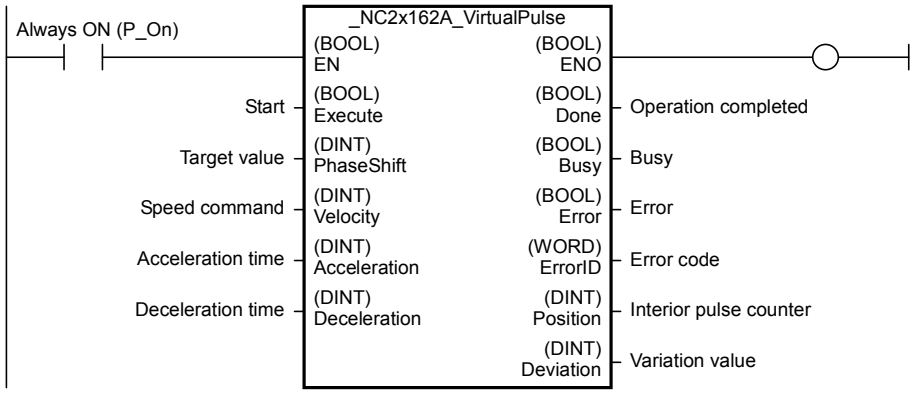
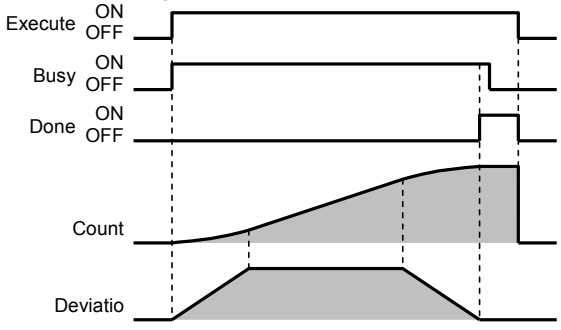
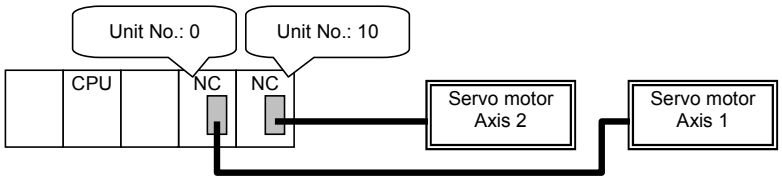
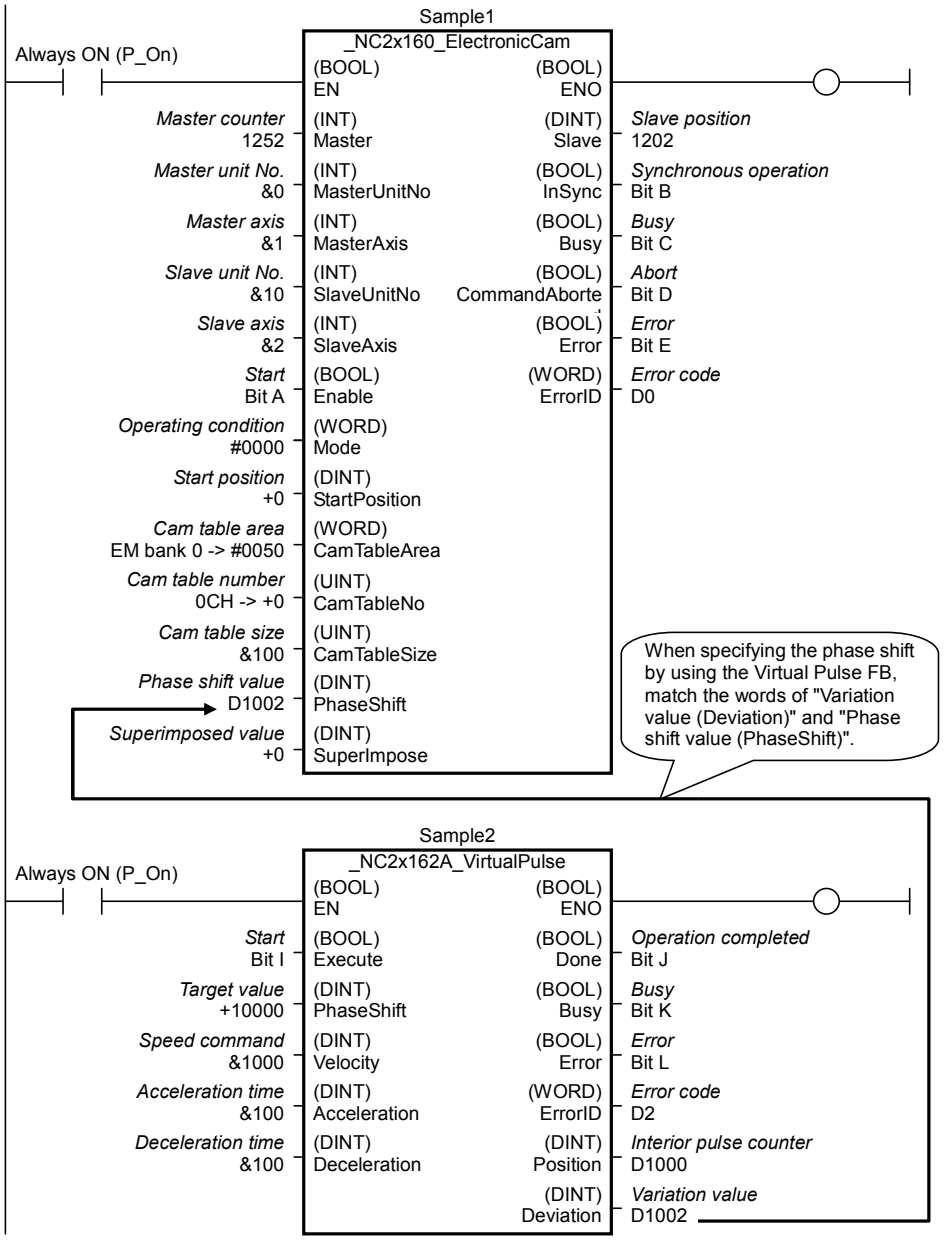
NC2x 162A	Virtual Pulse _NC2x162A_VirtualPulse

Basic function	Executes the virtual pulse output of trapezoidal acceleration/deceleration.
Symbol	
File name	Lib\FBL\omronlib\PositionController\NC2x_NC2x162A_VirtualPulse10.cxf
Applicable models	Position Control Units: CJ1W-NC214/234/414/434 CPU Unit: CJ2H-CPU**(-EIP) Version 1.1 or later CX-Programmer: Version 8.1 or later
Languages in function block definitions	Ladder programming
Conditions for usage	・When using this FB, enable “Synchronous Unit Operation” of the CJ2-CPU unit, and place the instance of this FB to the synchronous interrupt task. ・For the master axis counter value and the slave axis position command value, use the synchronous data refresh area. ・Refer to “Related Manuals” for details.
Function description	・This FB make smoother ratio than “_NC2x162_VirtualPulse”. On the other hand, the memory size, program size and calculation time increased. ・When "Start (Execute)" turns ON, the virtual pulse output is started using the specified "Target value (Position)", "Speed command (Velocity)", "Acceleration time (Acceleration)" and "Deceleration time (Deceleration)". ・"Output completed (Done)" is turned ON when the virtual pulse output for the FB has been completed. This flag will not be turned ON if the positioning operation is canceled because another operation has been started from a different instance, for a deceleration stop, or because an error has occurred. ・"Busy flag (Busy)" will be set when the "Start (Execute)" is turned ON. "Busy flag (Busy)" will be reset when any of "Output completed (Done)", or "Error flag (Error)" is turned ON. Even if an error occurs when the input variable is out of the range, etc., "Busy flag (Busy)" will be set for at least one cycle. ・"Error flag (Error)" will be turned ON and "Error code (ErrorID)" will be output if an error occurs for the FB. This will not occur for error in other FBs or other instances of the FB. ・These statuses (Done/Error/ErrorID) will be reset when "Start (Enable)" turns OFF. If "Start (Enable)" turns OFF before the positioning operation has been completed, the status will be set for at least one cycle when corresponding conditions have occurred. 
Kind of FB definition	Always execution type. Connect the EN input to the Always ON Flag (P_On). The same instance cannot be used in two or more places.
FB precautions	・This FB is aimed at supporting the phase shift and superimposed operation of synchronous FBs. The following are the related synchronous FBs: _NC2x160_ElectronicCam, _NC2x161_ElectronicShaft, _NC2x163_TrailingSync, _NC2x164_LinkOperation
EN input condition	・Connect the EN input to the Always ON Flag (P_On). If another bit is connected to EN, the FB outputs will be held when the connected bit turns OFF.
Restrictions Other	・This FB acquires the operation cycle (0.5 to 10.0ms) from auxiliary area allocations and built-in I/O allocations of the CPU when each instance starts for the first time.

Application example

Turning OFF bit A and then ON will perform cam operation for the axis 2 of the Position Control Unit of unit number 10, with the axis 1 of the Position Control Unit of unit number 0 as the master axis.
Turning OFF bit I and then ON will perform phase shift for the slave axis of “Sample 1”.





Related manuals

CJ-series Position Control Unit Operation Manual (W477)
10 Synchronous Unit Operation Function

■Variable Tables

Input Variables

Name	Variable name	Data type	Default	Range	Description
EN	EN	BOOL			1(ON): FB started 0(OFF): FB not started
Start	Execute	BOOL	0(OFF)		↑: Starts virtual pulse
Target value	Position	DINT	+0	-2147483648 to +2147483647	Specify the target value. Unit: Command units.
Speed command	Velocity	DINT	+1	+1 to +1000000	Specify the target speed. Unit: Command units/s.
Acceleration time	Acceleration	DINT	+0	+0 to +250000	Specify the acceleration time. Unit: ms.
Deceleration time	Deceleration	DINT	+0	+0 to +250000	Specify the deceleration time. Unit: ms.

Output Variables

Name	Variable name	Data type	Range	Description
ENO	ENO	BOOL		1(ON): FB operating normally 0(OFF): FB not started / FB ended with error
Output completed	Done	BOOL		Turns ON when the peration has been completed.
Busy flag	Busy	BOOL		Turns ON when FB is in the process.
Error flag	Error	BOOL		Turns ON when an error has occurred in the FB. Refer to "Error code (ErrorID)" for details.
Error code	ErrorID	WORD		Returns the error code when an error occurred in the FB. Refer to "■Error code list" for details.
Interior pulse counter	Count	DINT		Outputs the present value of the interior pulse counter.
Variation value	Deviation	DINT		Outputs the variation value of "Interior pulse counter (Count)" per one cycle.

■Error code list

Error name	Error code	Probable cause	Clearing method
Input variable out of range	#0001	The value of input variable of this FB is out of valid range.	Set the value of input variable within the specified range.
Synchronous disabled	#01F0	The synchronous unit operation is disabled.	Enable the synchronous unit operation by the PLC system setting.

■Version History

Version	Date	Contents
1.00	2011.07.	Original production.

■Note

This document explains the function of the function block.
It does not provide information of restrictions on the use of Units and Components or combination of them. For actual applications, make sure to read the operation manuals of the applicable products.