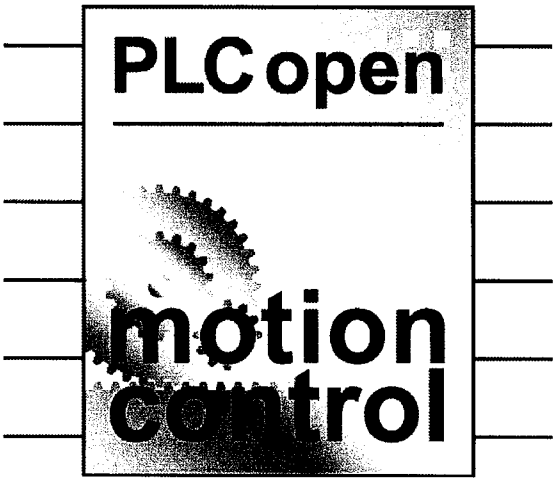


Subset of the

Technical Specification
PLCopen - Technical Committee 2 – Task Force

Function blocks for motion control

(Formerly Part 1 and Part 2)

Version 2.0

Appendix B

Compliance Procedure and Compliance List

March 17, 2011.

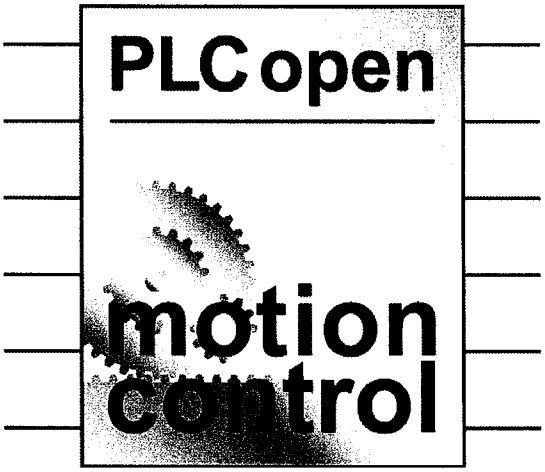
Appendix B. Compliance Procedure and Compliance List

Listed in this Appendix are the requirements for the compliance statement from the supplier of the Motion Control Function Blocks. The compliance statement consists of two main groups: supported data types and supported Function Blocks, in combination with the applicable inputs and outputs. The supplier is required to fill out the tables for the used data types and Function Blocks, according to their product, committing their support to the specification.

By submitting these tables to PLCopen, and after approval by PLCopen, the list will be published on the PLCopen website, www.plcopen.org as well as a shortform overview, as specified in Appendix B 2 Supported Data types and Appendix B 3 Overview of the Function Blocks as below.

In addition to this approval, the supplier is granted access and usage rights of the PLCopen Motion Control logo, as described in Appendix B 4:

The PLCopen Motion Control Logo and Its Usage..



Data types
The data type REAL listed in the Function Blocks and parameters (e.g. for velocity, acceleration, distance, etc.) may be exchanged to SINT, INT, DINT or LREAL without to be seen as incompliant to this standard, as long as they are consistent for the whole set of Function Blocks and parameters.
Implementation allows the extension of data types as long as the basic data type is kept. For example: WORD may be changed to DWORD, but not to REAL.

Function Blocks and Inputs and Outputs
An implementation which claims compliance with this PLCopen specification shall offer a set of Function Blocks for motion control, meaning one or more Function Blocks, with at least the **basic** input and output variables, marked as "**B**" in the tables. These inputs and outputs have to be supported to be compliant.
For higher-level systems and future extensions any subset of the **extended** input and output variables, marked as "**E**" in the tables can be implemented.
Vendor specific additions are marked with "**V**", and can be listed as such in the supplier documentation.

- **Basic** input/output variables are mandatory	Marked in the tables with the letter "**B**"
- **Extended** input /output variables are optional	Marked in the tables with the letter "**E**"
- **Vendor Specific** additions	Marked in the vendor's compliance documentation with "**V**"

All the vendor specific items will not be listed in the comparison table on the PLCopen website, but in the detailed vendor specific list, which also is published.
All vendor specific in- and outputs of all FBs must be listed in the certification list of the supplier. With this, the certification listing from a supplier describes all the I/Os of the relevant FBs, including vendor-specific extensions, and thus showing the complete FBs as used by the supplier.

Appendix B 1. Statement of Supplier

Supplier name	MITSUBISHI ELECTRIC CORPORATION
Supplier address	1-14, Yada-minami 5-chome, Higashi-ku
City	Nagoya
Country	Japan
Telephone	+81-52-723-5540
Fax	+81-52-712-4304
Email address	Kimura.Shinsuke@db.MitsubishiElectric.co.jp
Product Name	FX5-CCLGN-MS, GX-Works3
Product version	1.00
Release date	2025/04/23

I hereby state that the following tables as filled out and submitted do match our product as well as the accompanying user manual, as stated above.

Name of representation (person):
Tomoyuki Fujita,
Division Manager of FA System Department 3

Date of signature (dd/mm/yyyy):
18/12/2024
Signature:

Appendix B 2. Supported Data types

Defined datatypes with MC library:	Supported	If not supported, which datatype used
BOOL	Y	called Bit
INT	Y	called Word[Signed]
WORD	Y	called Word[Unsigned]/Bit String[16-bit]
REAL	N	Supported as Double Word [Signed]
ENUM	N	Supported as pre-defined INT labels
UINT	Y	called Word[Unsigned]/Bit String[16-bit]

Table 1: Supported datatypes

Within the specification the following derived datatypes are defined. Define which of these structures are used in this system:

Derived datatypes:	Where used	Supported	Which structure
AXIS_REF	Nearly all FBs	Y	Structured Data Types
MC_DIRECTION (extended)	MC_MoveAbsolute MC_MoveVelocity MC_TorqueControl MC_MoveContinuousAbsolute	Y Y Y N	Supported as pre-defined INT label with the following values: mcPositiveDirection 80h mcNegativeDirection 40h mcShortestWay C0h mcCurrentDirection 00h
MC_TP_REF	MC_PositionProfile	N	
MC_TV_REF	MC_VelocityProfile	N	
MC_TA_REF	MC_AccelerationProfile	N	
MC_CAM_REF	MC_CamTableSelect	N	
MC_CAM_ID (extended)	MC_CamTableSelect MC_CamIn	N N	
MC_START_MODE (extended)	MC_CamIn MC_CamTableSelect	N N	
MC_BUFFER_MODE	Buffered FBs	N	
MC_EXECUTION_MODE	MC_SetPosition MC_WriteParameter MC_WriteBoolParameter MC_WriteDigitalOutput MC_CamTableSelect	N N N N N	
MC_SOURCE	MC_ReadMotionState MC_CamIn MC_GearIn MC_GearInPos MC_CombineAxes MC_DigitalCamSwitch	N N N N N N	
MC_SYNC_MODE	MC_GearInPos	N	
MC_COMBINE_MODE	MC_CombineAxes	N	
MC_TRIGGER_REF	MC_TouchProbe MC_AbortTrigger	N N	
MC_INPUT_REF	MC_ReadDigitalInput	N	
MC_OUTPUT_REF	MC_DigitalCamSwitch MC_ReadDigitalOutput MC_WriteDigitalOutput	N N N	
MC_CAMSWITCH_REF	MC_DigitalCamSwitch	N	
MC_TRACK_REF	MC_DigitalCamSwitch	N	

Table 2: Supported derived datatypes

Appendix B 3. Overview of the Function Blocks

Single Axis Function Blocks	Supported as V1.0/ V1.1/ V2.0 or Not	Comments (<= 48 char.)
MC_Power	V2.0	
MC_Home	Not	The vendor-specific MCv_Home is used. This is because the mandatory "position" must be set either via our configurator or via the PLC program before activating the MC_Power FB.
MC_Stop	V2.0	
MC_Halt	V2.0	
MC_MoveAbsolute	V2.0	
MC_MoveRelative	V2.0	
MC_MoveAdditive	V2.0	
MC_MoveSuperimposed	Not	
MC_HaltSuperimposed	Not	
MC_MoveVelocity	V2.0	
MC_MoveContinuousAbsolute	Not	
MC_MoveContinuousRelative	Not	
MC_TorqueControl	V2.0	
MC_PositionProfile	Not	
MC_VelocityProfile	Not	
MC_AccelerationProfile	Not	
MC_SetPosition	Not	
MC_SetOverride	V2.0	
MC_ReadParameter & MC_ReadBoolParameter	Not	
MC_WriteParameter & MC_WriteBoolParameter	Not	
MC_ReadDigitalInput	Not	
MC_ReadDigitalOutput	Not	
MC_WriteDigitalOutput	Not	
MC_ReadActualPosition	Not	
MC_ReadActualVelocity	Not	
MC_ReadActualTorque	Not	
MC_ReadStatus	Not	
MC_ReadMotionState	Not	
MC_ReadAxisInfo	Not	
MC_ReadAxisError	Not	
MC_Reset	V2.0	
MC_DigitalCamSwitch	Not	
MC_TouchProbe	Not	
MC_AbortTrigger	Not	
Multi-Axis Function Blocks	**Supported as V1.0/ V1.1/ V2.0 or Not**	**Comments (<= 48 char.)**
MC_CamTableSelect	Not	
MC_CamIn	Not	
MC_CamOut	Not	
MC_GearIn	Not	
MC_GearOut	Not	
MC_GearInPos	Not	
MC_PhasingAbsolute	Not	
MC_PhasingRelative	Not	
MC_CombineAxes	Not	

Table 3: Short overview of the Function Blocks

Appendix B 3.1 MC_Power

If Supported	**MC_Power**	Sup. Y/N	Comments
VAR_IN_OUT			
B	Axis	Y	
VAR_INPUT			
B	Enable	Y	
E	EnablePositive	N	
E	EnableNegative	N	
VAR_OUTPUT			
B	Status	Y	
E	Valid	N	
V	Busy	Y	Datatype is BOOL Indicates that the FB is in execution
B	Error	Y	
E	ErrorID	Y	

Appendix B 3.2 MC_Home

If Supported	**MC_Home**	Sup. Y/N	Comments
VAR_IN_OUT			
B	Axis		
VAR_INPUT			
B	Execute		
B	Position		
E	BufferMode		
VAR_OUTPUT			
B	Done		
E	Busy		
E	Active		
E	CommandAborted		
B	Error		
E	ErrorID		

Appendix B 3.3 MC_Stop

If Supported	**MC_Stop**	Sup. Y/N	Comments
VAR_IN_OUT			
B	Axis	Y	
VAR_INPUT			
B	Execute	Y	
E	Deceleration	N	Intepreted according the settings of the servo amplifier. It can be read resp. set by Obj.6084h when using MCv_ReadMultiObject / MCv_WriteMultiObject FBs)
E	Jerk	N	
VAR_OUTPUT			
B	Done	Y	
E	Busy	Y	
E	CommandAborted	N	
B	Error	Y	
E	ErrorID	Y	

Appendix B 3.4 MC_Halt

If Supported	**MC_Halt**	Sup. Y/N	
VAR_IN_OUT			
B	Axis	Y	
VAR_INPUT			
B	Execute	Y	

E	Deceleration	Y	Supported as Double Word [Signed] The value specifies the time needed for the speed to decrease from speed limit value to zero. The value is specified in the unit [ms] (>1 ms).
E	Jerk	N	
E	BufferMode	N	
VAR_OUTPUT			
B	Done	Y	
E	Busy	Y	
E	Active	N	
E	CommandAborted	Y	
B	Error	Y	
E	ErrorID	Y	

Appendix B 3.5 MC_MoveAbsolute

If Supported	MC_MoveAbsolute	Sup. Y/N	Comments
VAR_IN_OUT			
B	Axis	Y	
VAR_INPUT			
B	Execute	Y	
E	ContinuousUpdate	N	
B	Position	Y	Supported as Double Word [Signed]
B	Velocity	Y	Supported as Double Word [Signed]
E	Acceleration	Y	Supported as Double Word [Signed] The value specifies the time needed for the speed to increase from zero to the speed limit value. The value is specified in the unit [ms] (>1 ms).
E	Deceleration	Y	Supported as Double Word [Signed] The value specifies the time needed for the speed to decrease from speed limit value to zero. The value is specified in the unit [ms] (>1 ms).
E	Jerk	N	
B	Direction	Y	Supported as pre-defined INT label Refer to Table 2 for their values
E	BufferMode	N	
VAR_OUTPUT			
B	Done	Y	
E	Busy	Y	
E	Active	N	
E	CommandAborted	Y	
B	Error	Y	
E	ErrorID	Y	

Appendix B 3.6 MC_MoveRelative

If Supported	MC_MoveRelative	Sup. Y/N	Comments
VAR_IN_OUT			
B	Axis	Y	
VAR_INPUT			
B	Execute	Y	
E	ContinuousUpdate	N	
B	Distance	Y	Supported as Double Word [Signed]
E	Velocity	Y	Supported as Double Word [Signed]

E	Acceleration	Y	Supported as Double Word [Signed] The value specifies the time needed for the speed to increase from zero to the speed limit value. The value is specified in the unit [ms] (>1 ms).
E	Deceleration	Y	Supported as Double Word [Signed] The value specifies the time needed for the speed to decrease from the speed limit value zero. The value is specified in the unit [ms] (>1 ms).
E	Jerk	N	
E	BufferMode	N	
VAR_OUTPUT			
B	Done	Y	
E	Busy	Y	
E	Active	N	
E	CommandAborted	Y	
B	Error	Y	
E	ErrorID	Y	

Appendix B 3.7 MC_MoveAdditive

If Supported	MC_MoveAdditive	Sup. Y/N	Comments
VAR_IN_OUT			
B	Axis	Y	
VAR_INPUT			
B	Execute	Y	
E	ContinuousUpdate	N	
B	Distance	Y	Supported as Double Word [Signed]
E	Velocity	Y	Supported as Double Word [Signed]
E	Acceleration	Y	Supported as Double Word [Signed] The value specifies the time needed for the speed to increase from zero to the speed limit value. The value is specified in the unit [ms] (>1 ms).
E	Deceleration	Y	Supported as Double Word [Signed] The value specifies the time needed for the speed to decrease from the speed limit value to zero. The value is specified in the unit [ms] (>1 ms).
E	Jerk	N	
E	BufferMode	N	
VAR_OUTPUT			
B	Done	Y	
E	Busy	Y	
E	Active	N	
E	CommandAborted	Y	
B	Error	Y	
E	ErrorID	Y	

Appendix B 3.8 MC_MoveSuperimposed

If Supported	**MC_MoveSuperimposed**	Sup. Y/N	Comments
VAR_IN_OUT			
B	Axis		
VAR_INPUT			
B	Execute		
E	ContinuousUpdate		
B	Distance		
E	VelocityDiff		
E	Acceleration		
E	Deceleration		
E	Jerk		
VAR_OUTPUT			
B	Done		
E	Busy		
E	CommandAborted		
B	Error		
E	ErrorID		
E	CoveredDistance		

Appendix B 3.9 MC_HaltSuperimposed

If Supported	**MC_HaltSuperimposed**	Sup. Y/N	Comments
VAR_IN_OUT			
B	Axis		
VAR_INPUT			
B	Execute		
E	Deceleration		
E	Jerk		
VAR_OUTPUT			
B	Done		
E	Busy		
E	CommandAborted		
B	Error		
E	ErrorID		

Appendix B 3.10 MC_MoveVelocity

If Supported	MC_MoveVelocity	Sup. Y/N	Comments
VAR_IN_OUT			
B	Axis	Y	
VAR_INPUT			
B	Execute	Y	
E	ContinuousUpdate	N	
B	Velocity	Y	Supported as Double Word [Signed]
E	Acceleration	Y	Supported as Double Word [Signed] The value specifies the time needed for the speed to increase from zero to the speed limit value. The value is specified in the unit [ms] (>1 ms).
E	Deceleration	Y	Supported as Double Word [Signed] The value specifies the time needed for the speed to decrease from the speed limit to zero. The value is specified in the unit [ms] (>1 ms).
E	Jerk	N	
E	Direction	Y	Supported as pre-defined INT label Refer to Table 2 for their values
E	BufferMode	N	
VAR_OUTPUT			
B	InVelocity	Y	
E	Busy	Y	
E	Active	N	
E	CommandAborted	Y	
B	Error	Y	
E	ErrorID	Y	

Appendix B 3.11 MC_MoveContinuousAbsolute

If Supported	**MC_MoveContinuousAbsolute**	Sup. Y/N	Comments
VAR_IN_OUT			
B	Axis		
VAR_INPUT			
B	Execute		
E	ContinuousUpdate		
B	Position		
B	EndVelocity		
B	Velocity		
E	Acceleration		
E	Deceleration		
E	Jerk		
E	Direction		
E	BufferMode		
VAR_OUTPUT			
B	InEndVelocity		
E	Busy		
E	Active		
E	CommandAborted		
B	Error		
E	ErrorID		

Appendix B 3.12 MC_MoveContinuousRelative

If Supported	**MC_MoveContinuousRelative**	Sup. Y/N	Comments
VAR_IN_OUT			
B	Axis		

VAR_INPUT			
B	Execute		
E	ContinuousUpdate		
B	Distance		
B	EndVelocity		
B	Velocity		
E	Acceleration		
E	Deceleration		
E	Jerk		
E	BufferMode		
VAR_OUTPUT			
B	InEndVelocity		
E	Busy		
E	Active		
E	CommandAborted		
B	Error		
E	ErrorID		

Appendix B 3.13 MC_TorqueControl

If Supported	MC_TorqueControl	Sup. Y/N	Comments
VAR_IN_OUT			
B	Axis	Y	
VAR_INPUT			
B	Execute	Y	
E	ContinuousUpdate	N	
B	Torque	Y	Supported as Double Word [Signed]
E	TorqueRamp	Y	Supported as Double Word [Signed]
E	Velocity	Y	Supported as Double Word [Signed]
E	Acceleration	N	
E	Deceleration	N	
E	Jerk	N	
E	Direction	Y	Supported as pre-defined INT label Refer to Table 2 for their values
E	BufferMode	N	
VAR_OUTPUT			
B	InTorque	Y	
E	Busy	Y	
E	Active	N	
E	CommandAborted	Y	
B	Error	Y	
E	ErrorID	Y	

Appendix B 3.14 MC_PositionProfile

If Supported	**MC_PositionProfile**	Sup. Y/N	Comments
VAR_IN_OUT			
B	Axis		
B	TimePosition		
VAR_INPUT			
B	Execute		
E	ContinuousUpdate		
E	TimeScale		
E	PositionScale		
E	Offset		
E	BufferMode		
VAR_OUTPUT			

B	Done		
E	Busy		
E	Active		
E	CommandAborted		
B	Error		
E	ErrorID		

Appendix B 3.15 MC_VelocityProfile

If Supported	**MC_VelocityProfile**	Sup. Y/N	Comments
VAR_IN_OUT			
B	Axis		
B	TimeVelocity		
VAR_INPUT			
B	Execute		
E	ContinuousUpdate		
E	TimeScale		
E	VelocityScale		
E	Offset		
E	BufferMode		
VAR_OUTPUT			
B	ProfileCompleted		
E	Busy		
E	Active		
E	CommandAborted		
B	Error		
E	ErrorID		

Appendix B 3.16 MC_AccelerationProfile

If Supported	**MC_AccelerationProfile**	Sup. Y/N	Comments
VAR_IN_OUT			
B	Axis		
B	TimeAcceleration		
VAR_INPUT			
B	Execute		
E	ContinuousUpdate		
E	TimeScale		
E	AccelerationScale		
E	Offset		
E	BufferMode		
VAR_OUTPUT			
B	ProfileCompleted		
E	Busy		
E	Active		
E	CommandAborted		
B	Error		
E	ErrorID		

Appendix B 3.17 MC_SetPosition

If Supported	**MC_SetPosition**	Sup.Y/N	Comments
VAR_IN_OUT			
B	Axis		
VAR_INPUT			
B	Execute		
B	Position		
E	Relative		
E	ExecutionMode		
VAR_OUTPUT			
B	Done		
E	Busy		
B	Error		
E	ErrorID		

Appendix B 3.18 MC_SetOverride

If Supported	**MC_SetOverride**	Sup.Y/N	Comments
VAR_IN_OUT			
B	Axis	Y	
VAR_INPUT			
B	Enable	Y	
B	VelFactor	Y	Supported as Double Word [Signed]
E	AccFactor	N	
E	JerkFactor	N	
VAR_OUTPUT			
B	Enabled	Y	
E	Busy	Y	
B	Error	Y	
E	ErrorID	Y	

Appendix B 3.19 MC_ReadParameter & MC_ReadBoolParameter

If Supported	**MC_ReadParameter**	Sup. Y/N	Comments
VAR_IN_OUT			
B	Axis		
VAR_INPUT			
B	Enable		
B	ParameterNumber		
VAR_OUTPUT			
B	Valid		
E	Busy		
B	Error		
E	ErrorID		
B	Value		

If Supported	**MC_ReadBoolParameter**	Sup. Y/N	Comments
VAR_IN_OUT			
B	Axis		
VAR_INPUT			
B	Enable		
B	ParameterNumber		
VAR_OUTPUT			
B	Valid		
E	Busy		
B	Error		
E	ErrorID		
B	Value		

Name	**B/E**	**R/W**	**Supp. Y/N**	**Comments**
CommandedPosition	B	R		
SWLimitPos	E	R/W		
SWLimitNeg	E	R/W		
EnableLimitPos	E	R/W		
EnableLimitNeg	E	R/W		
EnablePosLagMonitoring	E	R/W		
MaxPositionLag	E	R/W		
MaxVelocitySystem	E	R		
MaxVelocityAppl	B	R/W		
ActualVelocity	B	R		
CommandedVelocity	B	R		
MaxAccelerationSystem	E	R		
MaxAccelerationAppl	E	R/W		
MaxDecelerationSystem	E	R		
MaxDecelerationAppl	E	R/W		
MaxJerkSystem	E	R		
MarkJerkAppl	E	R/W		
SWLimitValid	V	R/W		

Table 4: Parameters for MC_Read(Bool)Parameter and MC_Write(Bool)Parameter

Appendix B 3.20 MC_WriteParameter & MC_WriteBoolParameter

If Supported	**MC_WriteParameter**	Sup. Y/N	Comments
VAR_IN_OUT			
B	Axis		
VAR_INPUT			
B	Execute		
B	ParameterNumber		
B	Value		
E	ExecutionMode		
VAR_OUTPUT			
B	Done		
E	Busy		
B	Error		
E	ErrorID		

If Supported	**MC_WriteBoolParameter**	Sup. Y/N	Comments
VAR_IN_OUT			
B	Axis		
VAR_INPUT			
B	Execute		
B	ParameterNumber		
B	Value		
E	ExecutionMode		
VAR_OUTPUT			
B	Done		
E	Busy		
B	Error		
E	ErrorID		

Appendix B 3.21 MC_ReadDigitalInput

If Supported	**MC_ReadDigitalInput**	Sup.Y/N	Comments
VAR_IN_OUT			
B	Input		
VAR_INPUT			
B	Enable		
E	InputNumber		
VAR_OUTPUT			
B	Valid		
E	Busy		
B	Error		
E	ErrorID		
B	Value		

Appendix B 3.22 MC_ReadDigitalOutput

If Supported	**MC_ReadDigitalOutput**	Sup.Y/N	Comments
VAR_IN_OUT			
B	Output		
VAR_INPUT			
B	Enable		
E	OutputNumber		
VAR_OUTPUT			
B	Valid		
E	Busy		
B	Error		
E	ErrorID		
B	Value		

Appendix B 3.23 MC_WriteDigitalOutput

If Supported	**MC_WriteDigitalOutput**	Sup.Y/N	Comments
VAR_IN_OUT			
B	Output		
VAR_INPUT			
B	Execute		
E	OutputNumber		
B	Value		
E	ExecutionMode		
VAR_OUTPUT			
B	Done		
E	Busy		
B	Error		
E	ErrorID		

Appendix B 3.24 MC_ReadActualPosition

If Supported	**MC_ReadActualPosition**	Sup. Y/N	Comments
VAR_IN_OUT			
B	Axis		
VAR_INPUT			
B	Enable		
VAR_OUTPUT			
B	Valid		
E	Busy		
B	Error		
E	ErrorID		
B	Position		
V	MachinePosition		

Appendix B 3.25 MC_ReadActualVelocity

If Supported	**MC_ReadActualVelocity**	Sup.Y/N	Comments
VAR_IN_OUT			
B	Axis		
VAR_INPUT			
B	Enable		
VAR_OUTPUT			
B	Valid		
E	Busy		
B	Error		

E	ErrorID		
B	Velocity		

Appendix B 3.26 MC_ReadActualTorque

If Supported	**MC_ReadActualTorque**	Sup.Y/N	Comments
VAR_IN_OUT			
B	Axis		
VAR_INPUT			
B	Enable		
VAR_OUTPUT			
B	Valid		
E	Busy		
B	Error		
E	ErrorID		
B	Torque		

Appendix B 3.27 MC_ReadStatus

If Supported	**MC_ReadStatus**	Sup. Y/N	Comments
VAR_IN_OUT			
B	Axis		
VAR_INPUT			
B	Enable		
VAR_OUTPUT			
B	Valid		
E	Busy		
B	Error		
E	ErrorID		
B	ErrorStop		
B	Disabled		
B	Stopping		
E	Homing		
B	Standstill		
E	DiscreteMotion		
E	ContinuousMotion		
E	SynchronizedMotion		

Appendix B 3.28 MC_ReadMotionState

If Supported	**MC_ReadMotionState**	Sup. Y/N	Comments
VAR_IN_OUT			
B	Axis		
VAR_INPUT			
B	Enable		
E	Source		
VAR_OUTPUT			
B	Valid		
E	Busy		
B	Error		
E	ErrorID		
E	ConstantVelocity		
E	Accelerating		
E	Decelerating		
E	DirectionPositive		
E	DirectionNegative		

Appendix B 3.29 MC_ReadAxisInfo

If Supported	**MC_ReadAxisInfo**	Sup. Y/N	Comments
VAR_IN_OUT			
B	Axis		
VAR_INPUT			
B	Enable		
VAR_OUTPUT			
B	Valid		
E	Busy		
B	Error		
E	ErrorID		
E	HomeAbsSwitch		
E	LimitSwitchPos		
E	LimitSwitchNeg		
E	Simulation		
E	CommunicationReady		
E	ReadyForPowerOn		
E	PowerOn		
E	IsHomed		
E	AxisWarning		

Appendix B 3.30 MC_ReadAxisError

If Supported	**MC_ReadAxisError**	Sup. Y/N	Comments
VAR_IN_OUT			
B	Axis		
VAR_INPUT			
B	Enable		
VAR_OUTPUT			
B	Valid		
E	Busy		
B	Error		
B	ErrorID		
E	AxisErrorID		
V	AxisWarningID		

Appendix B 3.31 MC_Reset

If Supported	**MC_Reset**	Sup. Y/N	Comments
VAR_IN_OUT			
B	Axis	Y	
VAR_INPUT			
B	Execute	Y	
VAR_OUTPUT			
B	Done	Y	
E	Busy	Y	
B	Error	Y	
E	ErrorID	Y	

Appendix B 3.32 MC_DigitalCamSwitch

If Supported	**MC_DigitalCamSwitch**	Sup.Y/N	Comments
VAR_IN_OUT			
B	Axis		
B	Switches		
E	Outputs		
E	TrackOptions		
VAR_INPUT			
B	Enable		
E	EnableMask		
E	ValueSource		
VAR_OUTPUT			
B	InOperation		
E	Busy		
B	Error		
E	ErrorID		

Basic elements within the array structure of MC_CAMSWITCH_REF

B/E	**Parameter**	Sup.Y/N	Comments
B	TrackNumber		
B	FirstOnPosition [u]		
B	LastOnPosition [u]		
E	AxisDirection		
E	CamSwitchMode		
E	Duration		

Basic elements within the array structure of MC_TRACK_REF

B/E	**Parameter**	Sup.Y/N	Comments
E	OnCompensation		
E	OffCompensation		
E	Hysteresis [u]		

Appendix B 3.33 MC_TouchProbe

If Supported	**MC_TouchProbe**	Sup.Y/N	Comments
VAR_IN_OUT			
B	Axis		
E	TriggerInput		
VAR_INPUT			
B	Execute		
E	WindowOnly		
E	FirstPosition		
E	LastPosition		
VAR_OUTPUT			
B	Done		
E	Busy		
E	CommandAborted		
B	Error		
E	ErrorID		
B	RecordedPosition		

Appendix B 3.34 MC_AbortTrigger

If Supported	**MC_AbortTrigger**	Sup.Y/N	Comments
VAR_IN_OUT			
B	Axis		
E	TriggerInput		
VAR_INPUT			
B	Execute		
VAR_OUTPUT			
B	Done		
E	Busy		
B	Error		
E	ErrorID		

Appendix B 3.35 MC_CamTableSelect

If Supported	**MC_CamTableSelect**	Sup. Y/N	Comments
VAR_IN_OUT			
E	Master		
E	Slave		
B	CamTable		
VAR_INPUT			
B	Execute		
E	Periodic		
E	MasterAbsolute		
E	SlaveAbsolute		
E	ExecutionMode		
VAR_OUTPUT			
B	Done		
E	Busy		
B	Error		
E	ErrorID		
E	CamTableID		

Appendix B 3.36 MC_CamIn

If Supported	MC_CamIn	Sup. Y/N	Comments
VAR_IN_OUT			
B	Master		
B	Slave		
VAR_INPUT			
B	Execute		
E	ContinuousUpdate		
E	MasterOffset		
E	SlaveOffset		
E	MasterScaling		
E	SlaveScaling		
E	MasterStartDistance		
E	MasterSyncPosition		
E	StartMode		
E	MasterValueSource		
E	CamTableID		
E	BufferMode		
VAR_OUTPUT			
B	InSync		
E	Busy		
E	Active		
E	CommandAborted		
B	Error		
E	ErrorID		
E	EndOfProfile		

Appendix B 3.37 MC_CamOut

If Supported	MC_CamOut	Sup. Y/N	Comments
VAR_IN_OUT			
B	Slave		
VAR_INPUT			
B	Execute		
VAR_OUTPUT			
B	Done		
E	Busy		
B	Error		
E	ErrorID		

Appendix B 3.38 MC_GearIn

If Supported	**MC_GearIn**	Sup. Y/N	Comments
VAR_IN_OUT			
B	Master		
B	Slave		
VAR_INPUT			
B	Execute		
E	ContinuousUpdate		
B	RatioNumerator		
B	RatioDenominator		
E	MasterValueSource		
E	Acceleration		
E	Deceleration		
E	Jerk		
E	BufferMode		
VAR_OUTPUT			
B	InGear		
E	Busy		
E	Active		
E	CommandAborted		
B	Error		
E	ErrorID		

Appendix B 3.39 MC_GearOut

If Supported	**MC_GearOut**	Sup. Y/N	Comments
VAR_IN_OUT			
B	Slave		
VAR_INPUT			
B	Execute		
VAR_OUTPUT			
B	Done		
E	Busy		
B	Error		
E	ErrorID		

Appendix B 3.40 MC_GearInPos

If Supported	**MC_GearInPos**	Sup.Y/N	Comments
VAR_IN_OUT			
B	Master		
B	Slave		
VAR_INPUT			
B	Execute		
B	RatioNumerator		
B	RatioDenominator		
E	MasterValueSource		
B	MasterSyncPosition		
B	SlaveSyncPosition		
E	SyncMode		
E	MasterStartDistance		
E	Velocity		
E	Acceleration		
E	Deceleration		
E	Jerk		
E	BufferMode		
VAR_OUTPUT			
E	StartSync		
B	InSync		
E	Busy		
E	Active		
E	CommandAborted		
B	Error		
E	ErrorID		

Appendix B 3.41 MC_PhasingAbsolute

If Supported	**MC_PhasingAbsolute**	Sup. Y/N	Comments
VAR_IN_OUT			
B	Master		
B	Slave		
VAR_INPUT			
B	Execute		
B	PhaseShift		
E	Velocity		
E	Acceleration		
E	Deceleration		
E	Jerk		
E	BufferMode		
VAR_OUTPUT			
B	Done		
E	Busy		
E	Active		
E	CommandAborted		
B	Error		
E	ErrorID		
E	AbsolutePhaseShift		

Appendix B 3.42 MC_PhasingRelative

If Supported	MC_PhasingRelative	Sup. Y/N	Comments
VAR_IN_OUT			
B	Master		
B	Slave		
VAR_INPUT			
B	Execute		
B	PhaseShift		
E	Velocity		
E	Acceleration		
E	Deceleration		
E	Jerk		
E	BufferMode		
VAR_OUTPUT			
B	Done		
E	Busy		
E	Active		
E	CommandAborted		
B	Error		
E	ErrorID		
E	CoveredPhaseShift		

Appendix B 3.43 CombineAxes

If Supported	MC_CombineAxes	Sup. Y/N	Comments
VAR_IN_OUT			
B	Master1		
B	Master2		
B	Slave		
VAR_INPUT			
B	Execute		
E	ContinuousUpdate		
E	CombineMode		
E	GearRationNumeratorM1		
E	GearRatioDenominatorM1		
E	GearRatioNumeratorM2		
E	GearRatioDenominatorM2		
E	MasterValueSourceM1		
E	MasterValueSourceM2		
E	BufferMode		
VAR_OUTPUT			
B	InSync		
E	Busy		
E	Active		
E	CommandAborted		
B	Error		
E	ErrorID		

Appendix B 4. The PLCopen Motion Control Logo and Its Usage

For quick identification of compliant products, PLCopen has developed a logo for the Motion Control Function Blocks:

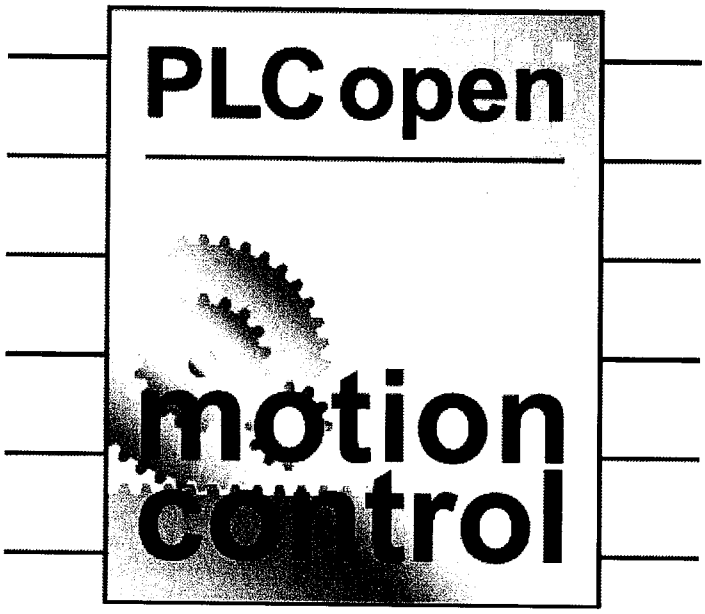


Figure 1: The PLCopen Motion Control Logo

This motion control logo is owned and trademarked by PLCopen.

In order to use this logo free-of-charge, the relevant company has to fulfill all the following requirements:

1. the company has to be a voting member of PLCopen;
2. the company has to comply with the existing specification, as specified by the PLCopen Task Force Motion Control, and as published by PLCopen, and of which this statement is a part;
3. this compliance application is provided in written form by the company to PLCopen, clearly stating the applicable software package and the supporting elements of all the specified tables, as specified in the document itself;
4. in case of non-fulfillment, which has to be decided by PLCopen, the company will receive a written statement concerning this from PLCopen. The company will have a one month period to either adopt their software package in such a way that it complies, represented by the issuing of a new compliance statement, or remove all reference to the specification, including the use of the logo, from all their specification, be it technical or promotional material;
5. the logo has to be used as is - meaning the full logo. It may be altered in size providing the original scale and color setting is kept.
6. the logo has to be used in the context of Motion Control.