

Платы дискретного ввода/вывода серии PCL-7 XX

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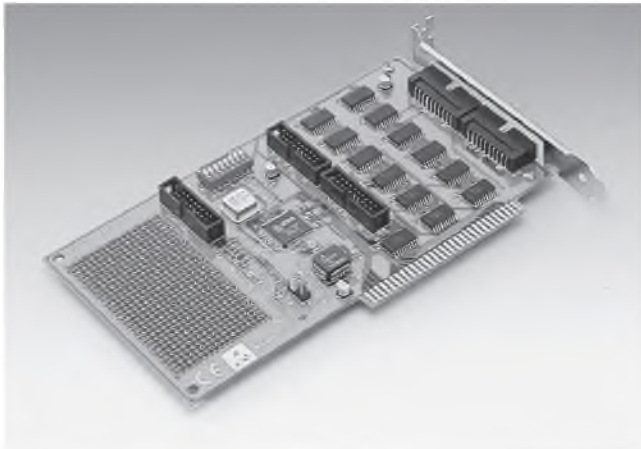
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PCL-720+

Digital I/O and Counter Card



CE

Features

- 32 TTL-level digital input channels
- 32 TTL-level digital output channels
- High-output driving capacity
- Low-input loading
- 3 programmable counter/timer channels
- User configurable clock source
- Breadboard area for custom circuits

Introduction

The PCL-720+ digital I/O and counter card is a PC-compatible add-on card with 32 digital input channels, 32 digital output channels and three programmable counter/timer channels. Its digital I/O channels are TTL-compatible and use 74LS244 driver/buffer circuits to provide high output driving capacity. These buffered circuits also require lower input loading current than regular TTL circuits. The PCL-720+'s 8254 programmable counter/timer provides three flexible 16-bit counter/timer channels. You can generate waves and pulses by programming the 8254. Jumper settings determine the clock crystal frequency. The PCL-720+ also includes a breadboard area perfect for customized circuits.

Specifications

Digital Input

- **Input Lines** 32
- **Logic Level 0** 0.8 V max.
- **Logic Level 1** 2.0 V min.

Digital Output

- **Output Lines** 32
- **Logic Level 0** 0.5 V max. @ 24 mA (sink)
- **Logic Level 1** 2.0 V min. @ 15 mA (source)

Programmable Counter/Timer

- **Frequency Range** 0 ~ 2.6 MHz
- **Counters** 3 independent 16-bit counters
- **Modes** 6 programmable modes
- **Usable Pins** CLOCK and GATE for each channel

Clock Source

- **Clock Frequency** 2 MHz, 1 MHz, 500 kHz or 250 kHz; jumper selectable
- **Frequency Divider** Divided by 1, 10, 100 or user adjustable

General

- **I/O Port Address** Eight consecutive bytes from hex 200 ~ 3F8
- **Breadboard Area** 540 (30 x 18) plated-through "donuts", each with a .036" hole on 0.10" centers. Further, provide +5 V on the left side, and provide GND on the right side
- **Power Consumption** +5 V @ 500 mA typical
- **Operating Temperature** 0 ~ 60° C (32 ~ 140° F)
- **Storage Temperature** -20 ~ 70° C (-4 ~ 158° F)
- **Operating Humidity** 5 ~ 95% RH non-condensing (refer to IEC 68-2-3)
- **Connectors** Five 20-pin male ribbon-cable connectors
- **Dimensions (L x H)** 185 x 100 mm (7.3" x 4")

Ordering Information

- **PCL-720+** Digital I/O and counter card, user's manual, user's manual and driver CD-ROM (cable not included)
- **PCL-10120-1** 20-pin flat cable, 1 m
- **PCL-10120-2** 20-pin flat cable, 2 m
- **PCLD-780** Screw terminal board
- **PCLD-782** 24/16 Channel opto-isolated D/I board
- **PCLD-785** 24/16 Channel relay output board
- **PCLD-786** SSR and relay driver board
- **PCLD-885** 16-Channel power relay (form A) output board
- **ADAM-3920** 20-pin flat cable wiring terminal for DIN-rail mounting

Applications

Digital Input

- Contact-closure monitoring
- Switch-panel status sensor
- BCD interface receiver
- Digital signal interface

Digital Output

- Industrial on/off controller
- Digital signal interface
- BCD interface driver

Counter/Timer

- Period and pulse-width measurement
- Event and frequency counting
- Waveform and pulse generation

PCL-722

PCL-724

PCL-731

144-bit Digital I/O Card

24-bit Digital I/O Card

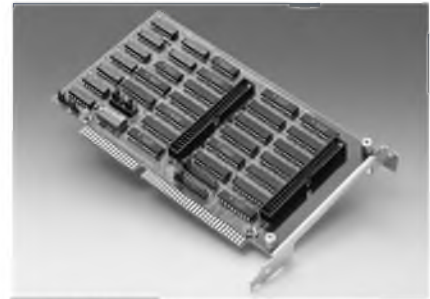
48-bit Digital I/O Card



PCL-722



PCL-724



PCL-731



Features

- Emulates 8255 PPI mode 0
- Buffered circuits for higher driving capacity than the 8255
- Interrupt handling
- Output status readback
- Pin compatible with Opto-22 I/O module racks

Specifications

- I/O Lines** 144 (24 bits x 6 ports)
- Programming Mode** 8255 PPI mode 0
- Interrupts** bits 0 and 3 of Port C can generate an interrupt to IRQ 2, 3, 4, 5, 6 or 7

Digital output

- Port A and Port B** Logic 0: 0.4 V max. @ 12 mA (sink)
Logic 1: 2.4 V min. @ 8.0 mA (source)
- Port C** Logic 0: 0.5 V max. @ 24 mA (sink)
Logic 1: 2.0 V min. @ 15 mA (source)

Digital input

- Port A and Port B** Logic Level 0: 0.8 V max.
Logic Level 1: 2.0 V min.
- Port C** Logic Level 0: 0.8 V max.
Logic Level 1: 2.0 V min.

General

- Power Consumption** +5 V @ 1.3 A typical
+5 V @ 1.8 A max.
- Operating Temperature** 0 ~ 60° C (32 ~ 140° F)
- Storage Temperature** -20 ~ 70° C
(-4 ~ 158° F)
- Operating Humidity** 5 ~ 95% RH non-condensing (refer to IEC 68-2-3)
- Connectors** Six 50-pin male ribbon-cable connectors. Pin assignments are fully compatible with Opto-22 I/O module racks
- Dimensions (L x H)** 334 x 100 mm (13.2" x 3.9")

Specifications

- I/O Lines** 24
- Programming Mode** 8255 PPI mode 0
- Interrupt** Bit 0 of one port can generate an interrupt to IRQ 2 ~ 7
- Interrupt Triggering** Rising or falling edge triggering, jumper-selectable
- Digital Output** Logic 0: 0.4 V max. @ 24 mA (sink)
Logic 1: 2.4 V min. @ 15 mA (source)
- Digital Input** Logic 0: 0.4 V max.
Logic 1: 2.4 V min.

General

- Power Consumption** +5 V @ 0.5 A (typical)
+5 V @ 0.8 A (max.)
- Operating Temperature** 0 ~ 60° C (32 ~ 140° F)
- Storage Temperature** -20 ~ 70° C
(-4 ~ 158° F)
- Operating Humidity** 5 ~ 95% RH non-condensing (refer to IEC 68-2-3)
- Connectors** 50-pin male ribbon-cable connector
- Dimensions (L x H)** 125 x 100 mm (4.9" x 3.9")

Pin Assignments

| | | | |
|------|----|----|-----|
| PC 7 | 1 | 2 | GND |
| PC 6 | 3 | 4 | GND |
| PC 5 | 5 | 6 | GND |
| PC 4 | 7 | 8 | GND |
| PC 3 | 9 | 10 | GND |
| PC 2 | 11 | 12 | GND |
| PC 1 | 13 | 14 | GND |
| PC 0 | 15 | 16 | GND |
| PB 7 | 17 | 18 | GND |
| PB 6 | 19 | 20 | GND |
| PB 5 | 21 | 22 | GND |
| PB 4 | 23 | 24 | GND |
| PB 3 | 25 | 26 | GND |
| PB 2 | 27 | 28 | GND |
| PB 1 | 29 | 30 | GND |
| PB 0 | 31 | 32 | GND |
| PA 7 | 33 | 34 | GND |
| PA 6 | 35 | 36 | GND |
| PA 5 | 37 | 38 | GND |
| PA 4 | 39 | 40 | GND |
| PA 3 | 41 | 42 | GND |
| PA 2 | 43 | 44 | GND |
| PA 1 | 45 | 46 | GND |
| PA 0 | 47 | 48 | GND |
| +5 V | 49 | 50 | GND |

Specifications

- I/O Lines** 48
- Programming Mode** 8255 PPI mode 0
- Interrupt** Bit 0 of one port can generate an interrupt to IRQ 2~15
- Interrupt Triggering** Rising or falling edge triggering, jumper-selectable
- Digital Output** Logic 0: 0.4 V max. @ 24 mA (sink)
Logic 1: 2.4 V min. @ 15 mA (source)
- Digital Input** Logic 0: 0.4 V max.
Logic 1: 2.4 V min.

General

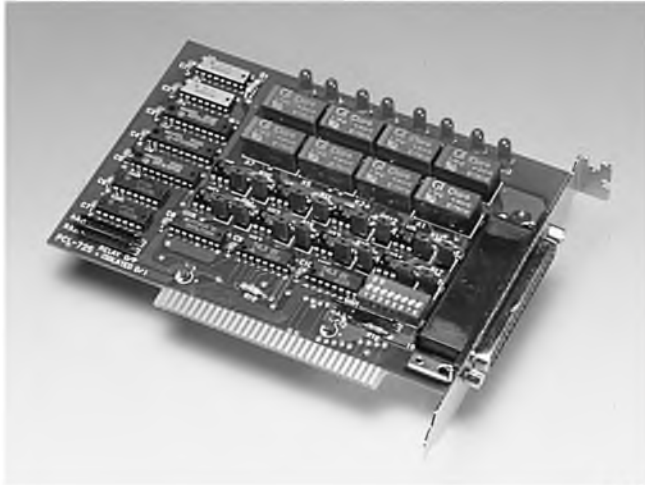
- Power Consumption** +5 V @ 0.5 A typical
+5 V @ 0.8 A max.
- Operating Temperature** 0 ~ 60° C (32 ~ 140° F)
- Storage Temperature** -20 ~ 70° C
(-4 ~ 158° F)
- Operating Humidity** 5 ~ 95% RH non-condensing (refer to IEC 68-2-3)
- Connectors** Two 50-pin male ribbon-cable connectors
- Dimensions (L x H)** 185 x 100 mm (7.3" x 3.9")

Ordering Information

- PCL-722** 144-bit digital I/O card, user's manual and driver CD-ROM (cable not included)
- PCL-724** 24-bit digital I/O card, user's manual and driver CD-ROM (cable not included)
- PCL-731** 48-bit digital I/O card, user's manual and driver CD-ROM (cable not included)
- PCL-10150-1.2** 50-pin flat cable, 1.2 m
- PCLD-782B** 24/16-ch. opto-isolated digital input board
- PCLD-785B** 24/16-ch. relay output board
- PCLD-7216** 16-ch. carrier board for SSR I/O modules
- PCLD-885** 16-ch. power relay (Form A) output board
- ADAM-3950** 50-pin flat cable wiring terminal for DIN-rail mounting

PCL-725

Relay Actuator and Isolated Digital Input Card



CE

Features

- 8 relay outputs
- 8 optically-isolated digital inputs
- LED relay status indicators
- Isolated or non-isolated digital inputs
- Male DB-37 matching connector included

Introduction

The PCL-725 relay actuator and isolated digital input card provides eight electromechanical SPDT relays and eight optically-isolated digital inputs on a half-size card. Its eight on-board SPDT relays are ideal for applications such as device On/Off control or low power switching. A red LED next to each relay shows its On/Off status for easy monitoring. The PCL-725's eight optically-isolated D/I channels are ideal for digital input in noisy environments or with floating potentials. You can configure each input channel individually for either isolated or non-isolated input by setting jumpers. An on-board DB-37 connector provides access to all input and output channels.

Specifications

Isolated Digital Input

- **Input Channels** 8
- **Opto-isolator** 4N25
- **Input Voltage** 5 – 24 V
- **Input Resistance** 560 Ω (1 W @ 24 V input)
- **Input Buffers** voltage comparators
- **Threshold Voltage** 1.5 V_{DC}, adjustable
- **Breakdown Voltage** 300 V_{DC}
- **Throughput** 10 KHz (max)

Relay Output

- **Output Channels** 8
- **Relay Type** single-pole double-throw (SPDT, Form C)
- **Output Type** CH0 – CH3 with Normally Open and Normally Closed, CH4 – CH7 with Normally Open only
- **Contact Rating** 120 V_{AC} @ 0.5 A or 30 V_{DC} @ 1 A
- **Breakdown Voltage** 300 V AC/DC min.
- **Relay on Time** 5 msec. typical
- **Relay off Time** 5 msec. typical
- **Total Switching Time** 10 msec. typical
- **Insulation Resistance** 100 M Ω min.
- **Life Expectancy** > 5 x 10⁹ operations at AC: 110 V/0.3 A, DC: 24 V/1.25 A
- **Relay Driver** +12 V @ 33 mA for each relay

General

- **Power Consumption** +5 V @ < 0.2 A; +12 V @ 33 mA for each relay, < 0.27 A if all eight relays are energized
- **Operating Temperature** 0° – +60° C (32° – 140° F)
- **Storage Temperature** -20° – +70° C (-4° – 158° F)

- **Operating Humidity** 5% – 95% RH non-condensing (refer to IEC 68-2-3)
- **I/O Port Address** two consecutive bytes from hex 200 – 3F8
- **Connector** 37-pin D-type female connector
- **Dimensions** 147 mm (L) x 100 mm (H) (5.75" x 3.9")

Ordering Information

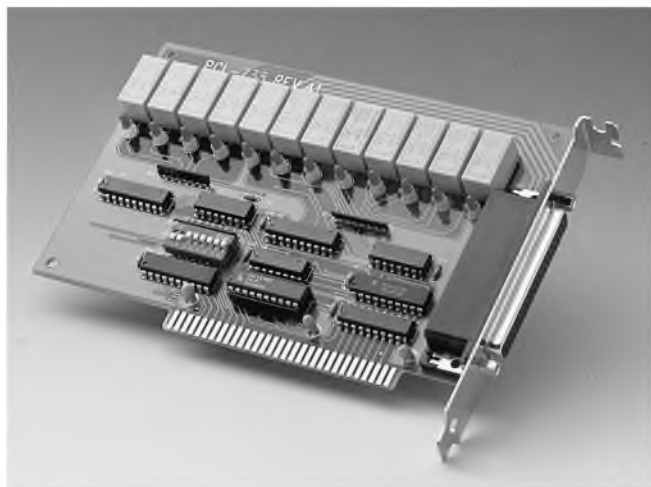
- **PCL-725** Relay actuator and isolated D/I Card, user's manual, driver CD-ROM and one DB-37 male connector (P/N: PCL-10437-0)
- **PCL-10137-1** DB-37 cable assembly, 1 m
- **PCL-10137-2** DB-37 cable assembly, 2 m
- **PCL-10137-3** DB-37 cable assembly, 3 m
- **PCLD-880** Universal screw terminal board
- **ADAM-3937** DB-37 wiring terminal for DIN-rail mounting

Applications

- Digital signal and contact status monitoring
- Industrial on/off control
- Signal switching
- External relay driving

PCL-735

12-ch Relay Actuator Card



CE

Features

- 12 relay outputs
- LED relay status indicators
- Male DB-37 matching connector included
- Relay status readback function

Introduction

Ideal for applications such as device on/off control or signal switching, the PCL-735 12-channel relay actuator provides 12 electro-mechanical SPDT relays on a half-size card. The on/off status of each relay is easy to monitor. A red LED next to each relay shows its on/off status, and the software can read each relay's status. An on-board DB-37 connector provides access to all output channels.

Specifications

Relay Output

- **Relay Type** Single-pole double-throw (SPDT, Form C)
- **Output Type** Ch0 to Ch11, normally open/normally closed
- **Contact Rating** 2 A @ 30 V_{DC}, 1 A @ 125 V_{AC}
- **Breakdown Voltage** 1,000 V_{60/0°C} min.
- **Relay on Time** 5 msec. typical
- **Relay off Time** 5 msec. typical
- **Total Switching Time** 10 msec. typical
- **Insulation Resistance** 1,000 M Ω @ 500 V_{DC} min.
- **Life Expectancy** > 5 x 10⁵ operations @ 30 V_{DC} and 2 A
> 2 x 10⁶ operations @ 30 V_{DC} and 1 A

General

- **Power Consumption** +5 V @ 280 mA (typical)
+12 V @ 200 mA (max.)
- **Operating Temperature** 0 ~ +60° C (32 ~ 140° F)
- **Storage Temperature** -20 ~ +70° C (-4 ~ 158° F)
- **Connector** One 37-pin D-type female connector
- **Operating Humidity** 5 ~ 95% RH non-condensing (refer to IEC 68-2-3)
- **I/O Port Address** Two consecutive bytes from hex 200 ~ 3F8
- **Dimensions (L x H)** 155 x 100 mm (6.1" x 3.9")

Ordering Information

- **PCL-735** 12-channel relay actuator card, user's manual, driver CD-ROM and one DB-37 male connector (P/N: PCL-10437-0)
- **PCL-10137-1** DB-37 cable assembly, 1 m
- **PCL-10137-2** DB-37 cable assembly, 2 m
- **PCL-10137-3** DB-37 cable assembly, 3 m
- **PCLD-880** Screw terminal board
- **ADAM-3937** DB-37 wiring terminal for DIN-rail mounting

Pin Assignments

| | | | |
|------|----|----|-------|
| NO0 | 1 | 20 | NO6 |
| COM0 | 2 | 21 | COM6 |
| NC0 | 3 | 22 | NC6 |
| NO1 | 4 | 23 | NO7 |
| COM1 | 5 | 24 | COM7 |
| NC1 | 6 | 25 | NC7 |
| NO2 | 7 | 26 | NO8 |
| COM2 | 8 | 27 | COM8 |
| NC2 | 9 | 28 | NC8 |
| NO3 | 10 | 29 | NO9 |
| COM3 | 11 | 30 | COM9 |
| NC3 | 12 | 31 | NC9 |
| NO4 | 13 | 32 | NO10 |
| COM4 | 14 | 33 | COM10 |
| NC4 | 15 | 34 | NC10 |
| NO5 | 16 | 35 | NO11 |
| COM5 | 17 | 36 | COM11 |
| NC5 | 18 | 37 | NC11 |
| N/A | 19 | | |

NO: Normally open
COM: Common relay pin
NC: Normally closed

Applications

- Industrial on/off control, Signal switching, External relay driving

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