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| <b>NC2x<br/>201</b> | <b>Read Parameter _NC2x201_ReadParameter</b> |
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|  |   |                        |                        |                 |   |                   |                      |                     |                 |                    |                   |                       |  |                      |  |               |  |
|--|---|------------------------|------------------------|-----------------|---|-------------------|----------------------|---------------------|-----------------|--------------------|-------------------|-----------------------|--|----------------------|--|---------------|--|
| <b>Basic function</b>                          | Reads the parameters.   |                        |                        |                 |   |                   |                      |                     |                 |                    |                   |                       |  |                      |  |               |  |
| <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>Start</p> <p>Read destination area</p> <p>Read destination word</p> <p>Read source area</p> <p>Read source address</p> <p>Number of read words</p> </div> <div style="flex: 2; border: 1px solid black; padding: 5px; margin: 0 10px;"> <p style="text-align: center;">_NC2x201_ReadParameter</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">(BOOL)<br/>EN</td> <td style="width: 50%;">(BOOL)<br/>ENO</td> </tr> <tr> <td>(INT)<br/>UnitNo</td> <td>(BOOL)<br/>Done</td> </tr> <tr> <td>(BOOL)<br/>Execute</td> <td>(BOOL)<br/>Busy</td> </tr> <tr> <td>(WORD)<br/>DstAreaID</td> <td>(BOOL)<br/>Error</td> </tr> <tr> <td>(INT)<br/>DstAreaNo</td> <td>(WORD)<br/>ErrorID</td> </tr> <tr> <td>(WORD)<br/>ParameterID</td> <td></td> </tr> <tr> <td>(INT)<br/>ParameterNo</td> <td></td> </tr> <tr> <td>(INT)<br/>Size</td> <td></td> </tr> </table> </div> <div style="flex: 1; text-align: right;"> <p>Read completed</p> <p>Busy</p> <p>Error</p> <p>Error code</p> </div> </div>   | (BOOL)<br>EN           | (BOOL)<br>ENO          | (INT)<br>UnitNo | (BOOL)<br>Done  | (BOOL)<br>Execute | (BOOL)<br>Busy       | (WORD)<br>DstAreaID | (BOOL)<br>Error | (INT)<br>DstAreaNo | (WORD)<br>ErrorID | (WORD)<br>ParameterID |  | (INT)<br>ParameterNo |  | (INT)<br>Size |  |
| (BOOL)<br>EN                                   | (BOOL)<br>ENO   |                        |                        |                 |   |                   |                      |                     |                 |                    |                   |                       |  |                      |  |               |  |
| (INT)<br>UnitNo                                | (BOOL)<br>Done  |                        |                        |                 |   |                   |                      |                     |                 |                    |                   |                       |  |                      |  |               |  |
| (BOOL)<br>Execute                              | (BOOL)<br>Busy  |                        |                        |                 |   |                   |                      |                     |                 |                    |                   |                       |  |                      |  |               |  |
| (WORD)<br>DstAreaID                            | (BOOL)<br>Error   |                        |                        |                 |   |                   |                      |                     |                 |                    |                   |                       |  |                      |  |               |  |
| (INT)<br>DstAreaNo                             | (WORD)<br>ErrorID   |                        |                        |                 |   |                   |                      |                     |                 |                    |                   |                       |  |                      |  |               |  |
| (WORD)<br>ParameterID                          |   |                        |                        |                 |   |                   |                      |                     |                 |                    |                   |                       |  |                      |  |               |  |
| (INT)<br>ParameterNo                           |   |                        |                        |                 |   |                   |                      |                     |                 |                    |                   |                       |  |                      |  |               |  |
| (INT)<br>Size                                  |   |                        |                        |                 |   |                   |                      |                     |                 |                    |                   |                       |  |                      |  |               |  |
| <b>File name</b>                               | Lib\FBL\omronlib\PositionController\NC2x\_NC2x201_ReadParameter10.cxf   |                        |                        |                 |   |                   |                      |                     |                 |                    |                   |                       |  |                      |  |               |  |
| <b>Applicable models</b>                       | <table border="1" 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<br/>CJ1M-CPU** Version 3.0 or later<br/>CP1H<br/>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<br>CJ1M-CPU** Version 3.0 or later<br>CP1H<br>CJ2H-CPU**(-EIP) | CX-Programmer     | Version 5.0 or later |                     |                 |                    |                   |                       |  |                      |  |               |  |
| Position Control Units                         | CJ1W-NC214/234/414/434  |                        |                        |                 |   |                   |                      |                     |                 |                    |                   |                       |  |                      |  |               |  |
| CPU Unit                                       | CJ1*-CPU**H Version 3.0 or later<br>CJ1M-CPU** Version 3.0 or later<br>CP1H<br>CJ2H-CPU**(-EIP)   |                        |                        |                 |   |                   |                      |                     |                 |                    |                   |                       |  |                      |  |               |  |
| 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)", the set value of the read source parameter will be read out to the read destination word when "Start (Execute)" turns ON.</li> <li>• The read source parameter will be specified in "Read source area (ParameterID)" and "Read source address (ParameterNo)".<br/>The read destination word will be specified in "Read destination area (DstAreaID)" and "Read destination word (DstAreaNo)".<br/>The number of read words will be specified in "Number of read words (Size)".</li> <li>• "Read completed (Done)" is turned ON when the parameter reading operation 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.</li> <li>• "Busy (Busy)" will be set when the "Start (Execute)" is turned ON.<br/>"Busy (Busy)" will be reset when any of "Read completed (Done)" or "Error (Error)" is turned ON.<br/>Even if an error occurs when the input variable is out of the range, etc., "Busy (Busy)" will be set for at least one cycle.</li> <li>• "Error (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 statuses (Done/Error/ErrorID) will be reset when "Start (Execute)" turns OFF. If "Start (Execute)" turns OFF before the positioning operation has been completed, the status will be set for at least one cycle when corresponding conditions have occurred.</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 axis specified in "Unit No. (UnitNo)". If this input variable has not been set correctly, the FB may not work normally.</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).</li> </ul> <p>Refer to the "■Used bits list" for the bits used by this FB.</p>   |                        |                        |                 |   |                   |                      |                     |                 |                    |                   |                       |  |                      |  |               |  |

|                                   |   |
|-----------------------------------|---|
| <p><b>Application example</b></p> | <p>When bit A is turned OFF and then ON, the parameter (Axis 1 initial speed) of the Position Control Unit of unit number 0 will be read out, and output for D1000.</p> |
| <p><b>Related manuals</b></p>     | <p>CJ-series Position Control Unit Operation Manual (W477)<br/>             8-3 Data Read with Data Transfer Bit<br/>             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<br>0(OFF): FB not started   |
| Unit No.              | UnitNo        | INT       | &0      | &0 to &94           | Specify the unit number.  |
| Start                 | Execute       | BOOL      | 0(OFF)  |                     | ↑ : Starts the parameter reading.   |
| Read destination area | DstAreaID     | WORD      | #0082   | Refer to the right. | Specify the area where data read out from the Position Control Unit will be written.<br>P_CIO(#00B0): CIO<br>P_WR(#00B1): WR<br>P_HR(#00B2): HR<br>P_DM(#0082): DM<br>P_EM00(#0050) to P_EM18(#0068): EM bank 00 to 18  |
| Read destination word | DstAreaNo     | INT       | &0      | &0 to &32767        | Specify the beginning word where data read out from the Position Control Unit will be written.  |
| Read source area      | ParameterID   | WORD      | #0100   | Refer to the right. | Specify the area in the Position Control Unit where data will be read out.<br>Refer to "Related manuals" for details.<br>#0100: Common parameter<br>#02xx: Axis parameter (xx: Axis number #01 to #04)<br>#02F1: External encoder axis parameter<br>#03xx: Memory operation parameter (xx: Task number #01 to #04)<br>#04xx: Memory operation data (xx: Task number #01 to #04)<br>#0500: Memory operation condition data |
| Read source address   | ParameterNo   | INT       | &0      | Refer to the right. | Specify the beginning address in the Position Control Unit where data will be read out.<br>Refer to "Related manuals" for details.  |
| Number of read words  | Size          | INT       | &1      | &1 to &25000        | Specify the number of read words.<br>Refer to "Related manuals" for details.  |

**Output Variables**

| Name           | Variable name | Data type | Range | Description   |
|----------------|---------------|-----------|-------|---|
| ENO            | ENO           | BOOL      |       | 1(ON): FB operating normally<br>0(OFF): FB not started / FB ended with error                      |
| Read completed | Done          | BOOL      |       | Turns ON when the parameter reading operation has been completed.                                 |
| Busy           | Busy          | BOOL      |       | Turns ON when FB is in the process.   |
| 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.  |
| 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.           |
| Unit initializing           | #2001      | The Position Control Unit is in process of initialization.                                    | Execute the FB after the Position Control Unit initialization process has been completed.                                  |
| Command disabled            | #2300      | FB commands have not been accepted.   | Execute the FB after putting the unit in status that can accept commands.  |
| Read data                   | #300D      | "Read data" of the PCU Control Output Memory area has been operated by the outside of the FB. | Do not operate each bit which the active FB is operating, by the external unit of the FB.<br>Do not use it on OUT command. |

**■Used bits list**

| Memory area                    | Name                             | Data type | Address | Note |
|--------------------------------|----------------------------------|-----------|---------|------|
| PCU Control Output Memory area | Read data                        | BOOL      | n+00.13 |      |
|                                | Number of data transfer words    | INT       | n+01    |      |
|                                | CPU Data Transfer area type      | WORD      | n+02    |      |
|                                | CPU data transfer beginning word | INT       | n+03    |      |
|                                | PCU Data Transfer area type      | WORD      | n+04    |      |
|                                | PCU data transfer beginning word | INT       | n+05    |      |

**■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.