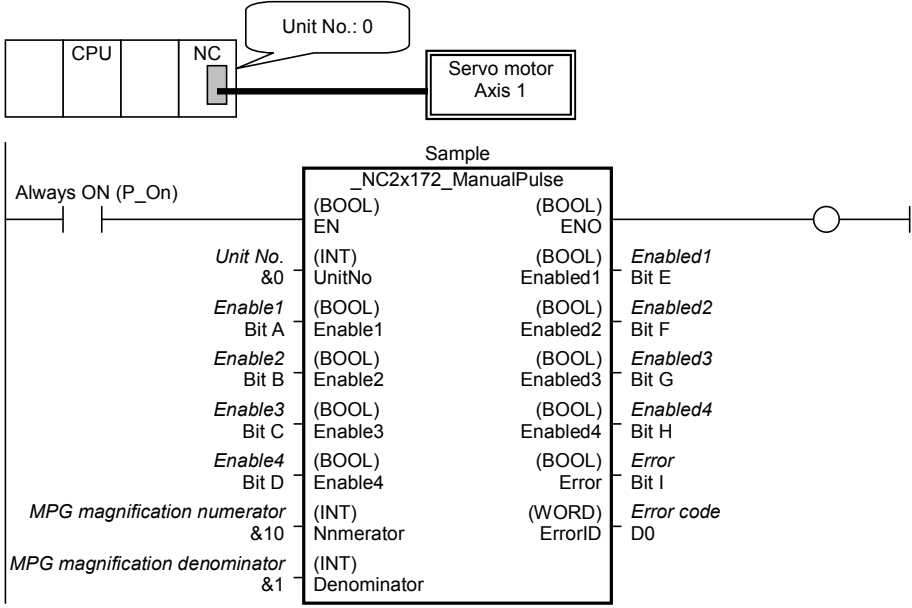


<b>NC2x 171</b>	<b>Manual Pulses Output _NC2x171_ManualPulse</b>
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<b>Basic function</b>	Operates the axis using manual pulses (MPG).																		
<b>Symbol</b>	<div style="display: flex; align-items: center;"> <div style="flex: 1;"> <p>Always ON (P_On)</p> <p>Unit No.</p> <p>Axis 1 Enable</p> <p>Axis 2 Enable</p> <p>Axis 3 Enable</p> <p>Axis 4 Enable</p> <p>MPG magnification numerator</p> <p>MPG magnification denominator</p> </div> <div style="flex: 2; border: 1px solid black; padding: 5px; margin: 0 10px;"> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">_NC2x172_ManualPulse</td> <td></td> </tr> <tr> <td>(BOOL) EN</td> <td>(BOOL) ENO</td> </tr> <tr> <td>(INT) UnitNo</td> <td>(BOOL) Enabled1</td> </tr> <tr> <td>(BOOL) Enable1</td> <td>(BOOL) Enabled2</td> </tr> <tr> <td>(BOOL) Enable2</td> <td>(BOOL) Enabled3</td> </tr> <tr> <td>(BOOL) Enable3</td> <td>(BOOL) Enabled4</td> </tr> <tr> <td>(BOOL) Enable4</td> <td>(BOOL) Error</td> </tr> <tr> <td>(INT) Numerator</td> <td>(WORD) ErrorID</td> </tr> <tr> <td>(INT) Denominator</td> <td></td> </tr> </table> </div> <div style="flex: 1; text-align: right;"> <p>Axis 1 Enabled</p> <p>Axis 2 Enabled</p> <p>Axis 3 Enabled</p> <p>Axis 4 Enabled</p> <p>Error flag</p> <p>Error code</p> </div> </div>	_NC2x172_ManualPulse		(BOOL) EN	(BOOL) ENO	(INT) UnitNo	(BOOL) Enabled1	(BOOL) Enable1	(BOOL) Enabled2	(BOOL) Enable2	(BOOL) Enabled3	(BOOL) Enable3	(BOOL) Enabled4	(BOOL) Enable4	(BOOL) Error	(INT) Numerator	(WORD) ErrorID	(INT) Denominator	
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<b>File name</b>	Lib\FBL\omronlib\PositionController\NC2x\_NC2x172_ManualPulse10.cxf																		
<b>Applicable models</b>	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Position Control Units</td> <td>CJ1W-NC214/234/414/434</td> </tr> <tr> <td>CPU Unit</td> <td>CJ1*-CPU**H Version 3.0 or later CJ1M-CPU** Version 3.0 or later CP1H CJ2H-CPU**(-EIP)</td> </tr> <tr> <td>CX-Programmer</td> <td>Version 5.0 or later</td> </tr> </table>	Position Control Units	CJ1W-NC214/234/414/434	CPU Unit	CJ1*-CPU**H Version 3.0 or later CJ1M-CPU** Version 3.0 or later CP1H CJ2H-CPU**(-EIP)	CX-Programmer	Version 5.0 or later												
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CX-Programmer	Version 5.0 or later																		
<b>Languages in function block definitions</b>	Ladder programming																		
<b>Conditions for usage</b>	None.																		
<b>Function description</b>	<ul style="list-style-type: none"> <li>• For the unit specified in "Unit No. (UnitNo)", axis operation will be performed using manual pulses (MPG).</li> <li>• Axes to be used are selected in "Axis 1 enable (Enable1)", "Axis 2 enable (Enable2)", "Axis 3 enable (Enable3)" and "Axis 4 enable (Enable4)".</li> <li>• When manual pulse operation is enabled, "Axis 1 enabled (Enabled1)", "Axis 2 enabled (Enabled2)", "Axis 3 enabled (Enabled3)" and "Axis 4 enabled (Enabled4)" will turn ON.</li> <li>• MPG magnifications are specified in "MPG magnification numerator (Numerator)" and "MPG magnification denominator (Denominator)".</li> <li>• "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.</li> <li>• These status (Error/ErrorID) will be reset when all axis enable commands are turned OFF. If an axis enable command is turned OFF before the operation has been completed, the status will be set at least for one cycle when corresponding conditions occur.</li> </ul> <div style="margin-top: 10px;"> </div>																		
<b>Kind of FB definition</b>	<p>Always execution type.</p> <p>Connect the EN input to the Always ON Flag (P_On).</p> <p>The same instance cannot be used in two or more places.</p>																		
<b>EN input condition</b>	<ul style="list-style-type: none"> <li>• Connect the EN input to the Always ON Flag (P_On).</li> <li>• If another bit is connected to EN, the FB outputs will be held when the connected bit turns OFF.</li> </ul>																		
<b>Restrictions Other</b>	<ul style="list-style-type: none"> <li>• This FB does not recognize the existence of the unit and axes specified in "Unit No. (UnitNo)". If this input variable has not been set correctly, the FB may not work normally.</li> <li>• This FB changes the following common parameters. <table border="1" style="width: 100%; border-collapse: collapse; margin: 5px 0;"> <thead> <tr> <th style="text-align: center;">Address</th> <th style="text-align: center;">Name</th> <th style="text-align: center;">Size</th> <th style="text-align: center;">Range</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">+40</td> <td>MPG Magnification 1 (Numerator)</td> <td style="text-align: center;">1CH</td> <td style="text-align: center;">-10000 to +10000</td> </tr> <tr> <td style="text-align: center;">+41</td> <td>MPG Magnification 1 (Denominator)</td> <td style="text-align: center;">1CH</td> <td style="text-align: center;">+1 to +10000</td> </tr> </tbody> </table> </li> <li>• This FB always selects MPG Magnification 1 of the Position Control Unit, and uses MPG magnification numerator/denominator for the operation.</li> <li>• This FB uses bits of the Position Control Unit. Therefore, do not turn these bits ON or OFF. For the same reason, do not use these bits for coil outputs (OUT commands). Refer to the "■Used bits list" for the bits used by this FB.</li> </ul>	Address	Name	Size	Range	+40	MPG Magnification 1 (Numerator)	1CH	-10000 to +10000	+41	MPG Magnification 1 (Denominator)	1CH	+1 to +10000						
Address	Name	Size	Range																
+40	MPG Magnification 1 (Numerator)	1CH	-10000 to +10000																
+41	MPG Magnification 1 (Denominator)	1CH	+1 to +10000																

<p><b>Application example</b></p>	<p>Turning OFF bit A and then ON will operate the Servomotor (Axis 1) connected to the Position Control Unit of unit number 0 by using manual pulses.</p>  <table border="1" data-bbox="352 383 1077 824"> <thead> <tr> <th colspan="2">Sample</th> <th colspan="2">_NC2x172_ManualPulse</th> </tr> </thead> <tbody> <tr> <td>Always ON (P_On)</td> <td>(BOOL)</td> <td>EN</td> <td>(BOOL) ENO</td> </tr> <tr> <td>Unit No. &amp;0</td> <td>(INT)</td> <td>UnitNo</td> <td>(BOOL) Enabled1</td> </tr> <tr> <td>Enable1 Bit A</td> <td>(BOOL)</td> <td>Enable1</td> <td>(BOOL) Enabled2</td> </tr> <tr> <td>Enable2 Bit B</td> <td>(BOOL)</td> <td>Enable2</td> <td>(BOOL) Enabled3</td> </tr> <tr> <td>Enable3 Bit C</td> <td>(BOOL)</td> <td>Enable3</td> <td>(BOOL) Enabled4</td> </tr> <tr> <td>Enable4 Bit D</td> <td>(BOOL)</td> <td>Enable4</td> <td>(BOOL) Error</td> </tr> <tr> <td>MPG magnification numerator &amp;10</td> <td>(INT)</td> <td>Nnmerator</td> <td>(WORD) ErrorID</td> </tr> <tr> <td>MPG magnification denominator &amp;1</td> <td>(INT)</td> <td>Denominator</td> <td></td> </tr> </tbody> </table>	Sample		_NC2x172_ManualPulse		Always ON (P_On)	(BOOL)	EN	(BOOL) ENO	Unit No. &0	(INT)	UnitNo	(BOOL) Enabled1	Enable1 Bit A	(BOOL)	Enable1	(BOOL) Enabled2	Enable2 Bit B	(BOOL)	Enable2	(BOOL) Enabled3	Enable3 Bit C	(BOOL)	Enable3	(BOOL) Enabled4	Enable4 Bit D	(BOOL)	Enable4	(BOOL) Error	MPG magnification numerator &10	(INT)	Nnmerator	(WORD) ErrorID	MPG magnification denominator &1	(INT)	Denominator	
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<p><b>Related manuals</b></p>	<p>CJ-series Position Control Unit Operation Manual (W477) 3-4 MPG Operation 12-6 Error Code List</p>																																				

■Variable Tables

Input Variables

Name	Variable name	Data type	Default	Range	Description
EN	EN	BOOL			1(ON): FB started 0(OFF): FB not started
Unit No.	UnitNo	INT	&0	&0 to &94	Specify the unit number.
Axis 1 Enable	Enable1	BOOL	0(OFF)		↑: Axis 1 manual pulse feed enabled ↓: Axis 1 manual pulse feed disabled
Axis 2 Enable	Enable2	BOOL	0(OFF)		↑: Axis 2 manual pulse feed enabled ↓: Axis 2 manual pulse feed disabled
Axis 3 Enable	Enable3	BOOL	0(OFF)		↑: Axis 3 manual pulse feed enabled ↓: Axis 3 manual pulse feed disabled
Axis 4 Enable	Enable4	BOOL	0(OFF)		↑: Axis 4 manual pulse feed enabled ↓: Axis 4 manual pulse feed disabled
MPG magnification numerator	Numerator	INT	+0	-10000 to +10000	Specify the numerator of magnification for the manual pulse generator.
MPG magnification denominator	Denominator	INT	+1	+1 to +10000	Specify the denominator of magnification for the manual pulse generator.

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
Axis 1 Enabled	Enabled1	BOOL		1(ON): Axis 1 manual pulse feed enabled 0(OFF): Axis 1 manual pulse feed disabled
Axis 2 Enabled	Enabled2	BOOL		1(ON): Axis 2 manual pulse feed enabled 0(OFF): Axis 2 manual pulse feed disabled
Axis 3 Enabled	Enabled3	BOOL		1(ON): Axis 3 manual pulse feed enabled 0(OFF): Axis 3 manual pulse feed disabled
Axis 4 Enabled	Enabled4	BOOL		1(ON): Axis 4 manual pulse feed enabled 0(OFF): Axis 4 manual pulse feed disabled
Error	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.

#### ■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.
Operating memory area allocation out of range	#0002	The allocation of Axis Operating Memory Area of Common Parameter is out of allowable setting range.	Correct the allocation of Axis Operating Memory Area of Common Parameter so that it falls within the allowable setting range of data.
Unit error	#1001	An error in individual unit has occurred.	Check "Unit common error code". Identify the error cause from the Operation Manual of the Position Control Unit.
Parameter setting error	#1100	Parameter transfer via the data transfer command has not been completed normally.	Check that the Position Control Unit status and parameter set values are within the range of the specifications.
Unit setup	#2000	The Position Control Unit is not in unit ready status.	Execute the FB after putting the Position Control Unit in unit ready status.

#### ■Used bits list

Memory area	Name	Data type	Address	Note
PCU Control Output Memory area	MPG magnification selection	WORD	n+07	
Manual Operation Command Memory area	MPG enable	BOOL	A+00.09	Uses bits of all axes.

#### ■Version History

Version	Date	Contents
1.00	2009.06.	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.