

Analog I/O Standard

PCI **BNC** **Analog Input 4ch** **Analog Output -** **Digital I/O 4/4** **Counter -** **High-speed Conversion** **Memory on Board**

Windows Driver



10MS/s 12-bit Analog Input AI-1204Z-PCI **NEW**

- 4ch simultaneous sampling at maximum conversion speed of 10MS/s(100nsec) per channel
- Synchronous Control Connectors supports the synchronous operation of multiple boards
- Mass buffer memory (32M Word) and the Bus Master Transfer function enables High-speed and long-time continuous data collection
- Features BNC connectors for the analog input terminal

Model	AI-1204Z-PCI
Channels	4 single-ended
Range	[When 50Ω terminal setting disabled] Bipolar: ±10V, ±5V, ±2.5V, ±1.25V; Unipolar: 0→+10V, 0→+5V, 0→+2.5V [When 50Ω terminal setting enabled] Bipolar: ±5V, ±2.5V, ±1.25V; Unipolar: 0→+5V, 0→+2.5V
Analog Input Impedance	1MΩ or more, 50Ω ±1% (when 50Ω terminal setting)
Resolution	12bit
Conversion Speed	100nsec (Max.)
Conversion Accuracy ¹⁾²⁾⁴⁾	±4LSB (±10V), ±6LSB (0→+10V, ±5V), ±8LSB (0→+5V, ±2.5V), ±10LSB (0→+2.5V, ±1.25V)
Buffer Memory	32M word
Digital I/O Input	4 Non-isolated TTL-level input (positive logic)
Digital I/O Output	4 Non-isolated TTL-level output (positive logic)
Counter Channels	-
Counter Counting	-
Counter Max. count	-
Interrupts	Error & each events, 1 interrupt request signal as INTA
I/O Address	Occupies 1 x 64 ports and 1 x 256 ports
Power Consumption (Max.)	5VDC 2500mA
Bus / Dimensions (mm)	PCI (32bit, 33MHz or 33V3) / 176.4(L) x 105.68(H) CN1(AIO): BNC connector, DB-414K [INSERT ENTERPRISE] or equivalent, CN2(DIO): 16pin box-header connector
Connector	-
Software	-
Accessories	FTP-15 ⁵⁾⁴⁾
Options	For Analog: BNC-B100, BNC-B200, BNC-B300; For Digital: DT-E3, DT/E1, PCA15P-1.5 ⁵⁾ , PCB15P-1.5 ⁵⁾⁶⁾

- Notes
- *1: If operating temperature becomes close to 0°C or 50°C, ±0.1% LSB non-linearity error may occur.
 - *2: When using a signal source with a high-speed built-in operational amplifier
 - *3: This board requires power supply at +5 V from an expansion slot (it does not work on a machine with a +3.3V power supply only).
 - *4: Requires optional cables DT/E3 and PCB15P-1.5.
 - *5: Optional cables DT/E3 is required.
 - *6: PCB15P is a cable for FTP-15 terminal panel.

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

■ Related Products of G series

MODEL No.	Equivalent Model	Description
GADA16-8/2(LPC)JL	ADA16-8/2(LPC)JL	8 Ch / 16-bit Multi-function board for Low-Profile PCI
GADAI16-8/2(LPC)JL	ADAI16-8/2(LPC)JL	8 Ch / 16-bit Isolated Multi-function board for Low-Profile PCI
GADH16-4(FIT)GY	ADH16-4(FIT)GY	4 Ch / 16-bit Bus Isolated Analog Input F&EIT module
GAI-1608AY-USB	AI-1608AY-USB	8 Ch / 16-bit USB Analog Input terminal
GAI0-160802AY-USB	AIO-160802AY-USB	8 Ch / 16-bit USB Analog I/O terminal
GDAI16-4(FIT)GY	DAI16-4(FIT)GY	4 Ch / 16-bit Isolated Analog Output module for F&EIT
GPTI-4(USB)	PTI-4(USB)	4 Ch PT100 USB Temperature Sensor Input terminal

Digital I/O

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

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



High-Voltage Opto-Isolated Digital I/O GDIO-1616H-PE **NEW**

- 16 opto-isolated input , 16 opto-isolated open collector output
- All input points 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 assignments are compatible with the PCI-compliant board PIO-16/16H(PCI)H

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

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



High-Voltage Opto-Isolated Digital I/O GDIO-3232H-PE **NEW**

- 32 opto-isolated input , 32 opto-isolated open collector output
- All input points 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 assignments are compatible with the PCI-compliant board PIO-32/32H(PCI)H

PCI Express **37-pin D-SUB** **Input 16** **Output 16** **Isolated** **Negative Common** **Digital Filter** **Surge & Overcurrent Protection**

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



Negative-Common Opto-Isolated Digital I/O GDIO-1616RL-PE **NEW**

- 16 opto-isolated input , 16 opto-isolated output
- All input points can be used as interrupts
- Digital filtering function to prevent input error caused by noise and/or chattering
- Functions, Connector pin and Signal assignments are compatible with the PCI-compliant board GPIO-16/16RL(PCI)H

PCI Express **96-pin Half Pitch** **Input 32** **Output 32** **Isolated** **Negative Common** **Digital Filter** **Surge & Overcurrent Protection**

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



Negative-Common Opto-Isolated Digital I/O GDIO-3232RL-PE **NEW**

- 32 opto-isolated input , 32 opto-isolated output
- All input points 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 assignments are compatible with the PCI-compliant board GPIO-32/32RL(PCI)H

Model	GDIO-1616H-PE	GDIO-3232H-PE	GDIO-1616RL-PE	GDIO-3232RL-PE
Input channels	16 (all available for interrupts) (1 common)	32 (all available for interrupts) (1 common every 16 channels)	16 (all available for interrupts) (1 common)	32 (all available for interrupts) (1 common every 16 channels)
Output channels	16 (1 common)	32 (1 common every 16 channels)	16 (1 common)	32 (1 common every 16 channels)
Input specifications	Type	Opto-Isolated (for sink current output) (Negative logic)	Opto-Isolated (for source current output) (Negative logic)	Opto-Isolated (for source current output) (Negative logic)
	Signal Level	24 ~ 48VDC (±10%)	12 ~ 24VDC (±10%)	12 ~ 24VDC (±10%)
Interrupts	Interrupts	16 interrupt signals combine to one interrupt request signal as INTA	32 interrupt signals combine to one interrupt request signal as INTA	32 interrupt signals combine to one interrupt request signal as INTA
	Resistance	15kΩ	4.7kΩ	4.7kΩ
Output specifications	Type	Opto-Isolated Open Collector (Current sinking type) (Negative logic)	Opto-Isolated Open Collector (Current sourcing type) (Negative logic)	Opto-Isolated Open Collector (Current sourcing type) (Negative logic)
	Rating	60VDC 100mA (per channel)	35VDC 100mA (per channel)	35VDC 100mA (per channel)
Response Time (Max.)	within 200µsec			
Internal Power	-			
Wiring Distance	50m (depending on wiring environment)			
I/O Address	Occupies 32 ports			
Power Consumption (Max.)	3.3VDC 310mA	3.3VDC 400mA	3.3VDC 350mA	3.3VDC 400mA
Bus / Dimensions (mm)	PCI Express Base Specification	PCI Express Base Specification	PCI Express Base Specification	PCI Express Base Specification
	Rev. 1.0a x1 / 121.69(L)x105.68(H)	Rev. 1.0a x1 / 169.33(L)x110.18(H)	Rev. 1.0a x1 / 121.69(L)x105.68(H)	Rev. 1.0a x1 / 169.33(L)x110.18(H)
Connector	37pin female D-type, DCLC- J37SAF-20L9E [JAE] or equivalent	96pin female half-pitch: PCR-96LMD J37SAF-20L9E [JAE] or equivalent	37pin female D-type, DCLC- J37SAF-20L9E [JAE] or equivalent	96pin female half-pitch: PCR-96LMD [HONDA Tsushin Kogyo] or equivalent
Options	Software	ACX-PAC(W32)	EPD-37A ¹⁾²⁾ , EPD-37*1, DTP-3A*1, DTP-4A*1, DICT-37S*1, DICT-37F*1	EPD-37A ¹⁾²⁾ , EPD-37*1, DTP-3A*1, DTP-4A*1, DICT-37S*1, DICT-37F*1
	Cables / Connectors	PCA37P, PCB37P, PCB37PS, PCA37PS, CN5-D37M	EPD-96A ³⁾⁴⁾ , EPD-96*1, EPD-37A ³⁾⁴⁾ , EPD-37*1, DTP-3A*1, DTP-4A*1, CCB-96*1, DICT-37S*1, DICT-37F*1, DICT-96S*1, DICT-96F*1	PCA37P, PCB37P, PCB37PS, PCA37PS, CN5-D37M
Notes	¹⁾ Requires optional cable PCB37P or PCB37PS. ²⁾ The screw-up terminal block is used, which screw does not falling off. ³⁾ Requires optional cable PCB96P or GPCB96PS(PCB96PS). ⁴⁾ Requires optional cable GPCB96WS(PCB96WS).			

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