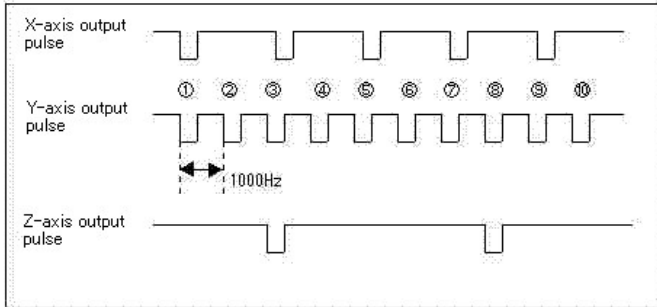


## Continuous Linear Interpolation 1

Configurable number of axes	Two to four axes in the same controller can be configured.
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Description	Operates the linear interpolation motion by specifying the moving quantity for multiple axes in the same controller. <b><u>The motion operates continuously in the ratio of configured moving quantity.</u></b>  As it operates the linear interpolation motion for up to 4 axes in a controller, three-dimensional interpolation motion is also supported.																																	
Comments	1	Configure the moving velocity to the <a href="#">interpolation control axes</a> , and configure the moving quantity (output pulse count) of all the interpolation axes. The moving direction depends on the code of the moving quantity.																																
	2	The axis whose moving velocity is largest is the <a href="#">master axis</a> and the others are <a href="#">slave axes</a> .																																
	3	The interpolation motion cannot be operated for the specified axis.																																
	4	When acceleration and deceleration is performed, the velocity is decelerated to the start-up velocity or the deceleration stops by inputting the <a href="#">deceleration signal (SD signal)</a> of moving direction.																																
	5	The deceleration stops or immediately stops by the <a href="#">stop signal (EL signal)</a> input of moving direction.																																
	6	The deceleration stops or immediately stops by the alarm signal (ALM signal) input.																																
	7	If any one axis in the interpolation axes stops in error, all interpolation axes stops as well. The interrupt at the error stop is generated for the axis which stops in the error.																																
	8	"Constant velocity start", "Acceleration and deceleration start", and "Constant velocity-deceleration start" can be selected as a start operation.																																
	9	Even if the <a href="#">origin signal (ORG signal)</a> is input, it is disregarded.																																
	10	The <a href="#">synthesis rate constant control</a> is available.																																
	11	<b><u>Specify the "output pulse cycle completion " to the <a href="#">pulse output completion timing</a>.</u></b>																																
Configuration Example	The continuous linear interpolation 1 operates in the following configuration. It outputs pulse consecutively in the following ratio; X-axis : Y-axis : Z-axis = 5 : 10 : 2.																																	
	<table><tr><td></td><td>X-axis</td><td>Y-axis</td><td>Z-axis</td></tr><tr><td>Mode</td><td>Continuous linear interpolation 1</td><td>Continuous linear interpolation1</td><td>Continuous linear interpolation1</td></tr><tr><td>Synthesis rate constant control</td><td>OFF</td><td>OFF</td><td>OFF</td></tr><tr><td>Moving pulse count</td><td>5</td><td>10</td><td>2</td></tr><tr><td>Moving velocity</td><td colspan="3">1000pps</td></tr><tr><td>Startup motion</td><td>Constant velocity start</td><td>Constant velocity start</td><td>Constant velocity start</td></tr><tr><td>Interpolation control axis</td><td>○</td><td></td><td></td></tr><tr><td>Master/slave axis</td><td><a href="#">slave axis</a></td><td><a href="#">master axis</a></td><td><a href="#">slave axis</a></td></tr></table> The pulses are output in the following timing. 				X-axis	Y-axis	Z-axis	Mode	Continuous linear interpolation 1	Continuous linear interpolation1	Continuous linear interpolation1	Synthesis rate constant control	OFF	OFF	OFF	Moving pulse count	5	10	2	Moving velocity	1000pps			Startup motion	Constant velocity start	Constant velocity start	Constant velocity start	Interpolation control axis	○			Master/slave axis	<a href="#">slave axis</a>	<a href="#">master axis</a>
	X-axis	Y-axis	Z-axis																															
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Master/slave axis	<a href="#">slave axis</a>	<a href="#">master axis</a>	<a href="#">slave axis</a>																															
	The following table shows the configurations of X, Y, and Z axes.																																	
	<table><tr><td>Configured axis</td><td>X-axis</td><td>Y-axis</td><td>Z-axis</td></tr><tr><td>Motion</td><td>Continuous linear interpolation 1</td><td></td><td></td></tr></table>			Configured axis	X-axis	Y-axis	Z-axis	Motion	Continuous linear interpolation 1																									
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Motion	Continuous linear interpolation 1																																	

Acceleration and deceleration	Linear acceleration and deceleration		
Initial rate	100		
Operating speed	1000		
Acceleration rate	5460 (100 ms)		
Deceleration rate	5460 (100 ms)		
Slow-down point	0		
S-curve range at acceleration			
S-curve range at deceleration			
Moving quantity	500	1000	200
Frequency scale	299	299	299

The unit for velocity is [pps].

The above table shows the register values set to the controller IC on the board.

Refer to the velocity calculation method for the relation among the register value, velocity, and acceleration and deceleration speed.

#### Multi-Function DLL

```

HANDLE hDeviceHandle;
int nRet;
MTNLINE Line;

hDeviceHandle = MtnOpen("FBIMTN1", MTR_FLAG_NORMAL );
:

Line.wAxis = 0x07;
Line.wClock = 299;
Line.wMode = MTR_LINE;
Line.wAccMode = MTR_ACC_NORMAL;
Line.fLowSpeed = 100;
Line.fSpeed = 1000;
Line.dwAcc = 100;
Line.dwDec = 100;
Line.fSAccSpeed = 0;
Line.fSDecSpeed = 0;
Line.lStep[0] = 500;
Line.lStep[1] = 1000;
Line.lStep[2] = 200;

nRet = MtnSetMotionLine( hDeviceHandle, MTR_LINE_NORMAL, &Line );
if(nRet != MTR_ERROR_SUCCESS) return -1;

nRet = MtnStartMotion( hDeviceHandle, 0x07, MTR_CONST, MTR_LINE );

※Operating continuous linear interpolation 1 motion for the motors of X, Y, Z axes in hDeviceHandle.
```