

# 17.4 Predefined Protocol Support Function Instruction

## S(P).CPRTCL

**FX5S    FX5UJ    FX5U    FX5UC**

This instruction executes the communication protocol registered using the engineering tool.

Ladder diagram	Structured text
	<pre>ENO:=S_CPRRTL(EN,U0,s,n1,n2,d); ENO:=SP_CPRRTL(EN,U0,s,n1,n2,d);</pre>
FBD/LD	

("S\_CPRRTL", "SP\_CPRRTL" enters □.)

### Setting data

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

Operand	Description	Range	Data type	Data type (label)
(U) <sup>*1</sup>	Dummy (Input the character string ["U0"].)	—	Character string	ANYSTRING_SINGLE
(n1)	Communication channel	■ FX5S/FX5UJ CPU module K2 to 4 ■ FX5U CPU module K1 to 4 ■ FX5UC CPU module K1, K3 to 4	16-bit unsigned binary	ANY16_U
(n2)	Number of protocols to be executed continuously	1 to 8	16-bit unsigned binary	ANY16_U
(s)	Head device number for storing the control data	Refer to Control data ( <a href="#">Page 1130</a> )	Word	ANY16_ARRAY (Number of elements: 18)
(d)	Head device number which turns ON when the execution of the instruction is completed and remains on for 1 scan. When the instruction completes with an error, (d)+1 also turns 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.

#### ■ 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		K, H	E	\$	
(U)	—	○	—	—	—	—	○	—	—	○	—
(n1)	—	○	—	—	—	—	○	○	—	—	—
(n2)	—	○	—	—	—	—	○	○	—	—	—
(s)	—	○	—	—	—	—	○	—	—	—	—
(d)	○	○ <sup>*1</sup>	—	—	—	—	—	—	—	—	—

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

## ■Control data

Device	Item	Description	Setting range	Set by <sup>*1</sup>
(s)+0	Completion status	The completion status is stored upon completion of the instruction. When two or more protocols are executed, the execution result of the protocol executed last is stored. 0: Normal completion Other than 0: Error completion (error code)	—	System
(s)+1	Resulting number of executed protocols	The number of protocols executed by the S(P).CPRTCL instruction is stored. Any protocol where an error occurred is also included in the execution number. If the setting of setting data or control data contains an error, "0" is stored.	0, 1 to 8	System
(s)+2	Execution protocol number 1	Specify the number of the protocol to be executed first.	1 to 64	User
(s)+3	Execution protocol number 2	Specify the number of the protocol to be executed second.	0, 1 to 64	
(s)+4	Execution protocol number 3	Specify the number of the protocol to be executed third.	0, 1 to 64	
(s)+5	Execution protocol number 4	Specify the number of the protocol to be executed fourth.	0, 1 to 64	
(s)+6	Execution protocol number 5	Specify the number of the protocol to be executed fifth.	0, 1 to 64	
(s)+7	Execution protocol number 6	Specify the number of the protocol to be executed sixth.	0, 1 to 64	
(s)+8	Execution protocol number 7	Specify the number of the protocol to be executed seventh.	0, 1 to 64	
(s)+9	Execution protocol number 8	Specify the number of the protocol to be executed eighth.	0, 1 to 64	
(s)+10	Collation match Receive packet number 1	If receiving is included in the communication type of the protocol that has been executed first, the receive packet number successful in collation match is stored. If the communication type is "receive only", "0" is stored. If an error occurs during execution of the first protocol, "0" is stored.	0, 1 to 16	System
(s)+11	Collation match Receive packet number 2	If receiving is included in the communication type of the protocol that has been executed second, the receive packet number successful in collation match is stored. If the communication type is "receive only", "0" is stored. If an error occurs during execution of the second protocol, "0" is stored. If the number of protocols executed is less than 2, "0" is stored.	0, 1 to 16	
(s)+12	Collation match Receive packet number 3	If receiving is included in the communication type of the protocol that has been executed third, the receive packet number successful in collation match is stored. If the communication type is "receive only", "0" is stored. If an error occurs during execution of the third protocol, "0" is stored. If the number of protocols executed is less than 3, "0" is stored.	0, 1 to 16	
(s)+13	Collation match Receive packet number 4	If receiving is included in the communication type of the protocol that has been executed fourth, the receive packet number successful in collation match is stored. If the communication type is "receive only", "0" is stored. If an error occurs during execution of the fourth protocol, "0" is stored. If the number of protocols executed is less than 4, "0" is stored.	0, 1 to 16	
(s)+14	Collation match Receive packet number 5	If receiving is included in the communication type of the protocol that has been executed fifth, the receive packet number successful in collation match is stored. If the communication type is "receive only", "0" is stored. If an error occurs during execution of the fifth protocol, "0" is stored. If the number of protocols executed is less than 5, "0" is stored.	0, 1 to 16	
(s)+15	Collation match Receive packet number 6	If receiving is included in the communication type of the protocol that has been executed sixth, the receive packet number successful in collation match is stored. If the communication type is "receive only", "0" is stored. If an error occurs during execution of the sixth protocol, "0" is stored. If the number of protocols executed is less than 6, "0" is stored.	0, 1 to 16	
(s)+16	Collation match Receive packet number 7	If receiving is included in the communication type of the protocol that has been executed seventh, the receive packet number successful in collation match is stored. If the communication type is "receive only", "0" is stored. If an error occurs during execution of the seventh protocol, "0" is stored. If the number of protocols executed is less than 7, "0" is stored.	0, 1 to 16	
(s)+17	Collation match Receive packet number 8	If receiving is included in the communication type of the protocol that has been executed eighth, the receive packet number successful in collation match is stored. If the communication type is "receive only", "0" is stored. If an error occurs during execution of the eighth protocol, "0" is stored. If the number of protocols executed is less than 8, "0" is stored.	0, 1 to 16	

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

## Processing details

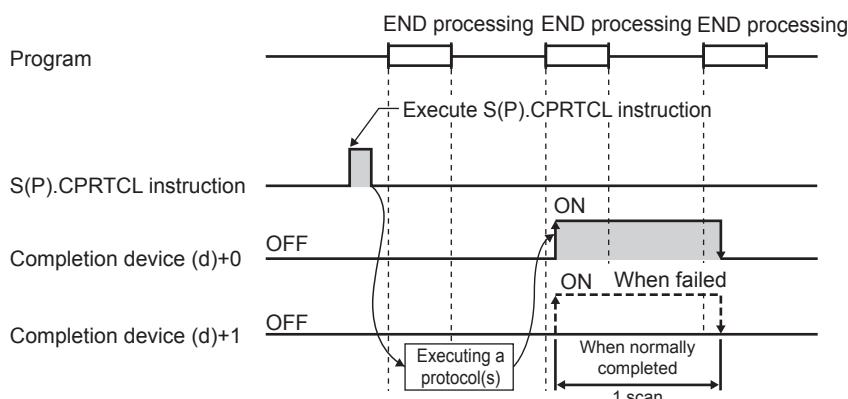
This instruction executes the protocol registered using the engineering tool. Using CH specified by (n1), the instruction executes the protocol in accordance with the control data stored in the device specified by (s) and later. The instruction continuously executes as many protocols as specified by (n2) (a maximum of 8 protocols) at one time.

The number of executed protocols is stored in the device specified by (s)+1.

The completion of the S(P).CPRTCL 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 S(P).CPRTCL instruction is completed, and turns OFF during the next END processing.
- Completion device (d)+1: Turns ON or OFF depending on the status when the S(P).CPRTCL 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 S(P).CPRTCL instruction is completed, and turns OFF during the next END processing.



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

## Precautions

- If an error occurs in the mth protocol while multiple protocols are being executed, the instruction does not execute the "m+1"th protocol and after and is completed with an error.
- The communication CH for which the S(P).CPRTCL instruction can be executed are only those for which "Predefined protocol support function" is specified for the communication protocol.
- If a cancel request is received during execution of the mth protocol while multiple protocols are executed continuously, the following is stored in (s).

Device	Item	Description
(s)+0	Completion status	The error codes.
(s)+1	Resulting number of executed protocols	The executed protocol number.
(s)+10	Collation match Receive packet number 1	The receive packet number successful in collation match for the already executed protocol.
:	:	
(s)+m+8	Collation match Receive packet number m-1	

- If same instructions are executed for the same CH, the subsequent instruction is ignored and is not executed until the preceding instruction is completed.

For other precautions, refer to [MELSEC iQ-F FX5 User's Manual \(Communication\)](#).

## Operation error

Error code (SD0/SD8067)	Description
2820H	The device used exceeded the specified range.
2821H	The device used to store data are overlapping.
2822H	Device that cannot be specified is specified.
3405H	The input data was out of range.