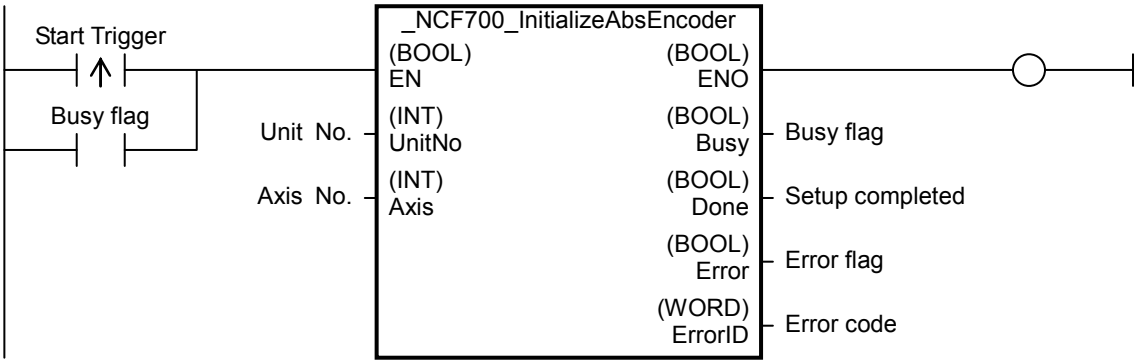
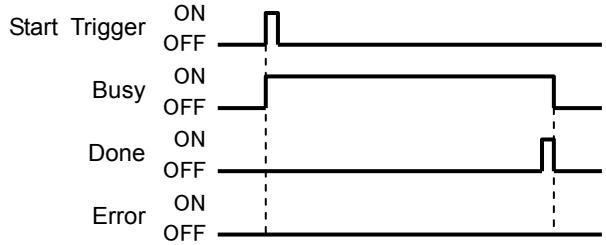
NCF 700	Absolute Encoder Setup _NCF700_InitializeAbsEncoder

Basic function	An absolute encoder is setup.	
Symbol		
File name	Lib\FBL\omronlib\PositionController\NCF\NCF700_InitializeAbsEncoder12.cxf	
Applicable models	Position Control Unit	CJ1W-NCF71, CS1W-NCF71
	CPU Unit	CS1*-CPU**H Unit Version 3.0 or later CJ1*-CPU**H Unit Version 3.0 or later CJ1M-CPU** Unit Version 3.0 or later CP1H
	CX-Programmer	Version 5.0 or later
Languages in function block definitions	Ladder programming	
Conditions for usage	None	
Function description	Absolute encoder setup is performed on the Position Control Unit specified with Unit No. (UnitNo) and Axis No. (Axis). This FB enables the initial setup of an absolute encoder or clearing the multi-turn data to 0. Note: Depending on the Unit Version of the Position Control Units, use of some functions available on this FB may be limited. For details, refer to Restrictions Other below. Use this FB after the following operations: ・Make appropriate setting so that an absolute encoder would be used as an absolute encoder. ・When there is a Unit Error, execute Unit Error Reset. ・Execute this FB with the MECHATROLINK communications stopped (connection released). Error flag (Error) will turn ON and Error code (ErrorID) will be output when an error related to this FB occurs or when an error occurs in the Position Control Unit or Servo Drive while executing this FB.	
Kind of FB definition	Multiple cycles execution type. This FB is processed over multiple cycles. The same instance cannot be used in two or more places in order to keep the internal state.	
FB precautions	・The FB is processed over multiple cycles. The “Busy flag (Busy)” can be used to check whether the FB is being processed. ・“Setup completed (Done)” or “Error flag (Error)” will be turned ON for one cycle only after processing is completed. Use these flags to detect the end of FB processing. 	
EN input condition	・As shown above, connect EN to an OR circuit between an upwardly differentiated condition for the Start trigger and the Busy flag (Busy) output from this FB.	

Restrictions Other

- Use an upwardly differentiated input for the input to EN.
- If one or more input variables are set out of range, the output from ENO will turn OFF and the FB will not be executed.
- Depending on the Unit Version of the Position Control Units, use of some functions available on this FB may be limited. See below.

Unit Version	Initial Setup (when encoder alarm occurs)	Clearing multi-turn data
Ver.1.1	Not available If executed, an MLK Initialization Error will occur in the Position Control Unit. To avoid this, execute the absolute encoder initial setup using the support tool for the Servo Driver.	Not available
Ver.1.2 or higher	Available	Available

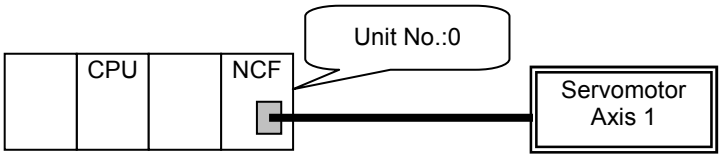
- This FB is executable when Servo Drive is in the following status:.

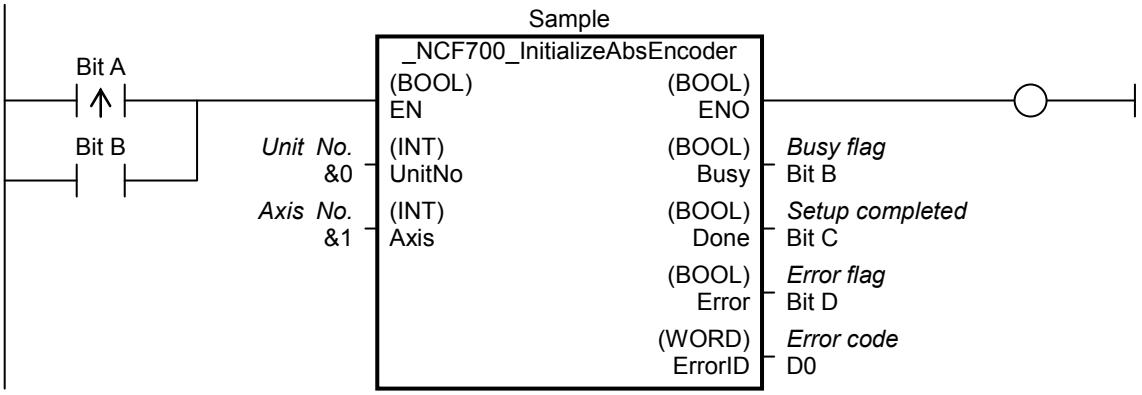
Status of drive	Alarm code	Note
Alarm none	None. (00)	
Backup error (ABS)	A.81□(Hex)	W-series Servo drives
Checksum error (ABS)	A.82□(Hex)	
Absolute encoder system down error	A.40(Dec)	G-series Servo drives
Absolute encoder counter overflow error	A.41(Dec)	
Absolute encoder overspeed error	A.42(Dec)	
Absolute encoder one-turn counter error	A.44(Dec)	
Absolute encoder multi-turn counter error	A.45(Dec)	

- Execute this FB with the MECHATROLINK communications of the Position Control Unit stopped (i.e., connection released).
- Execution of this FB will be ignored while the MECHATROLINK communications are in progress (i.e., connection established). If this FB is started while the connection is being established, an error will occur.
- Executing this FB when there is a Unit Error (i.e., when the Unit Error Flag is ON) in the Position Control Unit will end the FB processing with an error. Make sure to execute Unit Error Reset before executing this FB if there is a Unit Error.
- This FB uses the CONNECT Bit of the Position Control Unit. Do not turn ON or OFF the CONNECT Bit from when EN turns ON to when Setup completed (Done) turns ON (i.e., while the Busy flag (Busy) is ON. Additionally, when using the CONNECT Bit as an Output Bit in the ladder program outside of this FB, make sure to use the Bit as a self-holding bit.
- After executing Absolute Encoder Setup using this FB, make sure to turn OFF the power to the Servo Driver once and then ON again. Otherwise, normal operations of the Servo Driver cannot be guaranteed (for example, the Servo Driver will not respond to the command from the Position Control Unit).

Application example

When turning Bit A ON from OFF, the Absolute encoder setup is performed for the Servomotor (Axis 1) connected to the Position Control Unit of the Unit No. 0.





Related manuals

Position Control Units OPERATION MANUAL (W426-E1)
8-6-4 Absolute Encoder Setup

■**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 &15	Specify the unit number.
Axis No.	Axis	INT	&1	&1 to &16	The value set here should correspond to the Axis No.

Output Variables

Name	Variable name	Data type	Range	Description
ENO	ENO	BOOL		1 (ON): FB operating normally 0 (OFF): FB not operating normally ・FB not started ・Input variable out of the range ・FB ended with error ・Not satisfy the condition for starting (connection released)
Busy flag	Busy	BOOL		This turns ON while this FB's processing is in progress. After processing is completed, it automatically turns OFF.
Setup completed	Done	BOOL		This turns ON only for 1 cycle at normal completion.
Error flag	Error	BOOL		This turns ON only for 1 cycle at completion with an error.
Error code	ErrorID	WORD		The error code of the error occurred in the FB will be output. For errors of the Position Control Unit or Servo Driver, an applicable Unit or Axis Error Code is output. For details of the errors, refer to the manual listed in the Related manuals above. A code of #0000 will be returned if any of the following conditions is satisfied. ・Unit No. or Axis No. is out of the range ・Executing this FB while the connection is established A code of # F001 will be returned if any of the following conditions is satisfied. ・The communication completed error occurs at the time of completion of communications with the Position Control Units.

■**Version History**

Version	Date	Contents
1.00	2005.04.	Original production
1.10	2005.07.	Change the logic for the timer operation in FB
1.20	2008.07.	The G-Series Servo Drives with Built-in MECHATROLINK-II Communications are newly supported.

■**The detailed contents of the upgrade**

Version	Detailed Contents
1.10	The timer operation in the FB when starting for the first time has been changed.
1.20	On the previous version prior to version 1.20, the default setting of Absolute encoder was not possible during encoder alarm occurrence on G-Series Servo Drive. On version 1.20, the default setting of Absolute encoder is now possible during encoder alarm occurrence.

■**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.