Reading data from another station programmable controller (with notification)

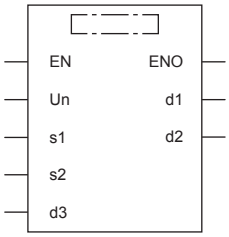
GP.SREAD

FX5S FX5UJ FX5U FX5UC

This instruction reads data from a device in another station programmable controller. (In units of words)
After the data reading is completed by the GP.SREAD instruction, the device of the other station is turned on. The other station can recognize that data has been read by the GP.SREAD instruction.
CC-Link IE TSN is compatible only with FX5U/FX5UC CPU module.

Ladder diagram	Structured text
	ENO:=GP_SREAD(EN,Un,s1,s2,d1,d2,d3);

FBD/LD



("GP_SREAD" enters ☐.)

Setting data

■Descriptions, ranges, and data types

Operand	Description	Range	Data type	Data type (label)
(U)*1	Position number of the module connected	■FX5UJ CPU module 1H to 8H ■FX5U/FX5UC CPU module 1H to 10H	16-bit unsigned binary	ANY16
(s1)	Own station start device where control data is stored	☞ Page 995 Control dataRefer to	Device name	ANY16*4
(s2)	Target station head device where the data to be read is stored	—	Character string*2	ANYSTRING_SINGLE*2
(d1)	Own station head device for storing the read data*3	—	Device name	ANY16*4
(d2)	Own station device to be turned on for one scan when the instruction completes. When the instruction completes with an error, (d2)+1 also turns on.	—	Bit	ANYBIT_ARRAY (Number of elements: 2)
(d3)	Target station device to be turned on for one scan when the instruction completes (The target station can recognize that data has been read from another station.)	—	Character string*2	ANYSTRING_SINGLE*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 For the specifications of the string data to be specified, refer to the following.
(☞ Page 987 Specifications of character string data specified by link dedicated instructions)
*3 The continuous area specified by the read data length (s1)+9 is required.
*4 Digit specified bit type label cannot be used.

■Applicable devices

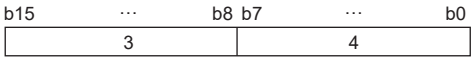
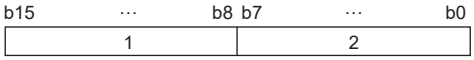
Operand	Bit	Word			Double word		Indirect specification	Constant			Others (U)
	X, Y, M, L, SM, F, B, SB, S	T, ST, C, D, W, SD, SW, R	U□\G□	Z	LC	LZ		K, H	E	$	
(U)	—	○	—	—	—	—	○	○	—	—	○
(s1)	—	○	—	—	—	—	○	—	—	—	—
(s2)	—	—	—	—	—	—	—	—	—	○	—
(d1)	—	○	—	—	—	—	○	—	—	—	—
(d2)	○*1	○*2	—	—	—	—	—	—	—	—	—
(d3)	—	—	—	—	—	—	—	—	—	○	—

*1 S cannot be used.

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

■Control data

Device	Item	Description	Setting range	Set by
(s1)+0	Error completion type	b15 b14 ··· b9 b8 b7 b6 ··· b0 (3) 0 (2) (1) 0 (1) Error completion type (b7) Specify whether to set data at completion with an error. • 0: Do not set data in (s1)+11 and later at completion with an error. • 1: Set data in (s1)+11 and later at completion with an error. (2)Setting of arrival acknowledgment time (b8) (compatible only with CC-Link IE TSN) • 0: By second • 1: By 100 ms (3)Method for specifying the target station address (b15) (compatible only with CC-Link IE TSN) • 0: Specify the network No. in (s1)+4 and the station No. in (s1)+5. • 1: Specify the IP address in (s1)+4 and 5.	0000H 0080H 0100H 0180H 8000H 8080H 8100H 8180H	User
(s1)+1	Completion status	The instruction completion status is stored. • 0: Normal • Other than 0: Error (error code)	—	System
(s1)+2	Own station channel	Specify the channel to be used by the own station. [CC-Link IE Field Network] • Channels 1 and 2 [CC-Link IE TSN] • Channels 1 to 8	1 to 8	User
(s1)+3	Target station CPU type	Specify the CPU type of the target station. • 0000H: Addressed to target station CPU (control CPU) • 03D0H: Addressed to control system CPU • 03D1H: Addressed to standby system CPU • 03D2H: Addressed to system A CPU • 03D3H: Addressed to system B CPU • 03E0H: Addressed to multiple CPU No. 1 • 03E1H: Addressed to multiple CPU No. 2 • 03E2H: Addressed to multiple CPU No. 3 • 03E3H: Addressed to multiple CPU No. 4 • 03FFH: Addressed to target station CPU (control CPU)	0000H 03D0H to 03D3H 03E0H to 03E3H 03FFH	User

Device	Item	Description	Setting range	Set by
(s1)+4	Target network number	[CC-Link IE Field Network] Specify the network No. of the target station. • 1 to 239 (network No.)	■(s1)+4 • Network No.: 1 to 239 ■(s1)+5 • Station No.: 1 to 120, 125 and 126 ■(s1)+4, 5 • IP address: 00000001H to FFFFFFFEH	User
		[CC-Link IE TSN] ■When "0" is specified in b15 in (s1)+0 Specify the network No. of the target station. • 1 to 239 (network No.) ■When "1" is specified in b15 in (s1)+0 Specify the IP address (third and fourth octets) of the target station.  • b8 to b15: Third octet • b0 to b7: Fourth octet		
(s1)+5	Target station number	[CC-Link IE Field Network] Specify the station number of the target station. • 125: Master station • 126: Master operating station • 1 to 120: Local station, intelligent device station or sub-master station		User
		[CC-Link IE TSN] ■When "0" is specified in b15 in (s1)+0 Specify the station number of the target station. • 1 to 120: Local station • 125: Master station ■When "1" is specified in b15 in (s1)+0 Specify the IP address (first and second octets) of the target station.  • b8 to b15: First octet • b0 to b7: Second octet		
(s1)+6	Not used	—	—	—
(s1)+7	Number of resends	■At instruction execution Specify the number of resends to be performed if the instruction is not completed within the monitoring time specified by (s1)+8. ■At completion of instruction The number of resends performed (result) is stored.	0 to 15	User/ system
(s1)+8	Arrival monitoring time	Specify the monitoring time until completion of processing. If the processing is not completed within the monitoring time, the instruction will be resent the number of times specified in (s1)+7. ■When "0" is specified in b8 in (s1)+0 • 0: 10 seconds • 1 to 32767: 1 to 32767 seconds ■When "1" is specified in b8 in (s1)+0 • 0: 10000 ms (10 seconds) • 1 to 65535: 1 to 65535 × 100 ms	0 to 65535	User
(s1)+9	Read data length	Specify the number of words to be read. • 1 to 960 (words) (When reading data from QnACPU: 1 to 480 (words))	1 to 960	User
(s1)+10	Not used	—	—	—
(s1)+11	Clock setting flag	The validity status (valid or invalid) of the data in (s1)+12 and later is stored. Note that the data in (s1)+12 and later is not cleared even when the instruction is completed successfully. • 0: Invalid • 1: Valid	—	System
(s1)+12	Clock data (Set only in an abnormal state)	Upper 8 bits: Month (01H to 12H) Lower 8 bits: Year (00H to 99H: Lower two digits of the year)	—	System
(s1)+13		Upper 8 bits: Hour (00H to 23H) Lower 8 bits: Day (01H to 31H)	—	System
(s1)+14		Upper 8 bits: Second (00H to 59H) Lower 8 bits: Minute (00H to 59H)	—	System
(s1)+15		Upper 8 bits: Year (00H to 99H: Upper two digits of the year) Lower 8 bits: Day of the week (00H (Sun.) to 06H (Sat.))	—	System

Device	Item	Description	Setting range	Set by
(s1)+16	Error detection network number*1	■When "0" is specified in b15 in (s1)+0 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.) • 1 to 239 (network No.) ■When "1" is specified in b15 in (s1)+0 (compatible only with CC-Link IE TSN) The IP address (third and fourth octets) of the station where an error was detected is stored. b15 … b8 b7 … b0 3 | 4 • b8 to b15: Third octet • b0 to b7: Fourth octet	—	System
(s1)+17	Error-detected station number*1	■When "0" is specified in b15 in (s1)+0 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.) [CC-Link IE Field Network] • 125: Master station • 1 to 120: Local station, intelligent device station or sub-master station [CC-Link IE TSN] • 125: Master station • 1 to 120: Device station ■When "1" is specified in b15 in (s1)+0 (compatible only with CC-Link IE TSN) The IP address (first and second octets) of the station where an error was detected is stored. b15 … b8 b7 … b0 1 | 2 • b8 to b15: First octet • b0 to b7: Second octet	—	System

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

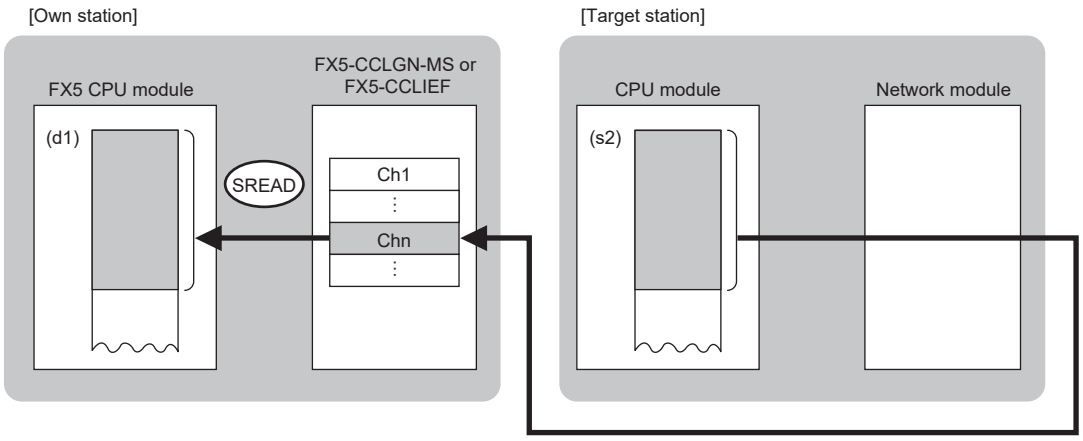
Point

- The continuous area (a maximum of 960 words) specified by the read data length ((s1)+9) is required in the read data storage device (d1).
- The number of resends (s1)+7 must be set every time the instruction is executed.

Processing details

- The instruction reads data by the specified number of words ((s1)+9) from the target station head device (s2) into the own station word device (after (d1)). Specify the target stations in control data ((s1)+4) and ((s1)+5). Upon completion of reading the device data specified by (s2), the completion device specified by (d2) turns on. In target station, upon completion of sending the device data specified by (s2), the device specified by (d3) turns on.
- For the target stations that can be specified, refer to the following.

☞ Page 986 Target networks and target station types



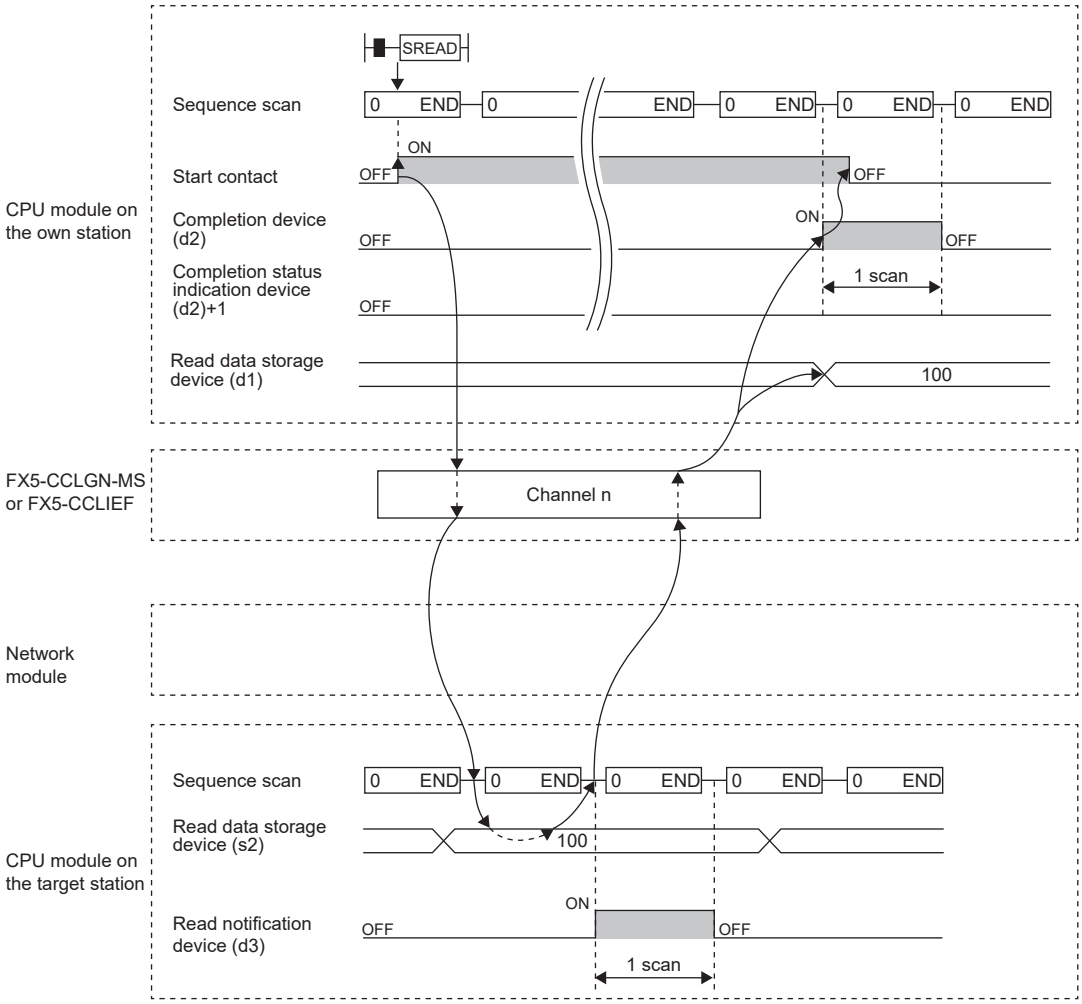
- When executing multiple link dedicated instructions concurrently, be careful not to overlap the channels of the link dedicated instructions. Multiple link dedicated instructions specifying the same channel cannot be used concurrently.

• The execution of the GP.SREAD 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.

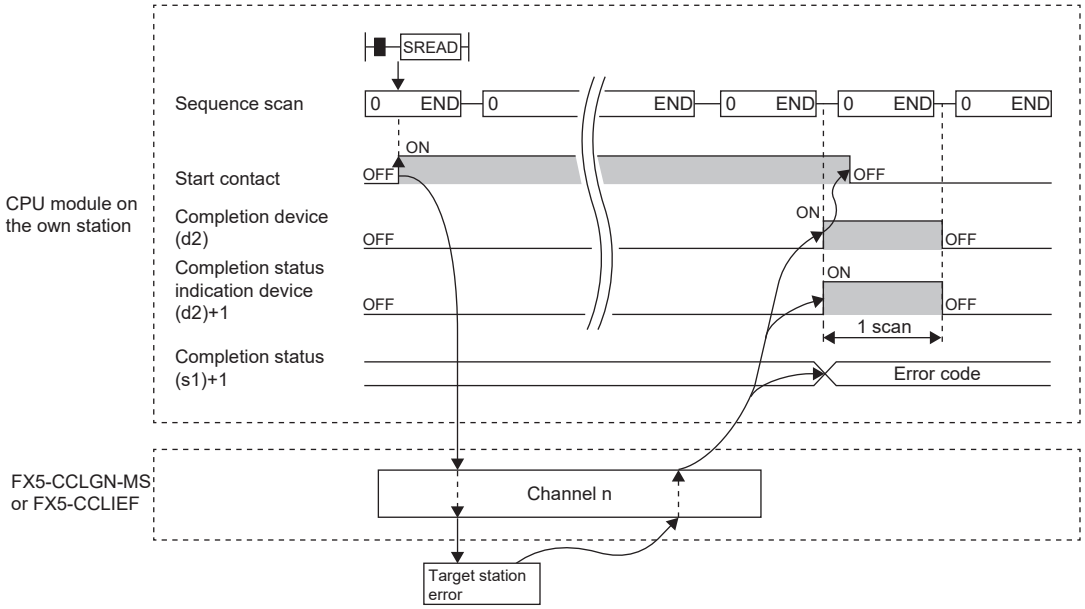
Device	Operation
Completion device (d2)	The device turns on during the END processing for the scan in which the GP.SREAD instruction is completed, and turns off during the next END processing.
Completion status indication device (d2)+1	The device turns on or off depending on the completion status of the GP.SREAD instruction. 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 GP.SREAD instruction is completed, and turns off during the next END processing.

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

When completed normally



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 ((s1)+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. Refer to MELSEC iQ-F FX5 CC-Link IE Field Network Module User's Manual.