NEW

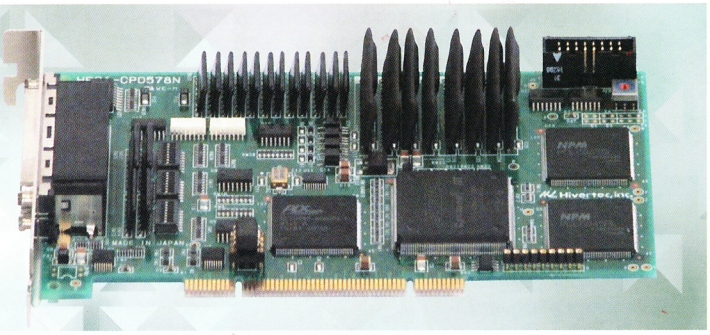
PCI BUS Motor Control

HPCI-CPD578N

Best use for those equipments; semiconductors/FDP manufactureings, inspections. and for robotics, automatic control equipments.

■Upper compatible of CPD578 (8-axes)

- Master axis controles the slave to follow
- Controllable gantry structured machine
- Acceptable 6.5Mcps Encoder freq.
- Capable of coordinate counter latch by the external signal, usefull for teaching and take in the coordinate count



Motions of circular and linear interpolation, positioning and continuous feed

Basic Specifications	■Basic specifications	8 axes control system (1) 8 axes positioning of Independent axses (2) 2 sets of 2−4 axes Linear interpolation (3) 2 sets of 2axes Circular interpolation
	■Position command Command signal Command range Command coordinate Position override	 Pulse-train output by differential driver −134,217,728～+134,217,727 [pulse] Relative coordinate command Changable the target position, only in positioning control
	■Speed control Speed range Constant speed control Speed override	 0.1 pps～6.5 Mpps (multiplication 0.1～100) 2 axes circular and linear interpolation: √2 control 3 axes linear interpolation: √3 control 4 axes linear interpolation: √3 control (1) Feed in constant speed, available in all cases (2) Accompanying acc/dec, available in case of positioning linear interpolation and continuous feed
	■Acceleration/ deceleration(acc/dec) control Automatic acc/dec control	(1) In case of positioning, linear interpolation, S-curve, partial s-cuve acc/dec and linear acc/dec are available (all are triangular drive, peak avoidable) Asymmetrical sloped acc/dec automatically down
Function Specifications	■acc/dec block feature	Capable of composing acc block, const speed block and dec block
	■Origin-returning cont. Kinds of origin point Origin search Origin extraction	 Sensor origin(OLS), Z-phase origin, End limit shared origin Available Available
	■Counter functions The counter set equipping with per axis	Command position counter (pulse count) Machine position counter (ENC count) Error counter General-purpose counter } capable of counter latch by the external sig.
	■Comparaters(comp)	Comp 1 & 2: For ±soft limit use Comp 3 to 5: For coordinate coincide to change speed or to start another axis or to trigger signal output
	■Encoder input	Differential input. 6.5Mcps Max. speed at ×4
	■Pulsar input	Select one input, for shared with encoder/pulsar
	■Backlash compensation	Capable of compensation by every turn of the direction
	■Positioning-control-start	Starts positioning by the input signal(PCS) during continuous feed
	■Machine interface	±ELS(end limit sensor), OLS(origin), DLS(dec sensor) and ENC input(a,b,z phase), all equipped every axes
	■Servo interface	Output: Command pulse, servo-errcounter-clear, servo-reset Input: Servo alarm, in-position signal all per axes
Others	Operating temperature BUS power supply	0℃ to 50℃, R/Humidity 20 to 90% (no condensation) 5V 0.4A and 3.3V 0.4A (typical value)
	BUS Dimensions	PCI BUS 175mm×107mm (short size)

<Specific feature of CPD578N>

CPD578N has realized new feature rather than CPD578: the master/slave function works in synchronously each other.

Parallel 2-axes control mode	**EX. ①**	Slave command pulse sync. with master command pulse
Appointed master/slave area operation	**EX. ②**	Slave follows master area determined by comparator. Slave synchronously start to move the area and end.
Slave extension mode	**EX. ③**	The master X and ordinary Z axis are interpolated. The axes U,V,···(subsidiary axis Z) synchronously can be moved with the Z. (up to 13axes available)
Master follow-up mode	**EX. ④**	The slave's command pulses are synchronizes with master's encoder input.(Slave follow up master's ENC)

Among the 8 axes, the X-axis is referred to as the master axis, and rest of 7 axes are as the slave axis.

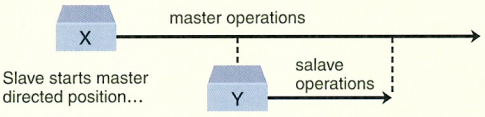
Followings are the typical instances.

1. The slave runs synchronously with the master (Parallel 2axes)

EX.① Gantry... X-X' (slave Y-axis) drives the double saddles. In case of homing, the mode will be changed to separate mode, and the fine adjustable movement available for the origin point.

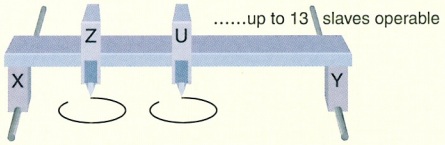
2. Appointed master/slave area operation

EX.② Synchronous movement in the appointed area...the slave Y starts from the comparator coincident area of the master X



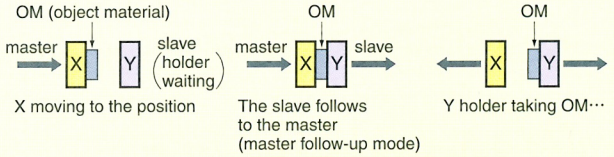
3. Multi-carriages interpolation (Slave extension mode)

EX.③ Gantry-type multiple carriages moves in the same way



4. Transfer an object material (OM) from X holder to Y, (Master follow-up mode)

EX.④



Hivertec, inc.
http://www.hivertec.co.jp/

HPCI-CPD578N

PCI BUS Motor Control

Software Guide

The following software is attached to the product free of charge.

●Device driver

Necessary for using the product on Windows PCs.
Compatible OS: Windows7, Vista, XP, 2000, NT4.0, 98SE
Contact us for any other OS including DOS, INtime, and QNX.

●Driver function

Provided by a low level input/output function which makes detailed settins and kinds of operations available.
Since it is provided by DLL, it is compatible to various development environments of Windows (VC,VB,VC#,BCB etc)

●Library function

A function for basic operations of motions (origin-returning, positioning, linear interporation, clrcurar interporation etc.)

●Sample program

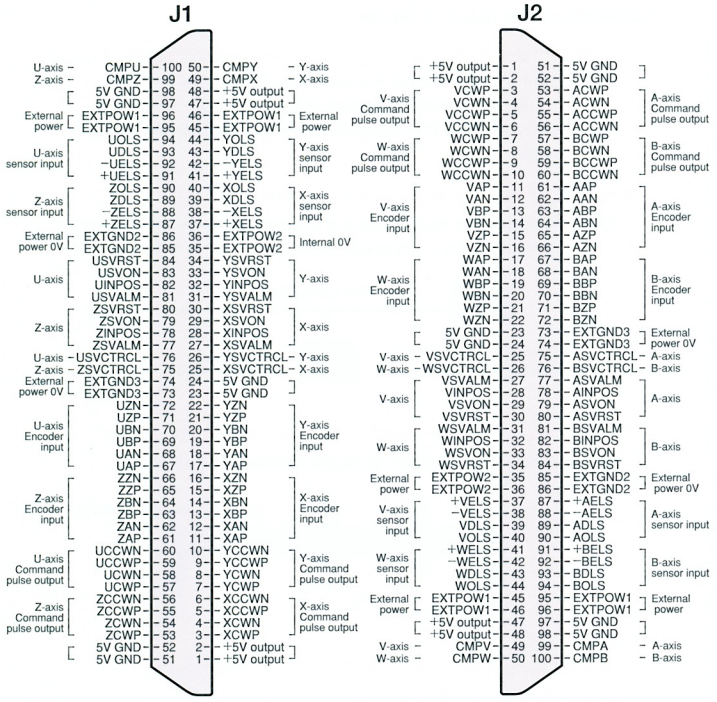
Sample software to provide explanations on attatched library function.
Sample codes of "Open/Close device", "Origin-returning", "Cont. feed", "Positioning", "Linear interporation", "Circular interporation", are included.
Development language: Microsoft Visual C++, Visual Basic, Visual C# (All attached as project files)

●"Try to move"

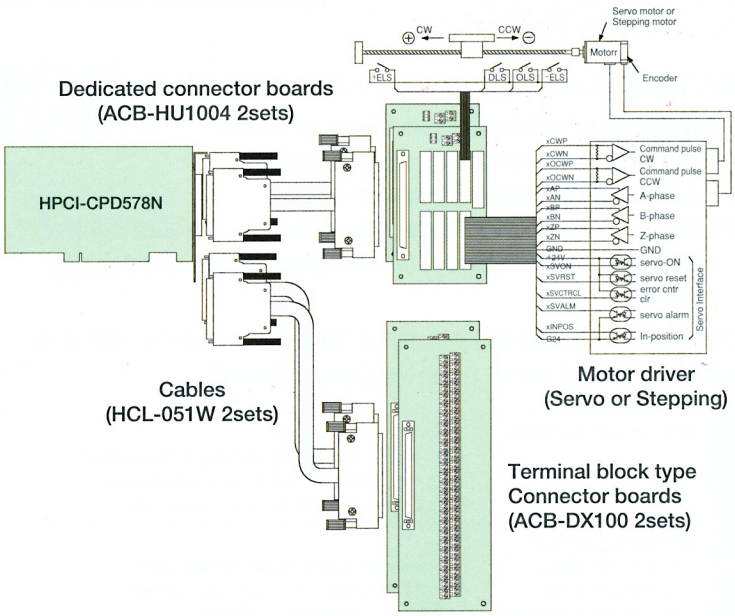
Software for operation checks.(With VC source code)
It can be used for checking input/output of sensors and servo I/F, or for studying the functions of the board.
Functions:

±continuos feed, ±relative positioning, origin-returning, command coordinate display, machine coordinate display (A/B phase counts), command speed display, input status display, servo-ON output, servoreset output and etc.

Connector Pin assigne

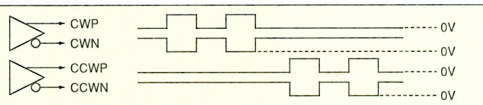


Connection



Input/output circuit

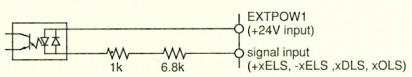
Command pulse output



Differential output driver (26LS31 compatible)
Pulse width: 200μS (In case of less 2.4Kpps)
50% duty (In case of 2.4Kpps−4.9Mpps) There may be less 50% duty existed depending on the speed factor.
50nS (In case of over 4.9Mpps)

Axis sensor and servo interface(input)

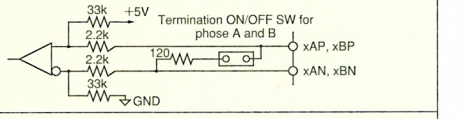
in side of CPD578N



Encoder input

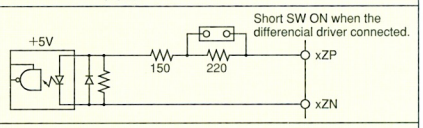
A and B phase

in side



Z phase

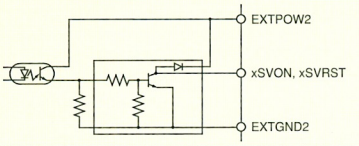
in side



Servo interface

Servo-on and servo reset

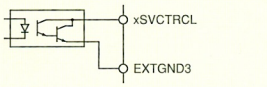
in side



Rated load voltage DC12V～DC24V
Load current Less 80mA/output (The total load current of 8bit outputs must be less than 150mA)

Clear servo-error counter

in side



Rated load voltage DC12V～DC24V
Load current Less 80mA /output

Safety Precations

●Read the instruction manuals thoroughly and carefully before using products in this catalog.
●Consult with our sales office before using products in this catalog in medical, transportation, combustion, or safety equipments or devices.

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