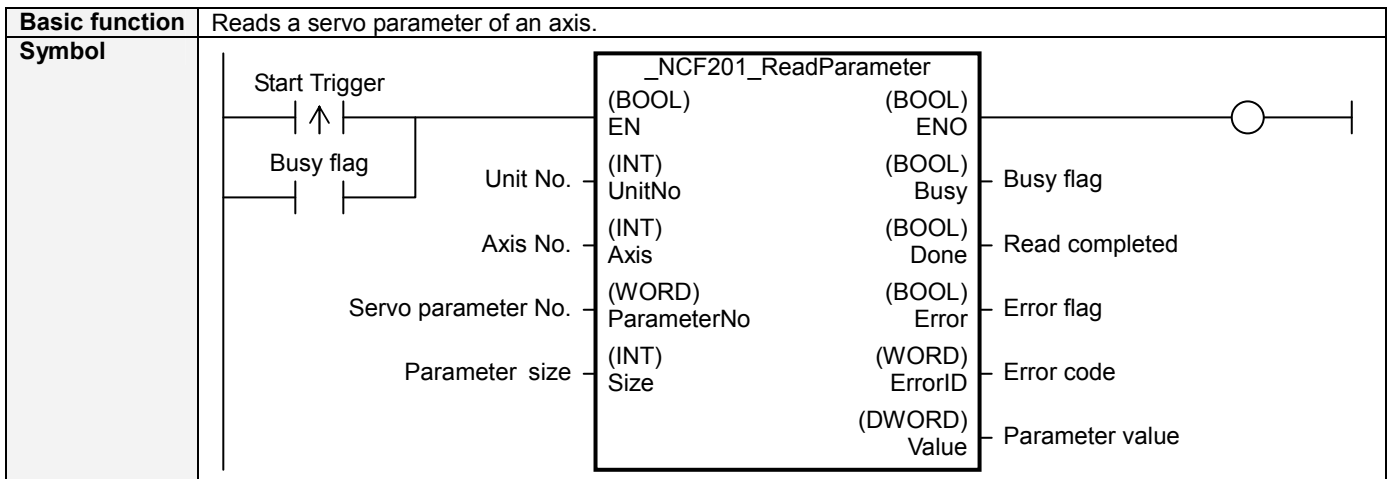


NCF 201	Read Parameter _NCF201_ReadParameter
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File name	Lib\FBL\omronlib\PositionController\NCF_NCF201_ReadParameter11.cxf
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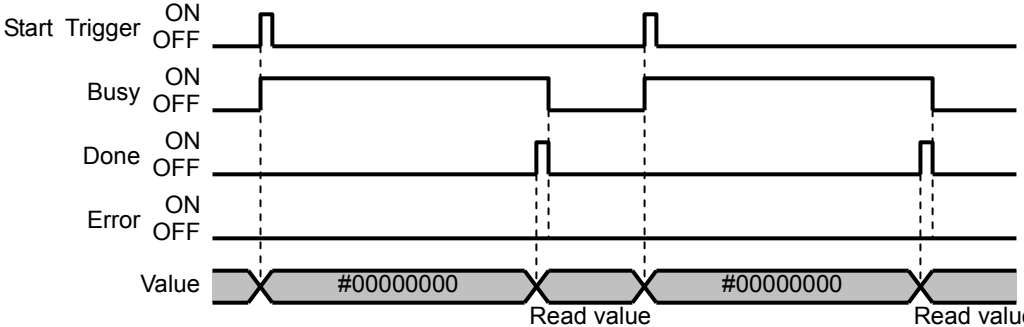
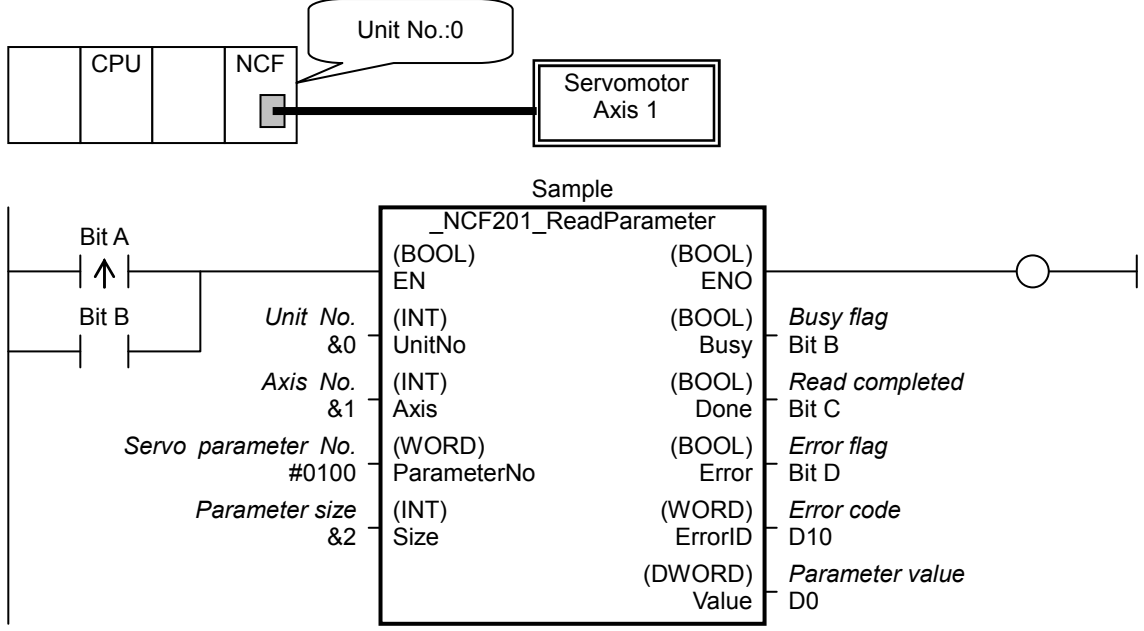
Applicable models	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Position Unit</td> <td>CJ1W-NCF71, CS1W-NCF71</td> </tr> <tr> <td>CPU Unit</td> <td>CS1*-CPU**H Unit Version 3.0 or later CJ1*-CPU**H Unit Version 3.0 or later CJ1M-CPU** Unit Version 3.0 or later CP1H</td> </tr> <tr> <td>CX-Programmer</td> <td>Version 5.0 or later</td> </tr> </table>	Position Unit	CJ1W-NCF71, CS1W-NCF71	CPU Unit	CS1*-CPU**H Unit Version 3.0 or later CJ1*-CPU**H Unit Version 3.0 or later CJ1M-CPU** Unit Version 3.0 or later CP1H	CX-Programmer	Version 5.0 or later
Position Unit	CJ1W-NCF71, CS1W-NCF71						
CPU Unit	CS1*-CPU**H Unit Version 3.0 or later CJ1*-CPU**H Unit Version 3.0 or later CJ1M-CPU** Unit Version 3.0 or later CP1H						
CX-Programmer	Version 5.0 or later						

Languages in function block definitions	Ladder programming
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Conditions for usage	<p>The following conditions for usage should be the Position Control Unit version 1.2 or earlier. (It will not be required in the Position Control Unit version 1.3 or later)</p> <p>■CX-Programmer Setting</p> <p>The function blocks related to the Position Control Units will not operate if the area H512 or higher (default setting) is specified as the Non Retain Area through the Function block memory allocation. Make sure to change the memory area to unused area (DM or EM, for example) from the CX-Programmer. To change this value, click PLC/Function Block Memory/Function Block Memory Allocation from the Menu Bar.</p> <div style="border: 1px solid gray; padding: 5px; margin: 10px 0;"> <table border="1" style="width: 100%; border-collapse: collapse; font-size: small;"> <caption>Function Block Memory Allocation [NewPLC1]</caption> <thead> <tr> <th>FB Instance Area</th> <th>Start Address</th> <th>End Address</th> <th>Size</th> </tr> </thead> <tbody> <tr style="background-color: #e0e0e0;"> <td>No Retain</td> <td>H512</td> <td>H1407</td> <td>896</td> </tr> <tr> <td>Retain</td> <td>H1408</td> <td>H1535</td> <td>128</td> </tr> <tr> <td>Timers</td> <td>T3072</td> <td>T4095</td> <td>1024</td> </tr> <tr> <td>Counters</td> <td>C3072</td> <td>C4095</td> <td>1024</td> </tr> </tbody> </table> </div> <div style="border: 1px solid gray; padding: 5px; margin: 10px 0;"> <p style="text-align: center;">Specify unused area.</p> <p>The required size varies depending on the used FB and the number of FBs. If an area being used in the ladder program is specified or sufficient free space cannot be found, the CX-Programmer will display a compile error.</p> </div> <div style="border: 1px solid gray; padding: 5px; margin: 10px 0;"> <table border="1" style="width: 100%; border-collapse: collapse; font-size: small;"> <caption>Function Block Memory Allocation [NewPLC1]</caption> <thead> <tr> <th>FB Instance Area</th> <th>Start Address</th> <th>End Address</th> <th>Size</th> </tr> </thead> <tbody> <tr style="background-color: #e0e0e0;"> <td>No Retain</td> <td>D32020</td> <td>D32767</td> <td>748</td> </tr> <tr> <td>Retain</td> <td>H1408</td> <td>H1535</td> <td>128</td> </tr> <tr> <td>Timers</td> <td>T3072</td> <td>T4095</td> <td>1024</td> </tr> <tr> <td>Counters</td> <td>C3072</td> <td>C4095</td> <td>1024</td> </tr> </tbody> </table> </div> <p style="font-size: x-small; margin-top: 10px;">For example, to use the memory area from D32020 to D32767 (748 words), specify the addresses as shown in the left.</p>	FB Instance Area	Start Address	End Address	Size	No Retain	H512	H1407	896	Retain	H1408	H1535	128	Timers	T3072	T4095	1024	Counters	C3072	C4095	1024	FB Instance Area	Start Address	End Address	Size	No Retain	D32020	D32767	748	Retain	H1408	H1535	128	Timers	T3072	T4095	1024	Counters	C3072	C4095	1024
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Function description	<p>When the <i>Start Trigger</i> turns ON, the specified parameter value for the axis of the specified "Unit No. (UnitNo)" and "Axis No. (Axis)" is read from the Servo Driver.</p> <p>If the FB execution ends in an error, an error code will be output to the "Error code (ErrorID)".</p> <p>■Reference</p> <p>This FB executes the servo parameter transfer function of the Position Control Unit. Refer to the <i>Related Manuals</i> for details.</p>
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Kind of FB definition	<p>Multiple cycles execution type.</p> <p>This FB is processed over multiple cycles.</p> <p>The same instance cannot be used in two or more places in order to keep the internal state.</p>
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<p>FB precautions</p>	<ul style="list-style-type: none"> The FB is processed over multiple cycles. The “Busy flag (Busy)” can be used to check whether the FB is being processed. “Read completed (Done)” or “Error flag (Error)” will be turned ON for one cycle only after processing is completed. Use these flags to detect the end of FB processing. 
<p>EN input condition</p>	<ul style="list-style-type: none"> Connect EN to an OR between an upwardly differentiated condition for the start trigger and the “Busy flag (Busy)” output from the FB.
<p>Restrictions Input variables</p>	<ul style="list-style-type: none"> Always use an upwardly differentiated condition for EN. If the input variables are out of range, the ENO Flag will turn OFF and the FB will not be processed. This FB uses Unit Error Reset, READ DATA, WRITE DATA, and SAVE DATA Bits of the Position Control Unit (see Note). Therefore, do not turn these bits ON or OFF between the period from the rising edge of EN to the rising edge of ENO. For the same reason, do not use these bits for coil outputs (OUT commands). There may be a case where the output variable of FB will not change even if EN is turned ON. In that case, check if Unit Error Reset, READ DATA, WRITE DATA, or SAVE DATA Bit is left ON. This FB uses the Read Servo Parameter Bit in the Axis Operating Output Memory Areas. Therefore, do not turn these bits ON or OFF until the operation is completed. For the same reason, do not use these bits for coil outputs (OUT commands). <p>Note: For calculation of bit addresses, these bits are referenced in this FB when executing each instance for the first time.</p>
<p>Output variables</p>	<ul style="list-style-type: none"> The “Busy flag (Busy)” must be inserted to OR of input conditions to Input variable EN in order to complete this process as it should be executed over multiple cycles. (Refer to “Symbol”) Do not turn the “Busy flag (Busy)” ON/OFF outside of the FB.
<p>Application example</p>	<p>When turning the Bit A ON from OFF, a servo parameter (the speed loop gain) is read from axis 1 of the Servomotor connected to the Position Control Unit with unit number 0 and stored in D0.</p> 
<p>Related manuals</p>	<p>Position Control Units OPERATION MANUAL (W426-E1) 5-3 Transferring Servo Parameters 12-4 Error Codes</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 &15	Specify the unit number.
Axis No.	Axis	INT	&1	&1 to &16	Specify the axis number.
Servo parameter No.	ParameterNo	WORD	&0		Specify the number of the Servo Driver parameter to read.
Parameter size	Size	INT	&2	&1 to &4	Specify the number of bytes in the parameter to read.

Output Variables

Name	Variable name	Data type	Range	Description
ENO	ENO	BOOL		1 (ON): FB operating normally 0 (OFF): FB not operating normally <ul style="list-style-type: none"> • FB not started • Input variable out of the range • FB ended with error • Common Parameters could not be read
Busy flag	Busy	BOOL		Automatically turns OFF when processing is completed.
Read completed	Done	BOOL		Turns ON for one cycle when processing ends normally.
Error flag	Error	BOOL		Turns ON for one cycle when processing ends in an error.
Error code	ErrorID	WORD		Returns the error code when an error has occurred in the FB. Refer to the <i>Related Manuals</i> for details on errors. A code of #0000 will be returned if any of the following conditions is satisfied. <ul style="list-style-type: none"> • Input variable is out of range. • The common parameters of the Position Control Units are out of range. • Not established communications with a specified axis. • The Read Servo Parameter Bit is changed by the other FB during the Read Servo Parameter in operation.
Parameter value	Value	DWORD		The parameter value that was read. If the parameter size is 2 bytes, the data is stored in the lower address.

■ Version History

Version	Date	Contents
1.00	2004.06.	Original production
1.10	2005.01.	Limitation about the setting timing with " Unit No. " and " Axis No. " was removed.

■ Upgrade Details

Version	Detailed Contents
1.10	In version 1.0x, only the first setting of " Unit No. (UnitNo) " or " Axis No. (Axis) " was valid. This meant that a same instance could not be used to write Servo parameters for more than one axis. In version 1.10, this limitation was removed.

■ 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.