
- A/D with DMA or interrupt
- 16 digital input channels
- 16 digital output channels
- Programmable counter/timer
- Programmable A/D ranges (gains)
- Includes C/C++, Pascal and BASIC drivers as well as calibration, demo and example programs
- Comprehensive application software support

- **Settling time:** 30 msec.
- **Output current:** ± 5 mA max.
- **Linearity:** $\pm 1/2$ bit

Digital Input

- **Channels:** 16, TTL level

Digital Output

- **Channels:** 16, TTL compatible
- **Driving capacity:** 8.0 mA @ 0.5 V (sink); 0.4 mA @ 2.4 V (source)

A/D pacer and counter (8254 compatible)

- **A/D pacer:** 32-bit timer with a 20 MHz time base
- **Max. and min. rates:** 500 kHz ~ 0.00046 Hz (one sample every 36 minutes)
- **Counter:** One 16-bit counter with a 2 MHz time base

General

- **Power consumption:** +5 V @ 500 mA typical, 1.0 A max.
+12 V @ 50 mA typical, 100 mA max.
-12 V @ 14 mA typical, 20 mA max.
- **Operating temperature:** 0 ~ 50° C (32 ~ 122° F)
- **Storage temperature:** -20 ~ 65° C (-4 ~ 149° F)
- **Operating humidity:** 5 ~ 95% RH non-condensing (refer to IEC 68-2-3)
- **I/O ports:** 16 consecutive bytes
- **Connectors:** Two 20-pin flat-cable connectors
- **Dimensions:** 185 mm (L) x 100 mm (H) (7.3" x 3.9")

Ordering Information

- PCL-812PG: PCL-812PG, user's manual and utility diskette with C/C++, Pascal and BASIC drivers
- PCL-10120-1: 20-pin flat cable, 1m
- PCL-10120-2: 20-pin flat cable, 2m
- PCLS-OCX: ActiveX Control for data acquisition and control
- PCLD-780: Screw terminal board
- PCLD-8115: Industrial wiring terminal board with CJC circuit