Pulse operation start, pulse series connection, pulse parallel connection

LDP, LDF, ANDP, ANDF, ORP, ORF

FX5S FX5UJ FX5U FX5UC

• LDP: Rising edge pulse operation start instruction

This becomes conductive (ON) only at the rising edge (OFF to ON) of the bit device specified by (s).

• LDF: Falling edge pulse operation start instruction

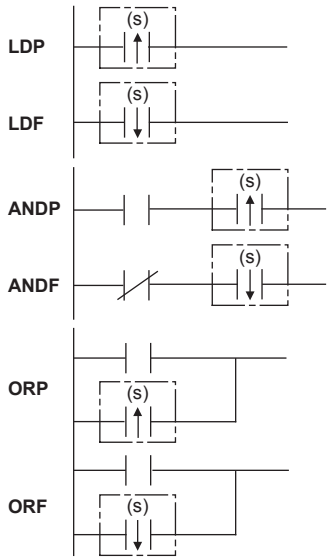
This becomes conductive (ON) only at the falling edge (ON to OFF) of the bit device specified by (s).

• ANDP: Rising edge pulse series connection instruction/ANDF: Falling edge pulse series connection instruction

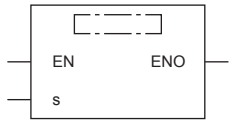
This instruction ANDs the bit device specified by (s) with the operation result so far, and uses the result as the operation result.

• ORP: Rising edge pulse parallel connection/ORF: Falling edge pulse parallel connection

This instruction ORs the bit device specified by (s) with the operation result so far, and uses the result as the operation result.

Ladder diagram	Structured text
	ENO:=LDP(EN,s); ENO:=LDF(EN,s); ENO:=ANDP(EN,s); ENO:=ANDF(EN,s); ENO:=ORP(EN,s); ENO:=ORF(EN,s);

FBD/LD



Setting data

■Descriptions, ranges, and data types

Operand	Remarks	Range	Data type	Data type (label)
(s)	Device used as a contact	—	Bit	ANY_BOOL
EN	Execution condition	—	Bit	BOOL
ENO	Execution result	—	Bit	BOOL

■Applicable devices

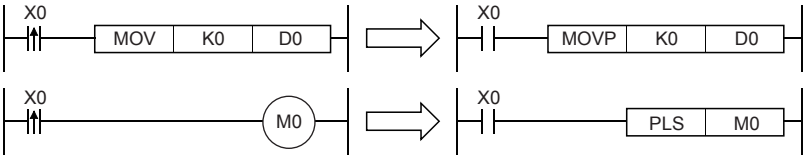
Operand	Bit	Word			Double word		Indirect specification	Constant			Others (DX)
	X, Y, M, L, SM, F, B, SB, S	T, ST, C, D, W, SD, SW, R	U□\G□	Z	LC	LZ		K, H	E	$	
(s)	○	○	○	—	○	—	—	—	—	—	○

Processing details

■LDP, LDF

- The LDP instruction is the rising edge pulse operation start instruction, and becomes conductive (ON) only at the rising edge (OFF to ON) of the specified bit device. When word devices are specified by bits, this instruction becomes conductive (ON) only when the status of the specified bit changes to 0→1. When only the LDP instruction is programmed, operation is the same as the conversion of the instruction under execution to pulse instruction (□P).

The following figure shows an example when a ladder using the LDP instruction is replaced with a ladder not using the LDP instruction.



- The LDF instruction is the falling edge pulse operation start instruction, and becomes conductive (ON) at the falling edge (ON to OFF) of the specified bit device. When word devices are specified by bits, this instruction becomes conductive only when the status of the specified bit changes to 1→0.

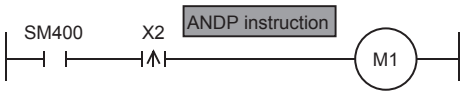
■ANDP, ANDF

- The ANDP instruction is the rising edge pulse series connection instruction, and the ANDF instruction is the falling edge pulse series connection. These instructions AND with the operation result so far, and uses the result as the operation result. The table below shows the ON/OFF information used by these instructions.

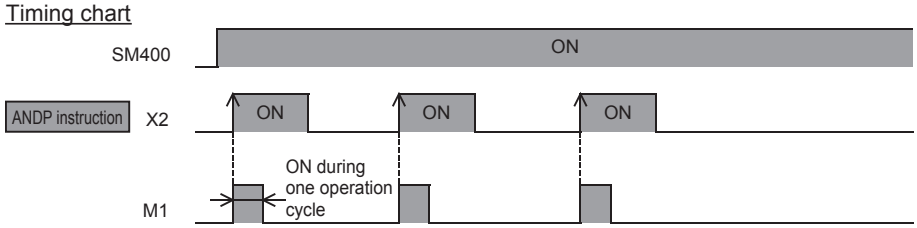
Device specified by ANDP, ANDF		ANDP status	ANDF status
Bit device	Bit specification of word device		
OFF to ON	0→1	ON	OFF
OFF	0	OFF	OFF
ON	1	OFF	OFF
ON to OFF	1→0	OFF	ON

Ex.

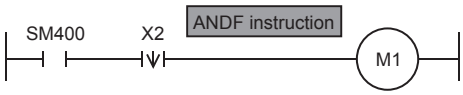
- ANDP instruction (series connection of rising edge pulse)



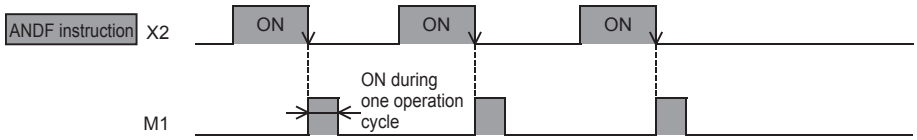
Timing chart



- ANDF instruction (series connection of falling edge pulse)



Timing chart



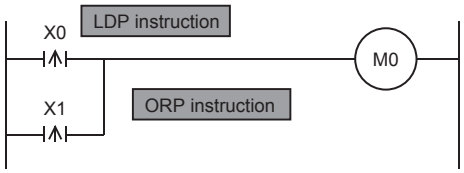
■ORP, ORF

- The ORP instruction is the rising edge pulse parallel connection instruction, and the ORF instruction is the falling edge pulse parallel connection instruction. These instructions OR with the operation result so far, and use the result as the operation result. The table below shows the ON/OFF information used by these instructions.

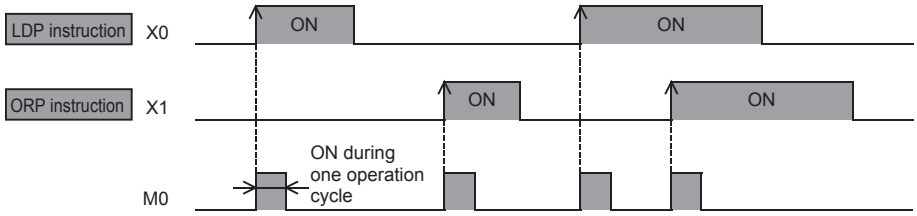
Device specified by ORP, ORF		ORP status	ORF status
Bit device	Bit specification of word device		
OFF to ON	0→1	ON	OFF
OFF	0	OFF	OFF
ON	1	OFF	OFF
ON to OFF	1→0	OFF	ON

Program example

- LDP and ORP instructions (initial logical operation of rising edge pulse, and parallel connection of rising edge pulse)

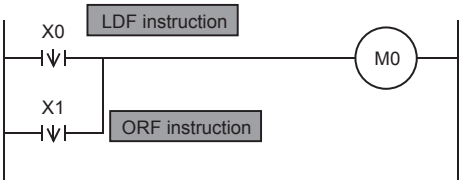


Timing chart

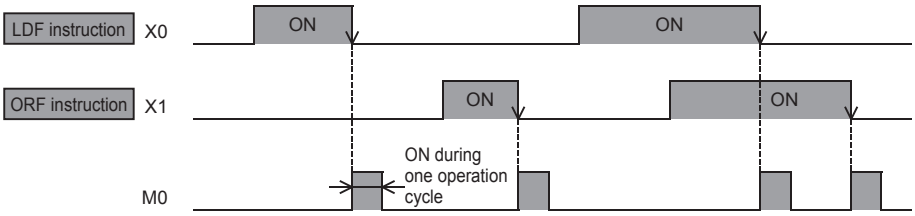


In the example shown above, M0 is ON during only one operation cycle when X0 or X1 turn from OFF to ON.

• LDF and ORF instructions (initial logical operation of falling edge pulse, and parallel connection of falling edge pulse)



Timing chart



In the example shown above, M0 is ON during only one operation cycle when X0 or X1 turn from ON to OFF.

Operation error

There is no operation error.