# 13 ETHERNET INSTRUCTION

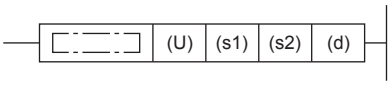
## 13.1 Built-in Ethernet Function Instruction

### Opening a connection

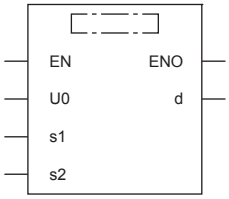
#### SP.SOCOPEN

FX5S FX5UJ FX5U FX5UC

This instruction opens a connection.

| Ladder diagram | Structured text |
|---|---|
|  | ENO:=SP_SOCOPEN(EN,U0,s1,s2,d); |

**FBD/LD**




("SP_SOCOPEN" enters □.)

#### Setting data

##### ■Descriptions, ranges, and data types

| Operand | Description | Range | Data type | Data type (label) |
|---|---|---|---|---|
| (U)*1 | Dummy (Input the character string ['U0'].) | — | Character string | —*2 (ANYSTRING_SINGLE) |
| (s1) | Connection number | 1 to 8 | 16-bit unsigned binary | ANY16 |
| (s2) | Head device number for storing the control data | Refer to Control data (☞ Page 1031) | Word | ANY16_ARRAY (Number of elements: 10) |
| (d) | Head device number which turns ON when the execution of the instruction is completed and remains on for 1 scan. If the instruction is completed with an error, (d)+1 is also turned on. | — | Bit | ANYBIT_ARRAY (Number of elements: 2) |
| EN | Execution condition | — | Bit | BOOL |
| ENO | Execution result | — | Bit | BOOL |

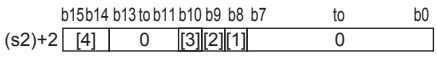
*1 In the case of the ST language and the FBD/LD language, U displays as U0.
*2 Regardless of the program language to be used, the data type is specified by a device. Do not specify a label.

##### ■Applicable devices

| Operand | Bit | Word | | | Double word | | Indirect specification | Constant | | | Others |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 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) | — | — | — | — | — | — | — | — | — | ○ | — |
| (s1) | — | ○ | — | — | — | — | ○ | ○ | — | — | — |
| (s2) | — | ○ | — | — | — | — | ○ | — | — | — | — |
| (d) | ○ | ○*1 | — | — | — | — | — | — | — | — | — |

*1 T, ST, and C cannot be used.

## ■Control data

| Device | Item | Description | Setting range | Set by[*1] |
|---|---|---|---|---|
| (s2)+0 | Execution type/ completion type | Specify whether to use the parameter value set using the engineering tool or to use the set values of the control data (s2)+2 to (s2)+6 during the open processing of the connection.<br><br>0000H:<br>The open processing is performed with the settings configured using "External Device Configuration" of the engineering tool.<br>8000H:<br>The open processing is performed with the set values of the control data (s2)+2 to (s2)+6. | 0000H<br>8000H | User |
| (s2)+1 | Completion status | The status at the completion of the instruction is stored.<br>0000H: Completed successfully<br>Other than 0000H: Completed with an error (error code)<br>For error codes, refer to MELSEC iQ-F FX5 User's Manual (Communication). | — | System |
| (s2)+2 | Application setting area |  <br>[1] Communication method (protocol)<br>0: TCP/IP<br>1: UDP/IP<br>[2] Socket communications function procedure<br>0: Communication protocol<br>1: Socket communications (No procedure)<br>[3] Communication protocol setting<br>0: Do not use the communication protocol support function (use the socket communications function)<br>1: Use the protocol support function<br>[4] Open method<br>00: Active open or UDP/IP<br>10: Unpassive open<br>11: Fullpassive open | As shown on the left | User |
| (s2)+3 | Host station port number | Specify the host station port number. | 1 to 5548, 5570 to 65534 (0001H to 15ACH, 15C2H to FFFEH)[*3] | |
| (s2)+4<br>(s2)+5 | Target device IP address[*2] | Specify the IP address of the target device. | 1 to 3758096382 (00000001H to DFFFFFFEH) | |
| (s2)+6 | Target device port number[*2] | Specify the port number of the target device. | 1 to 65534 (0001H to FFFEH) | |
| (s2)+7 to (s2)+9 | — | Use prohibited | — | System |

*1 User: Data to be set before the execution of the instruction. System: The CPU module stores the execution result of the instruction.

*2 When Unpassive open is selected, the target device IP address and target device port number are ignored.

*3 Of the host station port numbers, 1 to 1023 (0001H to 03FFH) are generally reserved port numbers and 61440 to 65534 (F000H to FFFEH) are used by other communication functions. Thus, using 1024 to 5548 and 5570 to 61439 (0400H to 15ACH and 15C2H to EFFFH) as the port numbers is recommended. Do not specify 5549 to 5569 (15ADH to 15C1H) since they are used by the system.

## Processing details

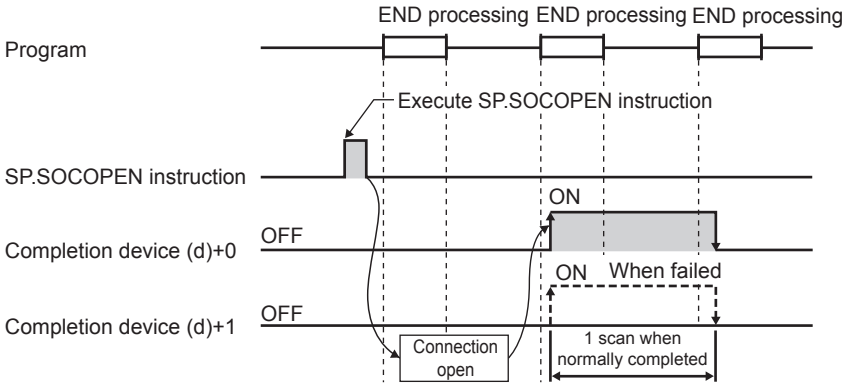
This instruction opens the connection specified by (s1).

The setting value used by the open processing is selected by (s2)+0.

The completion of the SP.SOCOPEN instruction can be checked using the completion devices (d)+0 and (d)+1.

- Completion device (d)+0: Turns ON during the END processing for the scan in which the SP.SOCOPEN instruction is completed, and turns OFF during the next END processing.
- Completion device (d)+1: Turns ON or OFF depending on the status of when the SP.SOCOPEN instruction is completed.

| Status | Description |
|---|---|
| When completed normally | The device does not change (remains OFF). |
| When completed with an error | The device turns ON during the END processing for the scan in which the SP.SOCOPEN instruction is completed, and turns OFF during the next END processing. |




The connection in which no protocol is set with the parameter can be opened and used. In this case, specify 8000H in (s2)+0 and the contents of the open processing in (s2)+2 to (s2)+6.

For details, refer to MELSEC iQ-F FX5 User's Manual (Communication).

## Operation error

| Error code (SD0/SD8067) | Description |
|---|---|
| 3405H | The connection number specified by (s1) is other than 1 to 8. |
| 2820H | The device number specified by (s2) or (d) is outside the range of the number of device points. |
| 2822H | Device that cannot be specified is specified. |
| 3582H | When an instruction which cannot be used in interruption routine program is used. |