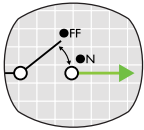# J

Digital Input/ Output

DIGITAL I/O

Interface boards that provide computers with digital signal I/O functions.
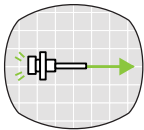
They monitor the status (ON/OFF) of relays, operating switches and measurement devices as well as controlling (ON/OFF) lamps, 7-segment display units and relays.

These boards can also be used as an interface for conducting digital communication with controllers such as PLC or microcomputers.
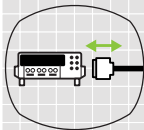
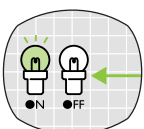| Application | Monitoring status of contact points and switches |
| Description | Inputs ON/OFF signals |

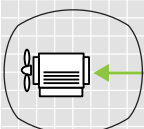| Application | Measurements of individual sensors |
| Description | Inputs BCD / binary data |

| Application | Connecting with measurement devices / controllers |
| Description | Controls BCD / binary data |

| Application | Controlling Relays / lamps |
| Description | Outputs ON/OFF signals |

| Application | Motor control |
| Description | Controls BCD / binary data |

Pictograms

Bus Specifications

PCI Express
Product is PCI Express standard compliant and can be used in the computer equipped with PCI Express bus expansion slot.

PCI
Product is PCI standard compliant and can be used in the computer equipped with PCI bus expansion slot.

USB 2.0
Product is USB standard compliant and can be used in the computer equipped with USB2.0/1.1 ports. Supports USB2.0 high-speed mode(480Mbps).

Card Bus
Product supports Cardbus that is a 32-bit PC card standard bus.

PCMCIA
Product supports 16-bit PC card standard.

Board Size

Low Profile
Product is PCI standard/Low Profile compliant. A bracket for standard-size PCI slots is provided.

Supported Connectors

| 100-pin 0.8mm Pitch | 68-pin 0.8mm Pitch | 37-pin D-SUB |
| 96-pin Half Pitch | 50-pin Mini-Ribbon | |

Indicates the number of pins and shapes of connectors used for external connection. The supported cables and accessories will vary depending on these specifications.

CONTEC provides a wide variety of cables and accessories to suit your needs.

Cables with connectors on both ends Accessories (Terminal block, etc.) **Q-07**

Cables with a connector on one end Connector set **Q-11**

I/O Points

Digital input nnn Maximum number of input channels

Digital output mmmm Maximum number of output channels

Bi-direct XX Maximum number of points(bits) that can be input / output

Supported softwares

Windows Driver
API-TOOL Drivers for Windows are provided. The license-free driver software (both development and runtime) provides commands to interface boards or cards using Windows standard Win32API function (DLL).

Linux Diver
API-TOOL Drivers for Linux are provided. The license-free driver software (both development and runtime) that provide commands to interface boards or cards using module-style device drivers and the shared library.

LabVIEW
VI-DAQ, a VI library for use with National Instruments' LabVIEW can be downloaded from our Web site.
With function format similar to that of LabVIEW's "Data Acquisition VI", VI-DAQ set-up is not complicated therefor simplifying device operation.
For the details, please visit: http//ww.contec.com/mldaq/

Points

Isolated
I/O interface and internal logical circuits are insulated by Opto-couplers and relay contacts in order to prevent electrical interference with the PC. Requires additional power to drive external circuits.

Non-isolated
I/O interface and internal logical circuits are not insulated. These respond at a higher speed than insulated devices.

Power On board
A power source is integrated on the device in order to drive input circuit Opto-couplers and I/O circuits. These are useful when additional power sources aren't available.

Negative Common
I/O interface supports a current sourcing circuit. It is called "negative common" because the common polarity is reverse to that of a current sinking circuit.

Non polarity
I/O interface supports both current sinking circuit and current sourcing circuit.

High Voltage
I/O interface supports high-voltage circuits [those exceeding 24VDC]. Some have an output interface that supports AC.

Hi-Speed Opto-coupler
Uses a high-speed Opto-coupler that enables a response of 1μ to 5μsec.

Digital Filter
Disables level (ON/OFF) changes that take place faster than the set value and prevents incorrect input due to noise and chattering.

Surge Protection
Output interface is equipped with a Zener diode that prevents damage and / or malfunction due to a surge in voltage and incoming current.

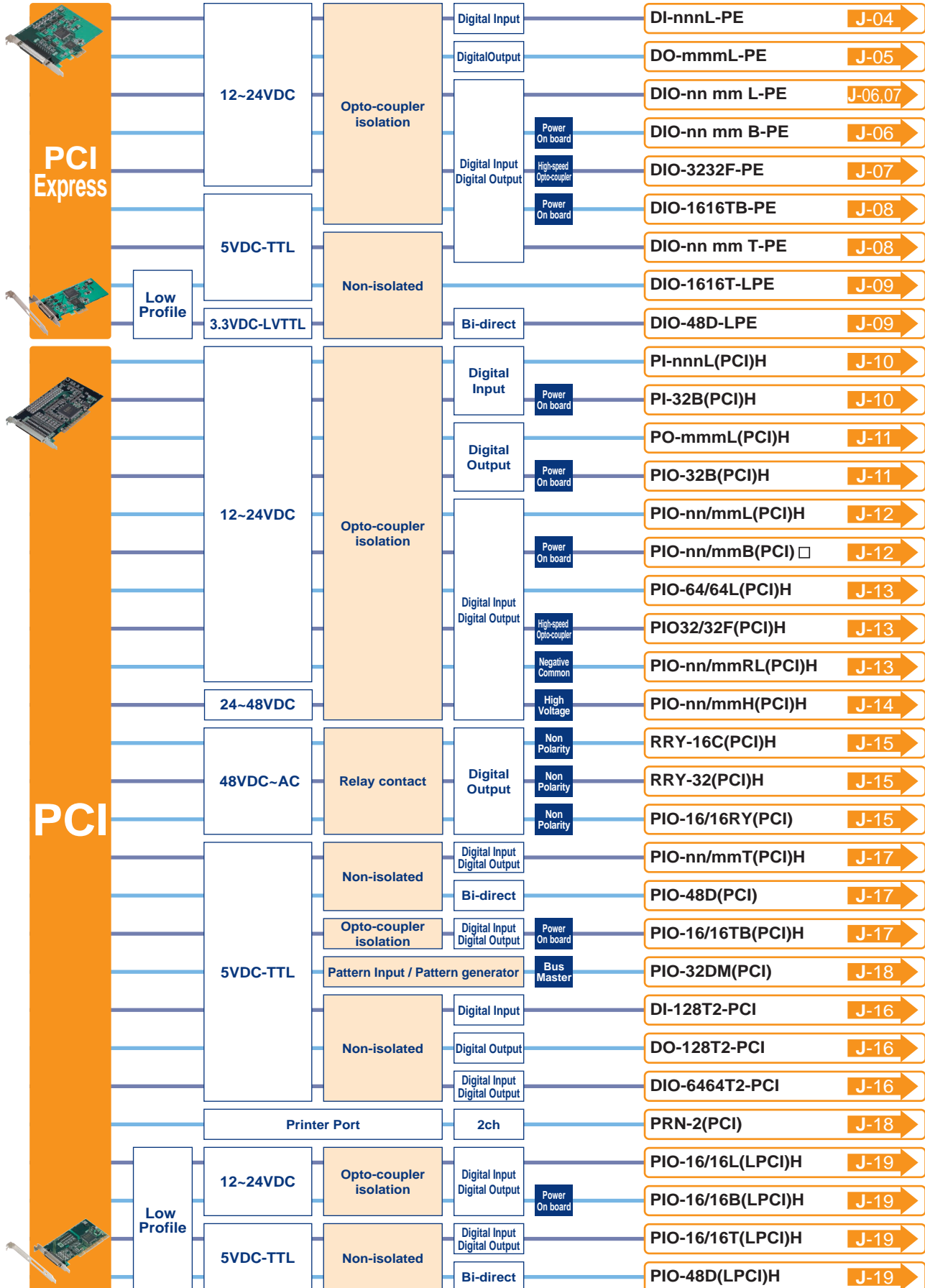**Surge & Overcurrent Protection**
Output interface is equipped with both a Zener diode which prevents damage and / or malfunction due to a surge in voltage and incoming current and a policing switch which guards against damage due to any current overages.

Product Lineup

You can choose from a variety of models according to your desired bus, I/O points and I/O type.

PCI Express

Low Profile

- 12~24VDC — Opto-coupler isolation — Digital Input / DigitalOutput / Digital Input Digital Output (Power On board / High-speed Opto-coupler / Power On board)
- 5VDC-TTL — Non-isolated
- 3.3VDC-LVTTL — Bi-direct

PCI

- 12~24VDC — Opto-coupler isolation — Digital Input (Power On board) / Digital Output (Power On board) / Digital Input Digital Output (Power On board / High-speed Opto-coupler / Negative Common)
- 24~48VDC — (High Voltage)
- 48VDC~AC — Relay contact — Digital Output (Non Polarity)
- 5VDC-TTL — Non-isolated — Digital Input Digital Output / Bi-direct
  - Opto-coupler isolation — Digital Input Digital Output (Power On board)
  - Pattern Input / Pattern generator (Bus Master)
  - Non-isolated — Digital Input / Digital Output / Digital Input Digital Output
- Printer Port — 2ch

Low Profile

- 12~24VDC — Opto-coupler isolation — Digital Input Digital Output (Power On board)
- 5VDC-TTL — Non-isolated — Digital Input Digital Output / Bi-direct

Digital I/O

Product Lineup

You can choose from a variety of models according to your desired bus, I/O points and I/O type.

Bus	Voltage	Isolation	I/O Type	Model	Page
Card Bus	12~24VDC	Opto-coupler isolation	Digital Input Digital Output	PIO-16/16L(CB)H	J-20
	3.3VDC-LVTTL	Non-isolated	Bi-direct	PIO-48D(CB)H	J-20
PCMCIA	12~24VDC	Opto-coupler isolation	Digital Input Digital Output	PIO-16/16L(PM)	J-21
	5VDC-TTL	Non-isolated	Bi-direct	PIO-32D(PM)	J-21
USB	12~24VDC	Opto-coupler isolation	Digital Input Digital Output	DIO-0808LY-USB	J-22
			Digital Input	DI-32(USB)	J-23
				DI-16(USB)GY	J-24
			Digital Output	DO-16(USB)GY	J-24
			Digital Input Digital Output	DIO-8/8(USB)GY	J-24
	12~48VDC		Digital Output	DO-32(USB)	J-23
	Input: 12~24VDC Output: 12~48VDC		Digital Input Digital Output	DIO-16/16(USB)	J-23
	3.3VDC-LVTTL	Non-isolated	Bi-direct	DIO-24DY-USB	J-22
Compact PCI	12~24VDC	Opto-coupler isolation	Digital Input	PI-64L(CPCI)	J-25
			Digital Output	PO-64L(CPCI)	J-25
			Digital Input Digital Output	PIO-32/32L(CPCI)	J-25
ISA				ISA	J-26

Digital I/O

PCI Express

37-pin D-SUB	Input 32	Isolated	Digital Filter

Windows Driver	Linux Diver	LabVIEW

Opto-Isolated Digital Input
DI-32L-PE

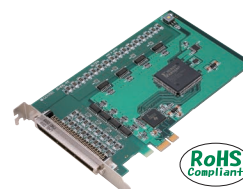**NEW**

- 32 opto-isolated input
- All input signals can be used as interrupts
- Digital filtering function to prevent input error caused by noise and/or chattering
- Functions, Connector pin and Signal assignment is compatible with the PCI-compliant board PI-32L(PCI)H

RoHS Compliant

PCI Express

96-pin Half Pitch	Input 64	Isolated	Digital Filter

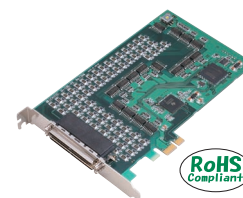| Windows Driver	Linux Diver	LabVIEW

Opto-Isolated Digital Input
DI-64L-PE

NEW

- 64 opto-isolated input
- 32 input signals can be used as interrupts
- Digital filtering function to prevent input error caused by noise and/or chattering
- Functions, Connector pin and Signal assignment is compatible with the PCI-compliant board PI-64L(PCI)H

RoHS Compliant

PCI Express

100-pin 0.8mm Pitch	Input 128	Isolated	Digital Filter

Windows Driver	Linux Diver	LabVIEW

Opto-Isolated Digital Input
DI-128L-PE

NEW

- 128 opto-isolated input
- 16 input signals can be used as interrupts
- Digital filtering function to prevent input error caused by noise and/or chattering
- Functions, Connector pin and Signal assignment is compatible with the PCI-compliant board PI-128L(PCI)H

RoHS Compliant

J-04

Model		DI-32L-PE	DI-64L-PE	DI-128L-PE	
Input channels		32 (1 common every 16 channels)	64 (1 common every 16 channels)	128 (1 common every 16 channels)	
Output channels		-			
Input specifications	Type	Opto-Isolated (for sink current output) (Negative logic)			
	Signal Level	12 ~ 24VDC (±10%)			
	Interrupts	32 interrupt signals combine to one interrupt request signal as INTA		16 interrupt signals combine to one interrupt request signal as INTA	
	Resistance	4.7kΩ			
Output specifications	Type	-			
	Rating	-			
Response Time (Max.)		200μsec			
Internal Power		-			
Wiring Distance		50m (depending on wiring environment)			
I/O Address		Any 32-byte boundary			
Power Consumption (Max.)		3.3VDC 350mA		3.3VDC 600mA	
Bus / Dimensions (mm)		PCI Express Base Specification Rev. 1.0a ×1 / 121.69(L) ×110.18(H)	PCI Express Base Specification Rev. 1.0a ×1 / 169.33(L) ×110.18(H)		
Connector		37-pin female D-type: DCLC-J37SAF-20L9E [JAE] or equivalent	96-pin female half-pitch: PCR-E96LMD+ [HONDA Tsushin Kogyo] or equivalent	100-pin 0.8mm female half-pitch ×2: HDRA-E100W1LFDT1EC-SL+ [HONDA Tsushin Kogyo] or equivalent	
Options	Software	ACX-PAC(W32) Ver.4.11			
	Accessories	EPD-37A*1, EPD-37*1, DTP-3A *1, DTP-4A *1, CM-32(PC)E *1	EPD-96A*2, EPD-96*2, DTP-64(PC)*2, CM-64(PC)E*2, EPD-37A*3, EPD-37*3, DTP-3A*3, DTP-4A*3, CM-32(PC)E*3, CCB-96 *4	DTP-3A*6, DTP-4A*6, DTP-64(PC)*5, EPD-37A*6, EPD-37*6, EPD-100A*7, EPD-96A*5, EPD-96*5, CCB-96*5, CM-64(PC)E*5	
	Cables / Connectors	PCB37P, PCB37PS, PCA37P, PCA37PS, CN5-D37M	PCB96PS, PCB96P, PCA96PS, PCA96P, PCB96WS, CN5-H96F	PCB100PS, PCB100/96PS, PCA100P, PCB100WS	
Note:		*1: Requires use of optional cable PCB37P or PCB37PS *2: Requires use of optional cable PCB96P or PCB96PS *3: Requires use of optional cable PCB96WS *4: Requires use of optional cable PCB96P or PCB96PS and 37-pin D-SUB cable *5: Requires use of optional cable PCB100/96PS *6: Requires use of optional cable PCB100WS *7: Requires use of optional cable PCB100PS			

As shown on the side of product's images, RoHS compliant **RoHS Compliant** is a CONTEC original marking for RoHS-compliant products.

Digital I/O

Box-PCs

Panel-PCs

Flat Panel Displays

Silicon Disk Drives

Option

Box PCs &Panel PCswith Windows CE

Single Board Computer

Chassis / Backplane

Analog I/O

Digital I/O

Counter & Motion Controller

Serial Communication

GPIB Communication

Remote I/O

Expansion Unit / Bus Adapter

Software

Accessories & Cables

Distributed Monitor & Control Network: F&eIT

Multi-Programmable Display

Wireless LAN

Remote Monitoring Solution

Service & Products

PCI Express

| 37-pin D-SUB | Output 32 | Isolated | Surge & Overcurrent Protection |

Windows Driver | **Linux Diver** | **LabVIEW**

Opto-Isolated Digital Output
DO-32L-PE

NEW

● 32 opto-insolated open collector output
● Output transistor has built-in circuit protection (voltage surge, zener diode, polyswitch)
● Functions, Connector pin and Signal assignment is compatible with the PCI-compliant board PO-32L(PCI)H

RoHS Compliant
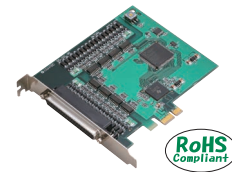
PCI Express

| 96-pin Half Pitch | Output 64 | Isolated | Surge & Overcurrent Protection |

Windows Driver | **Linux Diver** | **LabVIEW**

Opto-Isolated Digital Output
DO-64L-PE

NEW

● 64 opto-insolated open collector output
● Output transistor has built-in circuit protection (voltage surge, zener diode, polyswitch)
● Functions, Connector pin and Signal assignment is compatible with the PCI-compliant board PO-64L(PCI)H

RoHS Compliant

PCI Express

| 100-pin 0.8mm Pitch | Output 128 | Isolated | Surge & Overcurrent Protection |

Windows Driver | **Linux Diver** | **LabVIEW**

Opto-Isolated Digital Output
DO-128L-PE

NEW

● 128 opto-insolated open collector output
● Output transistor has built-in circuit protection (voltage surge, zener diode, polyswitch)
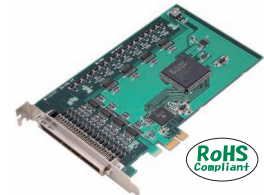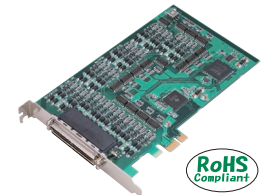● Functions, Connector pin and Signal assignment is compatible with the PCI-compliant board PO-128L(PCI)H

RoHS Compliant

J-05

Lineup

PCI Express

PCI

Low Profile PCI

PC Card

USB

Compact PCI

ISA

Model		DO-32L-PE	DO-64L-PE	DO-128L-PE	
Input channels		-			
Output channels		32 (1 common every 16 channels)	64 (1 common every 16 channels)	128 (1 common every 16 channels)	
Input specifications	Type	-			
	Signal Level	-			
	Interrupts	-			
	Resistance	-			
Output specifications	Type	Opto-Isolated Open Collector (Current sinking type) (Negative logic)			
	Rating	35VDC 100mA (per channel)			
Response Time (Max.)		200μsec			
Internal Power		-			
Wiring Distance		50m (depending on wiring environment)			
I/O Address		Any 32-byte boundary			
Power Consumption (Max.)		3.3VDC 450mA	3.3VDC 350mA	3.3VDC 600mA	
Bus / Dimensions (mm)		PCI Express Base Specification Rev. 1.0a ×1 / 121.69(L)×110.18(H)	PCI Express Base Specification Rev. 1.0a ×1 / 169.33(L)×110.18(H)		
Connector		37-pin female D-type: DCLC-J37SAF-20L9E [JAE] or equivalent	96-pin female half-pitch: PCR-E96LMD+ [HONDA Tsushin Kogyo] or equivalent	100-pin 0.8mm female half-pitch ×2: HDRA-E100W1LFDT1EC-SL+ [HONDA Tsushin Kogyo] or equivalent	
Options	Software	-			
	Accessories	EPD-37A*1, EPD-37*1, DTP-3A *1, DTP-4A *1, CM-32(PC)E *1	EPD-96A*2, EPD-96*2, DTP-64(PC)*2, CM-64(PC)E*2, EPD-37A*3, EPD-37*3, DTP-3A*3, DTP-4A*3, CM-32(PC)E*3, CCB-96 *4	DTP-3A*6, DTP-4A*6, DTP-64(PC)*5, EPD-37A*6, EPD-37*6, EPD-100A*7, EPD-96A*5, EPD-96*5, CCB-96*5, CM-64(PC)E*5	
	Cables / Connectors	PCB37P, PCB37PS, PCA37P, PCA37PS, CN5-D37M	PCB96PS, PCB96P, PCA96PS, PCA96P, PCB96WS, CN5-H96F	PCB100PS, PCB100/96PS, PCA100P, PCB100WS	
Note:		*1: Requires use of optional cable PCB37P or PCB37PS			
		*2: Requires use of optional cable PCB96P or PCB96PS			
		*3: Requires use of optional cable PCB96WS			
		*4: Requires use of optional cable PCB96P or PCB96PS and 37-pin D-SUB cable			
		*5: Requires use of optional cable PCB100/96PS			
		*6: Requires use of optional cable PCB100WS			
		*7: Requires use of optional cable PCB100PS			

As shown on the side of product's images, RoHS compliant (RoHS Compliant) is a CONTEC original marking for RoHS-compliant products.

Please see page Q-13 for optional accessories
and cables/connectors, and page P-01 for supported software.

PCI Express

37-pin D-SUB | **Input 16** | **Output 16** | Isolated | Digital Filter | Surge & Overcurrent Protection

Windows Driver | Linux Diver | LabVIEW

Opto-Isolated Digital I/O
DIO-1616L-PE

NEW

- 16 opto-isolated input , 16 opto-insolated open collector output
- All input signals can be used as interrupts
- Digital filtering function to prevent input error caused by noise and/or chattering
- Output transistor has built-in circuit protection (voltage surge, zener diode, polyswitch)
- Functions, Connector pin and Signal assignment is compatible with the PCI-compliant board PIO-16/16L(PCI)H
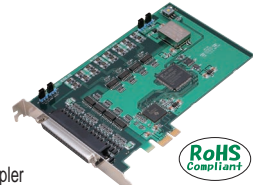
Pb Free — Soon to be RoHS-compliant

PCI Express

37-pin D-SUB | **Input 16** | **Output 16** | Isolated | Power On Board | Digital Filter | Surge & Overcurrent Protection

Windows Driver | Linux Diver | LabVIEW

Opto-Isolated Digital I/O with On-board 12V Power Supply
DIO-1616B-PE

NEW

- 16 opto-isolated input , 16 opto-insolated open collector output
- On-board power supply (12VDC 240mA) to drive the input circuit opto coupler
- All input signals can be used as interrupts
- Output transistor has built-in circuit protection (voltage surge, zener diode, polyswitch)
- Functions, Connector pin and Signal assignment is compatible with the PCI-compliant board PIO-16/16B(PCI)H

RoHS Compliant

PCI Express

96-pin D-SUB | **Input 32** | **Output 32** | Isolated | Digital Filter | Surge & Overcurrent Protection

Windows Driver | Linux Diver | LabVIEW

Opto-Isolated Digital I/O
DIO-3232L-PE

NEW

- 32 opto-isolated input , 32 opto-insolated open collector output
- All input signals can be used as interrupts
- Digital filtering function to prevent input error caused by noise and/or chattering
- Output transistor has built-in circuit protection (voltage surge, zener diode, polyswitch)
- Functions, Connector pin and Signal assignment is compatible with the PCI-compliant board PIO-32/32L(PCI)H
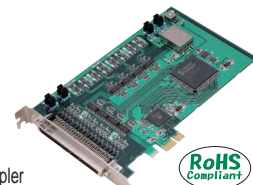
Pb Free — Soon to be RoHS-compliant

PCI Express

96-pin D-SUB | **Input 32** | **Output 32** | Isolated | Power On Board | Digital Filter | Surge & Overcurrent Protection

Windows Driver | Linux Diver | LabVIEW

Opto-Isolated Digital I/O with On-board 12V Power Supply
DIO-3232B-PE

NEW

- 32 opto-isolated input , 32 opto-insolated open collector output
- On-board power supply (12VDC 240mA) to drive the input circuit opto coupler
- All input signals can be used as interrupts
- Output transistor has built-in circuit protection (voltage surge, zener diode, polyswitch)
- Functions, Connector pin and Signal assignment is compatible with the PCI-compliant board PIO-32/32B(PCI)H

RoHS Compliant

J-06

Model		DIO-1616L-PE	DIO-1616B-PE	DIO-3232L-PE	DIO-3232B-PE
Input channels		16 (all available for interrupts)	16 (1 common every 16 channels)	32 (all available for interrupts)	32 (1 common every 16 channels)
Output channels		16 (1common)	16 (1common)	32 (1common)	32 (1 common every 16 channels)
Input specifications	Type	Opto-Isolated (for sink current output) (Negative logic)			
	Signal Level	12 ~ 24VDC (±10%)			
	Interrupts	16 interrupt signals combine to one interrupt request signal as INTA		32 interrupt signals combine to one interrupt request signal as INTA	
	Resistance	4.7kΩ			
Output specifications	Type	Opto-Isolated Open Collector (Current sinking type) (Negative logic)			
	Rating	35VDC 100mA (per channel)			
Response Time (Max.)		within 200μsec	within 200μsec	within 200μsec	within 200μsec
Internal Power		-			
Wiring Distance		50m			
I/O Address		Any 32-byte boundary			
Power Consumption (Max.)		3.3VDC 350mA	3.3VDC 350mA, 12VDC 350mA (On-board) 3.3VDC 350mA (External)	3.3VDC 400mA	3.3VDC 400mA, 12VDC 350mA (On-board) 3.3VDC 400mA (External)
Bus / Dimensions (mm)		PCI Express Base Specification Rev. 1.0a ×1 / 121.69(L)×110.18(H)	PCI Express Base Specification Rev. 1.0a ×1 / 169.33(L)×110.18(H)		
Connector		37-pin female D-type: DCLC-J37SAF-20L9 [JAE] or equivalent	37-pin female D-type: DCLC-J37SAF-20L9E [JAE] or equivalent	96-pin female half-pitch: PCR-E96LMD [HONDA Tsushin Kogyo] or equivalent	96-pin female half-pitch: PCR-E96LMD+ [HONDA Tsushin Kogyo] or equivalent
Options	Software	-			
	Accessories	DTP-3A *1, DTP-4A *1, EPD-37A *1, EPD-37 *1, CM-32(PC)E *1		EPD-96A*2, EPD-96*2, DTP-64(PC)*2, CM-64(PC)E*2, DTP-3A*3, DTP-4A*3, EPD-37A*3, EPD-37*3, CM-32(PC)E*3, CCB-96 *4	
	Cables / Connectors	PCB37P, PCB37PS, PCA37P, PCA37PS, CN5-D37M		PCB96PS, PCB96P, PCA96PS, PCA96P, PCB96WS	PCB96PS, PCB96P, PCA96PS, PCA96P, PCB96WS, CN5-H96F

Note:
*1: Requires use of optional cable PCB37P or PCB37PS
*2: Requires use of optional cable PCB96P or PCB96PS
*3: Requires use of optional cable PCB96WS
*4: Requires use of optional cable PCB96P or PCB96PS and 37-pin D-SUB cable

As shown on the side of product's images, Pbfree (Pb Free) is a CONTEC original marking for lead-free products.

As shown on the side of product's images, RoHS compliant (RoHS Compliant) is a CONTEC original marking for RoHS-compliant

Digital I/O

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PCI Express | 96-pin Half Pitch | Input 32 | Output 32 | Isolated | High Speed Opto coupler | Digital Filter | Surge & Overcurrent Protection

Windows Driver | Linux Diver | LabVIEW

High-speed Opto-Isolated Digital I/O
DIO-3232F-PE

NEW

- 32 opto-isolated input , 32 opto-insolated open collector output with the high speed of 5 µsec
- All input signals can be used as interrupts
- Digital filtering function to prevent input error caused by noise and/or chattering
- Output transistor has built-in circuit protection (voltage surge, zener diode, polyswitch)
- Functions, Connector pin and Signal assignment is compatible with the PCI-compliant board PIO-32/32F(PCI)H
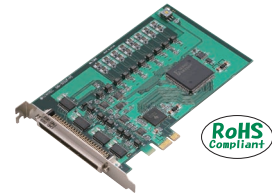
RoHS Compliant

PCI Express | 100-pin 0.8mm Pitch | Input 64 | Output 64 | Isolated | Digital Filter | Surge & Overcurrent Protection

Windows Driver | Linux Diver | LabVIEW

Opto-Isolated Digital I/O
DIO-6464L-PE

NEW

- 64 opto-isolated input , 64 opto-insolated open collector output
- 16 input signals can be used as interrupts
- Digital filtering function to prevent input error caused by noise and/or chattering
- Output transistor has built-in circuit protection (voltage surge, zener diode, polyswitch)
- Functions, Connector pin and Signal assignment is compatible with the PCI-compliant board PIO-64/64L(PCI)H

RoHS Compliant

J-07

| Model		DIO-3232F-PE	DIO-6464L-PE	
Input channels		32 (1 common every 16 channels)	64 (1 common every 16 channels)	
Output channels		32 (1 common every 16 channels)	64 (1 common every 16 channels)	
Input specifications	Type	Opto-Isolated (for sink current output) (Negative logic)		
	Signal Level	12 ~ 24VDC	12 ~ 24VDC (±10%)	
	Interrupts	32 interrupt signals combine to one interrupt request signal as INTA	16 interrupt signals combine to one interrupt request signal as INTA	
	Resistance	2.2kΩ	4.7kΩ	
Output specifications	Type	Opto-Isolated Open Collector (Current sinking type) (Negative logic)		
	Rating	35VDC 50mA (per channel)	35VDC 100mA (per channel)	
Response Time (Max.)		5µsec	within 200µsec	
Internal Power		-		
Wiring Distance		50m (depending on wiring environment)		
I/O Address		Any 32-byte boundary		
Power Consumption (Max.)		3.3VDC 500mA	3.3VDC 600mA	
Bus / Dimensions (mm)		PCI Express Base Specification Rev. 1.0a ×1 / 169.33(L)×110.18(H)		
Connector		96-pin female half-pitch: PCR-E96LMD+ [HONDA Tsushin Kogyo] or equivalent	100-pin 0.8mm female half-pitch ×2: HDRA-E100W1LFDT1EC-SL+ [HONDA Tsushin Kogyo] or equivalent	
Options	Software	-		
	Accessories	DTP-3A*1, DTP-4A*1, DTP-64(PC)*2, EPD-37A*1, EPD-37*1, EPD-96A*2, EPD-96*2, CCB-96*2, CM-32(PC)E*1, CM-64(PC)E*2	DTP-3A*4, DTP-4A*4, DTP-64(PC)*3, EPD-37A*4, EPD-37*4, EPD-100A*5, EPD-96A*3, EPD-96*3, CCB-96*3, CM-64(PC)E*3	
	Cables / Connectors	PCB96PS, PCB96P, PCA96PS, PCA96P, PCB96WS, CN5-H96F	PCB100PS, PCB100/96PS, PCA100P, PCB100WS	
Note:		*1: Requires use of optional cable PCB96WS *2: Requires use of optional cable PCB96P or PCB96PS *3: Requires use of optional cable PCB100/96PS *4: Requires use of optional cable PCB100WS *5: Requires use of optional cable PCB100PS		

As shown on the side of product's images, RoHS compliant (RoHS Compliant) is a CONTEC original marking for RoHS-compliant

Digital I/O

PCI Express

37-pin D-SUB | **Input 16** | **Output 16** | **Non Isolated** | **Digital Filter**

Windows Driver | Linux Diver | LabVIEW
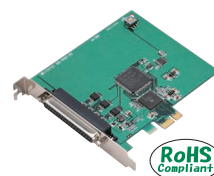
TTL-level Digital I/O
DIO-1616T-PE

- 16 TTL-level input, 16 open collector output
- All input signals can be used as interrupts
- Digital filtering function to prevent input error caused by noise and/or chattering
- Functions, Connector pin and Signal assignment is compatible with the PCI-compliant board PIO-16/16T(PCI)H

RoHS Compliant

PCI Express

37-pin D-SUB | **Input 16** | **Output 16** | **Isolated** | **Power On Board** | **Digital Filter**

Windows Driver | Linux Diver | LabVIEW

High-speed Opto-Isolated TTL Level Digital I/O
DIO-1616TB-PE

NEW

- 16 opto-isolated TTL-level input, 16 opto-insolated TTL-level output
- On-board battery (5VDC 600mA) to drive the input circuit photocoupler
- All input signals can be used as interrupts
- Digital filtering function to prevent input error caused by noise and/or chattering
- Functions, Connector pin and Signal assignment is compatible with the PCI-compliant board PIO-16/16TB(PCI)H
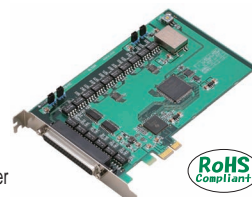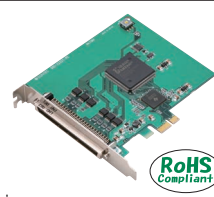
RoHS Compliant

PCI Express

96-pin D-SUB | **Input 32** | **Output 32** | **Non Isolated** | **Digital Filter**

Windows Driver | Linux Diver | LabVIEW

TTL-level Digital I/O
DIO-3232T-PE

NEW

- 32 TTL-level input, 32 open collector output
- All input signals can be used as interrupts
- Digital filtering function to prevent input error caused by noise and/or chattering
- Functions, Connector pin and Signal assignment is compatible with the PCI-compliant board PIO-32/32T(PCI)H

RoHS Compliant

PCI Express

100-pin D-SUB | **Input 64** | **Output 64** | **Non Isolated** | **Digital Filter**

Windows Driver | Linux Diver | LabVIEW

TTL-level Digital I/O
DIO-6464T-PE

NEW

- 64 TTL-level input, 64 open collector output
- 16 input signals can be used as interrupts
- Digital filtering function to prevent input error caused by noise and/or chattering

RoHS Compliant

J-08

Model		DIO-1616T-PE	DIO-1616TB-PE	DIO-3232T-PE	DIO-6464T-PE
Input channels		16	16 (1common)	32	64 (1 common every 16 channels)
Output channels		16	16 (1common)	32	64 (1 common every 16 channels)
Input specifications		-			
Input specifications	Type	TTL-level (Negative logic)	Opto-isolated TTL-level (Negative logic)	TTL-level (Negative logic)	
	Signal Level	5VDC			
	Interrupts	16 interrupt signals combine to one interrupt request signal as INTA	All interrupt signals combine to one interrupt request signal as INTA	32 interrupt signals combine to one interrupt request signal as INTA	16 interrupt signals combine to one interrupt request signal as INTA
	Resistance	Pull-up: 10kΩ	1.1kΩ	Pull-up: 10kΩ	10kΩ (1 TTL load)
Output specifications	Type	Open collector (Negative logic)	Opto-Isolated TTL-level (Negative logic)	Open collector (Negative logic)	
	Rating	30VDC 40mA	5VDC avg. 6.4mA (4 TTL load) per channel	30VDC 40mA	30VDC 40mA (per channel)
Response Time (Max.)		200nsec	1μsec	200nsec	within 200nsec (depending on Pull-up Resistance value)
Internal Power		-	5VDC 600mA	-	
Wiring Distance		1.5m	50m (depending on wiring environment)	1.5m	1.5m (depending on wiring environment)
I/O Address		Any 32-byte boundary			
Power Consumption (Max.)		3.3VDC 300mA	3.3VDC 550mA, 12VDC 350mA (On-board) 3.3VDC 550mA (External)	3.3VDC 300mA	3.3VDC 800mA
Bus / Dimensions (mm)		PCI Express Base Specification Rev. 1.0a ×1 / 121.69(L)×110.18(H)	PCI Express Base Specification Rev. 1.0a ×1 / 169.33(L)×110.18(H)	PCI Express Base Specification Rev. 1.0a ×1 / 121.69(L)×110.18(H)	
Connector		37-pin female D-type: DCLC-J37SAF-20L9 [JAE] or equivalent	37-pin female D-type: DCLC-J37SAF-20L9E [JAE] or equivalent	96-pin female half-pitch: PCR-E96LMD [HONDA Tsushin Kogyo] or equivalent	100-pin 0.8mm female half-pitch ×2: HDRA-E100W1LFDT1EC-SL+ [HONDA Tsushin Kogyo] or equivalent
Options	Software	-			
	Accessories	DTP-3A *1, DTP-4A *1, EPD-37A *1, EPD-37 *1, CM-32(PC)E *1		EPD-96*2, DTP-64(PC)*2, CM-64(PC)E*2, EPD-37A*3, EPD-37*3, DTP-3A*3, DTP-4A*3, CM-32(PC)E*3, CCB-96 *4	EPD-100A*5*8, EPD-96A*6*8, EPD-96*6*8, DTP-64(PC)*6*8, CCB-96*6*8, CM-64(PC)E*6*8, EPD-37A*7*9, EPD-37*7*9, DTP-3A*7*9, DTP-4A*7*9
	Cables / Connectors	PCA37P-1.5, PCB37P-1.5, PCA37PS-0.5P/1.5P, PCB37PS-0.5P/1.5P, CN5-D37M	PCA37P, PCB37P, PCA37PS, PCB37PS, CN5-D37M	PCA96P-1.5, PCB96P-1.5, PCA96PS-0.5P/1.5P, PCB96PS-0.5P/1.5P, PCB96WS-1.5P, CN5-H96F	PCB100PS-0.5/1.5, PCB100/96PS-1.5, PCA100P-1.5, PCB100WS-1.5

Note:
*1: Requires use of optional cable PCB37P or PCB37PS
*3: Requires use of optional cable PCB96WS-1.5P
*5: Requires use of optional cable PCB100PS-0.5/1.5
*7: Requires use of optional cable PCB100WS-1.5
*9: 2 cables are needed when CNA and CNB are used at the same time. In addition, the terminal which accepted the number of using channel(s) is necessary.
Driver Library [API-PAC(W32)] included

*2: Requires use of optional cable PCB96P-1.5 or PCB96PS-1.5P
*4: Requires use of optional cable PCB96P-1.5 or PCB96PS-1.5P and 37-pin D-SUB cable
*6: Requires use of optional cable PCB100/96PS-1.5
*8: 2 accessories and cables are needed when CNA and CNB are used at the same time.

As shown on the side of product's images, RoHS compliant (RoHS Compliant) is a CONTEC original marking for RoHS-compliant

Digital I/O

Sidebar navigation:
- Box-PCs
- Panel-PCs
- Flat Panel Displays
- Silicon Disk Drives
- Option
- Box PCs &Panel PCswith Windows CE
- Single Board Computer
- Chassis / Backplane
- Analog I/O
- **Digital I/O**
- Counter & Motion Controller
- Serial Communication
- GPIB Communication
- Remote I/O
- Expansion Unit / Bus Adapter
- Software
- Accessories & Cables
- Distributed Monitor & Control Network: F&eIT
- Multi-Programmable Display
- Wireless LAN
- Remote Monitoring Solution
- Service & Products

PCI Express

| Low Profile | 50-pin Mini-Ribbon | Input 16 | Output 16 | Non Isolated | Digital Filter |

Windows Driver | Linux Diver | LabVIEW

TTL level Digital I/O
DIO-1616T-LPE   NEW

Soon to be RoHS-compliant

- 16 TTL level input, 16 open collector output
- 200nsec high-speed response with non-isolated LVTTL level I/O
- All input signals can be used as interrupts, allow/forbid interrupts and select interruption trigger edge in bit unit.
- Digital filtering function to prevent input error caused by noise and/or chattering
- Output ratings can handle up to 35VDC and 40mA per channel
- Low Profile PCI - compliant (includes bracket for use in standard PCI slot)
- Equipped with function equivalent to those of PCI-compliant board PIO-16/16T(LPCI)H
- Connector pin assignment compatible with PIO-16/16T(LPCI)H

PCI Express

| Low Profile | 68-pin 0.8mm Pitch | Bi-direct 48 | Non Isolated | Digital Filter |

Windows Driver | Linux Diver | LabVIEW

Bi-directional Digital I/O
DIO-48D-LPE

Soon to be RoHS-compliant

- 48-point two-way digital I/O i8255 Mode 0-compliant
- 200nsec high-speed response with non-isolated LVTTL level I/O.
- All 48 input signals can be used as interrupts, allow/forbid interrupts and select interruption trigger edge in bit unit.
- Digital filtering function to prevent input error caused by noise and/or chattering.
- Input/output switching can be set via application software
- Low Profile PCI - compliant (includes bracket for use in standard PCI slot)
- Equipped with function equivalent to those of PCI bus-compatible board PIO-48D(PCI), PIO-48D(LPCI)H and CardBus-compliant PIO-48D(CB)H
- Connector pin assignment when using cable DIO-68M/96F is compatible with that of PIO-48D(PCI)when using PCB96P-** and PCB96PS-**P series (optional cables).

J-09

- Lineup
- **PCI Express**
- PCI
- Low Profile PCI
- PC Card
- USB
- Compact PCI
- ISA

Model		DIO-1616T-LPE	DIO-48D-LPE	
Input channels		16 (all available for interrupts)	-	
Output channels		16	-	
I/O channels		-	48 (all available for interrupts)	
Input specifications	Type	TTL level input (Negative logic)	LVTTL level (positive logic)	
	Signal Level	5VDC	3.3VDC	
	Interrupts	16 interrupt signals combine to one interrupt request signal as INTA	48 interrupt signals combine to one interrupt request signal as INTA	
	Resistance	10kΩ (1 TTL load)	33Ω	
Output specifications	Type	Open Collector (negative logic)	LVTTL level (positive logic)	
	Rating	30VDC 40mA	3.3VDC I_{OL}=8mA I_{OH}=-8mA	
Response Time (Max.)		Within 200nsec		
Internal Power		-		
Wiring Distance		Approx. 1.5m (depending on wiring environment)		
I/O Address		Any 32-byte boundary		
Power Consumption (Max.)		3.3VDC 300mV		
Bus / Dimensions (mm)		PCI Express Base Specification Rev. 1.0a ×1 / 121.69(L)×67.90(H)		
Connector		50-Pin Mini-Ribbon Connector: 10250-52A2JL [3M] or equivalent	68 pin 0.8mm pitch connector: HDRA-E68LFDT+ [HONDA TSUSHIN KOGYO CO., LTD.] or equivalent	
Options	Software	-		
	Accessories	EPD-50A *1, DTP-3A *2, DTP-4A *2, EPD-37A *2, EPD-37 *2, CM-32 (PC)E *2	DTP-64 (PC)*3, EPD-96 *3 EPD-68A*4	
	Cables / Connectorss	PCB50PS, PCA50PS, PCE50/37PS-0.5P	DIO-68M/96F , PCA68PS-0.5P, PCA68PS-1.5P	
Note:		*1: Requires use of optional cable PCB50PS-*P *2: Requires use of optional cable PCE50/37PS-0.5P and PCB37P or PCB37PS *3: Requires use of optional cable DIO-68M/96F *4: Requires use of optional cable PCB-68PS		

As shown on the side of product's images, Pbfree (Pb Free) is a CONTEC original marking for lead-free products.

Please see page Q-13 for optional accessories
and cables/connectors, and page P-01 for supported software.

PCI

37-pin D-SUB | **Input 32** | **Isolated** | **Digital Filter** | CE
Windows Driver | **Linux Diver** | **LabVIEW**

Opto-Isolated Digital Input
PI-32L(PCI)H

RoHS Compliant

● 32 opto-isolated for superb noise resistance (12 to 24VDC)
● Fast response time (within 200μsecs) / Power saving design
● All input signals can be used as interrupts
● Digital filter and interrupt trigger edge can be set via software

PCI

37-pin D-SUB | **Input 32** | **Isolated** | **Power on Board** | **Digital Filter** | CE
Windows Driver | **Linux Diver** | **LabVIEW**

Opto-Isolated Digital Input with On-board 12V Power Supply
PI-32B(PCI)H

RoHS Compliant

● On-board power supply (12VDC 240mA) to drive the input circuit opto coupler
● Fast response time (within 200μsecs)
● All input signals can be used as interrupts
● Digital filter and interrupt trigger edge can be set via software

PCI

96-pin Half Pitch | **Input 64** | **Isolated** | **Digital Filter** | CE
Windows Driver | **Linux Diver** | **LabVIEW**

Opto-Isolated Digital Input
PI-64L(PCI)H

RoHS Compliant

● 64 opto-isolated for superb noise resistance (12 to 24VDC)
● Fast response time (within 200μsecs) / Power saving design
● 32 input signals can be used as interrupts
● Digital filter and interrupt trigger edge can be set via software

PCI

100-pin 0.8mm Pitch | **Input 128** | **Isolated** | **Digital Filter** | CE
Windows Driver | **Linux Diver** | **LabVIEW**

Opto-Isolated Digital Input
PI-128L(PCI)H

RoHS Compliant

● 128 inputs on a PCI short-size board
● Fast response time (within 200μsecs)/Power saving design
● 16 input signals can be used as interrupts
● Digital filter and interrupt trigger edge can be set via software
● Optional Conversion cables (100-pin to 96-pin half pitch) available

Model	PI-32L(PCI)H	PI-32B(PCI)H	PI-64L(PCI)H	PI-128L(PCI)H
Input channels	32		64	128
Output channels	-			
Input specifications — Type	Opto-Isolated (for sink current output)			
Input specifications — Signal Level	12~24VDC			
Input specifications — Interrupts	32 interrupt signals combine to one interrupt request signal as INTA			16 interrupt signals combine to one interrupt request signal as INTA
Input specifications — Resistance	4.7kΩ			
Output specifications — Type	-			
Output specifications — Rating	-			
Response Time (Max.)	200μsec			
Internal Power	-	12VDC 240mA	-	
Wiring Distance	50m			
I/O Address	Any 32-byte boundary			
Power Consumption (Max.)	5VDC 200mA	5VDC 300mA (External), 5VDC 1200mA (On-board)	5VDC 250mA	5VDC 500mA
Bus / Dimensions (mm)	PCI (32bit, 33MHz, 5V or 3.3V*¹) / 121.69(L) × 105.68(H)	PCI (32bit, 33MHz, 5V or 3.3V*¹) / 176.41(L)×105.68(H)		
Connector	37-pin female D-type DCLC-J37SAF-20L9 [JAE] or equivalent		PCR-E96LMD [HONDA Tsushin Kogyo] or equivalent	HDRA-E100W1L-FDT1EC-SL [HONDA Tsushin Kogyo] or equivalent
Options — Software	-			
Options — Accessories	DTP-3A *², DTP-4A *², EPD-37A *², EPD-37 *², CM-32(PC)E *²		EPD-96A*³, EPD-96*³, DTP-64(PC)*³, CM-64(PC)E*³, DTP-3A *⁴, DTP-4A *⁴, EPD-37A*⁴, EPD-37*⁴, CM-32(PC)E*⁴, CCB-96*⁵	DTP-64(PC)*⁶, EPD-96*⁶, EPD-96A*⁶, EPD-100A*⁸, CCB-96*⁶, CM-64(PC)E*⁶, DTP-3A *⁷, DTP-4A *⁷, EPD-37A*⁷, EPD-37*⁷
Options — Cables / Connectors	PCA37P, PCB37P, PCA37PS, PCB37PS, CN5-D37M		PCA96P, PCB96P, PCA96PS, PCB96PS, PCB96WS, CN5-H96F	PCA100P, PCB100/96PS, PCB100PS, PCB100WS

Note:
*1: +5V power must be supplied from PCI bus slot.
*3: Requires use of optional cable PCB96P or PCB96PS
*5: Requires use of optional cable PCB96P or PCB96PS and 37-pin D-SUB
*7: Requires use of optional cable PCB100WS
*2: Requires use of optional cable PCB37P or PCB37PS
*4: Requires use of optional cable PCB96WS
*6: Requires use of optional cable PCB100/96PS
*8: Requires use of optional cable PCB100PS

As shown on the side of product's images, RoHS compliant (RoHS Compliant) is a CONTEC original marking for RoHS-compliant products.

Digital I/O

Please see page Q-13 for optional accessories
and cables/connectors, and page P-01 for supported software.

J-11

PCI | 37-pin D-SUB | Output 32 | Isolated | Surge & Overcurrent Protection | CE
Windows Driver | Linux Diver | LabVIEW

Opto-Isolated Digital Output
PO-32L(PCI)H

● 32 opto-isolated open collector output (35VDC, 100mA)
● Fast response time (within 200μsecs.)
● Output transistor has built-in circuit protection (voltage surge, overcurrent)

RoHS Compliant

PCI | 37-pin D-SUB | Output 32 | Isolated | Power on Board | Surge & Overcurrent Protection | CE
Windows Driver | Linux Diver | LabVIEW

Opto-Isolated Digital Output with On-board 12V Power Supply
PO-32B(PCI)H

● On-board power supply (12VDC 240mA) to drive the
  output circuit opto coupler
● Fast response time (within 200μsecs.)
● Output transistor has built-in circuit protection (voltage surge, overcurrent)

PCI | 96-pin Half Pitch | Output 64 | Isolated | Surge & Overcurrent Protection | CE
Windows Driver | Linux Diver | LabVIEW

Opto-Isolated Digital Output
PO-64L(PCI)H

● 64 opto-isolated open collector output (35VDC, 100mA)
● Fast response time (within 200μsecs.)
● Output transistor has built-in circuit protection (voltage surge, overcurrent)

RoHS Compliant

PCI | 100-pin 0.8mm Pitch | Output 128 | Isolated | Surge & Overcurrent Protection | CE
Windows Driver | Linux Diver | LabVIEW

Opto-Isolated Digital Output
PO-128L(PCI)H

● 128 outputs on a PCI short-size board
● Fast response time (within 200μsecs.)
● Output transistor has built-in circuit protection (voltage surge, overcurrent)
● Optional Conversion cables (100-pin to 96-pin half pitch) available

RoHS Compliant

Model		PO-32L(PCI)H	PO-32B(PCI)H	PO-64L(PCI)H	PO-128L(PCI)H
Input channels		-			
Output channels		32		64	128
Input specifications	Type	-			
	Signal Level	12~24VDC			
	Interrupts	-			
	Resistance	-			
Output specifications	Type	Opto-Isolated Open Collector (Current sinking type)			
	Rating	35VDC 100mA			
Response Time (Max.)		200μsec			
Internal Power		-	12VDC 240mA	-	
Wiring Distance		50m			
I/O Address		Any 32-byte boundary			
Power Consumption (Max.)		5VDC 200mA	5VDC 300mA (External), 5VDC 1200mA (On-board)	5VDC 250mA	5VDC 500mA
Bus / Dimensions (mm)		PCI (32bit, 33MHz, 5V or 3.3V*1) / 121.69(L) × 105.68(H)	PCI (32bit, 33MHz, 5V or 3.3V*1) / 176.41(L)×105.68(H)		
Connector		37-pin female D-type DCLC-J37SAF-20L9 [JAE] or equivalent		PCR-E96LMD [HONDA Tsushin Kogyo] or equivalent	HDRA-E100W1L-FDT1EC-SL [HONDA Tsushin Kogyo] or equivalent
Options	Software	-		EPD-96A*3, EPD-96*3, CM-64(PC)E*3, DTP-3A *4, DTP-4A *4, EPD-37*4, CM-32(PC)E*4, CCB-96*5, PTP-64(PC)*3, EPD-37A*4	DTP-64(PC)*6, EPD-96*6, EPD-96A*6, EPD-100A*8, CCB-96*6, CM-64(PC)E*6, DTP-3A *7, DTP-4A *7, EPD-37A*7, EPD-37*7
	Accessories	DTP-3A *2, DTP-4A *2, EPD-37A*2, EPD-37*2, CM-32(PC)E*2			
	Cables / Connectors	PCA37P, PCB37P, PCA37PS, PCB37PS, CN5-D37M		PCA96P, PCB96P, PCA96PS, PCB96PS, PCB96WS, CN5-H96F	PCA100P, PCB100/96PS, PCB100PS, PCB100WS

Note:
*1: +5V power must be supplied from PCI bus slot.
*3: Requires use of optional cable PCB96P or PCB96PS
*5: Requires use of optional cable PCB96P or PCB96PS and 37-pin D-SUB
*7: Requires use of optional cable PCB100WS

*2: Requires use of optional cable PCB37P or PCB37PS
*4: Requires use of optional cable PCB96WS
*6: Requires use of optional cable PCB100/96PS
*8: Requires use of optional cable PCB100PS

As shown on the side of product's images, RoHS compliant (RoHS Compliant) is a CONTEC original marking for RoHS-compliant

Please see page Q-13 for optional accessories
and cables/connectors, and page P-01 for supported software.

PCI

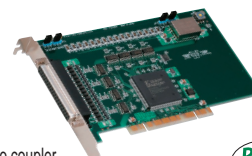| 37-pin D-SUB | Input 16 | Output 16 | Isolated | Digital Filter | Surge & Overcurrent Protection | CE |
| Windows Driver | Linux Diver | LabVIEW |

Opto-Isolated Digital I/O
PIO-16/16L(PCI)H

● 16 opto-isolated input , 16 opto-insolated open collector output
● Fast response time (within 200μsecs.) / Power saving design
● All input signals can be used as interrupts
● Output transistor has built-in circuit protection (voltage surge, overcurrent)

RoHS Compliant

PCI

| 37-pin D-SUB | Input 16 | Output 16 | Isolated | Digital Filter | Power on Board | Surge & Overcurrent Protection | CE |
| Windows Driver | Linux Diver | LabVIEW |

Opto-Isolated Digital I/O with On-board 12V Power Supply
PIO-16/16B(PCI)H

● On-board power supply (12VDC 240mA) to drive the input/output circuit opto coupler
● Fast response time (within 200μsecs.)
● All input signals can be used as interrupts
● Output transistor has built-in circuit protection (voltage surge, overcurrent)

RoHS Compliant

PCI

| 96-pin Half Pitch | Input 32 | Output 32 | Isolated | Digital Filter | Surge & Overcurrent Protection | CE |
| Windows Driver | Linux Diver | LabVIEW |

Opto-Isolated Digital I/O
PIO-32/32L(PCI)H

● 32 opto-isolated input , 32 points opto-insolated open collector output
● Fast response time (within 200μsecs.) / Power saving design
● All input signals can be used as interrupts
● Output transistor has built-in circuit protection (voltage surge, overcurrent)

RoHS Compliant

PCI

| 96-pin Half Pitch | Input 32 | Output 32 | Isolated | Digital Filter | Power on Board | Surge & Overcurrent Protection | CE |
| Windows Driver | Linux Diver | LabVIEW |
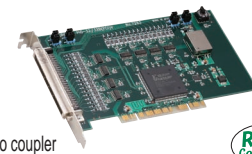
Opto-Isolated Digital I/O with On-board 12V Power Supply
PIO-32/32B(PCI)V

● On-board power supply (12VDC 240mA) to drive the input/output circuit opto coupler
● Digital filter and interrupt trigger edge can be set via software
● Output ratings can handle up to 35VDC and 100mA per channel
● Output transistor has built-in circuit protection (voltage surge, overcurrent)

RoHS Compliant

J-12

Model		PIO-16/16L(PCI)H	PIO-16/16B(PCI)H	PIO-32/32L(PCI)H	PIO-32/32B(PCI)V
Input channels		16		32	
Output channels		16		32	
Input specifications	Type	Opto-Isolated (for sink current output)			
	Signal Level	12~24VDC			
	Interrupts	16 interrupt signals combine to one interrupt request signal as INTA		32 interrupt signals combine to one interrupt request signal as INTA	
	Resistance	4.7kΩ			
Output specifications	Type	Opto-Isolated Open Collector (Current sinking type)			
	Rating	35VDC 100mA			
Response Time (Max.)		200μsec			
Internal Power		-	12VDC 240mA	-	12VDC 240mA
Wiring Distance		50m			
I/O Address		Any 32-byte boundary			
Power Consumption (Max.)		5VDC 200mA	5VDC 300mA (External), 5VDC 1200mA (On-board)	5VDC 250mA	5VDC 200mA (External), 5VDC 1050mA (On-board)
Bus / Dimensions (mm)		PCI (32bit, 33MHz, 5V or 3.3V*1) / 121.69(L) × 105.68(H)	PCI (32bit, 33MHz, 5V or 3.3V*1) / 176.41(L)×105.68(H)		
Connector		37-pin female D-type DCLC-J37SAF-20L9 [JAE] or equivalent		PCR-E96LMD [HONDA Tsushin Kogyo] or equivalent	
Options	Software	-			
	Accessories	DTP-3A *2, DTP-4A *2, EPD-37A*2, EPD-37*2, CM-32(PC)E*2		DTP-3A *4, DTP-4A *4, DTP-64(PC)*3, EPD-96*3, CM-64(PC)E*3, EPD-37A*4, EPD-96A*3, EPD-37*4, CM-32(PC)E*4, CCB-96*5	
	Cables / Connectors	PCA37P, PCB37P, PCA37PS, PCB37PS, CN5-D37M		PCA96P, PCB96P, PCA96PS, PCB96PS, PCB96WS, CN5-H96F	
Note:		*1: +5V power must be supplied from PCI bus slot. *3: Requires use of optional cable PCB96P or PCB96PS *5: Requires use of optional cable PCB96P or PCB96PS and 37-pin D-SUB		*2: Requires use of optional cable PCB37P or PCB37PS *4: Requires use of optional cable PCB96WS	

As shown on the side of product's images, RoHS compliant (RoHS Compliant) is a CONTEC original marking for RoHS-compliant products.

Digital I/O

Sidebar navigation:
- Box-PCs
- Panel-PCs
- Flat Panel Displays
- Silicon Disk Drives
- Option
- Box PCs &Panel PCswith Windows CE
- Single Board Computer
- Chassis / Backplane
- Analog I/O
- **Digital I/O**
- Counter & Motion Controller
- Serial Communication
- GPIB Communication
- Remote I/O
- Expansion Unit / Bus Adapter
- Software
- Accessories & Cables
- Distributed Monitor & Control Network: F&eIT
- Multi-Programmable Display
- Wireless LAN
- Remote Monitoring Solution
- Service & Products

J-13

- Lineup
- PCI Express
- PCI
- Low Profile PCI
- PC Card
- USB
- Compact PCI
- ISA

PCI | 100-pin 0.8mm Pitch | Input 64 | Output 64 | Isolated | Digital Filter | Surge & Overcurrent Protection | CE
Windows Driver | Linux Diver | LabVIEW

Opto-Isolated Digital I/O
PIO-64/64L(PCI)H

- 128 I/O on a PCI short-size board
- Digital filtering function to prevent input error caused by noise and/or chattering
- 16 interrupts featuring Digital Filter Function
- Output transistor has built-in circuit protection (voltage surge, overcurrent)
- Optional Conversion cables (100-pin to 96-pin half pitch) available

RoHS Compliant

PCI | 96-pin Half Pitch | Input 32 | Output 32 | Isolated | Hi-Speed opto coupler | Digital Filter
Windows Driver | Linux Diver | LabVIEW

Opto-Isolated High-speed Digital I/O
PIO-32/32F(PCI)H

- Features High-speed opto coupler with 5μsecs (max) response time
- Digital filter and interrupt trigger edge can be set via software
- Connector pin assignment compatible with PIO-32/32F(PCI)

RoHS Compliant

PCI | 37-pin D-SUB | Input 16 | Output 16 | Isolated | Negative Common | Digital Filter | Surge & Overcurrent Protection | CE
Windows Driver | Linux Diver | LabVIEW

Negative-Common Opto-Isolated Digital I/O
PIO-16/16RL(PCI)H

- 16 opto-isolated input (source current output)
  16 opto-insolated output (Current sourcing type)
- Fast response time (within 200μsecs.)
- All input signals can be used as interrupts
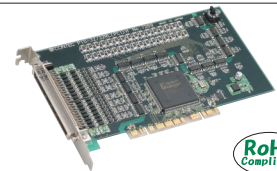- Output transistor has built-in circuit protection (voltage surge, overcurrent)

RoHS Compliant

PCI | 96-pin Half Pitch | Input 32 | Output 32 | Isolated | Negative Common | Digital Filter | Surge & Overcurrent Protection | CE
Windows Driver | Linux Diver | LabVIEW

Negative-Common Opto-Isolated Digital I/O
PIO-32/32RL(PCI)H

- 32 opto-isolated input (source current output)
  32 opto-insolated output (Current sourcing type)
- Fast response time (within 200μsecs.)
- All input signals can be used as interrupts
- Output transistor has built-in circuit protection (voltage surge, overcurrent)

RoHS Compliant

Model		PIO-64/64L(PCI)H	PIO-32/32F(PCI)H	PIO-16/16RL(PC)H	PIO-32/32RL(PC)H
Input channels		64	32	16	32
Output channels		64	32	16	32
Input specifications	Type	Opto-Isolated (for sink current output)		Opto-Isolated (for souce current output)	
	Signal Level	12~24VDC			
	Interrupts	16 interrupt signals combine to one interrupt request signal as INTA	32 interrupt signals combine to one interrupt request signal as INTA	16 interrupt signals combine to one interrupt request signal as INTA	32 interrupt signals combine to one interrupt request signal as INTA
	Resistance	4.7kΩ	2.2kΩ	4.7kΩ	
Output specifications	Type	Opto-Isolated Open Collector (Current sinking type)		Opto-Isolated Open Collector (Current sourcing type)	
	Rating	35VDC 100mA	35VDC 50mA	35VDC 100mA	
Response Time (Max.)		200μsec	5μsec	200μsec	
Internal Power		-			
Wiring Distance		50m			
I/O Address		Any 32-byte boundary			
Power Consumption (Max.)		5VDC 500mA	5VDC 400mA	5VDC 150mA	5VDC 200mA
Bus / Dimensions (mm)		PCI (32bit, 33MHz, 5V or 3.3V*1) / 176.41(L)×106.68(H)	PCI (32bit, 33MHz, 5V or 3.3V*1) / 176.41(L)×105.68(H)	PCI (32bit, 33MHz, 5V or 3.3V*1) / 121.69(L) × 105.68(H)	PCI (32bit, 33MHz, 5V or 3.3V*1) / 176.41(L) × 105.68(H)
Connector		HDRA-E100W1L-FDT1EC-SL [HONDA Tsushin Kogyo] or equivalent	PCR-E96LMD [HONDA Tsushin Kogyo] or equivalent	37-pin female D-type DCLC-J37SAF-20L9 [JAE] or equivalent	PCR-E96LMD [HONDA Tsushin Kogyo] or equivalent
Options	Software	-			
	Accessories	DTP-64(PC)*2, EPD-100A*8, EPD-96A*2, EPD-96*2, CM-64(PC)E*2, CCB-96*2, DTP-3A*3, DTP-4A*3, EPD-37A*3, EPD-37*3	DTP-3A*4, DTP-4A*4, EPD-37A*4, EPD-37*4, CM-32(PC)E*4, DTP-64(PC)*5, EPD-96A*5, EPD-96*5, CM-64(PC)E*5	DTP-3A*6, DTP-4A*6, EPD-37A*6, EPD-37*6	EPD-37A*4, EPD-37*4, EPD-96A*5, EPD-96*5, DTP-64(PC)*5, CCB-96*7
	Cables / Connectors	PCA100P, PCB100/96PS, PCB100WS	PCA96P, PCB96P, PCA96PS, PCB96PS, PCB96WS, CN5-H96F	PCA37P, PCB37P, PCA37PS, PCB37PS, CN5-D37M	PCA96P, PCB96P, PCA96PS, PCB96PS, PCB96WS, CN5-H96F
Note:		*1: +5V power must be supplied from PCI bus slot.		*2: Requires use of optional cable PCB100/96PS	
		*3: Requires use of optional cable PCB100WS		*4: Requires use of optional cable PCB96WS	
		*5: Requires use of optional cable PCB96P or PCB96PS		*6: Requires use of optional cable PCB37P or PCB37PS	
		*7: Requires use of optional cable PCB96P or PCB96PS and 37-pin D-SUB		*8: Optional cable PCB100PS is required.	

As shown on the side of product's images, RoHS compliant *RoHS Compliant* is a CONTEC original marking for RoHS-compliant products.

Digital I/O

PCI | **37-pin D-SUB** | **Input 16** | **Output 16** | **Isolated** | **High Voltage** | **Digital Filter** | **Surge & Overcurrent Protection** | CE

Windows Driver | **Linux Diver** | **LabVIEW**

Opto-Isolated Digital I/O
PIO-16/16H(PCI)H

RoHS Compliant

- Supports high voltage (24 to 48VDC) input/output.
- Due to its 16-point common configuration, each common supports different external power source.
- Speedier response time of 200μsec or less is achieved.
- All the input signal points can be used as interrupt input.
- Output transistor has built-in circuit protection (voltage surge, overcurrent)

PCI | **96-pin Half Pitch** | **Input 32** | **Output 32** | **Isolated** | **High Voltage** | **Digital Filter** | **Surge & Overcurrent Protection** | CE

Windows Driver | **Linux Diver** | **LabVIEW**

Opto-Isolated Digital I/O
PIO-32/32H(PCI)H

RoHS Compliant

- Supports high voltage (24 to 48VDC) input/output.
- Due to its 16-point common configuration, each common supports different external power source.
- Speedier response time of 200μsec or less is achieved.
- All the input signal points can be used as interrupt input.
- Output transistor has built-in circuit protection (voltage surge, overcurrent)

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Model		PIO-16/16H(PCI)H	PIO-32/32H(PCI)H	
Input channels		16	32	
Output channels		16	32	
Input specifications	Type	Opto-Isolated (for sink current output)		
	Signal Level	24~48VDC (±10%)		
	Interrupts	16 interrupt signals combine to one interrupt request signal as INTA	32 interrupt signals combine to one interrupt request signal as INTA	
	Resistance	15kΩ		
Output specifications	Type	Opto-Isolated Open Collector (Current sinking type)		
	Rating	60VDC 100mA		
Response Time (Max.)		200μsec		
Internal Power		-		
Wiring Distance		50m		
I/O Address		Any 32-byte boundary		
Power Consumption (Max.)		5VDC 150mA	5VDC 200mA	
Bus / Dimensions (mm)		PCI (32bit, 33MHz, 5V or 3.3V*1) / 121.69(L) × 105.68(H)	PCI (32bit, 33MHz, 5V or 3.3V*1) / 176.41(L) × 105.68(H)	
Connector		37-pin female D-type DCLC-J37SAF-20L9 [JAE] or equivalent	PCR-E96LMD [HONDA Tsushin Kogyo] or equivalent	
Options	Software	-		
	Accessories	EPD-37A*2, EPD-37*2	EPD-96A*3, EPD-96*3, DTP-64(PC)*3, EPD-37A*4, EPD-37*4, CCB-96*5	
	Cables / Connectors	PCA37P, PCB37P, PCA37PS, PCB37PS, CN5-D37M	PCA96P, PCB96P, PCA96PS, PCB96PS, PCB96WS, CN5-H96F	

Note:
*1: +5V power must be supplied from PCI bus slot.
*2: Requires use of optional cable PCB37P or PCB37PS.
*3: Requires use of optional cable PCB96P or PCB96PS.
*4: Requires use of optional cable PCB96WS
*5: Requires use of optional cable PCB96P or PCB96PS and 37-pin D-SUB.

As shown on the side of product's images, RoHS compliant (RoHS) is a CONTEC original marking for RoHS-compliant products.

Digital I/O

PCI | 37-pin D-SUB | Input 16 | Output 16 | Isolated | High Voltage | Digital Filter | Non polarity | CE

Windows Driver | Linux Diver | LabVIEW

High-voltage Non-polar Opto-Isolated I/O
PIO-16/16RY(PCI)

● 16 semiconductor relay output
● Input/output supports both current sink and current source output
● Supports high-voltage input range - 12 to 48VDC / output - 120VAC/VDC
● All input signals can be used as interrupts
● Digital filtering function to prevent input error caused by noise and/or chattering

PCI | 37-pin D-SUB | Output 16 | Isolated | High Voltage | Non polarity

Windows Driver | Linux Diver | LabVIEW

Reed Relay Output Board
RRY-16C(PCI)H

● 16 independent reed relay outputs
● Output ratings can handle up to 125VAC/30VDC - 2A / channel
● Connector pin assignment compatible with RRY-16C(PCI)

PCI | 37-pin D-SUB | Output 32 | Isolated | High Voltage | Non polarity

Windows Driver | Linux Diver | LabVIEW

Reed Relay Output Board
RRY-32(PCI)H

● 32 reed relay outputs
● Output ratings can handle up to 100VAC/VDC and 500mA per channel, 1A per common (max) for total of 8 points and 10VA (10W)
● Connector pin assignment is compatible with RRY-32(PC)

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Model		PIO-16/16RY(PCI)	RRY-16C(PCI)H	RRY-32(PCI)H	
Input channels		16	-		
Output channels		16		32	
Input specifications	Type	Opto-Isolated (for sink/source current output)	-		
	Signal Level	12~24VDC, 24~48VDC Each point can be set.	-		
	Interrupts	16 interrupt signals combine to one interrupt request signal as INTA	-		
	Resistance	3kΩ<12~24VDC>, 6kΩ<24~48VDC>	-		
Output specifications	Type	Semiconductor Relay	Reed Relay Contact (1-make contact)		
	Rating	120VAC/VDC 100mA	-		
	Maximum Power	-	125V(AC), 30V(DC)	10V(AC), 10V(DC)	
	Maximum Switching Current	-	2A (Max.)	0.5A (Max.)	
	Contact Resistance	-	30mΩ or less	100mΩ or less	
	Life Expectancy	-	Min. 20 million times (Swithing Freq. 180 times/min)	Min. 200 million times	
Response Time (Max.)		Input: 200μsec Output: 1.0msec	7msec	1msec	
Internal Power		-			
Wiring Distance		50m	-		
I/O Address		Any 32-byte boundary			
Power Consumption (Max.)		5VDC 400mA	5VDC 550mA	5VDC 1050mA	
Bus / Dimensions (mm)		PCI (32bit, 33MHz, 5V or 3.3V*1) / 176.41(L) × 105.68(H)	PCI (32bit, 33MHz, 5V or 3.3V*1) / 121.69(L)×105.68(H)	PCI (32bit, 33MHz, 5V or 3.3V*1) / 176.41(L)×105.68(H)	
Connector		37-pin female D-type DCLC-J37SAF-20L9 [JAE] or equivalent			
Options	Software	-			
	Accessories	DTP-3A *2, DTP-4A *2, EPD-37A*2, EPD-37*2, CM-32(PC)E*2	DTP-3A *2, DTP-4A *2, EPD-37A*2, EPD-37*2		
	Cables / Connectors	PCA37P, PCB37P, PCA37PS, PCB37PS, CN5-D37M			

Note: *1: +5V power must be supplied from PCI bus slot.   *2: Requires use of optional cable PCB37P or PCB37PS.

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Digital I/O

PCI

| 100-pin 0.8mm Pitch | Input 128 | Non-isolated | Digital Filter |

| Windows Driver | Linux Diver | LabVIEW |

TTL-level Digital Input
DI-128T2-PCI

NEW

● 128 TTL-level input
● 16 input points can be used as interrupts
● Digital filtering function to prevent input error caused by noise and/or chattering

RoHS Compliant

PCI

| 100-pin 0.8mm Pitch | Output 128 | Non-isolated |

| Windows Driver | Linux Diver | LabVIEW |

TTL-level Digital Output
DO-128T2-PCI

NEW

● 128 open collector output

RoHS Compliant

PCI

| 100-pin 0.8mm Pitch | Input 64 | Output 64 | Non-isolated | Digital Filter |

| Windows Driver | Linux Diver | LabVIEW |

TTL-level Digital I/O
DIO-6464T2-PCI

NEW

● 64 TTL-level input, 64 open collector output
● 16 input points can be used as interrupts
● Digital filtering function to prevent input error caused by noise and/or chattering

RoHS Compliant

Model		DI-128T2-PCI	DO-128T2-PCI	DIO-6464T2-PCI	
Input channels		128 (1common)	-	64 (1common)	
Output channels		-	128 (1common)	64 (1common)	
Input specifications	Type	TTL-level (Negative logic)	-	TTL-level (Negative logic)	
	Signal Level	5VDC	-	5VDC	
	Interrupts	16 interrupt signals combine to one interrupt request signal as INTA	-	16 interrupt signals combine to one interrupt request signal as INTA	
	Resistance	Pull-up: 10kΩ (1 TTL load)	-	Pull-up: 10kΩ (1 TTL load)	
Output specifications	Type	-	Open Collector (Negative logic)		
	Rating	-	30VDC 40mA		
Response Time (Max.)		200nsec			
Internal Power		-			
Wiring Distance		1.5m (depending on wiring environment)			
I/O Address		Any 32-byte boundary			
Power Consumption (Max.)		5VDC 350mA	5VDC 500mA	5VDC 450mA	
Bus / Dimensions (mm)		PCI (32bit, 33MHz, 5V or 3.3V*1) / 121.69(L)×105.68(H)			
Connector		100-pin 0.8mm female half-pitch ×2: HDRA-E100W1LFDT1EC-SL+ [HONDA Tsushin Kogyo] or equivalent			
Options	Software	-			
	Accessories	DTP-3A*3, DTP-4A*3, DTP-64(PC)*2, EPD-37A*3, EPD-37*3, EPD-100A*4, EPD-96A*2, EPD-96*2, CCB-96*2, CM-64(PC)E*2			
	Cables / Connectors	PCA100P-1.5, PCB100/96PS-1.5, PCB100PS-0.5/1.5, PCB100WS-1.5			
Note:		*1: +5V power must be supplied from PCI bus slot. *2: Requires use of optional cable PCB100/96PS *3: Requires use of optional cable PCB100WS *4: Requires use of optional cable PCB100PS			

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Digital I/O

Please see page Q-13 for optional accessories and cables/connectors, and page P-01 for supported software.

J-17

PCI — 37-pin D-SUB | Input 16 | Output 16 | Non-isolated | Digital Filter

Windows Driver | Linux Diver | LabVIEW

TTL-Level Digital I/O
PIO-16/16T(PCI)H

● 16 TTL level input, 16 open collector output (40mA sink current max.)
● Digital filter and interrupt trigger edge can be set via software
● Connector pin assignment compatible with PIO-16/16T(PC)H
● All input signals can be used as interrupts

RoHS Compliant

PCI — 37-pin D-SUB | Input 16 | Output 16 | Isolated | Power on Board | High Speed Opto coupler | Digital Filter | CE

Windows Driver | Linux Diver | LabVIEW

Opto-Isolated TTL Digital I/O with On-board 5V Power Supply
PIO-16/16TB(PCI)H

● 16 opto-isolated TTL digital input, 16 opto-isolated TTL digital output
● Features high-speed photo coupler 1μsec (max) response time
● Connector pin assignment compatible with PIO-16/16TB(PC)
● All input signals can be used as interrupts

RoHS Compliant

PCI — 96-pin Half Pitch | Input 32 | Output 32 | Non-isolated | Digital Filter

Windows Driver | Linux Diver | LabVIEW

TTL-Level Digital I/O
PIO-32/32T(PCI)H

● 32 TTL level input, 32 open collector output
● Digital filter and interrupt trigger edge can be set via software.
● Connector pin assignment compatible with PIO-32/32T(PC)H
● All input signals can be used as interrupts

RoHS Compliant

PCI — 96-pin Half Pitch | Bi-direct 48 | Non-isolated | CE

Windows Driver | Linux Diver | LabVIEW

High Current Drive Bi-Directional Digital I/O
PIO-48D(PCI)

● 48 TTL current drive bi-directional digital I/O / Emulates i8255 PPI mode 0
● 200nsec high-speed response with non-Isolated TTL level I/O
● All 48 input signals can be used as interrupts

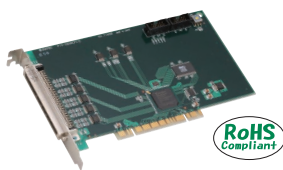| Model		PIO-16/16T(PCI)H	PIO-16/16TB(PCI)H	PIO-32/32T(PCI)H	PIO-48D(PCI)
Input channels		16		32	-
Output channels		16		32	-
I/O channels		-			48
Input specifications	Type	TTL level (negative logic)	Opto-Isolated TTL (negative logic)	TTL level (negative logic)	TTL level (positive logic)
	Signal Level	5VDC			
	Interrupts	16 interrupt signals combine to one interrupt request signal as INTA		32interrupt signals combine to one interrupt request signal as INTA	48 interrupt signals combine to one interrupt request signal as INTA
	Resistance	Pull-up:10k Ω	1.1k Ω	Pull-up: 10k Ω	
Output specifications	Type	Open Collector (negative logic)	Opto-Isolated TTL (Negative Logic)	Open Collector (negative logic)	TTL level (positive logic)
	Rating	30VDC 40mA	5VDC 6.4mA	30VDC 40mA	5VDC I_{OL}=24mA, I_{OH}=-15mA
Response Time (Max.)		200nsec	1μsec	200nsec	
Internal Power		-	5VDC 400mA	-	
Wiring Distance		1.5m	5m	1.5m	
I/O Address		Any 32-byte boundary			
Power Consumption (Max.)		5VDC 200mA	5VDC 350mA (External),5VDC 1150mA (On-board)	5VDC 350mA	5VDC 600mA
Bus / Dimensions (mm)		PCI (32bit, 33MHz, 5V or 3.3V*2) / 121.69(L)×105.68(H)	PCI (32bit, 33MHz, 5V or 3.3V*2) / 176.41(L)×105.68(H)	PCI (32bit, 33MHz, 5V or 3.3V*2) / 121.69(L)×105.68(H)	PCI (32bit, 33MHz, 5V) / 176.41(L) × 106.68(H)
Connector		37-pin female D-type DCL-J37SAF-20L9 [JAE] or equivalent		PCR-E96LMD [HONDA Tsushin Kogyo] or equivalent	
Options	Software	-			
	Accessories	DTP-3A *1, DTP-4A *1, CM-32(PC)E*1		DTP-64(PC)*3, EPD-96A*3, EPD-96*3, CM-64(PC)E*3, EPD-37A *4, EPD-37 *4, CM-32(PC)E*4, CCB-96*5	DTP-64(PC)*6, EPD-96A*6, EPD-96*6
	Cables / Connectors	PCA37P-1.5, PCB37P-1.5, PCA37PS-0.5P/1.5P, PCB37PS-0.5P/1.5P, CN5-D37M	PCA37P, PCB37P, PCA37PS, PCB37PS, CN5-D37M	PCA96P-1.5, PCB96P-1.5, PCA96PS-0.5/1.5, PCB96PS-0.5/1.5, PCB96WS-1.5P, CN5-H96F	CN1: PCA96PS-0.5P/1.5P, PCB96PS-0.5P/1.5P, PCA96P-0.5/1.5, PCB96P-0.5/1.5,CN5-H96F; CN2, 3: PCA50J-1.5, DT/F4

Note:
*1: Requires use of optional cable PCB37P or PCB37PS
*3: Requires use of optional cable PCB96P-1.5 or PCB96PS-1.5
*5: Requires use of optional cable PCB96P-1.5 or PCB96PS-1.5 and 37-pin D-SUB
*2: +5V power must be supplied from PCI bus slot.
*4: Requires use of optional cable PCB96WS-1.5
*6: Requires use of optional cable PCB96P or PCB96PS

As shown on the side of product's images, RoHS compliant (*RoHS Compliant*) is a CONTEC original marking for RoHS-compliant products.

Digital I/O

PCI | 96-pin Half Pitch | Bi-direct 32 | Non-isolated | Bus Master | CE
Windows Driver | **Linux Driver**

FEATURES
● 32 signals(configurable as 32 input signals, 16 I/O signals or 32 output signals)
● Stores digital signals at a sampling rate of 20 MHz - capable of detecting patterns (pattern input) and being used as a 20 MHz digital pattern generator (pattern output)
● Equipped with sync signal control connection. By using a sync signal cable, multiple boards can operate in sync with one another.

High Speed Bi-Directional Digital I/O
PIO-32DM(PCI)

RoHS Compliant

API-PAC(W32) [API Function Library]

SPECIFICATIONS

Number of channels	32ch (16 input signals, 16 I/O signals or 32 output signals - software selectable)
I/O Circuit	
Signal level	5VDC
Internal power	-
Input specifications	
Type	TTL level (positive logic)
Interrupt	Errors and various factors, one interrupt request line as INTA
Resistance	10kΩ
Output specifications	
Type	TTL level (positive logic)
Rating	5VDC 24mA
Response time	50nsec (max)

Wiring distance	1.5m (max)
I/O address	Occupies 2 : any 32- and 64-byte boundary
Power consumption	5VDC 700mA (max)
Bus /	PCI (32bit, 33MHz, 5V) /
Dimensions (mm)	176.41(L) × 106.68(H)
Connector	Sync. Section: PS-10PE-D4L1-B1 [JAE] or equivalent × 2 Digital Section: PCR-96LMD [HONDA] or equivalent
Options	
Software	-
Accessories	EPD-96 *1, DTP-64(PC)*1
Cables /	PCA96PS-0.5/1.5, PCB96PS-0.5/1.5,
Connectors	PCA96P-1.5, PCB96P-1.5, CN5-H96F

*1: Requires use of optional cable PCB96P or PCB96PS
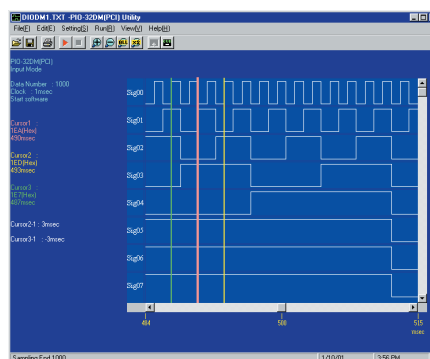
Functions

Bus Master Transfer
Utilizing Bus Master, the data transfer rate between the PC and CONTEC's PIO-32/32DM(PC)board is 80MB / sec. (133MB /sec. -max) without putting additional burden on the host computer's CPU.

Synchronization Control
The board is equipped with a synchronization control connector to allow easy inter-board synchronization.
16 boards (max) can be interconnected (including the master).

Pattern Input / Output
The PIO-32DM(PCI) stores digital signals at a sampling rate of 20 MHz and is capable of detecting patterns (pattern input). It can also be used as a 20 MHz digital pattern generator (pattern output).

PCI CE

FEATURES
● Provides 2 interface channels IEEE 1284 / Centronics - compliant
● Supports 5 modes of IEEE-1284 (Compatibility, Nibble, Byte, EPP, ECP) user selectable dependant on OS and device
● Up to 16 PRN-2(PCI) boards can be used at the same time under Windows NT 4.0, and Only one board can be used under Windows XP/2000/Me/98/95

Parallel Port Extension
PRN-2(PCI)

LPT Driver for Windows© XP/NT/Me/98/95

SPECIFICATIONS

Channels	2ch
Communication standard	IEEE-1284
Communication mode	Compatibility, Nibble, Byte, EPP, ECP
Hardware Specifications	TTL level (+5V)
Controller	ST78C236CJ44(EXAR) or equivalent
Reference clock	24MHz (Reference clock of on-chip LSI)
Wiring distance	5m max
Interrupts	1 level
I/O address	16 ports (control port) + (8 ports + 4 ports) × 2
Supply voltage	5VDC (±5%)
Power consumption	5VDC 150mA (max)
Dimensions (mm)	121.69(L) × 106.68(H)

Connector	DHA-RP36-R13AN [DDK] or equivalent
Options	
Software	-
Accessories	-
Cables / Connector	PRN-CB105

36-pin Micro Ribbon Conversion Cable PRN-CB105 (5m)

Support Software

PRN-DRV(W32)
LPT driver software for PRN-2(PCI)

PRN-2(PCI) drivers for Windows©
PRN-DRV(W32) is a utility software that displays the LPT numbers assigned to the individual channels on CONTEC's PRN-2(PCI).

For latest driver versions, please visit our web site.

* Transfer mode is dependant on device type and operating system (refer to the following table,)
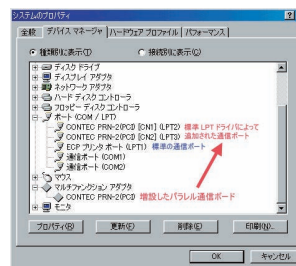
Device Type	OS	IEEE 1284				
		Compatibility	Nibble	Byte	EEP	ECP
IBM PC/AT Compatible	Windows XP/2000/Me/98/95	○	○	○	○	○
NEC-PC98-NX	Windows NT 4.0	○	○	×	×	×
NEC PC-9800 series	Windows 2000/Me/98/95	×	×	×	×	×
	Windows NT 4.0	○	○	×	×	×

As shown on the side of product's images, RoHS compliant is a CONTEC original marking for RoHS-compliant products.

Digital I/O

Please see page Q-13 for optional accessories and cables/connectors, and page P-01 for supported software.
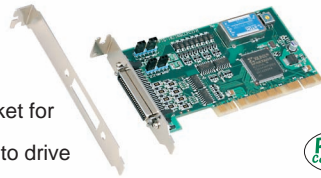
J-19

PCI | Low Profile | 50-pin Mini-Ribbon | Input 16 | Output 16 | Isolated | Digital Filter | Surge & Overcurrent Protection | CE

Windows Driver | Linux Diver | LabVIEW

Opto-Isolated Digital I/O
PIO-16/16L(LPCI)H

- Low Profile PCI-compliant (includes bracket for use in standard PCI slot)
- 16 opto-isolated input, 16 opto-insolated open collector output
- Fast response time (within 200μsecs)
- All input signals can be used as interrupts
- Output transistor has built-in circuit protection (voltage surge, overcurrent)

RoHS Compliant
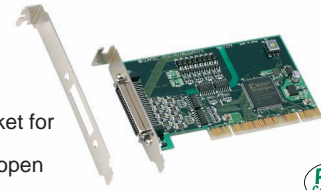
PCI | Low Profile | 50-pin Mini-Ribbon | Input 16 | Output 16 | Isolated | Power on Board | Digital Filter | Surge & Overcurrent Protection | CE

Windows Driver | Linux Diver | LabVIEW

Opto-Isolated Digital I/O with On-board 12V Power Supply
PIO-16/16B(LPCI)H

- Low Profile PCI-compliant (includes bracket for use in standard PCI slot)
- On-board power supply (12VDC 125mA) to drive the input/output circuit photocoupler
- Fast response time (within 200μsecs)
- All input signals can be used as interrupts
- Output transistor has built-in circuit protection (voltage surge, overcurrent)

RoHS Compliant

PCI | Low Profile | 50-pin Mini-Ribbon | Input 16 | Output 16 | Non-Isolated | Digital Filter | CE

Windows Driver | Linux Diver | LabVIEW

TTL-Level Digital I/O
PIO-16/16T(LPCI)H

- Low Profile PCI-compliant (includes bracket for use in standard PCI slot)
- 16 TTL input, 16 open collector output (40mA sink current max.)
- All input signals can be used as interrupts
- Digital filter and interrupt trigger edge can be set via software
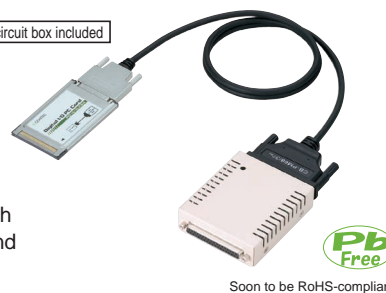

PCI | Low Profile | 68-pin 0.8mm Pitch | Bi-direct 48 | Non-Isolated | Digital Filter

Windows Driver | Linux Diver | LabVIEW

TTL Level Bi-Directional Digital I/O
PIO-48D(LPCI)H

- Low Profile PCI-compliant (includes bracket for use in standard PCI slot)
- 48-point two-way digital I/O i8255 Mode 0-compliant
- 200nsec high-speed response with non-Isolated TTL level I/O
- All 48 input points can be used as interrupts
- Digital filter and interrupt trigger edge can be set via software

Pb Free
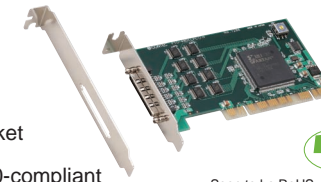
Soon to be RoHS-compliant

Model		PIO-16/16L(LPCI)H	PIO-16/16B(LPCI)H	PIO-16/16T(LPCI)H	PIO-48D(LPCI)H
Input channels		16			-
Output channels		16			-
I/O channels		-			48
Input specifications	Type	Opto-Isolated (for sink current output)		TTL level (negative logic)	TTL level (positive logic)
	Signal Level	12~24VDC		5VDC	
	Interrupts	16 interrupt signals combine to one interrupt request signal as INTA			48 interrupt signals combine to one interrupt request signal as INTA
	Resistance	4.7kΩ		10kΩ	33kΩ
Output specifications	Type	Opto-Isolated Open Collector (Current sinking type)		Open Collector (negative logic)	TTL level (positive logic)
	Rating	35VDC 100mA		30VDC 40mA	5VDC I_{OL}=24mA, I_{OH}=-15mA
Response Time (Max.)		200μsec		200nsec	
Internal Power		-	12VDC 125mA	-	
Wiring Distance		50m		1.5m	
I/O Address		Any 32-byte boundary			
Power Consumption (Max.)		5VDC 100mA	5VDC 100mA (External), 5VDC 600mA (On-board)	5VDC 100mA	5VDC 600mA
Bus / Dimensions (mm)		PCI (32bit, 33MHz, 5V or 3.3V[1]) / 121.69(L)×63.41(H)			
Connector		50-Pin Mini-Ribbon Connector 10250-52A2JL [3M] or equivalent			68-pin 0.8mm pitch connector: HDRA-E68LFDT+ [HONDA Tsushin Kogyo] or equivalent
Options	Software	-			
	Accessories	EPD-50A [2], EPD-37A [3], EPD-37 [3], DTP-3A [3], DTP-4A [3], CM-32(PC)E [3]			DTP-64(PC) [5], EPD-96 [5], EPD-68A[6]
	Cables / Connectorss	PCA50PS, PCB50PS, PCE50/37PS-0.5P		PCA50PS-0.5P,1.5P, PCB50PS-0.5P,1.5P, PCE50/37PS-0.5P	DIO-68M/96F, PCA68PS-0.5P,1.5P, PCB68PS-0.5P,1.5P
Note:		*1: +5V power must be supplied from PCI bus slot *3: Requires use of optional cable PCE50/37PS-0.5P and PCB37P or PCB37PS *5: Requires use of optional cable DIO-68M/96F		*2: Requires use of optional cable P *4: Requires use of optional cable PCE50/37PS-0.5P *6: Requires use of optional cable PCB68PS	

As shown on the side of product's images, Pbfree **Pb Free** is a CONTEC original marking for lead-free products.

As shown on the side of product's images, RoHS compliant **RoHS Compliant** is a CONTEC original marking for RoHS-compliant products.

Card Bus

| 37-pin D-SUB | Input 16 | Output 16 | Isolated | Digital Filter | Surge & Overcurrent Protection | CE |

Windows Driver **Linux Diver** **LabVIEW**

Opto-Isolated Digital I/O
PIO-16/16L(CB)H

Connection cable & Isolated circuit box included

Pb Free
Soon to be RoHS-compliant

● The connector pin-out is compatible with PIO-16/16L(PCI)H, PIO-16/16L(PCI) and PIO-16/16L(PM).
● Fast response time (within 200 µsec)
● Featuring a 16-point configuration, each common corresponds to a different external power source
● All input signals can be used as interrupts

* This card cannot be used with another card requiring external connections when used on a PC with 2 TYPEII PC card slots. For simultaneous use, the other card must be a PC card (excluding memory card) that does not require an external connector.

Card Bus

| 68-pin 0.8mm Pitch | Bi-direct 48 | Non-isolated | Digital Filter |

Windows Driver **Linux Diver** **LabVIEW**

Bi-Directional LVTTL Digital I/O
PIO-48D(CB)H

Pb Free
Soon to be RoHS-compliant

● 48-point two-way digital I/O i8255 Mode 0 - compliant
● 200nsec high-speed response with non-Isolated LVTTL level I/O
● Equipped with functions equivalent to those of PCI bus-compatible board PIO-48D(PCI)
● All input signals (Max. 48 points) can be used as interrupts

* This card cannot be used with another card requiring external connections when used on a PC with 2 TYPEII PC card slots. For simultaneous use, the other card must be a PC card (excluding memory card) that does not require an external connector.

Optional cable
DIO-68M/96F

Model	PIO-16/16L(CB)H	PIO-48D(CB)H	
Input channels	16 channels share one common (all available for interrupts)	-	
Output channels	16 (1 common)	-	
I/O channels	-	48	
Input specifications — Type	Opto-Isolated (for sink current output)(negative logic)	LVTTL level (positive logic)	
Input specifications — Signal Level	12~24VDC (±10%)	3.3VDC	
Input specifications — Interrupts	16 interrupt signals combine to one interrupt request signal as INTA	48 interrupt input signals are arranged into a signal output of interrupt sinal INTA. An interrupt is generated at the falling edge (HIGH to LOW)or rising edge (LOW to HIGH), which is set by software.	
Input specifications — Resistance	4.7kΩ	-	
Output specifications — Type	Opto-Isolated Open Collector (Current sinking type) (negative logic)	-	
Output specifications — Rating	35VDC 100mA	-	
Response Time (Max.)	200µsec	200nsec	
Internal Power	-		
Wiring Distance	50m (Max.)	1.5m (Max.)	
I/O Address	8-bit × 32-port boundary		
Power Consumption (Max.)	3.3V 200mA	3.3V 120mA	
Bus / Dimensions (mm)	PC Card Standard CardBus / TYPE II	PC Card Standard CardBus / 85.6(W) x 54.0(D) x 5.0(H) TYPE II	
Connector	37-pin female D-type DCL-J37SAF-20L9 [JAE] or equivalent	68-pin 0.8mm Pitch	
Options — Software	-		
Options — Accessories	DTP-3A *1, DTP-4A *1, EPD-37A *1, EPD-37*1, CM-32(PC)E*1	EPD-68A *3, DTP-64(PC)*3, EPD-96A*2, EPD-96*2	
Options — Cables / Connectors	PCA37P, PCB37P, PCA37PS, PCB37PS, CN5-D37M	DIO-68M/96F, PCA68PS-0.5P/1.5P, PCB68PS-0.5P,1.5P	

Note: *1: Requires use of optional cable PCB37P or PCB37PS.   *2: Requires use of optional cable DIO-68M/96F.   *3: Optional cable PCB68PS is required.

As shown on the side of product's images, Pbfree [Pb Free] is a CONTEC original marking for lead-free products.

Digital I/O

PCMCIA | **37-pin D-SUB** | **Input 16** | **Output 16** | **Isolated** | **Digital Filter** | **Surge Protection** | CE

Windows Driver | **LabVIEW**
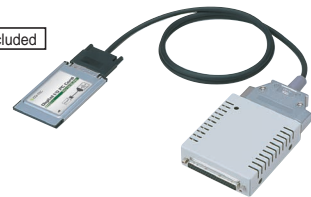
Opto-Isolated Digital I/O
PIO-16/16L(PM)

Connection cable & Isolated circuit box included

● Connector pin assignment compatible with PIO-16/16L(PCI)H, PIO-16/16L(PCI), PIO-16/16L(PC)V
● Digital filter can be applied to input signals
● All 16 input signals can be used as interrupts

*This card cannot be used with another card requiring external connections when used on a PC with 2 TYPEII PC card slots. For simultaneous use, the other card must be a PC card (excluding memory card) that does not require an external connector.

PCMCIA | **37-pin D-SUB** | **Bi-direct 32** | **Non-Isolated** | **Digital Filter** | CE

Windows Driver | **LabVIEW**

TTL-Level Digital I/O
PIO-32D(PM)

Connection cable included

● Groups can be either input or output (user selectable) i.e. card can support different configurations, including 16 input /16 output; all 32 as input or all 32 as output
● High-speed response with non-isolated TTL level I/O
● All input signals (Max. 32 points) can be used as interrupts

*This card cannot be used with another card requiring external connections when used on a PC with 2 TYPEII PC card slots. For simultaneous use, the other card must be a PC card (excluding memory card) that does not require an external connector.

Model		PIO-16/16L(PM)	PIO-32D(PM)	
Input channels		16 channels share one common (all available for interrupts)	-	
Output channels		16 (1 common)	-	
I/O channels		-	32	
Controller Chip		-	-	
Input specifications	Type	Opto-Isolated (for sink current output) (negative logic)	TTL level (negative logic)	
	Signal Level	12~24VDC	-	
	Interrupts	16 interrupt signals combine to one interrupt request signal as INTA	-	
	Resistance	3kΩ	Pull-up 100kΩ	
Output specifications	Type	Opto-Isolated Open Collector (Current sinking type) (negative logic)	TTL level (positive logic)	
	Rating	35VDC 100mA	I_{OL}=6mA, I_{OH}=-2mA	
Response Time (Max.)		1msec	200nsec	
Internal Power		-		
Wiring Distance		50m (Max.)	1.5m (Max.)	
I/O Address		8bit × 16port boundary		
Power Consumption (Max.)		5VDC 200mA		
Bus / Dimensions (mm)		PCMCIA Rel.2.1/JEIDA 4.2 upper / TYPE II		
Connector		37-pin female D-type		
Options	Software	-		
	Accessories	DTP-3A [1], DTP-4A [1], EPD-37A [1], EPD-37 [1], CM-32(PC)E [1]		
	Cables / Connectorss	PCA37P, PCB37P, PCA37PS, PCB37PS, CN5-D37M	PCA37P-1.5, PCB37P-1.5, PCA37PS-0.5P/1.5P, PCB37PS-0.5P/1.5P, CN5D37M	

*1: Requires use of optional cable PCB37P or PCB37PS.

Note:

Digital I/O

Please see page Q-13 for optional accessories
and cables/connectors, and page P-01 for supported software.

USB 2.0

| Input 8 | Output 8 | Isolated | Surge & Overcurrent Protection |

Windows Driver   **LabVIEW**

Opto-isolated Digital I/O
DIO-0808LY-USB

14 pin screw-type terminal connector (6 in one) CN6-Y14

● 8 opto-isolated inputs, 8 opto-isolated open collector outputs (Output ratings can handle up to 35VDC and 100mA per channel)
● USB2.0/USB1.1-compliant, high-speed (480Mbps)
● Bus-powered for convenience and portability
● USB and I/O interface are opto-isolated to prevent noises
● Output transistor has built-in circuit protection (voltage surge, overcurrent)
● Screw-type connectors for easy wiring

Pb Free
Soon to be RoHS-compliant

USB 2.0

| Bi-direct 24 | Non-Isolated |

Windows Driver   **LabVIEW**

LVTTL Level Bi-Directional
Digital I/O (USB cable included)
DIO-24DY-USB

14 pin screw-type terminal connector (6 in one) CN6-Y14

● 24 bi-directional digital I/O (eight channels, three groups)
● Non-isolated LVTTL level I/O (positive logic)
● USB2.0/USB1.1-compliant, high-speed (480Mbps)
● Bus-powered for convenience and portability
● Input/output switching can be set via application software
● Screw-type connectors for easy wiring

Pb Free
Soon to be RoHS-compliant

J-22

Model		DIO-0808LY-USB	DIO-24DY-USB	
Input channels		8 (1 common)	-	
Output channels		8 (1 common)	-	
I/O channels		-	24	
Input specifications	Type	Opto-Isolated (for sink current output, negative logic)	LVTTL level (possitive logic)	
	Signal Level	12~24VDC (±10%)	3.3VDC	
	Interrupts	-		
	Resistance	4.7kΩ	33Ω	
Output specifications	Type	Opto-Isolated Open Collector (current sinking type, negative logic)	LVTTL level (possitive logic)	
	Rating	35VDC 100mA per point	3.3VDC 8mA	
Response Time (Max.)		300μ sec[1]	200nsec [2]	
Wiring Distance		50m (Max.)	1.5m (Max.)	
USB speed		12Mbps <Full speed>, 480Mbps <High speed>		
Power Consumption (Max.)		5VDC 250mA		
Dimensions (mm)		64(W)×62(D)×24(H) (exclusive of protrusions)		
Connector		14-pin (screw-terminal) plug header		
Weight (main unit)		70g (Not including the USB cable, attachment)		
Included cable Length		USB cable 1.8m		
Options	Software	-		
	Accessories	-		
	Cables / Connectorss	CN6-Y14		

Note:
*1: Opto-coupler's response time
*2: Actual throughput is 100μ seconds (Depends on the host PC environment, such as OS and USB host controller.)

As shown on the side of product's images, Pbfree **Pb Free** is a CONTEC original marking for lead-free products.

Digital I/O

J-23

USB 2.0

Input 32 **Isolated**
Windows Driver **LabVIEW**

Opto-Isolated Digital Input (USB cable included)
DI-32(USB)

● On-board trigger monitoring
● Screw-less connectors for easy wiring
● Input channels can be expanded by use of extension modules (3 modules - max)
● Sample development and utility debugging software included

USB 2.0

Output 32 **Isolated**
Windows Driver **LabVIEW**

Opto-Isolated Digital Output (USB cable included)
DO-32(USB)

● Transistor Output that is designed to work with large capacities: 12~24V, 150mA (max.) per channel; 36~48V, 50mA (max.) per channel (Drives LED display directly)
● Screw-less connectors for easy wiring
● Output channels can be expanded by use of extension modules (3 modules - max)
● Sample development and utility debugging software included

USB 2.0

Input 16 **Output 16** **Isolated**
Windows Driver **LabVIEW**

Opto-Isolated Digital I/O (USB cable included)
DIO-16/16(USB)

● On-board trigger monitoring (Digital Input)
● Transistor Output that is designed to work with large capacities: 12~24V, 150mA (max.) per channel; 36~48V, 50mA (max.) per channel (Drives LED display directly)
● Screw-less connectors for easy wiring
● I/O channels can be expanded by use of extension modules (3 modules - max)
● Sample development and utility debugging software included

Model		DI-32(USB)	DO-32(USB)	DIO-16/16(USB)	
Input channels		32	-	16	
Output channels		-	32	16	
Input specifications	Type	Opto-Isolated (for sink/source current output)	-	Opto-Isolated (for high sink/source current output)	
	Signal Level	12~24VDC	-	12~24VDC	
	Resistance	3kΩ	-	3kΩ	
Output specifications	Type	-	Opto-Isolated Open Collector (current sinking type)		
	Rating	-	12~48VDC: 150mA per point (12~24V), 50mA per point (36~48V)		
Response Time (Max.)		1msec*1			
Connector		FMC 1,5/18-ST-3.5 [PHOENIX CONTACT]			
Wiring Distance		50m			
USB speed		12Mbps <Full speed>, 480Mbps <High speed>			
Power Consumption (Max.)		5VDC 450mA *2			
Dimensions (mm)		50.4(W) × 64.7(D) × 94.0(H)			
Weight (main unit)		100g			
Included cable Length		USB cable 1.8m			
Options	Software	-			
	Applicable Modules *3	DI-32(FIT)GY	DO-32(FIT)GY	DIO-16/16(FIT)GY	
	Applicable Power Supplies *3	POW-AD13GY, POW-AD22GY, POW-AD25GY, POW-DD10GY, POW-DD43GY			
	Applicable Adapters *3	POA200-20			

Note:
*1: USB module will execute API function via USB communication. The time required for such execution is about several milliseconds.
*2: Since current consumption may exceed 500mA when using extension modules, please use an optional power supply.
*3: Please refer to P-04 or visit our web site for the details of Applicable Modules, Power supplies, Adapters.

USB 2.0

Input 16 | **Isolated** | CE
Windows Driver | **LabVIEW**

Opto-Isolated Digital Input (USB cable included)
DI-16(USB)GY

- On-board trigger monitoring
- 2 Screw-less connectors for easy wiring - no special tools needed
- Input channels can be expanded by use of extension modules (3 modules - max)
- Sample development and utility debugging software included

USB 2.0

Output 16 | **Isolated** | CE
Windows Driver | **LabVIEW**

Opto-Isolated Digital Output (USB cable included)
DO-16(USB)GY

- Transistor Output that is designed to work with large capacities, 24VDC, 150mA (max) per channel (Drives LED display directly)
- 2 Screw-less connectors for easy wiring - no special tools needed
- Output channels can be expanded by use of extension modules (3 modules - max)
- Sample development and utility debugging software included

USB 2.0

Input 8 | **Output 8** | **Isolated** | CE
Windows Driver | **LabVIEW**

Opto-Isolated Digital I/O (USB cable included)
DIO-8/8(USB)GY

- On-board trigger monitoring (Digital Input)
- Transistor Output that is designed to work with large capacities, 24VDC, 150mA (max) per channel (Drives LED display directly)
- 2 Screw-less connectors for easy wiring - no special tools needed
- I/O channels can be expanded by use of extension modules (3 modules - max)
- Sample development and utility debugging software included

Model	DI-16(USB)GY	DO-16(USB)GY	DIO-8/8(USB)GY	
Input channels	16	-	8	
Output channels	-	16	8	
Input specifications — Type	Opto-Isolated (for sink/source current output)	-	Opto-Isolated (for sink/source current output)	
Input specifications — Signal Level	12~24VDC	-	12~24VDC	
Input specifications — Resistance	3kΩ	-	3kΩ	
Output specifications — Type	-	Opto-Isolated Open Collector (current sinking type)		
Output specifications — Rating	-	12~24VDC 150mA		
Response Time (Max.)	1msec[1]			
Connector	FK-MC 0.5/9-ST-2.5 [PHOENIX CONTACT]			
Wiring Distance	50m			
USB speed	12Mbps <Full speed>, 480Mbps <High speed>			
Power Consumption (Max.)	5VDC 450mA [2]			
Dimensions (mm)	50.4(W) × 64.7(D) × 94.0(H)			
Weight (main unit)	100g			
Included cable Length	USB cable 1.8m			
Options — Software	-			
Options — Applicable Modules [3]	DI-16(FIT)GY	DO-16(FIT)GY	DIO-8/8(FIT)GY	
Options — Applicable Power Supplies [3]	POW-AD13GY, POW-AD22GY, POW-AD25GY, POW-DD10GY, POW-DD43GY			
Options — Applicable Adapters [3]	POA200-20			

Note:
[1]: USB module will execute API function via USB communication. The time required for such execution is about several milliseconds.
[2]: Since current consumption may exceed 500mA when using extension modules, please use an optional power supply.
[3]: Please refer to P-04 or visit our web site for the details of Applicable Modules, Power supplies, Adapters.

Digital I/O

Compact PCI | **96-pin Half Pitch** | **Input 64** | **Isolated** | **Digital Filter** | **Windows Driver** | **LabVIEW**
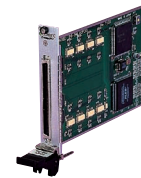
Opto-Isolated Digital Input
PI-64L(CPCI)

- 64 opto-isolated input with superb noise resistance (12 to 24VDC)
- Digital filter and interrupt trigger edge can be set via software
- Connector pin assignment compatible with PI-64L(PCI)
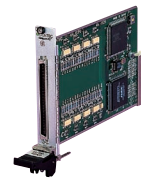
Compact PCI | **96-pin Half Pitch** | **Output 64** | **Isolated** | **Windows Driver** | **LabVIEW**

Opto-Isolated Digital Output
PO-64L(CPCI)

- 64 opto-isolated open collector output (35VDC, 100mA)
- Provides information on the state of the current output data without affecting that data
- Connector pin assignment compatible with PO-64L(PCI)

Compact PCI | **96-pin Half Pitch** | **Input 32** | **Output 32** | **Isolated** | **Digital Filter** | **Windows Driver** | **LabVIEW**

Opto-Isolated Digital I/O
PIO-32/32L(CPCI)

- 32 opto-isolated input, 32 points opto-isolated open collector output
- Digital filter and interrupt trigger edge can be set via software
- Connector pin assignment compatible with PIO-32/32L(PC)

Model		PI-64L(CPCI)	PO-64L(CPCI)	PIO-32/32L(CPCI)	
Input channels		64	-	32	
Output channels		-	64	32	
I/O Circuit	Signal Level	12~24VDC (±15%) (4mA/12V~8mA/24V per point)	12~24VDC (±15%)	12~24VDC (±15%) (4mA/12V~8mA/24V per point)	
	Internal Power	-			
Input specifications	Type	Opto-Isolated (for sink current output)	-	Opto-Isolated (for sink current output)	
	Interrupts	4 interrupt signals combine to one interrupt request signal as INTA	-	4 interrupt signals combine to one interrupt request signal as INTA	
	Resistance	3kΩ	-	3kΩ	
Output specifications	Type	-	Opto-Isolated Open Collector (Current sinking type)		
	Rating	-	35VDC 100mA		
Expansion Function		-			
Response Time (Max.)		1msec			
Wiring Distance		50m (Max.)			
I/O Address		Any 32-byte boundary			
Power Consumption (Max.)		5VDC 300mA			
Bus / Dimensions (mm)		Compact PCI / 3U × 4HP			
Connector		96-pin Half Pitch (male)			
Options	Software	API-PAC(W32)			
	Accessories	DTP-3A*1, DTP-4A*1, DTP-64(PC)*2, EPD-96A*2, EPD-96*2, CM-32(PC)E*1, CM-64(PC)E*2, CCB-96*2			
	Cables / Connectors	PCA96P, PCB96P, PCA96PS, PCB96PS, PCB96WS			

*1: Requires use of optional cable PCB96WS.
*2: Requires use of optional cable PCB96PS.

Note:

ISA

Model		Opto-Isolated Digital Input Board		Opto-Isolated Digital Input Board with On-Board 12V Power Supply
		PI-32L(PC)V	**PI-64L(PC)**	**PI-32B(PC)H**

SPECIFICATIONS

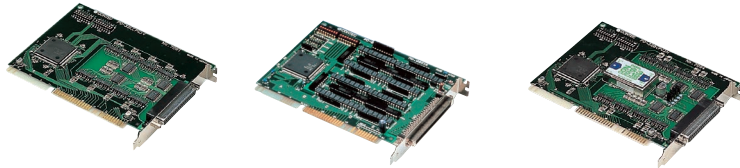|		PI-32L(PC)V	PI-64L(PC)	PI-32B(PC)H
Input channels		32	64	32
Output channels		-		
I/O Circuit	Signal level	12~24VDC		
	Internal power	-		12VDC 250mA
Input specifications	Type	Opto-Isolated (for sink current output)		
	Interrupts	Can use 2 interrupt lines simultaneously from IRQ 3~7, 9~12, 14 and 15	Can use 4 interrupt lines simultaneously from IRQ 3~7, 9~12, 14 and 15	Can use 2 interrupt lines simultaneously from IRQ 3~7, 9~12, 14 and 15
	Resistance	3kΩ		
Output specifications	Type	-		
	Rating	-		
Expansion function		-	Yes	-
Response time (Max.)		1msec		
Wiring Distance		50m		30m
I/O address		4 ports occupation	Any 8-byte boundary (general) Any 16-byte boundary (optional)	4 ports occupation
Power consumption (Max.)		5VDC 50mA	5VDC 100mA	5VDC 50mA (External) 5VDC 800mA (On-board)
Bus / Dimensions (mm)		ISA AT Bus / 163.0(L) × 122.0(H) viz. 6.5"(L) × 4.75"(H)		
Connector		37-pin female D-type	96-pin half pitch connector (male)	37-pin female D-type
Options	Software	API-PAC(W32)		
	Accessories	DTP-3A*1, DTP-4A*1, EPD-37A*1, EPD-37*1, CM-32(PC), CM-32(PC)E*1	DTP-3A*2, DTP-4A*2, DTP-64(PC)*3, EPD-96A*3, EPD-96*3,CCB-96*3, CM-32(PC)*2, CM-64(PC)E*3	DTP-3A*1, DTP-4A*1, EPD-37A*1, EPD-37*1, CM-32(PC), CM-32(PC)E*1
	Cables / Connectors	PCA37P, PCB37P, PCA37PS, PCB37PS	PCA96P, PCB96P, PCB96W, PCA96PS, PCB96PS, PCB96WS	PCA37P, PCB37P, PCA37PS, PCB37PS
CE marking		○	○	○

*1: Requires use of optional cable PCB37P or PCB37PS.
*2: Requires use of optional cable PCB96W or PCB96WS.
*3: Requires use of optional cable PCB96P or PCB96PS.

ISA

Model		Negative-Common Opto-Isolated Digital Input Board	TTL Digital Input Board	
		PI-32RL(PC)	**PI-32T(PC)H**	**PI-64T(PC)**

SPECIFICATIONS

		PI-32RL(PC)	PI-32T(PC)H	PI-64T(PC)
Input channels		32		64
Output channels		-		
I/O Circuit	Signal level	12~24VDC	5VDC	
	Internal power	-		
Input specifications	Type	Opto-Isolated (for source current output)	TTL level	
	Interrupts	Can use 2 interrupt lines simultaneously from IRQ 3~7, 9~12, 14 and 15	Can use 2 interrupt lines simultaneously from IRQ 3~7, 9	Can use 4 interrupt lines simultaneously from IRQ 3~7, 9~12, 14 and 15
	Resistance	3kΩ	10kΩ	
Output specifications	Type	-		
	Rating	-		
Expansion function		-		Yes
Response time (Max.)		1msec	200nsec	
Wiring Distance		50m	1.5m	
I/O address		4 ports occupation		Any 8-byte boundary (general) Any 16-byte boundary (optional)
Power consumption (Max.)		5VDC 300mA	5VDC 420mA	5VDC 200mA
Bus / Dimensions (mm)		ISA AT / 6.5"(L) × 4.75"(H)	ISA XT / 5.5"(L) × 4.25"(H)	ISA AT / 6.5"(L) × 4.75"(H)
Connector		37-pin female D-type		96-pin half pitch connector (male)
Options	Software	API-PAC(W32)		
	Accessories	DTP-3A*1, DTP-4A*1, EPD-37A*1, EPD-37*1	DTP-3A*1, DTP-4A*1, EPD-37A*1, EPD-37*1, CM-32(PC), CM-32(PC)E*1	DTP-3A*2, DTP-4A*2, DTP-64(PC)*2, EPD-96A*3, EPD-96*3, CCB-96*3, CM-32(PC)*2, CM-64(PC)E*3
	Cables / Connectors	PCA37P, PCB37P, PCA37PS, PCB37PS	PCA37P-1.5, PCB37P-1.5, PCA37PS-0.5P/1.5P, PCB37PS-0.5P/1.5P	PCA96P-1.5, PCB96P-1.5, PCB96W-1.5, PCA96PS-0.5/1.5, PCB96PS-0.5/1.5, PCB96WS-1.5P
CE marking		○	○	○

*1: Requires use of optional cable PCB37P or PCB37PS.
*2: Requires use of optional cable PCB96W or PCB96WS.
*3: Requires use of optional cable PCB96P or PCB96PS.

Digital I/O

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ISA Model		Opto-Isolated Digital Output Board		Opto-Isolated Digital Output Board with On-Board 12V Power Supply
		PO-32L(PC)V	**PO-64L(PC)**	**PO-32B(PC)H**

SPECIFICATIONS

		PO-32L(PC)V	PO-64L(PC)	PO-32B(PC)H
Input channels		-		
Output channels		32	64	32
I/O Circuit	Signal level	12~24VDC		
	Internal power	-		+12VDC 250mA
Input specifications	Type	-		
	Interrupt	-		
	Resistance	-		
Output specifications	Type	Opto-Isolated Open Collector (current sinking type)		
	Rating	35VDC 100mA	35VDC 150mA	35VDC 100mA
Expansion function		-	Yes	-
Response time (Max.)		1msec		
Wiring Distance		50m		30m
I/O address		4 ports occupation	Any 8-byte boundary (general) Any 16-byte boundary (optional)	4 ports occupation
Power consumption (Max.)		5VDC 50mA	5VDC 250mA	5VDC 50mA (External) 5VDC 800mA (On-board)
Bus / Dimensions (mm)		ISA AT Bus / 163.0(L) × 122.0(H) viz. 6.5"(L) × 4.75"(H)		
Connector		37-pin female D-type	96-pin half pitch connector (male)	37-pin female D-type
Options	Software	API-PAC(W32)		
	Accessories	DTP-3A*1, DTP-4A*1, EPD-37A*1, EPD-37*1, CM-32(PC), CM-32(PC)E*1	DTP-3A*2, DTP-4A*2, DTP-64(PC)*3, EPD-96*3, EPD-96A*3, CCB-96*3, CM-32(PC)*2, CM-64(PC)E*3	DTP-3A*1, DTP-4A*1, EPD-37A*1, EPD-37*1, CM-32(PC), CM-32(PC)E*1
	Cables / Connectors	PCA37P, PCB37P, PCA37PS,PCB37PS	PCA96P, PCB96P, PCB96W, PCA96PS, PCB96PS, PCB96WS	PCA37P, PCB37P, PCA37PS, PCB37PS
CE marking		○	○	○

*1: Requires use of optional cable PCB37P or PCB37PS.
*2: Requires use of optional cable PCB96W or PCB96WS.
*3: Requires use of optional cable PCB96P or PCB96PS.

ISA Model		Negative-Common Opto-Isolated Digital Output Board	TTL-Level Digital Output Board	
		PO-32RL(PC)	**PO-32T(PC)H**	**PO-64T(PC)**

SPECIFICATIONS

		PO-32RL(PC)	PO-32T(PC)H	PO-64T(PC)
Input channels		-		
Output channels		32		64
I/O Circuit	Signal level	12~24VDC	5VDC	
	Internal power	-		
Input specifications	Type	-		
	Interrupt	-		
	Resistance	-		
Output specifications	Type	Opto-Isolated (current sourcing type)	Open collector output (negative logic), TTL	TTL Open collector
	Rating	35VDC 150mA	5VDC 40mA	30VDC 40mA
Expansion function		-		Yes
Response time (Max.)		1msec	200nsec	
Wiring Distance		50m	1.5m	
I/O address		4 ports occupation		Any 8-byte boundary (general) Any 16-byte boundary (optional)
Power consumption (Max.)		5VDC 300mA	5VDC 550mA	5VDC 250mA
Bus / Dimensions (mm)		ISA AT / 6.5"(L) × 4.75"(H)	ISA XT / 5.5"(L) × 4.25"(H)	ISA AT / 6.5"(L) × 4.75"(H)
Connector		37-pin female D-type		96-pin half pitch connector (male)
Options	Software	API-PAC(W32)		
	Accessories	DTP-3A*1, DTP-4A*1, EPD-37A*1, EPD-37*1	DTP-3A*2, DTP-4A*2, EPD-37A*1, EPD-37*1, CM-32(PC), CM-32(PC)E*1	DTP-3A *2, DTP-4A *2,DTP-64(PC) *3, EPD-96 *3, EPD-96A *3, CCB-96 *3 CM-32(PC) *2, CM-64(PC)E *3
	Cables / Connectors	PCA37P, PCB37P, PCA37PS, PCB37PS	PCA37P-1.5, PCB37P-1.5, PCA37PS-0.5P/1.5P, PCB37PS-0.5P/1.5P	PCA96P-1.5, PCB96P-1.5, PCB96W-1.5, PCA96PS-0.5/1.5, PCB96PS-0.5/1.5, PCB96WS-1.5P
CE marking		○	○	○

*1: Requires use of optional cable PCB37P or PCB37PS.
*2: Requires use of optional cable PCB96W or PCB96WS.
*3: Requires use of optional cable PCB96P or PCB96PS.

ISA

Model		**Opto-Isolated Digital I/O Board**		**Opto-Isolated Digital I/O Board with On-Board 12V Power Supply**
		PIO-16/16L(PC)V	**PIO-32/32L(PC)**	**PIO-16/16B(PC)H**

SPECIFICATIONS

Input channels		16	32	16
Output channels		16	32	16
I/O Circuit	Signal level	12~24VDC		
	Internal power	-		12VDC 250mA
Input specifications	Type	Opto-Isolated (for sink current output)		
	Interrupts	Can use 2 interrupt lines simultaneously from IRQ 3–7, 9–12, 14 and 15	Can use 4 interrupt lines simultaneously from IRQ 3–7, 9–12, 14 and 15	Can use 2 interrupt lines simultaneously from IRQ 3–7, 9–12, 14 and 15
	Resistance	3KΩ		
Output specifications	Type	Opto-Isolated Open Collector (current sinking type)		
	Rating	35VDC 100mA	35VDC 150mA	35VDC 100mA
Expansion function		-	Yes	-
Response time (Max.)		1msec		
Wiring Distance		50m		30m
I/O address		Any 2-byte boundary	Any 4-byte boundary (general) Any 16-byte boundary (optional)	Any 2-byte boundary
Power consumption (Max.)		5VDC 50mA	5VDC 180mA	5VDC 50mA (External)5VDC 800mA (On-board)
Bus / Dimensions (mm)		ISA AT Bus / 163.0(L) × 122.0(H) viz. 6.5"(L) × 4.75"(H)		
Connector		37-pin female D-type	96-pin half pitch connector (male)	37-pin female D-type
Options	Software	API-PAC(W32)		
	Accessories	DTP-3A*1, DTP-4A*1, EPD-37*1, EPD-37A*1, CM-32(PC), CM-32(PC)E*1	DTP-3A*2, DTP-4A*2,DTP-64(PC)*3, EPD-96 *3, EPD-96A *3, CCB-96*3, CM-32(PC)*2, CM-64(PC)E*3	DTP-3A*1, DTP-4A*1, EPD-37*1, EPD-37A*1, CM-32(PC), CM-32(PC)E*1
	Cables / Connectors	PCA37P, PCB37P, PCA37PS, PCB37PS	PCA96P, PCB96P, PCB96W, PCA96PS, PCB96PS, PCB96WS	PCA37P, PCB37P, PCA37PS, PCB37PS
CE marking		○	○	○

*1: Requires use of optional cable PCB37P or PCB37PS.
*2: Requires use of optional cable PCB96W or PCB96WS.
*3: Requires use of optional cable PCB96P or PCB96PS.

ISA

Model		**Negative-Common Opto-Isolated I/O Output Board**	
		PIO-16/16RL(PC)	**PIO-32/32RL(PC)**

SPECIFICATIONS

Input channels		16	32
Output channels		16	32
I/O Circuit	Signal level	12~24VDC	
	Internal power	-	
Input specifications	Input type	Opto-Isolated (for source current output)	
	Interrupts	Can use 2 interrupt lines simultaneously from IRQ 3–7, 9–12, 14 and 15	Can use 4 interrupt lines simultaneously from IRQ 3–7, 9–12, 14 and 15
	Input resistance	3KΩ	
Output specifications	Output type	Opto-Isolated (current sourcing type)	
	Output rating	35VDC 150mA	
Expansion function		-	Yes
Response time (Max.)		1msec	
Wiring Distance		50m	
I/O address		Any 2-byte boundary	Any 4-byte boundary (general) Any 16-byte boundary (optional)
Power consumption (Max.)		5VDC 350mA	5VDC 150mA
Bus / Dimensions (mm)		ISA AT Bus / 163.0(L) × 122.0(H) viz. 6.5"(L) × 4.75"(H)	
Connector		37-pin female D-type	96-pin half pitch connector (male)
Options	Software	API-PAC(W32)	
	Accessories	DTP-3A*1, DTP-4A*1, EPD-37A*1, EPD-37*1	DTP-3A*2, DTP-4A*2, DTP-64(PC)*3, EPD-96 *3, EPD-96A *3,
	Cables / Connectors	PCA37P, PCB37P, PCA37PS, PCB37PS	PCA96P, PCB96P, PCB96W, PCA96PS, PCB96PS, PCB96WS
CE marking		○	○

*1: Requires use of optional cable PCB37P or PCB37PS.
*2: Requires use of optional cable PCB96W or PCB96WS.
*3: Requires use of optional cable PCB96P or PCB96PS.

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Digital I/O

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ISA | Model | **TTL-Level Digital I/O Board** | | **High Current Drive Bi-Directional Digital I/O Board**

PIO-16/16T(PC)H | **PIO-32/32T(PC)** | **PIO-48D(PC)**

SPECIFICATIONS

		PIO-16/16T(PC)H	PIO-32/32T(PC)	PIO-48D(PC)
Input channels		16	32	48
Output channels		16	32	
I/O Circuit	Signal level	5VDC		
	Internal power	-		
Input specifications	Type	TTL-level		
	Interrupt	Can use 2 interrupt lines simultaneously from IRQ 3~7, 9	Can use 4 interrupt lines simultaneously from IRQ 3~7, 9~12, 14 and 15	
	Resistance	10kΩ		
Output specifications	Type	Open collector output (negative logic), TTL	TTL Open collector	TTL-level with Buffer
	Rating	5VDC 40mA	30VDC 40mA	5VDC 24mA
Expansion function		-	Yes	-
Response time (Max.)		200nsec		
Wiring Distance		1.5m		
I/O address		Any 2-byte boundary	Any 4-byte boundary (general) Any 16-byte boundary (optional)	Any 8-byte boundary
Power consumption (Max.)		5VDC 550mA	5VDC 250mA	5VDC 1.25A
Bus / Dimensions (mm)		ISA XT / 5.5"(L) × 4.25"(H)	ISA AT / 6.5"(L) × 4.75"(H)	
Connector		37-pin female D-type	96-pin half pitch connector (male)	50-pin header (male) × 2
Option	Software	API-PAC(W32)		
	Accessories	DTP-3(PC), DTP-4(PC), EPD-37 *1, EPD-37A *1, CM-32(PC), CM-32(PC)E *1	DTP-3A *1, DTP-4A *1, DTP64(PC) *3, EPD-96A *3, EPD-96 *3, CCB-96 *3 CM-32(PC) *2, CM-64(PC)E *3	STP-50H(98), SCP-50H(98), PSD-50(98)J
	Cables / Connector	PCA37P-1.5, PCB37P-1.5, PCA37PS-0.5P/1.5P, PCB37PS-0.5P/1.5P	PCA96P-1.5, PCB96P-1.5, PCB96W-1.5, PCA96PS-0.5/1.5, PCB96PS-0.5/1.5, PCB96WS-1.5P	PCA50J
CE marking		○	○	○

*1: Requires use of optional cable PCB37P or PCB37PS.
*2: Requires use of optional cable PCB96W or PCB96WS.
*3: Requires use of optional cable PCB96P or PCB96PS.

ISA | Model | **Reed Relay Output Board**

RRY-32(PC)

SPECIFICATIONS

		RRY-32(PC)
Input channels		-
Output channels		32
Output type		Reed Relay SPST
Relay contact specifications	Maximum power	10VA(AC), 10W(DC)
	Maximum voltage	100V(AC), 100V(DC)
	Maximum switching current	0.5A
	Maximum current	1A
	Contact resistance	150mΩ or less
	Response time (Max.)	Within 1msec
	Life expectancy	100,000,000
I/O address		4 ports occupied
Power consumption (Max.)		+5VDC 760mA
Bus / Dimensions (mm)		ISA AT/6.5"(l) × 4.75"(h)
Connector		37-pin female D-type
Option	Software	API-PAC(W32)
	Accessories	DTP-3A *1, DTP-4A *1, EPD-37 *1, EPD-37A *1
	Cables / Connector	PCA37P, PCB37P, PCA37PS, PCB37PS
CE marking		○

*1: Requires use of optional cable PCB37P or PCB37PS.

ISA | Model | **Photo MOS Relay Output Board**

PRY-32(PC)

SPECIFICATIONS

		PRY-32(PC)
Input channels		-
Output channels		32
Output type		Photo MOS relay (8 channels with the common)
Relay contact specifications	Rating	100VAC/VDC
	Drive current	250mA max. per channel (1A max. per common)
	Relay resistance	2.6Ω (4Ω Max.)
	Output loss	360mW
	Leakage current	1μA (Max.)
	Response time (Max.)	1msec
I/O address		4 ports occupied
Power consumption (Max.)		+5VDC 450mA
Bus / Dimensions (mm)		ISA AT /6.5"(l) × 4.75"(h)
Connector		37-pin female D-type
Option	Software	API-PAC(W32)
	Accessories	DTP-3A *1, DTP-4A *1, EPD-37 *1, EPD-37A *1
	Cables / Connector	PCA37P, PCB37P, PCA37PS, PCB37PS
CE marking		○

*1: Requires use of optional cable PCB37P or PCB37PS.

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