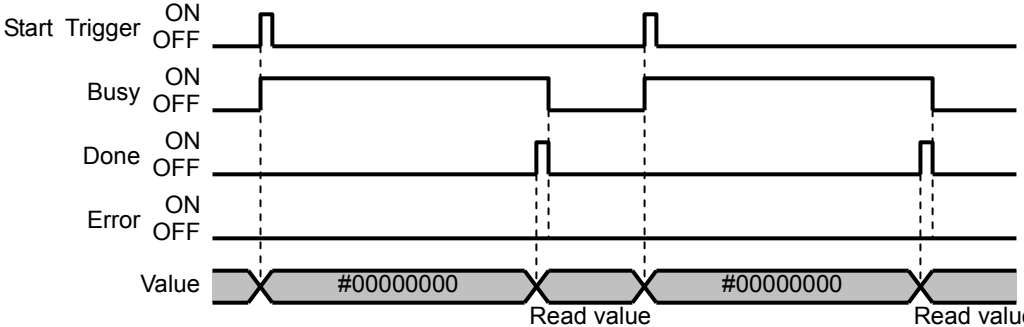
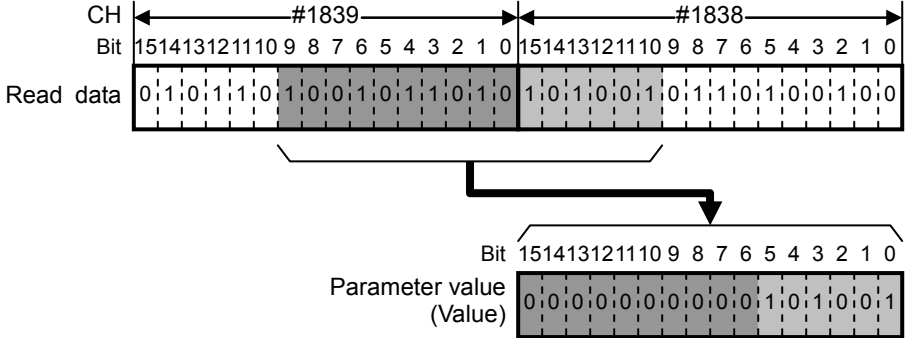
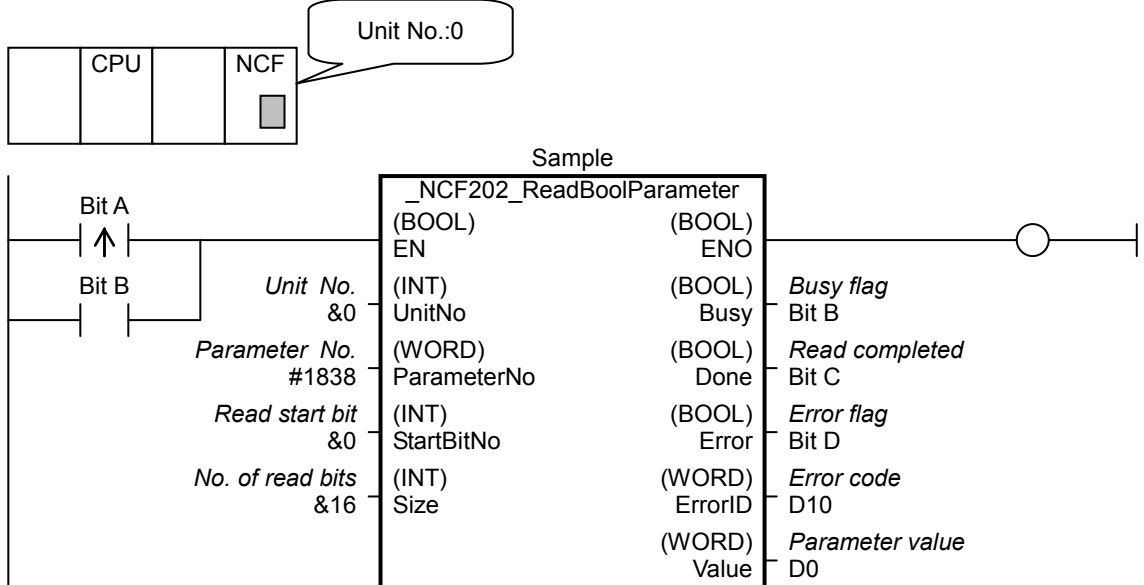


| | |
|----------------|---|
| NCF 202 | Read Boolean Parameter _NCF202_ReadBoolParameter |
|----------------|---|

| Basic function | Reads a Boolean parameter. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|------------------|------------------------|-------------|--|---------------|----------------------|-------|-----|--------|-------|-------|-----|--------|-------|-------|------|----------|-------|-------|------|------------------|---------------|-------------|------|-----------|--------|--------|-----|--------|-------|-------|-----|--------|-------|-------|------|----------|-------|-------|------|
| Symbol | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| File name | Lib\FBL\omronlib\PositionController\NCF_NCF202_ReadBoolParameter10.cxf | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Applicable models | <table border="1" 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 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 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: 5px 0;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <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> <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: 5px 0;"> <p>Specify unused area. 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: 5px 0;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <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> <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>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 |
| 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 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Function description | <p>When the <i>Start Trigger</i> turns ON, the parameter of the specified “Parameter number (ParameterNo)”, “Read start bit (StartBitNo)” and “Number of read bits (Size)” for the axis of the specified Unit No. and Axis No. is read.</p> <p>Only common parameters or individual axis parameters can be read.</p> <p>Only the specified number of read bits will be transferred to lowest bits of the Parameter value (Value). Other bits will be 0.</p> <p>If 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 parameter transfer function of the Position Control Unit. Refer to the <i>Related Manuals</i> for details.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 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> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | |
|--|--|
| <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. The data exceeding 1 CH (16 bits) will be set to 0 when specifying over multiple channels. Ex.) When specifying #1838 to “Parameter No. (ParameterNo)”, &10 to “Read start bit (StartBitNo)” and &16 to “No. of read bits (Size)”.  <p>The data exceeding the channel specified in the “Parameter No. (ParameterNo)” will be set to 0.</p> <ul style="list-style-type: none"> 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. <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 parameter (Common Parameter Area, Axis Parameter Areas) is read from the Position Control Unit with unit number 0 and stored in D0.</p>  <p>The diagram illustrates the function block's operation. It shows a hardware configuration with CPU and NCF components. A ladder logic diagram shows Bit A and Bit B as inputs. A callout indicates 'Unit No.:0'. The sample parameter table is as follows:</p> <table border="1" data-bbox="718 380 1117 806"> <thead> <tr> <th colspan="2">Sample</th> </tr> </thead> <tbody> <tr> <td>(BOOL) EN</td> <td>(BOOL) ENO</td> </tr> <tr> <td>(INT) UnitNo</td> <td>(BOOL) Busy flag Bit B</td> </tr> <tr> <td>(WORD) ParameterNo</td> <td>(BOOL) Read completed Bit C</td> </tr> <tr> <td>(INT) StartBitNo</td> <td>(BOOL) Error flag Bit D</td> </tr> <tr> <td>(INT) Size</td> <td>(WORD) Error code D10</td> </tr> <tr> <td></td> <td>(WORD) Parameter value D0</td> </tr> </tbody> </table> | Sample | | (BOOL) EN | (BOOL) ENO | (INT) UnitNo | (BOOL) Busy flag Bit B | (WORD) ParameterNo | (BOOL) Read completed Bit C | (INT) StartBitNo | (BOOL) Error flag Bit D | (INT) Size | (WORD) Error code D10 | | (WORD) Parameter value D0 |
|-----------------------------------|--|--------|--|-----------|------------|--------------|------------------------|--------------------|-----------------------------|------------------|-------------------------|------------|-----------------------|--|---------------------------|
| Sample | | | | | | | | | | | | | | | |
| (BOOL) EN | (BOOL) ENO | | | | | | | | | | | | | | |
| (INT) UnitNo | (BOOL) Busy flag Bit B | | | | | | | | | | | | | | |
| (WORD) ParameterNo | (BOOL) Read completed Bit C | | | | | | | | | | | | | | |
| (INT) StartBitNo | (BOOL) Error flag Bit D | | | | | | | | | | | | | | |
| (INT) Size | (WORD) Error code D10 | | | | | | | | | | | | | | |
| | (WORD) Parameter value D0 | | | | | | | | | | | | | | |
| <p>Related manuals</p> | <p>Position Control Units OPERATION MANUAL (W426-E1) 5-3 Transferring Unit 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. |
| Parameter No. | ParameterNo | WORD | #0000 | #1838 to #199F | Specify the address inside the Position Control Unit. |
| Read start bit | StartBitNo | INT | &0 | &0 to &15 | Specify the first bit to read in the specified parameter. |
| No. of read bits | Size | INT | &4 | &1 to &16 | Specify the number of bits 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 • FB not started • Input variable out of the range • FB ended with error |
| 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. • 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. |
| Parameter value | Value | WORD | | The specified numbers of read bits are transferred to lowest bits of the <i>Parameter Value</i> . |

■ Version History

| Version | Date | Contents |
|---------|----------|---------------------|
| 1.00 | 2004.06. | 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.