

# Receiving data from another station programmable controller

## GP.RECV



FX5S

FX5UJ

FX5U

FX5UC

This instruction reads data received from another station programmable controller. (For the main routine program)

CC-Link IE TSN is compatible only with FX5U/FX5UC CPU module.

| Ladder diagram | Structured text                         |
|----------------|---|
|                | <pre>ENO:=GP_RECV(EN,Un,s,d1,d2);</pre> |

| FBD/LD                       |
|------------------------------|
| <p>("GP_RECV" enters □.)</p> |

## Setting data

### ■Descriptions, ranges, and data types

| Operand           | Description  | Range  | Data type              | Data type (label)                       |
|-------------------|--|--|------------------------|---|
| (U) <sup>*1</sup> | Position number of the module connected  | ■FX5UJ CPU module<br>1H to 8H<br>■FX5U/FX5UC CPU module<br>1H to 10H | 16-bit unsigned binary | ANY16                                   |
| (s)               | Own station start device where control data is stored  | Page 1025 Control dataRefer to                                       | Device name            | ANY16 <sup>*3</sup>                     |
| (d1)              | Own station head device for storing the receive data <sup>*2</sup>   | —  | Device name            | ANY16 <sup>*3</sup>                     |
| (d2)              | Own station device to be turned on for one scan when the instruction completes.<br>When the instruction completes with an error, (d2)+1 also turns on. | —  | Bit                    | ANYBIT_ARRAY<br>(Number of elements: 2) |
| EN                | Execution condition  | —  | Bit                    | BOOL                                    |
| ENO               | Execution result   | —  | Bit                    | BOOL                                    |

\*1 In the case of the ST language and the FBD/LD language, U displays as Un.

\*2 The continuous area (a maximum of 960 words) specified by the receive data length (s)+9 is required.

\*3 Digit specified bit type label cannot be used.

### ■Applicable devices

| Operand | Bit                         | Word                      |       |   | Double word |    | Indirect specification | Constant |   |    | Others (U) |
|---------|-----------------------------|---------------------------|-------|---|-------------|----|------------------------|----------|---|----|------------|
|         | X, Y, M, L, SM, F, B, SB, S | T, ST, C, D, W, SD, SW, R | U□\G□ | Z | LC          | LZ |                        | K, H     | E | \$ |            |
| (U)     | —                           | ○                         | —     | — | —           | —  | ○                      | ○        | — | —  | ○          |
| (s)     | —                           | ○                         | —     | — | —           | —  | ○                      | —        | — | —  | —          |
| (d1)    | —                           | ○                         | —     | — | —           | —  | ○                      | —        | — | —  | —          |
| (d2)    | ○ <sup>*1</sup>             | ○ <sup>*2</sup>           | —     | — | —           | —  | —                      | —        | — | —  | —          |

\*1 S cannot be used.

\*2 T, ST, and C cannot be used.

## Control data

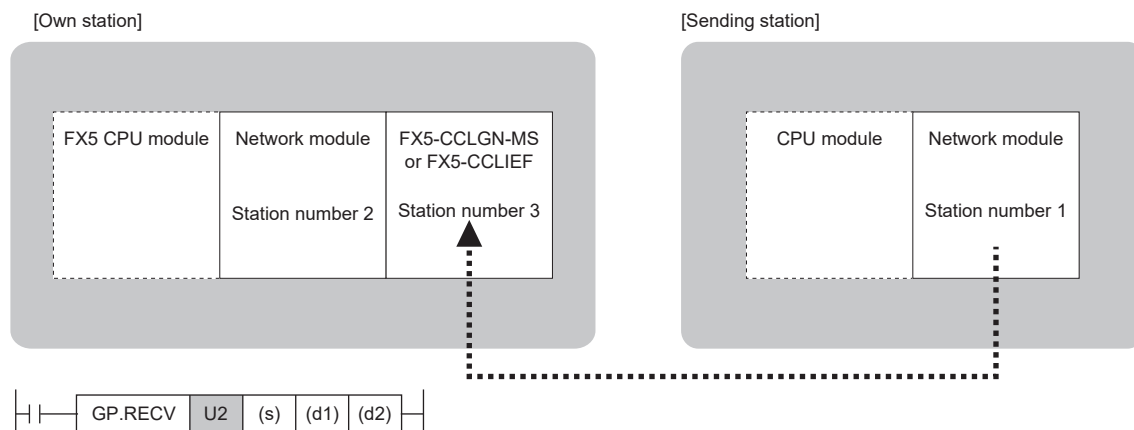
| Device | Item                            | Description  | Setting range                    | Set by |
|--------|---------------------------------|--|----------------------------------|--------|
| (s)+0  | Error completion type           | <div> <div> <div>b15 b14 ... b8 b7 ... b0</div> <div>(2) 0 (1) 0</div> </div> <p>(1) Error completion type (b7)<br/>Specify whether to set data at completion with an error.</p> <ul style="list-style-type: none"> <li>0: Clock data at error occurrence is not stored in (s1)+11 and later.</li> <li>1: Clock data at error occurrence is stored in (s1)+11 and later.</li> </ul> <p>(2) Method for indicating the sending station address (b15) (compatible only with CC-Link IE TSN)</p> <ul style="list-style-type: none"> <li>0: Specify the network No. in (s1)+4 and the station No. in (s1)+5.</li> <li>1: Specify the IP address in (s1)+4 and 5.</li> </ul> </div>  | 0000H<br>0080H<br>8000H<br>8080H | User   |
| (s)+1  | Completion status               | <p>The instruction completion status is stored.</p> <ul style="list-style-type: none"> <li>0: Normal</li> <li>Other than 0: Error (error code)</li> </ul>  | —                                | System |
| (s)+2  | Own station storage channel     | <p>Specify the channel to be used by the own station.</p> <p>[CC-Link IE Field Network]</p> <ul style="list-style-type: none"> <li>Channels 1 and 2</li> </ul> <p>[CC-Link IE TSN]</p> <ul style="list-style-type: none"> <li>Channels 1 to 8</li> </ul>   | 1 to 8                           | User   |
| (s)+3  | Channel used by sending station | The channel number (1 to 8) used by the sending station is stored.   | —                                | System |
| (s)+4  | Sending station network number  | <p>[CC-Link IE Field Network]</p> <p>The network number of the sending station is stored.</p> <ul style="list-style-type: none"> <li>1 to 239 (network No.)</li> </ul> <p>[CC-Link IE TSN]</p> <p>■ When "0" is specified in b15 in (s1)+0<br/>The network number of the sending station is stored.</p> <ul style="list-style-type: none"> <li>1 to 239 (network No.)</li> </ul> <p>■ When "1" is specified in b15 in (s1)+0<br/>The IP address (third and fourth octets) of the sending station is stored.</p> <div> <div>b15 ... b8 b7 ... b0</div> <div>3 4</div> </div> <ul style="list-style-type: none"> <li>b8 to b15: Third octet</li> <li>b0 to b7: Fourth octet</li> </ul>   | —                                | System |
| (s)+5  | Sending station number          | <p>[CC-Link IE Field Network]</p> <p>The sending station number is stored.</p> <ul style="list-style-type: none"> <li>125: Master station or sub-master station (operating as master station)</li> <li>1 to 120: Local station, intelligent device station or sub-master station (operating as device station)</li> </ul> <p>[CC-Link IE TSN]</p> <p>■ When "0" is specified in b15 in (s1)+0<br/>The sending station number is stored.</p> <ul style="list-style-type: none"> <li>1 to 120: Local station</li> <li>125: Master station</li> </ul> <p>■ When "1" is specified in b15 in (s1)+0<br/>The IP address (first and second octets) of the sending station is stored.</p> <div> <div>b15 ... b8 b7 ... b0</div> <div>1 2</div> </div> <ul style="list-style-type: none"> <li>b8 to b15: First octet</li> <li>b0 to b7: Second octet</li> </ul> | —                                | System |
| (s)+6  | Not used                        | —  | —                                | —      |
| (s)+7  | Not used                        | —  | —                                | —      |
| (s)+8  | Arrival monitoring time         | <p>Specify the monitoring time until completion of processing. The instruction is completed with an error if it fails to complete within the monitoring time.</p> <ul style="list-style-type: none"> <li>0: 10 seconds</li> <li>1 to 32767: 1 to 32767 seconds</li> </ul>  | 0 to 32767                       | User   |
| (s)+9  | Receive data length             | <p>The number of data received and stored in (d1) to (d1)+n is stored.</p> <ul style="list-style-type: none"> <li>0: No receive data</li> <li>1 to 960: Number of words of received data</li> </ul>  | —                                | System |
| (s)+10 | Not used                        | —  | —                                | —      |

| Device | Item  | Description  | Setting range | Set by |       |     |    |   |  |   |  |  |   |        |
|--------|---|--|---------------|--------|-------|-----|----|---|--|---|--|--|---|--------|
| (s)+11 | Clock setting flag                            | The validity status (valid or invalid) of the data in (s)+12 and later is stored.<br>Note that the data in (s)+12 and later is not cleared even when the instruction is completed successfully.<br>• 0: Invalid<br>• 1: Valid  | —             | System |       |     |    |   |  |   |  |  |   |        |
| (s)+12 | Clock data<br>(Set only in an abnormal state) | Upper 8 bits: Month (01H to 12H)<br>Lower 8 bits: Year (00H to 99H: Lower two digits of the year)  | —             | System |       |     |    |   |  |   |  |  |   |        |
| (s)+13 |   | Upper 8 bits: Hour (00H to 23H)<br>Lower 8 bits: Day (01H to 31H)  | —             | System |       |     |    |   |  |   |  |  |   |        |
| (s)+14 |   | Upper 8 bits: Second (00H to 59H)<br>Lower 8 bits: Minute (00H to 59H)   | —             | System |       |     |    |   |  |   |  |  |   |        |
| (s)+15 |   | Upper 8 bits: Year (00H to 99H: Upper two digits of the year)<br>Lower 8 bits: Day of the week (00H (Sun.) to 06H (Sat.))  | —             | System |       |     |    |   |  |   |  |  |   |        |
| (s)+16 | Error detection network number*1              | <p>■When "0" is specified in b15 in (s1)+0<br/>The network number of the station where an error was detected is stored. (The number is not stored when an error was detected in the own station.)<br/>• 1 to 239 (network No.)</p> <p>■When "1" is specified in b15 in (s1)+0 (compatible only with CC-Link IE TSN)<br/>The IP address (third and fourth octets) of the station where an error was detected is stored. (The number is not stored when an error was detected in the own station.)</p> <table border="1"> <tr> <td>b15</td><td>...</td><td>b8 b7</td><td>...</td><td>b0</td></tr> <tr> <td colspan="2">3</td><td colspan="3">4</td></tr> </table> <p>• b8 to b15: Third octet<br/>• b0 to b7: Fourth octet</p>   | b15           | ...    | b8 b7 | ... | b0 | 3 |  | 4 |  |  | — | System |
| b15    | ...   | b8 b7  | ...           | b0     |       |     |    |   |  |   |  |  |   |        |
| 3      |   | 4  |               |        |       |     |    |   |  |   |  |  |   |        |
| (s)+17 | Error-detected station number*1               | <p>■When "0" is specified in b15 in (s1)+0<br/>The number of the station where an error was detected is stored. (The number is not stored when an error was detected in the own station.)<br/>[CC-Link IE Field Network]<br/>• 125: Master station<br/>• 1 to 120: Local station, intelligent device station or sub-master station<br/>[CC-Link IE TSN]<br/>• 125: Master station<br/>• 1 to 120: Device station</p> <p>■When "1" is specified in b15 in (s1)+0 (compatible only with CC-Link IE TSN)<br/>The IP address (first and second octets) of the station where an error was detected is stored. (The number is not stored when an error was detected in the own station.)</p> <table border="1"> <tr> <td>b15</td><td>...</td><td>b8 b7</td><td>...</td><td>b0</td></tr> <tr> <td colspan="2">1</td><td colspan="3">2</td></tr> </table> <p>• b8 to b15: First octet<br/>• b0 to b7: Second octet</p> | b15           | ...    | b8 b7 | ... | b0 | 1 |  | 2 |  |  | — | System |
| b15    | ...   | b8 b7  | ...           | b0     |       |     |    |   |  |   |  |  |   |        |
| 1      |   | 2  |               |        |       |     |    |   |  |   |  |  |   |        |

\*1 If completion status ((s1)+1) is "Channel in use (dedicated instruction) (error codes: D25AH to D25BH)", data is not stored.

- The continuous area (a maximum of 960 words) specified by the receive data length ((s1)+9) is required in the receive data storage device (d1).
- The GP.RECV instruction is executed every time the bit of the corresponding channel in the GP.RECV instruction execution request area (SB0030 to SB0037) in the buffer memory turns on (with receive data).
- If multiple network modules having the same network number are installed in the receiving station, specify "U" for the network module that will receive data according to the GP.RECV instruction.

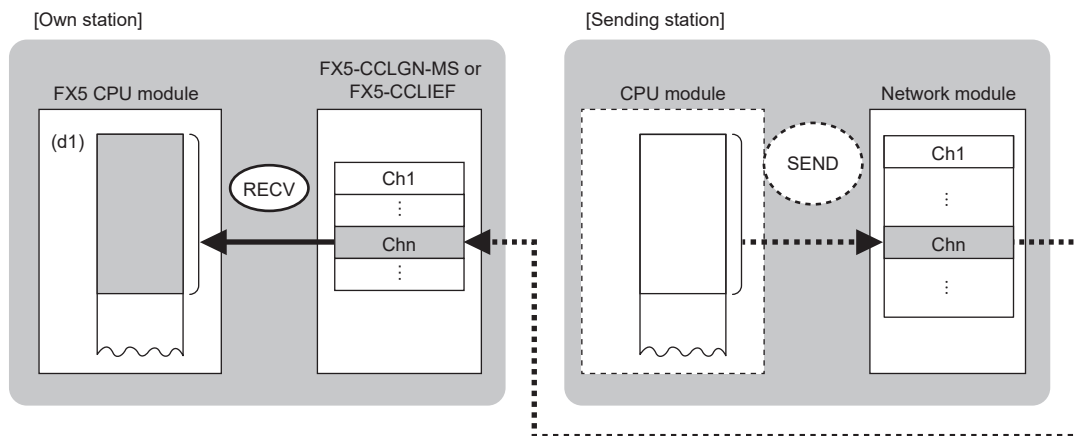
(Example: To execute the GP.RECV instruction in the station number 3 in response to the GP.SEND instruction from the station number 1, specify "U2".)



## Processing details

- This instruction reads data, which were sent from another station by the SEND instruction, from the specified channel of the own station module to the own station word device (after (d1)). When the data reading from the specified channel of the own station is completed, the completion device (d2) turns on.
- For the target stations that can be specified, refer to the following.

📖 Page 986 Target networks and target station types



- The data received from the sending station is stored in the own station channel specified by the sending station and the corresponding bit in the GP.RECV instruction execution request area corresponding to each channel is set to on. When the corresponding bit in the GP.RECV instruction execution request area is set to on, the received data is read from the receive data storage channel. The following table lists the GP.RECV instruction execution request areas.

| Name of GP.RECV instruction execution request area     | Device number/address of corresponding bit |
|--|--|
| GP.RECV execution request flag Channel 1               | SB0030                                     |
| GP.RECV execution request flag Channel 2               | SB0031                                     |
| GP.RECV execution request flag Channel 3 <sup>*1</sup> | SB0032                                     |
| GP.RECV execution request flag Channel 4 <sup>*1</sup> | SB0033                                     |
| GP.RECV execution request flag Channel 5 <sup>*1</sup> | SB0034                                     |
| GP.RECV execution request flag Channel 6 <sup>*1</sup> | SB0035                                     |
| GP.RECV execution request flag Channel 7 <sup>*1</sup> | SB0036                                     |
| GP.RECV execution request flag Channel 8 <sup>*1</sup> | SB0037                                     |

<sup>\*1</sup> Compatible only with FX5-CCLGN-MS.


- When executing multiple link dedicated instructions concurrently, be careful not to overlap the channels of the link dedicated instructions. Multiple link dedicated instructions specifying the same channel cannot be used concurrently.
- The execution of the GP.RECV instruction and whether it has been completed normally or completed with an error can be checked with the completion device (d2) or completion status indication device (d2)+1.

| Device                                     | Operation  |
|--|--|
| Completion device (d2)                     | The device turns on during the END processing for the scan in which the GP.RECV instruction is completed, and turns off during the next END processing.  |
| Completion status indication device (d2)+1 | The device turns on or off depending on the completion status of the GP.RECV instruction.<br>When completed normally: The device does not change (remains off).<br>When completed with an error: The device turns on during the END processing for the scan in which the GP.RECV instruction is completed, and turns off during the next END processing. |

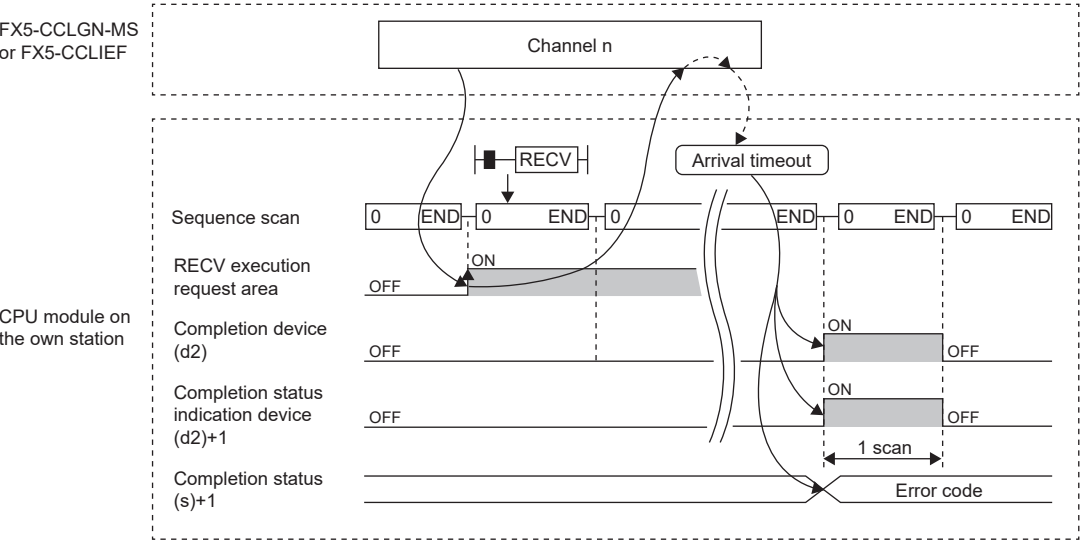
• The following figure shows the execution timing of the GP.RECV instruction.

When completed normally

For the execution timing, refer to the following instruction.




( Page 1016 GP.SEND)

When completed with an error



• Read processing is performed only once on the rising edge when the read command turns on.

## Operation error

| Error code ((s)+1) | Description   |
|--------------------|---|
| C000H to CFFFH     | Refer to  MELSEC iQ-F FX5 CC-Link IE TSN Master/Local Module User's Manual.  |
| D000H to DFFFH     | Refer to  MELSEC iQ-F FX5 CC-Link IE TSN Master/Local Module User's Manual.<br>Refer to  MELSEC iQ-F FX5 CC-Link IE Field Network Module User's Manual. |