

NC2x 100	Run Program _NC2x100_RunProgram
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Basic function	Executes program (memory) operations.																																																																														
Symbol	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%; padding: 5px;">Always ON (P_On)</td> <td style="width: 5%;"></td> <td style="width: 5%;"></td> <td style="width: 15%;"></td> <td style="width: 15%;"></td> <td style="width: 15%;"></td> <td style="width: 15%;"></td> </tr> <tr> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="text-align: center; padding: 5px;">_NC2x100_RunProgram</td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> </tr> <tr> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;">(BOOL) EN</td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;">(BOOL) ENO</td> </tr> <tr> <td style="padding: 5px;">Unit No.</td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;">(INT) UnitNo</td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;">(BOOL) Done</td> </tr> <tr> <td style="padding: 5px;">Task</td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;">(INT) Task</td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;">(BOOL) Busy</td> </tr> <tr> <td style="padding: 5px;">Start</td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;">(BOOL) Execute</td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;">(BOOL) CommandAborted</td> </tr> <tr> <td style="padding: 5px;">Stop</td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;">(BOOL) Stop</td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;">(BOOL) Error</td> </tr> <tr> <td style="padding: 5px;">M code reset</td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;">(BOOL) MCodeReset</td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;">(WORD) ErrorID</td> </tr> <tr> <td style="padding: 5px;">Program No.</td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;">(INT) ProgramNo</td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;">(BOOL) ReadyMCodeReset</td> </tr> <tr> <td style="padding: 5px;">Start mode</td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;">(INT) StartMode</td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;">(INT) ExecutionNo</td> </tr> <tr> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;">(INT) MCode</td> </tr> </table>		Always ON (P_On)										_NC2x100_RunProgram							(BOOL) EN			(BOOL) ENO	Unit No.			(INT) UnitNo			(BOOL) Done	Task			(INT) Task			(BOOL) Busy	Start			(BOOL) Execute			(BOOL) CommandAborted	Stop			(BOOL) Stop			(BOOL) Error	M code reset			(BOOL) MCodeReset			(WORD) ErrorID	Program No.			(INT) ProgramNo			(BOOL) ReadyMCodeReset	Start mode			(INT) StartMode			(INT) ExecutionNo							(INT) MCode
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File name	Lib\FBL\omronlib\PositionController\NC2x\ _NC2x100_RunProgram10.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	None.																																																																														
Function description	<ul style="list-style-type: none"> • When "Start (Execute)" turns ON, the program (memory) operation for the task specified in "Unit No. (UnitNo)" and "Task (Task)" is started. • Sequence number enable/disable and continuous start/independent start are specified in "Start mode (StartMode)". Program number (sequence number) is specified in "Program No. (ProgramNo)" • "Program operation completed (Done)" is turned ON when the program operation for the FB has been completed. "Abort (CommandAborted)" will turn ON if forced interrupt operation is performed. • "Busy (Busy)" will be set when the "Start (Execute)" is turned ON. "Busy (Busy)" will be reset when any of "Program operation completed (Done)", "Abort (CommandAborted)", 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 (Done/CommandAborted/Error/ErrorID) will be reset when "Start (Execute)" turns OFF. If "Start (Execute)" turns OFF before the positioning operation has been completed, the status will be set for at least one cycle when corresponding conditions have occurred. • If "Stop (Stop)" is turned ON during the program operation, the program operation will decelerate to stop. • "M code (MCode)" displays the present value of M code. • If "M code reset (Reset)" is turned ON while "M code reset waiting (ReadyMCodeReset)" turns ON, M code reset will be executed. 																																																																														

<p>Kind of FB definition</p>	<p>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.</p>																																																							
<p>EN input condition</p>	<ul style="list-style-type: none"> 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. 																																																							
<p>Restrictions Other</p>	<ul style="list-style-type: none"> This FB does not recognize the existence of the task specified in "Unit No. (UnitNo)" and "Task (Task)". If these input variables have not been set correctly, the FB may not work normally. "Stop (Stop)" is also effective for program operation by other FB and instances. Targeted tasks can be changed only when "Start (Execute)" turns ON. They cannot be changed when "M code reset (Reset)" turns ON. 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. 																																																							
<p>Application example</p>	<p>Turning the bit A from OFF to ON will start a program (memory) operation at the axis (X axis) connected to the Position Control Unit with Unit number 0.</p> <table border="1" data-bbox="351 1209 1260 1724"> <thead> <tr> <th colspan="2">Sample</th> <th colspan="2">_NC2x100_RunProgram</th> <th></th> </tr> </thead> <tbody> <tr> <td>Always ON (P_On)</td> <td>(BOOL)</td> <td>EN</td> <td>(BOOL)</td> <td>ENO</td> </tr> <tr> <td>Unit No. &0</td> <td>(INT)</td> <td>UnitNo</td> <td>(INT)</td> <td>Done</td> </tr> <tr> <td>Task &1</td> <td>(INT)</td> <td>Task</td> <td>(INT)</td> <td>Busy</td> </tr> <tr> <td>Start Bit A</td> <td>(BOOL)</td> <td>Execute</td> <td>(BOOL)</td> <td>Abort</td> </tr> <tr> <td>Stop Bit B</td> <td>(BOOL)</td> <td>Stop</td> <td>(BOOL)</td> <td>Error</td> </tr> <tr> <td>M code reset Bit C</td> <td>(BOOL)</td> <td>MCodeReset</td> <td>(WORD)</td> <td>Error code</td> </tr> <tr> <td>Program No. &0</td> <td>(INT)</td> <td>ProgramNo</td> <td>(BOOL)</td> <td>M code reset waiting</td> </tr> <tr> <td>Start mode &0</td> <td>(INT)</td> <td>StartMode</td> <td>(INT)</td> <td>Execution No.</td> </tr> <tr> <td></td> <td></td> <td></td> <td>(INT)</td> <td>M code</td> </tr> <tr> <td></td> <td></td> <td></td> <td>(INT)</td> <td>D1001</td> </tr> </tbody> </table>	Sample		_NC2x100_RunProgram			Always ON (P_On)	(BOOL)	EN	(BOOL)	ENO	Unit No. &0	(INT)	UnitNo	(INT)	Done	Task &1	(INT)	Task	(INT)	Busy	Start Bit A	(BOOL)	Execute	(BOOL)	Abort	Stop Bit B	(BOOL)	Stop	(BOOL)	Error	M code reset Bit C	(BOOL)	MCodeReset	(WORD)	Error code	Program No. &0	(INT)	ProgramNo	(BOOL)	M code reset waiting	Start mode &0	(INT)	StartMode	(INT)	Execution No.				(INT)	M code				(INT)	D1001
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<p>Related manuals</p>	<p>CJ-series Position Control Unit Operation Manual (W477) 7 Memory Operation 12-6 Error Code List</p>																																																							

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.
Task	Task	INT	&1	&1 to &4	Specify the task number.
Start	Execute	BOOL	0(OFF)		↑: Starts the program (memory) operation.
Stop	Stop	BOOL	0(OFF)		↑: Starts the deceleration stop of the program (memory) operation.
M code reset	MCodeReset	BOOL	0(OFF)		↑: Starts the M code reset.
Program No.	ProgramNo	INT	&1	&1 to &500	Specifies the program (sequence) No.
Start mode	StartMode	INT	&0	&0 to &3	Enable/disable of "Program No. (ProgramNo)" and continuous start /independent start are specified. &0: Continuous start with the sequence No. specified in "Program No. (ProgramNo)". &1: Continuous start with the next sequence No. after the one that ended last time, without using the setting of "Program No. (ProgramNo)". (See note.) &2: Independent start with the sequence No. specified in "Program No. (ProgramNo)". &3: Independent start with the next sequence No. after the one that ended last time, without using the setting of "Program No. (ProgramNo)". (See note.) (Note.) Starts with the sequence No. previously specified in the "Sequence No. enabled" in case of bank ending. Starts with the sequence No. that ended last time in case of interrupt ending and error ending.

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
Program operation completed	Done	BOOL		Turns ON when the program (memory) operation has been completed.
Busy	Busy	BOOL		Turns ON when FB is in the process.
Abort	CommandAborted	BOOL		Turns ON when an abort has occurred in the FB. Refer to "Error code (ErrorID)" for details.
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.
M code reset waiting	ReadyMCodeReset	BOOL		Turns ON when entering the status in which M code reset can be executed.
Execution No.	ExecutionNo	INT		Outputs the program No. (Sequence No.) currently being executed.
M code	MCode	INT		Displays the present value of M code.

■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.
Task error	#1003	An error in individual task has occurred.	Check "Task error code". Identify the error cause from the Operation Manual of the Position Control Unit.
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.
Memory operation stop	#2101	The Memory operation stop was executed while the FB was active.	Due to the Memory operation stop, the active FB was interrupted. But this is normal operation. Check that the Memory operation stop has started correctly.
Command disabled	#2300	FB commands have not been accepted.	Execute the FB after putting the unit in status that can accept commands.
Memory operation start	#3301	"Memory operation start" of the Memory 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.
Memory operation independent start	#3302	"Memory operation independent start" of the Memory Operation Command Memory area has been operated by the outside of the FB.	

■Used bits list

Memory area	Name	Data type	Address	Note
Memory Operation Command Memory area	Sequence No. enable	BOOL	D+00.00	
	Memory operation start	BOOL	D+00.01	
	Memory operation independent start	BOOL	D+00.02	
	M code reset	BOOL	D+00.04	
	Memory operation stop	BOOL	D+00.15	
	Sequence No.	INT	D+01	

■Version History

Version	Date	Contents
1.00	2009.06.	Original production.

■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.