

PackML_2Axis1EM [CPU 1515T-2 PN]

PackML_2Axis1EM

General\Project information

Name	PackML_2Axis1EM	Author	kte
Comment		Rack	0
Slot	1		

General\Catalog information

Short designation	CPU 1515T-2 PN	Description	Technology CPU with display; work memory 1.5 MB code and 4.5 MB data; 6 ns bit operation time; 1st interface: PROFINET RT/IRT with 2 ports; 2nd interface: PROFINET RT; firmware V3.1
Article number	6ES7 515-2TN03-0AB0	Firmware version	V3.1
	False		

General\Identification & Maintenance

Plant designation		Location identifier	
Installation date	2015-01-06 20:58:20.206	Additional information	

General\Checksums

Text lists	00 27 F9 C4 4D C8 48 93	Software	ED 4B 39 9B EA A1 7E D2
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Connection resources\

	Station resources - Reserved - Maximum	Station resources - Reserved - Configured	Station resources - Dynamic - Configured	Module resources - PackML_2Axis1EM [CPU 1515T-2 PN] - Configured
Maximum number of resources:		10	118	128
	Maximum	Configured	Configured	Configured
PG communication:	4	-	-	-
HMI communication:	4	0	0	0
S7 communication:	0	-	0	0
Open user communication:	0	-	0	0
Web communication:	2	-	-	-
OPC UA client/server communication:	0	-	-	-
Other communication:	-	-	0	0
Total resources used:		0	0	0
Available resources:		10	118	128

Overview of addresses\Overview of addresses\Overview of addresses

Inputs	True	Outputs	True
Address gaps	False	Slot	True

Type	I	Addr. from	0	Addr. to	3	Module	DI 32x24VDC HF_1
PIP	Automatic update	OB	-	Device name	PackML_2Axis1EM [CPU 1515T-2 PN]	Device number	-
Size	4 Bytes	Master / IO system	-	Rack	0	Slot	2
Type	O	Addr. from	4	Addr. to	7	Module	DQ 32x24VDC/0.5A ST_1
PIP	Automatic update	OB	-	Device name	PackML_2Axis1EM [CPU 1515T-2 PN]	Device number	-
Size	4 Bytes	Master / IO system	-	Rack	0	Slot	3
Type	I	Addr. from	4	Addr. to	21	Module	Standard telegram 5, PZD-9/9
PIP	PIP OB Servo	OB	MC-Servo[OB91]	Device name	SINAMICS-S120-CU310-2PN	Device number	1
Size	18 Bytes	Master / IO system	PROFINET IO-System [100]	Rack	0	Slot	1 3
Type	O	Addr. from	8	Addr. to	25	Module	Standard telegram 5, PZD-9/9
PIP	PIP OB Servo	OB	MC-Servo[OB91]	Device name	SINAMICS-S120-CU310-2PN	Device number	1
Size	18 Bytes	Master / IO system	PROFINET IO-System [100]	Rack	0	Slot	1 3
Type	I	Addr. from	22	Addr. to	39	Module	Standard telegram 5, PZD-9/9
PIP	PIP OB Servo	OB	MC-Servo[OB91]	Device name	SINAMICS-S120-CU310-2PN_1 [SINAMICS S120 CU310-2 PN V4.7]	Device number	2
Size	18 Bytes	Master / IO system	PROFINET IO-System [100]	Rack	0	Slot	1 3
Type	O	Addr. from	26	Addr. to	43	Module	Standard telegram 5, PZD-9/9
PIP	PIP OB Servo	OB	MC-Servo[OB91]	Device name	SINAMICS-S120-CU310-2PN_1 [SINAMICS S120 CU310-2 PN V4.7]	Device number	2
Size	18 Bytes	Master / IO system	PROFINET IO-System [100]	Rack	0	Slot	1 3

PackML_2Axis1EM [CPU 1515T-2 PN]

Software units

This folder is empty.

PackML_2Axis1EM [CPU 1515T-2 PN] / Program blocks

Main [OB1]

Main Properties

General

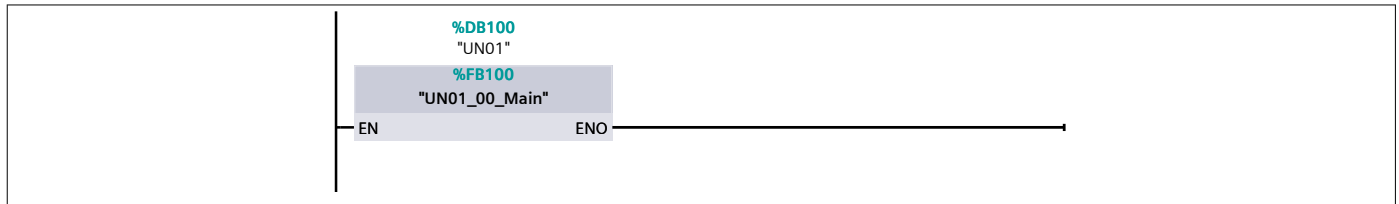
Name	Main	Number	1	Type	OB
Language	LAD	Numbering	Automatic		

Information

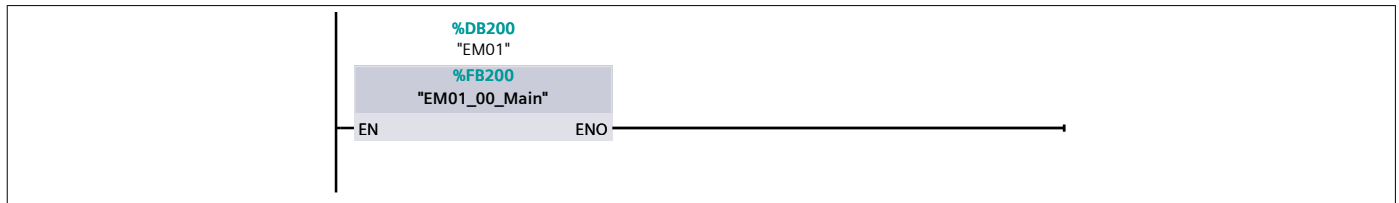
Title	"Main Program Sweep (Cycle)"	Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Default value
▼ Input		
Initial_Call	Bool	
Remanence	Bool	
Temp		
Constant		

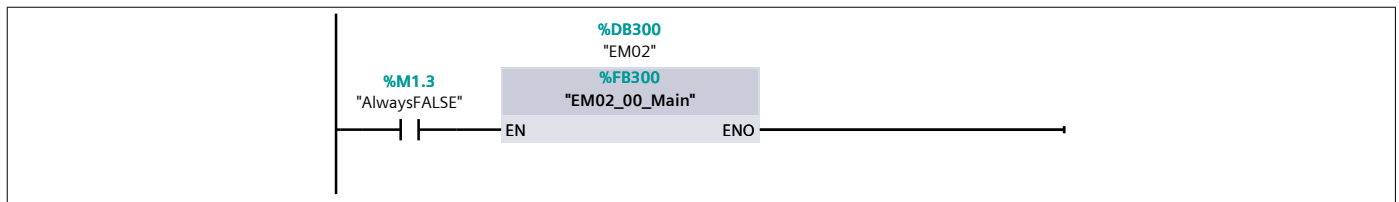
Network 1: Unit Processing



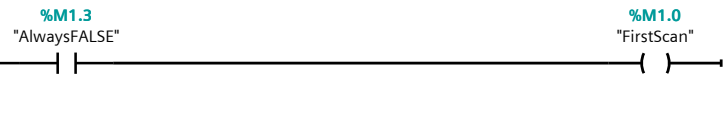
Network 2: EM 01 Processing



Network 3:



Network 4: Reset first scan Boolean



PackML_2Axis1EM [CPU 1515T-2 PN] / Program blocks / System blocks / Program resources

MC_MOVERELATIVE [FB1204]

MC_MOVERELATIVE Properties

General

Name	MC_MOVERELATIVE	Number	1204	Type	FB
Language	Motion_DB	Numbering	Automatic		

Information

Title		Author	SIMATIC	Comment	
Family	MC_1500	Version	7.0	User-defined ID	

Name	Data type	Default value	Retain
▼ Input			
Axis	TO_PositioningAxis		
Execute	Bool	false	Non-retain
Distance	LReal	0.0	Non-retain
Velocity	LReal	-1.0	Non-retain
Acceleration	LReal	-1.0	Non-retain
Deceleration	LReal	-1.0	Non-retain
Jerk	LReal	-1.0	Non-retain
▼ Output			
Done	Bool	false	Non-retain
Busy	Bool	false	Non-retain
CommandAborted	Bool	false	Non-retain
Error	Bool	false	Non-retain
ErrorId	Word	16#0	Non-retain
InOut			
Static			

PackML_2Axis1EM [CPU 1515T-2 PN] / Program blocks / System blocks / Program resources

MC_MOVEABSOLUTE [FB1202]

MC_MOVEABSOLUTE Properties

General

Name	MC_MOVEABSOLUTE	Number	1202	Type	FB
Language	Motion_DB	Numbering	Automatic		

Information

Title		Author	SIMATIC	Comment	
Family	MC_1500	Version	7.0	User-defined ID	

Name	Data type	Default value	Retain
▼ Input			
Axis	TO_PositioningAxis		
Execute	Bool	false	Non-retain
Position	LReal	0.0	Non-retain
Velocity	LReal	-1.0	Non-retain
Acceleration	LReal	-1.0	Non-retain
Deceleration	LReal	-1.0	Non-retain
Jerk	LReal	-1.0	Non-retain
Direction	Int	1	Non-retain
▼ Output			
Done	Bool	false	Non-retain
Busy	Bool	false	Non-retain
CommandAborted	Bool	false	Non-retain
Error	Bool	false	Non-retain
ErrorId	Word	16#0	Non-retain
InOut			
Static			

PackML_2Axis1EM [CPU 1515T-2 PN] / Program blocks / System blocks / Program resources

MC_MOVEJOG [FB1203]

MC_MOVEJOG Properties

General

Name	MC_MOVEJOG	Number	1203	Type	FB
Language	Motion_DB	Numbering	Automatic		

Information

Title		Author	SIMATIC	Comment	
Family	MC_1500	Version	7.0	User-defined ID	

Name	Data type	Default value	Retain
▼ Input			
Axis	TO_SpeedAxis		
JogForward	Bool	false	Non-retain
JogBackward	Bool	false	Non-retain
Velocity	LReal	100.0	Non-retain
Acceleration	LReal	-1.0	Non-retain
Deceleration	LReal	-1.0	Non-retain
Jerk	LReal	-1.0	Non-retain
PositionControlled	Bool	true	Non-retain
▼ Output			
InVelocity	Bool	false	Non-retain
Busy	Bool	false	Non-retain
CommandAborted	Bool	false	Non-retain
Error	Bool	false	Non-retain
ErrorId	Word	16#0	Non-retain
InOut			
Static			

PackML_2Axis1EM [CPU 1515T-2 PN] / Program blocks / System blocks / Program resources

MC_HOME [FB1201]

MC_HOME Properties

General

Name	MC_HOME	Number	1201	Type	FB
Language	Motion_DB	Numbering	Automatic		

Information

Title		Author	SIMATIC	Comment	
Family	MC_1500	Version	7.0	User-defined ID	

Name	Data type	Default value	Retain
▼ Input			
Axis	TO_Axis		
Execute	Bool	false	Non-retain
Position	LReal	0.0	Non-retain
Mode	Int	0	Non-retain
Sensor	DInt	0	Non-retain
▼ Output			
ReferenceMarkPosition	LReal	0.0	Non-retain
Done	Bool	false	Non-retain
Busy	Bool	false	Non-retain
CommandAborted	Bool	false	Non-retain
Error	Bool	false	Non-retain
ErrorId	Word	16#0	Non-retain
InOut			
Static			

PackML_2Axis1EM [CPU 1515T-2 PN] / Program blocks / System blocks / Program resources

MC_POWER [FB1206]

MC_POWER Properties

General

Name	MC_POWER	Number	1206	Type	FB
Language	Motion_DB	Numbering	Automatic		

Information

Title		Author	SIMATIC	Comment	
Family	MC_1500	Version	7.0	User-defined ID	

Name	Data type	Default value	Retain
▼ Input			
Axis	TO_Axis		
Enable	Bool	false	Non-retain
StartMode	DInt	1	Non-retain
StopMode	Int	0	Non-retain
▼ Output			
Status	Bool	false	Non-retain
Busy	Bool	false	Non-retain
Error	Bool	false	Non-retain
ErrorId	Word	16#0	Non-retain
InOut			
Static			

PackML_2Axis1EM [CPU 1515T-2 PN] / Program blocks / System blocks / Program resources

MC_HALT [FB1200]

MC_HALT Properties

General

Name	MC_HALT	Number	1200	Type	FB
Language	Motion_DB	Numbering	Automatic		

Information

Title		Author	SIMATIC	Comment	
Family	MC_1500	Version	7.0	User-defined ID	

Name	Data type	Default value	Retain
▼ Input			
Axis	TO_SpeedAxis		
Execute	Bool	false	Non-retain
Deceleration	LReal	-1.0	Non-retain
Jerk	LReal	-1.0	Non-retain
AbortAcceleration	Bool	false	Non-retain
▼ Output			
Done	Bool	false	Non-retain
Busy	Bool	false	Non-retain
CommandAborted	Bool	false	Non-retain
Error	Bool	false	Non-retain
ErrorId	Word	16#0	Non-retain
InOut			
Static			

PackML_2Axis1EM [CPU 1515T-2 PN] / Program blocks / System blocks / Program resources

MC_RESET [FB1207]

MC_RESET Properties

General

Name	MC_RESET	Number	1207	Type	FB
Language	Motion_DB	Numbering	Automatic		

Information

Title		Author	SIMATIC	Comment	
Family	MC_1500	Version	7.0	User-defined ID	

Name	Data type	Default value	Retain
▼ Input			
Axis	TO_Object		
Execute	Bool	false	Non-retain
Restart	Bool	false	Non-retain
▼ Output			
Done	Bool	false	Non-retain
Busy	Bool	false	Non-retain
CommandAborted	Bool	false	Non-retain
Error	Bool	false	Non-retain
ErrorId	Word	16#0	Non-retain
InOut			
Static			

PackML_2Axis1EM [CPU 1515T-2 PN] / Program blocks / 0_UN01_ExampleMachine

UN01_CM01_OperationLocal [FB101]

UN01_CM01_OperationLocal Properties

General

Name	UN01_CM01_Operation-Local	Number	101	Type	FB
Language	LAD	Numbering	Manual		

Information

Title		Author		Comment	Handle commands that are requests to change to a particular state
Family		Version	0.1	User-defined ID	

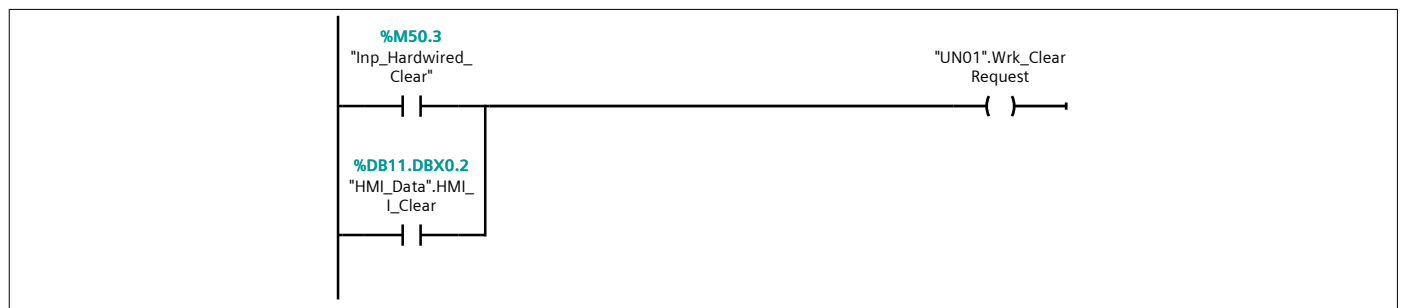
Name	Data type	Default value	Retain
Input			
Output			
InOut			
▼ Static			
Wrk_StartWarning_TON	TON_TIME		Non-retain
Temp			
Constant			

Network 2: Clear faults conditions

CLEAR FAULTS CONDITIONS

The Unit Conditions Set Here Are Used to Clear Faults and Initiate a State Transition of the Current Mode Operation Procedure from the Aborted State:

- 1) To the Clearing State, If the Clearing State is Enabled
- 2) To the Stopped State, If the Clearing State is Disabled

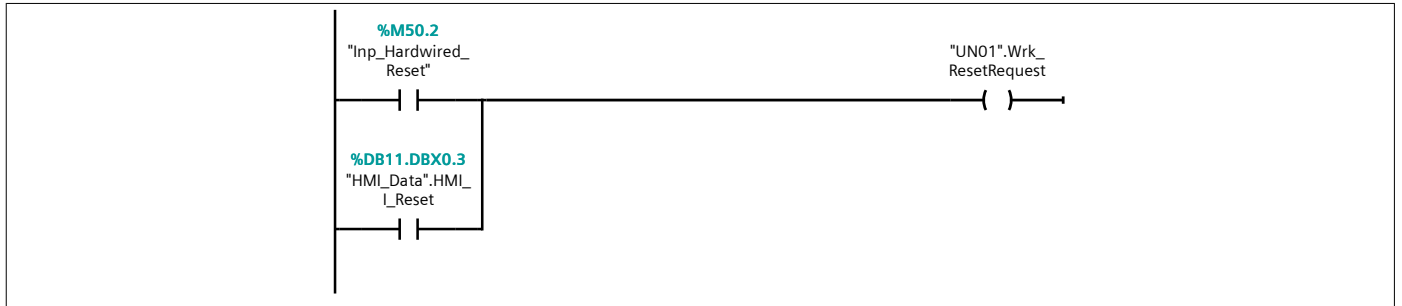


Network 3: Reset Conditions

RESET CONDITIONS

The Unit Condition Set Here Is Used to Initiate the Start Warning Cycle That Results in a State Transition of the Current Mode Operation Procedure from the Stopped State:

- 1) To the Resetting State, If the Resetting State is Enabled
- 2) To the Idle State, If the Resetting State is Disabled

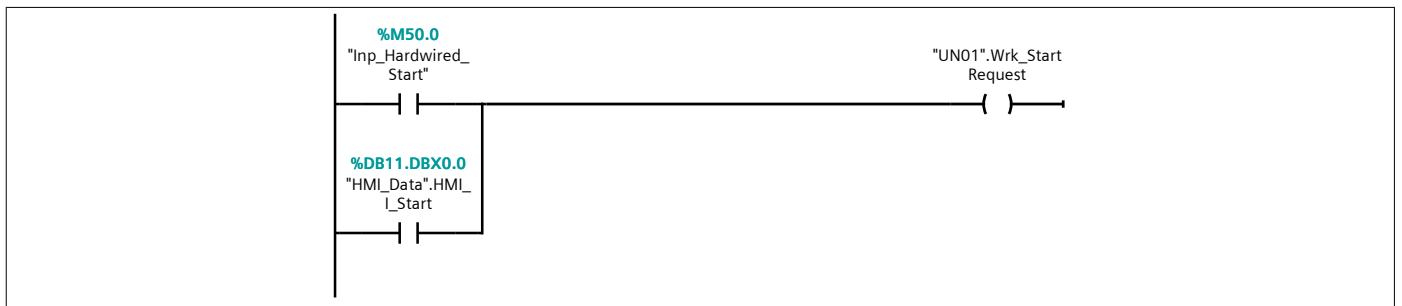


Network 4: Start conditions

START CONDITIONS

The Unit Condition Set Here is Used to

- 1) If the Idle State is Enabled, Initiate a State Transition of the Current Mode Operation Procedure:
 - a) From the Idle State to the Starting State, If the Starting State Is Enabled
 - b) From the Idle State to the Execute State, If the Starting State Is Disabled
- 2) If the Idle State is Disabled, Initiate the Start Warning Cycle That Results in a State Transition of the Current Mode Operation Procedure from the Stopped State:
 - a) To the Resetting State, If the Resetting State Is Enabled
 - b) To the Starting State, If the Resetting State is Disabled and the Starting State Is Enabled
 - c) To the Execute State, If Bothe the Resetting and Starting States Are Disabled



Network 5: Stop Conditions

***** Changed polarity of Inp_Hardwired_Stop to match it being a N.C. contact

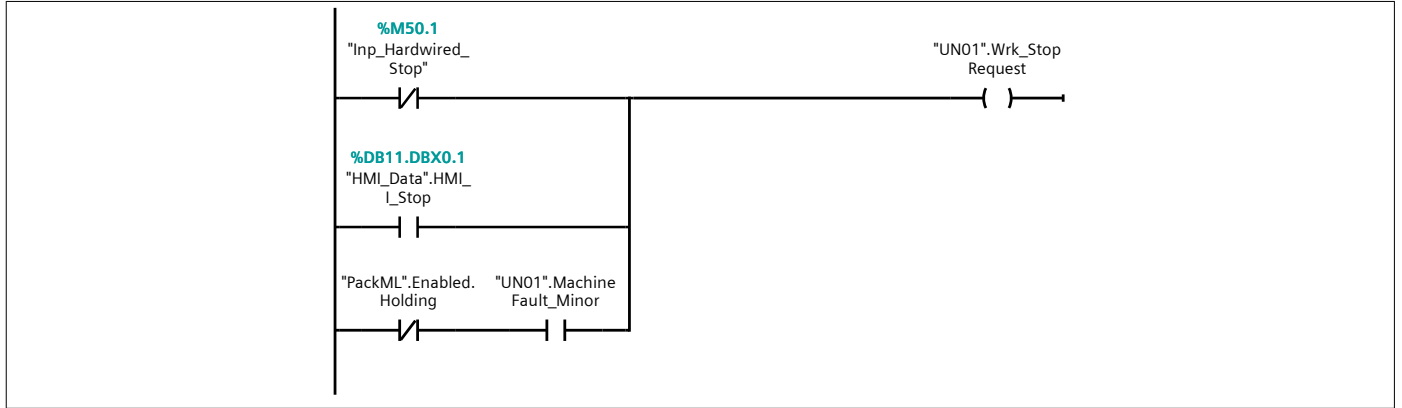
STOP CONDITIONS

The Unit Condition Set Here is Used to Initiate a State Transition of the Current Mode Operation Procedure to the:

- 1) Stopping State, If the Stopping State Is Enabled
- 2) Stopped State, If the Stopping State Is Disabled

From Any of the Following States:

Resetting, Idle, Starting, Execute, Holding, Held, UnHolding, Suspending, Suspended, UnSuspending, Completing



Network 6: Abort Conditions

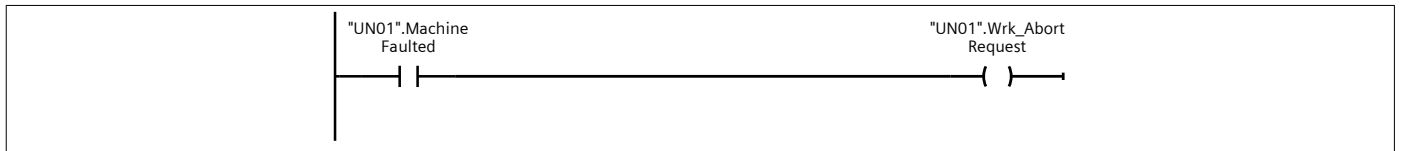
ABORT CONDITIONS

The Unit Condition Set Here is Used to Initiate a State Transition of the Current Mode Operation Procedure to the:

- 1) Aborting State, If the Aborting State Is Enabled
- 2) Aborted State, If the Aborting State Is Disabled

From Any of the Following States:

Resetting, Idle, Starting, Execute, Holding, Held, UnHolding, Suspending, Suspended, UnSuspending, Completing, Stopped, Stopping, Clearing

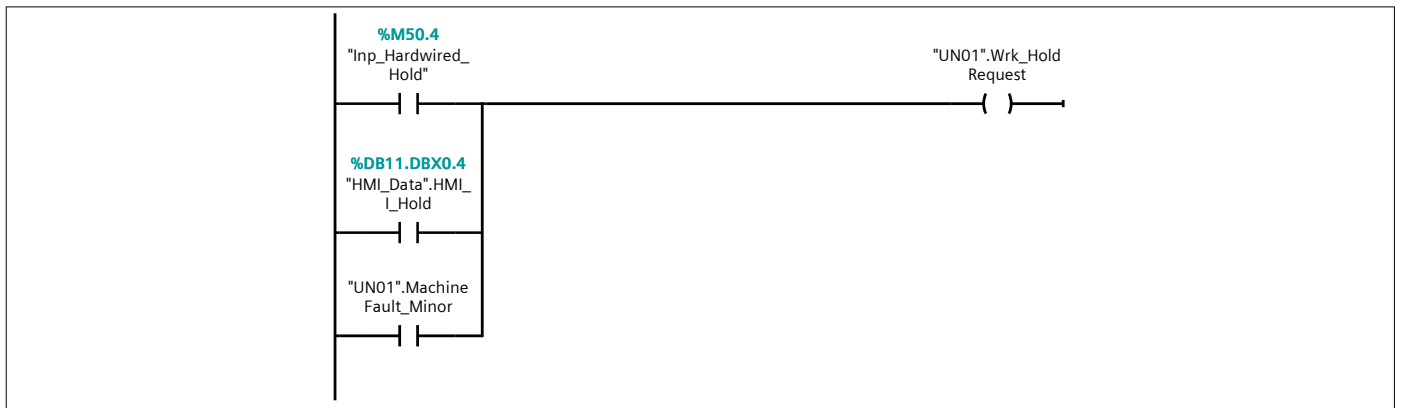


Network 7: Hold Conditions

HOLD CONDITIONS

The Unit Condition Set Here is Used to Initiate a State Transition of the Current Mode Operation Procedure from the Execute State to the:

- 1) Holding State, If the Holding State is Enabled
- 2) Held State, If the Holding State is Disabled

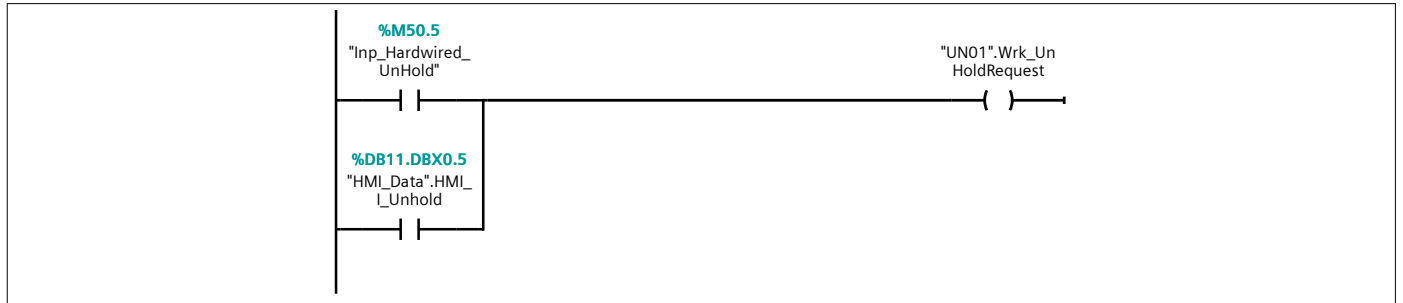


Network 8: Un-hold conditions

UN-HOLD CONDITIONS

The Unit Condition Set Here is Used to Initiate a State Transition of the Current Mode Operation Procedure from the Held State to the:

- 1) UnHolding State, If the UnHolding State is Enabled
- 2) Execute State, If the UnHolding State is Disabled



Network 9: Suspend Conditions

SUSPEND CONDITIONS

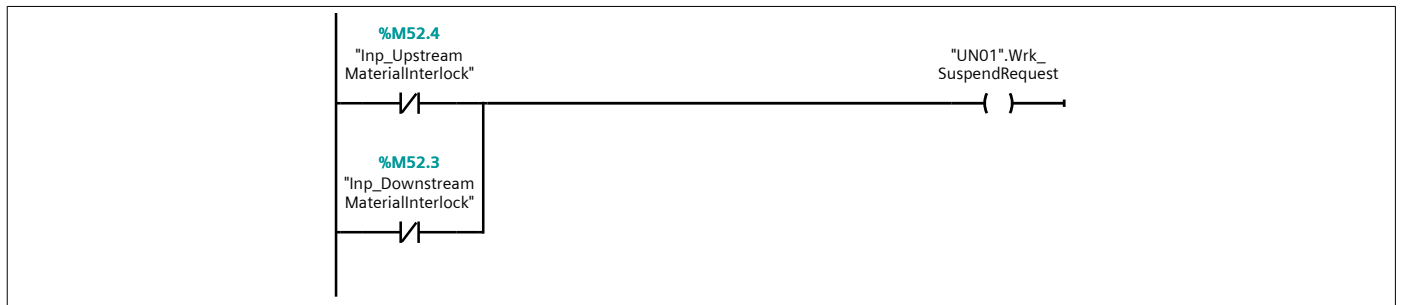
If any upstream or downstream material interlocks are not satisfied a suspend request will be made.

If a suspend request is made while the Machine is in the Execute State, Then a State Transition Is Initiated From the Execute State to the:

- 1) Suspending State, If the Suspending State Is Enabled
- 2) Suspended State, If the Suspending State Is Disabled

When ALL interlock conditions Are Satisfied, Then a State Transition Is Initiated From the Suspended State to the:

- 1) UnSuspending State, If the UnSuspending State Is Enabled
- 2) Execute State, If the UnSuspending State Is Disabled



Network 10: Complete Condition

COMPLETE CONDITION

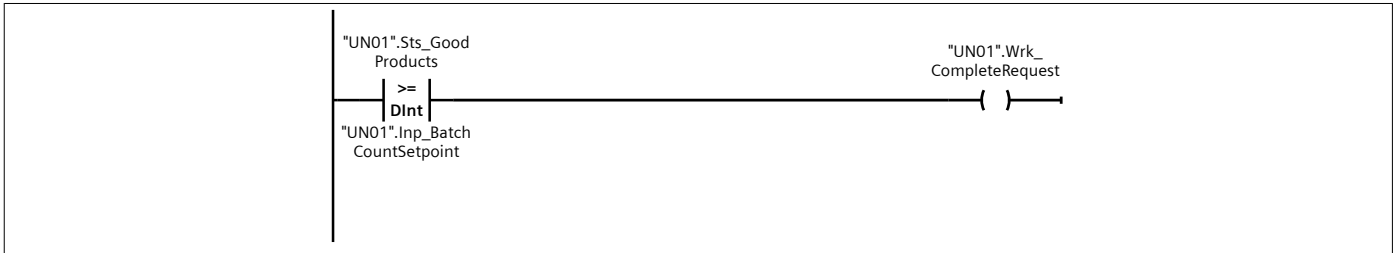
The Unit Condition Set Here is Used to Indicate That the Unit Has Produced the Desired Quantity of Good Product. It is Used for Processes That Run Desired Batch or Job Quantities And Automatically Stop to Conserve Materials. Such Processes Take Advantage of the Completing And Complete States of the PackML Model.

This Unit Condition is Generated By Comparing the Quantity of Good Product Counted or Calculated By the Program (In this Example, the Information from the Performance Tracking AOI is Used to Calculate Good Product *), to the Batch Count Setpoint for the Current Recipe.

The Condition Initiates a State Complete Transition from the Execute State to the:

- 1) Completing State, If the Completing State Is Enabled
- 2) Complete State, If the Completing State Is Disabled

* The Production Counting Data Used By the Performance Tracking FB Must Be Generated By the Program and Input Into the UN01 DB.
It May Be Preferred to Use the Production Counting Data Directly for Setting this Condition.

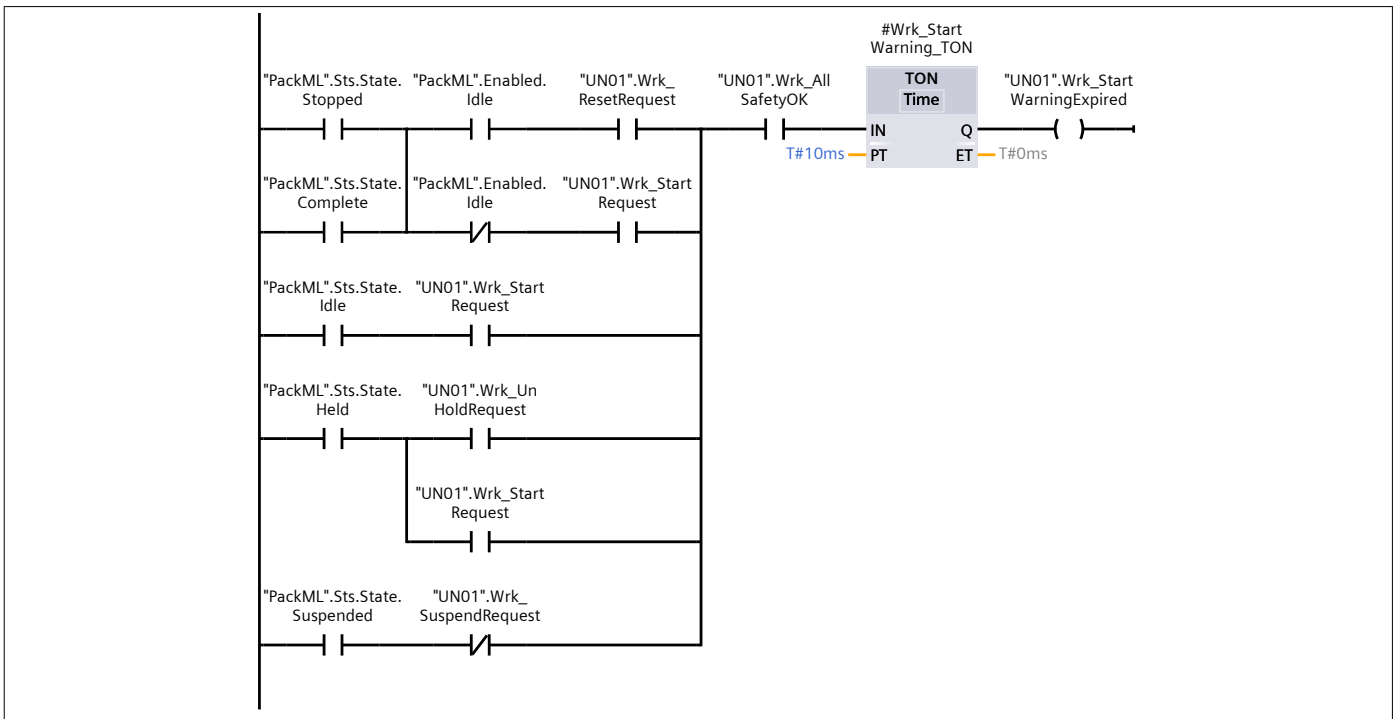


Network 11: Unit Start Logic

UNIT START LOGIC

This Unit Start Logic is Used to Provide a Warning Cycle Time Before Motion Occurs on the Machine. This Warning Cycle Should be Used Upon Initiating All State Transition Commands That Ultimately Result in Transition to the Execute State, And May be Used to Provide Audible And/Or Visual Notification to the Operator That Motion Will Occur Upon Completion.

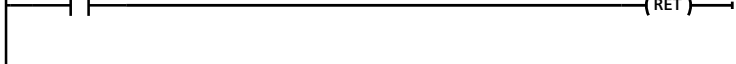
In case of Start warning buzzer included in the logic increase the timer preset to 1 or 2 sec



Network 12:

%M1.2
"AlwaysTRUE"

RLO
(RET)



PackML_2Axis1EM [CPU 1515T-2 PN] / Program blocks / 0_UN01_ExampleMachine

UN01_CM03_FaultHandler [FB102]

UN01_CM03_FaultHandler Properties

General

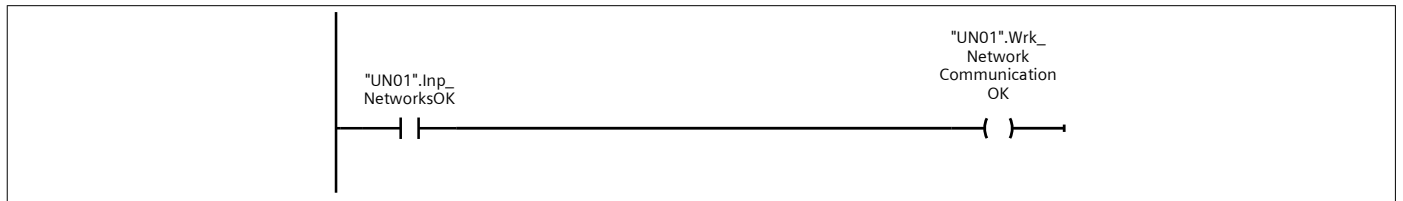
Name	UN01_CM03_FaultHandler	Number	102	Type	FB
Language	LAD	Numbering	Manual		

Information

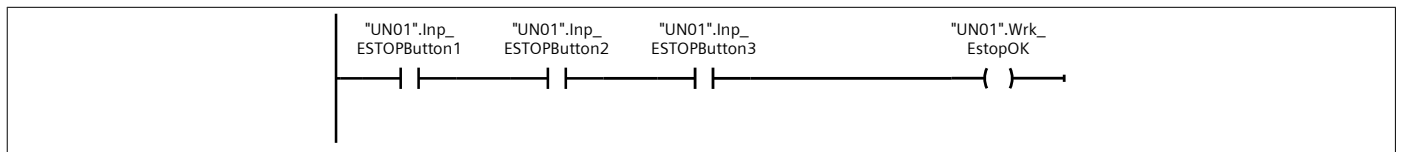
Title	Handle unit faults	Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Default value	Retain
Input			
Output			
InOut			
▼ Static			
Temp_Dint	Dint	0	Non-retain
Temp_Bool	Bool	false	Non-retain
Temp			
Constant			

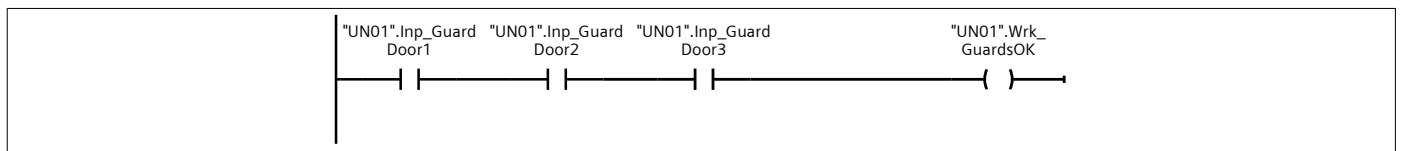
Network 2: Communication faults



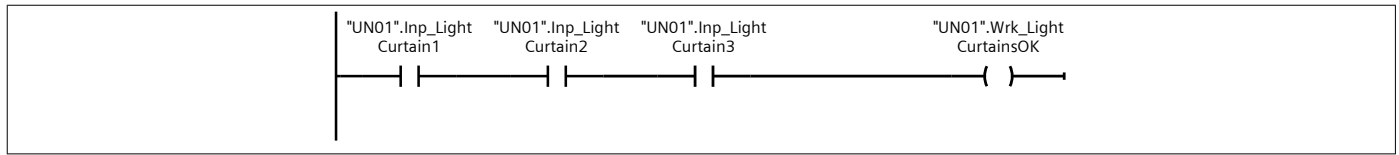
Network 3: E-Stop Collection



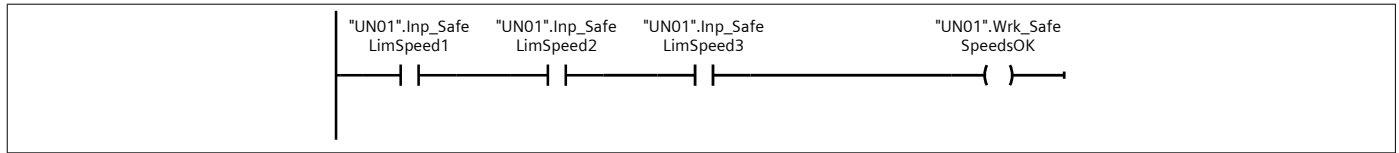
Network 4: Guard door collection



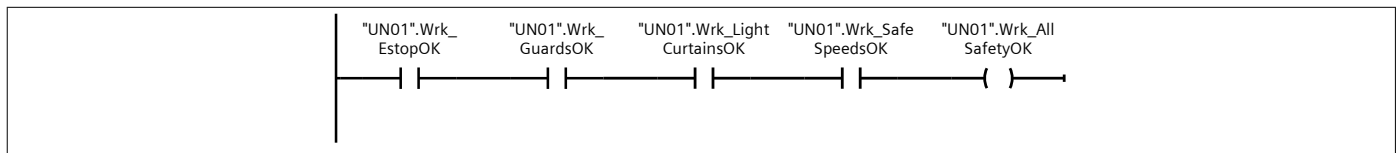
Network 5: Light curtain collection



Network 6: Safely limited speed collection

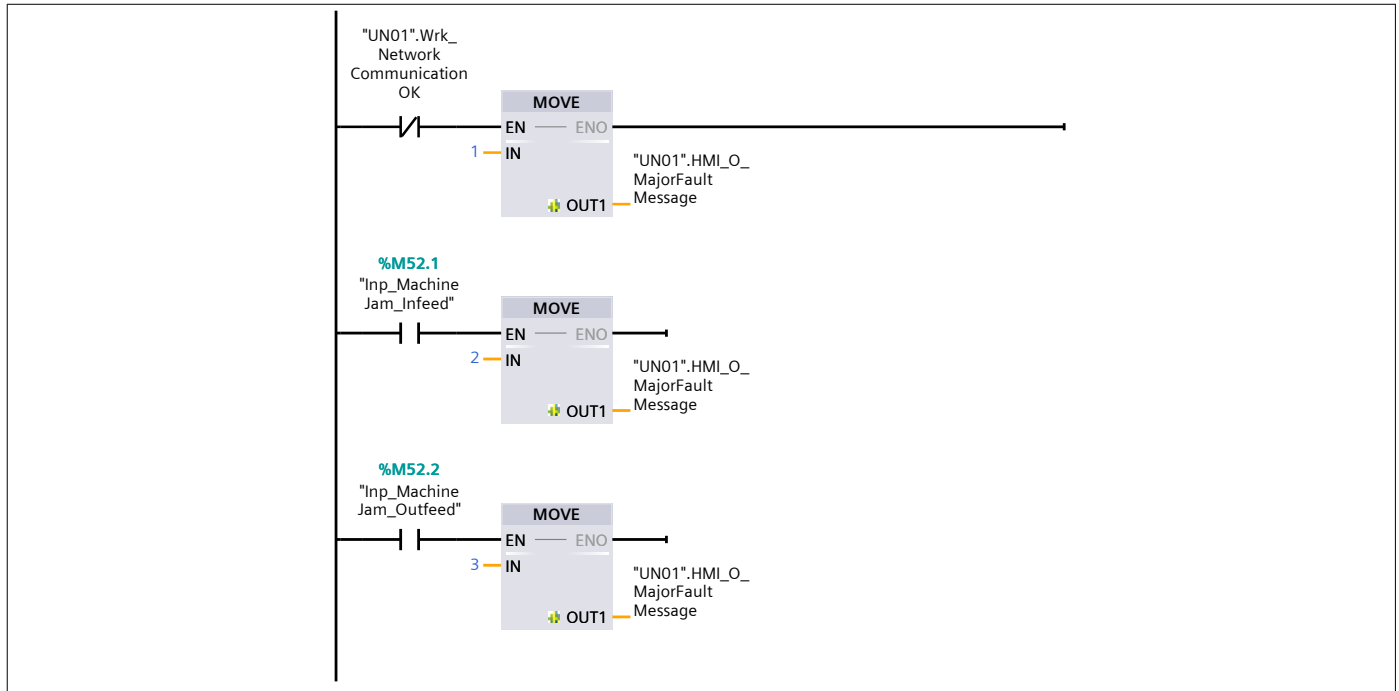


Network 7: All safety inputs OK



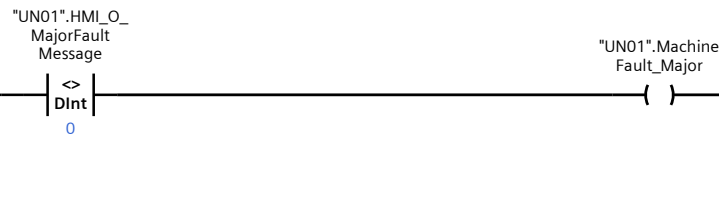
Network 8: Machine major faults

Add major machine faults that should result in an abort request to the machine

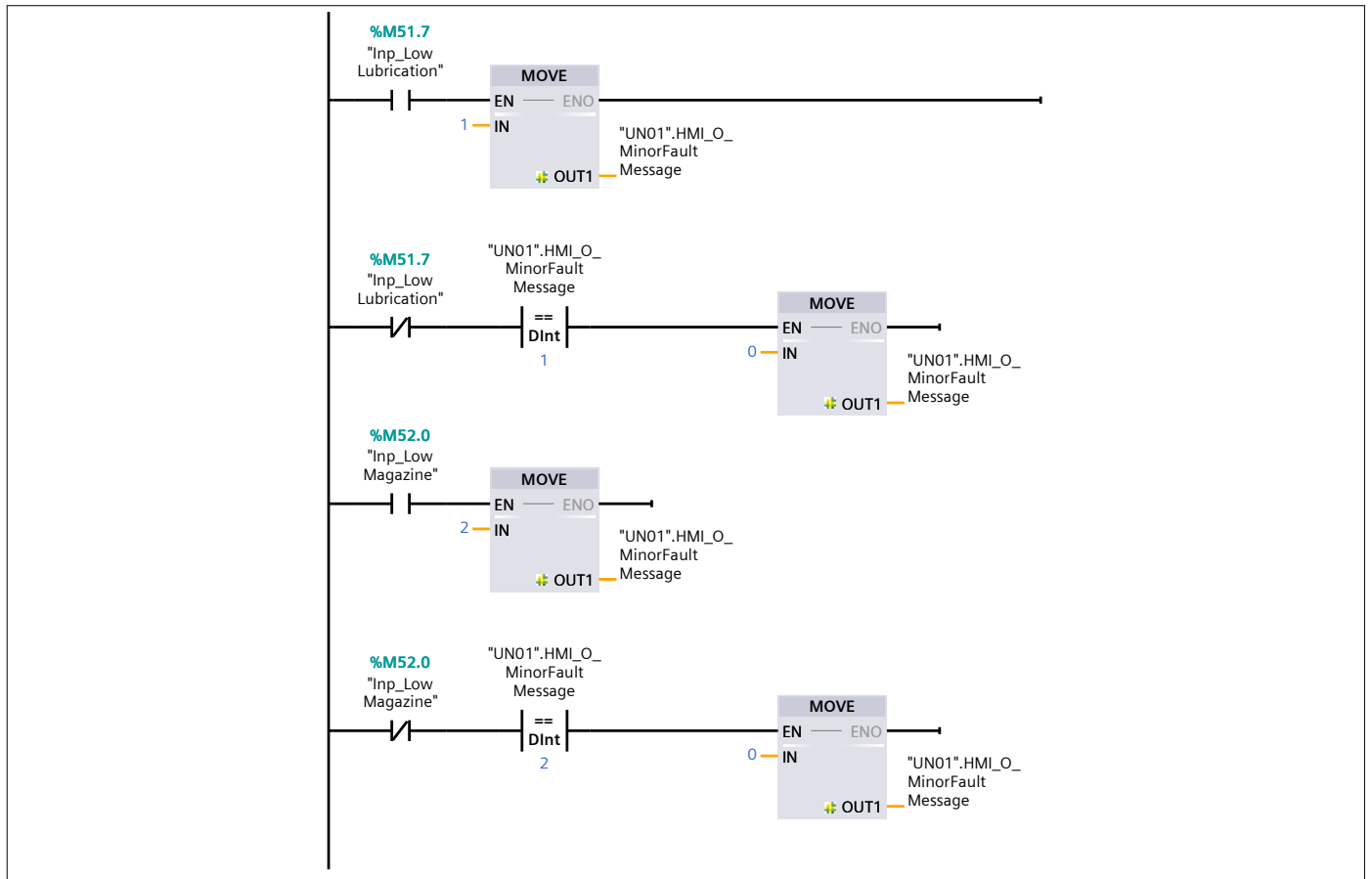


Network 9: General Unit Major Fault - Will result in machine abort request.

Add machine-specific major fault conditions as rung in conditions.

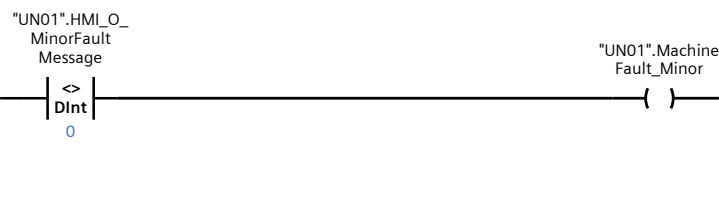


Network 10: Machine Minor faults

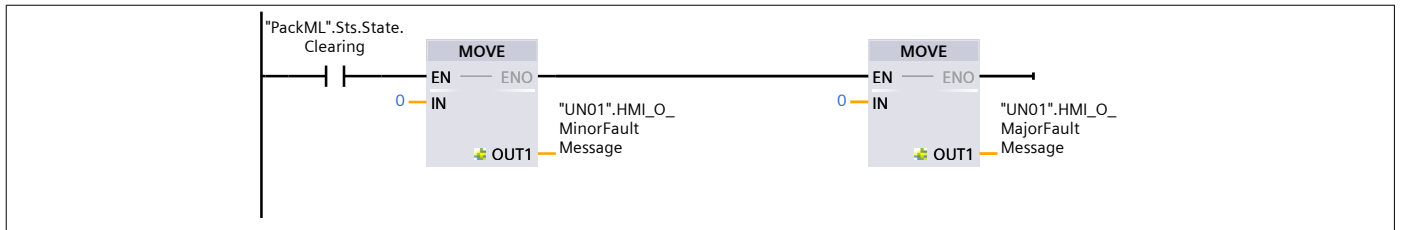


Network 11: General unit minor fault

Will result in machine hold request if holding state is enabled or stop if holding state is not enabled.

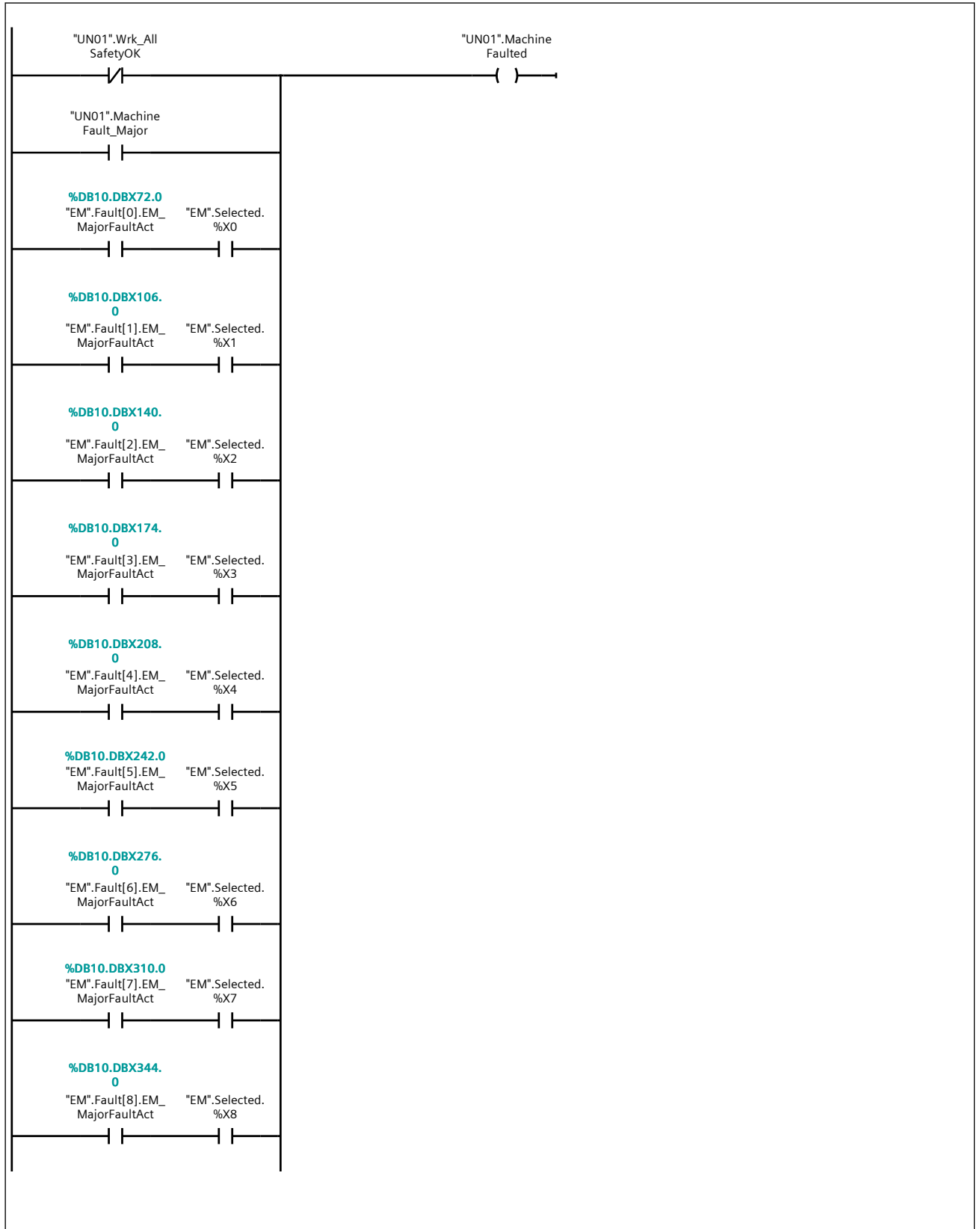


Network 12: Clear machine fault indicators



Network 13: General unit fault summary

Network 13: General unit fault summary (1.1 / 4.1)



Network 13: General unit fault summary (2.1 / 4.1)

1.1 (Page12 - 5)

<p>%DB10.DBX378.0 "EM".Fault[9].EM_MajorFaultAct</p>	<p>"EM".Selected. %X9</p>
<p>%DB10.DBX412.0 "EM".Fault[10].EM_MajorFaultAct</p>	<p>"EM".Selected. %X10</p>
<p>%DB10.DBX446.0 "EM".Fault[11].EM_MajorFaultAct</p>	<p>"EM".Selected. %X11</p>
<p>%DB10.DBX480.0 "EM".Fault[12].EM_MajorFaultAct</p>	<p>"EM".Selected. %X12</p>
<p>%DB10.DBX514.0 "EM".Fault[13].EM_MajorFaultAct</p>	<p>"EM".Selected. %X13</p>
<p>%DB10.DBX548.0 "EM".Fault[14].EM_MajorFaultAct</p>	<p>"EM".Selected. %X14</p>
<p>%DB10.DBX582.0 "EM".Fault[15].EM_MajorFaultAct</p>	<p>"EM".Selected. %X15</p>
<p>%DB10.DBX616.0 "EM".Fault[16].EM_MajorFaultAct</p>	<p>"EM".Selected. %X16</p>
<p>%DB10.DBX650.0 "EM".Fault[17].EM_MajorFaultAct</p>	<p>"EM".Selected. %X17</p>
<p>%DB10.DBX684.0 "EM".Fault[18].EM_MajorFaultAct</p>	<p>"EM".Selected. %X18</p>
<p>%DB10.DBX718.0 "EM".Fault[19].EM_MajorFaultAct</p>	<p>"EM".Selected. %X19</p>

3.1 (Page12 - 7)

Network 13: General unit fault summary (3.1 / 4.1)

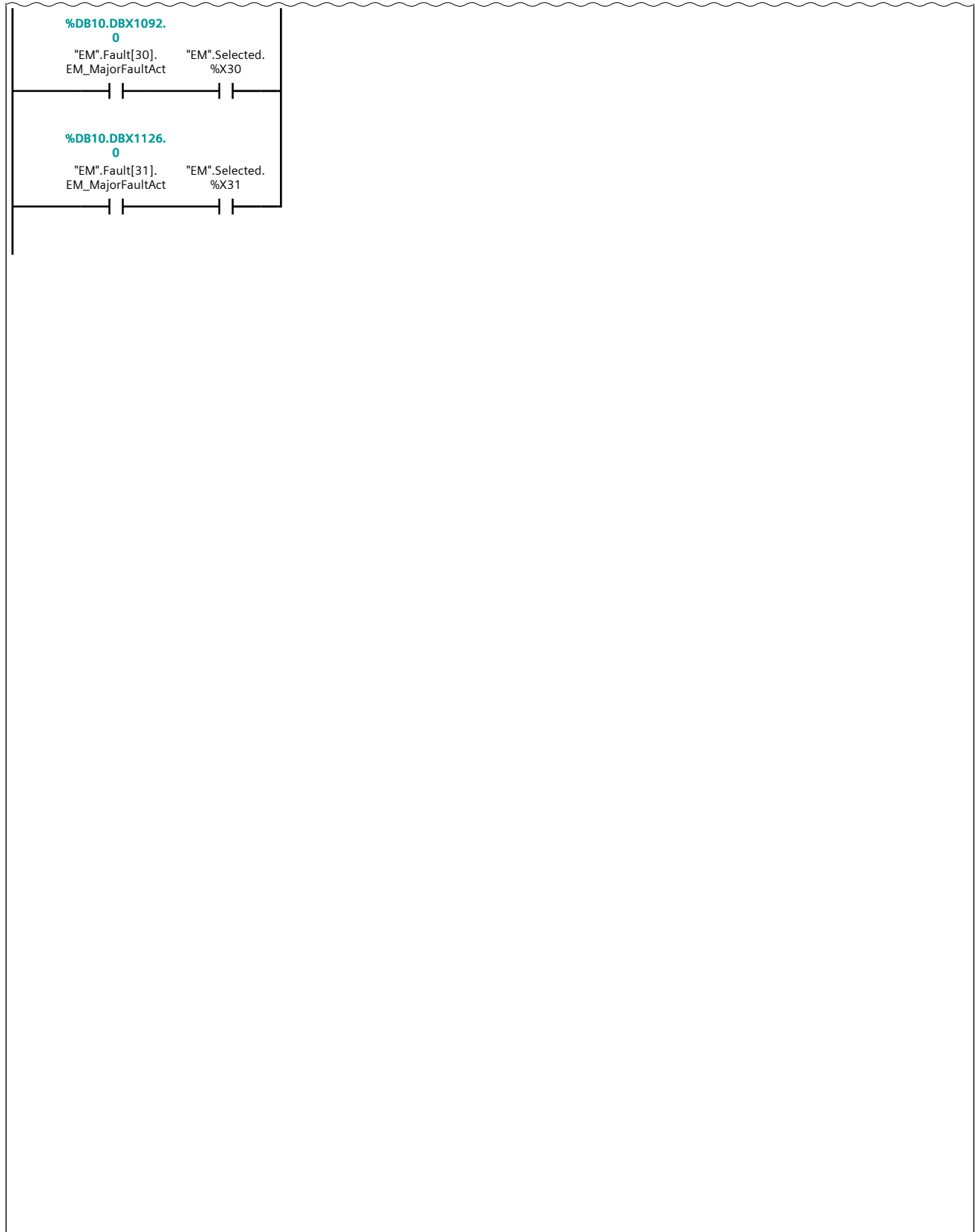
2.1 (Page12 - 6)



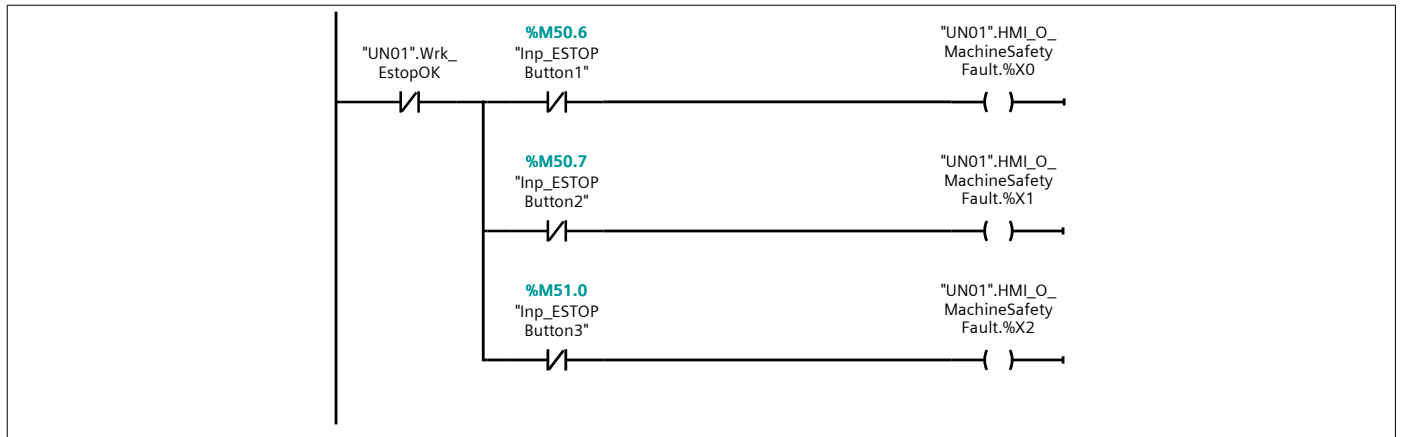
4.1 (Page12 - 8)

Network 13: General unit fault summary (4.1 / 4.1)

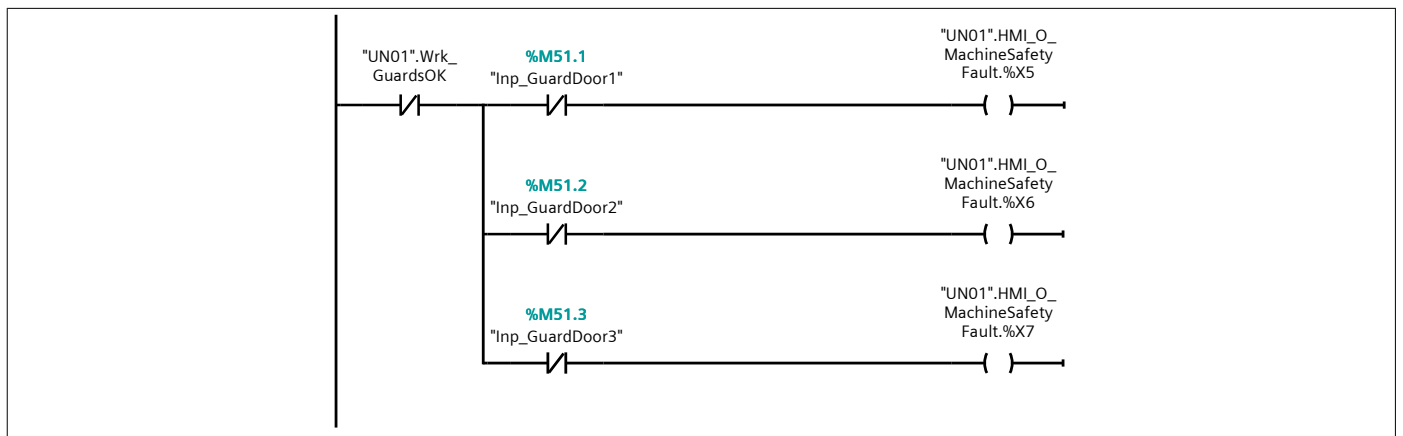
3.1 (Page12 - 7)



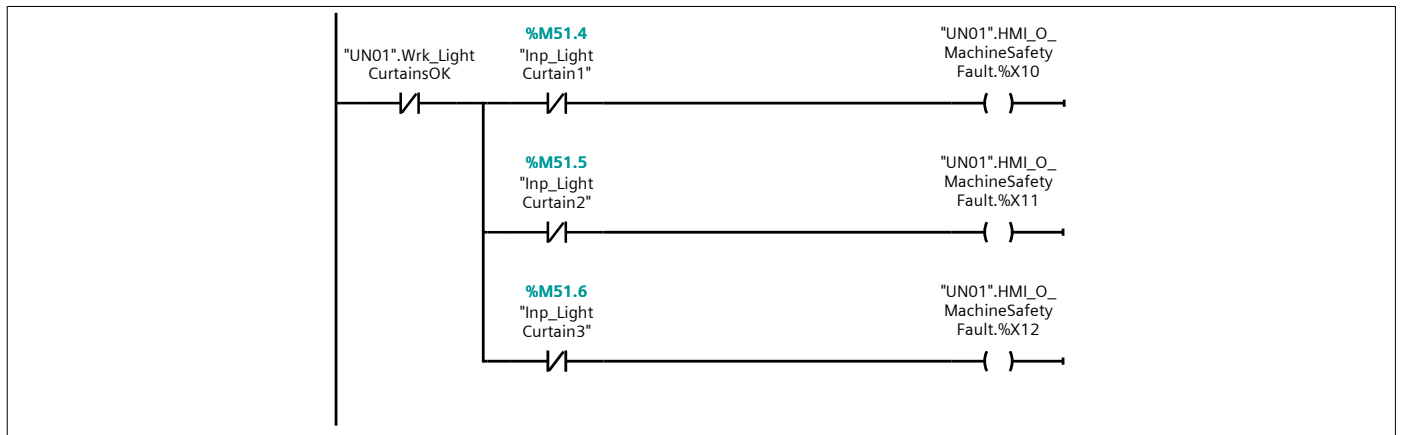
Network 14: Safety estops/guards/curtains status reporting



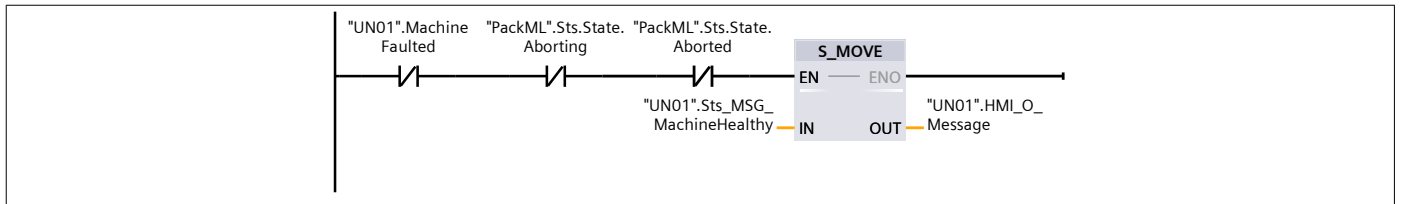
Network 15:



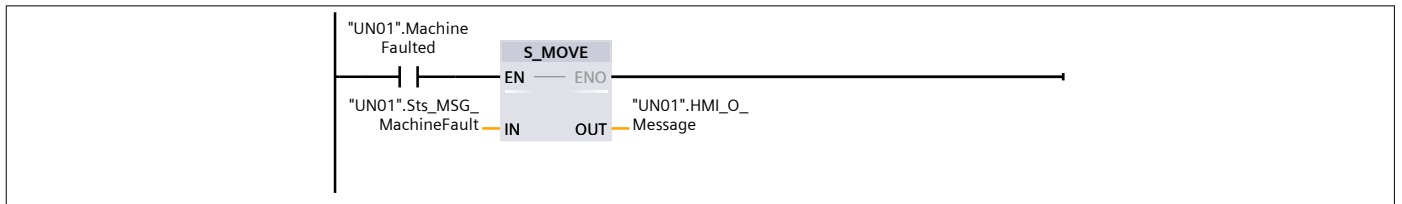
Network 16:



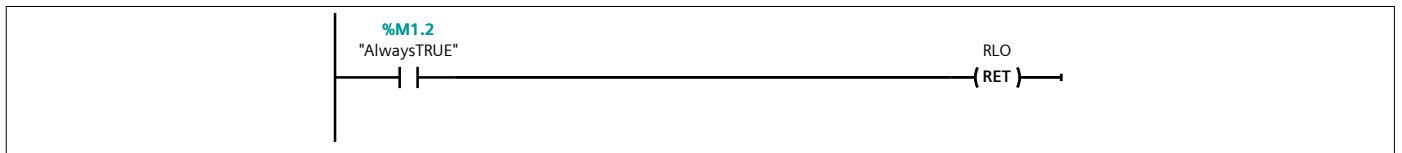
Network 17:



Network 18:



Network 19:



PackML_2Axis1EM [CPU 1515T-2 PN] / Program blocks / 0_UN01_ExampleMachine

UN01_SR20_Initialize [FB104]

UN01_SR20_Initialize Properties

General

Name	UN01_SR20_Initialize	Number	104	Type	FB
Language	LAD	Numbering	Manual		

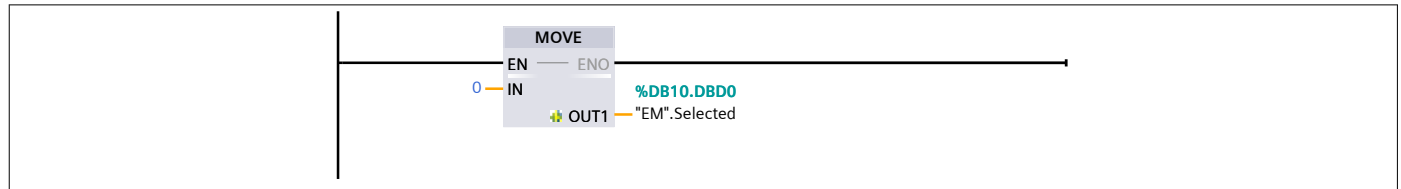
Information

Title		Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Default value	Retain
Input			
Output			
InOut			
▼ Static			
Temp_Dint	Dint	0	Non-retain
Temp_Bool	Bool	false	Non-retain
Temp			
Constant			

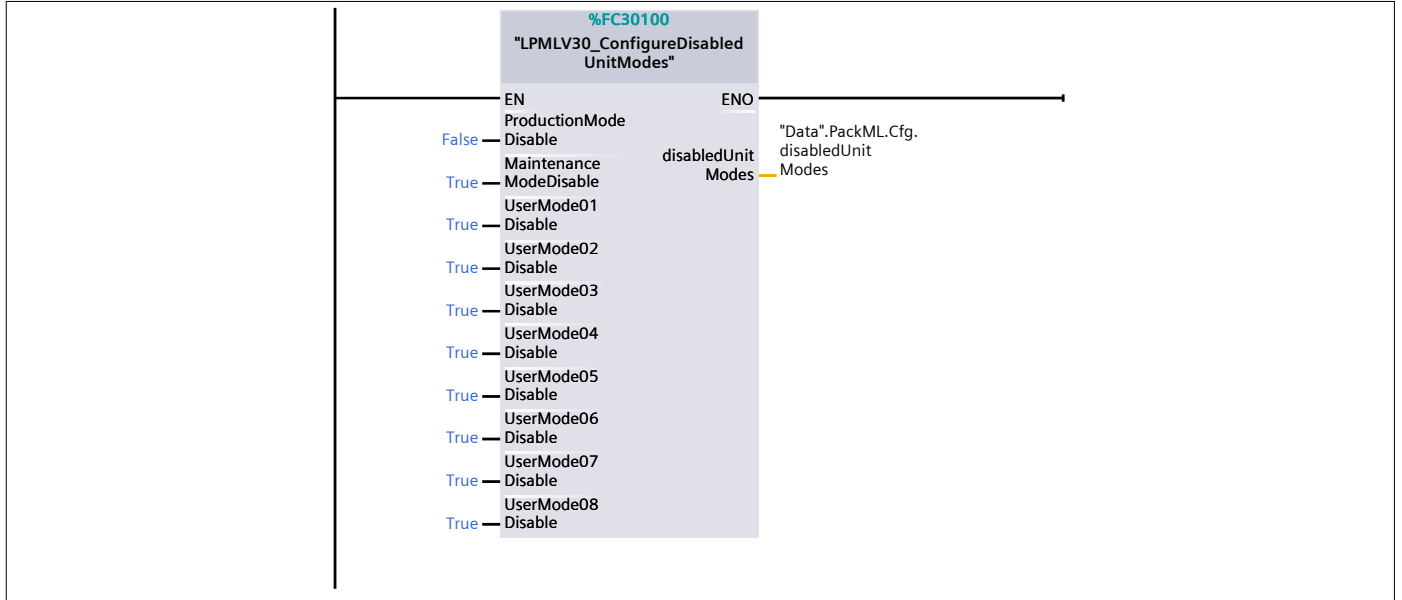
Network 2: Clear EM selected

Each EM will turn on its bit as it initializes



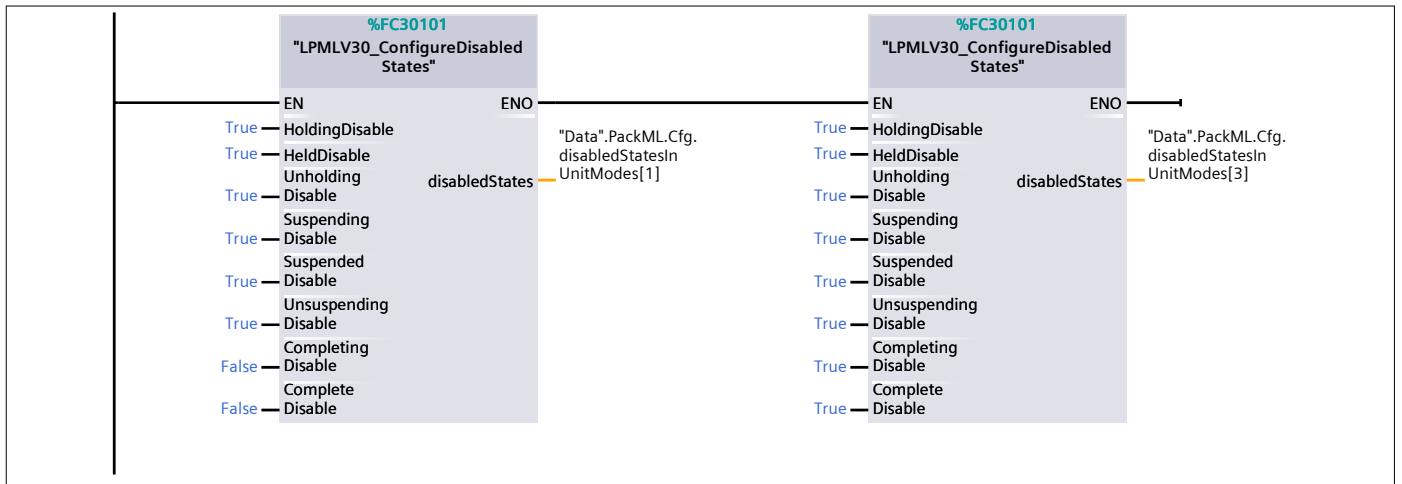
Network 3: Disable modes

Only enable modes 1 (Production) and 3 (Manual) Note that Manual can not be disabled.



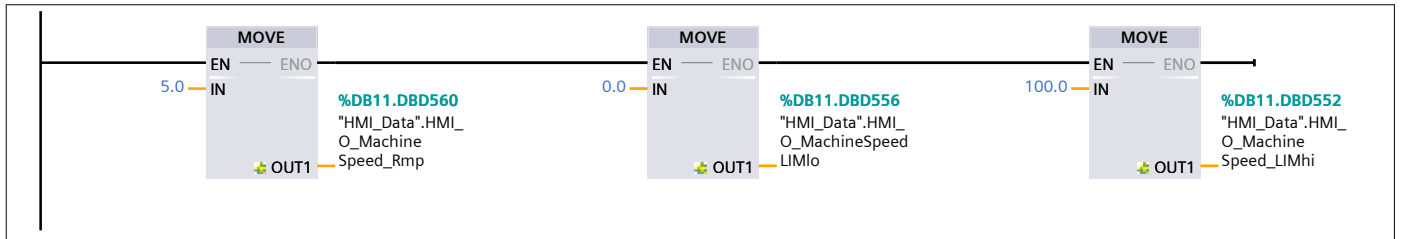
Network 4: Set disabled states

For both Production and Manual modes

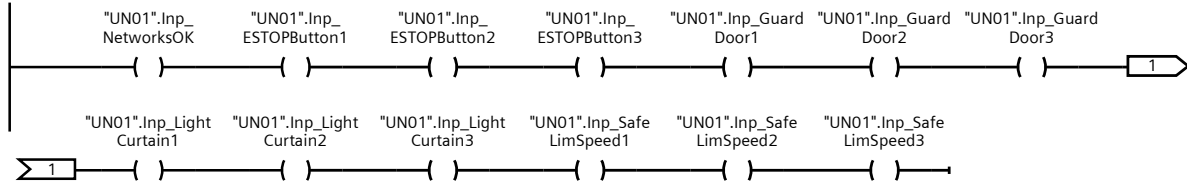


Network 5: Initialize HMI machine speed limits

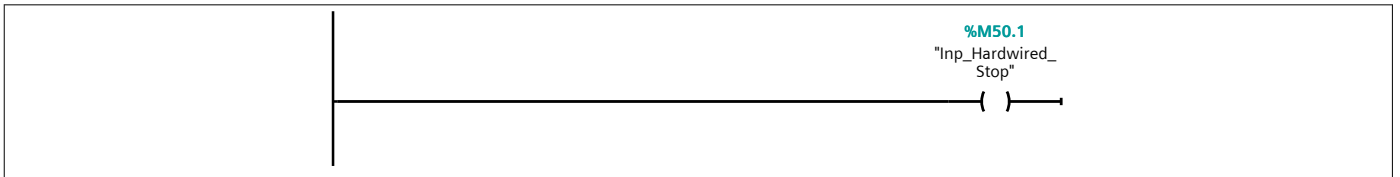
- Ramp increment
- Machine speed minimum
- Machine speed maximum



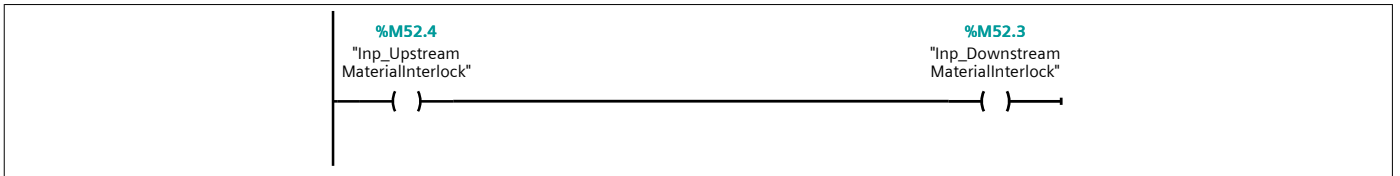
Network 6: Unused safety and status inputs



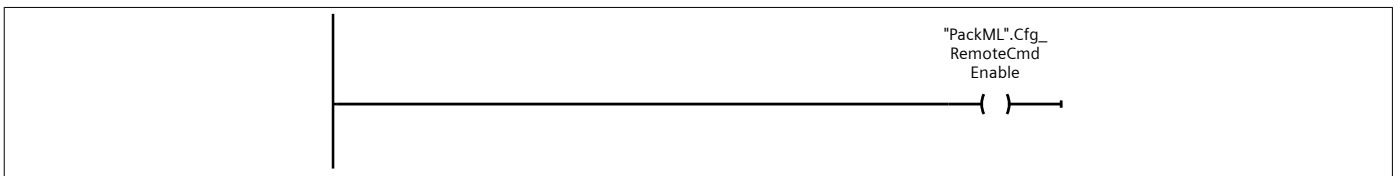
Network 7: Disabled unused stop



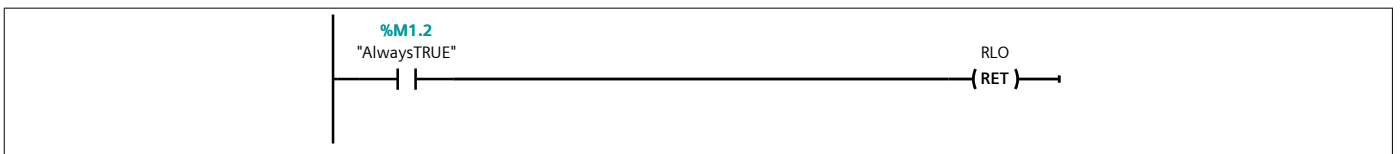
Network 8: Disable interlocks



Network 9: Enable remote commands



Network 10:



PackML_2Axis1EM [CPU 1515T-2 PN] / Program blocks / 0_UN01_ExampleMachine

UN01_UP00_Procedure [FB105]

UN01_UP00_Procedure Properties

General

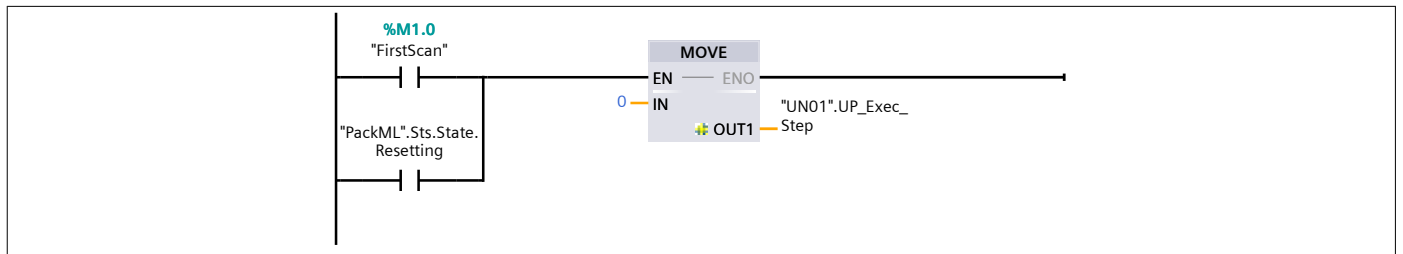
Name	UN01_UP00_Procedure	Number	105	Type	FB
Language	LAD	Numbering	Manual		

Information

Title	Execute State motion steps/commands for over-all operation	Author		Comment	
Family		Version	0.1	User-defined ID	

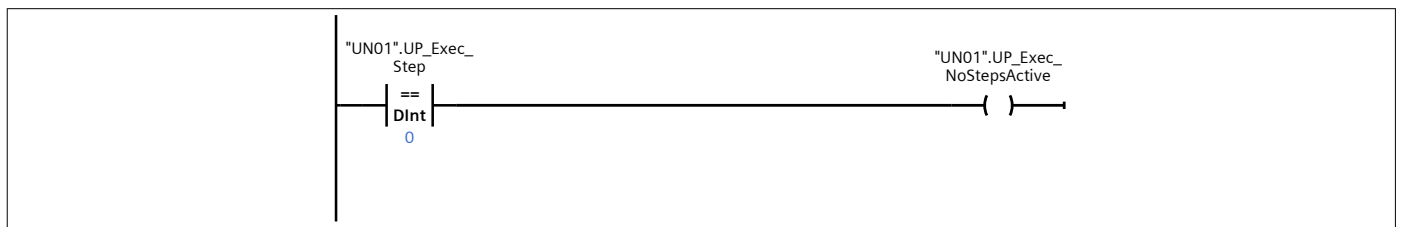
Name	Data type	Default value	Retain
Input			
Output			
InOut			
▼ Static			
Wrk_Delay1	TON_TIME		Non-retain
Wrk_Delay2	TON_TIME		Non-retain
Wrk_Delay3	TON_TIME		Non-retain
Wrk_Delay4	TON_TIME		Non-retain
Push	Bool	false	Non-retain
Temp			
Constant			

Network 2: First scan or resetting - clear all steps



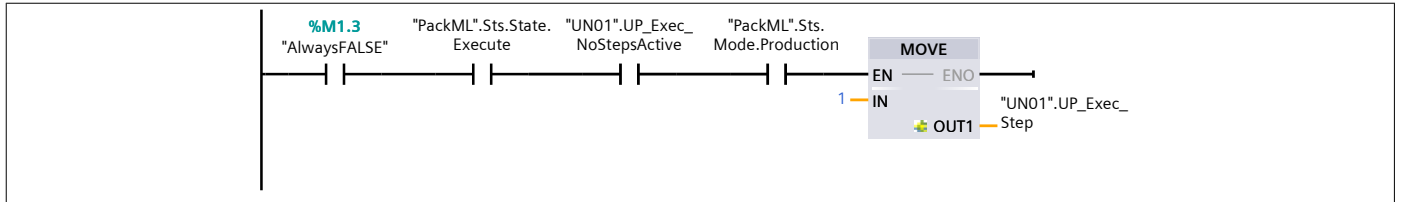
Network 3: Indication that all steps reset

Used by RESETTING state complete logic and initial execute step

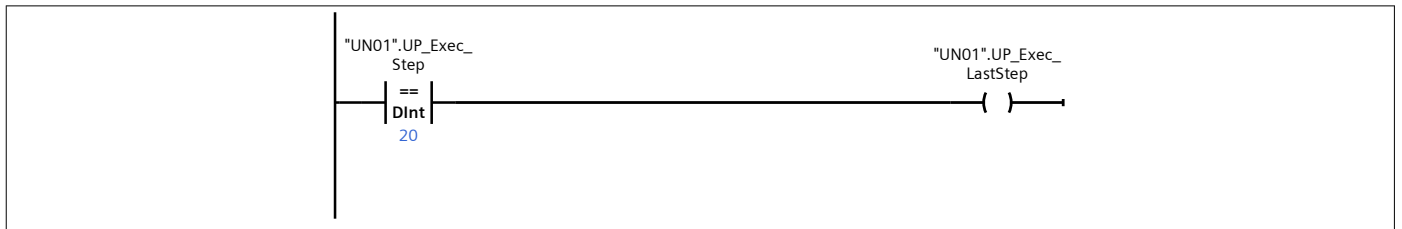


Network 4: EXECUTE - start

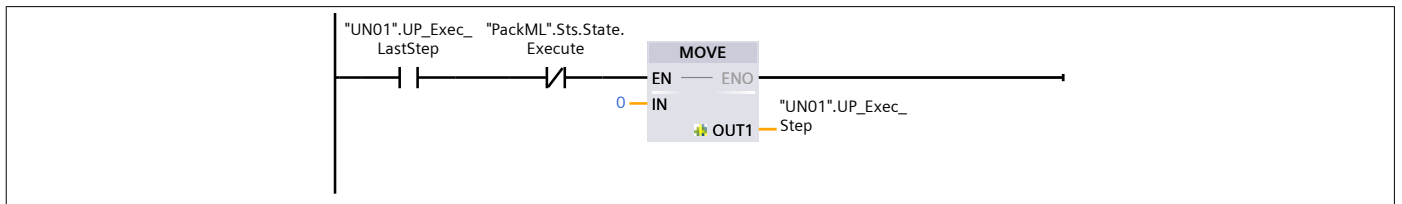
If no steps active, start in step 1



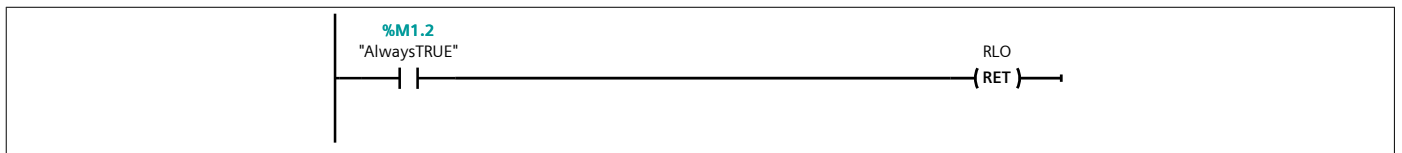
Network 5:



Network 6: Step 20 - When out of Execute, move zero into step number so it will start over at next push of start



Network 7:



PackML_2Axis1EM [CPU 1515T-2 PN] / Program blocks / 0_UN01_ExampleMachine

UN01_UP02_StateComplete [FB107]

UN01_UP02_StateComplete Properties

General

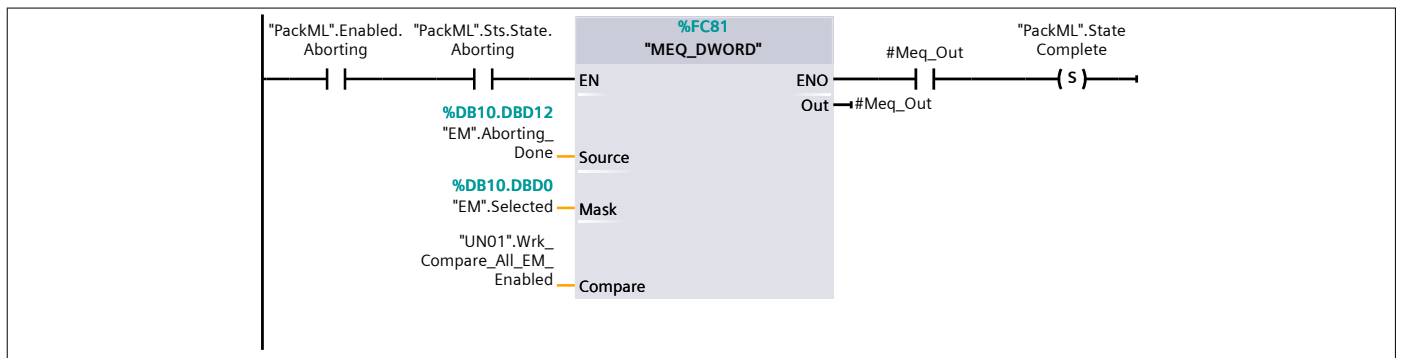
Name	UN01_UP02_StateComplete	Number	107	Type	FB
Language	LAD	Numbering	Manual		

Information

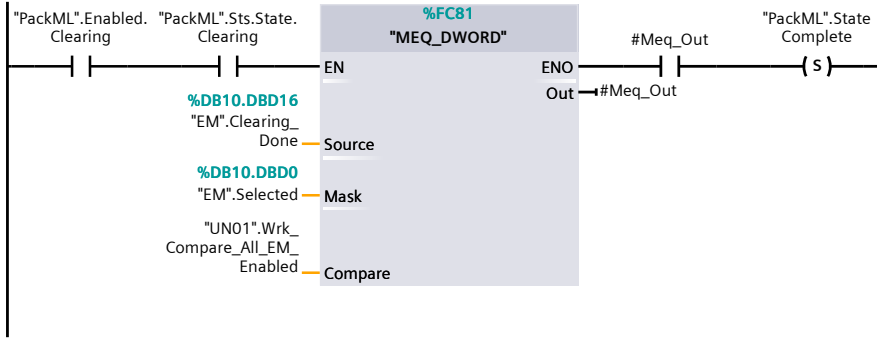
Title	State Complete Logic	Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Default value	Retain
Input			
Output			
InOut			
▼ Static			
Temp_Dint	Dint	0	Non-retain
Temp_Bool	Bool	false	Non-retain
▼ Temp			
Meq_Out	Bool		
Constant			

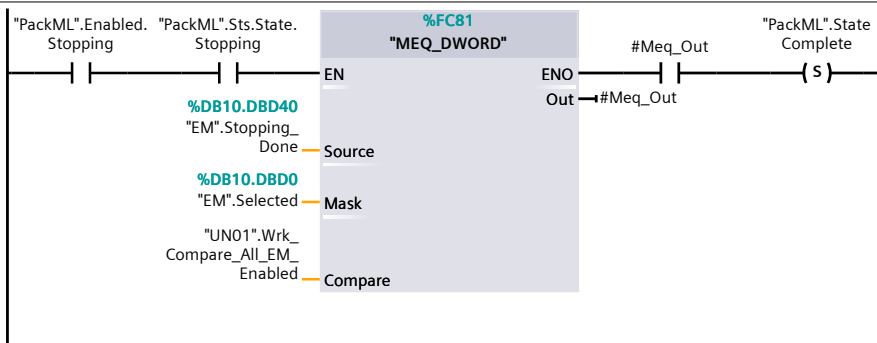
Network 2: Aborting state complete



Network 3: Clearing state complete

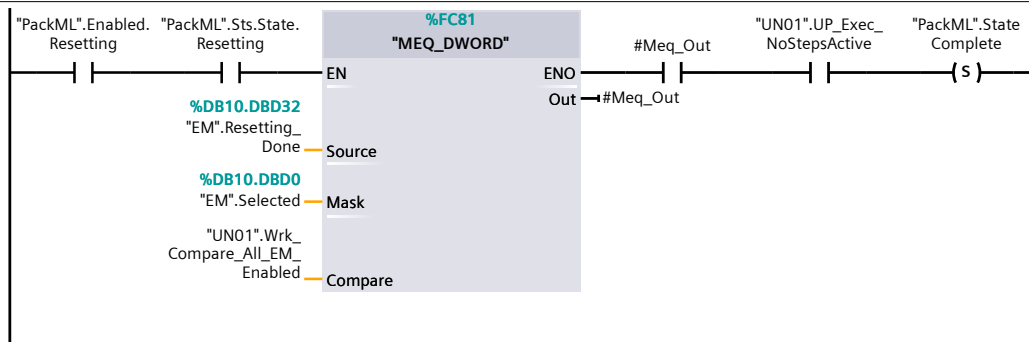


Network 4: Stopping state complete

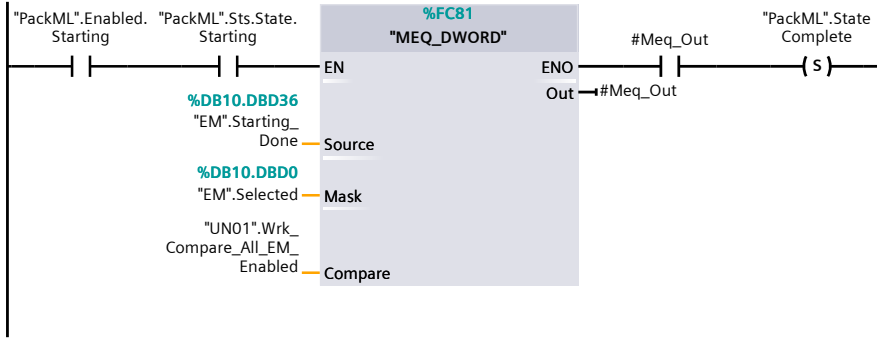


Network 5: Resetting state complete

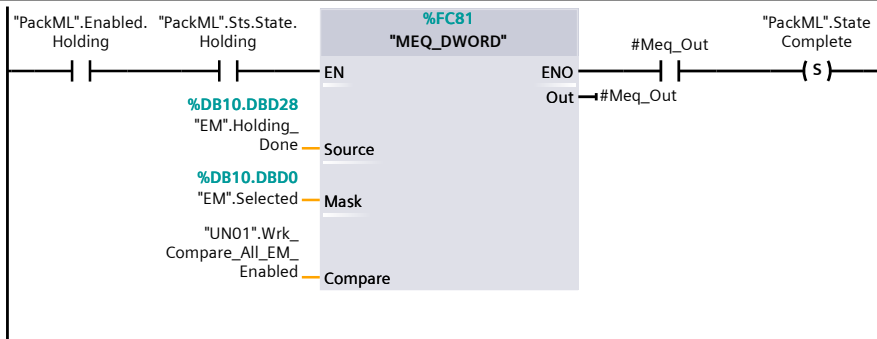
For resetting, make sure unit procedure initialized



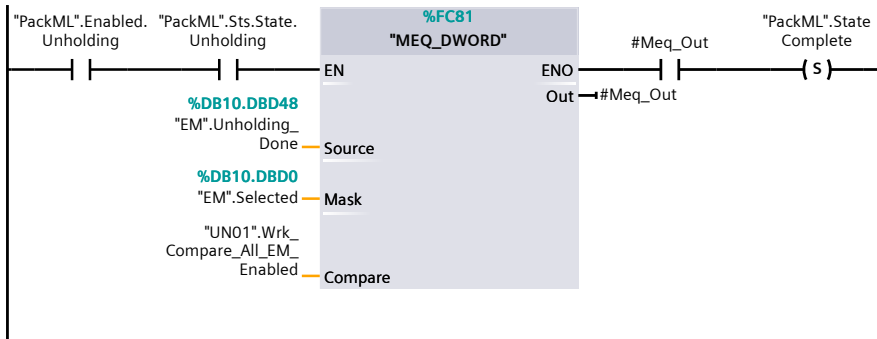
Network 6: Starting state complete



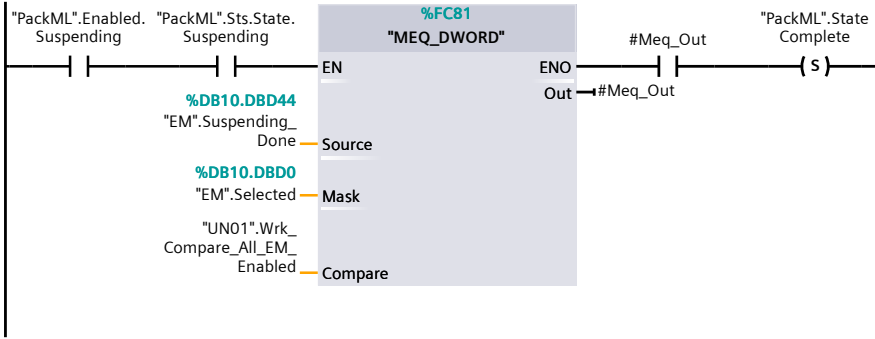
Network 7: Holding state complete



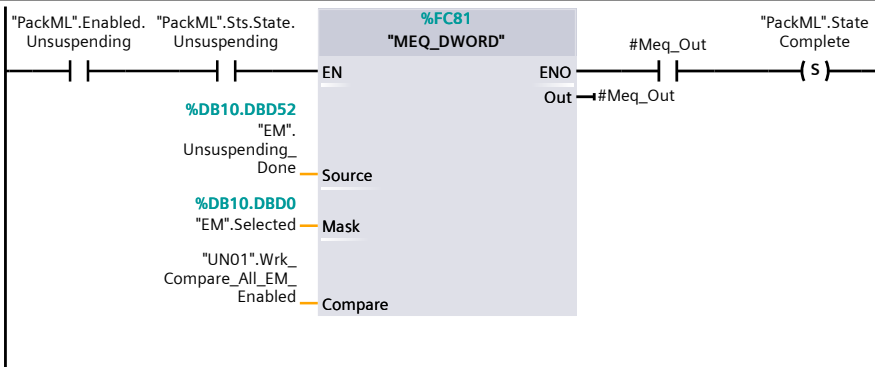
Network 8: Unholding state complete



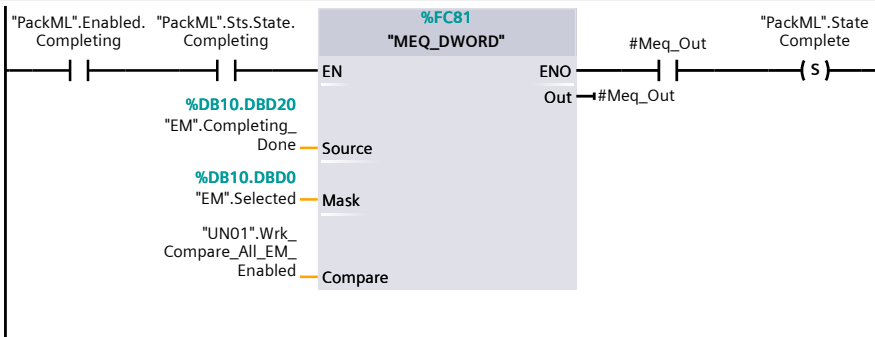
Network 9: Suspending state complete



Network 10: Unsuspending state complete

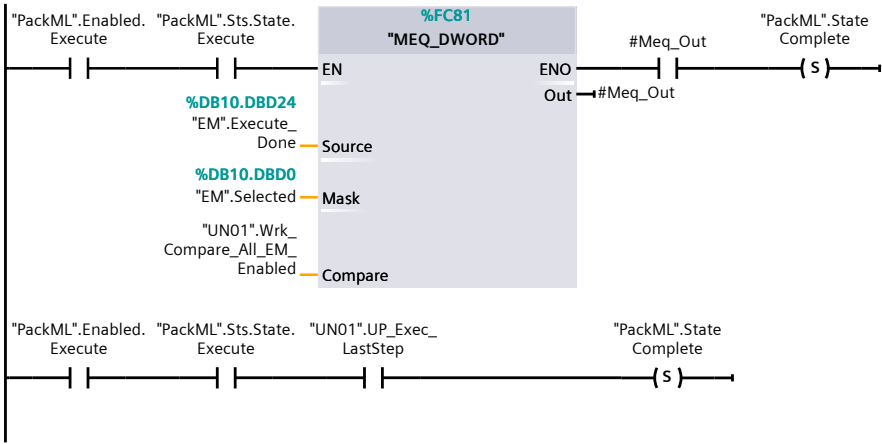


Network 11: Completing state complete

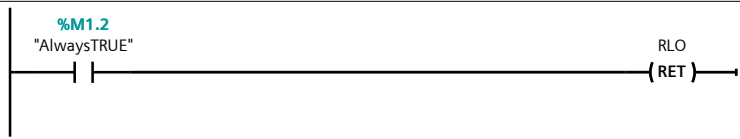


Network 12: Execute state complete

Complete when all EM's complete, or when unit procedure finished.



Network 13:



PackML_2Axis1EM [CPU 1515T-2 PN] / Program blocks / 0_UN01_ExampleMachine

UN01_UP01_PackML [FB106]

UN01_UP01_PackML Properties

General

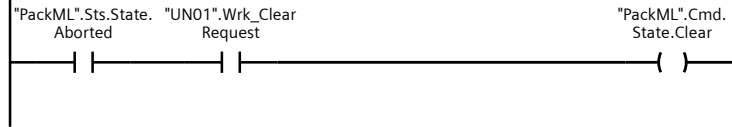
Name	UN01_UP01_PackML	Number	106	Type	FB
Language	LAD	Numbering	Manual		

Information

Title	*** PackML Template *** Controls the machines modes & states	Author	FoodBev	Comment	The
Family	FoodBev	Version	1.0	User-defined ID	OMAC

Name	Data type	Default value	Retain
Input			
Output			
InOut			
▼ Static			
LPMLV30_UnitModeStateManager_Instance	"LPMLV30_UnitModeStateManager"		
LPMLV30_UnitModeStateTimes_Instance	"LPMLV30_UnitModeStateTimes"		
RemoteCommand_ModeChageRequest	Struct		Non-retain
SC_InputToBlock	Bool	false	Non-retain
SC_TrigStorage	Bool	false	Non-retain
▼ Temp			
temp_ReadClock_RetVal	Int		
temp_HMI_RetVal	Int		
temp_OEE_Availability	Real		
temp_OEE_Performance	Real		
temp_OEE_Quality	Real		
temp_Ret_Val	Int		
temp_Int	Int		
temp_string	String[10]		
temp_DisabledStates	DInt		
temp_ModeCurrent	DInt		
temp_StateCurrent	DInt		
temp_StateRequested	DInt		
Constant			

Network 1: PackML ModeManager & State Model - Clear Command

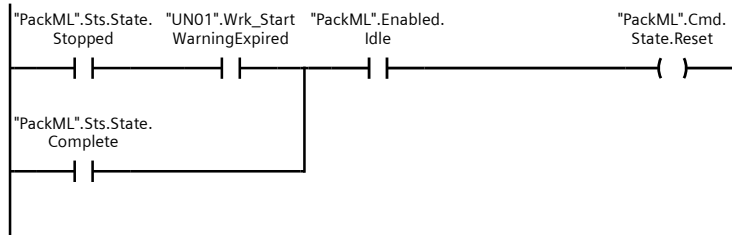


Network 2: PackML ModeManager & State Model - Reset command

STATE COMMAND
RESET

This Command is Triggered by the Unit Condition Indicating the Start Warning Cycle Has Completed. The Command Initiates in the PackML FB for the Current Mode Operation Procedure to Transition From the Stopped or Complete State to:

- 1) The Resetting State, If Resetting Is Enabled
- 2) The Idle State, If Resetting is Disabled and Idle Is Enabled
- 3) The Starting State, If Resetting and Idle Are Disabled and Starting is Enabled
- 4) The Execute State, If Resetting, Idle, and Starting Are Disabled

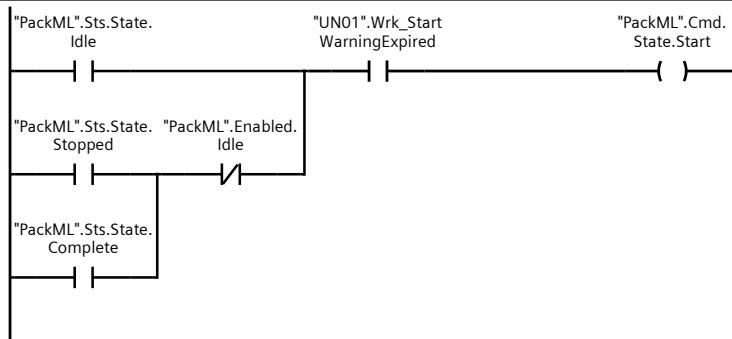


Network 3: PackML ModeManager & State Model - Start command

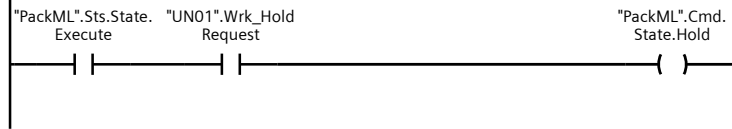
STATE COMMAND
START

This Command is Triggered by the Unit Condition Indicating the Start Warning Cycle Has Completed. The Command Initiates in the PackML FB for the Current Mode Operation Procedure to Transition From the Idle State to:

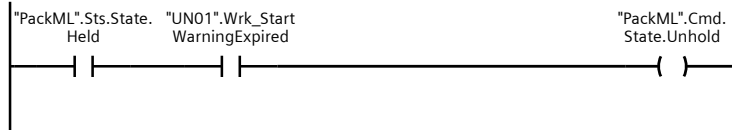
- 1) The Starting State, If Starting is Enabled
- 2) The Execute State, If Starting is Disabled



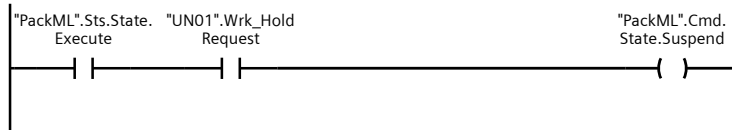
Network 4: PackML ModeManager & State Model - Hold command



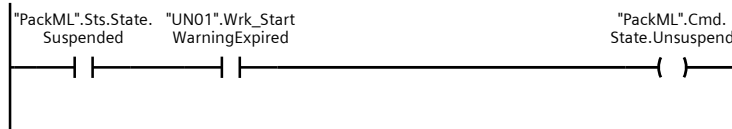
Network 5: PackML ModeManager & State Model - UnHold command



Network 6: PackML ModeManager & State Model - Suspend command



Network 7: PackML ModeManager & State Model - UnSuspend command

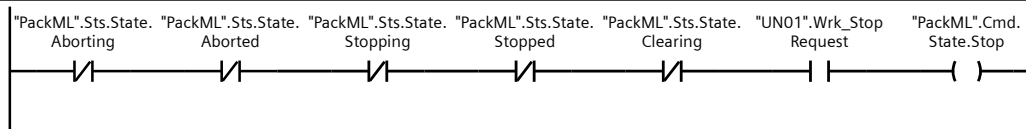


Network 8: PackML ModeManager & State Model - Stop command

STATE COMMAND
STOP

This Command is Triggered by the Unit Condition Indicating Any Stop Condition Is Present. The Command Initiates in the PackML AOI for the Current Mode Operation Procedure to Transition From the Following List of States (Resetting, Idle, Starting, Execute, Holding, Held, UnHolding, Suspending, Suspended, UnSuspending, Completing, Or Complete), When Each Is Enabled, To:

- 1) The Stopping State, If Stopping is Enabled
- 2) The Stopped State, If Stopping is Disabled



Network 9: PackML ModeManager & State Model - Abort command

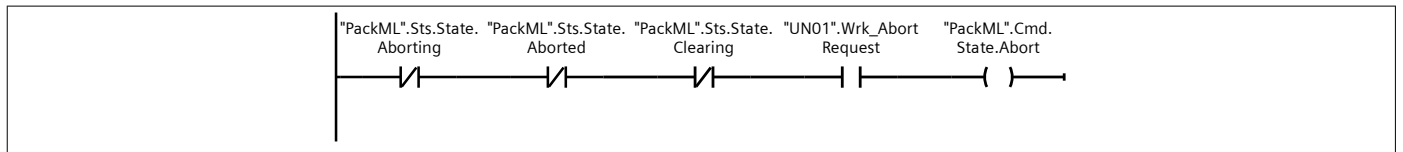
STATE COMMAND
ABORT

This Command is Triggered by the Unit Condition Indicating Any Fault Condition Is Present. The Command Initiates in the PackML FB for the Current Mode Operation Procedure to Transition From the Following List of States

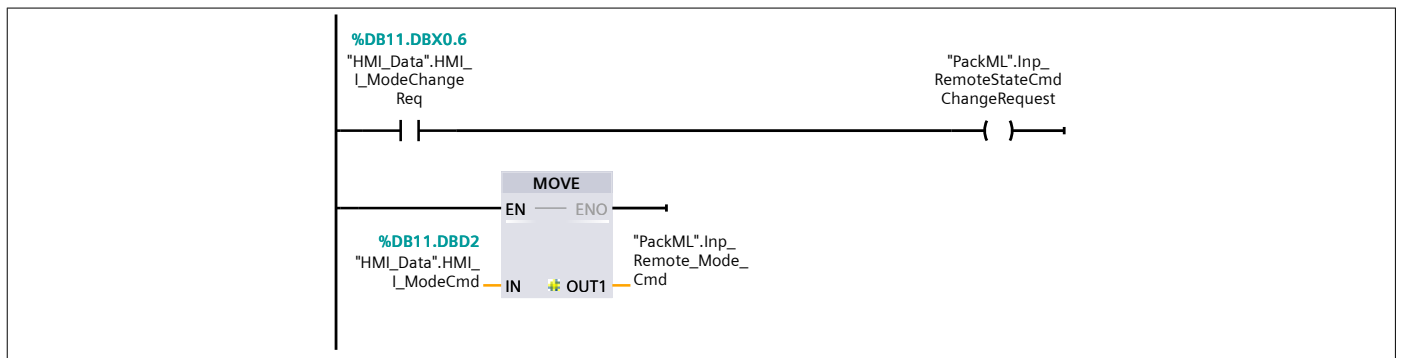
(Resetting, Idle, Starting, Execute, Holding, Held, UnHolding, Suspending, Suspended, UnSuspending, Completing, Complete, Stopping, Stopped, Or Clearing),
When Each Is Enabled, To:

- 1) The Aborting State, If Aborting is Enabled
- 2) The Aborted State, If Aborting is Disabled

MAKE SURE THAT ALL EQUIPMENT MODULES REPORT BACK A FAULTRESET_DONE AT SOME POINT IN TIME (EVEN IF FAULTS ARE PRESENT) TO AVOID THAT THE STATEMACHINE GETS STUCK IN CLEARING



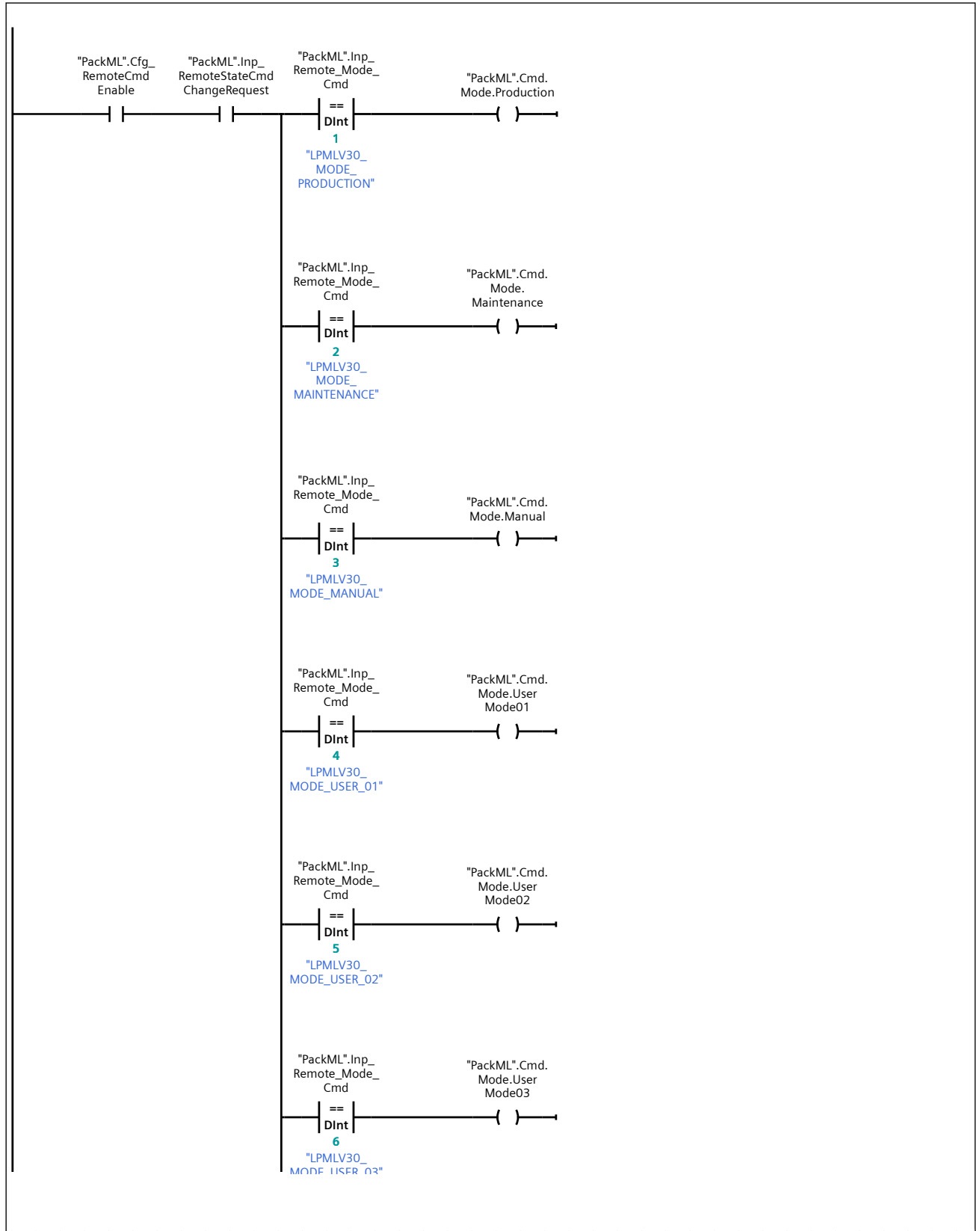
Network 10: Mode change requests from operator



Network 11: External PackML Mode Commands

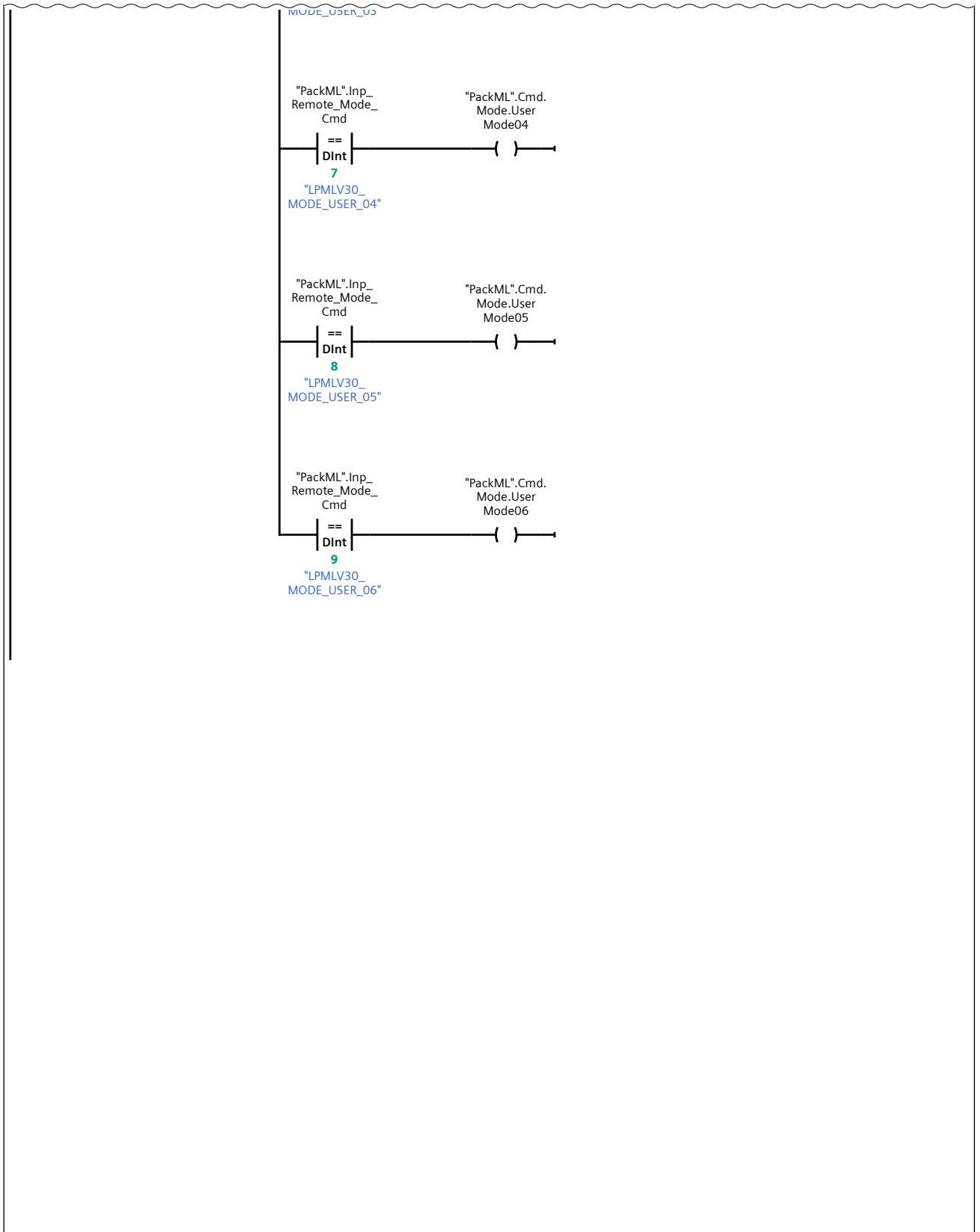
Rung from original program from CPG modified to use "PackML".Cmd.Mode. bits to change mode.

Network 11: External PackML Mode Commands (1.1 / 2.1)



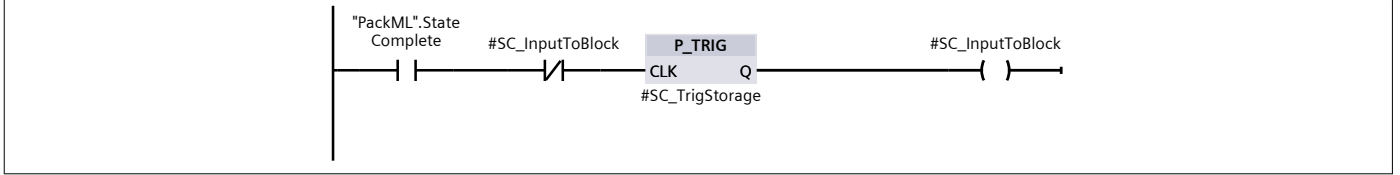
Network 11: External PackML Mode Commands (2.1 / 2.1)

1.1 (Page16 - 5)



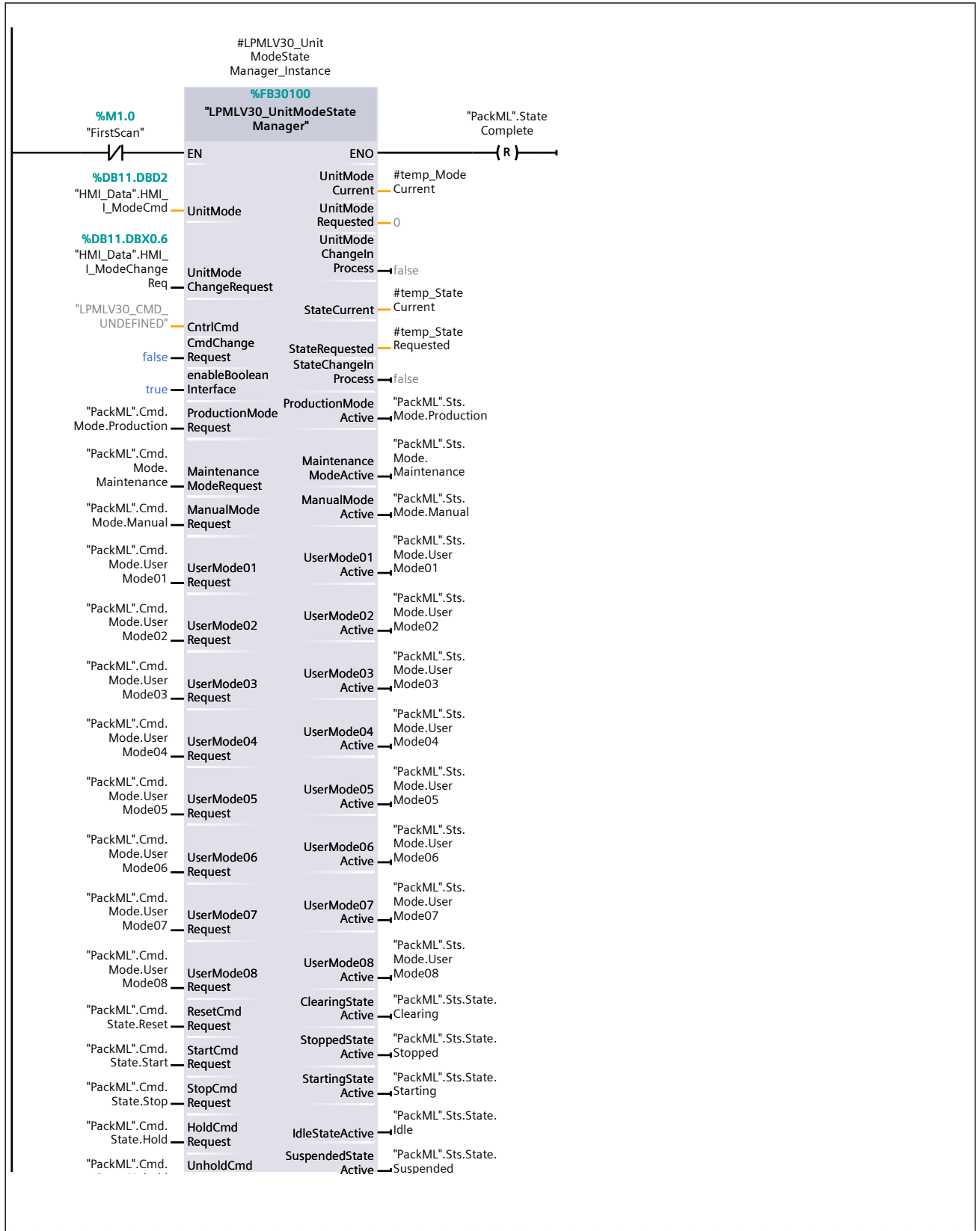
Network 12: Enforce change in SC input to block

If state changes, but SC does not change because the state complete conditions are fulfilled as soon as the state is active, the SC input to LPMLV30_StateManager must still see a transition. This logic makes sure that the SC input is off at the next scan after it turns on.



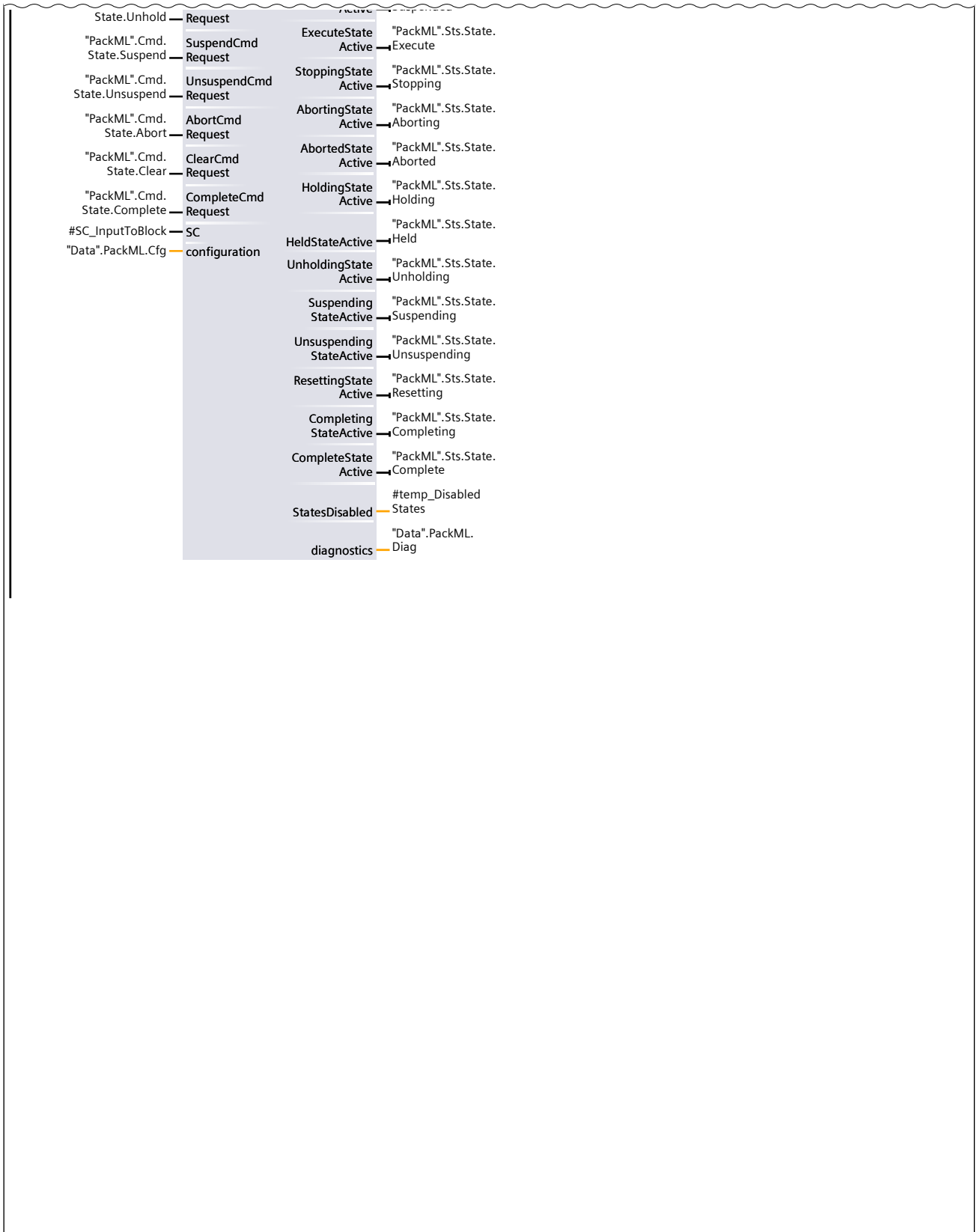
Network 13: Call thePackML Mode Manager & State Model FB

Network 13: Call thePackML Mode Manager & State Model FB (1.1 / 2.1)

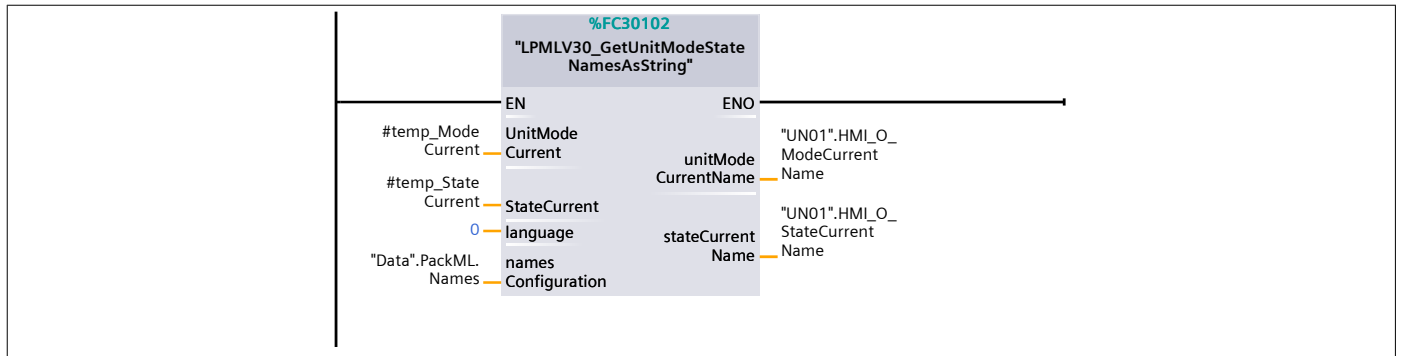


Network 13: Call thePackML Mode Manager & State Model FB (2.1 / 2.1)

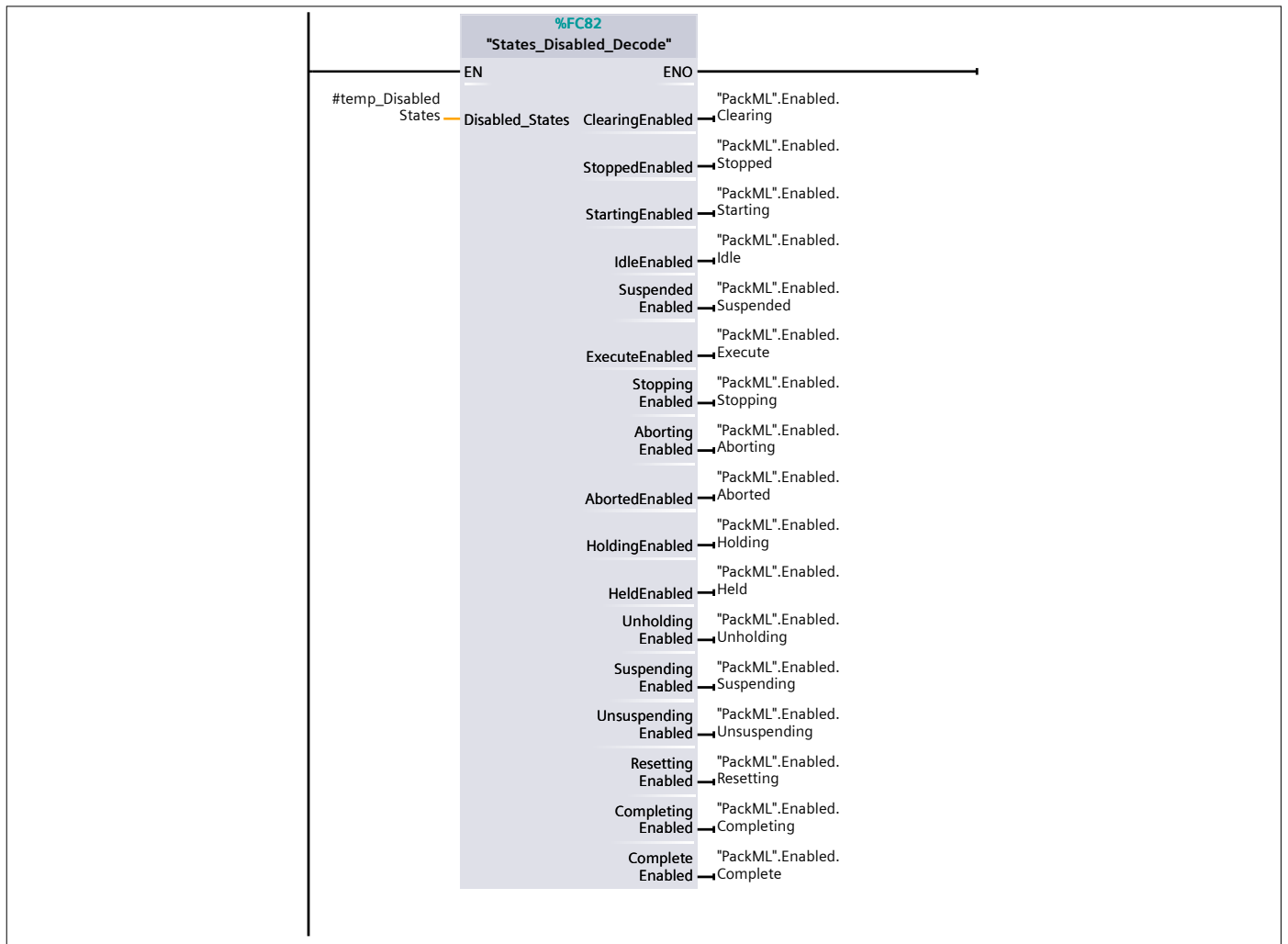
1.1 (Page16 - 8)



Network 14: Mode / State Names.



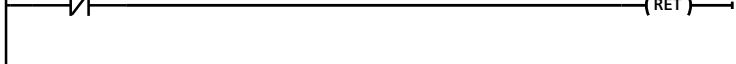
Network 15: Decode disabled states



Network 16: END: Update the ENO Output. (DO NOT REMOVE. Must be last rung)

%M1.3
"AlwaysFALSE"

RLO
(RET)



PackML_2Axis1EM [CPU 1515T-2 PN] / Program blocks / 0_UN01_ExampleMachine

UN01 [DB100]

UN01 Properties

General

Name	UN01	Number	100	Type	DB
Language	DB	Numbering	Manual		

Information

Title		Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Start value	Retain
Input			
Output			
InOut			
▼ Static			
HMI_O_ModeCurrentName	String[18]	"	False
HMI_O_StateCurrentName	String[16]	"	False
HMI_O_MachineSafetyFault	DInt	0	False
HMI_O_MajorFaultMessage	DInt	0	False
HMI_O_MinorFaultMessage	DInt	0	False
HMI_O_Message	String[18]	"	False
Sts_GoodProducts	DInt	0	False
Sts_MSG_MachineFault	String	'Machine Fault'	False
Sts_MSG_MachineHealthy	String	'Machine Healthy'	False
MachineFault_Major	Bool	false	False
MachineFault_Minor	Bool	false	False
MachineFaulted	Bool	false	False
UP_Exec_Step	DInt	0	False
UP_Exec_StepDn	Array[0..32] of DInt		False
UP_Exec_LastStep	Bool	false	False
UP_Exec_NoStepsActive	Bool	false	False
Inp_NetworksOK	Bool	false	False
Inp_ESTOPButton1	Bool	false	False
Inp_ESTOPButton2	Bool	false	False
Inp_ESTOPButton3	Bool	false	False
Inp_GuardDoor1	Bool	false	False
Inp_GuardDoor2	Bool	false	False
Inp_GuardDoor3	Bool	false	False
Inp_LightCurtain1	Bool	false	False
Inp_LightCurtain2	Bool	false	False
Inp_LightCurtain3	Bool	false	False
Inp_SafeLimSpeed1	Bool	false	False
Inp_SafeLimSpeed2	Bool	false	False
Inp_SafeLimSpeed3	Bool	false	False
Inp_BatchCountSetpoint	DInt	0	False

Name	Data type	Start value	Retain
Wrk_StartRequest	Bool	false	False
Wrk_StopRequest	Bool	false	False
Wrk_ResetRequest	Bool	false	False
Wrk_AbortRequest	Bool	false	False
Wrk_ClearRequest	Bool	false	False
Wrk_CompleteRequest	Bool	false	False
Wrk_HoldRequest	Bool	false	False
Wrk_UnHoldRequest	Bool	false	False
Wrk_SuspendRequest	Bool	false	False
Wrk_Compare_All_EM_Enabled	DInt	-1	False
Wrk_AllSafetyOK	Bool	false	False
Wrk_EstopOK	Bool	false	False
Wrk_GuardsOK	Bool	false	False
Wrk_LightCurtainsOK	Bool	false	False
Wrk_SafeSpeedsOK	Bool	false	False
Wrk_NetworkCommunicationOK	Bool	false	False
Wrk_StartWarningExpired	Bool	false	False
SR20_InitializeData	"UN01_SR20_Initialize"		False
CM01_OperationLocal	"UN01_CM01_OperationLocal"		False
CM03_FaultHandler	"UN01_CM03_FaultHandler"		False
UP02_StateComplete	"UN01_UP02_StateComplete"		False
UP01_PackML	"UN01_UP01_PackML"		False
UP00_Procedure	"UN01_UP00_Procedure"		False
CM04_SafetyInterface_Data	"UN01_CM04_SafetyInterface"		False

PackML_2Axis1EM [CPU 1515T-2 PN] / Program blocks / 0_UN01_ExampleMachine

UN01_00_Main [FB100]

UN01_00_Main Properties

General

Name	UN01_00_Main	Number	100	Type	FB
Language	LAD	Numbering	Manual		

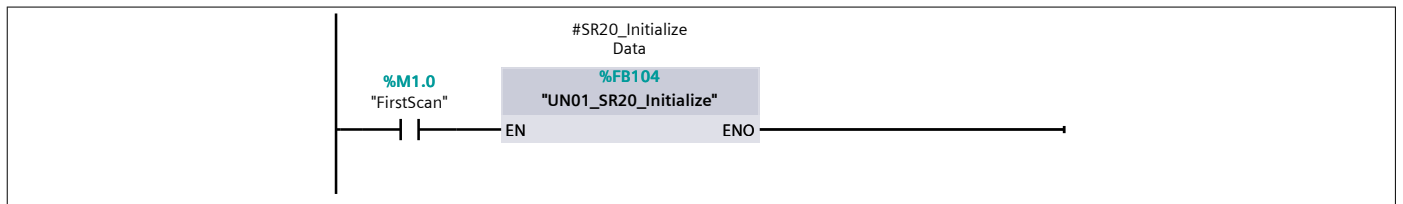
Information

Title		Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Default value	Retain
Input			
Output			
InOut			
▼ Static			
HMI_O_ModeCurrentName	String[18]	''	Non-retain
HMI_O_StateCurrentName	String[16]	''	Non-retain
HMI_O_MachineSafetyFault	DInt	0	Non-retain
HMI_O_MajorFaultMessage	DInt	0	Non-retain
HMI_O_MinorFaultMessage	DInt	0	Non-retain
HMI_O_Message	String[18]	''	Non-retain
Sts_GoodProducts	DInt	0	Non-retain
Sts_MSG_MachineFault	String	'Machine Fault'	Non-retain
Sts_MSG_MachineHealthy	String	'Machine Healthy'	Non-retain
MachineFault_Major	Bool	false	Non-retain
MachineFault_Minor	Bool	false	Non-retain
MachineFaulted	Bool	false	Non-retain
UP_Exec_Step	DInt	0	Non-retain
UP_Exec_StepDn	Array[0..32] of DInt		Non-retain
UP_Exec_LastStep	Bool	false	Non-retain
UP_Exec_NoStepsActive	Bool	false	Non-retain
Inp_NetworksOK	Bool	false	Non-retain
Inp_ESTOPButton1	Bool	false	Non-retain
Inp_ESTOPButton2	Bool	false	Non-retain
Inp_ESTOPButton3	Bool	false	Non-retain
Inp_GuardDoor1	Bool	false	Non-retain
Inp_GuardDoor2	Bool	false	Non-retain
Inp_GuardDoor3	Bool	false	Non-retain
Inp_LightCurtain1	Bool	false	Non-retain
Inp_LightCurtain2	Bool	false	Non-retain
Inp_LightCurtain3	Bool	false	Non-retain
Inp_SafeLimSpeed1	Bool	false	Non-retain
Inp_SafeLimSpeed2	Bool	false	Non-retain
Inp_SafeLimSpeed3	Bool	false	Non-retain
Inp_BatchCountSetpoint	DInt	0	Non-retain

Name	Data type	Default value	Retain
Wrk_StartRequest	Bool	false	Non-retain
Wrk_StopRequest	Bool	false	Non-retain
Wrk_ResetRequest	Bool	false	Non-retain
Wrk_AbortRequest	Bool	false	Non-retain
Wrk_ClearRequest	Bool	false	Non-retain
Wrk_CompleteRequest	Bool	false	Non-retain
Wrk_HoldRequest	Bool	false	Non-retain
Wrk_UnHoldRequest	Bool	false	Non-retain
Wrk_SuspendRequest	Bool	false	Non-retain
Wrk_Compare_All_EM_Enabled	DInt	-1	Non-retain
Wrk_AllSafetyOK	Bool	false	Non-retain
Wrk_EstopOK	Bool	false	Non-retain
Wrk_GuardsOK	Bool	false	Non-retain
Wrk_LightCurtainsOK	Bool	false	Non-retain
Wrk_SafeSpeedsOK	Bool	false	Non-retain
Wrk_NetworkCommunicationOK	Bool	false	Non-retain
Wrk_StartWarningExpired	Bool	false	Non-retain
SR20_InitializeData	"UN01_SR20_Initialize"		
CM01_OperationLocal	"UN01_CM01_OperationLocal"		
CM03_FaultHandler	"UN01_CM03_FaultHandler"		
UP02_StateComplete	"UN01_UP02_StateComplete"		
UP01_PackML	"UN01_UP01_PackML"		
UP00_Procedure	"UN01_UP00_Procedure"		
CM04_SafetyInterface_Data	"UN01_CM04_SafetyInterface"		
Temp			
Constant			

Network 1:



Network 2:

#CM04_Safety
Interface_Data

%FB103

"UN01_CM04_SafetyInterface"

EN

ENO

Network 3:

#CM01_Operation
Local

%FB101

"UN01_CM01_OperationLocal"

EN

ENO

Network 4:

#CM03_Fault
Handler

%FB102

"UN01_CM03_FaultHandler"

EN

ENO

Network 5:

#UP02_State
Complete

%FB107

"UN01_UP02_StateComplete"

EN

ENO

Network 6:

#UP01_PackML

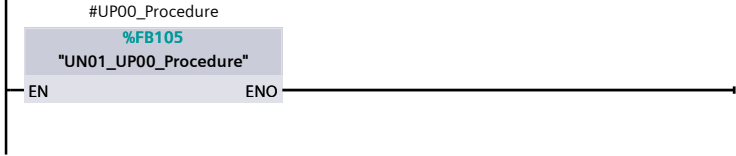
%FB106

"UN01_UP01_PackML"

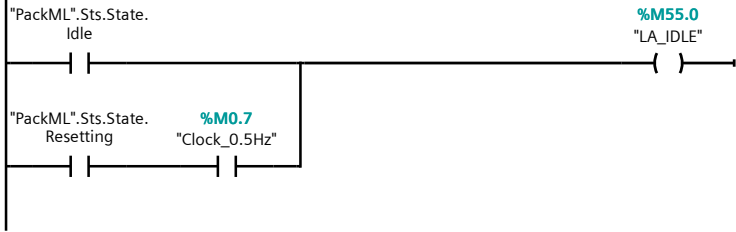
EN

ENO

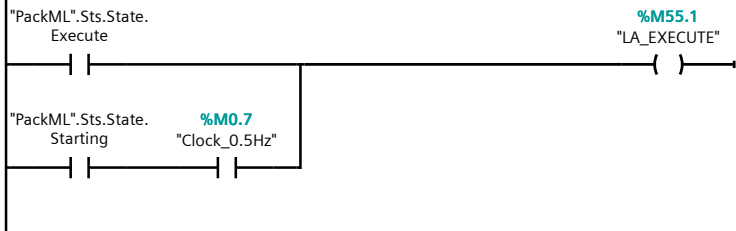
Network 7:



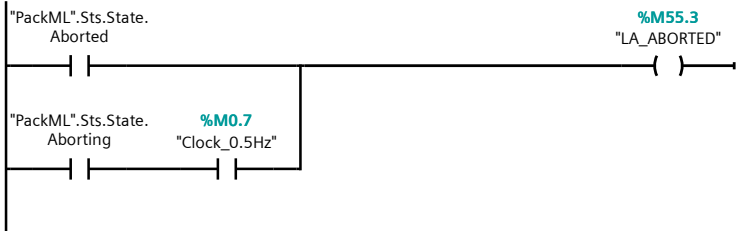
Network 8: INDICATOR LAMPS for C-More



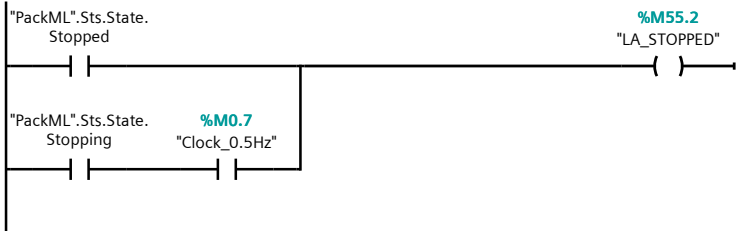
Network 9:



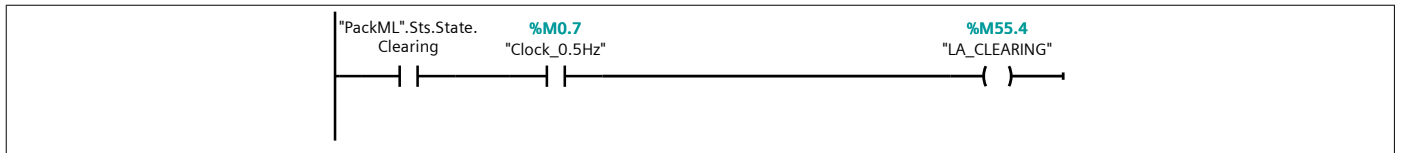
Network 10:



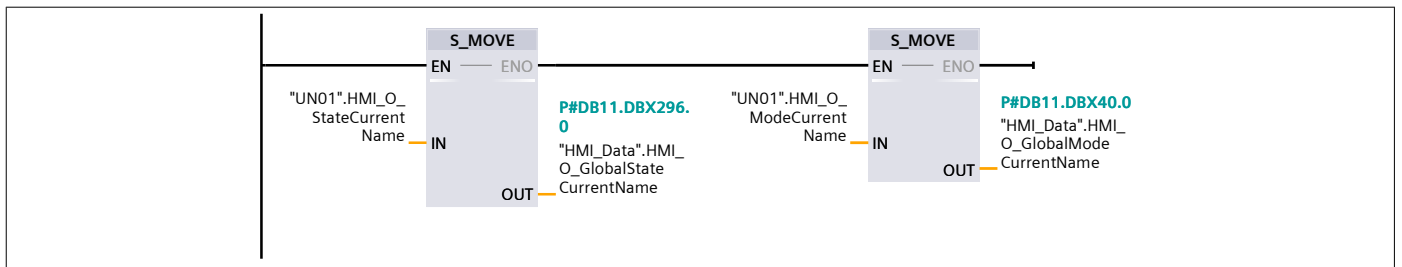
Network 11:



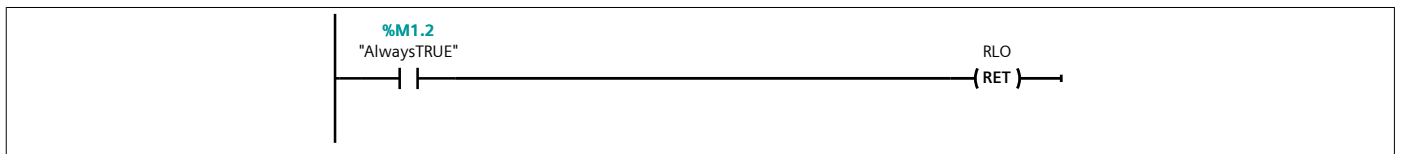
Network 12:



Network 13: Pass on state and mode names to global hmi



Network 14:



PackML_2Axis1EM [CPU 1515T-2 PN] / Program blocks / 0_UN01_ExampleMachine

UN01_CM04_SafetyInterface [FB103]

UN01_CM04_SafetyInterface Properties

General

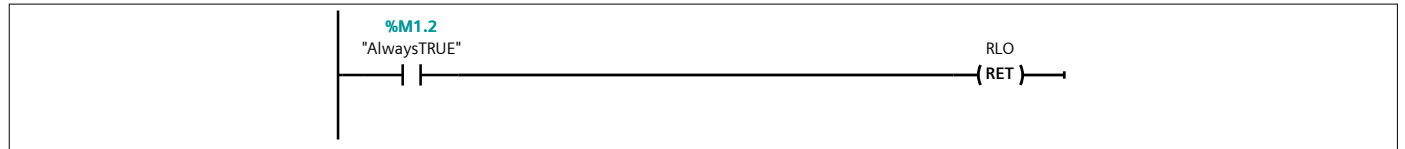
Name	UN01_CM04_SafetyInterface	Number	103	Type	FB
Language	LAD	Numbering	Manual		

Information

Title	Safety Interface - empty for now	Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Default value	Retain
Input			
Output			
InOut			
▼ Static			
Dummy	Bool	false	Non-retain
Temp			
Constant			

Network 1:



PackML_2Axis1EM [CPU 1515T-2 PN] / Program blocks / Data

EM [DB10]

EM Properties

General

Name	EM	Number	10	Type	DB
Language	DB	Numbering	Manual		

Information

Title		Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Start value	Retain
▼ Static			
Selected	DInt	0	False
Faulted	DInt	0	False
No_Motion	DInt	0	False
Aborting_Done	DInt	0	False
Clearing_Done	DInt	0	False
Completing_Done	DInt	0	False
Execute_Done	DInt	0	False
Holding_Done	DInt	0	False
Resetting_Done	DInt	0	False
Starting_Done	DInt	0	False
Stopping_Done	DInt	0	False
Suspending_Done	DInt	0	False
Unholding_Done	DInt	0	False
Unsuspending_Done	DInt	0	False
Fault	Array[0..31] of "EM_Faults"		False

PackML_2Axis1EM [CPU 1515T-2 PN] / Program blocks / Data

HMI_Data [DB11]

HMI_Data Properties

General

Name	HMI_Data	Number	11	Type	DB
Language	DB	Numbering	Manual		

Information

Title		Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Start value	Retain
▼ Static			
HMI_I_Start	Bool	false	True
HMI_I_Stop	Bool	false	True
HMI_I_Clear	Bool	false	True
HMI_I_Reset	Bool	false	True
HMI_I_Hold	Bool	false	True
HMI_I_Unhold	Bool	false	True
HMI_I_ModeChangeReq	Bool	false	True
HMI_I_JogNegative	Bool	false	True
HMI_I_JogPositive	Bool	false	True
HMI_I_ModeCmd	DInt	0	True
HMI_I_Select_JogAxis	DInt	0	True
HMI_I_MachineSpeed_Cmd	Real	0.0	True
HMI_I_XMovePosition	Real	100.0	True
HMI_I_XMoveSpeed	Real	50.0	True
HMI_I_XMoveAccelDecel	Real	50.0	True
HMI_I_ZMovePosition	Real	35.0	True
HMI_I_ZMoveSpeed	Real	50.0	True
HMI_I_ZMoveAccelDecel	Real	50.0	True
HMI_O_LAAborted	Bool	false	True
HMI_O_LAExecute	Bool	false	True
HMI_O_LAIidle	Bool	false	True
HMI_O_LAStopped	Bool	false	True
HMI_O_GlobalModeCurrentName	String	"	True
HMI_O_GlobalStateCurrentName	String	"	True
HMI_O_MachineSpeed_LIMhi	Real	0.0	True
HMI_O_MachineSpeedLIMlo	Real	0.0	True
HMI_O_MachineSpeed_Rmp	Real	0.0	True

PackML_2Axis1EM [CPU 1515T-2 PN] / Program blocks / Data

Data [DB1]

Data Properties

General

Name	Data	Number	1	Type	DB
Language	DB	Numbering	Automatic		

Information

Title	Machine Data	Author		Comment	Machine Data
Family		Version	1.0	User-defined ID	

Name	Data type	Start value	Retain
▼ Static			
PackML	Struct		False
ProdSchedule_BoxesMoveSP	DInt	L#30000	True
ProdSchedule_BoxesMovePV	DInt	L#46	True
ProdSchedule_Complete	Bool	false	True
ProdSchedule_Reset	Bool	false	True
OOE_RealTime	Real	4.479167e-1	True
OOE_Availabilty	Real	0.0	False
OOE_Performance	Real	0.0	False
OOE_Quality	Real	0.0	False

PackML_2Axis1EM [CPU 1515T-2 PN] / Program blocks / Data

PackML [DB19]

PackML Properties

General

Name	PackML	Number	19	Type	DB
Language	DB	Numbering	Automatic		

Information

Title		Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Start value	Retain
▼ Static			
Cmd	Struct		False
Sts	Struct		False
Enabled	Struct		False
StateComplete	Bool	false	False
Cfg_RemoteCmdEnable	Bool	false	False
Inp_RemoteStateCmdChangeRequest	Bool	false	False
Inp_Remote_Mode_Cmd	DInt	0	False

PackML_2Axis1EM [CPU 1515T-2 PN] / Program blocks / EM01_AxisXZ

EM01_00_Main [FB200]

EM01_00_Main Properties

General

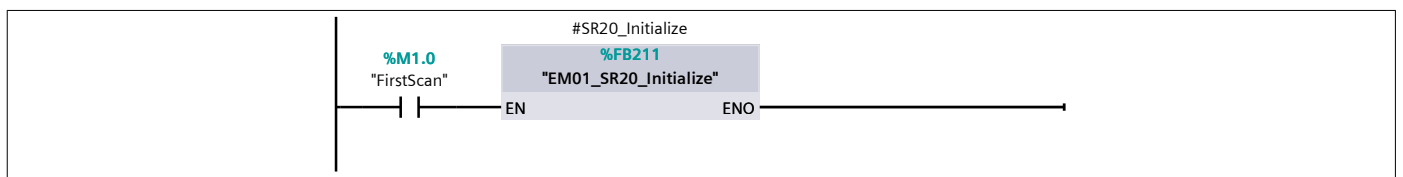
Name	EM01_00_Main	Number	200	Type	FB
Language	LAD	Numbering	Manual		

Information

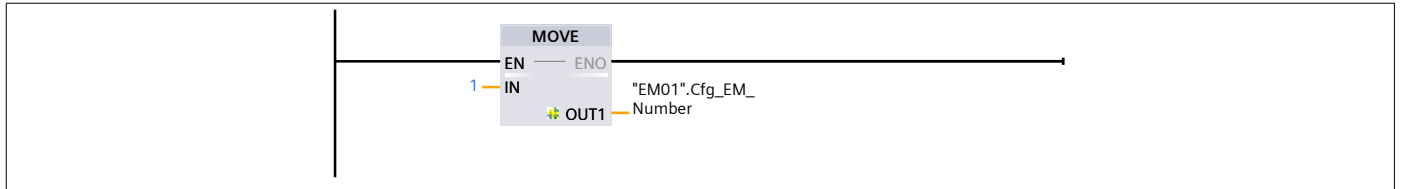
Title		Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Default value	Retain
Input			
Output			
InOut			
▼ Static			
Cfg_EM_Number	Int	0	Non-retain
Par_Jog_Accel	Real	0.0	Non-retain
Par_Jog_Decel	Real	0.0	Non-retain
Par_Jog_Speed	Real	0.0	Non-retain
CM00_EM_Procedure	"EM01_CM00_Procedure"		
CM01_EMConditions	"EM01_CM01_EM-Conditions"		
CM02_1_Axis_X	"EM01_CM02_ServoAxisObject"		
CM02_2_Axis_Z	"EM01_CM02_ServoAxisObject"		
CM03_1_AxisJog_X	"EM01_CM03_ServoAxisJog"		
CM03_2_AxisJog_Z	"EM01_CM03_ServoAxisJog"		
SR03_FaultHandler	"EM01_SR03_Fault Handler"		
SR20_Initialize	"EM01_SR20_Initialize"		
SR30_Simulate	"EM01_SR30_Simulate"		
Wrk_Temp_Bit	Bool	false	Non-retain
Temp			
Constant			

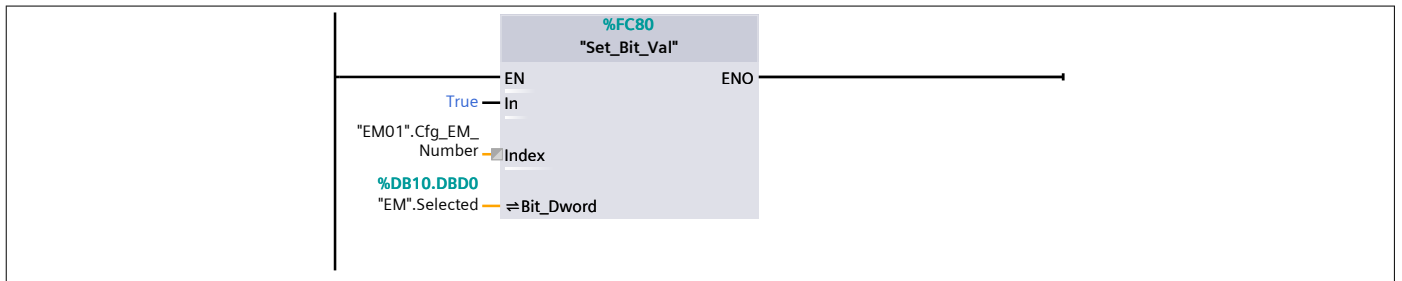
Network 1:



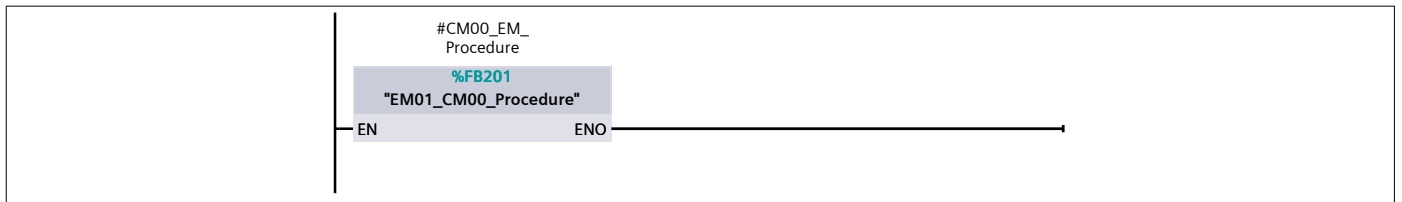
Network 2: Set EM number



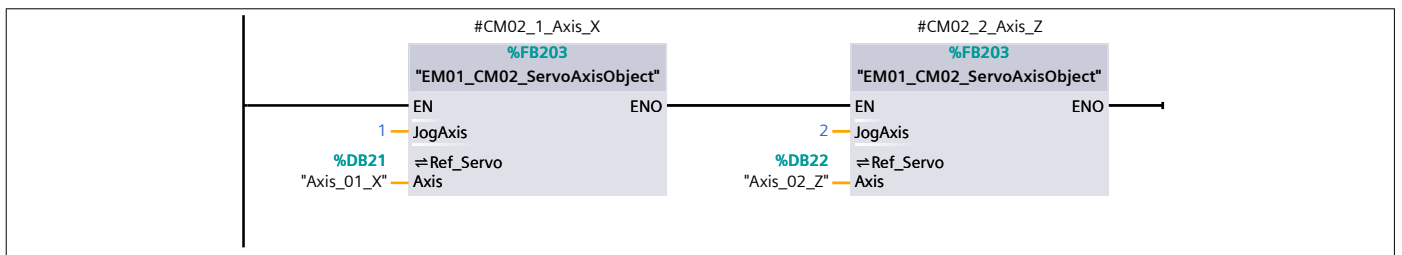
Network 3: Equipment module is selected and active



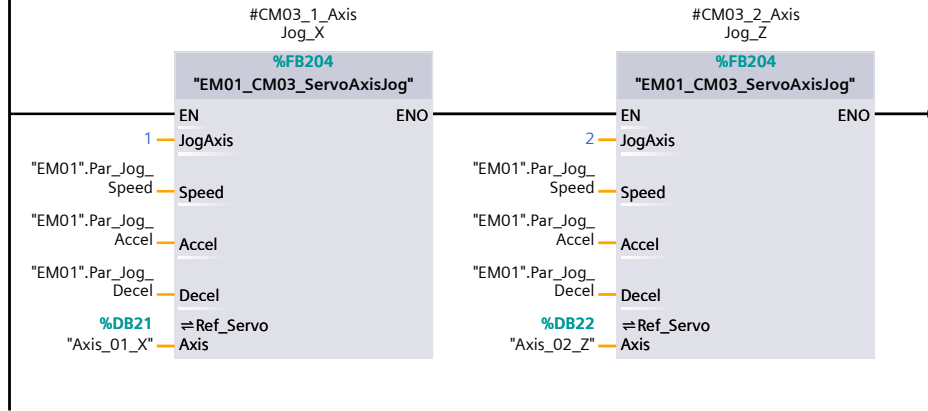
Network 4: EM Procedure



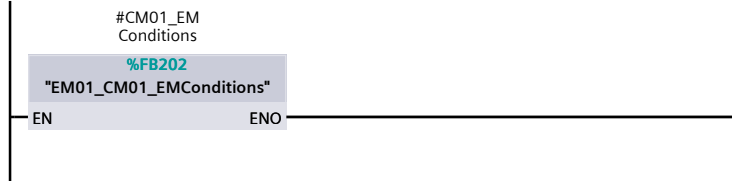
Network 5: Axis servo objects



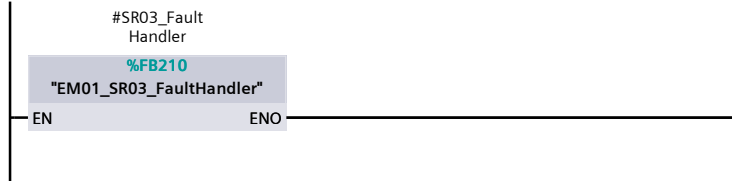
Network 6: Axis jogging



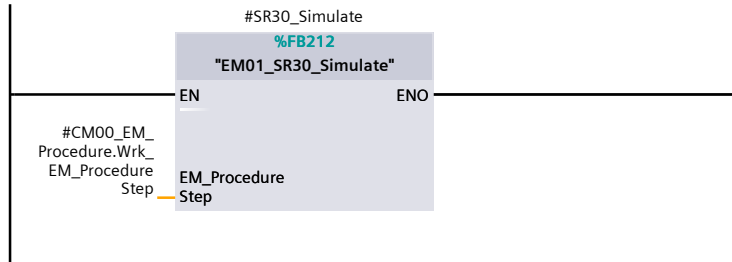
Network 7: State complete handling for EM



Network 8: Error handling



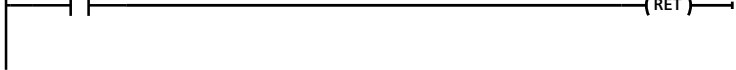
Network 9: Simulation



Network 10:

%M1.2
"AlwaysTRUE"

RLO
(RET)



PackML_2Axis1EM [CPU 1515T-2 PN] / Program blocks / EM01_AxisXZ

EM01_CM00_Procedure [FB201]

EM01_CM00_Procedure Properties

General

Name	EM01_CM00_Procedure	Number	201	Type	FB
Language	LAD	Numbering	Manual		

Information

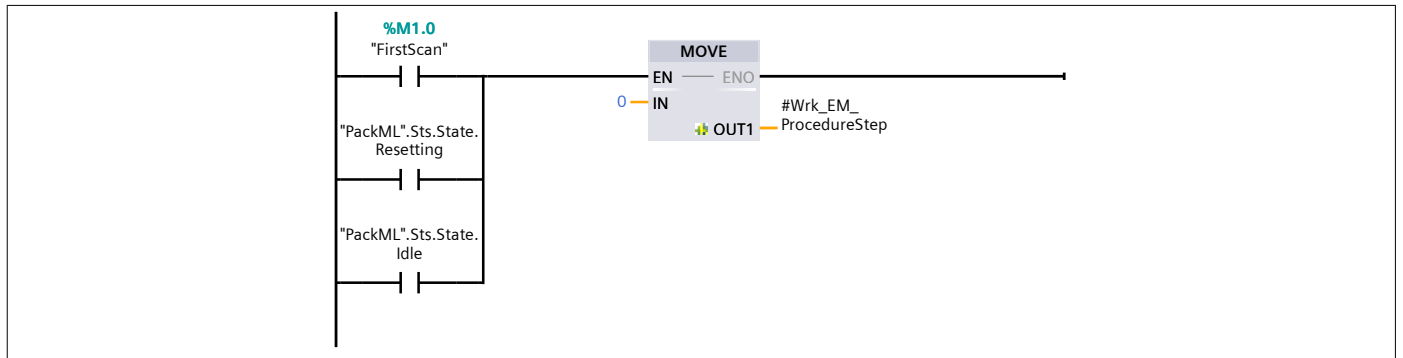
Title	EM Procedure Sequence	Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Default value	Retain
Input			
Output			
InOut			
▼ Static			
ErrorID	Word	16#0	Non-retain
Sts_Err	Int	0	Non-retain
Wrk_EM_ProcedureStep	DInt	0	Non-retain
Wrk_EM_ProcedureNoStepsActive	Bool	false	Non-retain
Wrk_EM_ProcedureDone	Bool	false	Non-retain
Wrk_EM_ProcedureFault	Bool	false	Non-retain
Wrk_MC_Move1_1_X	MC_MOVERELATIVE		
Wrk_MC_Move1_2_Z	MC_MOVERELATIVE		
Wrk_MC_Move2_2_Z	MC_MOVEABSOLUTE		
Wrk_MC_Move2_1_X	MC_MOVEABSOLUTE		
Wrk_Axis_X_Accel	Real	0.0	Non-retain
Wrk_Axis_X_Decel	Real	0.0	Non-retain
Wrk_Axis_Z_Accel	Real	0.0	Non-retain
Wrk_Axis_Z_Decel	Real	0.0	Non-retain
Wrk_TempReal	Real	0.0	Non-retain
MC_Move1_X_Done	Bool	false	Non-retain
MC_Move1_X_Busy	Bool	false	Non-retain
MC_Move1_X_CommandAborted	Bool	false	Non-retain
MC_Move1_X_Error	Bool	false	Non-retain
MC_Move1_X_ErrorID	Word	16#0	Non-retain
MC_Move1_Z_Done	Bool	false	Non-retain
MC_Move1_Z_Busy	Bool	false	Non-retain
MC_Move1_Z_CommandAborted	Bool	false	Non-retain
MC_Move1_Z_Error	Bool	false	Non-retain
MC_Move1_Z_ErrorID	Word	16#0	Non-retain
MC_Move2_X_Done	Bool	false	Non-retain
MC_Move2_X_Busy	Bool	false	Non-retain
MC_Move2_X_CommandAborted	Bool	false	Non-retain
MC_Move2_X_Error	Bool	false	Non-retain
MC_Move2_X_ErrorID	Word	16#0	Non-retain

Name	Data type	Default value	Retain
MC_Move2_Z_Done	Bool	false	Non-retain
MC_Move2_Z_CommandAborted	Bool	false	Non-retain
MC_Move2_Z_Error	Bool	false	Non-retain
MC_Move2_Z_Busy	Bool	false	Non-retain
MC_Move2_Z_ErrorID	Word	16#0	Non-retain
Wrk_Trans_MoveErr	Bool	false	Non-retain
Temp			
Constant			

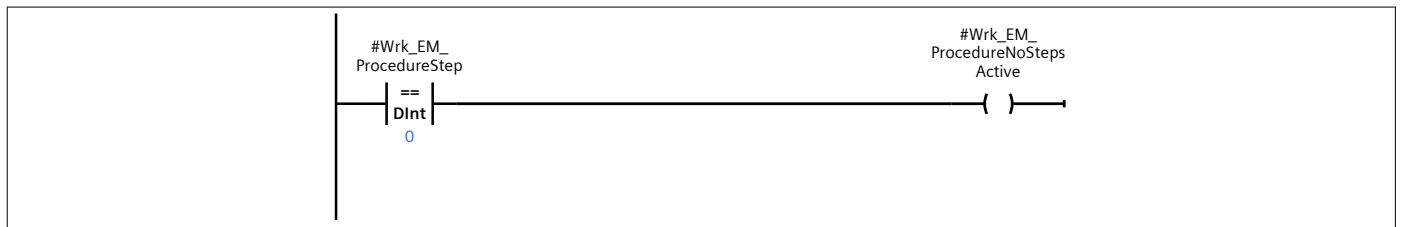
Network 1: Reset step number

First scan or resetting or idle - clear all steps



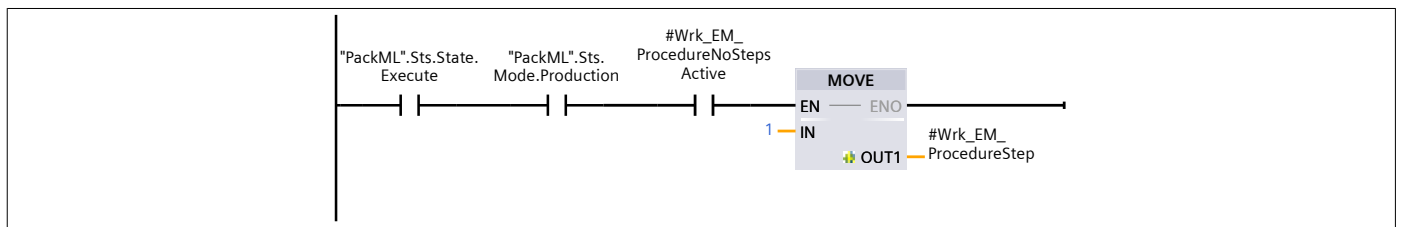
Network 2: Indication that all steps reset

Used by RESETTING state and initial execute step



Network 3: EXECUTE -

If no steps active go to step 1



Network 4:

```

0001 IF #Wrk_EM_ProcedureStep = 1 THEN
0002     #Wrk_TempReal := "HMI_Data".HMI_I_XMoveAccelDecel / 100.0;

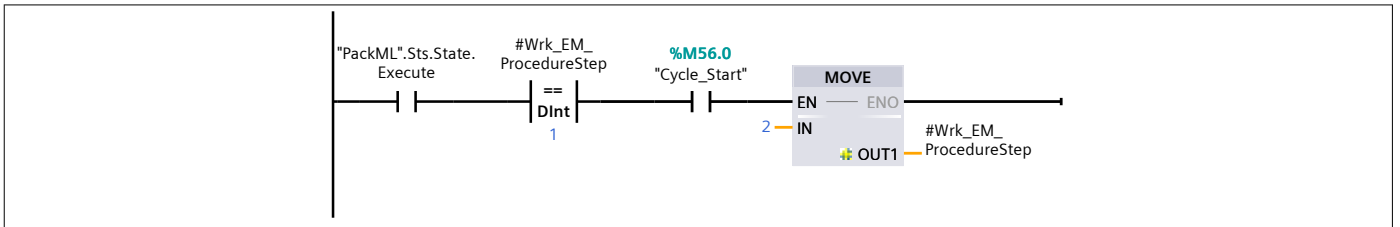
```

```

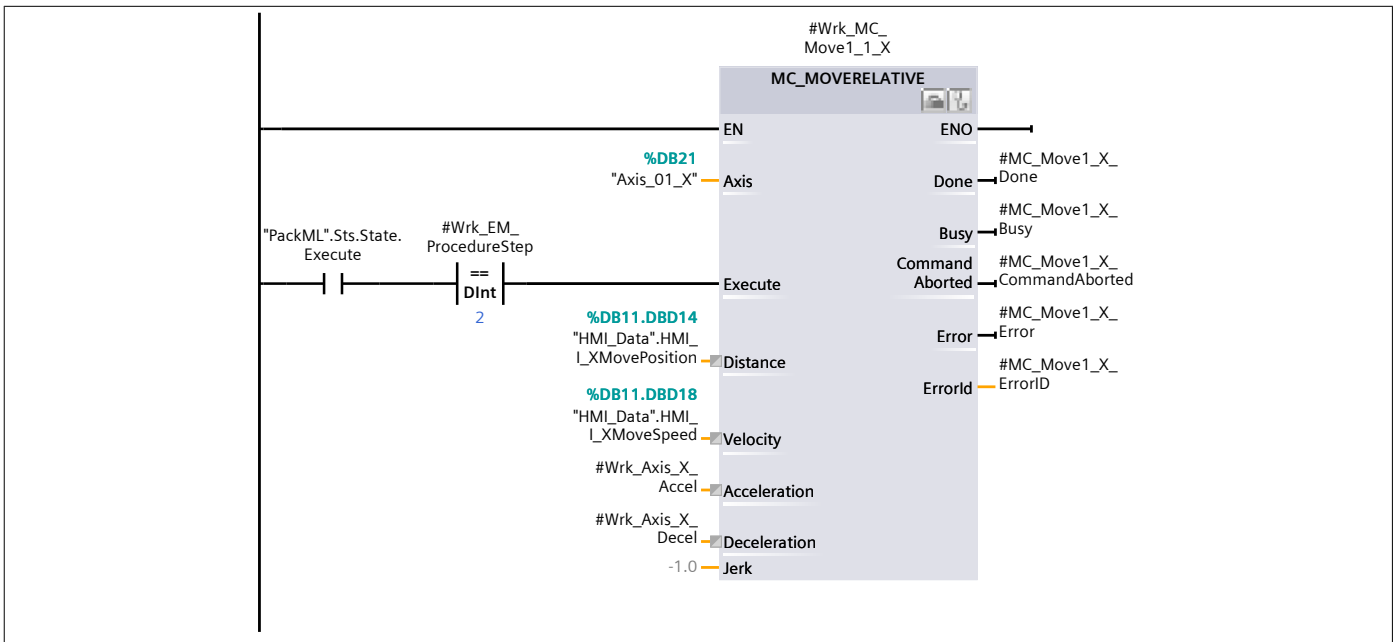
0003   #Wrk_Axis_X_Accel := #Wrk_TempReal * "Axis_01_X".DynamicLimits.MaxAccelera-
      tion;
0004   #Wrk_Axis_X_Decel := #Wrk_TempReal * "Axis_01_X".DynamicLimits.MaxDecelera-
      tion;
0005   #Wrk_TempReal := "HMI_Data".HMI_I_ZMoveAccelDecel / 100.0;
0006   #Wrk_Axis_Z_Accel := #Wrk_TempReal * "Axis_02_Z".DynamicLimits.MaxAccelera-
      tion;
0007   #Wrk_Axis_Z_Decel := #Wrk_TempReal * "Axis_02_Z".DynamicLimits.MaxDecelera-
      tion;
0008 END_IF;

```

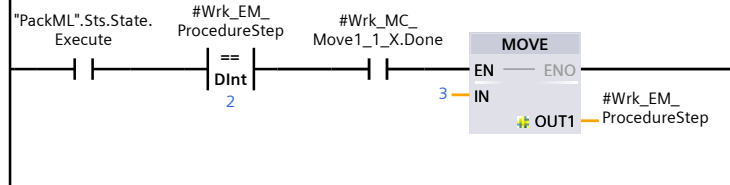
Network 5: EM Procedure Step 1 - Wait for Cycle_Start signal



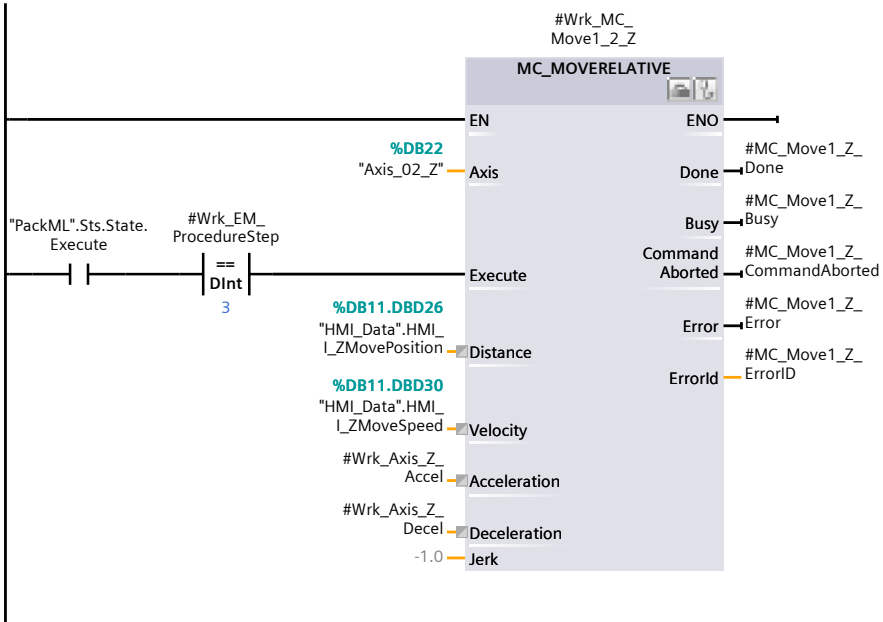
Network 6: EM Procedure Step 2 - X +move



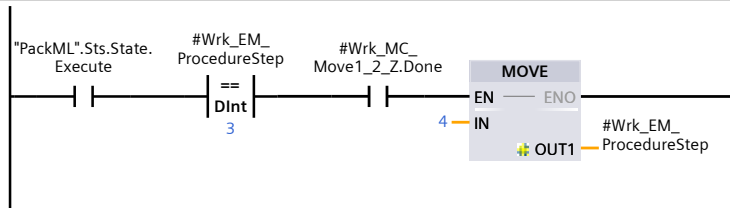
Network 7: Check for move done to advance to next step



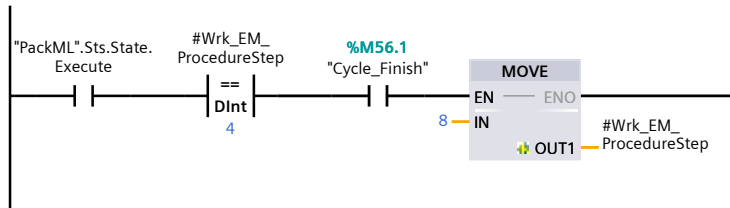
Network 8: EM Procedure Step 3 - Z + move



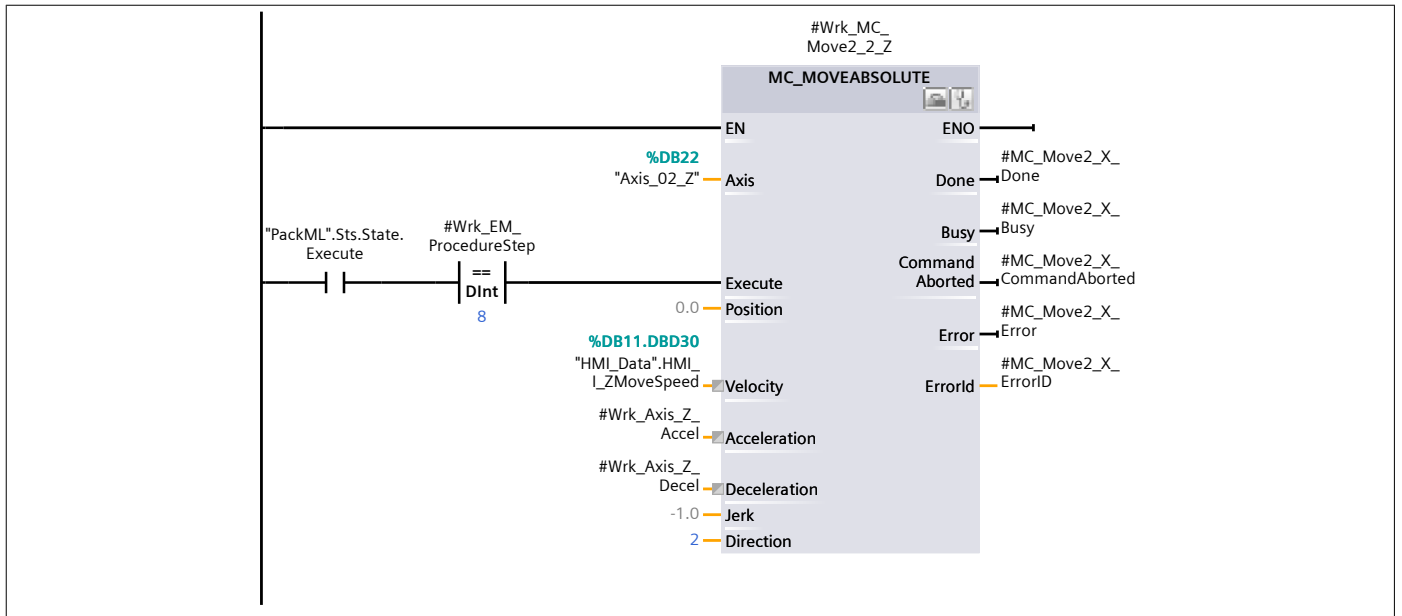
Network 9: Check for move done to advance to next step



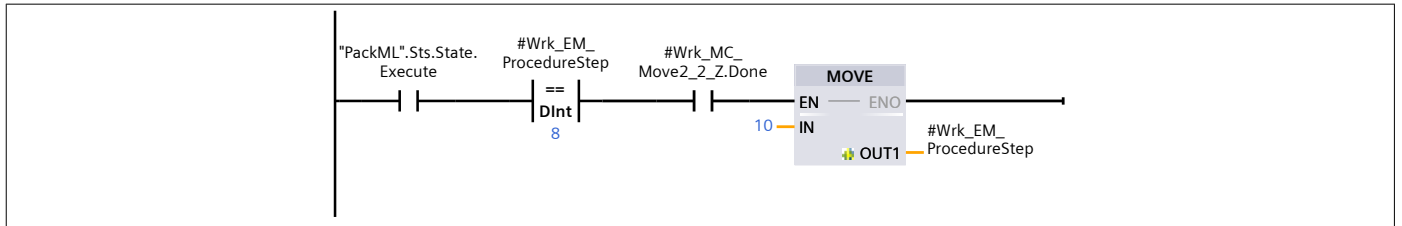
Network 10: EM Procedure Step 4 - Wait for Cycle_Finish



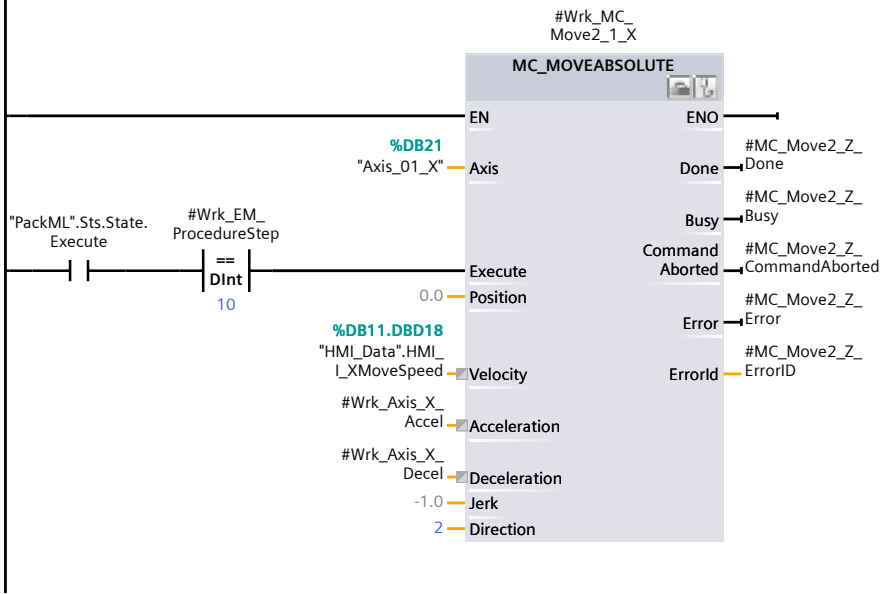
Network 11: EM Procedure Step 8 - Move Z back to starting point (home)



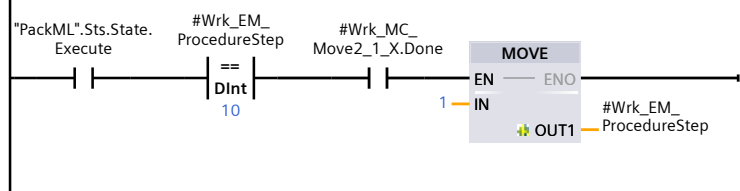
Network 12: Check for move done to advance to next step



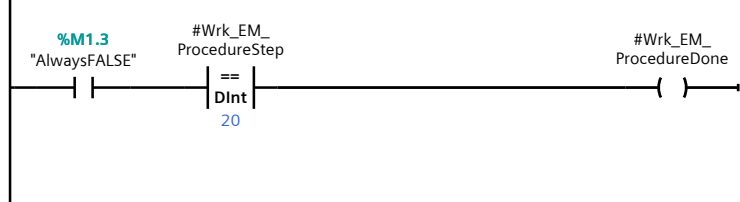
Network 13: EM Procedure Step 10 - X back to starting position (home)



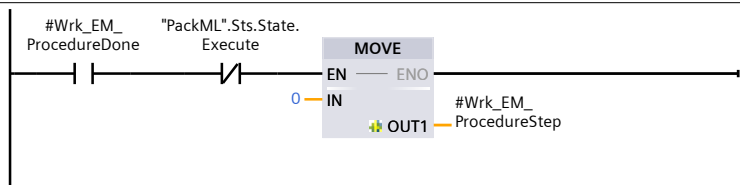
Network 14: Check for move done to advance to next step - back to start



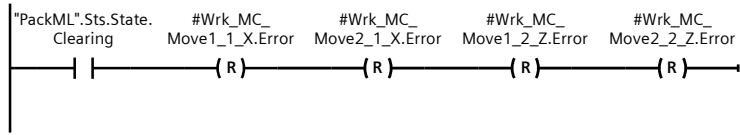
Network 15: Last step - set done indication. Only used if last step finishes Execute state



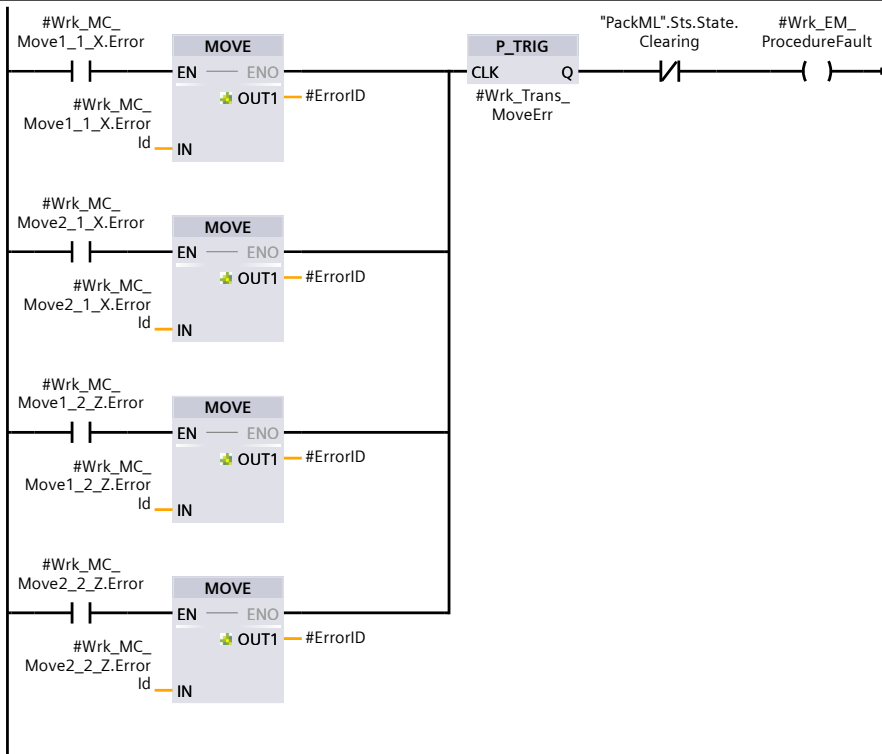
Network 16: When done, wait for out of execute step, then set step back to zero so can restart without resetting



Network 17: Clearing state resets all motion errors



Network 18: Motion block errors for X Axis



PackML_2Axis1EM [CPU 1515T-2 PN] / Program blocks / EM01_AxisXZ EM01_CM02_ServoAxisObject [FB203]

EM01_CM02_ServoAxisObject Properties

General

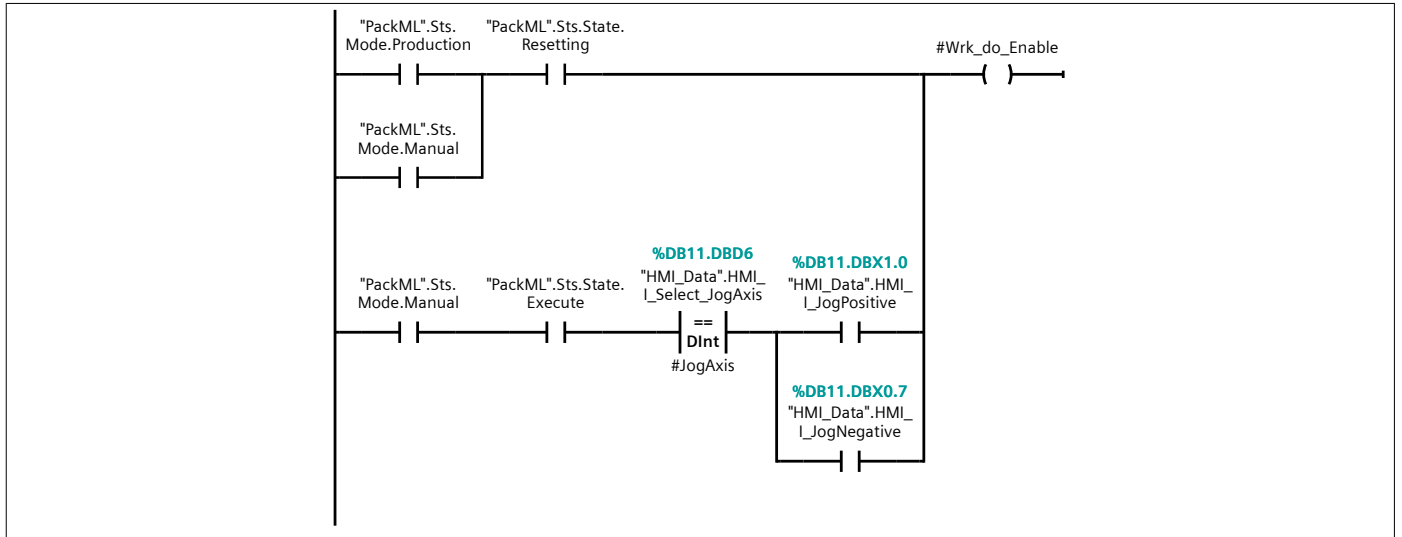
Name	EM01_CM02_ServoAxisObject	Number	203	Type	FB
Language	LAD	Numbering	Manual		

Information

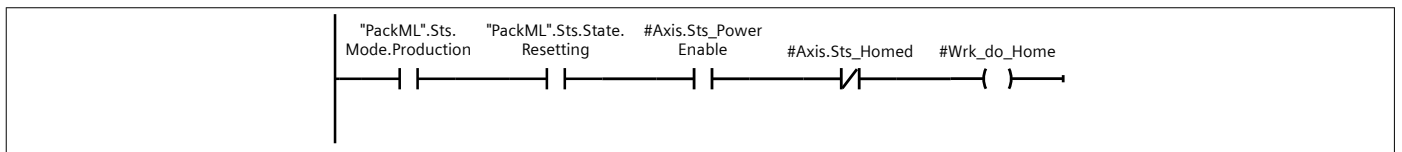
Title	Servo Axis object for X axis	Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Default value	Retain
▼ Input			
JogAxis	DInt	0	Non-retain
Output			
▼ InOut			
Ref_ServoAxis	TO_PositioningAxis		
▼ Static			
Axis	"Axis_ObjectPOS"		
Wrk_DisableDelay	TON_TIME		Non-retain
Wrk_DisableDelay_IN	Bool	false	Non-retain
Wrk_do_Enable	Bool	false	Non-retain
Wrk_do_Home	Bool	false	Non-retain
Wrk_do_Stop	Bool	false	Non-retain
Wrk_do_Disable	Bool	false	Non-retain
Wrk_Temp_Bit	Bool	false	Non-retain
Temp			
Constant			

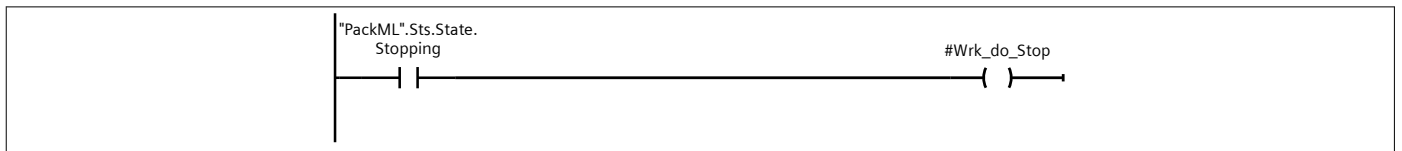
Network 1: Enable logic for production and manual (jogging)



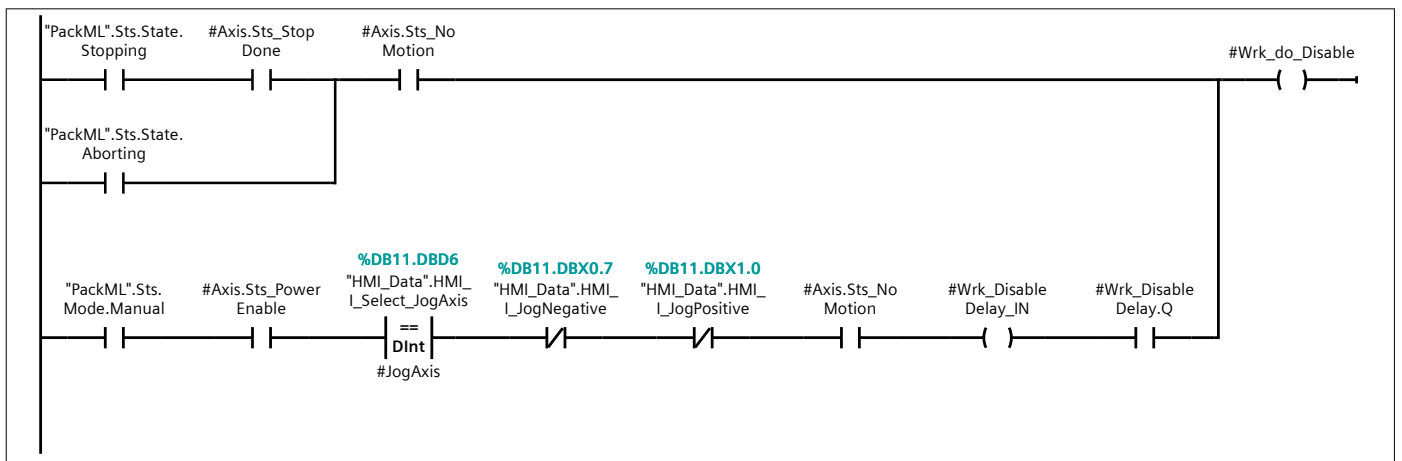
Network 2: Homing logic



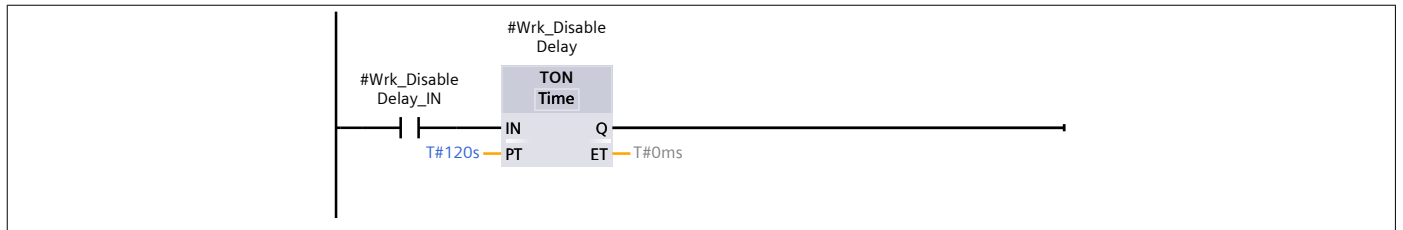
Network 3: Stop logic



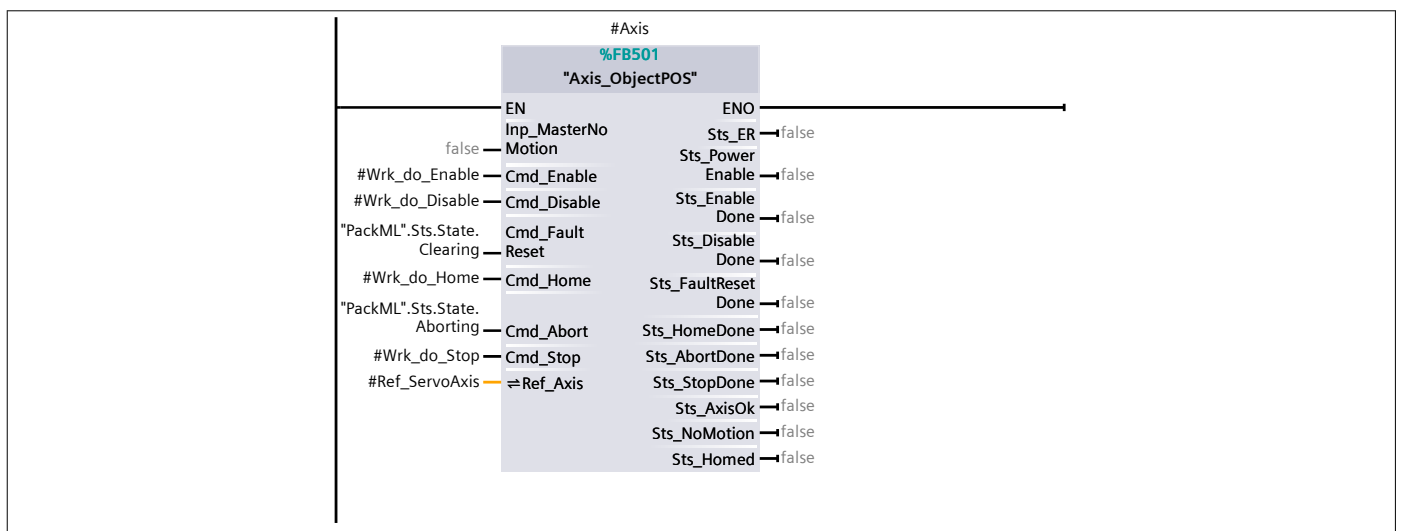
Network 4: Do_Disable logic



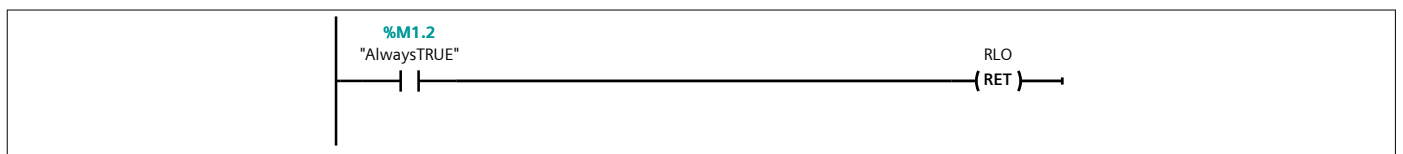
Network 5: Disable delay timer for manual mode - if no jogging for 2 min, disable axis



Network 6:



Network 7: END: Update the ENO Output. (DO NOT REMOVE. Must be last rung)



PackML_2Axis1EM [CPU 1515T-2 PN] / Program blocks / EM01_AxisXZ

EM01_CM03_ServoAxisJog [FB204]

EM01_CM03_ServoAxisJog Properties

General

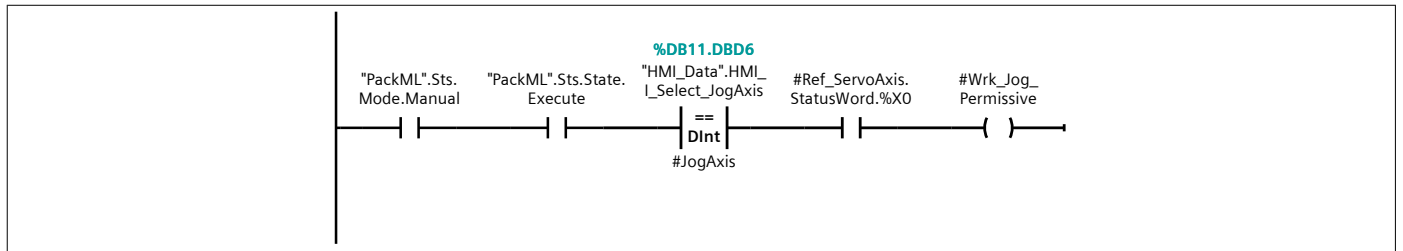
Name	EM01_CM03_ServoAxis-Jog	Number	204	Type	FB
Language	LAD	Numbering	Manual		

Information

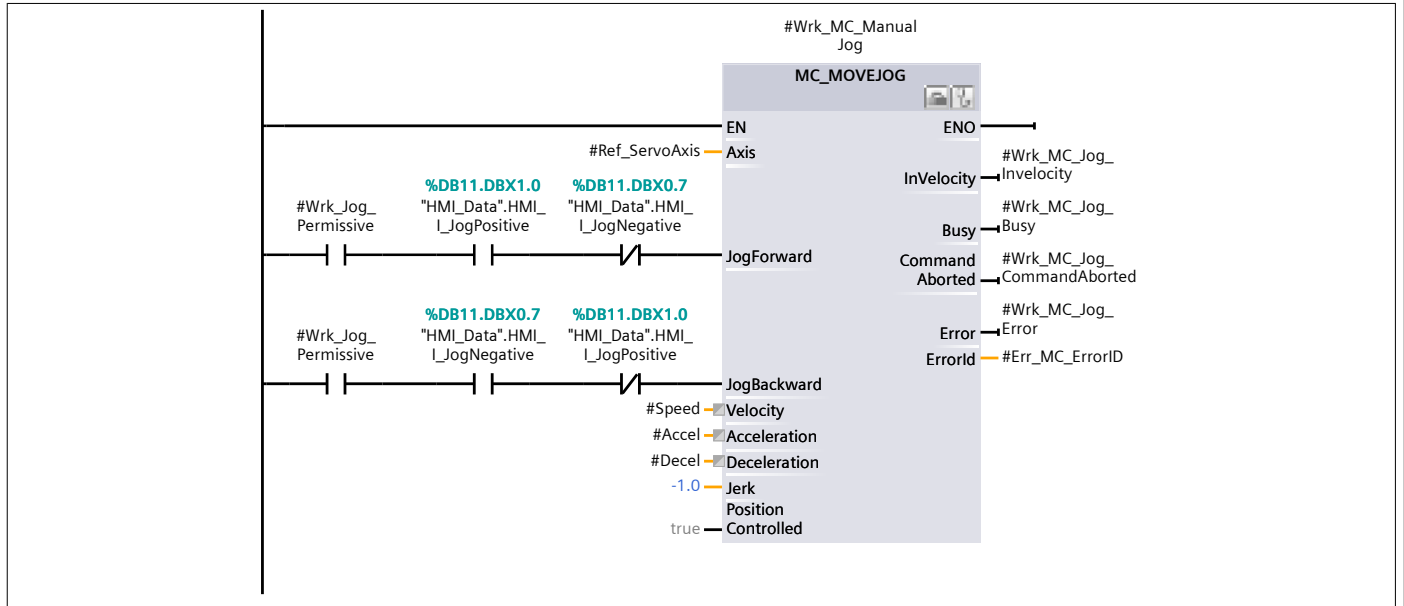
Title	Jog servo axis in manual mode	Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Default value	Retain
▼ Input			
JogAxis	DInt	0	Non-retain
Speed	Real	0.0	Non-retain
Accel	Real	0.0	Non-retain
Decel	Real	0.0	Non-retain
Output			
▼ InOut			
Ref_ServoAxis	TO_PositioningAxis		
▼ Static			
Sts_JogFault	Bool	false	Non-retain
Err_MC_ErrorID	Word	16#0	Non-retain
Wrk_Jog_Permissive	Bool	false	Non-retain
Wrk_MC_ManualJog	MC_MOVEJOG		
Wrk_MC_Jog_Invelocity	Bool	false	Non-retain
Wrk_MC_Jog_Busy	Bool	false	Non-retain
Wrk_MC_Jog_CommandAborted	Bool	false	Non-retain
Wrk_MC_Jog_Error	Bool	false	Non-retain
Temp			
Constant			

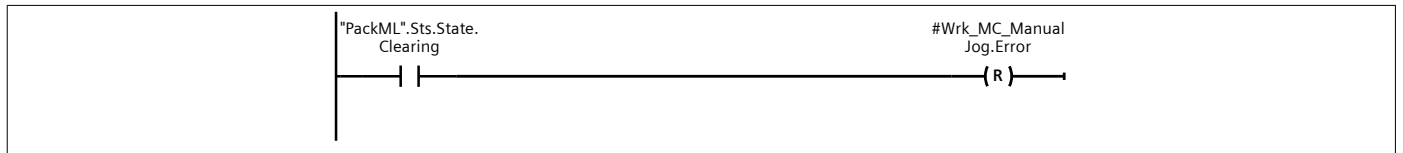
Network 2: RELEASE JOG FUNCTION (-> SELECT EM NUMBER VIA HMI)



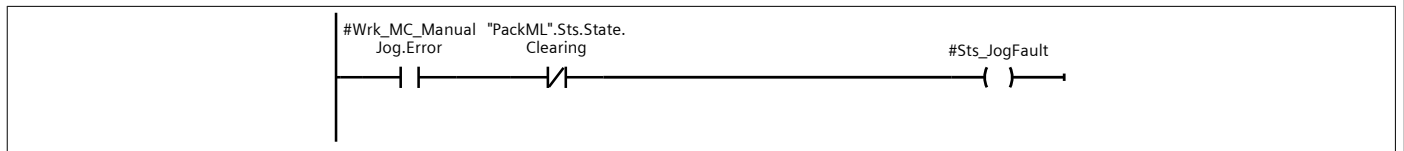
Network 3: JOG SERVO AXIS



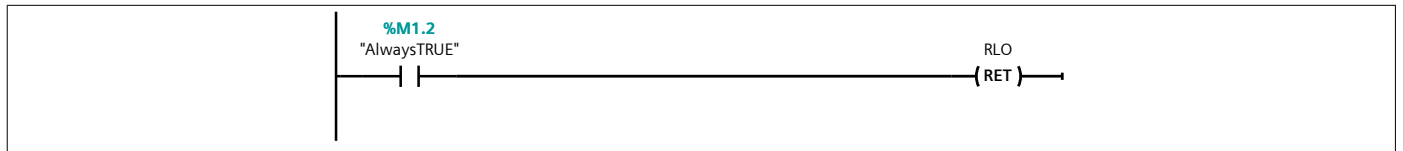
Network 4: Fault Reset



Network 5:



Network 6: END: Update the ENO Output. (DO NOT REMOVE. Must be last rung)



PackML_2Axis1EM [CPU 1515T-2 PN] / Program blocks / EM01_AxisXZ

EM01_SR20_Initialize [FB211]

EM01_SR20_Initialize Properties

General

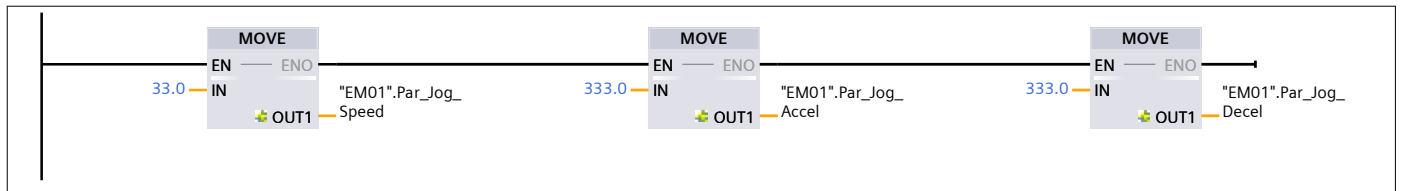
Name	EM01_SR20_Initialize	Number	211	Type	FB
Language	LAD	Numbering	Manual		

Information

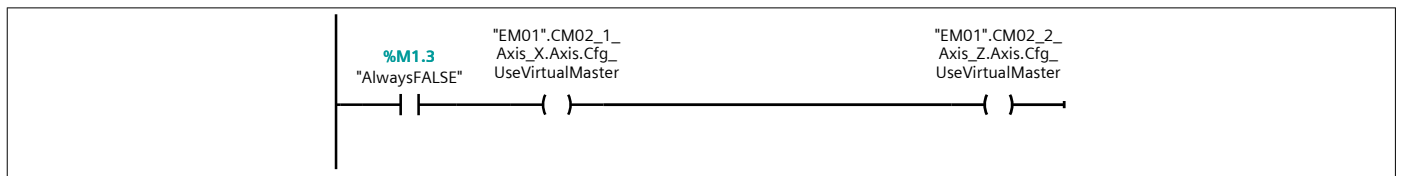
Title	Initialization for EM	Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Default value	Retain
Input			
Output			
InOut			
▼ Static			
Temp_Dint	DInt	0	Non-retain
Temp			
Constant			

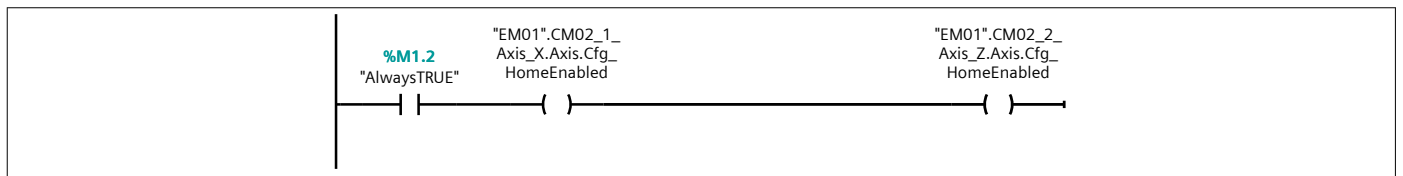
Network 2:



Network 3: Both axes do not use a virtual master



Network 4: Axes have home switch



PackML_2Axis1EM [CPU 1515T-2 PN] / Program blocks / EM01_AxisXZ

EM01 [DB200]

EM01 Properties

General

Name	EM01	Number	200	Type	DB
Language	DB	Numbering	Manual		

Information

Title		Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Start value	Retain
Input			
Output			
InOut			
▼ Static			
Cfg_EM_Number	Int	0	False
Par_Jog_Accel	Real	0.0	False
Par_Jog_Decel	Real	0.0	False
Par_Jog_Speed	Real	0.0	False
CM00_EM_Procedure	"EM01_CM00_Procedure"		False
CM01_EMConditions	"EM01_CM01_EMConditions"		False
CM02_1_Axis_X	"EM01_CM02_ServoAxisObject"		False
CM02_2_Axis_Z	"EM01_CM02_ServoAxisObject"		False
CM03_1_AxisJog_X	"EM01_CM03_ServoAxisJog"		False
CM03_2_AxisJog_Z	"EM01_CM03_ServoAxisJog"		False
SR03_FaultHandler	"EM01_SR03_FaultHandler"		False
SR20_Initialize	"EM01_SR20_Initialize"		False
SR30_Simulate	"EM01_SR30_Simulate"		False
Wrk_Temp_Bit	Bool	false	False

PackML_2Axis1EM [CPU 1515T-2 PN] / Program blocks / EM01_AxisXZ

EM01_SR30_Simulate [FB212]

EM01_SR30_Simulate Properties

General

Name	EM01_SR30_Simulate	Number	212	Type	FB
Language	LAD	Numbering	Manual		

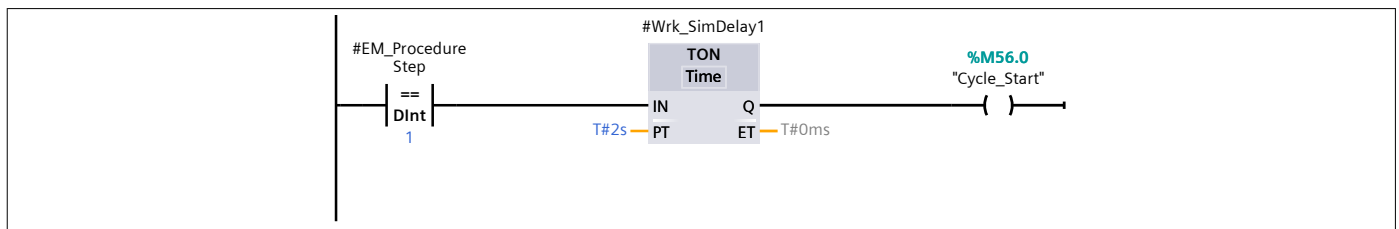
Information

Title	Simulate Cycle_Start and Cycle_Finish for EM procedure	Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Default value	Retain
▼ Input			
EM_ProcedureStep	DInt	0	Non-retain
Output			
InOut			
▼ Static			
Wrk_SimDelay1	TON_TIME		Non-retain
Wrk_SimDelay2	TON_TIME		Non-retain
Act_Pass	Bool	false	Non-retain
Wrk_SwitchPresnt	Bool	false	Non-retain
Wrk_AtHome	Bool	false	Non-retain
Temp			
Constant			

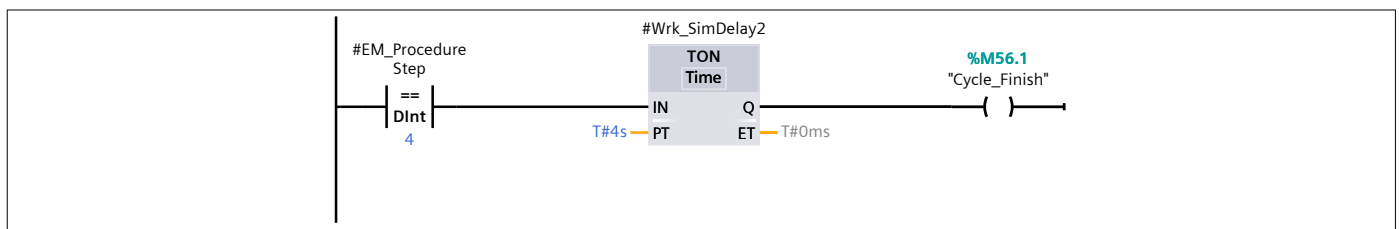
Network 1: Cycle_Start simulation

Turn on when procedure step 1 for 2 secs



Network 2: Cycle_Finish simulation

Turn on when procedure step 4 for 4 secs



PackML_2Axis1EM [CPU 1515T-2 PN] / Program blocks / EM01_AxisXZ

EM01_CM01_EMConditions [FB202]

EM01_CM01_EMConditions Properties

General

Name	EM01_CM01_EMCondi- tions	Number	202	Type	FB
Language	LAD	Numbering	Manual		

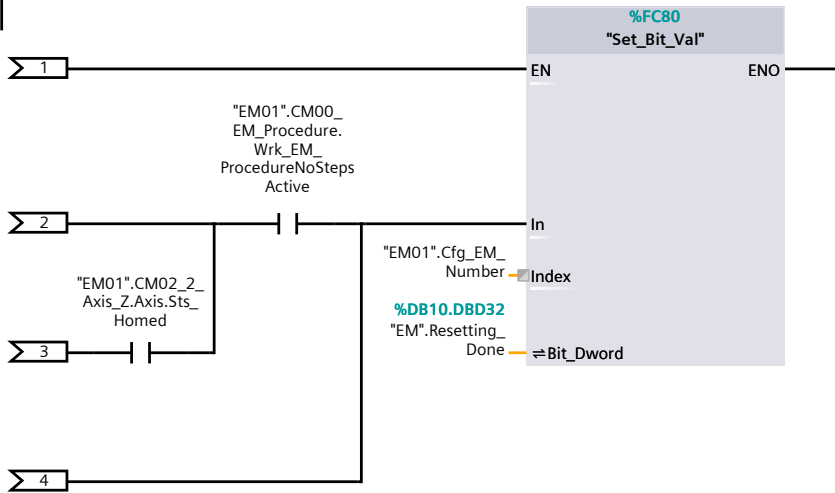
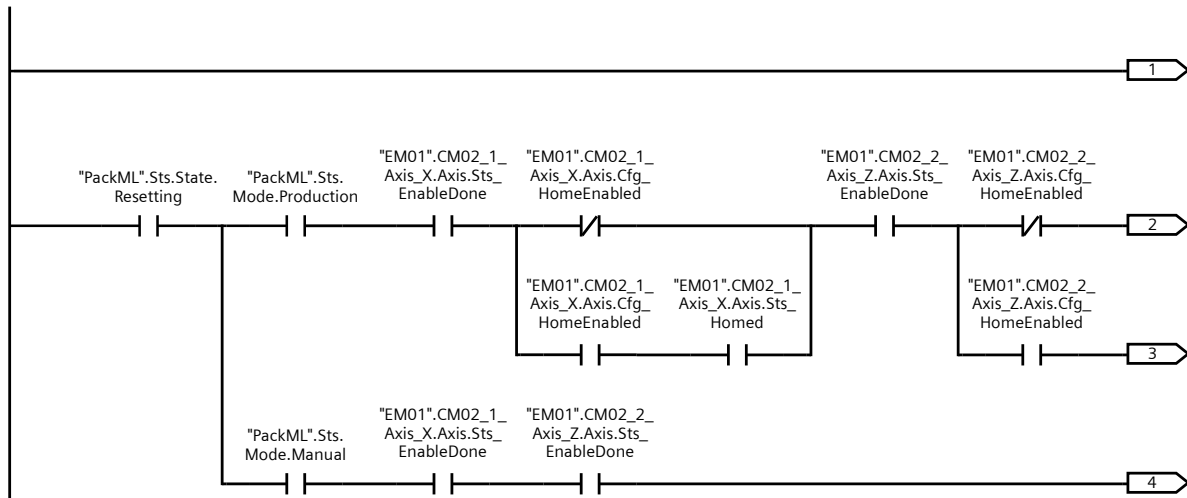
Information

Title		Author		Comment	
Family		Version	0.1	User-defined ID	

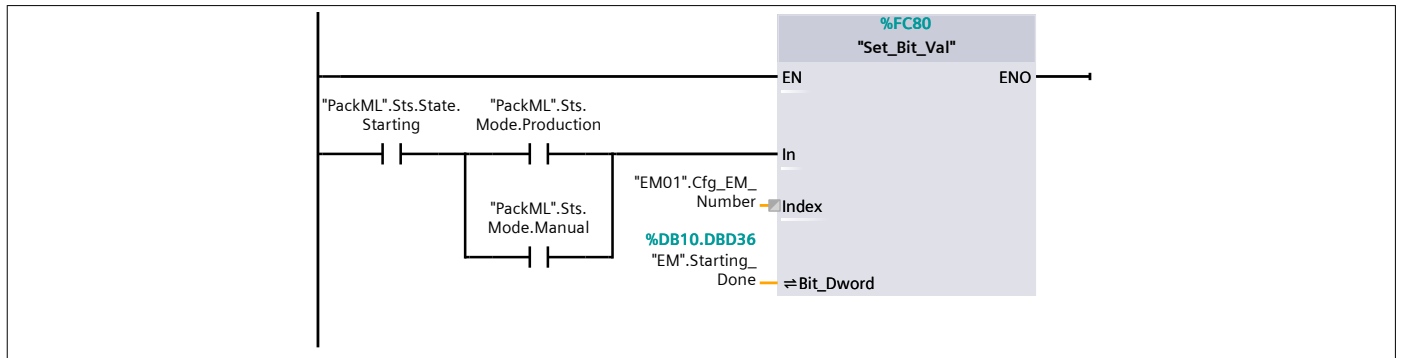
Name	Data type	Default value	Retain
Input			
Output			
InOut			
▼ Static			
Wrk_Temp	DInt	0	Non-retain
Temp			
Constant			

Network 1: Handles EM state complete conditions

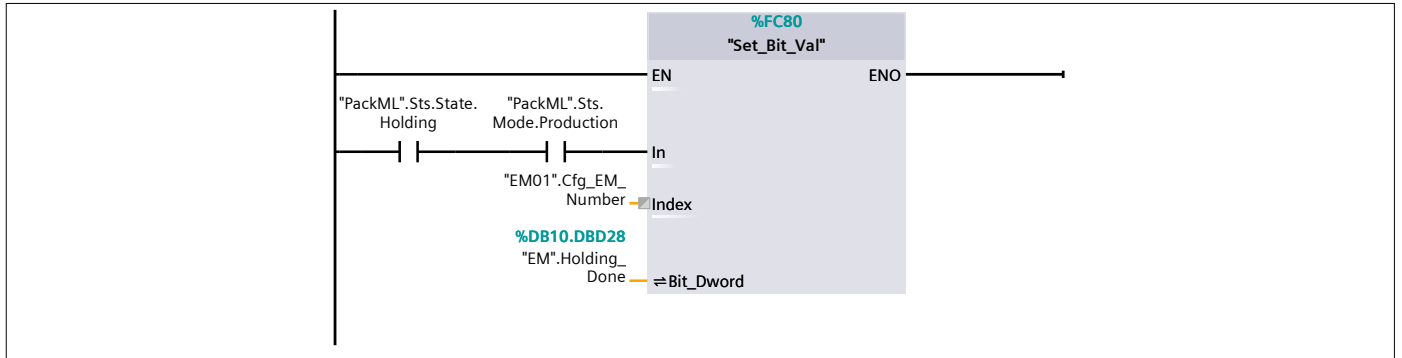
Network 2: Resetting state



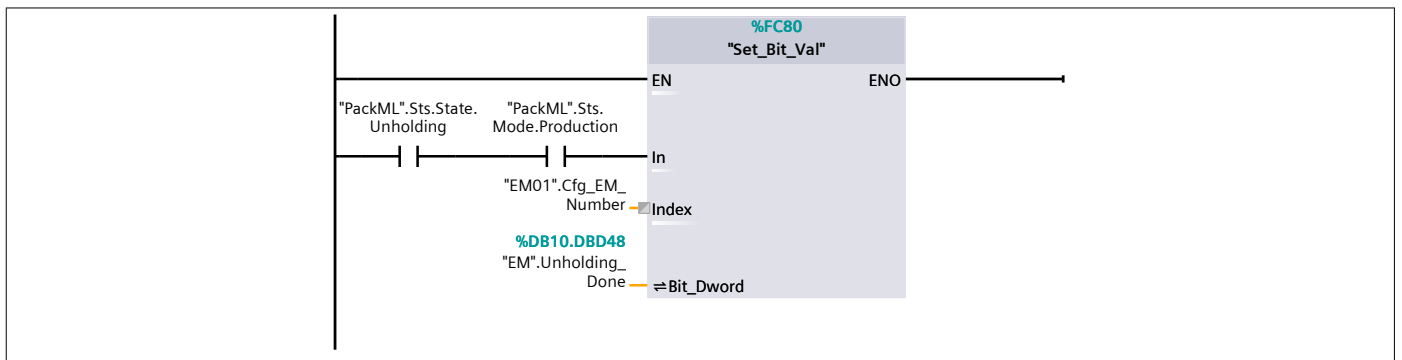
Network 3: Starting state



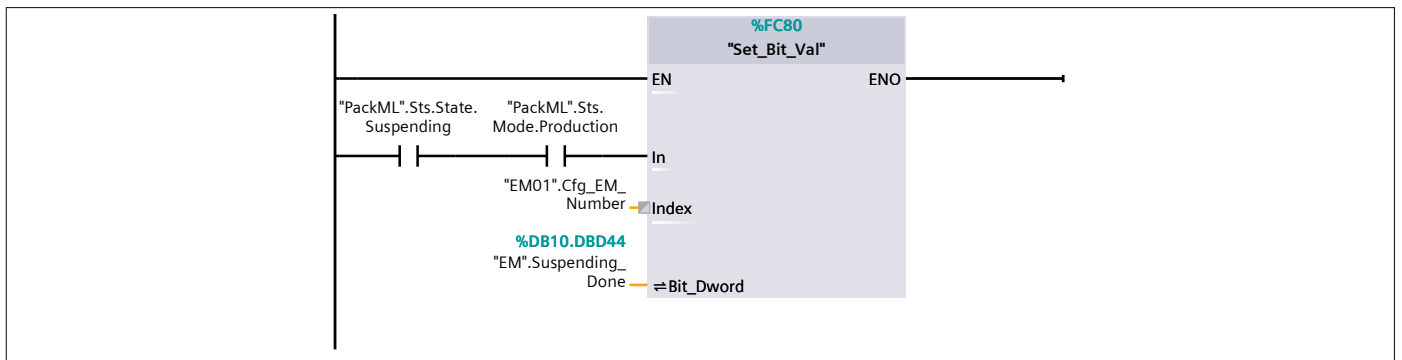
Network 4: Holding state



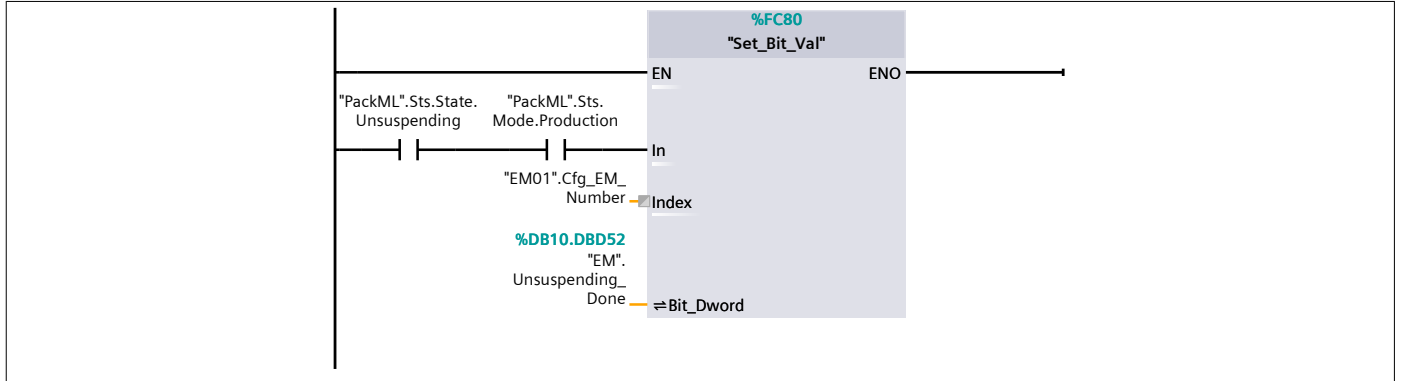
Network 5: Unholding



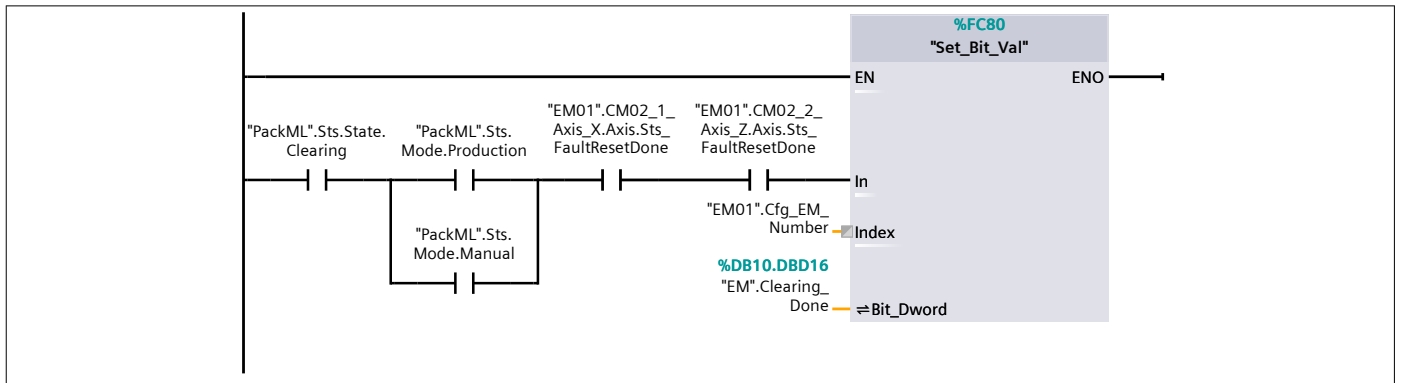
Network 6: Suspending state



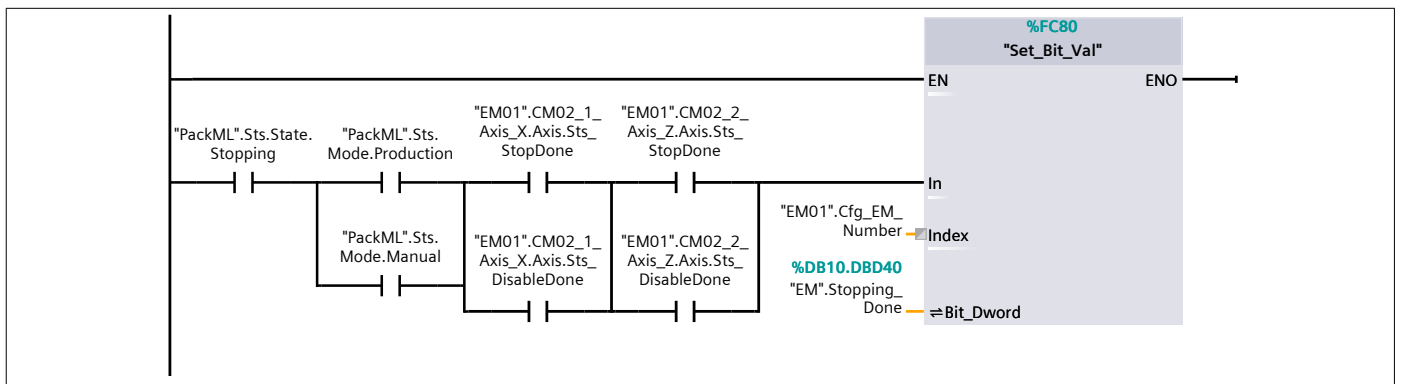
Network 7: Unsuspending



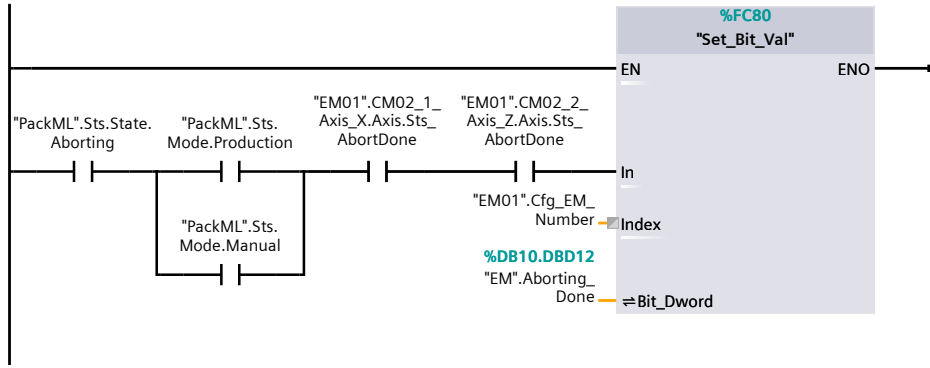
Network 8: Clearing state



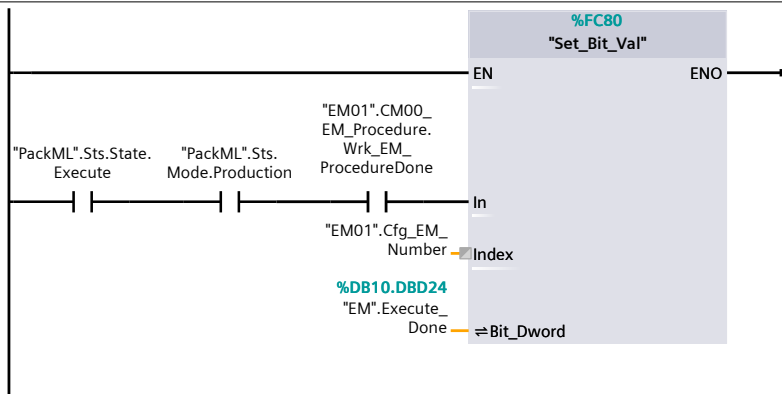
Network 9: Stopping state



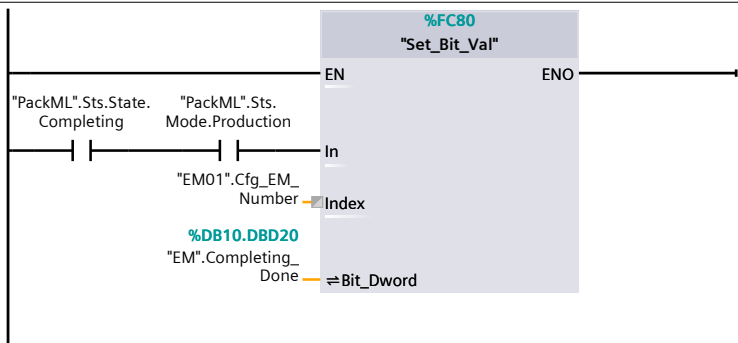
Network 10: Aborting state



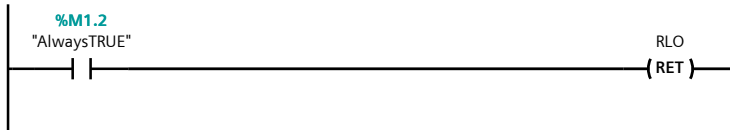
Network 11: Execute state



Network 12: Completing State



Network 13: Update the ENO output. Must be last rung.



PackML_2Axis1EM [CPU 1515T-2 PN] / Program blocks / EM01_AxisXZ

EM01_SR03_FaultHandler [FB210]

EM01_SR03_FaultHandler Properties

General

Name	EM01_SR03_FaultHandler	Number	210	Type	FB
Language	LAD	Numbering	Manual		

Information

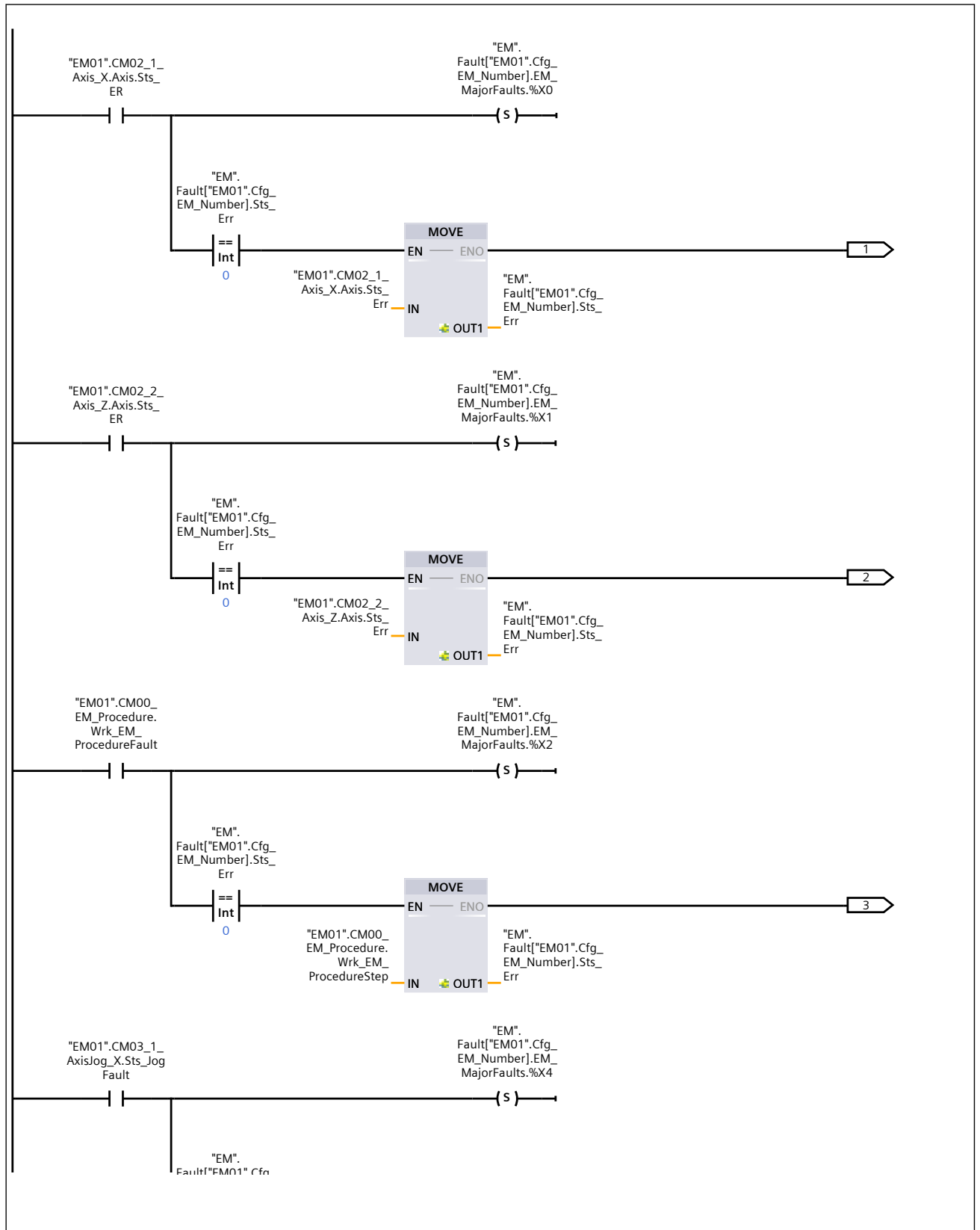
Title		Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Default value	Retain
Input			
Output			
InOut			
▼ Static			
Wrk_Temp	DInt	0	Non-retain
Wrk_Temp_Bit	Bool	false	Non-retain
Temp			
Constant			

Network 2: Map axis errors, procedure motion errors, and jogging errors into bits of the EM_Major-Faults

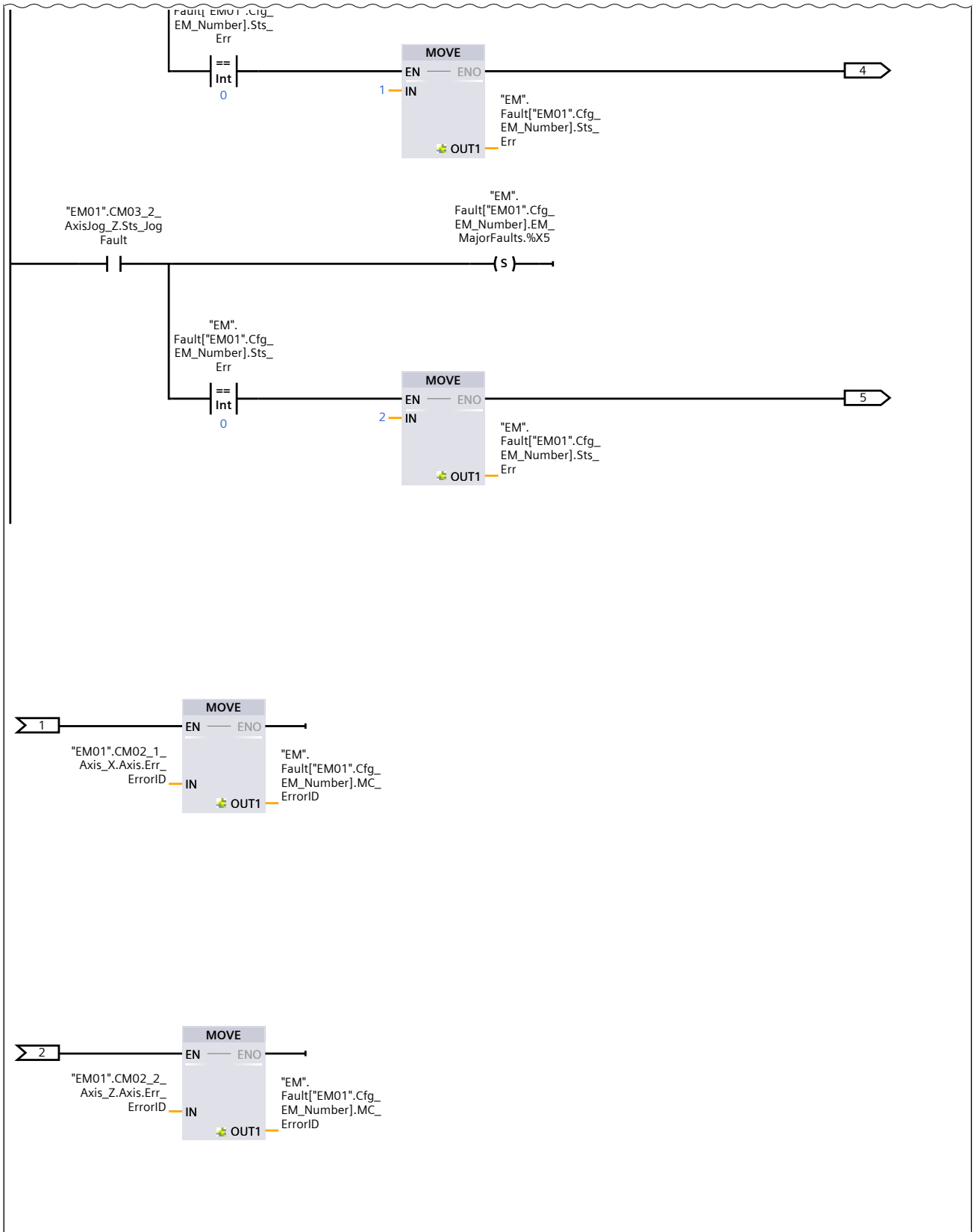
Only first error is recorded. Subsequent errors are not recorded.

Network 2: Map axis errors, procedure motion errors, and jogging errors into bits of the EM_MajorFaults (1.1 / 3.1)



Network 2: Map axis errors, procedure motion errors, and jogging errors into bits of the EM_MajorFaults (2.1 / 3.1)

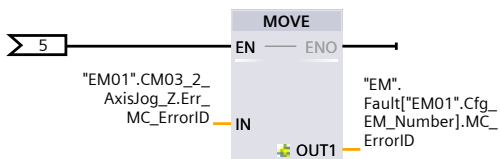
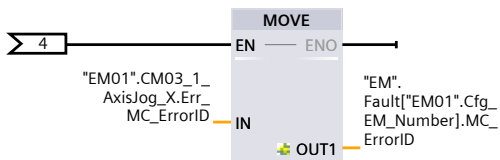
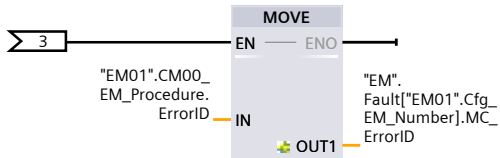
1.1 (Page32 - 2)



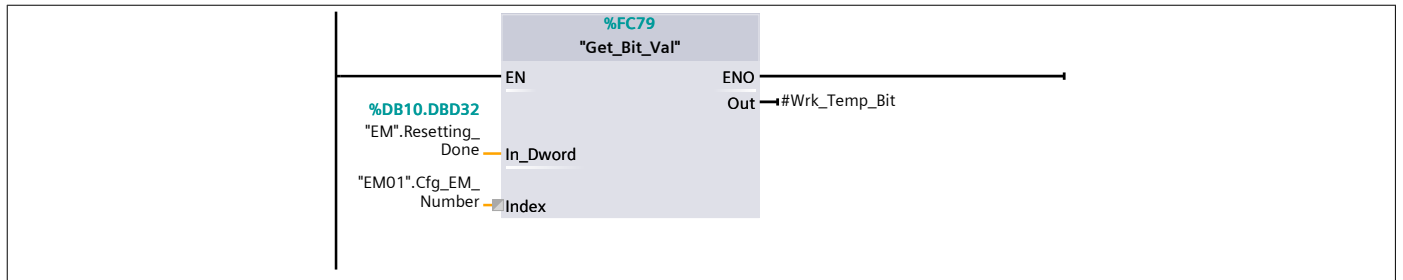
3.1 (Page32 - 4)

Network 2: Map axis errors, procedure motion errors, and jogging errors into bits of the EM_MajorFaults (3.1 / 3.1)

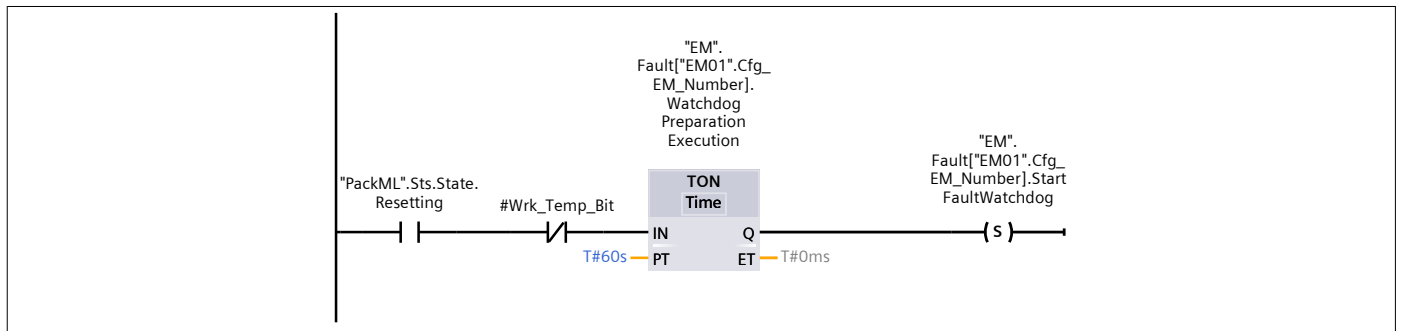
2.1 (Page32 - 3)



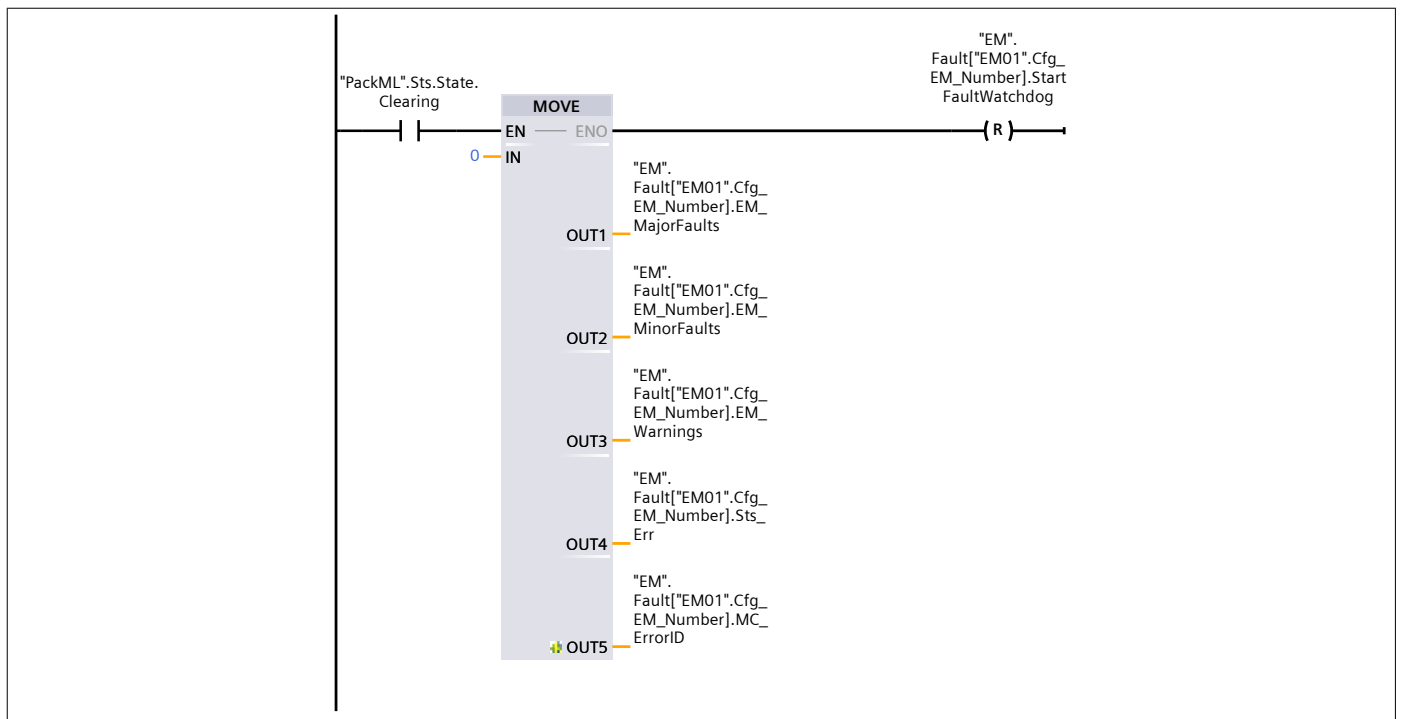
Network 3: Get resetting status for this EM



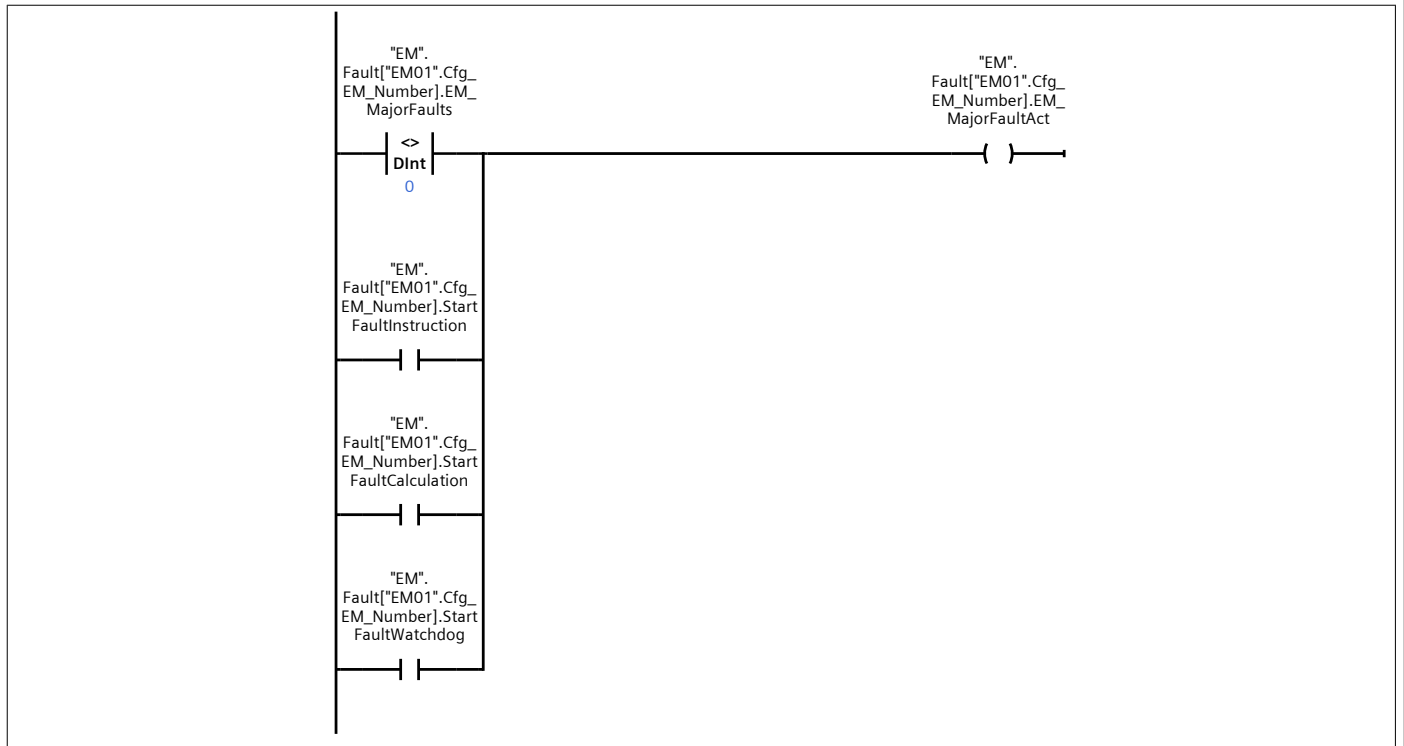
Network 4: Watchdog for resetting - Creat an error if timeout occurs



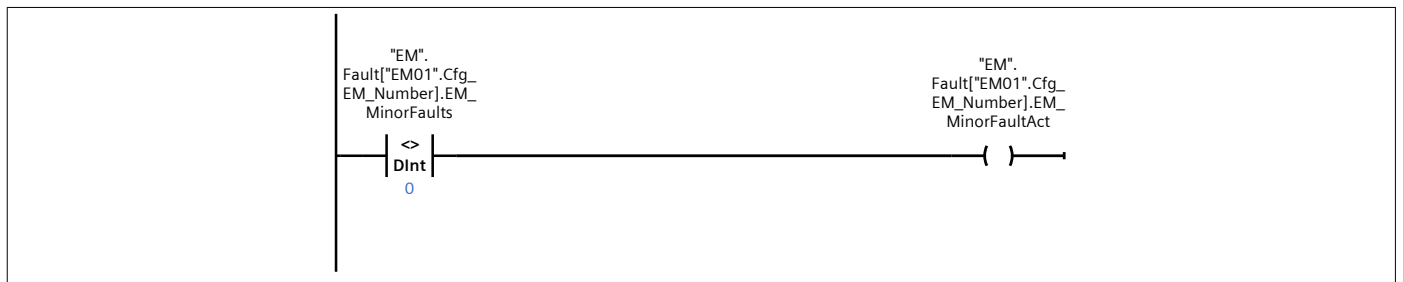
Network 5: Clear watchdog fault and instruction fault error details



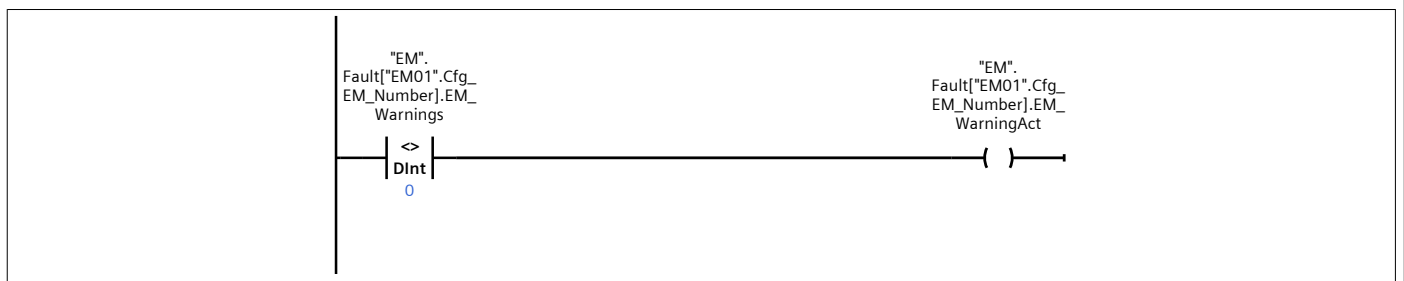
Network 6: Summary of EM faults



Network 7:



Network 8:



PackML_2Axis1EM [CPU 1515T-2 PN] / Program blocks / LPMLV30

LPMLV30_ConfigureDisabledStates [FC30101]

LPMLV30_ConfigureDisabledStates Properties

General

Name	LPMLV30_ConfigureDisa- bledStates	Number	30101	Type	FC
Language	SCL	Numbering	Automatic		

Information

Title	LPMLV30_ConfigureDisa- bledStates	Author	APC_ERLF	Comment	Support: tech.team.mo- tioncontrol@siemens.com Fax: +49 (0) 9131/98-1297
Family	OMAC	Version		User-defined ID	

Name	Data type	Default value
▼ Input		
HoldingDisable	Bool	
HeldDisable	Bool	
UnholdingDisable	Bool	
SuspendingDisable	Bool	
SuspendedDisable	Bool	
UnsuspendingDisable	Bool	
CompletingDisable	Bool	
CompleteDisable	Bool	
▼ Output		
disabledStates	DInt	
InOut		
Temp		
▼ Constant		
DISABLE_ALL_STATES	DWord	16#FFFF_FFFF
▼ Return		
LPMLV30_ConfigureDisabledStates	Void	

```

0001 //
=====
-----
0002 // SIEMENS AG
0003 // (c) Copyright 2015 All Rights Reserved
0004 //-----
-----
0005 // Library: LPMLV30
0006 // Tested with: S7-1200 with FW version V4.1, S7-1500 with FW version V1.7
0007 // Engineering: TIA Portal V13 SP1
0008 // Restrictions: ---
0009 // Requirements: S7-1200 / S7-1500
0010 // Functionality: The function generates a double integer value which represents
the state configuration
0011 // for one unit mode.

```

```

0012 //-----
0013 // Change log table:
0014 // Version Date Expert in charge Changes applied
0015 // 03.00.01 29.05.2015 RK First released version
0016 //
=====
0017 // Function: LPMLV30_ConfigureDisabledStates
0018 //
=====
0019
0020 #disabledStates := DWORD_TO_DINT(#DISABLE_ALL_STATES);
0021
0022 #disabledStates.%X0 := FALSE; // Undefined state is mandatory
0023 #disabledStates.%X1 := FALSE; // Clearing state is mandatory
0024 #disabledStates.%X2 := FALSE; // Stopped state is mandatory
0025 #disabledStates.%X3 := FALSE; // Starting state is mandatory
0026 #disabledStates.%X4 := FALSE; // Idle state is mandatory
0027 #disabledStates.%X5 := #SuspendedDisable;
0028 #disabledStates.%X6 := FALSE; // Execute state is mandatory
0029 #disabledStates.%X7 := FALSE; // Stopping state is mandatory
0030 #disabledStates.%X8 := FALSE; // Aborting state is mandatory
0031 #disabledStates.%X9 := FALSE; // Aborted state is mandatory
0032 #disabledStates.%X10 := #HoldingDisable;
0033 #disabledStates.%X11 := #HeldDisable;
0034 #disabledStates.%X12 := #UnholdingDisable;
0035 #disabledStates.%X13 := #SuspendingDisable;
0036 #disabledStates.%X14 := #UnsuspendingDisable;
0037 #disabledStates.%X15 := FALSE; // Resetting state is mandatory
0038 #disabledStates.%X16 := #CompletingDisable;
0039 #disabledStates.%X17 := #CompleteDisable;
0040
0041 //
=====
0042 // End of function: LPMLV30_ConfigureDisabledStates
0043 //
=====

```

PackML_2Axis1EM [CPU 1515T-2 PN] / Program blocks / LPMLV30

LPMLV30_ConfigureDisabledUnitModes [FC30100]

LPMLV30_ConfigureDisabledUnitModes Properties

General

Name	LPMLV30_ConfigureDisabledUnitModes	Number	30100	Type	FC
Language	SCL	Numbering	Automatic		

Information

Title	LPMLV30_ConfigureDisabledUnitModes	Author	APC_ERLF	Comment	Support: tech.team.motioncontrol@siemens.com Fax: +49 (0) 9131/98-1297
Family	OMAC	Version		User-defined ID	

Name	Data type	Default value
▼ Input		
ProductionModeDisable	Bool	
MaintenanceModeDisable	Bool	
UserMode01Disable	Bool	
UserMode02Disable	Bool	
UserMode03Disable	Bool	
UserMode04Disable	Bool	
UserMode05Disable	Bool	
UserMode06Disable	Bool	
UserMode07Disable	Bool	
UserMode08Disable	Bool	
▼ Output		
disabledUnitModes	Array[0.."LPMLV30_MAX_MODES_UPPER_LIM"] of Bool	
InOut		
▼ Temp		
templ	Int	
Constant		
▼ Return		
LPMLV30_ConfigureDisabledUnitModes	Void	

```

0001 //
=====
0002 // SIEMENS AG
0003 // (c) Copyright 2015 All Rights Reserved
0004 //-----
0005 // Library: LPMLV30
0006 // Tested with: S7-1200 with FW version V4.1, S7-1500 with FW version V1.7
0007 // Engineering: TIA Portal V13 SP1

```

```

0008 // Restrictions: ---
0009 // Requirements: S7-1200 / S7-1500
0010 // Functionality: The function generates the unit mode configuration as Array[]
of Bool.
0011 //-----
0012 // Change log table:
0013 // Version Date Expert in charge Changes applied
0014 // 03.00.01 29.05.2015 RK First released version
0015 //
=====
0016 // Function: LPMLV30_ConfigureDisabledUnitModes
0017 //
=====

0018
0019 // Initialize unitMode configuration
0020 FOR #tempI := 0 TO "LPMLV30_MAX_MODES_UPPER_LIM" DO
0021     #disabledUnitModes[#tempI] := TRUE;
0022 END_FOR;
0023
0024 // Set unitMode configuration
0025 #disabledUnitModes["LPMLV30_MODE_INVALID"] := FALSE;
0026 #disabledUnitModes["LPMLV30_MODE_PRODUCTION"] := #ProductionModeDisable;
0027 #disabledUnitModes["LPMLV30_MODE_MAINTENANCE"] := #MaintenanceModeDisable;
0028 #disabledUnitModes["LPMLV30_MODE_MANUAL"] := FALSE;
0029 #disabledUnitModes["LPMLV30_MODE_USER_01"] := #UserMode01Disable;
0030 #disabledUnitModes["LPMLV30_MODE_USER_02"] := #UserMode02Disable;
0031 #disabledUnitModes["LPMLV30_MODE_USER_03"] := #UserMode03Disable;
0032 #disabledUnitModes["LPMLV30_MODE_USER_04"] := #UserMode04Disable;
0033 #disabledUnitModes["LPMLV30_MODE_USER_05"] := #UserMode05Disable;
0034 #disabledUnitModes["LPMLV30_MODE_USER_06"] := #UserMode06Disable;
0035 #disabledUnitModes["LPMLV30_MODE_USER_07"] := #UserMode07Disable;
0036 #disabledUnitModes["LPMLV30_MODE_USER_08"] := #UserMode08Disable;
0037
0038 //
=====
0039 // End of function: LPMLV30_ConfigureDisabledUnitModes
0040 //
=====

```

PackML_2Axis1EM [CPU 1515T-2 PN] / Program blocks / LPMLV30

LPMLV30_GetUnitModeStateNamesAsString [FC30102]

LPMLV30_GetUnitModeStateNamesAsString Properties

General

Name	LPMLV30_GetUnitModeStateNamesAsString	Number	30102	Type	FC
Language	SCL	Numbering	Automatic		

Information

Title	LPMLV30_GetUnitModeStateNamesAsString	Author	APC_ERLF	Comment	Support: tech.team.motioncontrol@siemens.com Fax: +49 (0) 9131/98-1297
Family	OMAC	Version		User-defined ID	

Name	Data type	Default value
▼ Input		
UnitModeCurrent	DInt	
StateCurrent	DInt	
language	Int	
namesConfiguration	"typeLPMLV30_NamesConfiguration"	
▼ Output		
unitModeCurrentName	String	
stateCurrentName	String	
InOut		
▼ Temp		
tempUnitModeCurrent	DInt	
tempStateCurrent	DInt	
tempLanguage	Int	
Constant		
▼ Return		
LPMLV30_GetUnitModeStateNamesAsString	Void	

```

0001 //
=====
0002 // SIEMENS AG
0003 // (c) Copyright 2015 All Rights Reserved
0004 //-----
-----
0005 // Library: LPMLV30
0006 // Tested with: S7-1200 with FW version V4.1, S7-1500 with FW version V1.7
0007 // Engineering: TIA Portal V13 SP1
0008 // Restrictions: ---
0009 // Requirements: S7-1200 / S7-1500
0010 // Functionality: Gets the names for current unit mode and state in one language
0011 // corresponding to the names configuration
0012 //-----
-----

```

```
0013 // Change log table:
0014 // Version Date Expert in charge Changes applied
0015 // 03.00.01 29.05.2015 RK First released version
0016 //
=====
0017 // Function: LPMLV30_GetUnitModeStateNamesAsString
0018 //
=====

0019
0020 #tempUnitModeCurrent := #UnitModeCurrent;
0021 #tempStateCurrent    := #StateCurrent;
0022 #tempLanguage        := #language;
0023
0024 IF #tempUnitModeCurrent < 0 OR #tempUnitModeCurrent > "LPMLV30_MODES_UPPER_LIM" THEN
0025     #tempUnitModeCurrent := "LPMLV30_MODE_INVALID";
0026 END_IF;
0027 IF #tempStateCurrent < 0 OR #tempStateCurrent > "LPMLV30_STATES_UPPER_LIM" THEN
0028     #tempStateCurrent := "LPMLV30_STATE_UNDEFINED";
0029 END_IF;
0030 IF #tempLanguage < 0 OR #tempLanguage > "LPMLV30_LANGUAGES_UPPER_LIM" THEN
0031     #tempLanguage := "LPMLV30_LANGUAGE_1";
0032 END_IF;
0033
0034 #unitModeCurrentName := #namesConfiguration.unitModesNames[#tempLanguage, #tempUnitModeCurrent];
0035 #stateCurrentName    := #namesConfiguration.statesNames[#tempLanguage, #tempStateCurrent];
0036
0037 //
=====
0038 // End of function: LPMLV30_GetUnitModeStateNamesAsString
0039 //
=====
```

PackML_2Axis1EM [CPU 1515T-2 PN] / Program blocks / LPMLV30

LPMLV30_UnitModeStateManager [FB30100]

LPMLV30_UnitModeStateManager Properties

General

Name	LPMLV30_UnitModeState-Manager	Number	30100	Type	FB
Language	SCL	Numbering	Automatic		

Information

Title	LPMLV30_UnitModeState-Manager	Author	APC_ERLF	Comment	Support: tech.team.motioncontrol@siemens.com Fax: +49 (0) 9131/98-1297
Family	OMAC	Version		User-defined ID	

Name	Data type	Default value	Retain
▼ Input			
UnitMode	DInt	"LPMLV30_MODE_INVALID"	Non-retain
UnitModeChangeRequest	Bool	false	Non-retain
CntrlCmd	DInt	"LPMLV30_CMD_UNDEFINED"	Non-retain
CmdChangeRequest	Bool	false	Non-retain
enableBooleanInterface	Bool	false	Non-retain
ProductionModeRequest	Bool	false	Non-retain
MaintenanceModeRequest	Bool	false	Non-retain
ManualModeRequest	Bool	false	Non-retain
UserMode01Request	Bool	false	Non-retain
UserMode02Request	Bool	false	Non-retain
UserMode03Request	Bool	false	Non-retain
UserMode04Request	Bool	false	Non-retain
UserMode05Request	Bool	false	Non-retain
UserMode06Request	Bool	false	Non-retain
UserMode07Request	Bool	false	Non-retain
UserMode08Request	Bool	false	Non-retain
ResetCmdRequest	Bool	false	Non-retain
StartCmdRequest	Bool	false	Non-retain
StopCmdRequest	Bool	false	Non-retain
HoldCmdRequest	Bool	false	Non-retain
UnholdCmdRequest	Bool	false	Non-retain
SuspendCmdRequest	Bool	false	Non-retain
UnsuspendCmdRequest	Bool	false	Non-retain
AbortCmdRequest	Bool	false	Non-retain
ClearCmdRequest	Bool	false	Non-retain
CompleteCmdRequest	Bool	false	Non-retain
SC	Bool	false	Non-retain
configuration	"typeLPMLV30_Configuration"		Non-retain
▼ Output			
UnitModeCurrent	DInt	"LPMLV30_MODE_MANUAL"	Non-retain

Name	Data type	Default value	Retain
UnitModeRequested	DInt	0	Non-retain
UnitModeChangeInProgress	Bool	false	Non-retain
StateCurrent	DInt	"LPMLV30_STATE_STOPPED"	Non-retain
StateRequested	DInt	0	Non-retain
StateChangeInProgress	Bool	false	Non-retain
ProductionModeActive	Bool	false	Non-retain
MaintenanceModeActive	Bool	false	Non-retain
ManualModeActive	Bool	false	Non-retain
UserMode01Active	Bool	false	Non-retain
UserMode02Active	Bool	false	Non-retain
UserMode03Active	Bool	false	Non-retain
UserMode04Active	Bool	false	Non-retain
UserMode05Active	Bool	false	Non-retain
UserMode06Active	Bool	false	Non-retain
UserMode07Active	Bool	false	Non-retain
UserMode08Active	Bool	false	Non-retain
ClearingStateActive	Bool	false	Non-retain
StoppedStateActive	Bool	false	Non-retain
StartingStateActive	Bool	false	Non-retain
IdleStateActive	Bool	false	Non-retain
SuspendedStateActive	Bool	false	Non-retain
ExecuteStateActive	Bool	false	Non-retain
StoppingStateActive	Bool	false	Non-retain
AbortingStateActive	Bool	false	Non-retain
AbortedStateActive	Bool	false	Non-retain
HoldingStateActive	Bool	false	Non-retain
HeldStateActive	Bool	false	Non-retain
UnholdingStateActive	Bool	false	Non-retain
SuspendingStateActive	Bool	false	Non-retain
UnsuspendingStateActive	Bool	false	Non-retain
ResettingStateActive	Bool	false	Non-retain
CompletingStateActive	Bool	false	Non-retain
CompleteStateActive	Bool	false	Non-retain
StatesDisabled	DInt	0	Non-retain
diagnostics	"typeLPMLV30_Diagnostics"		Non-retain
InOut			
▼ Static			
statConfiguration	"typeLPMLV30_Configuration"		Non-retain
statUnitModeChangeRequest	Bool	false	Non-retain
statCmdChangeRequest	Bool	false	Non-retain
statFirstCycle	Bool	true	Non-retain
statSCOld	Bool	false	Non-retain
statUnitMode	DInt	"LPMLV30_MODE_MANUAL"	Non-retain
statUnitModeOld	DInt	"LPMLV30_MODE_MANUAL"	Non-retain
statUnitModeCurrentInternal	DInt	"LPMLV30_MODE_MANUAL"	Non-retain
statUnitModeCurrentInternalOld	DInt	"LPMLV30_MODE_INVALID"	Non-retain
statStateCurrentOld	DInt	"LPMLV30_STATE_STOPPED"	Non-retain

Name	Data type	Default value	Retain
statStateInternal	DInt	"LPMLV30_STATE_STOPPED"	Non-retain
statStateInternalOld	DInt	"LPMLV30_STATE_UNDEFINED"	Non-retain
statCntrlCmdOld	DInt	"LPMLV30_CMD_UNDEFINED"	Non-retain
statStatesInCurrentMode	Struct		Non-retain
statBooleanInterfaceModeOld	DWord	16#0	Non-retain
statBooleanInterfaceCmdOld	Word	16#0	Non-retain
statCmdChangeRequestOld	Bool	false	Non-retain
statUnitModeChangeRequestOld	Bool	false	Non-retain
▼ Temp			
tempCntrlCmd	DInt		
tempBooleanInterfaceMode	DWord		
tempBooleanInterfaceCmd	Word		
tempSCInternal	Bool		
tempRetVal	Int		
tempDiagnosticsBufferIndex	Int		
tempDiagnosticsBufferIndexSC	Int		
tempDiagnosticsBufferIndexCmd	Int		
▼ Constant			
MSG_NO_MESSAGE	Byte	16#00	
MSG_MODE_CHANGED_SUCCESSFULLY	Byte	16#01	
MSG_STATE_CHANGED_SUCCESSFULLY	Byte	16#02	
MSG_MODE_ALREADY_ACTIVE	Byte	16#03	
MSG_MODE_NOT_DEFINED	Byte	16#80	
MSG_CMD_NOT_DEFINED	Byte	16#81	
MSG_REQ_MODE_NOT_CONFIGURED	Byte	16#82	
MSG_MODE_TRANSITION_NOT_ALLOWED	Byte	16#83	
MSG_CMD_NOT_ALLOWED	Byte	16#84	
MSG_SC_NOT_ALLOWED	Byte	16#85	
MSG_STATE_CONFIG_FORCED	Byte	16#86	

```

0001 //
-----
-----
0002 // SIEMENS AG
0003 // (c) Copyright 2015 All Rights Reserved
0004 //-----
-----
0005 // Library: LPMLV30
0006 // Tested with: S7-1200 with FW version V4.1, S7-1500 with FW version V1.7
0007 // Engineering: TIA Portal V13 SP1
0008 // Restrictions: ---
0009 // Requirements: S7-1200 / S7-1500
0010 // Functionality: Management of unit modes and states according to ISA
TR88.00.02 - June 4, 2014
0011 //-----
-----
0012 // Change log table:
0013 // Version Date Expert in charge Changes applied

```

```

0014 // 03.00.01 29.05.2015 RK First released version
0015 //
=====
0016 // Function block: LPMLV30_UnitModeStateManager
0017 //
=====

0018
0019 IF NOT #statCmdChangeRequest AND #statCmdChangeRequestOld THEN // Falling edge
    CmdChangeRequest
0020     #statCntrlCmdOld := "LPMLV30_CMD_UNDEFINED";
0021 END_IF;
0022 #statCmdChangeRequestOld := #statCmdChangeRequest;
0023
0024 IF NOT #statUnitModeChangeRequest AND #statUnitModeChangeRequestOld THEN // Fall-
    ing edge UnitModeChangeRequest
0025     #statUnitModeOld := "LPMLV30_MODE_INVALID";
0026 END_IF;
0027 #statUnitModeChangeRequestOld := #statUnitModeChangeRequest;
0028
0029 #tempDiagnosticsBufferIndex := #diagnostics.bufferIndex; // Work with tempora-
    ry variable during block execution
0030 #tempDiagnosticsBufferIndexSC := -1;
0031 #tempDiagnosticsBufferIndexCmd := -1;
0032
0033 IF #statFirstCycle THEN // Initialize values in first cycle
0034     #tempDiagnosticsBufferIndex := -1;
0035
0036     #statConfiguration := #configuration; // Copy configuration from input
0037     #statConfiguration.disabledUnitModes["LPMLV30_MODE_MANUAL"] := FALSE; // Unit
    mode Manual is mandatory
0038
0039 // Initialize unit mode
0040 #statUnitMode := "LPMLV30_MODE_MANUAL";
0041 #statUnitModeOld := "LPMLV30_MODE_MANUAL";
0042 #UnitModeCurrent := "LPMLV30_MODE_MANUAL";
0043 #statUnitModeCurrentInternal := "LPMLV30_MODE_MANUAL";
0044 #statUnitModeCurrentInternalOld := "LPMLV30_MODE_INVALID";
0045 #statBooleanInterfaceModeOld := 0;
0046
0047 // Initialize state
0048 #StateCurrent := "LPMLV30_STATE_STOPPED";
0049 #StateRequested := "LPMLV30_STATE_STOPPED";
0050 #statStateInternal := "LPMLV30_STATE_STOPPED";
0051 #statStateInternalOld := "LPMLV30_STATE_UNDEFINED";
0052 #statStateCurrentOld := "LPMLV30_STATE_STOPPED";
0053
0054 // Initialize control command
0055 #tempCntrlCmd := "LPMLV30_CMD_UNDEFINED";
0056 #statCntrlCmdOld := "LPMLV30_CMD_UNDEFINED";
0057 #statBooleanInterfaceCmdOld := 0;
0058 END_IF; // End: Initialize values in first cycle
0059

```

```

0060 //-----
0061 // Evaluation of input parameters -> UnitMode, CntrlCmd
0062 //-----
0063 IF NOT #statFirstCycle THEN // As from second cycle
0064   IF NOT #enableBooleanInterface THEN // Set unit mode and control command ac-
cording to input parameters
0065     #statUnitMode := #UnitMode;
0066     #tempCntrlCmd := #CntrlCmd;
0067
0068     // Set change requests from input
0069     #statUnitModeChangeRequest := #UnitModeChangeRequest;
0070     #statCmdChangeRequest      := #CmdChangeRequest;
0071   ELSE // Read boolean interface inputs
0072     #statUnitModeChangeRequest := TRUE; // Change request static TRUE
0073     #statUnitMode              := "LPMLV30_MODE_INVALID";
0074     #tempBooleanInterfaceMode  := 0;
0075
0076     // Collect unit mode from boolean inputs
0077     #tempBooleanInterfaceMode.%X1 := #ProductionModeRequest;
0078     #tempBooleanInterfaceMode.%X2 := #MaintenanceModeRequest;
0079     #tempBooleanInterfaceMode.%X3 := #ManualModeRequest;
0080     #tempBooleanInterfaceMode.%X4 := #UserMode01Request;
0081     #tempBooleanInterfaceMode.%X5 := #UserMode02Request;
0082     #tempBooleanInterfaceMode.%X6 := #UserMode03Request;
0083     #tempBooleanInterfaceMode.%X7 := #UserMode04Request;
0084     #tempBooleanInterfaceMode.%X8 := #UserMode05Request;
0085     #tempBooleanInterfaceMode.%X9 := #UserMode06Request;
0086     #tempBooleanInterfaceMode.%X10 := #UserMode07Request;
0087     #tempBooleanInterfaceMode.%X11 := #UserMode08Request;
0088     // #tempBooleanInterfaceMode.%X12 := #UserMode09Request;
0089     // #tempBooleanInterfaceMode.%X13 := #UserMode10Request;
0090     // #tempBooleanInterfaceMode.%X14 := #UserMode11Request;
0091     // #tempBooleanInterfaceMode.%X15 := #UserMode12Request;
0092     // #tempBooleanInterfaceMode.%X16 := #UserMode13Request;
0093     // #tempBooleanInterfaceMode.%X17 := #UserMode14Request;
0094     // #tempBooleanInterfaceMode.%X18 := #UserMode15Request;
0095     // #tempBooleanInterfaceMode.%X19 := #UserMode16Request;
0096     // #tempBooleanInterfaceMode.%X20 := #UserMode17Request;
0097     // #tempBooleanInterfaceMode.%X21 := #UserMode18Request;
0098     // #tempBooleanInterfaceMode.%X22 := #UserMode19Request;
0099     // #tempBooleanInterfaceMode.%X23 := #UserMode20Request;
0100     // #tempBooleanInterfaceMode.%X24 := #UserMode21Request;
0101     // #tempBooleanInterfaceMode.%X25 := #UserMode22Request;
0102     // #tempBooleanInterfaceMode.%X26 := #UserMode23Request;
0103     // #tempBooleanInterfaceMode.%X27 := #UserMode24Request;
0104     // #tempBooleanInterfaceMode.%X28 := #UserMode25Request;
0105     // #tempBooleanInterfaceMode.%X29 := #UserMode26Request;
0106     // #tempBooleanInterfaceMode.%X30 := #UserMode27Request;
0107     // #tempBooleanInterfaceMode.%X31 := #UserMode28Request;
0108
0109     // Selection indicator: Rising edge at input, Priority (in case of multiple
selection): Manual, Maintenance, User Mode 01..28, Production

```

```

0110 IF #tempBooleanInterfaceMode.%X3 AND NOT #statBooleanInterfaceMo-
deOld.%X3 THEN
0111 #statUnitMode := "LPMLV30_MODE_MANUAL";
0112 ELSIF #tempBooleanInterfaceMode.%X2 AND NOT #statBooleanInterfaceMo-
deOld.%X2 THEN
0113 #statUnitMode := "LPMLV30_MODE_MAINTENANCE";
0114 ELSIF #tempBooleanInterfaceMode.%X4 AND NOT #statBooleanInterfaceMo-
deOld.%X4 THEN
0115 #statUnitMode := "LPMLV30_MODE_USER_01";
0116 ELSIF #tempBooleanInterfaceMode.%X5 AND NOT #statBooleanInterfaceMo-
deOld.%X5 THEN
0117 #statUnitMode := "LPMLV30_MODE_USER_02";
0118 ELSIF #tempBooleanInterfaceMode.%X6 AND NOT #statBooleanInterfaceMo-
deOld.%X6 THEN
0119 #statUnitMode := "LPMLV30_MODE_USER_03";
0120 ELSIF #tempBooleanInterfaceMode.%X7 AND NOT #statBooleanInterfaceMo-
deOld.%X7 THEN
0121 #statUnitMode := "LPMLV30_MODE_USER_04";
0122 ELSIF #tempBooleanInterfaceMode.%X8 AND NOT #statBooleanInterfaceMo-
deOld.%X8 THEN
0123 #statUnitMode := "LPMLV30_MODE_USER_05";
0124 ELSIF #tempBooleanInterfaceMode.%X9 AND NOT #statBooleanInterfaceMo-
deOld.%X9 THEN
0125 #statUnitMode := "LPMLV30_MODE_USER_06";
0126 ELSIF #tempBooleanInterfaceMode.%X10 AND NOT #statBooleanInterfaceMo-
deOld.%X10 THEN
0127 #statUnitMode := "LPMLV30_MODE_USER_07";
0128 ELSIF #tempBooleanInterfaceMode.%X11 AND NOT #statBooleanInterfaceMo-
deOld.%X11 THEN
0129 #statUnitMode := "LPMLV30_MODE_USER_08";
0130 ELSIF #tempBooleanInterfaceMode.%X12 AND NOT #statBooleanInterfaceMo-
deOld.%X12 THEN
0131 #statUnitMode := "LPMLV30_MODE_USER_09";
0132 ELSIF #tempBooleanInterfaceMode.%X13 AND NOT #statBooleanInterfaceMo-
deOld.%X13 THEN
0133 #statUnitMode := "LPMLV30_MODE_USER_10";
0134 ELSIF #tempBooleanInterfaceMode.%X14 AND NOT #statBooleanInterfaceMo-
deOld.%X14 THEN
0135 #statUnitMode := "LPMLV30_MODE_USER_11";
0136 ELSIF #tempBooleanInterfaceMode.%X15 AND NOT #statBooleanInterfaceMo-
deOld.%X15 THEN
0137 #statUnitMode := "LPMLV30_MODE_USER_12";
0138 ELSIF #tempBooleanInterfaceMode.%X16 AND NOT #statBooleanInterfaceMo-
deOld.%X16 THEN
0139 #statUnitMode := "LPMLV30_MODE_USER_13";
0140 ELSIF #tempBooleanInterfaceMode.%X17 AND NOT #statBooleanInterfaceMo-
deOld.%X17 THEN
0141 #statUnitMode := "LPMLV30_MODE_USER_14";
0142 ELSIF #tempBooleanInterfaceMode.%X18 AND NOT #statBooleanInterfaceMo-
deOld.%X18 THEN
0143 #statUnitMode := "LPMLV30_MODE_USER_15";
0144 ELSIF #tempBooleanInterfaceMode.%X19 AND NOT #statBooleanInterfaceMo-
deOld.%X19 THEN
0145 #statUnitMode := "LPMLV30_MODE_USER_16";

```

```

0146   ELSIF #tempBooleanInterfaceMode.%X20 AND NOT #statBooleanInterfaceMo-
deOld.%X20 THEN
0147     #statUnitMode := "LPMLV30_MODE_USER_17";
0148   ELSIF #tempBooleanInterfaceMode.%X21 AND NOT #statBooleanInterfaceMo-
deOld.%X21 THEN
0149     #statUnitMode := "LPMLV30_MODE_USER_18";
0150   ELSIF #tempBooleanInterfaceMode.%X22 AND NOT #statBooleanInterfaceMo-
deOld.%X22 THEN
0151     #statUnitMode := "LPMLV30_MODE_USER_19";
0152   ELSIF #tempBooleanInterfaceMode.%X23 AND NOT #statBooleanInterfaceMo-
deOld.%X23 THEN
0153     #statUnitMode := "LPMLV30_MODE_USER_20";
0154   ELSIF #tempBooleanInterfaceMode.%X24 AND NOT #statBooleanInterfaceMo-
deOld.%X24 THEN
0155     #statUnitMode := "LPMLV30_MODE_USER_21";
0156   ELSIF #tempBooleanInterfaceMode.%X25 AND NOT #statBooleanInterfaceMo-
deOld.%X25 THEN
0157     #statUnitMode := "LPMLV30_MODE_USER_22";
0158   ELSIF #tempBooleanInterfaceMode.%X26 AND NOT #statBooleanInterfaceMo-
deOld.%X26 THEN
0159     #statUnitMode := "LPMLV30_MODE_USER_23";
0160   ELSIF #tempBooleanInterfaceMode.%X27 AND NOT #statBooleanInterfaceMo-
deOld.%X27 THEN
0161     #statUnitMode := "LPMLV30_MODE_USER_24";
0162   ELSIF #tempBooleanInterfaceMode.%X28 AND NOT #statBooleanInterfaceMo-
deOld.%X28 THEN
0163     #statUnitMode := "LPMLV30_MODE_USER_25";
0164   ELSIF #tempBooleanInterfaceMode.%X29 AND NOT #statBooleanInterfaceMo-
deOld.%X29 THEN
0165     #statUnitMode := "LPMLV30_MODE_USER_26";
0166   ELSIF #tempBooleanInterfaceMode.%X30 AND NOT #statBooleanInterfaceMo-
deOld.%X30 THEN
0167     #statUnitMode := "LPMLV30_MODE_USER_27";
0168   ELSIF #tempBooleanInterfaceMode.%X31 AND NOT #statBooleanInterfaceMo-
deOld.%X31 THEN
0169     #statUnitMode := "LPMLV30_MODE_USER_28";
0170   ELSIF #tempBooleanInterfaceMode.%X1 AND NOT #statBooleanInterfaceMo-
deOld.%X1 THEN
0171     #statUnitMode := "LPMLV30_MODE_PRODUCTION";
0172   END_IF;
0173   #statBooleanInterfaceModeOld := #tempBooleanInterfaceMode; // Save values for
edge detection
0174
0175   // Evaluate CntrlCmd in boolean interface; priority descending: abort, stop,
other commands
0176   #statCmdChangeRequest := TRUE; // Change request static TRUE
0177   #tempBooleanInterfaceCmd := 0;
0178
0179   #tempBooleanInterfaceCmd.%X1 := #ResetCmdRequest;
0180   #tempBooleanInterfaceCmd.%X2 := #StartCmdRequest;
0181   #tempBooleanInterfaceCmd.%X4 := #HoldCmdRequest;
0182   #tempBooleanInterfaceCmd.%X5 := #UnholdCmdRequest;
0183   #tempBooleanInterfaceCmd.%X6 := #SuspendCmdRequest;
0184   #tempBooleanInterfaceCmd.%X7 := #UnsuspendCmdRequest;
0185   #tempBooleanInterfaceCmd.%X9 := #ClearCmdRequest;

```

```

0186 #tempBooleanInterfaceCmd.%X10 := #CompleteCmdRequest; // Remember, complete
command is not specified in the OMAC standard
0187
0188 IF #AbortCmdRequest THEN
0189 #tempCntrlCmd := "LPMLV30_CMD_ABORT";
0190 ELSIF #StopCmdRequest THEN
0191 #tempCntrlCmd := "LPMLV30_CMD_STOP";
0192 ELSE
0193 #tempCntrlCmd := "LPMLV30_CMD_UNDEFINED";
0194
0195 // Selection indicator: Rising edge at input, Priority (in case of multiple
selection): complete, reset, start, hold, unhold, suspend, unsuspend, clear
0196 IF #tempBooleanInterfaceCmd.%X10 AND NOT #statBooleanInterfaceCm-
dOld.%X10 THEN
0197 #tempCntrlCmd := "LPMLV30_CMD_COMPLETE";
0198 ELSIF #tempBooleanInterfaceCmd.%X1 AND NOT #statBooleanInterfaceCm-
dOld.%X1 THEN
0199 #tempCntrlCmd := "LPMLV30_CMD_RESET";
0200 ELSIF #tempBooleanInterfaceCmd.%X2 AND NOT #statBooleanInterfaceCm-
dOld.%X2 THEN
0201 #tempCntrlCmd := "LPMLV30_CMD_START";
0202 ELSIF #tempBooleanInterfaceCmd.%X4 AND NOT #statBooleanInterfaceCm-
dOld.%X4 THEN
0203 #tempCntrlCmd := "LPMLV30_CMD_HOLD";
0204 ELSIF #tempBooleanInterfaceCmd.%X5 AND NOT #statBooleanInterfaceCm-
dOld.%X5 THEN
0205 #tempCntrlCmd := "LPMLV30_CMD_UNHOLD";
0206 ELSIF #tempBooleanInterfaceCmd.%X6 AND NOT #statBooleanInterfaceCm-
dOld.%X6 THEN
0207 #tempCntrlCmd := "LPMLV30_CMD_SUSPEND";
0208 ELSIF #tempBooleanInterfaceCmd.%X7 AND NOT #statBooleanInterfaceCm-
dOld.%X7 THEN
0209 #tempCntrlCmd := "LPMLV30_CMD_UNsuspend";
0210 ELSIF #tempBooleanInterfaceCmd.%X9 AND NOT #statBooleanInterfaceCm-
dOld.%X9 THEN
0211 #tempCntrlCmd := "LPMLV30_CMD_CLEAR";
0212 END_IF;
0213 END_IF; // End: abort or stop cmd
0214
0215 #statBooleanInterfaceCmdOld := #tempBooleanInterfaceCmd; // Save values for
edge detection
0216 END_IF; // End: boolean interface
0217 END_IF; // End: As from second cycle
0218 // End: Evaluation of input parameters -> UnitMode, CntrlCmd
0219
0220 //-----
//-----
0221 // Unit mode manager
0222 //-----
//-----
0223 IF NOT #statFirstCycle THEN // As from second cycle
0224 //-----
0225 //Message handling for mode manager: head part
0226 //-----

```

```

0227 IF #statUnitModeChangeRequest AND #statUnitMode <> #statUnitModeOld AND #statU-
nitMode <> "LPMLV30_MODE_INVALID" THEN
0228 #tempDiagnosticsBufferIndex := #tempDiagnosticsBufferIndex + 1; // Next buffer
index
0229 IF #tempDiagnosticsBufferIndex > "LPMLV30_DIAG_BUFFER_UPPER_LIM" THEN
0230 #tempDiagnosticsBufferIndex := 0;
0231 END_IF;
0232 // Check for defined unit modes
0233 #tempRetVal := RD_SYS_T(#diagnostics.buffer[#tempDiagnosticsBufferIndex].time-
stamp);
0234 #diagnostics.buffer[#tempDiagnosticsBufferIndex].UnitModeCur-
rent := DINT_TO_BYTE(#UnitModeCurrent);
0235 #diagnostics.buffer[#tempDiagnosticsBufferIndex].StateCur-
rent := DINT_TO_BYTE(#StateCurrent);
0236 #diagnostics.buffer[#tempDiagnosticsBufferIndex].Uni-
tMode := DINT_TO_BYTE(#statUnitMode);
0237 #diagnostics.buffer[#tempDiagnosticsBufferIn-
dex].CntrlCmd := DINT_TO_BYTE(#tempCntrlCmd);
0238 #diagnostics.buffer[#tempDiagnosticsBufferIndex].SC := #SC;
0239 #diagnostics.buffer[#tempDiagnosticsBufferIndex].message := #MSG_NO_MESSAGE;
0240
0241 IF #statUnitMode < "LPMLV30_MODE_INVALID" OR #statUnit-
Mode > "LPMLV30_MODE_USER_28" THEN
0242 #diagnostics.buffer[#tempDiagnosticsBufferIndex].message := #MSG_MODE_NOT_DE-
FINED;
0243 ELSIF #statUnitMode = #statUnitModeCurrentInternal THEN
0244 #diagnostics.buffer[#tempDiagnosticsBufferIndex].message := #MSG_MODE_AL-
READY_ACTIVE;
0245 END_IF;
0246 END_IF; // End: message handling for mode manager: head part
0247 END_IF; // End: As from second cycle
0248
0249 //-----
0250 // Unit mode machine
0251 //-----
0252 // Check if unit mode has to be changed
0253 IF (#statUnitModeChangeRequest AND
0254 #statUnitMode <> #statUnitModeCurrentInternal AND
0255 #statUnitMode <> #statUnitModeOld AND
0256 #statUnitMode > "LPMLV30_MODE_INVALID" AND
0257 #statUnitMode <= "LPMLV30_MODE_USER_28"
0258 ) OR
0259 #statFirstCycle
0260 THEN
0261 // Check if state is available
0262 IF #statStateInternal = "LPMLV30_STATE_EXECUTE" OR // Every state but not in
execute
0263 #statStateInternal <> #StateRequested // Means to be in wait state or target
state
0264 THEN
0265 #diagnostics.buffer[#tempDiagnosticsBufferIndex].message := #MSG_MODE_TRANSI-
TION_NOT_ALLOWED;
0266 ELSE
0267 IF #statConfiguration.disabledUnitModes[#statUnitMode] = FALSE THEN
0268 // State in target unit mode available

```

```
0269     IF ((NOT #statConfiguration.disabledStatesInUnitModes[#statUnit-
0270 Mode].%X17 = FALSE) AND (#statStateInternal = "LPMLV30_STATE_COMPLETE")) OR
0271     ((NOT #statConfiguration.disabledStatesInUnitModes[#statUnit-
0272 Mode].%X11 = FALSE) AND (#statStateInternal = "LPMLV30_STATE_HELD")) OR
0273     ((NOT #statConfiguration.disabledStatesInUnitModes[#statUnit-
0274 Mode].%X5 = FALSE) AND (#statStateInternal = "LPMLV30_STATE_SUSPENDED"))
0275     THEN
0276     #diagnostics.buffer[#tempDiagnosticsBufferIndex].message := #MSG_MODE_TRANSI-
0277     TION_NOT_ALLOWED;
0278     ELSE
0279     // Set outputs
0280     #UnitModeChangeInProgress := TRUE;
0281     #UnitModeRequested := #statUnitMode;
0282     // Set internal variable
0283     #statUnitModeCurrentInternal := #statUnitMode;
0284     // Read current configuration for state
0285     #statStatesInCurrentMode.clearing := NOT #statConfiguration.disabledStatesI-
0286     nUnitModes[#statUnitMode].%X1;
0287     #statStatesInCurrentMode.stopped := NOT #statConfiguration.disabledStatesInU-
0288     nitModes[#statUnitMode].%X2;
0289     #statStatesInCurrentMode.starting := NOT #statConfiguration.disabledStatesI-
0290     nUnitModes[#statUnitMode].%X3;
0291     #statStatesInCurrentMode.idle := NOT #statConfiguration.disabledStatesInU-
0292     nitModes[#statUnitMode].%X4;
0293     #statStatesInCurrentMode.suspended := NOT #statConfiguration.disabledStatesI-
0294     nUnitModes[#statUnitMode].%X5;
0295     #statStatesInCurrentMode.execute := NOT #statConfiguration.disabledStatesInU-
0296     nitModes[#statUnitMode].%X6;
0297     #statStatesInCurrentMode.stopping := NOT #statConfiguration.disabledStatesI-
0298     nUnitModes[#statUnitMode].%X7;
0299     #statStatesInCurrentMode.aborting := NOT #statConfiguration.disabledStatesI-
0300     nUnitModes[#statUnitMode].%X8;
0301     #statStatesInCurrentMode.aborted := NOT #statConfiguration.disabledStatesInU-
0302     nitModes[#statUnitMode].%X9;
0303     #statStatesInCurrentMode.holding := NOT #statConfiguration.disabledStatesInU-
0304     nitModes[#statUnitMode].%X10;
0305     #statStatesInCurrentMode.held := NOT #statConfiguration.disabledStatesInU-
0306     nitModes[#statUnitMode].%X11;
0307     #statStatesInCurrentMode.unholding := NOT #statConfiguration.disabledStatesI-
0308     nUnitModes[#statUnitMode].%X12;
0309     #statStatesInCurrentMode.suspending := NOT #statConfiguration.disabledState-
0310     sInUnitModes[#statUnitMode].%X13;
0311     #statStatesInCurrentMode.unsuspending := NOT #statConfiguration.disabledSta-
0312     tesInUnitModes[#statUnitMode].%X14;
0313     #statStatesInCurrentMode.resetting := NOT #statConfiguration.disabledStatesI-
0314     nUnitModes[#statUnitMode].%X15;
0315     #statStatesInCurrentMode.completing := NOT #statConfiguration.disabledState-
0316     sInUnitModes[#statUnitMode].%X16;
0317     #statStatesInCurrentMode.complete := NOT #statConfiguration.disabledStatesI-
0318     nUnitModes[#statUnitMode].%X17;
0319     END_IF; // End: state in target unit mode available
0320     ELSE
0321     #diagnostics.buffer[#tempDiagnosticsBufferIndex].mes-
0322     sage := #MSG_REQ_MODE_NOT_CONFIGURED;
```

```

0302     END_IF;
0303     END_IF;
0304
0305     // Set the minimum required states for every unit mode
0306     IF NOT #statStatesInCurrentMode.stopped OR
0307     NOT #statStatesInCurrentMode.idle OR
0308     NOT #statStatesInCurrentMode.execute OR
0309     NOT #statStatesInCurrentMode.aborted OR
0310     NOT #statStatesInCurrentMode.resetting OR
0311     NOT #statStatesInCurrentMode.starting OR
0312     NOT #statStatesInCurrentMode.stopping OR
0313     NOT #statStatesInCurrentMode.clearing OR
0314     NOT #statStatesInCurrentMode.aborting OR
0315     (NOT #statStatesInCurrentMode.complete AND #statStatesInCurrentMode.complet-
ing) OR
0316     (NOT #statStatesInCurrentMode.suspended AND (#statStatesInCurrentMode.suspend-
ing OR #statStatesInCurrentMode.unsuspending)) OR
0317     (NOT #statStatesInCurrentMode.held AND (#statStatesInCurrentMode.hold-
ing OR #statStatesInCurrentMode.unholding))
0318     THEN
0319     #statStatesInCurrentMode.stopped := TRUE;
0320     #statStatesInCurrentMode.idle := TRUE;
0321     #statStatesInCurrentMode.execute := TRUE;
0322     #statStatesInCurrentMode.aborted := TRUE;
0323
0324     #statStatesInCurrentMode.resetting := TRUE;
0325     #statStatesInCurrentMode.starting := TRUE;
0326     #statStatesInCurrentMode.aborting := TRUE;
0327     #statStatesInCurrentMode.stopping := TRUE;
0328     #statStatesInCurrentMode.clearing := TRUE;
0329
0330     // Held
0331     IF NOT #statStatesInCurrentMode.held
0332     AND (#statStatesInCurrentMode.holding OR #statStatesInCurrentMode.unholding)
0333     THEN
0334     #statStatesInCurrentMode.held := TRUE;
0335     #statStatesInCurrentMode.holding := TRUE;
0336     #statStatesInCurrentMode.unholding := TRUE;
0337     END_IF;
0338     // Suspended
0339     IF NOT #statStatesInCurrentMode.suspended
0340     AND (#statStatesInCurrentMode.suspending OR #statStatesInCurrentMode.unsus-
pending)
0341     THEN
0342     #statStatesInCurrentMode.suspended := TRUE;
0343     #statStatesInCurrentMode.suspending := TRUE;
0344     #statStatesInCurrentMode.unsuspending := TRUE;
0345     END_IF;
0346     // Complete
0347     IF NOT #statStatesInCurrentMode.complete
0348     AND #statStatesInCurrentMode.completing
0349     THEN
0350     #statStatesInCurrentMode.complete := TRUE;
0351     #statStatesInCurrentMode.completing := TRUE;
0352     END_IF;

```

```
0353
0354   #tempDiagnosticsBufferIndex := #tempDiagnosticsBufferIndex + 1; // Next buffer
index
0355   IF #tempDiagnosticsBufferIndex > "LPMLV30_DIAG_BUFFER_UPPER_LIM" THEN
0356     #tempDiagnosticsBufferIndex := 0;
0357   END_IF;
0358
0359   // Write diagnostics
0360   #tempRetVal := RD_SYS_T(#diagnostics.buffer[#tempDiagnosticsBufferIndex].time-
stamp);
0361   #diagnostics.buffer[#tempDiagnosticsBufferIndex].UnitModeCur-
rent := DINT_TO_BYTE(#UnitModeCurrent);
0362   #diagnostics.buffer[#tempDiagnosticsBufferIndex].StateCur-
rent := DINT_TO_BYTE(#StateCurrent);
0363   #diagnostics.buffer[#tempDiagnosticsBufferIndex].Uni-
tMode := DINT_TO_BYTE(#statUnitMode);
0364   #diagnostics.buffer[#tempDiagnosticsBufferIn-
dex].CntrlCmd := DINT_TO_BYTE(#tempCntrlCmd);
0365   #diagnostics.buffer[#tempDiagnosticsBufferIndex].SC := #SC;
0366   #diagnostics.buffer[#tempDiagnosticsBufferIndex].message := #MSG_STATE_CON-
FIG_FORCED;
0367   END_IF; // End: set the minimum required states for every unit mode
0368
0369   #UnitModeCurrent := #statUnitModeCurrentInternal; // Write current unit mode
on output
0370
0371   // Write correct state configuration of current mode
0372   #StatesDisabled.%X1 := NOT #statStatesInCurrentMode.clearing;
0373   #StatesDisabled.%X2 := NOT #statStatesInCurrentMode.stopped;
0374   #StatesDisabled.%X3 := NOT #statStatesInCurrentMode.starting;
0375   #StatesDisabled.%X4 := NOT #statStatesInCurrentMode.idle;
0376   #StatesDisabled.%X5 := NOT #statStatesInCurrentMode.suspended;
0377   #StatesDisabled.%X6 := NOT #statStatesInCurrentMode.execute;
0378   #StatesDisabled.%X7 := NOT #statStatesInCurrentMode.stopping;
0379   #StatesDisabled.%X8 := NOT #statStatesInCurrentMode.aborting;
0380   #StatesDisabled.%X9 := NOT #statStatesInCurrentMode.aborted;
0381   #StatesDisabled.%X10 := NOT #statStatesInCurrentMode.holding;
0382   #StatesDisabled.%X11 := NOT #statStatesInCurrentMode.held;
0383   #StatesDisabled.%X12 := NOT #statStatesInCurrentMode.unholding;
0384   #StatesDisabled.%X13 := NOT #statStatesInCurrentMode.suspending;
0385   #StatesDisabled.%X14 := NOT #statStatesInCurrentMode.unsuspending;
0386   #StatesDisabled.%X15 := NOT #statStatesInCurrentMode.resetting;
0387   #StatesDisabled.%X16 := NOT #statStatesInCurrentMode.completing;
0388   #StatesDisabled.%X17 := NOT #statStatesInCurrentMode.complete;
0389
0390   //-----
0391   // Message handling for mode manager: foot part
0392   //-----
0393   IF NOT #statFirstCycle THEN
0394     IF #diagnostics.buffer[#tempDiagnosticsBufferIndex].message = #MSG_NO_MES-
SAGE THEN // ELSE: Unit mode wasn't changed successfully
0395       #diagnostics.buffer[#tempDiagnosticsBufferIndex].mes-
sage := #MSG_MODE_CHANGED_SUCCESSFULLY;
0396     END_IF;
0397     END_IF;
```

```
0398 ELSE
0399     #UnitModeChangeInProgress := FALSE; // No unit mode change
0400 END_IF; // End: check if unit mode has to be changed
0401 // End: Unit mode manager
0402
0403 //-----
0404 // State manager
0405 //-----
0406 IF NOT #statFirstCycle THEN // As from second cycle
0407     IF #SC AND NOT #statSCold THEN // Detect a rising edge at state complete signal
0408         #tempSCInternal := TRUE;
0409     ELSE
0410         #tempSCInternal := FALSE;
0411     END_IF;
0412     #statSCold := #SC; // End: Detect a rising edge at state complete signal
0413
0414 //-----
0415 // Message handling for state manager: head part
0416 //-----
0417 IF #tempSCInternal THEN // Check if rising edge of SC was detected
0418     #tempDiagnosticsBufferIndex := #tempDiagnosticsBufferIndex + 1; // Next buffer
index
0419     IF #tempDiagnosticsBufferIndex > "LPMLV30_DIAG_BUFFER_UPPER_LIM" THEN
0420         #tempDiagnosticsBufferIndex := 0;
0421     END_IF;
0422     #tempDiagnosticsBufferIndexSC := #tempDiagnosticsBufferIndex;
0423
0424 // Check current state to use SC
0425 IF #statStateInternal = "LPMLV30_STATE_CLEARING" OR
0426     #statStateInternal = "LPMLV30_STATE_STARTING" OR
0427     #statStateInternal = "LPMLV30_STATE_STOPPING" OR
0428     #statStateInternal = "LPMLV30_STATE_ABORTING" OR
0429     #statStateInternal = "LPMLV30_STATE_HOLDING" OR
0430     #statStateInternal = "LPMLV30_STATE_UNHOLDING" OR
0431     #statStateInternal = "LPMLV30_STATE_SUSPENDING" OR
0432     #statStateInternal = "LPMLV30_STATE_UNSPENDING" OR
0433     #statStateInternal = "LPMLV30_STATE_RESETTING" OR
0434     #statStateInternal = "LPMLV30_STATE_COMPLETING" OR
0435     #statStateInternal = "LPMLV30_STATE_EXECUTE"
0436 THEN // Write diagnostics
0437     #tempRetVal := RD_SYS_T(#diagnostics.buffer[#tempDiagnosticsBufferIn-
dex].timestamp);
0438     #diagnostics.buffer[#tempDiagnosticsBufferIndex].UnitModeCur-
rent := DINT_TO_BYTE(#UnitModeCurrent);
0439     #diagnostics.buffer[#tempDiagnosticsBufferIndex].StateCur-
rent := DINT_TO_BYTE(#StateCurrent);
0440     #diagnostics.buffer[#tempDiagnosticsBufferIndex].Uni-
tMode := DINT_TO_BYTE(#statUnitMode);
0441     #diagnostics.buffer[#tempDiagnosticsBufferIn-
dex].CntrlCmd := DINT_TO_BYTE(#tempCntrlCmd);
0442     #diagnostics.buffer[#tempDiagnosticsBufferIndex].SC := #SC;
0443     #diagnostics.buffer[#tempDiagnosticsBufferIndex].message := #MSG_NO_MESSAGE;
0444 ELSE // Write diagnostics
```

```

0445     #tempRetVal := RD_SYS_T(#diagnostics.buffer[#tempDiagnosticsBufferIn-
0446     dex].timestamp);
0446     #diagnostics.buffer[#tempDiagnosticsBufferIndex].UnitModeCur-
0447     rent := DINT_TO_BYTE(#UnitModeCurrent);
0447     #diagnostics.buffer[#tempDiagnosticsBufferIndex].StateCur-
0448     rent := DINT_TO_BYTE(#StateCurrent);
0448     #diagnostics.buffer[#tempDiagnosticsBufferIndex].Uni-
0449     tMode := DINT_TO_BYTE(#statUnitMode);
0449     #diagnostics.buffer[#tempDiagnosticsBufferIn-
0450     dex].CntrlCmd := DINT_TO_BYTE(#tempCntrlCmd);
0450     #diagnostics.buffer[#tempDiagnosticsBufferIndex].SC := #SC;
0451     #diagnostics.buffer[#tempDiagnosticsBufferIndex].message := #MSG_SC_NOT_AL-
LOWED;
0452     END_IF; // End: Check current state to use SC
0453     END_IF;
0454
0455     // Check if defined control command was sent correctly
0456     IF #statCmdChangeRequest AND #tempCntrlCmd <> #statCntrlCm-
dOld AND #tempCntrlCmd <> "LPMLV30_CMD_UNDEFINED" THEN
0457     IF #tempCntrlCmd = "LPMLV30_CMD_RESET" OR
0458     #tempCntrlCmd = "LPMLV30_CMD_START" OR
0459     #tempCntrlCmd = "LPMLV30_CMD_STOP" OR
0460     #tempCntrlCmd = "LPMLV30_CMD_HOLD" OR
0461     #tempCntrlCmd = "LPMLV30_CMD_UNHOLD" OR
0462     #tempCntrlCmd = "LPMLV30_CMD_SUSPEND" OR
0463     #tempCntrlCmd = "LPMLV30_CMD_UNSUSPEND" OR
0464     #tempCntrlCmd = "LPMLV30_CMD_ABORT" OR
0465     #tempCntrlCmd = "LPMLV30_CMD_CLEAR" OR
0466     #tempCntrlCmd = "LPMLV30_CMD_COMPLETE" // Info: Complete command not in the
OMAC standard
0467     THEN
0468     #tempDiagnosticsBufferIndex := #tempDiagnosticsBufferIndex + 1; // Next buf-
fer index
0469     IF #tempDiagnosticsBufferIndex > "LPMLV30_DIAG_BUFFER_UPPER_LIM" THEN
0470     #tempDiagnosticsBufferIndex := 0;
0471     END_IF;
0472     #tempDiagnosticsBufferIndexCmd := #tempDiagnosticsBufferIndex;
0473
0474     // Write diagnostics
0475     #tempRetVal := RD_SYS_T(#diagnostics.buffer[#tempDiagnosticsBufferIn-
dex].timestamp);
0476     #diagnostics.buffer[#tempDiagnosticsBufferIndex].UnitModeCur-
rent := DINT_TO_BYTE(#UnitModeCurrent);
0477     #diagnostics.buffer[#tempDiagnosticsBufferIndex].StateCur-
rent := DINT_TO_BYTE(#StateCurrent);
0478     #diagnostics.buffer[#tempDiagnosticsBufferIndex].Uni-
tMode := DINT_TO_BYTE(#statUnitMode);
0479     #diagnostics.buffer[#tempDiagnosticsBufferIn-
dex].CntrlCmd := DINT_TO_BYTE(#tempCntrlCmd);
0480     #diagnostics.buffer[#tempDiagnosticsBufferIndex].SC := #SC;
0481     #diagnostics.buffer[#tempDiagnosticsBufferIndex].message := #MSG_NO_MESSAGE;
0482     // Write message if CntrlCmd is not allowed
0483     IF ((#statStateInternal = "LPMLV30_STATE_CLEARING" OR
0484     #statStateInternal = "LPMLV30_STATE_STARTING" OR
0485     #statStateInternal = "LPMLV30_STATE_STOPPING" OR

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0486     #statStateInternal = "LPMLV30_STATE_ABORTING" OR
0487     #statStateInternal = "LPMLV30_STATE_HOLDING" OR
0488     #statStateInternal = "LPMLV30_STATE_UNHOLDING" OR
0489     #statStateInternal = "LPMLV30_STATE_SUSPENDING" OR
0490     #statStateInternal = "LPMLV30_STATE_UNSPENDING" OR
0491     #statStateInternal = "LPMLV30_STATE_RESETTING" OR
0492     #statStateInternal = "LPMLV30_STATE_COMPLETING") AND
0493     NOT (#tempCntrlCmd = "LPMLV30_CMD_ABORT") AND NOT (#tempCntrlCmd =
"LPMLV30_CMD_STOP")) OR
0494     (#statStateInternal = "LPMLV30_STATE_ABORT-
TED" AND (#tempCntrlCmd = "LPMLV30_CMD_ABORT"))
0495     THEN
0496     #diagnostics.buffer[#tempDiagnosticsBufferIndex].message := #MSG_CMD_NOT_AL-
LOWED;
0497     END_IF;
0498     ELSE
0499     // Not defined control command was sent
0500     #tempDiagnosticsBufferIndex := #tempDiagnosticsBufferIndex + 1; // Next buf-
fer index
0501     IF #tempDiagnosticsBufferIndex > "LPMLV30_DIAG_BUFFER_UPPER_LIM" THEN
0502     #tempDiagnosticsBufferIndex := 0;
0503     END_IF;
0504     #tempDiagnosticsBufferIndexCmd := #tempDiagnosticsBufferIndex;
0505
0506     // Write diagnostics
0507     #tempRetVal := RD_SYS_T(#diagnostics.buffer[#tempDiagnosticsBufferIn-
dex].timestamp);
0508     #diagnostics.buffer[#tempDiagnosticsBufferIndex].UnitModeCur-
rent := DINT_TO_BYTE(#UnitModeCurrent);
0509     #diagnostics.buffer[#tempDiagnosticsBufferIndex].StateCur-
rent := DINT_TO_BYTE(#StateCurrent);
0510     #diagnostics.buffer[#tempDiagnosticsBufferIndex].Uni-
tMode := DINT_TO_BYTE(#statUnitMode);
0511     #diagnostics.buffer[#tempDiagnosticsBufferIn-
dex].CntrlCmd := DINT_TO_BYTE(#tempCntrlCmd);
0512     #diagnostics.buffer[#tempDiagnosticsBufferIndex].SC := #SC;
0513     #diagnostics.buffer[#tempDiagnosticsBufferIndex].message := #MSG_CMD_NOT_DE-
FINED;
0514     END_IF;
0515     END_IF; // End: message handling for state manager: head part
0516
0517     //-----
0518     // State machine
0519     //-----
0520     IF #statCmdChangeRequest AND #tempCntrlCmd <> #statCntrlCm-
dOld AND #tempCntrlCmd = "LPMLV30_CMD_ABORT" AND // Check if
abort command was sent correctly
0521     #statStateInternal <> "LPMLV30_STATE_ABORTED" AND
0522     #statStateInternal <> "LPMLV30_STATE_ABORTING"
0523     THEN
0524     // Abort command was sent correctly
0525     #StateChangeInProgress := TRUE;
0526     #StateRequested := "LPMLV30_STATE_ABORTED";
0527     // Select next state
0528     IF #statStatesInCurrentMode.aborting THEN

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0576     #StateRequested      := "LPMLV30_STATE_COMPLETE";
0577     #statStateInternal  := "LPMLV30_STATE_COMPLETING";
0578     ELSIF #statStatesInCurrentMode.complete THEN
0579     #StateChangeInProgress := TRUE;
0580     #StateRequested      := "LPMLV30_STATE_COMPLETE";
0581     #statStateInternal  := "LPMLV30_STATE_COMPLETE";
0582     ELSE
0583     #diagnostics.buffer[#tempDiagnosticsBufferIndexCmd].mes-
sage := #MSG_CMD_NOT_ALLOWED;
0584     END_IF;
0585
0586     "LPMLV30_CMD_RESET":
0587     IF NOT #statStatesInCurrentMode.completing AND NOT #statStatesInCurrent-
Mode.complete THEN
0588     // Check if valid state for command is in use by current unit mode
0589     IF #statStatesInCurrentMode.resetting THEN
0590     #StateChangeInProgress := TRUE;
0591     #StateRequested      := "LPMLV30_STATE_IDLE";
0592     #statStateInternal  := "LPMLV30_STATE_RESETTING";
0593     ELSIF #statStatesInCurrentMode.idle THEN
0594     #StateChangeInProgress := TRUE;
0595     #StateRequested      := "LPMLV30_STATE_IDLE";
0596     #statStateInternal  := "LPMLV30_STATE_IDLE";
0597     ELSE
0598     #diagnostics.buffer[#tempDiagnosticsBufferIndexCmd].mes-
sage := #MSG_CMD_NOT_ALLOWED;
0599     END_IF;
0600     END_IF;
0601
0602     "LPMLV30_CMD_HOLD":
0603     // Check if valid state for command is in use by current unit mode
0604     IF #statStatesInCurrentMode.holding THEN
0605     #StateChangeInProgress := TRUE;
0606     #StateRequested      := "LPMLV30_STATE_HELD";
0607     #statStateInternal  := "LPMLV30_STATE_HOLDING";
0608     ELSIF #statStatesInCurrentMode.held THEN
0609     #StateChangeInProgress := TRUE;
0610     #StateRequested      := "LPMLV30_STATE_HELD";
0611     #statStateInternal  := "LPMLV30_STATE_HELD";
0612     ELSE
0613     #diagnostics.buffer[#tempDiagnosticsBufferIndexCmd].mes-
sage := #MSG_CMD_NOT_ALLOWED;
0614     END_IF;
0615
0616     "LPMLV30_CMD_SUSPEND":
0617     // Check if valid state for command is in use by current unit mode
0618     IF #statStatesInCurrentMode.suspending THEN
0619     #StateChangeInProgress := TRUE;
0620     #StateRequested      := "LPMLV30_STATE_SUSPENDED";
0621     #statStateInternal  := "LPMLV30_STATE_SUSPENDING";
0622     ELSIF #statStatesInCurrentMode.suspended THEN
0623     #StateChangeInProgress := TRUE;
0624     #StateRequested      := "LPMLV30_STATE_SUSPENDED";
0625     #statStateInternal  := "LPMLV30_STATE_SUSPENDED";
0626     ELSE

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0627         #diagnostics.buffer[#tempDiagnosticsBufferIndexCmd].mes-
sage := #MSG_CMD_NOT_ALLOWED;
0628         END_IF;
0629         ELSE
0630         IF #diagnostics.buffer[#tempDiagnosticsBufferIndexCmd].mes-
sage = #MSG_NO_MESSAGE THEN // ELSE: Message was already
written in head part of message handling
0631         #diagnostics.buffer[#tempDiagnosticsBufferIndexCmd].mes-
sage := #MSG_CMD_NOT_ALLOWED;
0632         END_IF;
0633         END_CASE;
0634     END_IF;
0635
0636     "LPMLV30_STATE_COMPLETING":
0637     // Check if state is completed
0638     IF #tempSCInternal AND #statStatesInCurrentMode.complete THEN
0639         #statStateInternal := "LPMLV30_STATE_COMPLETE";
0640     ELSIF #tempSCInternal AND NOT #statStatesInCurrentMode.complete THEN
0641         #diagnostics.buffer[#tempDiagnosticsBufferIndexSC].mes-
sage := #MSG_SC_NOT_ALLOWED;
0642     END_IF;
0643
0644     "LPMLV30_STATE_COMPLETE":
0645     #StateChangeInProgress := FALSE;
0646     IF #statCmdChangeRequest AND #tempCntrlCmd <> #statCntrlCm-
dOld AND #tempCntrlCmd <> "LPMLV30_CMD_UNDEFINED" THEN // Check
if state change is requested
0647         CASE #tempCntrlCmd OF // Check control command
0648         "LPMLV30_CMD_RESET":
0649             // Check if valid state for command is in use by current unit mode
0650             IF #statStatesInCurrentMode.resetting THEN
0651                 #StateChangeInProgress := TRUE;
0652                 #StateRequested := "LPMLV30_STATE_IDLE";
0653                 #statStateInternal := "LPMLV30_STATE_RESETTING";
0654             ELSIF #statStatesInCurrentMode.idle THEN
0655                 #StateChangeInProgress := TRUE;
0656                 #StateRequested := "LPMLV30_STATE_IDLE";
0657                 #statStateInternal := "LPMLV30_STATE_IDLE";
0658             ELSE
0659                 #diagnostics.buffer[#tempDiagnosticsBufferIndexCmd].mes-
sage := #MSG_CMD_NOT_ALLOWED;
0660             END_IF;
0661
0662         "LPMLV30_CMD_START":
0663             // Check if valid state for command is in use by current unit mode
0664             IF NOT #statStatesInCurrentMode.resetting AND NOT #statStatesInCurrent-
Mode.idle THEN
0665                 #StateChangeInProgress := TRUE;
0666                 #StateRequested := "LPMLV30_STATE_EXECUTE";
0667             // Check if valid state for command is in use by current unit mode
0668             IF #statStatesInCurrentMode.starting THEN
0669                 #statStateInternal := "LPMLV30_STATE_STARTING";
0670             ELSE
0671                 #statStateInternal := "LPMLV30_STATE_EXECUTE";
0672             END_IF;

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0673         ELSE
0674         #diagnostics.buffer[#tempDiagnosticsBufferIndexCmd].mes-
sage := #MSG_CMD_NOT_ALLOWED;
0675         END_IF;
0676         ELSE
0677         IF #diagnostics.buffer[#tempDiagnosticsBufferIndexCmd].mes-
sage = #MSG_NO_MESSAGE THEN // ELSE: Message was already
written in head part of message handling
0678         #diagnostics.buffer[#tempDiagnosticsBufferIndexCmd].mes-
sage := #MSG_CMD_NOT_ALLOWED;
0679         END_IF;
0680         END_CASE;
0681     END_IF;
0682
0683     "LPMLV30_STATE_RESETTING":
0684     // Check if state is completed
0685     // No message handling needed -> Idle is minimum required state
0686     IF #tempSCInternal THEN // ELSE: Wait for state complete signal
0687         #statStateInternal := "LPMLV30_STATE_IDLE";
0688     END_IF;
0689
0690     "LPMLV30_STATE_IDLE":
0691     #StateChangeInProgress := FALSE;
0692     // No message handling needed -> Execute is minimum required state
0693     // Check if valid command is sent
0694     IF #statCmdChangeRequest AND #tempCntrlCmd <> #statCntrlCm-
dOld AND #tempCntrlCmd <> "LPMLV30_CMD_UNDEFINED" THEN // Check
if state change is requested
0695         CASE #tempCntrlCmd OF // Check control command
0696         "LPMLV30_CMD_START":
0697             #StateChangeInProgress := TRUE;
0698             #StateRequested := "LPMLV30_STATE_EXECUTE";
0699             // Check if valid state for command is in use by current mode
0700             IF #statStatesInCurrentMode.starting THEN
0701                 #statStateInternal := "LPMLV30_STATE_STARTING";
0702             ELSE
0703                 #statStateInternal := "LPMLV30_STATE_EXECUTE";
0704             END_IF;
0705         ELSE
0706             IF #diagnostics.buffer[#tempDiagnosticsBufferIndexCmd].mes-
sage = #MSG_NO_MESSAGE THEN // ELSE: Message was already
written in head part of message handling
0707                 #diagnostics.buffer[#tempDiagnosticsBufferIndexCmd].mes-
sage := #MSG_CMD_NOT_ALLOWED;
0708             END_IF;
0709         END_CASE;
0710     END_IF;
0711
0712     "LPMLV30_STATE_STARTING",
0713     "LPMLV30_STATE_UNHOLDING",
0714     "LPMLV30_STATE_UNSUSPENDING":
0715     // Check if state is completed
0716     IF #tempSCInternal THEN // ELSE: Wait for state complete signal
0717         #statStateInternal := "LPMLV30_STATE_EXECUTE";
0718     END_IF;

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0719
0720     "LPMLV30_STATE_HOLDING":
0721     // Check if state is completed
0722     IF #tempSCInternal AND #statStatesInCurrentMode.held THEN // ELSE: Wait for
state complete signal
0723         #statStateInternal := "LPMLV30_STATE_HELD";
0724     ELSIF #tempSCInternal AND NOT #statStatesInCurrentMode.held THEN
0725         #diagnostics.buffer[#tempDiagnosticsBufferIndexSC].mes-
sage := #MSG_SC_NOT_ALLOWED;
0726     END_IF;
0727
0728     "LPMLV30_STATE_HELD":
0729     #StateChangeInProgress := FALSE;
0730     // Check if valid command is sent
0731     IF #statCmdChangeRequest AND #tempCntrlCmd <> #statCntrlCm-
dOld AND #tempCntrlCmd <> "LPMLV30_CMD_UNDEFINED" THEN // Check
if state change is requested
0732         CASE #tempCntrlCmd OF // Check control command
0733         "LPMLV30_CMD_UNHOLD":
0734             #StateChangeInProgress := TRUE;
0735             #StateRequested := "LPMLV30_STATE_EXECUTE";
0736             // Check if valid state for command is in use by current mode
0737             IF #statStatesInCurrentMode.unholding THEN
0738                 #statStateInternal := "LPMLV30_STATE_UNHOLDING";
0739             ELSE
0740                 #statStateInternal := "LPMLV30_STATE_EXECUTE";
0741             END_IF;
0742         ELSE
0743             IF #diagnostics.buffer[#tempDiagnosticsBufferIndexCmd].mes-
sage = #MSG_NO_MESSAGE THEN // ELSE: Message was already
written in head part of message handling
0744                 #diagnostics.buffer[#tempDiagnosticsBufferIndexCmd].mes-
sage := #MSG_CMD_NOT_ALLOWED;
0745             END_IF;
0746         END_CASE;
0747     END_IF;
0748
0749     "LPMLV30_STATE_SUSPENDING":
0750     // Check if state is completed
0751     IF #tempSCInternal AND #statStatesInCurrentMode.suspended THEN // ELSE: Wait
for state complete signal
0752         #statStateInternal := "LPMLV30_STATE_SUSPENDED";
0753     ELSIF #tempSCInternal AND NOT #statStatesInCurrentMode.suspended THEN
0754         #diagnostics.buffer[#tempDiagnosticsBufferIndexSC].mes-
sage := #MSG_SC_NOT_ALLOWED;
0755     END_IF;
0756
0757     "LPMLV30_STATE_SUSPENDED":
0758     #StateChangeInProgress := FALSE;
0759     // Check if valid command is sent
0760     IF #statCmdChangeRequest AND #tempCntrlCmd <> #statCntrlCm-
dOld AND #tempCntrlCmd <> "LPMLV30_CMD_UNDEFINED" THEN // Check
if state change is requested
0761         CASE #tempCntrlCmd OF // Check control command
0762         "LPMLV30_CMD_UNSPEND":

```

```

0763         #StateChangeInProgress := TRUE;
0764         #StateRequested := "LPMLV30_STATE_EXECUTE";
0765         // Check if valid state for command is in use by current mode
0766         IF #statStatesInCurrentMode.unsuspending THEN
0767             #statStateInternal := "LPMLV30_STATE_UNSUSPENDING";
0768         ELSE
0769             #statStateInternal := "LPMLV30_STATE_EXECUTE";
0770         END_IF;
0771     ELSE
0772         IF #diagnostics.buffer[#tempDiagnosticsBufferIndexCmd].mes-
message = #MSG_NO_MESSAGE THEN // ELSE: Message was already
written in head part of message handling
0773             #diagnostics.buffer[#tempDiagnosticsBufferIndexCmd].mes-
message := #MSG_CMD_NOT_ALLOWED;
0774         END_IF;
0775     END_CASE;
0776 END_IF;
0777
0778 "LPMLV30_STATE_ABORTING":
0779 // Check if state is completed
0780 IF #tempSCInternal THEN // ELSE: Wait for state complete signal
0781     #statStateInternal := "LPMLV30_STATE_ABORTED";
0782 END_IF;
0783
0784 "LPMLV30_STATE_ABORTED":
0785 #StateChangeInProgress := FALSE;
0786 // Check if valid command is sent
0787 IF #statCmdChangeRequest AND #tempCntrlCmd <> #statCntrlCm-
dOld AND #tempCntrlCmd <> "LPMLV30_CMD_UNDEFINED" THEN // Check
if state change is requested
0788     CASE #tempCntrlCmd OF // Check control command
0789         "LPMLV30_CMD_CLEAR":
0790             #StateChangeInProgress := TRUE;
0791             #StateRequested := "LPMLV30_STATE_STOPPED";
0792             // Check if valid state for command is in use by current mode
0793             IF #statStatesInCurrentMode.clearing THEN
0794                 #statStateInternal := "LPMLV30_STATE_CLEARING";
0795             ELSE
0796                 #statStateInternal := "LPMLV30_STATE_STOPPED";
0797             END_IF;
0798         ELSE
0799             IF #diagnostics.buffer[#tempDiagnosticsBufferIndexCmd].mes-
message = #MSG_NO_MESSAGE THEN // ELSE: Message was already
written in head part of message handling
0800                 #diagnostics.buffer[#tempDiagnosticsBufferIndexCmd].mes-
message := #MSG_CMD_NOT_ALLOWED;
0801             END_IF;
0802         END_CASE;
0803     END_IF;
0804
0805 "LPMLV30_STATE_CLEARING",
0806 "LPMLV30_STATE_STOPPING":
0807 // Check if state is completed
0808 IF #tempSCInternal THEN // ELSE: Wait for state complete signal
0809     #statStateInternal := "LPMLV30_STATE_STOPPED";

```

```

0810     END_IF;
0811
0812     "LPMLV30_STATE_STOPPED":
0813     #StateChangeInProgress := FALSE;
0814     IF #statCmdChangeRequest AND #tempCntrlCmd <> #statCntrlCm-
dOld AND #tempCntrlCmd <> "LPMLV30_CMD_UNDEFINED" THEN // Check
if state change is requested
0815     // Check if valid command is sent
0816     CASE #tempCntrlCmd OF
0817     "LPMLV30_CMD_RESET":
0818     // Check if valid state for command is in use by current unit mode
0819     IF #statStatesInCurrentMode.resetting THEN
0820     #StateChangeInProgress := TRUE;
0821     #StateRequested      := "LPMLV30_STATE_IDLE";
0822     #statStateInternal  := "LPMLV30_STATE_RESETTING";
0823     ELSIF #statStatesInCurrentMode.idle THEN
0824     #StateChangeInProgress := TRUE;
0825     #StateRequested      := "LPMLV30_STATE_IDLE";
0826     #statStateInternal  := "LPMLV30_STATE_IDLE";
0827     ELSE
0828     #diagnostics.buffer[#tempDiagnosticsBufferIndexCmd].mes-
sage := #MSG_CMD_NOT_ALLOWED;
0829     END_IF;
0830
0831     "LPMLV30_CMD_START":
0832     IF NOT #statStatesInCurrentMode.resetting AND NOT #statStatesInCurrent-
Mode.idle THEN
0833     #StateChangeInProgress := TRUE;
0834     #StateRequested := "LPMLV30_STATE_EXECUTE";
0835     // Check if valid state for command is in use by current mode
0836     IF #statStatesInCurrentMode.starting THEN
0837     #statStateInternal := "LPMLV30_STATE_STARTING";
0838     ELSE
0839     #statStateInternal := "LPMLV30_STATE_EXECUTE";
0840     END_IF;
0841     ELSE
0842     #diagnostics.buffer[#tempDiagnosticsBufferIndexCmd].mes-
sage := #MSG_CMD_NOT_ALLOWED;
0843     END_IF;
0844     ELSE
0845     IF #diagnostics.buffer[#tempDiagnosticsBufferIndexCmd].mes-
sage = #MSG_NO_MESSAGE THEN // ELSE: Message was already
written in head part of message handling
0846     #diagnostics.buffer[#tempDiagnosticsBufferIndexCmd].mes-
sage := #MSG_CMD_NOT_ALLOWED;
0847     END_IF;
0848     END_CASE;
0849     END_IF;
0850
0851     "LPMLV30_STATE_UNDEFINED":
0852     #StateChangeInProgress := FALSE;
0853     #StateRequested      := "LPMLV30_STATE_STOPPED";
0854     #statStateInternal  := "LPMLV30_STATE_STOPPED";
0855     ELSE
0856     ; // Undefined state

```

```

0857     END_CASE;
0858     END_IF; // End: state machine
0859
0860     //-----
0861     // Message handling for state manager: foot part
0862     //-----
0863     IF #statStateInternal <> #statStateCurrentOld THEN // ELSE: States were not
changed
0864     IF #tempDiagnosticsBufferIndexCmd >= 0 AND #tempDiagnosticsBufferIn-
dexCmd <= "LPMLV30_DIAG_BUFFER_UPPER_LIM" THEN
0865         IF #diagnostics.buffer[#tempDiagnosticsBufferIndexCmd].message = #MSG_NO_MES-
SAGE THEN
0866             #diagnostics.buffer[#tempDiagnosticsBufferIndexCmd].mes-
sage := #MSG_STATE_CHANGED_SUCCESSFULLY;
0867         END_IF;
0868     END_IF;
0869     IF #tempDiagnosticsBufferIndexSC >= 0 AND #tempDiagnosticsBufferIn-
dexSC <= "LPMLV30_DIAG_BUFFER_UPPER_LIM" THEN
0870         IF #diagnostics.buffer[#tempDiagnosticsBufferIndexSC].message = #MSG_NO_MES-
SAGE THEN
0871             #diagnostics.buffer[#tempDiagnosticsBufferIndexSC].mes-
sage := #MSG_STATE_CHANGED_SUCCESSFULLY;
0872         END_IF;
0873     END_IF;
0874     END_IF; // End: message handling for state manager: foot part
0875 END_IF; // End: As from second cycle
0876 // End: State manager
0877
0878 //-----
-----
0879 // Write outputs including boolean interface outputs
0880 //-----
-----
0881 IF #statUnitModeCurrentInternal <> #statUnitModeCurrentInternalOld THEN // Check
if new unit mode is selected
0882     #ProductionModeActive := FALSE;
0883     #MaintenanceModeActive := FALSE;
0884     #ManualModeActive := FALSE;
0885     #UserMode01Active := FALSE;
0886     #UserMode02Active := FALSE;
0887     #UserMode03Active := FALSE;
0888     #UserMode04Active := FALSE;
0889     #UserMode05Active := FALSE;
0890     #UserMode06Active := FALSE;
0891     #UserMode07Active := FALSE;
0892     #UserMode08Active := FALSE;
0893     // #UserMode09Active := FALSE;
0894     // #UserMode10Active := FALSE;
0895     // #UserMode11Active := FALSE;
0896     // #UserMode13Active := FALSE;
0897     // #UserMode14Active := FALSE;
0898     // #UserMode15Active := FALSE;
0899     // #UserMode16Active := FALSE;
0900     // #UserMode17Active := FALSE;
0901     // #UserMode18Active := FALSE;

```

```

0902 // #UserMode19Active := FALSE;
0903 // #UserMode20Active := FALSE;
0904 // #UserMode21Active := FALSE;
0905 // #UserMode22Active := FALSE;
0906 // #UserMode23Active := FALSE;
0907 // #UserMode24Active := FALSE;
0908 // #UserMode25Active := FALSE;
0909 // #UserMode26Active := FALSE;
0910 // #UserMode27Active := FALSE;
0911 // #UserMode28Active := FALSE;
0912
0913 CASE #statUnitModeCurrentInternal OF // Set new bit for current unit mode
0914 "LPMLV30_MODE_PRODUCTION":
0915     #ProductionModeActive := TRUE;
0916 "LPMLV30_MODE_MAINTENANCE":
0917     #MaintenanceModeActive := TRUE;
0918 "LPMLV30_MODE_MANUAL":
0919     #ManualModeActive := TRUE;
0920 "LPMLV30_MODE_USER_01":
0921     #UserMode01Active := TRUE;
0922 "LPMLV30_MODE_USER_02":
0923     #UserMode02Active := TRUE;
0924 "LPMLV30_MODE_USER_03":
0925     #UserMode03Active := TRUE;
0926 "LPMLV30_MODE_USER_04":
0927     #UserMode04Active := TRUE;
0928 "LPMLV30_MODE_USER_05":
0929     #UserMode05Active := TRUE;
0930 "LPMLV30_MODE_USER_06":
0931     #UserMode06Active := TRUE;
0932 "LPMLV30_MODE_USER_07":
0933     #UserMode07Active := TRUE;
0934 "LPMLV30_MODE_USER_08":
0935     #UserMode08Active := TRUE;
0936 // LPMLV30_MODE_USER_09:
0937 // #UserMode09Active := TRUE;
0938 // LPMLV30_MODE_USER_10:
0939 // #UserMode10Active := TRUE;
0940 // LPMLV30_MODE_USER_11:
0941 // #UserMode11Active := TRUE;
0942 // LPMLV30_MODE_USER_12:
0943 // #UserMode12Active := TRUE;
0944 // LPMLV30_MODE_USER_13:
0945 // #UserMode13Active := TRUE;
0946 // LPMLV30_MODE_USER_14:
0947 // #UserMode14Active := TRUE;
0948 // LPMLV30_MODE_USER_15:
0949 // #UserMode15Active := TRUE;
0950 // LPMLV30_MODE_USER_16:
0951 // #UserMode16Active := TRUE;
0952 // LPMLV30_MODE_USER_17:
0953 // #UserMode17Active := TRUE;
0954 // LPMLV30_MODE_USER_18:
0955 // #UserMode18Active := TRUE;
0956 // LPMLV30_MODE_USER_19:

```

```

0957 // #UserMode19Active := TRUE;
0958 // LPMLV30_MODE_USER_20:
0959 // #UserMode20Active := TRUE;
0960 // LPMLV30_MODE_USER_21:
0961 // #UserMode21Active := TRUE;
0962 // LPMLV30_MODE_USER_22:
0963 // #UserMode22Active := TRUE;
0964 // LPMLV30_MODE_USER_23:
0965 // #UserMode23Active := TRUE;
0966 // LPMLV30_MODE_USER_24:
0967 // #UserMode25Active := TRUE;
0968 // LPMLV30_MODE_USER_25:
0969 // #UserMode25Active := TRUE;
0970 // LPMLV30_MODE_USER_26:
0971 // #UserMode26Active := TRUE;
0972 // LPMLV30_MODE_USER_27:
0973 // #UserMode27Active := TRUE;
0974 // LPMLV30_MODE_USER_28:
0975 // #UserMode28Active := TRUE;
0976 ELSE
0977     ; // No bit is set
0978 END_CASE;
0979
0980 #statUnitModeCurrentInternalOld := #statUnitModeCurrentInternal;
0981 END_IF;
0982
0983 IF #statStateInternal <> #statStateInternalOld THEN // Check if new state is selected
0984     #StateCurrent := #statStateInternal; // Set output
0985
0986 // Set states of boolean interface out
0987 // Delete old state
0988 #ClearingStateActive := FALSE;
0989 #StoppedStateActive := FALSE;
0990 #StartingStateActive := FALSE;
0991 #IdleStateActive := FALSE;
0992 #SuspendedStateActive := FALSE;
0993 #ExecuteStateActive := FALSE;
0994 #StoppingStateActive := FALSE;
0995 #AbortingStateActive := FALSE;
0996 #AbortedStateActive := FALSE;
0997 #HoldingStateActive := FALSE;
0998 #HeldStateActive := FALSE;
0999 #UnholdingStateActive := FALSE;
1000 #SuspendingStateActive := FALSE;
1001 #UnsuspendingStateActive := FALSE;
1002 #ResettingStateActive := FALSE;
1003 #CompletingStateActive := FALSE;
1004 #CompleteStateActive := FALSE;
1005
1006 // Set new state
1007 CASE #statStateInternal OF
1008     "LPMLV30_STATE_CLEARING":
1009         #ClearingStateActive := TRUE;
1010     "LPMLV30_STATE_STOPPED":

```

```

1011     #StoppedStateActive := TRUE;
1012     "LPMLV30_STATE_STARTING":
1013     #StartingStateActive := TRUE;
1014     "LPMLV30_STATE_IDLE":
1015     #IdleStateActive := TRUE;
1016     "LPMLV30_STATE_SUSPENDED":
1017     #SuspendedStateActive := TRUE;
1018     "LPMLV30_STATE_EXECUTE":
1019     #ExecuteStateActive := TRUE;
1020     "LPMLV30_STATE_STOPPING":
1021     #StoppingStateActive := TRUE;
1022     "LPMLV30_STATE_ABORTING":
1023     #AbortingStateActive := TRUE;
1024     "LPMLV30_STATE_ABORTED":
1025     #AbortedStateActive := TRUE;
1026     "LPMLV30_STATE_HOLDING":
1027     #HoldingStateActive := TRUE;
1028     "LPMLV30_STATE_HELD":
1029     #HeldStateActive := TRUE;
1030     "LPMLV30_STATE_UNHOLDING":
1031     #UnholdingStateActive := TRUE;
1032     "LPMLV30_STATE_SUSPENDING":
1033     #SuspendingStateActive := TRUE;
1034     "LPMLV30_STATE_UNSPENDING":
1035     #UnsuspendingStateActive := TRUE;
1036     "LPMLV30_STATE_RESETTING":
1037     #ResettingStateActive := TRUE;
1038     "LPMLV30_STATE_COMPLETING":
1039     #CompletingStateActive := TRUE;
1040     "LPMLV30_STATE_COMPLETE":
1041     #CompleteStateActive := TRUE;
1042     ELSE
1043     ;
1044     END_CASE; // End: Set new state
1045
1046     #statStateInternalOld := #statStateInternal;
1047 END_IF; // End: Write boolean interface outputs
1048
1049 #diagnostics.bufferIndex := #tempDiagnosticsBufferIndex; // Temporary variable
    is used during block execution -> Copy back/Set output
1050 IF #statFirstCycle THEN
1051     #statFirstCycle := FALSE;
1052 END_IF;
1053
1054 // Save values for edge detection
1055 IF #statUnitModeChangeRequest THEN
1056     #statUnitModeOld := #statUnitMode;
1057 END_IF;
1058 IF #statCmdChangeRequest THEN
1059     #statCntrlCmdOld := #tempCntrlCmd;
1060 END_IF;
1061 IF #statStateInternal <> #statStateCurrentOld THEN
1062     #statStateCurrentOld := #statStateInternal;
1063 END_IF;
1064

```

1065 //

=====

1066 // End of function block: LPMLV30_UnitModeStateManager

1067 //

=====

=====

PackML_2Axis1EM [CPU 1515T-2 PN] / Program blocks / LPMLV30

LPMLV30_UnitModeStateTimes [FB30101]

LPMLV30_UnitModeStateTimes Properties

General

Name	LPMLV30_UnitModeStateTimes	Number	30101	Type	FB
Language	SCL	Numbering	Automatic		

Information

Title	LPMLV30_UnitModeStateTimes	Author	APC_ERLF	Comment	Support: tech.team.motioncontrol@siemens.com Fax: +49 (0) 9131/98-1297
Family	OMAC	Version		User-defined ID	

Name	Data type	Default value	Retain
▼ Input			
UnitModeCurrent	DInt	"LPMLV30_MODE_INVALID"	Non-retain
StateCurrent	DInt	"LPMLV30_STATE_UNDEFINED"	Non-retain
resetTimes	Bool	false	Non-retain
▼ Output			
ModeCurrentTime	Array[0.."LPMLV30_MODES_UPPER_LIM"] of DInt		Non-retain
ModeCumulativeTime	Array[0.."LPMLV30_MODES_UPPER_LIM"] of DInt		Retain
StateCurrentTime	Array[0.."LPMLV30_MODES_UPPER_LIM", 0.."LPMLV30_STATES_UPPER_LIM"] of DInt		Non-retain
StateCumulativeTime	Array[0.."LPMLV30_MODES_UPPER_LIM", 0.."LPMLV30_STATES_UPPER_LIM"] of DInt		Retain
actualTimeCurrentMode	DInt	0	Non-retain
cumulativeTimeCurrentMode	DInt	0	Non-retain
actualTimeCurrentStates	Array[0.."LPMLV30_STATES_UPPER_LIM"] of DInt		Non-retain
cumulativeTimeCurrentStates	Array[0.."LPMLV30_STATES_UPPER_LIM"] of DInt		Non-retain
AccTimeSinceReset	DInt	0	Retain
InOut			

Name	Data type	Default value	Retain
▼ Static			
statUnitModeCurrentOld	DInt	"LPMLV30_MODE_INVALID"	Non-retain
statStateCurrentOld	DInt	"LPMLV30_STATE_UNDEFINED"	Non-retain
statResetTimesOld	Bool	false	Non-retain
statStartingPointMeasureRuntime	LReal	0.0	Non-retain
statRuntime	LReal	0.0	Non-retain
statFirstCycle	Bool	true	Non-retain
▼ Temp			
tempI	Int		
tempJ	Int		
tempMeasuredRuntime	LReal		
tempRuntimeIntegerPart	DInt		
tempUnitModeCurrent	DInt		
tempStateCurrent	DInt		
Constant			

```

0001 //
=====
0002 // SIEMENS AG
0003 // (c)Copyright 2015 All Rights Reserved
0004 //-----
-----
0005 // Library: LPMLV30
0006 // Tested with: S7-1200 with FW version V4.1, S7-1500 with FW version V1.7
0007 // Engineering: TIA Portal V13 SP1
0008 // Restrictions: ---
0009 // Requirements: S7-1200 / S7-1500
0010 // Functionality: Determination of unit modes and states times (current and also
cumulative times)
0011 //-----
-----
0012 // Change log table:
0013 // Version Date Expert in charge Changes applied
0014 // 03.00.01 29.05.2015 RK First released version
0015 //
=====
=====
0016 // Function block: LPMLV30_UnitModeStateTimes
0017 //
=====
=====
0018
0019 IF #statFirstCycle OR (#resetTimes AND NOT #statResetTimesOld) THEN
0020 // Reset times structures
0021 FOR #tempI := "LPMLV30_MODE_INVALID" TO "LPMLV30_MODES_UPPER_LIM" DO
0022 #ModeCurrentTime[#tempI] := 0;
0023 IF NOT #statFirstCycle THEN // Do only with rising edge at resetTimes
0024 #ModeCumulativeTime[#tempI] := 0;
0025 END_IF;
0026 FOR #tempJ := "LPMLV30_STATE_UNDEFINED" TO "LPMLV30_STATES_UPPER_LIM" DO
0027 #StateCurrentTime[#tempI, #tempJ] := 0;

```

```

0028     IF NOT #statFirstCycle THEN // Do only with rising edge at resetTimes
0029         #StateCumulativeTime[#tempI, #tempJ] := 0;
0030     END_IF;
0031 END_FOR;
0032 END_FOR;
0033     IF NOT #statFirstCycle THEN // Do only with rising edge at resetTimes
0034         #AccTimeSinceReset := 0;
0035     END_IF;
0036
0037     // Reset additional outputs
0038     #actualTimeCurrentMode := 0;
0039     IF NOT #statFirstCycle THEN // Do only with rising edge at resetTimes
0040         #cumulativeTimeCurrentMode := 0;
0041     END_IF;
0042     FOR #tempI := "LPMLV30_STATE_UNDEFINED" TO "LPMLV30_STATES_UPPER_LIM" DO
0043         #actualTimeCurrentStates[#tempI] := 0;
0044         IF NOT #statFirstCycle THEN // Do only with rising edge at resetTimes
0045             #cumulativeTimeCurrentStates[#tempI] := 0;
0046         END_IF;
0047     END_FOR;
0048
0049     // Set starting point for calculation of elapsed seconds
0050     #tempMeasuredRuntime := RUNTIME(#statStartingPointMeasureRuntime);
0051     #statRuntime := 0.0;
0052
0053     IF #statFirstCycle THEN
0054         #statFirstCycle := FALSE;
0055         RETURN; // Nothing else in this cycle to avoid runtime peaks
0056     END_IF;
0057 END_IF;
0058
0059 // Inputs UnitModeCurrent and StateCurrent
0060 #tempUnitModeCurrent := #UnitModeCurrent;
0061 #tempStateCurrent := #StateCurrent;
0062
0063 // Measure program runtime
0064 #tempMeasuredRuntime := RUNTIME(#statStartingPointMeasureRuntime);
0065 IF #tempMeasuredRuntime > 0.0 THEN //value OK
0066     #statRuntime := #statRuntime + #tempMeasuredRuntime;
0067 END_IF;
0068
0069 // Check if at least one second has been reached
0070 IF #statRuntime > 1.0 THEN
0071     #tempRuntimeIntegerPart := TRUNC_DINT(#statRuntime);
0072
0073     IF #statUnitModeCurrentOld >= "LPMLV30_MODE_INVALID" AND #statUnitModeCurrentOld <= "LPMLV30_MODES_UPPER_LIM" THEN
0074         //DINT overflow is not taken into account, because DINT in seconds means approx. 68 years
0075         #ModeCurrentTime[#statUnitModeCurrentOld] := #ModeCurrentTime[#statUnitModeCurrentOld] + #tempRuntimeIntegerPart;
0076         #ModeCumulativeTime[#statUnitModeCurrentOld] := #ModeCumulativeTime[#statUnitModeCurrentOld] + #tempRuntimeIntegerPart;
0077

```

```

0078 IF #statStateCurrentOld >= "LPMLV30_STATE_UNDEFINED" AND #statStateCurren-
    tOld <= "LPMLV30_STATES_UPPER_LIM" THEN
0079 //DINT overflow is not taken into account, because DINT in seconds means
    approx. 68 years
0080 #StateCurrentTime[#statUnitModeCurrentOld, #statStateCurren-
    tOld] := #StateCurrentTime[#statUnitModeCurrentOld, #statStateCurren-
    tOld] + #tempRuntimeIntegerPart;
0081 #StateCumulativeTime[#statUnitModeCurrentOld, #statStateCurren-
    tOld] := #StateCumulativeTime[#statUnitModeCurrentOld, #statStateCurren-
    tOld] + #tempRuntimeIntegerPart;
0082 END_IF;
0083 END_IF;
0084
0085 //DINT overflow is not taken into account, because DINT in seconds means ap-
    prox. 68 years
0086 #AccTimeSinceReset := #AccTimeSinceReset + #tempRuntimeIntegerPart;
0087
0088 #statRuntime := #statRuntime - #tempRuntimeIntegerPart; //fractional part of
    runtime variable for next cycle
0089 END_IF;
0090
0091 // Check if new unitMode is selected
0092 IF #tempUnitModeCurrent <> #statUnitModeCurrentOld THEN
0093 IF #tempUnitModeCurrent >= "LPMLV30_MODE_INVALID" AND #tempUnitModeCur-
    rent <= "LPMLV30_MODES_UPPER_LIM" THEN
0094 #ModeCurrentTime[#tempUnitModeCurrent] := 0;
0095 IF #tempStateCurrent >= "LPMLV30_STATE_UNDEFINED" AND #tempStateCur-
    rent <= "LPMLV30_STATES_UPPER_LIM" THEN
0096 #StateCurrentTime[#tempUnitModeCurrent, #tempStateCurrent] := 0;
0097 END_IF;
0098 END_IF;
0099
0100 // Check if new state is selected
0101 ELSIF #tempStateCurrent <> #statStateCurrentOld THEN
0102 IF #tempUnitModeCurrent >= "LPMLV30_MODE_INVALID" AND #tempUnitModeCur-
    rent <= "LPMLV30_MODES_UPPER_LIM" AND
0103 #tempStateCurrent >= "LPMLV30_STATE_UNDEFINED" AND #tempStateCur-
    rent <= "LPMLV30_STATES_UPPER_LIM"
0104 THEN
0105 #StateCurrentTime[#tempUnitModeCurrent, #tempStateCurrent] := 0;
0106 END_IF;
0107 END_IF;
0108
0109 // Update additional outputs
0110 IF #tempUnitModeCurrent >= "LPMLV30_MODE_INVALID" AND #tempUnitModeCur-
    rent <= "LPMLV30_MODES_UPPER_LIM" THEN
0111 #actualTimeCurrentMode := #ModeCurrentTime[#tempUnitModeCurrent];
0112 #cumulativeTimeCurrentMode := #ModeCumulativeTime[#tempUnitModeCurrent];
0113 IF #tempStateCurrent >= "LPMLV30_STATE_UNDEFINED" AND #tempStateCur-
    rent <= "LPMLV30_STATES_UPPER_LIM" THEN
0114 #actualTimeCurrentStates := #StateCurrentTime[#tempUnitModeCurrent];
0115 #cumulativeTimeCurrentStates := #StateCumulativeTime[#tempUnitModeCurrent];
0116 ELSE
0117 FOR #tempI := "LPMLV30_STATE_UNDEFINED" TO "LPMLV30_STATES_UPPER_LIM" DO
0118 #actualTimeCurrentStates[#tempI] := 0;

```

```
0119     #cumulativeTimeCurrentStates[#tempI] := 0;
0120     END_FOR;
0121     END_IF;
0122 ELSE
0123     #actualTimeCurrentMode      := 0;
0124     #cumulativeTimeCurrentMode := 0;
0125
0126     FOR #tempI := "LPMLV30_STATE_UNDEFINED" TO "LPMLV30_STATES_UPPER_LIM" DO
0127         #actualTimeCurrentStates[#tempI]      := 0;
0128         #cumulativeTimeCurrentStates[#tempI] := 0;
0129     END_FOR;
0130 END_IF;
0131
0132 // Save values for state change detection
0133 #statResetTimesOld      := #resetTimes;
0134 #statUnitModeCurrentOld := #tempUnitModeCurrent;
0135 #statStateCurrentOld   := #tempStateCurrent;
0136
0137 //
=====
0138 // End of Function block: LPMLV30_UnitModeStateTimes
0139 //
=====
```

PackML_2Axis1EM [CPU 1515T-2 PN] / Program blocks / Servo_Control

Axis_ObjectPOS [FB501]

Axis_ObjectPOS Properties

General

Name	Axis_ObjectPOS	Number	501	Type	FB
Language	LAD	Numbering	Manual		

Information

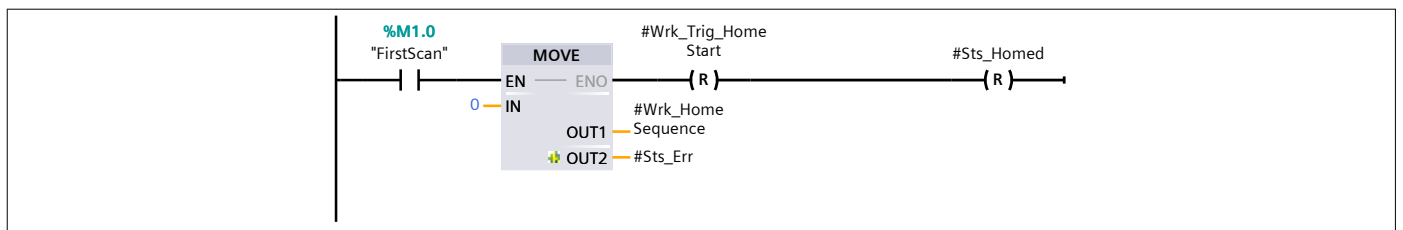
Title		Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Default value	Retain
▼ Input			
Inp_MasterNoMotion	Bool	false	Non-retain
Cmd_Enable	Bool	false	Non-retain
Cmd_Disable	Bool	false	Non-retain
Cmd_FaultReset	Bool	false	Non-retain
Cmd_Home	Bool	false	Non-retain
Cmd_Abort	Bool	false	Non-retain
Cmd_Stop	Bool	false	Non-retain
▼ Output			
Sts_ER	Bool	false	Non-retain
Sts_PowerEnable	Bool	false	Non-retain
Sts_EnableDone	Bool	false	Non-retain
Sts_DisableDone	Bool	false	Non-retain
Sts_FaultResetDone	Bool	false	Non-retain
Sts_HomeDone	Bool	false	Non-retain
Sts_AbortDone	Bool	false	Non-retain
Sts_StopDone	Bool	false	Non-retain
Sts_AxisOk	Bool	false	Non-retain
Sts_NoMotion	Bool	false	Non-retain
Sts_Homed	Bool	false	Non-retain
▼ InOut			
Ref_Axis	TO_PositioningAxis		
▼ Static			
Cfg_UseVirtualMaster	Bool	false	Non-retain
Cfg_HomeEnabled	Bool	true	Non-retain
Cfg_StopEnabled	Bool	true	Non-retain
Cfg_AbortEnabled	Bool	true	Non-retain
Cfg_ZeroSpeedTolerance	Real	0.1	Non-retain
Cfg_AbortRamp	Real	100.0	Non-retain
Cfg_StopRamp	Real	20.0	Non-retain
Sts_Err	DInt	0	Non-retain
Err_MCBBlockFault	Bool	false	Non-retain
Err_ErrorID	Word	16#0	Non-retain
Out_StatusWord	DWord	16#0	Non-retain
Out_ErrorWord	DWord	16#0	Non-retain

Name	Data type	Default value	Retain
Out_WarnWord	DWord	16#0	Non-retain
Wrk_DecelRate	Real	0.0	Non-retain
Wrk_TempR	Real	0.0	Non-retain
Wrk_Velocity	Real	0.0	Non-retain
Wrk_MaskedStillStatus	Real	0.0	Non-retain
Wrk_ER_Trig	Bool	false	Non-retain
Wrk_Trig_HomeStart	Bool	false	Non-retain
Wrk_AtHome1	Bool	false	Non-retain
Wrk_AtHome2	Bool	false	Non-retain
Wrk_AtHome3	Bool	false	Non-retain
Wrk_HomeSwPresent	Bool	false	Non-retain
Wrk_HomeJogFwd	Bool	false	Non-retain
Wrk_Trig_Init	Bool	false	Non-retain
Wrk_HaltEnable	Bool	false	Non-retain
Wrk_Sts_ER	Bool	false	Non-retain
Wrk_StatusWord_Homed	Bool	false	Non-retain
Wrk_Sts_NoMotion	Bool	false	Non-retain
Wrk_Trig_UnlatchHomeStatus	Bool	false	Non-retain
Wrk_FaultReset_Delay	TON_TIME		Non-retain
Wrk_DisabWatchdog	TON_TIME		Non-retain
Wrk_EnabWatchdog	TON_TIME		Non-retain
Wrk_HomeSequence	DInt	0	Non-retain
Wrk_HomeMode	Int	0	Non-retain
Wrk_StatusWord	DWord	16#0	Non-retain
Wrk_ErrorWord	DWord	16#0	Non-retain
Wrk_MC_Power	MC_POWER		
Wrk_MC_Halt	MC_HALT		
Wrk_MC_Home	MC_HOME		
Wrk_MC_Reset	MC_RESET		
Wrk_MC_Jog	MC_MOVEJOG		
Wrk_Jog_Velocity	LReal	0.0	Non-retain
MC_Power_Enable	Bool	false	Non-retain
Temp			
Constant			

Network 1: First scan initialization

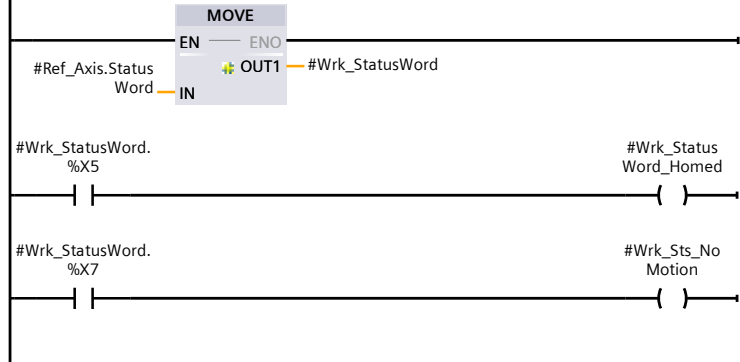
Initialize homing and fault errors



Network 2: Get axis state

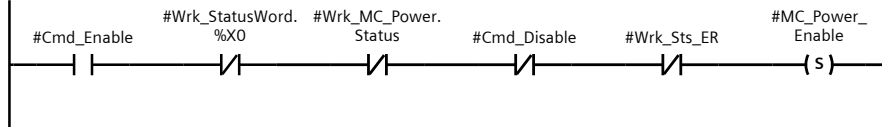
To avoid warning when using outputs as contacts keep some statuses in static area of DB

--	--	--



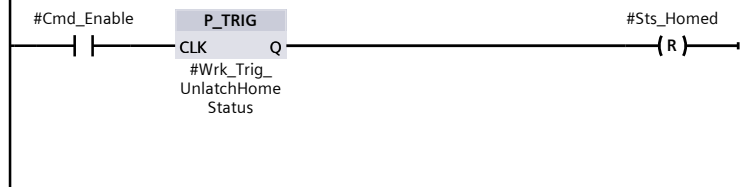
Network 3: - SECTION AXIS ENABLE

Enable axis indicated by result of MC_POWER

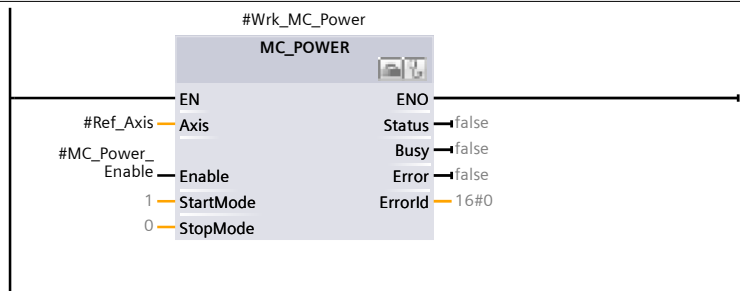


Network 4: Reset homed status

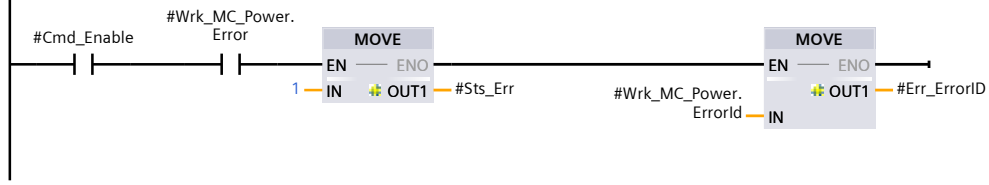
Reset when axis enabled



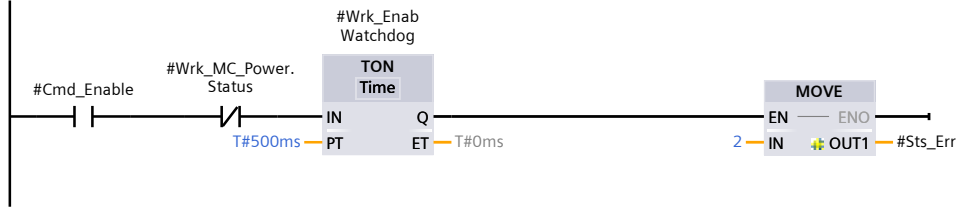
Network 5: MC_Power for axis



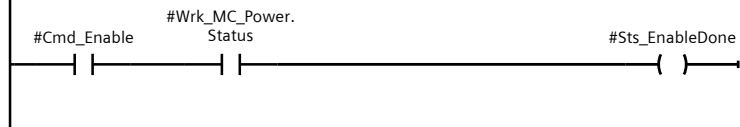
Network 6:



Network 7: Axis enable watchdog

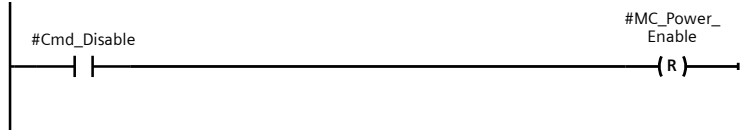


Network 8: Enable status for block output

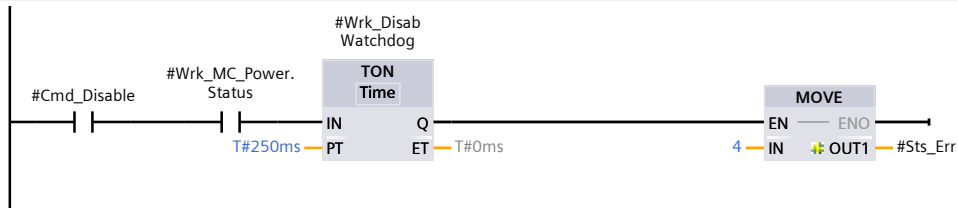


Network 9: - SECTION AXIS DISABLE

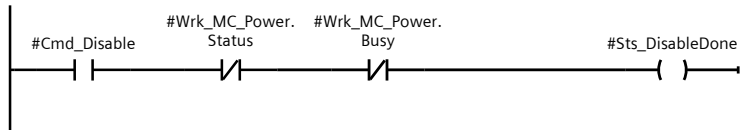
Turn off enable input to MC_POWER block



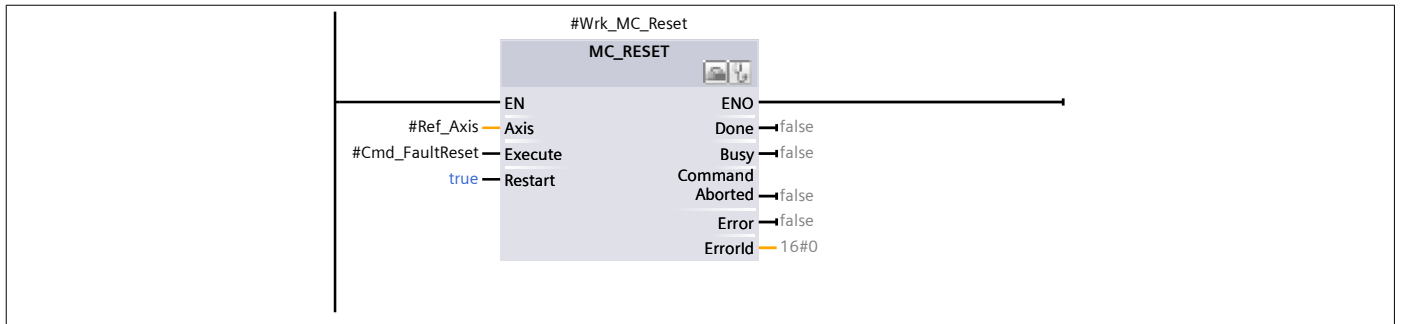
Network 10:



Network 11: Disable status for block output

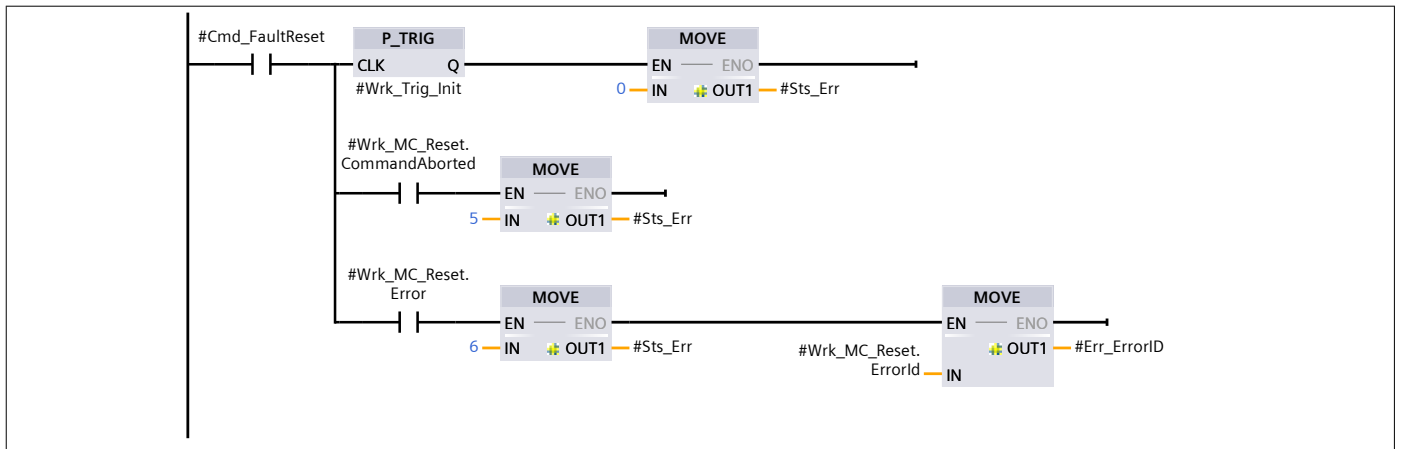


Network 12: - SECTION AXIS FAULT RESET

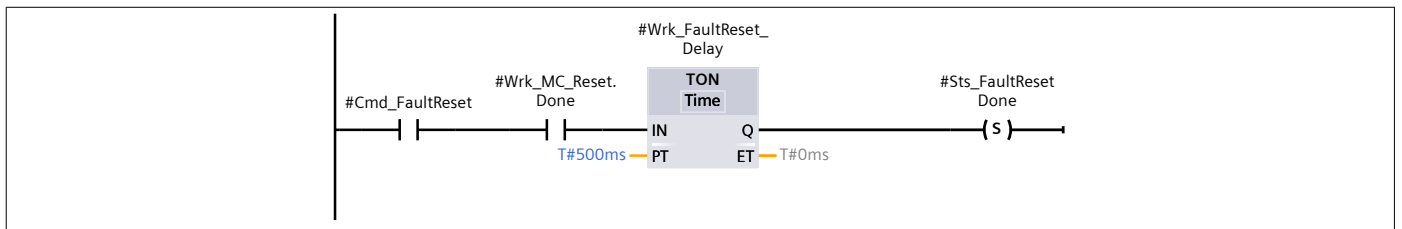


Network 13: Fault clearing indications

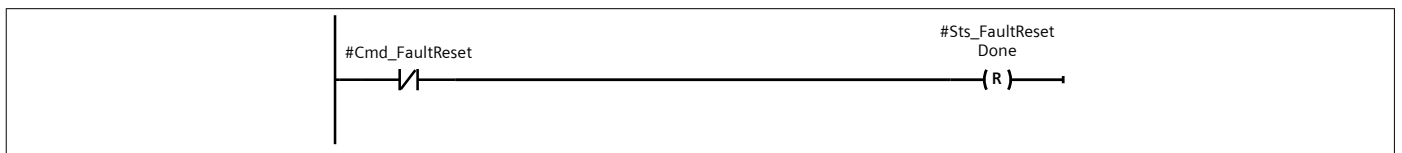
Error status output bits reset on earlier network.
Network reports errors from MC_Reset execution

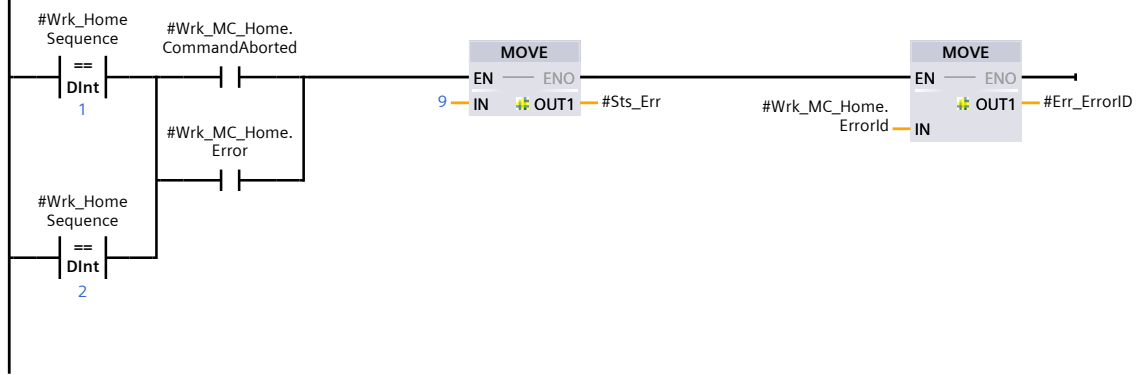


Network 14: Fault Reset done / handshake

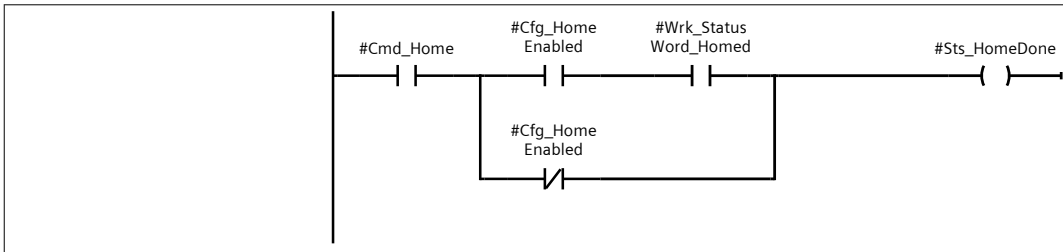


Network 15:





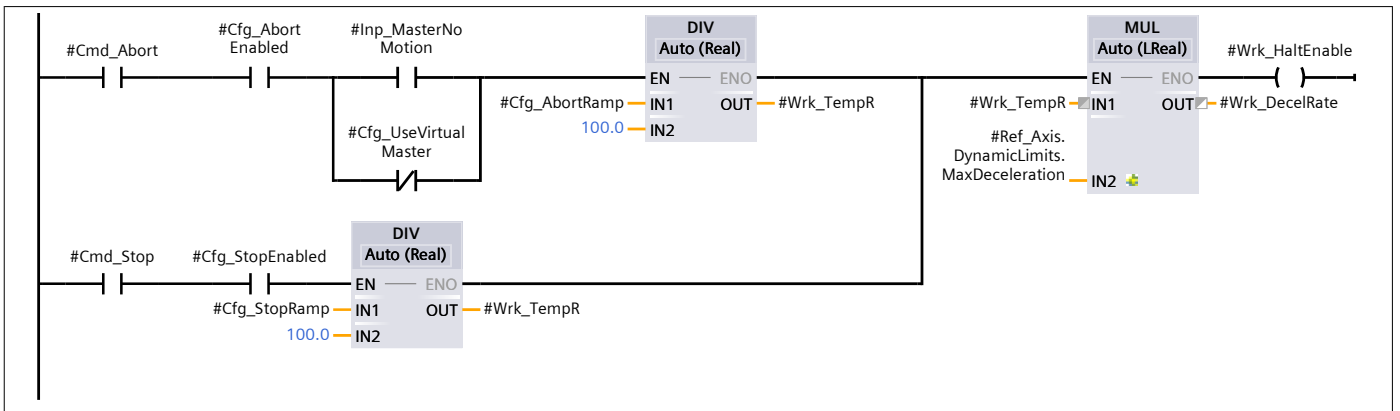
Network 21: Home done handshake



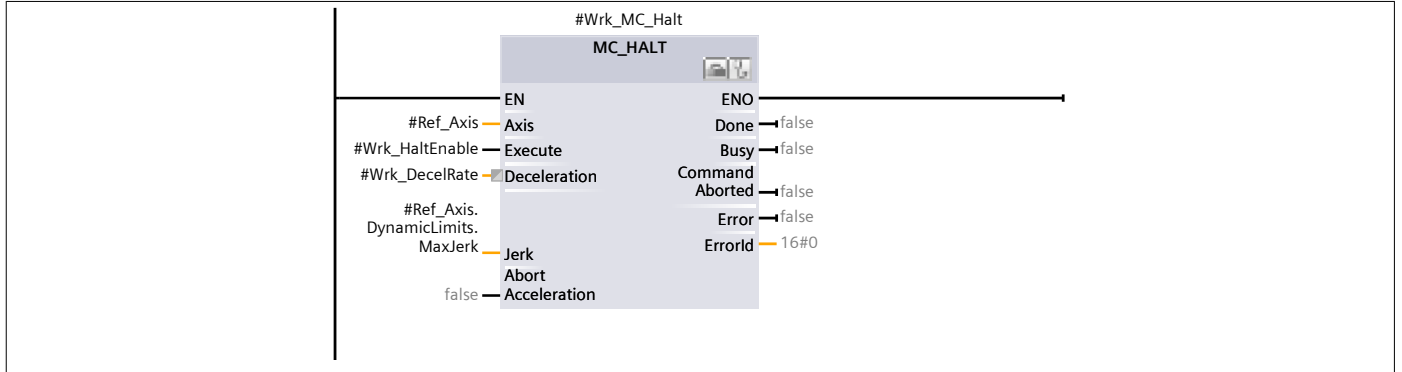
Network 22: - SECTION AXIS STOP

Whenever the machine enters either the stopping or aborting state, stop the axis
 -If stopping, all axes are stopped AFTER the virtual stops, providing a coordinated stop
 -Aborting causes all axes

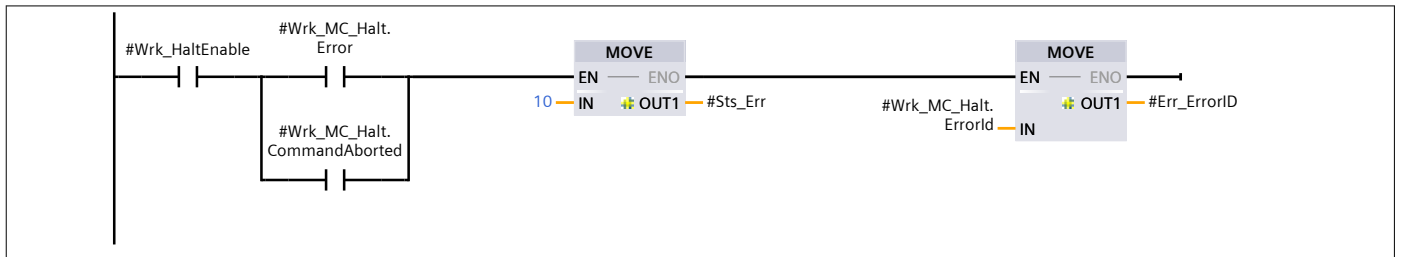
Deceleration as percent of maximum, obtained from axis structure
 Jerk set to max



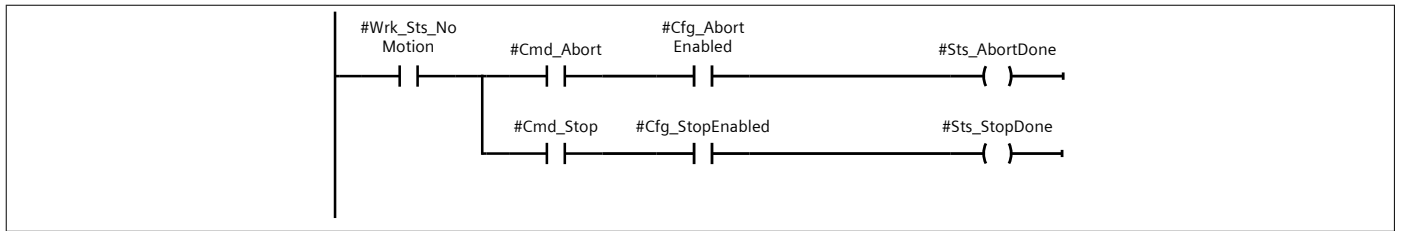
Network 23: MC_Halt block



Network 24:



Network 25: Stop done handshake



Network 26: - SECTION STATUS BIT UPDATE

Check for no axis movement

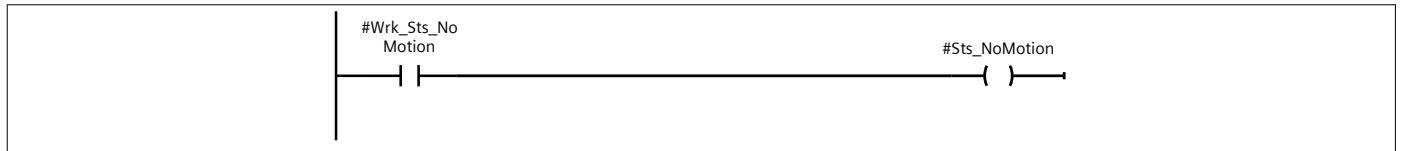
Status word relevant bits - x if relevant to no motion check

- Bit 00 1 if enabled
- Bit 01 1 error present
- Bit 02 1 restart active
- Bit 03 1 restart tags changed
- Bit 04 1 control panel active
- Bit 05 1 axis homed
- Bit 06 x 1 if no motion job running
- Bit 07 x 1 at standstill
- Bit 08 x 0 no positioning job running
- Bit 09 x 0 no jog job running
- Bit 10 x 0 no MoveVelocity running
- Bit 11 x 0 no Home job running
- Bit 12 x 1 axis running at constant velocity or at stanstill
- Bit 13 x 0 No acceleration

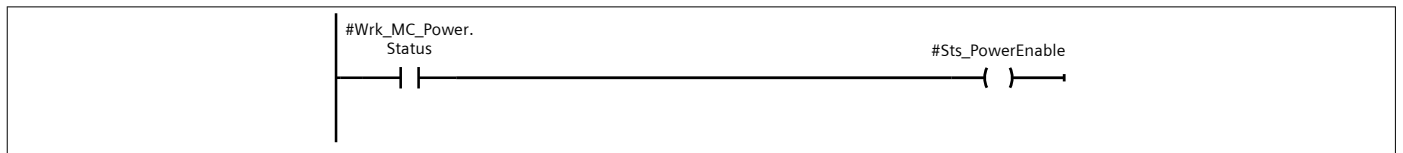
Bit 14 x 0 No deceleration
 Bit 21 x 0 Axis not being synchronized to leading value
 Bit 22 x 0 Axis is not moving synchronously
 Bit 23 x 0 No superimposed motion active
 Bit 24 x 0 No motion control instruction for leading value shift is active

Mask = DW#16#01E07FC0
 Value to check is = DW#16#000010C0

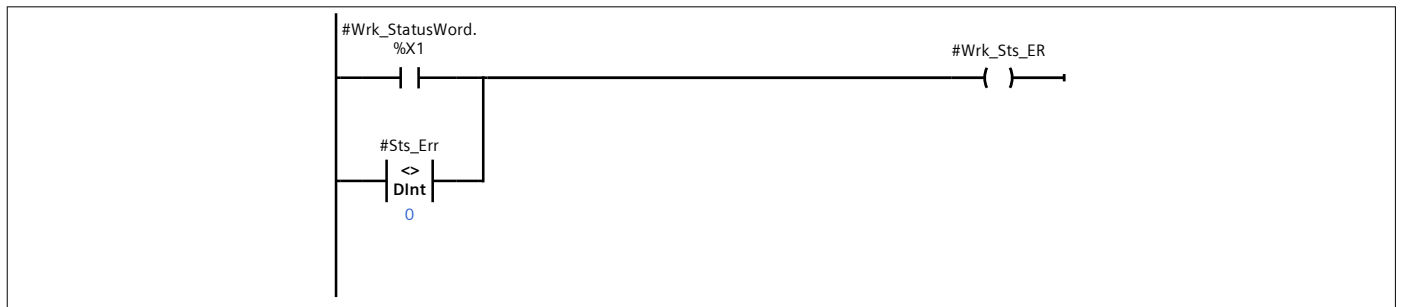
Err_Sts Values
 1 = MC_Power error
 2 = more than 500 msec for axis to enable
 4 = more than 250 msec for axis to disable
 5 = MC_Reset command aborted
 6 = MC_Reset error
 7 = MC_MOVEJOG when homing error
 8 = MC_HOME error
 9 = MC_HALT error



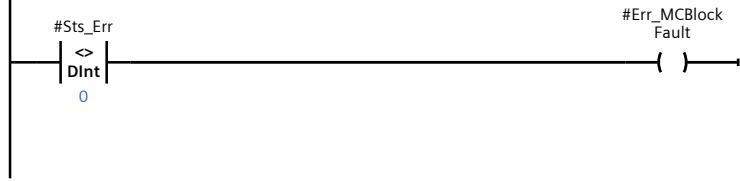
Network 27:



Network 28: General error

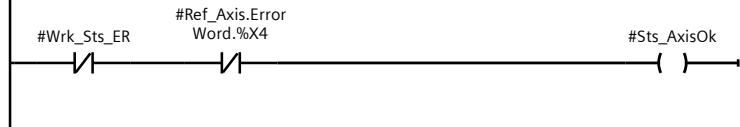


Network 29: Summary of motion block errors

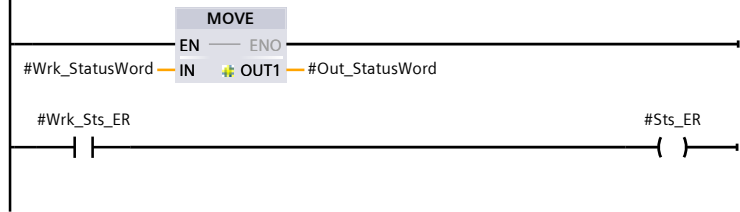


Network 30: Axis is okay and ready

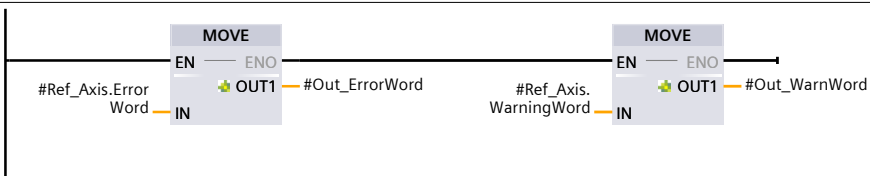
Bit 4 in ErrorWord is drive fault



Network 31: Copy working statuses to block outputs



Network 32: Copy axis error and warnings to outputs



PackML_2Axis1EM [CPU 1515T-2 PN] / Program blocks / EM02_AxisDum

EM02_00_Main [FB300]

EM02_00_Main Properties

General

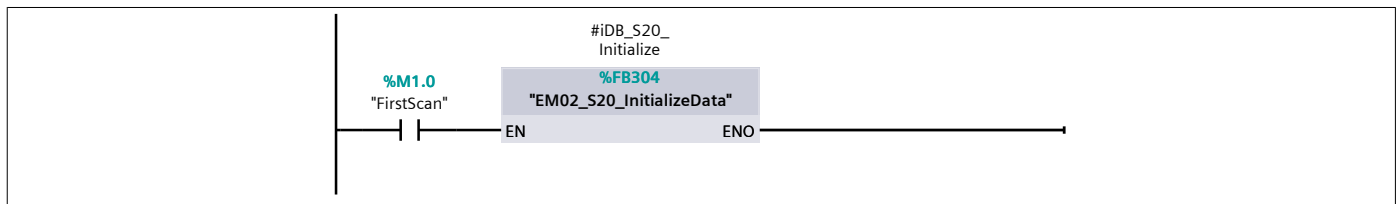
Name	EM02_00_Main	Number	300	Type	FB
Language	LAD	Numbering	Manual		

Information

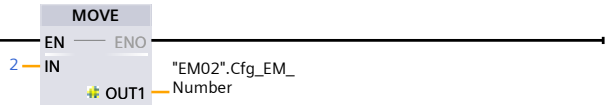
Title		Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Default value	Retain
Input			
Output			
InOut			
▼ Static			
Cfg_EM_Number	Int	0	Non-retain
Par_Jog_Accel	Real	0.0	Non-retain
Par_Jog_Decel	Real	0.0	Non-retain
Par_Jog_Speed	Real	0.0	Non-retain
iDB_EM_Procedure	"EM02_CM00_Procedure"		
iDB_CM02_ServoAxisObject	"EM01_CM02_ServoAxisObject"		
iDB_CM03_ServoAxisJog	"EM01_CM03_ServoAxisJog"		
iDB_S20_Initialize	"EM02_S20_InitializeData"		
Wrk_Temp_Bit	Bool	false	Non-retain
Temp			
Constant			

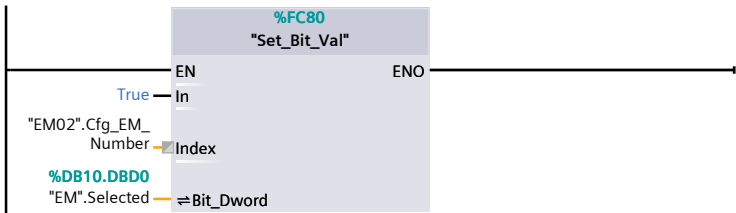
Network 2:



Network 3: Set EM number



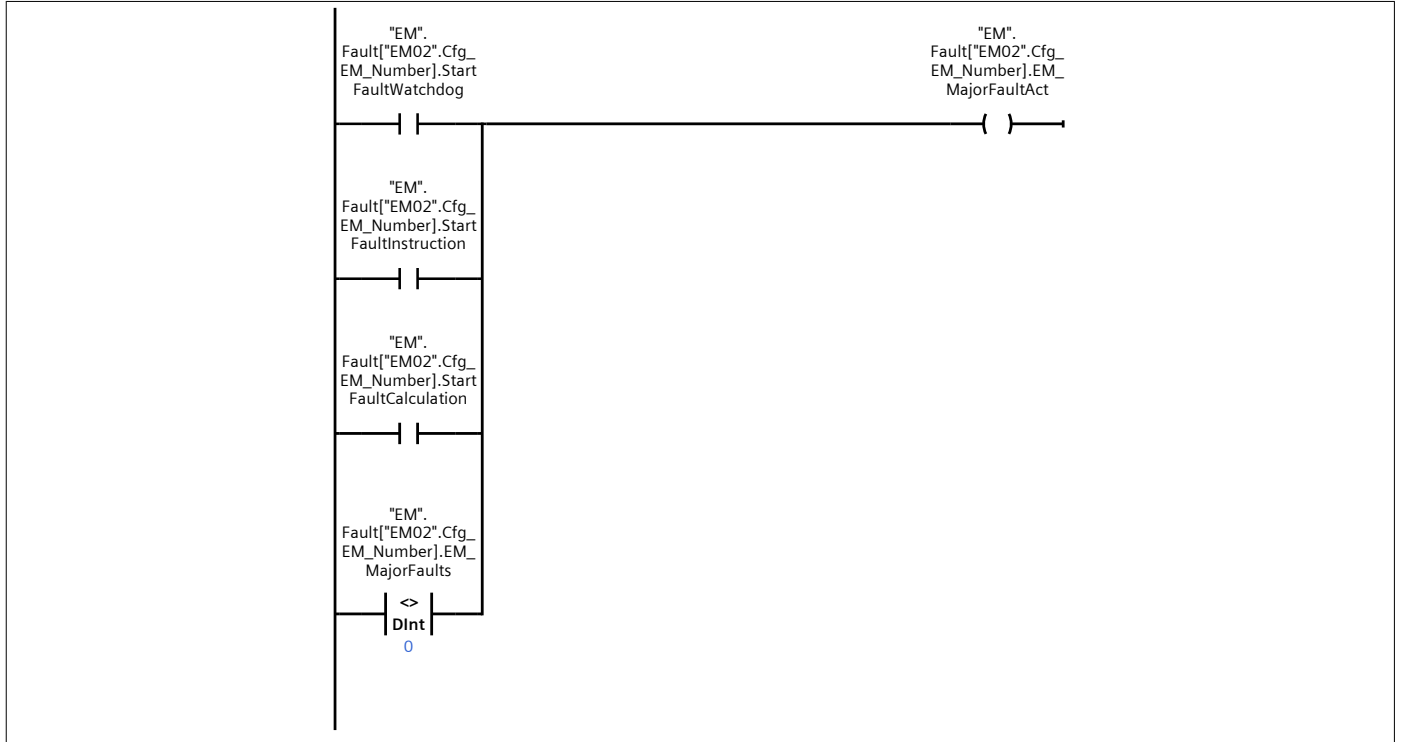
Network 4: Equipment module is selected and active



Network 5:

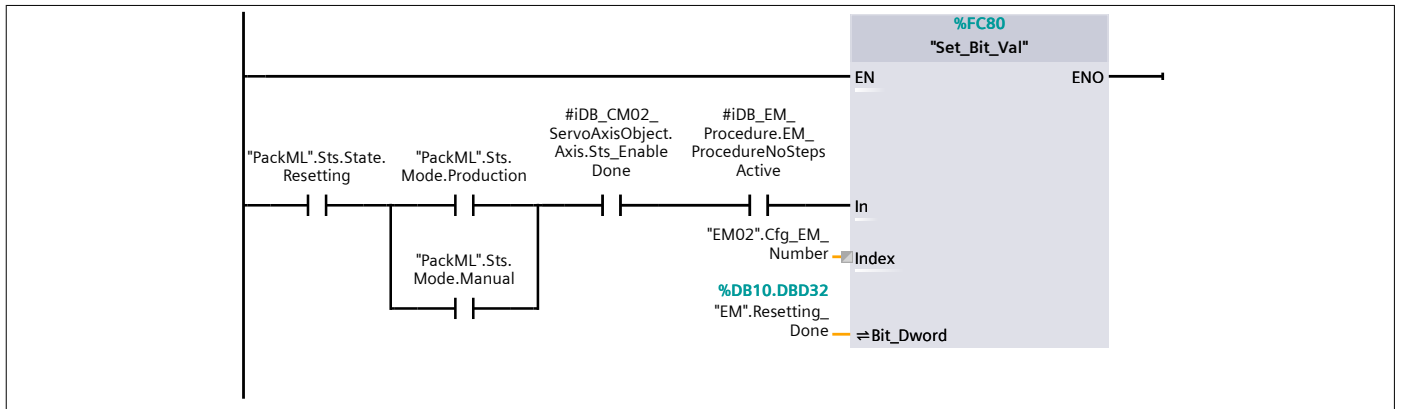


Network 6:

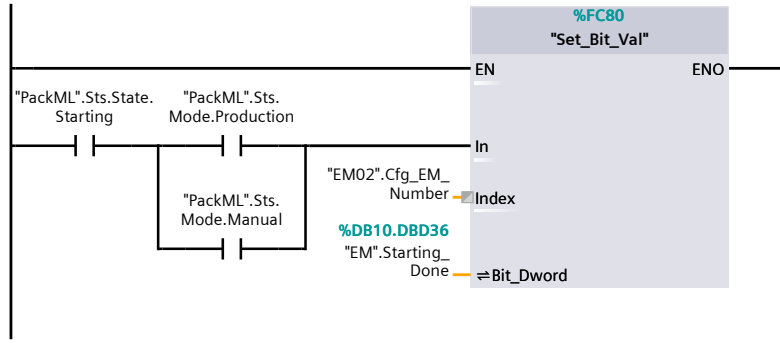


Network 7: SECTION EQUIPMENT MODULE STATE COMPLETE HANDLING - SET DONE BITS

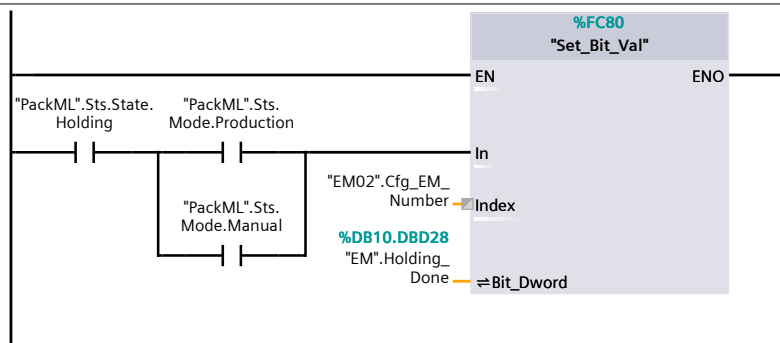
Network 8: Resetting state



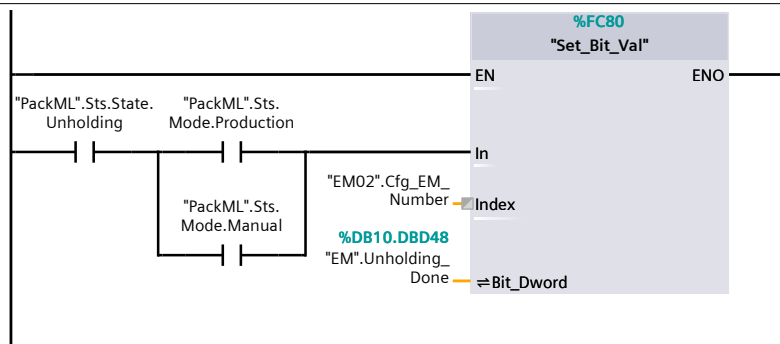
Network 9: Starting state



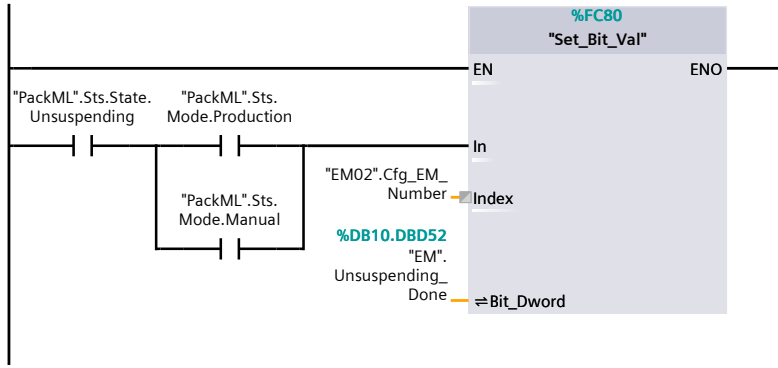
Network 10: Holding state



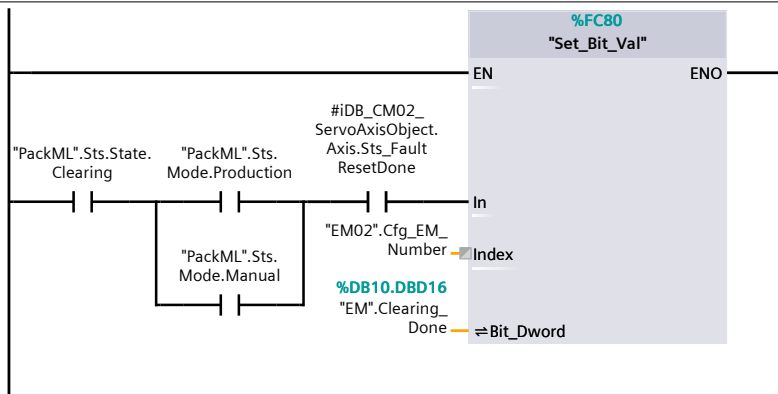
Network 11: Unholding



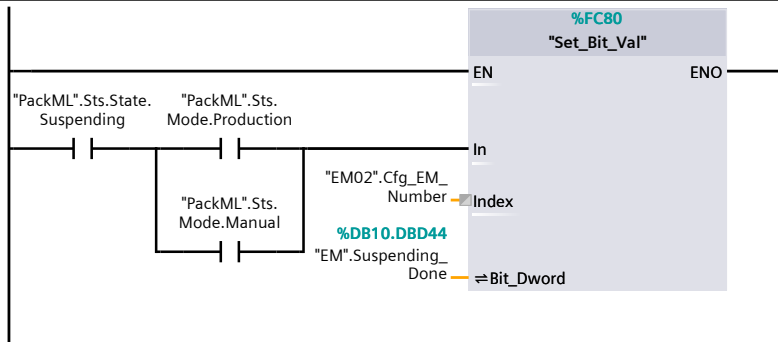
Network 12: Unsuspending



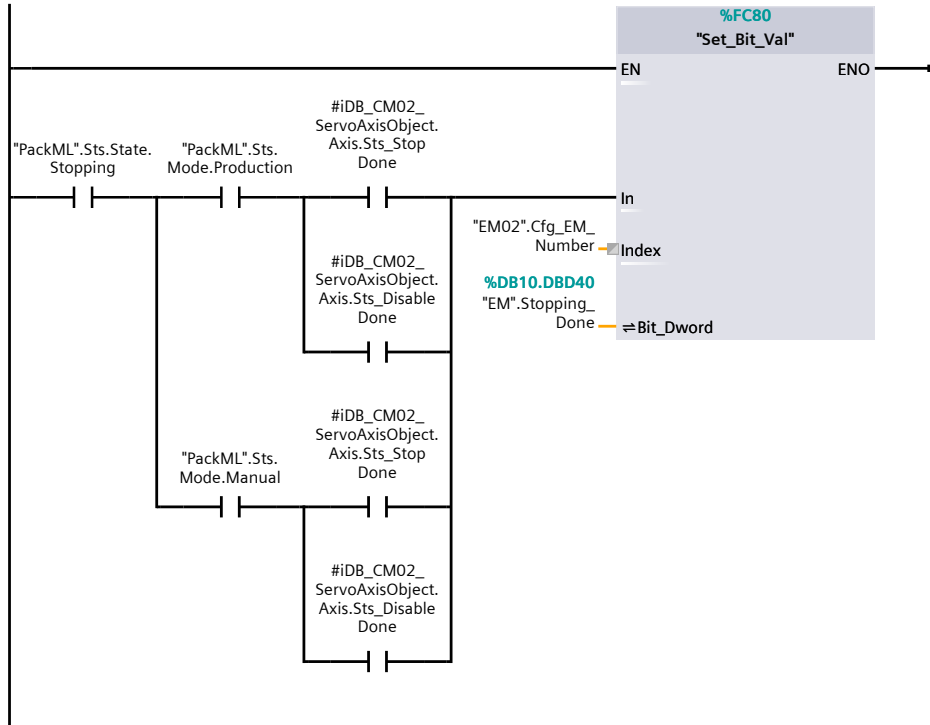
Network 13: Clearing state



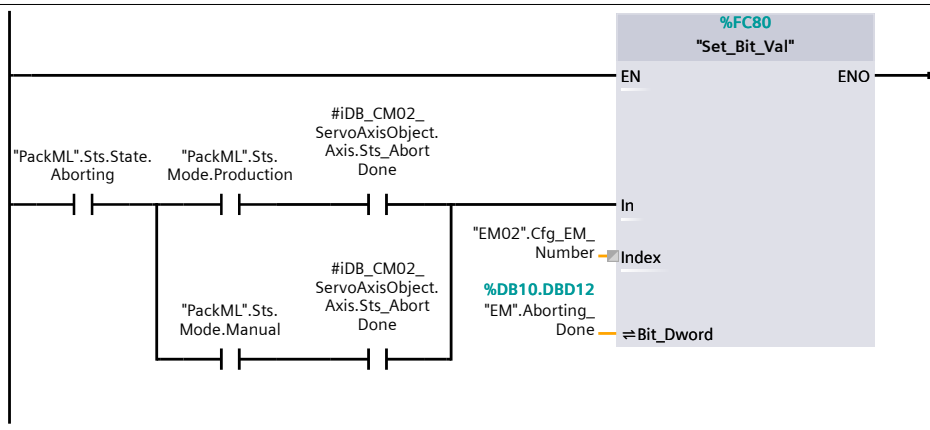
Network 14: Suspending state



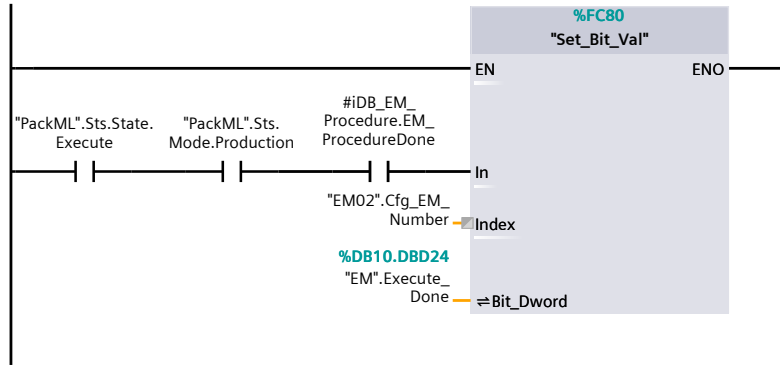
Network 15: Stopping state



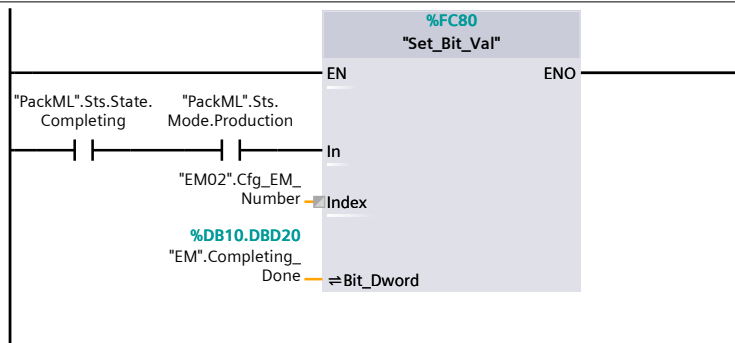
Network 16: Aborting state



Network 17: Execute state

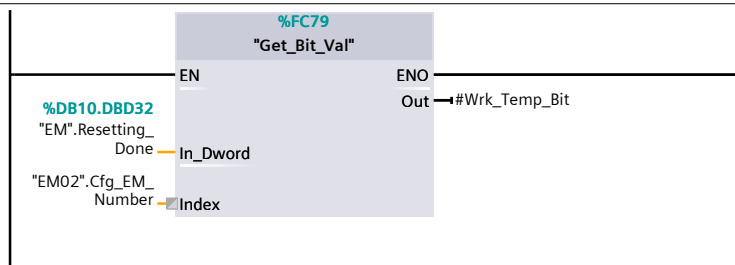


Network 18: Completing State

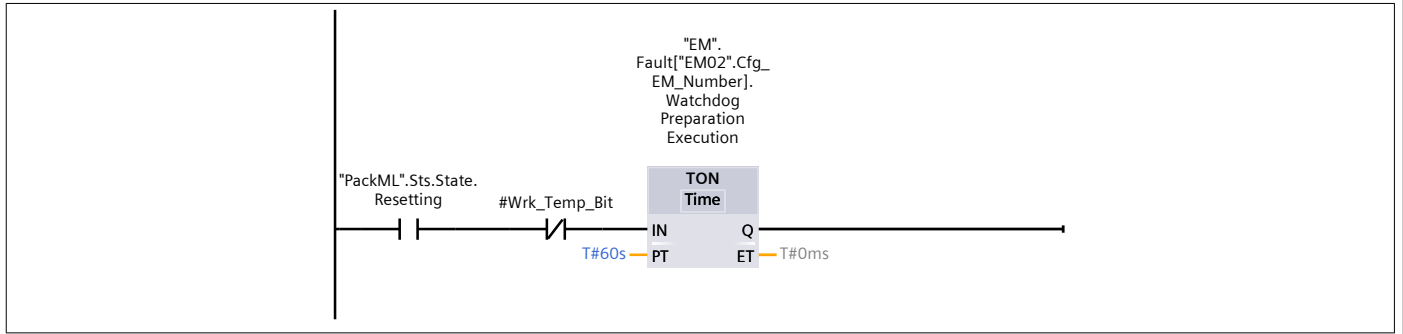


Network 19: Map axis errors, procedure motion errors, and jogging errors into bits of the EM_Major-Faults

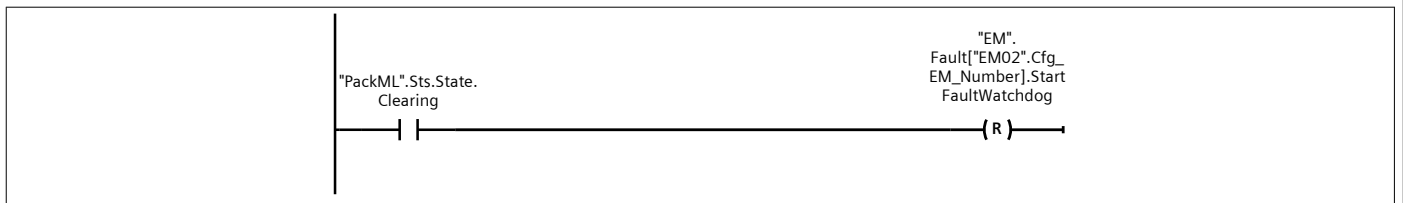
Network 20: Get resetting status for this EM



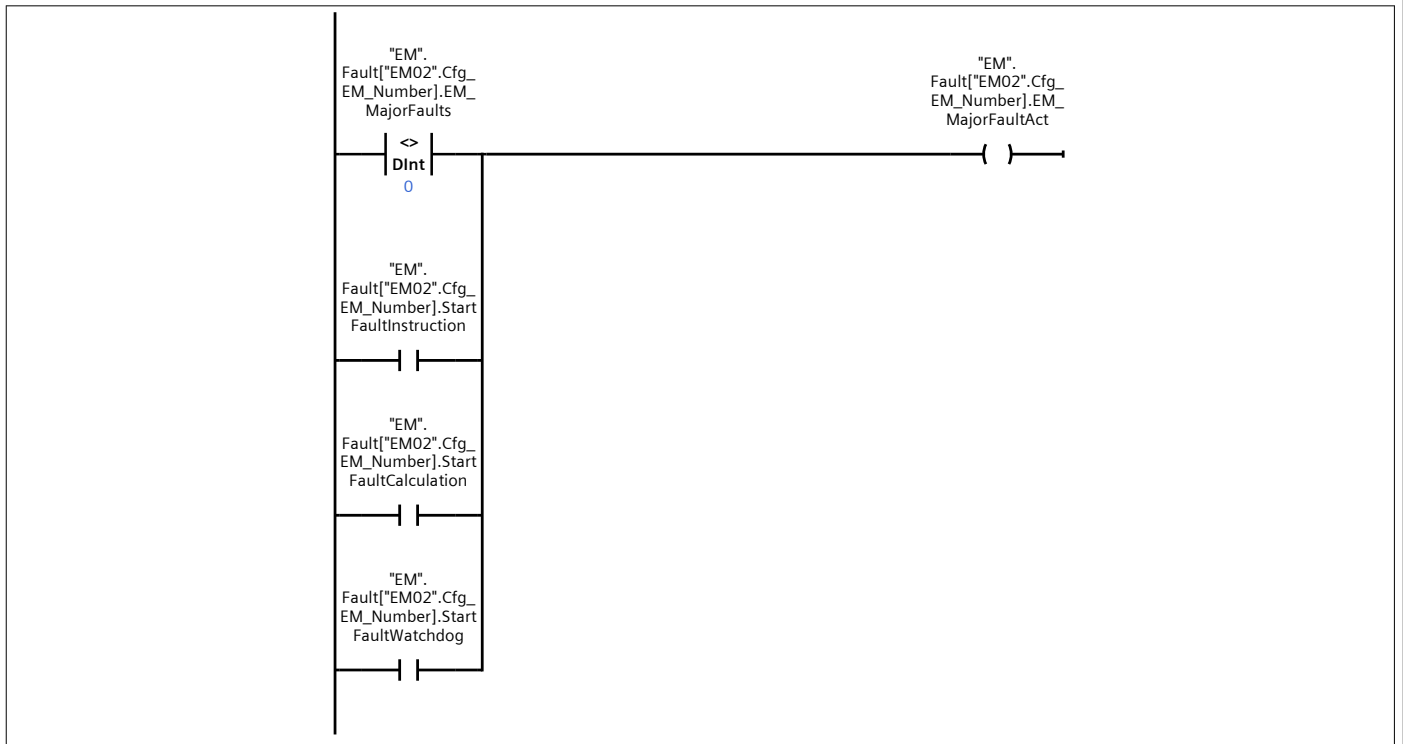
Network 21: Watchdog for resetting - CREATE AN ERROR IF TIMEOUT OCCURS



Network 22: Error cleared in clearing state



Network 23: Summary of EM faults



Network 24:



Network 25:



PackML_2Axis1EM [CPU 1515T-2 PN] / Program blocks / EM02_AxisDum EM02_CM00_Procedure [FB301]

EM02_CM00_Procedure Properties

General

Name	EM02_CM00_Procedure	Number	301	Type	FB
Language	LAD	Numbering	Manual		

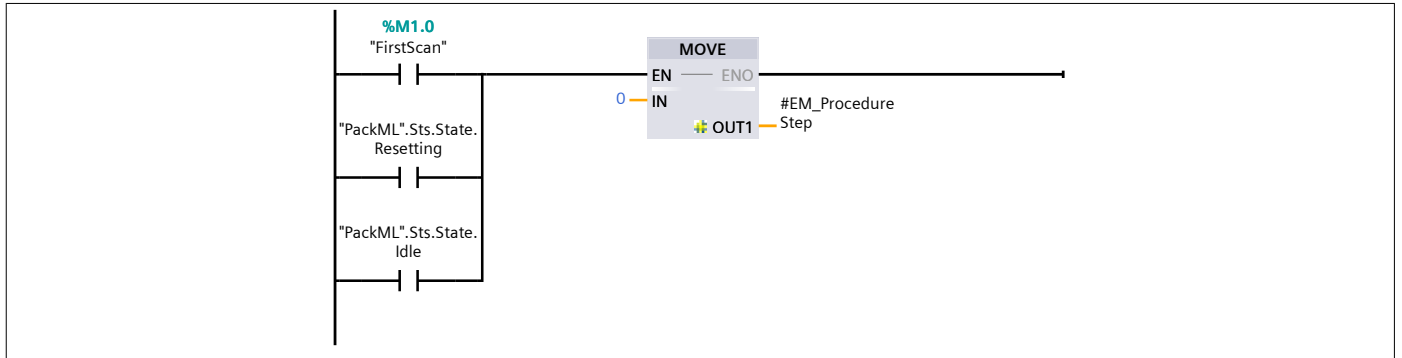
Information

Title	EM Procedure Sequence	Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Default value	Retain
Input			
Output			
InOut			
▼ Static			
EM_ProcedureStep	DInt	0	Non-retain
EM_ProcedureNoStepsActive	Bool	false	Non-retain
EM_ProcedureDone	Bool	false	Non-retain
EM_ProcedureError	Bool	false	Non-retain
MC_MoveRel1_DB	MC_MOVERELATIVE		
MC_MoveRel2_DB	MC_MOVERELATIVE		
MC_Home_DB	MC_HOME		
Delay	TON_TIME		Non-retain
MC_MoveRel1_Done	Bool	false	Non-retain
MC_MoveRel1_Busy	Bool	false	Non-retain
MC_MoveRel1_CommandAborted	Bool	false	Non-retain
MC_MoveRel1_Error	Bool	false	Non-retain
MC_MoveRel1_ErrorID	Word	16#0	Non-retain
MC_MoveRel2_Done	Bool	false	Non-retain
MC_MoveRel2_Busy	Bool	false	Non-retain
MC_MoveRel2_CommandAborted	Bool	false	Non-retain
MC_MoveRel2_Error	Bool	false	Non-retain
MC_MoveRel2_ErrorID	Word	16#0	Non-retain
MC_Home_Done	Bool	false	Non-retain
MC_Home_Busy	Bool	false	Non-retain
MC_Home_CommandAborted	Bool	false	Non-retain
MC_Home_Error	Bool	false	Non-retain
MC_Home_ErrorID	Word	16#0	Non-retain
Temp			
Constant			

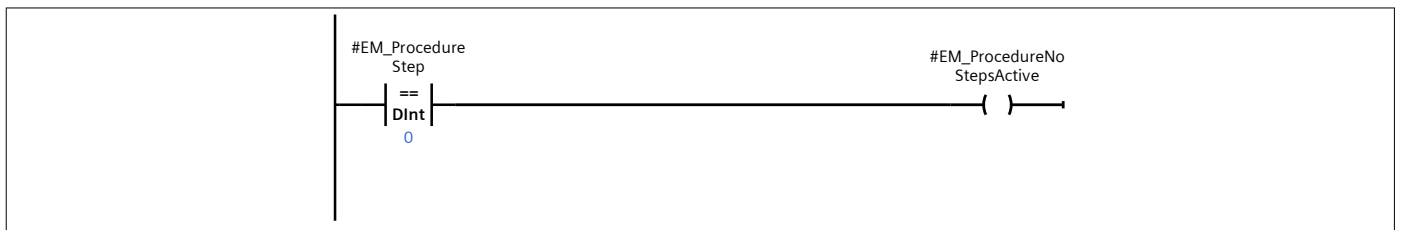
Network 1: Reset step number

First scan or resetting or idle - clear all steps



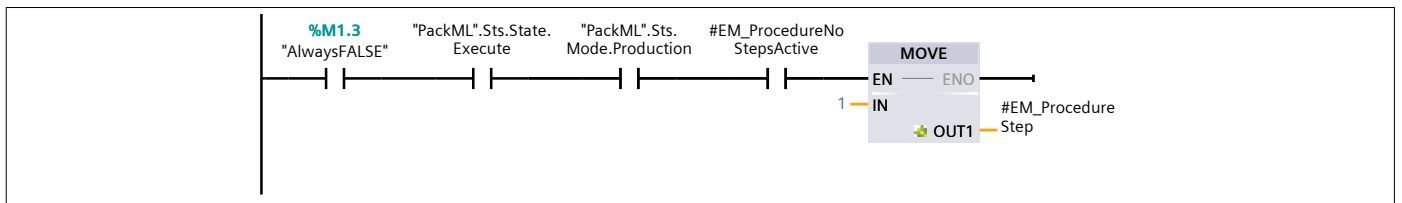
Network 2: Indication that all steps reset

Used by RESETTING state and initial execute step

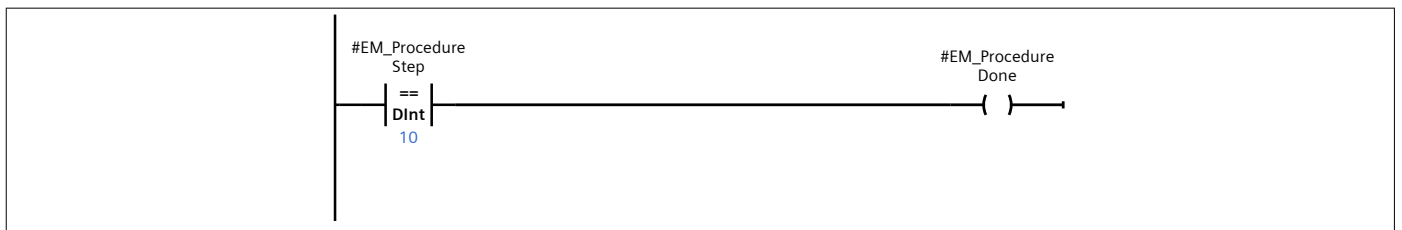


Network 3: EXECUTE - Disabled

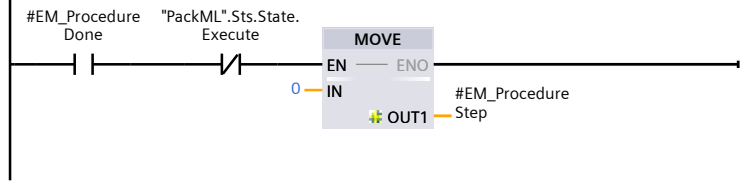
If no steps active go to step 1



Network 4: Last step - set done



Network 5: When done, wait for out of execute step, then set step back to zero so can restart without resetting



Network 6: Put any error handling here



PackML_2Axis1EM [CPU 1515T-2 PN] / Program blocks / EM02_AxisDum EM02_S20_InitializeData [FB304]

EM02_S20_InitializeData Properties

General

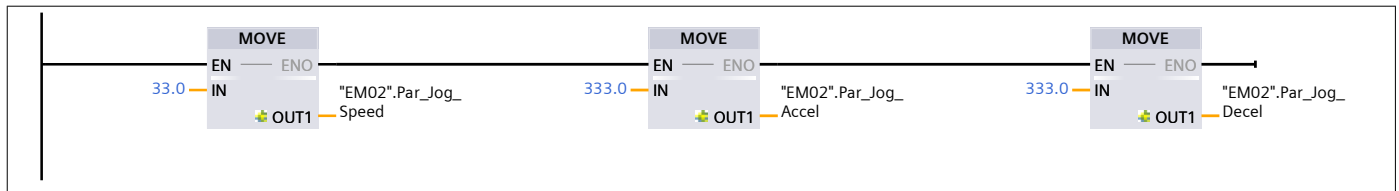
Name	EM02_S20_InitializeData	Number	304	Type	FB
Language	LAD	Numbering	Manual		

Information

Title	Initialization for EM	Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Default value	Retain
Input			
Output			
InOut			
▼ Static			
Temp_Dint	DInt	0	Non-retain
Temp			
Constant			

Network 2:



PackML_2Axis1EM [CPU 1515T-2 PN] / Program blocks / EM02_AxisDum EM02 [DB300]

EM02 Properties

General

Name	EM02	Number	300	Type	DB
Language	DB	Numbering	Manual		

Information

Title		Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Start value	Retain
Input			
Output			
InOut			
▼ Static			
Cfg_EM_Number	Int	0	False
Par_Jog_Accel	Real	0.0	False
Par_Jog_Decel	Real	0.0	False
Par_Jog_Speed	Real	0.0	False
iDB_EM_Procedure	"EM02_CM00_Procedure"		False
iDB_CM02_ServoAxisObject	"EM01_CM02_ServoAxisObject"		False
iDB_CM03_ServoAxisJog	"EM01_CM03_ServoAxisJog"		False
iDB_S20_Initialize	"EM02_S20_Initialize-Data"		False
Wrk_Temp_Bit	Bool	false	False

PackML_2Axis1EM [CPU 1515T-2 PN] / Program blocks / 0_Organization Blocks

MC-Interpolator [OB92]

MC-Interpolator Properties

General

Name	MC-Interpolator	Number	92	Type	OB
Language	LAD	Numbering	Automatic		

Information

Title		Author		Comment	
Family		Version	1.0	User-defined ID	

Name	Data type	Default value
▼ Input		
Initial_Call	Bool	
PIP_Input	Bool	
PIP_Output	Bool	
IO_System	USInt	
Event_Count	Int	
Reduction	UInt	

PackML_2Axis1EM [CPU 1515T-2 PN] / Program blocks / 0_Organization Blocks

MC-Servo [OB91]

MC-Servo Properties

General

Name	MC-Servo	Number	91	Type	OB
Language	LAD	Numbering	Automatic		

Information

Title		Author		Comment	
Family		Version	1.0	User-defined ID	

Name	Data type	Default value
▼ Input		
Initial_Call	Bool	
PIP_Input	Bool	
PIP_Output	Bool	
IO_System	USInt	
Event_Count	Int	
Synchronous	Bool	

PackML_2Axis1EM [CPU 1515T-2 PN] / Program blocks / 0_Organization Blocks

Startup [OB100]

Startup Properties

General

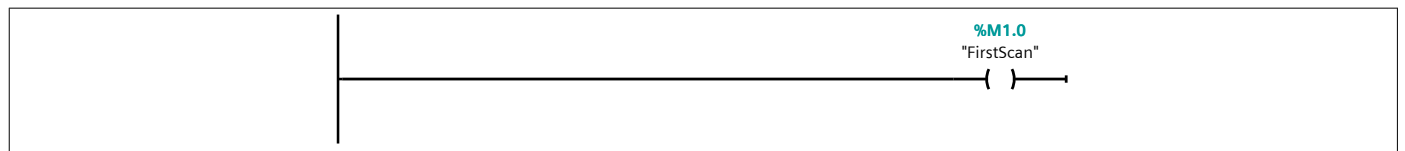
Name	Startup	Number	100	Type	OB
Language	LAD	Numbering	Automatic		

Information

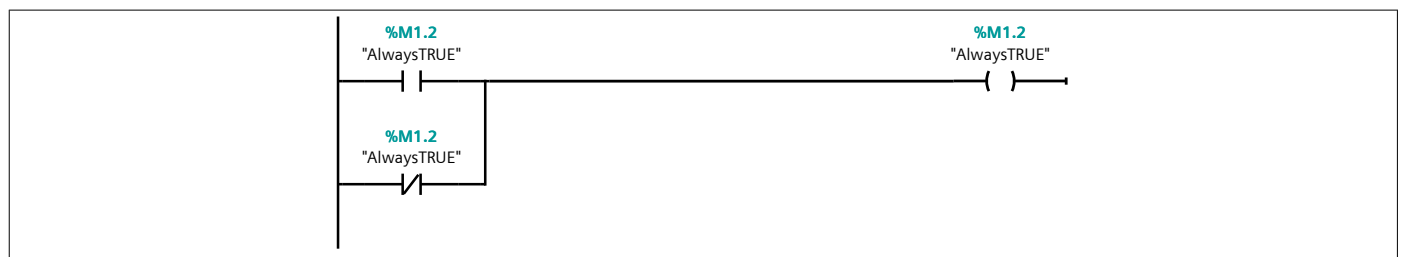
Title	"Complete Restart"	Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Default value
▼ Input		
LostRetentive	Bool	
LostRTC	Bool	
Temp		
Constant		

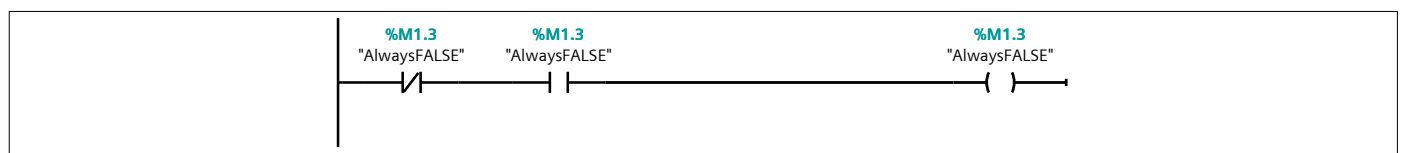
Network 1: Cleared in last rung of OB1



Network 2:



Network 3:



PackML_2Axis1EM [CPU 1515T-2 PN] / Program blocks / Misc Blocks

States_Disabled_Decode [FC82]

States_Disabled_Decode Properties

General

Name	States_Disabled_Decode	Number	82	Type	FC
Language	SCL	Numbering	Manual		

Information

Title		Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Default value
▼ Input		
Disabled_States	DInt	
▼ Output		
ClearingEnabled	Bool	
StoppedEnabled	Bool	
StartingEnabled	Bool	
IdleEnabled	Bool	
SuspendedEnabled	Bool	
ExecuteEnabled	Bool	
StoppingEnabled	Bool	
AbortingEnabled	Bool	
AbortedEnabled	Bool	
HoldingEnabled	Bool	
HeldEnabled	Bool	
UnholdingEnabled	Bool	
SuspendingEnabled	Bool	
UnsuspendingEnabled	Bool	
ResettingEnabled	Bool	
CompletingEnabled	Bool	
CompleteEnabled	Bool	
InOut		
Temp		
Constant		
▼ Return		
States_Disabled_Decode	Void	

```

0001 // Decode StatesDisabled Dint output from LPMLV30_UnitModeStateManager FB
0002 // Disabled states are "1" bits in the Dint.
0003 // Decode into individual enable Booleans that are "1" if state is enabled
0004 //
0005 #ClearingEnabled := NOT #Disabled_States.%X1;
0006 #StoppedEnabled := NOT #Disabled_States.%X2;
0007 #StartingEnabled := NOT #Disabled_States.%X3;
0008 #IdleEnabled := NOT #Disabled_States.%X4;
0009 #SuspendedEnabled := NOT #Disabled_States.%X5;
0010 #ExecuteEnabled := NOT #Disabled_States.%X6;

```

Totally Integrated
Automation Portal

```
0011 #StoppingEnabled := NOT #Disabled_States.%X7;  
0012 #AbortingEnabled := NOT #Disabled_States.%X8;  
0013 #AbortedEnabled := NOT #Disabled_States.%X9;  
0014 #HoldingEnabled := NOT #Disabled_States.%X10;  
0015 #HeldEnabled := NOT #Disabled_States.%X11;  
0016 #UnholdingEnabled := NOT #Disabled_States.%X12;  
0017 #SuspendingEnabled := NOT #Disabled_States.%X13;  
0018 #UnsuspendingEnabled := NOT #Disabled_States.%X14;  
0019 #ResettingEnabled := NOT #Disabled_States.%X15;  
0020 #CompletingEnabled := NOT #Disabled_States.%X16;  
0021 #CompleteEnabled := NOT #Disabled_States.%X17;
```

PackML_2Axis1EM [CPU 1515T-2 PN] / Program blocks / Misc Blocks

Set_Bit_Val [FC80]

Set_Bit_Val Properties

General

Name	Set_Bit_Val	Number	80	Type	FC
Language	SCL	Numbering	Manual		

Information

Title		Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Default value
▼ Input		
In	Bool	
Index	DInt	
Output		
▼ InOut		
Bit_Dword	DWord	
Temp		
Constant		
▼ Return		
Set_Bit_Val	Void	

```

0001 // Places boolean value in bit of Dword
0002 CASE #Index OF
0003     0:
0004         #Bit_Dword.%X0 := #In;
0005     1:
0006         #Bit_Dword.%X1 := #In;
0007     2:
0008         #Bit_Dword.%X2 := #In;
0009     3:
0010         #Bit_Dword.%X3 := #In;
0011     4:
0012         #Bit_Dword.%X4 := #In;
0013     5:
0014         #Bit_Dword.%X5 := #In;
0015     6:
0016         #Bit_Dword.%X6 := #In;
0017     7:
0018         #Bit_Dword.%X7 := #In;
0019     8:
0020         #Bit_Dword.%X8 := #In;
0021     9:
0022         #Bit_Dword.%X9 := #In;
0023    10:
0024         #Bit_Dword.%X10 := #In;
0025    11:
0026         #Bit_Dword.%X11 := #In;
0027    12:

```

```
0028     #Bit_Dword.%X12 := #In;
0029     13:
0030     #Bit_Dword.%X13 := #In;
0031     14:
0032     #Bit_Dword.%X14 := #In;
0033     15:
0034     #Bit_Dword.%X15 := #In;
0035     16:
0036     #Bit_Dword.%X16 := #In;
0037     17:
0038     #Bit_Dword.%X17 := #In;
0039     18:
0040     #Bit_Dword.%X18 := #In;
0041     19:
0042     #Bit_Dword.%X19 := #In;
0043     20:
0044     #Bit_Dword.%X20 := #In;
0045     21:
0046     #Bit_Dword.%X21 := #In;
0047     22:
0048     #Bit_Dword.%X22 := #In;
0049     23:
0050     #Bit_Dword.%X23 := #In;
0051     24:
0052     #Bit_Dword.%X24 := #In;
0053     25:
0054     #Bit_Dword.%X25 := #In;
0055     26:
0056     #Bit_Dword.%X26 := #In;
0057     27:
0058     #Bit_Dword.%X27 := #In;
0059     28:
0060     #Bit_Dword.%X28 := #In;
0061     29:
0062     #Bit_Dword.%X29 := #In;
0063     30:
0064     #Bit_Dword.%X30 := #In;
0065     31:
0066     #Bit_Dword.%X31 := #In;
0067     END_CASE;
0068
```

PackML_2Axis1EM [CPU 1515T-2 PN] / Program blocks / Misc Blocks

MEQ_DWORD [FC81]

MEQ_DWORD Properties

General

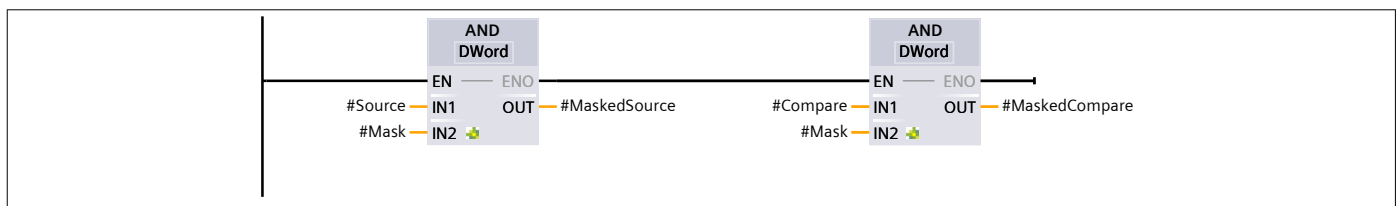
Name	MEQ_DWORD	Number	81	Type	FC
Language	LAD	Numbering	Manual		

Information

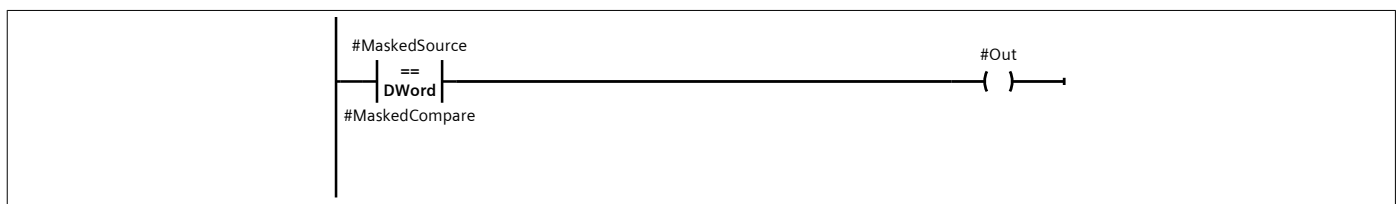
Title	Masked Equal for DWord	Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Default value
▼ Input		
Source	DWord	
Mask	DWord	
Compare	DWord	
▼ Output		
Out	Bool	
InOut		
▼ Temp		
MaskedSource	DWord	
MaskedCompare	DWord	
Constant		
▼ Return		
MEQ_DWORD	Void	

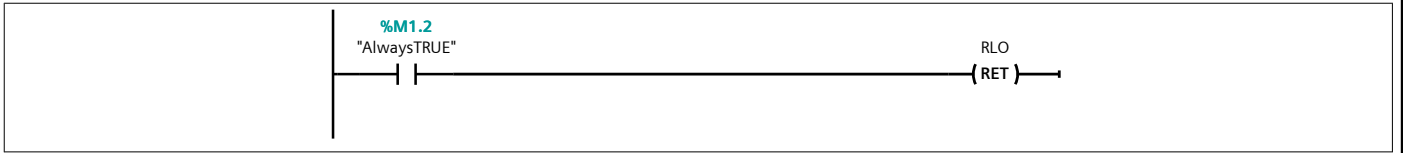
Network 1: Do masking



Network 2: Compare



Network 3: Always sets ENO true



PackML_2Axis1EM [CPU 1515T-2 PN] / Program blocks / Misc Blocks

Get_Bit_Val [FC79]

Get_Bit_Val Properties

General

Name	Get_Bit_Val	Number	79	Type	FC
Language	SCL	Numbering	Manual		

Information

Title		Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Default value
▼ Input		
In_Dword	DWord	
Index	DInt	
▼ Output		
Out	Bool	
InOut		
Temp		
Constant		
▼ Return		
Get_Bit_Val	Void	

```

0001 // Gets value of bit of Dword
0002 CASE #Index OF
0003     0:
0004         #Out := #In_Dword.%X0;
0005     1:
0006         #Out := #In_Dword.%X1;
0007     2:
0008         #Out := #In_Dword.%X2;
0009     3:
0010         #Out := #In_Dword.%X3;
0011     4:
0012         #Out := #In_Dword.%X4;
0013     5:
0014         #Out := #In_Dword.%X5;
0015     6:
0016         #Out := #In_Dword.%X6;
0017     7:
0018         #Out := #In_Dword.%X7;
0019     8:
0020         #Out := #In_Dword.%X8;
0021     9:
0022         #Out := #In_Dword.%X9;
0023    10:
0024         #Out := #In_Dword.%X10;
0025    11:
0026         #Out := #In_Dword.%X11;
0027    12:

```

```
0028     #Out := #In_Dword.%X12;  
0029 13:  
0030     #Out := #In_Dword.%X13;  
0031 14:  
0032     #Out := #In_Dword.%X14;  
0033 15:  
0034     #Out := #In_Dword.%X15;  
0035 16:  
0036     #Out := #In_Dword.%X16;  
0037 17:  
0038     #Out := #In_Dword.%X17;  
0039 18:  
0040     #Out := #In_Dword.%X18;  
0041 19:  
0042     #Out := #In_Dword.%X19;  
0043 20:  
0044     #Out := #In_Dword.%X20;  
0045 21:  
0046     #Out := #In_Dword.%X21;  
0047 22:  
0048     #Out := #In_Dword.%X22;  
0049 23:  
0050     #Out := #In_Dword.%X23;  
0051 24:  
0052     #Out := #In_Dword.%X24;  
0053 25:  
0054     #Out := #In_Dword.%X25;  
0055 26:  
0056     #Out := #In_Dword.%X26;  
0057 27:  
0058     #Out := #In_Dword.%X27;  
0059 28:  
0060     #Out := #In_Dword.%X28;  
0061 29:  
0062     #Out := #In_Dword.%X29;  
0063 30:  
0064     #Out := #In_Dword.%X30;  
0065 31:  
0066     #Out := #In_Dword.%X31;  
0067 END_CASE;
```

PackML_2Axis1EM [CPU 1515T-2 PN] / Technology objects

Axis_01_X [DB21]

Axis_01_X properties

General

Name	Axis_01_X	Number	21	Type	DB
Language	Motion_DB	Numbering	manual		

Information

Title		Author	SIMATIC	Comment	
Family	MC_1500	Version	7.0	User-defined ID	

Name	Data type	Start value project	Unit of measure	Comment
Velocity	LREAL	0	mm/s	
Acceleration	LREAL	0	mm/s ²	
ActualSpeed	LREAL	0	1/min	
VelocitySetpoint	LREAL	0	mm/s	
▼ Actor	Struct			
Type	DINT	PROFIDRIVE		
InverseDirection	BOOL	False		
DataAdaption	DINT	ACTOR_DATA_ADAP- TION_NO		
Efficiency	LREAL	1		
MotorType	DINT	STANDARD_MOTOR- TYPE		
▼ Interface	Struct			
▼ AddressIn	Struct			
RID	DWORD	34080538		
AREA	BYTE	129		
DB_NUMBER	UINT	0		
OFFSET	UDINT	32		
▼ AddressOut	Struct			
RID	DWORD	34080539		
AREA	BYTE	130		
DB_NUMBER	UINT	0		
OFFSET	UDINT	64		
EnableDriveOutput	BOOL	False		
▼ EnableDriveOutputAddress	Struct			
RID	DWORD	0		
AREA	BYTE	0		
DB_NUMBER	UINT	0		
OFFSET	UDINT	0		
DriveReadyInput	BOOL	False		
▼ DriveReadyInputAddress	Struct			
RID	DWORD	0		
AREA	BYTE	0		
DB_NUMBER	UINT	0		

Name	Data type	Start value project	Unit of measure	Comment
OFFSET	UDINT	0		
EnableTorqueData	BOOL	False		
▼ TorqueDataAddressIn	Struct			
RID	DWORD	0		
AREA	BYTE	0		
DB_NUMBER	UINT	0		
OFFSET	UDINT	0		
▼ TorqueDataAddressOut	Struct			
RID	DWORD	0		
AREA	BYTE	0		
DB_NUMBER	UINT	0		
OFFSET	UDINT	0		
▼ DriveParameter	Struct			
ReferenceSpeed	LREAL	3000	1/min	
MaxSpeed	LREAL	3000	1/min	
ReferenceTorque	LREAL	3.2	Nm	
▼ LinearMotorDriveParameter	Struct			
ReferenceVelocity	LREAL	120	m/min	
MaxVelocity	LREAL	120	m/min	
ReferenceForce	LREAL	100	N	
▼ TorqueLimiting	Struct			
LimitBase	DINT	TORQUELIMIT_LIMIT-BASE_LOAD		
PositionBasedMonitorings	DINT	TORQUELIMIT_POS_BASED_MONITORING_NO		
▼ LimitDefaults	Struct			
Torque	LREAL	0	Nm	
Force	LREAL	0	N	
▼ LoadGear	Struct			
Numerator	UDINT	40		
Denominator	UDINT	30		
▼ DynamicLimits	Struct			
MaxVelocity	LREAL	500	mm/s	
Velocity	LREAL	1000000000000	mm/s	
MaxAcceleration	LREAL	10000	mm/s ²	
MaxDeceleration	LREAL	10000	mm/s ²	
MaxJerk	LREAL	200000	mm/s ³	
▼ DynamicDefaults	Struct			
Velocity	LREAL	100	mm/s	
Acceleration	LREAL	2000	mm/s ²	
Deceleration	LREAL	2000	mm/s ²	
Jerk	LREAL	40000	mm/s ³	
EmergencyDeceleration	LREAL	10000	mm/s ²	
▼ Override	Struct			
Velocity	LREAL	100	%	

Name	Data type	Start value project	Unit of measure	Comment
▼ Units	Struct			
LengthUnit	UDINT	0		
VelocityUnit	UDINT	0		
TimeUnit	UDINT	0		
TorqueUnit	UDINT	0		
ForceUnit	UDINT	0		
▼ StatusDrive	Struct			
InOperation	BOOL	False		
CommunicationOK	BOOL	False		
Error	BOOL	False		
AdaptionState	DINT	NOT_ADAPTED		
▼ StatusTorqueData	Struct			
CommandAdditiveTorqueActive	DINT	ADDITIVE_TORQUE_ACTIVE_NO		
CommandTorqueRangeActive	DINT	TORQUE_RANGE_ACTIVE_NO		
ActualTorque	LREAL	0	Nm	
ActualForce	LREAL	0	N	
▼ StatusMotionIn	Struct			
FunctionState	DINT	MOTIONIN_INAKTIV		
StatusWord	DWORD	0		
StatusWord	DWORD	0		
StatusWord2	DWORD	0		
ErrorWord	DWORD	0		
▼ ErrorDetail	Struct			
Number	UDINT	0		
Reaction	DINT	NONE		
WarningWord	DWORD	0		
▼ ControlPanel	Struct			
▼ Input	Struct			
▼ Command	Array[]			
▼ Command[1]	Struct			
ReqCounter	UDINT	0		
Type	UDINT	0		
Position	LREAL	0	mm	
Velocity	LREAL	0	mm/s	
Acceleration	LREAL	0	mm/s ²	
Deceleration	LREAL	0	mm/s ²	
Jerk	LREAL	0	mm/s ³	
Param	LREAL	0		
▼ Command[2]	Struct			
ReqCounter	UDINT	0		
Type	UDINT	0		
Position	LREAL	0	mm	
Velocity	LREAL	0	mm/s	

Name	Data type	Start value project	Unit of measure	Comment
Acceleration	LREAL	0	mm/s ²	
Deceleration	LREAL	0	mm/s ²	
Jerk	LREAL	0	mm/s ³	
Param	LREAL	0		
TimeOut	LREAL	2000	ms	
EsLifeSign	UDINT	0		
▼ Output	Struct			
▼ Command	Array[]			
▼ Command[1]	Struct			
AckCounter	UDINT	0		
Error	BOOL	False		
ErrorID	WORD	0		
Done	BOOL	False		
Aborted	BOOL	False		
▼ Command[2]	Struct			
AckCounter	UDINT	0		
Error	BOOL	False		
ErrorID	WORD	0		
Done	BOOL	False		
Aborted	BOOL	False		
RtLifeSign	UDINT	0		
▼ InternalToTrace	Array[]			
▼ InternalToTrace[1]	Struct			
Id	DINT	0		
Value	LREAL	0		
▼ InternalToTrace[2]	Struct			
Id	DINT	0		
Value	LREAL	0		
▼ InternalToTrace[3]	Struct			
Id	DINT	0		
Value	LREAL	0		
▼ InternalToTrace[4]	Struct			
Id	DINT	0		
Value	LREAL	0		
▼ VirtualAxis	Struct			
Mode	UDINT	0		
▼ Simulation	Struct			
Mode	UDINT	0		
Position	LREAL	0	mm	
ActualPosition	LREAL	0	mm	
ActualVelocity	LREAL	0	mm/s	
ActualAcceleration	LREAL	0	mm/s ²	
OperativeSensor	UDINT	0		
ModuloCycle	DINT	0		
ActualModuloCycle	DINT	0		

Name	Data type	Start value project	Unit of measure	Comment
▼ Clamping	Struct			
FollowingErrorDeviation	LREAL	10	mm	
PositionTolerance	LREAL	10	mm	
▼ Sensor	Array[]			
▼ Sensor[1]	Struct			
Existent	BOOL	True		
Type	DINT	ABSOLUTE		
InverseDirection	BOOL	False		
System	DINT	ROTATORY		
MountingMode	DINT	DRIVE		
DataAdaption	DINT	SENSOR_DATA_ADAP-TION_NO		
ActualVelocityMode	DINT	STANDARD		
▼ Interface	Struct			
▼ AddressIn	Struct			
RID	DWORD	34080538		
AREA	BYTE	129		
DB_NUMBER	UINT	0		
OFFSET	UDINT	32		
▼ AddressOut	Struct			
RID	DWORD	34080539		
AREA	BYTE	130		
DB_NUMBER	UINT	0		
OFFSET	UDINT	64		
Number	UDINT	1		
▼ Parameter	Struct			
Resolution	LREAL	0.001	mm	
StepsPerRevolution	UDINT	512		
FineResolutionXist1	UDINT	11		
FineResolutionXist2	UDINT	9		
DeterminableRevolutions	UDINT	4096		
DistancePerRevolution	LREAL	100	mm	
BehaviorGx_XIST1	DINT	SEN-SOR_GX_XIST1_NO		
ReferenceSpeed	LREAL	3000	1/min	
ReferenceVelocity	LREAL	120	m/min	
▼ Backlash	Struct			
Enable	BOOL	False		
Size	LREAL	0	mm	
Velocity	LREAL	0	mm/s	
DirectionAbsoluteHoming	DINT	SENSOR_BACK-LASH_POSITIVE		
▼ ActiveHoming	Struct			
Mode	DINT	DIGITAL_INPUT		
Sidelnput	BOOL	True		

Name	Data type	Start value project	Unit of measure	Comment
Direction	DINT	POSITIVE		
HomePositionOffset	LREAL	0	mm	
▼ DigitalInputAddress	Struct			
RID	DWORD	33554433		
AREA	BYTE	129		
DB_NUMBER	UINT	0		
OFFSET	UDINT	8		
SwitchLevel	BOOL	True		
▼ PassiveHoming	Struct			
Mode	DINT	ZERO_MARK		
Sidelnput	BOOL	True		
Direction	DINT	NEGATIVE		
▼ DigitalInputAddress	Struct			
RID	DWORD	33554433		
AREA	BYTE	129		
DB_NUMBER	UINT	0		
OFFSET	UDINT	8		
SwitchLevel	BOOL	True		
▼ Sensor[2]	Struct			
Existent	BOOL	False		
Type	DINT	INCREMENTAL		
InverseDirection	BOOL	False		
System	DINT	ROTATORY		
MountingMode	DINT	DRIVE		
DataAdaption	DINT	SENSOR_DATA_ADAP-TION_NO		
ActualVelocityMode	DINT	STANDARD		
▼ Interface	Struct			
▼ AddressIn	Struct			
RID	DWORD	0		
AREA	BYTE	0		
DB_NUMBER	UINT	0		
OFFSET	UDINT	0		
▼ AddressOut	Struct			
RID	DWORD	0		
AREA	BYTE	0		
DB_NUMBER	UINT	0		
OFFSET	UDINT	0		
Number	UDINT	1		
▼ Parameter	Struct			
Resolution	LREAL	0.001	mm	
StepsPerRevolution	UDINT	2048		
FineResolutionXist1	UDINT	11		
FineResolutionXist2	UDINT	9		
DeterminableRevolutions	UDINT	1		

Name	Data type	Start value project	Unit of measure	Comment
DistancePerRevolution	LREAL	100	mm	
BehaviorGx_XIST1	DINT	SEN- SOR_GX_XIST1_NO		
ReferenceSpeed	LREAL	3000	1/min	
ReferenceVelocity	LREAL	120	m/min	
▼ Backlash	Struct			
Enable	BOOL	False		
Size	LREAL	0	mm	
Velocity	LREAL	0	mm/s	
DirectionAbsoluteHoming	DINT	SENSOR_BACK- LASH_POSITIVE		
▼ ActiveHoming	Struct			
Mode	DINT	ZERO_MARK		
SideInput	BOOL	True		
Direction	DINT	POSITIVE		
HomePositionOffset	LREAL	0	mm	
▼ DigitalInputAddress	Struct			
RID	DWORD	0		
AREA	BYTE	0		
DB_NUMBER	UINT	0		
OFFSET	UDINT	0		
SwitchLevel	BOOL	True		
▼ PassiveHoming	Struct			
Mode	DINT	ZERO_MARK		
SideInput	BOOL	True		
Direction	DINT	ACTUAL		
▼ DigitalInputAddress	Struct			
RID	DWORD	0		
AREA	BYTE	0		
DB_NUMBER	UINT	0		
OFFSET	UDINT	0		
SwitchLevel	BOOL	True		
▼ Sensor[3]	Struct			
Existent	BOOL	False		
Type	DINT	INCREMENTAL		
InverseDirection	BOOL	False		
System	DINT	ROTATORY		
MountingMode	DINT	DRIVE		
DataAdaption	DINT	SENSOR_DATA_ADAP- TION_NO		
ActualVelocityMode	DINT	STANDARD		
▼ Interface	Struct			
▼ AddressIn	Struct			
RID	DWORD	0		
AREA	BYTE	0		
DB_NUMBER	UINT	0		

Name	Data type	Start value project	Unit of measure	Comment
OFFSET	UDINT	0		
▼ AddressOut	Struct			
RID	DWORD	0		
AREA	BYTE	0		
DB_NUMBER	UINT	0		
OFFSET	UDINT	0		
Number	UDINT	1		
▼ Parameter	Struct			
Resolution	LREAL	0.001	mm	
StepsPerRevolution	UDINT	2048		
FineResolutionXist1	UDINT	11		
FineResolutionXist2	UDINT	9		
DeterminableRevolutions	UDINT	1		
DistancePerRevolution	LREAL	100	mm	
BehaviorGx_XIST1	DINT	SENSOR_GX_XIST1_NO		
ReferenceSpeed	LREAL	3000	1/min	
ReferenceVelocity	LREAL	120	m/min	
▼ Backlash	Struct			
Enable	BOOL	False		
Size	LREAL	0	mm	
Velocity	LREAL	0	mm/s	
DirectionAbsoluteHoming	DINT	SENSOR_BACKLASH_POSITIVE		
▼ ActiveHoming	Struct			
Mode	DINT	ZERO_MARK		
Sidelnput	BOOL	True		
Direction	DINT	POSITIVE		
HomePositionOffset	LREAL	0	mm	
▼ DigitalInputAddress	Struct			
RID	DWORD	0		
AREA	BYTE	0		
DB_NUMBER	UINT	0		
OFFSET	UDINT	0		
SwitchLevel	BOOL	True		
▼ PassiveHoming	Struct			
Mode	DINT	ZERO_MARK		
Sidelnput	BOOL	True		
Direction	DINT	ACTUAL		
▼ DigitalInputAddress	Struct			
RID	DWORD	0		
AREA	BYTE	0		
DB_NUMBER	UINT	0		
OFFSET	UDINT	0		
SwitchLevel	BOOL	True		

Name	Data type	Start value project	Unit of measure	Comment
▼ Sensor[4]	Struct			
Existent	BOOL	False		
Type	DINT	INCREMENTAL		
InverseDirection	BOOL	False		
System	DINT	ROTATORY		
MountingMode	DINT	DRIVE		
DataAdaption	DINT	SENSOR_DATA_ADAP-TION_NO		
ActualVelocityMode	DINT	STANDARD		
▼ Interface	Struct			
▼ AddressIn	Struct			
RID	DWORD	0		
AREA	BYTE	0		
DB_NUMBER	UINT	0		
OFFSET	UDINT	0		
▼ AddressOut	Struct			
RID	DWORD	0		
AREA	BYTE	0		
DB_NUMBER	UINT	0		
OFFSET	UDINT	0		
Number	UDINT	1		
▼ Parameter	Struct			
Resolution	LREAL	0.001	mm	
StepsPerRevolution	UDINT	2048		
FineResolutionXist1	UDINT	11		
FineResolutionXist2	UDINT	9		
DeterminableRevolutions	UDINT	1		
DistancePerRevolution	LREAL	100	mm	
BehaviorGx_XIST1	DINT	SEN-SOR_GX_XIST1_NO		
ReferenceSpeed	LREAL	3000	1/min	
ReferenceVelocity	LREAL	120	m/min	
▼ Backlash	Struct			
Enable	BOOL	False		
Size	LREAL	0	mm	
Velocity	LREAL	0	mm/s	
DirectionAbsoluteHoming	DINT	SENSOR_BACK-LASH_POSITIVE		
▼ ActiveHoming	Struct			
Mode	DINT	ZERO_MARK		
SideInput	BOOL	True		
Direction	DINT	POSITIVE		
HomePositionOffset	LREAL	0	mm	
▼ DigitalInputAddress	Struct			
RID	DWORD	0		

Name	Data type	Start value project	Unit of measure	Comment
AREA	BYTE	0		
DB_NUMBER	UINT	0		
OFFSET	UDINT	0		
SwitchLevel	BOOL	True		
▼ PassiveHoming	Struct			
Mode	DINT	ZERO_MARK		
Sidelnput	BOOL	True		
Direction	DINT	ACTUAL		
▼ DigitalInputAddress	Struct			
RID	DWORD	0		
AREA	BYTE	0		
DB_NUMBER	UINT	0		
OFFSET	UDINT	0		
SwitchLevel	BOOL	True		
▼ Extrapolation	Struct			
LeadingAxisDependentTime	LREAL	0	s	
FollowingAxisDependentTime	LREAL	0	s	
▼ Settings	Struct			
SystemDefinedExtrapolation	DINT	SYSTEM_DEFINED_EXTRAPOLATION_ACTIVE		
ExtrapolatedVelocityMode	DINT	EXTRAPOLATED_VELOCITY_MODE_DIFFERENTIATION		
▼ PositionFilter	Struct			
T1	LREAL	0	s	
T2	LREAL	0	s	
▼ VelocityFilter	Struct			
T1	LREAL	0	s	
T2	LREAL	0	s	
▼ VelocityTolerance	Struct			
Range	LREAL	0	mm/s	
▼ Hysteresis	Struct			
Value	LREAL	0	mm	
▼ Mechanics	Struct			
LeadScrew	LREAL	172.7	mm/rot	
▼ Properties	Struct			
MotionType	DINT	LIN_MOTION		
▼ Modulo	Struct			
Enable	BOOL	False		
Length	LREAL	1000	mm	
StartValue	LREAL	0	mm	
▼ PositionLimits_SW	Struct			
Active	BOOL	True		
MinPosition	LREAL	-1000000000000	mm	

Name	Data type	Start value project	Unit of measure	Comment
MaxPosition	LREAL	1000000000000	mm	
LimitReachedBehavior	DINT	STOP_WITH_MAX_DYNAMICS		
LimitExceededBehavior	DINT	AXIS_DISABLE		
▼ PositionLimits_HW	Struct			
Active	BOOL	False		
Mode	DINT	SWITCH_TRAVERSABLE		
MinSwitchLevel	BOOL	True		
▼ MinSwitchAddress	Struct			
RID	DWORD	0		
AREA	BYTE	0		
DB_NUMBER	UINT	0		
OFFSET	UDINT	0		
MaxSwitchLevel	BOOL	True		
▼ MaxSwitchAddress	Struct			
RID	DWORD	0		
AREA	BYTE	0		
DB_NUMBER	UINT	0		
OFFSET	UDINT	0		
ApproachBehavior	DINT	AXIS_DISABLE		
▼ Homing	Struct			
AutoReversal	BOOL	False		
ApproachDirection	BOOL	True		
ApproachVelocity	LREAL	20	mm/s	
ReferencingVelocity	LREAL	5	mm/s	
HomePosition	LREAL	0	mm	
▼ PositionControl	Struct			
Kv	LREAL	10	1/s	
Kpc	LREAL	100	%	
EnableDSC	BOOL	False		
SmoothingTimeByChangeDifference	LREAL	0	s	
InitialOperativeSensor	UDINT	1		
▼ ControlDifferenceQuantization	Struct			
Mode	DINT	REFER_TO_ACTUAL_SENSOR_VALUE_RESOLUTION		
Value	LREAL	0.001	mm	
VelocityModePowerOn	DINT	RAMP_TO_VELO_ZERO		
▼ SetpointFilter	Struct			
▼ DynamicFilter	Struct			
Mode	DINT	OFF		
T1	LREAL	0	s	
T2	LREAL	0	s	

Name	Data type	Start value project	Unit of measure	Comment
Tt	LREAL	0	s	
▼ DynamicAxisModel	Struct			
VelocityTimeConstant	LREAL	0	s	
AdditionalPositionTimeConstant	LREAL	0	s	
▼ FollowingError	Struct			
EnableMonitoring	BOOL	True		
MinValue	LREAL	10	mm	
MaxValue	LREAL	100	mm	
MinVelocity	LREAL	10	mm/s	
WarningLevel	LREAL	70	%	
AdditionalSetpointDelayTime	LREAL	0	s	
▼ CrossPlcSynchronousOperation	Struct			
▼ Interface	Array[]			
▼ Interface[1]	Struct			
EnableLeadingValueOutput	BOOL	False		
▼ AddressOut	Struct			
RID	DWORD	0		
AREA	BYTE	0		
DB_NUMBER	UINT	0		
OFFSET	UDINT	0		
▼ Interface[2]	Struct			
EnableLeadingValueOutput	BOOL	False		
▼ AddressOut	Struct			
RID	DWORD	0		
AREA	BYTE	0		
DB_NUMBER	UINT	0		
OFFSET	UDINT	0		
▼ Interface[3]	Struct			
EnableLeadingValueOutput	BOOL	False		
▼ AddressOut	Struct			
RID	DWORD	0		
AREA	BYTE	0		
DB_NUMBER	UINT	0		
OFFSET	UDINT	0		
▼ Interface[4]	Struct			
EnableLeadingValueOutput	BOOL	False		
▼ AddressOut	Struct			
RID	DWORD	0		
AREA	BYTE	0		
DB_NUMBER	UINT	0		

Name	Data type	Start value project	Unit of measure	Comment
OFFSET	UDINT	0		
▼ Interface[5]	Struct			
EnableLeadingValueOutput	BOOL	False		
▼ AddressOut	Struct			
RID	DWORD	0		
AREA	BYTE	0		
DB_NUMBER	UINT	0		
OFFSET	UDINT	0		
▼ Interface[6]	Struct			
EnableLeadingValueOutput	BOOL	False		
▼ AddressOut	Struct			
RID	DWORD	0		
AREA	BYTE	0		
DB_NUMBER	UINT	0		
OFFSET	UDINT	0		
▼ Interface[7]	Struct			
EnableLeadingValueOutput	BOOL	False		
▼ AddressOut	Struct			
RID	DWORD	0		
AREA	BYTE	0		
DB_NUMBER	UINT	0		
OFFSET	UDINT	0		
▼ Interface[8]	Struct			
EnableLeadingValueOutput	BOOL	False		
▼ AddressOut	Struct			
RID	DWORD	0		
AREA	BYTE	0		
DB_NUMBER	UINT	0		
OFFSET	UDINT	0		
LocalLeadingValueDelayTime	LREAL	0	s	
▼ PositioningMonitoring	Struct			
ToleranceTime	LREAL	1	s	
MinDwellTime	LREAL	0.1	s	
Window	LREAL	1	mm	
▼ StandstillSignal	Struct			
VelocityThreshold	LREAL	5	mm/s	
MinDwellTime	LREAL	0.01	s	
▼ StatusPositioning	Struct			
Distance	LREAL	0	mm	
TargetPosition	LREAL	0	mm	
TargetPositionModuloCycle	DINT	0		

Name	Data type	Start value project	Unit of measure	Comment
FollowingError	LREAL	0	mm	
SetpointExecutionTime	LREAL	0	s	
SuperimposedDistance	LREAL	0	mm	
▼ StatusServo	Struct			
BalancedPosition	LREAL	0	mm	
ControlDifference	LREAL	0	mm	
PositionAfterDynamicFilter	LREAL	0	mm	
▼ StatusProvidedLeadingValue	Struct			
▼ DelayedLeadingValue	Struct			
Position	LREAL	0	mm	
Velocity	LREAL	0	mm/s	
Acceleration	LREAL	0	mm/s ²	
▼ StatusSensor	Array[]			
▼ StatusSensor[1]	Struct			
State	DINT	NOT_VALID		
CommunicationOK	BOOL	False		
Error	BOOL	False		
AbsEncoderOffset	LREAL	0	mm	
Control	BOOL	False		
Position	LREAL	0	mm	
Velocity	LREAL	0	mm/s	
AdaptionState	DINT	NOT_ADAPTED		
ModuloCycle	DINT	0		
Adjusted	DINT	NOT_ADJUSTED		
▼ StatusSensor[2]	Struct			
State	DINT	NOT_VALID		
CommunicationOK	BOOL	False		
Error	BOOL	False		
AbsEncoderOffset	LREAL	0	mm	
Control	BOOL	False		
Position	LREAL	0	mm	
Velocity	LREAL	0	mm/s	
AdaptionState	DINT	NOT_ADAPTED		
ModuloCycle	DINT	0		
Adjusted	DINT	NOT_ADJUSTED		
▼ StatusSensor[3]	Struct			
State	DINT	NOT_VALID		
CommunicationOK	BOOL	False		
Error	BOOL	False		
AbsEncoderOffset	LREAL	0	mm	
Control	BOOL	False		
Position	LREAL	0	mm	
Velocity	LREAL	0	mm/s	
AdaptionState	DINT	NOT_ADAPTED		
ModuloCycle	DINT	0		
Adjusted	DINT	NOT_ADJUSTED		

Name	Data type	Start value project	Unit of measure	Comment
▼ StatusSensor[4]	Struct			
State	DINT	NOT_VALID		
CommunicationOK	BOOL	False		
Error	BOOL	False		
AbsEncoderOffset	LREAL	0	mm	
Control	BOOL	False		
Position	LREAL	0	mm	
Velocity	LREAL	0	mm/s	
AdaptionState	DINT	NOT_ADAPTED		
ModuloCycle	DINT	0		
Adjusted	DINT	NOT_ADJUSTED		
▼ StatusExtrapolation	Struct			
FilteredPosition	LREAL	0	mm	
FilteredVelocity	LREAL	0	mm/s	
ExtrapolatedPosition	LREAL	0	mm	
ExtrapolatedVelocity	LREAL	0	mm/s	
▼ StatusKinematicsMotion	Struct			
StatusWord	DWORD	0		

PackML_2Axis1EM [CPU 1515T-2 PN] / Technology objects

Axis_02_Z [DB22]

Axis_02_Z properties

General

Name	Axis_02_Z	Number	22	Type	DB
Language	Motion_DB	Numbering	manual		

Information

Title		Author	SIMATIC	Comment	
Family	MC_1500	Version	7.0	User-defined ID	

Name	Data type	Start value project	Unit of measure	Comment
Velocity	LREAL	0	mm/s	
Acceleration	LREAL	0	mm/s ²	
ActualSpeed	LREAL	0	1/min	
VelocitySetpoint	LREAL	0	mm/s	
▼ Actor	Struct			
Type	DINT	PROFIDRIVE		
InverseDirection	BOOL	False		
DataAdaption	DINT	ACTOR_DATA_ADAP- TION_NO		
Efficiency	LREAL	1		
MotorType	DINT	STANDARD_MOTOR- TYPE		
▼ Interface	Struct			
▼ AddressIn	Struct			
RID	DWORD	34080538		
AREA	BYTE	129		
DB_NUMBER	UINT	0		
OFFSET	UDINT	176		
▼ AddressOut	Struct			
RID	DWORD	34080539		
AREA	BYTE	130		
DB_NUMBER	UINT	0		
OFFSET	UDINT	208		
EnableDriveOutput	BOOL	False		
▼ EnableDriveOutputAddress	Struct			
RID	DWORD	0		
AREA	BYTE	0		
DB_NUMBER	UINT	0		
OFFSET	UDINT	0		
DriveReadyInput	BOOL	False		
▼ DriveReadyInputAddress	Struct			
RID	DWORD	0		
AREA	BYTE	0		
DB_NUMBER	UINT	0		

Name	Data type	Start value project	Unit of measure	Comment
OFFSET	UDINT	0		
EnableTorqueData	BOOL	False		
▼ TorqueDataAddressIn	Struct			
RID	DWORD	0		
AREA	BYTE	0		
DB_NUMBER	UINT	0		
OFFSET	UDINT	0		
▼ TorqueDataAddressOut	Struct			
RID	DWORD	0		
AREA	BYTE	0		
DB_NUMBER	UINT	0		
OFFSET	UDINT	0		
▼ DriveParameter	Struct			
ReferenceSpeed	LREAL	3000	1/min	
MaxSpeed	LREAL	3000	1/min	
ReferenceTorque	LREAL	3.2	Nm	
▼ LinearMotorDriveParameter	Struct			
ReferenceVelocity	LREAL	120	m/min	
MaxVelocity	LREAL	120	m/min	
ReferenceForce	LREAL	100	N	
▼ TorqueLimiting	Struct			
LimitBase	DINT	TORQUELIMIT_LIMIT-BASE_LOAD		
PositionBasedMonitorings	DINT	TORQUELIMIT_POS_BASED_MONITORING_NO		
▼ LimitDefaults	Struct			
Torque	LREAL	0	Nm	
Force	LREAL	0	N	
▼ LoadGear	Struct			
Numerator	UDINT	1		
Denominator	UDINT	1		
▼ DynamicLimits	Struct			
MaxVelocity	LREAL	500	mm/s	
Velocity	LREAL	1000000000000	mm/s	
MaxAcceleration	LREAL	10000	mm/s ²	
MaxDeceleration	LREAL	10000	mm/s ²	
MaxJerk	LREAL	200000	mm/s ³	
▼ DynamicDefaults	Struct			
Velocity	LREAL	100	mm/s	
Acceleration	LREAL	2000	mm/s ²	
Deceleration	LREAL	2000	mm/s ²	
Jerk	LREAL	40000	mm/s ³	
EmergencyDeceleration	LREAL	10000	mm/s ²	
▼ Override	Struct			
Velocity	LREAL	100	%	

Name	Data type	Start value project	Unit of measure	Comment
▼ Units	Struct			
LengthUnit	UDINT	0		
VelocityUnit	UDINT	0		
TimeUnit	UDINT	0		
TorqueUnit	UDINT	0		
ForceUnit	UDINT	0		
▼ StatusDrive	Struct			
InOperation	BOOL	False		
CommunicationOK	BOOL	False		
Error	BOOL	False		
AdaptionState	DINT	NOT_ADAPTED		
▼ StatusTorqueData	Struct			
CommandAdditiveTorqueActive	DINT	ADDITIVE_TORQUE_ACTIVE_NO		
CommandTorqueRangeActive	DINT	TORQUE_RANGE_ACTIVE_NO		
ActualTorque	LREAL	0	Nm	
ActualForce	LREAL	0	N	
▼ StatusMotionIn	Struct			
FunctionState	DINT	MOTIONIN_INAKTIV		
StatusWord	DWORD	0		
StatusWord	DWORD	0		
StatusWord2	DWORD	0		
ErrorWord	DWORD	0		
▼ ErrorDetail	Struct			
Number	UDINT	0		
Reaction	DINT	NONE		
WarningWord	DWORD	0		
▼ ControlPanel	Struct			
▼ Input	Struct			
▼ Command	Array[]			
▼ Command[1]	Struct			
ReqCounter	UDINT	0		
Type	UDINT	0		
Position	LREAL	0	mm	
Velocity	LREAL	0	mm/s	
Acceleration	LREAL	0	mm/s ²	
Deceleration	LREAL	0	mm/s ²	
Jerk	LREAL	0	mm/s ³	
Param	LREAL	0		
▼ Command[2]	Struct			
ReqCounter	UDINT	0		
Type	UDINT	0		
Position	LREAL	0	mm	
Velocity	LREAL	0	mm/s	

Name	Data type	Start value project	Unit of measure	Comment
Acceleration	LREAL	0	mm/s ²	
Deceleration	LREAL	0	mm/s ²	
Jerk	LREAL	0	mm/s ³	
Param	LREAL	0		
TimeOut	LREAL	2000	ms	
EsLifeSign	UDINT	0		
▼ Output	Struct			
▼ Command	Array[]			
▼ Command[1]	Struct			
AckCounter	UDINT	0		
Error	BOOL	False		
ErrorID	WORD	0		
Done	BOOL	False		
Aborted	BOOL	False		
▼ Command[2]	Struct			
AckCounter	UDINT	0		
Error	BOOL	False		
ErrorID	WORD	0		
Done	BOOL	False		
Aborted	BOOL	False		
RtLifeSign	UDINT	0		
▼ InternalToTrace	Array[]			
▼ InternalToTrace[1]	Struct			
Id	DINT	0		
Value	LREAL	0		
▼ InternalToTrace[2]	Struct			
Id	DINT	0		
Value	LREAL	0		
▼ InternalToTrace[3]	Struct			
Id	DINT	0		
Value	LREAL	0		
▼ InternalToTrace[4]	Struct			
Id	DINT	0		
Value	LREAL	0		
▼ VirtualAxis	Struct			
Mode	UDINT	0		
▼ Simulation	Struct			
Mode	UDINT	0		
Position	LREAL	0	mm	
ActualPosition	LREAL	0	mm	
ActualVelocity	LREAL	0	mm/s	
ActualAcceleration	LREAL	0	mm/s ²	
OperativeSensor	UDINT	0		
ModuloCycle	DINT	0		
ActualModuloCycle	DINT	0		

Name	Data type	Start value project	Unit of measure	Comment
▼ Clamping	Struct			
FollowingErrorDeviation	LREAL	10	mm	
PositionTolerance	LREAL	10	mm	
▼ Sensor	Array[]			
▼ Sensor[1]	Struct			
Existent	BOOL	True		
Type	DINT	ABSOLUTE		
InverseDirection	BOOL	False		
System	DINT	ROTATORY		
MountingMode	DINT	DRIVE		
DataAdaption	DINT	SENSOR_DATA_ADAP-TION_NO		
ActualVelocityMode	DINT	STANDARD		
▼ Interface	Struct			
▼ AddressIn	Struct			
RID	DWORD	34080538		
AREA	BYTE	129		
DB_NUMBER	UINT	0		
OFFSET	UDINT	176		
▼ AddressOut	Struct			
RID	DWORD	34080539		
AREA	BYTE	130		
DB_NUMBER	UINT	0		
OFFSET	UDINT	208		
Number	UDINT	1		
▼ Parameter	Struct			
Resolution	LREAL	0.001	mm	
StepsPerRevolution	UDINT	512		
FineResolutionXist1	UDINT	11		
FineResolutionXist2	UDINT	9		
DeterminableRevolutions	UDINT	4096		
DistancePerRevolution	LREAL	100	mm	
BehaviorGx_XIST1	DINT	SEN-SOR_GX_XIST1_NO		
ReferenceSpeed	LREAL	3000	1/min	
ReferenceVelocity	LREAL	120	m/min	
▼ Backlash	Struct			
Enable	BOOL	False		
Size	LREAL	0	mm	
Velocity	LREAL	0	mm/s	
DirectionAbsoluteHoming	DINT	SENSOR_BACK-LASH_POSITIVE		
▼ ActiveHoming	Struct			
Mode	DINT	DIGITAL_INPUT		
Sidelnput	BOOL	True		

Name	Data type	Start value project	Unit of measure	Comment
Direction	DINT	POSITIVE		
HomePositionOffset	LREAL	0	mm	
▼ DigitalInputAddress	Struct			
RID	DWORD	33554433		
AREA	BYTE	129		
DB_NUMBER	UINT	0		
OFFSET	UDINT	9		
SwitchLevel	BOOL	True		
▼ PassiveHoming	Struct			
Mode	DINT	ZERO_MARK		
Sidelnput	BOOL	True		
Direction	DINT	NEGATIVE		
▼ DigitalInputAddress	Struct			
RID	DWORD	33554433		
AREA	BYTE	129		
DB_NUMBER	UINT	0		
OFFSET	UDINT	9		
SwitchLevel	BOOL	True		
▼ Sensor[2]	Struct			
Existent	BOOL	False		
Type	DINT	INCREMENTAL		
InverseDirection	BOOL	False		
System	DINT	ROTATORY		
MountingMode	DINT	DRIVE		
DataAdaption	DINT	SENSOR_DATA_ADAP- TION_NO		
ActualVelocityMode	DINT	STANDARD		
▼ Interface	Struct			
▼ AddressIn	Struct			
RID	DWORD	0		
AREA	BYTE	0		
DB_NUMBER	UINT	0		
OFFSET	UDINT	0		
▼ AddressOut	Struct			
RID	DWORD	0		
AREA	BYTE	0		
DB_NUMBER	UINT	0		
OFFSET	UDINT	0		
Number	UDINT	1		
▼ Parameter	Struct			
Resolution	LREAL	0.001	mm	
StepsPerRevolution	UDINT	2048		
FineResolutionXist1	UDINT	11		
FineResolutionXist2	UDINT	9		
DeterminableRevolu- tions	UDINT	1		

Name	Data type	Start value project	Unit of measure	Comment
DistancePerRevolution	LREAL	100	mm	
BehaviorGx_XIST1	DINT	SEN- SOR_GX_XIST1_NO		
ReferenceSpeed	LREAL	3000	1/min	
ReferenceVelocity	LREAL	120	m/min	
▼ Backlash	Struct			
Enable	BOOL	False		
Size	LREAL	0	mm	
Velocity	LREAL	0	mm/s	
DirectionAbsoluteHoming	DINT	SENSOR_BACK- LASH_POSITIVE		
▼ ActiveHoming	Struct			
Mode	DINT	ZERO_MARK		
SideInput	BOOL	True		
Direction	DINT	POSITIVE		
HomePositionOffset	LREAL	0	mm	
▼ DigitalInputAddress	Struct			
RID	DWORD	0		
AREA	BYTE	0		
DB_NUMBER	UINT	0		
OFFSET	UDINT	0		
SwitchLevel	BOOL	True		
▼ PassiveHoming	Struct			
Mode	DINT	ZERO_MARK		
SideInput	BOOL	True		
Direction	DINT	ACTUAL		
▼ DigitalInputAddress	Struct			
RID	DWORD	0		
AREA	BYTE	0		
DB_NUMBER	UINT	0		
OFFSET	UDINT	0		
SwitchLevel	BOOL	True		
▼ Sensor[3]	Struct			
Existent	BOOL	False		
Type	DINT	INCREMENTAL		
InverseDirection	BOOL	False		
System	DINT	ROTATORY		
MountingMode	DINT	DRIVE		
DataAdaption	DINT	SENSOR_DATA_ADAP- TION_NO		
ActualVelocityMode	DINT	STANDARD		
▼ Interface	Struct			
▼ AddressIn	Struct			
RID	DWORD	0		
AREA	BYTE	0		
DB_NUMBER	UINT	0		

Name	Data type	Start value project	Unit of measure	Comment
OFFSET	UDINT	0		
▼ AddressOut	Struct			
RID	DWORD	0		
AREA	BYTE	0		
DB_NUMBER	UINT	0		
OFFSET	UDINT	0		
Number	UDINT	1		
▼ Parameter	Struct			
Resolution	LREAL	0.001	mm	
StepsPerRevolution	UDINT	2048		
FineResolutionXist1	UDINT	11		
FineResolutionXist2	UDINT	9		
DeterminableRevolutions	UDINT	1		
DistancePerRevolution	LREAL	100	mm	
BehaviorGx_XIST1	DINT	SENSOR_GX_XIST1_NO		
ReferenceSpeed	LREAL	3000	1/min	
ReferenceVelocity	LREAL	120	m/min	
▼ Backlash	Struct			
Enable	BOOL	False		
Size	LREAL	0	mm	
Velocity	LREAL	0	mm/s	
DirectionAbsoluteHoming	DINT	SENSOR_BACKLASH_POSITIVE		
▼ ActiveHoming	Struct			
Mode	DINT	ZERO_MARK		
Sidelnput	BOOL	True		
Direction	DINT	POSITIVE		
HomePositionOffset	LREAL	0	mm	
▼ DigitalInputAddress	Struct			
RID	DWORD	0		
AREA	BYTE	0		
DB_NUMBER	UINT	0		
OFFSET	UDINT	0		
SwitchLevel	BOOL	True		
▼ PassiveHoming	Struct			
Mode	DINT	ZERO_MARK		
Sidelnput	BOOL	True		
Direction	DINT	ACTUAL		
▼ DigitalInputAddress	Struct			
RID	DWORD	0		
AREA	BYTE	0		
DB_NUMBER	UINT	0		
OFFSET	UDINT	0		
SwitchLevel	BOOL	True		

Name	Data type	Start value project	Unit of measure	Comment
▼ Sensor[4]	Struct			
Existent	BOOL	False		
Type	DINT	INCREMENTAL		
InverseDirection	BOOL	False		
System	DINT	ROTATORY		
MountingMode	DINT	DRIVE		
DataAdaption	DINT	SENSOR_DATA_ADAP-TION_NO		
ActualVelocityMode	DINT	STANDARD		
▼ Interface	Struct			
▼ AddressIn	Struct			
RID	DWORD	0		
AREA	BYTE	0		
DB_NUMBER	UINT	0		
OFFSET	UDINT	0		
▼ AddressOut	Struct			
RID	DWORD	0		
AREA	BYTE	0		
DB_NUMBER	UINT	0		
OFFSET	UDINT	0		
Number	UDINT	1		
▼ Parameter	Struct			
Resolution	LREAL	0.001	mm	
StepsPerRevolution	UDINT	2048		
FineResolutionXist1	UDINT	11		
FineResolutionXist2	UDINT	9		
DeterminableRevolutions	UDINT	1		
DistancePerRevolution	LREAL	100	mm	
BehaviorGx_XIST1	DINT	SEN-SOR_GX_XIST1_NO		
ReferenceSpeed	LREAL	3000	1/min	
ReferenceVelocity	LREAL	120	m/min	
▼ Backlash	Struct			
Enable	BOOL	False		
Size	LREAL	0	mm	
Velocity	LREAL	0	mm/s	
DirectionAbsoluteHoming	DINT	SENSOR_BACK-LASH_POSITIVE		
▼ ActiveHoming	Struct			
Mode	DINT	ZERO_MARK		
SideInput	BOOL	True		
Direction	DINT	POSITIVE		
HomePositionOffset	LREAL	0	mm	
▼ DigitalInputAddress	Struct			
RID	DWORD	0		

Name	Data type	Start value project	Unit of measure	Comment
AREA	BYTE	0		
DB_NUMBER	UINT	0		
OFFSET	UDINT	0		
SwitchLevel	BOOL	True		
▼ PassiveHoming	Struct			
Mode	DINT	ZERO_MARK		
Sidelnput	BOOL	True		
Direction	DINT	ACTUAL		
▼ DigitalInputAddress	Struct			
RID	DWORD	0		
AREA	BYTE	0		
DB_NUMBER	UINT	0		
OFFSET	UDINT	0		
SwitchLevel	BOOL	True		
▼ Extrapolation	Struct			
LeadingAxisDependentTime	LREAL	0	s	
FollowingAxisDependentTime	LREAL	0	s	
▼ Settings	Struct			
SystemDefinedExtrapolation	DINT	SYSTEM_DEFINED_EXTRAPOLATION_ACTIVE		
ExtrapolatedVelocityMode	DINT	EXTRAPOLATED_VELOCITY_MODE_DIFFERENTIATION		
▼ PositionFilter	Struct			
T1	LREAL	0	s	
T2	LREAL	0	s	
▼ VelocityFilter	Struct			
T1	LREAL	0	s	
T2	LREAL	0	s	
▼ VelocityTolerance	Struct			
Range	LREAL	0	mm/s	
▼ Hysteresis	Struct			
Value	LREAL	0	mm	
▼ Mechanics	Struct			
LeadScrew	LREAL	169.6	mm/rot	
▼ Properties	Struct			
MotionType	DINT	LIN_MOTION		
▼ Modulo	Struct			
Enable	BOOL	False		
Length	LREAL	1000	mm	
StartValue	LREAL	0	mm	
▼ PositionLimits_SW	Struct			
Active	BOOL	False		
MinPosition	LREAL	-1000000000000	mm	

Name	Data type	Start value project	Unit of measure	Comment
MaxPosition	LREAL	1000000000000	mm	
LimitReachedBehavior	DINT	STOP_WITH_MAX_DYNAMICS		
LimitExceededBehavior	DINT	AXIS_DISABLE		
▼ PositionLimits_HW	Struct			
Active	BOOL	False		
Mode	DINT	SWITCH_TRAVERSABLE		
MinSwitchLevel	BOOL	True		
▼ MinSwitchAddress	Struct			
RID	DWORD	0		
AREA	BYTE	0		
DB_NUMBER	UINT	0		
OFFSET	UDINT	0		
MaxSwitchLevel	BOOL	True		
▼ MaxSwitchAddress	Struct			
RID	DWORD	0		
AREA	BYTE	0		
DB_NUMBER	UINT	0		
OFFSET	UDINT	0		
ApproachBehavior	DINT	AXIS_DISABLE		
▼ Homing	Struct			
AutoReversal	BOOL	False		
ApproachDirection	BOOL	True		
ApproachVelocity	LREAL	20	mm/s	
ReferencingVelocity	LREAL	5	mm/s	
HomePosition	LREAL	0	mm	
▼ PositionControl	Struct			
Kv	LREAL	10	1/s	
Kpc	LREAL	100	%	
EnableDSC	BOOL	True		
SmoothingTimeByChangeDifference	LREAL	0	s	
InitialOperativeSensor	UDINT	1		
▼ ControlDifferenceQuantization	Struct			
Mode	DINT	REFER_TO_ACTUAL_SENSOR_VALUE_RESOLUTION		
Value	LREAL	0.001	mm	
VelocityModePowerOn	DINT	RAMP_TO_VELO_ZERO		
▼ SetpointFilter	Struct			
▼ DynamicFilter	Struct			
Mode	DINT	OFF		
T1	LREAL	0	s	
T2	LREAL	0	s	

Name	Data type	Start value project	Unit of measure	Comment
Tt	LREAL	0	s	
▼ DynamicAxisModel	Struct			
VelocityTimeConstant	LREAL	0	s	
AdditionalPositionTimeConstant	LREAL	0	s	
▼ FollowingError	Struct			
EnableMonitoring	BOOL	True		
MinValue	LREAL	10	mm	
MaxValue	LREAL	100	mm	
MinVelocity	LREAL	10	mm/s	
WarningLevel	LREAL	70	%	
AdditionalSetpointDelayTime	LREAL	0	s	
▼ CrossPlcSynchronousOperation	Struct			
▼ Interface	Array[]			
▼ Interface[1]	Struct			
EnableLeadingValueOutput	BOOL	False		
▼ AddressOut	Struct			
RID	DWORD	0		
AREA	BYTE	0		
DB_NUMBER	UINT	0		
OFFSET	UDINT	0		
▼ Interface[2]	Struct			
EnableLeadingValueOutput	BOOL	False		
▼ AddressOut	Struct			
RID	DWORD	0		
AREA	BYTE	0		
DB_NUMBER	UINT	0		
OFFSET	UDINT	0		
▼ Interface[3]	Struct			
EnableLeadingValueOutput	BOOL	False		
▼ AddressOut	Struct			
RID	DWORD	0		
AREA	BYTE	0		
DB_NUMBER	UINT	0		
OFFSET	UDINT	0		
▼ Interface[4]	Struct			
EnableLeadingValueOutput	BOOL	False		
▼ AddressOut	Struct			
RID	DWORD	0		
AREA	BYTE	0		
DB_NUMBER	UINT	0		
























Name	Data type	Start value project	Unit of measure	Comment
OFFSET	UDINT	0		
▼ Interface[5]	Struct			
EnableLeadingValueOutput	BOOL	False		
▼ AddressOut	Struct			
RID	DWORD	0		
AREA	BYTE	0		
DB_NUMBER	UINT	0		
OFFSET	UDINT	0		
▼ Interface[6]	Struct			
EnableLeadingValueOutput	BOOL	False		
▼ AddressOut	Struct			
RID	DWORD	0		
AREA	BYTE	0		
DB_NUMBER	UINT	0		
OFFSET	UDINT	0		
▼ Interface[7]	Struct			
EnableLeadingValueOutput	BOOL	False		
▼ AddressOut	Struct			
RID	DWORD	0		
AREA	BYTE	0		
DB_NUMBER	UINT	0		
OFFSET	UDINT	0		
▼ Interface[8]	Struct			
EnableLeadingValueOutput	BOOL	False		
▼ AddressOut	Struct			
RID	DWORD	0		
AREA	BYTE	0		
DB_NUMBER	UINT	0		
OFFSET	UDINT	0		
LocalLeadingValueDelayTime	LREAL	0	s	
▼ PositioningMonitoring	Struct			
ToleranceTime	LREAL	1	s	
MinDwellTime	LREAL	0.1	s	
Window	LREAL	1	mm	
▼ StandstillSignal	Struct			
VelocityThreshold	LREAL	5	mm/s	
MinDwellTime	LREAL	0.01	s	
▼ StatusPositioning	Struct			
Distance	LREAL	0	mm	
TargetPosition	LREAL	0	mm	
TargetPositionModuloCycle	DINT	0		























Name	Data type	Start value project	Unit of measure	Comment
FollowingError	LREAL	0	mm	
SetpointExecutionTime	LREAL	0	s	
SuperimposedDistance	LREAL	0	mm	
▼ StatusServo	Struct			
BalancedPosition	LREAL	0	mm	
ControlDifference	LREAL	0	mm	
PositionAfterDynamicFilter	LREAL	0	mm	
▼ StatusProvidedLeadingValue	Struct			
▼ DelayedLeadingValue	Struct			
Position	LREAL	0	mm	
Velocity	LREAL	0	mm/s	
Acceleration	LREAL	0	mm/s ²	
▼ StatusSensor	Array[]			
▼ StatusSensor[1]	Struct			
State	DINT	NOT_VALID		
CommunicationOK	BOOL	False		
Error	BOOL	False		
AbsEncoderOffset	LREAL	0	mm	
Control	BOOL	False		
Position	LREAL	0	mm	
Velocity	LREAL	0	mm/s	
AdaptionState	DINT	NOT_ADAPTED		
ModuloCycle	DINT	0		
Adjusted	DINT	NOT_ADJUSTED		
▼ StatusSensor[2]	Struct			
State	DINT	NOT_VALID		
CommunicationOK	BOOL	False		
Error	BOOL	False		
AbsEncoderOffset	LREAL	0	mm	
Control	BOOL	False		
Position	LREAL	0	mm	
Velocity	LREAL	0	mm/s	
AdaptionState	DINT	NOT_ADAPTED		
ModuloCycle	DINT	0		
Adjusted	DINT	NOT_ADJUSTED		
▼ StatusSensor[3]	Struct			
State	DINT	NOT_VALID		
CommunicationOK	BOOL	False		
Error	BOOL	False		
AbsEncoderOffset	LREAL	0	mm	
Control	BOOL	False		
Position	LREAL	0	mm	
Velocity	LREAL	0	mm/s	
AdaptionState	DINT	NOT_ADAPTED		
ModuloCycle	DINT	0		
Adjusted	DINT	NOT_ADJUSTED		

Name	Data type	Start value project	Unit of measure	Comment
▼ StatusSensor[4]	Struct			
State	DINT	NOT_VALID		
CommunicationOK	BOOL	False		
Error	BOOL	False		
AbsEncoderOffset	LREAL	0	mm	
Control	BOOL	False		
Position	LREAL	0	mm	
Velocity	LREAL	0	mm/s	
AdaptionState	DINT	NOT_ADAPTED		
ModuloCycle	DINT	0		
Adjusted	DINT	NOT_ADJUSTED		
▼ StatusExtrapolation	Struct			
FilteredPosition	LREAL	0	mm	
FilteredVelocity	LREAL	0	mm/s	
ExtrapolatedPosition	LREAL	0	mm	
ExtrapolatedVelocity	LREAL	0	mm/s	
▼ StatusKinematicsMotion	Struct			
StatusWord	DWORD	0		
























PackML_2Axis1EM [CPU 1515T-2 PN] / PLC tags / Default tag table [110]



























PLC tags



























PLC tags				
	Name	Data type	Address	Retain
	RESET_SW	Bool	%I0.2	False
	Tag_2	Bool	%Q4.0	False
	START_PB	Bool	%I0.0	False
	STOP_PB	Bool	%I0.1	False
	EM_Idle	Bool	%M70.0	False
	EM_Starting	Bool	%M70.1	False
	EM_Execute	Bool	%M70.2	False
	EM_Aborting	Bool	%M70.3	False
	EM_Aborted	Bool	%M70.4	False
	EM_Resetting	Bool	%M70.5	False
	Motion_Steps_Error	Bool	%M72.0	False
	EM_Execute_Done	Bool	%M72.1	False
	System_Byte	Byte	%MB1	False
	FirstScan	Bool	%M1.0	False
	DiagStatusUpdate	Bool	%M1.1	False
	AlwaysTRUE	Bool	%M1.2	False
	AlwaysFALSE	Bool	%M1.3	False
	▼ Axis_1_Actor_Interface_AddressIn	"PD_TEL5_IN"	%I4.0	False
	▼ ZSW1	PD_ZSW1	%I4.0	
	NoSpeedDeviation	Bool	%I4.0	
	ControlRequested	Bool	%I4.1	
	SpeedComparisonValusReachedExeeded	Bool	%I4.2	
	TorqueLimitNotReached	Bool	%I4.3	



























	Name	Data type	Address	Retain
	OpenHoldingBrake	Bool	%I4.4	
	NoMotorOvertemperature	Bool	%I4.5	
	ActualSpeedPositive	Bool	%I4.6	
	NoPowerUnitOvertemperature	Bool	%I4.7	
	ReadyToSwitchOn	Bool	%I5.0	
	ReadyToOperate	Bool	%I5.1	
	OperationEnabled	Bool	%I5.2	
	FaultPresent	Bool	%I5.3	
	NoCoastStopActivated	Bool	%I5.4	
	NoQuickStopActivated	Bool	%I5.5	
	SwitchingOnInhibited	Bool	%I5.6	
	AlarmPresent	Bool	%I5.7	
	NIST_B	DWord	%ID6	
	▼ ZSW2	PD_ZSW2	%I10.0	
	TravelToFixedEndStopActive	Bool	%I10.0	
	Reserved_Bit09	Bool	%I10.1	
	PulsesEnabled	Bool	%I10.2	
	MotorDataSetChangeoverActive	Bool	%I10.3	
	SlaveSignOfLifeBit0	Bool	%I10.4	
	SlaveSignOfLifeBit1	Bool	%I10.5	
	SlaveSignOfLifeBit2	Bool	%I10.6	
	SlaveSignOfLifeBit3	Bool	%I10.7	
	DriveDataSetEffectiveBit0	Bool	%I11.0	
	DriveDataSetEffectiveBit1	Bool	%I11.1	
	DriveDataSetEffectiveBit2	Bool	%I11.2	
	DriveDataSetEffectiveBit3	Bool	%I11.3	

	Name	Data type	Address	Retain
	DriveDataSetEffectiveBit4	Bool	%I11.4	
	AlarmClassBit0	Bool	%I11.5	
	AlarmClassBit1	Bool	%I11.6	
	ParkingAxisActive	Bool	%I11.7	
	▼ G1_ZSW	PD_Gx_ZSW	%I12.0	
	Probe1Deflected	Bool	%I12.0	
	Probe2Deflected	Bool	%I12.1	
	Reserved_Bit10	Bool	%I12.2	
	EncoderFaultAcknowledgeActive	Bool	%I12.3	
	HomePositionExecuted	Bool	%I12.4	
	AbsoluteValueCyclicallyExecuted	Bool	%I12.5	
	ParkingSensorExecuted	Bool	%I12.6	
	SensorError	Bool	%I12.7	
	Function1Active	Bool	%I13.0	
	Function2Active	Bool	%I13.1	
	Function3Active	Bool	%I13.2	
	Function4Active	Bool	%I13.3	
	Value1Available	Bool	%I13.4	
	Value2Available	Bool	%I13.5	
	Value3Available	Bool	%I13.6	
	Value4Available	Bool	%I13.7	
	G1_XIST1	DWord	%ID14	
	G1_XIST2	DWord	%ID18	
	▼ Axis_1_Actor_Interface_AddressOut	"PD_TEL5_OUT"	%Q8.0	False
	▼ STW1	PD_STW1	%Q8.0	
	Reserved_Bit08	Bool	%Q8.0	





















	Name	Data type	Address	Retain
	Reserved_Bit09	Bool	%Q8.1	
	ControlByPlc	Bool	%Q8.2	
	SetpointInversion	Bool	%Q8.3	
	OpenHoldingBrake	Bool	%Q8.4	
	RaiseMotorizedPotentiometerSetpoint	Bool	%Q8.5	
	LowerMotorizedPotentiometerSetpoint	Bool	%Q8.6	
	Reserved_Bit15	Bool	%Q8.7	
	On	Bool	%Q9.0	
	NoCoastStop	Bool	%Q9.1	
	NoQuickStop	Bool	%Q9.2	
	EnableOperation	Bool	%Q9.3	
	EnableRampGenerator	Bool	%Q9.4	
	UnfreezeRampGenerator	Bool	%Q9.5	
	EnableSetpoint	Bool	%Q9.6	
	FaultAcknowledge	Bool	%Q9.7	
	NSOLL_B	DWord	%QD10	
	▼ STW2	PD_STW2	%Q14.0	
	TravelToFixedEndstop	Bool	%Q14.0	
	Reserved_Bit09	Bool	%Q14.1	
	Reserved_Bit10	Bool	%Q14.2	
	MotorSwitchoverFinished	Bool	%Q14.3	
	MasterSignOfLifeBit0	Bool	%Q14.4	
	MasterSignOfLifeBit1	Bool	%Q14.5	
	MasterSignOfLifeBit2	Bool	%Q14.6	
	MasterSignOfLifeBit3	Bool	%Q14.7	
	DriveDataSetSelectionBit0	Bool	%Q15.0	

















	Name	Data type	Address	Retain
	DriveDataSetSelectionBit1	Bool	%Q15.1	
	DriveDataSetSelectionBit2	Bool	%Q15.2	
	DriveDataSetSelectionBit3	Bool	%Q15.3	
	DriveDataSetSelectionBit4	Bool	%Q15.4	
	Reserved_Bit05	Bool	%Q15.5	
	Reserved_Bit06	Bool	%Q15.6	
	ParkingAxisSelection	Bool	%Q15.7	
	▼ G1_STW	PD_Gx_STW	%Q16.0	
	Reserved_Bit08	Bool	%Q16.0	
	Reserved_Bit09	Bool	%Q16.1	
	Reserved_Bit10	Bool	%Q16.2	
	Reserved_Bit11	Bool	%Q16.3	
	Reserved_Bit12	Bool	%Q16.4	
	AbsoluteValueCyclically	Bool	%Q16.5	
	RequestParkingEncoder	Bool	%Q16.6	
	AcknowledgeError	Bool	%Q16.7	
	Function1Request	Bool	%Q17.0	
	Function2Request	Bool	%Q17.1	
	Function3Request	Bool	%Q17.2	
	Function4Request	Bool	%Q17.3	
	Command0Request	Bool	%Q17.4	
	Command1Request	Bool	%Q17.5	
	Command2Request	Bool	%Q17.6	
	Mode	Bool	%Q17.7	
	XERR	DWord	%QD18	
	KPC	DWord	%QD22	

	Name	Data type	Address	Retain
	Clock_Byte	Byte	%MB0	False
	Clock_10Hz	Bool	%M0.0	False
	Clock_5Hz	Bool	%M0.1	False
	Clock_2.5Hz	Bool	%M0.2	False
	Clock_2Hz	Bool	%M0.3	False
	Clock_1.25Hz	Bool	%M0.4	False
	Clock_1Hz	Bool	%M0.5	False
	Clock_0.625Hz	Bool	%M0.6	False
	Clock_0.5Hz	Bool	%M0.7	False
	▼ Axis_02_Z_Actor_Interface_AddressIn	"PD_TEL5_IN"	%I22.0	False
	▼ ZSW1	PD_ZSW1	%I22.0	
	NoSpeedDeviation	Bool	%I22.0	
	ControlRequested	Bool	%I22.1	
	SpeedComparisonValusReachedExeeded	Bool	%I22.2	
	TorqueLimitNotReached	Bool	%I22.3	
	OpenHoldingBrake	Bool	%I22.4	
	NoMotorOvertemperature	Bool	%I22.5	
	ActualSpeedPositive	Bool	%I22.6	
	NoPowerUnitOvertemperature	Bool	%I22.7	
	ReadyToSwitchOn	Bool	%I23.0	
	ReadyToOperate	Bool	%I23.1	
	OperationEnabled	Bool	%I23.2	
	FaultPresent	Bool	%I23.3	
	NoCoastStopActivated	Bool	%I23.4	
	NoQuickStopActivated	Bool	%I23.5	
	SwitchingOnInhibited	Bool	%I23.6	

	Name	Data type	Address	Retain
	AlarmPresent	Bool	%I23.7	
	NIST_B	DWord	%ID24	
	▼ ZSW2	PD_ZSW2	%I28.0	
	TravelToFixedEndStopActive	Bool	%I28.0	
	Reserved_Bit09	Bool	%I28.1	
	PulsesEnabled	Bool	%I28.2	
	MotorDataSetChangeoverActive	Bool	%I28.3	
	SlaveSignOfLifeBit0	Bool	%I28.4	
	SlaveSignOfLifeBit1	Bool	%I28.5	
	SlaveSignOfLifeBit2	Bool	%I28.6	
	SlaveSignOfLifeBit3	Bool	%I28.7	
	DriveDataSetEffectiveBit0	Bool	%I29.0	
	DriveDataSetEffectiveBit1	Bool	%I29.1	
	DriveDataSetEffectiveBit2	Bool	%I29.2	
	DriveDataSetEffectiveBit3	Bool	%I29.3	
	DriveDataSetEffectiveBit4	Bool	%I29.4	
	AlarmClassBit0	Bool	%I29.5	
	AlarmClassBit1	Bool	%I29.6	
	ParkingAxisActive	Bool	%I29.7	
	▼ G1_ZSW	PD_Gx_ZSW	%I30.0	
	Probe1Deflected	Bool	%I30.0	
	Probe2Deflected	Bool	%I30.1	
	Reserved_Bit10	Bool	%I30.2	
	EncoderFaultAcknowledgeActive	Bool	%I30.3	
	HomePositionExecuted	Bool	%I30.4	
	AbsoluteValueCyclicallyExecuted	Bool	%I30.5	







	Name	Data type	Address	Retain
	ParkingSensorExecuted	Bool	%I30.6	
	SensorError	Bool	%I30.7	
	Function1Active	Bool	%I31.0	
	Function2Active	Bool	%I31.1	
	Function3Active	Bool	%I31.2	
	Function4Active	Bool	%I31.3	
	Value1Available	Bool	%I31.4	
	Value2Available	Bool	%I31.5	
	Value3Available	Bool	%I31.6	
	Value4Available	Bool	%I31.7	
	G1_XIST1	DWord	%ID32	
	G1_XIST2	DWord	%ID36	
	▼ Axis_02_Z_Actor_Interface_AddressOut	"PD_TEL5_OUT"	%Q26.0	False
	▼ STW1	PD_STW1	%Q26.0	
	Reserved_Bit08	Bool	%Q26.0	
	Reserved_Bit09	Bool	%Q26.1	
	ControlByPlc	Bool	%Q26.2	
	SetpointInversion	Bool	%Q26.3	
	OpenHoldingBrake	Bool	%Q26.4	
	RaiseMotorizedPotentiometerSetpoint	Bool	%Q26.5	
	LowerMotorizedPotentiometerSetpoint	Bool	%Q26.6	
	Reserved_Bit15	Bool	%Q26.7	
	On	Bool	%Q27.0	
	NoCoastStop	Bool	%Q27.1	
	NoQuickStop	Bool	%Q27.2	
	EnableOperation	Bool	%Q27.3	

	Name	Data type	Address	Retain
	EnableRampGenerator	Bool	%Q27.4	
	UnfreezeRampGenerator	Bool	%Q27.5	
	EnableSetpoint	Bool	%Q27.6	
	FaultAcknowledge	Bool	%Q27.7	
	NSOLL_B	DWord	%QD28	
	▼ STW2	PD_STW2	%Q32.0	
	TravelToFixedEndstop	Bool	%Q32.0	
	Reserved_Bit09	Bool	%Q32.1	
	Reserved_Bit10	Bool	%Q32.2	
	MotorSwitchoverFinished	Bool	%Q32.3	
	MasterSignOfLifeBit0	Bool	%Q32.4	
	MasterSignOfLifeBit1	Bool	%Q32.5	
	MasterSignOfLifeBit2	Bool	%Q32.6	
	MasterSignOfLifeBit3	Bool	%Q32.7	
	DriveDataSetSelectionBit0	Bool	%Q33.0	
	DriveDataSetSelectionBit1	Bool	%Q33.1	
	DriveDataSetSelectionBit2	Bool	%Q33.2	
	DriveDataSetSelectionBit3	Bool	%Q33.3	
	DriveDataSetSelectionBit4	Bool	%Q33.4	
	Reserved_Bit05	Bool	%Q33.5	
	Reserved_Bit06	Bool	%Q33.6	
	ParkingAxisSelection	Bool	%Q33.7	
	▼ G1_STW	PD_Gx_STW	%Q34.0	
	Reserved_Bit08	Bool	%Q34.0	
	Reserved_Bit09	Bool	%Q34.1	
	Reserved_Bit10	Bool	%Q34.2	

	Name	Data type	Address	Retain
	Reserved_Bit11	Bool	%Q34.3	
	Reserved_Bit12	Bool	%Q34.4	
	AbsoluteValueCyclically	Bool	%Q34.5	
	RequestParkingEncoder	Bool	%Q34.6	
	AcknowledgeError	Bool	%Q34.7	
	Function1Request	Bool	%Q35.0	
	Function2Request	Bool	%Q35.1	
	Function3Request	Bool	%Q35.2	
	Function4Request	Bool	%Q35.3	
	Command0Request	Bool	%Q35.4	
	Command1Request	Bool	%Q35.5	
	Command2Request	Bool	%Q35.6	
	Mode	Bool	%Q35.7	
	XERR	DWord	%QD36	
	KPC	DWord	%QD40	
	Tag_1	Bool	%M2.0	False

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC tags / Default tag table [110]

User constants

User constants			
	Name	Data type	Value
	c_Manual	Int	3
	c_Produce	Int	1
	LPMLV30_MAX_MODES_UPPER_LIM	Int	31
	LPMLV30_MODES_UPPER_LIM	Int	11
	LPMLV30_STATES_UPPER_LIM	Int	17
	LPMLV30_DIAG_BUFFER_UPPER_LIM	Int	15

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC tags / Erickson_Constants [2]

PLC tags



PLC tags

	Name	Data type	Address	Retain
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PackML_2Axis1EM [CPU 1515T-2 PN] / PLC tags / Erickson_Constants [2]











User constants









User constants

	Name	Data type	Value
	MAX_CM_PER_EM	Int	5
	MC_INCREM_ENCODER	DInt	0

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC tags / IO_Tags [31]

PLC tags

PLC tags				
	Name	Data type	Address	Retain
	Inp_Hardwired_Start	Bool	%M50.0	False
	Inp_Hardwired_Stop	Bool	%M50.1	False
	Inp_Hardwired_Reset	Bool	%M50.2	False
	Inp_Hardwired_Clear	Bool	%M50.3	False
	Inp_Hardwired_Hold	Bool	%M50.4	False
	Inp_Hardwired_UnHold	Bool	%M50.5	False
	Inp_ESTOPButton1	Bool	%M50.6	False
	Inp_ESTOPButton2	Bool	%M50.7	False
	Inp_ESTOPButton3	Bool	%M51.0	False
	Inp_GuardDoor1	Bool	%M51.1	False
	Inp_GuardDoor2	Bool	%M51.2	False
	Inp_GuardDoor3	Bool	%M51.3	False
	Inp_LightCurtain1	Bool	%M51.4	False
	Inp_LightCurtain2	Bool	%M51.5	False
	Inp_LightCurtain3	Bool	%M51.6	False
	Inp_LowLubrication	Bool	%M51.7	False
	Inp_LowMagazine	Bool	%M52.0	False
	Inp_MachineJam_Infeed	Bool	%M52.1	False
	Inp_MachineJam_Outfeed	Bool	%M52.2	False
	Inp_DownstreamMaterialInterlock	Bool	%M52.3	False
	Inp_UpstreamMaterialInterlock	Bool	%M52.4	False
	Inp_Networks_OK	Bool	%M52.5	False
	LA_IDLE	Bool	%M55.0	False

	Name	Data type	Address	Retain
	LA_EXECUTE	Bool	%M55.1	False
	LA_STOPPED	Bool	%M55.2	False
	LA_ABORTED	Bool	%M55.3	False
	Regist_Sensor	Bool	%I1.0	False
	Home_Sensor	Bool	%I1.1	False
	Cycle_Start	Bool	%M56.0	False
	Cycle_Finish	Bool	%M56.1	False
	LA_CLEARING	Bool	%M55.4	False

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC tags / IO_Tags [31]

User constants

User constants

Name	Data type	Value
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PackML_2Axis1EM [CPU 1515T-2 PN] / PLC tags / LPMLV30_Constants [68]

PLC tags


































PLC tags




































Name	Data type	Address	Retain
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PackML_2Axis1EM [CPU 1515T-2 PN] / PLC tags / LPMLV30_Constants [68]

User constants

User constants

	Name	Data type	Value
	LPMLV30_MODE_INVALID	DInt	0
	LPMLV30_MODE_PRODUCTION	DInt	1
	LPMLV30_MODE_MAINTENANCE	DInt	2
	LPMLV30_MODE_MANUAL	DInt	3
	LPMLV30_MODE_USER_01	DInt	4
	LPMLV30_MODE_USER_02	DInt	5
	LPMLV30_MODE_USER_03	DInt	6
	LPMLV30_MODE_USER_04	DInt	7
	LPMLV30_MODE_USER_05	DInt	8
	LPMLV30_MODE_USER_06	DInt	9
	LPMLV30_MODE_USER_07	DInt	10
	LPMLV30_MODE_USER_08	DInt	11
	LPMLV30_MODE_USER_09	DInt	12
	LPMLV30_MODE_USER_10	DInt	13
	LPMLV30_MODE_USER_11	DInt	14
	LPMLV30_MODE_USER_12	DInt	15
	LPMLV30_MODE_USER_13	DInt	16
	LPMLV30_MODE_USER_14	DInt	17
	LPMLV30_MODE_USER_15	DInt	18
	LPMLV30_MODE_USER_16	DInt	19
	LPMLV30_MODE_USER_17	DInt	20
	LPMLV30_MODE_USER_18	DInt	21
	LPMLV30_MODE_USER_19	DInt	22
	LPMLV30_MODE_USER_20	DInt	23
	LPMLV30_MODE_USER_21	DInt	24
	LPMLV30_MODE_USER_22	DInt	25
	LPMLV30_MODE_USER_23	DInt	26
	LPMLV30_MODE_USER_24	DInt	27
	LPMLV30_MODE_USER_25	DInt	28
	LPMLV30_MODE_USER_26	DInt	29
	LPMLV30_MODE_USER_27	DInt	30
	LPMLV30_MODE_USER_28	DInt	31
	LPMLV30_STATE_UNDEFINED	DInt	0

	Name	Data type	Value
	LPMLV30_STATE_CLEARING	DInt	1
	LPMLV30_STATE_STOPPED	DInt	2
	LPMLV30_STATE_STARTING	DInt	3
	LPMLV30_STATE_IDLE	DInt	4
	LPMLV30_STATE_SUSPENDED	DInt	5
	LPMLV30_STATE_EXECUTE	DInt	6
	LPMLV30_STATE_STOPPING	DInt	7
	LPMLV30_STATE_ABORTING	DInt	8
	LPMLV30_STATE_ABORTED	DInt	9
	LPMLV30_STATE_HOLDING	DInt	10
	LPMLV30_STATE_HELD	DInt	11
	LPMLV30_STATE_UNHOLDING	DInt	12
	LPMLV30_STATE_SUSPENDING	DInt	13
	LPMLV30_STATE_UNSPENDING	DInt	14
	LPMLV30_STATE_RESETTING	DInt	15
	LPMLV30_STATE_COMPLETING	DInt	16
	LPMLV30_STATE_COMPLETE	DInt	17
	LPMLV30_CMD_UNDEFINED	DInt	0
	LPMLV30_CMD_RESET	DInt	1
	LPMLV30_CMD_START	DInt	2
	LPMLV30_CMD_STOP	DInt	3
	LPMLV30_CMD_HOLD	DInt	4
	LPMLV30_CMD_UNHOLD	DInt	5
	LPMLV30_CMD_SUSPEND	DInt	6
	LPMLV30_CMD_UNSPEND	DInt	7
	LPMLV30_CMD_ABORT	DInt	8
	LPMLV30_CMD_CLEAR	DInt	9
	LPMLV30_CMD_COMPLETE	DInt	10
	LPMLV30_LANGUAGE_1	Int	0
	LPMLV30_LANGUAGE_2	Int	1
	LPMLV30_DIAG_BUFFER_UPPER_LIM(1)	Int	15
	LPMLV30_LANGUAGES_UPPER_LIM	Int	1
	LPMLV30_MODES_UPPER_LIM(1)	Int	11
	LPMLV30_STATES_UPPER_LIM(1)	Int	17
	LPMLV30_MAX_MODES_UPPER_LIM(1)	Int	31

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types

Servo_StatusWord_Type

Servo_StatusWord_Type Properties

General

Name	Servo_StatusWord_Type	Number	1	Type	UDT
Language		Numbering			

Information

Title		Author		Comment	
Family		Version		User-defined ID	

Name	Data type	Default value
TO_DWord	DWord	16#0
Enable	Bool	false
Error	Bool	false
RestartActive	Bool	false
OnlineStartValuesChanged	Bool	false
ControlPanelActive	Bool	false
HomingDone	Bool	false
Done	Bool	false
Standstill	Bool	false
PositioningCommand	Bool	false
JogCommand	Bool	false
VelocityCommand	Bool	false
HomingCommand	Bool	false
ConstantVelocity	Bool	false
Accelerating	Bool	false
Decelerating	Bool	false
SWLimitMinActive	Bool	false
SWLimitMaxActive	Bool	false
HWLimitMinActive	Bool	false
HWLimitMaxActive	Bool	false
Reserved19	Bool	false
Reserved20	Bool	false
Synchronizing	Bool	false
Synchronous	Bool	false
SuperimposedMotionCommand	Bool	false
Reserved24	Bool	false
Reserved25	Bool	false
Reserved26	Bool	false
Reserved27	Bool	false
Reserved28	Bool	false
Reserved29	Bool	false
Reserved30	Bool	false
Reserved31	Bool	false

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types

Servo_ErrorWord_Type

Servo_ErrorWord_Type Properties

General

Name	Servo_ErrorWord_Type	Number	2	Type	UDT
Language		Numbering			

Information

Title		Author		Comment	
Family		Version		User-defined ID	

Name	Data type	Default value
TO_DWord	DWord	16#0
SystemFault	Bool	false
ConfigurationFault	Bool	false
UserFault	Bool	false
CommandNotAccepted	Bool	false
DriveFault	Bool	false
SensorFault	Bool	false
DynamicError	Bool	false
CommunicationFault	Bool	false
SWLimit	Bool	false
HWLimit	Bool	false
HomingFault	Bool	false
FollowingErrorFault	Bool	false
PositioningFault	Bool	false
PeripheralError	Bool	false
SynchronousError	Bool	false
Reserved15	Bool	false
Reserved16	Bool	false
Reserved17	Bool	false
Reserved18	Bool	false
Reserved19	Bool	false
Reserved20	Bool	false
Reserved21	Bool	false
Reserved22	Bool	false
Reserved23	Bool	false
Reserved24	Bool	false
Reserved25	Bool	false
Reserved26	Bool	false
Reserved27	Bool	false
Reserved28	Bool	false
Reserved29	Bool	false
Reserved30	Bool	false
Reserved31	Bool	false

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types

Servo_WarningWord_Type

Servo_WarningWord_Type Properties

General

Name	Servo_WarningWord_Type	Number	3	Type	UDT
Language		Numbering			

Information

Title		Author		Comment	
Family		Version		User-defined ID	

Name	Data type	Default value
TO_Dword	DWord	16#0
Reserved0	Bool	false
ConfigurationFault	Bool	false
Reserved2	Bool	false
CommandNotAccepted	Bool	false
Reserved4	Bool	false
Reserved5	Bool	false
DynamicError	Bool	false
Reserved7	Bool	false
Reserved8	Bool	false
Reserved9	Bool	false
Reserved10	Bool	false
FollowingErrorWarning	Bool	false
Reserved12	Bool	false
Reserved13	Bool	false
Reserved14	Bool	false
Reserved15	Bool	false
Reserved16	Bool	false
Reserved17	Bool	false
Reserved18	Bool	false
Reserved19	Bool	false
Reserved20	Bool	false
Reserved21	Bool	false
Reserved22	Bool	false
Reserved23	Bool	false
Reserved24	Bool	false
Reserved25	Bool	false
Reserved26	Bool	false
Reserved27	Bool	false
Reserved28	Bool	false
Reserved29	Bool	false
Reserved30	Bool	false
Reserved31	Bool	false

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types

typeLPMLV30_Configuration

typeLPMLV30_Configuration Properties

General

Name	typeLPMLV30_Configuration	Number	30100	Type	UDT
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Language

Numbering

Information

Title	typeLPMLV30_Configuration	Author		Comment	Support: tech.team.motioncontrol@siemens.com Fax: +49 (0) 9131/98-1297
Family		Version		User-defined ID	

Name	Data type	Default value
disabledUnitModes	Array[0.."LPMLV30_MAX_MODES_UPPER_LIM"] of Bool	
disabledStatesInUnitModes	Array[0.."LPMLV30_MAX_MODES_UPPER_LIM"] of Dint	

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types

typeLPMLV30_Diagnostics

typeLPMLV30_Diagnostics Properties

General

Name	typeLPMLV30_Diagnostics	Number	30102	Type	UDT
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Language		Numbering			
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Information

Title	typeLPMLV30_Diagnostics	Author		Comment	Support: tech.team.motioncontrol@siemens.com Fax: +49 (0) 9131/98-1297
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Family		Version		User-defined ID	
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Name	Data type	Default value
bufferIndex	Int	-1
buffer	Array[0.."LPMLV30_DIAG_BUFFER_UPPER_LIM"] of "typeLPMLV30_DiagnosticsEntry"	

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types

typeLPMLV30_DiagnosticsEntry

typeLPMLV30_DiagnosticsEntry Properties

General

Name	typeLPMLV30_DiagnosticsEntry	Number	30101	Type	UDT
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Language

Language		Numbering			
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Information

Title	typeLPMLV30_DiagnosticsEntry	Author		Comment	Support: tech.team.motioncontrol@siemens.com Fax: +49 (0) 9131/98-1297
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Family		Version		User-defined ID	
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Name	Data type	Default value
timestamp	DTL	DTL#1970-01-01-00:00:00
UnitModeCurrent	Byte	16#00
StateCurrent	Byte	16#00
UnitMode	Byte	16#00
CntrlCmd	Byte	16#00
SC	Bool	false
message	Byte	16#00

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types

typeLPMLV30_NamesConfiguration

typeLPMLV30_NamesConfiguration Properties

General

Name	typeLPMLV30_NamesCon- figuration	Number	4	Type	UDT
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Language		Numbering	
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Information

Title	typeLPMLV30_NamesCon- figuration	Author		Comment	Support: tech.team.mo- tioncontrol@siemens.com Fax: +49 (0) 9131/98-1297
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Family		Version		User-defined ID	
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Name	Data type	Default value
unitModesNames	Array[0.."LPMLV30_LANGUAG- ES_UPPER_LIM", 0.."LPMLV30_MODES_UPPER_LIM"] of String[18]	
statesNames	Array[0.."LPMLV30_LANGUAG- ES_UPPER_LIM", 0.."LPMLV30_STATES_UPPER_LIM"] of String[16]	

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types

EM_Faults

EM_Faults Properties

General

Name	EM_Faults	Number	5	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
EM_MajorFaults	DInt	0
EM_MinorFaults	DInt	0
EM_Warnings	DInt	0
Sts_Err	Int	0
MC_ErrorID	Word	16#0
EM_MajorFaultAct	Bool	false
EM_MinorFaultAct	Bool	false
EM_WarningAct	Bool	false
StartFaultInstruction	Bool	false
StartFaultCalculation	Bool	false
StartFaultWatchdog	Bool	false
WatchdogPreparationExecution	TON_TIME	

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types

CM_Data_Type

CM_Data_Type Properties

General

Name	CM_Data_Type	Number	6	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
Wrk_do_Enable	Bool	false
Wrk_do_Disable	Bool	false
Wrk_do_Stop	Bool	false
Wrk_do_Home	Bool	false
Wrk_do_Gear	Bool	false
Wrk_JogPermissive	Bool	false
Wrk_ONS_UnlatchHomeStatus	Bool	false
Wrk_PrepareExecutionDone	Bool	false

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

PD_TEL5_IN

PD_TEL5_IN Properties

General

Name	PD_TEL5_IN	Number	1818	Type	UDT
Language		Numbering			

Information

Title		Author		Comment	
Family		Version		User-defined ID	

Name	Data type	Default value
ZSW1	PD_ZSW1	
NIST_B	DWord	16#0
ZSW2	PD_ZSW2	
G1_ZSW	PD_Gx_ZSW	
G1_XIST1	DWord	16#0
G1_XIST2	DWord	16#0

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

PD_ZSW1

PD_ZSW1 Properties

General

Name	PD_ZSW1	Number	1811	Type	UDT
Language		Numbering			

Information

Title		Author		Comment	
Family		Version		User-defined ID	

Name	Data type	Default value
NoSpeedDeviation	Bool	false
ControlRequested	Bool	false
SpeedComparisonValusReachedExeeded	Bool	false
TorqueLimitNotReached	Bool	false
OpenHoldingBrake	Bool	false
NoMotorOvertemperature	Bool	false
ActualSpeedPositive	Bool	false
NoPowerUnitOvertemperature	Bool	false
ReadyToSwitchOn	Bool	false
ReadyToOperate	Bool	false
OperationEnabled	Bool	false
FaultPresent	Bool	false
NoCoastStopActivated	Bool	false
NoQuickStopActivated	Bool	false
SwitchingOnInhibited	Bool	false
AlarmPresent	Bool	false

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

PD_ZSW2

PD_ZSW2 Properties

General

Name	PD_ZSW2	Number	1813	Type	UDT
Language		Numbering			

Information

Title		Author		Comment	
Family		Version		User-defined ID	

Name	Data type	Default value
TravelToFixedEndStopActive	Bool	false
Reserved_Bit09	Bool	false
PulsesEnabled	Bool	false
MotorDataSetChangeoverActive	Bool	false
SlaveSignOfLifeBit0	Bool	false
SlaveSignOfLifeBit1	Bool	false
SlaveSignOfLifeBit2	Bool	false
SlaveSignOfLifeBit3	Bool	false
DriveDataSetEffectiveBit0	Bool	false
DriveDataSetEffectiveBit1	Bool	false
DriveDataSetEffectiveBit2	Bool	false
DriveDataSetEffectiveBit3	Bool	false
DriveDataSetEffectiveBit4	Bool	false
AlarmClassBit0	Bool	false
AlarmClassBit1	Bool	false
ParkingAxisActive	Bool	false

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

PD_Gx_ZSW

PD_Gx_ZSW Properties

General

Name	PD_Gx_ZSW	Number	1815	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
Probe1Deflected	Bool	false
Probe2Deflected	Bool	false
Reserved_Bit10	Bool	false
EncoderFaultAcknowledgeActive	Bool	false
HomePositionExecuted	Bool	false
AbsoluteValueCyclicallyExecuted	Bool	false
ParkingSensorExecuted	Bool	false
SensorError	Bool	false
Function1Active	Bool	false
Function2Active	Bool	false
Function3Active	Bool	false
Function4Active	Bool	false
Value1Available	Bool	false
Value2Available	Bool	false
Value3Available	Bool	false
Value4Available	Bool	false

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

PD_TEL5_OUT

PD_TEL5_OUT Properties

General

Name	PD_TEL5_OUT	Number	1819	Type	UDT
Language		Numbering			

Information

Title		Author		Comment	
Family		Version		User-defined ID	

Name	Data type	Default value
STW1	PD_STW1	
NSOLL_B	DWord	16#0
STW2	PD_STW2	
G1_STW	PD_Gx_STW	
XERR	DWord	16#0
KPC	DWord	16#0

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

PD_STW1

PD_STW1 Properties

General

Name	PD_STW1	Number	1810	Type	UDT
Language		Numbering			

Information

Title		Author		Comment	
Family		Version		User-defined ID	

Name	Data type	Default value
Reserved_Bit08	Bool	false
Reserved_Bit09	Bool	false
ControlByPlc	Bool	false
SetpointInversion	Bool	false
OpenHoldingBrake	Bool	false
RaiseMotorizedPotentiometerSetpoint	Bool	false
LowerMotorizedPotentiometerSetpoint	Bool	false
Reserved_Bit15	Bool	false
On	Bool	false
NoCoastStop	Bool	false
NoQuickStop	Bool	false
EnableOperation	Bool	false
EnableRampGenerator	Bool	false
UnfreezeRampGenerator	Bool	false
EnableSetpoint	Bool	false
FaultAcknowledge	Bool	false

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

PD_STW2

PD_STW2 Properties

General

Name	PD_STW2	Number	1812	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
TravelToFixedEndstop	Bool	false
Reserved_Bit09	Bool	false
Reserved_Bit10	Bool	false
MotorSwitchoverFinished	Bool	false
MasterSignOfLifeBit0	Bool	false
MasterSignOfLifeBit1	Bool	false
MasterSignOfLifeBit2	Bool	false
MasterSignOfLifeBit3	Bool	false
DriveDataSetSelectionBit0	Bool	false
DriveDataSetSelectionBit1	Bool	false
DriveDataSetSelectionBit2	Bool	false
DriveDataSetSelectionBit3	Bool	false
DriveDataSetSelectionBit4	Bool	false
Reserved_Bit05	Bool	false
Reserved_Bit06	Bool	false
ParkingAxisSelection	Bool	false

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

PD_Gx_STW

PD_Gx_STW Properties

General

Name	PD_Gx_STW	Number	1814	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
Reserved_Bit08	Bool	false
Reserved_Bit09	Bool	false
Reserved_Bit10	Bool	false
Reserved_Bit11	Bool	false
Reserved_Bit12	Bool	false
AbsoluteValueCyclically	Bool	false
RequestParkingEncoder	Bool	false
AcknowledgeError	Bool	false
Function1Request	Bool	false
Function2Request	Bool	false
Function3Request	Bool	false
Function4Request	Bool	false
Command0Request	Bool	false
Command1Request	Bool	false
Command2Request	Bool	false
Mode	Bool	false

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_Actor

TO_Struct_Actor Properties

General

Name	TO_Struct_Actor	Number	1700	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
Type	DInt	0
InverseDirection	Bool	false
DataAdaption	DInt	0
Efficiency	LReal	0.0
MotorType	DInt	0
Interface	TO_Struct_ActorInterface	
DriveParameter	TO_Struct_ActorDriveParameter	
LinearMotorDriveParameter	TO_Struct_LinearMotorActorDrive-Parameter	

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_ActorInterface

TO_Struct_ActorInterface Properties

General

Name	TO_Struct_ActorInterface	Number	1701	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
AddressIn	VREF	
AddressOut	VREF	
EnableDriveOutput	Bool	false
EnableDriveOutputAddress	VREF	
DriveReadyInput	Bool	false
DriveReadyInputAddress	VREF	
EnableTorqueData	Bool	false
TorqueDataAddressIn	VREF	
TorqueDataAddressOut	VREF	

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_ActorDriveParameter

TO_Struct_ActorDriveParameter Properties

General

Name	TO_Struct_ActorDriveParameter	Number	1702	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
ReferenceSpeed	LReal	0.0
MaxSpeed	LReal	0.0
ReferenceTorque	LReal	0.0

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_LinearMotorActorDriveParameter

TO_Struct_LinearMotorActorDriveParameter Properties

General

Name	TO_Struct_LinearMotorActorDriveParameter	Number	2052	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
ReferenceVelocity	LReal	0.0
MaxVelocity	LReal	0.0
ReferenceForce	LReal	0.0

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_TorqueLimiting

TO_Struct_TorqueLimiting Properties

General

Name	TO_Struct_TorqueLimiting	Number	1782	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
LimitBase	DInt	0
PositionBasedMonitorings	DInt	0
LimitDefaults	TO_Struct_TorqueLimitingLimitDe- faults	

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_TorqueLimitingLimitDefaults

TO_Struct_TorqueLimitingLimitDefaults Properties

General

Name	TO_Struct_TorqueLimitingLimitDefaults	Number	1783	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
Torque	LReal	0.0
Force	LReal	0.0

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_LoadGear

TO_Struct_LoadGear Properties

General

Name	TO_Struct_LoadGear	Number	1744	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
Numerator	UDInt	0
Denominator	UDInt	0

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_DynamicLimits

TO_Struct_DynamicLimits Properties

General

Name	TO_Struct_DynamicLimits	Number	1713	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
MaxVelocity	LReal	0.0
Velocity	LReal	0.0
MaxAcceleration	LReal	0.0
MaxDeceleration	LReal	0.0
MaxJerk	LReal	0.0

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_DynamicDefaults

TO_Struct_DynamicDefaults Properties

General

Name	TO_Struct_DynamicDe- faults	Number	1714	Type	UDT
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Language

Language		Numbering	
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
Velocity	LReal	0.0
Acceleration	LReal	0.0
Deceleration	LReal	0.0
Jerk	LReal	0.0
EmergencyDeceleration	LReal	0.0

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_Override

TO_Struct_Override Properties

General

Name	TO_Struct_Override	Number	1718	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
Velocity	LReal	0.0

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_Units

TO_Struct_Units Properties

General

Name	TO_Struct_Units	Number	1708	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
LengthUnit	UDInt	0
VelocityUnit	UDInt	0
TimeUnit	UDInt	0
TorqueUnit	UDInt	0
ForceUnit	UDInt	0

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_StatusDrive

TO_Struct_StatusDrive Properties

General

Name	TO_Struct_StatusDrive	Number	1724	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
InOperation	Bool	false
CommunicationOK	Bool	false
Error	Bool	false
AdaptionState	DInt	0

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_StatusTorqueData

TO_Struct_StatusTorqueData Properties

General

Name	TO_Struct_StatusTorque-Data	Number	2036	Type	UDT
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Language

Language		Numbering	
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
CommandAdditiveTorqueActive	DInt	0
CommandTorqueRangeActive	DInt	0
ActualTorque	LReal	0.0
ActualForce	LReal	0.0

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_StatusMotionIn

TO_Struct_StatusMotionIn Properties

General

Name	TO_Struct_StatusMotionIn	Number	2037	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
FunctionState	DInt	0
StatusWord	DWord	16#0

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_ErrorDetail

TO_Struct_ErrorDetail Properties

General

Name	TO_Struct_ErrorDetail	Number	1728	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
Number	UDInt	0
Reaction	DInt	0

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_ControlPanel

TO_Struct_ControlPanel Properties

General

Name	TO_Struct_ControlPanel	Number	1729	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
Input	TO_Struct_ControlPanelInput	
Output	TO_Struct_ControlPanelOutput	

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_ControlPanellInput

TO_Struct_ControlPanellInput Properties

General

Name	TO_Struct_ControlPanellInput	Number	1730	Type	UDT
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Language

Language		Numbering	
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
Command	Array[1..2] of TO_Struct_ControlPanellInputCmd	
TimeOut	LReal	0.0
EsLifeSign	UDInt	0

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_ControlPanellInputCmd

TO_Struct_ControlPanellInputCmd Properties

General

Name	TO_Struct_ControlPanellInputCmd	Number	1731	Type	UDT
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Language

Language		Numbering	
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Information

Title		Author		Comment	
Family		Version		User-defined ID	

Name	Data type	Default value
ReqCounter	UDInt	0
Type	UDInt	0
Position	LReal	0.0
Velocity	LReal	0.0
Acceleration	LReal	0.0
Deceleration	LReal	0.0
Jerk	LReal	0.0
Param	LReal	0.0

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_ControlPanelOutput

TO_Struct_ControlPanelOutput Properties

General

Name	TO_Struct_ControlPanelOutput	Number	1732	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
Command	Array[1..2] of TO_Struct_ControlPanelOutputCmd	
RtLifeSign	UDInt	0

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_ControlPanelOutputCmd

TO_Struct_ControlPanelOutputCmd Properties

General

Name	TO_Struct_ControlPanelOutputCmd	Number	1733	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
AckCounter	UDInt	0
Error	Bool	false
ErrorID	Word	16#0
Done	Bool	false
Aborted	Bool	false

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_Internal

TO_Struct_Internal Properties

General

Name	TO_Struct_Internal	Number	1734	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
Id	DInt	0
Value	LReal	0.0

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_VirtualAxis

TO_Struct_VirtualAxis Properties

General

Name	TO_Struct_VirtualAxis	Number	1792	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
Mode	UDInt	0

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_AxisSimulation

TO_Struct_AxisSimulation Properties

General

Name	TO_Struct_AxisSimulation	Number	1739	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
Mode	UDInt	0

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_Clamping

TO_Struct_Clamping Properties

General

Name	TO_Struct_Clamping	Number	1784	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
FollowingErrorDeviation	LReal	0.0
PositionTolerance	LReal	0.0

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_Sensor

TO_Struct_Sensor Properties

General

Name	TO_Struct_Sensor	Number	1703	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
Existent	Bool	false
Type	DInt	0
InverseDirection	Bool	false
System	DInt	0
MountingMode	DInt	0
DataAdaption	DInt	0
ActualVelocityMode	DInt	0
Interface	TO_Struct_SensorInterface	
Parameter	TO_Struct_SensorParameter	
Backlash	TO_Struct_Backlash	
ActiveHoming	TO_Struct_SensorActiveHoming	
PassiveHoming	TO_Struct_SensorPassiveHoming	

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_SensorInterface

TO_Struct_SensorInterface Properties

General

Name	TO_Struct_SensorInterface	Number	1704	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
AddressIn	VREF	
AddressOut	VREF	
Number	UDInt	0

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_SensorParameter

TO_Struct_SensorParameter Properties

General

Name	TO_Struct_SensorParameter	Number	1705	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
Resolution	LReal	0.0
StepsPerRevolution	UDInt	0
FineResolutionXist1	UDInt	0
FineResolutionXist2	UDInt	0
DeterminableRevolutions	UDInt	0
DistancePerRevolution	LReal	0.0
BehaviorGx_XIST1	DInt	0
ReferenceSpeed	LReal	0.0
ReferenceVelocity	LReal	0.0

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_Backlash

TO_Struct_Backlash Properties

General

Name	TO_Struct_Backlash	Number	2053	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
Enable	Bool	false
Size	LReal	0.0
Velocity	LReal	0.0
DirectionAbsoluteHoming	DInt	0

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_SensorActiveHoming

TO_Struct_SensorActiveHoming Properties

General

Name	TO_Struct_SensorActive-Homing	Number	1706	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
Mode	DInt	0
Sidelnput	Bool	false
Direction	DInt	0
HomePositionOffset	LReal	0.0
DigitalInputAddress	VREF	
SwitchLevel	Bool	false

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_SensorPassiveHoming

TO_Struct_SensorPassiveHoming Properties

General

Name	TO_Struct_SensorPassive-Homing	Number	1707	Type	UDT
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Language

Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
Mode	DInt	0
SidInput	Bool	false
Direction	DInt	0
DigitalInputAddress	VREF	
SwitchLevel	Bool	false

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_Extrapolation

TO_Struct_Extrapolation Properties

General

Name	TO_Struct_Extrapolation	Number	1785	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
LeadingAxisDependentTime	LReal	0.0
FollowingAxisDependentTime	LReal	0.0
Settings	TO_Struct_ExtrapolationSettings	
PositionFilter	TO_Struct_ExtrapolationPositionFilter	
VelocityFilter	TO_Struct_ExtrapolationVelocityFilter	
VelocityTolerance	TO_Struct_ExtrapolationVelocityTolerance	
Hysteresis	TO_Struct_ExtrapolationHysteresis	

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_ExtrapolationSettings

TO_Struct_ExtrapolationSettings Properties

General

Name	TO_Struct_Extrapolation-Settings	Number	2043	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
SystemDefinedExtrapolation	Dint	0
ExtrapolatedVelocityMode	Dint	0

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_ExtrapolationPositionFilter

TO_Struct_ExtrapolationPositionFilter Properties

General

Name	TO_Struct_Extrapolation- PositionFilter	Number	1786	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
T1	LReal	0.0
T2	LReal	0.0

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_ExtrapolationVelocityFilter

TO_Struct_ExtrapolationVelocityFilter Properties

General

Name	TO_Struct_Extrapolation-VelocityFilter	Number	1787	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
T1	LReal	0.0
T2	LReal	0.0

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_ExtrapolationVelocityTolerance

TO_Struct_ExtrapolationVelocityTolerance Properties

General

Name	TO_Struct_Extrapolation-VelocityTolerance	Number	1788	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
Range	LReal	0.0

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_ExtrapolationHysteresis

TO_Struct_ExtrapolationHysteresis Properties

General

Name	TO_Struct_Extrapolation-Hysteresis	Number	1789	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
Value	LReal	0.0

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_Mechanics

TO_Struct_Mechanics Properties

General

Name	TO_Struct_Mechanics	Number	1711	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
LeadScrew	LReal	0.0

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_Properties

TO_Struct_Properties Properties

General

Name	TO_Struct_Properties	Number	1745	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
MotionType	DInt	0

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_Modulo

TO_Struct_Modulo Properties

General

Name	TO_Struct_Modulo	Number	1712	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
Enable	Bool	false
Length	LReal	0.0
StartValue	LReal	0.0

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_PositionLimitsSW

TO_Struct_PositionLimitsSW Properties

General

Name	TO_Struct_PositionLimitsSW	Number	1715	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
Active	Bool	false
MinPosition	LReal	0.0
MaxPosition	LReal	0.0
LimitReachedBehavior	DInt	0
LimitExceededBehavior	DInt	0

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_PositionLimitsHW

TO_Struct_PositionLimitsHW Properties

General

Name	TO_Struct_PositionLi- mitsHW	Number	1716	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
Active	Bool	false
Mode	DInt	0
MinSwitchLevel	Bool	false
MinSwitchAddress	VREF	
MaxSwitchLevel	Bool	false
MaxSwitchAddress	VREF	
ApproachBehavior	DInt	0

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_Homing

TO_Struct_Homing Properties

General

Name	TO_Struct_Homing	Number	1717	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
AutoReversal	Bool	false
ApproachDirection	Bool	false
ApproachVelocity	LReal	0.0
ReferencingVelocity	LReal	0.0
HomePosition	LReal	0.0

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_PositionControl

TO_Struct_PositionControl Properties

General

Name	TO_Struct_PositionControl	Number	1719	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
Kv	LReal	0.0
Kpc	LReal	0.0
EnableDSC	Bool	false
SmoothingTimeByChangeDifference	LReal	0.0
InitialOperativeSensor	UDInt	0
ControlDifferenceQuantization	TO_Struct_PositionDifferenceQuantification	
VelocityModePowerOn	Dint	0

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_PositionDifferenceQuantification

TO_Struct_PositionDifferenceQuantification Properties

General

Name	TO_Struct_PositionDifferenceQuantification	Number	1746	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
Mode	Dint	0
Value	LReal	0.0

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_SetpointFilter

TO_Struct_SetpointFilter Properties

General

Name	TO_Struct_SetpointFilter	Number	2059	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
DynamicFilter	TO_Struct_DynamicFilter	

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_DynamicFilter

TO_Struct_DynamicFilter Properties

General

Name	TO_Struct_DynamicFilter	Number	2060	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
Mode	DInt	0
T1	LReal	0.0
T2	LReal	0.0
Tt	LReal	0.0

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_DynamicAxisModel

TO_Struct_DynamicAxisModel Properties

General

Name	TO_Struct_DynamicAxis-Model	Number	1747	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
VelocityTimeConstant	LReal	0.0
AdditionalPositionTimeConstant	LReal	0.0

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_FollowingError

TO_Struct_FollowingError Properties

General

Name	TO_Struct_FollowingError	Number	1720	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
EnableMonitoring	Bool	false
MinValue	LReal	0.0
MaxValue	LReal	0.0
MinVelocity	LReal	0.0
WarningLevel	LReal	0.0
AdditionalSetpointDelayTime	LReal	0.0

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_CrossPlcSynchronousOperation

TO_Struct_CrossPlcSynchronousOperation Properties

General

Name	TO_Struct_CrossPlcSynchronousOperation	Number	2041	Type	UDT
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Language		Numbering	
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
Interface	Array[1..8] of TO_Struct_Cross-PlcLeadingValueInterface	
LocalLeadingValueDelayTime	LReal	0.0

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_CrossPlcLeadingValueInterface

TO_Struct_CrossPlcLeadingValueInterface Properties

General

Name	TO_Struct_CrossPlcLeadingValueInterface	Number	2042	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
EnableLeadingValueOutput	Bool	false
AddressOut	VREF	

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_PositioningMonitoring

TO_Struct_PositioningMonitoring Properties

General

Name	TO_Struct_PositioningMo- nitoring	Number	1721	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
ToleranceTime	LReal	0.0
MinDwellTime	LReal	0.0
Window	LReal	0.0

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_StandstillSignal

TO_Struct_StandstillSignal Properties

General

Name	TO_Struct_StandstillSignal	Number	1722	Type	UDT
Language		Numbering			

Information

Title		Author		Comment	
Family		Version		User-defined ID	

Name	Data type	Default value
VelocityThreshold	LReal	0.0
MinDwellTime	LReal	0.0

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_StatusPositioning

TO_Struct_StatusPositioning Properties

General

Name	TO_Struct_StatusPositioning	Number	1723	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
Distance	LReal	0.0
TargetPosition	LReal	0.0
TargetPositionModuloCycle	DInt	0
FollowingError	LReal	0.0
SetpointExecutionTime	LReal	0.0
SuperimposedDistance	LReal	0.0

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_StatusServo

TO_Struct_StatusServo Properties

General

Name	TO_Struct_StatusServo	Number	1748	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
BalancedPosition	LReal	0.0
ControlDifference	LReal	0.0
PositionAfterDynamicFilter	LReal	0.0

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_StatusProvidedLeadingValue

TO_Struct_StatusProvidedLeadingValue Properties

General

Name	TO_Struct_StatusProvidedLeadingValue	Number	2044	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
DelayedLeadingValue	TO_Struct_ProvidedLeadingValue	

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_ProvidedLeadingValue

TO_Struct_ProvidedLeadingValue Properties

General

Name	TO_Struct_ProvidedLeadingValue	Number	2045	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
Position	LReal	0.0
Velocity	LReal	0.0
Acceleration	LReal	0.0

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_StatusSensor

TO_Struct_StatusSensor Properties

General

Name	TO_Struct_StatusSensor	Number	1725	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
State	DInt	0
CommunicationOK	Bool	false
Error	Bool	false
AbsEncoderOffset	LReal	0.0
Control	Bool	false
Position	LReal	0.0
Velocity	LReal	0.0
AdaptionState	DInt	0
ModuloCycle	DInt	0
Adjusted	DInt	0

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_StatusExtrapolation

TO_Struct_StatusExtrapolation Properties

General

Name	TO_Struct_StatusExtrapolation	Number	1790	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
FilteredPosition	LReal	0.0
FilteredVelocity	LReal	0.0
ExtrapolatedPosition	LReal	0.0
ExtrapolatedVelocity	LReal	0.0

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC data types / System data types

TO_Struct_StatusKinematicsMotion

TO_Struct_StatusKinematicsMotion Properties

General

Name	TO_Struct_StatusKinematicsMotion	Number	2035	Type	UDT
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Language		Numbering			
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Information

Title		Author		Comment	
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Family		Version		User-defined ID	
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Name	Data type	Default value
StatusWord	DWord	16#0

PackML_2Axis1EM [CPU 1515T-2 PN] / Watch and force tables

Force table

Name	Address	Display format	Force value
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PackML_2Axis1EM [CPU 1515T-2 PN] / Watch and force tables

Watch table_1

Name	Address	Display format	Modify value
"HMI_Data".HMI_I_Start	%DB11.DBX0.0	Bool	
"HMI_Data".HMI_I_Stop	%DB11.DBX0.1	Bool	
"HMI_Data".HMI_I_Reset	%DB11.DBX0.3	Bool	
"HMI_Data".HMI_I_Clear	%DB11.DBX0.2	Bool	
"LA_IDLE"	%M55.0	Bool	FALSE
"LA_EXECUTE"	%M55.1	Bool	FALSE
"LA_STOPPED"	%M55.2	Bool	FALSE
"LA_ABORTED"	%M55.3	Bool	FALSE
"HMI_Data".HMI_I_Mode- ChangeReq	%DB11.DBX0.6	Bool	
"HMI_Data".HMI_I_ModeCmd	%DB11.DBD2	DEC+/-	2
"HMI_Data".HMI_I_JogPosi- tive	%DB11.DBX1.0	Bool	
"HMI_Data".HMI_I_JogNega- tive	%DB11.DBX0.7	Bool	
"HMI_Data".HMI_I_Select_Jo- gAxis	%DB11.DBD6	DEC+/-	
"HMI_Data".HMI_O_Global- StateCurrentName	P#DB11.DBX296.0	String	'Test'
"HMI_Data".HMI_O_Global- ModeCurrentName	P#DB11.DBX40.0	String	'Manual'
"UN01".UP00_Proce- dure.Push		Bool	TRUE
"HMI_Data".HMI_I_Select_Jo- gAxis	%DB11.DBD6	DEC+/-	
"EM".Fault[1].EM_Major- Faults	%DB10.DBD90	DEC+/-	0
"EM".Fault[1].Sts_Err	%DB10.DBW102	DEC+/-	0
"EM".Fault[1].MC_ErrorID	%DB10.DBW104	Hex	16#0000

PackML_2Axis1EM [CPU 1515T-2 PN]

Traces

Name
Test1

PackML_2Axis1EM [CPU 1515T-2 PN] / Traces / Measurements

Tune_Axis_1

Signals

Name	Data type	Address	Unit	Comment
"Axis_1".Position	LReal		°	
"Axis_1".ActualPosition	LReal		°	
"Axis_1".Velocity	LReal		°/s	
"Axis_1".ActualVelocity	LReal		°/s	

Snapshots

Name	Time stamp	Comment
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PackML_2Axis1EM [CPU 1515T-2 PN] / Traces

Combined measurements

Name

PackML_2Axis1EM [CPU 1515T-2 PN] / Traces / Long-term traces

Measurements

This folder is empty.

PackML_2Axis1EM [CPU 1515T-2 PN] / Traces / Long-term traces

Combined measurements

This folder is empty.

PackML_2Axis1EM [CPU 1515T-2 PN] / OPC UA communication

Server interfaces

This folder is empty.

PackML_2Axis1EM [CPU 1515T-2 PN] / OPC UA communication

Client interfaces

This folder is empty.

PackML_2Axis1EM [CPU 1515T-2 PN]

Web applications

This folder is empty.













PackML_2Axis1EM [CPU 1515T-2 PN] / PLC supervisions & alarms

Supervisions

This folder is empty.

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC supervisions & alarms

PLC alarms

PLC alarms					
Name	Type	ID	Alarm text	Info text	Information only
 MC Alarm	PLC alarm		MC Alarm @1W@d@: \$\$CpuName\$\$ @2W%t#496K@: @1W%t#240K@		False
 MC Alarm	PLC alarm	54	MC Alarm @1W@d@: \$\$CpuName\$\$ @2W%t#496K@: @1W%t#240K@		False
 MC Alarm	PLC alarm	59	MC Alarm @1W@d@: \$\$CpuName\$\$ @2W%t#496K@: @1W%t#240K@		False
 MC Fatal Alarm	PLC alarm		MC Fatal Alarm @1W@d@: \$\$CpuName\$\$ @2W%t#496K@: @1W%t#240K@		False
 MC Fatal Alarm	PLC alarm	53	MC Fatal Alarm @1W@d@: \$\$CpuName\$\$ @2W%t#496K@: @1W%t#240K@		False
 MC Fatal Alarm	PLC alarm	58	MC Fatal Alarm @1W@d@: \$\$CpuName\$\$ @2W%t#496K@: @1W%t#240K@		False
 MC Warning	PLC alarm		MC Warning @1W@d@: \$\$CpuName\$\$ @2W%t#496K@: @1W%t#240K@		False
 MC Warning	PLC alarm	55	MC Warning @1W@d@: \$\$CpuName\$\$ @2W%t#496K@: @1W%t#240K@		False
 MC Warning	PLC alarm	60	MC Warning @1W@d@: \$\$CpuName\$\$ @2W%t#496K@: @1W%t#240K@		False
 MC Alarm	PLC alarm		MC Alarm @1W@d@: \$\$CpuName\$\$ @2W%t#496K@: @1W%t#240K@		False
 MC Fatal Alarm	PLC alarm		MC Fatal Alarm @1W@d@: \$\$CpuName\$\$ @2W%t#496K@: @1W%t#240K@		False
 MC Warning	PLC alarm		MC Warning @1W@d@: \$\$CpuName\$\$ @2W%t#496K@: @1W%t#240K@		False

PackML_2Axis1EM [CPU 1515T-2 PN] / PLC supervisions & alarms

System alarms

System alarms

Name	Type	ID	Alarm text	Info text	Information only
SDIAG_AL-CAT_CPU_IN-FO_MSG_000F	PLC alarm	1	CPU info: @1W%t#7W@ @5W%t#7W@ @6W%t#257K@ / @6W%t#258K@ @6W%t#262K@ @6W%t#263K@ @8W%t#7W@	Short name: @6W%t#260K@ Order number: @6W%t#265K@	True
SDIAG_AL-CAT_CPU_ERR_MSG_0010	PLC alarm	2	CPU error: @1W%t#7W@ @5W%t#7W@ @6W%t#257K@ / @6W%t#258K@ @6W%t#262K@ @6W%t#263K@ @8W%t#7W@	Short name: @6W%t#260K@ Order number: @6W%t#265K@	True
SDIAG_AL-CAT_CPU_ERR_MSG_0110	PLC alarm	3	CPU error: @1W%t#7W@ @5W%t#7W@ @6W%t#257K@ / @6W%t#258K@ @6W%t#262K@ @6W%t#263K@ @8W%t#7W@	Short name: @6W%t#260K@ Order number: @6W%t#265K@	False
SDIAG_AL-CAT_CPU_MD_MSG_0011	PLC alarm	4	CPU maintenance demanded: @1W%t#7W@ @6W%t#257K@ / @5W%t#7W@ @6W%t#258K@ @6W%t#262K@ @6W%t#263K@ @8W%t#7W@	Short name: @6W%t#260K@ Order number: @6W%t#265K@	True
SDIAG_AL-CAT_CPU_MD_MSG_0111	PLC alarm	5	CPU maintenance demanded: @1W%t#7W@ @6W%t#257K@ / @5W%t#7W@ @6W%t#258K@ @6W%t#262K@ @6W%t#263K@ @8W%t#7W@	Short name: @6W%t#260K@ Order number: @6W%t#265K@	False
SDIAG_AL-CAT_CPU_MR_MSG1_0012	PLC alarm	6	CPU maintenance required: @1W%t#7W@ @6W%t#257K@ / @5W%t#7W@ @6W%t#258K@ @6W%t#262K@ @6W%t#263K@ @8W%t#7W@	Short name: @6W%t#260K@ Order number: @6W%t#265K@	True
SDIAG_AL-CAT_CPU_MR_MSG1_0112	PLC alarm	7	CPU maintenance required: @1W%t#7W@ @6W%t#257K@ / @5W%t#7W@ @6W%t#258K@ @6W%t#262K@ @6W%t#263K@ @8W%t#7W@	Short name: @6W%t#260K@ Order number: @6W%t#265K@	False
SDIAG_AL-CAT_CPU_TM_PERR_MSG_0013	PLC alarm	8	Temporary CPU error: @1W%t#7W@ @5W%t#7W@ @6W%t#257K@ / @6W%t#258K@ @6W%t#262K@ @6W%t#263K@ @8W%t#7W@	Short name: @6W%t#260K@ Order number: @6W%t#265K@	True
SDIAG_AL-CAT_RACK_M SG_0004	PLC alarm	9	Error: @1W%t#7W@ @5W%t#7W@ @6W%t#257K@ @6W%t#262K@ @6W%t#263K@	Short name: @6W%t#260K@ Order number: @6W%t#265K@	True
SDIAG_AL-CAT_RACK_M SG_0104	PLC alarm	10	Error: @1W%t#7W@ @5W%t#7W@ @6W%t#257K@ @6W%t#262K@ @6W%t#263K@	Short name: @6W%t#260K@ Order number: @6W%t#265K@	False
SDIAG_AL-CAT_DE-VICE_MSG_0005	PLC alarm	11	Error: @1W%t#7W@ @5W%t#7W@ @6W%t#257K@ @6W%t#262K@ @6W%t#263K@ @8W%t#7W@	Short name: @6W%t#260K@ Order number: @6W%t#265K@	True
SDIAG_AL-CAT_DE-VICE_MSG_0105	PLC alarm	12	Error: @1W%t#7W@ @5W%t#7W@ @6W%t#257K@ @6W%t#262K@ @6W%t#263K@ @8W%t#7W@	Short name: @6W%t#260K@ Order number: @6W%t#265K@	False

Name	Type	ID	Alarm text	Info text	Information only
SDIAG_AL-CAT_IOSYS-TEM_MSG_0006	PLC alarm	13	Error: @1W%t#7W@ @5W%t#7W@ @6W%t#276K@ @6W%t#262K@ @6W%t#263K@ @8W%t#7W@	Short name: @6W%t#260K@ Order number: @6W%t#265K@	True
SDIAG_AL-CAT_IOSYS-TEM_MSG_0106	PLC alarm	14	Error: @1W%t#7W@ @5W%t#7W@ @6W%t#276K@ @6W%t#262K@ @6W%t#263K@ @8W%t#7W@	Short name: @6W%t#260K@ Order number: @6W%t#265K@	False
SDIAG_AL-CAT_MOD-UL_MSG_0003	PLC alarm	15	Error: @1W%t#7W@ @5W%t#7W@ @6W%t#257K@ / @6W%t#258K@ @6W%t#262K@ @6W%t#263K@	Short name: @6W%t#260K@ Order number: @6W%t#265K@	True
SDIAG_AL-CAT_MOD-UL_MSG_0103	PLC alarm	16	Error: @1W%t#7W@ @5W%t#7W@ @6W%t#257K@ / @6W%t#258K@ @6W%t#262K@ @6W%t#263K@	Short name: @6W%t#260K@ Order number: @6W%t#265K@	False
SDIAG_AL-CAT_SUBMO-DUL_MSG_0002	PLC alarm	17	Error: @1W%t#7W@ @5W%t#7W@ @6W%t#257K@ / @6W%t#258K@.@6W%t#259K@ @6W%t#262K@ @6W%t#263K@	Short name: @6W%t#260K@ Order number: @6W%t#265K@	True
SDIAG_AL-CAT_SUBMO-DUL_MSG_0102	PLC alarm	18	Error: @1W%t#7W@ @5W%t#7W@ @6W%t#257K@ / @6W%t#258K@.@6W%t#259K@ @6W%t#262K@ @6W%t#263K@	Short name: @6W%t#260K@ Order number: @6W%t#265K@	False
SDIAG_AL-CAT_CPU_OS_T_MSG_000D	PLC alarm	19	CPU status message: @1W%t#7W@ @5W%t#7W@ @6W%t#257K@ / @6W%t#258K@ @6W%t#262K@ @6W%t#263K@ @8W%t#7W@	Short name: @6W%t#260K@ Order number: @6W%t#265K@	True
SDIAG_AL-CAT_CPU_OS_T_MSG_010D	PLC alarm	20	CPU status message: @1W%t#7W@ @5W%t#7W@ @6W%t#257K@ / @6W%t#258K@ @6W%t#262K@ @6W%t#263K@ @8W%t#7W@	Short name: @6W%t#260K@ Order number: @6W%t#265K@	False
SDIAG_AL-CAT_PLC_MS G_00FF	PLC alarm	21	PLC notification: @1W%t#7W@ @5W%t#7W@ @6W%t#256K@ @6W%t#262K@ @6W%t#263K@	Short name: @6W%t#260K@ Order number: @6W%t#265K@	True
SDIAG_AL-CAT_PLC_MS G_01FF	PLC alarm	22	PLC notification: @1W%t#7W@ @5W%t#7W@ @6W%t#256K@ @6W%t#262K@ @6W%t#263K@	Short name: @6W%t#260K@ Order number: @6W%t#265K@	False
SDIAG_AL-CAT_CON-FIG_RE-PORT_0029	PLC alarm	23	Info: @1W%t#7W@ - @5W%t#7W@ @6W%t#257K@ / @6W%t#258K@ @6W%t#262K@ @6W%t#263K@	Short name: @6W%t#260K@ Order number: @6W%t#265K@	True
SDIAG_AL-CAT_USER_M SG_0080	PLC alarm	24	User message: @1W%t#2W@	Short name: @6W%t#260K@ Order number: @6W%t#265K@	True
SDIAG_AL-CAT_SE-CU_EV_MSG_005E	PLC alarm	25	Security event: @1W%t#7W@ @5W%t#7W@ @6W%t#258K@ @6W%t#262K@ @6W%t#263K@ @8W%t#7W@	Short name: @6W%t#260K@ Order number: @6W%t#265K@	True
SDIAG_AL-CAT_SE-CU_EV_IN-FO_005F	PLC alarm	26	Security information: @1W%t#7W@ @5W%t#7W@ @6W%t#258K@ @6W%t#262K@ @6W%t#263K@ @8W%t#7W@	Short name: @6W%t#260K@ Order number: @6W%t#265K@	True

Totally Integrated Automation Portal					
Name	Type	ID	Alarm text	Info text	Information only
SDIAG_AL-CAT_SUB_ERR_MSG_001E	PLC alarm	27	Error: @1W%t#7W@ @6W%t#257K@ / @6W%t#258K@.@6W%t#259K@ @6W%t#262K@ @6W%t#263K@	Short name: @6W%t#260K@ Order number: @6W%t#265K@	True
SDIAG_AL-CAT_SUB_ERR_MSG_011E	PLC alarm	28	Error: @1W%t#7W@ @6W%t#257K@ / @6W%t#258K@.@6W%t#259K@ @6W%t#262K@ @6W%t#263K@	Short name: @6W%t#260K@ Order number: @6W%t#265K@	False
SDIAG_AL-CAT_SUB_MD_MSG_0021	PLC alarm	29	Maintenance demanded: @1W%t#7W@ @6W%t#257K@ / @6W%t#258K@.@6W%t#259K@ @6W%t#262K@ @6W%t#263K@	Short name: @6W%t#260K@ Order number: @6W%t#265K@	True
SDIAG_AL-CAT_SUB_MD_MSG_0121	PLC alarm	30	Maintenance demanded: @1W%t#7W@ @6W%t#257K@ / @6W%t#258K@.@6W%t#259K@ @6W%t#262K@ @6W%t#263K@	Short name: @6W%t#260K@ Order number: @6W%t#265K@	False
SDIAG_AL-CAT_SUB_MR_MSG_0024	PLC alarm	31	Maintenance required: @1W%t#7W@ @6W%t#257K@ / @6W%t#258K@.@6W%t#259K@ @6W%t#262K@ @6W%t#263K@	Short name: @6W%t#260K@ Order number: @6W%t#265K@	True
SDIAG_AL-CAT_SUB_MR_MSG_0124	PLC alarm	32	Maintenance required: @1W%t#7W@ @6W%t#257K@ / @6W%t#258K@.@6W%t#259K@ @6W%t#262K@ @6W%t#263K@	Short name: @6W%t#260K@ Order number: @6W%t#265K@	False
SDIAG_AL-CAT_CH_ERR_MSG_0015	PLC alarm	33	Error: @1W%t#7W@ on @8W%t#280K@ @6W%t#257K@ / @6W%t#258K@.@6W%t#259K@ @6W%t#262K@ @6W%t#263K@	Short name: @6W%t#260K@ Order number: @6W%t#265K@	True
SDIAG_AL-CAT_CH_ERR_MSG_0115	PLC alarm	34	Error: @1W%t#7W@ on @8W%t#280K@ @6W%t#257K@ / @6W%t#258K@.@6W%t#259K@ @6W%t#262K@ @6W%t#263K@	Short name: @6W%t#260K@ Order number: @6W%t#265K@	False
SDIAG_AL-CAT_CH_MD_MSG_0018	PLC alarm	35	Maintenance demanded:@1W%t#7W@ on @8W%t#280K@ @6W%t#257K@ / @6W%t#258K@.@6W%t#259K@ @6W%t#262K@ @6W%t#263K@	Short name: @6W%t#260K@ Order number: @6W%t#265K@	True
SDIAG_AL-CAT_CH_MD_MSG_0118	PLC alarm	36	Maintenance demanded:@1W%t#7W@ on @8W%t#280K@ @6W%t#257K@ / @6W%t#258K@.@6W%t#259K@ @6W%t#262K@ @6W%t#263K@	Short name: @6W%t#260K@ Order number: @6W%t#265K@	False
SDIAG_AL-CAT_CH_MR_MSG_001B	PLC alarm	37	Maintenance required:@1W%t#7W@ on @8W%t#280K@ @6W%t#257K@ / @6W%t#258K@.@6W%t#259K@ @6W%t#262K@ @6W%t#263K@	Short name: @6W%t#260K@ Order number: @6W%t#265K@	True
SDIAG_AL-CAT_CH_MR_MSG_011B	PLC alarm	38	Maintenance required:@1W%t#7W@ on @8W%t#280K@ @6W%t#257K@ / @6W%t#258K@.@6W%t#259K@ @6W%t#262K@ @6W%t#263K@	Short name: @6W%t#260K@ Order number: @6W%t#265K@	False
SDIAG_AL-CAT_CONFIG_IN-FO_0028	PLC alarm	39	Info: @1W%t#7W@ - @5W%t#7W@ @6W%t#257K@ @6W%t#262K@ @6W%t#263K@ @8W%t#7W@	Short name: @6W%t#260K@ Order number: @6W%t#265K@	True
SDIAG_AL-CAT_CONFIG_IN-FO_0128	PLC alarm	40	Info: @1W%t#7W@ - @5W%t#7W@ @6W%t#257K@ @6W%t#262K@ @6W%t#263K@ @8W%t#7W@	Short name: @6W%t#260K@ Order number: @6W%t#265K@	False

Totally Integrated Automation Portal					
Name	Type	ID	Alarm text	Info text	Information only
SDIAG_AL-CAT_ESUB_ERR_MSG_001F	PLC alarm	41	Error: @1W%t#7W@ - @5W%t#7W@ @6W%t#257K@ / @6W%t#258K@.@6W%t#259K@ @6W%t#262K@ @6W%t#263K@	Short name: @6W%t#260K@ Order number: @6W%t#265K@	True
SDIAG_AL-CAT_ESUB_ERR_MSG_011F	PLC alarm	42	Error: @1W%t#7W@ - @5W%t#7W@ @6W%t#257K@ / @6W%t#258K@.@6W%t#259K@ @6W%t#262K@ @6W%t#263K@	Short name: @6W%t#260K@ Order number: @6W%t#265K@	False
SDIAG_AL-CAT_ESUB_MD_MSG_0022	PLC alarm	43	Maintenance demanded: @1W%t#7W@ - @5W%t#7W@ @6W%t#257K@ / @6W%t#258K@.@6W%t#259K@ @6W%t#262K@ @6W%t#263K@	Short name: @6W%t#260K@ Order number: @6W%t#265K@	True
SDIAG_AL-CAT_ESUB_MD_MSG_0122	PLC alarm	44	Maintenance demanded: @1W%t#7W@ - @5W%t#7W@ @6W%t#257K@ / @6W%t#258K@.@6W%t#259K@ @6W%t#262K@ @6W%t#263K@	Short name: @6W%t#260K@ Order number: @6W%t#265K@	False
SDIAG_AL-CAT_ESUB_MR_MSG_0025	PLC alarm	45	Maintenance required: @1W%t#7W@ - @5W%t#7W@ @6W%t#257K@ / @6W%t#258K@.@6W%t#259K@ @6W%t#262K@ @6W%t#263K@	Short name: @6W%t#260K@ Order number: @6W%t#265K@	True
SDIAG_AL-CAT_ESUB_MR_MSG_0125	PLC alarm	46	Maintenance required: @1W%t#7W@ - @5W%t#7W@ @6W%t#257K@ / @6W%t#258K@.@6W%t#259K@ @6W%t#262K@ @6W%t#263K@	Short name: @6W%t#260K@ Order number: @6W%t#265K@	False
SDIAG_AL-CAT_ECH_ERR_MSG_0016	PLC alarm	47	Error: @1W%t#7W@ - @5W%t#7W@ on @8W%t#280K@ @6W%t#257K@ / @6W%t#258K@.@6W%t#259K@ @6W%t#262K@ @6W%t#263K@	Short name: @6W%t#260K@ Order number: @6W%t#265K@	True
SDIAG_AL-CAT_ECH_ERR_MSG_0116	PLC alarm	48	Error: @1W%t#7W@ - @5W%t#7W@ on @8W%t#280K@ @6W%t#257K@ / @6W%t#258K@.@6W%t#259K@ @6W%t#262K@ @6W%t#263K@	Short name: @6W%t#260K@ Order number: @6W%t#265K@	False
SDIAG_AL-CAT_ECH_MD_MSG_0019	PLC alarm	49	Maintenance demanded:@1W%t#7W@ - @5W%t#7W@ on @8W%t#280K@ @6W%t#257K@ / @6W%t#258K@.@6W%t#259K@ @6W%t#262K@ @6W%t#263K@	Short name: @6W%t#260K@ Order number: @6W%t#265K@	True
SDIAG_AL-CAT_ECH_MD_MSG_0119	PLC alarm	50	Maintenance demanded:@1W%t#7W@ - @5W%t#7W@ on @8W%t#280K@ @6W%t#257K@ / @6W%t#258K@.@6W%t#259K@ @6W%t#262K@ @6W%t#263K@	Short name: @6W%t#260K@ Order number: @6W%t#265K@	False
SDIAG_AL-CAT_ECH_MR_MSG_001C	PLC alarm	51	Maintenance required:@1W%t#7W@ - @5W%t#7W@ on @8W%t#280K@ @6W%t#257K@ / @6W%t#258K@.@6W%t#259K@ @6W%t#262K@ @6W%t#263K@	Short name: @6W%t#260K@ Order number: @6W%t#265K@	True
SDIAG_AL-CAT_ECH_MR_MSG_011C	PLC alarm	52	Maintenance required:@1W%t#7W@ - @5W%t#7W@ on @8W%t#280K@ @6W%t#257K@ / @6W%t#258K@.@6W%t#259K@ @6W%t#262K@ @6W%t#263K@	Short name: @6W%t#260K@ Order number: @6W%t#265K@	False
SDIAG_AL-CAT_SUBMODULE_MAN_SPEEC_002F	PLC alarm	56	Error (vendor-specific): @1W%t#7W@ @6W%t#257K@ / @6W%t#258K@.@6W%t#259K@ @6W%t#262K@ @6W%t#263K@	Short name: @6W%t#260K@ Order number: @6W%t#265K@	True
SDIAG_AL-CAT_SUBMODULE_MAN_SPEEC_012F	PLC alarm	57	Error (vendor-specific): @1W%t#7W@ @6W%t#257K@ / @6W%t#258K@.@6W%t#259K@ @6W%t#262K@ @6W%t#263K@	Short name: @6W%t#260K@ Order number: @6W%t#265K@	False

PackML_2Axis1EM [CPU 1515T-2 PN]

PLC alarm text lists

SYSTEM_Motion_101_2

Selection	Decimal	ID	4095
Comment			

Text list entries of SYSTEM_Motion_101_2

Range from	Range to	Entry
1	1	Faulty load gear factors.
2	2	Illegal value in Actor.DriveParameter.MaxSpeed.
3	3	Illegal value in DynamicLimits.MaxVelocity.
4	4	Illegal value in DynamicLimits.MaxAcceleration.
5	5	Illegal value in Mechanics.Leadscrew.
6	6	Illegal combination for homing data with incremental encoder.
7	7	Illegal value in Sensor.MountingMode.
8	8	Illegal value in Sensor.Parameter.DistancePerRevolution.
9	9	Illegal value in Sensor.Parameter.Resolution.
10	10	Illegal value in Sensor.Parameter.StepsPerRevolution.
11	11	Illegal value in Sensor.Parameter.FineResolutionXist1.
12	12	Values in Sensor.Parameter.FineResolutionXist1 and p979 not equal.
13	13	Illegal value in Actor.Interface.Telegram.
14	14	Illegal value in Sensor.Type.
15	15	Illegal value in Sensor.System.
16	16	Illegal value in Sensor.ActiveHoming.HomePositionOffset.
17	17	Illegal value in PositioningMonitoring.MinDwellTime.
18	18	Illegal value in PositioningMonitoring.Window.
19	19	Illegal value in Sensor.ActiveHoming.Mode.
20	20	Illegal value in Sensor.PassiveHoming.Mode.
21	21	Illegal value in Sensor.Interface.Telegram.
22	22	Controller parameter is incorrect.
23	23	Illegal value for StandStillSignal.VelocityThreshold.
24	24	Illegal value in PositioningMonitoring.ToleranceTime.
25	25	Illegal value in Actor.Type.
26	26	PROFIBUS parameter assignment inconsistent. Sum of Ti and To greater than send clock.
27	27	Illegal value in StandStillSignal.MinDwellTime.

Range from	Range to	Entry
28	28	Illegal value in FollowingError.MinValue.
29	29	Drive or drive telegram type or encoder not suitable for DSC.
30	30	Illegal value in DynamicLimits.MaxJerk.
31	31	Illegal value in DynamicLimits.MaxDeceleration.
32	32	Illegal value in Modulo.Length.
33	33	Illegal value in Modulo.StartValue.
34	34	Illegal value in Actor.DriveParameter.ReferenceSpeed.
35	35	Illegal value in Sensor.Parameter.FineResolutionXist2.
36	36	Illegal value in Sensor.Parameter.DeterminableRevolutions.
37	37	Illegal value in Sensor.PassiveHoming.Direction.
38	38	Illegal value in DynamicDefaults.Velocity.
39	39	Illegal value in DynamicDefaults.Acceleration.
40	40	Illegal value in DynamicDefaults.Deceleration.
41	41	Illegal value in DynamicDefaults.Jerk.
42	42	Illegal value in DynamicDefaults.EmergencyDeceleration.
43	43	Illegal value in PositionLimits_SW.MinPosition.
44	44	Illegal value in PositionLimits_SW.MaxPosition.
45	45	Illegal value in Sensor.ActiveHoming.Direction.
46	46	Illegal value in Homing.ApproachVelocity.
47	47	Illegal value in Homing.ReferencingVelocity.
48	48	Illegal value in Homing.HomePosition.
49	49	Illegal value in FollowingError.MaxValue.
50	50	Illegal value in FollowingError.MinVelocity.
51	51	Illegal value in FollowingError.WarningLevel.
52	52	Illegal value in PositionControl.Kpc.
53	53	Parameter timeout outside limits.
54	54	Illegal value in Simulation.
55	55	Illegal value in Actor.Interface.AddressIn.
56	56	Illegal value in Actor.Interface.AddressIn.RID.
57	57	Illegal value in VREF Actor.Interface.AddressOut.
58	58	Illegal value in Actor.Interface.AddressOut.RID.
59	59	Telegram in Actor.Interface.AddressIn and AddressOut not equal.
60	60	Illegal value in Sensor[.].Interface.AddressIn.
61	61	Illegal value in Sensor.Interface.AddressIn.RID.

Range from	Range to	Entry
62	62	Illegal value in Sensor[].Interface.AddressOut.
63	63	Illegal value in Sensor.Interface.AddressOut.RID.
64	64	Telegram in Sensor.Interface.AddressIn and AddressOut not equal.
65	65	Illegal value in Sensor.ActiveHoming.DigitalInputAddress.
66	66	Illegal value in Sensor.PassiveHoming.DigitalInputAddress.
67	67	Illegal value in PositionLimits_HW.MaxSwitchAddress.
68	68	Illegal value in PositionLimits_HW.MinSwitchAddress.
69	69	Illegal value in Actor.Interface.EnableDriveOutputAddress.
70	70	Illegal value in Actor.Interface.DriveReadyInputAddress.
85	85	Illegal value in Sensor[].DataAdaption.
86	86	Illegal value in Actor.DataAdaption.
98	98	Illegal value for the configuration data element Clamping.FollowingErrorDeviation.
99	99	Illegal value in Clamping.PositionTolerance.
100	100	Illegal value for VirtualAxis.Mode.
101	101	Illegal value for Actor.Efficiency.
102	102	Illegal value in Sensor.Interface.Number.
103	103	Illegal value in Actor.InitialOperativeSensor.
104	104	Illegal value in Sensor[N].Existent.
105	105	At least one encoder required. Sensor[].existent.
106	106	Sensor[1] must be configured for DSC.
119	119	Illegal value in PositionControl.ControlDifferenceQuantization.Mode.
120	120	Illegal value in PositionControl.ControlDifferenceQuantization.Value.
121	121	Illegal value in PositionControl.SmoothingTimeByChangeDifference.
122	122	Illegal value in Override.Velocity.
123	123	Illegal value in Actor.DriveParameter.ReferenceTorque.
124	124	Illegal value in TorqueLimiting.LimitBase.
125	125	Illegal value in TorqueLimiting.PositionBasedMonitorings.
126	126	Illegal value in TorqueLimiting.LimitDefaults.Force.
127	127	Illegal value in TorqueLimiting.LimitDefaults.Torque.
128	128	Illegal value in Extrapolation.FollowingAxisDependentTime.
129	129	Illegal value in Extrapolation.PositionFilter.T1.
130	130	Illegal value in Extrapolation.PositionFilter.T2.

Range from	Range to	Entry
131	131	Illegal value in Extrapolation.VelocityFilter.T1.
132	132	Illegal value in Extrapolation.Hysteresis.Value.
133	133	Illegal value in Extrapolation.VelocityTolerance.Range.
134	134	Illegal value in DynamicAxisModel.VelocityTimeConstant.
135	135	Encoder position cannot be displayed because of the encoder configuration/mechanics.
487	487	Invalid value in Actor.Interface.EnableTorqueData.
488	488	Invalid value in VREF Actor.Interface.TorqueDataAddressIn.
489	489	Invalid value in VREF Actor.Interface.TorqueDataAddressOut.
490	490	Illegal value in DynamicLimits.Velocity.
491	491	Technology data block is only possible with digital drive coupling.
493	493	The VREF of the analog output or the bit drivers are assigned multiple times.
494	494	Illegal value in Sensor[N].BehaviourGx_XIST1.
495	495	Illegal value in Extrapolation.Settings.SystemDefinedExtrapolation.
496	496	Illegal value in Extrapolation.Settings.ExtrapolatedVelocityMode.
497	497	Illegal value in Extrapolation.VelocityFilter.T2.
498	498	Illegal value in CrossPlcSynchronousOperation.Interface.EnableLeadingValueOutput.
499	499	Illegal value in CrossPlcSynchronousOperation.Interface.LocalLeadingValueDelayTime.
500	500	Illegal value in CrossPlcSynchronousOperation.Interface.AddressOut.
504	504	Value in Sensor.ActualVelocityMode invalid.
505	505	Value in Sensor.Parameter.ReferenceSpeed or .ReferenceVelocity invalid.
506	506	Value in Sensor.Backlash.<variable> invalid.
507	507	Backlash compensation not permitted with encoder on load side.
508	508	Illegal value in Sensor.Parameter.ActualVelocityMode or Sensor.Interface.Address[In,Out].Rid. Read actual speed value NIST with telegram 83.
509	509	Linear encoder on rotary drive system (Sensor.System) not permitted.
564	564	Illegal value for EmergencyDeceleration.
578	578	Illegal value in PositionLimits_HW.ApproachBehaviour
579	579	Illegal value in PositionLimits_HW.Mode
580	580	Illegal value in Actor.MotorType.

Range from	Range to	Entry
581	581	Illegal value in PositionLimits_SW.LimitReachedBehaviour.
582	582	Illegal value in PositionLimits_SW.LimitExceededBehaviour.
583	583	Illegal value in SetpointFilter.DynamicFilter.Mode.
584	584	Illegal value in SetpointFilter.DynamicFilter.T1.
585	585	Illegal value in SetpointFilter.DynamicFilter.T2.
586	586	Illegal value in SetpointFilter.DynamicFilter.Tt.
587	587	Illegal value in PositionControl.VelocityModePowerOn.
588	588	Illegal value in DynamicAxisModel.AdditionalPositionTimeConstant.
589	589	Illegal value in FollowingError.AdditionalSetpointDelayTime.
590	590	Illegal value in Actor.LinearMotorDriveParameter.ReferenceForce.
592	592	Illegal value in Actor.LinearMotorDriveParameter.ReferenceVelocity.
593	593	Illegal value in Actor.LinearMotorDriveParameter.MaxVelocity.
619	619	Illegal value in Sensor.MeasuringGear.Numerator
620	620	Illegal value in Actor.LoadInertia.
621	621	Illegal value in Actor.RemoveEnableReaction.
622	622	Illegal value in TorquePreControl.Mode.
623	623	Illegal value in TorquePreControl.Scale.
625	625	Illegal value in Actor.LinearmotorDriveData.MotorMass.
626	626	Illegal value in Actor.DriveData.MotorInertia
627	627	Illegal value in DynamicAxisModel.CurrentTimeConstant.
629	629	Illegal value in Sensor.MeasuringGear.Denominator
885	885	Incremental value range of the encoder too large. Value in Sensor[N].Parameter.Resolution or .FineResolutionXist1 or .DeterminableRevolutions invalid
886	886	Data length of the actual encoder value without fine resolution too large. Value in Sensor[N].Parameter.Resolution or .DeterminableRevolutions invalid

SYSTEM_Motion_104_2

Selection	Decimal	ID	4094
Comment			

Text list entries of SYSTEM_Motion_104_2

Range from	Range to	Entry
1	1	Neg. SW limit switch greater than pos. SW limit switch.

SYSTEM_Motion_105_3

Selection	Decimal	ID	4093
Comment			

Text list entries of SYSTEM_Motion_105_3

Range from	Range to	Entry
1	1	HW configuration.
2	2	The TO needs a smaller servo cycle clock.
3	3	Error in internal communication.
4	4	Error in the parameter assignment of the frame for torque data.
5	5	Address overlap during drive interconnection.

SYSTEM_Motion_106_3

Selection	Decimal	ID	4092
Comment			

Text list entries of SYSTEM_Motion_106_3

Range from	Range to	Entry
2	2	System has no communication with drive.
3	3	Drive not initialized during ramp-up.

SYSTEM_Motion_107_3

Selection	Decimal	ID	4091
Comment			

Text list entries of SYSTEM_Motion_107_3

Range from	Range to	Entry
1	1	HW configuration.
2	2	The TO needs a smaller servo cycle clock.
3	3	Error in internal communication.
4	4	Address overlap during encoder interconnection.

SYSTEM_Motion_108_3

Selection	Decimal	ID	4090
Comment			

Text list entries of SYSTEM_Motion_108_3

Range from	Range to	Entry
2	2	System without communication to encoder.
3	3	Encoder not initialized during ramp-up.

SYSTEM_Motion_109_2

Selection	Decimal	ID	4089
Comment			

Text list entries of SYSTEM_Motion_109_2

Range from	Range to	Entry
1	1	Neg. HW limit switch.
2	2	Pos. HW limit switch.
3	3	Reference cam "Active homing".
4	4	Reference cam "Passive homing".
5	5	Enable bit for the analog drive interface.

Range from	Range to	Entry
6	6	DriveReady bit of the analog drive interface.
7	7	Measurement sensing input faulty.
8	8	Output cam output faulty.
9	9	Data exchange with the drive.

SYSTEM_Motion_110_2

Selection	Decimal	ID	4088
Comment			

Text list entries of SYSTEM_Motion_110_2

Range from	Range to	Entry
1	1	Actor.DriveParameter.MaxSpeed is limited.
2	2	PositioningMonitoring.ToleranceTime is limited.
3	3	DynamicDefaults.EmergencyDeceleration is limited.
7	7	DriveParameter.ReferenceTorque is too low.
8	8	Sensor[.].Backlash.Size is limited.
9	9	Sensor[.].Backlash.Velocity is limited.

SYSTEM_Motion_204_2

Selection	Decimal	ID	4087
Comment			

Text list entries of SYSTEM_Motion_204_2

Range from	Range to	Entry
1	1	Connection to the TIA Portal interrupted.

SYSTEM_Motion_305_2

Selection	Decimal	ID	4086
Comment			

Text list entries of SYSTEM_Motion_305_2

Range from	Range to	Entry
1	1	acceleration
2	2	deceleration

SYSTEM_Motion_307_2

Selection	Decimal	ID	4085
Comment			

Text list entries of SYSTEM_Motion_307_2

Range from	Range to	Entry
1	1	Negative
2	2	Positive

SYSTEM_Motion_308_2

Selection	Decimal	ID	4084
Comment			

Text list entries of SYSTEM_Motion_308_2

Range from	Range to	Entry
1	1	Negative
2	2	Positive

SYSTEM_Motion_322_2

Selection	Decimal	ID	4083
Comment			

Text list entries of SYSTEM_Motion_322_2

Range from	Range to	Entry
1	1	TO is not ready for restart.
2	2	Condition for TO restart not satisfied.

SYSTEM_Motion_341_2

Selection	Decimal	ID	4082
Comment			

Text list entries of SYSTEM_Motion_341_2

Range from	Range to	Entry
1	1	Approach velocity is zero.
2	2	Homing velocity is zero.

SYSTEM_Motion_401_4

Selection	Decimal	ID	4081
Comment			

Text list entries of SYSTEM_Motion_401_4

Range from	Range to	Entry
1	1	Address is invalid.
2	2	Input address is invalid.
3	3	Output address is invalid.
4	4	Error in the parameter assignment of the address area.
5	5	Address overlap during drive interconnection.
6	6	Address overlap during encoder interconnection.

SYSTEM_Motion_411_4

Selection	Decimal	ID	4080
Comment			

Text list entries of SYSTEM_Motion_411_4

Range from	Range to	Entry
1	1	Alarm message from encoder.
2	2	Hardware error encoder.
3	3	Encoder dirty.
4	4	Read error encoder absolute value.
5	5	Zero mark monitoring encoder.
6	6	Encoder in parking state.

SYSTEM_Motion_412_2

Selection	Decimal	ID	4079
Comment			

Text list entries of SYSTEM_Motion_412_2

Range from	Range to	Entry
1	1	Positive.
2	2	Negative.
3	3	Modulo length.

SYSTEM_Motion_421_3

Selection	Decimal	ID	4078
Comment			

Text list entries of SYSTEM_Motion_421_3

Range from	Range to	Entry
1	1	Alarm message from drive.
2	2	No drive control required.
3	3	Drive has shut down.
4	4	Drive enable not possible.
5	5	Error controlling the PROFIdrive State Machine.

SYSTEM_Motion_431_4

Selection	Decimal	ID	4077
Comment			

Text list entries of SYSTEM_Motion_431_4

Range from	Range to	Entry
1	1	Drive failed.
2	2	Signs of life of drive faulty.
3	3	Encoder failed.
4	4	Signs of life of encoder faulty.

SYSTEM_Motion_502_2

Selection	Decimal	ID	4076
Comment			

Text list entries of SYSTEM_Motion_502_2

Range from	Range to	Entry
1	1	acceleration
2	2	deceleration

SYSTEM_Motion_531_2

Selection	Decimal	ID	4075
Comment			

Text list entries of SYSTEM_Motion_531_2

Range from	Range to	Entry
1	1	Positive HW limit switch approached.
2	2	Negative HW limit switch approached.
3	3	Invalid retraction direction, HW limit switch active.
4	4	HW limit switch polarity reversed, retraction not possible.
5	5	Both HW limit switches active, retraction not possible.
6	6	Encoder error with triggered HW limit switch, no retraction possible.

SYSTEM_Motion_533_2

Selection	Decimal	ID	4074
Comment			

Text list entries of SYSTEM_Motion_533_2

Range from	Range to	Entry
1	1	Negative
2	2	Positive

SYSTEM_Motion_534_2

Selection	Decimal	ID	4073
Comment			

Text list entries of SYSTEM_Motion_534_2

Range from	Range to	Entry
1	1	Negative
2	2	Positive

SYSTEM_Motion_541_2

Selection	Decimal	ID	4072
Comment			

Text list entries of SYSTEM_Motion_541_2

Range from	Range to	Entry
1	1	Target range not reached.
2	2	Exit target range again.

SYSTEM_Motion_102_2

Selection	Decimal	ID	4071
Comment			

Text list entries of SYSTEM_Motion_102_2

Range from	Range to	Entry
1	1	Parameter P964 not supported by device or cannot be read.
2	2	Parameter does not exist, value unreadable or invalid.
3	3	Adaptation canceled due to insufficient resources.
4	4	Drive is not interconnected directly to I/O area.

SYSTEM_Motion_102_3

Selection	Decimal	ID	4070
Comment			

Text list entries of SYSTEM_Motion_102_3

Range from	Range to	Entry
1	1	Maximum speed.
2	2	Maximum torque (p1520).
3	3	Maximum torque (p1521).
4	4	Fine resolution torque.
5	5	Rated speed.
6	6	Rated torque.
7	7	Motor type.
8	8	Unspecified.

SYSTEM_Motion_103_2

Selection	Decimal	ID	4069
Comment			

Text list entries of SYSTEM_Motion_103_2

Range from	Range to	Entry
1	1	Parameter P964 not supported by device or cannot be read.
2	2	Parameter does not exist, value unreadable or invalid.
3	3	Adaptation canceled due to insufficient resources.
4	4	Encoder is not interconnected directly to I/O area.

SYSTEM_Motion_103_3

Selection	Decimal	ID	4068
Comment			

Text list entries of SYSTEM_Motion_103_3

Range from	Range to	Entry
1	1	Encoder system
2	2	Encoder resolution
3	3	Encoder fine resolution Gx_XIST1
4	4	Encoder fine resolution Gx_XIST2
5	5	Encoder revolutions
6	6	Unspecified
7	7	Reference value NIST

SYSTEM_Motion_111_2

Selection	Decimal	ID	4067
Comment			

Text list entries of SYSTEM_Motion_111_2

Range from	Range to	Entry
1	1	Different telegram type.
2	2	Incompatible torque resolution.
3	3	Application cycle of the drive and servo cycle are different.
4	4	Application cycle of the drive and processing cycle of the TO are different.
5	5	Linear motor configured.

SYSTEM_Motion_112_2

Selection	Decimal	ID	4066
Comment			

Text list entries of SYSTEM_Motion_112_2

Range from	Range to	Entry
1	1	Different telegram type.
2	2	Encoder is not an absolute encoder.
3	3	Application cycle of the encoder and servo cycle are different.
4	4	Application cycle of the encoder and processing cycle of the TO are different.
5	5	Encoder is not an incremental encoder.

SYSTEM_Motion_552_2

Selection	Decimal	ID	4065
Comment			

Text list entries of SYSTEM_Motion_552_2

Range from	Range to	Entry
1	1	Parameter P964 not supported by device or cannot be read.
2	2	Parameter does not exist, value unreadable or invalid.
3	3	Adaptation canceled due to insufficient resources.
4	4	Encoder is not interconnected directly to I/O area.

SYSTEM_Motion_552_3

Selection	Decimal	ID	4064
Comment			

Text list entries of SYSTEM_Motion_552_3

Range from	Range to	Entry
1	1	Encoder system.
2	2	Encoder resolution.
3	3	Encoder fine resolution Gx_XIST1.
4	4	Encoder fine resolution Gx_XIST2.
5	5	Encoder revolutions.
6	6	Unspecified.
7	7	Reference value NIST.

SYSTEM_Motion_511_2

Selection	Decimal	ID	4063
Comment			

Text list entries of SYSTEM_Motion_511_2

Range from	Range to	Entry
1	1	Velocity.
2	2	Acceleration.
3	3	Deceleration.

SYSTEM_Motion_114_2

Selection	Decimal	ID	4062
Comment			

Text list entries of SYSTEM_Motion_114_2

Range from	Range to	Entry
1	1	Configuration error.

PackML_2Axis1EM [CPU 1515T-2 PN] / Local modules

PM 190W 120/230VAC

This folder is empty.

PackML_2Axis1EM [CPU 1515T-2 PN] / Local modules

PackML_2Axis1EM [CPU 1515T-2 PN]

PackML_2Axis1EM

General\Project information

Name	PackML_2Axis1EM	Author	kte
Comment		Rack	0
Slot	1		

General\Catalog information

Short designation	CPU 1515T-2 PN	Description	Technology CPU with display; work memory 1.5 MB code and 4.5 MB data; 6 ns bit operation time; 1st interface: PROFINET RT/IRT with 2 ports; 2nd interface: PROFINET RT; firmware V3.1
Article number	6ES7 515-2TN03-0AB0	Firmware version	V3.1
	False		

General\Identification & Maintenance

Plant designation		Location identifier	
Installation date	2015-01-06 20:58:20.206	Additional information	

General\Checksums

Text lists	00 27 F9 C4 4D C8 48 93	Software	ED 4B 39 9B EA A1 7E D2
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Connection resources\

	Station resources - Reserved - Maximum	Station resources - Reserved - Configured	Station resources - Dynamic - Configured	Module resources - PackML_2Axis1EM [CPU 1515T-2 PN] - Configured
Maximum number of resources:		10	118	128
	Maximum	Configured	Configured	Configured
PG communication:	4	-	-	-
HMI communication:	4	0	0	0
S7 communication:	0	-	0	0
Open user communication:	0	-	0	0
Web communication:	2	-	-	-
OPC UA client/server communication:	0	-	-	-
Other communication:	-	-	0	0
Total resources used:		0	0	0
Available resources:		10	118	128

Overview of addresses\Overview of addresses\Overview of addresses

Inputs	True	Outputs	True
Address gaps	False	Slot	True

Type	I	Addr. from	0	Addr. to	3	Module	DI 32x24VDC HF_1
PIP	Automatic update	OB	-	Device name	PackML_2Axis1EM [CPU 1515T-2 PN]	Device number	-
Size	4 Bytes	Master / IO system	-	Rack	0	Slot	2
Type	O	Addr. from	4	Addr. to	7	Module	DQ 32x24VDC/0.5A ST_1
PIP	Automatic update	OB	-	Device name	PackML_2Axis1EM [CPU 1515T-2 PN]	Device number	-
Size	4 Bytes	Master / IO system	-	Rack	0	Slot	3
Type	I	Addr. from	4	Addr. to	21	Module	Standard telegram 5, PZD-9/9
PIP	PIP OB Servo	OB	MC-Servo[OB91]	Device name	SINAMICS-S120-CU310-2PN	Device number	1
Size	18 Bytes	Master / IO system	PROFINET IO-System [100]	Rack	0	Slot	1 3
Type	O	Addr. from	8	Addr. to	25	Module	Standard telegram 5, PZD-9/9
PIP	PIP OB Servo	OB	MC-Servo[OB91]	Device name	SINAMICS-S120-CU310-2PN	Device number	1
Size	18 Bytes	Master / IO system	PROFINET IO-System [100]	Rack	0	Slot	1 3
Type	I	Addr. from	22	Addr. to	39	Module	Standard telegram 5, PZD-9/9
PIP	PIP OB Servo	OB	MC-Servo[OB91]	Device name	SINAMICS-S120-CU310-2PN_1 [SINAMICS S120 CU310-2 PN V4.7]	Device number	2
Size	18 Bytes	Master / IO system	PROFINET IO-System [100]	Rack	0	Slot	1 3
Type	O	Addr. from	26	Addr. to	43	Module	Standard telegram 5, PZD-9/9
PIP	PIP OB Servo	OB	MC-Servo[OB91]	Device name	SINAMICS-S120-CU310-2PN_1 [SINAMICS S120 CU310-2 PN V4.7]	Device number	2
Size	18 Bytes	Master / IO system	PROFINET IO-System [100]	Rack	0	Slot	1 3

PackML_2Axis1EM [CPU 1515T-2 PN] / Local modules

DI 32x24VDC HF_1

DI 32x24VDC HF_1

Name	DI 32x24VDC HF_1	Rack	0
Slot	2	Article number	6ES7 521-1BL00-0AB0
Short designation	DI 32x24VDC HF	Firmware version	V2.0

PackML_2Axis1EM [CPU 1515T-2 PN] / Local modules

DQ 32x24VDC/0.5A ST_1

DQ 32x24VDC/0.5A ST_1

Name	DQ 32x24VDC/0.5A ST_1	Rack	0
Slot	3	Article number	6ES7 522-1BL00-0AB0
Short designation	DQ 32x24VDC/0.5A ST	Firmware version	V2.0

PackML_2Axis1EM [CPU 1515T-2 PN] / Distributed I/O

PROFINET IO-System (100): PN/IE_2

PROFINET IO-System

General

IO controller:	PackML_2Axis1EM	Name:	PROFINET IO-System
Number:	100	Multiple use IO system	False
Use name as extension for the PROFINET device name.	False		

Hardware identifier

Hardware identifier	260
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Overview of addresses\Overview of addresses\Overview of addresses

Inputs	True	Outputs	True
Address gaps	False	Slot	True

Type	I	Addr. from	0	Addr. to	3	Module	DI 32x24VDC HF_1
PIP	Automatic update	OB	-	Device name	PackML_2Axis1EM [CPU 1515T-2 PN]	Device number	-
Size	4 Bytes	Master / IO system	-	Rack	0	Slot	2
Type	O	Addr. from	4	Addr. to	7	Module	DQ 32x24VDC/0.5A ST_1
PIP	Automatic update	OB	-	Device name	PackML_2Axis1EM [CPU 1515T-2 PN]	Device number	-
Size	4 Bytes	Master / IO system	-	Rack	0	Slot	3
Type	I	Addr. from	4	Addr. to	21	Module	Standard telegram 5, PZD-9/9
PIP	PIP OB Servo	OB	MC-Servo[OB91]	Device name	SINAMICS-S120-CU310-2PN	Device number	1
Size	18 Bytes	Master / IO system	PROFINET IO-System [100]	Rack	0	Slot	1 3
Type	O	Addr. from	8	Addr. to	25	Module	Standard telegram 5, PZD-9/9
PIP	PIP OB Servo	OB	MC-Servo[OB91]	Device name	SINAMICS-S120-CU310-2PN	Device number	1
Size	18 Bytes	Master / IO system	PROFINET IO-System [100]	Rack	0	Slot	1 3
Type	I	Addr. from	22	Addr. to	39	Module	Standard telegram 5, PZD-9/9
PIP	PIP OB Servo	OB	MC-Servo[OB91]	Device name	SINAMICS-S120-CU310-2PN_1 [SINAMICS S120 CU310-2 PN V4.7]	Device number	2
Size	18 Bytes	Master / IO system	PROFINET IO-System [100]	Rack	0	Slot	1 3
Type	O	Addr. from	26	Addr. to	43	Module	Standard telegram 5, PZD-9/9
PIP	PIP OB Servo	OB	MC-Servo[OB91]	Device name	SINAMICS-S120-CU310-2PN_1 [SINAMICS S120 CU310-2 PN V4.7]	Device number	2
Size	18 Bytes	Master / IO system	PROFINET IO-System [100]	Rack	0	Slot	1 3

**PackML_2Axis1EM [CPU 1515T-2 PN] / Distributed I/O /
PROFINET IO-System (100): PN/IE_2**

SINAMICS-S120-CU310-2PN_1 [SINAMICS S120 CU310-2 PN V4.7]

SINAMICS-S120-CU310-2PN_1

General

Name	SINAMICS-S120-CU310-2PN_1	Author	Kelvin
Comment		Rack	0
Slot	0		

General/Catalog information

Short designation	SINAMICS S120 CU310-2 PN V4.7	Description	IO device SINAMICS S120 CU310-2 PN V4.7 with PROFINET-IO interface (RT, IRT and non-cyclic communications, clock cycle synchronization, PROFIsafe, Shared Device)
Article number	6SL3 040-1LA01-0AAx	Firmware version	V4.70
HwVersion	V2.0	GSD file	gsdml-v2.3-siemens-sinamics_s_cu3x0-20140313.xml