

#### 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**

#### **DISCLAIMER OF WARANTIES**

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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, <a href="www.plcopen.org">www.plcopen.org</a> 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
 Extended input /output variables are optional
 Marked in the tables with the letter "B"
 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	Rockwell Automation
Supplier address	1201 South Second Street, Milwaukee, WI53204-2496 USA
City	Milwaukee
Country	USA
Telephone	1-414-382-2000
Fax	1-414-382-4444
Email address	yzhang1@ra.rockwell.com
Product Name	Micro800 controller, Connected Component Workbench Software
Product version	2.0
Release date	30/09/2012

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:

Zhang Yue

Date of signature

10/09/2012

Signature:

#### Appendix B 2. **Supported Data types**

Defined datatypes with MC library:	Supported	If not supported, which datatype used
BOOL	Yes	
INT	Yes	
WORD	No	UINT
REAL	Yes	
ENUM	No	INT
UINT	Yes	

**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	Yes	
MC_DIRECTION	MC_MoveAbsolute	No	INT used instead
(extended)	MC_MoveVelocity		
	MC_TorqueControl		
	MC_MoveContinuousAbsolut		
	e		
MC_TP_REF	MC_PositionProfile	No	
MC_TV_REF	MC_VelocityProfile	No	
MC_TA_REF	MC_AccelerationProfile	No	
MC_CAM_REF	MC_CamTableSelect	No	
MC_CAM_ID	MC_CamTableSelect	No	
(extended)	MC_CamIn		
MC_START_MODE	MC_CamIn	No	
(extended)	MC_CamTableSelect		
MC_BUFFER_MODE	Buffered FBs	No	INT used instead
MC_EXECUTION_MODE	MC_SetPosition	No	INT used instead
	MC_WriteParameter		
	MC_WriteBoolParameter		
	MC_WriteDigitalOutput		
	MC_CamTableSelect		
MC_SOURCE	MC_ReadMotionState	No	
	MC_CamIn		
	MC_GearIn		
	MC_GearInPos		
	MC_CombineAxes		
	MC_DigitalCamSwitch		
MC_SYNC_MODE	MC_GearInPos	No	
MC_COMBINE_MODE	MC_CombineAxes	No	
MC_TRIGGER_REF	MC_TouchProbe	No	UINT used instead
	MC_AbortTrigger		
MC_INPUT_REF	MC_ReadDigitalInput	No	
MC_OUTPUT_REF	MC_DigitalCamSwitch	No	
	MC_ReadDigitalOutput		
	MC_WriteDigitalOutput		
MC_CAMSWITCH_REF	MC_DigitalCamSwitch	No	
MC_TRACK_REF	MC_DigitalCamSwitch	No	

**Table 2: Supported derived datatypes** 

## Appendix B 3. Overview of the Function Blocks

V1.0 V1.1	Single Axis Function Blocks	Supported as	Comments (<= 48 char.)
MC_Power   V2.0   MC_Home   V1.1   MC_Stop   V2.0   MC_Halt   V2.0   MC_Halt   V2.0   MC_MoveAbsolute   V1.1   MC_MoveRelative   V1.1   MC_MoveRelative   V1.1   MC_MoveAdditive   Not   MC_MoveAdditive   Not   MC_MoveSuperimposed   Not   MC_HaltSuperimposed   Not   MC_HaltSuperimposed   Not   MC_MoveCocity   V1.1   MC_MoveCocitionuousRelative   MC_MoveCocitionuousRelative   Not   MC_TorqueControl   Not   MC_TorqueControl   Not   MC_PositionProfile   Not   MC_PositionProfile   Not   MC_AccelerationProfile   Not   MC_SetOverride   Not   MC_SetOverride   Not   MC_ReadParameter &   V1.1   MC_ReadBoolParameter   MC_WiteParameter &   V1.1   MC_ReadDigitalInput   Not   MC_ReadDigitalInput   Not   MC_ReadDigitalOutput   Not   MC_ReadActualPosition   Not   MC_ReadActualPosition   Not   MC_ReadActualPosition   Not   MC_ReadActualPosition   Not   MC_ReadActualForque   Not   MC_CamTableSelect   Not   MC_PassingRelative   Not   MC_PassingRelative   Not   MC_PassingRelative   Not   MC_PassingRelative   Not   MC_PassingRelati		V1.0/ V1.1/	
MC_Home		V2.0 or Not	
MC   Stop   V2.0   MC   Halt   V2.0   MC   MoveAbsolute   V1.1   MC   MoveAbsolute   V1.1   MC   MoveAbsolute   V1.1   MC   MoveAbsolute   V1.1   MC   MoveAbsolute   Not   MC   MoveSuperimposed   Not   MC   MoveSuperimposed   Not   MC   MoveVelocity   V1.1   MC   MoveVelocity   V1.1   MC   MoveVelocity   V1.1   MC   MoveContinuousRobalute   MC   MoveContinuousRobalute   MC   MoveContinuousRobalute   MC   MoveContinuousRobalute   MC   MoveContinuousRobalute   Not   MC   ForqueControl   Not   MC   MoveContinuousRobalute   Not   MV   MV   MV   MV   MV   MV   MV   M	MC_Power	V2.0	
MC_Halt	MC_Home	V1.1	
MC   MoveRelative	MC_Stop	V2.0	
MC   MoveRelative   Not   Not   MC   MoveSuperimposed   Not   MC   MoveSuperimposed   Not   MC   MoveSuperimposed   Not   MC   MoveContinuousAbsolute   Not   MC   PositionProfile   Not   MC   PositionProfile   Not   MC   SctPosition   V2.0   MC   SctPosition   V2.0   MC   ReadParameter & V1.1   MC   ReadBoolParameter   WC   WriteParameter & V1.1   MC   WriteParameter & V1.1   MC   WriteParameter   Not   MC   ReadDigitalOutput   Not   MC   ReadActualPosition   Not   MC   ReadActualForque   Not   MC   ReadAxisInfo   Not   MC   MC   MC   MC   MC   MC   MC   M	MC_Halt	V2.0	
MC_MoveSuperimposed Not   Not   MC_MoveSuperimposed Not   Not   MC_MoveSuperimposed Not   MC_MoveContinuousAbsolute Not   MC_MoveContinuousAbsolute Not   MC_MoveContinuousAbsolute Not   MC_MoveContinuousAbsolute Not   MC_TorqueControl   Not   MC_PositionProfile   Not   MC_PositionProfile   Not   MC_VelocityProfile   Not   MC_VelocityProfile	MC_MoveAbsolute	V1.1	
MC   MoveSuperimposed   Not   MC   MoveVelocity   V1.1   MC   MoveVelocity   V1.1   MC   MoveVelocity   V1.1   MC   MoveVelocity   Not   MC   MoveVelocity   Not   MC   MoveContinuousAbsolute   Not   MC   TorqueControl   Not   MC   TorqueControl   Not   MC   TorqueControl   Not   MC   Mc   Mc   Mc   Mc   Mc   Mc   Mc	MC_MoveRelative	V1.1	
MC_HaltSuperimposed         Not           MC_MoveVelocity         V1.1           MC_MoveContinuousAbsolute         Not           MC_MoveContinuousRelative         Not           MC_TorqueControl         Not           MC_PositionProfile         Not           MC_VelocityProfile         Not           MC_AccelerationProfile         Not           MC_SetPosition         V2.0           MC_SetOverride         Not           MC_ReadBrameter & V1.1         Not           MC_ReadBoolParameter         W1.1           MC_WriteParameter & W1.1         Not           MC_WriteBoolParameter         Not           MC_ReadDigitalCutput         Not           MC_ReadDigitalOutput         Not           MC_ReadDigitalOutput         Not           MC_ReadActualPosition         Not           MC_ReadActualFosition         Not           MC_ReadActualTorque         Not           MC_ReadActualTorque         Not           MC_ReadAxisInfo         Not           MC_ReadAxisError         V2.0           MC_ReadAxisError         V2.0           MC_Beset         V2.0           MC_DigitalCamSwitch         Not           MC_CamIn	MC_MoveAdditive	Not	
MC_MoveVelocity         V1.1           MC_MoveContinuousAbsolute         Not           MC_MoveContinuousRelative         Not           MC_MoveControl         Not           MC_PositionProfile         Not           MC_VelocityProfile         Not           MC_VelocityProfile         Not           MC_SetPosition         V2.0           MC_SetPosition         V2.0           MC_SetOverride         Not           MC_ReadParameter & V1.1         V1.1           MC_ReadBoolParameter         V1.1           MC_WriteParameter & W1.1         V1.1           MC_WriteDaigtalImput         Not           MC_ReadDigitalImput         Not           MC_ReadDigitalOutput         Not           MC_ReadActualPosition         Not           MC_ReadActualPosition         Not           MC_ReadActualPosition         Not           MC_ReadActualPosition         Not           MC_ReadActualPosition         Not           MC_ReadAxisInfo         Not           MC_ReadAxisInfo         Not           MC_ReadAxisInfo         Not           MC_ReadAxisInfo         Not           MC_Pack         V2.0           MC_DigitalCamSwitch <t< td=""><td>MC_MoveSuperimposed</td><td>Not</td><td></td></t<>	MC_MoveSuperimposed	Not	
MC_MoveContinuousAbsolute         Not           MC_MoveContinuousRelative         Not           MC_TorqueControl         Not           MC_PositionProfile         Not           MC_VelocityProfile         Not           MC_AccelerationProfile         Not           MC_SetDossition         V2.0           MC_SetOverride         Not           MC_ReadPosition         V2.0           MC_ReadBoolParameter         W1.1           MC_ReadBoolParameter         W1.1           MC_WriteBoolParameter         Not           MC_ReadDigitalInput         Not           MC_ReadDigitalOutput         Not           MC_ReadDigitalOutput         Not           MC_ReadActualPosition         Not           MC_ReadActualForium         Not           MC_ReadActualForque         Not           MC_ReadActualForque         Not           MC_ReadAsisInfor         Not           MC_ReadAxisInfo         Not           MC_ReadAxisError         V2.0           MC_Baset         V2.0           MC_TouchProbe         V2.0           MC_AbortTrigger         V2.0           MC_CamDrobe         V2.0           MC_CamIn         Not	MC_HaltSuperimposed	Not	
MC_MoveContinuousRelative MC_TorqueControl MC_PositionProfile Not MC_VelocityProfile Not MC_VelocityProfile Not MC_AccelerationProfile Not MC_SetPosition MC_SetPosition MC_SetPosition MC_SetOverride Not MC_ReadParameter & V1.1 MC_ReadBoolParameter MC_WriteParameter & V1.1 MC_WriteParameter & V1.1 MC_ReadDigitalInput Not MC_ReadDigitalIoutput Not MC_ReadDigitalOutput Not MC_ReadActualVesition Not MC_ReadActualVesition MC_ReadActualVesition MC_ReadActualVesition MC_ReadActualVesition Not MC_CamaDut Not MC_GearIn Not MC_GearIn Not MC_PhasingAbsolute Not MC_PhasingAbsolute Not	MC_MoveVelocity	V1.1	
MC_TorqueControl         Not           MC_PositionProfile         Not           MC_VelocityProfile         Not           MC_SetPosition         V2.0           MC_SetOverride         Not           MC_ReadParameter & W1.1         V1.1           MC_ReadBoolParameter         W1.1           MC_WriteParameter & MC_WriteBoolParameter         V1.1           MC_WriteBoolParameter         Not           MC_ReadDigitalIoutput         Not           MC_ReadDigitalOutput         Not           MC_ReadActualPosition         Not           MC_ReadActualPosition         Not           MC_ReadActualForque         Not           MC_ReadActualForque         Not           MC_ReadActualForque         Not           MC_ReadAsisInfo         Not           MC_ReadAxisInfo         Not           MC_ReadAxisError         V2.0           MC_Reset         V2.0           MC_DigitalCamSwitch         Not           MC_TouchProbe         V2.0           MC_AbortTrigger         V2.0           Multi-Axis Function Blocks         Supported as V1.0/V1.1/V2.0 or Not           MC_CamTall         Not           MC_CamOut         Not           MC_Ge	MC_MoveContinuousAbsolute	Not	
MC_PositionProfile         Not           MC_VelocityProfile         Not           MC_AccelerationProfile         Not           MC_SetPosition         V2.0           MC_ReadParameter         Not           MC_ReadParameter &         V1.1           MC_ReadBoolParameter         WC_WriteBoolParameter           MC_WriteBoolParameter         W1.1           MC_WriteBoolParameter         Not           MC_ReadDigitalInput         Not           MC_ReadDigitalOutput         Not           MC_ReadOstioutput         Not           MC_ReadActualPosition         Not           MC_ReadActualTorque         Not           MC_ReadActualTorque         Not           MC_ReadActualTorque         Not           MC_ReadAxisInfo         Not           MC_ReadAxisInfo         Not           MC_ReadAxisInfo         Not           MC_Reset         V2.0           MC_DigitalCamSwitch         Not           MC_TouchProbe         V2.0           MC_AbortTrigger         V2.0           MC_CamTableSelect         Not           MC_CamIn         Not           MC_CamOut         Not           MC_GearIn         Not	MC_MoveContinuousRelative	Not	
MC_PositionProfile         Not           MC_VelocityProfile         Not           MC_AccelerationProfile         Not           MC_SetPosition         V2.0           MC_ReadParameter         Not           MC_ReadParameter &         V1.1           MC_ReadDolParameter         WC_WriteBoolParameter           MC_WriteBoolParameter         W1.1           MC_WriteBoolParameter         Not           MC_ReadDigitalInput         Not           MC_ReadDigitalOutput         Not           MC_ReadDigitalOutput         Not           MC_ReadActualPosition         Not           MC_ReadActualTorque         Not           MC_ReadActualTorque         Not           MC_ReadActualTorque         Not           MC_ReadAxisInfo         Not           MC_ReadAxisInfo         Not           MC_ReadAxisInfo         Not           MC_Reset         V2.0           MC_DigitalCamSwitch         Not           MC_TouchProbe         V2.0           MC_DigitalCamSwitch         Not           MC_CamTableSelect         Not           MC_CamTableSelect         Not           MC_CamOut         Not           MC_GearIn         Not     <	MC_TorqueControl	Not	
MC_VelocityProfile         Not           MC_AccelerationProfile         Not           MC_SetPosition         V2.0           MC_SetOverride         Not           MC_ReadParameter &         V1.1           MC_ReadBoolParameter         V1.1           MC_WriteBoolParameter         W1.1           MC_WriteBoolParameter         W1.1           MC_ReadDigitalInput         Not           MC_ReadDigitalOutput         Not           MC_ReadActualPosition         Not           MC_ReadActualVelocity         Not           MC_ReadActualTorque         Not           MC_ReadMotionState         Not           MC_ReadMotionState         Not           MC_ReadAxisInfo         Not           MC_ReadAxisInfo         Not           MC_ReadSwister         V2.0           MC_Reset         V2.0           MC_DigitalCamSwitch         Not           MC_TouchProbe         V2.0           MC_AbortTrigger         V2.0           MC_AbortTrigger         V2.0           MC_CamTableSelect         Not           MC_CamOut         Not           MC_GearIn         Not           MC_GearIn         Not           MC_Ph		Not	
MC_AccelerationProfile         Not           MC_SetPosition         V2.0           MC_SetOverride         Not           MC_ReadParameter & V1.1         V1.1           MC_ReadBoolParameter         W1.1           MC_WriteParameter & MC_ReadDigitalInput         Not           MC_ReadDigitalOutput         Not           MC_WriteDigitalOutput         Not           MC_ReadActualPosition         Not           MC_ReadActualPosition         Not           MC_ReadActualForque         Not           MC_ReadActualForque         Not           MC_ReadAxisIrorque         Not           MC_ReadAxisInfo         Not           MC_ReadAxisInfo         Not           MC_ReadAxisFror         V2.0           MC_DigitalCamSwitch         Not           MC_TouchProbe         V2.0           MC_AbortTrigger         V2.0           Multi-Axis Function Blocks         Supported as V1.0/ V1.1/ V2.0 or Not           MC_CamTableSelect         Not           MC_CamOut         Not           MC_GearIn         Not           MC_GearInPos         Not           MC_PhasingAbsolute         Not           MC_PhasingRelative         Not			
MC_SetPosition         V2.0           MC_ReadParameter & MC_ReadBoolParameter         V1.1           MC_WriteParameter & MC_WriteBoolParameter         V1.1           MC_ReadDigitalInput         Not           MC_ReadDigitalOutput         Not           MC_WriteDigitalOutput         Not           MC_ReadActualPosition         Not           MC_ReadActualVelocity         Not           MC_ReadActualVelocity         Not           MC_ReadAstatus         V1.1           MC_ReadAstisus         V1.1           MC_ReadAxisInfo         Not           MC_ReadAxisInfo         Not           MC_ReadAxisInfo         Not           MC_ReadAxisError         V2.0           MC_DigitalCamSwitch         Not           MC_TouchProbe         V2.0           MC_AbortTrigger         V2.0           MC_AbortTrigger         V2.0           MC_AbortTrigger         V2.0           MC_CamTableSelect         Not           MC_CamIn         Not           MC_CamOut         Not           MC_GearIn         Not           MC_GearInPos         Not           MC_PhasingAbsolute         Not		Not	
MC_ReadParameter & V1.1  MC_ReadBoolParameter W1.1  MC_WriteParameter & V1.1  MC_WriteBoolParameter W1.1  MC_WriteBoolParameter W1.1  MC_ReadDigitalInput Not MC_ReadDigitalOutput Not MC_ReadActualPosition Not MC_ReadActualPosition Not MC_ReadActualVelocity Not MC_ReadActualTorque Not MC_ReadActualTorque Not MC_ReadActualTorque Not MC_ReadAxisInfo Not MC_Reset V2.0  MC_DigitalCamSwitch Not MC_TouchProbe V2.0  MC_AbortTrigger V2.0  MC_AbortTrigger V2.0  MC_AbortTrigger V2.0  MC_CamTableSelect Not MC_CamIn Not MC_CamIn Not MC_GearIn Not MC_GearIn Not MC_GearIn Not MC_GearIn Not MC_GearInPos Not MC_PhasingAbsolute Not MC_PhasingRelative Not			
MC_ReadBoolParameter MC_WriteParameter & V1.1 MC_WriteParameter & V1.1 MC_ReadDigitalInput Not MC_ReadDigitalOutput Not MC_ReadDigitalOutput Not MC_ReadActualPosition Not MC_ReadActualVelocity Not MC_ReadActualVelocity Not MC_ReadActualTorque Not MC_ReadAstatus V1.1 MC_ReadAstisInfo Not MC_ReadAxisInfo Not MC_ReadAxisInfo Not MC_ReadAxisInfo Not MC_ReadAxisIror V2.0 MC_Reset V2.0 MC_DigitalCamSwitch Not MC_TouchProbe V2.0 MC_AbortTrigger V2.0 MC_AbortTrigger V2.0 MC_AbortTrigger V2.0 MC_CamTableSelect Not MC_CamOut Not MC_CamOut Not MC_GearIn Not MC_GearInPos Not MC_PhasingAbsolute Not MC_PhasingAbsolute Not MC_PhasingRelative Not	MC SetOverride	Not	
MC_ReadBoolParameter         W1.1           MC_WriteParameter & MC_ReadDigitalInput         Not           MC_ReadDigitalOutput         Not           MC_ReadDigitalOutput         Not           MC_WriteDigitalOutput         Not           MC_ReadActualPosition         Not           MC_ReadActualVelocity         Not           MC_ReadActualTorque         Not           MC_ReadStatus         V1.1           MC_ReadMotionState         Not           MC_ReadAxisInfo         Not           MC_ReadAxisError         V2.0           MC_Reset         V2.0           MC_DigitalCamSwitch         Not           MC_DigitalCamSwitch         Not           MC_AbortTrigger         V2.0           MC_AbortTrigger         V2.0           Multi-Axis Function Blocks         Supported as V1.0/V1.1/V2.0 or Not           MC_CamTableSelect         Not           MC_CamIn         Not           MC_GearIn         Not           MC_GearInpos         Not           MC_GearInpos         Not           MC_PhasingAbsolute         Not           MC_PhasingRelative         Not	MC ReadParameter &		
MC_WriteBoolParameter  MC_ReadDigitalInput  MC_ReadDigitalOutput  MC_WriteDigitalOutput  Not  MC_WriteDigitalOutput  Not  MC_ReadActualPosition  MC_ReadActualVelocity  Not  MC_ReadActualTorque  Not  MC_ReadActualTorque  Not  MC_ReadStatus  V1.1  MC_ReadMotionState  Not  MC_ReadAxisInfo  Not  MC_ReadAxisInfo  MC_ReadAxisError  V2.0  MC_ReadAxisError  V2.0  MC_DigitalCamSwitch  MC_DigitalCamSwitch  MC_TouchProbe  V2.0  MC_AbortTrigger  Multi-Axis Function Blocks  V1.0/V1.1/V2.0 or Not  MC_CamTableSelect  Not  MC_CamIn  Not  MC_GaarIn  Not  MC_GaarIn  Not  MC_GaarIn  MC_GaarIn  Not  MC_GaarInPos  Not  MC_PhasingAbsolute  Not  MC_PhasingAbsolute  Not  MC_PhasingAbsolute  Not	_		
MC_ReadDigitalInput         Not           MC_ReadDigitalOutput         Not           MC_WriteDigitalOutput         Not           MC_ReadActualPosition         Not           MC_ReadActualVelocity         Not           MC_ReadActualTorque         Not           MC_ReadStatus         V1.1           MC_ReadMotionState         Not           MC_ReadAxisInfo         Not           MC_ReadAxisError         V2.0           MC_Reset         V2.0           MC_DigitalCamSwitch         Not           MC_TouchProbe         V2.0           MC_AbortTrigger         V2.0           Multi-Axis Function Blocks         Supported as V1.0/ V1.1/ V2.0 or Not           MC_CamTableSelect         Not           MC_CamIn         Not           MC_GearIn         Not           MC_GearOut         Not           MC_GearOut         Not           MC_PhasingAbsolute         Not           MC_PhasingRelative         Not	MC WriteParameter &	V1.1	
MC_ReadDigitalInput         Not           MC_ReadDigitalOutput         Not           MC_WriteDigitalOutput         Not           MC_ReadActualPosition         Not           MC_ReadActualVelocity         Not           MC_ReadActualTorque         Not           MC_ReadStatus         V1.1           MC_ReadMotionState         Not           MC_ReadAxisInfo         Not           MC_ReadAxisError         V2.0           MC_Reset         V2.0           MC_DigitalCamSwitch         Not           MC_TouchProbe         V2.0           MC_AbortTrigger         V2.0           Multi-Axis Function Blocks         Supported as V1.0/ V1.1/ V2.0 or Not           MC_CamTableSelect         Not           MC_CamIn         Not           MC_GearIn         Not           MC_GearOut         Not           MC_GearOut         Not           MC_PhasingAbsolute         Not           MC_PhasingRelative         Not	MC_WriteBoolParameter		
MC_WriteDigitalOutput         Not           MC_ReadActualPosition         Not           MC_ReadActualVelocity         Not           MC_ReadActualTorque         Not           MC_ReadStatus         V1.1           MC_ReadMotionState         Not           MC_ReadAxisInfo         Not           MC_ReadAxisError         V2.0           MC_Reset         V2.0           MC_DigitalCamSwitch         Not           MC_TouchProbe         V2.0           MC_AbortTrigger         V2.0           Multi-Axis Function Blocks         Supported as V1.0/ V1.1/ V2.0 or Not           MC_CamTableSelect         Not           MC_CamOut         Not           MC_GearIn         Not           MC_GearInPos         Not           MC_PhasingAbsolute         Not           MC_PhasingRelative         Not		Not	
MC_ReadActualPosition         Not           MC_ReadActualVelocity         Not           MC_ReadActualTorque         Not           MC_ReadStatus         V1.1           MC_ReadMotionState         Not           MC_ReadAxisInfo         Not           MC_ReadAxisError         V2.0           MC_Reset         V2.0           MC_DigitalCamSwitch         Not           MC_TouchProbe         V2.0           MC_AbortTrigger         V2.0           Multi-Axis Function Blocks         Supported as V1.0/ V1.1/ V2.0 or Not           MC_CamTableSelect         Not           MC_CamIn         Not           MC_GearIn         Not           MC_GearIn         Not           MC_GearInPos         Not           MC_PhasingAbsolute         Not           MC_PhasingRelative         Not	MC_ReadDigitalOutput	Not	
MC_ReadActualPosition         Not           MC_ReadActualVelocity         Not           MC_ReadActualTorque         Not           MC_ReadStatus         V1.1           MC_ReadMotionState         Not           MC_ReadAxisInfo         Not           MC_ReadAxisError         V2.0           MC_Reset         V2.0           MC_DigitalCamSwitch         Not           MC_TouchProbe         V2.0           MC_AbortTrigger         V2.0           Multi-Axis Function Blocks         Supported as V1.0/ V1.1/ V2.0 or Not           MC_CamTableSelect         Not           MC_CamIn         Not           MC_GearIn         Not           MC_GearIn         Not           MC_GearInPos         Not           MC_PhasingAbsolute         Not           MC_PhasingRelative         Not	MC_WriteDigitalOutput	Not	
MC_ReadActualTorque         Not           MC_ReadStatus         V1.1           MC_ReadMotionState         Not           MC_ReadAxisInfo         Not           MC_ReadAxisError         V2.0           MC_Reset         V2.0           MC_DigitalCamSwitch         Not           MC_TouchProbe         V2.0           MC_AbortTrigger         V2.0           Multi-Axis Function Blocks         Supported as V1.0/ V1.1/ V2.0 or Not           MC_CamTableSelect         Not           MC_CamIn         Not           MC_GearIn         Not           MC_GearOut         Not           MC_GearInPos         Not           MC_PhasingAbsolute         Not           MC_PhasingRelative         Not		Not	
MC_ReadStatus         V1.1           MC_ReadMotionState         Not           MC_ReadAxisInfo         Not           MC_ReadAxisError         V2.0           MC_Reset         V2.0           MC_DigitalCamSwitch         Not           MC_TouchProbe         V2.0           MC_AbortTrigger         V2.0           Multi-Axis Function Blocks         Supported as V1.0/ V1.1/ V2.0 or Not           MC_CamTableSelect         Not           MC_CamIn         Not           MC_GearIn         Not           MC_GearOut         Not           MC_GearInPos         Not           MC_PhasingAbsolute         Not           MC_PhasingRelative         Not	MC_ReadActualVelocity	Not	
MC_ReadMotionState         Not           MC_ReadAxisInfo         Not           MC_ReadAxisError         V2.0           MC_Reset         V2.0           MC_DigitalCamSwitch         Not           MC_TouchProbe         V2.0           MC_AbortTrigger         V2.0           Multi-Axis Function Blocks         Supported as V1.0/ V1.1/ V2.0 or Not           MC_CamTableSelect         Not           MC_CamIn         Not           MC_GearIn         Not           MC_GearOut         Not           MC_GearInPos         Not           MC_PhasingAbsolute         Not           MC_PhasingRelative         Not	MC_ReadActualTorque	Not	
MC_ReadAxisInfo         Not           MC_ReadAxisError         V2.0           MC_Reset         V2.0           MC_DigitalCamSwitch         Not           MC_TouchProbe         V2.0           MC_AbortTrigger         V2.0           Multi-Axis Function Blocks         Supported as V1.0/ V1.1/ V2.0 or Not           MC_CamTableSelect         Not           MC_CamIn         Not           MC_GearIn         Not           MC_GearOut         Not           MC_GearInPos         Not           MC_PhasingAbsolute         Not           MC_PhasingRelative         Not		V1.1	
MC_ReadAxisInfo         Not           MC_ReadAxisError         V2.0           MC_Reset         V2.0           MC_DigitalCamSwitch         Not           MC_TouchProbe         V2.0           MC_AbortTrigger         V2.0           Multi-Axis Function Blocks         Supported as V1.0/ V1.1/ V2.0 or Not           MC_CamTableSelect         Not           MC_CamIn         Not           MC_GearIn         Not           MC_GearOut         Not           MC_GearInPos         Not           MC_PhasingAbsolute         Not           MC_PhasingRelative         Not	MC ReadMotionState	Not	
MC_Reset         V2.0           MC_DigitalCamSwitch         Not           MC_TouchProbe         V2.0           MC_AbortTrigger         V2.0           Multi-Axis Function Blocks         Supported as V1.0/ V1.1/ V2.0 or Not           MC_CamTableSelect         Not           MC_CamIn         Not           MC_CamOut         Not           MC_GearIn         Not           MC_GearInPos         Not           MC_PhasingAbsolute         Not           MC_PhasingRelative         Not		Not	
MC_Reset         V2.0           MC_DigitalCamSwitch         Not           MC_TouchProbe         V2.0           MC_AbortTrigger         V2.0           Multi-Axis Function Blocks         Supported as V1.0/ V1.1/ V2.0 or Not           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 ReadAxisError	V2.0	
MC_DigitalCamSwitch         Not           MC_TouchProbe         V2.0           MC_AbortTrigger         V2.0           Multi-Axis Function Blocks         Supported as V1.0/ V1.1/ V2.0 or Not           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 Reset		
MC_TouchProbe         V2.0           MC_AbortTrigger         V2.0           Multi-Axis Function Blocks         Supported as V1.0/ V1.1/ V2.0 or Not           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_AbortTrigger         V2.0           Multi-Axis Function Blocks         Supported as V1.0/ V1.1/ V2.0 or Not           MC_CamTableSelect         Not           MC_CamIn         Not           MC_CamOut         Not           MC_GearIn         Not           MC_GearOut         Not           MC_GearInPos         Not           MC_PhasingAbsolute         Not           MC_PhasingRelative         Not	Š		
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			
V1.0/ V1.1/           V2.0 or Not           MC_CamTableSelect         Not           MC_CamIn         Not           MC_CamOut         Not           MC_GearIn         Not           MC_GearOut         Not           MC_GearInPos         Not           MC_PhasingAbsolute         Not           MC_PhasingRelative         Not			Comments (<= 48 char.)
V2.0 or Not           MC_CamTableSelect         Not           MC_CamIn         Not           MC_CamOut         Not           MC_GearIn         Not           MC_GearOut         Not           MC_GearInPos         Not           MC_PhasingAbsolute         Not           MC_PhasingRelative         Not	2.30		
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_CamIn         Not           MC_CamOut         Not           MC_GearIn         Not           MC_GearOut         Not           MC_GearInPos         Not           MC_PhasingAbsolute         Not           MC_PhasingRelative         Not	MC_CamTableSelect		
MC_CamOut         Not           MC_GearIn         Not           MC_GearOut         Not           MC_GearInPos         Not           MC_PhasingAbsolute         Not           MC_PhasingRelative         Not		Not	
MC_GearInNotMC_GearOutNotMC_GearInPosNotMC_PhasingAbsoluteNotMC_PhasingRelativeNot			
MC_GearOut     Not       MC_GearInPos     Not       MC_PhasingAbsolute     Not       MC_PhasingRelative     Not			
MC_GearInPos Not MC_PhasingAbsolute Not MC_PhasingRelative Not			
MC_PhasingAbsolute Not MC_PhasingRelative Not			
MC_PhasingRelative Not			
1.10 00	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			
В	Axis	Yes	
VAR_INPUT			
В	Enable	Yes	
E	EnablePositive	Yes	
E	EnableNegative	Yes	
VAR_OUTPUT			
В	Status	Yes	
E	Valid	Yes	
В	Error	Yes	
E	ErrorID	Yes	

Appendix B 3.2 MC\_Home

	1.56 W	G 77.37	g .
If Supported	MC_Home	Sup. Y/N	Comments
VAR_IN_OUT			
В	Axis	Yes	
VAR_INPUT			
В	Execute	Yes	
В	Position	Yes	
E	BufferMode	Yes	
VAR_OUTPUT			
В	Done	Yes	
Е	Busy	Yes	
E	Active	Yes	
Е	CommandAborted	Yes	
В	Error	Yes	
Е	ErrorID	Yes	

Appendix B 3.3 MC Stop

Tippendix B 3.5 Me_5top			
If Supported	MC_Stop	Sup. Y/N	Comments
VAR_IN_OUT			
В	Axis	Yes	
VAR_INPUT			
В	Execute	Yes	
Е	Deceleration	Yes	
Е	Jerk	Yes	
VAR_OUTPUT			
В	Done	Yes	
Е	Busy	Yes	
Е	CommandAborted	Yes	
В	Error	Yes	
E	ErrorID	Yes	

Appendix B 3.4 MC\_Halt

	<u> </u>	
If Supported	MC_Halt	Sup. Y/N
VAR_IN_OUT		
В	Axis	Yes
VAR_INPUT		
В	Execute	Yes
Е	Deceleration	Yes
Е	Jerk	Yes
Е	BufferMode	Yes
VAR_OUTPUT		
В	Done	Yes
E	Busy	Yes
Е	Active	Yes
E	CommandAborted	Yes
В	Error	Yes
Е	ErrorID	Yes

Appendix B 3.5 MC\_MoveAbsolute

If Supported	MC_MoveAbsolute	Sup.Y/N	Comments
VAR_IN_OUT		<u> </u>	
В	Axis	Yes	
VAR_INPUT			
В	Execute	Yes	
Е	ContinuousUpdate	No	Supported as V1.1.
В	Position	Yes	
В	Velocity	Yes	
Е	Acceleration	Yes	
Е	Deceleration	Yes	
Е	Jerk	Yes	
В	Direction	Yes	
Е	BufferMode	Yes	
VAR_OUTPUT			
В	Done	Yes	
Е	Busy	Yes	
Е	Active	Yes	
Е	CommandAborted	Yes	
В	Error	Yes	
Е	ErrorID	Yes	

Appendix B 3.6 MC\_MoveRelative

If Supported	MC_MoveRelative	Sup. Y/N	Comments
VAR_IN_OUT	·		
В	Axis	Yes	
VAR_INPUT			
В	Execute	Yes	
E	ContinuousUpdate	No	Supported as V1.1
В	Distance	Yes	
E	Velocity	Yes	
E	Acceleration	Yes	
E	Deceleration	Yes	
E	Jerk	Yes	
E	BufferMode	Yes	
VAR_OUTPUT			
В	Done	Yes	
E	Busy	Yes	
E	Active	Yes	
E	CommandAborted	Yes	
В	Error	Yes	
Е	ErrorID	Yes	

Appendix B 3.7 MC\_MoveAdditive

Appendix B 5.7 WC_WoveAdditive			
If Supported	MC_MoveAdditive	Sup. Y/N	Comments
VAR_IN_OUT			
В	Axis		
VAR_INPUT			
В	Execute		
Е	ContinuousUpdate		
В	Distance		
Е	Velocity		
Е	Acceleration		
Е	Deceleration		
Е	Jerk		
Е	BufferMode		
VAR_OUTPUT			
В	Done		
Е	Busy		
E	Active		
Е	CommandAborted		
В	Error		
E	ErrorID		

Appendix B 3.8 MC\_MoveSuperimposed

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

Appendix B 3.9 MC HaltSuperimposed

търрене	Tippendix B 3.5 Me_Hattbaperimposed			
If Supported	MC_HaltSuperimposed	Sup. Y/N	Comments	
VAR_IN_OUT				
В	Axis			
VAR_INPUT				
В	Execute			
Е	Deceleration			
E	Jerk			
VAR_OUTPUT				
В	Done			
Е	Busy			
E	CommandAborted			
В	Error			
E	ErrorID			

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Appendix B 3.10 MC\_MoveVelocity

If Supported	MC_MoveVelocity	Sup. Y/N	Comments
VAR_IN_OUT			
В	Axis	Yes	
VAR_INPUT			
В	Execute	Yes	
Е	ContinuousUpdate	No	Supported as V1.1
E	Velocity	Yes	
E	Acceleration	Yes	
E	Deceleration	Yes	
Е	Jerk	Yes	
E	Direction	Yes	
Е	BufferMode	Yes	
VAR_OUTPUT			
В	InVelocity	Yes	
E	Busy	Yes	
E	Active	Yes	
Е	CommandAborted	Yes	
В	Error	Yes	
E	ErrorID	Yes	

Annendix R 3 11 MC MoveContinuous Absolute

Appendix B 3.11 MC_MoveContinuousAbsolute			
If Supported	MC_MoveContinuousAbsolute	Sup. Y/N	Comments
VAR_IN_OUT			
В	Axis		
VAR_INPUT			
В	Execute		
E	ContinuousUpdate		
В	Position		
В	EndVelocity		
В	Velocity		
E	Acceleration		
E	Deceleration		
Е	Jerk		
E	Direction		
E	BufferMode		
VAR_OUTPUT			
В	InEndVelocity		
E	Busy		
Е	Active		
Е	CommandAborted		
В	Error		
Е	ErrorID		

Appendix B 3.12 MC MoveContinuousRelative

Appendix b 5.12 WC_WloveContinuousKelative				
If Supported	MC_MoveContinuousRelative	Sup. Y/N	Comments	
VAR_IN_OUT				
В	Axis			
VAR_INPUT				
В	Execute			
Е	ContinuousUpdate			
В	Distance			
В	EndVelocity			
В	Velocity			
Е	Acceleration			
Е	Deceleration			
Е	Jerk			
Е	BufferMode			
VAR_OUTPUT				
В	InEndVelocity			
Е	Busy			
Е	Active			
Е	CommandAborted			
В	Error			
Е	ErrorID			

Appendix B 3.13 MC TorqueControl

Appen	Appendix b 5.15 MC_forqueControl			
If Supported	MC_TorqueControl	Sup.Y/N	Comments	
VAR_IN_OUT				
В	Axis			
VAR_INPUT				
В	Execute			
Е	ContinuousUpdate			
В	Torque			
Е	TorqueRamp			
E	Velocity			
E	Acceleration			
E	Deceleration			
E	Jerk			
E	Direction			
E	BufferMode			
VAR_OUTPUT				
В	InTorque			
E	Busy			
Е	Active			
Е	CommandAborted			
В	Error			
Е	ErrorID			

Appendix B 3.14 MC\_PositionProfile

If Supported	MC_PositionProfile	Sup. Y/N	Comments
VAR_IN_OUT	Me_i ositioni tonic	Sup. 1/10	Comments
	т		
В	Axis		
В	TimePosition		
VAR_INPUT			
В	Execute		
E	ContinuousUpdate		
E	TimeScale		
E	PositionScale		
E	Offset		
E	BufferMode		
VAR_OUTPUT			
В	Done		
E	Busy		
E	Active		
E	CommandAborted		
В	Error		
E	ErrorID		

Appendix B 3.15 MC VelocityProfile

Appen	Appendix B 5.15 MC_velocityProme			
If Supported	MC_VelocityProfile	Sup. Y/N	Comments	
VAR_IN_OUT				
В	Axis			
В	TimeVelocity			
VAR_INPUT				
В	Execute			
Е	ContinuousUpdate			
Е	TimeScale			
Е	VelocityScale			
Е	Offset			
Е	BufferMode			
VAR_OUTPUT				
В	ProfileCompleted			
Е	Busy			
Е	Active			
Е	CommandAborted			
В	Error			
Е	ErrorID			

Appendix B 3.16 MC\_AccelerationProfile

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

Appendix B 3.17 MC\_SetPosition

	ma b cit/ nic_beti ont	1011	
If Supported	MC_SetPosition	Sup.Y/N	Comments
VAR_IN_OUT			
В	Axis	Yes	
VAR_INPUT			
В	Execute	Yes	
В	Position	Yes	
Е	Relative	Yes	
E	ExecutionMode	Yes	
VAR_OUTPUT			
В	Done	Yes	
E	Busy	Yes	
В	Error	Yes	
E	ErrorID	Yes	

Appendix B 3.18 MC\_SetOverride

пррепа	Appendix B 3:10 Me_SetOverride			
If Supported	MC_SetOverride	Sup.Y/N	Comments	
VAR_IN_OUT				
В	Axis			
VAR_INPUT				
В	Enable			
В	VelFactor			
Е	AccFactor			
Е	JerkFactor			
VAR_OUTPUT				
В	Enabled			
Е	Busy			
В	Error			
Е	ErrorID			

Appendix B 3.19 MC\_ReadParameter & MC\_ReadBoolParameter

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

If Supported	MC_ReadBoolParameter	Sup. Y/N	Comments
VAR_IN_OUT			
В	Axis	Yes	
VAR_INPUT			
В	Enable	Yes	
В	ParameterNumber	Yes	
VAR_OUTPUT			
В	Valid	Yes	
Е	Busy	Yes	
В	Error	Yes	
Е	ErrorID	Yes	
В	Value	Yes	

Name	B/E	R/W	Supp	Comments
			. Y/N	
CommandedPosition	В	R	Yes	
SWLimitPos	E	R/W	Yes	
SWLimitNeg	E	R/W	Yes	
EnableLimitPos	E	R/W	Yes	
EnableLimitNeg	E	R/W	Yes	
EnablePosLagMonitoring	Е	R/W	No	There is no position feddbacl from moving mechanism for Micro800 motion.
MaxPositionLag	Е	R/W	No	There is no position feddbacl from moving mechanism for Micro800 motion.
MaxVelocitySystem	E	R	Yes	
MaxVelocityAppl	В	R/W	Yes	
ActualVelocity	В	R	No	There is no velocity feddbacl from moving mechanism for Micro800 motion.
CommandedVelocity	В	R	Yes	
MaxAccelerationSystem	E	R	Yes	
MaxAccelerationAppl	Е	R/W	Yes	
MaxDecelerationSystem	Е	R	Yes	
MaxDecelerationAppl	Е	R/W	Yes	
MaxJerkSystem	Е	R	No	Supported as V1.1. MaxJerkSystem is not supported.
MarkJerkAppl	Е	R/W	Yes	

 $Table~4: Parameters~for~MC\_Read(Bool) Parameter~and~MC\_Write(Bool) Parameter~$ 

Appendix B 3.20 MC\_WriteParameter & MC\_WriteBoolParameter

If Supported	MC_WriteParameter	Sup. Y/N	Comments
VAR_IN_OUT	·	<u> </u>	
В	Axis	Yes	
VAR_INPUT	•		
В	Execute	Yes	
В	ParameterNumber	Yes	
В	Value	Yes	
Е	ExecutionMode	Yes	
VAR_OUTPUT			
В	Done	Yes	
Е	Busy	Yes	
В	Error	Yes	
Е	ErrorID	Yes	

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

Appendix B 3.21 MC\_ReadDigitalInput

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

Appendix B 3.22 MC\_ReadDigitalOutput

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

Appendix B 3.23 MC WriteDigitalOutput

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

Appendix B 3.24 MC\_ReadActualPosition

If Supported	MC_ReadActualPosition	Sup. Y/N	Comments	
VAR_IN_OUT				
В	Axis			
VAR_INPUT				
В	Enable			
VAR_OUTPUT				
В	Valid			
Е	Busy			
В	Error			
Е	ErrorID			
В	Position		·	

Appendix B 3.25 MC\_ReadActualVelocity

inppending below it to interest to the control of t			
If Supported	MC_ReadActualVelocity	Sup.Y/N	Comments
VAR_IN_OUT			
В	Axis		
VAR_INPUT			
В	Enable		
VAR_OUTPUT			
В	Valid		
Е	Busy		
В	Error		
Е	ErrorID		
В	Velocity		

Appendix B 3.26 MC\_ReadActualTorque

If Supported	MC_ReadActualTorque	Sup.Y/N	Comments
VAR_IN_OUT			
В	Axis		
VAR_INPUT			
В	Enable		
VAR_OUTPUT			
В	Valid		
Е	Busy		
В	Error		
Е	ErrorID		
В	Torque		

Appendix B 3.27 MC ReadStatus

Appendix D 3.27 MC_ReadStatus			
MC_ReadStatus	Sup. Y/N	Comments	
Axis	Yes		
Enable	Yes		
Valid	Yes		
Busy	Yes		
Error	Yes		
ErrorID	Yes		
ErrorStop	Yes		
Disabled	Yes		
Stopping	Yes		
Homing	Yes		
Standstill	Yes		
DiscreteMotion	Yes		
ContinuousMotion	Yes		
SynchronizedMotion	Yes		
	MC_ReadStatus  Axis  Enable  Valid Busy Error ErrorID ErrorStop Disabled Stopping Homing Standstill DiscreteMotion ContinuousMotion	MC_ReadStatusSup. Y/NAxisYesEnableYesValidYesBusyYesErrorYesErrorIDYesErrorStopYesDisabledYesStoppingYesHomingYesStandstillYesDiscreteMotionYesContinuousMotionYes	

Appendix B 3.28 MC\_ReadMotionState

iippendix D ciao 1/10_iteadi/10tionstate				
If Supported	MC_ReadMotionState	Sup. Y/N	Comments	
VAR_IN_OUT				
В	Axis			
VAR_INPUT				
В	Enable			
E	Source			
VAR_OUTPUT				
В	Valid			
E	Busy			
В	Error			
E	ErrorID			
E	ConstantVelocity			
Е	Accelerating			
Е	Decelerating			
Е	DirectionPositive			
Е	DirectionNegative			

Appendix B 3.29 MC ReadAxisInfo

If Supported	MC_ReadAxisInfo	Sup. Y/N	Comments
VAR_IN_OUT			
В	Axis		
VAR_INPUT			
В	Enable		
VAR_OUTPUT			
В	Valid		
E	Busy		
В	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

	iippenam z ete e iii e_iteaaiimezii ei			
If Supported	MC_ReadAxisError	Sup. Y/N	Comments	
VAR_IN_OUT				
В	Axis	Yes		
VAR_INPUT				
В	Enable	Yes		
VAR_OUTPUT				
В	Valid	Yes		
E	Busy	Yes		
В	Error	Yes		
В	ErrorID	Yes		
E	AxisErrorID	Yes		

Appendix B 3.31 MC\_Reset

If Supported	MC_Reset	Sup. Y/N	Comments
VAR_IN_OUT			
В	Axis	Yes	
VAR_INPUT			
В	Execute	Yes	
VAR_OUTPUT			
В	Done	Yes	
E	Busy	Yes	
В	Error	Yes	
Е	ErrorID	Yes	

Appendix B 3.32 MC DigitalCamSwitch

Аррсіп	Appendix b 3.32 WC_DigitalCalliSwitch			
If Supported	MC_DigitalCamSwitch	Sup.Y/N	Comments	
VAR_IN_OUT				
В	Axis			
В	Switches			
E	Outputs			
E	TrackOptions			
VAR_INPUT				
В	Enable			
E	EnableMask			
E	ValueSource			
VAR_OUTPUT				
В	InOperation			
E	Busy			
В	Error			
Е	ErrorID			

Basic elements within the array structure of MC\_CAMSWITCH\_REF

B/E	Parameter	Sup.Y/N	Comments
В	TrackNumber		
В	FirstOnPosition [u]		
В	LastOnPosition [u]		
Е	AxisDirection		
Е	CamSwitchMode		
Е	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			
В	Axis	Yes	
E	TriggerInput	Yes	
VAR_INPUT			
В	Execute	Yes	
Е	WindowOnly	Yes	
Е	FirstPosition	Yes	
E	LastPosition	Yes	
VAR_OUTPUT			
В	Done	Yes	
Е	Busy	Yes	
E	CommandAborted	Yes	
В	Error	Yes	
Е	ErrorID	Yes	
В	RecordedPosition	Yes	

Appendix B 3.34 MC\_AbortTrigger

	111 D CIC   1110_110011111	88 -	
If Supported	MC_AbortTrigger	Sup.Y/N	Comments
VAR_IN_OUT			
В	Axis	Yes	
Е	TriggerInput	Yes	
VAR_INPUT			
В	Execute	Yes	
VAR_OUTPUT			
В	Done	Yes	
Е	Busy	Yes	
В	Error	Yes	
Е	ErrorID	Yes	

Appendix B 3.35 MC\_CamTableSelect

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

Appendix B 3.36 MC CamIn

Appendix b 5.50 MC_Cannin				
MC_CamIn	Sup. Y/N	Comments		
VAR_IN_OUT				
Master				
Slave				
Execute				
ContinuousUpdate				
MasterOffset				
SlaveOffset				
MasterScaling				
SlaveScaling				
MasterStartDistance				
MasterSyncPosition				
StartMode				
MasterValueSource				
CamTableID				
BufferMode				
InSync				
Busy				
Active				
CommandAborted				
Error				
ErrorID				
EndOfProfile				
	MC_CamIn  Master Slave  Execute ContinuousUpdate MasterOffset SlaveOffset MasterScaling SlaveScaling MasterStartDistance MasterSyncPosition StartMode MasterValueSource CamTableID BufferMode  InSync Busy Active CommandAborted Error ErrorID	MC_CamIn  Sup. Y/N  Master Slave  Execute ContinuousUpdate MasterOffset SlaveOffset MasterScaling SlaveScaling MasterStartDistance MasterSyncPosition StartMode MasterValueSource CamTableID BufferMode  InSync Busy Active CommandAborted Error ErrorID		

Appendix B 3.37 MC CamOut

Appen	Appendix D 3.57 MC_CamOut			
If Supported	MC_CamOut	Sup. Y/N	Comments	
VAR_IN_OUT				
В	Slave			
VAR_INPUT				
В	Execute			
VAR_OUTPUT				
В	Done			
Е	Busy			
В	Error			
Е	ErrorID			

Appendix B 3.38 MC\_GearIn

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

Appendix B 3.39 MC\_GearOut

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

Appendix B 3.40 MC\_GearInPos

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

Appendix B 3.41 MC PhasingAbsolute

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

Appendix B 3.42 MC\_PhasingRelative

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

Appendix B 3.43 CombineAxes

Appendix B 5.45 CombineAxes					
If Supported	MC_CombineAxes	Sup. Y/N	Comments		
VAR_IN_OUT					
В	Master1				
В	Master2				
В	Slave				
VAR_INPUT					
В	Execute				
E	ContinuousUpdate				
Е	CombineMode				
E	GearRationNumeratorM1				
E	GearRatioDenominatorM1				
E	GearRatioNumeratorM2				
Е	GearRatioDenominatorM2				
E	MasterValueSourceM1				
Е	MasterValueSourceM2				
E	BufferMode				
VAR_OUTPUT					
В	InSync				
E	Busy				
Е	Active				
Е	CommandAborted				
В	Error				
Е	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;
- 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 it-
- 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.
- the logo has to be used in the context of Motion Control.