

Платы релейного и изолированного дискретного ввода/вывода серии PLCD-7000 и PLCD-8000

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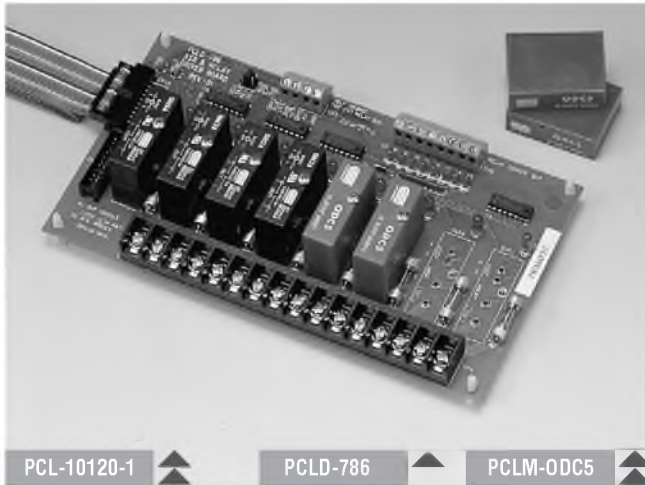
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PCLD-786

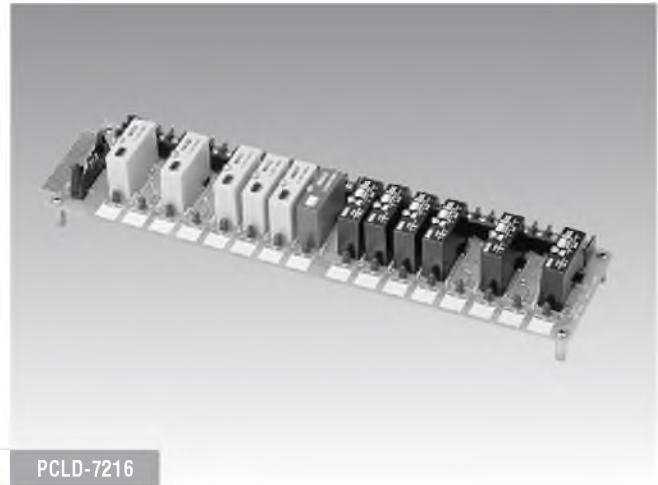
PCLD-7216

8-ch SSR I/O Module Carrier Board

16-ch SSR I/O Module Carrier Board



PCL-10120-1 ▲ PCLD-786 ▲ PCLM-ODC5 ▲



PCLD-7216



Features

- Up to eight AC or DC solid state relay modules
- Photo-coupler isolated operation
- Eight external relay drivers
- LED status indicators

Specifications

AC Solid State Relays

- **1 Cycle Surge** 40 A
- **Blocking Voltage** ± 600 V min.
- **OFF Leakage Current** 8 mA max.
- **ON-state Voltage** 1.6 V max.
- **Output Rating** 24 ~ 280 V_{AC} @ 3.0 A
- **Turn On** zero volts
- **Turn On/Turn Off Time** < 1/2 cycle
- **Type** PCLM-OAC5A

DC Solid State Relays

- **1 Second Surge** 5 A
- **OFF Leakage Current** 1 mA max.
- **ON-state Voltage** 1.4 V max.
- **Output Rating** 5 ~ 60 V_{DC} @ 3.0 A
- **Turn On/Turn Off Time** 750 μ s max.
- **Type** PCLM-ODC5

External Relay Drivers

- **Channels** 8 channels
- **Coil Driving Voltage** +5 V, +12 V from PC or external source
- **Driver Type** ULN2003, open collector type
- **Max. Driving Current** 125 mA each channel

General

- **Dimensions (L x W)** 205 x 114 mm (8.1" x 4.5")

Ordering Information

- **PCLD-786** 8-ch SSR I/O Module Carrier Board, user's manual and one 1 m 20-pin flat cable assembly (P/N: PCL-10120-1)

Note:

PCLD-786 does not include SSRs. They must be ordered by selecting single piece SSR modules according to your requirements.

- **PCLM-OAC5A** Single piece AC SSR module (280 V_{AC}, 3 A)
- **PCLM-ODC5** Single piece DC SSR module (60 V_{DC}, 3 A)

Features

- Channel status reflected by onboard LED for easy monitoring
- Optically isolated inputs and outputs between computer and field devices
- Onboard fuse protection

Specifications

Module type		Field side		Logic side
Output modules	Part No.	Output voltage rating	Output current rating	Input logic and SSR status
AC output	PCLM-OAC5A	24 ~ 280 V _{AC}	3.0 A _{AC}	TTL low (On)
		12 ~ 280 V _{AC}		TTL high (Off)
DC output	PCLM-ODC5	5 ~ 60 V _{AC}	3.0 A _C	TTL low (On)
				TTL high (Off)
Input modules	Part No.	Input On voltage	Input Off voltage	Output logic & On/Off status
AC input	PCLM-IAC5	90 ~ 140 V _{AC}	< 45 V _{AC}	TTL low (On)
		180 ~ 280 V _{AC}	< 80 V _{AC}	TTL high (Off)
DC input	PCLM-IDC5B	3 ~ 32 V _{AC}	< 1 V _{AC}	TTL low (On)
				TTL high (Off)

Input Modules

- **Field Side**
- **Input On/Off Voltage Range** IAC5 series: 90 ~ 140 V/45 V_{RMS}
IAC5A series: 180 ~ 280 V/80 V_{RMS}
IDC5B series: 3 ~ 32 V/1 V_{DC}
- **Input Resistance** IAC5 series: 14 k Ω , IAC5A series: 44 k Ω
IDC5B series: 1.5 k Ω
- **Turn on/Off Time** IAC5 series: 20 msec. max., IAC5A series: 20 msec. max.
IDC5B series: 100 msec. max.
- **Logic Side**
- **Breakdown Voltage** 30 V_{DC}
- **Output Current** 100 mA max.
- **Output Voltage Drop** 0.4 V max.
- **Supply Current** 12 mA max.
- **Supply Voltage** 4 ~ 6 V

Output Modules

- **Field Side**
- **Current Rating** 3 A max. (@ 25° C)
- **Contact Voltage Drop** 1.6 V max.
- **Turn on/Off Time** OAC series: 1/2 AC cycle max.
ODC series: 100 μ sec/750 μ sec. max.
- **Logic Side**
- **Input Resistance** 220 Ω
- **Supply Voltage** 4 ~ 6 V
- **Supply Current** 12 mA max.

General

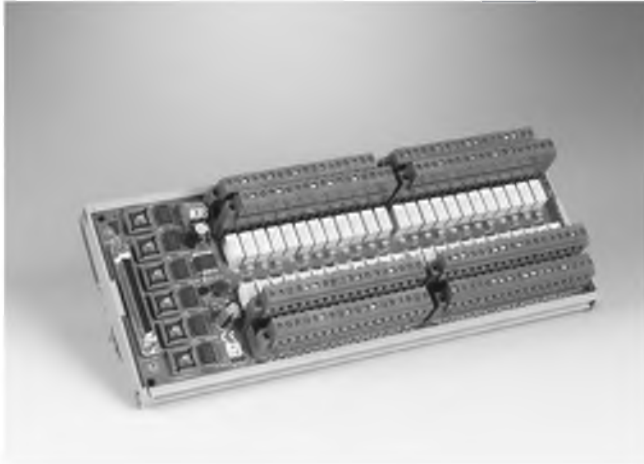
- Logic side connectors: 50-pin edge connector, Opto-22 compatible
- Dimensions (L x W x H): 367 x 111 x 56 mm (14.4" x 4.4" x 2.2")

Ordering Information

- **PCLD-7216** 16-ch SSR I/O Module Carrier Board, one 1.2 m, 50-pin flat cable (PCL-10151-1.2), one 1 m 20-pin flat cable (PCL-10120-1) and user's manual

PCLD-8762

48-channel Relay Output Board



Features

- Built-in plug-in screw terminals for easier wiring
- LED status indicators for Relay output
- DIN-rail mounting
- On-board relay driver circuits

Specifications

Relay Output

- **Contact Rating** 30 V_{DC} @ 1 A, 120 V_{AC} @ 0.5 A
- **Contact Resistance** < 100 ohm
- **Electrical Endurance** 5*10⁷ times at 12 V/10 mA
- **Mechanical Endurance** 108 times
- **Operation Time** 5 ms Max
- **Release Time** 6 ms Max

General

- **Certifications** CE
- **Connectors** Controller: SCSI-68 (male)
Digital Input: Plug-in screw terminals: (#14 ~ 24 AWG)
- **Dimensions** 285 x 117 mm
- **Mounting** DIN 35 rail
- **Power Consumption** 7 V @ 1.8 A, 30 V @ 0.45 A

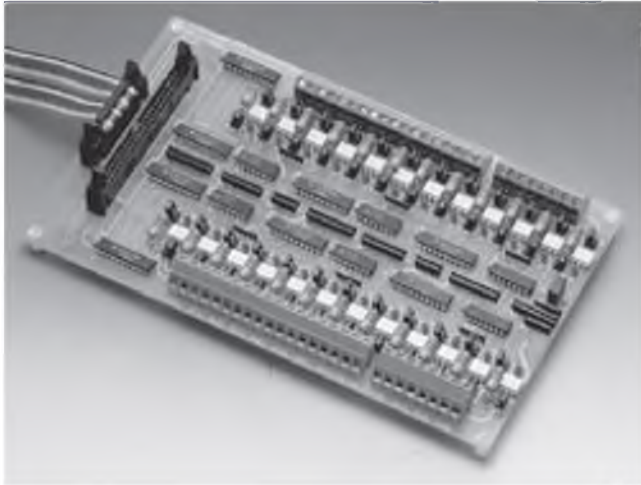
Ordering Information

- **PCLD-8762** 48-Channel I Relay (SPDT) output Board

PCLD-782 PCLD-782B

16-ch Opto-Isolated DI Board

16/24-ch Opto-Isolated DI Board



CE

Features

- Compatible with all PC-LabCard™ products with DI channels on either 20-pin flat cable or 50-pin Opto-22 compatible connectors.
- 16 or 24 optically-isolated digital input channels
- Built-in screw terminals for easy input wiring
- LEDs indicate input logic status
- Inputs buffered with voltage comparators

Introduction

PCLD-782 and PCLD-782B digital input daughterboards feature high-voltage (> 1,500 V_{DC}) optical isolation on all inputs. PCLD-782 provides 16 input channels accessible through one 20-pin flat cable connector, which is standard on most PC-LabCard™ products. The PCLD-782B provides either 16 or 24 channels, depending on what connector you use. The PCLD-782B's 20-pin connector lets you access 16 channels, similar to the PCLD-782, but also provides a 50-pin Opto-22 connector with access to 24 channels.

Both cards have onboard screw terminals for easy input wiring. Optically isolated signal conditioning provides isolation between separate channels, as well as between each input channel and the PC. This isolation prevents floating potential and ground loop problems while protecting the input lines from potentially damaging fault conditions.

A red LED on each input channel indicates its status. If the input signal is high, the LED is lit. You can configure each channel to work in either isolated or non-isolated mode. A variable resistor adjusts the threshold level for all 24 isolated input channels simultaneously.

Specifications

Digital Input

- Input Channels** 24 (PCLD-782B), 16 (PCLD-782)
- Input Range** 0 ~ 24 V_{DC}
- Input Resistance** 560 Ω
- Isolation Voltages** 1,500 V_{DC} min.
- Threshold Voltage** 1.5 V_{DC} (VR adjustable)

General

- Certifications** CE
- Connectors**
 - Digital Input: Screw terminals (#12 – 22 AWG)
 - Controller: PCLD-782: 1 x 20-pin flat cable connector (CN1)
 - PCLD-782B: 1 x 20-pin flat cable connector (CN1) and 1 x 50-pin Opto-22 connector (CN2)
- Dimensions (L x W)**
 - PCLD-782: 3U–205 x 114 mm (8.1" x 4.5")
 - PCLD-782B: 4U–220 x 132 mm (8.7" x 5.2")
- LED Indicators** Indicates input logic status
- Mounting** 4 x screw holes for flat surface mounting

Ordering Information

- PCLD-782B** 16/24-ch Opto-isolated DI Board, user's manual, one 1m 20-pin flat cable assembly (P/N: PCL-10120-1) and one 1.2m 50-pin flat cable (P/N: PCL-10150-1.2)
- PCLD-782** 16-ch Opto-isolated DI Board, user's manual and 1 x 1 m 20-pin flat cable assembly (P/N: PCL-10120-1)
- PCL-10120-1** 20-pin flat cable assembly, 1 m
- PCL-10120-2** 20-pin flat cable assembly, 2 m
- PCL-10150-1.2** 50-pin flat cable, 1.2 m (for connecting the PCL-722 or 724 to the PCLD-885, 782B or 785B)

Pin Assignments

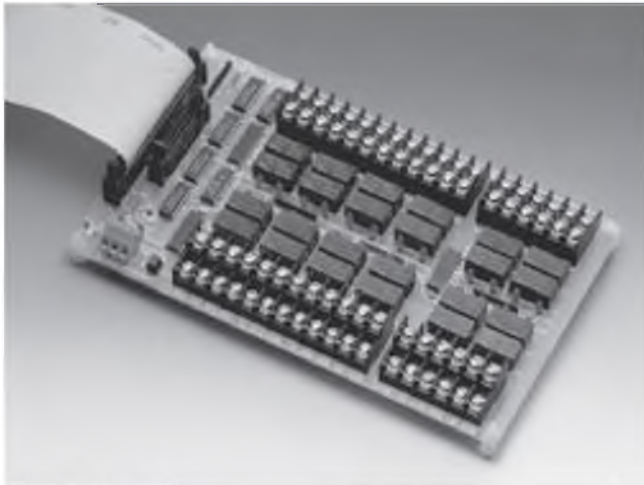
CN1				CN2			
DI0	1	2	DI1	DI23	1	2	GND
DI2	3	4	DI3	DI22	3	4	GND
DI4	5	6	DI5	DI21	5	6	GND
DI6	7	8	DI7	DI20	7	8	GND
DI8	9	10	DI9	DI19	9	10	GND
DI10	11	12	DI11	DI18	11	12	GND
DI12	13	14	DI13	DI17	13	14	GND
DI14	15	16	DI15	DI16	15	16	GND
GND	17	18	GND	DI15	17	18	GND
+5 V	19	20	+12 V	DI14	19	20	GND
				DI13	21	22	GND
				DI12	23	24	GND
				DI11	25	26	GND
				DI10	27	28	GND
				DI9	29	30	GND
				DI8	31	32	GND
				DI7	33	34	GND
				DI6	35	36	GND
				DI5	37	38	GND
				DI4	39	40	GND
				DI3	41	42	GND
				DI2	43	44	GND
				DI1	45	46	GND
				DI0	47	48	GND
				+5 V	49	50	GND

PCLD-785 PCLD-785B PCLD-885

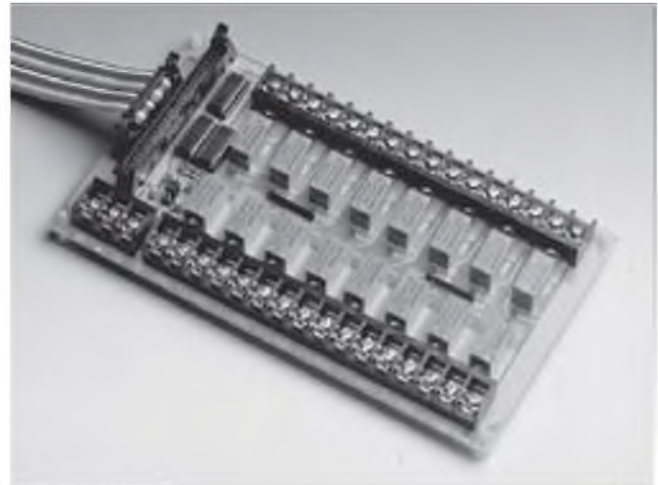
16-ch Relay Output Board

24-ch Relay Output Board

16-ch Power Relay Output Board



PCLD-785/785B



PCLD-885



Features

- Compatible with PC-LabCard™ products with 20-pin digital output connector and 50-pin Opto-22 digital output connector (PCLD-785B only)
- Automatic selection of control logic (PCLD-785B only): Negative logic for the Opto-22 connector Positive logic for the 20-pin flat cable connector
- Relays: PCLD-785: 16 SPDT, PCLD-785B: 16 or 24 SPDT
- Onboard relay driver circuits
- Screw terminals for easy output wiring
- LED status indicators

Specifications

Relay

- Channels**

PCLD-785:	16 (CN1, 20-pin conn.)
PCLD-785B:	16 (CN1, 20-pin conn.) 24 (CN2, 50-pin conn.)
- Contact Ratings** 120 V_{AC} @ 0.5 A, 30 V_{DC} @ 1 A
- Contact Resistance** < 100 mΩ
- Control Logic** 20-pin flat cable conn.: Input TTL high (+5 V) = Relay on
50-pin Opto-22 conn.: Input TTL low (0 V) = Relay on
- Operation Time** 5 ms max.
- Insulation Resistance** 100 MΩ
- Life Expectancy** AC: 5 x 10⁶ @ 110 V/0.3 A
DC: 5 x 10⁶ @ 24 V/1.25 A
- Relay Type** SPDT (Single-Pole Double-Throw) Form C
- Release Time** 5 ms max.

General

- Dimensions (L x W)** PCLD-785: 114 x 220 mm (4.5" x 8.7")
PCLD-785B: 132 x 220 mm (5.2" x 8.7")
- Power Consumption** +5 V @ < 100 mA; +12 V @ 33 mA for each relay
- Power Input** 20-pin connector:
+5 V_{DC}: Jumper select either PC bus or external supply
+12 V_{DC}: Jumper select either PC bus or external supply
50-pin connector: external 12 V supply

Ordering Information

- PCLD-785B** 24-ch Relay Output Board, user's manual, 1 m 20-pin flat cable assembly (P/N: PCL-10120-1) and 1.2 m 50-pin flat cable assembly (P/N: PCL-10150-1.2)
- PCLD-785** 16-ch Relay Output Board, user's manual, 1 m 20-pin flat cable assembly (P/N: PCL-10120-1)
- PCL-10120-1** 20-pin flat cable assembly, 1 m
- PCL-10120-2** 20-pin flat cable assembly, 2 m
- PCL-10150-1.2** 50-pin flat cable, 1.2 m (connects the PCL-722 or 724 to the PCLD-885, 782B or 785B)

Features

- Accepts 20-pin or 50-pin (Opto-22 compatible) connectors
- 16 single-pole single-throw (SPST) relays
- High-power relay handles up to 5 A @ 250 V_{AC}
- Onboard varistors protect all relay contact points
- Industrial screw terminals for ease of wiring
- LED On/Off status indication for each relay
- +5 V/+12 V power/status LED indicator

Specifications

Relay

- Breakdown Voltage** 750 V_{AC} for 1 minute, between open contacts
2500 V_{AC} for 1 minute, between coil and contacts
- Contact Rating** AC: 250 V @ 5 A
DC: 30 V @ 5 A
- Contact Resistance** 30 mΩ max.
- Insulation Resistance** 1000 mΩ @ 500 V_{DC}
- Life Expectancy** >100,000 cycles at rated load
- Relay on Time** 6 ms max.
- Relay off Time** 3 ms max.
- Relay Type** SPST (Form A), normally open

Varistor

- Clamping Voltage** 760 V (10 A)
- Max. Peak Current** 1200 A for 8 msec.
- Max. Applied Voltage** 300 V_{RMS} AC continuous
- Varistor Voltage** 470 V (current = 1 mA)

General

- Power Consumption** 12 V @ 22 mA for each relay,
352 mA if all relays energized; 5 V @ 200 mA max.
- Connectors** Input: 20-pin flat cable or 50-pin Opto-22 compatible
Output: Barrier strip screw terminal
- Dimensions (L x W)** 205 x 114 mm (8" x 4.5")
- Operating Temperature** 0 - 60° C (32 - 140° F)

Ordering Information

- PCLD-885** 16-ch Power Relay Output Board, one 1m 20-pin flat cable assembly (P/N: PCL-10120-1) and a 1.2 m 50-pin flat cable assembly (P/N: PCL-10150-1.2)

PCLD-8751

PCLD-8761

48-ch Opto-Isolated Digital Input Board

24-ch Opto-Isolated DI and 24-ch Relay Output Board



PCLD-8751



Features

- 48 optically-isolated digital input channels
- Built-in plug-in screw terminals for easier wiring
- LEDs indicate input logic status
- Input buffered with voltage comparators
- Wet/Dry contact set by DIP switches
- Input logic set by jumper
- Wide input range from 5 to 30 V

Specifications

Digital Input

- **Channels** 48 isolated digital inputs
- **Contact Mode** Wet contact
Dry contact (set by switch)
- **Isolation Voltage** 3500 V
- **Logic Modes** Positive Logic
Negative Logic (set by jumper)
- **Signal Voltage** 0 – 30 V
VIH (MIN) : 4 V, VIL (MAX) : 1 V

General

- **Certifications** CE
- **Connectors** Controller: SCSI-68 male
Digital Input: Plug-in screw terminals: (#14 ~ 24 AWG)
- **Dimensions** 255 x 121 mm
- **LED Indicators** One for each channel to indicate logic status
- **Mounting** DIN-rail

Ordering Information

- **PCLD-8751** 48-ch Opto-isolated Digital Input Board



PCLD-8761



Features

- Built-in plug-in screw terminals for easier wiring
- LED status indicators for DI and relay output
- Digital inputs buffered with voltage comparators
- Wet/Dry contact set by DIP switches for DI
- Wide input range from 5 to 30 V
- INT/EXT Power selection by jumper

Specifications

Digital Input

- **Channels** 24 IDI with LED and 24 Relay (SPDT) Form C with LED
- **Contact Mode** Wet contact and dry contact for each IDI (set by switch)
- **Digital Input** 0 – 30 V VIH (MIN) : 4 V, VIL (MAX) : 1V
- **Isolation Voltage** 3,500 V (Isolated DI), 1,500V (Relay)
- **Logic Mode** Positive Logic Negative Logic (set by jumper)
(IDI and Relay are independent)

Relay Output

- **Contact Rating** 30 V_{DC} @ 1 A, 120 V_{AC} @ 0.5 A
- **Contact Resistance** < 100 ohm
- **Electrical Endurance** 5*10⁷ times at 12 V/10 mA
- **Mechanical Endurance** 108 times
- **Operation Time** 5 ms Max
- **Release Time** 6 ms Max

General

- **Certifications** CE
- **Connectors** Controller: SCSI-68 male
Digital Input: Plug-in screw terminals: (#14 ~ 24 AWG)
- **Dimensions** 285 x 121 mm
- **Mounting** DIN 35 rail
- **Power Consumption** +5 V @ < 380 mA +50*n (mA)
+12 V @ < 240 mA +70*n (mA)
(*n indicate the number of relays)
- **Power Selection** PCI Bus or External power(7 ~ 30 V) by jumper

Ordering Information

- **PCLD-8761** 24-ch Opto-isolated DI and 24-Channel Relay (SPDT) Output Board

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