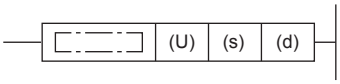
Starting the positioning

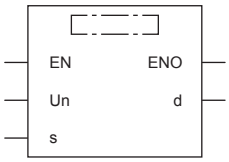
GP.PSTRT☐

FX5S FX5UJ FX5U FX5UC

This instruction starts positioning of the specified axis.

Ladder diagram	Structured text
 ("GP.PSTRT1, GP.PSTRT2" enters ☐.)	ENO:=GP_PSTRT1(EN,Un,s,d); ENO:=GP_PSTRT2(EN,Un,s,d);

FBD/LD



("GP_PSTRT1, GP_PSTRT2" 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
(s)	Own station head device where control data is stored	☞ Page 1185 Control dataRefer to	Device name	ANY16_ARRAY*2 (Number of elements: 3)
(d)	Own station device to be turned on for one scan when the instruction completes. 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 Un.

*2 When specifying setting data by using a label, define an array to secure enough operation area and specify an element of the array label.
Digit specified bit type label cannot be used.

■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)
(U)	—	○	—	—	—	—	○	○	—	—	○
(s)	—	○	—	—	—	—	○	—	—	—	—
(d)	○*1	○*2	—	—	—	—	—	—	—	—	—

*1 S cannot be used.

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

■Control data

Device	Item	Description	Setting range	Set by
(s)+0	System area	—	—	—
(s)+1	Completion status	The instruction completion status is stored. • 0: Normal • Other than 0: Error (error code)	—	System
(s)+2	Start number	Specifies the number of the following data that is started with the GP.PSTRT☐ instruction. • Positioning data number: 1 to 600 • Block start: 7000 to 7004 • Machine OPR: 9001 • Fast OPR: 9002 • Present value change: 9003 • Multiple axes concurrent start: 9004	1 to 600 7000 to 7004 9001 to 9004	User

Processing details

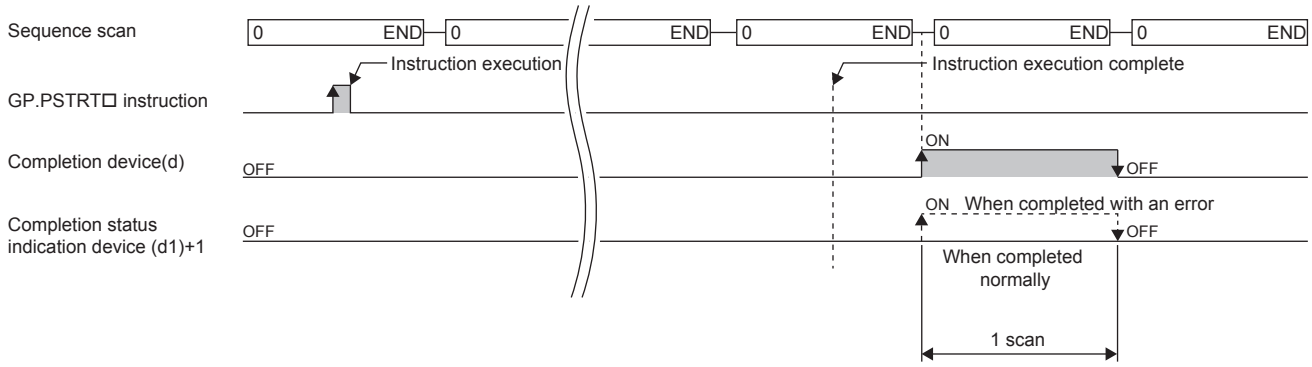
- The positioning is started for the specified axes below.

Instruction symbol	Target axis
GP.PSTRT1	Axis 1
GP.PSTRT2	Axis 2

- Block start, origin return start, present value change start, and multiple axes concurrent start are available by specifying one of 7000 to 7004 or 9001 to 9004 with "Start number" in (s)+2.
- Whether the GP.PSTRT☐ instruction has been completed normally or with an error can be checked with the completion device (d) or completion status indication device (d)+1.

Device	Description
Completion device (d)	This device turns on during the END processing of the scan where the GP.PSTRT☐ instruction completed, and turns off during the next END processing.
Completion status indication device (d)+1	This device turns on or off depending on the completion status of the GP.PSTRT☐ instruction. When completed normally: Unchanged from off. When completed with an error: Turns on during the END processing of the scan where the GP.PSTRT☐ instruction completed, and turns off during the next END processing.

- The following figure shows the operation at completion of the GP.PSTRT☐ instruction.



- For details of the function, refer to MELSEC iQ-F FX5 Positioning Module User's Manual.

Precautions

- If the positioning is started by using the GP.PSTRT☐ instruction, the [Cd.184] Positioning start signal will not turn on. In this case, although the start completion signals ([Md.31] Status: b14) turn on, the ON time is short; the program may fail to detect the ON state. For this reason, start completion cannot be checked using the start completion signals ([Md.31] Status: b14). Check the positioning control status with the start command of the GP.PSTRT☐ instruction or the [Md.141] BUSY signal.
- If the positioning is started by using the GP.PSTRT☐ instruction, and then the stop command is input before the positioning completes, the completion device (d) turns on for one scan and the execution of the GP.PSTRT☐ instruction completes.
- The following instructions cannot be executed simultaneously to a single axis. For different axes, any of the following can be executed concurrently with a GP.PSTRTo instruction.
  - Positioning start instruction (GP.PSTRT☐)
  - Absolute position restoration instruction (G.ABRST☐)
  - Teaching instruction (GP.TEACH☐)
- The GP.PSTRT☐ instruction can be executed when the READY signal ([Md.140] module status: b0) is ON. While the READY signal ([Md.140] module status: b0) is OFF, if the GP.PSTRT☐ instruction is executed, "PLC READY OFF start (Error code: 19A1H)" error occurs and positioning cannot be started. Turn the "[Cd.190] PLC READY signal" ON, and turn the READY signal ([Md.140] module status: b0) ON before executing the GP.PSTRT☐ instruction.
- If multiple axes concurrent start is executed using the GP.PSTRT☐ instruction, the completion device (d) turns on when the positioning completes for the axis where the GP.PSTRT☐ instruction has been executed (e.g. Axis 1 for GP.PSTRT1).
- If the GP.PSTRT☐ instruction is used, the starting time will delay 0 to 0.88ms relative to the [Cd.184] Positioning start signal.
- If this instruction is executed in an interrupt program with the priority 1, operation error (3580H) occurs. This instruction operates in an interrupt program with the priority 2 or 3.

Operation error

Error code ((s)+1)	Description
1862H	A value other than 1 to 600, 7000 to 7004, or 9001 to 9004 was set in "Starting number" of (s)+2.
1865H	An instruction was specified for an undefined axis.
19A1H	Start positioning when the "[Cd.190] PLC READY signal" is OFF.