7.2.5 MtnSetPulseOut

Description

The MtnSetPulseOut function configures the pulse output settings.

Syntax

C

```
INT MtnSetPulseOut(
   HANDLE hDeviceHandle,
   WORD   wAxis,
   WORD   wMode,
   WORD   wConfig
);
```

Visual Basic

```
Declare Function MtnSetPulseOut Lib "FbiMtn.DLL"
(
   ByVal hDeviceHandle As Long,
   ByVal wAxis         As Integer,
   ByVal wMode         As Integer,
   ByVal wConfig       As Integer
) As Long
```

Delphi

```
function MtnSetPulseOut(
   hDeviceHandle: THandle;
   wAxis:         WORD;
   wMode:         WORD;
   wConfig:       WORD
) : Integer; stdcall; external 'FbiMtn.DLL';
```

Parameters

hDeviceHandle Specifies the device handle obtained by the MtnOpen function.

wAxis Specifies the axis to configure pulse output settings.

bit15 through bit4	bit3	bit2	bit1	bit0
Reserved	Axis U	Axis Z	Axis Y	Axis X

Axis X: axis 1
Axis Y: axis 2
Axis Z: axis 3
Axis U: axis 4

To specify the axis, specify 1 to the corresponding bit. Two or more axes can be specified.

Example: 0Fh should be specified to specify four axes of axis X through axis U.

wMode

Specifies an item.

Code	Value	Description
MTR_METHOD	0h	Pulse output mode
MTR_IDLING	1h	Idling method
MTR_FINISH_FLAG	3h	Motion completion flag
MTR_SYNC_OUT	4h	Timing of internal synchronous activation signal output

wConfig

Specifies the setting value.

<wMode = MTR_METHOD>
Specifies the pulse output mode.

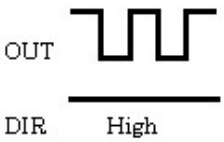
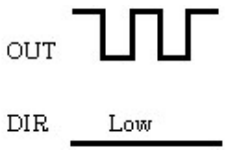
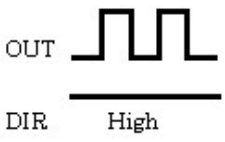
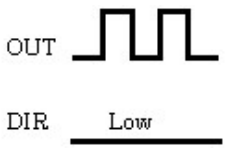
bit15 through bit5	bit4	bit3	bit2	bit1	bit0
Reserved	DUTY	WAIT	DIR	OUT	PULSE

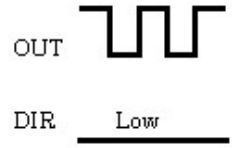
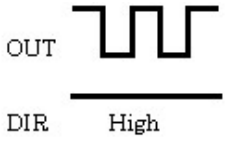
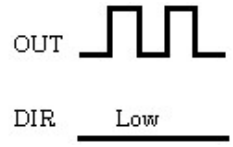
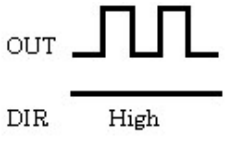
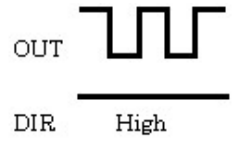
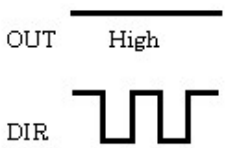
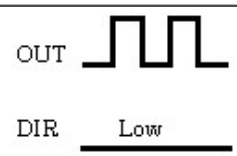
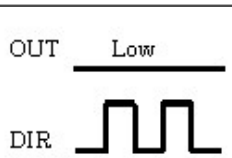
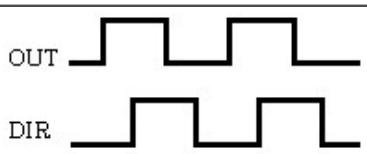
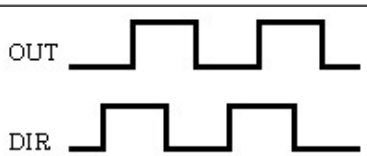
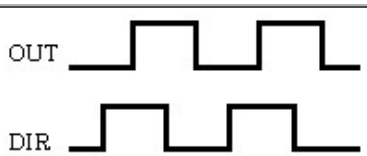
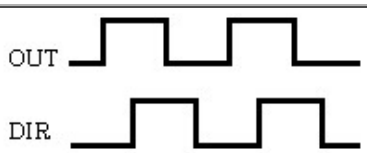
The default setting value is 1h. (Step/Dir mode, active low, no delay, 50% of duty cycle)

Bit		Description
bit15 through bit5		Reserved (Specify 0.)
bit4		Specifies pulse width.
	0	50% of duty cycle
	1	Automatic change of constant pulse width and constant duty cycle according to the velocity
bit3		Specifies a delay timer.
	0	No delay for starting motions when changing direction
	1	200 µs delay occurs when changing direction.
bit2 through bit0		See the output pulse specification below.

Note: *1 CW: Clockwise, CCW: Counter clockwise

＜Output Pulse Specification＞

bit2	bit1	bit0	CW(+) direction motion	CCW(-) direction motion
Pulse/Direction Method				
0	0	0		
0	1	0		

1	0	0		
1	1	0		
Two-Pulse Method				
0	0	1		
1	1	1		
90° Phase Difference Output Method This method is applicable to the operating system of Windows 2000 or later versions. Some products may not support this method. (*)				
0	1	1		
1	0	1		

<wMode = MTR_IDLING>
Specifies the number of idling pulses in the range of 0 through 6 pulses. The default setting value is 0 pulse.

<wMode = MTR_FINISH_FLAG>
Specifies the timing of pulse output completion. The default setting value is 0h. (MTR_PULSE_OUT)

Code	Value	Description
MTR_PULSE_OUT	0h	The motion completion flag is set when the pulse output is completed.
MTR_INP	1h	The motion completion flag is set by asserting the INP signal after the pulse output is completed.
MTR_PULSE_OFF	2h	The motion completion flag is set by stopping pulse output (it does not wait the completion of the later half of the last pulse cycle.)

Notes:

- The motion completion flag is the flag of bit5. It is the retrieved motion status

（MTR_BUSY）by the MtnGetStatus function.

- When the motion completion flag is configured during motor operation, the setting is enabled after the motor operation is completed and the next motion starts.

<wMode = MTR_SYNC_OUT>
Specifies the timing of internal synchronous activation signal. The default setting value is 0h. (MTR_SYNC_OFF)

Code	Value	Description
MTR_SYNC_OFF	0h	Internal synchronous activation signal output is not executed when the comparison condition is satisfied.
MTR_COMP1	1h	Internal synchronous activation signal output is executed when the comparison condition 1 is satisfied.
MTR_COMP2	2h	Internal synchronous activation signal output is executed when the comparison condition 2 is satisfied.
MTR_COMP3	3h	Internal synchronous activation signal output is executed when the comparison condition 3 is satisfied.
MTR_COMP4	4h	Internal synchronous activation signal output is executed when the comparison condition 4 is satisfied.
MTR_COMP5	5h	Internal synchronous activation signal output is executed when the comparison condition 5 is satisfied.
MTR_ACC_START	8h	Internal synchronous activation signal output is executed when the acceleration starts.
MTR_ACC_FINISH	9h	Internal synchronous activation signal output is executed when the acceleration is completed.
MTR_DEC_START	Ah	Internal synchronous activation signal output is executed when the deceleration starts.
MTR_DEC_FINISH	Bh	Internal synchronous activation signal output is executed when the deceleration is completed.

* Refer to "Start-up by the Internal Synchronous Signal".

Return Value

The MtnSetPulseOut function returns 0 if the process is successfully completed. Otherwise, this function returns other codes. Please refer to the error codes.

Comments

- The pulse output method configured with this function must be the same as the configuration of your motor driver. Improper configuration may

cause malfunctions.

- This program can configure the axes of specified number synchronously. The synchronous configuration is applicable only when the data are same.
  The program cannot synchronously configure different data for multiple axes.

Examples

C

```
HANDLE hDeviceHandle;
int    nRet;

hDeviceHandle = MtnOpen("FBIMTN1",
MTR_FLAG_NORMAL );
.
.
.
nRet = MtnSetPulseOut( hDeviceHandle, 0x0f,
MTR_METHOD, 0x00 );
```

Visual Basic

```
Dim lpszName As String
Dim hDeviceHandle  As Long
Dim nRet As Long

lpszName = "FBIMTN1" & Chr( 0 )
hDeviceHandle = MtnOpen( lpszName,
MTR_FLAG_NORMAL )
.
.
.
nRet = MtnSetPulseOut( hDeviceHandle, &HF,
MTR_METHOD, &H0 )
```

Delphi

```
var
  lpszName: String;
  hDeviceHandle: THandle;
  nRet: Integer;
  nRet: Integer;

  lpszName :='FBIMTN1';
  hDeviceHandle := MtnOpen( lpszName,
  MTR_FLAG_NORMAL );
  .
  .
```

```
.
nRet := MtnSetPulseOut( hDeviceHandle, $0f,
MTR_METHOD, $00 );
```

Configure the pulse output mode of axis X through axis U on the board specified by hDeviceHandle. The following table is shown the settings.

Mode	CW/CCW mode
Logic	The OUT signal is active low.
Direction	The DIR signal goes high level, rotate the axis with CW direction.
Delay Timer	No delay for starting motions when changing direction.
Pulse Width	50% of duty cycle

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