

Lexium 32M – Profibus/Profinet

Example TIA / S7-1200/1500

S7-1200



S7-1500



Profibus/
Profinet

LXM32M

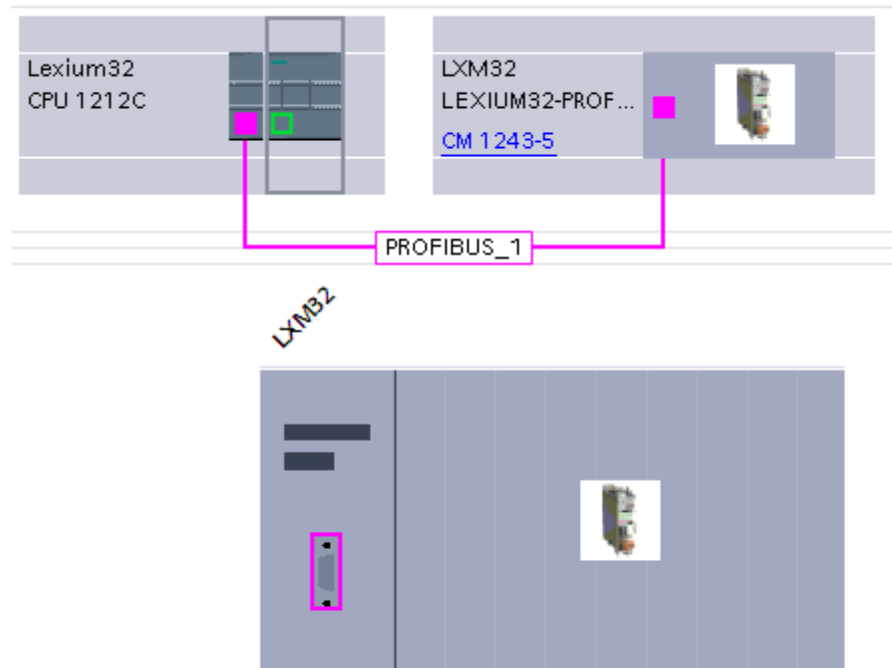


LXM32M – S7-1200/1500

Hardware – Configuration (Profinet)



GSD file for Lexium32M: “SE120B9D.GSD”



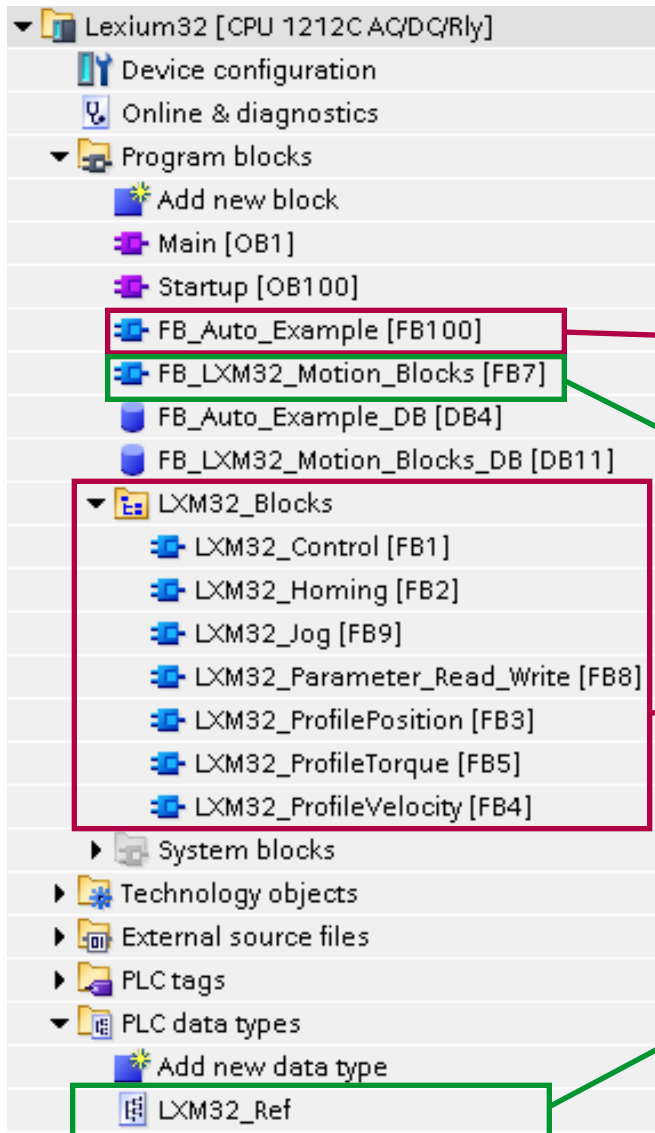
LXM32M uses 26 Bytes Input data and 26 bytes Output data.

Drive Profile Lexium 1

Device overview							
	...	Module	Rack	Slot	I address	Q address	Type
		LXM32	0	0			LEXIUM32-PROFIBUS-DPV1 FW V01.10
		Drive Profile Lexium 1_1	0	Processdata-Interface	1...26	1...26	Drive Profile Lexium 1
		Empty module_1	0	Optional IO Module			Empty module

LXM32M – S7-1200/1500

Overview



Example sequence

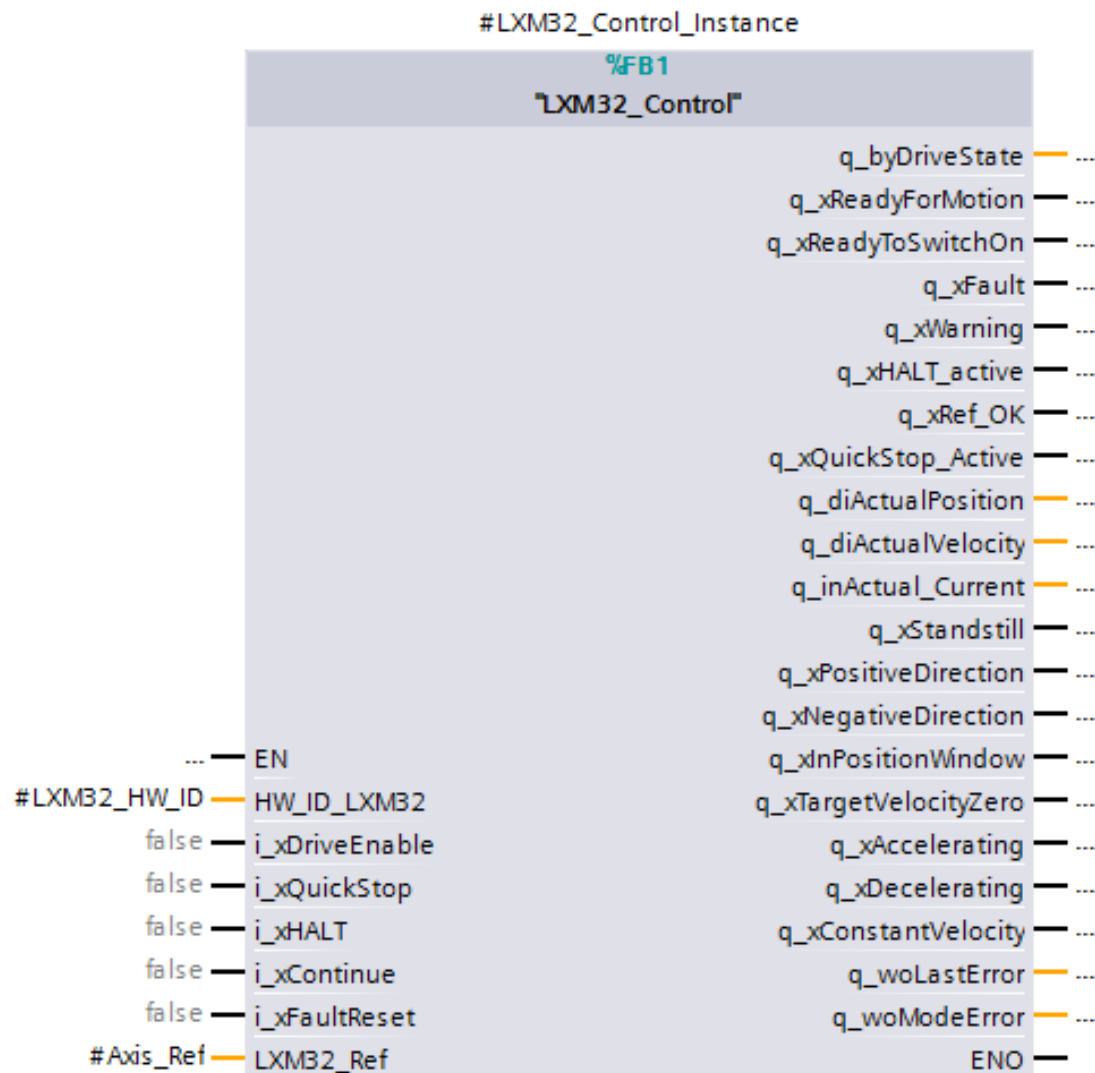
Example for calling the LXM32 motion function blocks

Function blocks to control the LXM32 drive

All function blocks need a common Axis reference data structure (LXM32_Ref) for each axis. This structure could be created in a global data block or in the static variables of a FB.

LXM32M – S7-1200/1500

Function block - LXM32_Control



LXM32M – S7-1200/1500

LXM32_Control Interface



LXM32_Control								
	Name	Datentyp	Defaultwert	Remanenz	Erreichbar a..	Sichtbar i...	Einstellwert	Kommentar
1	▼ Input				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2	HW_ID_LXM32	HW_IO	16#0	Nicht rema...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	HW-ID from PLC configuration
3	i_xDriveEnable	Bool	false	Nicht rema...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Enable motor current
4	i_xQuickStop	Bool	false	Nicht rema...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	QuickStop
5	i_xHALT	Bool	false	Nicht rema...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	HALT
6	i_xContinue	Bool	false	Nicht rema...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Continue after HALT
7	i_xFaultReset	Bool	false	Nicht rema...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Clear Error
8	▼ Output				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9	q_byDriveState	Byte	16#0	Nicht rema...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Drive state
10	q_xReadyForMotion	Bool	false	Nicht rema...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Drive is in state 6 - Ready to start any movement
11	q_xReadyToSwitchOn	Bool	false	Nicht re... ▼	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Drive is in state 4 - Ready to switch ON (ENABLE)
12	q_xFault	Bool	false	Nicht rema...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	fault is active
13	q_xWarning	Bool	false	Nicht rema...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	warning is active
14	q_xHALT_active	Bool	false	Nicht rema...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	HALT is active
15	q_xRef_OK	Bool	false	Nicht rema...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	reference OK
16	q_xQuickStop_Active	Bool	false	Nicht rema...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Quick Stop is active
17	q_diActualPosition	DInt	0	Nicht rema...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Actual position value
18	q_diActualVelocity	DInt	0	Nicht rema...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Actual velocity value
19	q_inActualCurrent	Int	0	Nicht rema...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Actual motor current
20	q_xStandstill	Bool	false	Nicht rema...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	STANDSTILL
21	q_xPositiveDirection	Bool	false	Nicht rema...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	positive direction
22	q_xNegativeDirection	Bool	false	Nicht rema...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	negative direction
23	q_xInPositionWindow	Bool	false	Nicht rema...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	In position window
24	q_xTargetVelocityZero	Bool	false	Nicht rema...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	target velocity is zero
25	q_xAccelerating	Bool	false	Nicht rema...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	accelerating phase
26	q_xDecelerating	Bool	false	Nicht rema...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	decelerating phase
27	q_xConstantVelocity	Bool	false	Nicht rema...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	constant velocity
28	q_woLastError	Word	16#0	Nicht rema...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Last Error ID (7178)
29	q_woModeError	Word	16#0	Nicht rema...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Mode Error ID (6962)
30	▼ InOut				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
31	► LXM32_Ref	"LXM32_Ref"			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Axis reference structure

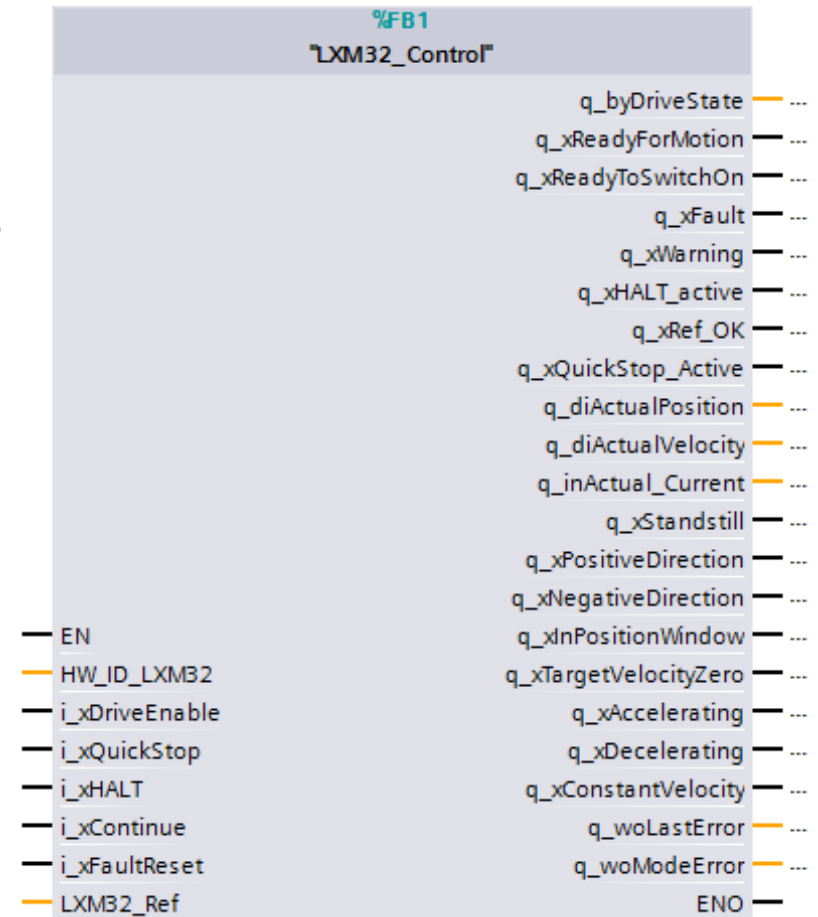
LXM32M – S7-1200/1500

Function block - LXM32_Control



Inputs:

i_DriveEnable:	Enables the power stage
i_xQuickStop:	Stop movement with quick stop
i_xHALT:	HALT activate
i_xContinue:	Continues movement after HALT
i_xFaultReset:	Error reset



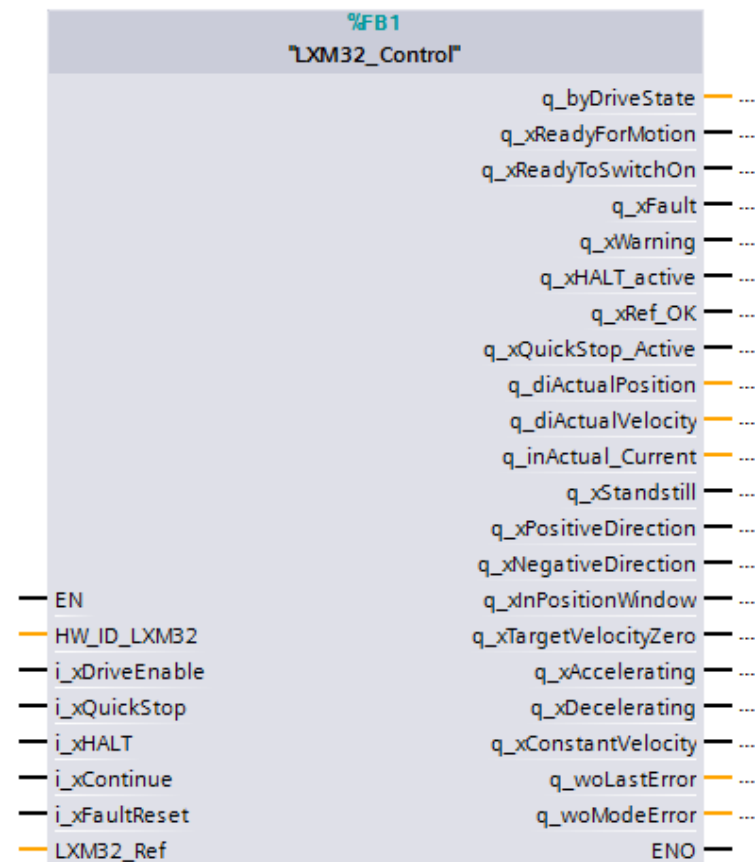
LXM32M – S7-1200/1500

Function block - LXM32_Control



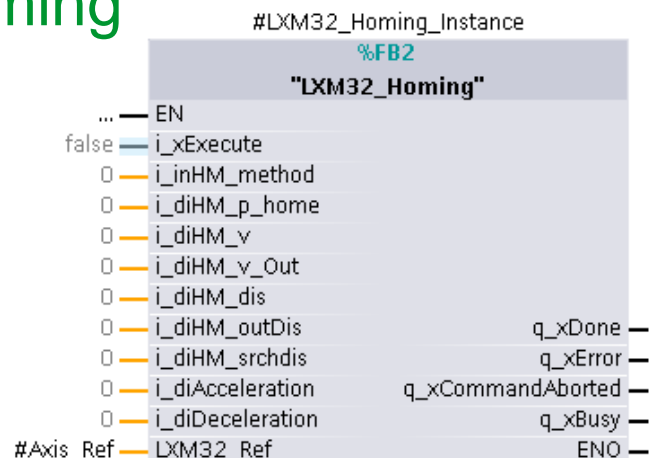
Outputs:


































q_byDriveState:	Operating state of the drive
q_xReadyForMotion:	Drive is enabled (state 6)
q_xReadyToSwitchOn:	Drive is ready to switch on (state 4)
q_xFault:	Drive Fault is active
q_xWarning:	Warning is active
q_xRef_OK:	Drive is referenced
q_xQuickStop_Active:	Quick Stop is active
q_diActualPosition:	Actual motor position
q_diActualVelocity:	Actual motor speed
q_inActual_Current:	Actual motor current
q_xStandstill:	Statusbit STANDSTILL
q_xPositiveDirection:	Statusbit motor moves positive
q_xNegativeDirection:	Statusbit motor moves negative
q_xInPositionWindow:	Statusbit "In Position Window"
q_xTargetVelocityZero:	Target velocity is zero
q_xAccelerating:	drive is accelerating
q_xDecelerating:	drive is decelerating
q_xConstantVelocity:	drive moves with constant velocity
q_woLastError:	drive error ID – See product manual (Object 7178)
q_woModeError:	drive mode error ID – See product manual (Object 6962)



LXM32M – S7-1200/1500

Function block - LXM32_Homing



Interface						
	Name	Data type	Default value	Retain	Visible in ...	Comment
	▼ Input					
	■ i_xExecute	Bool	false	Non-retentive		rising edge starts the operation
	■ i_inHM_method	Int	0	Non-retentive		Homing method (6936)
	■ i_diHM_p_home	DInt	0	Non-retentive		Position at reference point (10262)
	■ i_diHM_v	DInt	0	Non-retentive		Target velocity for searching the switch (10248)
	■ i_diHM_v_Out	DInt	0	Non-retentive		Target velocity for moving away from switch (10250)
	■ i_diHM_dis	DInt	0	Non-retentive		Distance from switching point (10254)
	■ i_diHM_outDis	DInt	0	Non-retentive		Maximum distance for search for switching point (10252)
	■ i_diHM_srchdis	DInt	0	Non-retentive		Maximum search distance after overtravel of switch (10266)
	■ i_diAcceleration	DInt	0	Non-retentive		Acceleration value
	■ i_diDeceleration	DInt	0	Non-retentive		Deceleration value
	▼ Output					
	■ q_xDone	Bool	false	Non-retentive		reference movement finished without error
	■ q_xError	Bool	false	Non-retentive		finished with error
	■ q_xCommandAborted	Bool	false	Non-retentive		function aborted
	■ q_xBusy	Bool	false	Non-retentive		function is active
	▼ InOut					
	■ ▶ LXM32_Ref	"LXM32_Ref"		Non-retentive		Axis reference structure

LXM32M – S7-1200/1500



Function block - LXM32_Homing

Rising edge on “i_xExecute” starts the reference movement.

The homing is finished without an error when the output “q_xDone” is TRUE.

Homing could be aborted by a QuickStop (LXM32_Control).

In this case the output “q_xError” will be set to TRUE.

Homing types: (Product manual parameter HMmethod (6936))

HMmethod	Homing method (263)			
	1: LIMN with index pulse	-	INT8	CANopen 6098:0h
	2: LIMP with index pulse	1	INT16	Modbus 6936
	7: REF+ with index pulse, inv., outside	18	INT16	Profibus 6936
	8: REF+ with index pulse, inv., inside	35	INT16	CIP 127.1.12
	9: REF+ with index pulse, not inv., inside		R/W	
	10: REF+ with index pulse, not inv., outside		-	
	11: REF- with index pulse, inv., outside		-	
	12: REF- with index pulse, inv., inside			
	13: REF- with index pulse, not inv., inside			
	14: REF- with index pulse, not inv., outside			
	17: LIMN			
	18: LIMP			
	23: REF+, inv., outside			
	24: REF+, inv., inside			
	25: REF+, not inv., inside			
	26: REF+, not inv., outside			
	27: REF-, inv., outside			
	28: REF-, inv., inside			
	29: REF-, not inv., inside			
	30: REF-, not inv., outside			
	33: Index pulse neg. direction			
	34: Index pulse pos. direction			
	35: Position setting			

A detailed description of the homing parameters is available in the drive manual of LXM32.

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Function block - LXM32_Homing



HMdis	<p>Distance from switching point</p> <p>The distance from the switching point is defined as the reference point.</p> <p>The parameter is only effective during a reference movement without index pulse.</p> <p>Changed settings become active the next time the motor moves.</p>	usr_p 1 200 2147483647	INT32 INT32 INT32 INT32 R/W per. -	CANopen 3028:7h Modbus 10254 Profibus 10254 CIP 140.1.7
HMp_home	<p>Position at reference point</p> <p>After a successful reference movement, this position is automatically set at the reference point.</p> <p>Changed settings become active the next time the motor moves.</p>	usr_p -2147483648 0 2147483647	INT32 INT32 INT32 INT32 R/W per. -	CANopen 3028:Bh Modbus 10262 Profibus 10262 CIP 140.1.11

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Function block - LXM32_Homing



HMoutdis	<p>Maximum distance for search for switching point</p> <p>0: Monitoring of distance inactive >0: Maximum distance</p> <p>After detection of the switch, the drive starts to search for the defined switching point. If the defined switching point is not found within the distance defined here, the reference movement is canceled with an error.</p> <p>Changed settings become active the next time the motor moves.</p>	usr_p 0 0 2147483647	INT32 INT32 INT32 INT32 R/W per. -	CANopen 3028:6h Modbus 10252 Profibus 10252 CIP 140.1.6
HMsrchdis	<p>Maximum search distance after overtravel of switch</p> <p>0: Search distance monitoring disabled >0: Search distance</p> <p>The switch must be activated again within this search distance, otherwise the reference movement is canceled.</p> <p>Changed settings become active the next time the motor moves.</p>	usr_p 0 0 2147483647	INT32 INT32 INT32 INT32 R/W per. -	CANopen 3028:Dh Modbus 10266 Profibus 10266 CIP 140.1.13

LXM32M – S7-1200/1500

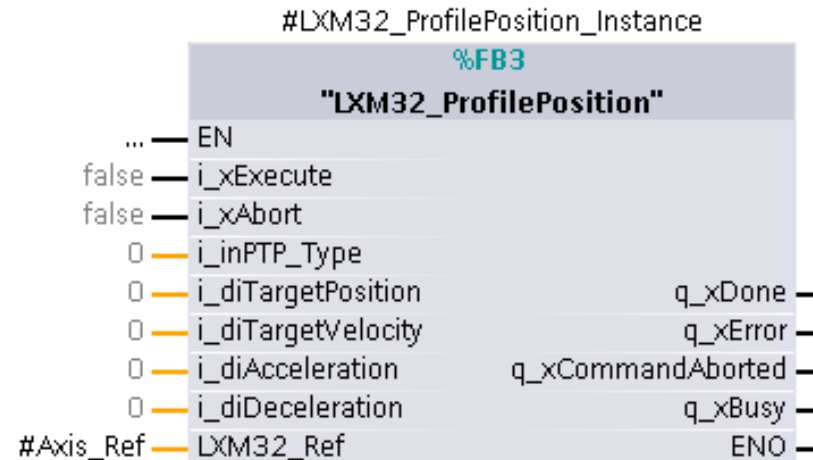
Function block - LXM32_Homing



<p>HMv</p> <p>oP → hom-</p> <p>h/n</p>	<p>Target velocity for searching the switch</p> <p>The adjustable value is internally limited to the current parameter setting in RAMP_v_max.</p> <p>Changed settings become active the next time the motor moves.</p>	<p>usr_v</p> <p>1</p> <p>60</p> <p>2147483647</p>	<p>UINT32</p> <p>UINT32</p> <p>UINT32</p> <p>UINT32</p> <p>R/W</p> <p>per.</p> <p>-</p>	<p>CANopen 6099:1h</p> <p>Modbus 10248</p> <p>Profibus 10248</p> <p>CIP 140.1.4</p>
<p>HMv_out</p>	<p>Target velocity for moving away from switch</p> <p>The adjustable value is internally limited to the current parameter setting in RAMP_v_max.</p> <p>Changed settings become active the next time the motor moves.</p>	<p>usr_v</p> <p>1</p> <p>6</p> <p>2147483647</p>	<p>UINT32</p> <p>UINT32</p> <p>UINT32</p> <p>UINT32</p> <p>R/W</p> <p>per.</p> <p>-</p>	<p>CANopen 6099:2h</p> <p>Modbus 10250</p> <p>Profibus 10250</p> <p>CIP 140.1.5</p>

LXM32M – S7-1200/1500

LXM32_ProfilePosition



Interface

Name	Data type	Default value	Retain	Visible in HMI	Comment
Input					
i_xExecute	Bool	false	Non-retentive	<input checked="" type="checkbox"/>	rising edge starts a new movement
i_xAbort	Bool	false	Non-retentive	<input checked="" type="checkbox"/>	abort active movement
i_inPTP_Type	Int	0	Non-retentive	<input checked="" type="checkbox"/>	1=absolute / 2=additive / 3=relative
i_diTargetPosition	DInt	0	Non-retentive	<input checked="" type="checkbox"/>	Target position value
i_diTargetVelocity	DInt	0	Non-retentive	<input checked="" type="checkbox"/>	Target velocity value
i_diAcceleration	DInt	0	Non-retentive	<input checked="" type="checkbox"/>	Acceleration value
i_diDeceleration	DInt	0	Non-retentive	<input checked="" type="checkbox"/>	Deceleration value
Output					
q_xDone	Bool	false	Non-retentive	<input checked="" type="checkbox"/>	Target position reached
q_xError	Bool	false	Non-retentive	<input checked="" type="checkbox"/>	finished with error
q_xCommandAborted	Bool	false	Non-retentive	<input checked="" type="checkbox"/>	function aborted
q_xBusy	Bool	false	Non-retentive	<input checked="" type="checkbox"/>	function is active
InOut					
LXM32_Ref	"LXM32_Ref"		Non-retentive	<input checked="" type="checkbox"/>	Axis reference structure

LXM32M – S7-1200/1500

LXM32_ProfilePosition



Rising edge on “i_xExecute” starts the movement.

Rising edge on “i_xAbort” stops the movement.

“i_inPTP_Type”:

1 = Absolute movement

2 = Additive movement

3 = Relative movement

New target position can be started with a new rising edge on “i_xExecute” during an active movement.

Absolute movement:

Changing target velocity value during an active movement takes effect immediately.

LXM32M – S7-1200/1500

LXM32_ProfileVelocity



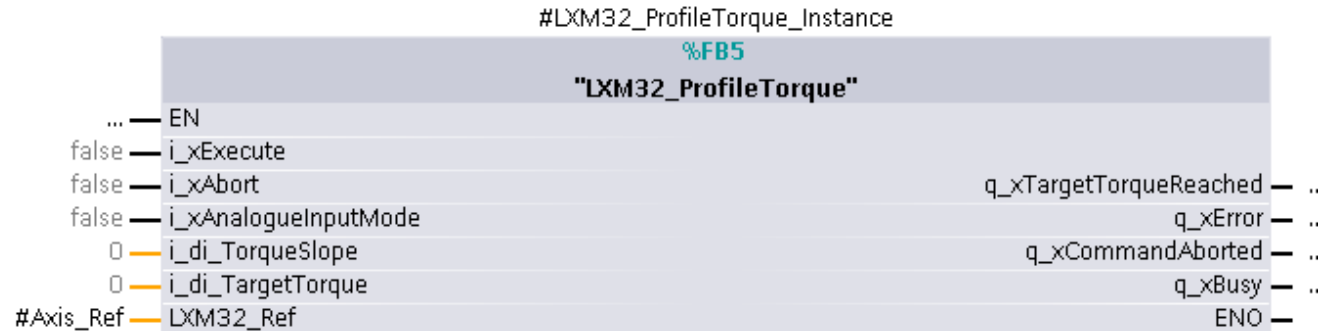
Interface						
	Name	Data type	Default value	Retain	Visible in HMI	Comment
	Input					
	i_xExecute	Bool	false	Non-retentive	<input checked="" type="checkbox"/>	Start movement
	i_xAbort	Bool	false	Non-retentive	<input checked="" type="checkbox"/>	Abort current movement
	i_xAnalogueInputMode	Bool	false	Non-retentive	<input checked="" type="checkbox"/>	TRUE = speed reference is +/- 10V analogue signal
	i_diTargetVelocity	DInt	0	Non-retentive	<input checked="" type="checkbox"/>	Target speed
	i_diAcceleration	DInt	0	Non-retentive	<input checked="" type="checkbox"/>	Acceleration
	i_diDeceleration	DInt	0	Non-retentive	<input checked="" type="checkbox"/>	Deceleration
	Output					
	q_xTargetVelocityReached	Bool	false	Non-retentive	<input checked="" type="checkbox"/>	Target velocity reached
	q_xError	Bool	false	Non-retentive	<input checked="" type="checkbox"/>	FB finished with error
	q_xCommandAborted	Bool	false	Non-retentive	<input checked="" type="checkbox"/>	FB aborted
	q_xBusy	Bool	false	Non-retentive	<input checked="" type="checkbox"/>	function block is busy
	InOut					
	LXM32_Ref	"LXM32_Ref"		Non-retentive	<input checked="" type="checkbox"/>	Axis reference structure

i_xAnalogueInputMode: TRUE = target velocity is set by analogue input of IO module.

Changing target velocity value during an active movement take effect immediately.

LXM32M – S7-1200/1500

LXM32_ProfileTorque



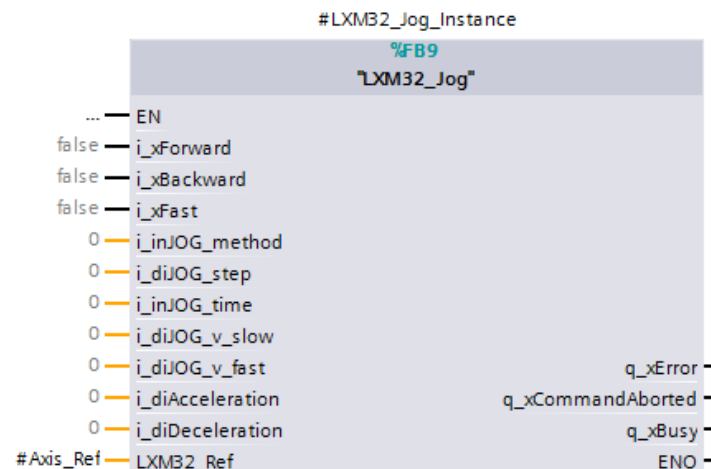
Interface						
	Name	Data type	Default value	Retain	Visible in HMI	Comment
Input						
	i_xExecute	Bool	false	Non-retentive	<input checked="" type="checkbox"/>	Start movement
	i_xAbort	Bool	false	Non-retentive	<input checked="" type="checkbox"/>	Abort current movement
	i_xAnalogueInputMode	Bool	false	Non-retentive	<input checked="" type="checkbox"/>	TRUE =torque reference is +/- 10V analogue signal
	i_di_TorqueSlope	DInt	0	Non-retentive	<input checked="" type="checkbox"/>	Torque slope (1620)
	i_di_TargetTorque	DInt	0	Non-retentive	<input checked="" type="checkbox"/>	Target torque (6944)
Output						
	q_xTargetTorqueReached	Bool	false	Non-retentive	<input checked="" type="checkbox"/>	Target torque is reached
	q_xError	Bool	false	Non-retentive	<input checked="" type="checkbox"/>	finished with error
	q_xCommandAborted	Bool	false	Non-retentive	<input checked="" type="checkbox"/>	function aborted
	q_xBusy	Bool	false	Non-retentive	<input checked="" type="checkbox"/>	function is active
InOut						
	LXM32_Ref	"LXM32_Ref"		Non-retentive	<input checked="" type="checkbox"/>	Axis reference structure

i_xAnalogueInputMode: TRUE = target torque is set by analogue input of IO module.

Changing target torque value during an active movement take effect immediately.

LXM32M – S7-1200/1500

LXM32_Jog



LXM32_Jog								
	Name	Data t..	Def...	Retain	Accessible f...	Visible...	Setp...	Comment
1	▼ Input				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2	i_xForward	Bool	false	Non-retain	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Jog forward
3	i_xBackward	Bool	false	Non-retain	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Jog backward
4	i_xFast	Bool	false	Non-retain	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Jog fast
5	i_inJOG_method	Int	0	Non-retain	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Jog method (10502) 0=continuous 1= Step movement
6	i_diJOG_step	DInt	0	Non-retain	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Jog_Step (10510) Distance for Step movement
7	i_inJOG_time	Int	0	Non-retain	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Jog time (10512) Wait time for Step movement
8	i_diJOG_v_slow	DInt	0	Non-retain	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Jog slow velocity (10504)
9	i_diJOG_v_fast	DInt	0	Non-retain	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Jog fast velocity (10506)
10	i_diAcceleration	DInt	0	Non-retain	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Acceleration
11	i_diDeceleration	DInt	0	Non-retain	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Deceleration
12	▼ Output				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
13	q_xError	Bool	false	Non-retain	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	finished with error
14	q_xCommandAborted	Bool	false	Non-retain	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	function aborted
15	q_xBusy	Bool	false	Non-retain	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	function is busy
16	▼ InOut				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
17	► LXM32_Ref	*LXM...			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Axis reference structure

LXM32M – S7-1200/1500

LXM32_Parameter_Read_Write
































Interface						
	Name	Data type	Default value	Retain	Visible in HMI	Comment
	▼ Input					
	i_xParameterRead	Bool	false	Non-retentive		TRUE = Reading value continuously
	i_xParameterWrite	Bool	false	Non-retentive		rising edge = Writing once
	i_woParameterAddress	Word	0	Non-retentive		Parameter address (see product manual)
	i_byWriteParameterLength	Byte	0	Non-retentive		parameter length in bytes (2 or 4 bytes)
	i_diWriteParameterValue	DInt	0	Non-retentive		parameter write value
	▼ Output					
	q_xReadValueValid	Bool	false	Non-retentive		reading value is valid
	q_xWriteDone	Bool	false	Non-retentive		writing finished without error
	q_xError	Bool	false	Non-retentive		finished with error
	q_xBusy	Bool	false	Non-retentive		function is active
	q_diReadParameterValue	DInt	0	Non-retentive		reading value
	▼ InOut					
	▶ LXM32_Ref	"LXM32_Ref"		Non-retentive		Axis reference structure

LXM32M – S7-1200/1500

LXM32_ElectronicGear

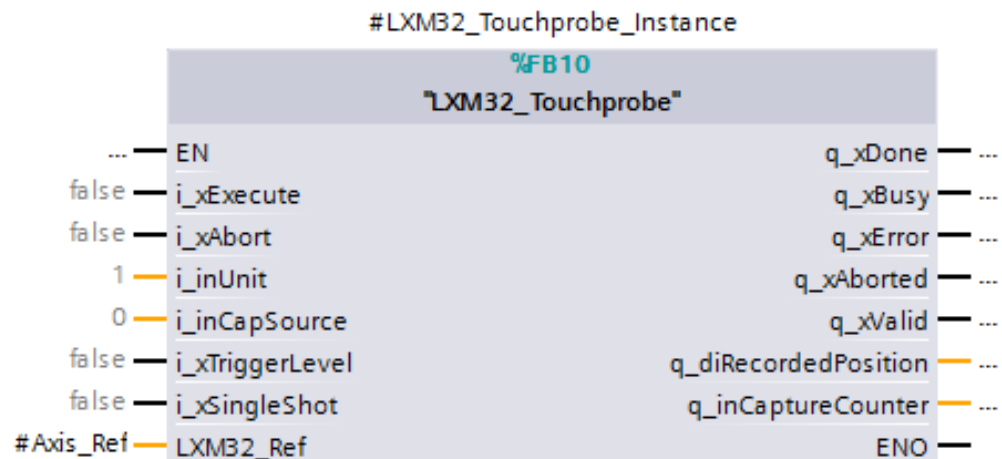


Interface						
	Name	Data type	Default value	Retain	Visible in ...	Comment
	▼ Input					
	i_xExecute	Bool 	false	Non-ret... 		Start movement
	i_xAbort	Bool	false	Non-retenti...		Abort current movement
	i_inGearReference	Int	0	Non-retenti...		(1..3) 1= PosSync immediate / 2=PosSync compensated / 3=VelocitySync
	i_diGearNumerator	DInt	131072	Non-retenti...		Gear Numerator (9736) (-2147483648...2147483647)
	i_diGearDenominator	DInt	4096	Non-retenti...		GearDenominator (9734) (1..2147483647)
	i_diAcceleration	DInt	1000	Non-retenti...		Acceleration only active in Velocity Sync with ProfileOn
	i_diDeceleration	DInt	1000	Non-retenti...		Deceleration only active in Velocity Sync with ProfileOn
	▼ Output					
	q_xInGear	Bool	false	Non-retenti...		Synchronization is active
	q_xError	Bool	false	Non-retenti...		FB finished with error
	q_xCommandAborted	Bool	false	Non-retenti...		FB aborted
	q_xBusy	Bool	false	Non-retenti...		function block is busy
	▼ InOut					
	▶ LXM32_Ref	"LXM32_Ref"		Non-retenti...		Axis reference structure

Note: Additional Parameter values for Gear mode have to be configured by commissioning tool or by using LXM32_Parameter_Read_Write function block.

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LXM32_Touchprobe



LXM32_Touchprobe									
	Name	Datentyp	Defau...	Remanenz	Erreichbar a...	Sichtbar i...	Einstellwert	Kommentar	
1	▼ Input				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
2	i_xExecute	Bool	false	Nicht re...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Rising edge starts the touchprobe function	
3	i_xAbort	Bool	false	Nicht reman...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Abort active touchprobe FB	
4	i_inUnit	Int	1	Nicht reman...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Unit number CAP1, CAP2 or CAP3	
5	i_inCapSource	Int	0	Nicht reman...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0=Encoder1 / 1=Encoder2	
6	i_xTriggerLevel	Bool	false	Nicht reman...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	FALSE: Trigger on falling edge / TRUE: Trigger on rising edge	
7	i_xSingleShot	Bool	false	Nicht reman...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	FALSE: trigger continuously / TRUE Trigger only once	
8	▼ Output				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
9	q_xDone	Bool	false	Nicht reman...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Position capture OK (only SingleShot)	
10	q_xBusy	Bool	false	Nicht reman...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Function block busy	
11	q_xError	Bool	false	Nicht reman...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Function block error - Capture stopped	
12	q_xAborted	Bool	false	Nicht reman...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Function block aborted - Capture stopped	
13	q_xValid	Bool	false	Nicht reman...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	TRUE=new Capture event (only TRUE for 1 PLC cycle)	
14	q_diRecordedPosition	DInt	0	Nicht reman...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Captured position at the time of the "capture signal"	
15	q_inCaptureCounter	Int	0	Nicht reman...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Capture input event counter	
16	▼ InOut				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
17	► LXM32_Ref	"LXM32_Ref"			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Axis reference structure	

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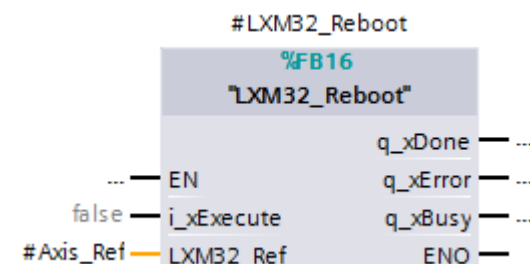
LXM32_Reboot



This function can be used to restart the LXM32 device.

Note !!!

The communication will be lost until the LXM32 has booted up again



LXM32_Reboot								
	Name	Datentyp	Defaultwert	Remanenz	Erreichbar a..	Sichtbar i...	Einstellwert	Kommentar
1	Input				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2	i_xExecute	Bool	false	Nicht remanent	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	TRUE = Reading value continuously
3	Output				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4	q_xDone	Bool	false	Nicht remanent	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	writing finished without error
5	q_xError	Bool	false	Nicht remanent	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	finished with error
6	q_xBusy	Bool	false	Nicht remanent	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	function is active
7	InOut				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8	LXM32_Ref	"LXM32_Ref"			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Axis reference structure

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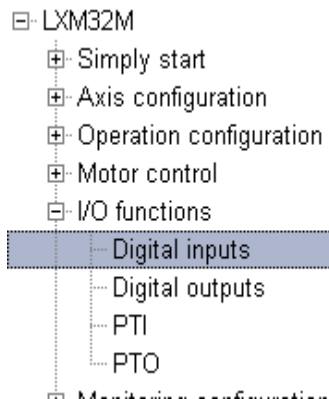
LXM32_RMAC



Relative Movement After Capture

LXM32 Configuration

Only define the one digital input with “Start Signal Of RMAC” and connect the capture sensor to this digital input.



<input type="text"/> In: All Search		
Name	Value	
IOfuncn_DI0	Start Signal Of RMAC	Function Input DI0
IOfuncn_DI1	Reference Switch (REF)	Function Input DI1
IOfuncn_DI2	Positive Limit Switch (LIMP)	Function Input DI2
IOfuncn_DI3	Negative Limit Switch (LIMN)	Function Input DI3
IOfuncn_DI4	Freely Available	Function Input DI4
IOfuncn_DI5	Freely Available	Function Input DI5

Do not define the IO function “Activate RMAC” !

The activation is done by the PLC when using the FB “LXM32_RMAC”

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LXM32_RMAC



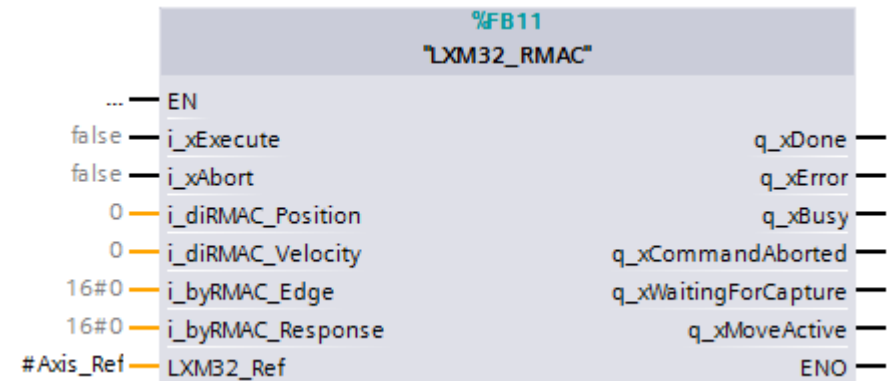
Relative Movement After Capture

i_xExecute

Rising edge activates RMAC function
Activation can be done in STANDSTILL
or during a movement.

i_xAbort

1st case: Deactivates RMAC function
2nd case: Stops an active RMAC movement
if capture already occurred



q_xDONE –

RMAC Movement is finished without error

q_xWaitingForCapture –

RMAC is activated and waiting for Capture signal

q_xMoveActive –

Capture signal occurred and RMAC movement is active. The Original operating mode is aborted. E.g. `ProfilePosition.q_xAborted = TRUE`

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LXM32_RMAC



Relative Movement After Capture

Parameters (see also LXM32 Product manual)

Parameter name HMI menu HMI name	Description	Unit Minimum value Factory setting Maximum value	Data type R/W Persistent Expert	Parameter address via fieldbus
RMAC_Position	Target position of relative movement after capture Minimum/maximum values depend on: - Scaling factor Changed settings become active the next time the motor moves. Available with firmware version ≥V01.10.	usr_p - 0 -	INT32 INT32 INT32 INT32 R/W per. -	CANopen 3023:D _h Modbus 8986 Profibus 8986 CIP 135.1.13
RMAC_Velocity	Velocity of relative movement after capture Value 0: Use of current motor velocity Value >0: Value is the target velocity The adjustable value is internally limited to the setting in RAMP_v_max. Changed settings become active the next time the motor moves. Available with firmware version ≥V01.10.	usr_v 0 0 2147483647	UINT32 UINT32 UINT32 UINT32 R/W per. -	CANopen 3023:E _h Modbus 8988 Profibus 8988 CIP 135.1.14

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LXM32_RMAC



Relative Movement After Capture

Parameters (see also LXM32 Product manual)

Parameter name HMI menu HMI name	Description	Unit Minimum value Factory setting Maximum value	Data type R/W Persistent Expert	Parameter address via fieldbus
RMAC_Edge	Edge of capture signal for relative movement after capture 0 / Falling edge: Falling edge 1 / Rising edge: Rising edge Available with firmware version ≥V01.10.	- 0 0 1	UINT16 UINT16 UINT16 UINT16 R/W per. -	CANopen 3023:10 _h Modbus 8992 Profibus 8992 CIP 135.1.16
RMAC_Response	Response if target position is overtraveled 0 / Error Class 1: Error class 1 1 / No Movement To Target Position: No movement to target position 2 / Movement To Target Position: Movement to target position Changed settings become active immediately. Available with firmware version ≥V01.10.	- 0 0 2	UINT16 UINT16 UINT16 UINT16 R/W per. -	CANopen 3023:F _h Modbus 8990 Profibus 8990 CIP 135.1.15

LXM32M – Profibus – S7-1200/1500

Questions and Answers



Thanks!

Make the most of your energy