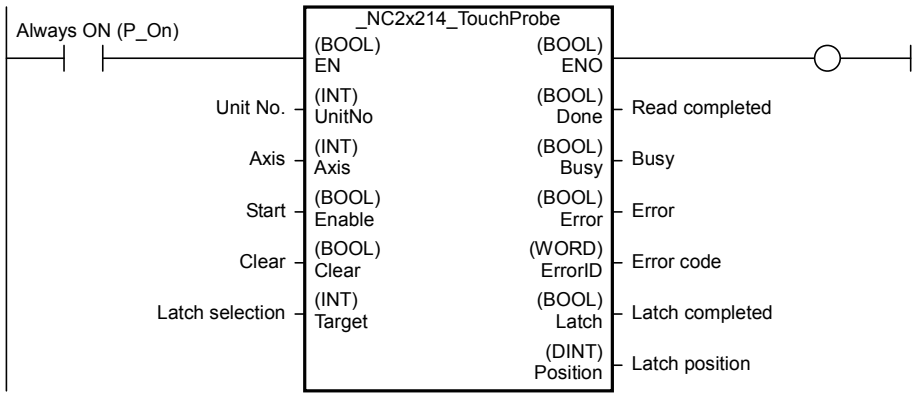
NC2x 214	Present Position Latch _NC2x214_TouchProbe

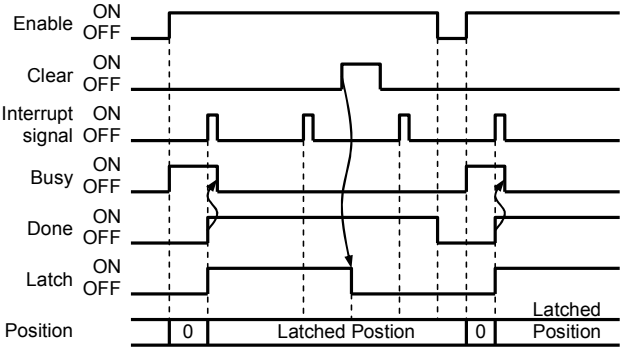
Basic function	Acquires the position at the time when the interrupt signal is input.
Symbol	
File name	Lib\FBL\omronlib\PositionController\NC2x_NC2x214_TouchProbe10.cxf
Applicable models	Position Control Units: CJ1W-NC214/234/414/434 CPU Unit: CJ1*-CPU**H Version 3.0 or later CJ1M-CPU** Version 3.0 or later CP1H CJ2H-CPU**(-EIP) CX-Programmer: Version 5.0 or later
Languages in function block definitions	Ladder programming
Conditions for usage	・When using this FB, the following setting is required for the axis parameter of the Position Control Unit.

Address	Name	Size	Range	Setting value
+2.12	I/O Function Selection Interrupt Input Function	1 bit	0, 1	1: Use as present position latch signal

・If the setting is not made correctly, the FB will not work normally.

Function description

・For the axis specified in "Unit No. (UnitNo)" and "Axis (Axis)", the external input latch will be executed when "Start (Enable)" turns ON.
・By inputting the valid interrupt signal, the latch position will be output for “Latch position (Position)”.
・The type of latch (command position/feedback position) will be specified in “Latch selection (Target)”.
・"Read completed (Done)" will turn ON when this FB acquires the latch position. It will not turn ON when interrupted by a duplicate start of other instances, and an error occurrence.
During "Read completed (Done)" ON, the next interrupt signal is ignored.
・"Busy (Busy)" will be set when the "Start (Enable)" is turned ON.
"Busy (Busy)" will be reset when any of "Read completed (Done)" or "Error (Error)" is turned ON.
Even if an error occurs when the input variable is out of the range, etc., "Busy (Busy)" will be set for at least one cycle.
・"Error (Error)" will be turned ON and "Error code (ErrorID)" will be output if an error occurs for the FB. This will not occur for error in other FBs or other instances of the FB.
・These statuses (DoneError/ErrorID) will be reset when "Start (Enable)" turns OFF. If "Start (Enable)" turns OFF before the positioning operation has been completed, the status will be set for at least one cycle when corresponding conditions have occurred.
・“Latch completed (Latch)” displays the acquisition status of latch data.
・When “Clear (Clear)” turns ON, “Latch completed (Latch)” will be reset. And the external input latch will be newly executed when "Start (Enable)" turns ON. When “Latch completed (Latch)” is left setting, new latching function is not executed, even if "Start (Enable)" turns ON.



Kind of FB definition	Always execution type. Connect the EN input to the Always ON Flag (P_On). The same instance cannot be used in two or more places.

EN input condition

- Connect the EN input to the Always ON Flag (P_On).
  If another bit is connected to EN, the FB outputs will be held when the connected bit turns OFF.

Restrictions Other

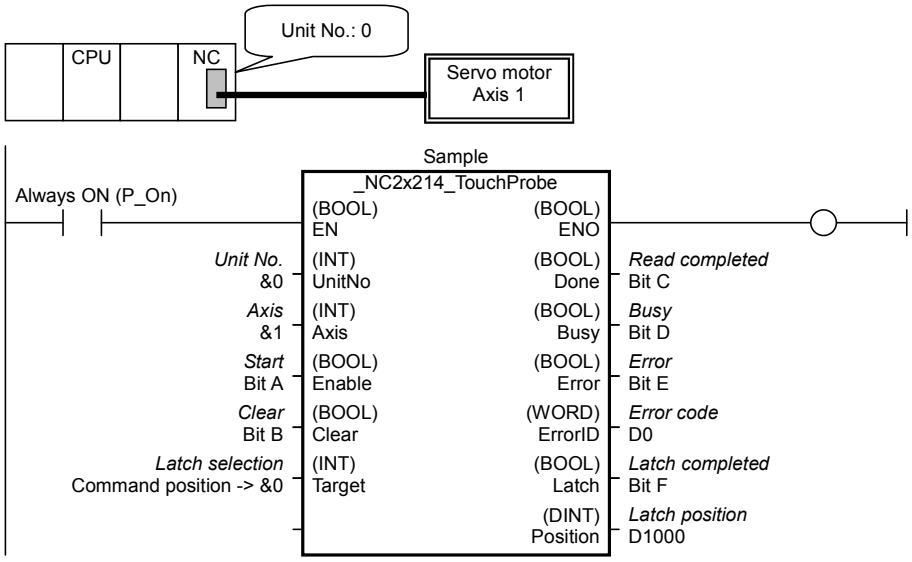
- This FB does not recognize the existence of the axis specified in "Unit No. (UnitNo)" and "Axis (Axis)". If these input variables have not been set correctly, the FB may not work normally.
- Axes to be used can be changed only when “Start (Enable)” turns ON. They cannot be changed when “Clear (Clear)” turns ON.
- New latch data cannot be acquired during the status in which latch data has been acquired. Turn ON “Clear (Clear)”, confirm that “Latch completed (Latch)” has turned OFF, and then execute this FB.
- “Clear (Clear)” should be turned ON in “Start (Enable)” ON. If “Clear (Clear)” is executed during “Start (Enable)” OFF, PCU may not work normally.
- This FB changes the following Axis parameters.

Address	Name	Size	Setting value
+58.00	Interrupt Feeding Reference Position / Latch Target Position Selection	1 bit	0(OFF): Command position 1(ON): Feedback position
+58.01	Interrupt Input Undetected Error Enable	1 bit	0(OFF)

- This FB uses bits of the Position Control Unit. Therefore, do not turn these bits ON or OFF. For the same reason, do not use these bits for coil outputs (OUT commands).
  Refer to the "■Used bits list" for the bits used by this FB.

Application example

Turning OFF bit A and then ON will execute the external input latch of the Servomotor (X axis) connected to the Position Control Unit of unit number 0.



Related manuals

CJ-series Position Control Unit Operation Manual (W477)
9-7 Present Position Latch Function
12-6 Error Code List

■Variable Tables
Input Variables

Name	Variable name	Data type	Default	Range	Description
EN	EN	BOOL			1(ON): FB started 0(OFF): FB not started
Unit No.	UnitNo	INT	&0	&0 to &94	Specify the unit number.
Axis	Axis	INT	&1	&1 to &4	Specify the axis number.
Start	Enable	BOOL	0(OFF)		↑: External input latch start ↓: External input latch interrupted
Clear	Mask	BOOL	0(OFF)		↑: External input latch occurring status cleared
Latch selection	Target	INT	&0	&0, &1	Select the command position or feedback position for the latch. &0: Command position &1: Feedback position

Output Variables

Name	Variable name	Data type	Range	Description
ENO	ENO	BOOL		1(ON): FB operating normally 0(OFF): FB not started / FB ended with error
Read completed	Done	BOOL		Turns ON when the external input latch operation is completed.
Busy	Busy	BOOL		Turns ON when FB is in the process.
Error	Error	BOOL		Turns ON when an error has occurred in the FB. Refer to "Error code (ErrorID)" for details.
Error code	ErrorID	WORD		Returns the error code when an error occurred in the FB. Refer to "■Error code list" for details.
Latch completed	Latch	BOOL		1(ON): External input latch occurring 0(OFF): External input latch acceptable
Latch position	Position	DINT		Outputs the acquired latch position.

■Error code list

Error name	Error code	Probable cause	Clearing method
Input variable out of range	#0001	The value of input variable of this FB is out of valid range.	Set the value of input variable within the specified range.
Operating memory area allocation out of range	#0002	The allocation of Axis Operating Memory Area of Common Parameter is out of allowable setting range.	Correct the allocation of Axis Operating Memory Area of Common Parameter so that it falls within the allowable setting range of data.
Unit error	#1001	An error in individual unit has occurred.	Check "Unit common error code". Identify the error cause from the Operation Manual of the Position Control Unit.
Parameter setting error	#1100	Parameter transfer via the data transfer command has not been completed normally.	Check that the Position Control Unit status and parameter set values are within the range of the specifications.
Unit setup	#2000	The Position Control Unit is not in unit ready status.	Execute the FB after putting the Position Control Unit in unit ready status.
Interrupt input mask enable / Present position latch enable	#3206	"Interrupt input mask enable / Present position latch enable" of the Direct Operation Command Memory area has been operated by the outside of the FB.	Do not operate each bit which the active FB is operating, by the external unit of the FB. Do not use it on OUT command.

■Used bits list

Memory area	Name	Data type	Address	Note
Direct Operation Command Memory Area	Interrupt input mask enable/ present position latch enable	BOOL	B+00.06	
	Latch completed clear	BOOL	B+00.15	

■Version History

Version	Date	Contents
1.00	2009.02.	Original production.
1.01	2010.04	The problem is fixed, which causes the “IOWR Busy” warning when the “Feedback Counter Present Value” or “External Encoder Axis Count Value” is written by using the IOWR instruction.

■Note

This document explains the function of the function block.
It does not provide information of restrictions on the use of Units and Components or combination of them. For actual applications, make sure to read the operation manuals of the applicable products.