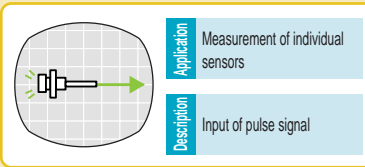
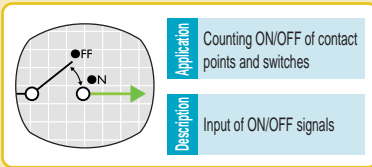




Counter / Motion Controller

- Box-PCs
- Panel-PCs
- Flat Panel Displays
- Silicon Disk Drives
- Option
- Box PCs & Panel PCs with Windows CE
- Single Board Computer
- Chassis / Backplane
- Analog I/O
- Digital I/O
- Counter & Motion Controller**
- Serial Communication
- GPB 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

Counter



These boards communicate pulse train input and pulse number count functions to the PC. They calculate addition and/or subtraction of count values onboard and read out current count values when needed. They can connect to incremental rotary encoders, linear gauges, pulse-output type flowmeters or power meters.

Product Lineup

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

Interface	Counter Type	Input Type	Channels	Frequency	Bus	Product Code	Page
PCI Express	32-bit Up/Down Counter	TTL input Differential input	8ch	10MHz	Bus Master	CNT-3208M-PE	K-02
	Low Profile 32-bit Up/Down Counter	LVTTTL input	4ch	10MHz	Bus Master	CNT-3204MT-LPE	K-02
PCI	24-bit Up/Down Counter	TTL input/ Isolation input	4ch	TTL input: 1MHz Isolation input: 500kHz		CNT24-4(PCI)H	K-04
		TTL input Differential input		1MHz		CNT24-4D(PCI)H	K-04
PCI	32-bit Up/Down Counter	TTL input Differential input	8ch	10MHz	Bus Master	CNT32-8M(PCI)	K-04
	Low Profile 32-bit Up/Down Counter	LVTTTL input	4ch	10MHz	Bus Master	CNT32-4MT(LPCI)	K-03
CardBus	32-bit Up/Down Counter	LVTTTL input	4ch	10MHz	Bus Master	CNT32-4MT(CB)	K-03
USB	24-bit Up/Down Counter	Opto-coupler isolation	2ch	500MHz		CNT24-2(USB)GY	K-05
ISA	24-bit Up/Down Counter	TTL input/ Isolation input	4ch	TTL input: 1MHz Isolation input: 500kHz		CNT24-4(PC)	K-05

K-01

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.

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).

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

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

Supported Connectors

96-pin Half Pitch **37-pin D-SUB**

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

Cables with connectors on both ends Accessories (Terminal block, etc.) **Q-13**

Cables with a connector on one end Connector set **Q-15**

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

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 therefore simplifying device operation. For the details, please visit: <http://www.contec.com/mdaq/>

Board Size

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

Number of Channels

Counter XXch Maximum number of input channels for pulse signals

Points

Differential Input A level input circuit in which differential receiver is used as input terminal. While it is not insulated from external circuit, it supports high-speed pulse input. Also noise-resistant, it allows for longdistance transfer.

Isolated Input A current input circuit in which an opto-coupler (cathode side) is used as the input terminal. Isolated from external circuits, it can prevent electric disturbance.

TTL Input A level-input circuit in which a TTL-IC (base) is used as the input terminal. While not isolated from external circuits, it enables high-speed pulse input.

Digital Filter Delays the count processing by the specified length of time. By preventing incorrect counting induced by noise such as chattering, it ensures precise operation.

Disconnection Detection During differential input, an error alarm is issued upon detection of a signal wire disconnection. (Status, interrupt, external output)

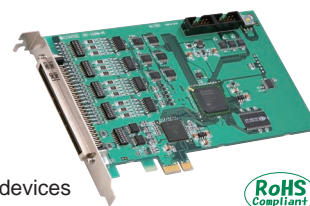
Surge Protection The input interface is equipped with a Zener diode which prevents damage and malfunction induced by voltage surges and incoming current.

Bus Master Large sampling data can be transferred promptly to PC memory without going through CPU.

Counter

Please see page Q-21 for optional accessories and cables/connectors, and page P-01 for supported software.

PCI Express **96-pin D-SUB** **Counter 8ch** **Differential Input** **TTL Input** **Digital Filter** **Disconnection Detection** **Bus Master**
Windows Driver



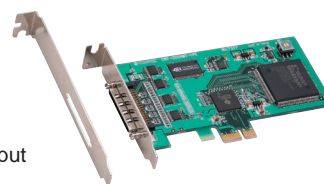
High Speed 8-channel 32-bit Up/Down Counter

CNT-3208M-PE



- 8-channel 32-bit up/down counter
- Capable of counting two-phase signals from devices like rotary encoders or linear gauges
- Disconnection can be detected at the time of differential input
- High-speed data transfer achieved by using the bus master transfer feature
- Synchronous Control Connectors enable the synchronous operation of the boards of 16 pieces at the maximum.
- Functions, Connector pin and Signal assignment is compatible with the PCI-compliant board CNT32-8M(PCI)

PCI Express **Low Profile** **68-pin 0.8mm Pitch** **Counter 4ch** **TTL Input** **Digital Filter** **Bus Master**
Windows Driver **LabVIEW**



High Speed 4-channel 32-bit Up/Down Counter

CNT-3204MT-LPE

- 4-channel 32-bit up/down counter, LVTTTL input supported
- Capable of counting two-phase signals from devices like rotary encoders or linear gauges
- High-speed data transfer achieved by using the bus master transfer feature
- Low Profile PCI -compliant (includes bracket for use in standard PCI slot)
- Functions, Connector pin and Signal assignment is compatible with the PCI-compliant board CNT32-4MT(LPCI) and CardBus-compliant board CNT32-4MT(CB)
- Can be converted into differential input interface by using differential/TTL input terminal (CTP-4D) and a connecting cable (CNT-68M/50M) both of which are sold separately



Differential / TTL Input Terminal
CTP-4D



Optional Cable
CNT-68M/50M

Model	CNT-3208M-PE	CNT-3204MT-LPE
Number of Channels	8ch	4ch
Counting System	32-bit Up/Down Counter (two-phase/single-phase/single-phase with Gate Control)	
Input Signals	Phase A/UP: 1 pointx8ch; Phase B/DOWN: 1 pointx8ch; Phase Z/CLR: 1 pointx8ch; General input: 1 pointx8ch	Phase A/UP: 1 pointx4ch; Phase B/DOWN: 1 pointx4ch; Phase Z/CLR: 1 pointx4ch
Response Frequency (Max.)	10MHz (duty: 50%)	
Timer	1~6553msec (selectable in 1msec intervals)	
Max. Count	32-bit binary data	
Input Specifications	TTL level: 1 TTL level load; Differential: input voltage range±7V	LVTTTL level
Interrupts	1 interrupt (factors: count mathch, count error, sampling factors, SCC error, carry/borrow, timer)	1 interrupt (factors: count mathch, count error, sampling factors, carry/borrow, timer)
I/O Address	32 portsx1, 64 portsx1 occupation	
Additional Function	Filter, Counter coincidence pulse output, Test pulse output, Disconnection alarm output	Filter, Counter coincidence pulse output, Test pulse output
Power Consumption (Max.)	3.3VDC, 1.8A	
Bus / Dimensions (mm)	PCI Express Base Specification Rev. 1.0a x1 / 169.33(L)x110.18(H) CN1: 96-pin Half-pitch:PCR-E96LMD [HONDA Tsushin Kogyo];CN2, CN3: PS-10PE-D4L1-B1 [JAE] or equivalent x2	PCI Express Base Specification Rev. 1.0a x1 / 121.69(L)x67.90(H)
Connector	HDRA-E68LFDT+ [HONDA Tsushin Kogyo] or equivalent	
Options	Software - Accessories EPD-96A*1, EPD-96*1, DTP-64(PC)*1 Cables / Connectors PCBPS-0.5P/1.5P, PCB96P-1.5, PCA96PS-0.5P/1.5P, PCA96P-1.5, CN5-H96F	- CTP-4D*1, EPD-50A*1, EPD-68A*3, CNT-68M/50M, PCA68PS-0.5P/1.5P, PCB68PS-0.5P/1.5P

Note:

- *1: Requires use of optional cable PCB96P or PCB96PS
 *2: Requires use of optional cable CNT-68M/50M
 *3: Requires use of optional cable PCB68PS

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

- Box-PCs
- Panel-PCs
- Flat Panel Displays
- Silicon Disk Drives
- Option
- Box PCs & Panel PCs with Windows CE
- Single Board Computer
- Chassis / Backplane
- Analog I/O
- Digital I/O
- Counter & Motion Controller
- Serial Communication
- GPB 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

K-02

- Counter
- Lineup
- PCI Express
- PCI
- PC Card
- USB
- ISA
- Motion Controller
- Lineup
- PCI
- ISA

Counter

Please see page Q-21 for optional accessories and cables/connectors, and page P-01 for supported software.

- Box-PCs
- Panel-PCs
- Flat Panel Displays
- Silicon Disk Drives
- Option
- Box PCs & Panel PCs with 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&IT
- Multi-Programmable Display
- Wireless LAN
- Remote Monitoring Solution
- Service & Products

PCI Low Profile 68-pin 0.8mm Pitch Counter 4ch TTL Input Digital Filter Bus Master Windows Driver

High Speed 4-channel 32-bit Up/Down Counter CNT32-4MT(LPCI)

- 4-channel 32-bit up/down counter, LVTTTL input supported
- Capable of counting two-phase signals from devices like rotary encoders or linear gauges
- High-speed data transfer achieved by using the bus master transfer feature
- Can be converted into differential input interface by using differential/TTL input terminal (CTP-4D) and a connecting cable (CNT-68M/50M) both of which are sold separately
- Low Profile PCI -compliant (includes bracket for use in standard PCI slot)



Soon to be RoHS-compliant

Card Bus 68-pin 0.8mm Pitch Counter 4ch TTL Input Digital Filter Bus Master Windows Driver

High Speed 4-channel 32-bit Up/Down Counter CNT32-4MT(CB)

- 4-channel 32-bit up/down counter, LVTTTL input supported
- Capable of counting two-phase signals from devices like rotary encoders or linear gauges
- High-speed data transfer achieved by using the bus master transfer feature
- Can be converted into differential input interface by using differential/TTL input terminal (CTP-4D) and a connecting cable (CNT-68M/50M) both of which are sold separately

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



Soon to be RoHS-compliant



Differential / TTL Input Terminal CTP-4D



Optional Cable CNT-68M/50M

K-03

- Counter
- Lineup
- PCI Express
- PCI
- PC Card
- USB
- ISA
- Motion Controller
- Lineup
- PCI
- ISA

Model	CNT32-4MT(LPCI)	CNT32-4MT(CB)
Number of Channels	4ch	
Counting System	32-bit Up/Down Counter (two-phase/single-phase/single-phase with Gate Control)	
Input Signals	Phase A/UP: 1 pointx4ch; Phase B/DOWN: 1 pointx4ch; Phase Z/CLR: 1 pointx4ch	
Response Frequency (Max.)	10MHz (duty: 50%)	
Timer	1~6553msec (selectable in 1msec intervals)	
Max. Count	32-bit binary data	
Input Specifications	LVTTTL level	
Interrupts	1 interrupt (factors: count match, count error, sampling factors, carry/borrow, timer)	
I/O Address	32 portsx1, 64 portsx1 occupation	
Additional Function	Filter, Counter coincidence pulse output and Test pulse output	
Power Consumption (Max.)	5VDC, 300mA	3.3VDC, 300mA
Bus / Dimensions (mm)	PCI (32bit, 33MHz, 5V or 3.3V*2) / 121.69(L)x105.68(H)	PC Card Standard CardBus / TYPE II
Connector	HDRA-E68LFD1+ [HONDA Tsushin Kogyo] or equivalentx2	-
Options	Software - Accessories CTP-4D*1, EPD-68A*3, EPD-50A*1 Cables / Connectors CNT-68M/50M, PCA68PS-0.5P/1.5P, PCB68PS-0.5P/1.5P	

*1: Requires use of optional cable CNT-68M/50M
 *2: +5V power must be supplied from PCI bus slot
 *3: Requires use of optional cable PCB69PS.

Note:

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

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

Counter

- Box-PCs
- Panel-PCs
- Flat Panel Displays
- Silicon Disk Drives
- Option
- Box PCs & Panel PCs with Windows CE
- Single Board Computer
- Chassis / Backplane
- Analog I/O
- Digital I/O
- Counter & Motion Controller
- Serial Communication
- GPB 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 96-pin Half Pitch Counter 8ch Differential Input TTL Input Digital Filter Disconnection Detection Bus Master 
Windows Driver

High Speed 8-channel 32-bit Up/Down Counter CNT32-8M(PCI)

- 8-channel, 32-bit up/down counter
- Capable of counting two-phase signals from devices like rotary encoders or linear gauges
- Disconnection can be detected at the time of differential input
- When using the bus master transfer feature, data between the board and PC can be transferred at a speed of 80MB/sec (max.133MB/sec) with no additional load on the computer.
- Synchronous Control Connector to enable the synchronous operation of a number of boards (regardless of type).



PCI 37-pin D-SUB Counter 4ch Isolated Input TTL Input Digital Filter
Windows Driver Linux Driver LabVIEW

4-Channel 24-bit Up/Down Counter CNT24-4(PCI)H

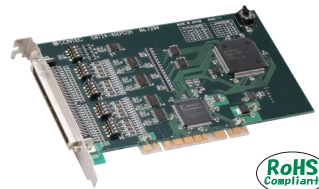
- 4 channel, 24-bit up/down counter
- Capable of counting two-phase signals from devices like rotary encoders or linear gauges (A maximum of 4 encoders can be connected)
- Equipped with a programmable timer
- Connector pin assignment compatible with CNT24-4(PCI)



PCI 96-pin Half Pitch Counter 4ch Differential Input TTL Input Digital Filter Surge Protection 
Windows Driver Linux Driver LabVIEW

4-Channel 24-bit Differential Up/Down Counter CNT24-4D(PCI)H

- 4 channel, 24-bit up/down counter
- Capable of counting two-phase signals from devices like rotary encoders or linear gauges (A maximum of 4 encoders can be connected)
- Equipped with a programmable timer
- Differential input area is equipped with a surge protection device
- Connector pin assignment compatible with CNT24-4D(PCI)



Model	CNT32-8M(PCI)	CNT24-4(PCI)H	CNT24-4D(PCI)H	
Number of Channels	8ch	4ch		
Counting System	32-bit Up/Down Counter (two-phase/single-phase/single-phase with Gate Control)	24-bit Up/Down Counter (two-phase/single-phase/single-phase with Gate Control)		
Input Signals	Phase A/UP: 1 pointx8ch Phase B/DOWN: 1 pointx8ch Phase Z/CLR: 1 pointx8ch General input: 1 pointx8ch	Phase A/UP: 1 pointx4ch, Phase B/DOWN: 1 pointx4ch, Phase Z/CLR: 1 pointx4ch, General input: 1 pointx4ch		
Response Frequency (Max.)	Differential input: 10MHz (duty: 50%) TTL level input: 10MHz (duty: 50%)	TTL level input: 1MHz (duty: 50%) Opto-isolated input: 500kHz (duty: 50%)	Differential input: 1MHz (duty: 50%) TTL level input: 1MHz (duty: 50%)	
Timer	1-6553msec (selectable in 1msec intervals)	1msec-200sec		
Max. Count	32-bit binary data	24-bit binary data		
Input Specifications	TTL level: 1 TTL level load, Differential: input voltage range±7V	TTL level: 1 TTL level load, Opto-isolated: DC5V-12V, Impedance: 220Ω	TTL level: 1 TTL level load, Differential: input voltage range±7V	
Interrupts	1 interrupt(factors: count match, count error, sampling factors, SCC error, carry/borrow, timer)	One point generated when the count of each channel matches or the timer runs out of time.		
I/O Address	32 portsx1, 64 portsx1 occupation	Any 32-byte boundary		
Additional Function	Filter, Counter coincidence pulse output, Test pulse output and Disconnection alarm output	Filter and Counter coincidence pulse output		
Power Consumption (Max.)	5VDC, 1A	5VDC 250mA	5VDC 500mA	
Bus / Dimensions (mm)	PCI (32bit, 33MHz, 5V) / 176.41(L)x106.68(H)	PCI (32bit, 33MHz, 5V or 3.3V*) / 176.41(L)x105.68(H)		
Connector	PCR-E96LMD[HONDA Tsushin Kogyo], PS-10PE-D4L1-B1[JAE] or equivalentx2	DCLC-J37SAF-20L9 [JAE] or equivalent TTL level input: PS-30PE-D4TIPNI [JAE] or equivalent	PCR-E96LMD[HONDA Tsushin Kogyo] or equivalent	
Options	Software	-	-	
	Accessories	EPD-96*4, EPD-96A*4, DTP-64(PC)*4	DTP-3A*2, DTP-4A*2, EPD-37A*2, EPD-37*2	DTP-3A*3, DTP-4A*3, EPD-37A*3, EPD-37*3, EPD-96*4, EPD-96A*4, DTP-64(PC)*4, CCB-96*4
	Cables / Connectors	PCA96P-1.5, PCA96PS-0.5P/1.5P, PCB96P-1.5, PCB96PS-0.5P/1.5P, CN5-H96F	PCA37P, PCB37P, PCA37PS, PCB37PS, DT/O, DT/B2, CN5-D37M	PCA96P, PCB96P, PCA96PS, PCB96PS, PCB96WS, CN5-D37M
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 PCB96WS *4: Requires use of optional cable PCB96P or PCB96PS *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  is a CONTEC original marking for RoHS-compliant products.

K-04

- Counter
- Lineup
- PCI Express
- PCI
- PC Card
- USB
- ISA
- Motion Controller
- Lineup
- PCI
- ISA

Counter

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

USB 2.0 Counter 2 Isolated Input Digital Filter CE Windows Driver LabVIEW

Opto-Isolated Counter Module (AC Adapter & USB Cable included)

CNT24-2(USB)GY

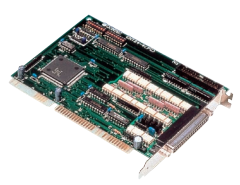
- Supporting a variety of counter modes
- Counter coincidence pulse output (signal frequency can be set 0~104.5ms)
- Digital filter (0.1~1056.1μs variable sampling range frequency)
- 2 Screw-less connectors for easy wiring - no special tools needed
- Additional channels through use of extension modules (Max. 3 sets)
- 35mm DIN rail mountable
- Sample development and utility debugging software included



Model	CNT24-2(USB)GY	
Number of Channels	2	
Counting System	24-bit Up/Down Counter (two-phase/single-phase/single-phase with Gate Control)	
Input type	Opto-Isolated (for sink current output)	
Input Signals	Phase A/UP: 1 point x 2ch Phase B/DOWN: 1 point x 2ch Phase Z/CLR: 1 point x 2ch General-purpose input: 1 point x 2ch	
Response Frequency (Max.)	500kHz, duty: 50%	
Connector	FK-MC0.5/9-ST-2.5 [PHOENIX CONTACT]	
USB speed	12Mbps (Full Speed) 480Mbps (High Speed)	
Additional Function	Filter, Counter coincidence pulse output	
Power Consumption (Max.)	5VDC 450mA *1	
Dimensions (mm)	50.4(W) x 64.7(D) x 94.0(H)	
Weight (main unit)	100g	
Included AC Adapter	AC90~264V, DC5.0V ± 5%, 2.0A(Max.)	
Included Cable	Cable Length: approx. 1.4m USB cable 1.8m	
Options	Software	-
	Applicable Modules *2	CNT24-2(FIT)GY
	Applicable Power Supplies *2	POA200-20, POW-AD13GY, POW-AD22GY, POW-DD10GY, POW-DD43GY

Note: *1: Since current consumption may exceed 500mA when using an extension module, please use a attached AC adapter or a optional power supply.
*2: Please refer to P-04 or visit our web site for the details of Applicable Modules, Power supplies, Adapters.

ISA Model 4-channel 24-bit Up/Down Counter CNT24-4(PC)



SPECIFICATIONS

Number of Channels	4	
Counting System	24-bit Up/Down Counter (two-phase/single-phase/single-phase with Gate Control)	
Input Signals	Phase A/UP: 1 point x 4ch Phase B/DOWN: 1 point x 4ch Phase Z/CLR: 1 point x 4ch General-purpose input: 1 point x 4ch	
Response Frequency (Max.)	TTL level input: 1MHz (duty: 50%) Opto-isolated input: 500kHz (duty: 50%)	
Timer	1msec~200sec	
Max. Count	24-bit binary data	
Input Specifications	TTL level: 1 TTL level load Opto-isolated: 220Ω	
Interrupts	Preset value of each channel matches or TimeUp value can be set as one of IRQ3~7, 9~12, 14 or 15	
I/O address / Addition Function	Any 2-byte boundary / Filter function	
Power Consumption (Max.)	5VDC 300mA	
Bus / Dimensions (mm)	AT Bus / 163.0(L) x 122.0(H)	
Connector	Opto-isolated input: 37-pin D-SUB female connector TTL level input: 30-pin header male connector	
Options	Software	API-PAC(W32)
	Accessories	DTP-3A*1, DTP-4A*1, EPD-37A*1, EPD-37*1
	Cables / Connectors	PCA37P, PCB37P, PCA37PS, PCB37PS, DT/O, DT/B2
CE marking	○	

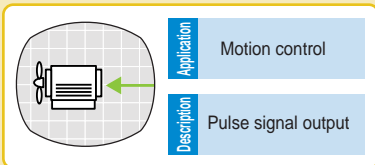
*1: Requires use of optional cable PCB37P or PCB37PS.

K-05

- Counter
- Lineup
- PCI Express
- PCI
- PC Card
- USB
- ISA
- Motion Controller
- Lineup
- PCI
- ISA

Counter / Motion Controller **K**

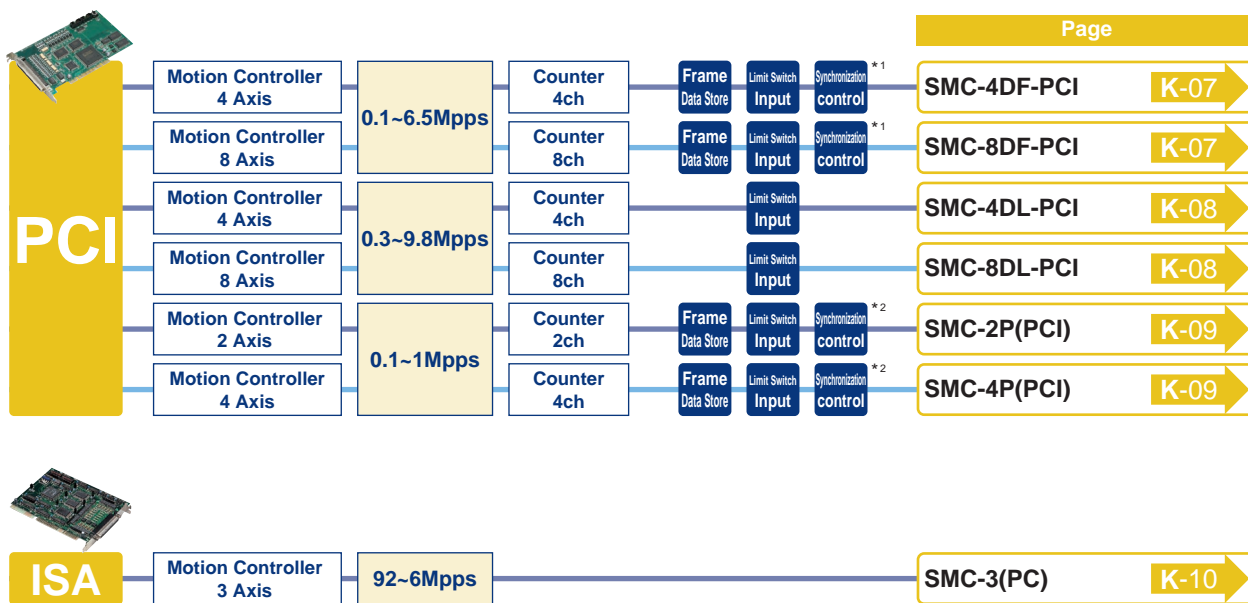
Motion Control



Enables PC controlled output of pulse train according to a specified pulse number and frequency. Can automatically output control pulse which corresponds to operation parameters such as target position, speed and acceleration / deceleration rate. Limit input functions [required for positioning control] are also provided. For use with pulse-input type stepping motors or servo motors.

Product Lineup

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



- Box-PCs
- Panel-PCs
- Flat Panel Displays
- Silicon Disk Drives
- Option
- Box PCs & Panel PCs with Windows CE
- Single Board Computer
- Chassis / Backplane
- Analog I/O
- Digital I/O
- Counter & Motion Controller
- Serial Communication
- GPB 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

K-06

Pictograms

Bus Specifications



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

Supported softwares

Windows Driver

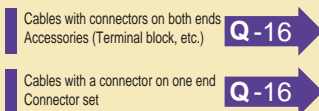
API-TOOL Drivers for Windows are provided. The license-free driver software (both development and runtime) provides commands to interface boards or cards using Windows standard Win32API function (DLL).

Supported Connectors



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

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



Number of Channels



Maximum number of controllable channels



Maximum number of input channels for pulse signals

Points



You can store a maximum of 1,000 frames [1 frame gathering information necessary for single positioning such as speed, acceleration/ deceleration rate and target position].



Detects the stop point, deceleration point and origin point of the motor for high-level positioning control.



Synchronization control for multiple simultaneous start/stop control commands is available. A bundled synchronization control cable makes it possible for synchronization control in up to 16 boards.

*1: Compatible with both SMC-4DF-PCI and SMC-8DF-PCI type boards.

*2: Only one type of board can be used with any single synchronization control cable.

Counter

Lineup

PCI Express

PCI

PC Card

USB

ISA

Motion Controller

Lineup

PCI

ISA

Motion Controller

Please see page Q-24 for optional accessories and cables/connectors, and page P-01 for supported software.

- Box-PCs
- Panel-PCs
- Flat Panel Displays
- Silicon Disk Drives
- Option
- Box PCs & Panel PCs with 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&IT
- Multi-Programmable Display
- Wireless LAN
- Remote Monitoring Solution
- Service & Products

PCI 100-pin Half Pitch Motion Controller 4ch Frame Data Store Limit Switch Input Synchronization control
Windows Diver



High Speed 4 Axes Motion Controller with high functionality

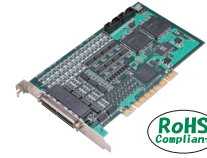
SMC-4DF-PCI

NEW

- Stepping and servo motors are easily controlled in familiar Windows environments
- Diverse control, i.e. Target Location, ORG return, Linear/Circular Interpolation, S-type Acceleration/Deceleration, Frame consecutive movement, Synchronous Control, etc.
- Every axis can store 1024 frames without applying any additional load on the CPU
- Encoders compatible with Differential output, TTL-level output, Open collector output are provided
- Override of Speed or Target Location in the movement is provided
- Supporting multiple axis in synchronization to arrange the timing of operation beginning and stopping (SMC-4DF-PCI and SMC-8DF-PCI can be coextensively composited, and the boards of 16 pieces at the maximum can be synchronously operated)



PCI 100-pin Half Pitch Motion Controller 8ch Frame Data Store Limit Switch Input Synchronization control
Windows Diver



High Speed 8 Axes Motion Controller with high functionality

SMC-8DF-PCI

NEW

- Stepping and servo motors are easily controlled in familiar Windows environments
- Diverse control, i.e. Target Location, ORG return, Linear/Circular Interpolation, S-type Acceleration/Deceleration, Frame consecutive movement, Synchronous Control, etc.
- Every axis can store 1024 frames without applying any additional load on the CPU
- Encoders compatible with Differential output, TTL-level output, Open collector output are provided
- Override of Speed or Target Location in the movement is provided
- Supporting multiple axis in synchronization to arrange the timing of operation beginning and stopping (SMC-4DF-PCI and SMC-8DF-PCI can be coextensively composited, and the boards of 16 pieces at the maximum can be synchronously operated)



K-07

- Counter
- Lineup
- PCI Express
- PCI
- PC Card
- USB
- ISA
- Motion Controller
- Lineup
- PCI
- ISA

Model	SMC-4DF-PCI	SMC-8DF-PCI
Number of Channels	4	8
Output Specifications	2-pulse (CW/CCW) or Common-pulse (Pulse/Direction) or 90°Phase Difference pulse (Lead/Lag)	
Pulse output	Signal type	Differential Line Driver output
	Pulse Rate	0.1~6.5Mpps
	Rating	20mA
Encoder input	Signal Form	Single-phase (UP/DOWN/Z), Two-phase (A/B/Z)
	Output type	Differential, TTL-level, Open Collector
	Response	5MHz [Differential output, two-phase input, 4 twice, duty: 50%]; 3MHz [TTL-level output, two-phase input, 4 twice, duty: 50%]
	Frequency	1MHz [Open Collector output, two-phase input, 4 twice, duty: 50%]
	Resistance	150Ω (SW cut-able)
Limit Switch input	Signals	3 signals/ch (ORG, +LIM, -LIM)
	Signal type	Opto-isolated input (for sink current output)
	Input Resistance	4.7kΩ
General-purpose input	Signals	7 signals/ch
	Signal type	Opto-isolated input (for sink current output)
	Resistance	4.7kΩ
General-purpose output	Signals	3 signals/ch
	Signal type	Open Collector (Current sinking type) (software selectable positive/negative logic)
	Rating	50VDC; 100mA per channel, 300mA per axis
Controller Chip	PCL6045B [NPM] or equivalent	
Interrupts	1	
I/O Address	Any 128-byte boundary	
Power Consumption (Max.)	5VDC 800mA	5VDC 1600mA
Bus / Dimensions (mm)	PCI (32bit, 33MHz, 5V or 3.3V ^{*1}) / 176.41(L)×106.68(H)	
Connector	HDRA-EC100LFDT+ [HONDA Tsushin Kogyo] or equivalent	HDRA-E100W1LFDT1EC-SL+ [HONDA Tsushin Kogyo] or equivalent
	-	
Options	Accessories CCB-SMC2 ^{*2*} 3, EPD-100A ^{*3}	
	Cables / Connectors PCB100PS, PPCA100P	

Note: ^{*1}: +5V power must be supplied from PCI bus slot. (It does not work on a machine with a +3.3V power supply alone)
^{*2}: 100-pin 0.8mm pitch connector x1 → 37-pin D-SUBx4, 9-pin D-SUBx4
^{*3}: Requires use of optional cable PCB100PS
^{*4}: Each connector needs cables and accessories.

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

Motion Controller

Please see page Q-24 for optional accessories and cables/connectors, and page P-01 for supported software.

PCI **100-pin Half Pitch** **Motion Controller** **4ch** **Limit Switch Input**
Windows Diver

High Speed 4 Axes Motor Controller SMC-4DL-PCI

- Stepping and servo motors are easily controlled in familiar Windows environments
- Enable to control Consecutive Movement, Target Location, ORG return, etc. by Fixed Speed, Beeline Acceleration/Deceleration
- Encoders compatible with Differential output, TTL-level output, Open collector output are provided
- Pulse output of up to 9.8Mbps is supported
- Override of Speed or Target Location in the movement is provided

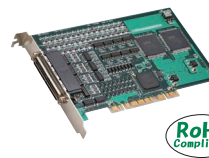


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- Remote Monitoring Solution
- Service & Products

PCI **100-pin Half Pitch** **Motion Controller** **8ch** **Limit Switch Input**
Windows Diver

High Speed 8 Axes Motor Controller SMC-8DL-PCI

- Stepping and servo motors are easily controlled in familiar Windows environments
- Enable to control Consecutive Movement, Target Location, ORG return, etc. by Fixed Speed, Beeline Acceleration/Deceleration
- Encoders compatible with Differential output, TTL-level output, Open collector output are provided
- Pulse output of up to 9.8Mbps is supported
- Override of Speed or Target Location in the movement is provided



Model	SMC-4DL-PCI	SMC-8DL-PCI
Number of Channels	4	8
Pulse output	Output Specifications	2-pulse (CW/CCW) or Common-pulse (Pulse/Direction) or 90° Phase Difference pulse (Lead/Lag)
	Signal type	Differential Line Driver output
	Pulse Rate	0.3~9.8Mbps
	Rating	-
Encoder input	Signal Form	Single-phase (UP/DOWN/Z), Two-phase (A/B/Z)
	Output type	Differential, TTL-level, Open Collector
	Response Frequency	5MHz (Differential output, duty: 50%); 3MHz (TTL-level output, duty: 50%); 1MHz (Open Collector output, duty: 50%)
Limit Switch input	Resistance	150Ω (SW cut-able)
	Signals	3 signals/ch (ORG, +LIM, -LIM)
General-purpose input	Signal type	Opto-isolated input (for sink current output)
	Resistance	4.7kΩ
General-purpose output	Signals	7 signals/ch
	Signal type	Opto-isolated input (for sink current output)
General-purpose output	Resistance	4.7kΩ
	Signals	3 signals/ch
General-purpose output	Signal type	Open Collector (Current sinking type) (software selectable positive/negative logic)
	Rating	50VDC; 100mA per channel, 300mA per axis
Controller Chip	PCL6143 [NPM] or equivalent	
Interrupts	1	
I/O Address	Any 128-byte boundary	
Power Consumption (Max.)	5VDC 700mA	5VDC 1200mA
Bus / Dimensions (mm)	PCI (32bit, 33MHz, 5V or 3.3V*) / 176.41(L)×106.68(H)	
Connector	HDRA-EC100LFDT+ [HONDA Tsushin Kogyo] or equivalent	HDRA-E100W1LFDT1EC-SL+ [HONDA Tsushin Kogyo] or equivalent
Options	Software	-
	Accessories	CCB-SMC2*2*3, EPD-100A*3
	Cables / Connectors	PCB100PS, PPCA100P

K-08

- Counter
- Lineup
- PCI Express
- PCI
- PC Card
- USB
- ISA
- Motion Controller
- Lineup
- PCI
- ISA

Note: *1: +5V power must be supplied from PCI bus slot. (It does not work on a machine with a +3.3V power supply alone)
 *2: 100-pin 0.8mm pitch connector x1 37-pin D-SUBx4, 9-pin D-SUBx4
 *3: Requires use of optional cable PCB100PS

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

Motion Controller

Please see page Q-24 for optional accessories and cables/connectors, and page P-01 for supported software.

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- Counter & Motion Controller**
- Serial Communication
- GPIB Communication
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- Software
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- Service & Products

PCI 96-pin Half Pitch Motion Controller 2ch Counter 2ch Frame Data Store Limit Switch Input Synchronization control CE

Windows Diver



High Speed 2 Axes Motion Controller SMC-2P(PCI)

- Stepping and servo motors are easily controlled in familiar Windows environments
- Able to store 1000 frames - each frame carrying required information for single positioning sequence (i.e. speed, acceleration/deceleration rate, target location)
- Able to control multiple axis (max. 32) in synchronization
- Supporting linear interpolation control on several axis

PCI 96-pin Half Pitch Motion Controller 4ch Counter 4ch Frame Data Store Limit Switch Input Synchronization control CE

Windows Diver



High Speed 4 Axes Motion Controller SMC-4P(PCI)

- Stepping and servo motors are easily controlled in familiar Windows environments
- Able to store 1000 frames - each frame carrying required information for single positioning sequence (i.e. speed, acceleration/deceleration rate, target location)
- Able to control multiple axis (max. 64) in synchronization
- Supporting linear interpolation control on several axis

K-09

Model	SMC-2P(PCI)	SMC-4P(PCI)	
Number of Channels	2	4	
Pulse output	Signal Specifications	2-pulse (CW/CCW) or Common-pulse (Pulse/Direction)	
	Output type	Open collector (software selectable positive/negative logic)	
	Pulse Rate	0.1~1Mpps	
	Rating	35VDC 100mA	
Encoder input	Signal Form	Single-phase (UP/DOWN/Z), Two-phase (A/B/Z)	
	Signal type	High-speed opto-isolated	
	Response Frequency	1MHz	
	Resistance	A,B: 220Ω / Z: 510Ω	
Limit Signal	Signals	3 signals/ch (ORG, +LIM, -LIM)	
	Signal type	Opto-isolated input (12~24VDC)	
General	Input Resistance	3kΩ	
	Signals	7 signals/ch	
	-purpose	Signal type: Opto-isolated (12~24VDC)	
General	Resistance	IN1, IN3~IN7: 3kΩ; IN2: 1.8kΩ	
	Signals	3 signals/ch	
	-purpose	Signal type: Open collector	
output	Rating	35VDC 100mA	
	Controller Chip	PCL5014 [NPM]	
Interrupts	-		
I/O Address	Any 16-byte boundary		
Power Consumption (Max.)	5VDC 800mA	5VDC 900mA	
Bus / Dimensions (mm)	PCI (32bit, 33MHz, 5V) / 176.41(L) x 106.68(H)		
Connector	PCR-E96LMD [HONDA Tsushin Kogyo] or equivalent		
Options	Software	-	
	Accessories	CCB-SMC1*1, EPD-96	
	Cables / Connectors	PCA96P, PCA96PS, PCB96P, PCB96PS, CN5-D96M	

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

Note:

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

Motion Controller

ISA

Model

3 Axes Motion Controller

SMC-3(PC)



SPECIFICATIONS

Number of Channels		3
Pulse output	Signal Specifications	2-pulse (CW/CCW) or Common-pulse (Pulse/Direction)
	Output type	Open collector (software selectable positive/negative logic)
	Pulse Rate	92~6Mpps
Limit Signal	Signals	4 signals/ch (ORG, +LIM, -LIM, Slowdown)
	Signal type	Opto-isolated (12~24VDC)
	Input Resistance	3.3kΩ
General -purpose input	Signals	2 signals/MPG (each MPG emergency stop option is jumper selectable)
	Signal type	Opto-isolated (12~24VDC)
	Resistance	3.3kΩ
General -purpose output	Signals	2 signals/ch
	Signal type	Opto-isolated Open collector
	Rating	35VDC 200mA
Controller Chip		MPG1020 × 3 [MYCOM]
Interrupts		Pulse output stop or stop error (Can use 4 of IRQ3~7, 9~12, 14 or 15)
I/O Address		4 port occupation
Power Consumption (Max.)		5VDC 600mA
Bus / Dimensions (mm)		ISA / 163.0(L) × 122.0(H)
Connector		37-pin D-type female connector
Options	Software	API-PAC(W32)
	Accessories	DTP-3A*1, DTP-4A*1, EPD-37A*1, EPD-37*1
	Cables / Connectors	PCA37P, PCB37P, PCA37PS, PCB37PS
	CE	○

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

Box-PCs

Panel-PCs

Flat Panel Displays

Silicon Disk Drives

Option

Box PCs & Panel PCs with Windows CE

Single Board Computer

Chassis / Backplane

Analogue I/O

Digital I/O

Counter & Motion Controller

Serial Communication

GPIB Communication

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Software

Accessories & Cables

Distributed Monitor & Control Network: F&EIT

Multi-Programmable Display

Wireless LAN

Remote Monitoring Solution

Service & Products

K-10

Counter

Lineup

PCI Express

PCI

PC Card

USB

ISA

Motion Controller

Lineup

PCI

ISA