First Edition	2014, 7, 14
Revision	

High-Speed Motor Control Board for PCI

SMC-4DL-PCI

SMC-8DL-PCI

High-Speed Motor Control Board for PCI Express

SMC-4DL-PE

SMC-8DL-PE

Guide for Migration from the SMC-4P(PCI) / SMC-2P(PCI)

CONTEC Co., LTD

Table of Contents

1 Overview

The specifications of the I/O section of the SMC-4DL-PCI / SMC-8DL-PCI board and SMC-4DL-PE / SMC-8DL-PE board differ from those of the SMC-2P(PCI) / SMC-4P(PCI) board. To facilitate the use of the new boards to smoothly migrate from existing systems, we have listed the I/O specification differences and precautions regarding wiring below.

2 I/O SPECIFICATION DIFFERENCES AND WIRING METHODS

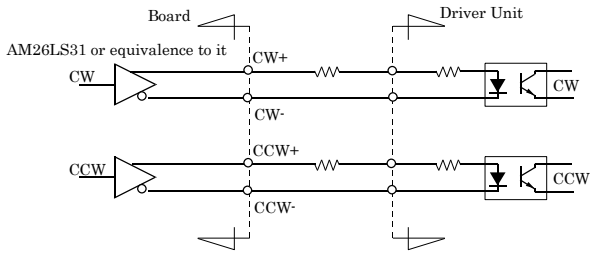
2.1 Pulse Output Section

The differences are shown in the following table.

Item	SMC-2P(PCI), SMC-4P(PCI)	SMC-4DL-PCI,SMC-8DLPCI, SMC-4DL-PE, SMC-8DL-PE
Output format	Open-collector output	Differential line-driver output
Speed range	0.1 - 1Mpps	0.3 - 9.8Mpps
Output format	Two-pulse method, common-pulse method	Two-pulse method, common-pulse method, 90-degree, phase-difference pulse method

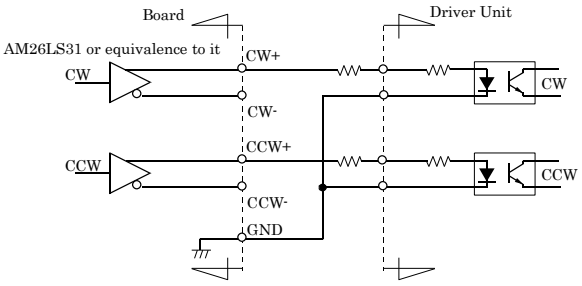
The methods to follow in connecting the pulse output circuit of the SMC-4DL-PCI/SMC-8DL-PCI and of the SMC-4DL-PE/SMC-8DL-PE to opto-coupler input are shown below. The pulse output section of the SMC-4DL-PC/SMC-8DL-PCI and of the SMC-4DL-PE/SMC-8DL-PE outputs a voltage of 2.5 V (minimum) during high-level output and a voltage of 0.5 V (maximum) during low-level output. Before connecting to the driver unit of the opto-coupler input, check the specifications of the driver unit to ensure that the pulse input section of the driver unit functions with the above voltages. Also, to prevent malfunctions caused by noise, perform the wiring as far from other signal lines and noise sources as possible.

Connection with opto-coupler input (when the driver unit is guaranteed to be connected to differential output)



Pulse output circuit (connected to opto-coupler input)

Connected to opto-coupler input



Pulse output circuit (connected to opto-coupler input)

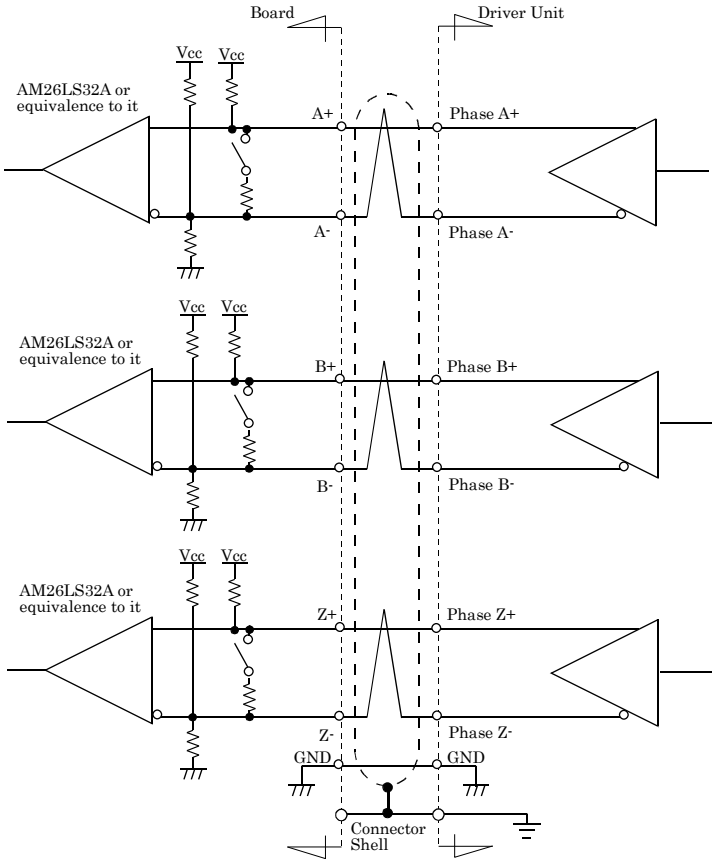
2.2 Encoder Input Section

The differences are shown in the following table.

Item	Specification	
	SMC-2P(PCI), SMC-4P(PCI)	SMC-4DL-PCI,SMC-8DLPCI, SMC-4DL-PE, SMC-8DL-PE
Input format	High-speed, opto-coupler-isolated input	Differential input
Response frequency	1MHz Max.	5MHz Max. (differential output), 3MHz Max. (TTL level output), 1MHz Max. (open-collector output)

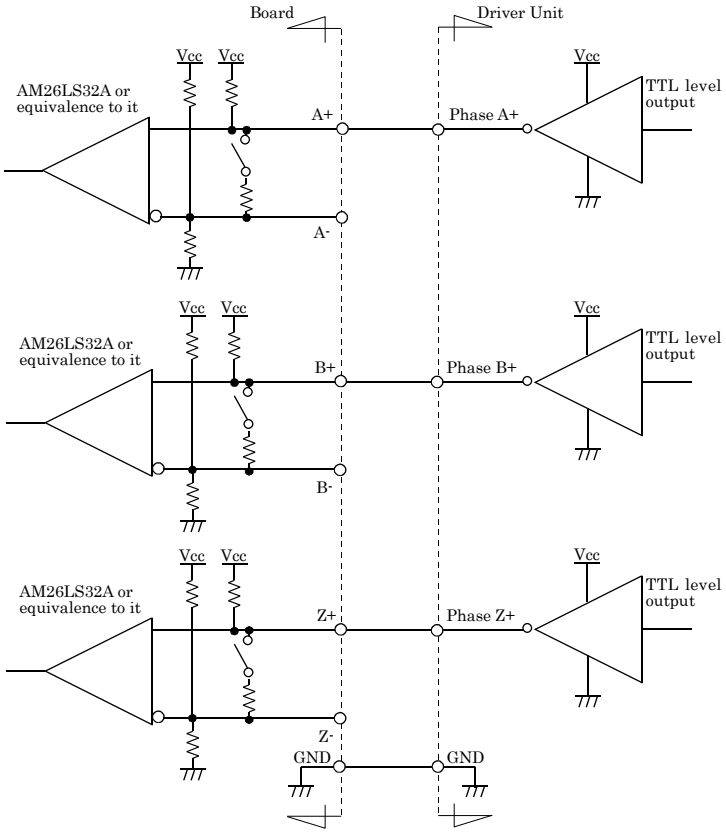
The methods to follow in connecting the encoder input circuit of the SMC-4DL-PCI/SMC-8DL-PCI and of the SMC-4DL-PE/SMC-8DL-PE to differential output, open-collector output, and TTL level output are shown below. When connecting to open-collector output or TTL level output, do not insert a terminator (terminal resistor). Doing so may lead to malfunctions, the generation of heat, or product failures. Also, use a cable 10 m or less in length during line-driver output, use a cable 3 m or less in length during open-collector output, and use a cable 1.5 m or less in length during TTL level output. To prevent malfunctions caused by noise, perform the wiring as far from other signal lines and noise sources as possible.

Connection with differential output



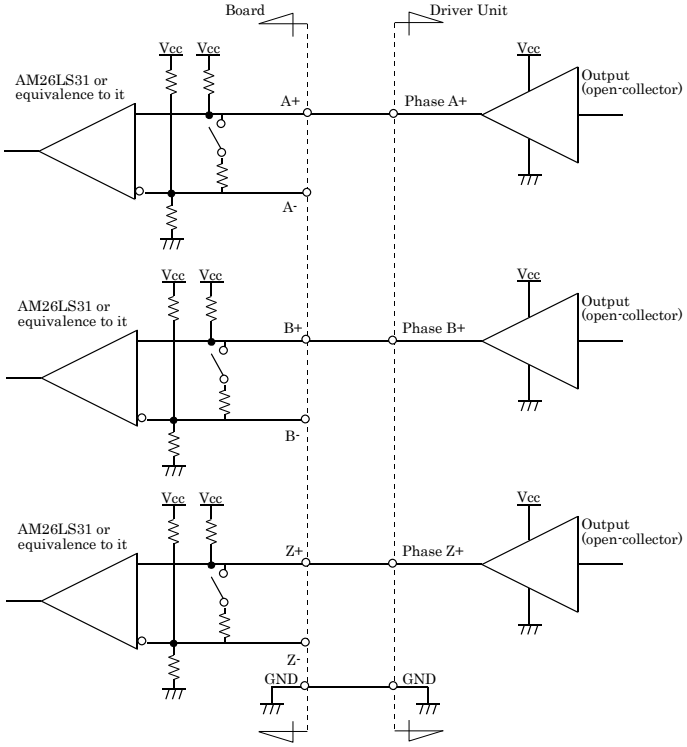
Encoder input circuit

Connection with TTL level output



Encoder input circuit

Connection with open-collector output



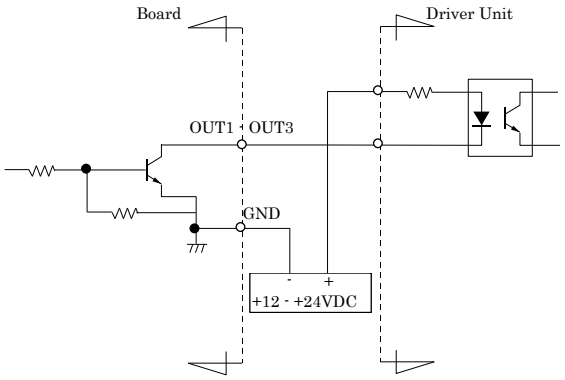
Encoder input circuit

2.3 General-purpose Output Section

The differences are shown in the following table.

Item	SMC-2P(PCI), SMC-4P(PCI)	SMC-4DL-PCI,SMC-8DLPCI, SMC-4DL-PE, SMC-8DL-PE
Response time	1μsec(Max.)	10μsec (with an input-side load of : 510Ω、 and +24 VDC)
Rated output current	Max. 100 mA per channel,	Max. 100 mA per channel, Max. 300 mA per axis

The method to follow in connecting the general-purpose output circuit of the SMC-4DL-PCI/SMC-8DL-PCI and of the SMC-4DL-PE/SMC-8DL-PE to opto-coupler input is shown below. The general-purpose output section uses open-collector output, so to drive this section, the ground wire of the power supply must be connected.



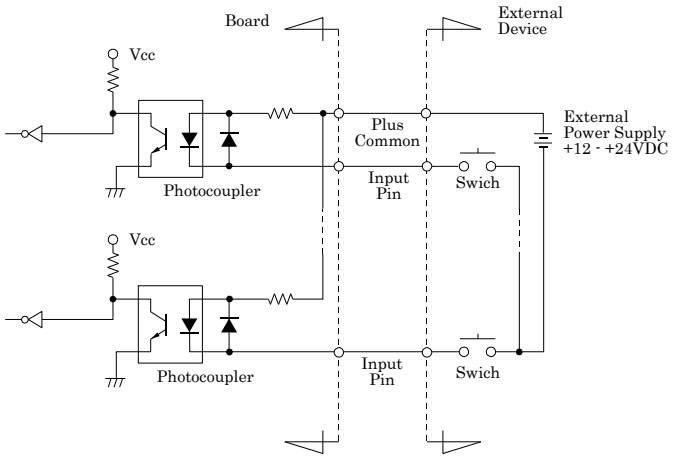
Output circuit

2.4 Limit Input/General-purpose Input Section

The differences are shown in the following table.

Item	SMC-2P(PCI), SMC-4P(PCI)	SMC-4DL-PCI,SMC-8DLPCI, SMC-4DL-PE, SMC-8DL-PE
Input format	High-speed, opto-coupler-isolated input	Opto-coupler input
Response time	1μsec Max. , 1msec Max.	200μsec Max.
Input resistance	1.8kΩ, 3kΩ	4.7kΩ
Input ON current	5.0mA or more, 3.4mA or more	2.0mA or more
Input OFF current	0.5mA or less, 0.16mA or less	0.16mA or less

The method to follow in connecting the limit input and general-purpose input circuit of the SMC-4DL-PCI/SMC-8DL-PCI and of the SMC-4DL-PE/SMC-8DL-PE to the switch circuit is shown below. Current-driven input is applied to the general-purpose input section by way of an opto-coupler, so an external power supply (+12 V to +24 V) is required to drive this section.



Limit input / general-purpose input / control input circuit

3 CONNECTOR PIN ASSIGNMENT

As a reference, the connector pin assignments of axis number 0 for the SMC-4DL-PCI/SMC-8DL-PCI and for the SMC-4DL-PE/SMC-8DL-PE as well as the corresponding connector pin assignments of axis number 0 for the SMC-2P(PCI)/SMC-4P(PCI) are shown in the following table.

Item	SMC-2P(PCI), SMC-4P(PCI)		SMC-4DL-PCI,SMC-8DL-PCI, SMC-4DL-PE, SMC-8DL-PE	
	Pin name	Pin No.	Pin name	Pin No.
Pulse Output Section			CW+	61
	PCW	B08	CW-	60
			CCW+	63
	DCCW	B09	CCW-	62
Encoder Input Section	A+	B49	A+	78
			A-	77
	B+	B46	B+	76
			B-	75
	Z+	B44	Z+	74
			Z-	73
General-purpose Output Section	OUT1	B10	OUT1	64
	OUT2	B11	OUT2	65
	OUT3	B12	OUT3	66
Limit Input Section	+LIM	B27	+LIM	91
	-LIM	B26	-LIM	90
	ORG	B28	ORG	92
General-purpose Input Section	IN1	B35	IN1	99
	IN2	B34	IN2	98
	IN3	B33	IN3	97
	IN4	B32	IN4	96
	IN5	B31	IN5	95
	IN6	B30	IN6	94
	IN7	B29	IN7	93
Plus common	P.COM	B36	P-COM	100
Ground	GND	B01	GND	59

4 DIFFERENCES BETWEEN THE CCB-SMC1 AND THE CCB-SMC2

The differences between the CCB-SMC1, an accessory dedicated for use with the SMC-2P(PCI)/SMC-4P(PCI), and the CCB-SMC2, an accessory dedicated for use with the SMC-4DL-PCI/SMC-8DL-PCI and with the SMC-4DL-PE/SMC-8DL-PE, are shown in the following table.

Item	CCB-SMC1	CCB-SMC2
Connector for the limit sensor	terminal block	9 Pin D-Sub connector
External dimension [mm]	105.0x230.0	105.0x190.0

The connector pin assignments of the CCB-SMC1 and CCB-SMC2 are shown in the following table.

Item	CCB-SMC1		CCB-SMC2	
	Pin name	Pin No.	Pin name	Pin No.
Pulse Output Section			CW+	37
	PCW-	18	CW-	18
			CCW+	36
	DCCW-	17	CCW-	17
Encoder Input Section	A+	32	A+	32
	A-	13	A-	13
	B+	31	B+	31
	B-	12	B-	12
	Z+	30	A+	30
	Z-	11	Z-	11
Encoder Input Section	OUT1	16	OUT1	16
	OUT2	15	OUT2	15
	OUT3	14	OUT3	14
Limit Input Section	+LIM	2	+LIM	2
	-LIM	1	-LIM	1
	ORG	3	ORG	3
General-purpose Input Section	IN1	29	IN1	29
	IN2	28	IN2	28
	IN3	27	IN3	27
	IN4	26	IN4	26
	IN5	25	IN5	25
	IN6	24	IN6	24
	IN7	23	IN7	23
Plus common	P.COM	20 - 22, 33 - 37	P-COM	20 - 22, 33 - 35
Ground	GND	4 - 10	GND	4 - 10

Generally speaking, the connector pin assignments are compatible, but the pulse output format and encoder input format are different, so check the conformity of the connection before performing wiring.

5 DRIVER OVERVIEW

A WDM (Windows Driver Model) driver is provided as the driver for the SMC-4DL-PCI/SMC-8DL-PCI and for the SMC-4DL-PE/SMC-8DL-PE.

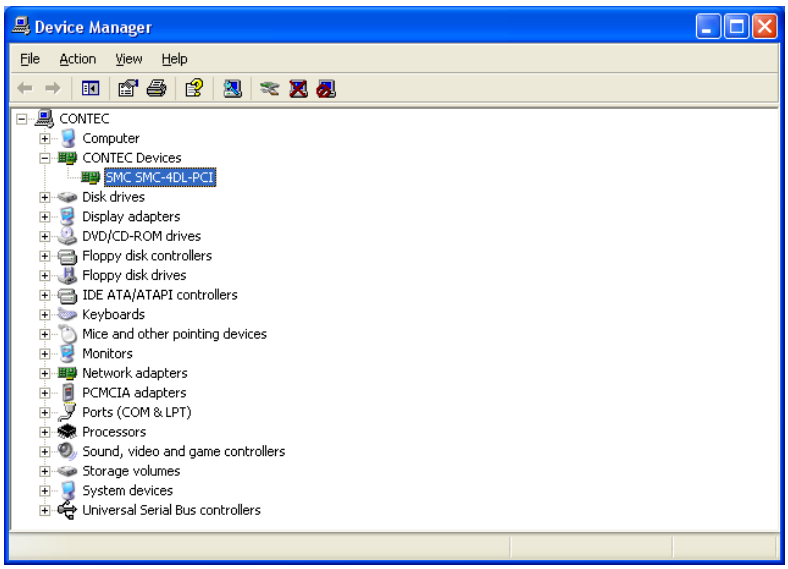
Because it has been confirmed that the old API-SMC (98/PC) driver does not support 64-bit versions of Windows, we are providing a WDM driver.

We have applied to this new driver based on the requests that we have received for the old SMC series. We have also cleaned up the driver's functional organization. To facilitate the use of the new driver to smoothly migrate from existing systems, we have listed the precautions and differences below.

6 DIFFERENCES BETWEEN API-SMC (98/PC) AND API-SMC (WDM)

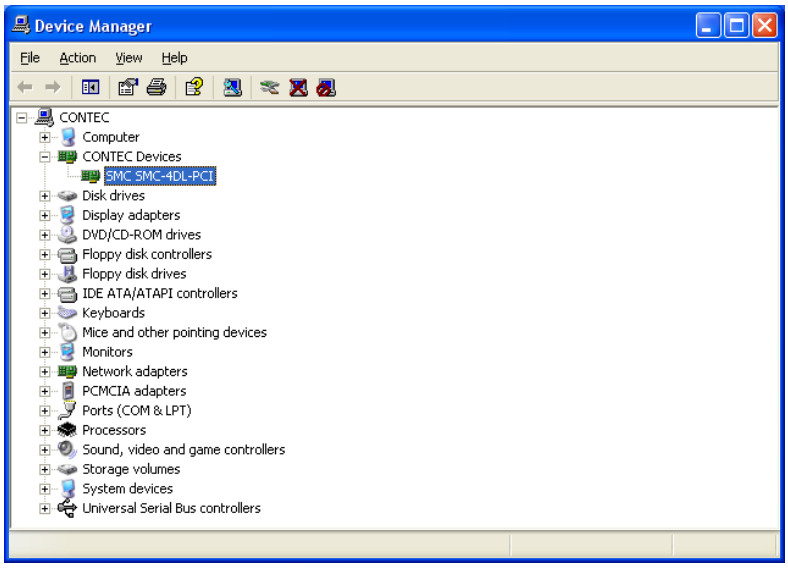
6.1 Differences in Operating the Driver from Device Manager

API-SMC (98/PC) was classified as a Multifunction Adapter.



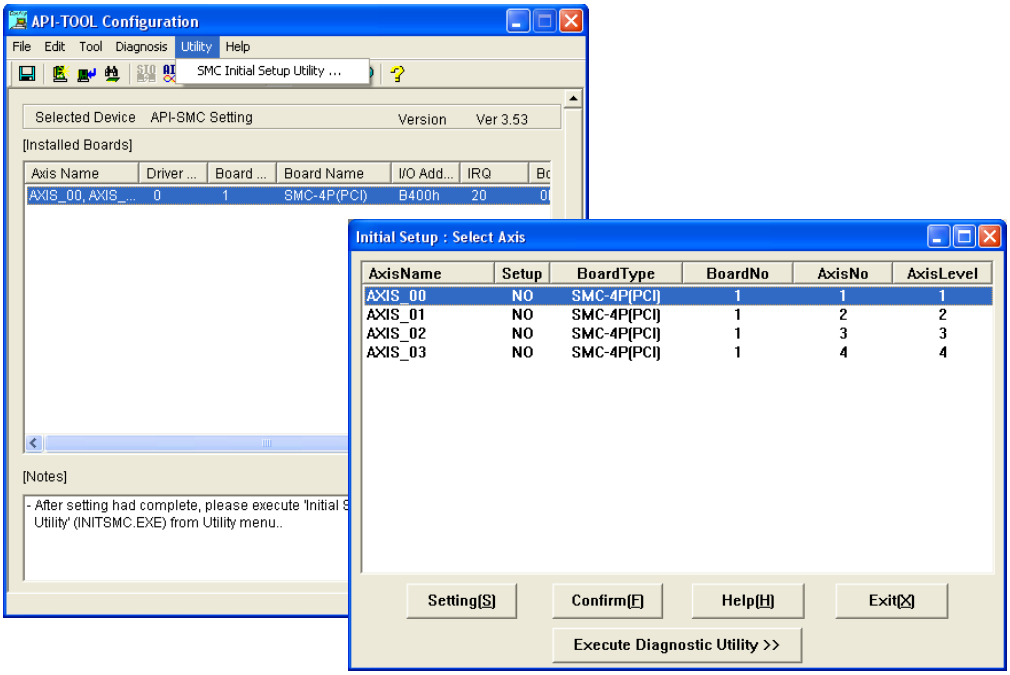
API-SMC (WDM) is classified as a new category: "CONTEC Devices".

This is the same classification as devices such as the API-AIO (WDM) analog device driver.

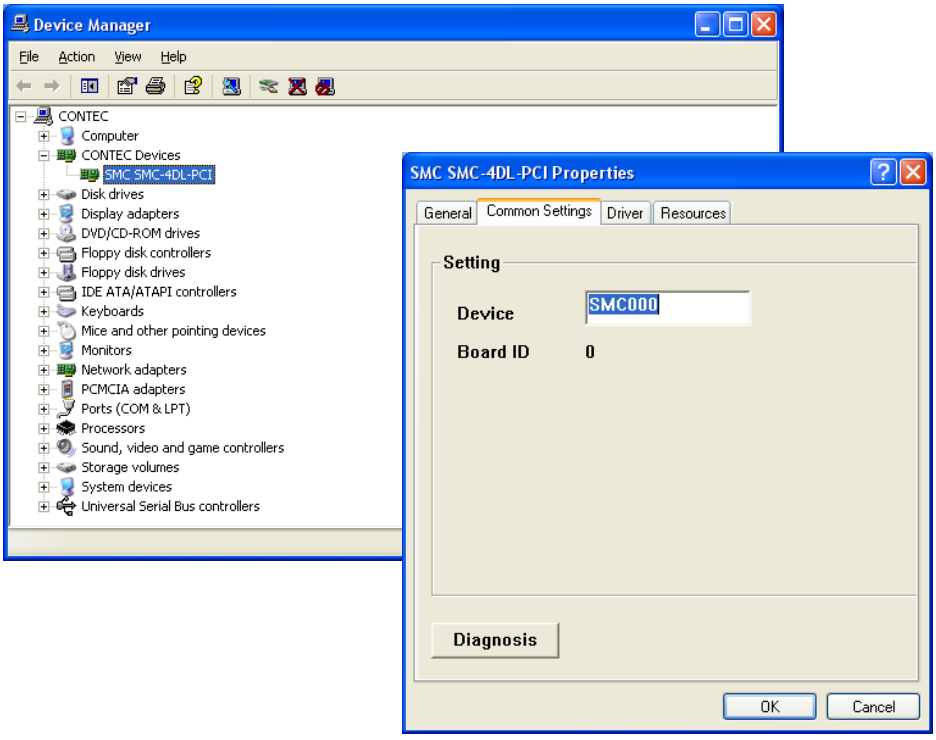


6.2 Device Name Definitions

With API-SMC (98/PC), "API-TOOL Configuration" was used to register devices, and the initial setup utility was used to set device names **for each axis.**



With API-SMC (WDM), the standard Device Manager of Windows is used to select a board, and then the device name **for the board** is set on the "Common Settings" tab of the "Properties" dialog box.



6.3 API Functions

With API-SMC (98/PC), each function is called with the device name (the name of the axis) passed as a parameter. However, with API-SMC (WDM), the device name (a character string) is used to initialize the device (SmcWInit), and then functions are called with the device handle returned from the initialization and with the axis number (a value).

Ex.>

API-SMC(98/PC)

```
Ret = SmcInit("AXIS_00");                                   // Initialize the axis.
                :
Ret =SmcSetAccelRate("AXIS_00",50);                         // Set the acceleration rate.
Ret = SmcSetReady("AXIS_00",SMC_JOG,SMC_CW);                // Set the start preparation parameters.
Ret = SmcMotionStart("AXIS_00");                            // Start the axis motor operation.
                :
Ret = SmcExit("AXIS_00");                                   // Perform axis end processing.
```

API-SMC(WDM)

```
short Id;
Ret = SmcWInit("SMC00", &Id);                   // Initialize the device and obtain a device handle.
Ret = SmcWSetPulseType( Id, AxisNo, PulseType, DirTimer);   // Specify the pulse output mode.
                :
Ret = SmcWSetInFilterType( Id, AxisNo, FilterType);// Set the ±EL, SD, ORG, ALM, and INP input
filters.
Ret = SmcWSetInitParam( Id, AxisNo);                        // Set the device with the initial setting
details.
                :
Ret =SmcWSetAccelRate(Id, AxisNo,50);                       //  Set the acceleration time.
Ret = SmcWSetReady( Id, AxisNo, CSMC_JOG, CSMC_CW); //  Set the start preparation parameters.
Ret = SmcWMotionStart( Id , AxisNo );                       // Start the axis motor operation.
                :
Ret = SmcWExit( Id );                                       // Perform device axis end processing.
```

6.4 Initial Setup Functions

With API-SMC (98/PC), the initial axis setup can only be performed with the initial setup utility, but an API function is available with which to perform this task with API-SMC (WDM).

After you execute various initial setup functions (such as SmcWSetPulseType), call the SmcWSetInitParam function to apply the setting details. The setting details will not be applied to the hardware until you execute this function.

After the computer (driver) starts, if you execute this function once, the setting details will be saved.

The functions that start with "SmcWGet" can be used to acquire the setting details.

You can also execute the "Setting" sample included with this driver to execute the initial setup.

Ex.>

API-SMC(WDM)

```
Ret = SmcWInit("SMC00", Id) ;
Ret = SmcWSetPulseType( Id, AxisNo, PulseType, DirTimer) ;    // Specify the pulse output mode.
        :   <Configure any other settings that you will use with values other than the default values.>
        :
Ret = SmcWSetInFilterType( Id, AxisNo, FilterType) ; // Set the ±EL, SD, ORG, ALM, and INP input filters.
Ret = SmcWSetInitParam( Id, AxisNo) ;
```

7 COMPARISON OF NEW AND OLD FUNCTIONS

The old function names have been changed into the new function names in a way that makes it easy to migrate from the old functions. Basically, "Smc" has been changed to "SmcW." However, note that there are some functions whose names have been changed even though their behavior is the same.

For functions such as SmcWXxxReady, the "Xxx" indicates that there are both Get and Set versions of the function.

7.1 Initialization Functions

The functions that can be used with the various boards are shown below.

(○: Usable, △: Usable under certain conditions or the operation or, parameters have changed, ×: Not usable.)

Old function name	SMC-2P(PCI), SMC-4P(PCI)	SMC-4DL-PCI, SMC-8DL-PCI, SMC-4DL-PE, SMC-8DL-PE	New function name
○Initialization Functions			
SmcInit	○	△	SmcWInit
SmcInitAll	○	×	
SmcExit	○	△	SmcWExit
SmcExitAll	○	×	
	×	○	SmcWGetErrorString

: Added function

SmcWInit : The function previously performed initialization in units of axes. This has been changed so that the function performs initialization in units of boards.

< API-SMC(98/PC) >

```
Ret =SmcInit("AXIS_00");
```

<API-SMC(WDM)>

```
Ret =SmcWInit( "SMC00", Id )
```

SmcWExit : The function previously performed end processing in units of axes. This has been changed so that the function performs end processing in units of boards.

<API-SMC(98/PC)>

```
Ret =SmcExit("AXIS_00");
```

<API-SMC(WDM)>

```
Ret = SmcWExit( Id );
```

SmcWGetErrorString : Change the error code details into a character string.

7.2 Basic Operation Setup Functions

The functions that can be used with the various boards are shown below.

(○: Usable, △: Usable under certain conditions or the operation or, parameters have changed,

×: Not usable.)

Old function name	SMC-2P(PCI), SMC-4P(PCI)	SMC-4DL-PCI, SMC-8DL-PCI, SMC-4DL-PE, SMC-8DL-PE	New function name
○Basic Operation Setup Functions			
SmcXxxMasterSlave	○	×	
SmcXxxReady	○	○	SmcWXxxReady
SmcXxxStartSpeed	○	○	SmcWXxxStartSpeed
SmcXxxTargetSpeed	○	○	SmcWXxxTargetSpeed
SmcXxxAccelRate	○	△	SmcWXxxAccelTime
SmcXxxDecelRate	○	△	SmcWXxxDecelTime
SmcXxxSSpeed	○	○	SmcWXxxSSpeed
SmcXxxStopPosition	○	○	SmcWXxxStopPosition
SmcXxxPreStopPosition	○	×	
SmcSetRevisePosition	○	×	
	×	○	SmcWSetResolveSpeed
SmcGetResolveSpeed	○	○	SmcWGetResolveSpeed
SmcGetMinSpeed	○	×	
SmcGetMaxSpeed	○	×	
SmcGetResolveRate	○	×	
SmcGetMinRate	○	×	
SmcGetMaxRate	○	×	

: Added function

SmcXxxMasterSlave : This function is no longer necessary because the master/slave concept is no longer necessary when synchronization starts/stops and during the interpolation operation.

Also, the following conditions are saved as the synchronization start conditions.

・For each board, only one synchronization operation combination can be used.

SmcXxxAccelTime : The setting details have been changed from acceleration to acceleration time.

<API-SMC(98/PC)>

Set the acceleration rate when changing the speed.

Ret =SmcSetAccelRate("AXIS_00",dblAccelRate); // The unit is [ms/KPPS].

<API-SMC(WDM)>

Set the acceleration time.

Ret = SmcWSetAccelTime(Id , AxisNo , AccelTime); // The unit is [ms].

SmcXxxDecelTime : The setting details have been changed from deceleration to deceleration time.

<API-SMC(98/PC)>

Set the deceleration rate when decelerating.

Ret =SmcSetDecelRate ("AXIS_00", dblDecelRate); // The unit is [ms/KPPS].

<API-SMC(WDM)>

Set the deceleration time.

Ret = SmcWSetDecelTime (Id , AxisNo , DecelTime); // The unit is [ms].

SmcXxxPreStopPosition : This is not supported.

SmcSetRevisePosition : The equivalent feature can be set with a separate initial setup function.

SmcWSetResolveSpeed : Previously this setting could only be made by using the initial setup utility, but access to it has been added as a function.

SmcGetMinSpeed : This is not supported.

SmcGetMaxSpeed : This is not supported.

SmcGetResolveRate : This function is no longer necessary because the concept of acceleration resolution is no longer used.

SmcGetMinRate : This function is no longer necessary because the concept of acceleration resolution is no longer used.

SmcGetMaxRate : This function is no longer necessary because the concept of acceleration resolution is no longer used.

7.3 Operation Status Acquisition Functions

The functions that can be used with the various boards are shown below.

(○: Usable, △: Usable under certain conditions or function name have changed,
×: Not usable.)

Old function name	SMC-2P(PCI), SMC-4P(PCI)	SMC-4DL-PCI, SMC-8DL-PCI, SMC-4DL-PE, SMC-8DL-PE	New function name
○Operation Status Acquisition Functions			
SmcXxxOutPulse	○	○	SmcWXxxOutPulse
SmcXxxCountPulse	○	○	SmcWXxxCountPulse
SmcGetBankNo	○	×	SmcWGetBankNo
SmcGetPulseSts	○	○	SmcWGetPulseStatus
SmcGetMoveSts	○	○	SmcWGetMoveStatus
SmcGetStopSts	○	△	SmcWGetStopStatus
SmcGetLimitSts	○	△	SmcWGetLimitStatus
	×	○	SmcWGetLatchOutPulse
	×	○	SmcWGetLatchCountPulse
	×	○	SmcWGetMoveSpeed
	×	○	SmcWGetZCount

: Added

SmcGetBankNo : This function is related to bank operation. This function is not supported by this board.

SmcGetStopSts : It is no longer possible to acquire the direction of the decelerated stop signal.

<API-SMC(98/PC)>

Ret =SmcGetStopSts (“AXIS_00”, &bStopSts); // Use the axis name to acquire the value.

<API-SMC(WDM)>

Ret = SmcWGetStopStatus (Id , AxisNo , &StopSts); // Use the device name and axis number to acquire the value.

SmcGetLimitSts : The SD signal of the limit status that can be acquired is common in both the positive and negative directions.

SmcWGetLatchOutPulse : Acquire the number of feedback output pulses latched by the LTC signal input.

SmcWGetLatchCountPulse : Acquire the encoder counter value latched by the LTC signal input.

SmcWGetMoveSpeed : Acquire the pulse output speed during operation.

SmcWGetZCount : Acquire the z-phase count during the standalone z-phase count operation and during the z-phase count operation that accompanies the origin return operation.

7.4 Motion Operation Functions

The functions that can be used with the various boards are shown below.

(○: Usable, △: Usable under certain conditions or the operation or, parameters have changed, ×: Not usable.)

Old function name	SMC-2P(PCI), SMC-4P(PCI)	SMC-4DL-PCI, SMC-8DL-PCI, SMC-4DL-PE, SMC-8DL-PE	New function name
○Motion Operation Functions			
SmcMotionStart	○	○	SmcWMotionStart
SmcMotionStartAll	○	×	
SmcMotionChange	○	△	SmcWMotionChange
SmcMotionStop	○	○	SmcWMotionStop
SmcMotionDecStop	○	○	SmcWMotionDecStop
SmcMotionBankStop	○	×	SmcWMotionBankStop
	×	○	SmcWSyncMotionStart

: Added functions

SmcWMotionStart : This function does not operate if SmcWSetInitParam has not been executed (this function can only be operated for the axis that SmcWSetInitParam was executed for)

SmcMotionStartAll : Use SmcWSetSync, the synchronization setup function, to set the axis synchronization, and then use SmcWSyncMotionStart to start synchronization. See the "SyncMove" sample.

SmcMotionChange : Previously, only the target speed could be changed, but now the target position can also be changed, so a parameter has been added to facilitate the selection of what to change.

SmcMotionBankStop : This function is related to bank operation. This function is not supported by this board.

SmcWSyncMotionStart : Start the operation of the axis that is the target of synchronization control and that is in the synchronization start wait state.

7.5 Control Signal Setup Functions

The functions that can be used with the various boards are shown below.

(○: Usable, △: Usable under certain conditions or the operation or, parameters have changed,

×: Not usable.)

Old function name	SMC-2P(PCI), SMC-4P(PCI)	SMC-4DL-PCI, SMC-8DL-PCI, SMC-4DL-PE, SMC-8DL-PE	New function name
○Control Signal Setup Functions			
SmcSetAlarmCLR	○	○	SmcWSetAlarmClear
SmcXxxLimitMask	○	△	SmcWXxxLimitMask
SmcXxxDigitalOut	○	○	SmcWXxxDigitalOut
SmcGetDigitalIn	○	○	SmcWGetDigitalIn
SmcXxxStepMode	○	×	
SmcXxxServoPower	○	×	
SmcXxxHoldOFF	○	○	SmcWXxxHoldOFF
SmcGetAlarmCode	○	○	SmcWGetAlarmCode
SmcSetCountCLR	○	△	SmcWSetErcOut

SmcWSetAlarmClear : This function can also be used as one-shot pulse output.

SmcXxxLimitMask : The only limits that can be masked are decelerated stop (SD) and alarm (ALM). To mask ±LIM, change the logic of the ±LIM limit.

SmcXxxStepMode : This function is not supported. Use the general-purpose output.

SmcXxxServoPower : This function is not supported. Use the general-purpose output.

SmcWSetErcOut : When the differential counter clear signal is set to level output, use this function to turn the signal ON/OFF.

7.6 Initial Setup Functions

The functions that can be used with the various boards are shown below.

(○: Usable, △: Usable under certain conditions or the operation or, parameters have changed, ×: Not usable.)

＊The items that are set with these new functions are those that were set with the initial setup utility of the old driver.

Old function name	SMC-2P(PCI), SMC-4P(PCI)	SMC-4DL-PCI, SMC-8DL-PCI, SMC-4DL-PE, SMC-8DL-PE	New function name
○Initial Setup Functions			
SmcXxxInitialParam	○	×	
	×	○	SmcWXxxPulseType
	×	○	SmcWXxxEncType
	×	○	SmcWXxxCtrlTypeOut
	×	○	SmcWXxxCtrlTypeIn
	×	○	SmcWXxxOrgLog
	×	○	SmcWXxxCtrlInOutLog
	×	○	SmcWXxxErcMode
	×	○	SmcWXxxErcAlmClearTime
	×	○	SmcWXxxOrgMode
	×	○	SmcWXxxSAccelType
	×	○	SmcWXxxInFilterType
	×	○	SmcWXxxSDMode
	×	○	SmcWXxxCounterMode
	×	○	SmcWXxxInitParam

: Added functions

SmcWXxxPulseType : Set the pulse output mode.

SmcWXxxEncType : Set the encoder input format.

SmcWXxxCtrlTypeOut : Set the control output signal format.

SmcWXxxCtrlTypeIn : Set the control input signal format.

SmcWXxxOrgLog : Set the origin input logic.

SmcWXxxCtrlInOutLog : Set the control I/O signal logic.

SmcWXxxErcMode : Set the differential counter clear signal.

SmcWXxxErcAlmClearTime : Set the differential counter clear/alarm clear signal width and the time of the differential counter clear signal OFF timer.

SmcWXxxOrgMode : Set the origin return format.

SmcWXxxSAccelType : Set whether S-curve acceleration/deceleration is used.

SmcWXxxInFilterType : Set the ±EL, SD, ORG, ALM, and INP input filters.

SmcWXxxSDMode : Set the operation to perform when SD signal input is received.

SmcWXxxCounterMode : Set the operation of the counter.

SmcWXxxInitParam : Apply the initial setup details to the board.

7.7 Expanded Operation Setup Functions

This group of functions is related to bank operation. The SMC-4DL-PCI/SMC-8DL-PCI and SMC-4DL-PE/SMC-8DL-PE do not have bank functions, so the following functions are not supported.

The functions that can be used with the various boards are shown below.

(○: Usable, △: Usable under certain conditions or the operation or, parameters have changed, ×: Not usable.)

Old function name	SMC-2P(PCI), SMC-4P(PCI)	SMC-4DL-PCI, SMC-8DL-PCI, SMC-4DL-PE, SMC-8DL-PE	New function name
○Expanded Operation Setup Functions			
SmcXxxBankReady	○	×	SmcWXxxBankReady
SmcXxxBankNumber	○	×	SmcWXxxBankNumber
SmcXxxBankDistance	○	×	SmcWXxxBankDistance
SmcXxxBankStartSpeed	○	×	SmcWXxxBankStartSpeed
SmcXxxBankTargetSpeed	○	×	SmcWXxxBankTargetSpeed
SmcXxxBankBaseSpeed	○	×	SmcWXxxBankBaseSpeed
SmcXxxBankTime	○	×	SmcWXxxBankTime
SmcXxxBankAccelRate	○	×	SmcWXxxBankAccelTime
SmcXxxBankDecelRate	○	×	SmcWXxxBankDecelTime
SmcXxxBankSSpeed	○	×	SmcWXxxBankSSpeed

7.8 Parameter Calculation Functions

This group of functions is related to bank operation. The SMC-4DL-PCI/SMC-8DL-PCI and SMC-4DL-PE/SMC-8DL-PE do not have bank functions, so the following functions are not supported.

The functions that can be used with the various boards are shown below.

(○: Usable, △: Usable under certain conditions or the operation or, parameters have changed, ×: Not usable.)

Old function name	SMC-2P(PCI), SMC-4P(PCI)	SMC-4DL-PCI, SMC-8DL-PCI, SMC-4DL-PE, SMC-8DL-PE	New function name
○Parameter Calculation Functions			
SmcCalcBankParam	○	×	
SmcCalcTimeRequired	○	×	

7.9 Event Functions

The functions that can be used with the various boards are shown below.

(○: Usable, △: Usable under certain conditions or the operation or, parameters have changed, ×: Not usable.)

Old function name	SMC-2P(PCI), SMC-4P(PCI)	SMC-4DL-PCI, SMC-8DL-PCI, SMC-4DL-PE, SMC-8DL-PE	New function name
○Event Functions			
SmcStopEvent	○	○	SmcWStopEvent
SmcBankEvent	○	×	SmcWBankEvent
SmcCountEvent	○	○	SmcWCountEvent

SmcBankEvent : This function is related to bank operation. This function is not supported by this board.