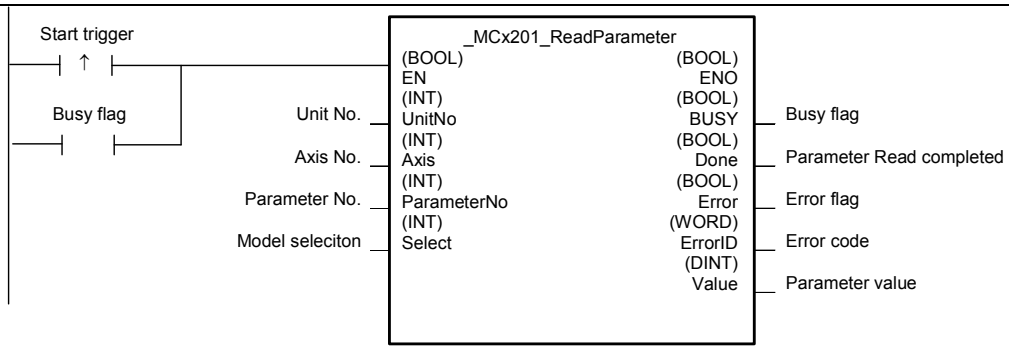
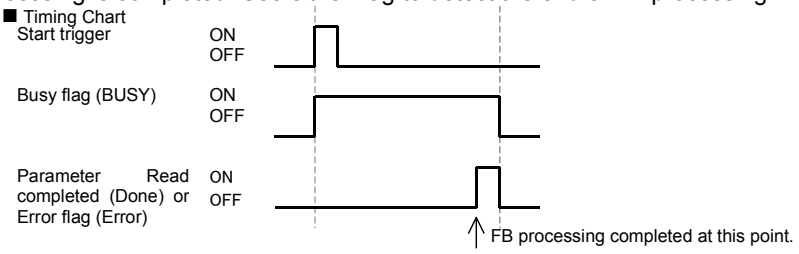
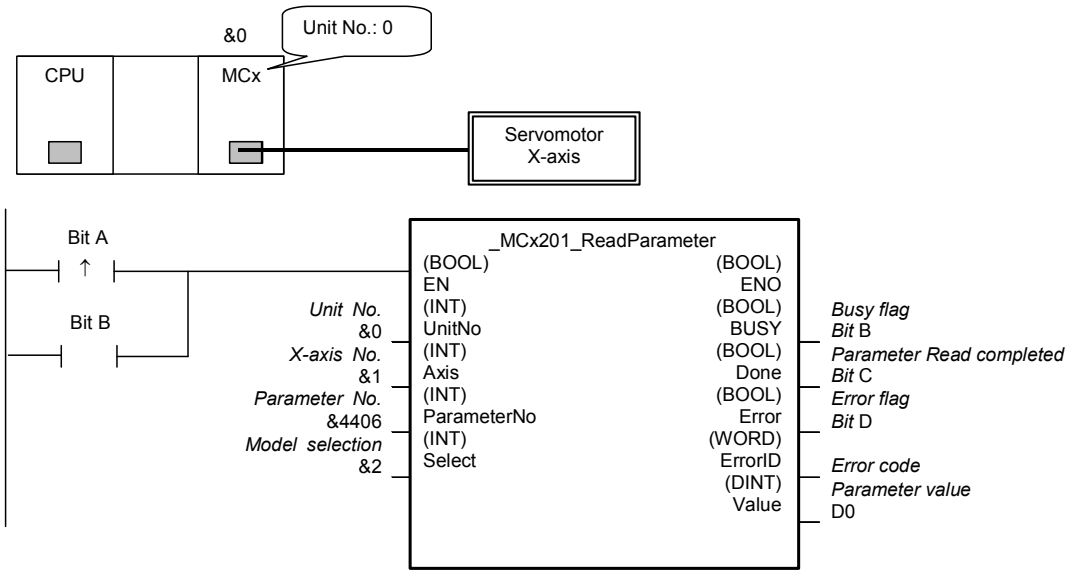
MCx 201	Read Parameter: _MCx201_ReadParameter

Basic function	Reads a servo parameter of an axis.	
Symbol		
File name	Lib\FBL\omronlib\ PositionController \MCx\ _MCx201_ReadParameter10.cxf	
Applicable models	Motion Control Unit	CS1W-MC221(-V1)/421(-V1)
	CPU Unit	CS1*-CPU**H Unit version 3.0 or higher CJ1*-CPU**H Unit version 3.0 or higher CJ1M-CPU** Unit version 3.0 or higher CP1H
	CX-Programmer	Version 5.0 or higher
Conditions for usage	None	
Function description	The parameter specified with Parameter No. (ParameterNo) of the Unit or Axis specified with Unit No. (UnitNo) and Axis No. (Axis) is read. There is no need to specify Axis No. (Axis) when reading Unit Parameters and Memory Management Parameters. When the Start trigger turns ON, the specified parameter will be read from the applicable Motion Control Unit listed above and output. If Parameter Read ends with an error, the error code will be output from Error code (ErrorID). ■ Reference This FB executes Parameter Read using the IORD instruction for the applicable Motion Control Unit. For details, refer to the manuals listed in Related manuals below.	
FB precautions	• This FB is processed over multiple cycles. The Busy flag (BUSY) output can be used to check whether or not the FB is being processed. • The Parameter Read completed (Done) or Error flag (Error) will be turned ON only for one cycle after processing is completed. Use either flag to detect the end of FB processing. ■ Timing Chart 	
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.	
RestrictionsInput Variable	• Always use an upwardly differentiated condition for EN. • If any of the Input Variables is set out of range, the output from ENO will turn OFF and the FB will not be processed.	
Output Variable	• This FB requires several cycles to process. Always connect an OR circuit including the Busy flag (BUSY) output to ensure that it will be processed to completion. • Do not turn ON or OFF the Busy flag (BUSY) output from outside of this FB.	

Application example	When the Bit A turns from OFF to ON, the specified parameter (the Feed-rate Parameter (X-axis acceleration time) in this example) of the Motion Control Unit of the Unit No. 0 will be read and stored in the address D0.
Related manuals	CS1W-MC221(-V1)/421(-V1) Motion Control Units Operation Manual (W359) 3-3 System Parameter



■ Variable Tables

Input Variables

Name	Variable name	Data type	Default	Range	Description
EN	EN	BOOL			1 (ON): Starts FB 0 (OFF): Does not start FB
Unit No.	UnitNo	INT	&0	&0 to &93 &0 to &91	Depends on the model of Motion Control Units. &0 to &95 (MC221) &0 to &91 (MC421)
Axis No.	Axis	INT	&1	&1 to &4	&1: X-axis &2: Y-axis &3: Z-axis &4: U-axis
Parameter No.	ParameterNo	INT	&0		Refer to the tables **■ Parameter No.** below.
Model selection	Select	INT	&4	&2, &4	&2: 2-axis Unit (MC221) &4: 4-axis Unit (MC421)

■ Parameter No.

Unit Parameters

Parameter No.	Name	Address of Motion Control Units	Remarks
4000	Axis configuration	0FA0h(4000)	
4001	No. Of tasks	0FA1h(4001)	
4002	Task axis declaration (for task 1)	0FA2h(4002)	
4003	Task axis declaration (for task 2)	0FA3h(4003)	
4004	Task axis declaration (for task 3)	0FA4h(4004)	Can not be used on MC221
4005	Task axis declaration (for task 4)	0FA5h(4005)	Can not be used on MC221
4006	Output port setting	0FA6h(4006)	
4007	MPG/sync encoder ratio	0FA7h(4007)	
4008	Pass Mode	0FA8h(4008)	
4009	Teaching Box language/autoload timeout	0FA9h(4009)	

Memory Management Parameters

Parameter No.	Name	Address of Motion Control Units	Remarks
4100	First position data number for task 1	1004h(4100)	
4101	Last position data number for task 1	1005h(4101)	
4102	First position data number for task 2	1006h(4102)	
4103	Last position data number for task 2	1007h(4103)	
4104	First position data number for task 3	1008h(4104)	Can not be used on MC221
4105	Last position data number for task 3	1009h(4105)	Can not be used on MC221
4106	First position data number for task 4	100Ah(4106)	Can not be used on MC221
4107	Last position data number for task 4	100Bh(4107)	Can not be used on MC221

Machine Parameters

(The Z and U axes can not be used with the CS1W-MC221 Motion Control Units.)

Parameter No.	Name	Address of Motion Control Units			
		X-axis	Y-axis	Z-axis	U-axis
4200	Minimum setting unit	1068h(4200)	1081h(4225)	109Ah(4250)	10B3h(4275)
4201	Axis Mode/display unit	1069h(4201)	1082h(4226)	109Bh(4251)	10B4h(4276)
4202	Rotation direction	106Ah(4202)	1083h(4227)	109Ch(4252)	10B5h(4277)
4203	Emergency stop/limit input stop	106Bh(4203)	1084h(4228)	109Dh(4253)	10B6h(4278)
4204	Encoder ABS/INC	106Ch(4204)	1085h(4229)	109Eh(4254)	10B7h(4279)
4205	Encoder resolution	106Dh(4205)	1086h(4230)	109Fh(4255)	10B8h(4280)
4206	Encoder ratio	106Eh(4206)	1087h(4231)	10A0h(4256)	10B9h(4281)
4207	Encoder polarity	106Fh(4207)	1088h(4232)	10A1h(4257)	10BAh(4282)
4208	Pulse rate numerator	1070h(4208)	1089h(4233)	10A2h(4258)	10BBh(4283)
4209	Pulse rate denominator	1071h(4209)	108Ah(4234)	10A3h(4259)	10BCh(4284)
4210	Max. motor frequency	1072h(4210)	108Bh(4235)	10A4h(4260)	10BDh(4285)
4213	Software limit (-)	1075h(4213)	108Eh(4238)	10A7h(4263)	10C0h(4288)
4214	Software limit (+)	1076h(4214)	108Fh(4239)	10A8h(4264)	10C1h(4289)
4215	Origin search method	1077h(4215)	1090h(4240)	10A9h(4265)	10C2h(4290)
4216	Origin search direction	1078h(4216)	1091h(4241)	10AAh(4266)	10C3h(4291)
4217	Origin deceleration method	1079h(4217)	1092h(4242)	10ABh(4267)	10C4h(4292)
4218	Origin proximity input logic	107Ah(4218)	1093h(4243)	10ACh(4268)	10C5h(4293)
4219	Wiring check	107Bh(4219)	1094h(4244)	10ADh(4269)	10C6h(4294)
4220	Wiring check time	107Ch(4220)	1095h(4245)	10AEh(4270)	10C7h(4295)
4221	Wiring check pulses	107Dh(4221)	1096h(4246)	10AFh(4271)	10C8h(4296)
4222	Absolute position setting	107Eh(4222)	1097h(4247)	10B0h(4272)	10C9h(4297)

Coordinate Parameters

(The Z and U axes can not be used with the CS1W-MC221 Motion Control Units.)

Parameter No.	Name	Address of Motion Control Units			
		X-axis	Y-axis	Z-axis	U-axis
4300	Reference origin offset value	10CCh(4300)	10E5h(4325)	10FEh(4350)	1117h(4375)
4301	Work-piece origin offset value	10CDh(4301)	10E6h(4326)	10FFh(4351)	1118h(4376)

Feed Rate Parameters

(The Z and U axes can not be used with the CS1W-MC221 Motion Control Units.)

Parameter No.	Name	Address of Motion Control Units			
		X-axis	Y-axis	Z-axis	U-axis
4400	Maximum feed rate	1130h(4400)	1149h(4425)	1162h(4450)	117Bh(4475)
4401	Maximum interpolation feed rate	1131h(4401)	114Ah(4426)	1163h(4451)	117Ch(4476)
4402	High speed origin search feed rate	1132h(4402)	114Bh(4427)	1164h(4452)	117Dh(4477)
4403	Low speed origin search feed rate	1133h(4403)	114Ch(4428)	1165h(4453)	117Eh(4478)
4404	Maximum jog feed rate	1134h(4404)	114Dh(4429)	1166h(4454)	117Fh(4479)
4405	Acceleration/deceleration curve	1135h(4405)	114Eh(4430)	1167h(4455)	1180h(4480)
4406	Acceleration time	1136h(4406)	114Fh(4431)	1168h(4456)	1181h(4481)
4407	Deceleration time	1137h(4407)	1150h(4432)	1169h(4457)	1182h(4482)
4408	Interpolation acceleration time	1138h(4408)	1151h(4433)	116Ah(4458)	1183h(4483)
4409	Interpolation deceleration time	1139h(4409)	1152h(4434)	116Bh(4459)	1184h(4484)
4410	MPG ratio numerator (1) / electronic gear ratio numerator (1)	113Ah(4410)	1153h(4435)	116Ch(4460)	1185h(4485)
4411	MPG ratio denominator (1) / electronic gear ratio denominator (1)	113Bh(4411)	1154h(4436)	116Dh(4461)	1186h(4486)
4412	MPG ratio numerator (2) / electronic gear ratio numerator (2)	113Ch(4412)	1155h(4437)	116Eh(4462)	1187h(4487)
4413	MPG ratio denominator (2) / electronic gear ratio denominator (2)	113Dh(4413)	1156h(4438)	116Fh(4463)	1188h(4488)
4414	MPG ratio numerator (3) / electronic gear ratio numerator (3)	113Eh(4414)	1157h(4439)	1170h(4464)	1189h(4489)
4415	MPG ratio denominator (3) / electronic gear ratio denominator (3)	113Fh(4415)	1158h(4440)	1171h(4465)	118Ah(4490)
4416	MPG ratio numerator (4) / electronic gear ratio numerator (4)	1140h(4416)	1159h(4441)	1172h(4466)	118Bh(4491)
4417	MPG ratio denominator (4) / electronic gear ratio denominator (4)	1141h(4417)	115Ah(4442)	1173h(4467)	118Ch(4492)

Zone Parameters

(The Z and U axes can not be used with the CS1W-MC221 Motion Control Units.)

Parameter No.	Name	Address of Motion Control Units			
		X-axis	Y-axis	Z-axis	U-axis
4500	Zone specification	1194h(4500)	11ADh(4525)	11C6h(4550)	11DFh(4575)
4501	Zone 1 negative direction setting	1195h(4501)	11AEh(4526)	11C7h(4551)	11E0h(4576)
4502	Zone 1 positive direction setting	1196h(4502)	11AFh(4527)	11C8h(4552)	11E1h(4577)
4503	Zone 2 negative direction setting	1197h(4503)	11B0h(4528)	11C9h(4553)	11E2h(4578)
4504	Zone 2 positive direction setting	1198h(4504)	11B1h(4529)	11CAh(4554)	11E3h(4579)
4505	Zone 3 negative direction setting	1199h(4505)	11B2h(4530)	11CBh(4555)	11E4h(4580)
4506	Zone 3 positive direction setting	119Ah(4506)	11B3h(4531)	11CCh(4556)	11E5h(4581)
4507	Zone 4 negative direction setting	119Bh(4507)	11B4h(4532)	11CDh(4557)	11E6h(4582)
4508	Zone 4 positive direction setting	119Ch(4508)	11B5h(4533)	11CEh(4558)	11E7h(4583)
4509	Zone 5 negative direction setting	119Dh(4509)	11B6h(4534)	11CFh(4559)	11E8h(4584)
4510	Zone 5 positive direction setting	119Eh(4510)	11B7h(4535)	11D0h(4560)	11E9h(4585)
4511	Zone 6 negative direction setting	119Fh(4511)	11B8h(4536)	11D1h(4561)	11EAh(4586)
4512	Zone 6 positive direction setting	11A0h(4512)	11B9h(4537)	11D2h(4562)	11EBh(4587)
4513	Zone 7 negative direction setting	11A1h(4513)	11BAh(4538)	11D3h(4563)	11ECh(4588)
4514	Zone 7 positive direction setting	11A2h(4514)	11BBh(4539)	11D4h(4564)	11EDh(4589)
4515	Zone 8 negative direction setting	10A3h(4515)	11BCh(4540)	11D5h(4565)	11EEh(4590)
4516	Zone 8 positive direction setting	10A4h(4516)	11BDh(4541)	11D6h(4566)	11EFh(4591)

Servo Parameters

(The Z and U axes can not be used with the CS1W-MC221 Motion Control Units.)

Parameter No.	Name	Address of Motion Control Units			
		X-axis	Y-axis	Z-axis	U-axis
4600	Error counter warning value	11F8h(4600)	1211h(4625)	122Ah(4650)	1243h(4675)
4601	In-position range	11F9h(4601)	1212h(4626)	122Bh(4651)	1244h(4676)
4602	Position loop gain	11FAh(4602)	1213h(4627)	122Ch(4652)	1245h(4677)
4603	Position loop FF gain	11FBh(4603)	1214h(4628)	122Dh(4653)	1246h(4678)
4604	Backlash correction value	11FCh(4604)	1215h(4629)	122Eh(4654)	1247h(4679)
4605	Brake OFF time	11FDh(4605)	1216h(4630)	122Fh(4655)	1248h(4680)
4606	Brake On time	11FEh(4606)	1217h(4631)	1230h(4656)	1249h(4681)

Output Variables

Name	Variable name	Data type	Range	Description
ENO	ENO	BOOL		1 (ON): FB operating normally 0 (OFF): FB not operating normally or FB ended with an error
Busy flag	BUSY	BOOL		The output from this Output Variable will automatically turns OFF after completion of Parameter Read.
Parameter Read completed	Done	BOOL		This turns ON only for 1 cycle when the FB ends its processing normally.
Error flag	Error	BOOL		This turns ON only for 1 cycle when the FB ends with an error.
Error code	ErrorID	WORD		The error code of the error occurred in the FB will be output. For details of the errors, refer to the manual listed in the Related manuals above. When Unit No. or Axis No. is out of the range, #0000 will be output.
Parameter value	Value	DINT		The value of the parameter that was read using the IORD instruction is output here. When the size of the read data is 1 word, it is written in the lower word.

Version History

Version	Date	Contents
1.00	2005.4	Original production

Note

This manual is a reference that explains the function block functions.
It does not explain the operational limitations of Units, components, or combinations of Units and components. Always read and understand the Operation Manuals for the system's Units and other components before using them.