11 SFC PROGRAM INSTRUCTIONS

Point

This chapter describes the instructions used in SFC programs. For details on SFC programs, refer to the following.

MELSEC iQ-F FX5 Programming Manual (Program Design)

11.1 SFC Control Instructions

Checking the status of a step

LD, LDI, AND, ANI, OR, ORI [S□/BL□\S□]

FX5S FX5UJ FX5U FX5UC

• LD: Normally open contact, LDI: Normally closed contact

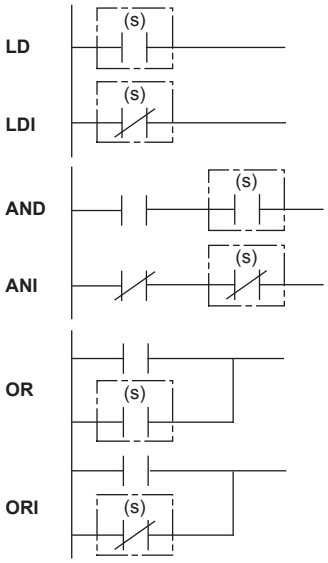
These instructions output the status (active or inactive) of the specified step as the operation result.

• AND: Normally open contact series connection, ANI: Normally closed contact series connection

These instructions perform an AND operation between the status (active or inactive) of the specified step and the previous operation result(s), and output the operation result.

• OR: Single normally open contact parallel connection, ORI: Single normally closed contact parallel connection

These instructions perform an OR operation between the status (active or inactive) of the specified step and the previous operation result(s), and output the operation result.

Ladder diagram	Structured text
	Not supported.

FBD/LD
Not supported.

Setting data

■Descriptions, ranges, and data types

Operand	Description	Range	Data type	Data type (label)
(s)	Device used as a contact	—	Bit	ANY_BOOL

■Applicable devices

Operand	Bit	Word			Double word		Indirect specification	Constant			Others (BL□\S□)
	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	$	
(s)	○*1*2	—	—	—	—	—	—	—	—	—	○*2

*1 Only S can be used.
*2 Indexing is not available.

Processing details

- These instructions check whether the specified step in the specified block is active or not.
- The status (on or off) of each contact will be as follows depending on the status (active or inactive) of the specified step.

Status of the specified step	Contact of the normally open contact instruction	Contact of the normally closed contact instruction
Active	ON	OFF
Inactive*1	OFF	ON

*1 Including the cases where no corresponding step exists in an SFC program.

- The following table summarizes specification methods of steps.

Program		Specification method
SFC program	Specifying a step in current block	Use S□.
	Specifying a step in another block	Use BL□\S□.
Sequence program		• Use BL□\S□. • If the block No. is not specified, the target block will be the block 0.

- If the block No. or the step No. specified is out of range, both of the normally open contact and normally closed contact turn off.
- If the instruction is executed while no SFC program exists (SM320 (Presence/absence of SFC program) is off) or SM321 (Start/stop SFC program) is off and both of the specified block No. and step No. are within the range, the normally open contact instruction turns off and the normally closed contact instruction turns on.

Operation error

Error code (SD0/SD8067)	Description
2820H	When a block No. is specified, the specified block No. is out of the range of 0 to 31.
	When a block No. is specified, the specified step No. is out of the range of 0 to 511.
	When a block No. is specified, the step relay No. assigned the specified step is out of the range of 0 to 4095.
	When a block No. is not specified, the specified step No. is out of the range of 0 to 4095.
3582H	The SFC control instruction is used in the interrupt routine program.