

Controller PackML_2Axis1EM

PackML for 2 axes, 1 EM

Controller Fault Handler

Power-Up Handler

Tasks

MainTask

UN01_ExampleMachine

MainRoutine

CM01_OperationLocal

Control Module: OperationLocal This routine monitors Unit level inputs to generate command triggers to initiate state transition commands used by the current active mode Operation

CM03_FaultHandler

Fault Handler This routine monitors unit level events, and it merges all reported events (Unit and EMs) into an active and historical queue.

CM04_SafetyInterface

SR20_Initialize

Initialize Data Performs initialization of any local parameters of this Equipment Module and contained Control Modules that require it

UP00_Procedure

UP01_PackML

UP02_StateComplete

EM01_Axis_XZ

MainRoutine

CM00_Procedure

CM01_EMConditions

CM02_1_ServoAxisObject_X

This Control Module performs the state control for the slave axis; including Enable, Disable, Reset, Absolute Home, Stop, and Abort

CM02_2_ServoAxisObject_Z

This Control Module performs the state control for the slave axis; including Enable, Disable, Reset, Absolute Home, Stop, and Abort

CM03_1_ServoAxisJog_X

Control Module Manual Jog Control This Control Module jogs the servo axis when the Unit is in Manual mode. This provides independent control of the servo axis.

CM03_2_ServoAxisJog_Z

Control Module Manual Jog Control This Control Module jogs the servo axis when the Unit is in Manual mode. This provides independent control of the servo axis.

SR03_FaultHandler

SR20_Initialize

Initialize Data Performs initialization of any local parameters of this Equipment Module and contained Control Modules that require it

SR30_Simulate

Unscheduled

EM_Axis02_Dum

MainRoutine

CM00_Procedure

CM02_ServoAxisObject_Z

This Control Module performs the state control for the slave axis; including Enable, Disable, Reset, Absolute Home, Stop, and Abort

CM03_ServoAxisJog_Z

Control Module Manual Jog Control This Control Module jogs the servo axis when the Unit is in Manual mode. This provides independent control of the servo axis.

S20_InitializeData

Initialize Data Performs initialization of any local parameters of this Equipment Module and contained Control Modules that require it

Motion Groups

Motion_Group

Axis_1_X

Axis_2_Z

Ungrouped Axes

Add-On Instructions

Axis_ObjectCD

Axis CIP Drive Object

Logic

Prescan

PackMLv3_StateModel

Logic

 Prescan


Data Types


 User-Defined

 EM_Faults

All the Fault bits related an Equipment

 Strings

 String_Short


 Add-On-Defined


 Axis_ObjectCD


Axis CIP Drive Object


 PackMLv3_StateModel


 Module-Defined


 AB:1734_15SLOT:I:0


 AB:1734_15SLOT:O:0


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
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 AB:1734_2SLOT:I:0


 AB:1734_2SLOT:O:0


 AB:1734_8CFG:C:0


 AB:1734_DI8:C:0


 AB:1734_DOB8:C:0


 AB:1734_IE8:C:0


 AB:1734_IE8:I:0

 AB:1734_OE4:C:0

 AB:1734_OE4:I:0

 AB:1734_OE4:O:0


 AB:1756_DI:C:0


 AB:1756_DI:I:0

 AB:1769_HSC1_Range:C:0


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 AB:1794_AEN_2SLOT:O:0


 AB:1794_DO16:C:0


 AB:1794_IB16:C:0


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
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 AB:Embedded_AnalogIO1:I:0

 AB:Embedded_AnalogIO1:O:0


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 AB:Embedded_DiscreteIO1:O:0

 AB:Embedded_HSC1:C:0

 AB:Embedded_HSC1:I:0

 AB:Embedded_HSC1:O:0


 AB:Embedded_HSC1_STRUCT_OUT1:O:0


 AB:Motion_Diagnostics:S:1


Trends


 Y_Axis

I/O Configuration

 1756 Backplane, 1756-A10

 [0] 1756-L71 PackML_2Axis1EM

 [1] 1756-EN2TR en2tr

 Ethernet

 440R-ENETR/A a440_enetr

 1756-EN2TR en2tr

 2097-V31PR0-LM Axis_X_Servo

 2097-V31PR0-LM Axis_Z_Servo

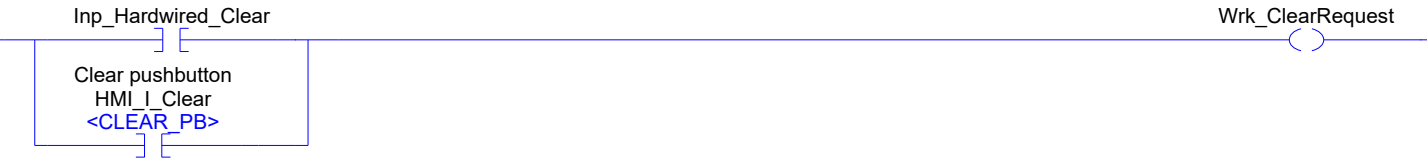
////////////////////////////////////
COMPANY: Rockwell Automation
FUNCTION: Local Input Summary
AUTHOR: Rockwell Automation
DATE CREATED: March 2011

Version Comments:
////////////////////////////////////

0 [NOP]

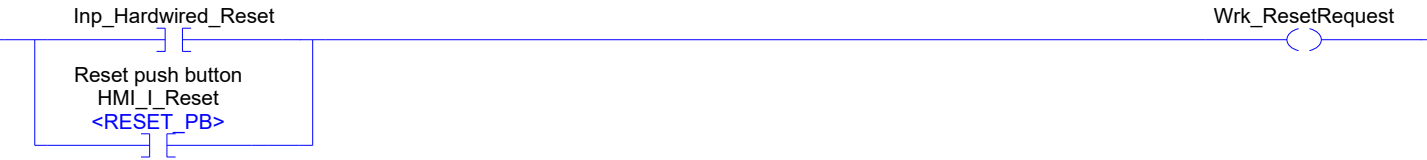
CLEAR FAULTS CONDITIONS

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



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



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



***** 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

4

Inp_Hardwired_Stop

Wrk_StopRequest

Stop push button
HMI_I_Stop
<STOP_PB>

Use of the Holding
state for the
current mode is
enabled

UN01_MachineStateModel.Sts_HoldingEnabled UN01_MachineFault_Minor

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

5

UN01_MachineFaulted

Wrk_AbortRequest

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

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Inp_Hardwired_Hold

Wrk_HoldRequest

HMI_I_Hold

UN01_MachineFault_Minor

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

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Inp_Hardwired_UnHold

Wrk_UnHoldRequest

HMI_I_UnHold

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

8

Inp_UpstreamMaterialInterlock

Wrk_SuspendRequest

Inp_DownstreamMaterialInterlock

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 AOI Must Be Generated By the Program and Input Into the AOI. It May Be Preferred to Use the Production Counting Data Directly for Setting this Condition.

9

GE

Grtr Than or Eq (A>=B)

Source A Sts_GoodProducts

0

Source B Inp_BatchCountSetpoint

0

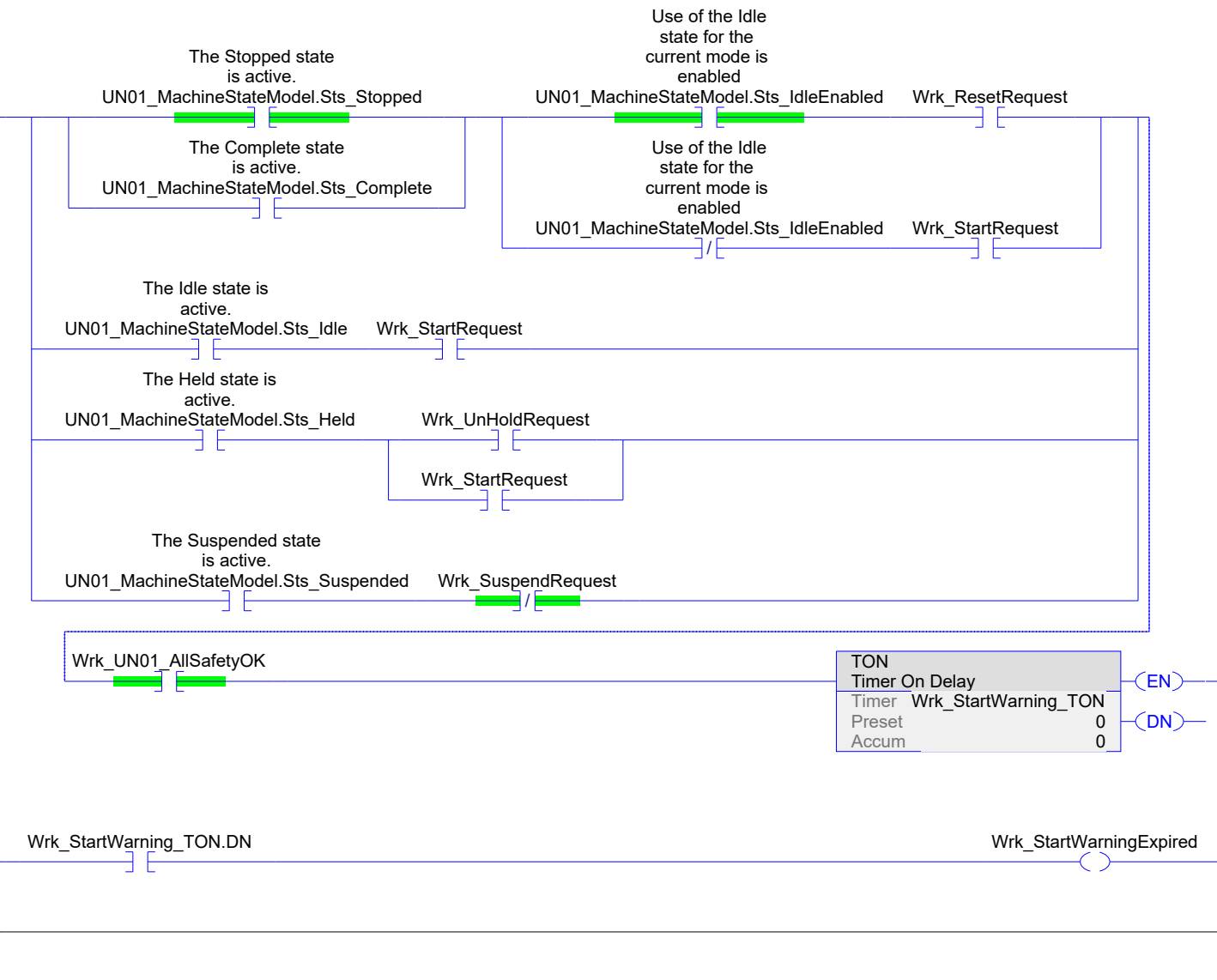
Wrk_CompleteRequest

***** Wrk_StartWarning_TON preset changed to zero

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



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////////////////////////////////////
COMPANY:      Rockwell Automation
FUNCTION:     Fault Handler / Alarm Annunciation
AUTHOR:      Rockwell Automation
DATE CREATED: March 2011

Version Comments:
////////////////////////////////////
    
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0 [NOP]

COMMUNICATION FAULTS

1 Inp_NetworksOK Wrk_UN01_NetworkCommunicationOK

ESTOP COLLECTION

2 Inp_ESTOPButton1 Inp_ESTOPButton2 Inp_ESTOPButton3 Wrk_UN01_EstopOK

GUARD DOOR COLLECTION

3 Inp_GuardDoor1 Inp_GuardDoor2 Inp_GuardDoor3 Wrk_UN01_GuardsOK

LIGHT CURTAIN COLLECTION

4 Inp_LightCurtain1 Inp_LightCurtain2 Inp_LightCurtain3 Wrk_UN01_LightCurtainsOK

ALL SAFETY INPUTS OK

5 Wrk_UN01_EstopOK Wrk_UN01_GuardsOK Wrk_UN01_LightCurtainsOK Wrk_UN01_AllSafetyOK

MACHINE MAJOR FAULTS
 ADD MAJOR MACHINE FAULTS THAT SHOULD RESULT IN AN ABORT REQUEST TO THE MACHINE

6 Wrk_UN01_NetworkCommunicationOK

MOVE
Move
Source 1
Dest HMI_O_MajorFaultMessage 0

7 Inp_MachineJam_Infeed

MOVE
Move
Source 2
Dest HMI_O_MajorFaultMessage 0

8 Inp_MachineJam_Outfeed

MOVE
Move
Source 3
Dest HMI_O_MajorFaultMessage 0

GENERAL UNIT MAJOR FAULT - WILL RESULT IN MACHINE ABORT REQUEST. ADD MACHINE SPECIFIC MAJOR FAULT CONDITIONS AS RUNG IN CONDITIONS

9

NE	Not Equal
Source A	HMI_O_MajorFaultMessage
	0
Source B	0

UN01_MachineFault_Major

MACHINE MINOR FAULTS
ADD MAJOR MACHINE FAULTS THAT SHOULD RESULT IN A HOLD (IF STATE IS ENABLED) OR STOP (IF HOLD STATE IS DISABLED) REQUEST TO THE MACHINE

10

Inp_LowLubrication

MOVE	Move
Source	1
Dest	HMI_O_MinorFaultMessage
	0

Inp_LowLubrication

EQ	Equal
Source A	HMI_O_MinorFaultMessage
	0
Source B	1

MOVE	Move
Source	0
Dest	HMI_O_MinorFaultMessage
	0

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Inp_LowMagazine

MOVE	Move
Source	2
Dest	HMI_O_MinorFaultMessage
	0

Inp_LowMagazine

EQ	Equal
Source A	HMI_O_MinorFaultMessage
	0
Source B	2

MOVE	Move
Source	0
Dest	HMI_O_MinorFaultMessage
	0

GENERAL UNIT MINOR FAULT - WILL RESULT IN MACHINE HOLD REQUEST IF HOLDING STATE IS ENABLED OR STOP IF HOLDING STATE IS NOT ENABLED.

12

NE	Not Equal
Source A	HMI_O_MinorFaultMessage
	0
Source B	0

UN01_MachineFault_Minor

CLEAR MACHINE FAULT INDICATORS

MAJOR FAULTS RESULT IN THE MACHINE STATE GOING TO ABORTING. MAJOR MACHINE FAULTS SHOULD BE RESET IN THE CLEARING STATE

MINOR FAULTS RESULT IN EITHER A HOLD CONDITION OR STOP CONDITION. ONCE CONDITIONS INITIATING MINOR FAULTS ARE SATISFIED THE FAULTS WILL CLEAR AUTOMATICALLY. MINOR FAULT INDICATORS WILL ALSO BE CLEARED IN THE CLEARING STATE.

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The Clearing state
is active.
UN01_MachineStateModel.Sts_Clearing

MOVE	
Move	
Source	0
Dest	HMI_O_MinorFaultMessage
	0

MOVE	
Move	
Source	0
Dest	HMI_O_MajorFaultMessage
	0

GENERAL UNIT FAULT SUMMARY

Wrk_UN01_AllSafetyOK

UN01_MachineFaulted

UN01_MachineFault_Major

All the Fault bits related an Equipment Any EM major fault active EM_Fault[0].EM_MajorFaultAct	This Tag is used to enable states for each Equipment Module EM_Selected.0
---	--

All the Fault bits related an Equipment Any EM major fault active EM_Fault[1].EM_MajorFaultAct	This Tag is used to enable states for each Equipment Module EM_Selected.1
---	--

All the Fault bits related an Equipment Any EM major fault active EM_Fault[2].EM_MajorFaultAct	This Tag is used to enable states for each Equipment Module EM_Selected.2
---	--

All the Fault bits related an Equipment Any EM major fault active EM_Fault[3].EM_MajorFaultAct	This Tag is used to enable states for each Equipment Module EM_Selected.3
---	--

All the Fault bits related an Equipment Any EM major fault active EM_Fault[4].EM_MajorFaultAct	This Tag is used to enable states for each Equipment Module EM_Selected.4
---	--

All the Fault bits related an Equipment Any EM major fault active EM_Fault[5].EM_MajorFaultAct	This Tag is used to enable states for each Equipment Module EM_Selected.5
---	--

All the Fault bits related an Equipment Any EM major fault active EM_Fault[6].EM_MajorFaultAct	This Tag is used to enable states for each Equipment Module EM_Selected.6
---	--

All the Fault bits related an Equipment Any EM major fault active EM_Fault[7].EM_MajorFaultAct	This Tag is used to enable states for each Equipment Module EM_Selected.7
---	--

All the Fault bits related an Equipment Any EM major fault active EM_Fault[8].EM_MajorFaultAct	This Tag is used to enable states for each Equipment Module EM_Selected.8
---	--

All the Fault bits related an Equipment Any EM major fault active EM_Fault[9].EM_MajorFaultAct	This Tag is used to enable states for each Equipment Module EM_Selected.9
---	--

All the Fault bits related an Equipment Any EM major fault active EM_Fault[10].EM_MajorFaultAct	This Tag is used to enable states for each Equipment Module EM_Selected.10
--	---

All the Fault bits related an Equipment Any EM major fault active	This Tag is used to enable states for each Equipment Module
---	---

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related an Equipment Any EM major fault active EM_Fault[24].EM_MajorFaultAct	enable states for each Equipment Module EM_Selected.24
All the Fault bits related an Equipment Any EM major fault active EM_Fault[25].EM_MajorFaultAct	This Tag is used to enable states for each Equipment Module EM_Selected.25
All the Fault bits related an Equipment Any EM major fault active EM_Fault[26].EM_MajorFaultAct	This Tag is used to enable states for each Equipment Module EM_Selected.26
All the Fault bits related an Equipment Any EM major fault active EM_Fault[27].EM_MajorFaultAct	This Tag is used to enable states for each Equipment Module EM_Selected.27
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All the Fault bits related an Equipment Any EM major fault active EM_Fault[31].EM_MajorFaultAct	This Tag is used to enable states for each Equipment Module EM_Selected.31

15

Wrk_UN01_EstopOK



Inp_ESTOPButton1



HMI_O_MachineSafetyFault.0



Inp_ESTOPButton2



HMI_O_MachineSafetyFault.1



Inp_ESTOPButton3



HMI_O_MachineSafetyFault.2



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Wrk_UN01_GuardsOK



Inp_GuardDoor1



HMI_O_MachineSafetyFault.5



Inp_GuardDoor2



HMI_O_MachineSafetyFault.6

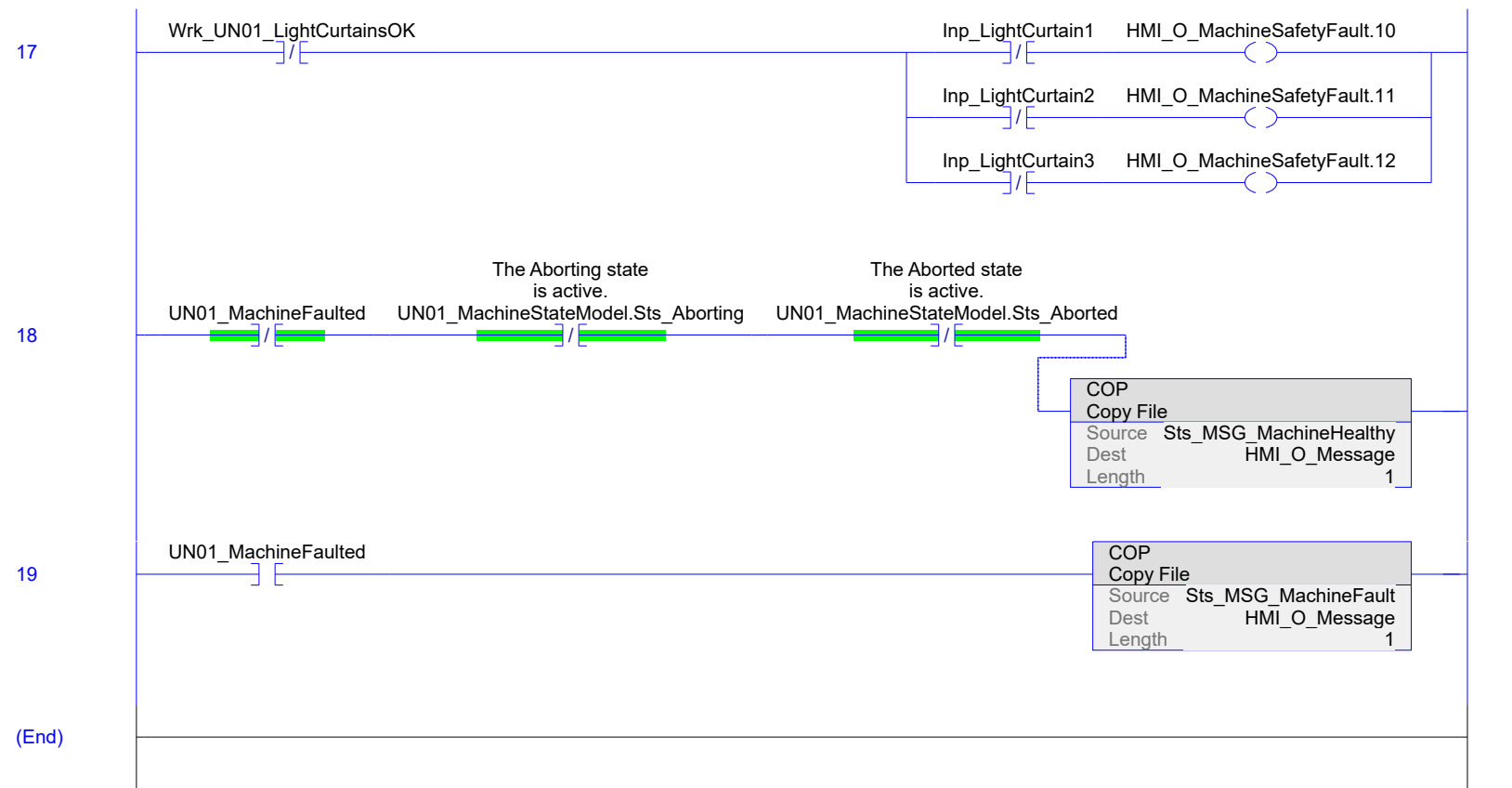


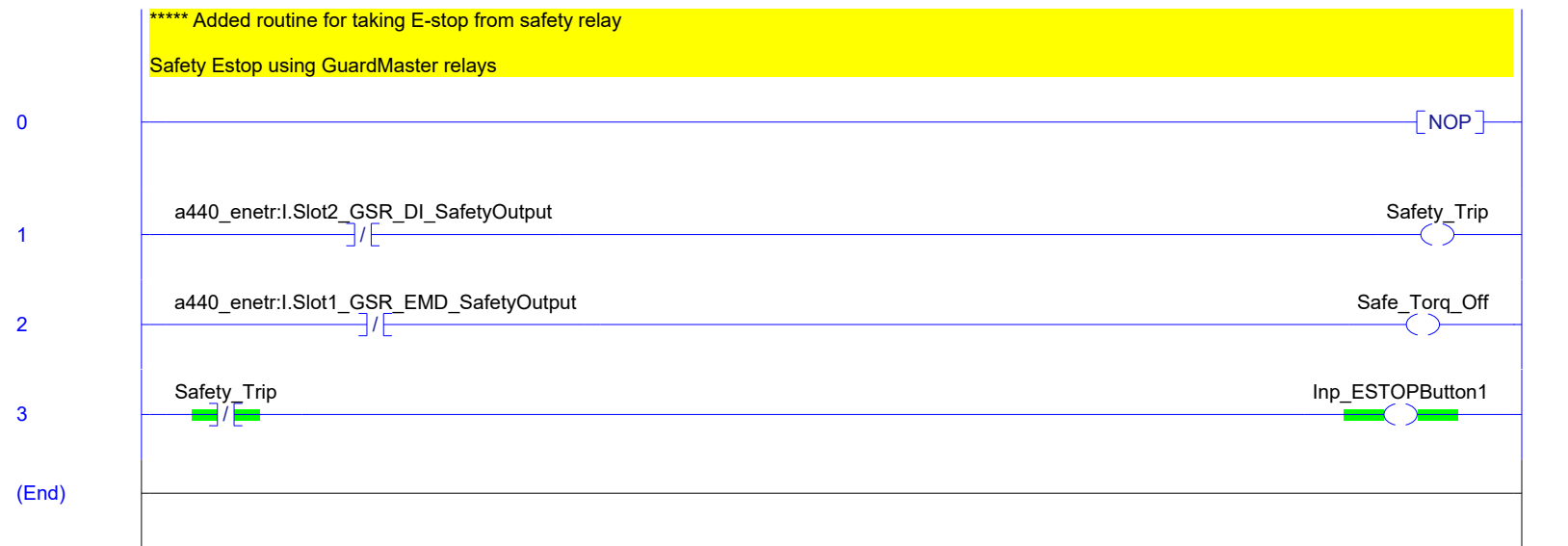
Inp_GuardDoor3



HMI_O_MachineSafetyFault.7







PackML implementation for a 2-axis machine using the H-Bridge gantry.
The bridge Y axis is here used as the X axis. Movement is Y and Z axes. Each axis is treated as a separate EM
Started with the Rockwell Power Programming BasicV4_2.acd sample project.

[NOP]

////////////////////////////////////
COMPANY: Rockwell Automation
FUNCTION: Main Routine
AUTHOR: Rockwell Automation/Kelvin Erickson
DATE CREATED: March 2011
Version Comments:
////////////////////////////////////

Initialize Data

Performs initialization of any local parameters of this Equipment Module and contained Control Modules that require it

S:FS
] [

JSR
Jump To Subroutine
Routine Name SR20_Initialize

Control Module:
OperationLocal
This routine monitors Unit level inputs to generate command triggers to initiate state transition commands used by the current active mode
Operation

JSR
Jump To Subroutine
Routine Name CM01_OperationLocal

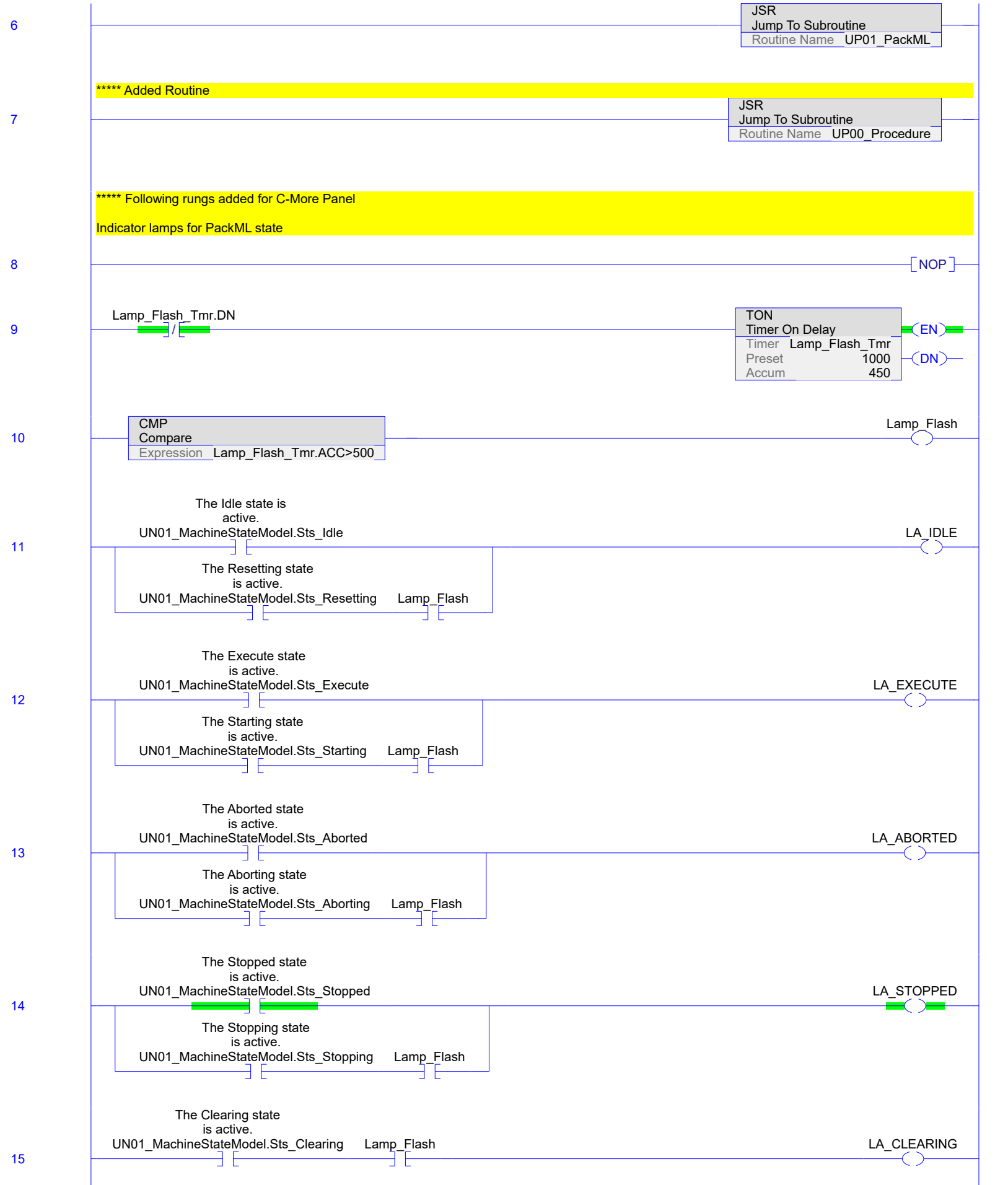
Fault Handler
This routine monitors unit level events, and it merges all reported events (Unit and EMs) into an active and historical queue.

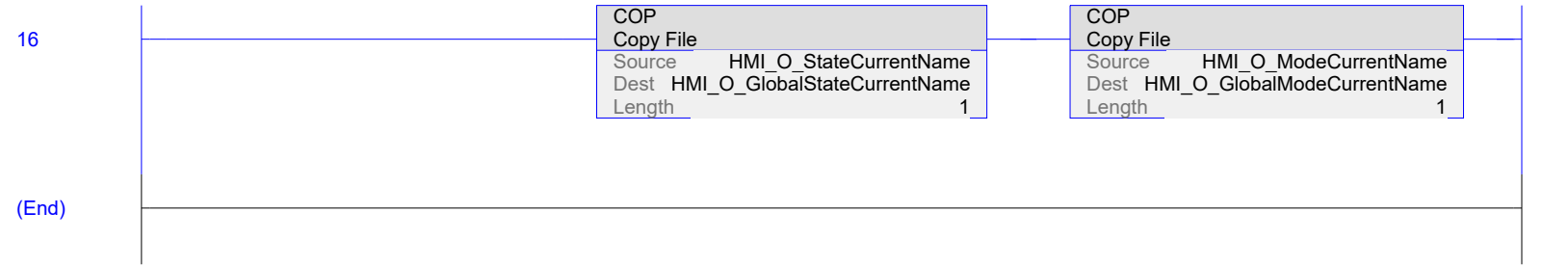
JSR
Jump To Subroutine
Routine Name CM03_FaultHandler

**** Added routine

JSR
Jump To Subroutine
Routine Name CM04_SafetyInterface

JSR
Jump To Subroutine
Routine Name UP02_StateComplete





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////////////////////////////////////
COMPANY:      Rockwell Automation
FUNCTION:     Machine Data Initialization
AUTHOR:      Rockwell Automation
DATE CREATED: March 2011

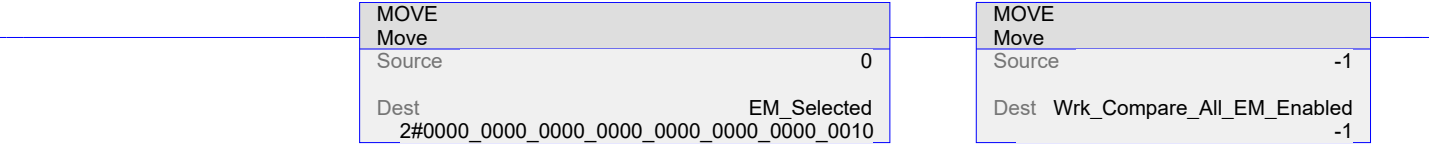
Version Comments:

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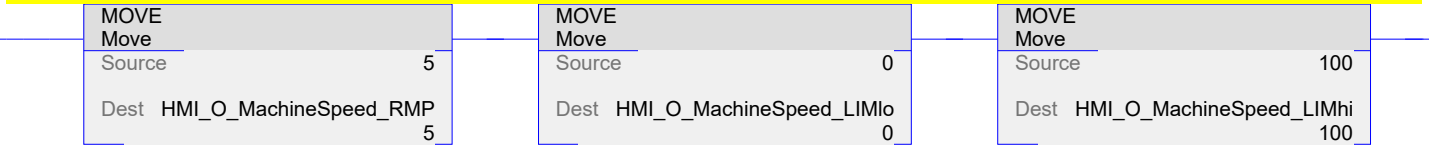
0 [NOP]

Clear EM selected bits. Each EM will set bit as it initializes. Initialize value used to check for EM state complete bits

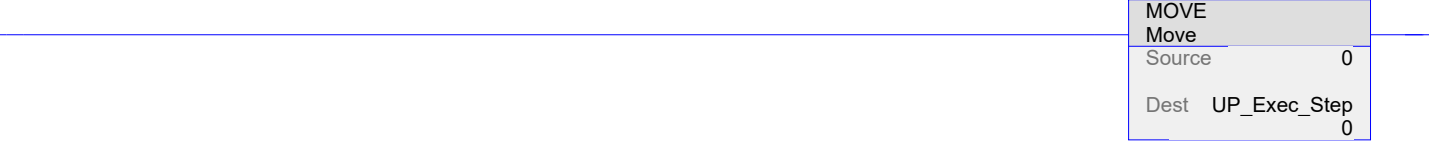
This Tag is used to enable states for each Equipment Module



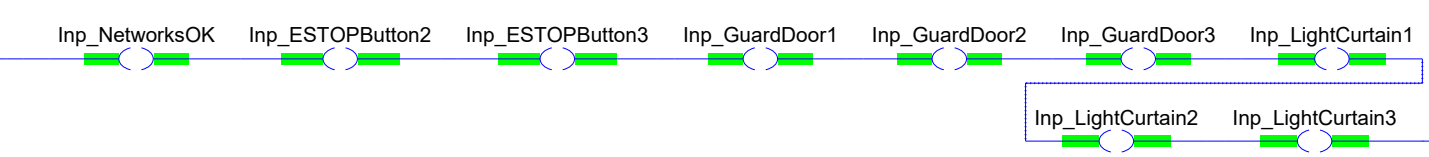
INITIALIZE HMI MACHINE SPEED LIMITS
 -RAMP INCREMENT
 -MACHINE SPEED MINIMUM
 -MACHINE SPEED MAXIMUM



Clear unit procedure step



**** Make networks okay and all unused safetys enabled



**** Disable unused stop



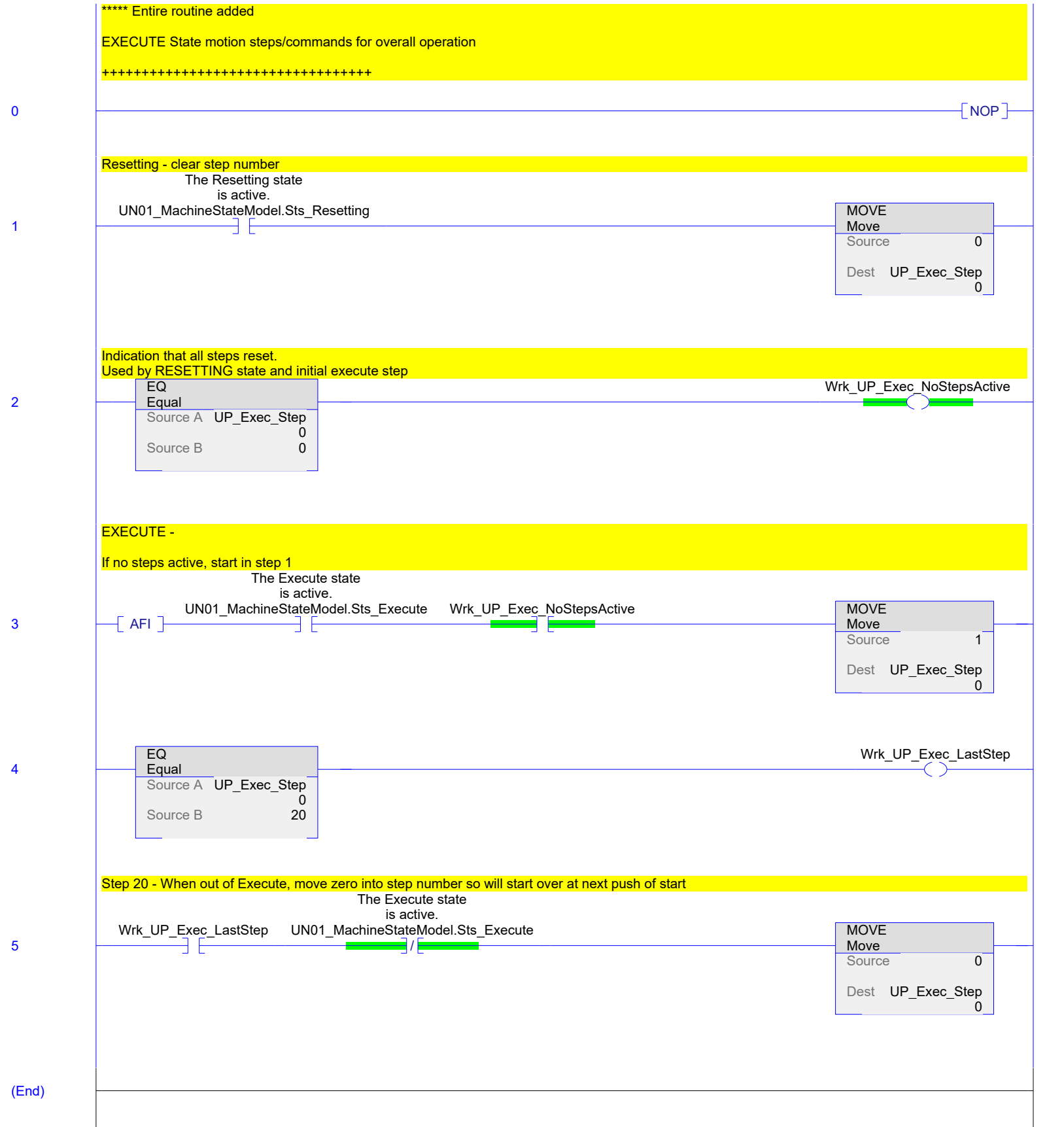
**** Disable interlocks



**** Enable remote commands







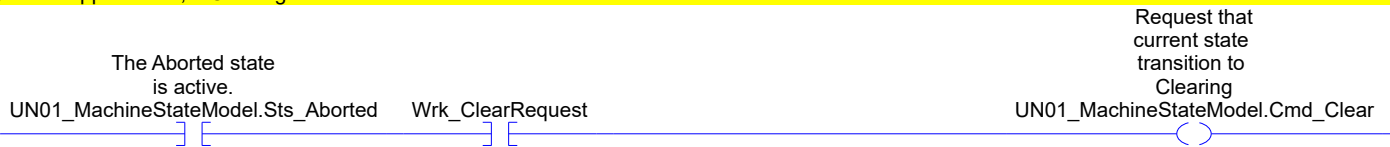
////////////////////////////////////
COMPANY: Rockwell Automation
FUNCTION: PACK ML State and Mode Management
AUTHOR: Rockwell Automation
DATE CREATED: March 2011

Version Comments:
////////////////////////////////////

[NOP]

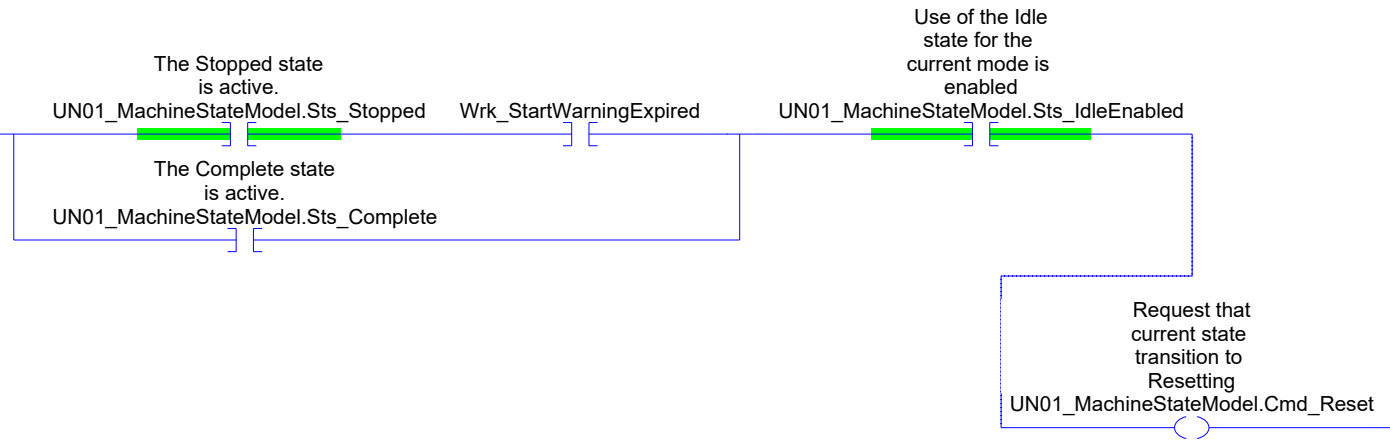
STATE COMMAND
CLEAR

This Command is Triggered by the Unit Condition Indicating a Clear Faults Request Has Been Received.
The Command Initiates in the PackML AOI for the Current Mode Operation Procedure to Transition From the Aborted State to:
1) The Clearing State, If Clearing is Enabled
2) The Stopped State, If Clearing is Disabled



STATE COMMAND
RESET

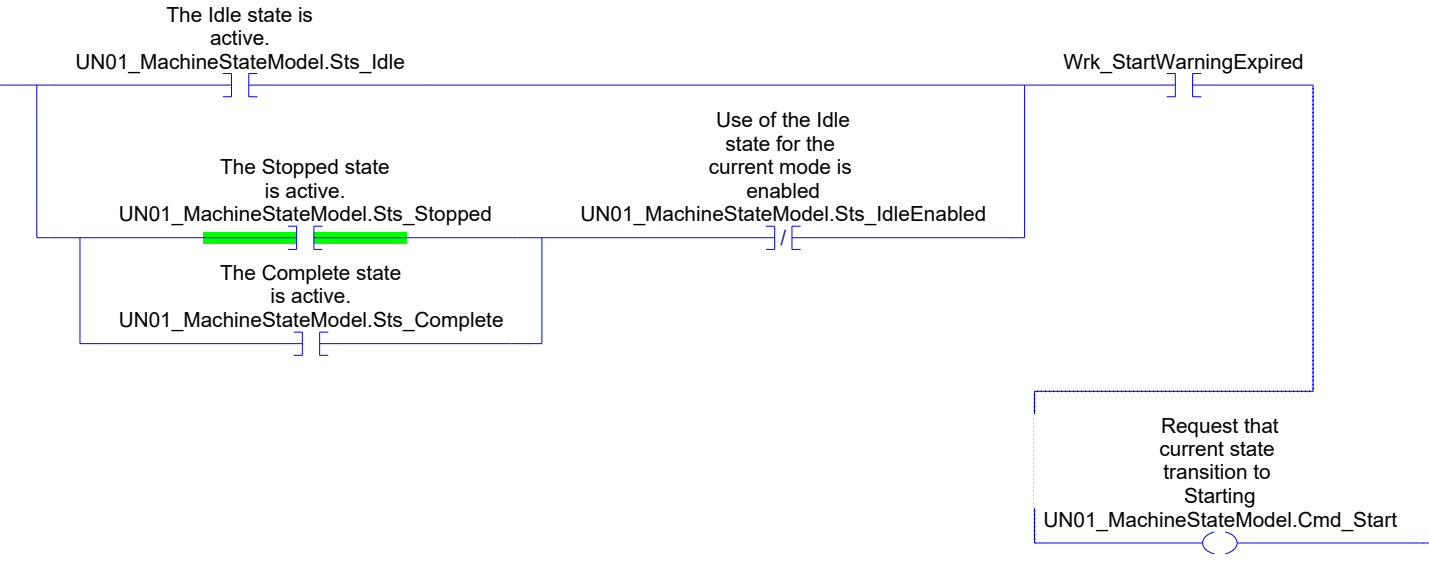
This Command is Triggered by the Unit Condition Indicating the Start Warning Cycle Has Completed.
The Command Initiates in the PackML AOI for the Current Mode Operation Procedure to Transition From the Stopped or Complete State to:
1) The Resetting State, If Resetting Is Enabled
2) The Idle State, If 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



STATE COMMAND
START

This Command is Triggered by the Unit Condition Indicating the Start Warning Cycle Has Completed.
 The Command Initiates in the PackML AOI 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

3



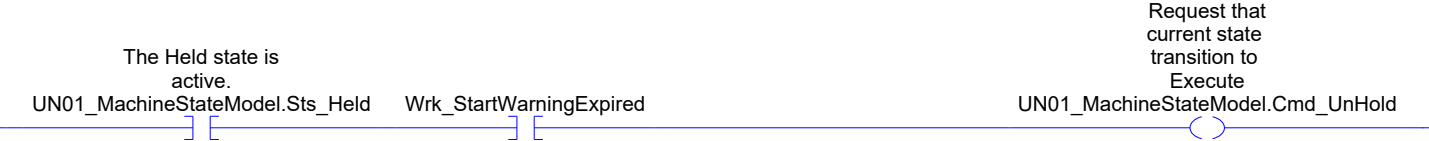
STATE COMMAND
HOLD

4



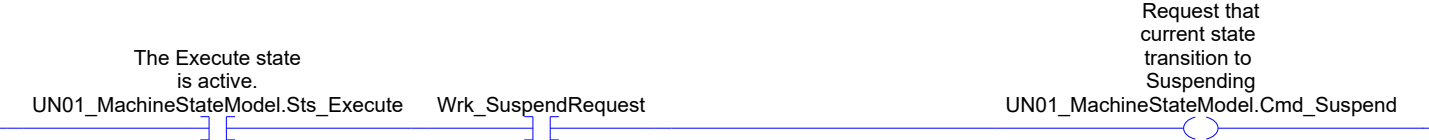
STATE COMMAND
UNHOLD

5



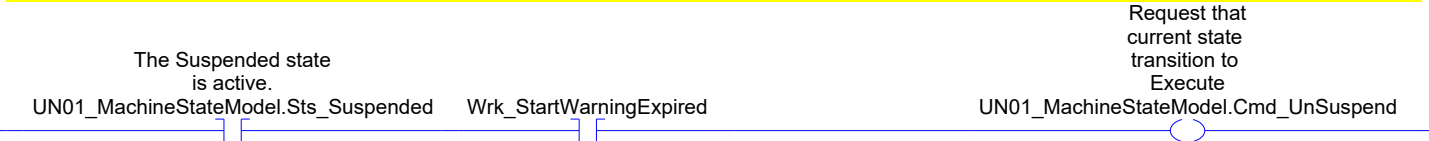
STATE COMMAND
SUSPEND

6



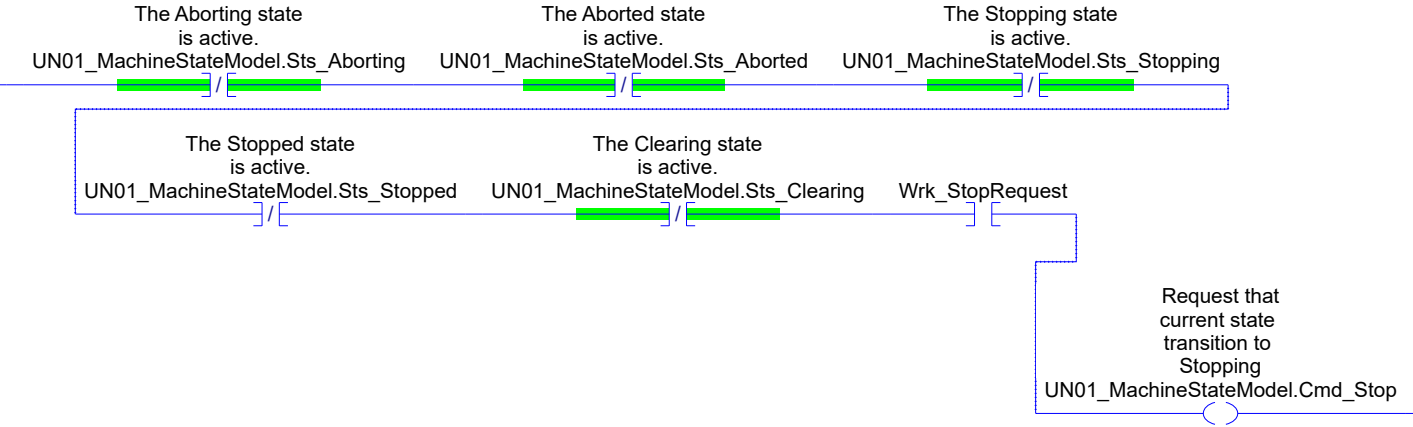
STATE COMMAND
UN-SUSPEND

7



**STATE COMMAND
 STOP**

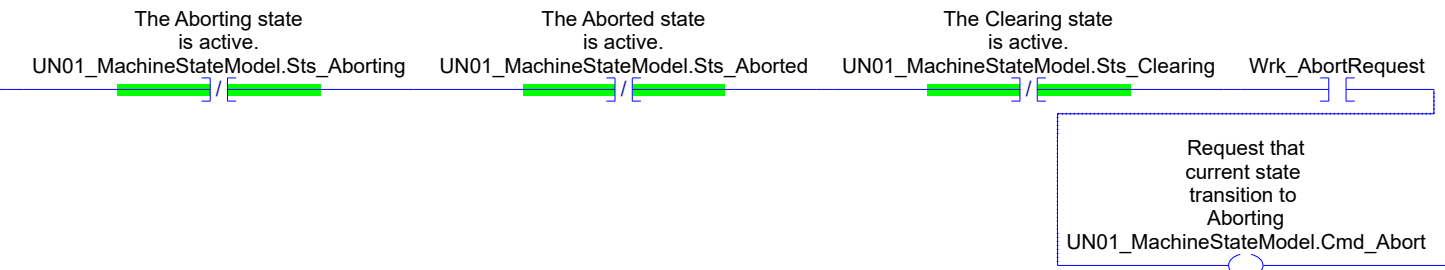
This Command is Triggered by the Unit Condition Indicating Any Stop Condition Is Present.
 The Command Initiates in the PackML AOI for the Current Mode Operation Procedure to Transition From the Following List of States (Resetting, Idle, Starting, Execute, Holding, Held, UnHolding, Suspending, Suspended,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



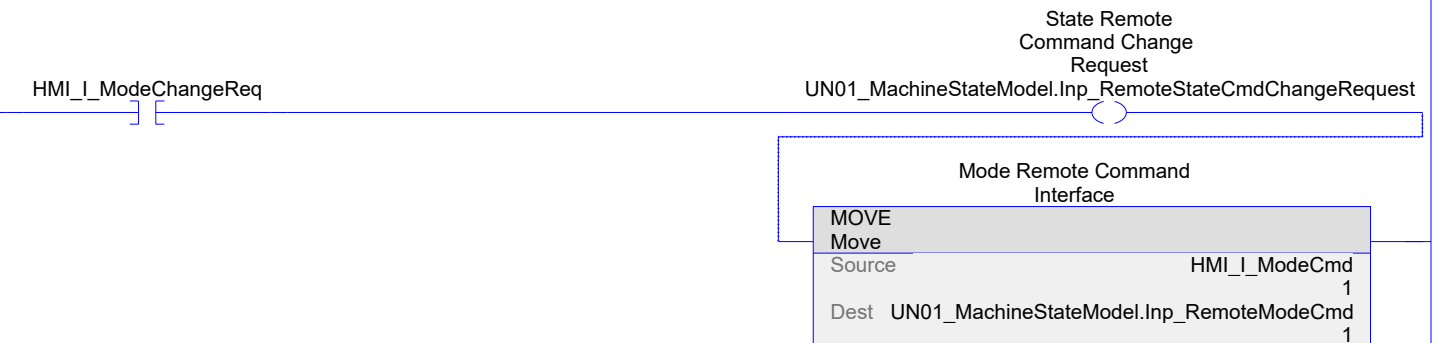
**STATE COMMAND
 ABORT**

This Command is Triggered by the Unit Condition Indicating Any Fault 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, 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

HINT: 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



****** Mode change requests from HMI**



MODE AND STATE MANAGEMENT

PackML V3.0 Model (Defined By ISA-TR88.00.02)

This Add-On Instruction (AOI) Manages the State Transitions and Configurations for Up To 32 Unit Modes, and the Transitions Between Modes. Only One Mode May Be Active on the Unit At Any Given Time. Each Mode is Executed as an Unique Operation Procedure in a Program Folder in the Controller Organizer.

Use the Configuration Tag Arrays (Prefixes Cfg_) to Setup the Modes and States for the Specific Machine Needs. Each Element of the Array Corresponds to the Configuration for the Mode, Defined by Number. Bits 1-17 of Each Element Corresponds to an Associated State of the Mode.

-- Cfg_ModeTransitions - DINT[32] - Use to Define Which State(s) Must Be Currently Active to Allow Transition From the Current Mode to the Mode Requested by Cmd_Mode. Current and Requested Modes Both Need Same State Bit Set. A Mode Transition May Be Requested at Any Time. If the Transition is NOT Allowed, Then the Sts_ModeChangeNotAllowed Will Be Set To Indicate to the Operator. Transition Occurs by Changing Current Mode to Requested Mode, But Maintains Current State in New Mode.

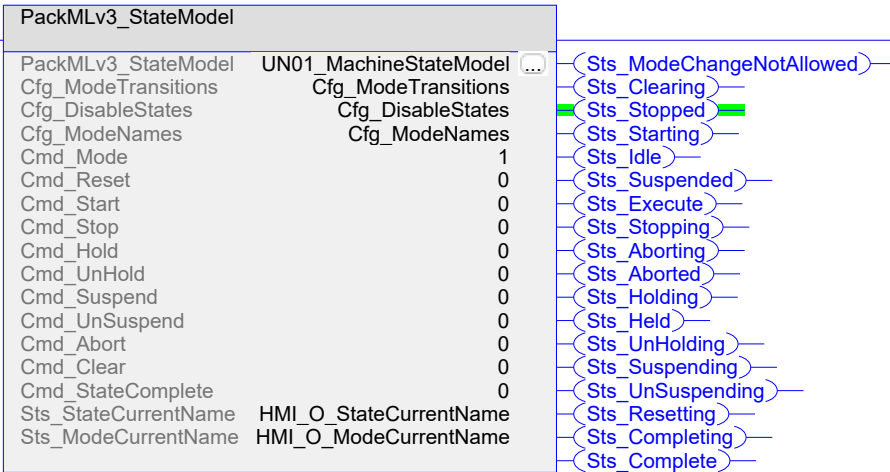
-- Cfg_DisableStates - DINT[32] - Use to Define for Each Mode Which State(s) Are Not Necessary to Perform the Associated Operation Procedure. The Stopped, Aborted, and Execute States May NOT Be Disabled. When Online:
 1) Disabling the Held State Will Automatically Disable the Holding and UnHolding States
 2) Disabling the Suspended State Will Automatically Disable the Suspending and UnSuspending States
 3) Disabling the Complete State Will Automatically Disable the Completing State.

-- Cfg_ModeNames - String_Short[32] - Use to Associate a Name to Each Mode. A Name is Often More Desirable For Operation and Design, So the Name is Used to Display the Modes on the HMI Application. The String_Short Data Type is Defined for 12 Characters. This Minimizes the Memory Impact of the Strings, But This May Be Expanded If Required for Your Application

Command Parameters (Prefixes Cmd_) Initiate Either Mode or State Transitions. Cmd_Mode Requests the Mode Using an Integer Value. The State Transition Commands Are Boolean Parameters to Initiate State Transitions. The Cmd_StateComplete Bit is Used Transition All Acting and Dual States Upon Completion of State Sequence. This Is REQUIRED for ALL Acting States, But Only Used for the Dual State (Execute) If Complete Is Enabled.

Status Parameters (Prefixes Sts_) Indicate the Current State By Boolean Bit and String Name, the Enabled States for the Current Mode, And the Current Mode by String Name. These Are Used By the Logic and HMI for Display and Decision-Making

PackML State Complete Command - Latch
 Cmd_StateComplete to allow transition from acting state to wait state
 UN01_MachineStateModel.Cmd_StateComplete (U)



Signature ID: 13B69801

11

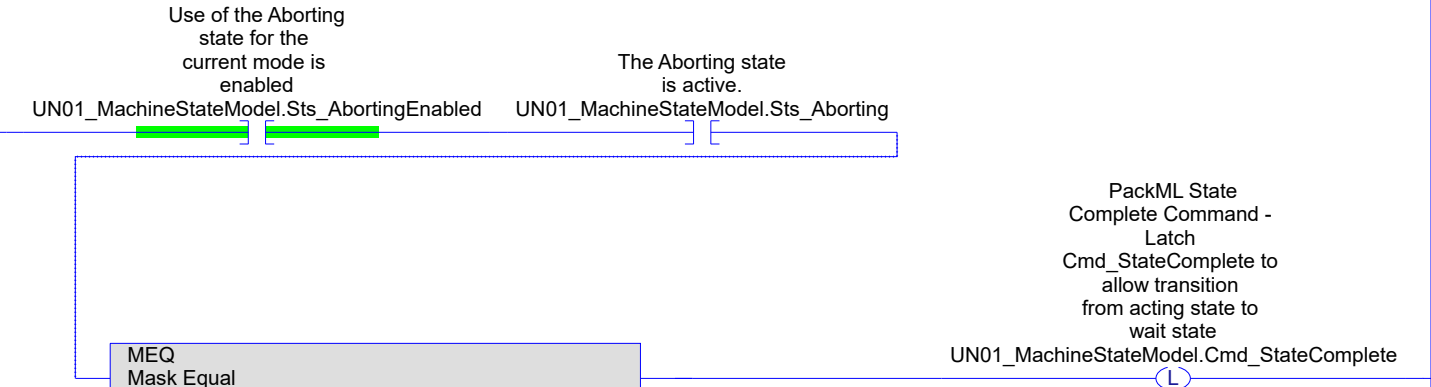
(End)

```

    //////////////////////////////////////
    COMPANY:      Rockwell Automation
    FUNCTION:     Procedural Routine - State Complete Verification for Equipment Modules
    AUTHOR:      Rockwell Automation
    DATE CREATED: March 2011

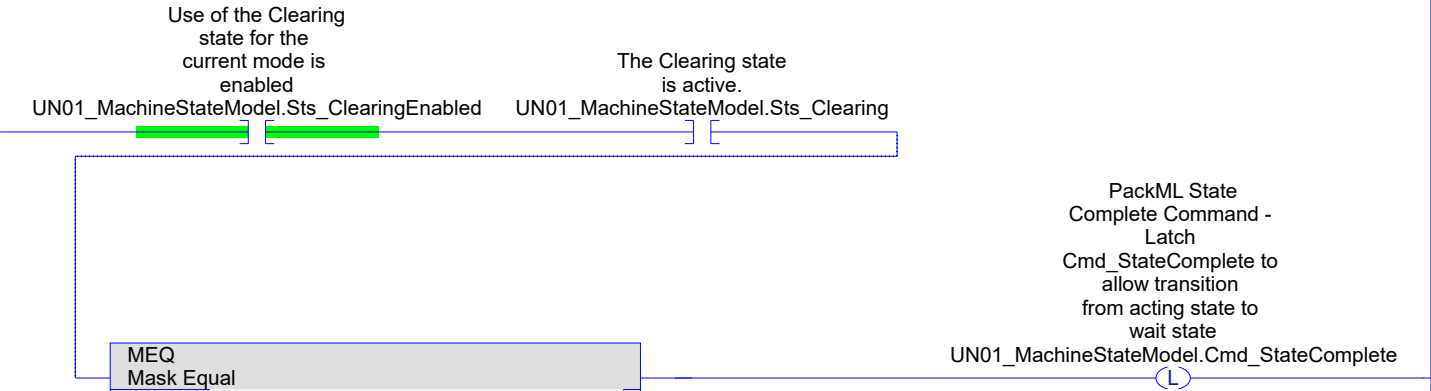
    Version Comments:
    //////////////////////////////////////
    
```

0 [NOP]



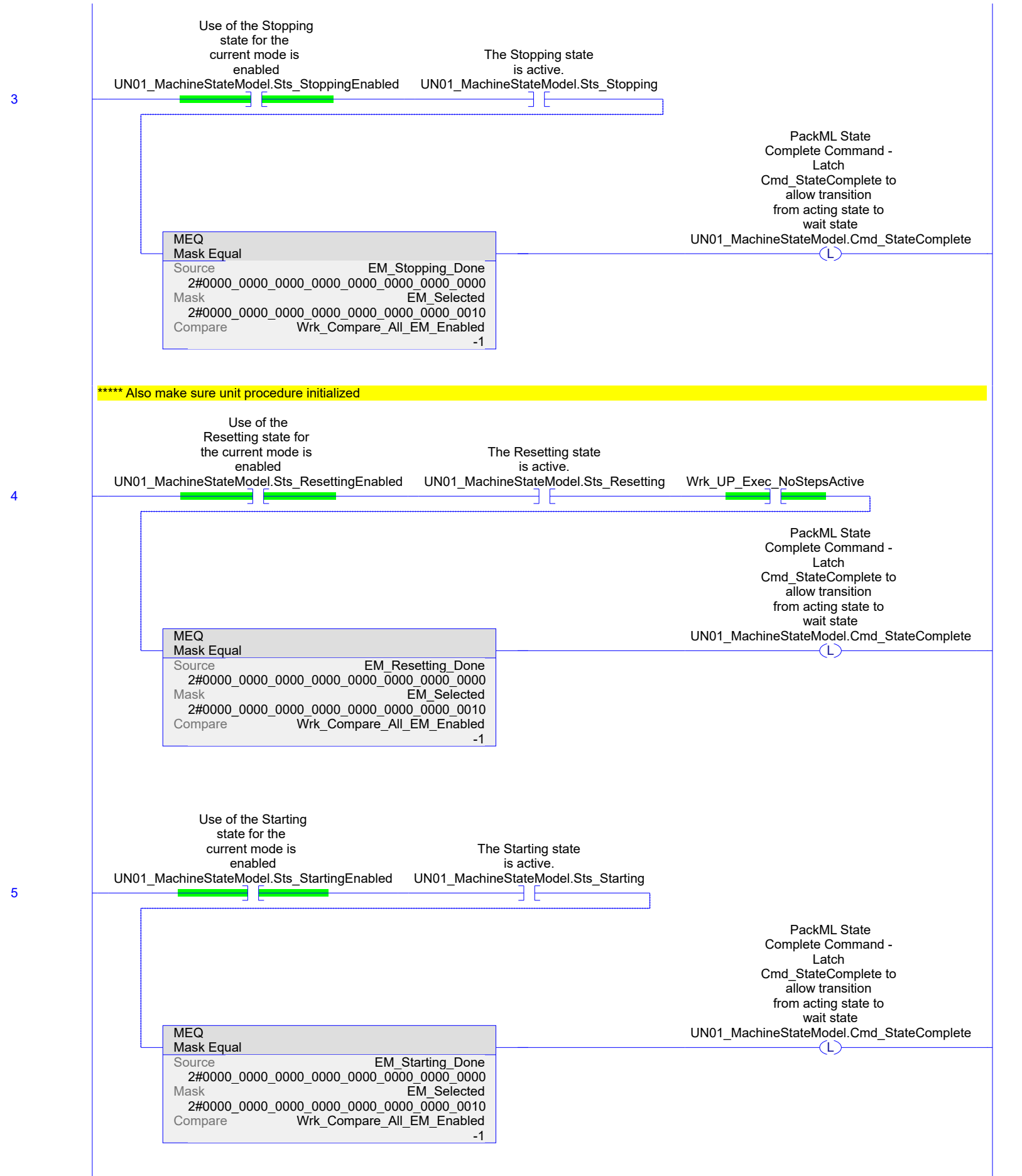
MEQ
 Mask Equal

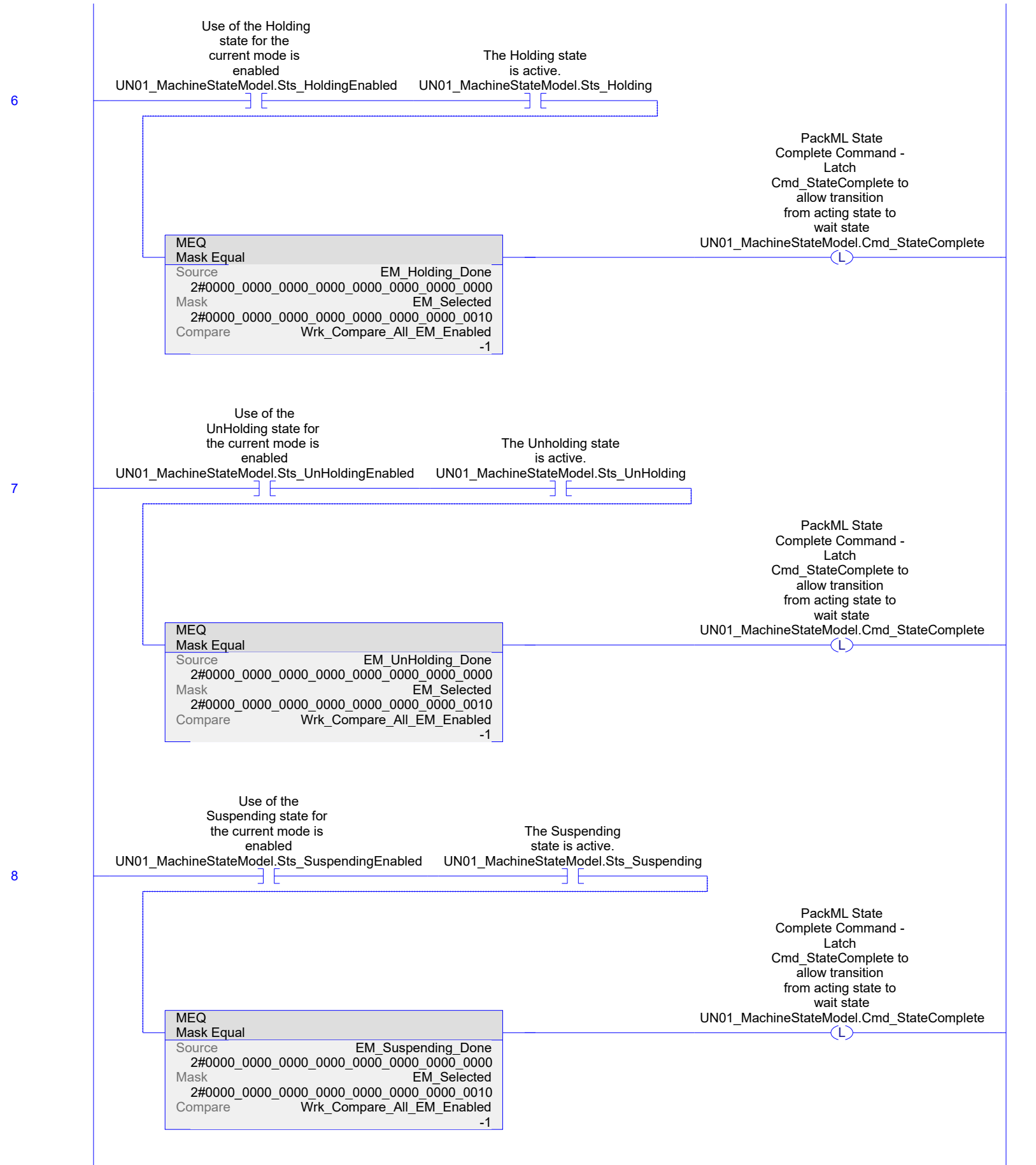
Source	EM_Aborting_Done
2#0000_0000_0000_0000_0000_0000_0000	
Mask	EM_Selected
2#0000_0000_0000_0000_0000_0000_0000_0010	
Compare	Wrk_Compare_All_EM_Enabled
	-1



MEQ
 Mask Equal

Source	EM_Clearing_Done
2#0000_0000_0000_0000_0000_0000_0000	
Mask	EM_Selected
2#0000_0000_0000_0000_0000_0000_0000_0010	
Compare	Wrk_Compare_All_EM_Enabled
	-1





9

Use of the UnSuspending state for the current mode is enabled
 UN01_MachineStateModel.Sts_UnSuspendingEnabled

The UnSuspending state is active.
 UN01_MachineStateModel.Sts_UnSuspending

MEQ	
Mask Equal	
Source	EM_UnSuspending_Done
	2#0000_0000_0000_0000_0000_0000_0000_0000
Mask	EM_Selected
	2#0000_0000_0000_0000_0000_0000_0000_0010
Compare	Wrk_Compare_All_EM_Enabled
	-1

PackML State Complete Command - Latch
 Cmd_StateComplete to allow transition from acting state to wait state
 UN01_MachineStateModel.Cmd_StateComplete (L)

***** Added state complete for COMPLETING state

10

Use of the Completing state for the current mode is enabled
 UN01_MachineStateModel.Sts_CompletingEnabled

The Completing state is active.
 UN01_MachineStateModel.Sts_Completing

MEQ	
Mask Equal	
Source	EM_Completing_Done
	0
Mask	EM_Selected
	2#0000_0000_0000_0000_0000_0000_0000_0010
Compare	Wrk_Compare_All_EM_Enabled
	-1

PackML State Complete Command - Latch
 Cmd_StateComplete to allow transition from acting state to wait state
 UN01_MachineStateModel.Cmd_StateComplete (L)

***** Added state complete for EXECUTE state. Complete when all EM's complete, or when unit procedure finished.

11

Use of the Execute state for the current mode is enabled

UN01_MachineStateModel.Sts_ExecuteEnabled

The Execute state is active.

UN01_MachineStateModel.Sts_Execute



PackML State Complete Command - Latch

Cmd_StateComplete to allow transition from acting state to wait state

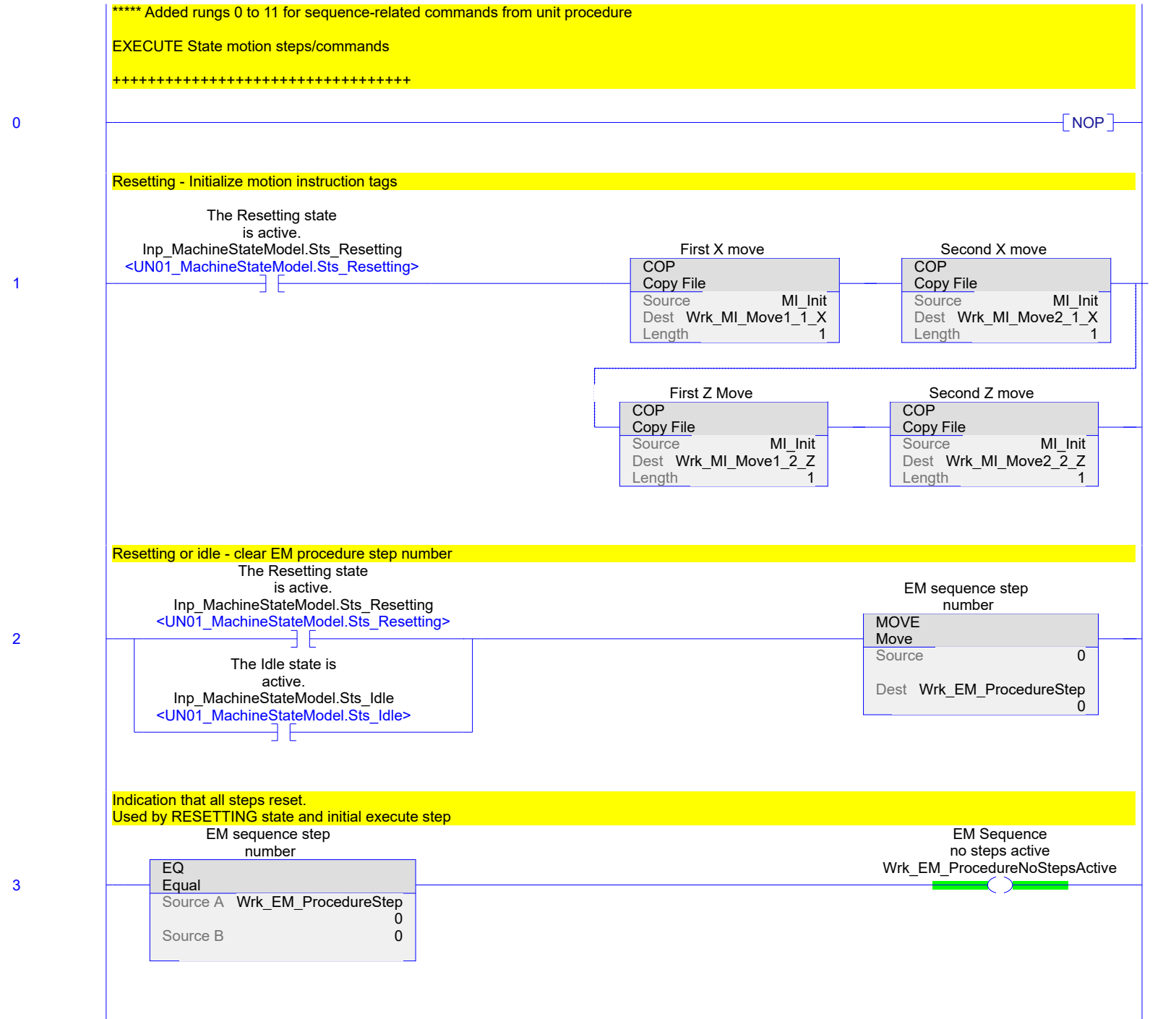
UN01_MachineStateModel.Cmd_StateComplete

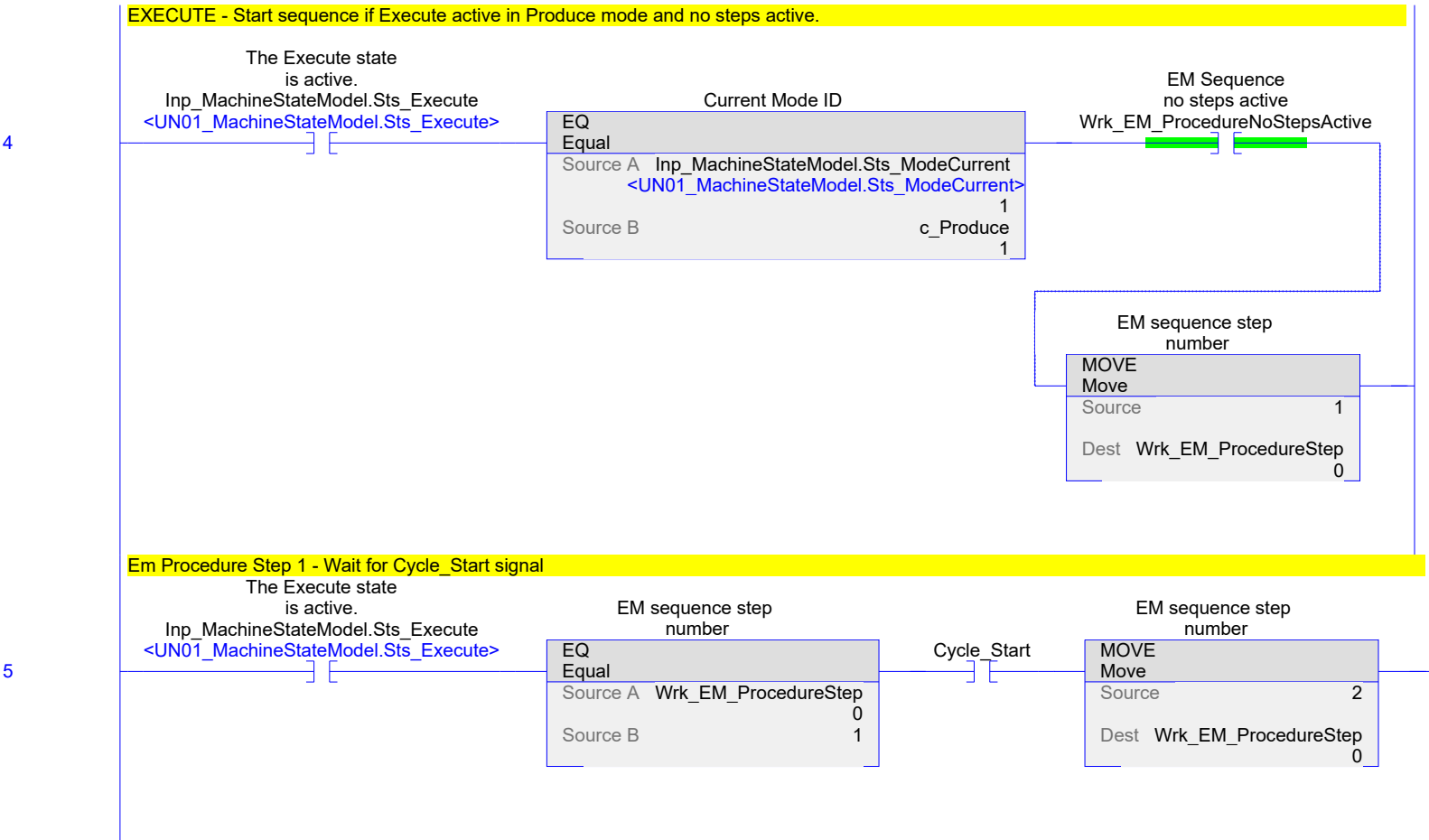
MEQ	
Mask Equal	
Source	EM_Execute_Done
	0
Mask	EM_Selected
	2#0000_0000_0000_0000_0000_0000_0000_0010
Compare	Wrk_Compare_All_EM_Enabled
	-1

Wrk_UP_Exec_LastStep

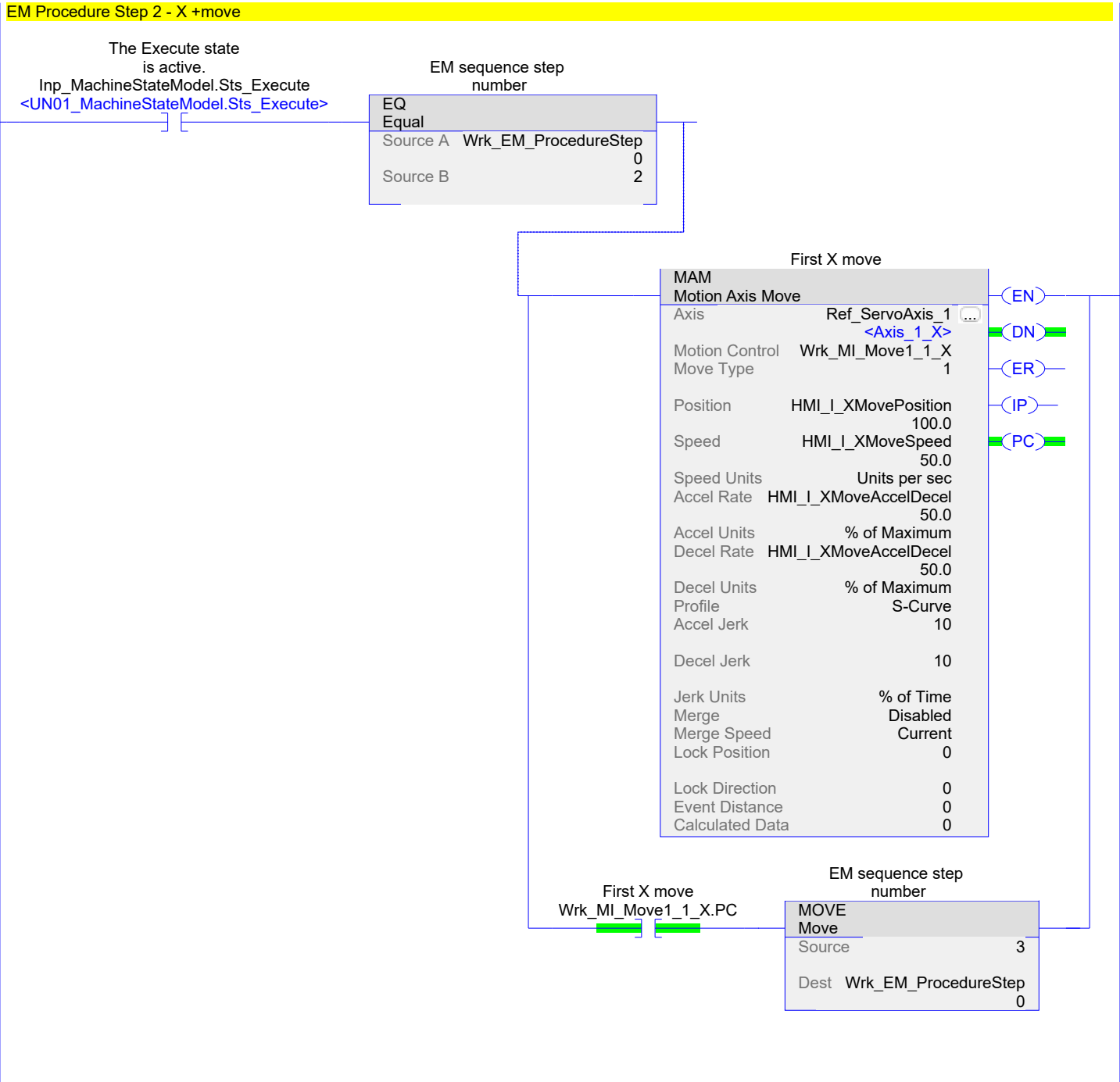


(End)

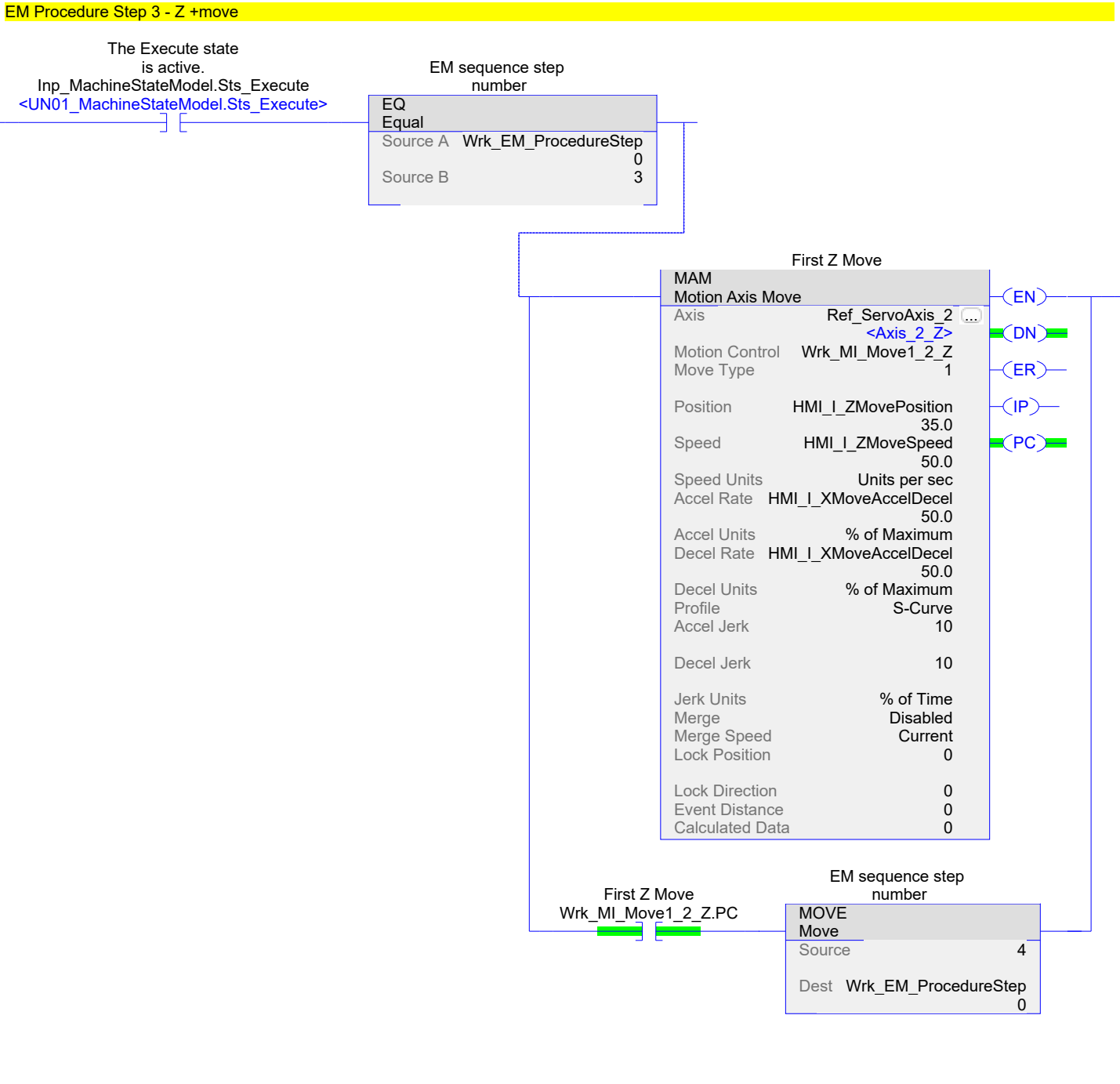




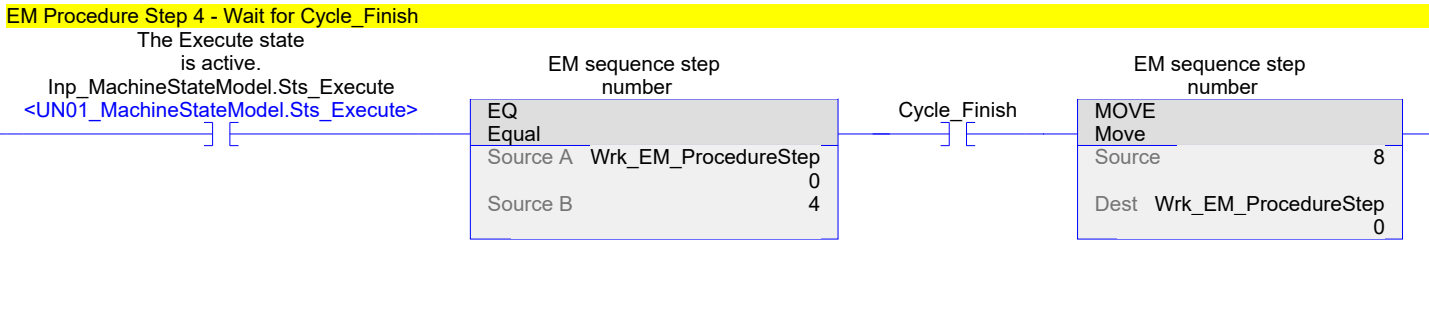
6



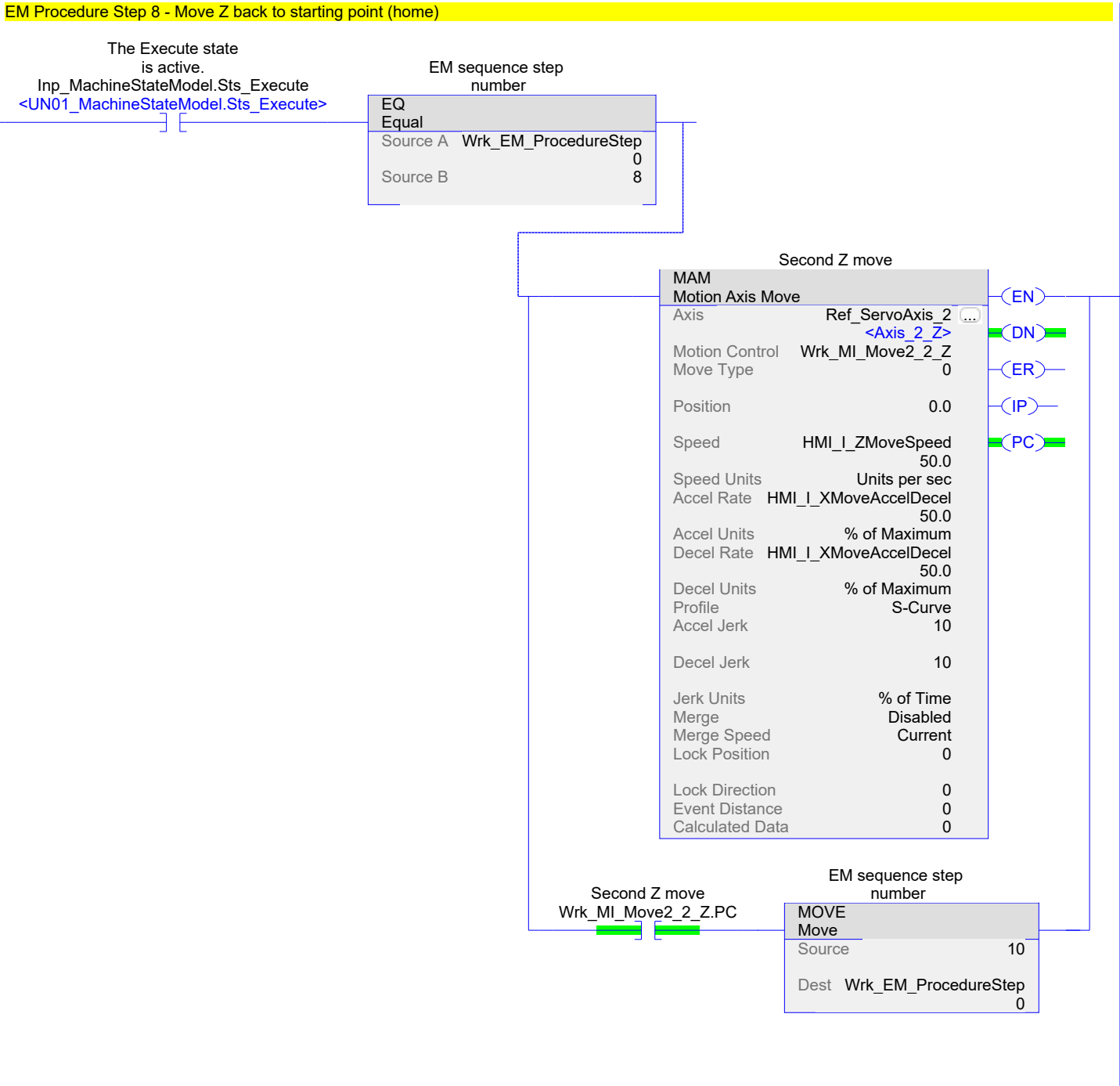
7

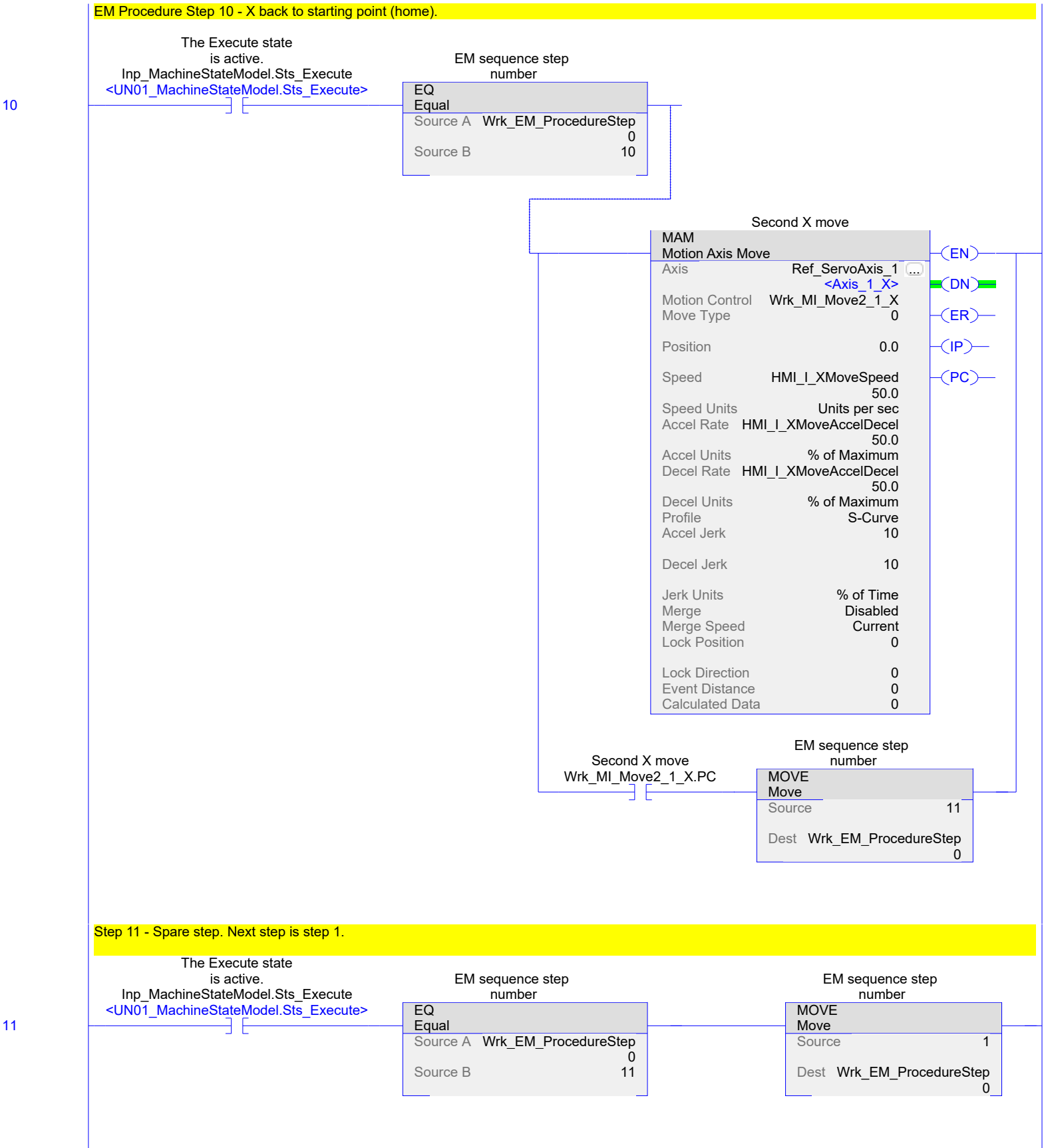


8

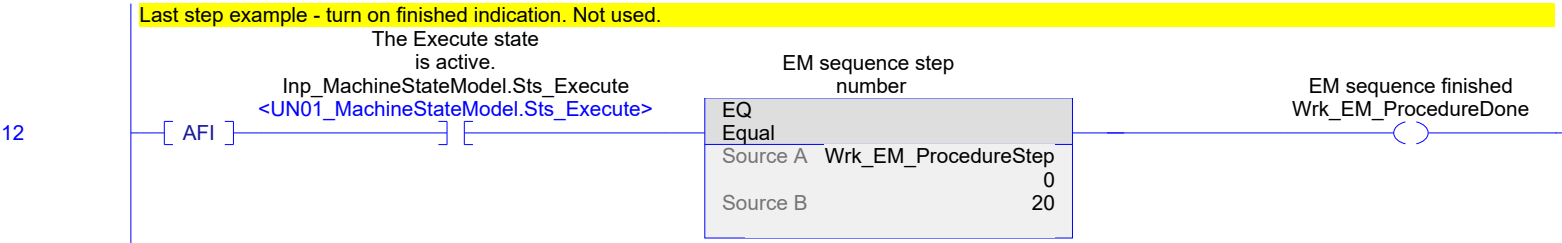


9

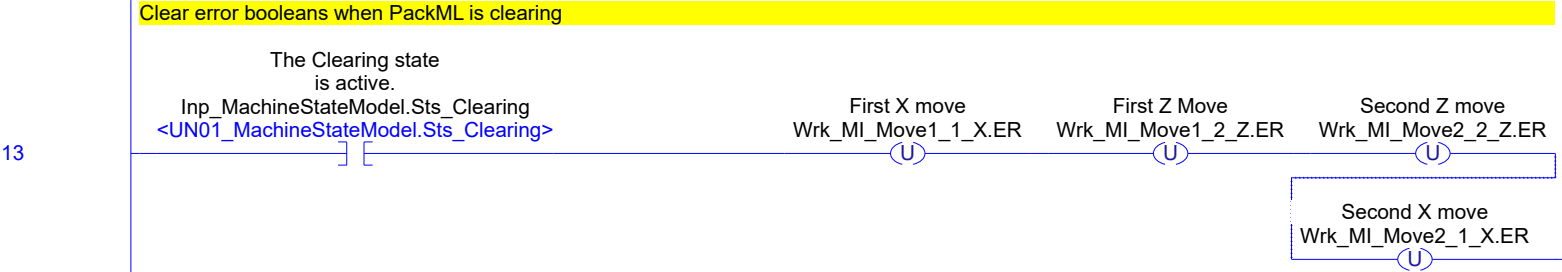




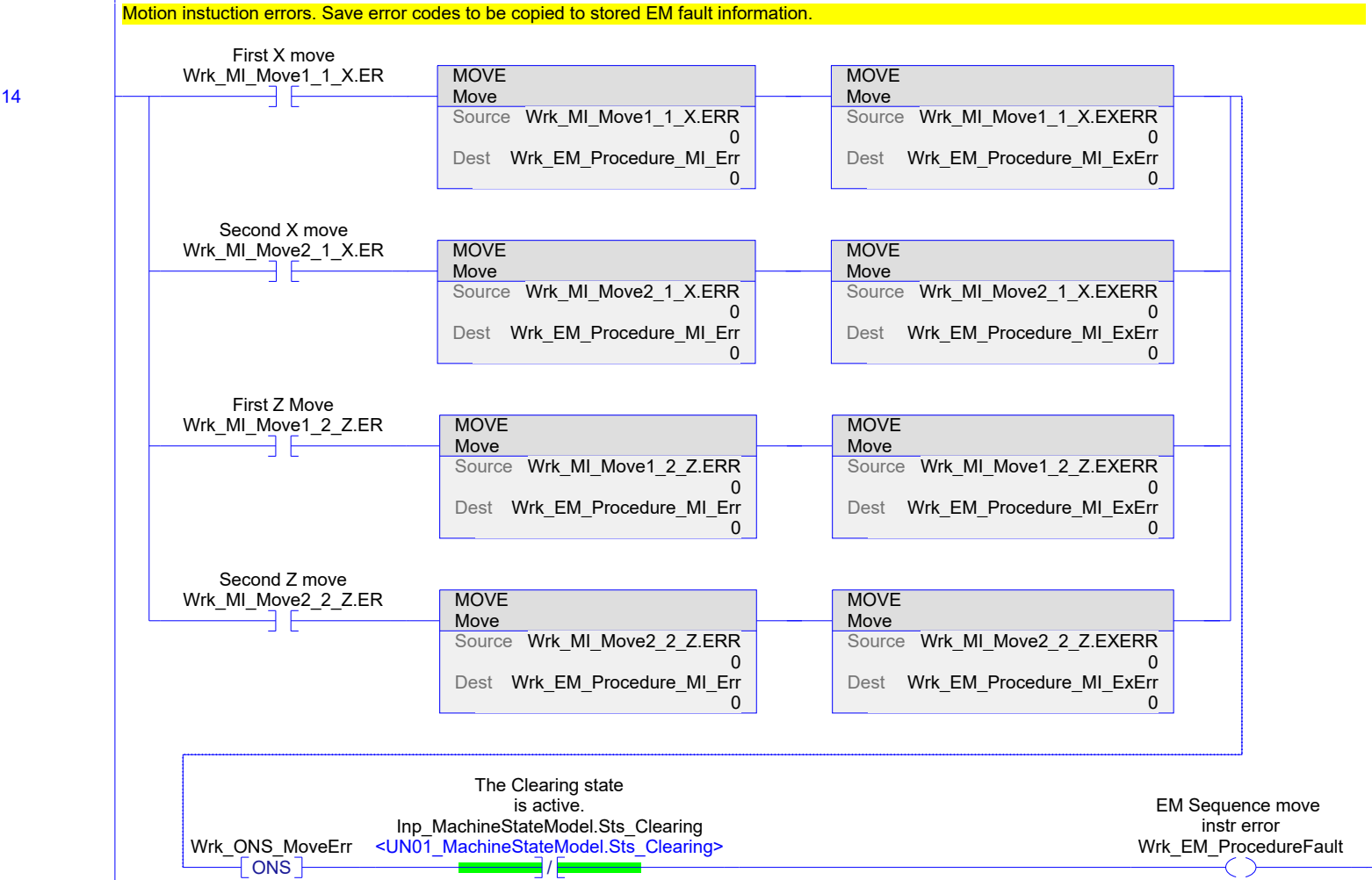
Last step example - turn on finished indication. Not used.



Clear error booleans when PackML is clearing



Motion instruction errors. Save error codes to be copied to stored EM fault information.



(End)

SECTION EQUIPMENT MODULE STATE COMPLETE HANDLING - SET DONE BITS
ALSO EM STATUS conditions that are a combination of axis conditions

[NOP]

**** Added additional conditions for Producing - EM procedure steps not active and homing finished if homing enabled

0

1

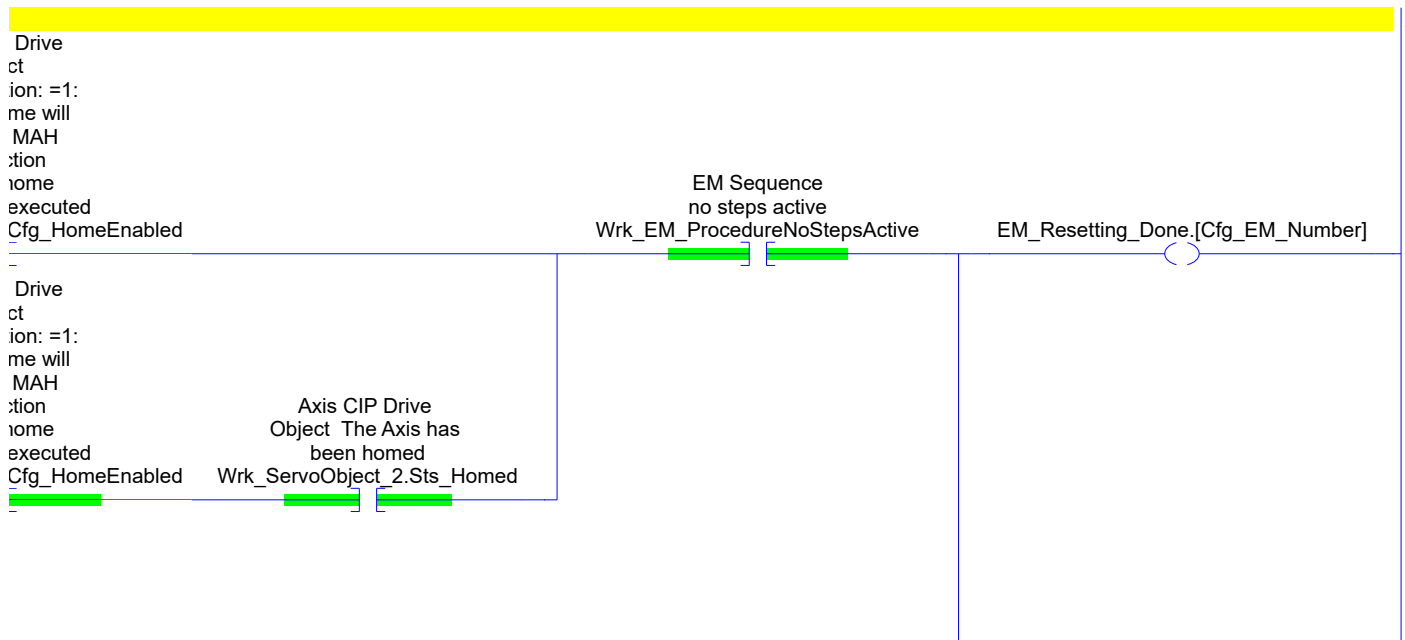
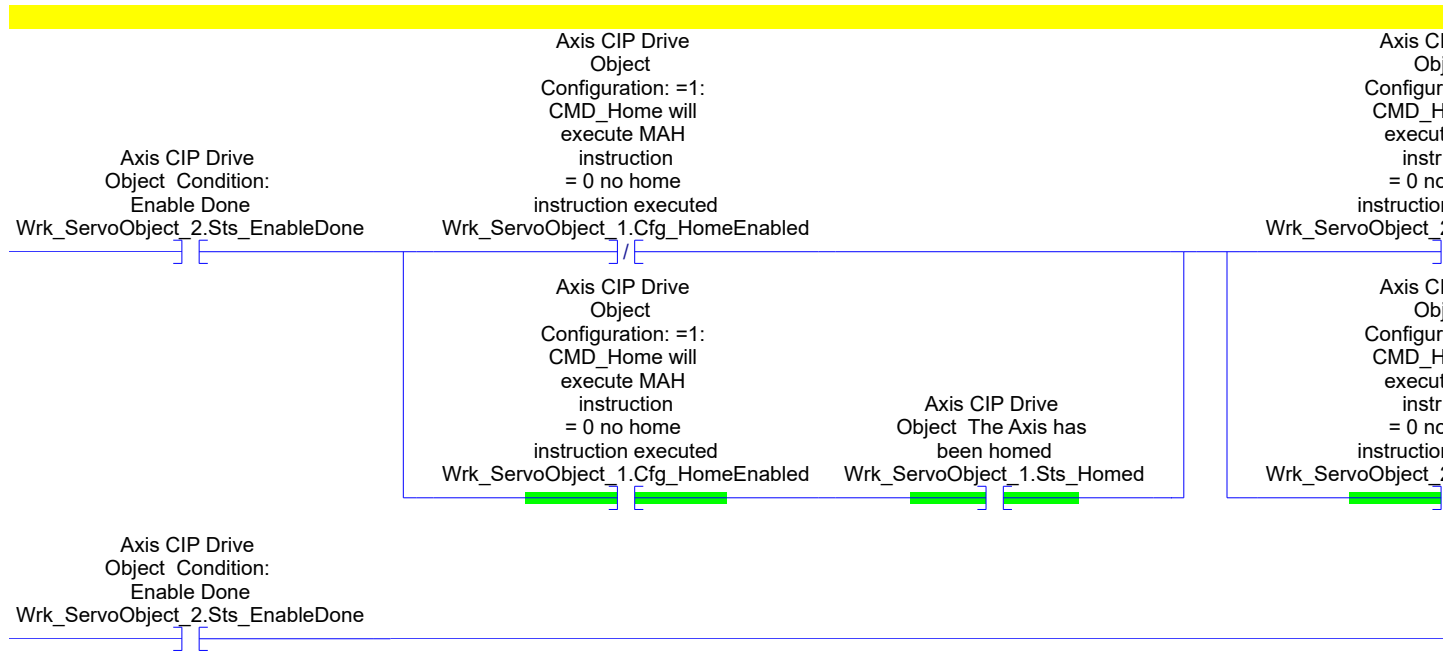
The Resetting state
is active.
Inp_MachineStateModel.Sts_Resetting
<UN01_MachineStateModel.Sts_Resetting>

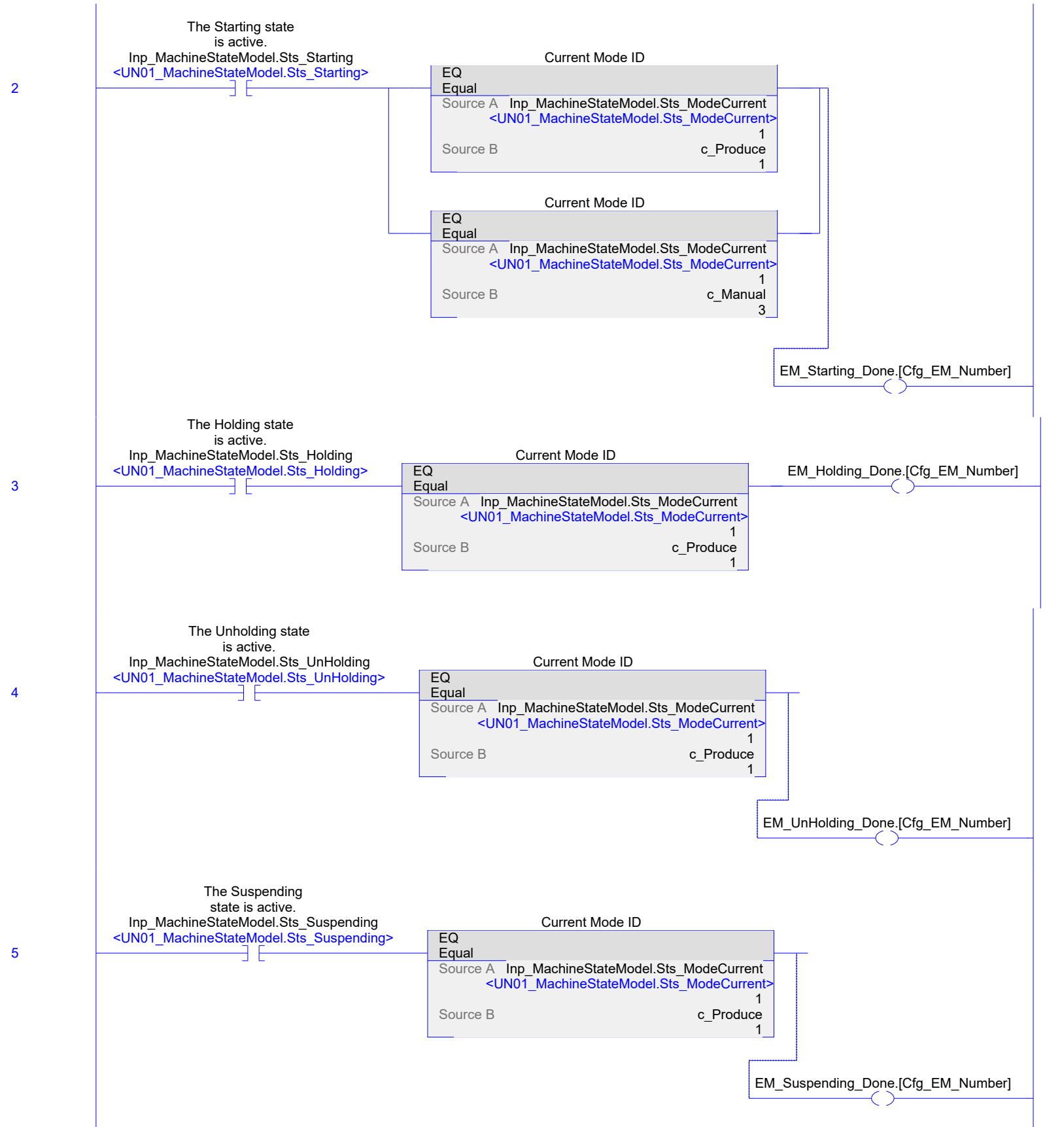
Current Mode ID	
EQ	
Equal	
Source A	Inp_MachineStateModel.Sts_ModeCurrent <UN01_MachineStateModel.Sts_ModeCurrent>
	1
Source B	c_Produce
	1

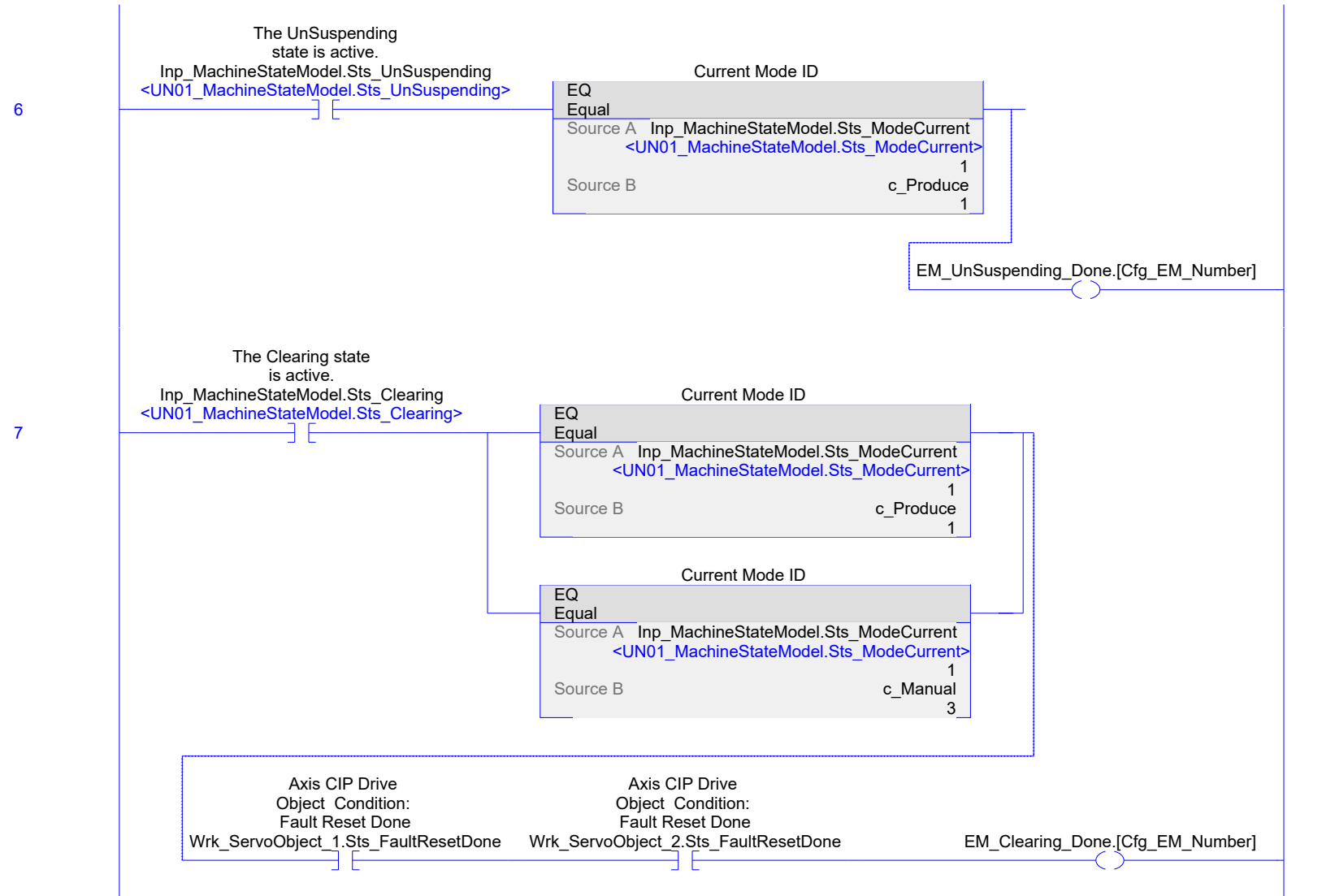
Axis CIP Drive
Object Condition:
Enable Done
Wrk_ServoObject_1.Sts_EnableDone

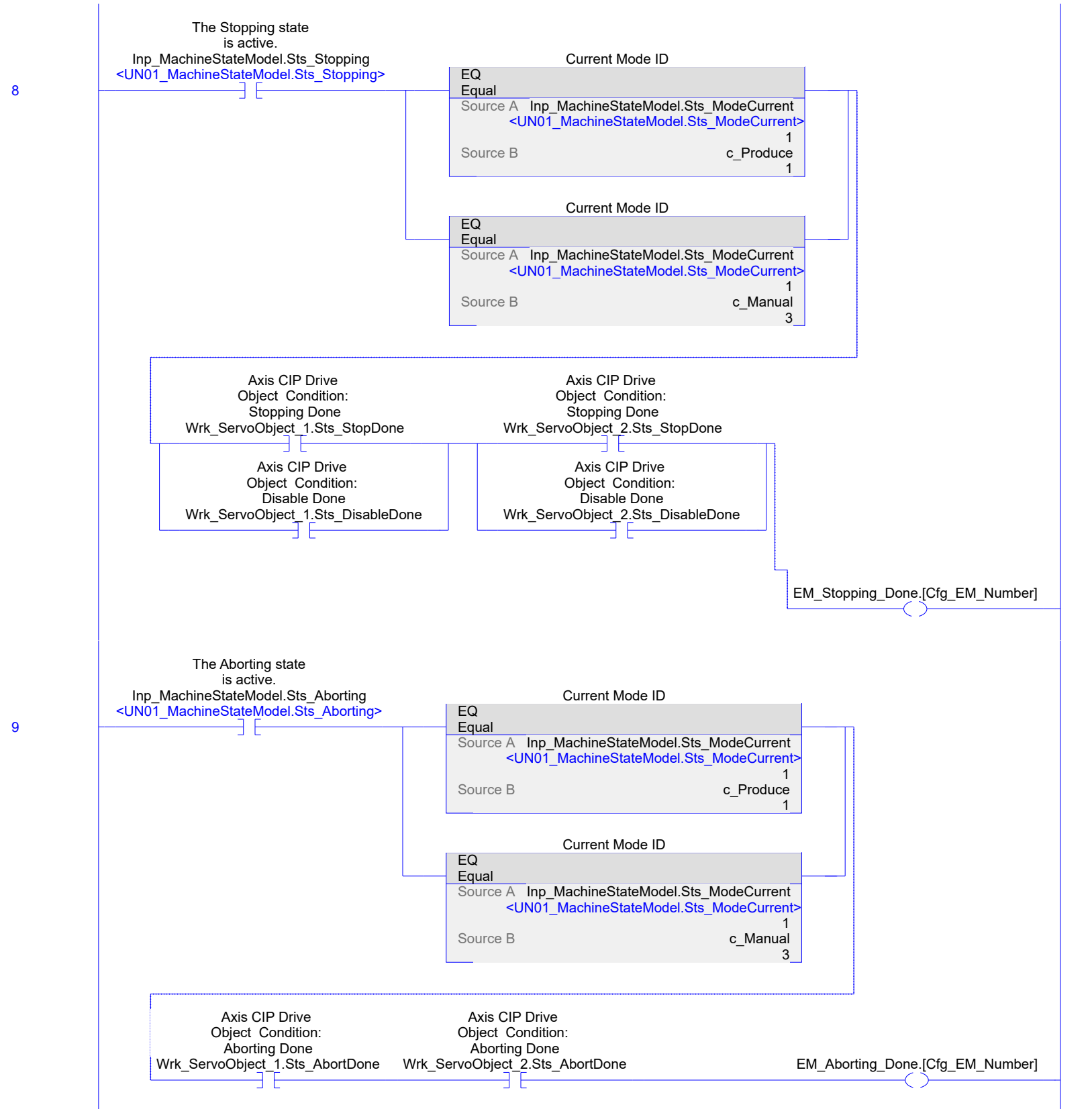
Current Mode ID	
EQ	
Equal	
Source A	Inp_MachineStateModel.Sts_ModeCurrent <UN01_MachineStateModel.Sts_ModeCurrent>
	1
Source B	c_Manual
	3

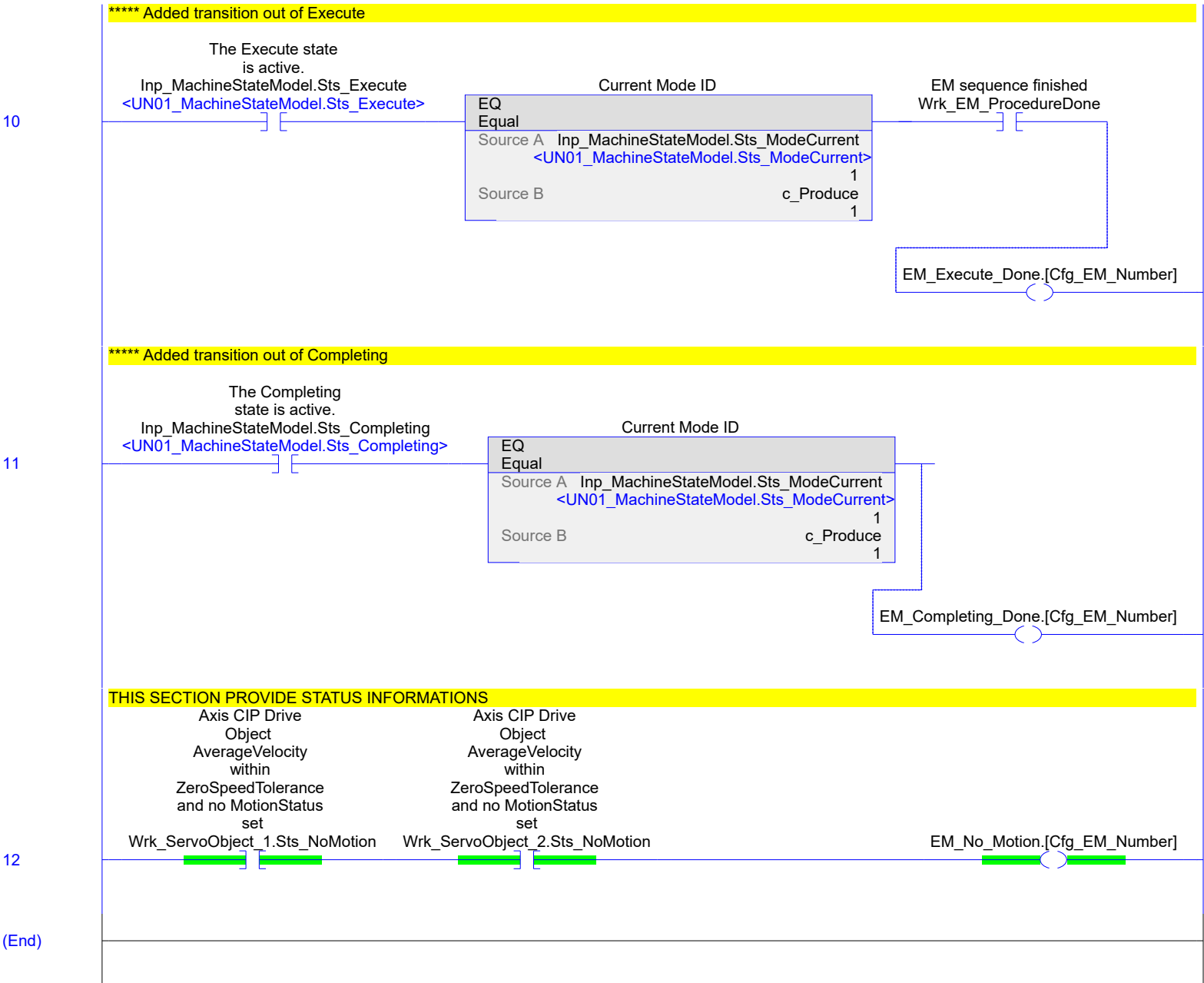
Axis CIP Drive
Object Condition:
Enable Done
Wrk_ServoObject_1.Sts_EnableDone









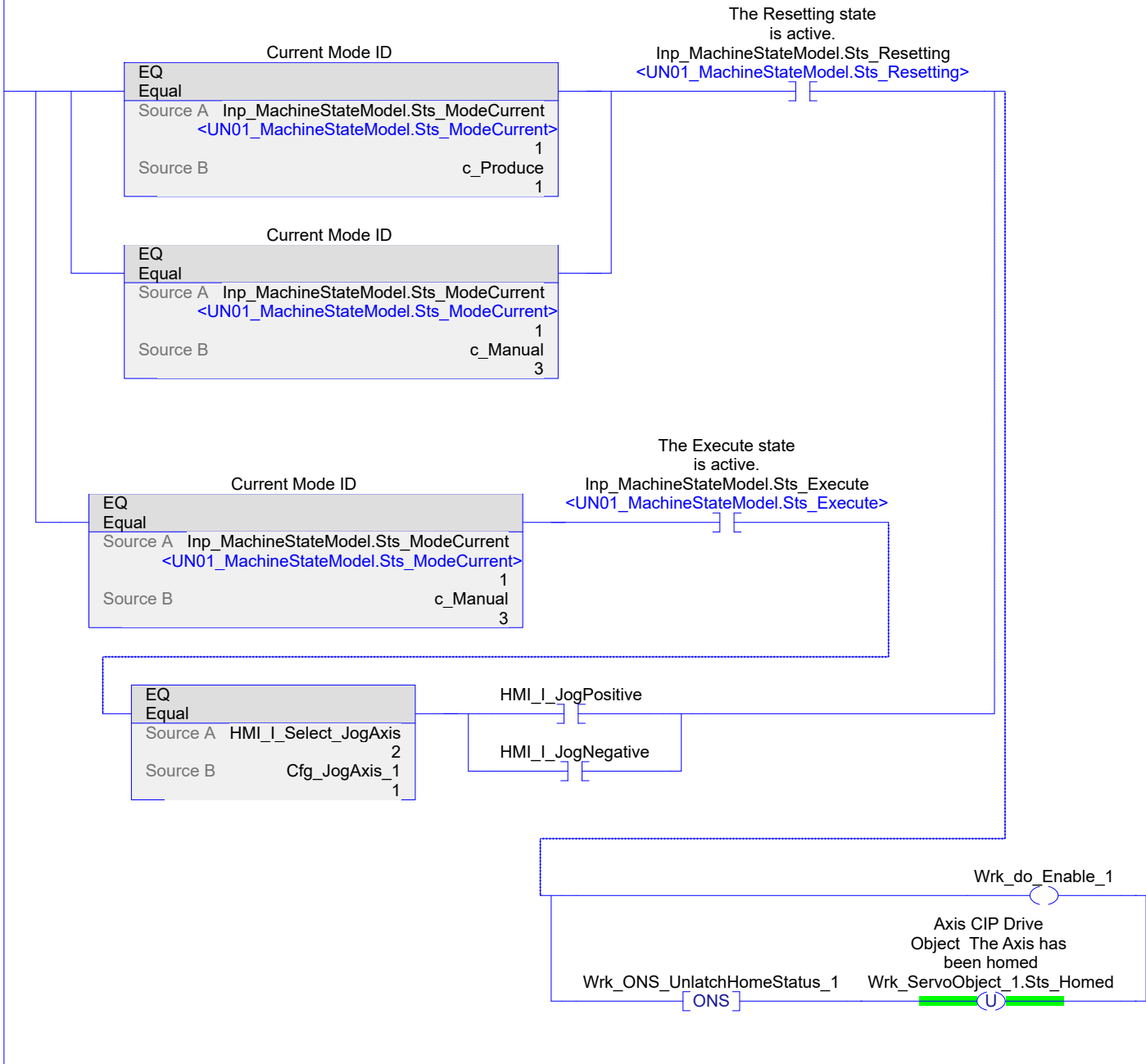


COMPANY: Rockwell Automation / Dogwood Valley Press
 FUNCTION: Servo Axis Object
 AUTHOR: Rockwell Automation / Kelvin Erickson
 DATE CREATED: July 2017

Version Comments: Deleted rung 1 in original CM02_ServoAxisObject getting motion status from master axis
 Moved rungs dealing with command inputs to Axis_ObjectCD AOI from PP example CM00_Procedure into here.
 Added "_1" suffix to axis-related tags in preparation to add second axis to EM

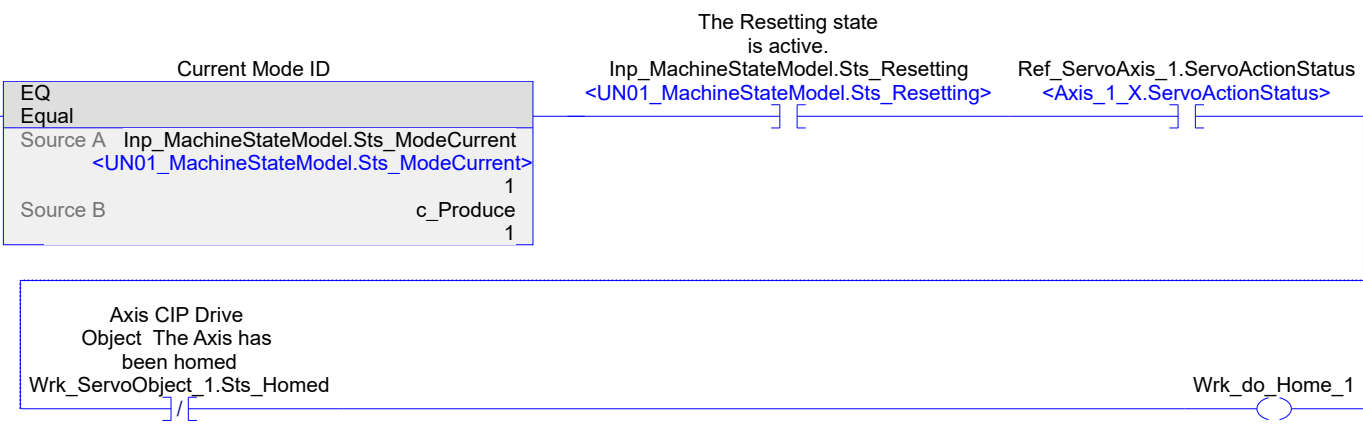
[NOP]

**** Added enable when resetting in Manual mode



Homing logic

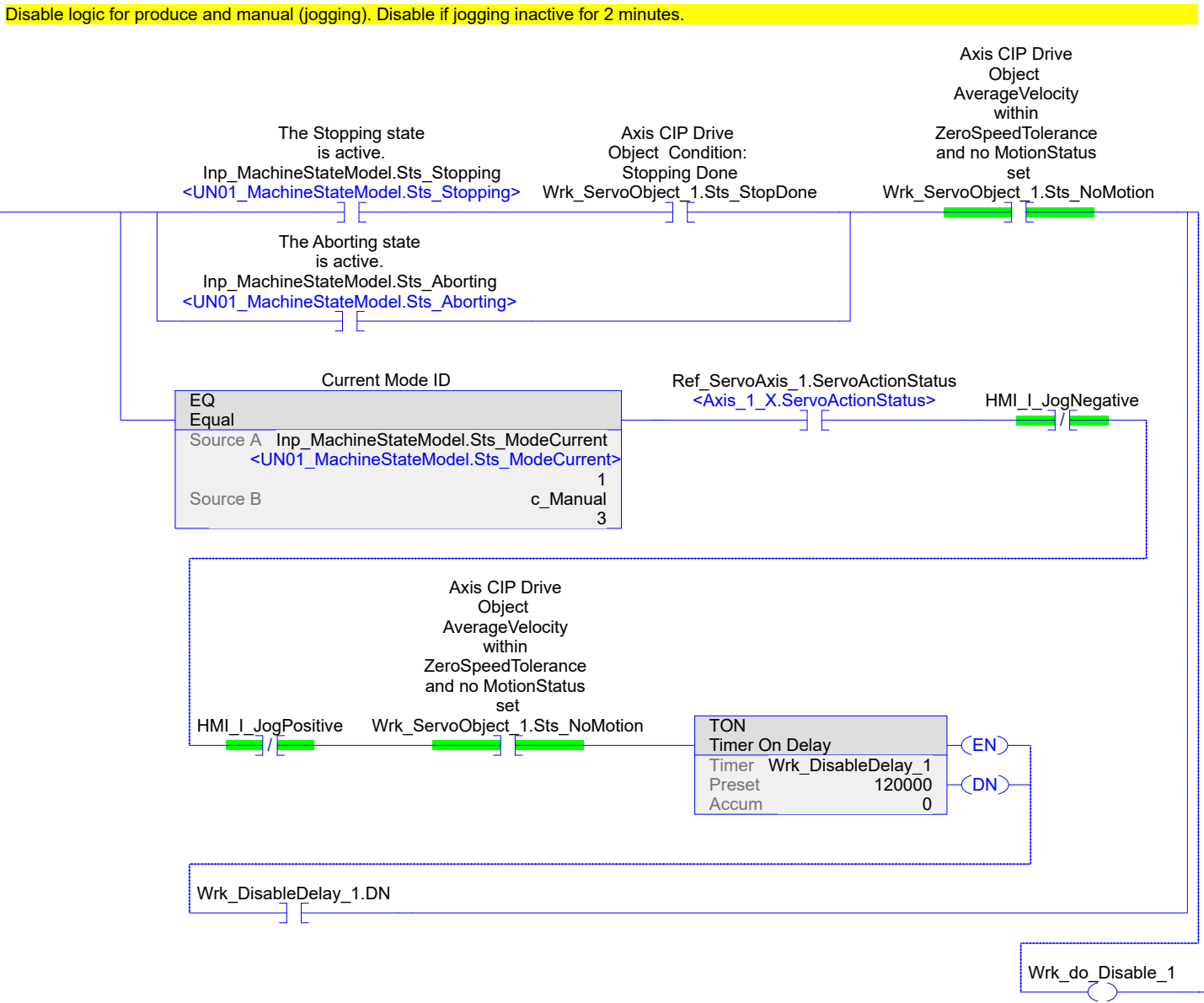
2



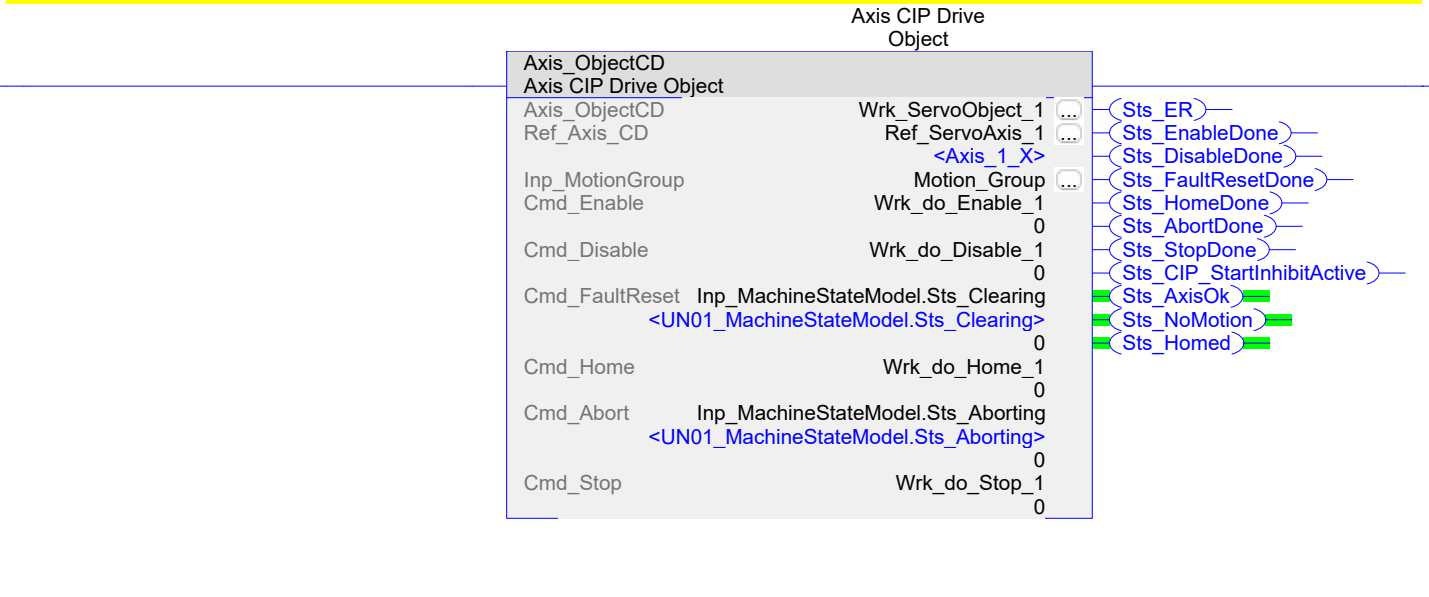
Stop logic

3





SERVO AXIS OBJECT



(End)

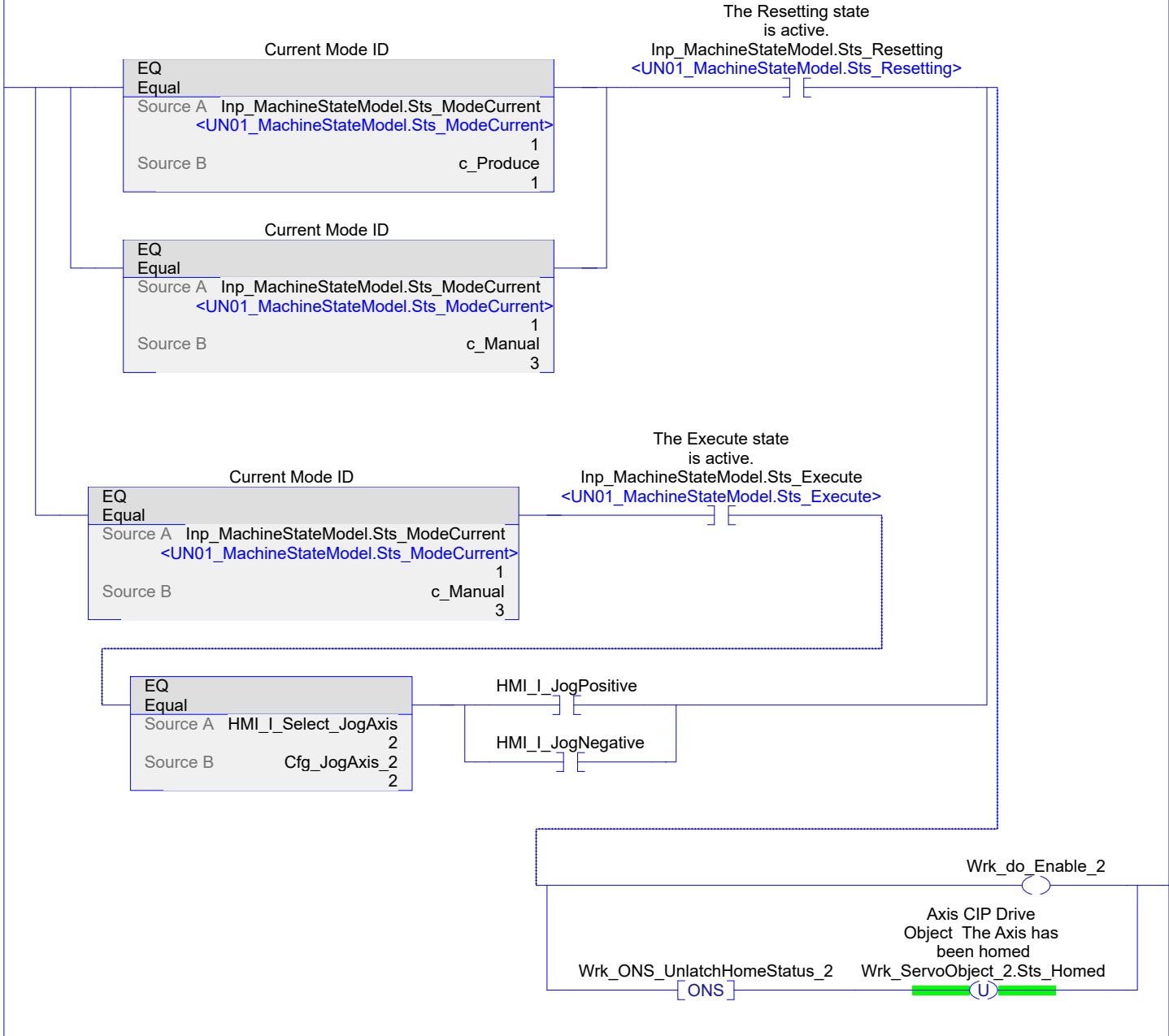
COMPANY: Rockwell Automation / Dogwood Valley Press
 FUNCTION: Servo Axis Object
 AUTHOR: Rockwell Automation / Kelvin Erickson
 DATE CREATED: July 2017

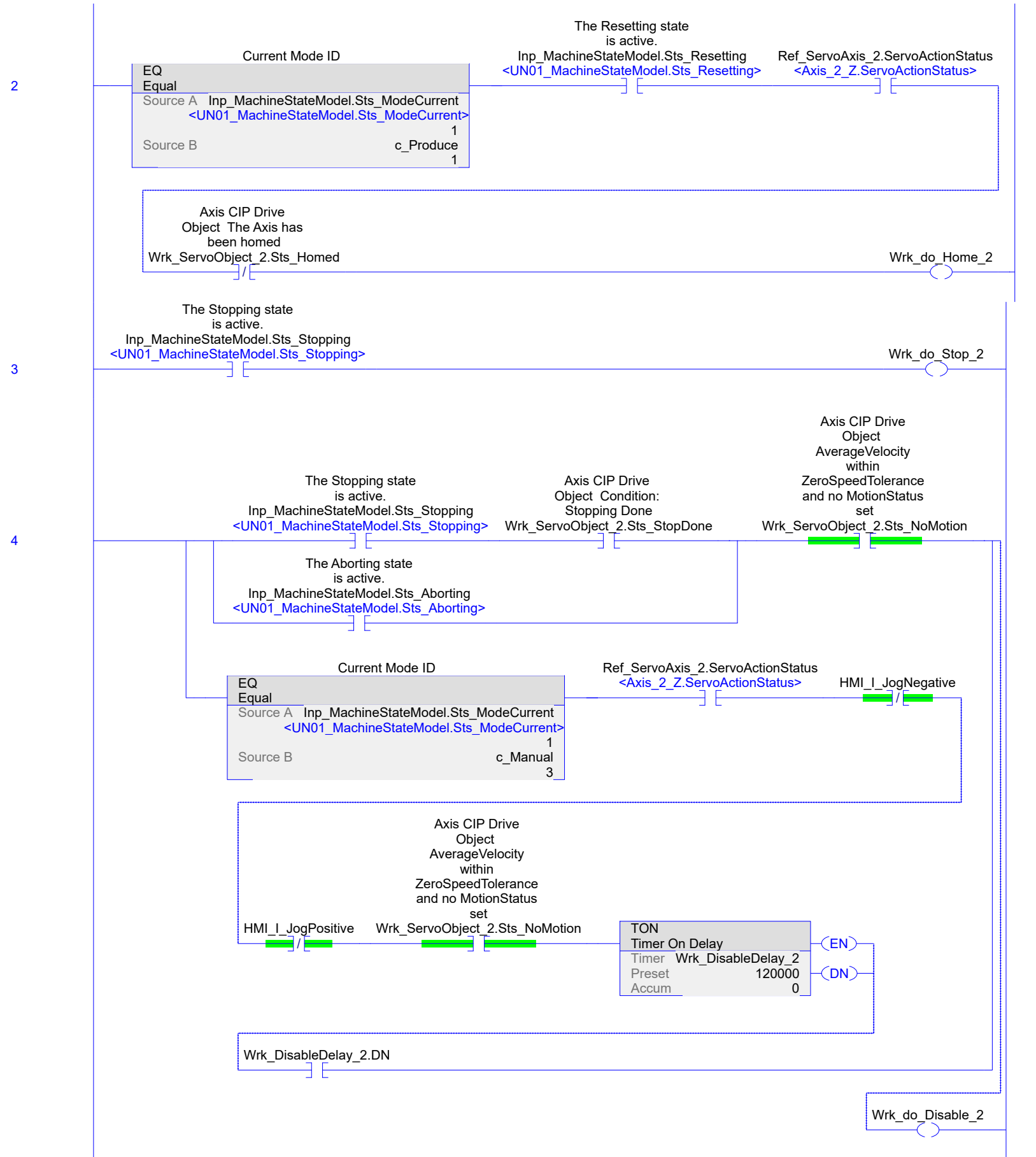
Version Comments: Deleted rung 1 in original CM02_ServoAxisObject getting motion status from master axis
 Moved rungs dealing with command inputs to Axis_ObjectCD AOI from PP example CM00_Procedure into here.
 Added "_2" suffix to axis-related tags in preparation to move routine to another EM

0

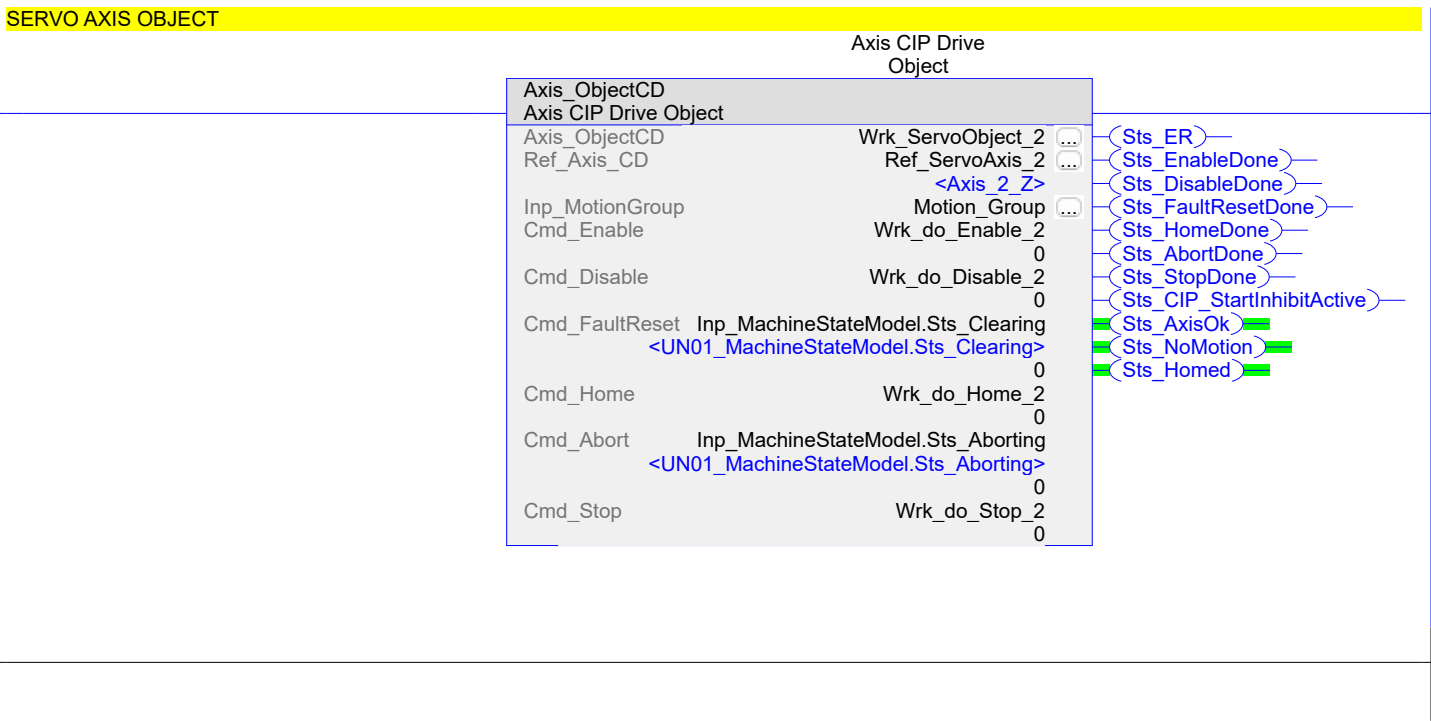
[NOP]

1





5



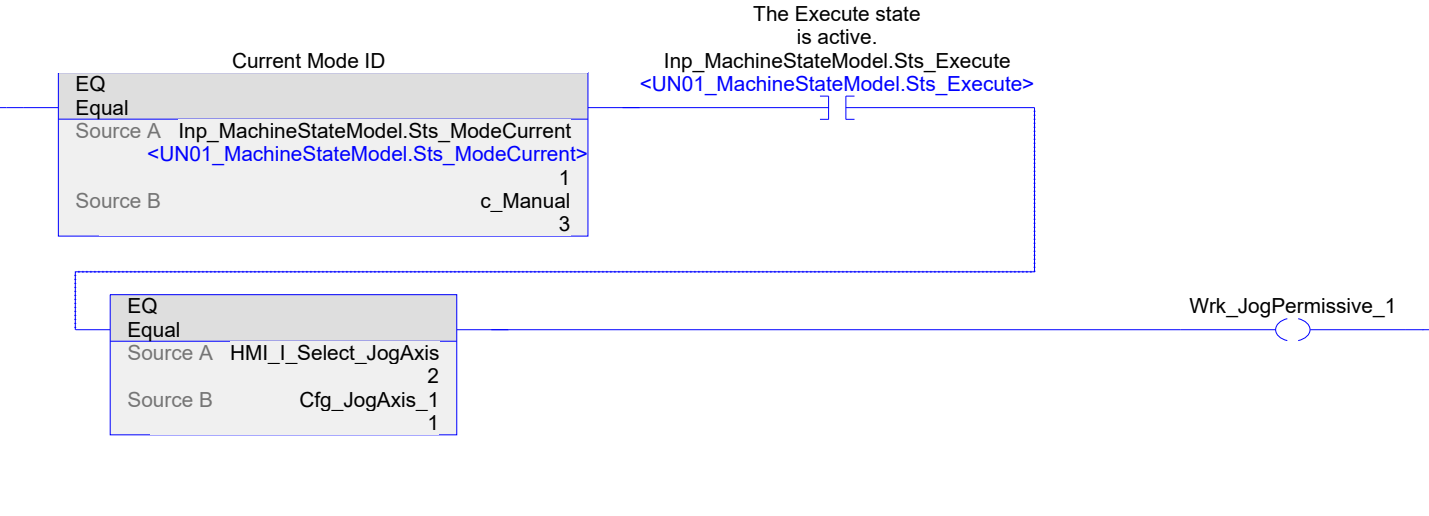
(End)

////////////////////////////////////
COMPANY: Rockwell Automation
FUNCTION: Servo Axis Jogging
AUTHOR: Rockwell Automation
DATE CREATED: March 2009

Version Comments:
////////////////////////////////////

0 [NOP]

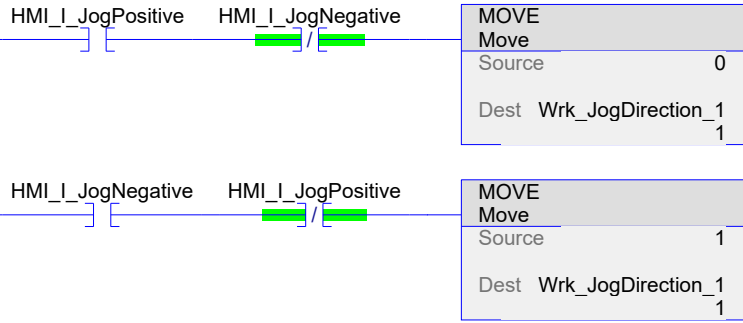
RELEASE JOG FUNCTION Axis number selected via HMI



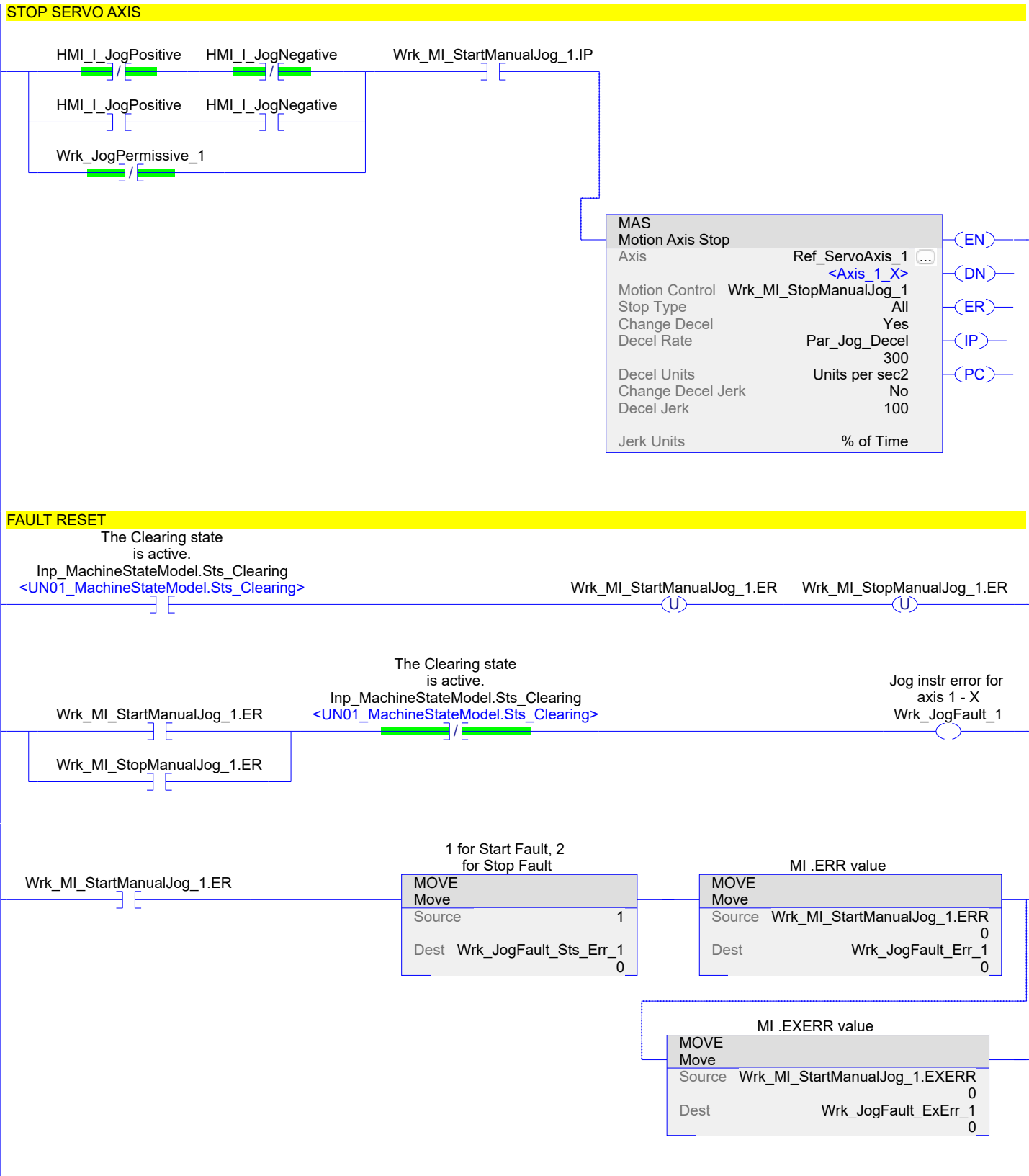
JOG SERVO AXIS

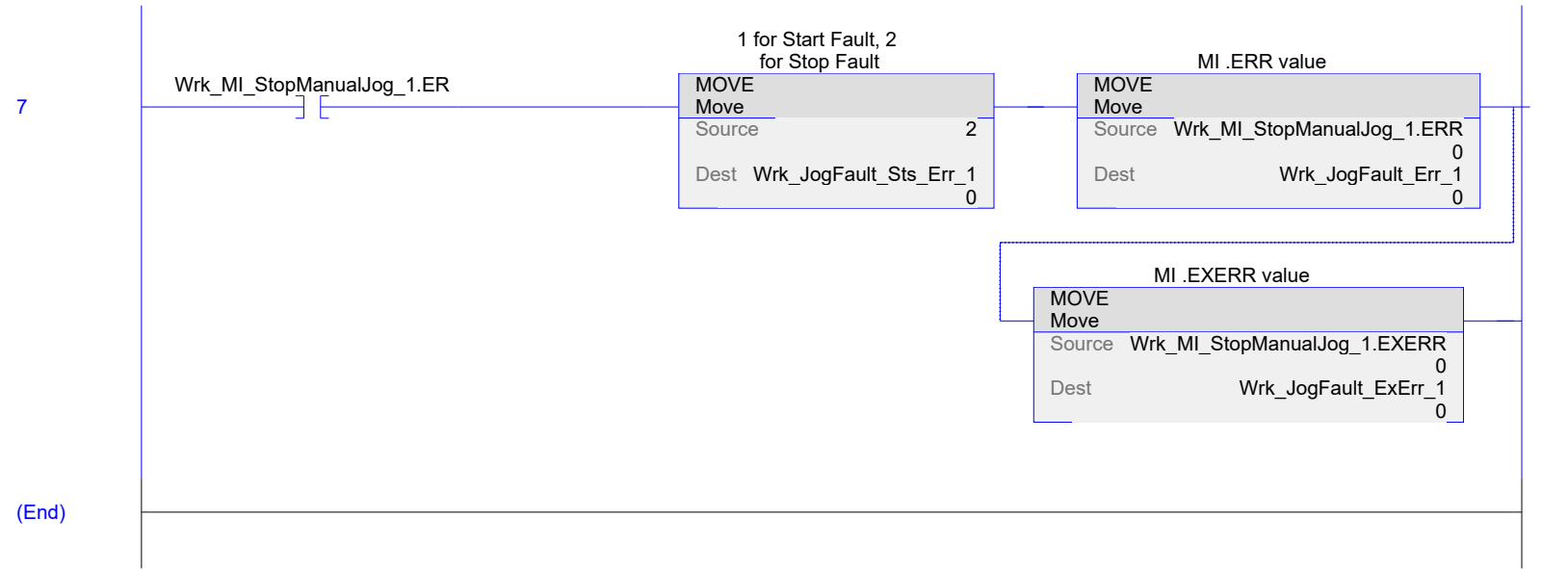
2

Wrk_JogPermissive_1 Ref_ServoAxis_1.ServoActionStatus
 <Axis_1_X.ServoActionStatus>



MAJ			(EN)
Motion Axis Jog			(DN)
Axis	Ref_ServoAxis_1	...	(ER)
	<Axis_1_X>		(IP)
Motion Control	Wrk_MI_StartManualJog_1		
Direction	Wrk_JogDirection_1		
	1		
Speed	Par_Jog_Speed		
	30		
Speed Units	Units per sec		
Accel Rate	Par_Jog_Accel		
	300		
Accel Units	Units per sec2		
Decel Rate	Par_Jog_Decel		
	300		
Decel Units	Units per sec2		
Profile	Trapezoidal		
Accel Jerk	100		
Decel Jerk	100		
Jerk Units	% of Time		
Merge	Disabled		
Merge Speed	Programmed		
Lock Position	0		
Lock Direction	None		



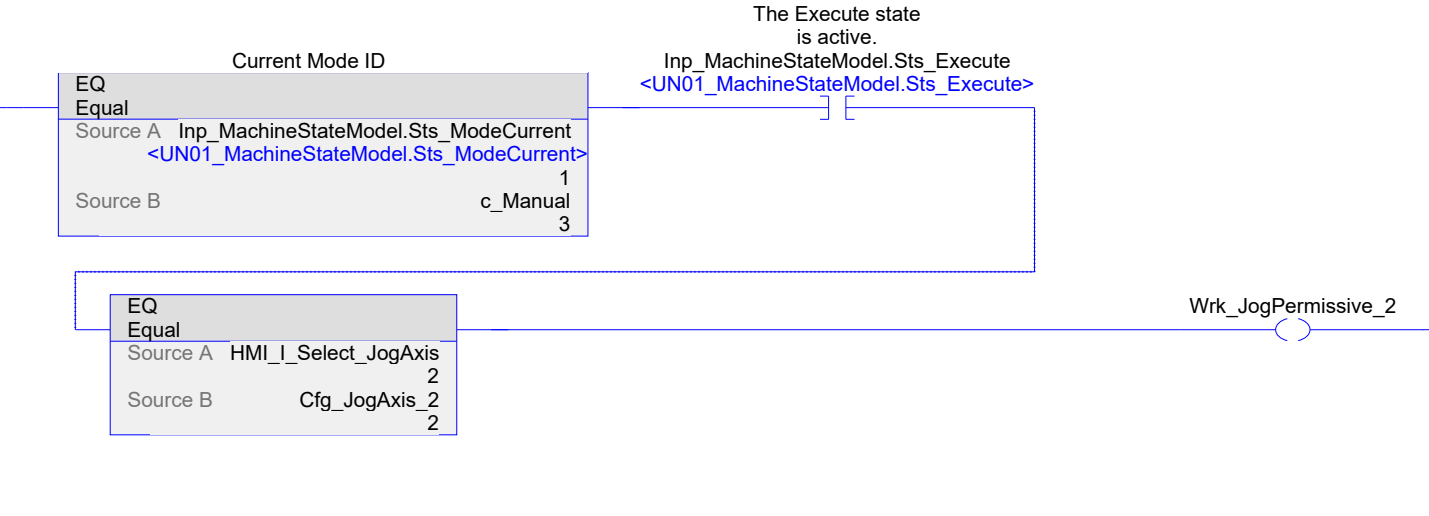


////////////////////////////////////
COMPANY: Rockwell Automation
FUNCTION: Servo Axis Jogging
AUTHOR: Rockwell Automation
DATE CREATED: March 2009

Version Comments:
////////////////////////////////////

0 [NOP]

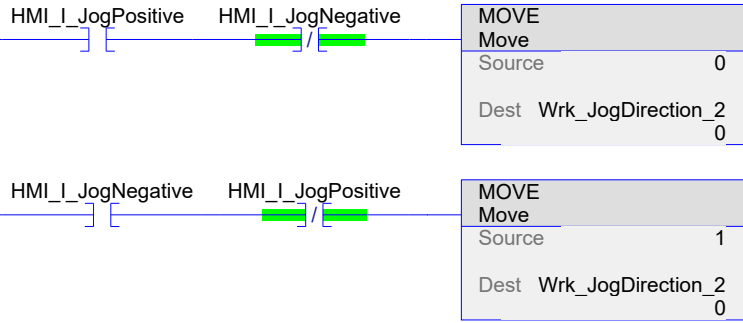
RELEASE JOG FUNCTION Axis number selected via HMI



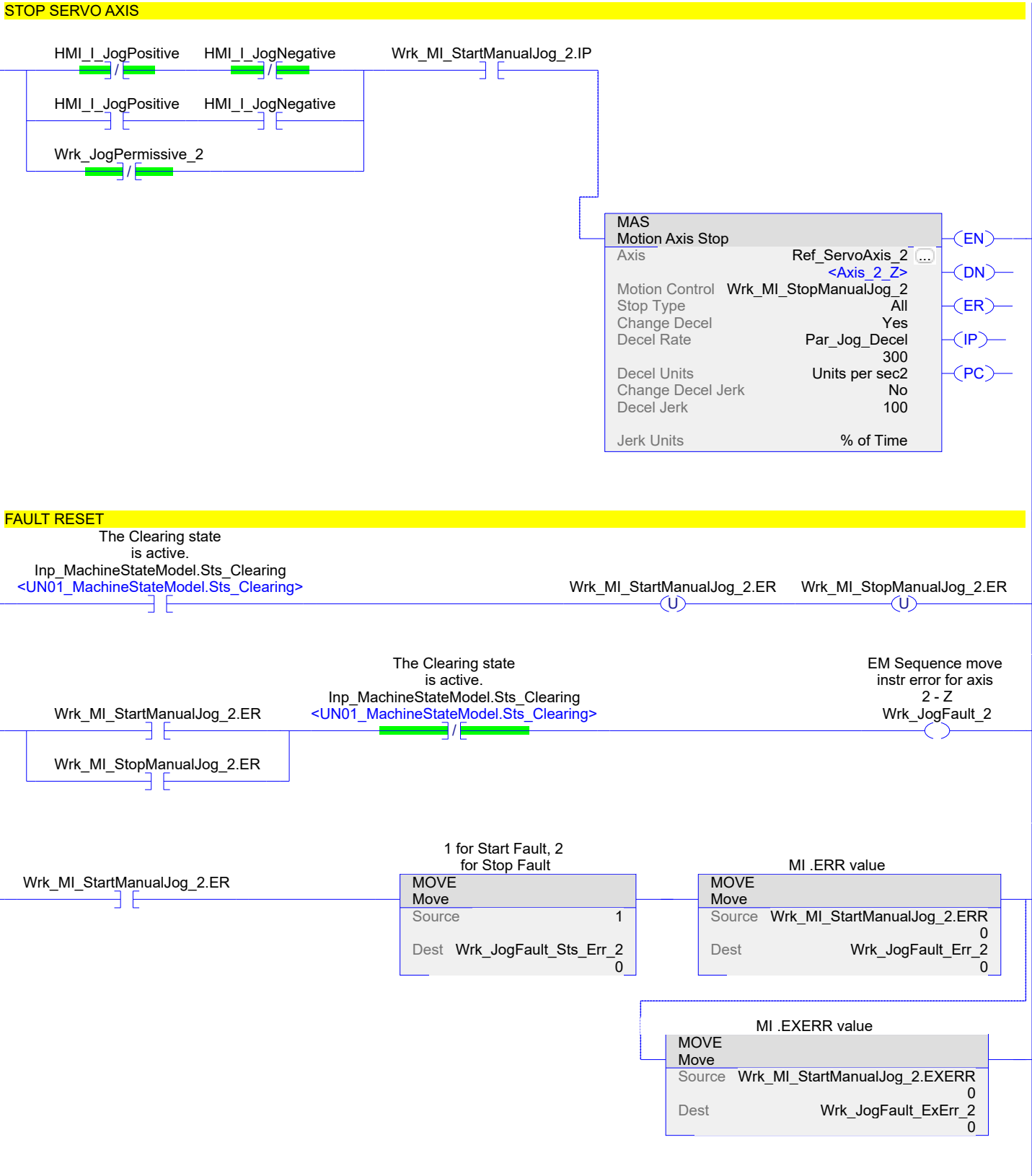
JOG SERVO AXIS

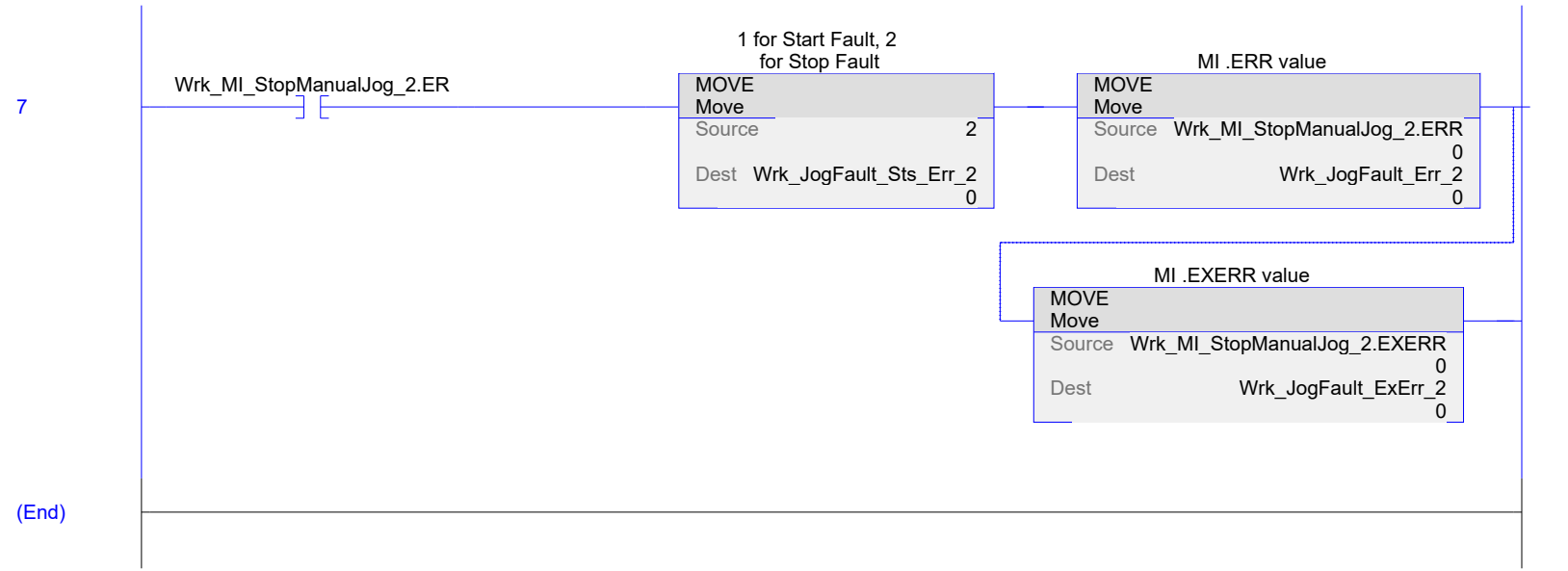
2

Wrk_JogPermissive_2 Ref_ServoAxis_2.ServoActionStatus
 <Axis_2_Z.ServoActionStatus>



MAJ		
Motion Axis Jog		(EN)
Axis	Ref_ServoAxis_2 <Axis_2_Z>	(DN)
Motion Control	Wrk_MI_StartManualJog_2	(ER)
Direction	Wrk_JogDirection_2 0	(IP)
Speed	Par_Jog_Speed 30	
Speed Units	Units per sec	
Accel Rate	Par_Jog_Accel 300	
Accel Units	Units per sec ²	
Decel Rate	Par_Jog_Decel 300	
Decel Units	Units per sec ²	
Profile	Trapezoidal	
Accel Jerk	100	
Decel Jerk	100	
Jerk Units	% of Time	
Merge	Disabled	
Merge Speed	Programmed	
Lock Position	0	
Lock Direction	None	





```

////////////////////////////////////
COMPANY:      Rockwell Automation
FUNCTION:     Virtual Follower Axis - Equipment Module
AUTHOR:      Rockwell Automation / Kelvin Erickson
DATE CREATED: July 2017

Version Comments: Started with EM_Follower01 program in Power Programming example, PPBasicV4_2.ACD

No gearing CM
////////////////////////////////////

```

0

[NOP]

INITIALIZE

Initialize Data

Performs initialization of any local parameters of this Equipment Module and contained Control Modules that require it

S:FS

JSR
Jump To Subroutine
Routine Name SR20_Initialize

1

Set EM number to 1

EM Number

MOVE	
Move	
Source	1
Dest	Cfg_EM_Number
	1

2

THIS EQUIPMENT MODULE IS SELECTED AND ACTIVE

This Tag is used to enable states for each Equipment Module
EM_Selected.[Cfg_EM_Number]

3

Set axis numbers for jogging

HMI jog axis number for axis 1 - X

HMI jog axis number for axis 2 - Z

MOVE	
Move	
Source	1
Dest	Cfg_JogAxis_1
	1

MOVE	
Move	
Source	2
Dest	Cfg_JogAxis_2
	2

4

JSR
Jump To Subroutine
Routine Name CM00_Procedure

5

SERVO AXIS X AND IT'S LOGICAL FUNCTIONS

This Control Module performs the state control for the slave axis; including Enable, Disable, Reset, Absolute Home, Stop, and Abort

JSR
Jump To Subroutine
Routine Name CM02_1_ServoAxisObject_X

Control Module Manual Jog Control

This Control Module jogs the servo axis when the Unit is in Manual mode. This provides independent control of the servo axis.

JSR
Jump To Subroutine
Routine Name CM03_1_ServoAxisJog_X

SERVO AXIS Z AND IT'S LOGICAL FUNCTIONs

This Control Module performs the state control for the slave axis; including Enable, Disable, Reset, Absolute Home, Stop, and Abort

JSR
Jump To Subroutine
Routine Name CM02_2_ServoAxisObject_Z

Control Module Manual Jog Control

This Control Module jogs the servo axis when the Unit is in Manual mode. This provides independent control of the servo axis.

JSR
Jump To Subroutine
Routine Name CM03_2_ServoAxisJog_Z

Summary of EM conditions and status based on CM's

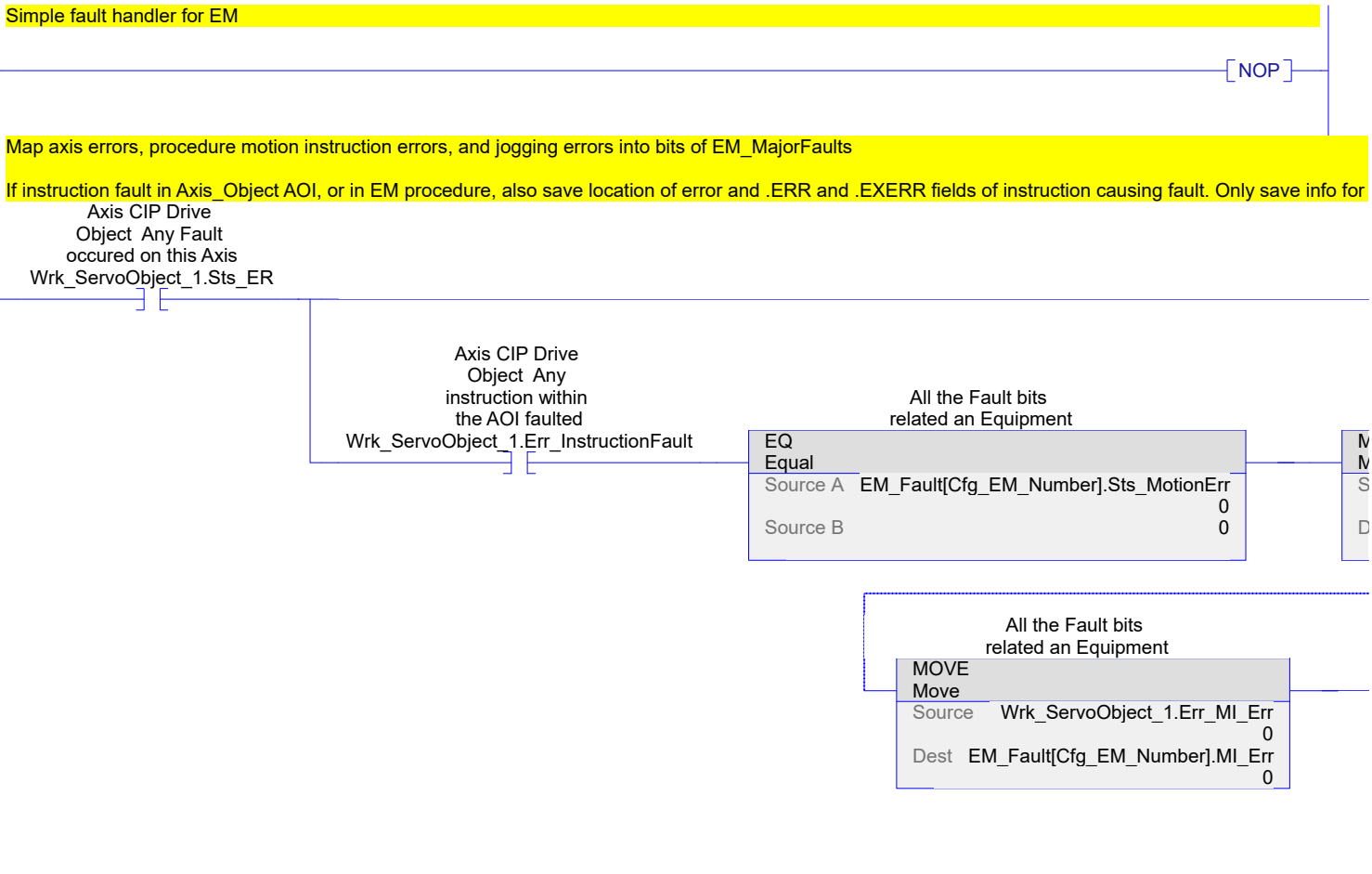
JSR
Jump To Subroutine
Routine Name CM01_EMConditions

Map axis faults to EM

JSR
Jump To Subroutine
Routine Name SR03_FaultHandler

JSR
Jump To Subroutine
Routine Name SR30_Simulate





st fault after resetting.

All the Fault bits
 related an Equipment
 EM_Fault[Cfg_EM_Number].EM_MajorFaults.0



All the Fault bits
 related an Equipment

MOVE
 Move
 Source Wrk_ServoObject_1.Sts_Err
 0
 Dest EM_Fault[Cfg_EM_Number].Sts_MotionErr
 0

All the Fault bits
 related an Equipment

MOVE
 Move
 Source Wrk_ServoObject_1.Err_MI_ExErr
 0
 Dest EM_Fault[Cfg_EM_Number].MI_Exerr
 0

Axis CIP Drive
 Object Any Fault
 occurred on this Axis
 Wrk_ServoObject_2.Sts_ER

Axis CIP Drive
 Object Any
 instruction within
 the AOI faulted
 Wrk_ServoObject_2.Err_InstructionFault

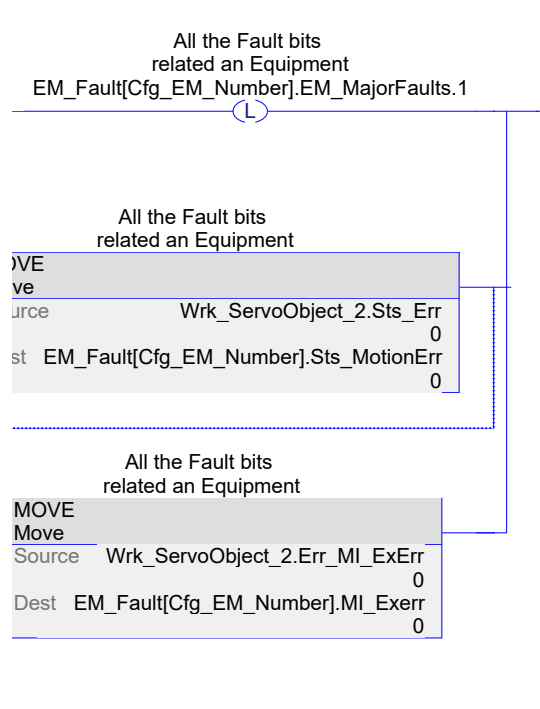
All the Fault bits
 related an Equipment

EQ
 Equal
 Source A EM_Fault[Cfg_EM_Number].Sts_MotionErr
 0
 Source B 0

All the Fault bits
 related an Equipment

MOVE
 Move
 Source Wrk_ServoObject_2.Err_MI_Err
 0
 Dest EM_Fault[Cfg_EM_Number].MI_Err
 0

2

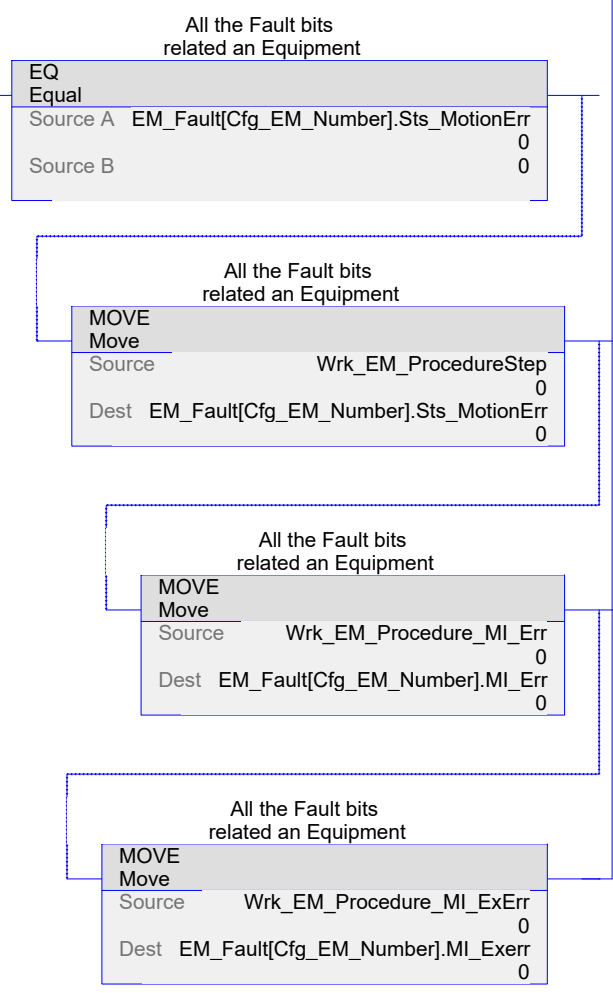


3

EM Sequence move
 instr error
 Wrk_EM_ProcedureFault

All the Fault bits related an Equipment
 EM_Fault[Cfg_EM_Number].EM_MajorFaults.2

(L)



4

Jog instr error for
axis 1 - X
Wrk_JogFault_1

All the Fault bits
related an Equipment
EM_Fault[Cfg_EM_Number].EM_MajorFaults.4

All the Fault bits
related an Equipment

EQ Equal	
Source A	EM_Fault[Cfg_EM_Number].Sts_MotionErr 0
Source B	0

All the Fault bits
related an Equipment

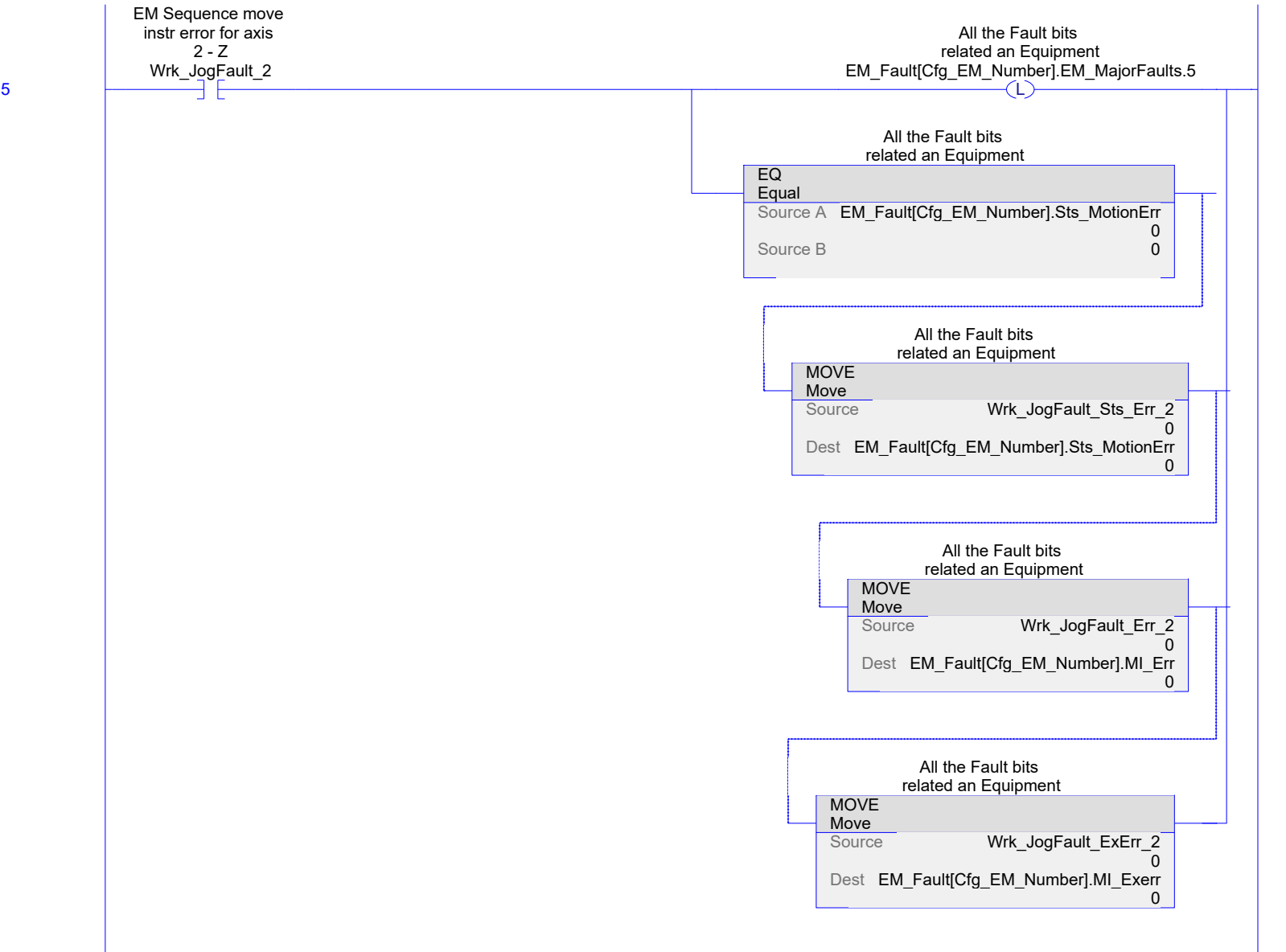
MOVE Move	
Source	Wrk_JogFault_Sts_Err_1 0
Dest	EM_Fault[Cfg_EM_Number].Sts_MotionErr 0

All the Fault bits
related an Equipment

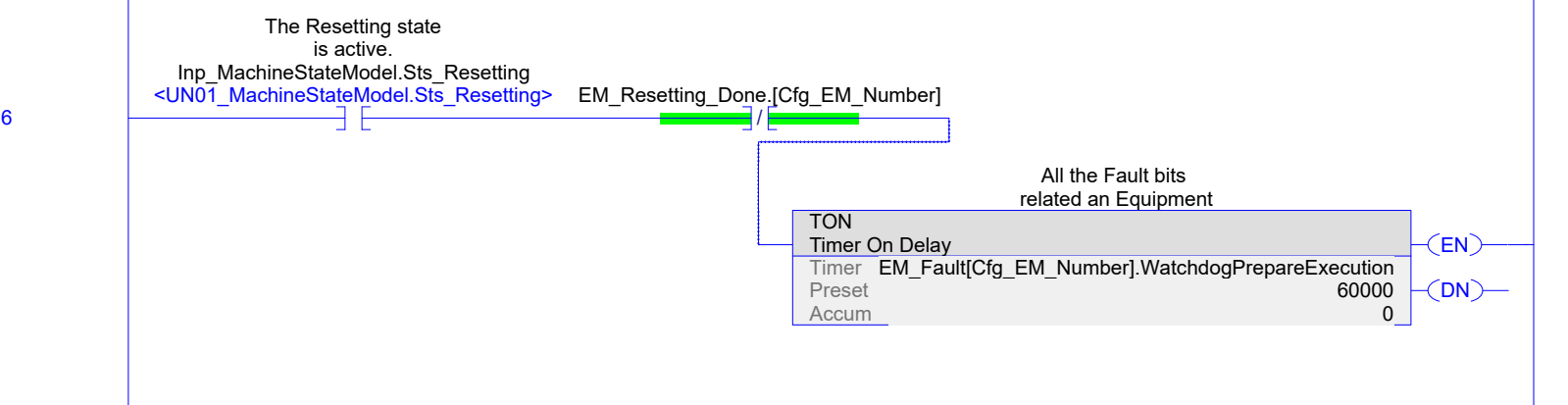
MOVE Move	
Source	Wrk_JogFault_Err_1 0
Dest	EM_Fault[Cfg_EM_Number].MI_Err 0

All the Fault bits
related an Equipment

MOVE Move	
Source	Wrk_JogFault_ExErr_1 0
Dest	EM_Fault[Cfg_EM_Number].MI_Exerr 0



***** Moved from CM04_ServoAxisGear
 Watchdog for resetting - Create an error if timeout occurs



**** Moved from CM04_ServoAxisGear
 **** Added clear of Sts_Err

Clearing resets watchdog faults and other faults and warnings and clears instruction fault error details

The Clearing state
 is active.
 Inp_MachineStateModel.Sts_Clearing
 <UN01_MachineStateModel.Sts_Clearing>

All the Fault bits
 related an Equipment
 EM_Fault[Cfg_EM_Number].StartFaultWatchdog
 (U)

All the Fault bits
 related an Equipment

MOVE	
Move	
Source	0
Dest	EM_Fault[Cfg_EM_Number].EM_MajorFaults
	0

All the Fault bits
 related an Equipment

MOVE	
Move	
Source	0
Dest	EM_Fault[Cfg_EM_Number].EM_MinorFaults
	0

All the Fault bits
 related an Equipment

MOVE	
Move	
Source	0
Dest	EM_Fault[Cfg_EM_Number].EM_Warnings
	0

All the Fault bits
 related an Equipment

MOVE	
Move	
Source	0
Dest	EM_Fault[Cfg_EM_Number].Sts_MotionErr
	0

All the Fault bits
 related an Equipment

MOVE	
Move	
Source	0
Dest	EM_Fault[Cfg_EM_Number].MI_Err
	0

All the Fault bits
 related an Equipment

MOVE	
Move	
Source	0
Dest	EM_Fault[Cfg_EM_Number].MI_Exerr
	0

**** Moved from CM04_ServoAxisGear

Watchdog fault bit

All the Fault bits
 related an Equipment
 EM_Fault[Cfg_EM_Number].WatchdogPrepareExecution.DN

All the Fault bits
 related an Equipment
 EM_Fault[Cfg_EM_Number].StartFaultWatchdog
 (L)

Summary of EM faults

All the Fault bits
 related an Equipment

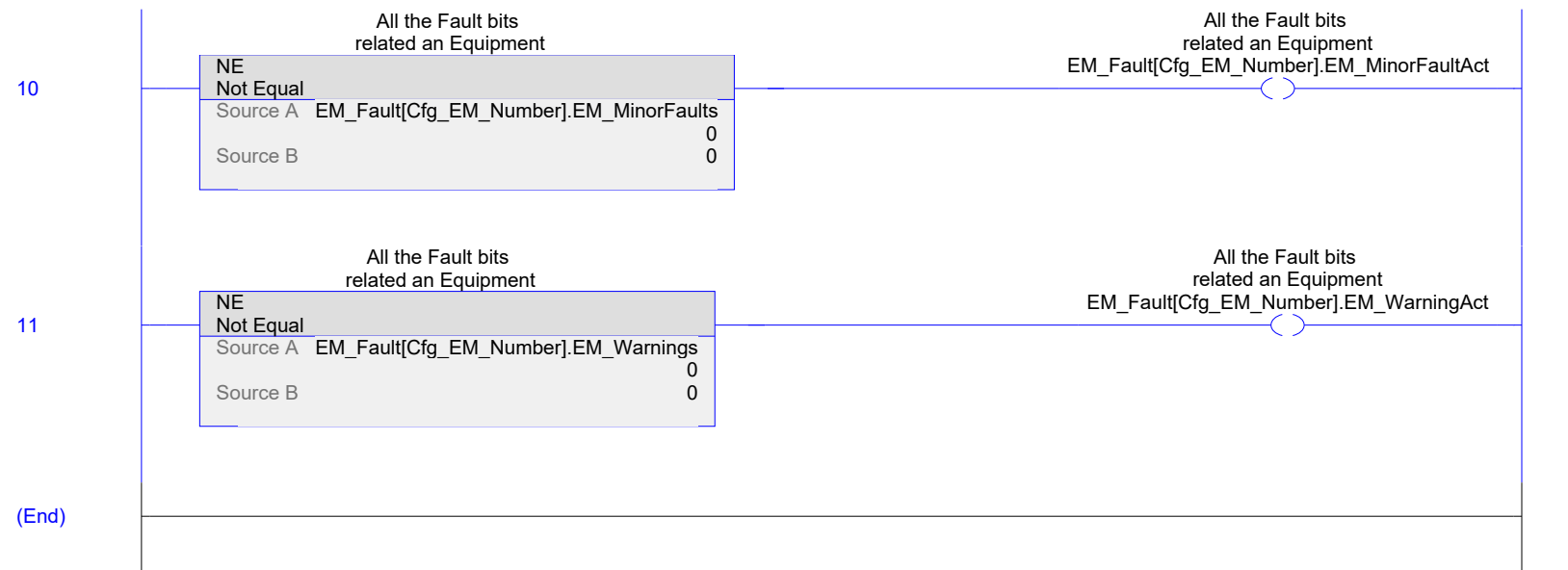
NE	
Not Equal	
Source A	EM_Fault[Cfg_EM_Number].EM_MajorFaults
	0
Source B	0

All the Fault bits
 related an Equipment
 EM_Fault[Cfg_EM_Number].EM_MajorFaultAct
 (C)

All the Fault bits
 related an Equipment
 EM_Fault[Cfg_EM_Number].StartFaultInstruction

All the Fault bits
 related an Equipment
 EM_Fault[Cfg_EM_Number].StartFaultCalculation

All the Fault bits
 related an Equipment
 EM_Fault[Cfg_EM_Number].StartFaultWatchdog

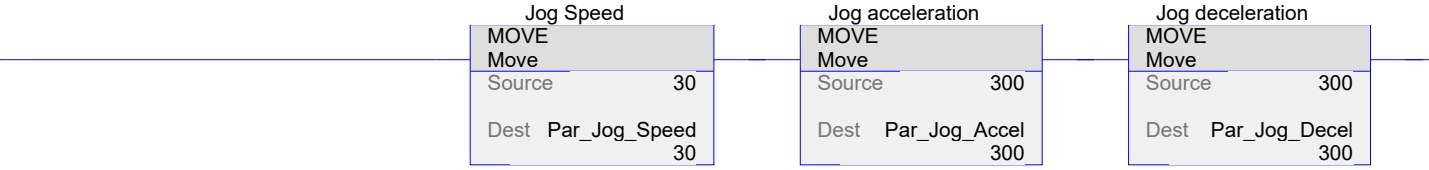


```

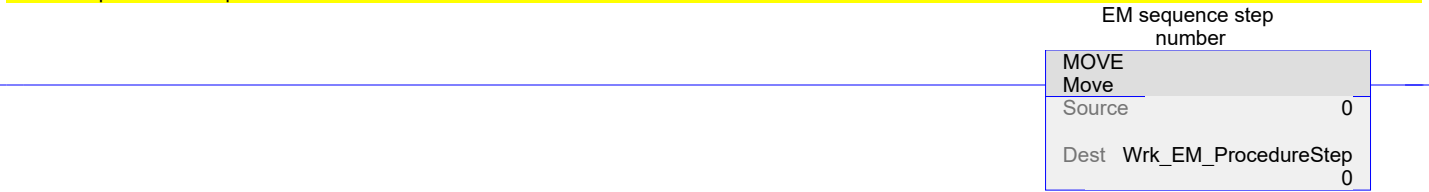
    ////////////////////////////////////////////////////////////////////////////
    COMPANY:      Rockwell Automation
    FUNCTION:     Initialize Equipment Module Data
    AUTHOR:      Rockwell Automation
    DATE CREATED: March 2011

    Version Comments:
    ////////////////////////////////////////////////////////////////////////////
    
```

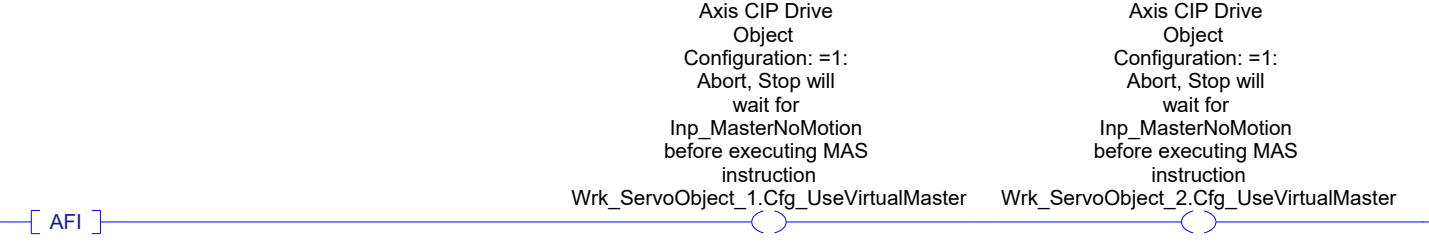
0 [NOP]



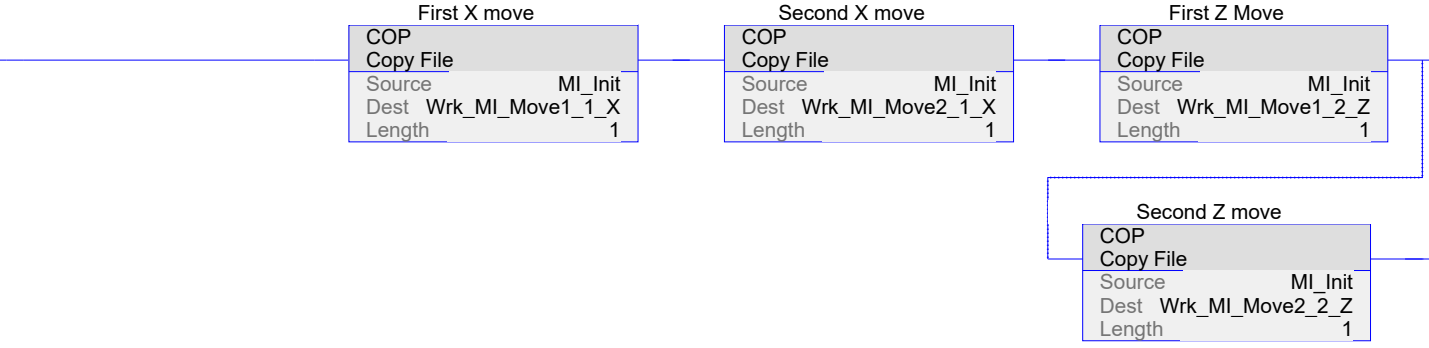
Clear EM procedure step

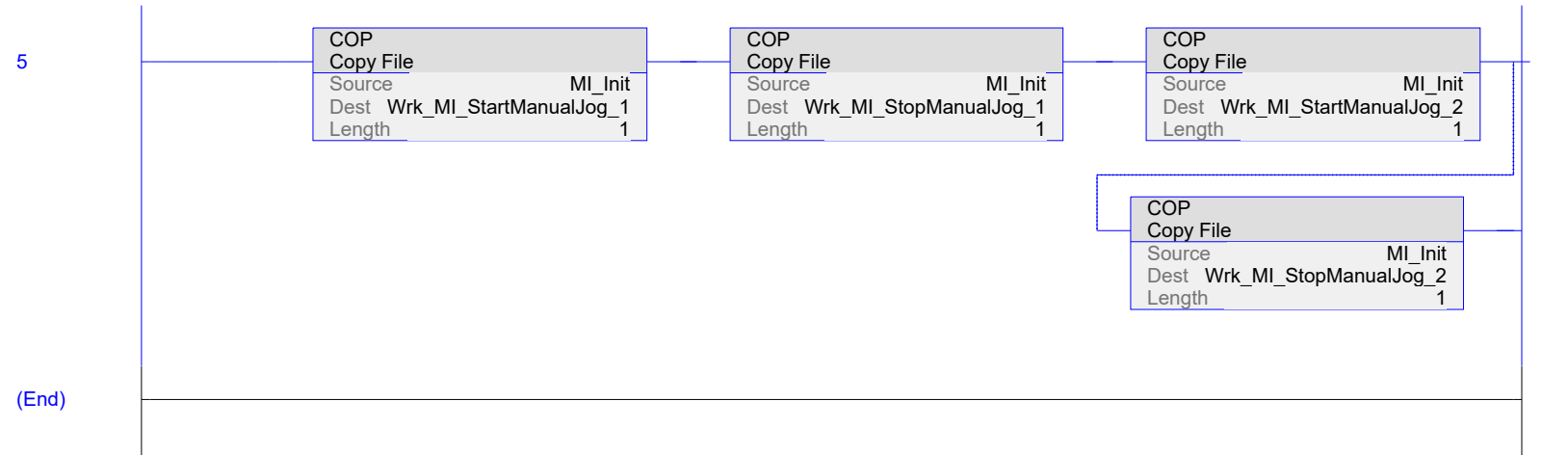


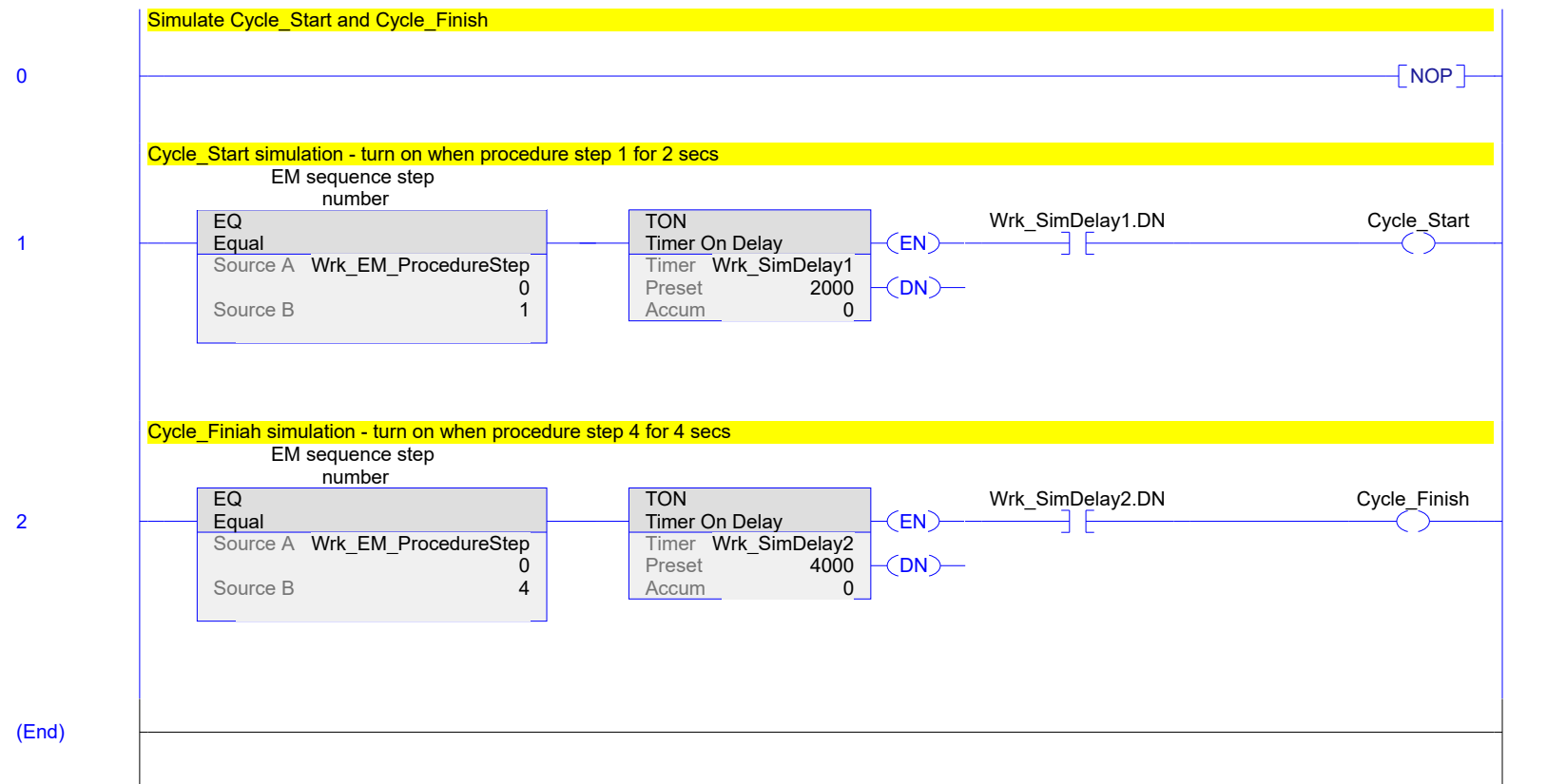
Both axes do not use a virtual master

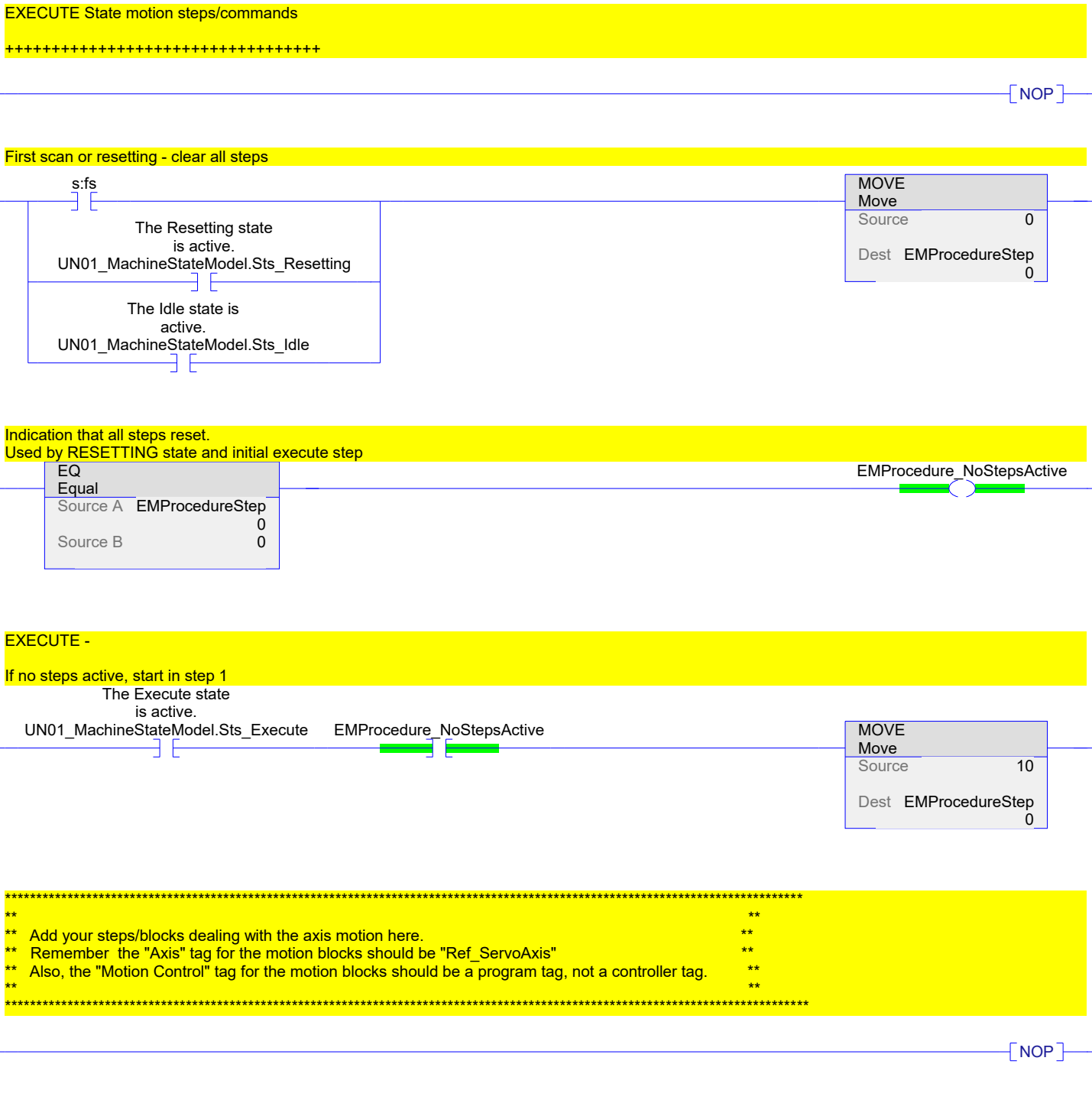


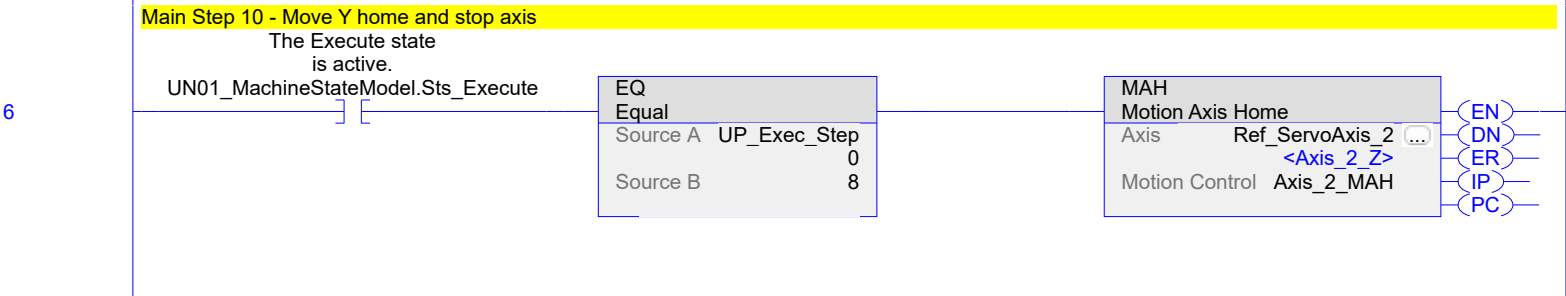
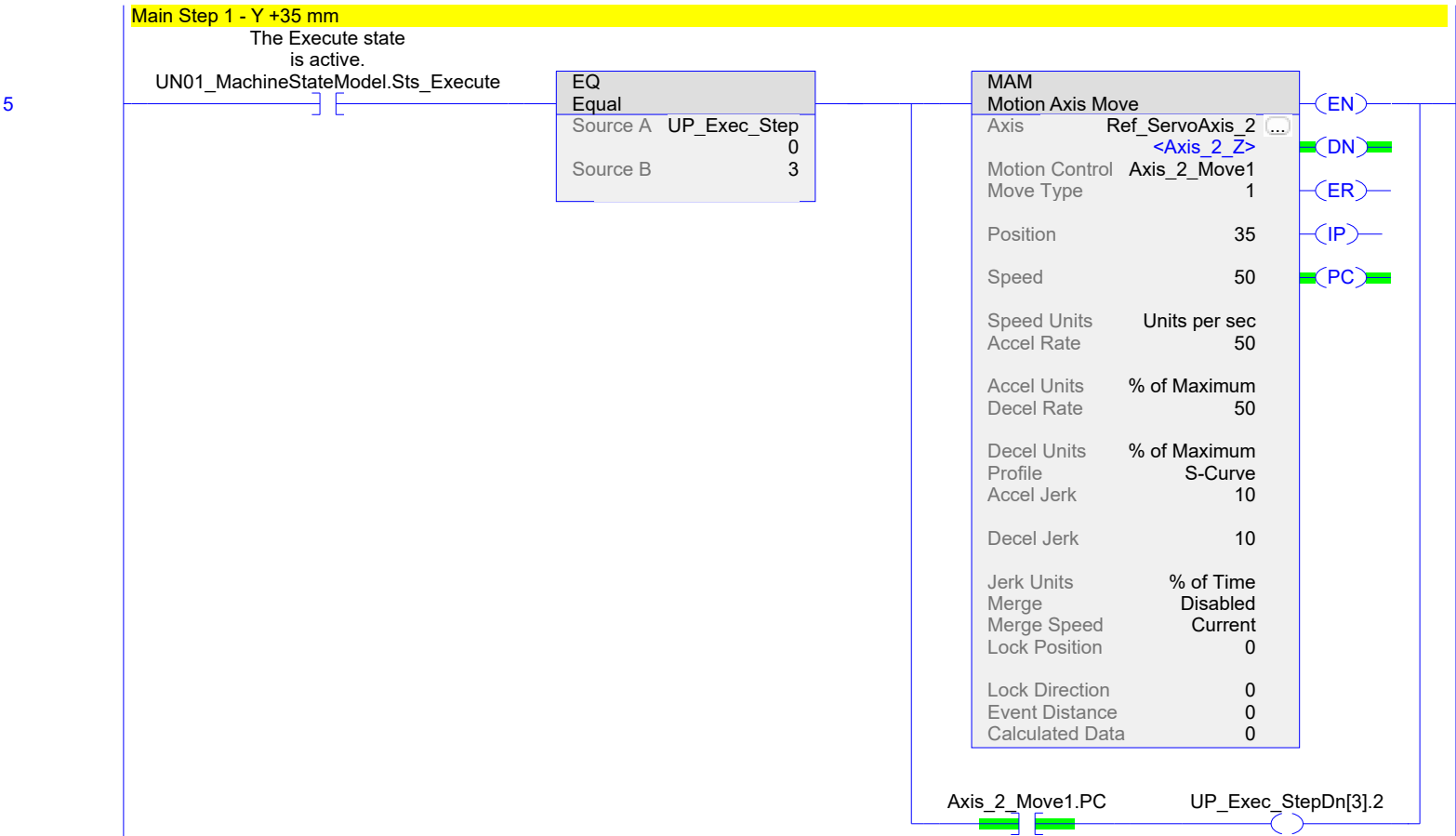
Initialize motion instruction tags

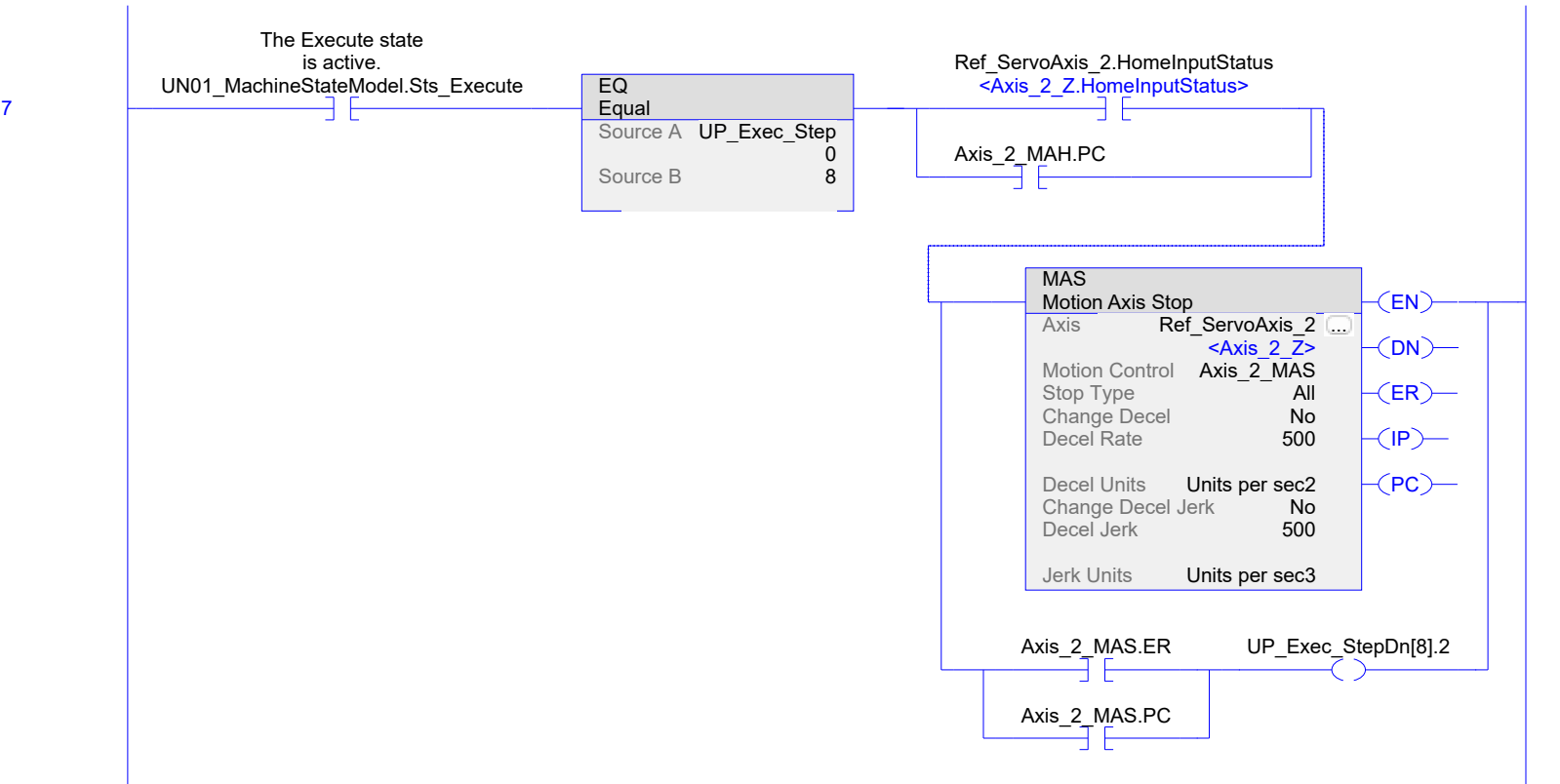






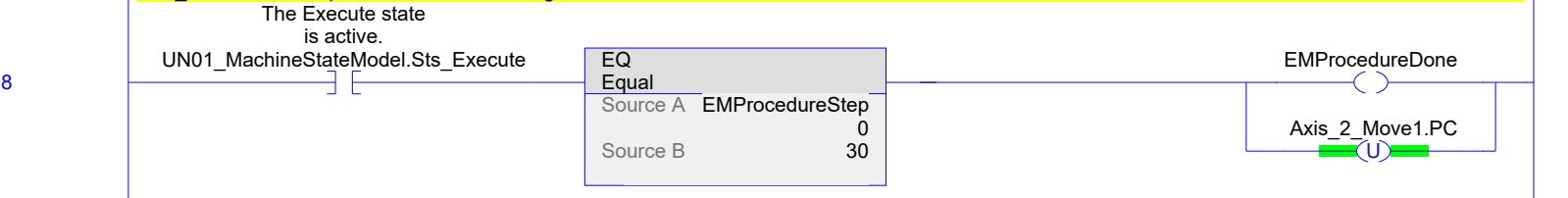






Last step - when done, unlatch it, latch Execute_done Boolean for this axis.
 Also, unlatch all .PC from motion instructions.

Axis_Move1 is a sample motion instruction tag.



All motion block errors in this routine should be in parallel and drive connected to global flag.

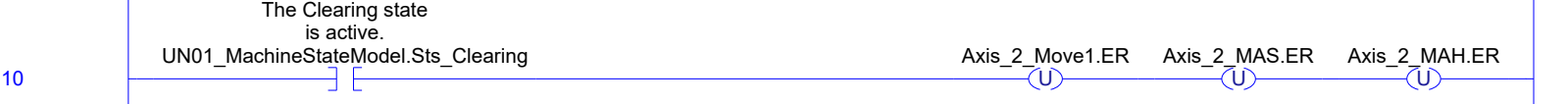
Axis_Move1 is a sample motion instruction tag.

Remove AFI.



UP_Resetting should clear all motion block errors in this routine.

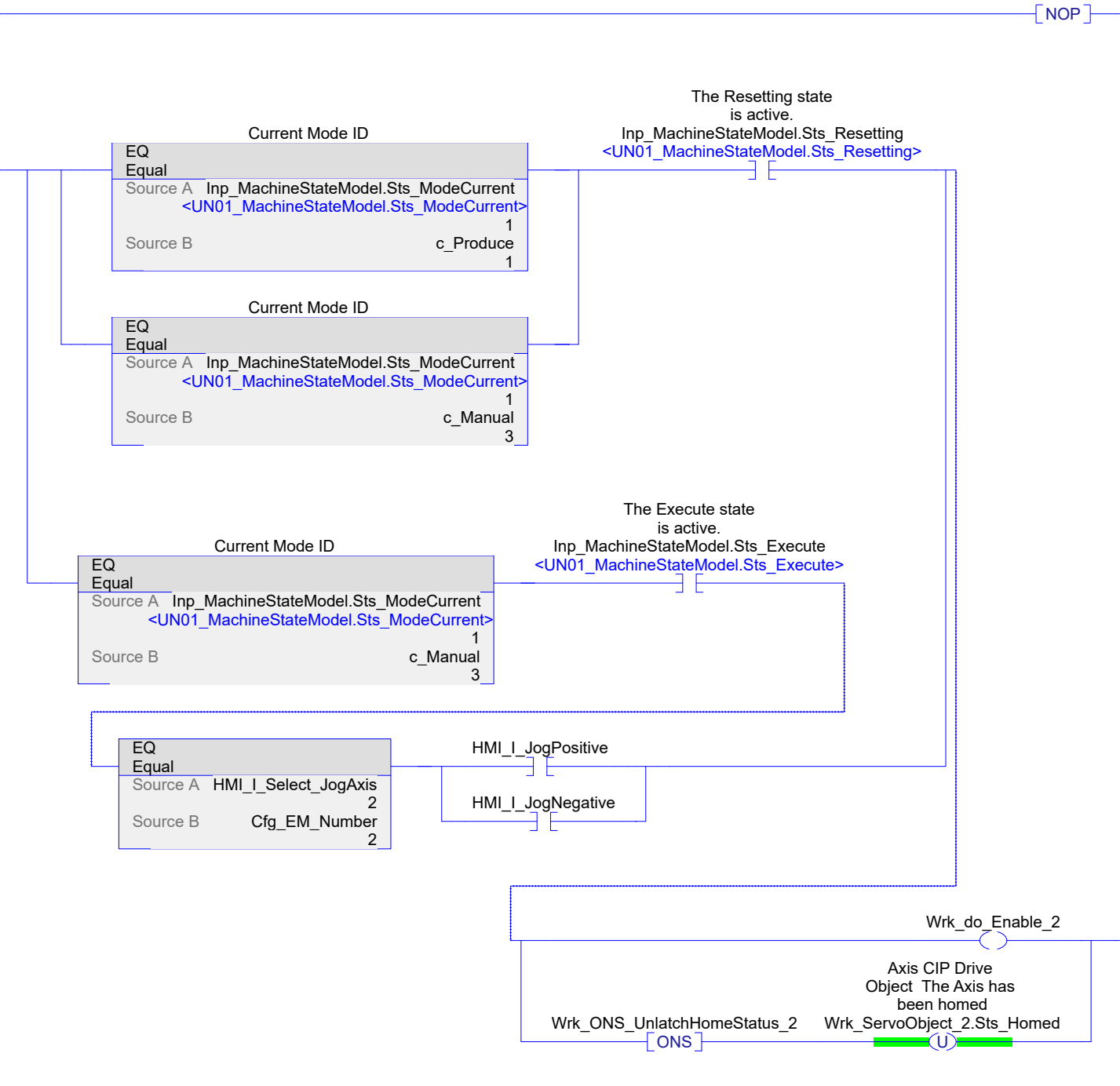
Axis_Move1 is a sample motion instruction tag.

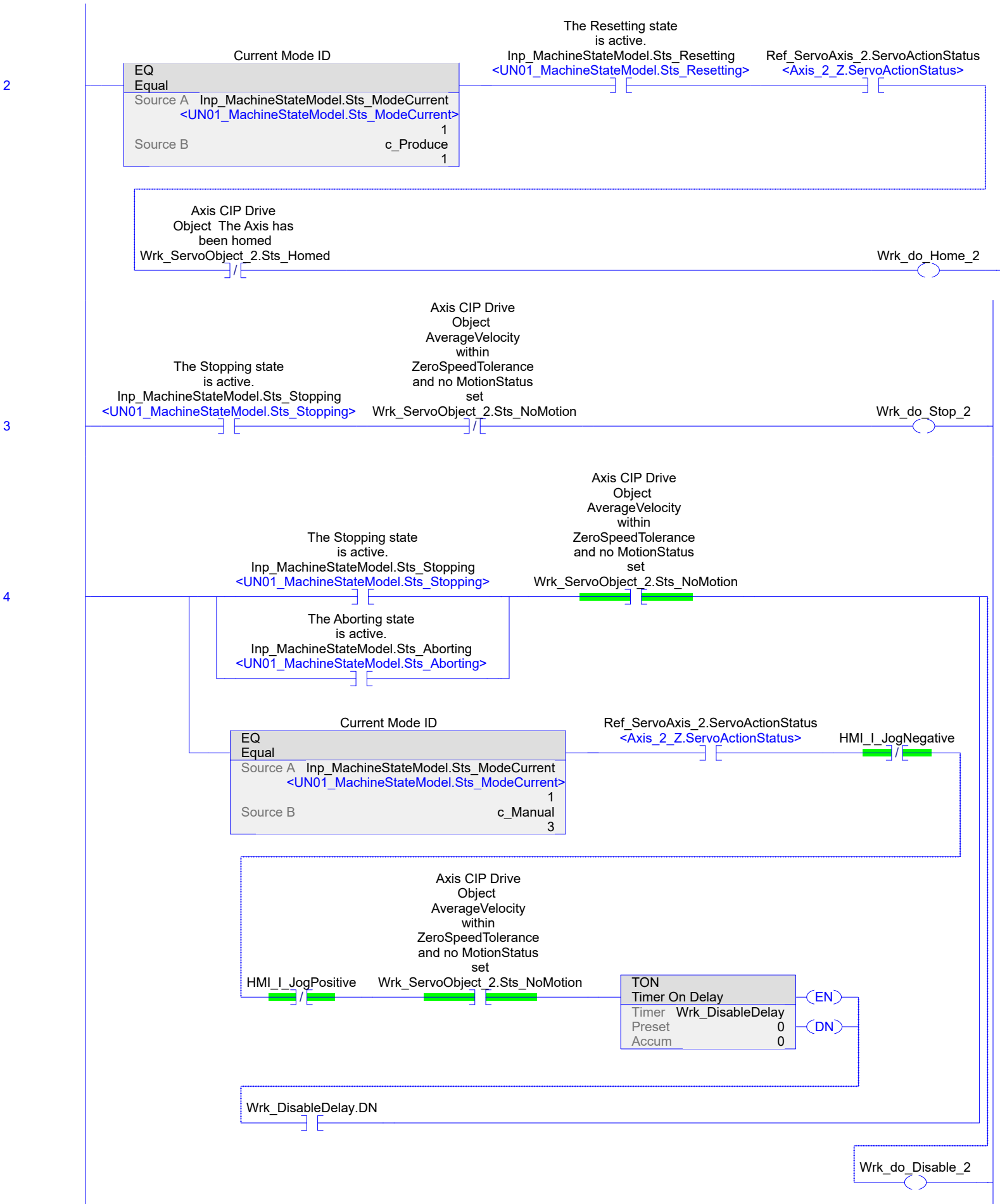


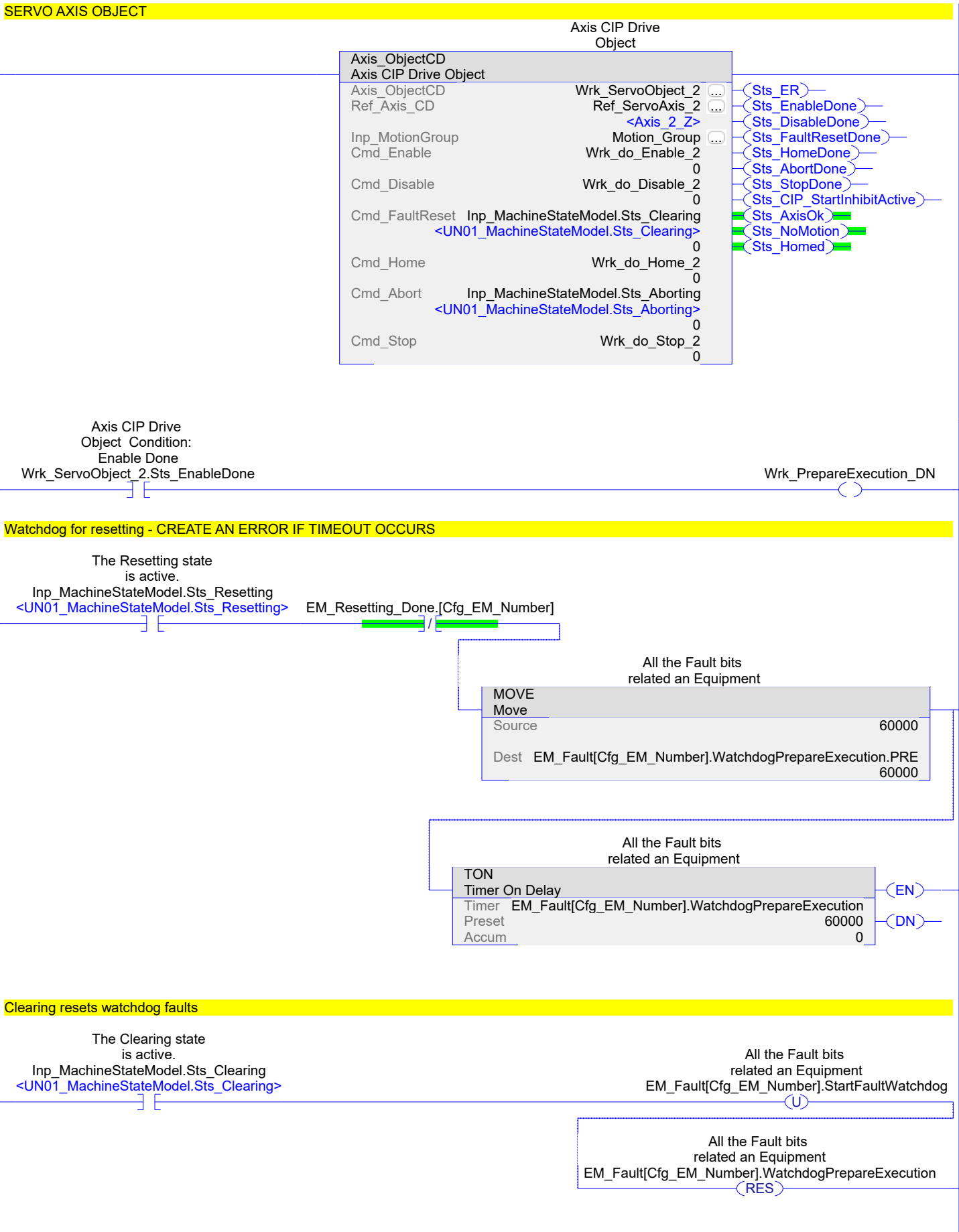
(End)

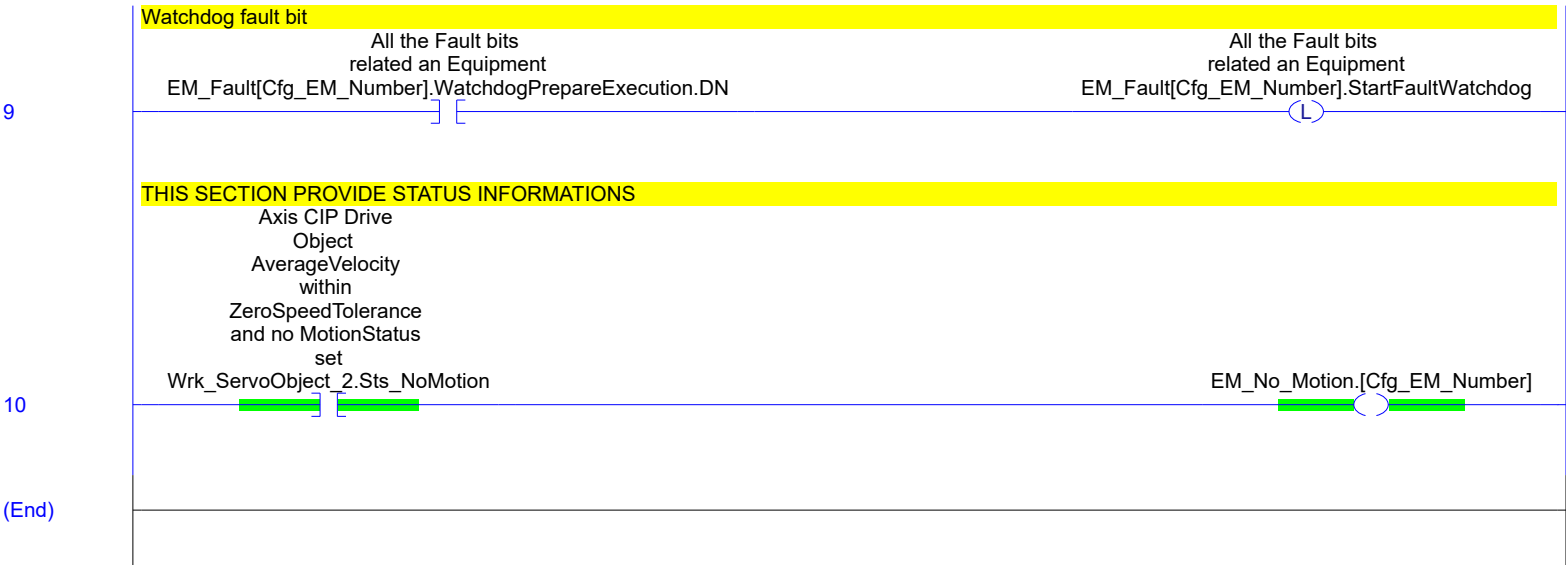
COMPANY: Rockwell Automation
 FUNCTION: Servo Axis Object
 AUTHOR: Rockwell Automation / Kelvin Erickson
 DATE CREATED: July 2017

Version Comments: Deleted rung 1 in original CM02_ServoAxisObject getting motion status from master axis
 Moved rungs dealing with command inputs to Axis_ObjectCD AOI from PP example CM00_Procedure into here.
 Added "_2" suffix to axis-related tags in preparation to move routine to another EM







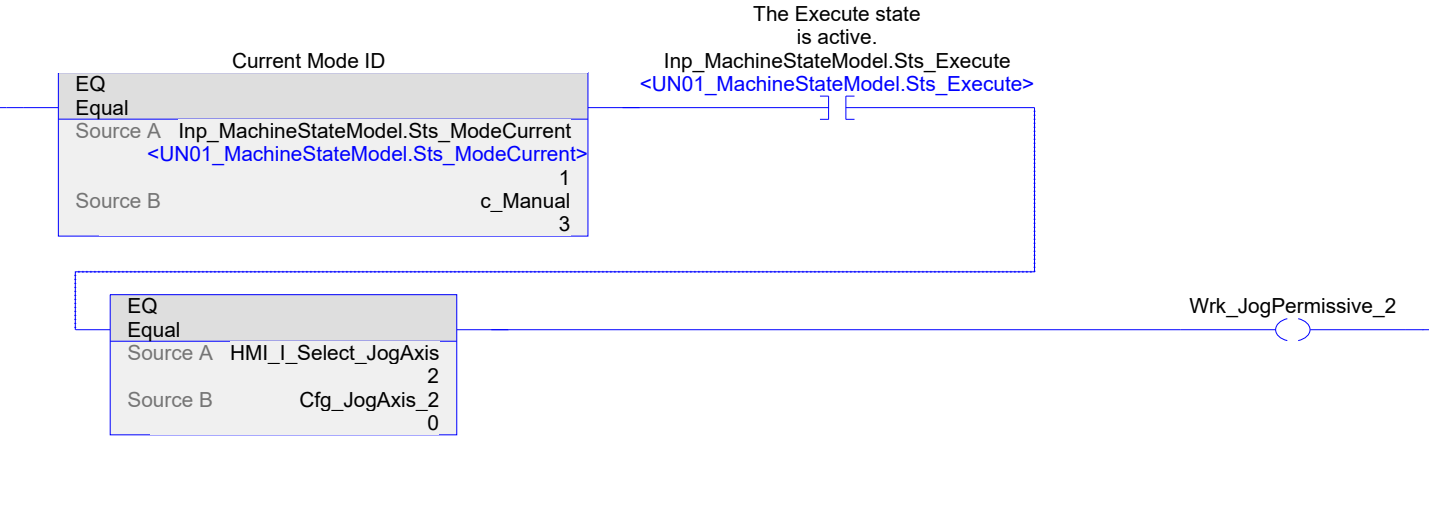


////////////////////////////////////
COMPANY: Rockwell Automation
FUNCTION: Servo Axis Jogging
AUTHOR: Rockwell Automation
DATE CREATED: March 2009

Version Comments:
////////////////////////////////////

0 [NOP]

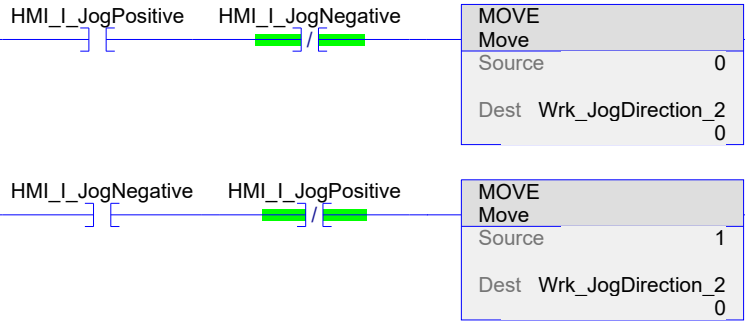
RELEASE JOG FUNCTION (-> SELECT EM NUMBER VIA HMI)



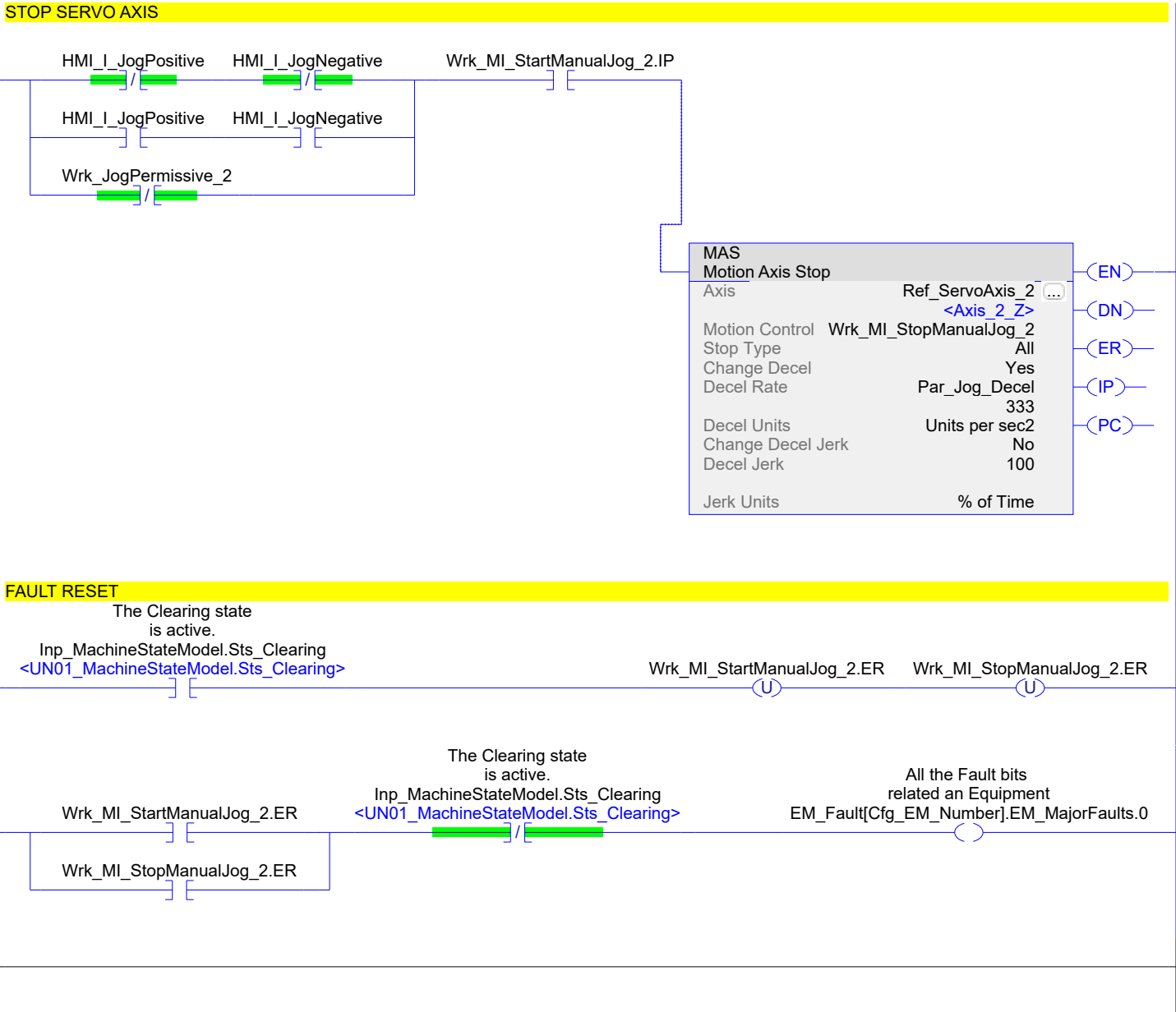
JOG SERVO AXIS

2

Wrk_JogPermissive_2 Ref_ServoAxis_2.ServoActionStatus
 <Axis_2_Z.ServoActionStatus>



MAJ			(EN)
Motion Axis Jog			(DN)
Axis	Ref_ServoAxis_2		(ER)
	<Axis_2_Z>		(IP)
Motion Control	Wrk_MI_StartManualJog_2		
Direction	Wrk_JogDirection_2		
	0		
Speed	Par_Jog_Speed		
	33		
Speed Units	Units per sec		
Accel Rate	Par_Jog_Accel		
	333		
Accel Units	Units per sec ²		
Decel Rate	Par_Jog_Decel		
	333		
Decel Units	Units per sec ²		
Profile	Trapezoidal		
Accel Jerk	100		
Decel Jerk	100		
Jerk Units	% of Time		
Merge	Disabled		
Merge Speed	Programmed		
Lock Position	0		
Lock Direction	None		



```

////////////////////////////////////
COMPANY:      Rockwell Automation
FUNCTION:     Virtual Follower Axis - Equipment Module
AUTHOR:      Rockwell Automation
DATE CREATED: March 2011

Version Comments:
////////////////////////////////////

```

[NOP]

INITIALIZE

Initialize Data

Performs initialization of any local parameters of this Equipment Module and contained Control Modules that require it

S:FS] [

JSR
 Jump To Subroutine
 Routine Name S20_InitializeData

MOVE
 Move
 Source 2
 Dest Cfg_EM_Number 2

THIS EQUIPMENT MODULE IS SELECTED AND ACTIVE

This Tag is used to enable states for each Equipment Module
 EM_Selected.[Cfg_EM_Number]

JSR
 Jump To Subroutine
 Routine Name CM00_Procedure

SERVO AXIS OBJECT AND IT'S LOGICAL FUNCTIONS

This Control Module performs the state control for the slave axis; including Enable, Disable, Reset, Absolute Home, Stop, and Abort

JSR
 Jump To Subroutine
 Routine Name CM02_ServoAxisObject_Z

Control Module
Manual Jog Control

This Control Module
jogs the servo axis
when the Unit is in
Manual mode. This
provides independent
control of the servo
axis.

JSR
Jump To Subroutine
Routine Name CM03_ServoAxisJog_Z

All the Fault bits
related an Equipment

NE
Not Equal
Source A EM_Fault[Cfg_EM_Number].EM_MajorFaults
0
Source B
0

All the Fault bits
related an Equipment
EM_Fault[Cfg_EM_Number].EM_MajorFaultAct

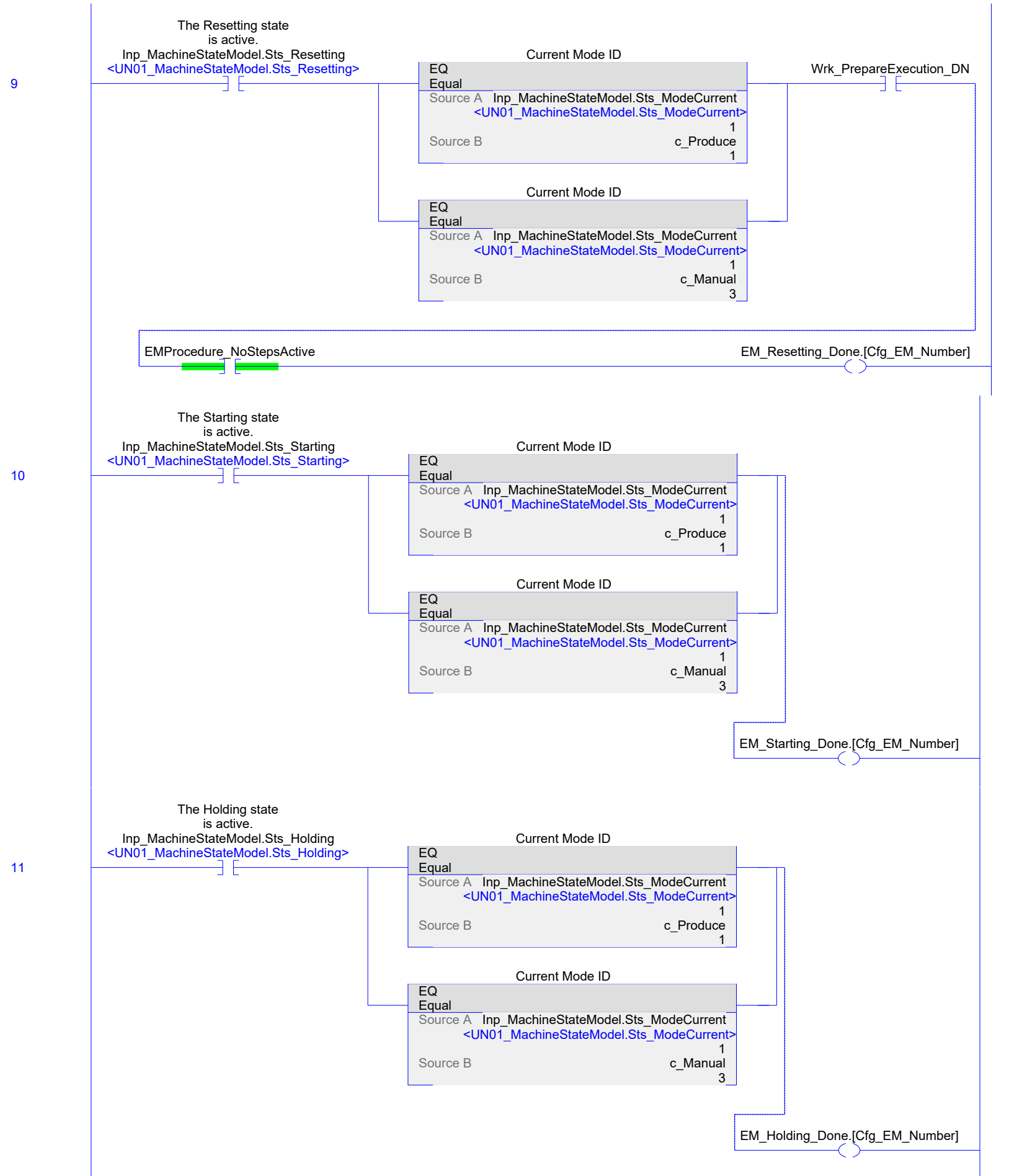
All the Fault bits
related an Equipment
EM_Fault[Cfg_EM_Number].StartFaultWatchdog

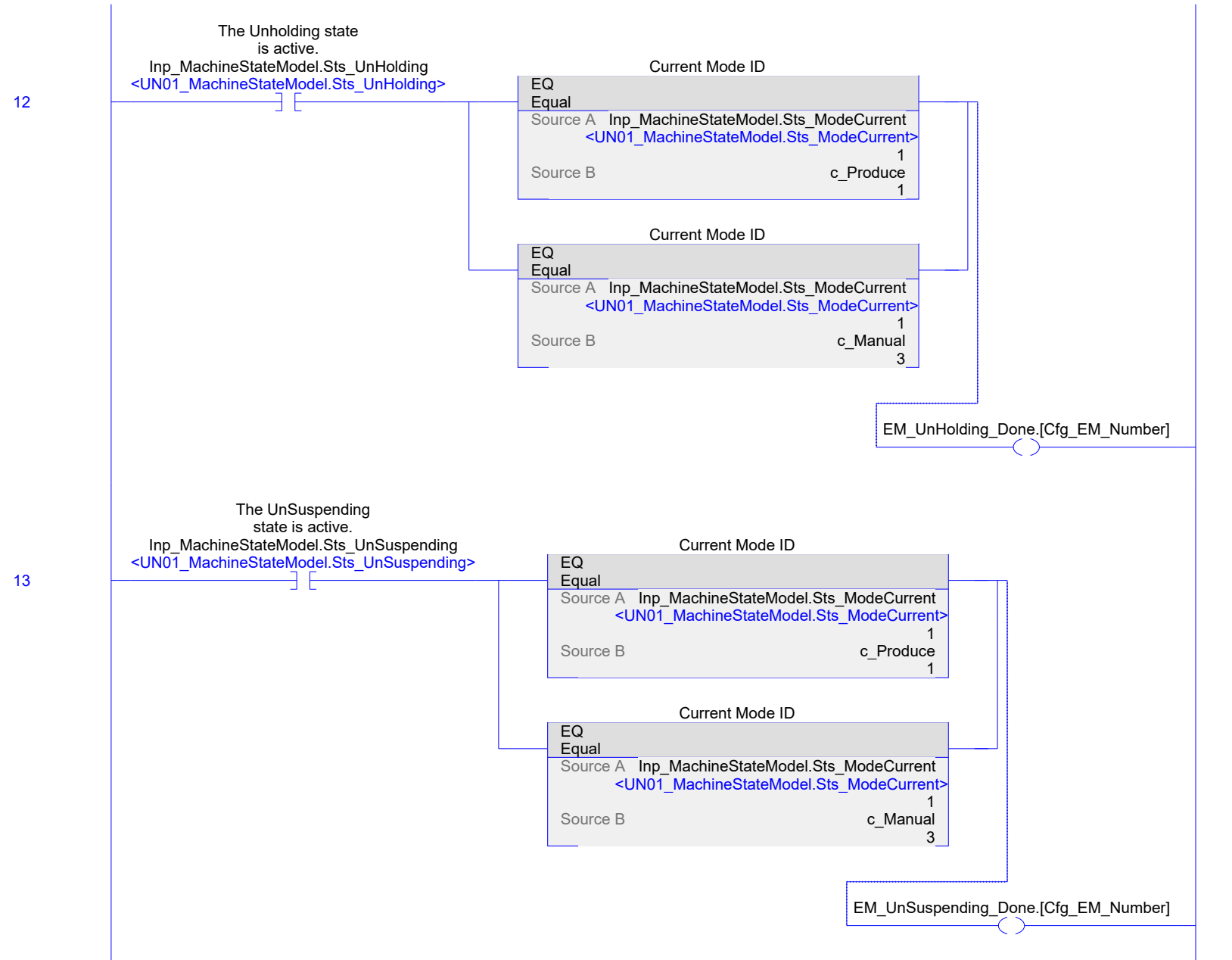
All the Fault bits
related an Equipment
EM_Fault[Cfg_EM_Number].StartFaultInstruction

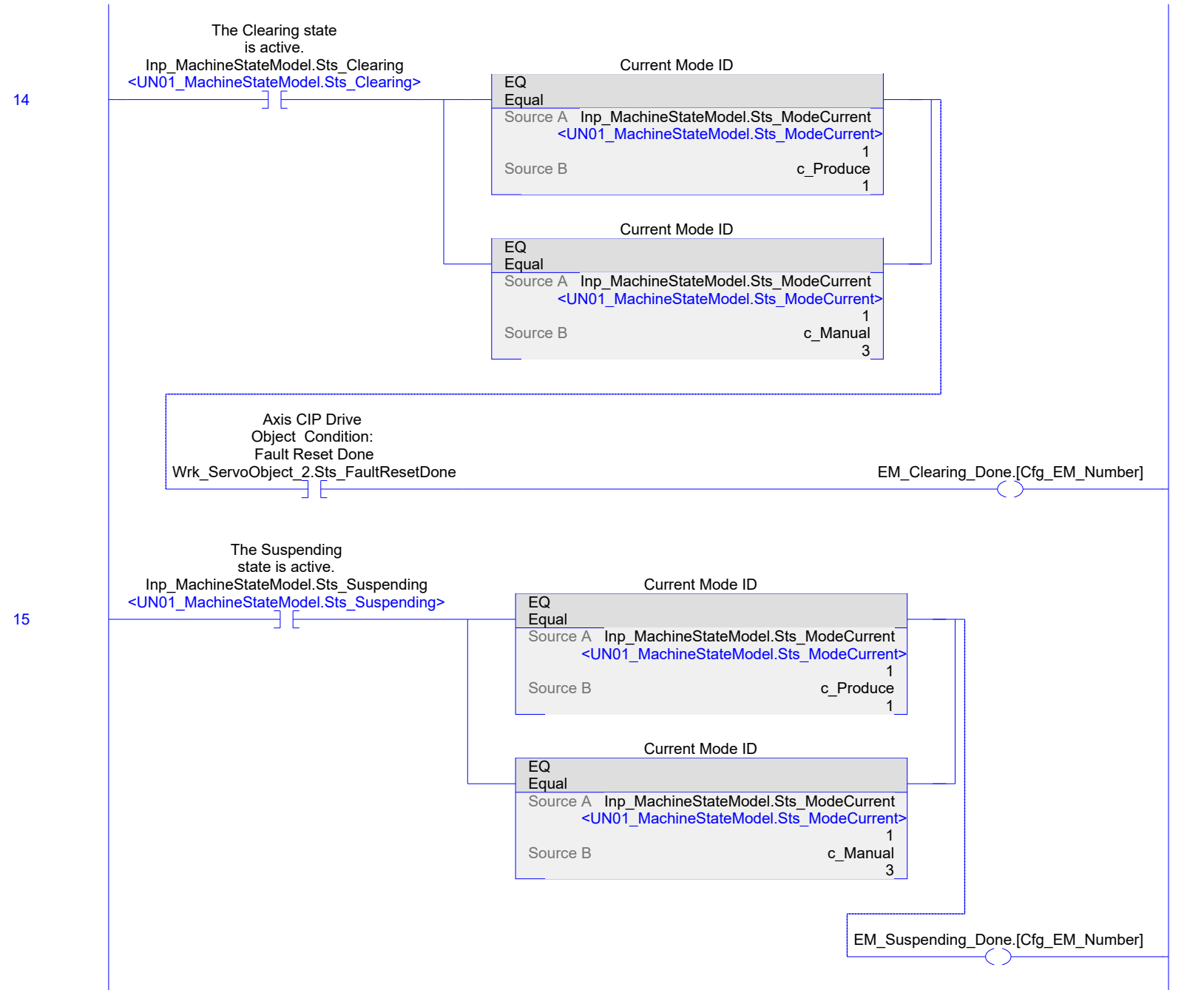
All the Fault bits
related an Equipment
EM_Fault[Cfg_EM_Number].StartFaultCalculation

SECTION EQUIPMENT MODULE STATE COMPLETE HANDLING - SET DONE BITS

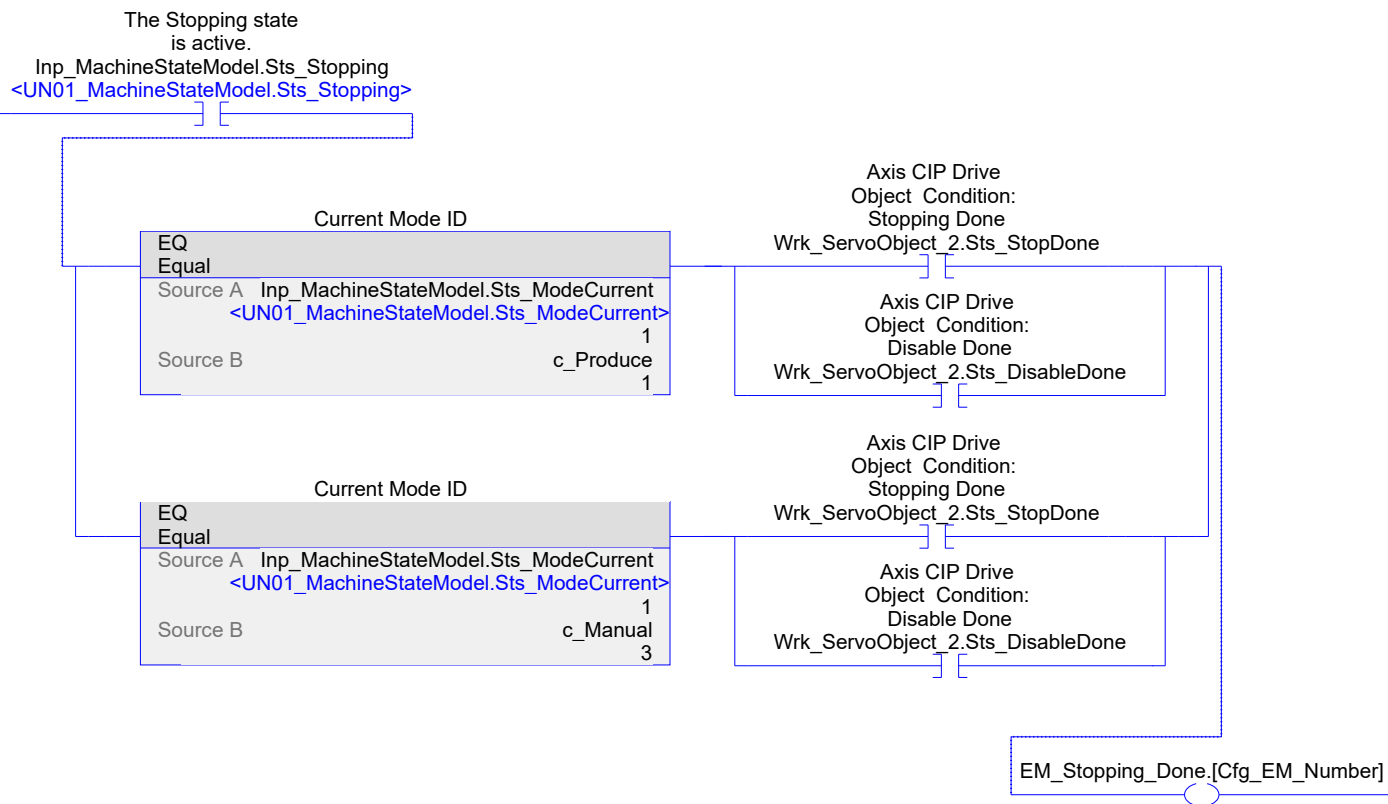
[NOP]



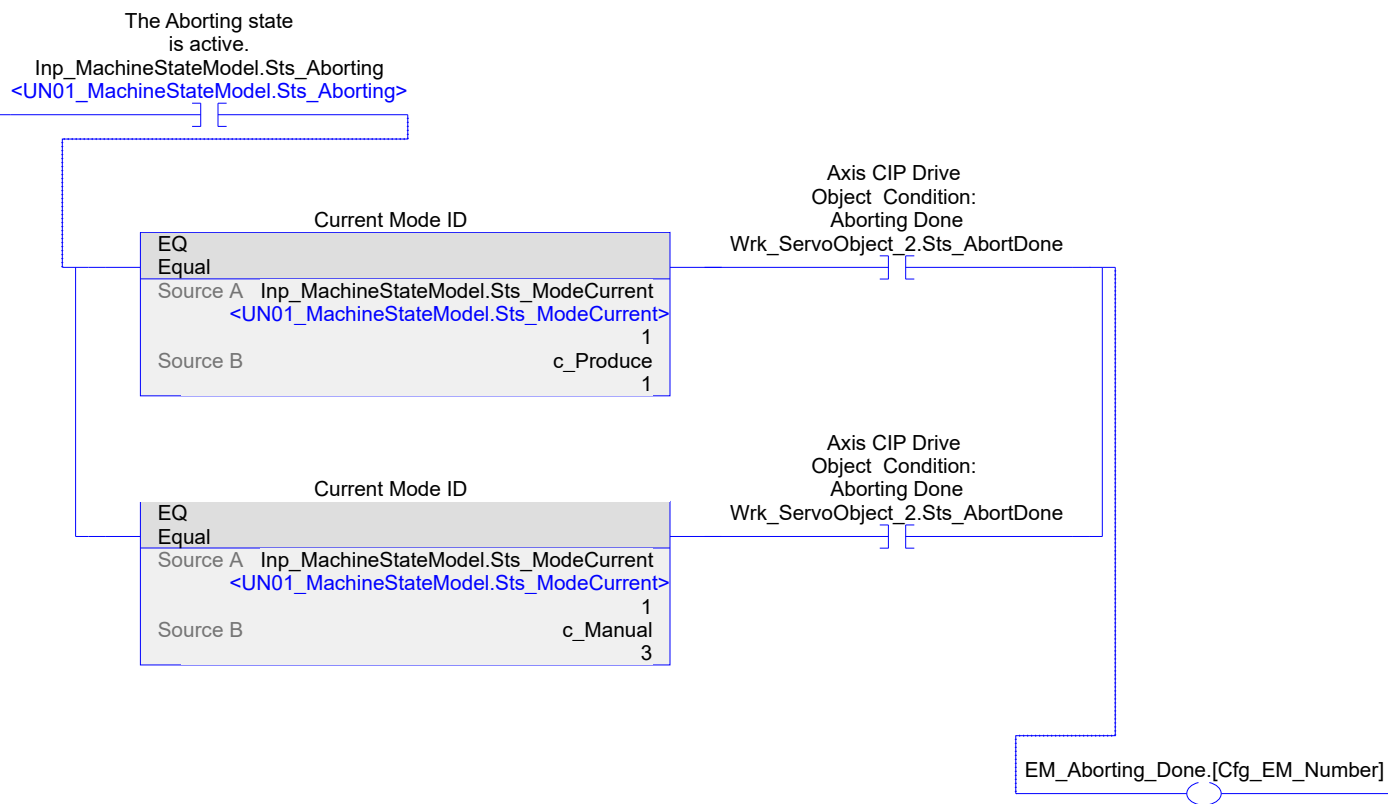


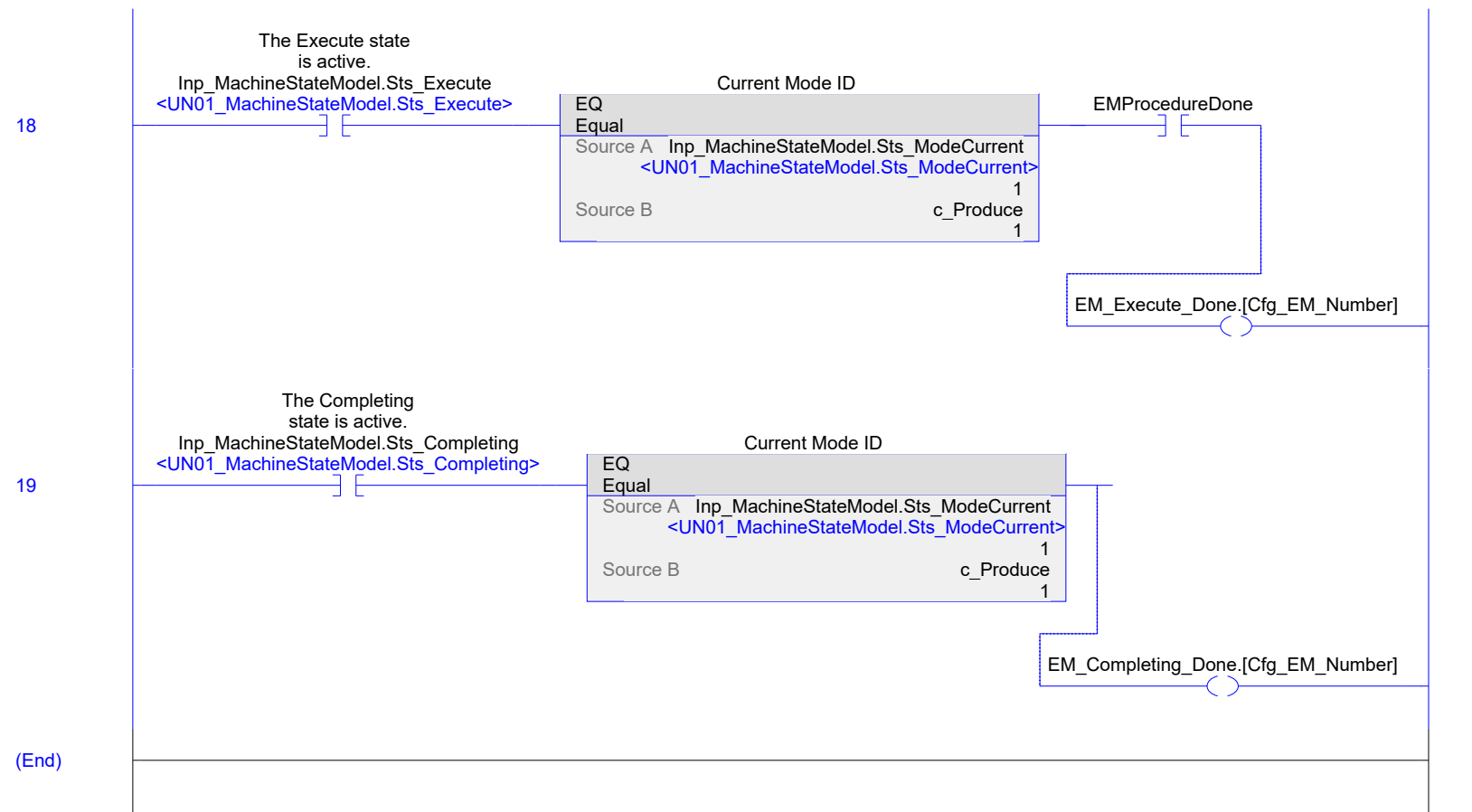


16



17





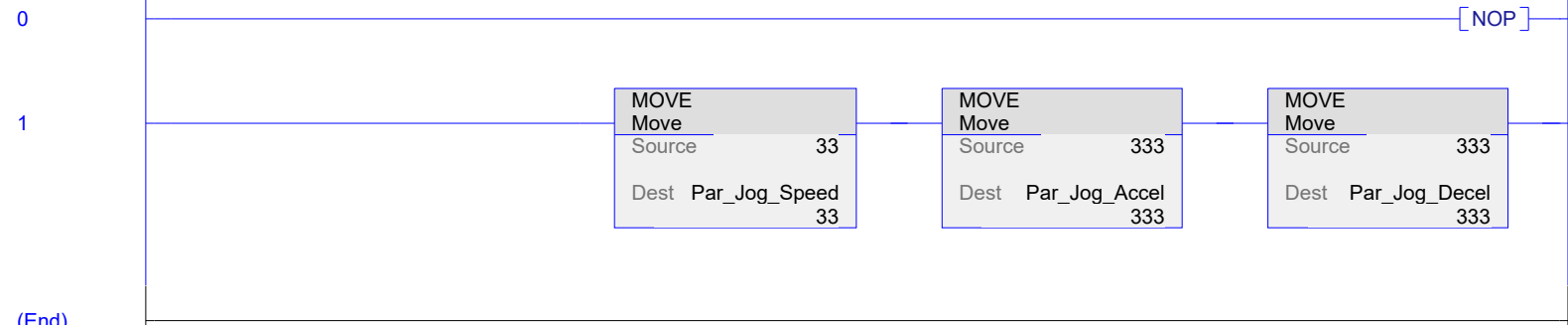
```

////////////////////////////////////
COMPANY:      Rockwell Automation
FUNCTION:     Initialize Equipment Module Data
AUTHOR:      Rockwell Automation
DATE CREATED: March 2011

Version Comments:

////////////////////////////////////

```



Signature Listing

PackMLv3_StateModel

Revision: v2.3

2.3 - Help File Updates

2.2 - ReOrder Sts Tags to reflect numerical TR88 state value

2.1 - Enable status added to reflect instruction scan

2.0 - AOI name update to reflect PML Model version

1.0 - Improved execution scantime

09/04/2009 - ETP - Edited Rung 14 to Enable

a) Held State IF Holding or UnHolding is Enabled

b) Suspended State IF Suspending or UnSuspending is Enabled

c) Complete State IF Completing is Enabled

Signature: 13B69801, 2025-07-09T14:56:04.695Z

Axis_ObjectCD v1.13

Rockwell Automation

Axis CIP Drive Object

Available Languages

Relay Ladder

Axis_ObjectCD	
Axis CIP Drive Object	
Axis_ObjectCD	? (Sts_ER)
Ref_Axis_CD	? (Sts_EnableDone)
Inp_MotionGroup	? (Sts_DisableDone)
Cmd_Enable	? (Sts_FaultResetDone)
	?? (Sts_HomeDone)
Cmd_Disable	? (Sts_AbortDone)
	?? (Sts_StopDone)
Cmd_FaultReset	? (Sts_CIP_StartInhibitActive)
	?? (Sts_AxisOk)
Cmd_Home	? (Sts_NoMotion)
	?? (Sts_Homed)
Cmd_Abort	? (Sts_Homed)
	??
Cmd_Stop	? (Sts_Homed)
	??

Function Block

Axis_ObjectCD	
Axis CIP Drive Object	
Ref_Axis_CD	?
Inp_MotionGroup	?
Cmd_Enable	Sts_ER
Cmd_Disable	Sts_EnableDone
Cmd_FaultReset	Sts_DisableDone
Cmd_Home	Sts_FaultResetDone
Cmd_Abort	Sts_HomeDone
Cmd_Stop	Sts_AbortDone
	Sts_StopDone
	Sts_CIP_StartInhibitActive
	Sts_AxisOk
	Sts_NoMotion
	Sts_Homed

Structured Text

Axis_ObjectCD(Ref_Axis_CD, Inp_MotionGroup, Cmd_Enable, Cmd_Disable, Cmd_FaultReset, Cmd_Home, Cmd_Abort, Cmd_Stop);

Parameters

Required	Name	Data Type	Usage	Description
X	Axis_ObjectCD	Axis_ObjectCD	InOut	Axis CIP Drive Object
	EnableIn	BOOL	Input	
	EnableOut	BOOL	Output	
	Cfg_UseVirtualMaster	BOOL	Input	Configuration: =1: Abort, Stop will wait for Inp_MasterNoMotion before executing MAS instruction

	Cfg_HomeEnabled	BOOL	Input	Configuration: =1: CMD_Home will execute MAH instruction = 0 no home instruction executed
	Cfg_StopEnabled	BOOL	Input	Configuration: =1: CMD_Stop will execute MAS instruction = 0 no stop instruction executed
	Cfg_AbortEnabled	BOOL	Input	Configuration: =1: CMD_Abort will execute MAS instruction = 0 no stop instruction executed
	Cfg_ZeroSpeedTolerance	REAL	Input	Zero Speed Tolerance Window in units/sec for Sts_NoMotion
	Cfg_AbortRamp	REAL	Input	Ramp for MAS instruction in aborting
	Cfg_StopRamp	REAL	Input	Ramp for MAS instruction in stopping
	Inp_MasterNoMotion	BOOL	Input	If Cfg_UseVirtualMaster=1: Abort, Stop will wait for Inp_MasterNoMotion before executing MAS instruction
X	Ref_Axis_CD	AXIS_CIP_DRIVE	InOut	Servo Axis, Data type Axis CIP Drive
X	Inp_MotionGroup	MOTION_GROUP	InOut	Motion Group
X	Cmd_Enable	BOOL	Input	Enables the Axis
X	Cmd_Disable	BOOL	Input	Disables the Axis
X	Cmd_FaultReset	BOOL	Input	Fault Reset
X	Cmd_Home	BOOL	Input	Home the Axis, if Cfg_HomeEnabled = 1
X	Cmd_Abort	BOOL	Input	Stops the axis with AbortRamp Waits for Inp_MasterNoMotion if CfgUseVirtualMaster=1
X	Cmd_Stop	BOOL	Input	Stops the axis with StopRamp Waits for Inp_MasterNoMotion if CfgUseVirtualMaster=1
	Sts_ER	BOOL	Output	Any Fault occured on this Axis
	Sts_EnableDone	BOOL	Output	Condition: Enable Done
	Sts_DisableDone	BOOL	Output	Condition: Disable Done
	Sts_FaultResetDone	BOOL	Output	Condition: Fault Reset Done
	Sts_HomeDone	BOOL	Output	Condition: Home Done
	Sts_AbortDone	BOOL	Output	Condition: Aborting Done
	Sts_StopDone	BOOL	Output	Condition: Stopping Done
	Sts_CIP_StartInhibitActive	BOOL	Output	
	Sts_AxisOk	BOOL	Output	Status Display: Axis ready to enable
	Sts_AbsoluteReferenceStatus	BOOL	Output	Absolute Feedback device shows Reference Ok
	Sts_NoMotion	BOOL	Output	AverageVelocity within ZeroSpeedTolerance and no MotionStatus set
	Sts_Homed	BOOL	Output	The Axis has been homed
	Err_PosOvertravel	BOOL	Output	Any positive Overtravel Fault
	Err_NegOvertravel	BOOL	Output	Any neagtive Overtravel Fault
	Err_FeedbackFault	BOOL	Output	Any Feedback Fault including Aux Feedback
	Err_DeviceCommunication	BOOL	Output	Any General Fault
	Err_PowerFault	BOOL	Output	Any Overload/Voltage Fault
	Err_TemperatureFault	BOOL	Output	Any Temperature Fault
	Err_PositionError	BOOL	Output	Position Error window exceeded
	Err_GuardFault	BOOL	Output	Any Guard Fault (Safety Fault)
	Err_InstructionFault	BOOL	Output	Any instruction within the AOI faulted
	Out_AxisCipState	DINT	Output	CipState
	Cfg_HMIFPDdisplay	DINT	Input	HMI Display tag used with HMI Global Object
	Sts_Err	DINT	Output	
	Err_MI_Err	DINT	Output	Motion instruction .ERR field if fault
	Err_MI_ExErr	DINT	Output	Motion instuction .EXERR field if fault

Extended Description

Instruction Overview:

The Axis Cip Drive Object Add-On Instruction performs Enable, Disable, Fault Reset, Home, Stop, Abort, Diagnostics, and Status functions of a physical axis.

The AOI consists of Parameters and Local Tags, and a routine for Logic and Prescan.

Instruction Execution:

This instruction is intended to be executed unconditionally.

Supplemental Descriptions:

These configuration tags need to be configured for the AOI to work correctly:

- Cfg_UseVirtualMaster
- Cfg_StopEnabled
- Cfg_HomeEnabled
- Cfg_AbortEnabled

Prescan

The Prescan routine executes after the primary Logic routine executes in Prescan mode. It will initialize tag values to a known or predefined state prior to execution of the AOI.

When an add-on instruction executes in Prescan mode, any required parameters have their data passed.

Values are passed to input parameters from their arguments in the instruction call.

Values are passed from output parameters to their arguments defined in the instruction call.

These values are passed even when the rung condition is false.

Cmd_Enable and Sts_EnableDone

When the command Cmd_Enable is set, it is checked to see if the axis is ready to execute the MSO instruction (feedback on). When Cmd_Enable is successfully executed, the Sts_EnableDone bit will be set.

Cmd_Disable and Sts_DisableDone

When the command Cmd_Disable is set, it is checked to see if the axis is ready to execute the MSF instruction (feedback off). When Cmd_Disable is successfully executed, the Sts_DisableDone bit will be set.

Cmd_FaultReset and Sts_FaultResetDone

When the command Cmd_FaultReset is set, all Err-bits of the AOI are unlatched and the axis will be reset with a MASR instruction (Axis Shutdown Reset). When Cmd_FaultReset is successfully executed, the Sts_FaultResetDone bit will be set.

Cmd_Home, Sts_Homed and Sts_HomedDone

When the command Cmd_Home is set, a home sequence is initiated if the axis is configured to do a home. To configure the axis to home, the Cfg_HomeEnabled bit must be set.

Cfg_HomeEnabled	Behavior
0	Home instruction is not executed
1	CMD_Home will execute MAH instruction

When Cmd_Home is successfully executed, the Sts_Homed and Sts_HomeDone bits will be set.

Cmd_Abort/Sts_AbortDone and Cmd_Stop/Sts_StopDone

The two commands Cmd_Abort and Cmd_Stop initiate a stop of the axis.

If configured to do so, the command Cmd_Abort or Cmd_Stop will set a deceleration rate used by the MAS instruction (axis stop).

Cfg_AbortEnabled	Cfg_StopEnabled	Behavior
0	0	The axis does not execute the command
1	1	The axis executes the command

The axis can wait for the virtual master to be completely stopped before the MAS instruction is executed. If Cfg_UseVirtualMaster is set, abort will wait for Inp_MasterNoMotion before execution of the instruction. If not, it will be executed immediately.

Cfg_UseVirtualMaster Behavior

0	Abort, Stop will execute the MAS instruction immediately
1	Abort, Stop will wait for Inp_MasterNoMotion before executing MAS instruction

When Sts_NoMotion of the axis is detected and either a Cmd_Abort or Cmd_Stop command is set, either the Sts_AbortDone or Sts_StopDone status bit, as appropriate, will be set.

Sts_NoMotion

???No motion??? is when none of the motion planner inputs (for example, gears, jogs, or CAMs) are active and the axis speed is less than the level configured in Cfg_ZeroSpeedTolerance.

The motion planner inputs are masked with the MotionStatus (Motion planner input) set this way:

65407 [dec] = 1111 1111 0111 1111 [bin]

Bit	Description
00	AccelStatus
01	DecelStatus
02	MoveStatus
03	JogStatus
04	GearingStatus
05	HomingStatus
06	StoppingStatus
07	AxisHomedStatus
08	PositionCamStatus
09	TimeCamStatus
10	PositionCamPendingStatus
11	TimeCamPendingStatus
12	GearingLockStatus
13	PositionCamLockStatus
14	MasterOffsetMoveStatus
15	CoordinatedMotionStatus

Sts_Err - Error Codes

- 1 - MSO Instruction Execution Error
- 2 - MSO Instruction Execution Watchdog Timeout
- 3 - MSF Instruction Execution Error
- 4 - MSF Instruction Execution Watchdog Timeout
- 5 - MASR Instruction Execution Error
- 6 - MAFR Instruction Execution Error
- 7 - MAH Instruction Execution Error
- 8 - MAS Instruction Execution Error

General Information - Parameter Prefixing:

Inp_

Input:

Generally used to designate a connection to a real I/O input point or an upstream block.

Set_

Setpoint:

Used as a setpoint coming into the instruction. May come from the operator via the HMI, or from the controller program itself.

Cmd_

Command:

Generally used to as a command input either from the operator via the HMI or from the program.

Cfg_

Configuration:

Generally used to designate a configuration value.

Typically, but not always, something that is only changed irregularly.

Par_

Parameter:

Equipment parameter or input parameter from Batching systems.

Generally used to designate a value that receives changes on a regular basis.

Wrk_

Working Register:

In many cases the control routine will require some internal working storage locations. This is targeted at the control routine that lies inside a normal UDT. In the case of AOI's, these registers can simply become "Local Tags".

Out_

Output:
Generally used to designate a connection to a real I/O output point or a downstream block.

Val_

Value:
Designates a value calculated inside the instruction, which may or may not be the primary output of the instruction.

Rpt_

Report:
Designates a value calculated inside the instruction that is typically used for batch reporting.

Sts_

Status:
Status of the instruction. Also contains two required members.
Ex.
Sts_Alarm - An alarm exists. (Boolean)
Sts_ER - The instruction itself has an error. (Boolean)

Alm_

Alarm:
Alarm indicators to display which actual alarm is occurring. All of these are Booleans.

Rdy_

Ready:
Command ready bits. Booleans determined inside the control routines to reflect whether the routine will allow state change commands. Used with the HMI faceplates to enable or disable command buttons.

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Execution

<u>Condition</u>	<u>Description</u>
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EnableIn is true	
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Prescan

Revision v1.13 Notes

- 1.12 - Correct repeated output and AFI warnings
- 1.11 - Fix rung 2 to use DriveEnableStatus. Fix rung 4 to zero Sts_Err only on positive transition
- 1.10 - Fix homing to work with Kinetix 350
- 1.9 - Fix Device Comm Error anom.
- 1.8 - PosErr reset, add inhibit conditions to ER
- 1.7 - Add watchdog for fault reset
- 1.6 - Change Error annunciation for instruction faults
- 1.5 - Add notification for Inhibit Conditions
- 1.4 - v20 Update

Name	Default	Data Type	Scope
Cfg_AbortEnabled	1	BOOL	Axis_ObjectCD
Configuration: =1: CMD_Abort will execute MAS instruction = 0 no stop instruction executed			
Usage:	Input Parameter		
Required:	No		
Visible:	No		
External Access:	Read/Write		
OPC UA Access:	None		
<i>Cfg_AbortEnabled - Axis_ObjectCD/Logic - 10(XIC), 11(XIC)</i>			
Cfg_AbortRamp	100.0	REAL	Axis_ObjectCD
Ramp for MAS instruction in aborting			
Usage:	Input Parameter		
Required:	No		
Visible:	No		
External Access:	Read/Write		
OPC UA Access:	None		
<i>Cfg_AbortRamp - Axis_ObjectCD/Logic - 10(MOVE)</i>			
Cfg_HMIFPDisplay	0	DINT	Axis_ObjectCD
HMI Display tag used with HMI Global Object			
Usage:	Input Parameter		
Required:	No		
Visible:	No		
External Access:	Read/Write		
OPC UA Access:	None		
<i>Cfg_HMIFPDisplay - Axis_ObjectCD/Logic - *20(MOVE)</i>			
Cfg_HomeEnabled	1	BOOL	Axis_ObjectCD
Configuration: =1: CMD_Home will execute MAH instruction = 0 no home instruction executed			
Usage:	Input Parameter		
Required:	No		
Visible:	No		
External Access:	Read/Write		
OPC UA Access:	None		
<i>Cfg_HomeEnabled - Axis_ObjectCD/Logic - 6(XIC), 9(XIC), 9(XIO)</i>			
Cfg_StopEnabled	1	BOOL	Axis_ObjectCD
Configuration: =1: CMD_Stop will execute MAS instruction = 0 no stop instruction executed			
Usage:	Input Parameter		
Required:	No		
Visible:	No		
External Access:	Read/Write		
OPC UA Access:	None		
<i>Cfg_StopEnabled - Axis_ObjectCD/Logic - 10(XIC), 11(XIC)</i>			
Cfg_StopRamp	20.0	REAL	Axis_ObjectCD
Ramp for MAS instruction in stopping			
Usage:	Input Parameter		
Required:	No		
Visible:	No		
External Access:	Read/Write		
OPC UA Access:	None		
<i>Cfg_StopRamp - Axis_ObjectCD/Logic - 10(MOVE)</i>			
Cfg_UseVirtualMaster	1	BOOL	Axis_ObjectCD
Configuration: =1: Abort, Stop will wait for Inp_MasterNoMotion before executing MAS instruction			
Usage:	Input Parameter		
Required:	No		
Visible:	No		
External Access:	Read/Write		
OPC UA Access:	None		
<i>Cfg_UseVirtualMaster - Axis_ObjectCD/Logic - 10(XIO)</i>			

Cfg_ZeroSpeedTolerance	0.1	REAL	Axis_ObjectCD
Zero Speed Tolerance Window in units/sec for Sts_NoMotion			
Usage:	Input Parameter		
Required:	No		
Visible:	No		
External Access:	Read/Write		
OPC UA Access:	None		
<i>Cfg_ZeroSpeedTolerance - Axis_ObjectCD/Logic - 13(LE)</i>			
Cmd_Abort	0	BOOL	Axis_ObjectCD
Stops the axis with AbortRamp Waits for Inp_MasterNoMotion if CfgUseVirtualMaster=1			
Usage:	Input Parameter		
Required:	Yes		
Visible:	Yes		
External Access:	Read/Write		
OPC UA Access:	None		
<i>Cmd_Abort - Axis_ObjectCD/Logic - 10(XIC), 11(XIC)</i>			
Cmd_Disable	0	BOOL	Axis_ObjectCD
Disables the Axis			
Usage:	Input Parameter		
Required:	Yes		
Visible:	Yes		
External Access:	Read/Write		
OPC UA Access:	None		
<i>Cmd_Disable - Axis_ObjectCD/Logic - 2(XIO), 3(XIC)</i>			
Cmd_Enable	0	BOOL	Axis_ObjectCD
Enables the Axis			
Usage:	Input Parameter		
Required:	Yes		
Visible:	Yes		
External Access:	Read/Write		
OPC UA Access:	None		
<i>Cmd_Enable - Axis_ObjectCD/Logic - 2(XIC)</i>			
Cmd_FaultReset	0	BOOL	Axis_ObjectCD
Fault Reset			
Usage:	Input Parameter		
Required:	Yes		
Visible:	Yes		
External Access:	Read/Write		
OPC UA Access:	None		
<i>Cmd_FaultReset - Axis_ObjectCD/Logic - 4(XIC), 5(XIC), 5(XIO)</i>			
Cmd_Home	0	BOOL	Axis_ObjectCD
Home the Axis, if Cfg_HomeEnabled = 1			
Usage:	Input Parameter		
Required:	Yes		
Visible:	Yes		
External Access:	Read/Write		
OPC UA Access:	None		
<i>Cmd_Home - Axis_ObjectCD/Logic - 6(XIC), 9(XIC)</i>			
Cmd_Stop	0	BOOL	Axis_ObjectCD
Stops the axis with StopRamp Waits for Inp_MasterNoMotion if CfgUseVirtualMaster=1			
Usage:	Input Parameter		
Required:	Yes		
Visible:	Yes		
External Access:	Read/Write		
OPC UA Access:	None		
<i>Cmd_Stop - Axis_ObjectCD/Logic - 10(XIC), 11(XIC)</i>			

Err_DeviceCommunication	0	BOOL	Axis_ObjectCD
Any General Fault			
Usage:	Output Parameter		
Required:	No		
Visible:	No		
External Access:	Read Only		
OPC UA Access:	None		
<i>Err_DeviceCommunication - Axis_ObjectCD/Logic - *18(OTL), *18(OTL), *4(OTU)</i>			
<i>Err_DeviceCommunication - Axis_ObjectCD/Prescan - *4(OTU)</i>			
Err_FeedbackFault	0	BOOL	Axis_ObjectCD
Any Feedback Fault including Aux Feedback			
Usage:	Output Parameter		
Required:	No		
Visible:	No		
External Access:	Read Only		
OPC UA Access:	None		
<i>Err_FeedbackFault - Axis_ObjectCD/Logic - *18(OTL), *4(OTU)</i>			
<i>Err_FeedbackFault - Axis_ObjectCD/Prescan - *4(OTU)</i>			
Err_GuardFault	0	BOOL	Axis_ObjectCD
Any Guard Fault (Safety Fault)			
Usage:	Output Parameter		
Required:	No		
Visible:	No		
External Access:	Read Only		
OPC UA Access:	None		
<i>Err_GuardFault - Axis_ObjectCD/Logic - *18(OTL), *18(OTL), *4(OTU)</i>			
<i>Err_GuardFault - Axis_ObjectCD/Prescan - *4(OTU)</i>			
Err_InstructionFault	0	BOOL	Axis_ObjectCD
Any instruction within the AOI faulted			
Usage:	Output Parameter		
Required:	No		
Visible:	No		
External Access:	Read Only		
OPC UA Access:	None		
<i>Err_InstructionFault - Axis_ObjectCD/Logic - *17(OTL), *17(OTU), *4(OTU)</i>			
<i>Err_InstructionFault - Axis_ObjectCD/Prescan - *4(OTU)</i>			
Err_MI_Err	0	DINT	Axis_ObjectCD
Motion instruction .ERR field if fault			
Usage:	Output Parameter		
Required:	No		
Visible:	No		
External Access:	Read Only		
OPC UA Access:	None		
<i>Err_MI_Err - Axis_ObjectCD/Logic - *10(MOVE), *2(MOVE), *3(MOVE), *4(MOVE), *4(MOVE), *4(MOVE), *7(MOVE)</i>			
<i>Err_MI_Err - Axis_ObjectCD/Prescan - *3(MOVE)</i>			
Err_MI_ExErr	0	DINT	Axis_ObjectCD
Motion instruction .EXERR field if fault			
Usage:	Output Parameter		
Required:	No		
Visible:	No		
External Access:	Read Only		
OPC UA Access:	None		
<i>Err_MI_ExErr - Axis_ObjectCD/Logic - *10(MOVE), *2(MOVE), *3(MOVE), *4(MOVE), *4(MOVE), *4(MOVE), *7(MOVE)</i>			
<i>Err_MI_ExErr - Axis_ObjectCD/Prescan - *3(MOVE)</i>			
Err_NegOvertravel	0	BOOL	Axis_ObjectCD
Any neagtive Overtravel Fault			
Usage:	Output Parameter		

Err_NegOvertravel (Continued)			
Required:	No		
Visible:	No		
External Access:	Read Only		
OPC UA Access:	None		
<i>Err_NegOvertravel - Axis_ObjectCD/Logic - *18(OTL), *4(OTU)</i>			
<i>Err_NegOvertravel - Axis_ObjectCD/Prescan - *4(OTU)</i>			
Err_PositionError	0	BOOL	Axis_ObjectCD
Position Error window exceeded			
Usage:	Output Parameter		
Required:	No		
Visible:	No		
External Access:	Read Only		
OPC UA Access:	None		
<i>Err_PositionError - Axis_ObjectCD/Logic - *18(OTL)</i>			
Err_PosOvertravel	0	BOOL	Axis_ObjectCD
Any positive Overtravel Fault			
Usage:	Output Parameter		
Required:	No		
Visible:	No		
External Access:	Read Only		
OPC UA Access:	None		
<i>Err_PosOvertravel - Axis_ObjectCD/Logic - *18(OTL), *4(OTU)</i>			
<i>Err_PosOvertravel - Axis_ObjectCD/Prescan - *4(OTU)</i>			
Err_PowerFault	0	BOOL	Axis_ObjectCD
Any Overload/Voltage Fault			
Usage:	Output Parameter		
Required:	No		
Visible:	No		
External Access:	Read Only		
OPC UA Access:	None		
<i>Err_PowerFault - Axis_ObjectCD/Logic - *18(OTL), *4(OTU)</i>			
<i>Err_PowerFault - Axis_ObjectCD/Prescan - *4(OTU)</i>			
Err_TemperatureFault	0	BOOL	Axis_ObjectCD
Any Temperature Fault			
Usage:	Output Parameter		
Required:	No		
Visible:	No		
External Access:	Read Only		
OPC UA Access:	None		
<i>Err_TemperatureFault - Axis_ObjectCD/Logic - *18(OTL), *4(OTU)</i>			
<i>Err_TemperatureFault - Axis_ObjectCD/Prescan - *4(OTU)</i>			
Inp_MasterNoMotion	0	BOOL	Axis_ObjectCD
If Cfg_UseVirtualMaster=1: Abort, Stop will wait for Inp_MasterNoMotion before executing MAS instruction			
Usage:	Input Parameter		
Required:	No		
Visible:	No		
External Access:	Read/Write		
OPC UA Access:	None		
<i>Inp_MasterNoMotion - Axis_ObjectCD/Logic - 10(XIC)</i>			
Inp_MotionGroup		MOTION_GROUP	Axis_ObjectCD
Motion Group			
Usage:	InOut Parameter		
Required:	Yes		
Visible:	Yes		
OPC UA Access:	None		
Inp_MotionGroup.GroupStatus	??	DINT	

Inp_MotionGroup (Continued)			
Motion Group			
Inp_MotionGroup.GroupStatus.1	??	BOOL	
Motion Group			
Inp_MotionGroup.InhibStatus	??	BOOL	
Motion Group			
Inp_MotionGroup.GroupSynced	??	BOOL	
Motion Group			
<i>Inp_MotionGroup.GroupSynced - Axis_ObjectCD/Logic - 19(XIC)</i>			
Inp_MotionGroup.AxisInhibitStatus	??	BOOL	
Motion Group			
Inp_MotionGroup.AxisTestModeStatus	??	BOOL	
Motion Group			
Inp_MotionGroup.GroupFault	??	DINT	
Motion Group			
Inp_MotionGroup.GroupOverlapFault	??	BOOL	
Motion Group			
Inp_MotionGroup.CSTLossFault	??	BOOL	
Motion Group			
Inp_MotionGroup.GroupTaskLoadingFault	??	BOOL	
Motion Group			
Inp_MotionGroup.ClockSyncFault	??	BOOL	
Motion Group			
Inp_MotionGroup.GroupAlarm	??	DINT	
Motion Group			
Inp_MotionGroup.ClockSyncAlarm	??	BOOL	
Motion Group			
Inp_MotionGroup.AxisFault	??	DINT	
Motion Group			
Inp_MotionGroup.PhysicalAxisFault	??	BOOL	
Motion Group			
Inp_MotionGroup.ModuleFault	??	BOOL	
Motion Group			
Inp_MotionGroup.ConfigFault	??	BOOL	
Motion Group			
Inp_MotionGroup.TaskMaxScanTime	??	DINT	
Motion Group			
Inp_MotionGroup.TaskLastScanTime	??	DINT	
Motion Group			
Inp_MotionGroup.TaskLastIOTime	??	DINT	
Motion Group			
Inp_MotionGroup.TaskMaxIOTime	??	DINT	
Motion Group			
Inp_MotionGroup.TaskAverageScanTime	??	DINT	
Motion Group			
Inp_MotionGroup.TaskAverageIOTime	??	DINT	
Motion Group			
Out_AxisCipState	0	DINT	Axis_ObjectCD
CipState			
Usage:	Output Parameter		

Out_AxisCipState (Continued)

Required: No
 Visible: No
 External Access: Read Only
 OPC UA Access: None
*Out_AxisCipState - Axis_ObjectCD/Logic - *1(MOVE), 16(EQ)*

Ref_Axis_CD

Servo Axis, Data type Axis CIP Drive AXIS_CIP_DRIVE Axis_ObjectCD

Usage: InOut Parameter

Required: Yes

Visible: Yes

OPC UA Access: None

Ref_Axis_CD - Axis_ObjectCD/Logic - 10(MAS), 2(MSO), 3(MSF), 4(MAFR), 4(MASR), 7(MAH)

Ref_Axis_CD.AxisFault ?? DINT

Servo Axis, Data type Axis CIP Drive

Ref_Axis_CD.AxisFault.1 ?? BOOL

Servo Axis, Data type Axis CIP Drive

Ref_Axis_CD.AxisFault.5 ?? BOOL

Servo Axis, Data type Axis CIP Drive

Ref_Axis_CD.AxisFault.6 ?? BOOL

Servo Axis, Data type Axis CIP Drive

Ref_Axis_CD.AxisFault.7 ?? BOOL

Servo Axis, Data type Axis CIP Drive

Ref_Axis_CD.PhysicalAxisFault ?? BOOL

Servo Axis, Data type Axis CIP Drive

Ref_Axis_CD.ModuleFault ?? BOOL

Servo Axis, Data type Axis CIP Drive

Ref_Axis_CD.ModuleFault - Axis_ObjectCD/Logic - 19(XIO)

Ref_Axis_CD.ConfigFault ?? BOOL

Servo Axis, Data type Axis CIP Drive

Ref_Axis_CD.GroupFault ?? BOOL

Servo Axis, Data type Axis CIP Drive

Ref_Axis_CD.MotionFault ?? BOOL

Servo Axis, Data type Axis CIP Drive

Ref_Axis_CD.GuardFault ?? BOOL

Servo Axis, Data type Axis CIP Drive

Ref_Axis_CD.GuardFault - Axis_ObjectCD/Logic - 18(XIC)

Ref_Axis_CD.InitializationFault ?? BOOL

Servo Axis, Data type Axis CIP Drive

Ref_Axis_CD.InitializationFault - Axis_ObjectCD/Logic - 19(XIO)

Ref_Axis_CD.APRFault ?? BOOL

Servo Axis, Data type Axis CIP Drive

Ref_Axis_CD.APRFault - Axis_ObjectCD/Logic - 14(XIO)

Ref_Axis_CD.SafetyFault ?? BOOL

Servo Axis, Data type Axis CIP Drive

Ref_Axis_CD.AxisStatus ?? DINT

Servo Axis, Data type Axis CIP Drive

Ref_Axis_CD.AxisStatus.1 ?? BOOL

Servo Axis, Data type Axis CIP Drive

Ref_Axis_CD.AxisStatus.2 ?? BOOL

Servo Axis, Data type Axis CIP Drive

Ref_Axis_CD.ServoActionStatus ?? BOOL

Servo Axis, Data type Axis CIP Drive

Ref_Axis_CD.ServoActionStatus - Axis_ObjectCD/Logic - 2(XIC), 2(XIO), 2(XIO), 3(XIO)

Ref_Axis_CD.DriveEnableStatus ?? BOOL

Servo Axis, Data type Axis CIP Drive

Ref_Axis_CD.DriveEnableStatus - Axis_ObjectCD/Logic - 2(XIC), 2(XIO), 2(XIO), 3(XIC)

Ref_Axis_CD.ShutdownStatus ?? BOOL

Servo Axis, Data type Axis CIP Drive

Ref_Axis_CD.ShutdownStatus - Axis_ObjectCD/Logic - 19(XIO)

Ref_Axis_CD.ConfigUpdateInProgress ?? BOOL

Ref_Axis_CD (Continued)

Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.InhibitStatus ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.DirectControlStatus ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.AxisUpdateStatus ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.MotionStatus ??	DINT
Servo Axis, Data type Axis CIP Drive	
<i>Ref_Axis_CD.MotionStatus - Axis_ObjectCD/Logic - 13(MEQ)</i>	
Ref_Axis_CD.AccelStatus ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.DecelStatus ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.MoveStatus ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.JogStatus ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.GearingStatus ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.HomingStatus ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.StoppingStatus ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.AxisHomedStatus ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.PositionCamStatus ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.TimeCamStatus ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.PositionCamPendingStatus ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.TimeCamPendingStatus ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.GearingLockStatus ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.PositionCamLockStatus ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.TimeCamLockStatus ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.MasterOffsetMoveStatus ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.CoordinatedMotionStatus ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.TransformStateStatus ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ControlledByTransformStatus ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.DirectVelocityControlStatus ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.DirectTorqueControlStatus ??	BOOL
Servo Axis, Data type Axis CIP Drive	

Ref_Axis_CD (Continued)		
Ref_Axis_CD.MoveLockStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.JogLockStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.MasterOffsetMoveLockStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.MaximumSpeedExceeded	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.MotionAlarmStatus	??	DINT
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SoftTravelLimitPositiveAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SoftTravelLimitNegativeAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.MotionFaultStatus	??	DINT
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.MotionFaultStatus.1	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.MotionFaultStatus.2	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SoftTravelLimitPositiveFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
<i>Ref_Axis_CD.SoftTravelLimitPositiveFault - Axis_ObjectCD/Logic - 18(XIC)</i>		
Ref_Axis_CD.SoftTravelLimitNegativeFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
<i>Ref_Axis_CD.SoftTravelLimitNegativeFault - Axis_ObjectCD/Logic - 18(XIC)</i>		
Ref_Axis_CD.AxisEvent	??	DINT
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.WatchEventArmedStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.WatchEventStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.RegEvent1ArmedStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.RegEvent1Status	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.RegEvent2ArmedStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.RegEvent2Status	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.HomeEventArmedStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.HomeEventStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.OutputCamStatus	??	DINT
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.OutputCamPendingStatus	??	DINT
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.OutputCamLockStatus	??	DINT
Servo Axis, Data type Axis CIP Drive		

Ref_Axis_CD (Continued)

Ref_Axis_CD.OutputCamTransitionStatus	??	DINT
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ActualPosition	??	REAL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.StrobeActualPosition	??	REAL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.StartActualPosition	??	REAL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.AverageVelocity	??	REAL
Servo Axis, Data type Axis CIP Drive		
<i>Ref_Axis_CD.AverageVelocity - Axis_ObjectCD/Logic - 13(ABS)</i>		
Ref_Axis_CD.ActualVelocity	??	REAL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ActualAcceleration	??	REAL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.WatchPosition	??	REAL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.Registration1Position	??	REAL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.Registration1PositiveEdgePosition	??	REAL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.Registration1NegativeEdgePosition	??	REAL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.Registration2Position	??	REAL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.Registration2PositiveEdgePosition	??	REAL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.Registration2NegativeEdgePosition	??	REAL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.Registration1Time	??	DINT
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.Registration1PositiveEdgeTime	??	DINT
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.Registration1NegativeEdgeTime	??	DINT
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.Registration2Time	??	DINT
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.Registration2PositiveEdgeTime	??	DINT
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.Registration2NegativeEdgeTime	??	DINT
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.InterpolationTime	??	DINT
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.InterpolatedActualPosition	??	REAL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.InterpolatedCommandPosition	??	REAL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.MasterOffset	??	REAL

Ref_Axis_CD (Continued)

Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.StrobeMasterOffset ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.StartMasterOffset ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.CommandPosition ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.StrobeCommandPosition ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.StartCommandPosition ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.DirectCommandVelocity ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.CommandVelocity ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.CommandAcceleration ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.CommandTorque ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ModuleFaults ??	DINT
Servo Axis, Data type Axis CIP Drive	
<i>Ref_Axis_CD.ModuleFaults - Axis_ObjectCD/Logic - 16(NE), 18(NE)</i>	
Ref_Axis_CD.ControlSyncFault ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ModuleSyncFault ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.TimerEventFault ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ModuleHardwareFault ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ModuleConnFault ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ConnFormatFault ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.LocalModeFault ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.CPUWatchdogFault ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ClockJitterFault ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.CyclicReadFault ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.CyclicWriteFault ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ClockSkewFault ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ControlConnFault ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ClockSyncFault ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.LogicWatchdogFault ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.DuplicateAddressFault ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.SystemConnectionFault ??	BOOL

Ref_Axis_CD (Continued)

Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ModuleAlarmStatus ??	DINT
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ControlSyncAlarm ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ModuleSyncAlarm ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.TimerEventAlarm ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.CPUOverloadAlarm ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ClockJitterAlarm ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.OutOfRangeAlarm ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ClockSkewAlarm ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ClockSyncAlarm ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.NodeAddressAlarm ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.AttributeErrorCode ??	INT
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.AttributeErrorID ??	INT
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.PositionFineCommand ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.PositionReference ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.PositionFeedback1 ??	DINT
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.PositionFeedback2 ??	DINT
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.PositionError ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.PositionIntegratorOutput ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.PositionLoopOutput ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.VelocityFineCommand ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.VelocityFeedforwardCommand ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.VelocityReference ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.VelocityFeedback ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.VelocityFeedback1 ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.VelocityFeedback2 ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.VelocityError ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.VelocityIntegratorOutput ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.VelocityLoopOutput ??	REAL
Servo Axis, Data type Axis CIP Drive	

Ref_Axis_CD (Continued)	
Ref_Axis_CD.VelocityLimitSource ??	DINT
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.AccelerationFineCommand ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.AccelerationFeedforwardCommand ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.AccelerationReference ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.AccelerationFeedback ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.LoadObserverAccelerationEstimate ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.LoadObserverTorqueEstimate ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.TorqueReference ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.TorqueReferenceFiltered ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.TorqueReferenceLimited ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.TorqueEstimate ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.TorqueNotchFilterFrequencyEstimate ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.TorqueNotchFilterMagnitudeEstimate ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.TorqueNotchFilterWidthEstimate ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.TorqueNotchFilter2FrequencyEstimate ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.TorqueNotchFilter2MagnitudeEstimate ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.TorqueNotchFilter2WidthEstimate ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.TorqueNotchFilter3FrequencyEstimate ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.TorqueNotchFilter3MagnitudeEstimate ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.TorqueNotchFilter3WidthEstimate ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.TorqueNotchFilter4FrequencyEstimate ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.TorqueNotchFilter4MagnitudeEstimate ??	REAL

Ref_Axis_CD (Continued)

Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.TorqueNotchFilter4WidthEstimate	REAL
??	
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.TorqueLowPassFilterBandwidthEstimate	REAL
??	
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.AdaptiveTuningGainScalingFactor	REAL
??	
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.CurrentCommand	REAL
??	
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.CurrentReference	REAL
??	
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.CurrentFeedback	REAL
??	
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.CurrentError	REAL
??	
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.FluxCurrentReference	REAL
??	
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.FluxCurrentFeedback	REAL
??	
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.FluxCurrentError	REAL
??	
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.OperativeCurrentLimit	REAL
??	
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.CurrentLimitSource	DINT
??	
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.MotorElectricalAngle	REAL
??	
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.SlipCompensation	REAL
??	
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.OutputFrequency	REAL
??	
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.OutputCurrent	REAL
??	
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.OutputVoltage	REAL
??	
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.OutputPower	REAL
??	
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ConverterOutputCurrent	REAL
??	
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ConverterOutputPower	REAL
??	
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.DCBusVoltage	REAL
??	
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.DCBusInputCurrent	REAL
??	
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.MotorCapacity	REAL
??	
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.InverterCapacity	REAL
??	
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ConverterCapacity	REAL
??	
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.BusRegulatorCapacity	REAL
??	

Ref_Axis_CD (Continued)

Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.DigitalInputs ??	DINT
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.AnalogInput1 ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.AnalogInput2 ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ACLineFrequency ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ACLineCurrent ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ACLineVoltage ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.BusVoltageReference ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.BusVoltageFeedback ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.BusVoltageError ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.BusObserverVoltageRateEstimate ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.BusObserverCurrentEstimate ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ActiveCurrentReference ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ActiveCurrentReferenceFiltered ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ActiveCurrentReferenceCompensated ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ReactiveCurrentReference ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ReactiveCurrentReferenceCompensated ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ActiveCurrentReferenceLimited ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ReactiveCurrentReferenceLimited ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ActiveCurrentFeedback ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ActiveCurrentError ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ReactiveCurrentFeedback ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ReactiveCurrentError ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ConverterOperativeCurrentLimit ??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ConverterCurrentLimitSource ??	DINT

Ref_Axis_CD (Continued)

Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ACLineElectricalAngle	
??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.TrackSectionCoil1CurrentFeedback	
??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.TrackSectionCoil2CurrentFeedback	
??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.TrackSectionCoil3CurrentFeedback	
??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.TrackSectionCoil4CurrentFeedback	
??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.TrackSectionCoil5CurrentFeedback	
??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.TrackSectionCoil6CurrentFeedback	
??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.TrackSectionCoil7CurrentFeedback	
??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.TrackSectionCoil8CurrentFeedback	
??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.TrackSectionCoil9CurrentFeedback	
??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.TrackSectionCoil10CurrentFeedback	
??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.TrackSectionCoil11CurrentFeedback	
??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.TrackSectionCoil12CurrentFeedback	
??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.AccelerometerFeedbackDeviceX	
??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.AccelerometerFeedbackDeviceY	
??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.AccelerometerFeedbackDeviceZ	
??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.AccelerometerFeedbackDeviceXRMS	
??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.AccelerometerFeedbackDeviceYRMS	
??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.AccelerometerFeedbackDeviceZRMS	
??	REAL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.PositionTrim	??
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.VelocityTrim	??
Servo Axis, Data type Axis CIP Drive	

Ref_Axis_CD (Continued)		
Ref_Axis_CD.AccelerationTrim	??	REAL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.TorqueTrim	??	REAL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.VelocityFeedforwardGain	??	REAL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.AccelerationFeedforwardGain	??	REAL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.PositionLoopBandwidth	??	REAL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.PositionIntegratorBandwidth	??	REAL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.VelocityLoopBandwidth	??	REAL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.VelocityIntegratorBandwidth	??	REAL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.LoadObserverBandwidth	??	REAL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.LoadObserverIntegratorBandwidth	??	REAL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.TorqueLimitPositive	??	REAL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.TorqueLimitNegative	??	REAL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.VelocityLowPassFilterBandwidth	??	REAL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.TorqueLowPassFilterBandwidth	??	REAL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SystemInertia	??	REAL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.CurrentDisturbance	??	REAL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.DigitalOutputs	??	DINT
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.AnalogOutput1	??	REAL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.AnalogOutput2	??	REAL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.BusVoltageSetPoint	??	REAL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ActiveCurrentTrim	??	REAL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.GuardStatus	??	DINT
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.GuardStatus.2	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.GuardOKStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.GuardConfigLockedStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		

Ref_Axis_CD (Continued)	
Ref_Axis_CD.GuardGateDriveOutputStatus	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
<i>Ref_Axis_CD.GuardGateDriveOutputStatus - Axis_ObjectCD/Logic - 18(XIO)</i>	
Ref_Axis_CD.GuardStopInputStatus	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.GuardStopRequestStatus	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.GuardStopInProgressStatus	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.GuardStopDecelStatus	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.GuardStopStandstillStatus	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.GuardStopOutputStatus	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.GuardLimitedSpeedInputStatus	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.GuardLimitedSpeedRequestStatus	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.GuardLimitedSpeedMonitorInProgressStatus	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.GuardLimitedSpeedOutputStatus	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.GuardMaxSpeedMonitorInProgressStatus	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.GuardMaxAccelMonitorInProgressStatus	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.GuardDirectionMonitorInProgressStatus	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.GuardDoorControlLockStatus	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.GuardDoorControlOutputStatus	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.GuardDoorMonitorInputStatus	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.GuardDoorMonitorInProgressStatus	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.GuardLockMonitorInputStatus	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.GuardEnablingSwitchInputStatus	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.GuardEnablingSwitchInProgressStatus	

Ref_Axis_CD (Continued)	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.GuardResetInputStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.GuardResetRequiredStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.GuardStopInputCycleRequiredStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.GuardFaults	??	DINT
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.GuardInternalFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.GuardConfigurationFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.GuardGateDriveFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.GuardResetFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.GuardFeedback1Fault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.GuardFeedback2Fault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.GuardFeedbackSpeedCompareFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.GuardFeedbackPositionCompareFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.GuardStopInputFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.GuardStopOutputFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.GuardStopDecelFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.GuardStopStandstillFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.GuardStopMotionFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.GuardLimitedSpeedInputFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.GuardLimitedSpeedOutputFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.GuardLimitedSpeedMonitorFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.GuardMaxSpeedMonitorFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		

Ref_Axis_CD (Continued)**Ref_Axis_CD.GuardMaxAccelMonitorFault**

??

BOOL

Servo Axis, Data type Axis CIP Drive

Ref_Axis_CD.GuardDirectionMonitorFault

??

BOOL

Servo Axis, Data type Axis CIP Drive

Ref_Axis_CD.GuardDoorMonitorInputFault

??

BOOL

Servo Axis, Data type Axis CIP Drive

Ref_Axis_CD.GuardDoorMonitorFault

??

BOOL

Servo Axis, Data type Axis CIP Drive

Ref_Axis_CD.GuardDoorControlOutputFault

??

BOOL

Servo Axis, Data type Axis CIP Drive

Ref_Axis_CD.GuardLockMonitorInputFault

??

BOOL

Servo Axis, Data type Axis CIP Drive

Ref_Axis_CD.GuardLockMonitorFault

??

BOOL

Servo Axis, Data type Axis CIP Drive

Ref_Axis_CD.GuardEnablingSwitchMonitorInputFault

??

BOOL

Servo Axis, Data type Axis CIP Drive

Ref_Axis_CD.GuardEnablingSwitchMonitorFault

??

BOOL

Servo Axis, Data type Axis CIP Drive

Ref_Axis_CD.GuardFeedback1VoltageMonitorFault

??

BOOL

Servo Axis, Data type Axis CIP Drive

Ref_Axis_CD.GuardFeedback2VoltageMonitorFault

??

BOOL

Servo Axis, Data type Axis CIP Drive

Ref_Axis_CD.CIPAxisState

??

INT

Servo Axis, Data type Axis CIP Drive

*Ref_Axis_CD.CIPAxisState - Axis_ObjectCD/Logic - 1(MOVE), 16(EQ), 16(LIMIT), 18(LIMIT), 2(EQ)***Ref_Axis_CD.CIPAxisStatus**

??

DINT

Servo Axis, Data type Axis CIP Drive

Ref_Axis_CD.LocalControlStatus

??

BOOL

Servo Axis, Data type Axis CIP Drive

Ref_Axis_CD.AlarmStatus

??

BOOL

Servo Axis, Data type Axis CIP Drive

Ref_Axis_CD.DCBusUpStatus

??

BOOL

Servo Axis, Data type Axis CIP Drive

Ref_Axis_CD.PowerStructureEnabledStatus

??

BOOL

Servo Axis, Data type Axis CIP Drive

Ref_Axis_CD.MotorFluxUpStatus

??

BOOL

Servo Axis, Data type Axis CIP Drive

Ref_Axis_CD.TrackingCommandStatus

??

BOOL

Servo Axis, Data type Axis CIP Drive

Ref_Axis_CD.PositionLockStatus

??

BOOL

Servo Axis, Data type Axis CIP Drive

Ref_Axis_CD.VelocityLockStatus

??

BOOL

Servo Axis, Data type Axis CIP Drive

Ref_Axis_CD.VelocityStandstillStatus

??

BOOL

Servo Axis, Data type Axis CIP Drive

Ref_Axis_CD.VelocityThresholdStatus

??

BOOL

Servo Axis, Data type Axis CIP Drive

Ref_Axis_CD (Continued)	
Ref_Axis_CD.VelocityLimitStatus ?? Servo Axis, Data type Axis CIP Drive	BOOL
Ref_Axis_CD.AccelerationLimitStatus ?? Servo Axis, Data type Axis CIP Drive	BOOL
Ref_Axis_CD.DecelerationLimitStatus ?? Servo Axis, Data type Axis CIP Drive	BOOL
Ref_Axis_CD.TorqueThresholdStatus ?? Servo Axis, Data type Axis CIP Drive	BOOL
Ref_Axis_CD.TorqueLimitStatus ?? Servo Axis, Data type Axis CIP Drive	BOOL
Ref_Axis_CD.CurrentLimitStatus ?? Servo Axis, Data type Axis CIP Drive	BOOL
Ref_Axis_CD.ThermalLimitStatus ?? Servo Axis, Data type Axis CIP Drive	BOOL
Ref_Axis_CD.FeedbackIntegrityStatus ?? Servo Axis, Data type Axis CIP Drive	BOOL
Ref_Axis_CD.CIPShutdownStatus ?? Servo Axis, Data type Axis CIP Drive	BOOL
Ref_Axis_CD.InProcessStatus ?? Servo Axis, Data type Axis CIP Drive	BOOL
Ref_Axis_CD.DCBusUnload ?? Servo Axis, Data type Axis CIP Drive	BOOL
Ref_Axis_CD.ACPowerLossStatus ?? Servo Axis, Data type Axis CIP Drive	BOOL
Ref_Axis_CD.PositionControlModeStatus ?? Servo Axis, Data type Axis CIP Drive	BOOL
Ref_Axis_CD.VelocityControlModeStatus ?? Servo Axis, Data type Axis CIP Drive	BOOL
Ref_Axis_CD.TorqueControlModeStatus ?? Servo Axis, Data type Axis CIP Drive	BOOL
Ref_Axis_CD.CIPAxisStatus2 ?? Servo Axis, Data type Axis CIP Drive	DINT
Ref_Axis_CD.MotoringStatus ?? Servo Axis, Data type Axis CIP Drive	BOOL
Ref_Axis_CD.RegeneratingStatus ?? Servo Axis, Data type Axis CIP Drive	BOOL
Ref_Axis_CD.RideThruStatus ?? Servo Axis, Data type Axis CIP Drive	BOOL
Ref_Axis_CD.ACLineSyncStatus ?? Servo Axis, Data type Axis CIP Drive	BOOL
Ref_Axis_CD.BusVoltageLockStatus ?? Servo Axis, Data type Axis CIP Drive	BOOL
Ref_Axis_CD.ReactivePowerOnlyModeStatus ?? Servo Axis, Data type Axis CIP Drive	BOOL
Ref_Axis_CD.VoltageControlModeStatus ?? Servo Axis, Data type Axis CIP Drive	BOOL
Ref_Axis_CD.PowerLossStatus ?? Servo Axis, Data type Axis CIP Drive	BOOL
Ref_Axis_CD.ACLineVoltageSagStatus ?? Servo Axis, Data type Axis CIP Drive	BOOL
Ref_Axis_CD.ACLinePhaseLossStatus	

Ref_Axis_CD (Continued)	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ACLineFrequencyChangeStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ACLineSyncLossStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SinglePhaseStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.BusVoltageLimitStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.BusVoltageRateLimitStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ActiveCurrentRateLimitStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ReactiveCurrentRateLimitStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ReactivePowerLimitStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ReactivePowerRateLimitStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ActiveCurrentLimitStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ReactiveCurrentLimitStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.MotoringPowerLimitStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.RegenerativePowerLimitStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ConverterThermalLimitStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.CIPAxisStatusRA	??	DINT
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.TorqueNotchFilterFrequencyDetectedStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.TorqueNotchFilterTuneUnsuccessfulStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.TorqueNotchFilterMultipleFreqStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.TorqueNotchFilterFreqBelowLimitStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.TorqueNotchFilterFreqAboveLimitStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.AdaptiveTuneGainStabilizationStatus	??	BOOL

Ref_Axis_CD (Continued)

Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.TestModeStatus ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.CIPAxisStatus2RA ??	DINT
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.CIPAxisIOStatus ??	DINT
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.EnableInputStatus ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.HomeInputStatus ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.Registration1InputStatus ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.Registration2InputStatus ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.PositiveOvertravelInputStatus ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.NegativeOvertravelInputStatus ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.Feedback1ThermostatStatus ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ResistiveBrakeOutputStatus ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.MechanicalBrakeOutputStatus ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.MotorThermostatInputStatus ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.CIPAxisIOStatusRA ??	DINT
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.RegenerativePowerInputStatus ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.BusCapacitorInputStatus ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ShuntThermalSwitchInputStatus ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ContactorenableOutputStatus ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.PreChargeInputStatus ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ACLineContactorenableInputStatus ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.RegenerativePowerOutputStatus ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.BusConditionerModuleInputStatus ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ConverterInputStatus	

Ref_Axis_CD (Continued)	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ConverterOutputStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.CIPAxisFaults	??	LINT
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.MotorOvercurrentFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.MotorCommutationFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
<i>Ref_Axis_CD.MotorCommutationFault - Axis_ObjectCD/Logic - 18(XIC)</i>		
Ref_Axis_CD.MotorOverspeedFLFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.MotorOverspeedULFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.MotorOvertemperatureFLFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
<i>Ref_Axis_CD.MotorOvertemperatureFLFault - Axis_ObjectCD/Logic - 18(XIC)</i>		
Ref_Axis_CD.MotorOvertemperatureULFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.MotorThermalOverloadFLFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
<i>Ref_Axis_CD.MotorThermalOverloadFLFault - Axis_ObjectCD/Logic - 18(XIC)</i>		
Ref_Axis_CD.MotorThermalOverloadULFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.MotorPhaseLossFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.InverterOvercurrentFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
<i>Ref_Axis_CD.InverterOvercurrentFault - Axis_ObjectCD/Logic - 18(XIC)</i>		
Ref_Axis_CD.InverterOvertemperatureFLFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
<i>Ref_Axis_CD.InverterOvertemperatureFLFault - Axis_ObjectCD/Logic - 18(XIC)</i>		
Ref_Axis_CD.InverterOvertemperatureULFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.InverterThermalOverloadFLFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
<i>Ref_Axis_CD.InverterThermalOverloadFLFault - Axis_ObjectCD/Logic - 18(XIC)</i>		
Ref_Axis_CD.InverterThermalOverloadULFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ConverterOvercurrentFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ConverterGroundCurrentFLFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ConverterGroundCurrentULFault		

Ref_Axis_CD (Continued)	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ConverterOvertemperatureFLFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
<i>Ref_Axis_CD.ConverterOvertemperatureFLFault - Axis_ObjectCD/Logic - 18(XIC)</i>		
Ref_Axis_CD.ConverterOvertemperatureULFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ConverterThermalOverloadFLFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
<i>Ref_Axis_CD.ConverterThermalOverloadFLFault - Axis_ObjectCD/Logic - 18(XIC)</i>		
Ref_Axis_CD.ConverterThermalOverloadULFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ConverterACPowerLossFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ConverterACSinglePhaseLossFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
<i>Ref_Axis_CD.ConverterACSinglePhaseLossFault - Axis_ObjectCD/Logic - 18(XIC)</i>		
Ref_Axis_CD.ConverterACPhaseShortFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ConverterPreChargeFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.BusRegulatorOvertemperatureFLFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
<i>Ref_Axis_CD.BusRegulatorOvertemperatureFLFault - Axis_ObjectCD/Logic - 18(XIC)</i>		
Ref_Axis_CD.BusRegulatorOvertemperatureULFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.BusRegulatorThermalOverloadFLFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
<i>Ref_Axis_CD.BusRegulatorThermalOverloadFLFault - Axis_ObjectCD/Logic - 18(XIC)</i>		
Ref_Axis_CD.BusRegulatorThermalOverloadULFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.BusRegulatorFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.BusModuleFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.BusUndervoltageFLFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
<i>Ref_Axis_CD.BusUndervoltageFLFault - Axis_ObjectCD/Logic - 18(XIC)</i>		
Ref_Axis_CD.BusUndervoltageULFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.BusOvervoltageFLFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
<i>Ref_Axis_CD.BusOvervoltageFLFault - Axis_ObjectCD/Logic - 18(XIC)</i>		
Ref_Axis_CD.BusOvervoltageULFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.BusPowerLossFault	??	BOOL

Ref_Axis_CD (Continued)	
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.BusPowerBlownFuseFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.BusPowerLeakageFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.BusPowerSharingFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.FeedbackSignalNoiseFLFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.FeedbackSignalNoiseULFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.FeedbackSignalLossFLFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.FeedbackSignalLossULFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.FeedbackDataLossFLFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.FeedbackDataLossULFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.FeedbackDeviceFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
<i>Ref_Axis_CD.FeedbackDeviceFault - Axis_ObjectCD/Logic - 18(XIC)</i>	
Ref_Axis_CD.SensorFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.BrakeSlipFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.HardwareOvertravelPositiveFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
<i>Ref_Axis_CD.HardwareOvertravelPositiveFault - Axis_ObjectCD/Logic - 18(XIC)</i>	
Ref_Axis_CD.HardwareOvertravelNegativeFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
<i>Ref_Axis_CD.HardwareOvertravelNegativeFault - Axis_ObjectCD/Logic - 18(XIC)</i>	
Ref_Axis_CD.ExcessivePositionErrorFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
<i>Ref_Axis_CD.ExcessivePositionErrorFault - Axis_ObjectCD/Logic - 18(XIC)</i>	
Ref_Axis_CD.ExcessiveVelocityErrorFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.OvertorqueLimitFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.UndertorqueLimitFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ExcessiveBusVoltageErrorFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.AmbientTemperatureRiseFault	
??	BOOL

Ref_Axis_CD (Continued)

Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.IllegalControlModeFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.EnableInputDeactivatedFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ControllerInitiatedFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ExternalInputFault	??
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.CIPAxisFaults2	??
??	LINT
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ACLineOvervoltageFLFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ACLineOvervoltageULFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ACLineUndervoltageFLFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ACLineUndervoltageULFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ACLineHighFrequencyFLFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ACLineHighFrequencyULFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ACLineLowFrequencyFLFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ACLineLowFrequencyULFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ACLineVoltageUnbalanceFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ACLineCurrentUnbalanceFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ACLineVoltageSagFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ACLineFrequencyChangeFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ACLineSyncLossFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ACLineSyncFailureFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.InverterGroundCurrentFLFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.InverterGroundCurrentULFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	

Ref_Axis_CD (Continued)	
Ref_Axis_CD.InverterOutputPhaseShortFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.AuxiliaryPowerSupplyFLFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.AuxiliaryPowerSupplyULFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.BusInputOvercurrentFLFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.BusInputOvercurrentULFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.CIPAxisFaultsRA	??
Servo Axis, Data type Axis CIP Drive	LINT
Ref_Axis_CD.CommutationStartupFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.MotorVoltageMismatchFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.FeedbackFilterNoiseFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.FeedbackBatteryLossFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.FeedbackBatteryLowFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.FeedbackIncrementalCountErrorFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ControlModuleOvertemperatureFLFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ControlModuleOvertemperatureULFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ConverterPreChargeOverloadFLFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
<i>Ref_Axis_CD.ConverterPreChargeOverloadFLFault - Axis_ObjectCD/Logic - 18(XIC)</i>	
Ref_Axis_CD.ConverterPreChargeOverloadULFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ExcessiveCurrentFeedbackOffsetFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.RegenerativePowerSupplyFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.PWMFrequencyReducedFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.CurrentLimitReducedFault	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.TorqueProveFault	??
Servo Axis, Data type Axis CIP Drive	BOOL

Ref_Axis_CD (Continued)

Ref_Axis_CD.DecelOverrideFault ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.PreventativeMaintenanceFault ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.MotorTestFault ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.HardwareConfigurationFault ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.FirmwareChangeFault ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ConverterPreChargeInputDeactivatedFault ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.DCCommonBusFault ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.RuntimeErrorFault ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.BackplaneCommunicationErrorFault ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.SafetyModuleCommunicationErrorFault ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ACLineContactorFault ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ACLineResonanceFLFault ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ACLineResonanceULFault ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.TrackStopFault ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.LostMoverAssociationFault ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.UnassociatedMoverFault ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.PeripheralHardwareFLFault ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.PeripheralHardwareULFault ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.PeripheralOverTemperatureFLFault ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.PeripheralOverTemperatureULFault ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.PeripheralUnderTemperatureFLFault ??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.PeripheralUnderTemperatureULFault ??	BOOL
Servo Axis, Data type Axis CIP Drive	

Ref_Axis_CD (Continued)

Ref_Axis_CD.PeripheralCommunicationFLFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.PeripheralCommunicationULFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.AdapterCommunicationFLFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.AdapterCommunicationULFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ExcessiveMotorVoltageFeedbackOffsetFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ACLinePhaseReversalFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.PhaseThermalImbalanceFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.DCBusVoltageImbalanceFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.PredictiveMaintenanceFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ProductSpecificFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.CIPAxisAlarms	??	LINT
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.MotorOvercurrentAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.MotorCommutationAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.MotorOverspeedFLAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.MotorOverspeedULAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.MotorOvertemperatureFLAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.MotorOvertemperatureULAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.MotorThermalOverloadFLAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.MotorThermalOverloadULAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.MotorPhaseLossAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.InverterOvercurrentAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.InverterOvertemperatureFLAlarm		

Ref_Axis_CD (Continued)	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.InverterOvertemperatureULAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.InverterThermalOverloadFLAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.InverterThermalOverloadULAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ConverterOvercurrentAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ConverterGroundCurrentFLAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ConverterGroundCurrentULAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ConverterOvertemperatureFLAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ConverterOvertemperatureULAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ConverterThermalOverloadFLAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ConverterThermalOverloadULAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ConverterACPowerLossAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ConverterACSinglePhaseLossAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ConverterACPhaseShortAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ConverterPreChargeAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.BusRegulatorOvertemperatureFLAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.BusRegulatorOvertemperatureULAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.BusRegulatorThermalOverloadFLAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.BusRegulatorThermalOverloadULAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.BusRegulatorAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.BusModuleAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.BusUndervoltageFLAlarm	??	BOOL

Ref_Axis_CD (Continued)

Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.BusUndervoltageULAlarm	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.BusOvervoltageFLAlarm	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.BusOvervoltageULAlarm	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.BusPowerLossAlarm	??
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.BusPowerBlownFuseAlarm	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.BusPowerLeakageAlarm	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.BusPowerSharingAlarm	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.FeedbackSignalNoiseFLAlarm	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.FeedbackSignalNoiseULAlarm	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.FeedbackSignalLossFLAlarm	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.FeedbackSignalLossULAlarm	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.FeedbackDataLossFLAlarm	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.FeedbackDataLossULAlarm	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.FeedbackDeviceAlarm	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.SensorAlarm	??
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.BrakeSlipAlarm	??
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.HardwareOvertravelPositiveAlarm	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.HardwareOvertravelNegativeAlarm	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ExcessivePositionErrorAlarm	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ExcessiveVelocityErrorAlarm	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.OvertorqueLimitAlarm	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.UndertorqueLimitAlarm	

Ref_Axis_CD (Continued)	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ExcessiveBusVoltageErrorAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.AmbientTemperatureRiseAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.IllegalControlModeAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.EnableInputDeactivatedAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ControllerInitiatedAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ExternalInputAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.CIPAxisAlarms2	??	LINT
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ACLineOvervoltageFLAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ACLineOvervoltageULAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ACLineUndervoltageFLAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ACLineUndervoltageULAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ACLineHighFrequencyFLAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ACLineHighFrequencyULAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ACLineLowFrequencyFLAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ACLineLowFrequencyULAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ACLineVoltageUnbalanceAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ACLineCurrentUnbalanceAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ACLineVoltageSagAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ACLineFrequencyChangeAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ACLineSyncLossAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ACLineSyncFailureAlarm	??	BOOL

Ref_Axis_CD (Continued)	
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.InverterGroundCurrentFLAlarm	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.InverterGroundCurrentULAlarm	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.InverterOutputPhaseShortAlarm	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.AuxiliaryPowerSupplyFLAlarm	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.AuxiliaryPowerSupplyULAlarm	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.BusInputOvercurrentFLAlarm	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.BusInputOvercurrentULAlarm	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.CIPAxisAlarmsRA	??
LINT	
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.CommutationStartupAlarm	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.MotorVoltageMismatchAlarm	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.FeedbackFilterNoiseAlarm	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.FeedbackBatteryLossAlarm	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.FeedbackBatteryLowAlarm	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.FeedbackIncrementalCountErrorAlarm	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ControlModuleOvertemperatureFLAlarm	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ControlModuleOvertemperatureULAlarm	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ConverterPreChargeOverloadFLAlarm	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ConverterPreChargeOverloadULAlarm	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ExcessiveCurrentFeedbackOffsetAlarm	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.RegenerativePowerSupplyAlarm	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.PWMFrequencyReducedAlarm	
??	BOOL

Ref_Axis_CD (Continued)	
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.CurrentLimitReducedAlarm	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.TorqueProveAlarm	??
Servo Axis, Data type Axis CIP Drive	BOOL
Ref_Axis_CD.DecelOverrideAlarm	??
Servo Axis, Data type Axis CIP Drive	BOOL
Ref_Axis_CD.PreventativeMaintenanceAlarm	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.MotorTestAlarm	??
Servo Axis, Data type Axis CIP Drive	BOOL
Ref_Axis_CD.HardwareConfigurationAlarm	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.FirmwareChangeAlarm	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ConverterPreChargeInputDeactivatedAlarm	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.DCCommonBusAlarm	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.RuntimeErrorAlarm	??
Servo Axis, Data type Axis CIP Drive	BOOL
Ref_Axis_CD.BackplaneCommunicationErrorAlarm	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.SafetyModuleCommunicationErrorAlarm	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ACLineContactorAlarm	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ACLineResonanceFLAlarm	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ACLineResonanceULAlarm	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.TrackStopAlarm	??
Servo Axis, Data type Axis CIP Drive	BOOL
Ref_Axis_CD.LostMoverAssociationAlarm	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.UnassociatedMoverAlarm	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.PeripheralHardwareFLAlarm	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.PeripheralHardwareULAlarm	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.PeripheralOverTemperatureFLAlarm	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.PeripheralOverTemperatureULAlarm	
??	BOOL
Servo Axis, Data type Axis CIP Drive	

Ref_Axis_CD (Continued)

Ref_Axis_CD.PeripheralUnderTemperatureFLAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.PeripheralUnderTemperatureULAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.PeripheralCommunicationFLAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.PeripheralCommunicationULAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.AdapterCommunicationFLAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.AdapterCommunicationULAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ExcessiveMotorVoltageFeedbackOffsetAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ACLinePhaseReversalAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.PhaseThermalImbalanceAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.DCBusVoltageImbalanceAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.PredictiveMaintenanceAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ProductSpecificAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.AxisSafetyAlarms	??	DINT
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SafetyCoreAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SafetyFeedbackAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SafeTorqueOffAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SS1Alarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SS2Alarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SOSAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SBCAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SMTAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SSMAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SLSAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SLAAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		

Ref_Axis_CD (Continued)		
Ref_Axis_CD.SDIAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SCAAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SLPAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SafetyValidatorAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SafetyAbortAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.AxisSafetyAlarmsRA	??	DINT
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SFXAlarm	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.CIPInitializationFaults	??	DINT
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.BootBlockChecksumFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.MainBlockChecksumFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.NonvolatileMemoryChecksumFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.CIPInitializationFaultsRA	??	DINT
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.CIPInitializationFaultsRA.19	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.FeedbackDataCorruptionFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.FeedbackDataRangeFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.FeedbackCommunicationStartupFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.FeedbackAbsoluteOverspeedFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.FeedbackAbsolutePowerOffTravelFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.FeedbackAbsoluteStartupSpeedFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.CommutationOffsetUninitializedFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.InvalidFPGAImageFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.InvalidBoardSupportPackageFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.InvalidSafetyFirmwareFault		

Ref_Axis_CD (Continued)	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.PowerBoardFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.IllegalOptionCardFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.OptionStorageChecksumFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ModuleVoltageMismatchFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
<i>Ref_Axis_CD.ModuleVoltageMismatchFault - Axis_ObjectCD/Logic - 18(XIC)</i>		
Ref_Axis_CD.UnknownModuleFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.FactoryConfigurationErrorFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.IllegalAddressFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SeriesMismatchFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.OpenSlotFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.MoverAxisAssignmentFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.TrackBackplaneCommunicationFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.UnassociatedSectionAxisFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.TrackConfigurationFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.CIPStartInhibits	??	INT
Servo Axis, Data type Axis CIP Drive		
<i>Ref_Axis_CD.CIPStartInhibits - Axis_ObjectCD/Logic - 15(NE)</i>		
Ref_Axis_CD.AxisEnableInputInhibit	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.MotorNotConfiguredInhibit	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.FeedbackNotConfiguredInhibit	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.CommutationNotConfigured	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SafeTorqueOffActiveInhibit	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ConverterBusUnloadInhibit	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.BusInputOvercurrentInhibit	??	BOOL

Ref_Axis_CD (Continued)

Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.InvalidSlipSpeedInhibit	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.CIPStartInhibitsRA	??
Servo Axis, Data type Axis CIP Drive	INT
<i>Ref_Axis_CD.CIPStartInhibitsRA - Axis_ObjectCD/Logic - 15(NE)</i>	
Ref_Axis_CD.VoltsHertzCurveDefinitionInhibit	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.MotorFeedbackRequiredInhibit	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.SpeedLimitConfigurationInhibit	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.TorqueProveConfigurationInhibit	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.SafeTorqueOffInhibit	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.SafetyResetRequiredInhibit	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.SafetyNotConfiguredInhibit	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.StopCommandActiveInhibit	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.FeedbackDeviceResetInhibit	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.BrakeMalfunctionInhibit	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.ACLineContactorInputInhibit	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.TrackSectionNotEnabledInhibit	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.TrackMoverMotorMismatchInhibit	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.AxisSafetyState	??
Servo Axis, Data type Axis CIP Drive	INT
Ref_Axis_CD.AxisSafetyDataA	??
Servo Axis, Data type Axis CIP Drive	DINT
Ref_Axis_CD.AxisSafetyDataB	??
Servo Axis, Data type Axis CIP Drive	DINT
Ref_Axis_CD.AxisSafetyStatus	??
Servo Axis, Data type Axis CIP Drive	DINT
Ref_Axis_CD.SafetyFaultStatus	??
Servo Axis, Data type Axis CIP Drive	BOOL
Ref_Axis_CD.SafetyResetRequestStatus	
??	BOOL
Servo Axis, Data type Axis CIP Drive	
Ref_Axis_CD.SafetyResetRequiredStatus	
??	BOOL
Servo Axis, Data type Axis CIP Drive	

Ref_Axis_CD (Continued)

Ref_Axis_CD.SafeTorqueOffActiveStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SafeTorqueDisabledStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SBCActiveStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SBCEngagedStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SS1ActiveStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SS2ActiveStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SOSActiveStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SOSStandstillStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SMTActiveStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SMTOvertemperatureStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SSMActiveStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SSMStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SLSActiveStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SLSLimitStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SLAAActiveStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SLALimitStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SDIAActiveStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SDILimitStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SafePositiveMotionStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SafeNegativeMotionStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SCAAActiveStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SCAStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SLPActiveStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SLPLimitStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SafetyOutputConnectionClosedStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SafetyOutputConnectionIdleStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.AxisSafetyStatusRA	??	DINT
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SafeBrakeIntegrityStatus		

Ref_Axis_CD (Continued)	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SafeFeedbackHomedStatus	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.AxisSafetyFaults	??	DINT
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SafetyCoreFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SafetyFeedbackFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SafeTorqueOffFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SS1Fault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SS2Fault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SOSFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SBCFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SMTFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SSMFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SLSFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SLAFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SDIFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SCAFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SLPFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SafetyValidatorFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SafetyAbortFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.AxisSafetyFaultsRA	??	DINT
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.SFXFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.CIPAPRFaults	??	INT
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.MemoryWriteErrorAPRFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.MemoryReadErrorAPRFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.FeedbackSerialNumberMismatchAPRFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.BufferAllocationAPRFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.ScalingConfigurationChangedAPRFault	??	BOOL
Servo Axis, Data type Axis CIP Drive		
Ref_Axis_CD.FeedbackModeChangedAPRFault	??	BOOL

Ref_Axis_CD (Continued)			
Servo Axis, Data type Axis CIP Drive			
Ref_Axis_CD.FeedbackIntegrityLossAPRFault	??	BOOL	
Servo Axis, Data type Axis CIP Drive			
Ref_Axis_CD.FeedbackPositionRangeChangedAPRFault	??	BOOL	
Servo Axis, Data type Axis CIP Drive			
Ref_Axis_CD.CIPAPRFaultsRA	??	INT	
Servo Axis, Data type Axis CIP Drive			
Ref_Axis_CD.PersistentMediaAPRFault	??	BOOL	
Servo Axis, Data type Axis CIP Drive			
Ref_Axis_CD.FirmwareErrorAPRFault	??	BOOL	
Servo Axis, Data type Axis CIP Drive			
Ref_Axis_CD.FeedbackBatteryLossAPRFault	??	BOOL	
Servo Axis, Data type Axis CIP Drive			
Ref_Axis_CD.MoverSequencingWithoutReferenceAPRFault	??	BOOL	
Servo Axis, Data type Axis CIP Drive			
Ref_Axis_CD.MoverAssignmentSequenceChangedAPRFault	??	BOOL	
Servo Axis, Data type Axis CIP Drive			
Sts_AbortDone	0	BOOL	Axis_ObjectCD
Condition: Aborting Done			
Usage:	Output Parameter		
Required:	No		
Visible:	Yes		
External Access:	Read Only		
OPC UA Access:	None		
<i>Sts_AbortDone - Axis_ObjectCD/Logic - *11(OTE)</i>			
Sts_AbsoluteReferenceStatus	0	BOOL	Axis_ObjectCD
Absolute Feedback device shows Reference Ok			
Usage:	Output Parameter		
Required:	No		
Visible:	No		
External Access:	Read Only		
OPC UA Access:	None		
<i>Sts_AbsoluteReferenceStatus - Axis_ObjectCD/Logic - *14(OTE)</i>			
Sts_AxisOk	0	BOOL	Axis_ObjectCD
Status Display: Axis ready to enable			
Usage:	Output Parameter		
Required:	No		
Visible:	Yes		
External Access:	Read Only		
OPC UA Access:	None		
<i>Sts_AxisOk - Axis_ObjectCD/Logic - *19(OTE)</i>			
Sts_CIP_StartInhibitActive	0	BOOL	Axis_ObjectCD
Usage:	Output Parameter		
Required:	No		
Visible:	Yes		
External Access:	Read Only		
OPC UA Access:	None		
<i>Sts_CIP_StartInhibitActive - Axis_ObjectCD/Logic - *15(OTE), 16(XIC)</i>			
Sts_DisableDone	0	BOOL	Axis_ObjectCD
Condition: Disable Done			

Sts_DisableDone (Continued)			
Usage:	Output Parameter		
Required:	No		
Visible:	Yes		
External Access:	Read Only		
OPC UA Access:	None		
<i>Sts_DisableDone - Axis_ObjectCD/Logic - *3(OTE)</i>			
Sts_EnableDone	0	BOOL	Axis_ObjectCD
Condition: Enable Done			
Usage:	Output Parameter		
Required:	No		
Visible:	Yes		
External Access:	Read Only		
OPC UA Access:	None		
<i>Sts_EnableDone - Axis_ObjectCD/Logic - *2(OTE)</i>			
Sts_ER	0	BOOL	Axis_ObjectCD
Any Fault occurred on this Axis			
Usage:	Output Parameter		
Required:	No		
Visible:	Yes		
External Access:	Read Only		
OPC UA Access:	None		
<i>Sts_ER - Axis_ObjectCD/Logic - *16(OTE), 18(XIC), 19(XIO), 2(XIO), 20(XIC)</i>			
Sts_Err	0	DINT	Axis_ObjectCD
Usage:	Output Parameter		
Required:	No		
Visible:	No		
External Access:	Read Only		
OPC UA Access:	None		
<i>Sts_Err - Axis_ObjectCD/Logic - *10(MOVE), *2(MOVE), *2(MOVE), *3(MOVE), *3(MOVE), *4(MOVE), *4(MOVE), *4(MOVE), *7(MOVE), 16(NE), 17(EQ), 17(NE)</i>			
<i>Sts_Err - Axis_ObjectCD/Prescan - *3(MOVE)</i>			
Sts_FaultResetDone	0	BOOL	Axis_ObjectCD
Condition: Fault Reset Done			
Usage:	Output Parameter		
Required:	No		
Visible:	Yes		
External Access:	Read Only		
OPC UA Access:	None		
<i>Sts_FaultResetDone - Axis_ObjectCD/Logic - *5(OTL), *5(OTU)</i>			
Sts_Homed	0	BOOL	Axis_ObjectCD
The Axis has been homed			
Usage:	Output Parameter		
Required:	No		
Visible:	Yes		
External Access:	Read Only		
OPC UA Access:	None		
<i>Sts_Homed - Axis_ObjectCD/Logic - *6(OTU), *8(OTL), 9(XIC)</i>			
<i>Sts_Homed - Axis_ObjectCD/Prescan - *2(OTU)</i>			
Sts_HomeDone	0	BOOL	Axis_ObjectCD
Condition: Home Done			
Usage:	Output Parameter		
Required:	No		
Visible:	Yes		
External Access:	Read Only		
OPC UA Access:	None		
<i>Sts_HomeDone - Axis_ObjectCD/Logic - *9(OTE)</i>			

Sts_NoMotion	0	BOOL	Axis_ObjectCD
AverageVelocity within ZeroSpeedTolerance and no MotionStatus set			
Usage:	Output Parameter		
Required:	No		
Visible:	Yes		
External Access:	Read Only		
OPC UA Access:	None		
<i>Sts_NoMotion - Axis_ObjectCD/Logic - *13(O TE), 11(XIC)</i>			
Sts_StopDone	0	BOOL	Axis_ObjectCD
Condition: Stopping Done			
Usage:	Output Parameter		
Required:	No		
Visible:	Yes		
External Access:	Read Only		
OPC UA Access:	None		
<i>Sts_StopDone - Axis_ObjectCD/Logic - *11(O TE)</i>			

Name	Default	Data Type	Scope
Wrk_DecelRate	0.0	REAL	Axis_ObjectCD
Usage:	Local Tag		
External Access:	None		
OPC UA Access:	None		
<i>Wrk_DecelRate - Axis_ObjectCD/Logic - *10(MOVE), *10(MOVE), 10(MAS)</i>			
Wrk_ER_ONS	0	BOOL	Axis_ObjectCD
Usage:	Local Tag		
External Access:	None		
OPC UA Access:	None		
<i>Wrk_ER_ONS - Axis_ObjectCD/Logic - *20(ONS)</i>			
Wrk_FaultReset_delay		TIMER	Axis_ObjectCD
Usage:	Local Tag		
External Access:	None		
OPC UA Access:	None		
<i>Wrk_FaultReset_delay - Axis_ObjectCD/Logic - *5(TON)</i>			
Wrk_FaultReset_delay.DN	0	BOOL	
<i>Wrk_FaultReset_delay.DN - Axis_ObjectCD/Logic - 5(XIC)</i>			
Wrk_HomeSequence	0	DINT	Axis_ObjectCD
Usage:	Local Tag		
External Access:	None		
OPC UA Access:	None		
<i>Wrk_HomeSequence - Axis_ObjectCD/Logic - *6(MOVE), *7(MOVE), *8(MOVE), 7(EQ), 8(EQ)</i>			
<i>Wrk_HomeSequence - Axis_ObjectCD/Prescan - *2(MOVE)</i>			
Wrk_MI_Disable		MOTION_INSTRUCTION	Axis_ObjectCD
Usage:	Local Tag		
External Access:	None		
OPC UA Access:	None		
<i>Wrk_MI_Disable - Axis_ObjectCD/Logic - *3(MSF)</i>			
<i>Wrk_MI_Disable - Axis_ObjectCD/Prescan - *1(COP)</i>			
Wrk_MI_Disable.DN	0	BOOL	
<i>Wrk_MI_Disable.DN - Axis_ObjectCD/Logic - 3(XIC)</i>			
Wrk_MI_Disable.ER	0	BOOL	
<i>Wrk_MI_Disable.ER - Axis_ObjectCD/Logic - 3(XIC), 3(XIC)</i>			
Wrk_MI_Disable.ERR	0	INT	
<i>Wrk_MI_Disable.ERR - Axis_ObjectCD/Logic - 3(MOVE)</i>			
Wrk_MI_Disable.EXERR	0	SINT	
<i>Wrk_MI_Disable.EXERR - Axis_ObjectCD/Logic - 3(MOVE)</i>			
Wrk_MI_Enable		MOTION_INSTRUCTION	Axis_ObjectCD
Usage:	Local Tag		
External Access:	None		
OPC UA Access:	None		
<i>Wrk_MI_Enable - Axis_ObjectCD/Logic - *2(MSO)</i>			
<i>Wrk_MI_Enable - Axis_ObjectCD/Prescan - *1(COP)</i>			
Wrk_MI_Enable.ER	0	BOOL	
<i>Wrk_MI_Enable.ER - Axis_ObjectCD/Logic - 2(XIC)</i>			
Wrk_MI_Enable.ERR	0	INT	
<i>Wrk_MI_Enable.ERR - Axis_ObjectCD/Logic - 2(MOVE)</i>			
Wrk_MI_Enable.EXERR	0	SINT	
<i>Wrk_MI_Enable.EXERR - Axis_ObjectCD/Logic - 2(MOVE)</i>			
Wrk_MI_FaultReset		MOTION_INSTRUCTION	Axis_ObjectCD
Usage:	Local Tag		
External Access:	None		
OPC UA Access:	None		
<i>Wrk_MI_FaultReset - Axis_ObjectCD/Logic - *4(MAFR)</i>			
<i>Wrk_MI_FaultReset - Axis_ObjectCD/Prescan - *1(COP)</i>			
Wrk_MI_FaultReset.ER	0	BOOL	

Wrk_MI_FaultReset (Continued)		
<i>Wrk_MI_FaultReset.ER - Axis_ObjectCD/Logic - 4(XIC)</i>		
Wrk_MI_FaultReset.ERR	0	INT
<i>Wrk_MI_FaultReset.ERR - Axis_ObjectCD/Logic - 4(MOVE)</i>		
Wrk_MI_FaultReset.EXERR	0	SINT
<i>Wrk_MI_FaultReset.EXERR - Axis_ObjectCD/Logic - 4(MOVE)</i>		
Wrk_MI_Home		MOTION_INSTRUCTION
		Axis_ObjectCD
Usage:	Local Tag	
External Access:	None	
OPC UA Access:	None	
<i>Wrk_MI_Home - Axis_ObjectCD/Logic - *7(MAH)</i>		
<i>Wrk_MI_Home - Axis_ObjectCD/Prescan - *1(COP)</i>		
Wrk_MI_Home.ER	0	BOOL
<i>Wrk_MI_Home.ER - Axis_ObjectCD/Logic - 7(XIC)</i>		
Wrk_MI_Home.PC	0	BOOL
<i>Wrk_MI_Home.PC - Axis_ObjectCD/Logic - 8(XIC)</i>		
Wrk_MI_Home.ERR	0	INT
<i>Wrk_MI_Home.ERR - Axis_ObjectCD/Logic - 7(MOVE)</i>		
Wrk_MI_Home.EXERR	0	SINT
<i>Wrk_MI_Home.EXERR - Axis_ObjectCD/Logic - 7(MOVE)</i>		
Wrk_MI_Init		MOTION_INSTRUCTION
		Axis_ObjectCD
Usage:	Local Tag	
External Access:	None	
OPC UA Access:	None	
<i>Wrk_MI_Init - Axis_ObjectCD/Prescan - 1(COP), 1(COP), 1(COP), 1(COP), 1(COP), 1(COP)</i>		
Wrk_MI_Init.FLAGS	0	DINT
<i>Wrk_MI_Init.FLAGS - Axis_ObjectCD/Prescan - *1(MOVE)</i>		
Wrk_MI_Init.ERR	0	INT
<i>Wrk_MI_Init.ERR - Axis_ObjectCD/Prescan - *1(MOVE)</i>		
Wrk_MI_Init.STATUS	0	SINT
<i>Wrk_MI_Init.STATUS - Axis_ObjectCD/Prescan - *1(MOVE)</i>		
Wrk_MI_Init.STATE	0	SINT
<i>Wrk_MI_Init.STATE - Axis_ObjectCD/Prescan - *1(MOVE)</i>		
Wrk_MI_Init.SEGMENT	0	DINT
<i>Wrk_MI_Init.SEGMENT - Axis_ObjectCD/Prescan - *1(MOVE)</i>		
Wrk_MI_Init.EXERR	0	SINT
<i>Wrk_MI_Init.EXERR - Axis_ObjectCD/Prescan - *1(MOVE)</i>		
Wrk_MI_ShutdownReset		MOTION_INSTRUCTION
		Axis_ObjectCD
Usage:	Local Tag	
External Access:	None	
OPC UA Access:	None	
<i>Wrk_MI_ShutdownReset - Axis_ObjectCD/Logic - *4(MASR)</i>		
<i>Wrk_MI_ShutdownReset - Axis_ObjectCD/Prescan - *1(COP)</i>		
Wrk_MI_ShutdownReset.ER	0	BOOL
<i>Wrk_MI_ShutdownReset.ER - Axis_ObjectCD/Logic - 4(XIC)</i>		
Wrk_MI_ShutdownReset.ERR	0	INT
<i>Wrk_MI_ShutdownReset.ERR - Axis_ObjectCD/Logic - 4(MOVE)</i>		
Wrk_MI_ShutdownReset.EXERR	0	SINT
<i>Wrk_MI_ShutdownReset.EXERR - Axis_ObjectCD/Logic - 4(MOVE)</i>		
Wrk_MI_Stop		MOTION_INSTRUCTION
		Axis_ObjectCD
Usage:	Local Tag	
External Access:	None	
OPC UA Access:	None	
<i>Wrk_MI_Stop - Axis_ObjectCD/Logic - *10(MAS)</i>		
<i>Wrk_MI_Stop - Axis_ObjectCD/Prescan - *1(COP)</i>		
Wrk_MI_Stop.ER	0	BOOL
<i>Wrk_MI_Stop.ER - Axis_ObjectCD/Logic - 10(XIC)</i>		
Wrk_MI_Stop.ERR	0	INT
<i>Wrk_MI_Stop.ERR - Axis_ObjectCD/Logic - 10(MOVE)</i>		

Wrk_MI_Stop (Continued)			
Wrk_MI_Stop.EXERR	0	SINT	
<i>Wrk_MI_Stop.EXERR - Axis_ObjectCD/Logic - 10(MOVE)</i>			
Wrk_MSFWatchdog		TIMER	Axis_ObjectCD
Usage:	Local Tag		
External Access:	None		
OPC UA Access:	None		
<i>Wrk_MSFWatchdog - Axis_ObjectCD/Logic - *3(TON)</i>			
Wrk_MSFWatchdog.PRE	0	DINT	
<i>Wrk_MSFWatchdog.PRE - Axis_ObjectCD/Logic - *3(MOVE)</i>			
Wrk_MSFWatchdog.DN	0	BOOL	
<i>Wrk_MSFWatchdog.DN - Axis_ObjectCD/Logic - 3(XIC)</i>			
Wrk_MSOWatchdog		TIMER	Axis_ObjectCD
Usage:	Local Tag		
External Access:	None		
OPC UA Access:	None		
<i>Wrk_MSOWatchdog - Axis_ObjectCD/Logic - *2(TON)</i>			
Wrk_MSOWatchdog.PRE	0	DINT	
<i>Wrk_MSOWatchdog.PRE - Axis_ObjectCD/Logic - *2(MOVE)</i>			
Wrk_MSOWatchdog.DN	0	BOOL	
<i>Wrk_MSOWatchdog.DN - Axis_ObjectCD/Logic - 2(XIC)</i>			
Wrk_ONS_HomeStart	0	BOOL	Axis_ObjectCD
Usage:	Local Tag		
External Access:	None		
OPC UA Access:	None		
<i>Wrk_ONS_HomeStart - Axis_ObjectCD/Logic - *6(ONS)</i>			
<i>Wrk_ONS_HomeStart - Axis_ObjectCD/Prescan - *2(OTU)</i>			
Wrk_ONS_Init	0	BOOL	Axis_ObjectCD
Usage:	Local Tag		
External Access:	None		
OPC UA Access:	None		
<i>Wrk_ONS_Init - Axis_ObjectCD/Logic - *4(ONS)</i>			
Wrk_Velocity	0.0	REAL	Axis_ObjectCD
Usage:	Local Tag		
External Access:	Read/Write		
OPC UA Access:	None		
<i>Wrk_Velocity - Axis_ObjectCD/Logic - *13(ABS), 13(LE)</i>			

```

/////////////////////////////////////////////////////////////////
COMPANY:      Rockwell Automation / Dogwood Valley Press
FUNCTION:     AXIS_CIP_DRIVE AOI
AUTHOR:      Rockwell Automation/Kelvin Erickson
DATE UPDATED: July 2020

FUNCTION:

Version Comments: Modified homing sequence to omit check for status of home switch.
If configured to not home, home done status turned on immediately

/////////////////////////////////////////////////////////////////

```

[NOP]

```

///////////////////////////////////////////////////////////////// CIP AXIS STATE ///////////////////////////////////////////////////////////////////

- ENUMERATION :

0 = Initializing
1 = Pre-Charge
2 = Stopped
3 = Starting
4 = Running
5 = Testing
6 = Stopping
7 = Aborting
8 = Faulted
9 = Start Inhibited
10 = Shutdown
11 = Axis Inhibited
12 = Not Grouped
13 = No Module
14...255 = Reserved

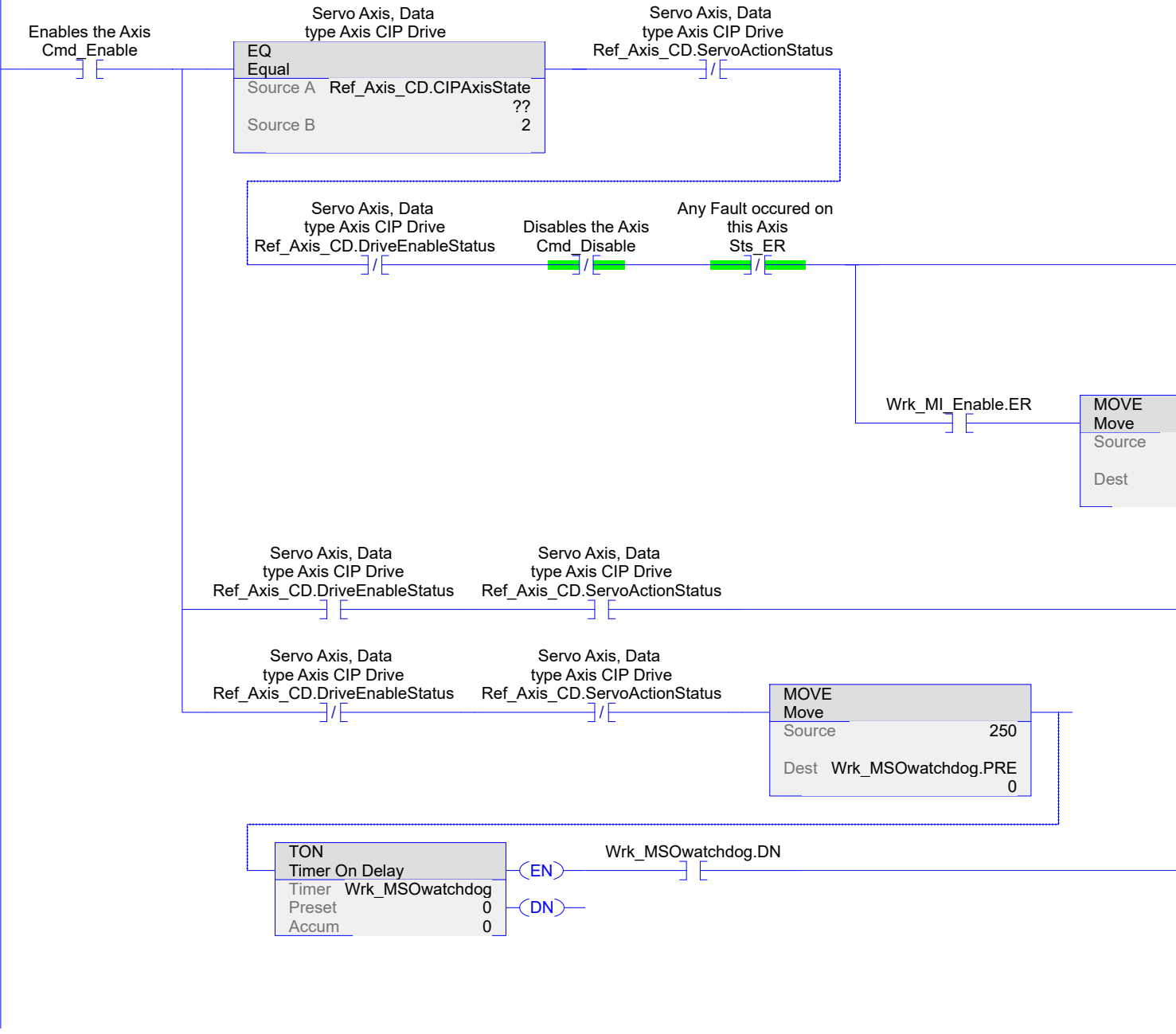
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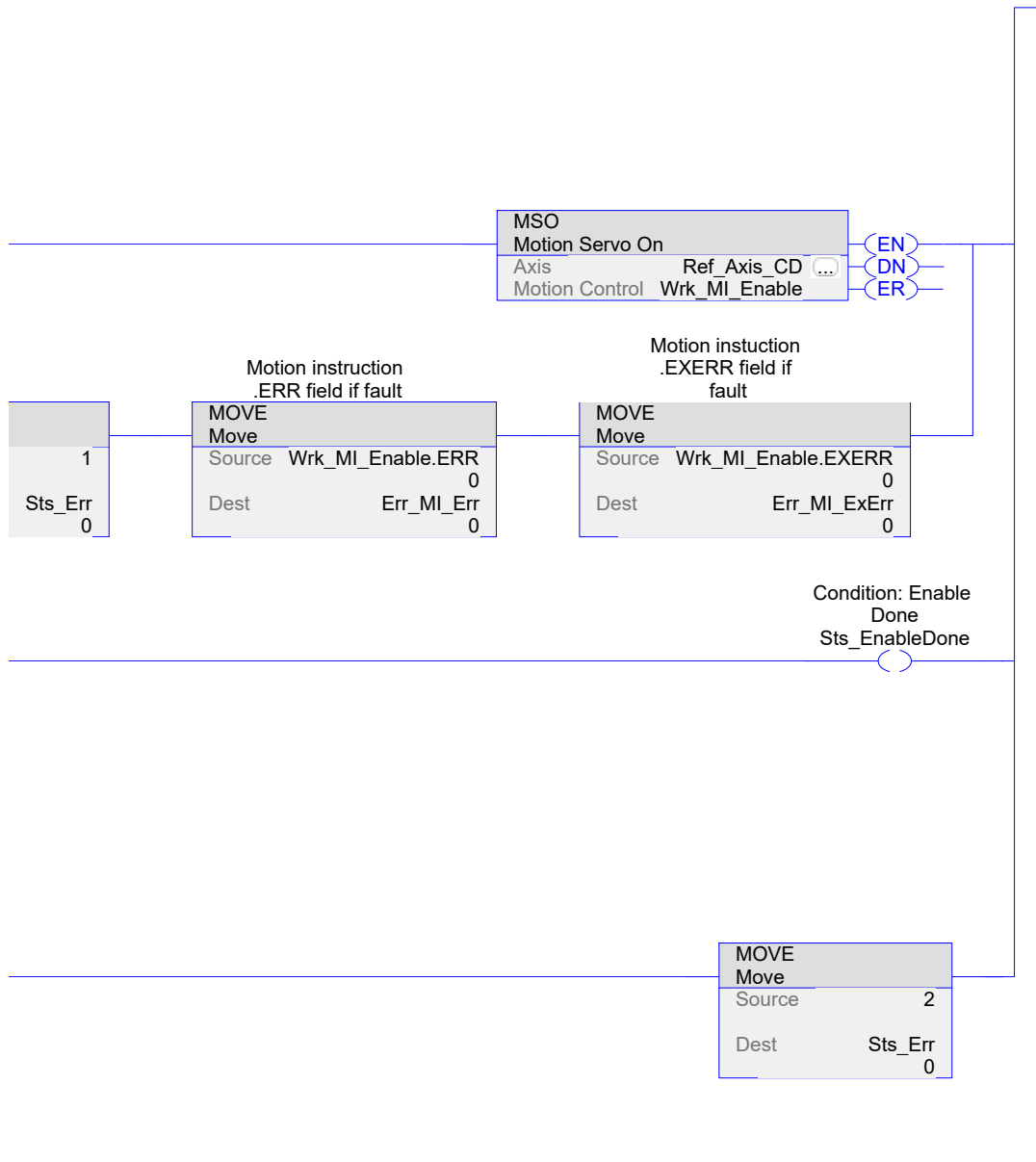
CipState

MOVE	
Move	
Source	Ref_Axis_CD.CIPAxisState ??
Dest	Out_AxisCipState 0

////////////////////////////////////
 - SECTION AXIS ENABLE
 //////////////////////////////////////
 ENABLE AXIS (CLOSE SERVULOOP)
 ***** Changed occurrences of Ref_Axis_CD.PowerStructureEnabledStatus to Ref_Axis_CD.DriveEnableStatus

2

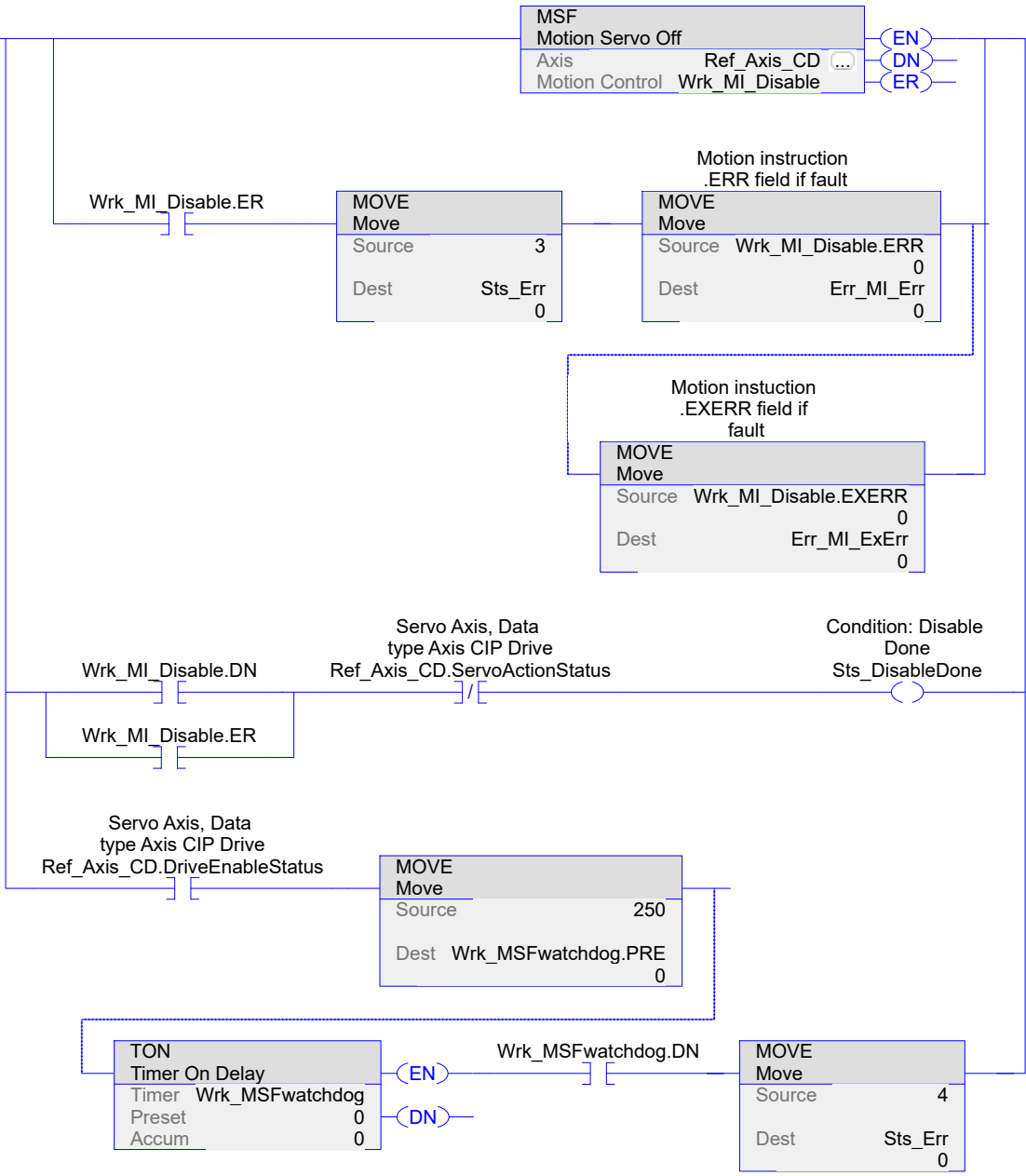




3

SECTION AXIS DISABLE
DISABLE AXIS (OPEN SERVOLOOP)

Disables the Axis
Cmd_Disable

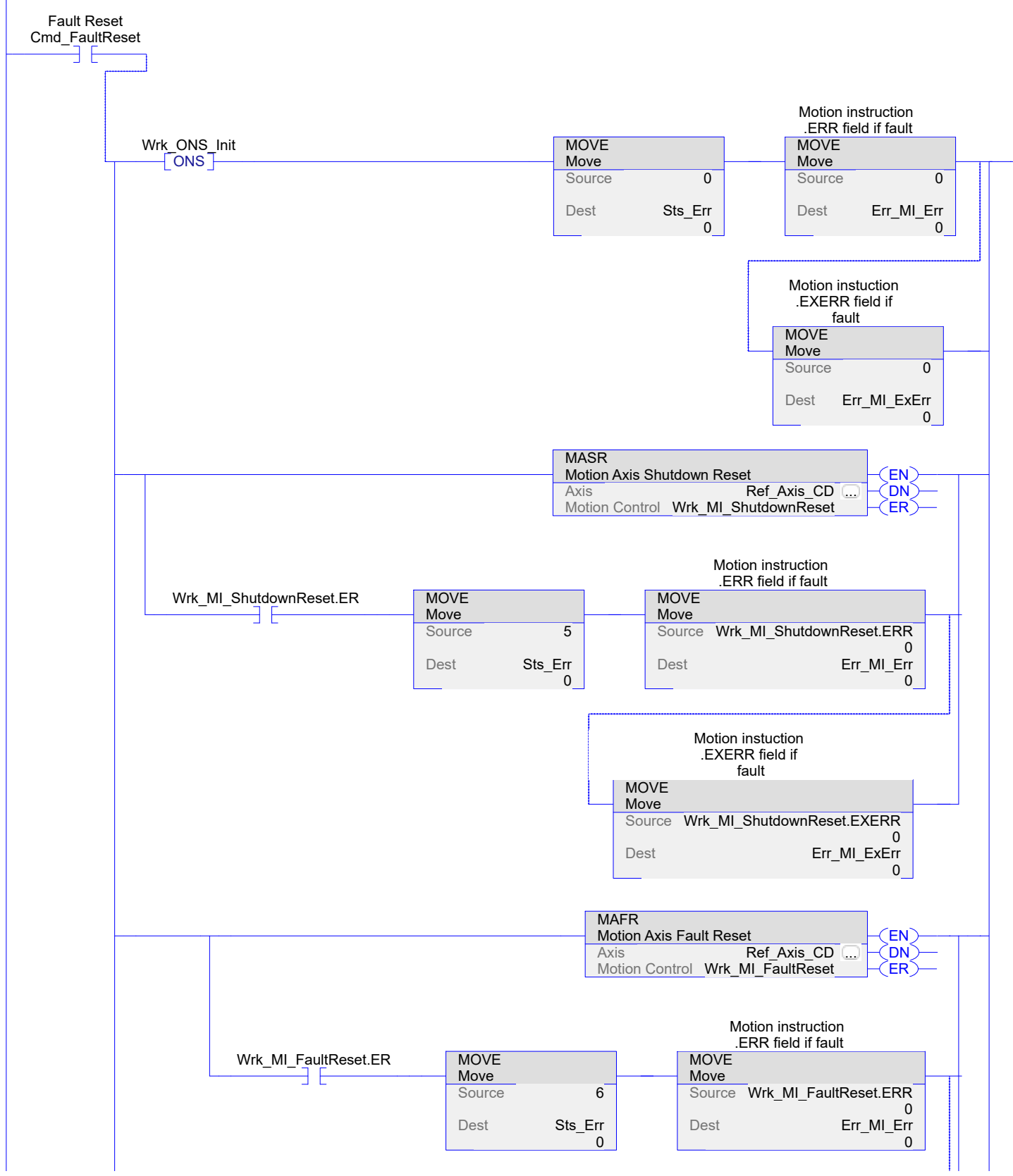


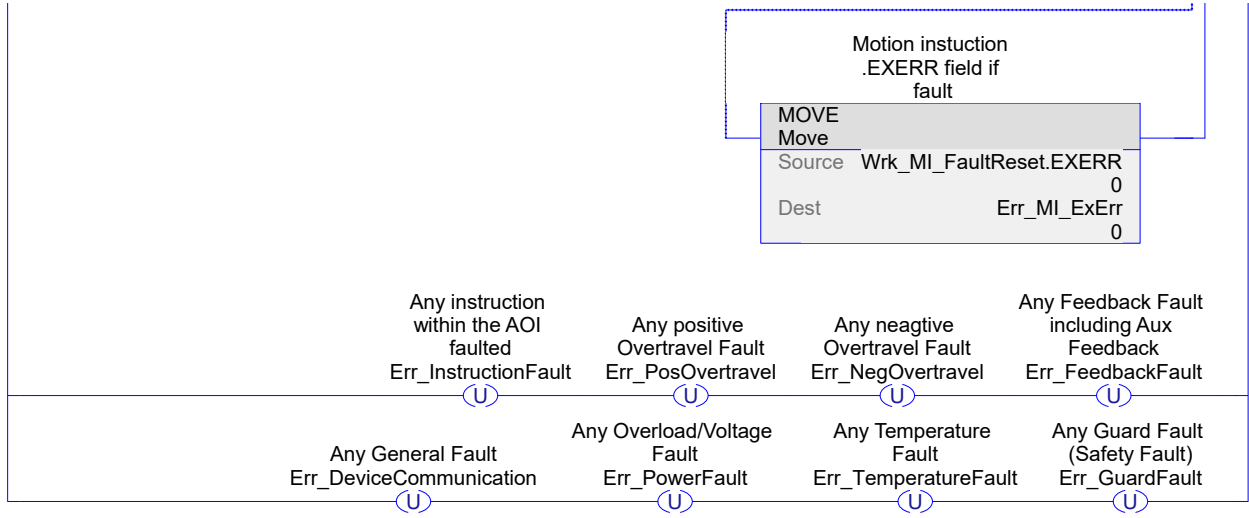
SECTION AXIS FAULT RESET

RESET FAULTs

***** Corrected to zero Sts_Err and Sts_ExtErr only on transition of Cmd_FaultReset

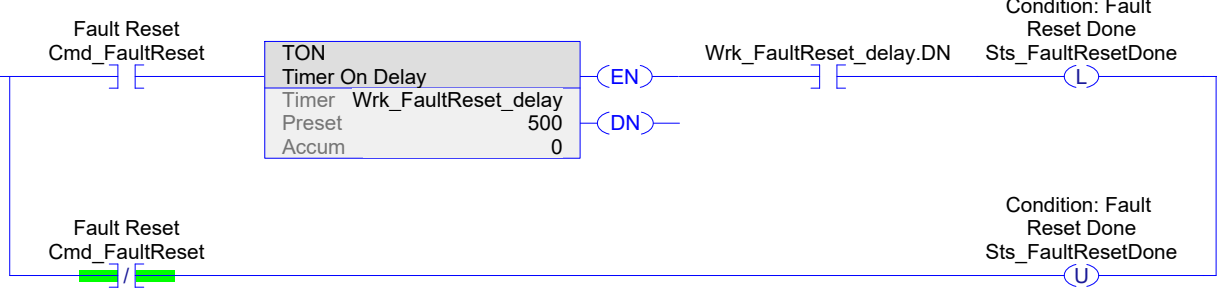
4





FAULT RESET DONE / HANDSHAKE

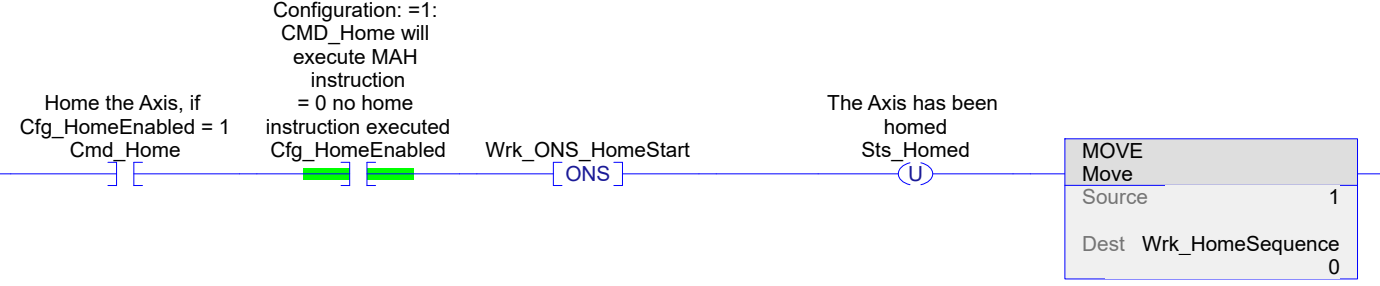
5



////////////////////
 - SECTION AXIS HOMING
 //////////////////////

HOME COMMAND, TO INITIATE THE HOME SEQUENCE

6



HOME SEQUENCE EXECUTION (CONFIGURATION VIA AXIS PROPERTIES WIZARDS)

7

EQ
Equal
Source A Wrk_HomeSequence
0
Source B
1

MAH
Motion Ax
Axis
Motion Co

Wrk_MI_Home.ER

MOVE
Move
Source 7
Dest Sts_Err
0

Motion instruction
.ERR field if fault

MOVE
Move
Source Wrk_MI_Home.ERR
0
Dest Err_MI_Err
0

Home
Ref_Axis_CD ...
Control Wrk_MI_Home

EN
DN
ER
IP
PC

Motion instruction
.EXERR field if
fault

MOVE
Move
Source Wrk_MI_Home.EXERR
0
Dest Err_MI_ExErr
0

MOVE
Move
Source 2
Dest Wrk_HomeSequence
0

AXIS IS HOMED

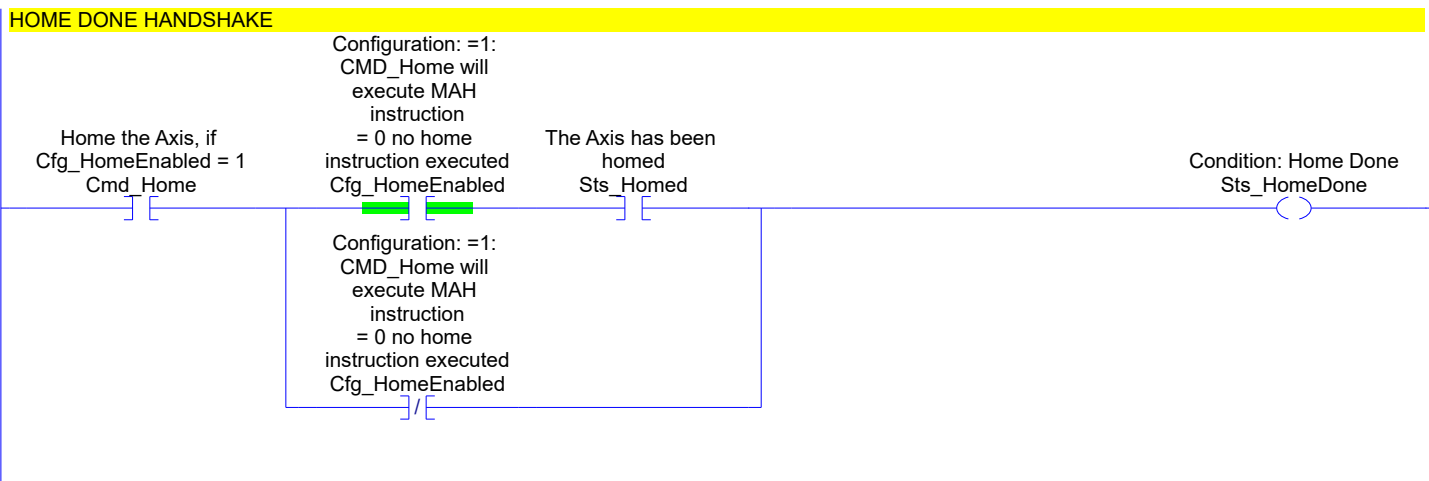
8

EQ
Equal
Source A Wrk_HomeSequence
0
Source B
2

Wrk_MI_Home.PC

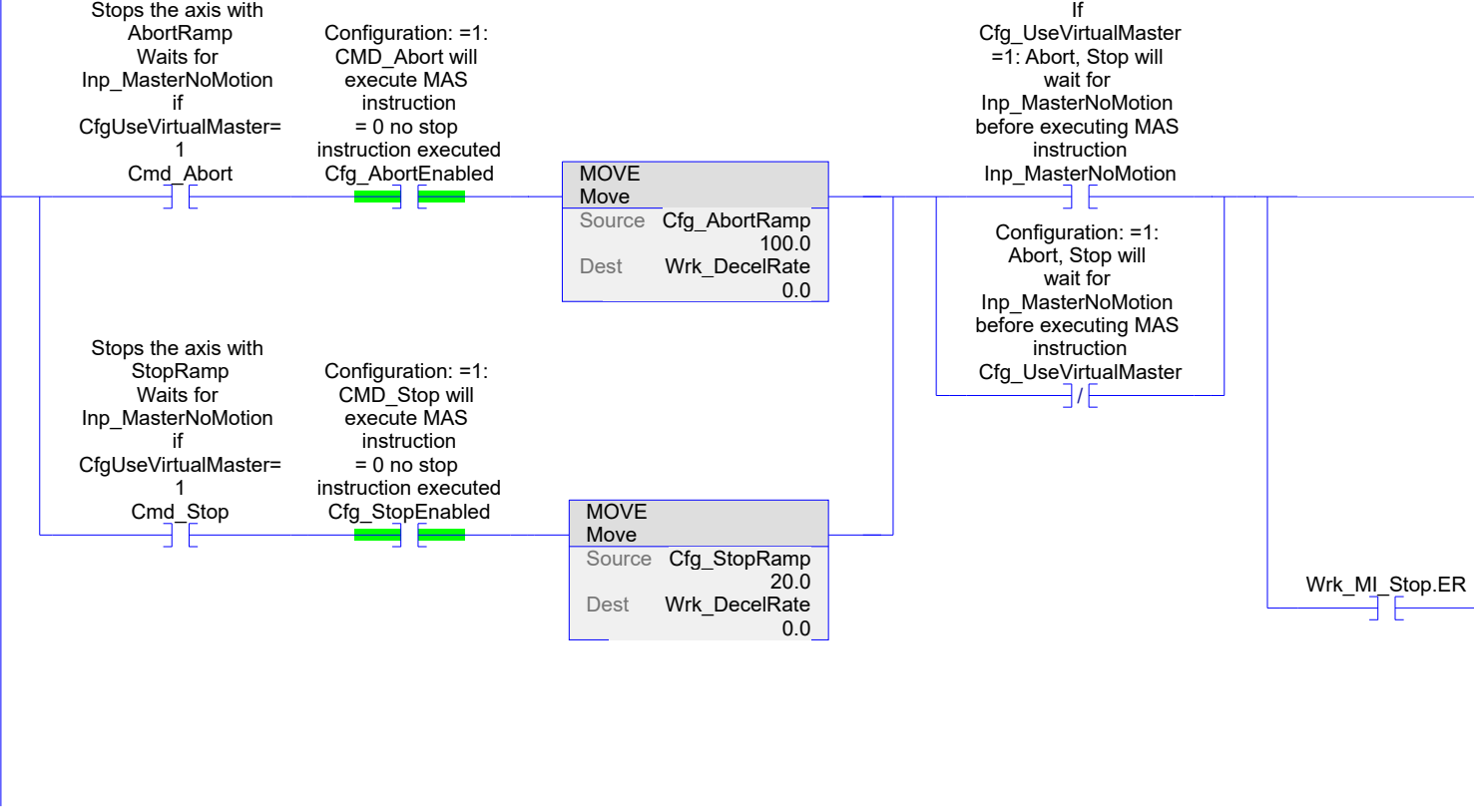
The Axis has been
homed
Sts_Homed

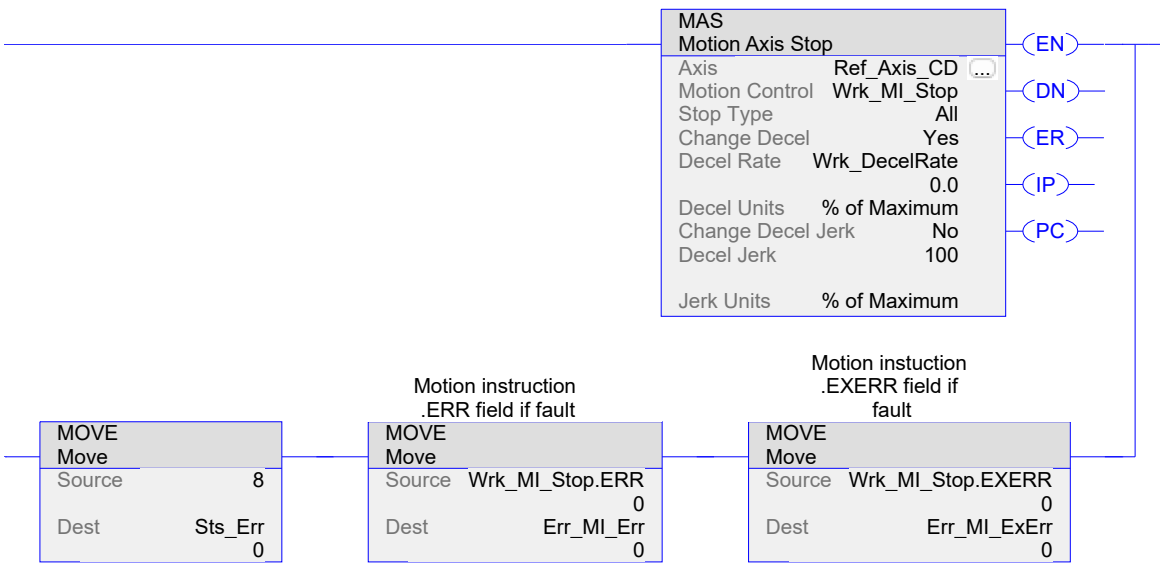
MOVE
Move
Source 3
Dest Wrk_HomeSequence
0



- SECTION AXIS STOP

WHENEVER THE MACHINE ENTERS EITHER STOPPING OR ABORTING, STOP THE AXIS
 - If stopping, all axes are stopped AFTER the imaginary stops. This provides a coordinated stop
 - Aborting cause all axes independently to stop.





STOP DONE HANDSHAKE

11

AverageVelocity
 within
 ZeroSpeedTolerance
 and no MotionStatus
 set
 Sts_NoMotion

Stops the axis with
 AbortRamp
 Waits for
 Inp_MasterNoMotion
 if
 CfgUseVirtualMaster=
 1
 Cmd_Abort

Configuration: =1:
 CMD_Abort will
 execute MAS
 instruction
 = 0 no stop
 instruction executed
 Cfg_AbortEnabled

Condition: Aborting
 Done
 Sts_AbortDone

Stops the axis with
 StopRamp
 Waits for
 Inp_MasterNoMotion
 if
 CfgUseVirtualMaster=
 1
 Cmd_Stop

Configuration: =1:
 CMD_Stop will
 execute MAS
 instruction
 = 0 no stop
 instruction executed
 Cfg_StopEnabled

Condition: Stopping
 Done
 Sts_StopDone

- SECTION STATUS BIT UPDATE

12

[NOP]

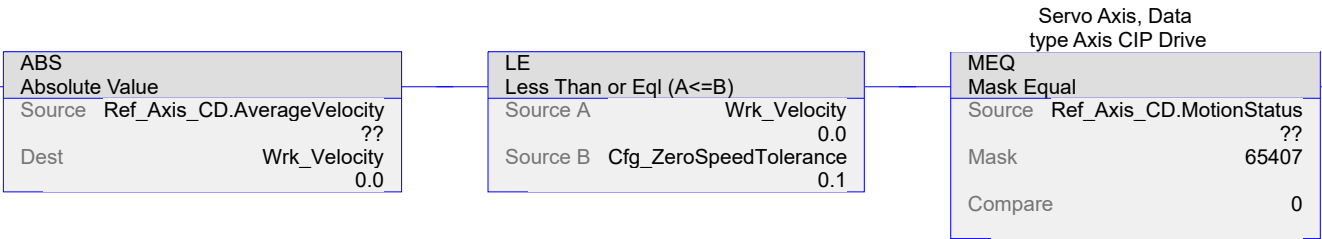
//////////////////////////////////// CIP AXIS //////////////////////////////////////

- NO AXIS MOVEMENT

Description : MotionStatus
 Bit 00 AccelStatus
 Bit 01 DecelStatus
 Bit 02 MoveStatus
 Bit 03 JogStatus
 Bit 04 GearingStatus
 Bit 05 HomingStatus
 Bit 06 StoppingStatus
 Bit 07 AxisHomedStatus
 Bit 08 PositionCamStatus
 Bit 09 TimeCamStatus
 Bit 10 PositionCamPendingStatus
 Bit 11 TimeCamPendingStatus
 Bit 12 GearingLockStatus
 Bit 13 PositionCamLockStatus
 Bit 14 MasterOffsetMoveStatus
 Bit 15 CoordinatedMotionStatus

65407 = 1111 1111 0111 1111

13



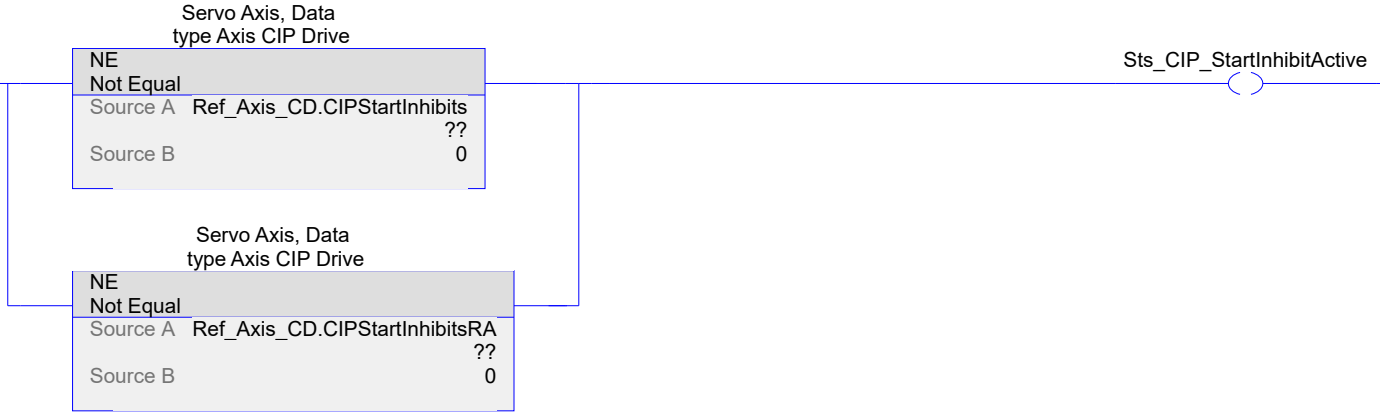
AverageVelocity within ZeroSpeedTolerance and no MotionStatus set
 Sts_NoMotion

- ABSOLUTE REFERENCE STATUS INFORMATION

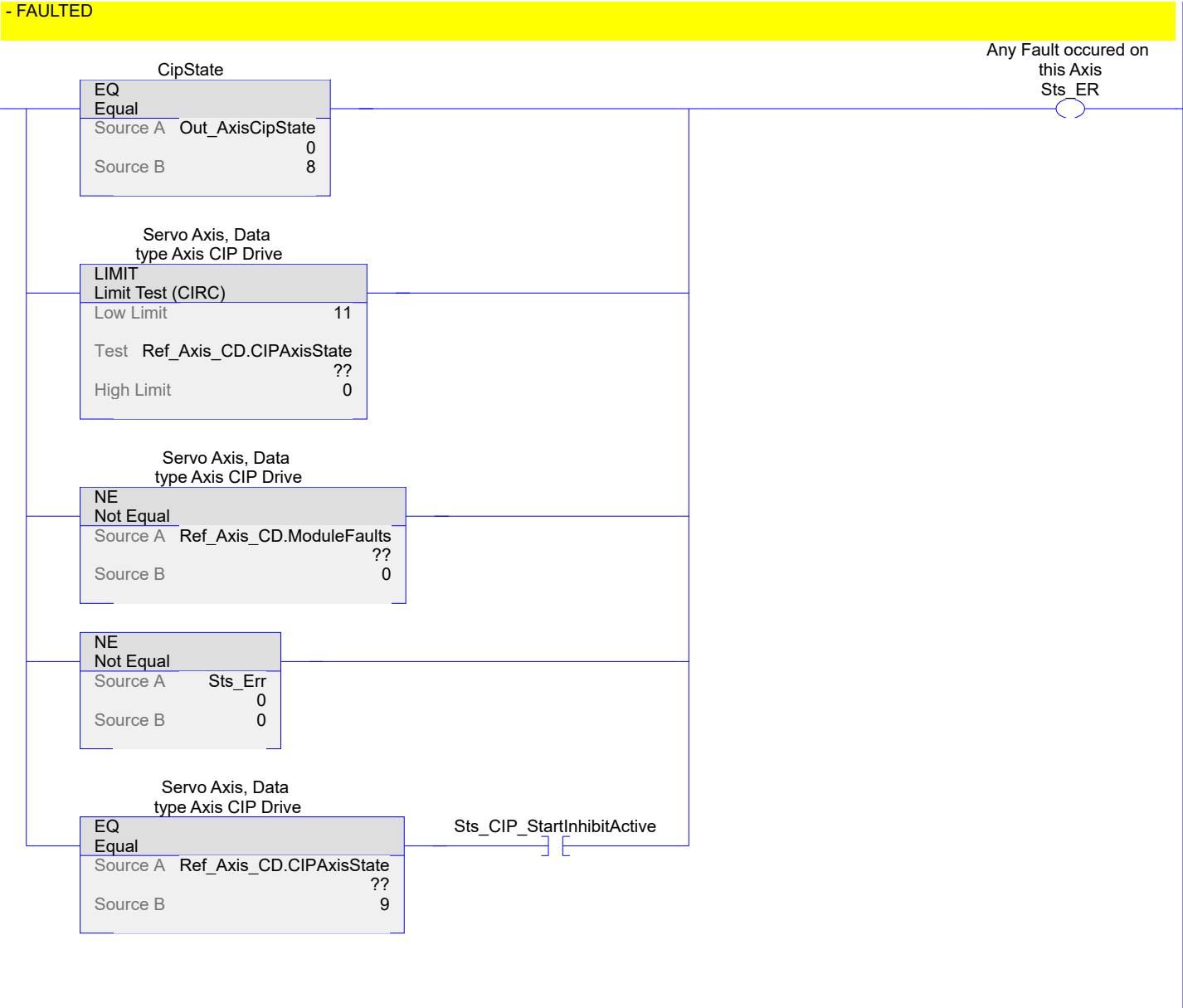
14



15



16



- AOI INSTRUCTION FAULTS Sts_Err holds location of motion instruction fault

- 1 = Enable MSO error
- 2 = Enable timeout. MSO did not complete in 250 ms. Err_MI_Err and Err_MI_ExErr are zero.
- 3 = Disable MSF error
- 4 = Disable timeout. MSF did not complete in 250 ms. Err_MI_Err and Err_MI_ExErr are zero.
- 5 = Fault reset MASR error
- 6 = Fault reset MAFR error
- 7 = Homing MAH error
- 8 = Stopping MAS error

17

NE	
Not Equal	
Source A	Sts_Err
	0
Source B	0

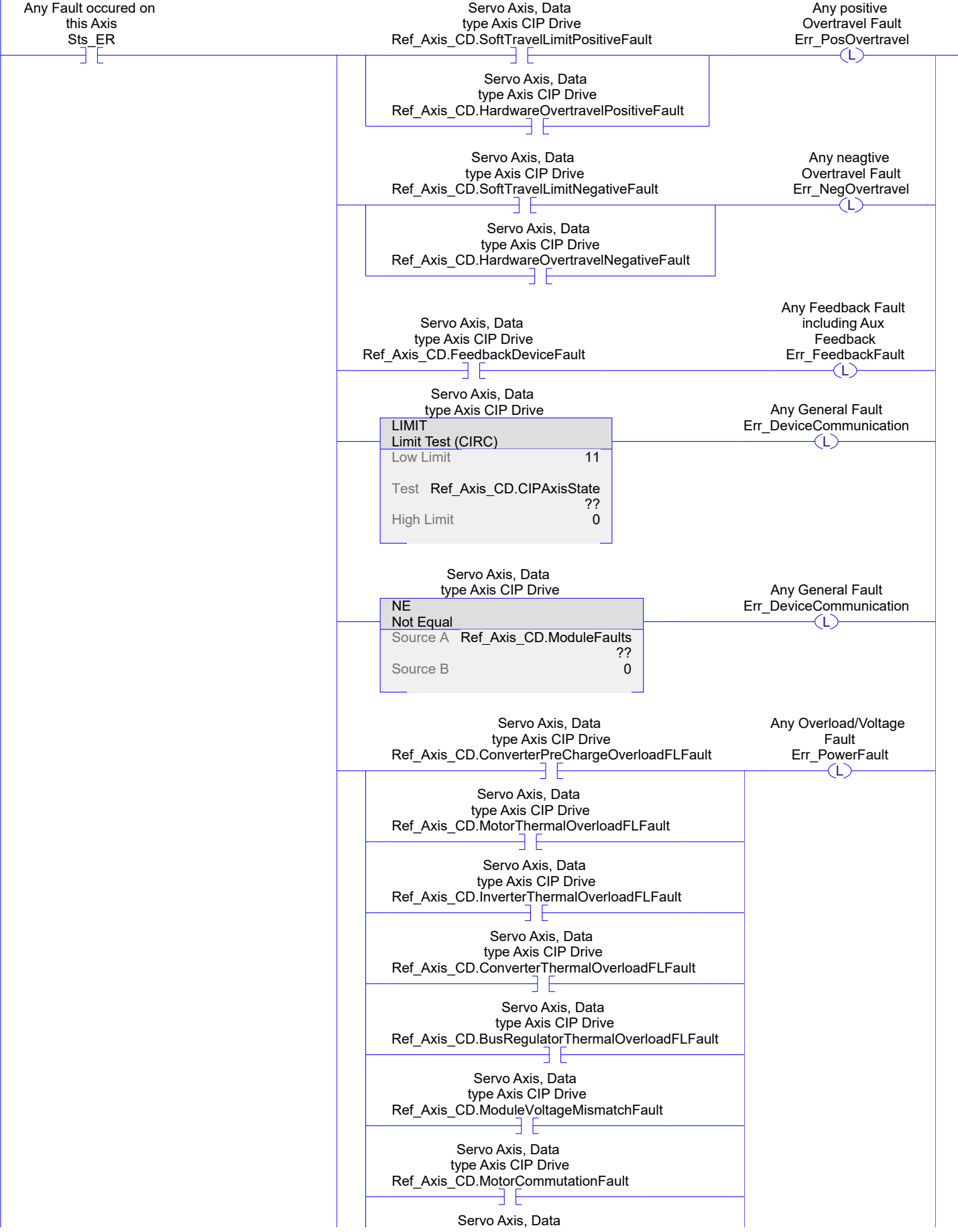
Any instruction
within the AOI
faulted
Err_InstructionFault
(L)

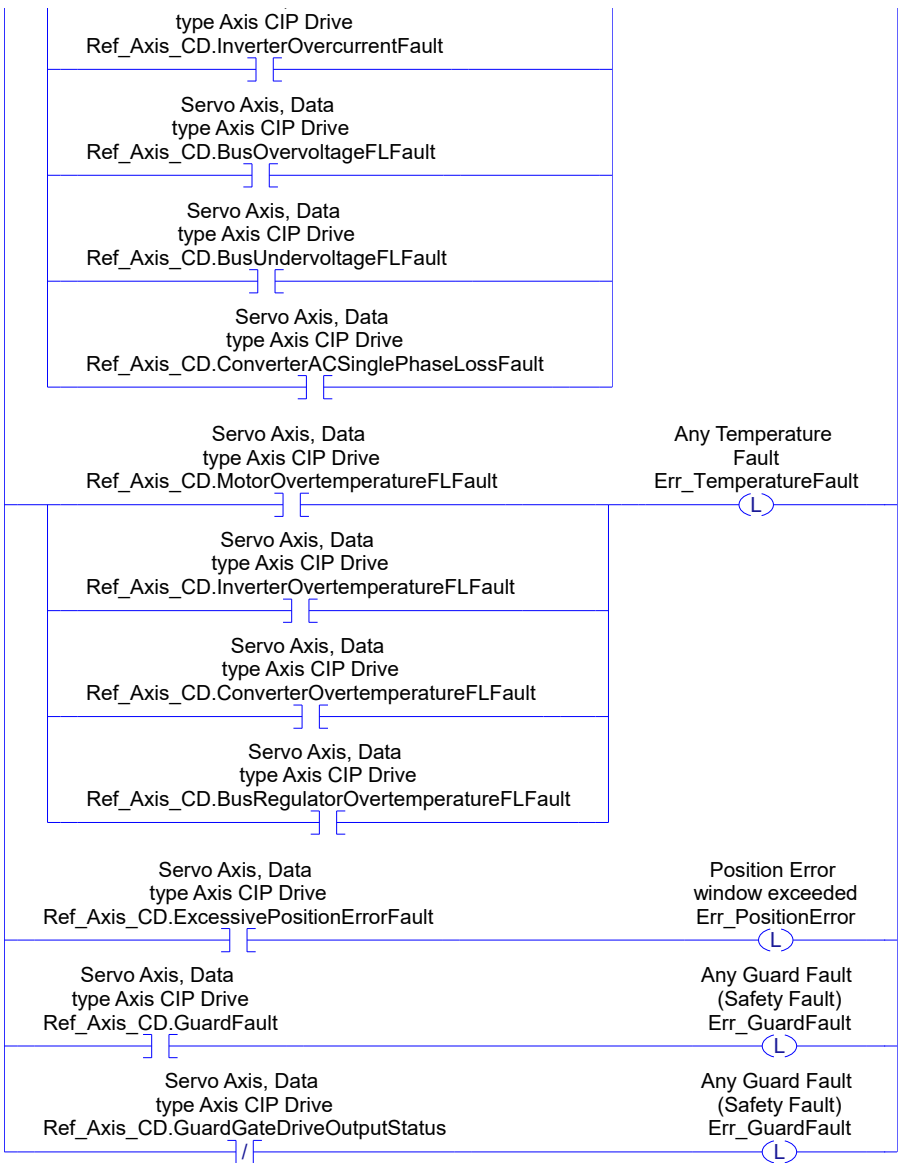
EQ	
Equal	
Source A	Sts_Err
	0
Source B	0

Any instruction
within the AOI
faulted
Err_InstructionFault
(U)

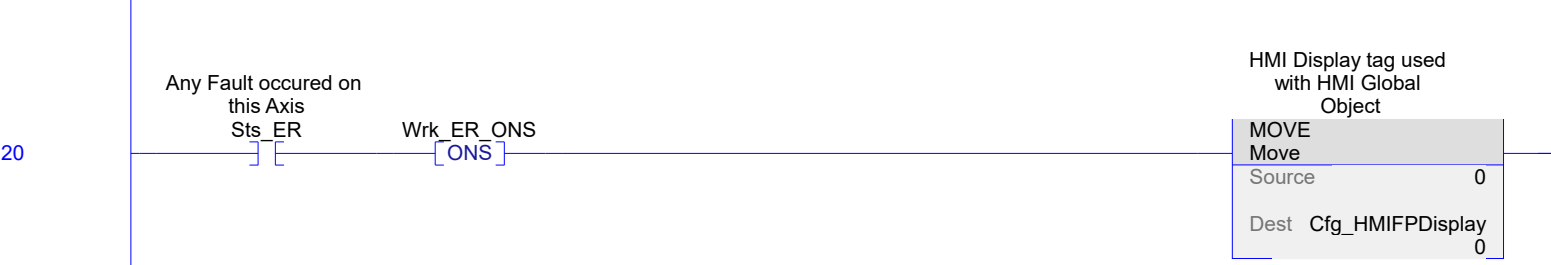
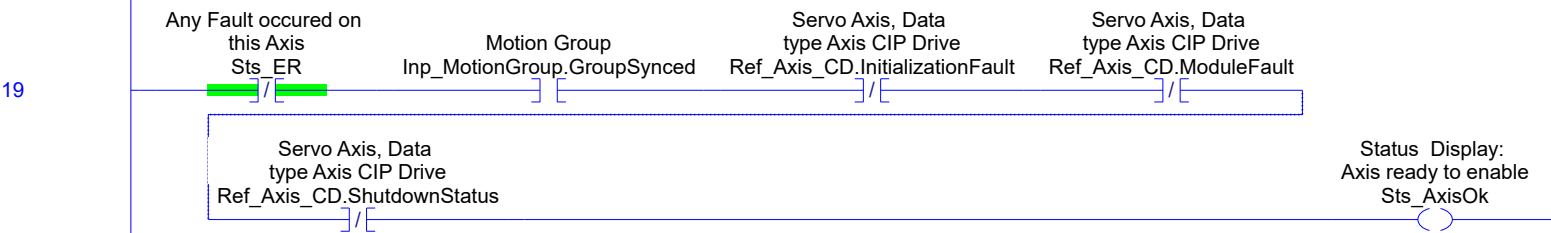
AXIS ERRORS

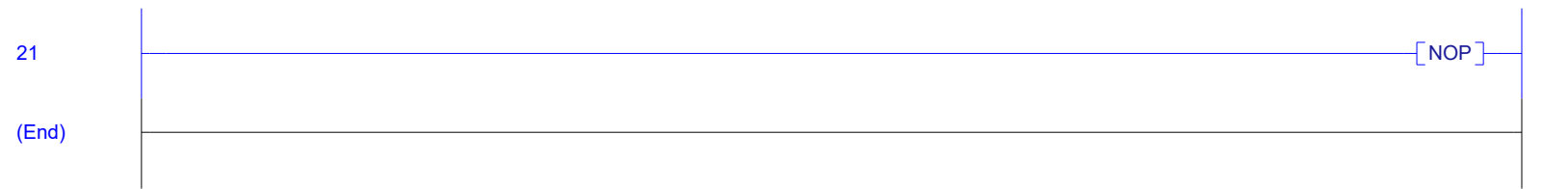
18





AXIS IS OK AND READY





```

    //////////////////////////////////////
    COMPANY:      Rockwell Automation
    FUNCTION:     AXIS_CIP_DRIVE AOI
    AUTHOR:       Rockwell Automation
    DATE UPDATED: Jun 2011

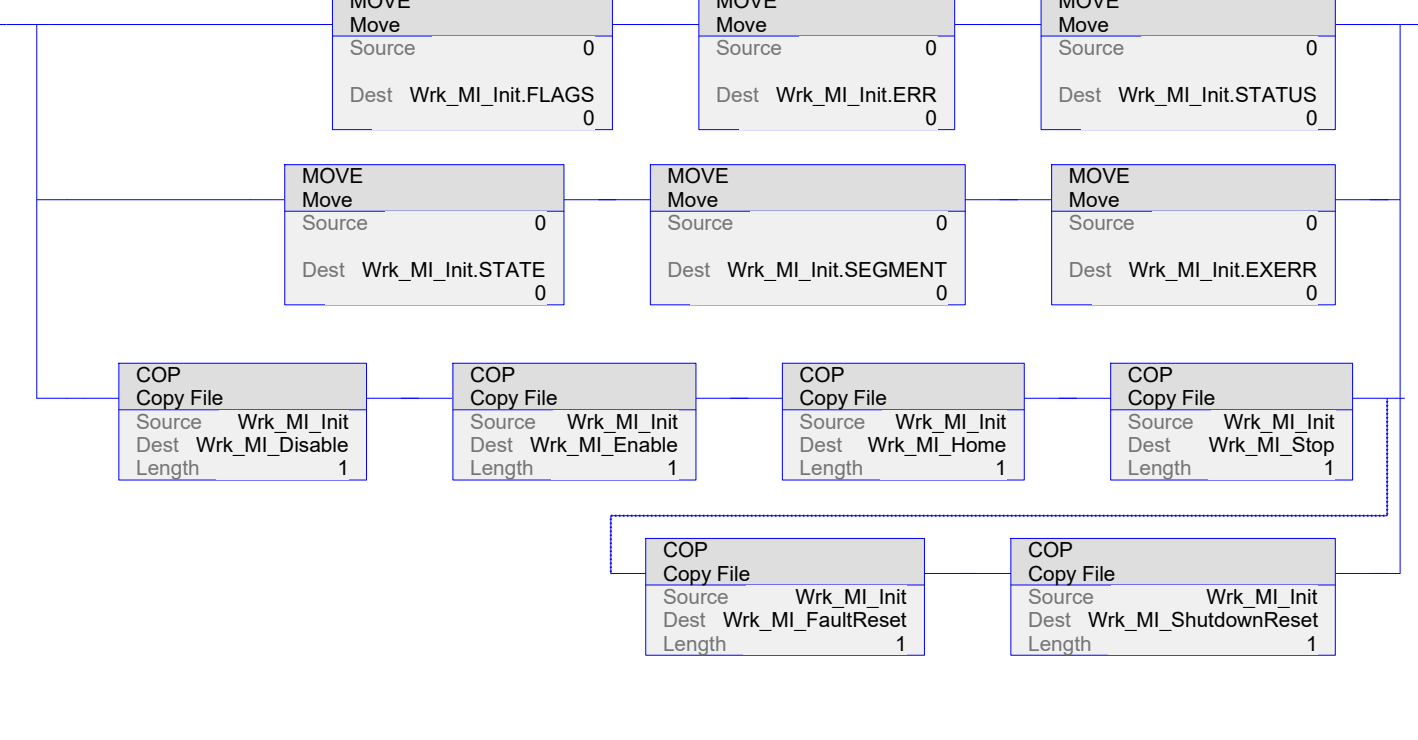
    FUNCTION:

    Version Comments:

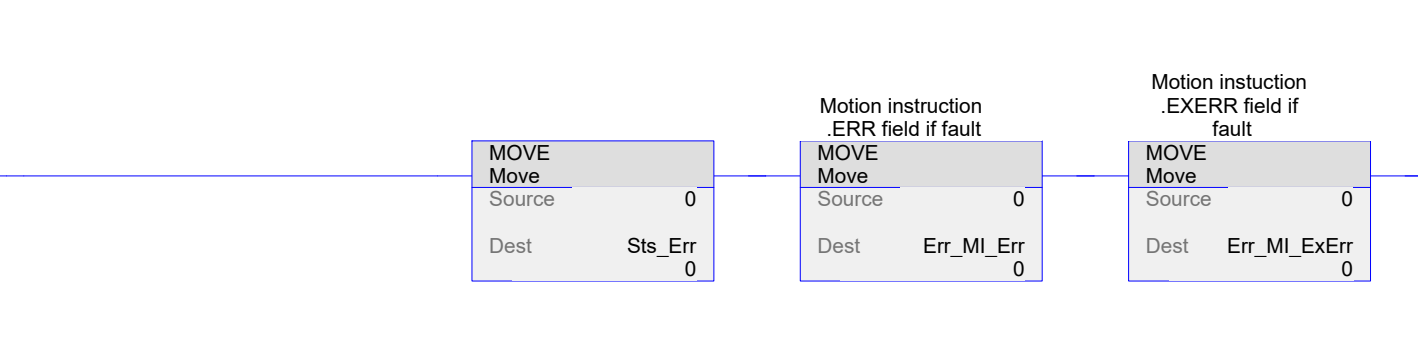
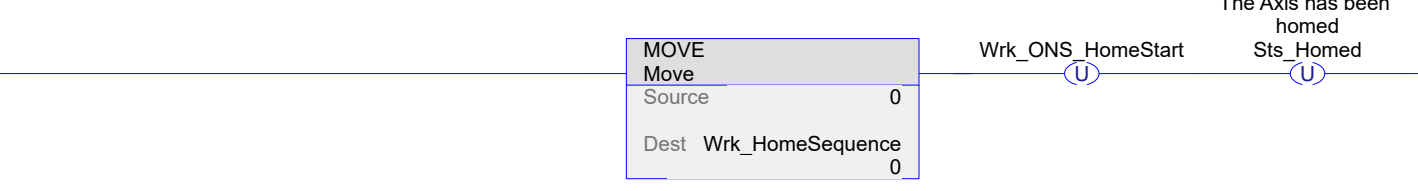
    //////////////////////////////////////
    
```

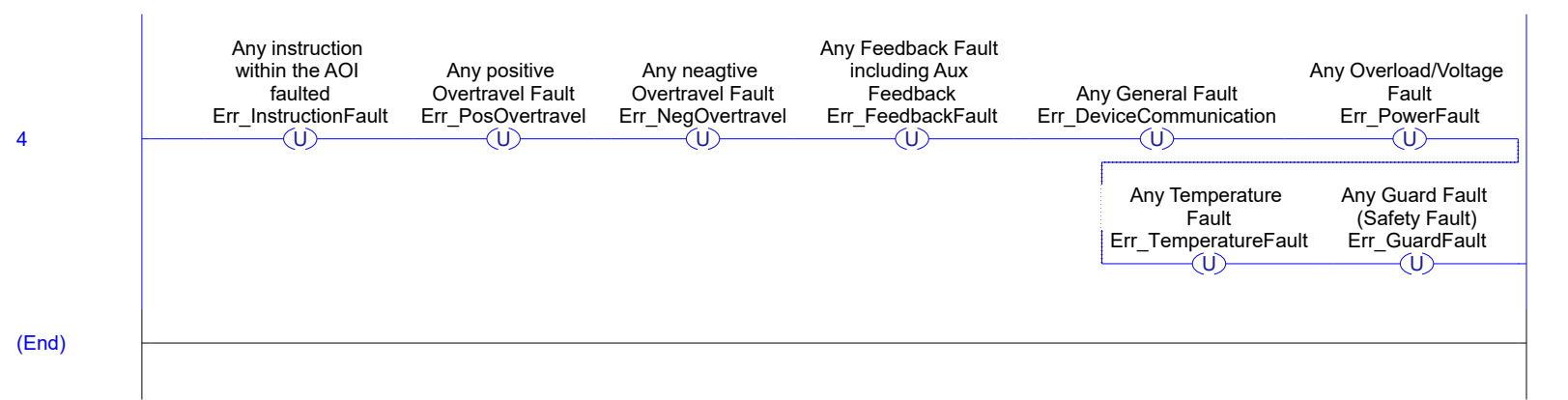
0 [NOP]

PRESCAN INIT - Motion Instruction



PRESCAN INIT - HomeSequence






 PackMLv3_StateModel v2.3

Rockwell Automation

Available Languages

 Relay Ladder

PackMLv3_StateModel		
PackMLv3_StateModel	? 	-(Sts_ModeChangeNotAllowed)
Cfg_ModeTransitions	?	-(Sts_Clearing)
Cfg_DisableStates	?	-(Sts_Stopped)
Cfg_ModeNames	?	-(Sts_Starting)
Cmd_Mode	?	-(Sts_Idle)
Cmd_Reset	?	-(Sts_Suspended)
Cmd_Start	?	-(Sts_Execute)
Cmd_Stop	?	-(Sts_Stopping)
Cmd_Hold	?	-(Sts_Aborting)
Cmd_UnHold	?	-(Sts_Aborted)
Cmd_Suspend	?	-(Sts_Holding)
Cmd_UnSuspend	?	-(Sts_Held)
Cmd_Abort	?	-(Sts_UnHolding)
Cmd_Clear	?	-(Sts_Suspending)
Cmd_StateComplete	?	-(Sts_UnSuspending)
Sts_StateCurrentName	?	-(Sts_Resetting)
Sts_ModeCurrentName	?	-(Sts_Completing)
		-(Sts_Complete)

 Function Block



Structured Text

PackMLv3_StateModel(Cfg_ModeTransitions, Cfg_DisableStates, Cfg_ModeNames, Sts_StateCurrentName, Sts_ModeCurrentName);

Parameters

Required	Name	Data Type	Usage	Description
X	PackMLv3_StateModel	PackMLv3_StateModel	InOut	
	EnableIn	BOOL	Input	
	EnableOut	BOOL	Output	
X	Cfg_ModeTransitions	DINT	InOut	Acceptable States to Transition Between Modes
X	Cfg_DisableStates	DINT	InOut	Disable States for Different Modes
X	Cfg_ModeNames	String_Short	InOut	Mode Names
	Cmd_Mode	DINT	Input	Commanded Mode
	Cmd_Reset	BOOL	Input	Request that current state transition to Resetting
	Cmd_Start	BOOL	Input	Request that current state transition to Starting
	Cmd_Stop	BOOL	Input	Request that current state transition to Stopping
	Cmd_Hold	BOOL	Input	Request that current state transition to Holding
	Cmd_UnHold	BOOL	Input	Request that current state transition to Execute
	Cmd_Suspend	BOOL	Input	Request that current state transition to Suspending
	Cmd_UnSuspend	BOOL	Input	Request that current state transition to Execute

Cmd_Abort	BOOL	Input	Request that current state transition to Aborting
Cmd_Clear	BOOL	Input	Request that current state transition to Clearing
Cmd_StateComplete	BOOL	Input	PackML State Complete Command - Latch Cmd_StateComplete to allow transition from acting state to wait state
Cfg_RemoteCmdEnable	BOOL	Input	Enable Remote Commands
Inp_RemoteModeCmd	DINT	Input	Mode Remote Command Interface
Inp_RemoteModeCmdChangeRequest	BOOL	Input	Mote Remote Command Change Request
Inp_RemoteStateCmd	DINT	Input	State Remote Command Interface
Inp_RemoteStateCmdChangeRequest	BOOL	Input	State Remote Command Change Request
Sts_StateCurrent	DINT	Output	Current State ID
Sts_ModeCurrent	DINT	Output	Current Mode ID
Sts_EnabledStates	DINT	Output	Currently Disabled States = 0
X Sts_StateCurrentName	String_Short	InOut	Current State Name
X Sts_ModeCurrentName	String_Short	InOut	Current Mode Name
Sts_ClearingEnabled	BOOL	Output	Use of the Clearing state for the current mode is enabled
Sts_StoppedEnabled	BOOL	Output	Use of the Stopped state for the current mode is enabled
Sts_StartingEnabled	BOOL	Output	Use of the Starting state for the current mode is enabled
Sts_IdleEnabled	BOOL	Output	Use of the Idle state for the current mode is enabled
Sts_SuspendedEnabled	BOOL	Output	Use of the Suspended state for the current mode is enabled
Sts_ExecuteEnabled	BOOL	Output	Use of the Execute state for the current mode is enabled
Sts_StoppingEnabled	BOOL	Output	Use of the Stopping state for the current mode is enabled
Sts_AbortingEnabled	BOOL	Output	Use of the Aborting state for the current mode is enabled
Sts_AbortedEnabled	BOOL	Output	Use of the Aborted state for the current mode is enabled
Sts_HoldingEnabled	BOOL	Output	Use of the Holding state for the current mode is enabled
Sts_HeldEnabled	BOOL	Output	Use of the Held state for the current mode is enabled
Sts_UnHoldingEnabled	BOOL	Output	Use of the UnHolding state for the current mode is enabled
Sts_SuspendingEnabled	BOOL	Output	Use of the Suspending state for the current mode is enabled
Sts_UnSuspendingEnabled	BOOL	Output	Use of the UnSuspending state for the current mode is enabled
Sts_ResettingEnabled	BOOL	Output	Use of the Resetting state for the current mode is enabled
Sts_CompletingEnabled	BOOL	Output	Use of the Completing state for the current mode is enabled
Sts_CompleteEnabled	BOOL	Output	Use of the Complete state for the current mode is enabled
Sts_ModeChangeNotAllowed	BOOL	Output	Mode Change Request Was Denied
Sts_Clearing	BOOL	Output	The Clearing state is active.
Sts_Stopped	BOOL	Output	The Stopped state is active.
Sts_Starting	BOOL	Output	The Starting state is active.
Sts_Idle	BOOL	Output	The Idle state is active.
Sts_Suspended	BOOL	Output	The Suspended state is active.
Sts_Execute	BOOL	Output	The Execute state is active.
Sts_Stopping	BOOL	Output	The Stopping state is active.
Sts_Aborting	BOOL	Output	The Aborting state is active.
Sts_Aborted	BOOL	Output	The Aborted state is active.
Sts_Holding	BOOL	Output	The Holding state is active.
Sts_Held	BOOL	Output	The Held state is active.
Sts_UnHolding	BOOL	Output	The Unholding state is active.
Sts_Suspending	BOOL	Output	The Suspending state is active.
Sts_UnSuspending	BOOL	Output	The UnSuspending state is active.
Sts_Resetting	BOOL	Output	The Resetting state is active.
Sts_Completing	BOOL	Output	The Completing state is active.
Sts_Complete	BOOL	Output	The Complete state is active.

Extended Description

Instruction Overview:

The PackML State Model Add-On Instruction provides an implementation of the Modes and States defined by PackML v3.0.

Instruction Execution:

This AOI is intended to be scanned unconditionally

Supplemental Descriptions:

These configuration tags need to be configured for the AOI to work correctly:

- Cfg_ModeNames
- Cfg_ModeTransitions
- Cfg_DisableStates

Cfg_ModeNames (Configure Mode Names)

The state model can operate in various modes. Up to 31 different modes can be used (array index 1...31). Array number 0 (zero) is reserved and cannot be used.

The template has two predefined modes, Produce and Manual. Additional modes either user defined or defined by ISA-TR88 can be added by the user.

Cfg_ModeTransitions (Configure Mode Transitions)

Cfg_ModeTransitions is used to define acceptable states to transition between modes. In this way you can allow a mode change, such as from Produce mode to Manual mode,

in the Execute state. The tag consists of an array of 32 DINT, each corresponding to one of the possible modes.

- Cfg_ModeName[1] = Cfg_ModeTransitions[1]
- Cfg_ModeName[2] = Cfg_ModeTransitions[2]

....

- Cfg_ModeName[31] = Cfg_ModeTransitions[31]

Each individual bit of the DINT corresponds to a specific state as follows.

The template has the following defined for both Automatic and Manual mode:

Cfg_ModeTransitions[1] = 516 [dec] = 0000 0000 0000 0000 0000 0010 0000 0100 [bin]

That means the template only allows a mode change in Stopped and Aborted state.

Cfg_DisableStates (Configure Disabling of States)

The template is very flexible and allows you to use only the states that are needed for a particular mode. The states that are not used will be jumped in the program and will not be visible on the state machine overview on the HMI application.

Each individual bit of the DINT corresponds to a specific state as follows.

Produce Mode

Cfg_DisableStates[1] = 228400 [dec] = 0000 0000 0000 0011 0111 1100 0011 0000 [bin]

That means the template disables the Idle, Suspended, Held, Un-Holding, Suspending, Un-Suspending, Completing, and Complete states.

Manual Mode

Cfg_DisableStates[3] = 228408 [dec] = 0000 0000 0000 0011 0111 1100 0011 1000 [bin]

That means the template disables the Starting, Idle, Suspended, Holding, Held, Un-holding, Suspending, Un-Suspending, Completing, and Complete states.

Cfg_RemoteCmdEnable (Configure Remote Commands)

The AOI can be controlled via remote commands outside the unit (machine) such as with a line control (cell control).

Cfg_RemoteCmdEnable

Behavior

- 0 Remote command control is disabled
- 1 Remote command control is enabled

Cmd_xx (Commands)

The AOI makes use of the following commands that will request a state or mode change:

- Cmd_Mode
- Cmd_Suspend
- Cmd_Reset
- Cmd_UnSuspend
- Cmd_Start
- Cmd_Abort
- Cmd_Stop
- Cmd_Clear
- Cmd_Hold
- Cmd_StateComplete

Cmd_UnHold

All commands but two (Cmd_Mode and Cmd_Reset) have the same behavior. If Cmd_xx is set, the respective command is initiated if the actual state allows this command.

According to PackML, the route in the state machine is dictated by the arrows.

Cmd_Mode

Cmd_Mode (command mode) will request a mode change and will only be accepted according to the configuration of Cfg_ModeTransitions.

Here it is defined if the individual states allow a change. If Cmd_Mode is set and the active state does not allow it, the Sts_ModeChangeNotAllowed status bit will be set.

Cmd_Reset

If Cmd_Reset (command reset) is set, a reset command is initiated. According to PackML, this command is used in either Complete or Stopped state to initiate a Resetting state.

For a more intuitive mechanism, the template uses this command slightly differently, and will only allow this in Aborted. It will transition from Aborted to Clearing and is handled as a fault reset.

Inp_RemoteXX (Input)

Remote control of mode and state commands is possible.

Remote Mode

Inp_RemoteModeCmd

Usage: Input

Type: DINT

Description: Mode Remote Command Interface

Inp_RemoteModeCmdChangeRequest

Usage: Input

Type: BOOL

Description: Mode Remote Command Change Request

The local equivalent to Inp_RemoteModeCmd is Cmd_Mode, and its behavior is similar.

Inp_RemoteModeCmdChangeRequest is used to request a mode change – remote. There is no local equivalent to it.

Remote State

Inp_RemoteStateCmd

Usage: Input

Type: DINT

Description: State Remote Command Interface

Inp_RemoteStateCmdChangeRequest

Usage: Input

Type: BOOL

Description: State Remote Command Change Request

The local equivalent to Inp_RemoteStateCmd is Cmd_XX (the individual commands), and the behavior is similar.

The remote word is a DINT where the individual bits will correspond to a specific command.

Inp_RemoteStateCmdChangeRequest is used to request a state change – remote. There is no local equivalent to it.

Sts_XX (Status)

The AOI produces status for states and modes.

Status indicators for states

The AOI will produce an output status for each individual state. Only one of them can be set at any time, as it is the actual state of the state machine.

Sts_Aborted

Sts_Completing

Sts_Idle

Sts_Stopping

Sts_Aborting

Sts_Execute

Sts_Resetting

Sts_Suspended

Sts_Clearing

Sts_Held

Sts_Starting
 Sts_Suspending
 Sts_Complete
 Sts_Holding
 Sts_Stopped
 Sts_UnHolding
 Sts_UnSuspending

Sts_EnabledStates Currently Disabled States = 0
 Sts_StateCurrent Current State ID
 Sts_StateCurrentName Current State Name
 Sts_StateCurrentName Current State Name

Status indicators for modes

Sts_ModeChangeNotAllowed
 Usage: Output
 Type: BOOL
 Description: Mode Change Request Was Denied

Sts_ModeCurrent
 Usage: Output
 Type: DINT
 Description: Current Mode ID

Sts_ModeCurrentName
 Usage: InOut
 Type: STRING
 Description: Current Mode Name

States - Descriptions

The PackML state machine consists of 17 states. The description and intention of each is listed below.

State Name

STOPPED {Down}

State Type: Wait

The machine is powered and stationary. All communications with other systems are functioning (if applicable).

STARTING {STARTUP}

State Type: Acting

This state provides the steps needed to start the machine and is a result of a starting type command (local or remote). Following this command, the machine will begin to “execute”.

IDLE [READY]

State Type: Wait

This is a state which indicates that RESETTING is complete. This state maintains the machine conditions which were achieved during the RESET state.

SUSPENDING

State Type: Acting

This state is a result of a command change from the EXECUTE state. This state is typically required prior to the SUSPENDED wait state, and prepares the machine (for example, stops glue cycles, stops carton feeds, etc.) prior to the SUSPEND state.

SUSPENDED [RUNNING] {STANDBY}

State Type: Wait

The machine may be running at the relevant setpoint speed, but there is no product being produced. This state can be reached as a result of a machine status, and differs from HELD in that HELD is typically a result of an operator request.

UN SUSPENDING

State Type: Acting

This state is a result of a request from SUSPENDED state to go back to the EXECUTE state. The actions of this state may include: ramping up speeds, turning on vacuums, the re-engagement of clutches. This state is done prior to EXECUTE state, and prepares the machine for the EXECUTE state.

EXECUTE [PRODUCING] {RUN}

State Type: Dual

State Once the machine is processing materials, it is deemed to be Executing or in the EXECUTE state. Execute refers to the mode in which the machine is in. If the machine is in the “Clean Out” mode, then “execute” refers to the action of cleaning the machine.

STOPPING {RUNOUT}

State Type: Acting

This state executes the logic which brings the machine to a controlled and safe stop.

ABORTING

State Type: Acting

The ABORTED state can be entered at any time in response to the Abort command or on the occurrence of a machine fault. The aborting logic will bring the machine to a rapid, controlled safe stop. Operation of the Emergency Stop will cause the machine to be tripped by its safety system. It will also provide a signal to initiate the ABORTING State.

ABORTED

State Type: Wait

This state maintains machine status information relevant to the Abort condition. The Stop command will force transition to the Stopped state.

HOLDING

State Type: Acting

When the machine is in the EXECUTE state, the Hold command can be used to start HOLDING logic which brings the machine to a controlled stop or to a state which represents HELD for the particular machine mode.

HELD

State Type: Wait

The HELD state is typically be used by the operator to hold the machine's operation temporarily while material blockages are cleared, or to stop throughput while a downstream problem is resolved.

UNHOLDING

State Type: Acting

UNHOLDING prepares the machine to re-enter the EXECUTE state. The UNHOLDING state is typically a response to an operator command to resume EXECUTE state.

COMPLETING

State Type: Acting

This state is typically an automatic response from the EXECUTE state. Normal operation has run to completion, that is, processing of material at the infeed will stop

COMPLETE

State Type: Wait

The machine has finished the COMPLETING state and is now waiting for a STOP command that will cause a transition to the STOPPED state.

RESETTING

State Type: Acting

This element is the result of a RESET command from the STOPPED state. RESETTING will typically cause a machine to sound a horn and place the machine in a state where components are energized awaiting a START command.

CLEARING

State Type: Acting

The procedural element has received a command to clear faults that may have occurred when ABORTING, and are present in the ABORTED state before proceeding to a STOPPED state.

Not all states are configured in this template, but the AOI supports it

HMI - PackML State Machine

The AOI comes with a face plate, where all states of the PackML state machine are shown. The active state is indicated with a green background. Only states that are not disabled will be shown. In this template, Automatic Mode will only show Aborting, Aborted, Clearing, Stopping, Stopped, Resetting, Starting, and Execute state.

Mode Selector

It is possible to change between the different modes that have been configured. The template has two different modes: Automatic and Manual. If you try to change mode in a state that does not allow a mode change, you will be notified by a red bar with the text: Requested Mode Change Not Allowed.

General Information - Parameter Prefixing:

Inp_

Input:

Generally used to designate a connection to a real I/O input point or an upstream block.

Set_

Setpoint:

Used as a setpoint coming into the instruction. May come from the operator via the HMI, or from the controller program itself.

Cmd_

Command:

Generally used to as a command input either from the operator via the HMI or from the program.

Cfg_

Configuration:

Generally used to designate a configuration value.

Typically, but not always, something that is only changed irregularly.

Par_

Parameter:

Equipment parameter or input parameter from Batching systems.

Generally used to designate a value that receives changes on a regular basis.

Wrk_

Working Register:

In many cases the control routine will require some internal working storage locations.

This is targeted at the control routine that lies inside a normal UDT.

In the case of AOI's, these registers can simply become "Local Tags".

Out_

Output:

Generally used to designate a connection to a real I/O output point or a downstream block.

Val_

Value:

Designates a value calculated inside the instruction, which may or may not be the primary output of the instruction.

Rpt_

Report:

Designates a value calculated inside the instruction that is typically used for batch reporting.

Sts_

Status:

Status of the instruction. Also contains two required members.

Ex.

Sts_Alarm - An alarm exists. (Boolean)

Sts_ER - The instruction itself has an error. (Boolean)

Alm_

Alarm:

Alarm indicators to display which actual alarm is occurring. All of these are Booleans.

Rdy_

Ready:

Command ready bits. Booleans determined inside the control routines to reflect whether the routine will allow state change commands.

Used with the HMI faceplates to enable or disable command buttons.

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Execution

Condition	Description
EnableIn is true	
Prescan	

Revision v2.3 Notes

2.3 - Help File Updates

2.2 - ReOrder Sts Tags to reflect numerical TR88 state value

2.1 - Enable status added to reflect instruction scan

2.0 - AOI name update to reflect PML Model version

1.0 - Improved execution scantime

09/04/2009 - ETP - Edited Rung 14 to Enable

a) Held State IF Holding or UnHolding is Enabled

b) Suspended State IF Suspending or UnSuspending is Enabled

c) Complete State IF Completing is Enabled

Name	Default	Data Type	Scope
Cfg_DisableStates		DINT[32]	PackMLv3_StateModel
Disable States for Different Modes			
Usage:	InOut Parameter		
Required:	Yes		
Visible:	Yes		
Constant	No		
OPC UA Access:	None		
<i>Cfg_DisableStates - PackMLv3_StateModel/Logic - *35(MOVE), 13(MOVE)</i>			
Cfg_DisableStates[0]	??	DINT	
Disable States for Different Modes			
Cfg_DisableStates[1]	??	DINT	
Disable States for Different Modes			
Cfg_DisableStates[2]	??	DINT	
Disable States for Different Modes			
Cfg_DisableStates[3]	??	DINT	
Disable States for Different Modes			
Cfg_DisableStates[4]	??	DINT	
Disable States for Different Modes			
Cfg_DisableStates[5]	??	DINT	
Disable States for Different Modes			
Cfg_DisableStates[6]	??	DINT	
Disable States for Different Modes			
Cfg_DisableStates[7]	??	DINT	
Disable States for Different Modes			
Cfg_DisableStates[8]	??	DINT	
Disable States for Different Modes			
Cfg_DisableStates[9]	??	DINT	
Disable States for Different Modes			
Cfg_DisableStates[10]	??	DINT	
Disable States for Different Modes			
Cfg_DisableStates[11]	??	DINT	
Disable States for Different Modes			
Cfg_DisableStates[12]	??	DINT	
Disable States for Different Modes			
Cfg_DisableStates[13]	??	DINT	
Disable States for Different Modes			
Cfg_DisableStates[14]	??	DINT	
Disable States for Different Modes			
Cfg_DisableStates[15]	??	DINT	
Disable States for Different Modes			
Cfg_DisableStates[16]	??	DINT	
Disable States for Different Modes			
Cfg_DisableStates[17]	??	DINT	
Disable States for Different Modes			
Cfg_DisableStates[18]	??	DINT	
Disable States for Different Modes			
Cfg_DisableStates[19]	??	DINT	
Disable States for Different Modes			
Cfg_DisableStates[20]	??	DINT	
Disable States for Different Modes			
Cfg_DisableStates[21]	??	DINT	
Disable States for Different Modes			
Cfg_DisableStates[22]	??	DINT	
Disable States for Different Modes			
Cfg_DisableStates[23]	??	DINT	
Disable States for Different Modes			
Cfg_DisableStates[24]	??	DINT	
Disable States for Different Modes			
Cfg_DisableStates[25]	??	DINT	
Disable States for Different Modes			
Cfg_DisableStates[26]	??	DINT	
Disable States for Different Modes			

Cfg_DisableStates (Continued)		
Cfg_DisableStates[27]	??	DINT
Disable States for Different Modes		
Cfg_DisableStates[28]	??	DINT
Disable States for Different Modes		
Cfg_DisableStates[29]	??	DINT
Disable States for Different Modes		
Cfg_DisableStates[30]	??	DINT
Disable States for Different Modes		
Cfg_DisableStates[31]	??	DINT
Disable States for Different Modes		
Cfg_ModeNames		String_Short[32]
Mode Names		
Usage:	InOut Parameter	
Required:	Yes	
Visible:	Yes	
Constant	No	
OPC UA Access:	None	
<i>Cfg_ModeNames - PackMLv3_StateModel/Logic - 86(COP)</i>		
Cfg_ModeNames[0]	??	String_Short
Mode Names		
Cfg_ModeNames[0].LEN	??	DINT
Mode Names		
Cfg_ModeNames[0].DATA		SINT
Mode Names		
Cfg_ModeNames[1]	??	String_Short
Mode Names		
Cfg_ModeNames[1].LEN	??	DINT
Mode Names		
Cfg_ModeNames[1].DATA		SINT
Mode Names		
Cfg_ModeNames[2]	??	String_Short
Mode Names		
Cfg_ModeNames[2].LEN	??	DINT
Mode Names		
Cfg_ModeNames[2].DATA		SINT
Mode Names		
Cfg_ModeNames[3]	??	String_Short
Mode Names		
Cfg_ModeNames[3].LEN	??	DINT
Mode Names		
Cfg_ModeNames[3].DATA		SINT
Mode Names		
Cfg_ModeNames[4]	??	String_Short
Mode Names		
Cfg_ModeNames[4].LEN	??	DINT
Mode Names		
Cfg_ModeNames[4].DATA		SINT
Mode Names		
Cfg_ModeNames[5]	??	String_Short
Mode Names		
Cfg_ModeNames[5].LEN	??	DINT
Mode Names		
Cfg_ModeNames[5].DATA		SINT
Mode Names		
Cfg_ModeNames[6]	??	String_Short
Mode Names		
Cfg_ModeNames[6].LEN	??	DINT
Mode Names		
Cfg_ModeNames[6].DATA		SINT
Mode Names		
Cfg_ModeNames[7]	??	String_Short

Cfg_ModeNames (Continued)		
Mode Names		
Cfg_ModeNames[7].LEN	??	DINT
Mode Names		
Cfg_ModeNames[7].DATA		SINT
Mode Names		
Cfg_ModeNames[8]	??	String_Short
Mode Names		
Cfg_ModeNames[8].LEN	??	DINT
Mode Names		
Cfg_ModeNames[8].DATA		SINT
Mode Names		
Cfg_ModeNames[9]	??	String_Short
Mode Names		
Cfg_ModeNames[9].LEN	??	DINT
Mode Names		
Cfg_ModeNames[9].DATA		SINT
Mode Names		
Cfg_ModeNames[10]	??	String_Short
Mode Names		
Cfg_ModeNames[10].LEN	??	DINT
Mode Names		
Cfg_ModeNames[10].DATA		SINT
Mode Names		
Cfg_ModeNames[11]	??	String_Short
Mode Names		
Cfg_ModeNames[11].LEN	??	DINT
Mode Names		
Cfg_ModeNames[11].DATA		SINT
Mode Names		
Cfg_ModeNames[12]	??	String_Short
Mode Names		
Cfg_ModeNames[12].LEN	??	DINT
Mode Names		
Cfg_ModeNames[12].DATA		SINT
Mode Names		
Cfg_ModeNames[13]	??	String_Short
Mode Names		
Cfg_ModeNames[13].LEN	??	DINT
Mode Names		
Cfg_ModeNames[13].DATA		SINT
Mode Names		
Cfg_ModeNames[14]	??	String_Short
Mode Names		
Cfg_ModeNames[14].LEN	??	DINT
Mode Names		
Cfg_ModeNames[14].DATA		SINT
Mode Names		
Cfg_ModeNames[15]	??	String_Short
Mode Names		
Cfg_ModeNames[15].LEN	??	DINT
Mode Names		
Cfg_ModeNames[15].DATA		SINT
Mode Names		
Cfg_ModeNames[16]	??	String_Short
Mode Names		
Cfg_ModeNames[16].LEN	??	DINT
Mode Names		
Cfg_ModeNames[16].DATA		SINT
Mode Names		
Cfg_ModeNames[17]	??	String_Short
Mode Names		
Cfg_ModeNames[17].LEN	??	DINT

Cfg_ModeNames (Continued)		
Mode Names		
Cfg_ModeNames[17].DATA		SINT
Mode Names		
Cfg_ModeNames[18]	??	String_Short
Mode Names		
Cfg_ModeNames[18].LEN	??	DINT
Mode Names		
Cfg_ModeNames[18].DATA		SINT
Mode Names		
Cfg_ModeNames[19]	??	String_Short
Mode Names		
Cfg_ModeNames[19].LEN	??	DINT
Mode Names		
Cfg_ModeNames[19].DATA		SINT
Mode Names		
Cfg_ModeNames[20]	??	String_Short
Mode Names		
Cfg_ModeNames[20].LEN	??	DINT
Mode Names		
Cfg_ModeNames[20].DATA		SINT
Mode Names		
Cfg_ModeNames[21]	??	String_Short
Mode Names		
Cfg_ModeNames[21].LEN	??	DINT
Mode Names		
Cfg_ModeNames[21].DATA		SINT
Mode Names		
Cfg_ModeNames[22]	??	String_Short
Mode Names		
Cfg_ModeNames[22].LEN	??	DINT
Mode Names		
Cfg_ModeNames[22].DATA		SINT
Mode Names		
Cfg_ModeNames[23]	??	String_Short
Mode Names		
Cfg_ModeNames[23].LEN	??	DINT
Mode Names		
Cfg_ModeNames[23].DATA		SINT
Mode Names		
Cfg_ModeNames[24]	??	String_Short
Mode Names		
Cfg_ModeNames[24].LEN	??	DINT
Mode Names		
Cfg_ModeNames[24].DATA		SINT
Mode Names		
Cfg_ModeNames[25]	??	String_Short
Mode Names		
Cfg_ModeNames[25].LEN	??	DINT
Mode Names		
Cfg_ModeNames[25].DATA		SINT
Mode Names		
Cfg_ModeNames[26]	??	String_Short
Mode Names		
Cfg_ModeNames[26].LEN	??	DINT
Mode Names		
Cfg_ModeNames[26].DATA		SINT
Mode Names		
Cfg_ModeNames[27]	??	String_Short
Mode Names		
Cfg_ModeNames[27].LEN	??	DINT
Mode Names		
Cfg_ModeNames[27].DATA		SINT

Cfg_ModeNames (Continued)

Mode Names		
Cfg_ModeNames[28]	??	String_Short
Mode Names		
Cfg_ModeNames[28].LEN	??	DINT
Mode Names		
Cfg_ModeNames[28].DATA		SINT
Mode Names		
Cfg_ModeNames[29]	??	String_Short
Mode Names		
Cfg_ModeNames[29].LEN	??	DINT
Mode Names		
Cfg_ModeNames[29].DATA		SINT
Mode Names		
Cfg_ModeNames[30]	??	String_Short
Mode Names		
Cfg_ModeNames[30].LEN	??	DINT
Mode Names		
Cfg_ModeNames[30].DATA		SINT
Mode Names		
Cfg_ModeNames[31]	??	String_Short
Mode Names		
Cfg_ModeNames[31].LEN	??	DINT
Mode Names		
Cfg_ModeNames[31].DATA		SINT
Mode Names		

Cfg_ModeTransitions

DINT[32]

PackMLv3_StateModel

Acceptable States to Transition Between Modes

Usage: InOut Parameter

Required: Yes

Visible: Yes

Constant: No

OPC UA Access: None

*Cfg_ModeTransitions - PackMLv3_StateModel/Logic - *81(OTL), *82(OTL), 81(XIO), 82(XIO), 83(XIC), 83(XIC), 84(XIC), 84(XIC)***Cfg_ModeTransitions[0]** ?? DINT

Acceptable States to Transition Between Modes

Cfg_ModeTransitions[1] ?? DINT

Acceptable States to Transition Between Modes

Cfg_ModeTransitions[2] ?? DINT

Acceptable States to Transition Between Modes

Cfg_ModeTransitions[3] ?? DINT

Acceptable States to Transition Between Modes

Cfg_ModeTransitions[4] ?? DINT

Acceptable States to Transition Between Modes

Cfg_ModeTransitions[5] ?? DINT

Acceptable States to Transition Between Modes

Cfg_ModeTransitions[6] ?? DINT

Acceptable States to Transition Between Modes

Cfg_ModeTransitions[7] ?? DINT

Acceptable States to Transition Between Modes

Cfg_ModeTransitions[8] ?? DINT

Acceptable States to Transition Between Modes

Cfg_ModeTransitions[9] ?? DINT

Acceptable States to Transition Between Modes

Cfg_ModeTransitions[10] ?? DINT

Acceptable States to Transition Between Modes

Cfg_ModeTransitions[11] ?? DINT

Acceptable States to Transition Between Modes

Cfg_ModeTransitions[12] ?? DINT

Acceptable States to Transition Between Modes

Cfg_ModeTransitions[13] ?? DINT

Acceptable States to Transition Between Modes

Cfg_ModeTransitions (Continued)			
Cfg_ModeTransitions[14]	??	DINT	
Acceptable States to Transition Between Modes			
Cfg_ModeTransitions[15]	??	DINT	
Acceptable States to Transition Between Modes			
Cfg_ModeTransitions[16]	??	DINT	
Acceptable States to Transition Between Modes			
Cfg_ModeTransitions[17]	??	DINT	
Acceptable States to Transition Between Modes			
Cfg_ModeTransitions[18]	??	DINT	
Acceptable States to Transition Between Modes			
Cfg_ModeTransitions[19]	??	DINT	
Acceptable States to Transition Between Modes			
Cfg_ModeTransitions[20]	??	DINT	
Acceptable States to Transition Between Modes			
Cfg_ModeTransitions[21]	??	DINT	
Acceptable States to Transition Between Modes			
Cfg_ModeTransitions[22]	??	DINT	
Acceptable States to Transition Between Modes			
Cfg_ModeTransitions[23]	??	DINT	
Acceptable States to Transition Between Modes			
Cfg_ModeTransitions[24]	??	DINT	
Acceptable States to Transition Between Modes			
Cfg_ModeTransitions[25]	??	DINT	
Acceptable States to Transition Between Modes			
Cfg_ModeTransitions[26]	??	DINT	
Acceptable States to Transition Between Modes			
Cfg_ModeTransitions[27]	??	DINT	
Acceptable States to Transition Between Modes			
Cfg_ModeTransitions[28]	??	DINT	
Acceptable States to Transition Between Modes			
Cfg_ModeTransitions[29]	??	DINT	
Acceptable States to Transition Between Modes			
Cfg_ModeTransitions[30]	??	DINT	
Acceptable States to Transition Between Modes			
Cfg_ModeTransitions[31]	??	DINT	
Acceptable States to Transition Between Modes			
Cfg_RemoteCmdEnable	0	BOOL	PackMLv3_StateModel
Enable Remote Commands			
Usage:	Input Parameter		
Required:	No		
Visible:	No		
External Access:	Read/Write		
OPC UA Access:	None		
<i>Cfg_RemoteCmdEnable - PackMLv3_StateModel/Logic - 2(XIC)</i>			
Cmd_Abort	0	BOOL	PackMLv3_StateModel
Request that current state transition to Aborting			
Usage:	Input Parameter		
Required:	No		
Visible:	Yes		
External Access:	Read/Write		
OPC UA Access:	None		
<i>Cmd_Abort - PackMLv3_StateModel/Logic - 60(XIC)</i>			
Cmd_Clear	0	BOOL	PackMLv3_StateModel
Request that current state transition to Clearing			
Usage:	Input Parameter		
Required:	No		
Visible:	Yes		
External Access:	Read/Write		
OPC UA Access:	None		

Cmd_Clear (Continued)*Cmd_Clear - PackMLv3_StateModel/Logic - 58(XIC)***Cmd_Hold** 0 BOOL PackMLv3_StateModel

Request that current state transition to Holding

Usage: Input Parameter

Required: No

Visible: Yes

External Access: Read/Write

OPC UA Access: None

*Cmd_Hold - PackMLv3_StateModel/Logic - 54(XIC)***Cmd_Mode** 0 DINT PackMLv3_StateModel

Commanded Mode

Usage: Input Parameter

Required: No

Visible: Yes

External Access: Read/Write

OPC UA Access: None

*Cmd_Mode - PackMLv3_StateModel/Logic - *83(MOVE), *85(MOVE), 84(LIMIT), 84(MOVE), 84(NE), 84(XIC), 85(NE)**Cmd_Mode - PackMLv3_StateModel/Prescan - *0(MOVE)***Cmd_Reset** 0 BOOL PackMLv3_StateModel

Request that current state transition to Resetting

Usage: Input Parameter

Required: No

Visible: Yes

External Access: Read/Write

OPC UA Access: None

*Cmd_Reset - PackMLv3_StateModel/Logic - 51(XIC), 52(XIC)***Cmd_Start** 0 BOOL PackMLv3_StateModel

Request that current state transition to Starting

Usage: Input Parameter

Required: No

Visible: Yes

External Access: Read/Write

OPC UA Access: None

*Cmd_Start - PackMLv3_StateModel/Logic - 53(XIC)***Cmd_StateComplete** 0 BOOL PackMLv3_StateModel

PackML State Complete Command - Latch Cmd_StateComplete to allow transition from acting state to wait state

Usage: Input Parameter

Required: No

Visible: Yes

External Access: Read/Write

OPC UA Access: None

*Cmd_StateComplete - PackMLv3_StateModel/Logic - 37(XIC), 38(XIO)***Cmd_Stop** 0 BOOL PackMLv3_StateModel

Request that current state transition to Stopping

Usage: Input Parameter

Required: No

Visible: Yes

External Access: Read/Write

OPC UA Access: None

*Cmd_Stop - PackMLv3_StateModel/Logic - 59(XIC)***Cmd_Suspend** 0 BOOL PackMLv3_StateModel

Request that current state transition to Suspending

Usage: Input Parameter

Required: No

Visible: Yes

Cmd_Suspend (Continued)

External Access: Read/Write
 OPC UA Access: None
Cmd_Suspend - PackMLv3_StateModel/Logic - 56(XIC)

Cmd_UnHold 0 BOOL PackMLv3_StateModel

Request that current state transition to Execute
 Usage: Input Parameter
 Required: No
 Visible: Yes
 External Access: Read/Write
 OPC UA Access: None
Cmd_UnHold - PackMLv3_StateModel/Logic - 55(XIC)

Cmd_UnSuspend 0 BOOL PackMLv3_StateModel

Request that current state transition to Execute
 Usage: Input Parameter
 Required: No
 Visible: Yes
 External Access: Read/Write
 OPC UA Access: None
Cmd_UnSuspend - PackMLv3_StateModel/Logic - 57(XIC)

Inp_RemoteModeCmd 0 DINT PackMLv3_StateModel

Mode Remote Command Interface
 Usage: Input Parameter
 Required: No
 Visible: No
 External Access: Read/Write
 OPC UA Access: None
Inp_RemoteModeCmd - PackMLv3_StateModel/Logic - 82(OTL), 82(XIO), 83(LIMIT), 83(MOVE), 83(NE), 83(XIC), 85(NE)

Inp_RemoteStateCmd 0 DINT PackMLv3_StateModel

State Remote Command Interface
 Usage: Input Parameter
 Required: No
 Visible: No
 External Access: Read/Write
 OPC UA Access: None
Inp_RemoteStateCmd - PackMLv3_StateModel/Logic - 10(EQ), 11(EQ), 3(EQ), 4(EQ), 5(EQ), 6(EQ), 7(EQ), 8(EQ), 9(EQ)

Inp_RemoteStateCmdChangeRequest 0 BOOL PackMLv3_StateModel

State Remote Command Change Request
 Usage: Input Parameter
 Required: No
 Visible: No
 External Access: Read/Write
 OPC UA Access: None
Inp_RemoteStateCmdChangeRequest - PackMLv3_StateModel/Logic - 2(XIC)

Sts_Aborted 0 BOOL PackMLv3_StateModel

The Aborted state is active.
 Usage: Output Parameter
 Required: No
 Visible: Yes
 External Access: Read Only
 OPC UA Access: None
*Sts_Aborted - PackMLv3_StateModel/Logic - *70(OTE), 70(XIO)*

Sts_AbortedEnabled 0 BOOL PackMLv3_StateModel

Use of the Aborted state for the current mode is enabled
 Usage: Output Parameter

Sts_AbortedEnabled (Continued)

Required: No
 Visible: No
 External Access: Read Only
 OPC UA Access: None

*Sts_AbortedEnabled - PackMLv3_StateModel/Logic - *24(OTE)*

Sts_Aborting 0 BOOL PackMLv3_StateModel

The Aborting state is active.

Usage: Output Parameter

Required: No

Visible: Yes

External Access: Read Only

OPC UA Access: None

*Sts_Aborting - PackMLv3_StateModel/Logic - *69(OTE), 69(XIO)*

Sts_AbortingEnabled 0 BOOL PackMLv3_StateModel

Use of the Aborting state for the current mode is enabled

Usage: Output Parameter

Required: No

Visible: No

External Access: Read Only

OPC UA Access: None

*Sts_AbortingEnabled - PackMLv3_StateModel/Logic - *23(OTE), 43(XIO)*

Sts_Clearing 0 BOOL PackMLv3_StateModel

The Clearing state is active.

Usage: Output Parameter

Required: No

Visible: Yes

External Access: Read Only

OPC UA Access: None

*Sts_Clearing - PackMLv3_StateModel/Logic - *62(OTE), 62(XIO)*

Sts_ClearingEnabled 0 BOOL PackMLv3_StateModel

Use of the Clearing state for the current mode is enabled

Usage: Output Parameter

Required: No

Visible: No

External Access: Read Only

OPC UA Access: None

*Sts_ClearingEnabled - PackMLv3_StateModel/Logic - *15(OTE), 39(XIO)*

Sts_Complete 0 BOOL PackMLv3_StateModel

The Complete state is active.

Usage: Output Parameter

Required: No

Visible: Yes

External Access: Read Only

OPC UA Access: None

*Sts_Complete - PackMLv3_StateModel/Logic - *78(OTE), 78(XIO)*

Sts_CompleteEnabled 0 BOOL PackMLv3_StateModel

Use of the Complete state for the current mode is enabled

Usage: Output Parameter

Required: No

Visible: No

External Access: Read Only

OPC UA Access: None

*Sts_CompleteEnabled - PackMLv3_StateModel/Logic - *34(OTE), 41(XIC), 52(XIO)*

Sts_Completing 0 BOOL PackMLv3_StateModel

The Completing state is active.

Sts_Completing (Continued)

Usage: Output Parameter
 Required: No
 Visible: Yes
 External Access: Read Only
 OPC UA Access: None
*Sts_Completing - PackMLv3_StateModel/Logic - *77(O7E), 77(XIO)*

Sts_CompletingEnabled 0 BOOL PackMLv3_StateModel

Use of the Completing state for the current mode is enabled
 Usage: Output Parameter
 Required: No
 Visible: No
 External Access: Read Only
 OPC UA Access: None
*Sts_CompletingEnabled - PackMLv3_StateModel/Logic - *33(O7E), 49(XIO)*

Sts_EnabledStates 0 DINT PackMLv3_StateModel

Currently Disabled States = 0
 Usage: Output Parameter
 Required: No
 Visible: No
 External Access: Read Only
 OPC UA Access: None

Sts_EnabledStates.1 0 BOOL

Currently Disabled States = 0
*Sts_EnabledStates.1 - PackMLv3_StateModel/Logic - *15(O7E)*

Sts_EnabledStates.2 0 BOOL

Currently Disabled States = 0
*Sts_EnabledStates.2 - PackMLv3_StateModel/Logic - *16(O7E)*

Sts_EnabledStates.3 0 BOOL

Currently Disabled States = 0
*Sts_EnabledStates.3 - PackMLv3_StateModel/Logic - *17(O7E)*

Sts_EnabledStates.4 0 BOOL

Currently Disabled States = 0
*Sts_EnabledStates.4 - PackMLv3_StateModel/Logic - *18(O7E)*

Sts_EnabledStates.5 0 BOOL

Currently Disabled States = 0
*Sts_EnabledStates.5 - PackMLv3_StateModel/Logic - *20(O7E)*

Sts_EnabledStates.6 0 BOOL

Currently Disabled States = 0
*Sts_EnabledStates.6 - PackMLv3_StateModel/Logic - *21(O7E)*

Sts_EnabledStates.7 0 BOOL

Currently Disabled States = 0
*Sts_EnabledStates.7 - PackMLv3_StateModel/Logic - *22(O7E)*

Sts_EnabledStates.8 0 BOOL

Currently Disabled States = 0
*Sts_EnabledStates.8 - PackMLv3_StateModel/Logic - *23(O7E)*

Sts_EnabledStates.9 0 BOOL

Currently Disabled States = 0
*Sts_EnabledStates.9 - PackMLv3_StateModel/Logic - *24(O7E)*

Sts_EnabledStates.10 0 BOOL

Currently Disabled States = 0
*Sts_EnabledStates.10 - PackMLv3_StateModel/Logic - *26(O7E)*

Sts_EnabledStates.11 0 BOOL

Currently Disabled States = 0
*Sts_EnabledStates.11 - PackMLv3_StateModel/Logic - *27(O7E)*

Sts_EnabledStates.12 0 BOOL

Currently Disabled States = 0
*Sts_EnabledStates.12 - PackMLv3_StateModel/Logic - *28(O7E)*

Sts_EnabledStates.13 0 BOOL

Currently Disabled States = 0
*Sts_EnabledStates.13 - PackMLv3_StateModel/Logic - *29(O7E)*

Sts_EnabledStates (Continued)			
Sts_EnabledStates.14	0	BOOL	
Currently Disabled States = 0			
<i>Sts_EnabledStates.14 - PackMLv3_StateModel/Logic - *30(O TE)</i>			
Sts_EnabledStates.15	0	BOOL	
Currently Disabled States = 0			
<i>Sts_EnabledStates.15 - PackMLv3_StateModel/Logic - *31(O TE)</i>			
Sts_EnabledStates.16	0	BOOL	
Currently Disabled States = 0			
<i>Sts_EnabledStates.16 - PackMLv3_StateModel/Logic - *33(O TE)</i>			
Sts_EnabledStates.17	0	BOOL	
Currently Disabled States = 0			
<i>Sts_EnabledStates.17 - PackMLv3_StateModel/Logic - *34(O TE)</i>			
Sts_Execute	0	BOOL	PackMLv3_StateModel
The Execute state is active.			
Usage:	Output Parameter		
Required:	No		
Visible:	Yes		
External Access:	Read Only		
OPC UA Access:	None		
<i>Sts_Execute - PackMLv3_StateModel/Logic - *67(O TE), 67(XIO)</i>			
Sts_ExecuteEnabled	0	BOOL	PackMLv3_StateModel
Use of the Execute state for the current mode is enabled			
Usage:	Output Parameter		
Required:	No		
Visible:	No		
External Access:	Read Only		
OPC UA Access:	None		
<i>Sts_ExecuteEnabled - PackMLv3_StateModel/Logic - *21(O TE)</i>			
Sts_Held	0	BOOL	PackMLv3_StateModel
The Held state is active.			
Usage:	Output Parameter		
Required:	No		
Visible:	Yes		
External Access:	Read Only		
OPC UA Access:	None		
<i>Sts_Held - PackMLv3_StateModel/Logic - *72(O TE), 72(XIO)</i>			
Sts_HeldEnabled	0	BOOL	PackMLv3_StateModel
Use of the Held state for the current mode is enabled			
Usage:	Output Parameter		
Required:	No		
Visible:	No		
External Access:	Read Only		
OPC UA Access:	None		
<i>Sts_HeldEnabled - PackMLv3_StateModel/Logic - *27(O TE), 54(XIC)</i>			
Sts_Holding	0	BOOL	PackMLv3_StateModel
The Holding state is active.			
Usage:	Output Parameter		
Required:	No		
Visible:	Yes		
External Access:	Read Only		
OPC UA Access:	None		
<i>Sts_Holding - PackMLv3_StateModel/Logic - *71(O TE), 71(XIO)</i>			
Sts_HoldingEnabled	0	BOOL	PackMLv3_StateModel
Use of the Holding state for the current mode is enabled			
Usage:	Output Parameter		
Required:	No		

Sts_HoldingEnabled (Continued)			
Visible:	No		
External Access:	Read Only		
OPC UA Access:	None		
<i>Sts_HoldingEnabled - PackMLv3_StateModel/Logic - *26(O TE), 44(XIO)</i>			
Sts_Idle	0	BOOL	PackMLv3_StateModel
The Idle state is active.			
Usage:	Output Parameter		
Required:	No		
Visible:	Yes		
External Access:	Read Only		
OPC UA Access:	None		
<i>Sts_Idle - PackMLv3_StateModel/Logic - *65(O TE), 65(XIO)</i>			
Sts_IdleEnabled	0	BOOL	PackMLv3_StateModel
Use of the Idle state for the current mode is enabled			
Usage:	Output Parameter		
Required:	No		
Visible:	No		
External Access:	Read Only		
OPC UA Access:	None		
<i>Sts_IdleEnabled - PackMLv3_StateModel/Logic - *18(O TE), 53(XIO)</i>			
Sts_ModeChangeNotAllowed	0	BOOL	PackMLv3_StateModel
Mode Change Request Was Denied			
Usage:	Output Parameter		
Required:	No		
Visible:	Yes		
External Access:	Read Only		
OPC UA Access:	None		
<i>Sts_ModeChangeNotAllowed - PackMLv3_StateModel/Logic - *85(O TE)</i>			
Sts_ModeCurrent	0	DINT	PackMLv3_StateModel
Current Mode ID			
Usage:	Output Parameter		
Required:	No		
Visible:	No		
External Access:	Read Only		
OPC UA Access:	None		
<i>Sts_ModeCurrent - PackMLv3_StateModel/Logic - *83(MOVE), *84(MOVE), 13(MOVE), 35(MOVE), 81(OTL), 81(XIO), 83(MOVE), 83(NE), 83(XIC), 84(NE), 84(XIC), 85(MOVE), 85(NE), 85(NE), 86(COP)</i>			
<i>Sts_ModeCurrent - PackMLv3_StateModel/Prescan - *0(MOVE)</i>			
Sts_ModeCurrentName	??	String_Short	PackMLv3_StateModel
Current Mode Name			
Usage:	InOut Parameter		
Required:	Yes		
Visible:	Yes		
Constant	No		
OPC UA Access:	None		
<i>Sts_ModeCurrentName - PackMLv3_StateModel/Logic - *86(COP)</i>			
Sts_ModeCurrentName.LEN	??	DINT	
Current Mode Name			
Sts_ModeCurrentName.DATA		SINT	
Current Mode Name			
Sts_Resetting	0	BOOL	PackMLv3_StateModel
The Resetting state is active.			
Usage:	Output Parameter		
Required:	No		
Visible:	Yes		
External Access:	Read Only		

Sts_Resetting (Continued)

OPC UA Access: None
*Sts_Resetting - PackMLv3_StateModel/Logic - *76(O TE), 76(XIO)*

Sts_ResettingEnabled 0 BOOL PackMLv3_StateModel

Use of the Resetting state for the current mode is enabled
 Usage: Output Parameter
 Required: No
 Visible: No
 External Access: Read Only
 OPC UA Access: None
*Sts_ResettingEnabled - PackMLv3_StateModel/Logic - *31(O TE), 48(XIO)*

Sts_Starting 0 BOOL PackMLv3_StateModel

The Starting state is active.
 Usage: Output Parameter
 Required: No
 Visible: Yes
 External Access: Read Only
 OPC UA Access: None
*Sts_Starting - PackMLv3_StateModel/Logic - *64(O TE), 64(XIO)*

Sts_StartingEnabled 0 BOOL PackMLv3_StateModel

Use of the Starting state for the current mode is enabled
 Usage: Output Parameter
 Required: No
 Visible: No
 External Access: Read Only
 OPC UA Access: None
*Sts_StartingEnabled - PackMLv3_StateModel/Logic - *17(O TE), 40(XIO)*

Sts_StateCurrent 0 DINT PackMLv3_StateModel

Current State ID
 Usage: Output Parameter
 Required: No
 Visible: No
 External Access: Read Only
 OPC UA Access: None
*Sts_StateCurrent - PackMLv3_StateModel/Logic - *62(MOVE), *63(MOVE), *64(MOVE), *65(MOVE), *66(MOVE), *67(MOVE), *68(MOVE), *69(MOVE), *70(MOVE), *71(MOVE), *72(MOVE), *73(MOVE), *74(MOVE), *75(MOVE), *76(MOVE), *77(MOVE), *78(MOVE), 83(XIC), 83(XIC), 84(XIC), 84(XIC)*
*Sts_StateCurrent - PackMLv3_StateModel/Prescan - *1(MOVE)*

Sts_StateCurrentName ?? String_Short PackMLv3_StateModel

Current State Name
 Usage: InOut Parameter
 Required: Yes
 Visible: Yes
 Constant: No
 OPC UA Access: None
*Sts_StateCurrentName - PackMLv3_StateModel/Logic - *62(COP), *63(COP), *64(COP), *65(COP), *66(COP), *67(COP), *68(COP), *69(COP), *70(COP), *71(COP), *72(COP), *73(COP), *74(COP), *75(COP), *76(COP), *77(COP), *78(COP)*

Sts_StateCurrentName.LEN ?? DINT

Current State Name

Sts_StateCurrentName.DATA SINT

Current State Name

Sts_Stopped 0 BOOL PackMLv3_StateModel

The Stopped state is active.
 Usage: Output Parameter
 Required: No
 Visible: Yes
 External Access: Read Only

Sts_Stopped (Continued)

OPC UA Access: None
*Sts_Stopped - PackMLv3_StateModel/Logic - *63(O TE), 63(XIO)*

Sts_StoppedEnabled 0 BOOL PackMLv3_StateModel

Use of the Stopped state for the current mode is enabled

Usage: Output Parameter

Required: No

Visible: No

External Access: Read Only

OPC UA Access: None

*Sts_StoppedEnabled - PackMLv3_StateModel/Logic - *16(O TE)*

Sts_Stopping 0 BOOL PackMLv3_StateModel

The Stopping state is active.

Usage: Output Parameter

Required: No

Visible: Yes

External Access: Read Only

OPC UA Access: None

*Sts_Stopping - PackMLv3_StateModel/Logic - *68(O TE), 68(XIO)*

Sts_StoppingEnabled 0 BOOL PackMLv3_StateModel

Use of the Stopping state for the current mode is enabled

Usage: Output Parameter

Required: No

Visible: No

External Access: Read Only

OPC UA Access: None

*Sts_StoppingEnabled - PackMLv3_StateModel/Logic - *22(O TE), 42(XIO)*

Sts_Suspended 0 BOOL PackMLv3_StateModel

The Suspended state is active.

Usage: Output Parameter

Required: No

Visible: Yes

External Access: Read Only

OPC UA Access: None

*Sts_Suspended - PackMLv3_StateModel/Logic - *66(O TE), 66(XIO)*

Sts_SuspendedEnabled 0 BOOL PackMLv3_StateModel

Use of the Suspended state for the current mode is enabled

Usage: Output Parameter

Required: No

Visible: No

External Access: Read Only

OPC UA Access: None

*Sts_SuspendedEnabled - PackMLv3_StateModel/Logic - *20(O TE), 56(XIC)*

Sts_Suspending 0 BOOL PackMLv3_StateModel

The Suspending state is active.

Usage: Output Parameter

Required: No

Visible: Yes

External Access: Read Only

OPC UA Access: None

*Sts_Suspending - PackMLv3_StateModel/Logic - *74(O TE), 74(XIO)*

Sts_SuspendingEnabled 0 BOOL PackMLv3_StateModel

Use of the Suspending state for the current mode is enabled

Usage: Output Parameter

Required: No

Visible: No

Sts_SuspendingEnabled (Continued)

External Access: Read Only
 OPC UA Access: None

*Sts_SuspendingEnabled - PackMLv3_StateModel/Logic - *29(O TE), 46(XIO)*

Sts_UnHolding 0 BOOL PackMLv3_StateModel

The UnHolding state is active.

Usage: Output Parameter

Required: No

Visible: Yes

External Access: Read Only

OPC UA Access: None

*Sts_UnHolding - PackMLv3_StateModel/Logic - *73(O TE), 73(XIO)*

Sts_UnHoldingEnabled 0 BOOL PackMLv3_StateModel

Use of the UnHolding state for the current mode is enabled

Usage: Output Parameter

Required: No

Visible: No

External Access: Read Only

OPC UA Access: None

*Sts_UnHoldingEnabled - PackMLv3_StateModel/Logic - *28(O TE), 45(XIO)*

Sts_UnSuspending 0 BOOL PackMLv3_StateModel

The UnSuspending state is active.

Usage: Output Parameter

Required: No

Visible: Yes

External Access: Read Only

OPC UA Access: None

*Sts_UnSuspending - PackMLv3_StateModel/Logic - *75(O TE), 75(XIO)*

Sts_UnSuspendingEnabled 0 BOOL PackMLv3_StateModel

Use of the UnSuspending state for the current mode is enabled

Usage: Output Parameter

Required: No

Visible: No

External Access: Read Only

OPC UA Access: None

*Sts_UnSuspendingEnabled - PackMLv3_StateModel/Logic - *30(O TE), 47(XIO)*

Name	Default	Data Type	Scope
AbortRemoteCmd	0	BOOL	PackMLv3_StateModel
Usage:	Local Tag		
External Access:	Read/Write		
OPC UA Access:	None		
<i>AbortRemoteCmd - PackMLv3_StateModel/Logic - *10(OTE), 60(XIC)</i>			
Cfg_DisableStatesCopy	0	DINT	PackMLv3_StateModel
Usage:	Local Tag		
External Access:	Read/Write		
OPC UA Access:	None		
<i>Cfg_DisableStatesCopy - PackMLv3_StateModel/Logic - *13(MOVE), 35(MOVE)</i>			
Cfg_DisableStatesCopy.0	0	BOOL	
No State Associated			
Cfg_DisableStatesCopy.1	0	BOOL	
Clearing State 1 = Disabled State			
<i>Cfg_DisableStatesCopy.1 - PackMLv3_StateModel/Logic - 15(XIO)</i>			
Cfg_DisableStatesCopy.2	0	BOOL	
Stopped State 1 = Disabled State			
<i>Cfg_DisableStatesCopy.2 - PackMLv3_StateModel/Logic - *14(OTU), 14(XIC), 16(XIO)</i>			
Cfg_DisableStatesCopy.3	0	BOOL	
Starting State 1 = Disabled State			
<i>Cfg_DisableStatesCopy.3 - PackMLv3_StateModel/Logic - 17(XIO)</i>			
Cfg_DisableStatesCopy.4	0	BOOL	
Idle State 1 = Disabled State			
<i>Cfg_DisableStatesCopy.4 - PackMLv3_StateModel/Logic - 18(XIO)</i>			
Cfg_DisableStatesCopy.5	0	BOOL	
Suspended State 1 = Disabled State			
<i>Cfg_DisableStatesCopy.5 - PackMLv3_StateModel/Logic - 19(XIC), 20(XIO)</i>			
Cfg_DisableStatesCopy.6	0	BOOL	
Execute State 1 = Disabled State			
<i>Cfg_DisableStatesCopy.6 - PackMLv3_StateModel/Logic - *14(OTU), 14(XIC), 21(XIO)</i>			
Cfg_DisableStatesCopy.7	0	BOOL	
Stopping State 1 = Disabled State			
<i>Cfg_DisableStatesCopy.7 - PackMLv3_StateModel/Logic - 22(XIO)</i>			
Cfg_DisableStatesCopy.8	0	BOOL	
Aborting State 1 = Disabled State			
<i>Cfg_DisableStatesCopy.8 - PackMLv3_StateModel/Logic - 23(XIO)</i>			
Cfg_DisableStatesCopy.9	0	BOOL	
Aborted State 1 = Disabled State			
<i>Cfg_DisableStatesCopy.9 - PackMLv3_StateModel/Logic - *14(OTU), 14(XIC), 24(XIO)</i>			
Cfg_DisableStatesCopy.10	0	BOOL	
Holding State 1 = Disabled State			
<i>Cfg_DisableStatesCopy.10 - PackMLv3_StateModel/Logic - *25(OTL), 26(XIO)</i>			
Cfg_DisableStatesCopy.11	0	BOOL	
Held State 1 = Disabled State			
<i>Cfg_DisableStatesCopy.11 - PackMLv3_StateModel/Logic - 25(XIC), 27(XIO)</i>			
Cfg_DisableStatesCopy.12	0	BOOL	
UnHolding State 1 = Disabled State			
<i>Cfg_DisableStatesCopy.12 - PackMLv3_StateModel/Logic - *25(OTL), 28(XIO)</i>			
Cfg_DisableStatesCopy.13	0	BOOL	
Suspending State 1 = Disabled State			
<i>Cfg_DisableStatesCopy.13 - PackMLv3_StateModel/Logic - *19(OTL), 29(XIO)</i>			
Cfg_DisableStatesCopy.14	0	BOOL	
UnSuspending State 1 = Disabled State			
<i>Cfg_DisableStatesCopy.14 - PackMLv3_StateModel/Logic - *19(OTL), 30(XIO)</i>			
Cfg_DisableStatesCopy.15	0	BOOL	
Resetting State 1 = Disabled State			
<i>Cfg_DisableStatesCopy.15 - PackMLv3_StateModel/Logic - 31(XIO)</i>			
Cfg_DisableStatesCopy.16	0	BOOL	
Completing State 1 = Disabled State			
<i>Cfg_DisableStatesCopy.16 - PackMLv3_StateModel/Logic - *32(OTL), 33(XIO)</i>			
Cfg_DisableStatesCopy.17	0	BOOL	

Cfg_DisableStatesCopy (Continued)

Complete State 1 = Disabled State

*Cfg_DisableStatesCopy.17 - PackMLv3_StateModel/Logic - 32(XIC), 34(XIO)***ClearRemoteCmd** 0 BOOL PackMLv3_StateModel

Usage: Local Tag

External Access: Read/Write

OPC UA Access: None

*ClearRemoteCmd - PackMLv3_StateModel/Logic - *11(OTE), 58(XIC)***HoldRemoteCmd** 0 BOOL PackMLv3_StateModel

Usage: Local Tag

External Access: Read/Write

OPC UA Access: None

*HoldRemoteCmd - PackMLv3_StateModel/Logic - *6(OTE), 54(XIC)***LocalAborted** 0 BOOL PackMLv3_StateModel

Usage: Local Tag

External Access: Read/Write

OPC UA Access: None

*LocalAborted - PackMLv3_StateModel/Logic - *43(OTL), *58(OTU), 58(XIC), 70(XIC)**LocalAborted - PackMLv3_StateModel/Prescan - *1(OTU)***LocalAborting** 0 BOOL PackMLv3_StateModel

Usage: Local Tag

External Access: Read/Write

OPC UA Access: None

*LocalAborting - PackMLv3_StateModel/Logic - *43(OTU), *60(OTL), 43(XIC), 69(XIC)**LocalAborting - PackMLv3_StateModel/Prescan - *1(OTU)***LocalClearing** 0 BOOL PackMLv3_StateModel

Usage: Local Tag

External Access: Read/Write

OPC UA Access: None

*LocalClearing - PackMLv3_StateModel/Logic - *39(OTU), *58(OTL), *60(OTU), 39(XIC), 60(XIC), 62(XIC)**LocalClearing - PackMLv3_StateModel/Prescan - *1(OTU)***LocalComplete** 0 BOOL PackMLv3_StateModel

Usage: Local Tag

External Access: Read/Write

OPC UA Access: None

*LocalComplete - PackMLv3_StateModel/Logic - *49(OTL), *52(OTU), *59(OTU), *60(OTU), 52(XIC), 59(XIC), 60(XIC), 78(XIC)**LocalComplete - PackMLv3_StateModel/Prescan - *1(OTU)***LocalCompleting** 0 BOOL PackMLv3_StateModel

Usage: Local Tag

External Access: Read/Write

OPC UA Access: None

*LocalCompleting - PackMLv3_StateModel/Logic - *41(OTL), *49(OTU), *59(OTU), *60(OTU), 49(XIC), 59(XIC), 60(XIC), 77(XIC)**LocalCompleting - PackMLv3_StateModel/Prescan - *1(OTU)***LocalExecute** 0 BOOL PackMLv3_StateModel

Usage: Local Tag

External Access: Read/Write

OPC UA Access: None

*LocalExecute - PackMLv3_StateModel/Logic - *40(OTL), *41(OTU), *45(OTL), *47(OTL), *54(OTU), *56(OTU), *59(OTU), *60(OTU), 41(XIC), 54(XIC), 56(XIC), 59(XIC), 60(XIC), 67(XIC)**LocalExecute - PackMLv3_StateModel/Prescan - *1(OTU)***LocalHeld** 0 BOOL PackMLv3_StateModel

Usage: Local Tag

External Access: Read/Write

OPC UA Access: None

LocalHeld (Continued)*LocalHeld - PackMLv3_StateModel/Logic - *44(OTL), *55(OTU), *59(OTU), *60(OTU), 55(XIC), 59(XIC), 60(XIC), 72(XIC)**LocalHeld - PackMLv3_StateModel/Prescan - *1(OTU)***LocalHolding** 0 BOOL PackMLv3_StateModel

Usage: Local Tag

External Access: Read/Write

OPC UA Access: None

*LocalHolding - PackMLv3_StateModel/Logic - *44(OTL), *54(OTL), *59(OTU), *60(OTU), 44(XIC), 59(XIC), 60(XIC), 71(XIC)**LocalHolding - PackMLv3_StateModel/Prescan - *1(OTU)***LocalIdle** 0 BOOL PackMLv3_StateModel

Usage: Local Tag

External Access: Read/Write

OPC UA Access: None

*LocalIdle - PackMLv3_StateModel/Logic - *48(OTL), *53(OTU), *59(OTU), *60(OTU), 53(XIC), 59(XIC), 60(XIC), 65(XIC)**LocalIdle - PackMLv3_StateModel/Prescan - *1(OTU)***LocalResetting** 0 BOOL PackMLv3_StateModel

Usage: Local Tag

External Access: Read/Write

OPC UA Access: None

*LocalResetting - PackMLv3_StateModel/Logic - *48(OTU), *51(OTL), *52(OTL), *59(OTU), *60(OTU), 48(XIC), 59(XIC), 60(XIC), 76(XIC)**LocalResetting - PackMLv3_StateModel/Prescan - *1(OTU)***LocalStarting** 0 BOOL PackMLv3_StateModel

Usage: Local Tag

External Access: Read/Write

OPC UA Access: None

*LocalStarting - PackMLv3_StateModel/Logic - *40(OTU), *53(OTL), *59(OTU), *60(OTU), 40(XIC), 59(XIC), 60(XIC), 64(XIC)**LocalStarting - PackMLv3_StateModel/Prescan - *1(OTU)***LocalStopped** 0 BOOL PackMLv3_StateModel

Usage: Local Tag

External Access: Read/Write

OPC UA Access: None

*LocalStopped - PackMLv3_StateModel/Logic - *39(OTL), *42(OTL), *51(OTU), *60(OTU), 51(XIC), 60(XIC), 63(XIC)**LocalStopped - PackMLv3_StateModel/Prescan - *1(OTL)***LocalStopping** 0 BOOL PackMLv3_StateModel

Usage: Local Tag

External Access: Read/Write

OPC UA Access: None

*LocalStopping - PackMLv3_StateModel/Logic - *42(OTU), *59(OTL), *60(OTU), 42(XIC), 60(XIC), 68(XIC)**LocalStopping - PackMLv3_StateModel/Prescan - *1(OTU)***LocalSuspended** 0 BOOL PackMLv3_StateModel

Usage: Local Tag

External Access: Read/Write

OPC UA Access: None

*LocalSuspended - PackMLv3_StateModel/Logic - *46(OTL), *57(OTU), *59(OTU), *60(OTU), 57(XIC), 59(XIC), 60(XIC), 66(XIC)**LocalSuspended - PackMLv3_StateModel/Prescan - *1(OTU)***LocalSuspending** 0 BOOL PackMLv3_StateModel

Usage: Local Tag

External Access: Read/Write

OPC UA Access: None

*LocalSuspending - PackMLv3_StateModel/Logic - *46(OTU), *56(OTL), *59(OTU), *60(OTU), 46(XIC), 59(XIC), 60(XIC), 74(XIC)**LocalSuspending - PackMLv3_StateModel/Prescan - *1(OTU)***LocalUnHolding** 0 BOOL PackMLv3_StateModel

Usage: Local Tag

External Access: Read/Write

LocalUnHolding (Continued)

OPC UA Access: None
*LocalUnHolding - PackMLv3_StateModel/Logic - *45(OTU), *55(OTL), *59(OTU), *60(OTU), 45(XIC), 59(XIC), 60(XIC), 73(XIC)*
*LocalUnHolding - PackMLv3_StateModel/Prescan - *1(OTU)*

LocalUnSuspending 0 BOOL PackMLv3_StateModel

Usage: Local Tag
 External Access: Read/Write
 OPC UA Access: None
*LocalUnSuspending - PackMLv3_StateModel/Logic - *47(OTU), *57(OTL), *59(OTU), *60(OTU), 47(XIC), 59(XIC), 60(XIC), 75(XIC)*
*LocalUnSuspending - PackMLv3_StateModel/Prescan - *1(OTU)*

PreviousMode 0 DINT PackMLv3_StateModel

Usage: Local Tag
 External Access: Read/Write
 OPC UA Access: None
*PreviousMode - PackMLv3_StateModel/Prescan - *0(CLR)*

RemoteCmdChangeRequested 0 BOOL PackMLv3_StateModel

Usage: Local Tag
 External Access: Read/Write
 OPC UA Access: None
*RemoteCmdChangeRequested - PackMLv3_StateModel/Logic - *2(OTE), 10(XIC), 11(XIC), 3(XIC), 4(XIC), 5(XIC), 6(XIC), 7(XIC), 8(XIC), 83(XIC), 85(XIC), 9(XIC)*

ResetRemoteCmd 0 BOOL PackMLv3_StateModel

Usage: Local Tag
 External Access: Read/Write
 OPC UA Access: None
*ResetRemoteCmd - PackMLv3_StateModel/Logic - *3(OTE), 51(XIC), 52(XIC)*

StartRemoteCmd 0 BOOL PackMLv3_StateModel

Usage: Local Tag
 External Access: Read/Write
 OPC UA Access: None
*StartRemoteCmd - PackMLv3_StateModel/Logic - *4(OTE), 53(XIC)*

StateComplete 0 BOOL PackMLv3_StateModel

Usage: Local Tag
 External Access: Read/Write
 OPC UA Access: None
*StateComplete - PackMLv3_StateModel/Logic - *37(OTL), *38(OTU), *39(OTU), *40(OTU), *41(OTU), *42(OTU), *43(OTU), *44(OTU), *45(OTU), *46(OTU), *47(OTU), *48(OTU), *49(OTU), 39(XIC), 40(XIC), 41(XIC), 42(XIC), 43(XIC), 44(XIC), 45(XIC), 46(XIC), 47(XIC), 48(XIC), 49(XIC)*

StopRemoteCmd 0 BOOL PackMLv3_StateModel

Usage: Local Tag
 External Access: Read/Write
 OPC UA Access: None
*StopRemoteCmd - PackMLv3_StateModel/Logic - *5(OTE), 59(XIC)*

StringAborted 'Aborted' String_Short PackMLv3_StateModel

Usage: Local Tag
 External Access: Read/Write
 OPC UA Access: None
StringAborted - PackMLv3_StateModel/Logic - 70(COP)

StringAborting 'Aborting' String_Short PackMLv3_StateModel

Usage: Local Tag
 External Access: Read/Write
 OPC UA Access: None
StringAborting - PackMLv3_StateModel/Logic - 69(COP)

StringClearing	'Clearing'	String_Short	PackMLv3_StateModel
Usage:	Local Tag		
External Access:	Read/Write		
OPC UA Access:	None		
<i>StringClearing - PackMLv3_StateModel/Logic - 62(COP)</i>			
StringComplete	'Complete'	String_Short	PackMLv3_StateModel
Usage:	Local Tag		
External Access:	Read/Write		
OPC UA Access:	None		
<i>StringComplete - PackMLv3_StateModel/Logic - 78(COP)</i>			
StringCompleting	'Completing'	String_Short	PackMLv3_StateModel
Usage:	Local Tag		
External Access:	Read/Write		
OPC UA Access:	None		
<i>StringCompleting - PackMLv3_StateModel/Logic - 77(COP)</i>			
StringExecute	'Execute'	String_Short	PackMLv3_StateModel
Usage:	Local Tag		
External Access:	Read/Write		
OPC UA Access:	None		
<i>StringExecute - PackMLv3_StateModel/Logic - 67(COP)</i>			
StringHeld	'Held'	String_Short	PackMLv3_StateModel
Usage:	Local Tag		
External Access:	Read/Write		
OPC UA Access:	None		
<i>StringHeld - PackMLv3_StateModel/Logic - 72(COP)</i>			
StringHolding	'Holding'	String_Short	PackMLv3_StateModel
Usage:	Local Tag		
External Access:	Read/Write		
OPC UA Access:	None		
<i>StringHolding - PackMLv3_StateModel/Logic - 71(COP)</i>			
StringIdle	'Idle'	String_Short	PackMLv3_StateModel
Usage:	Local Tag		
External Access:	Read/Write		
OPC UA Access:	None		
<i>StringIdle - PackMLv3_StateModel/Logic - 65(COP)</i>			
StringResetting	'Resetting'	String_Short	PackMLv3_StateModel
Usage:	Local Tag		
External Access:	Read/Write		
OPC UA Access:	None		
<i>StringResetting - PackMLv3_StateModel/Logic - 76(COP)</i>			
StringStarting	'Starting'	String_Short	PackMLv3_StateModel
Usage:	Local Tag		
External Access:	Read/Write		
OPC UA Access:	None		
<i>StringStarting - PackMLv3_StateModel/Logic - 64(COP)</i>			
StringStopped	'Stopped'	String_Short	PackMLv3_StateModel
Usage:	Local Tag		
External Access:	Read/Write		
OPC UA Access:	None		
<i>StringStopped - PackMLv3_StateModel/Logic - 63(COP)</i>			
StringStopping	'Stopping'	String_Short	PackMLv3_StateModel
Usage:	Local Tag		
External Access:	Read/Write		

StringStopping (Continued)

OPC UA Access: None
StringStopping - PackMLv3_StateModel/Logic - 68(COP)

StringSuspended

'Suspended' String_Short
 Usage: Local Tag
 External Access: Read/Write
 OPC UA Access: None
StringSuspended - PackMLv3_StateModel/Logic - 66(COP)

PackMLv3_StateModel

StringSuspending

'Suspending' String_Short
 Usage: Local Tag
 External Access: Read/Write
 OPC UA Access: None
StringSuspending - PackMLv3_StateModel/Logic - 74(COP)

PackMLv3_StateModel

StringUnHolding

'UnHolding' String_Short
 Usage: Local Tag
 External Access: Read/Write
 OPC UA Access: None
StringUnHolding - PackMLv3_StateModel/Logic - 73(COP)

PackMLv3_StateModel

StringUnSuspending

'UnSuspending' String_Short
 Usage: Local Tag
 External Access: Read/Write
 OPC UA Access: None
StringUnSuspending - PackMLv3_StateModel/Logic - 75(COP)

PackMLv3_StateModel

SuspendRemoteCmd

0 BOOL
 Usage: Local Tag
 External Access: Read/Write
 OPC UA Access: None
*SuspendRemoteCmd - PackMLv3_StateModel/Logic - *8(OTE), 56(XIC)*

PackMLv3_StateModel

TON_ModeChangeNotAllowed

TIMER
 Usage: Local Tag
 External Access: Read/Write
 OPC UA Access: None
*TON_ModeChangeNotAllowed - PackMLv3_StateModel/Logic - *85(TON)*

PackMLv3_StateModel

TON_ModeChangeNotAllowed.PRE

3000 DINT
*TON_ModeChangeNotAllowed.PRE - PackMLv3_StateModel/Prescan - *2(MOVE)*

TON_ModeChangeNotAllowed.DN

0 BOOL
TON_ModeChangeNotAllowed.DN - PackMLv3_StateModel/Logic - 85(XIC)

UnHoldRemoteCmd

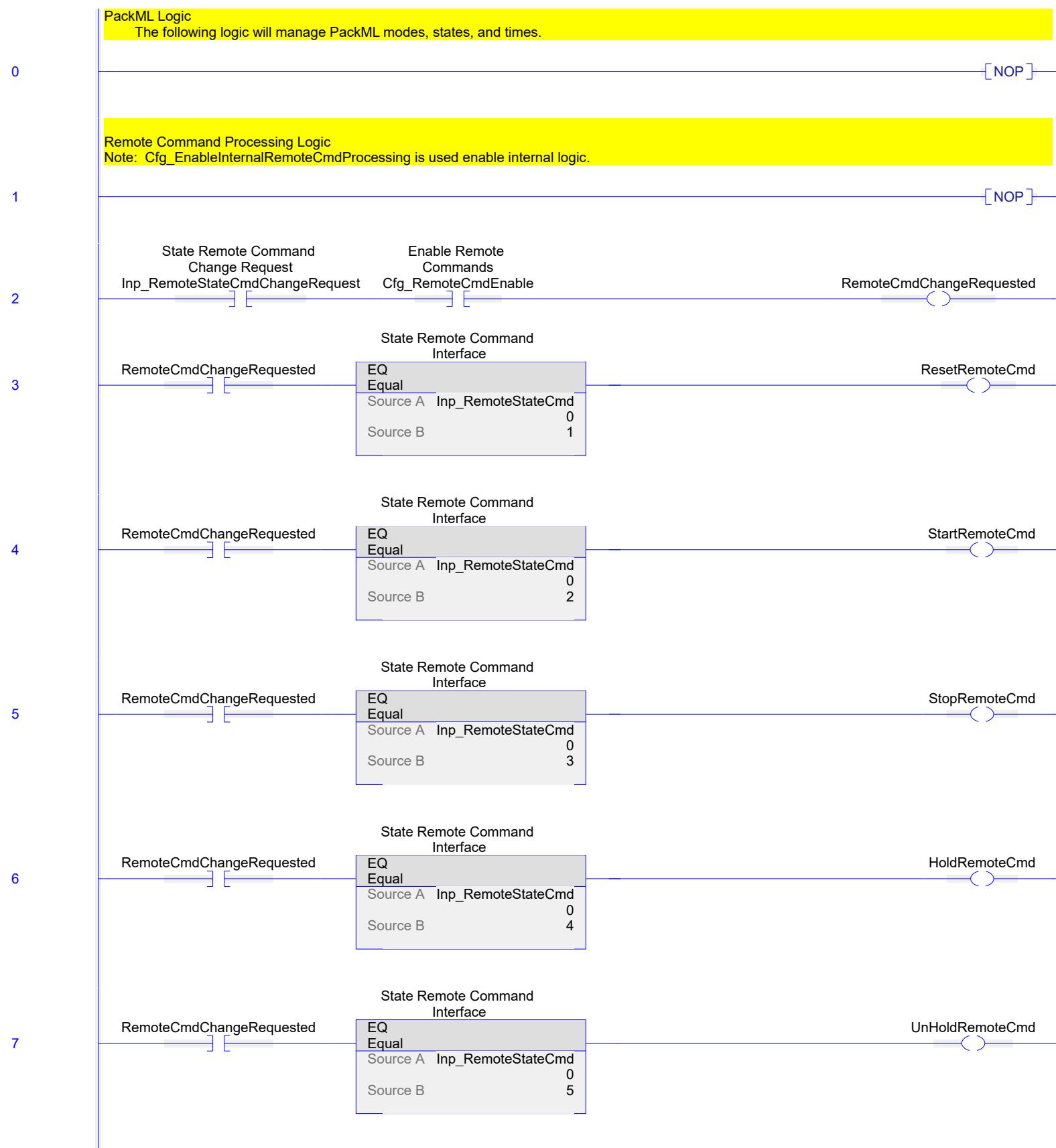
0 BOOL
 Usage: Local Tag
 External Access: Read/Write
 OPC UA Access: None
*UnHoldRemoteCmd - PackMLv3_StateModel/Logic - *7(OTE), 55(XIC)*

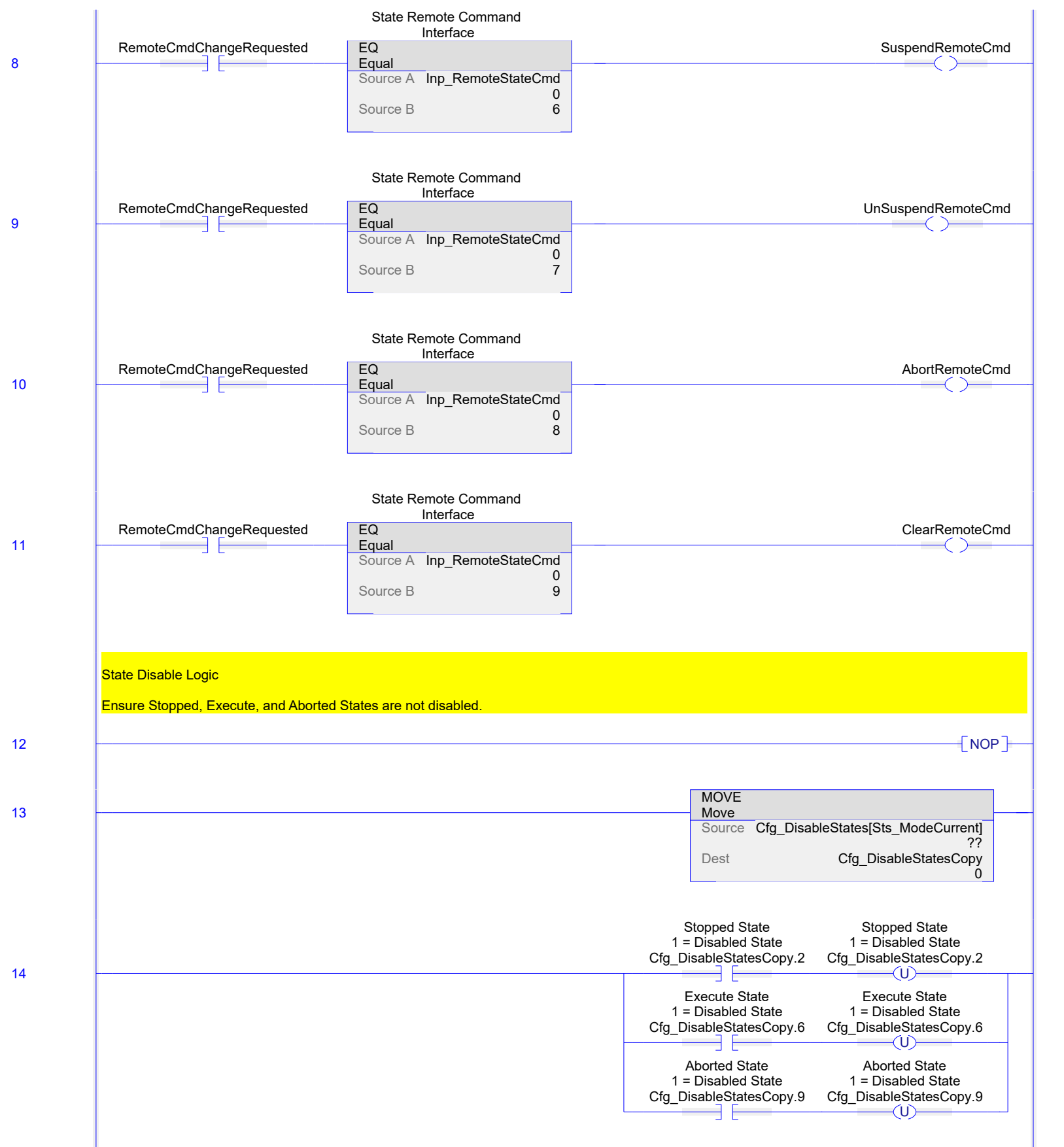
PackMLv3_StateModel

UnSuspendRemoteCmd

0 BOOL
 Usage: Local Tag
 External Access: Read/Write
 OPC UA Access: None
*UnSuspendRemoteCmd - PackMLv3_StateModel/Logic - *9(OTE), 57(XIC)*

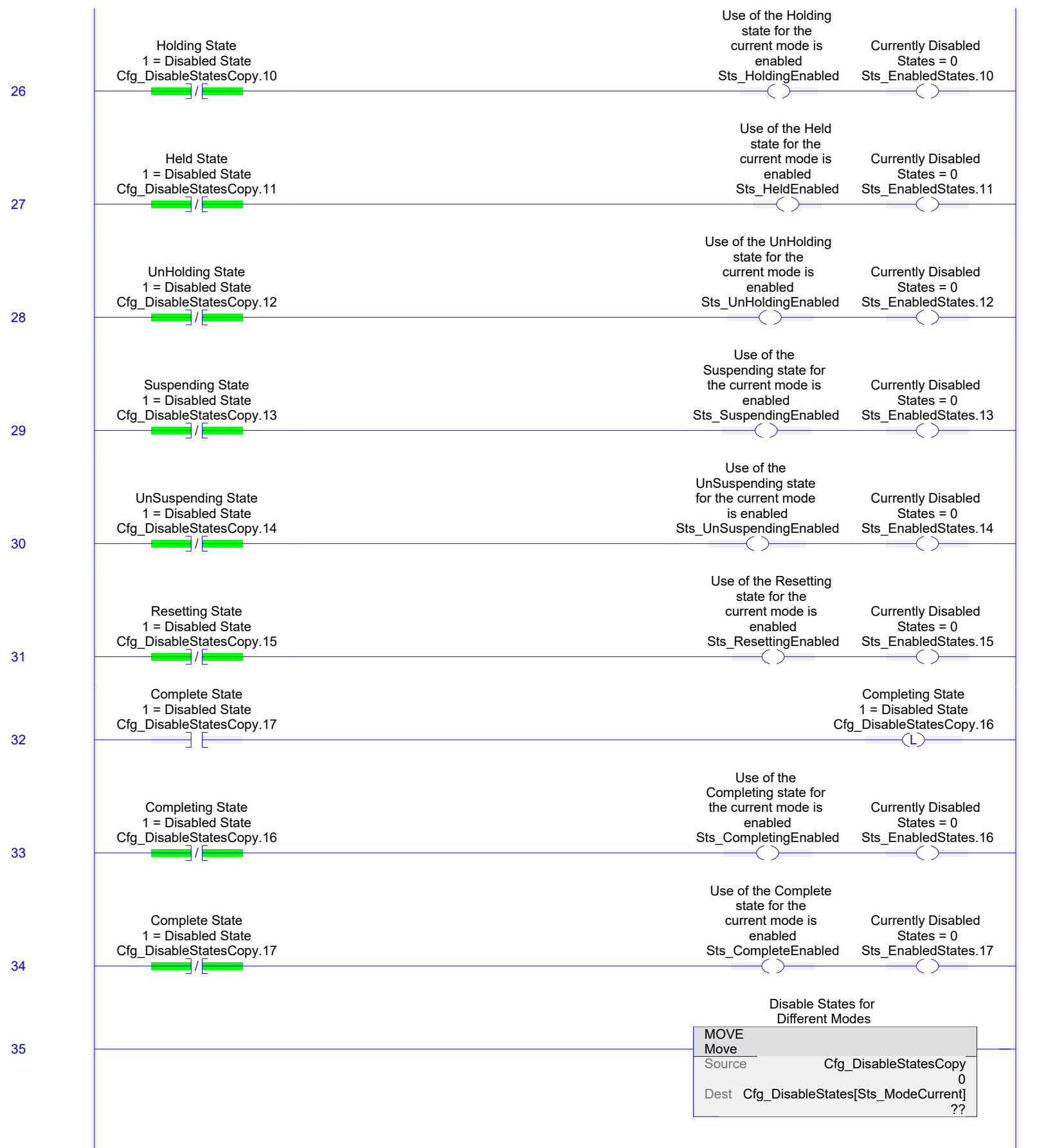
PackMLv3_StateModel

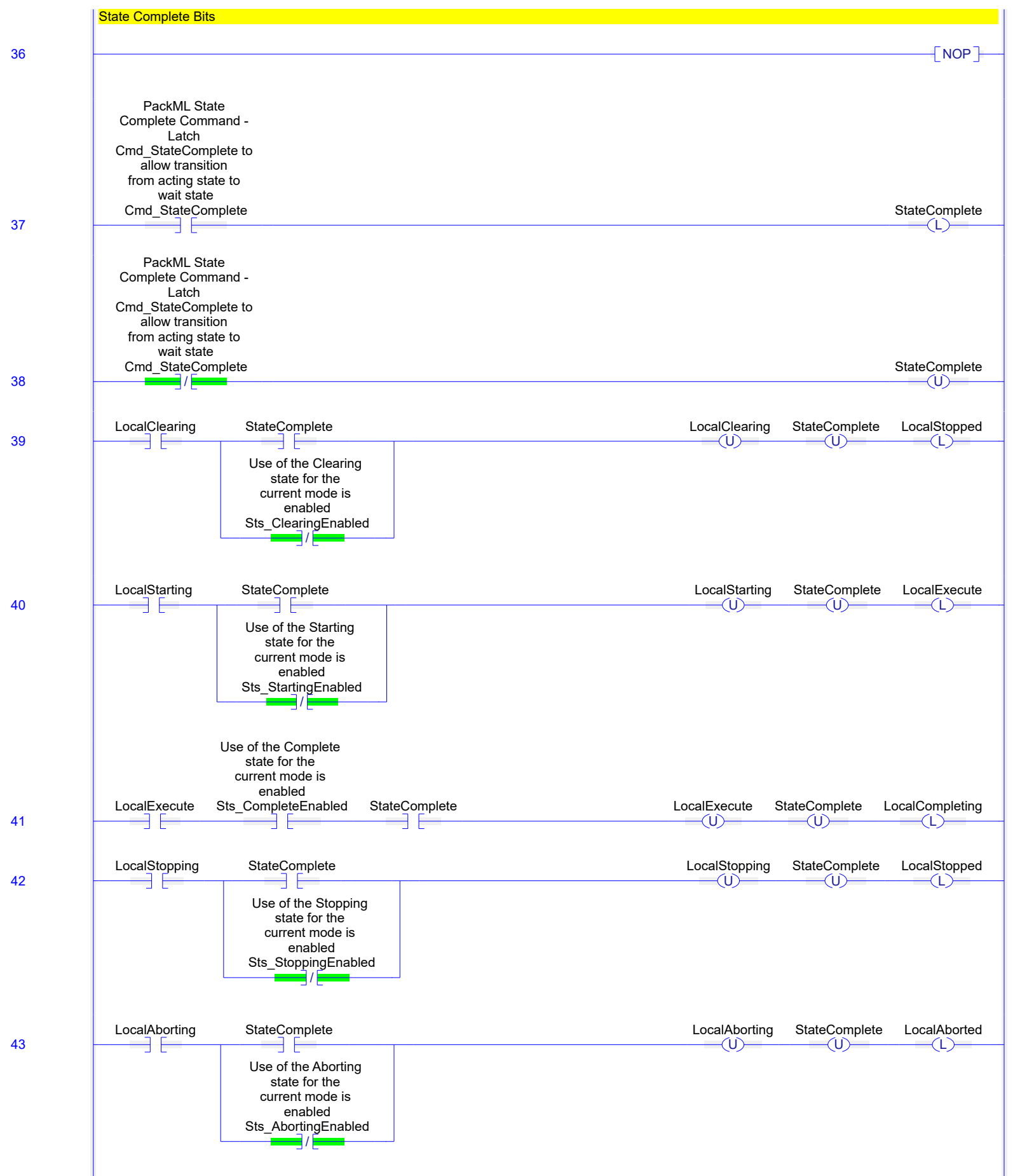


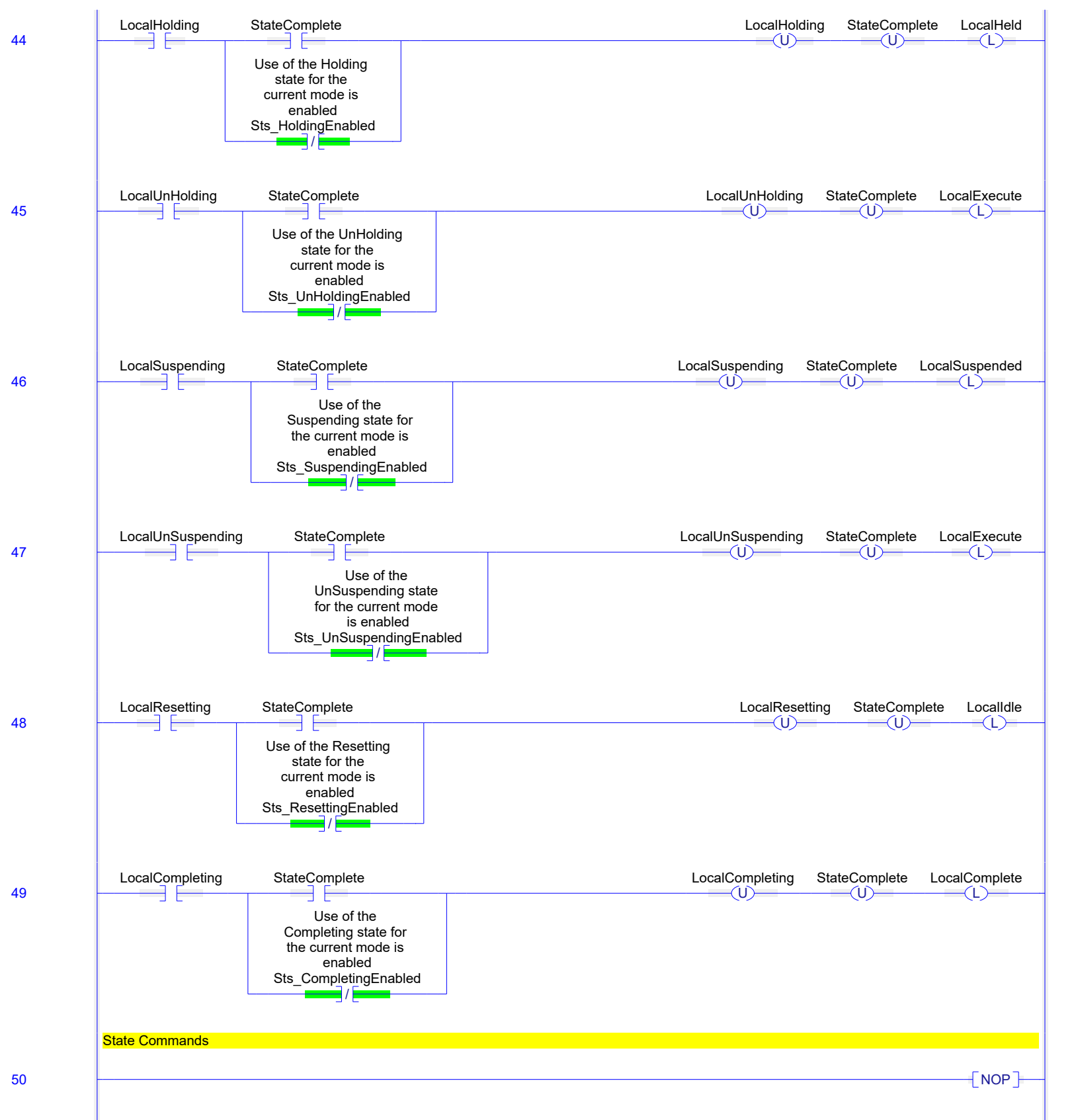


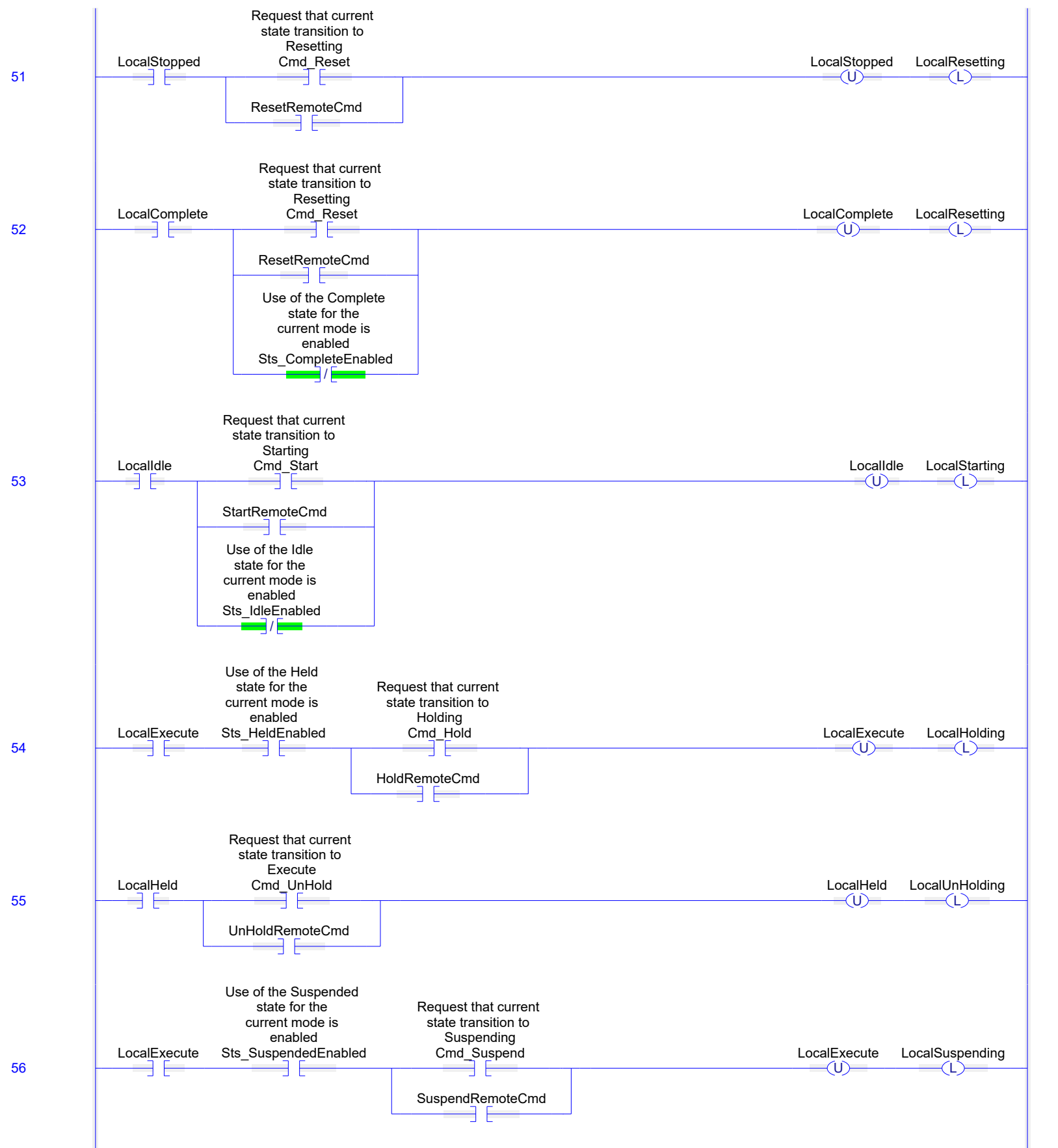
State Disable Logic
 Ensure Stopped, Execute, and Aborted States are not disabled.

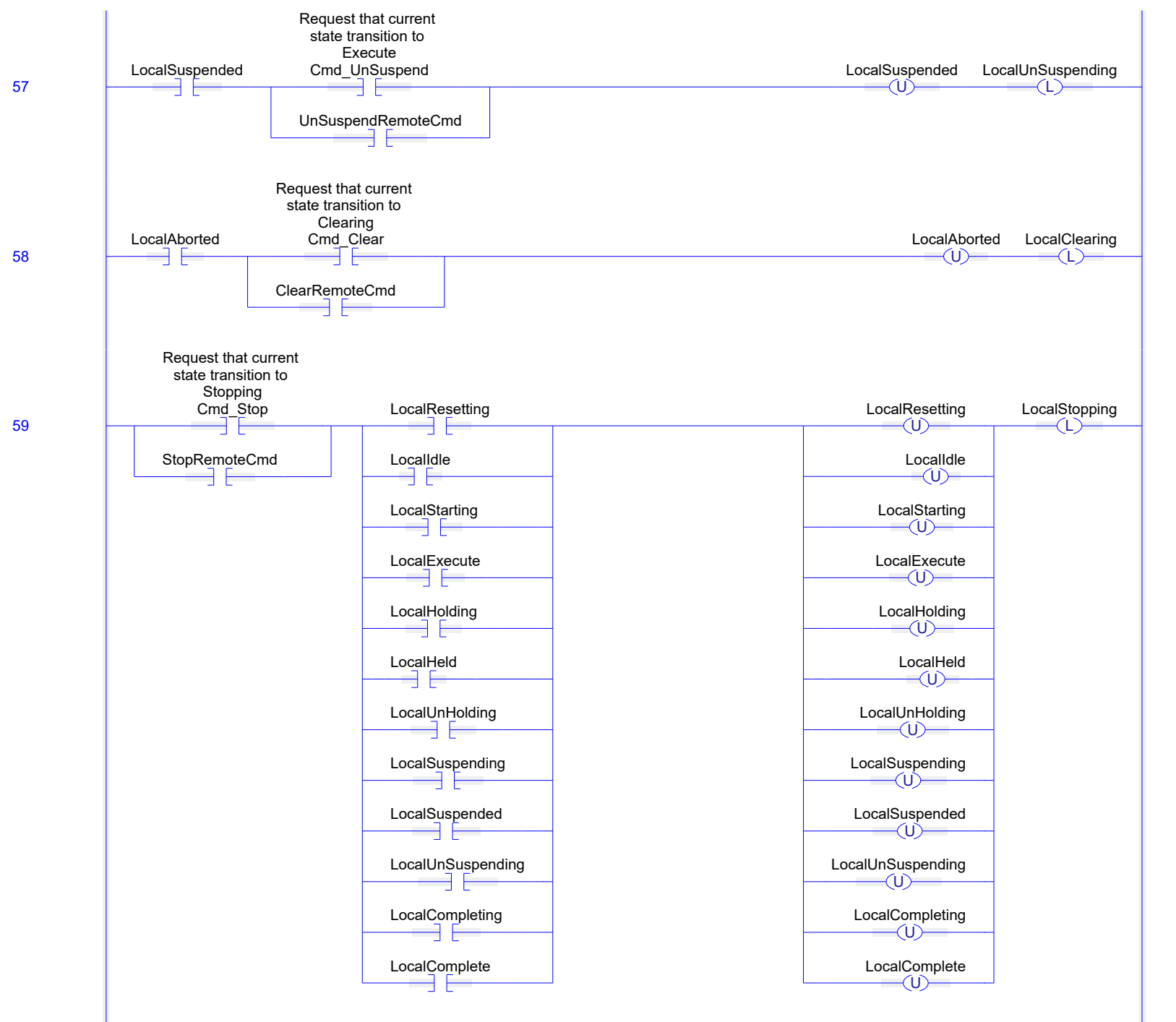


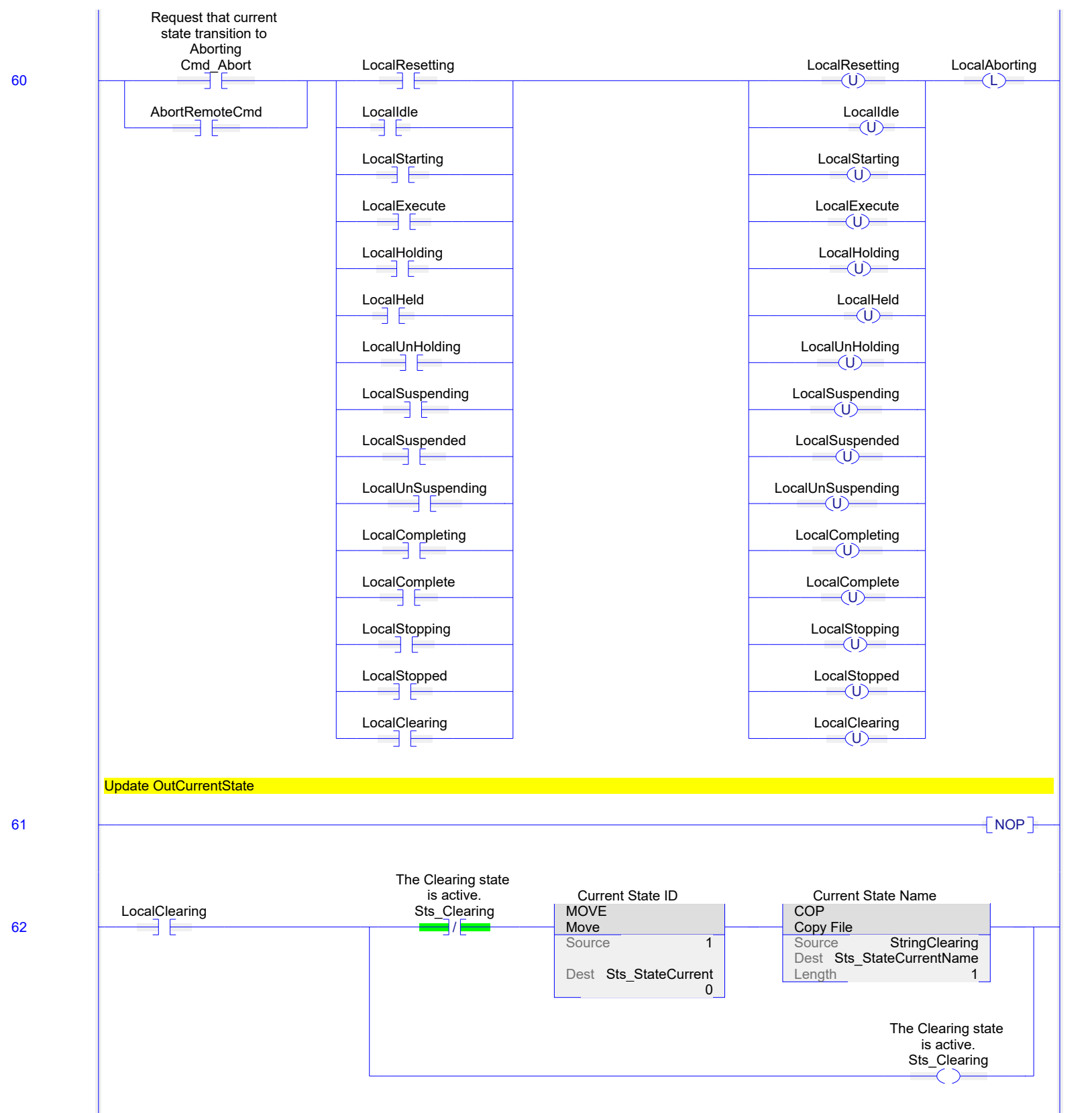


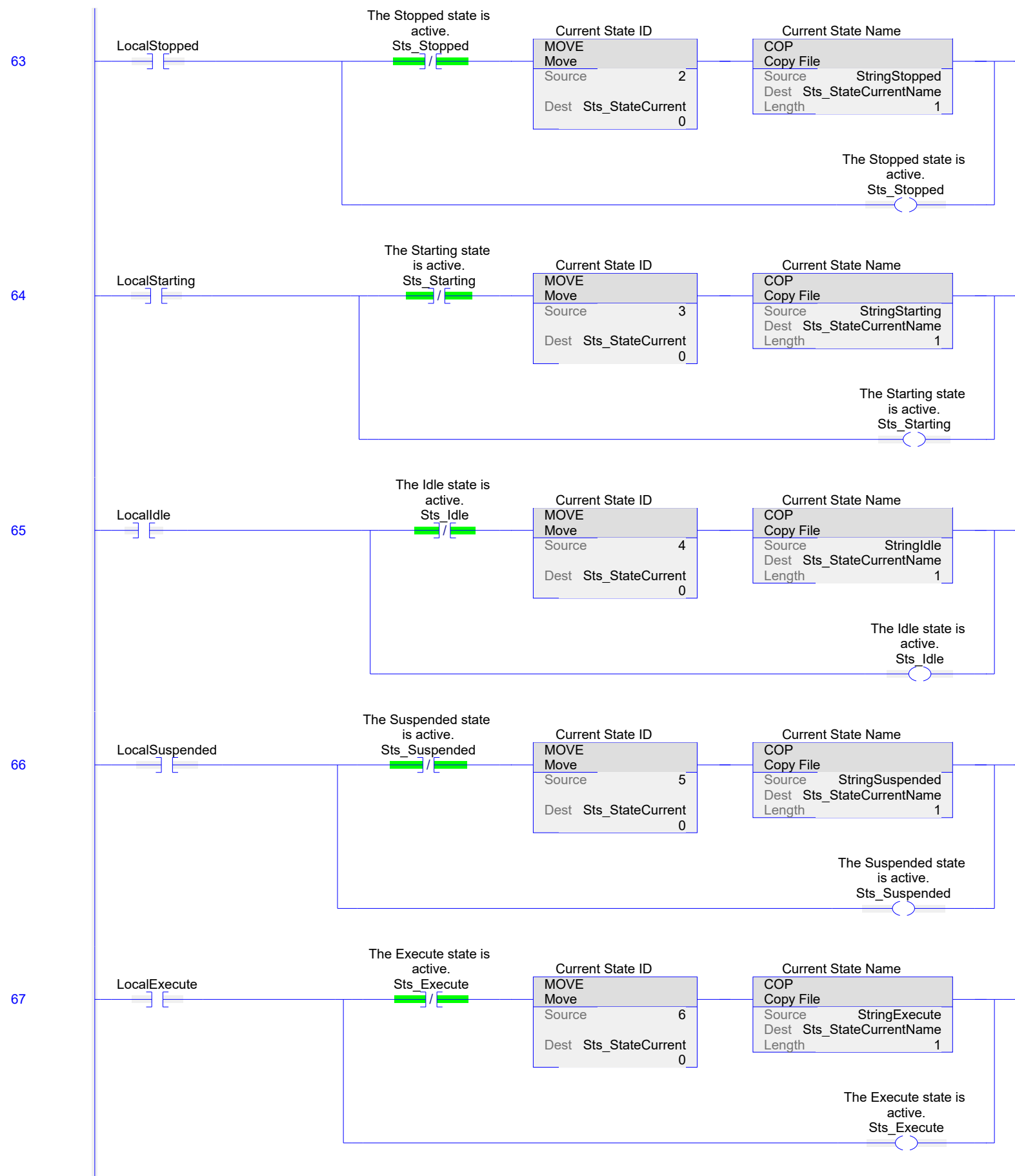


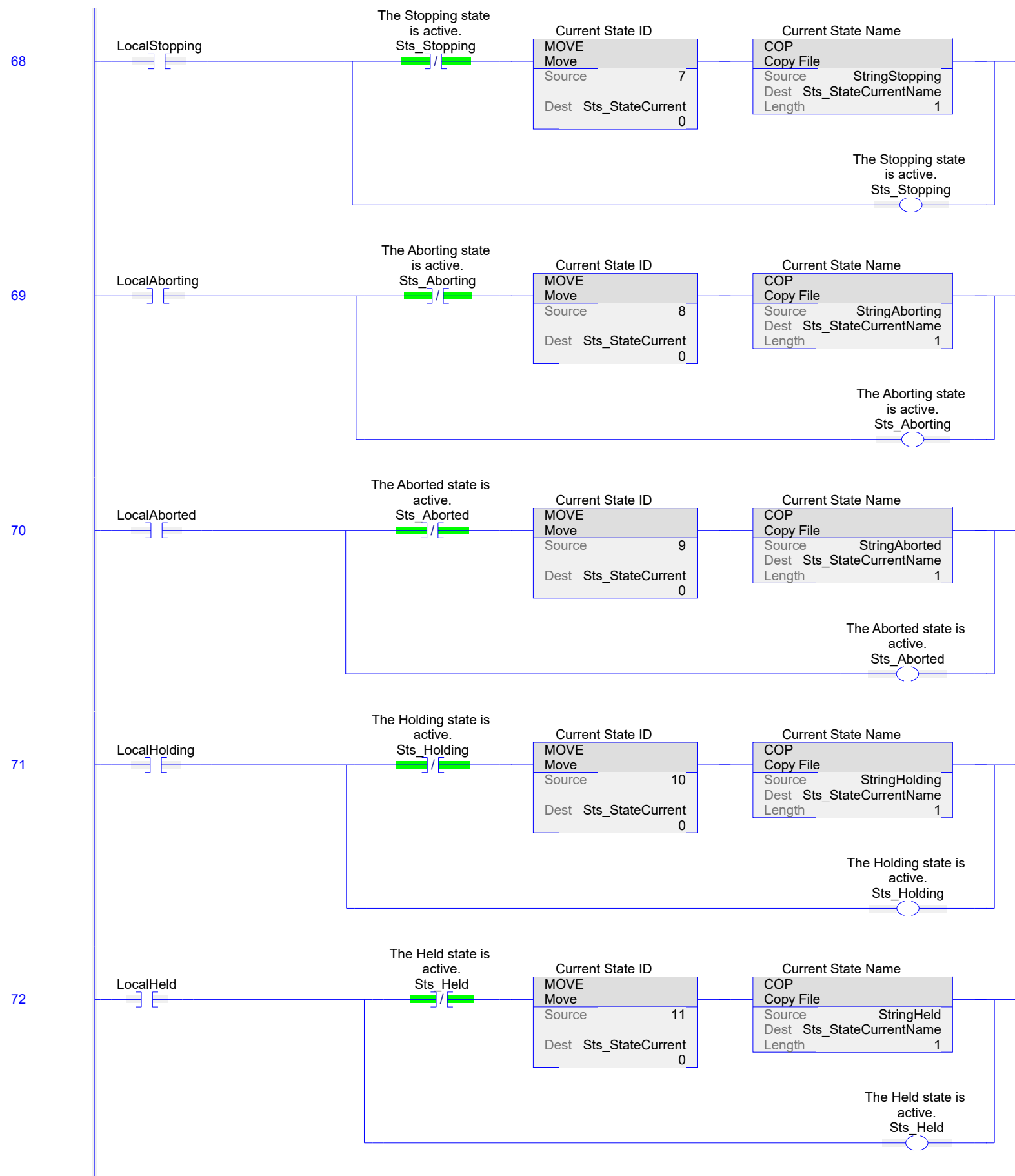


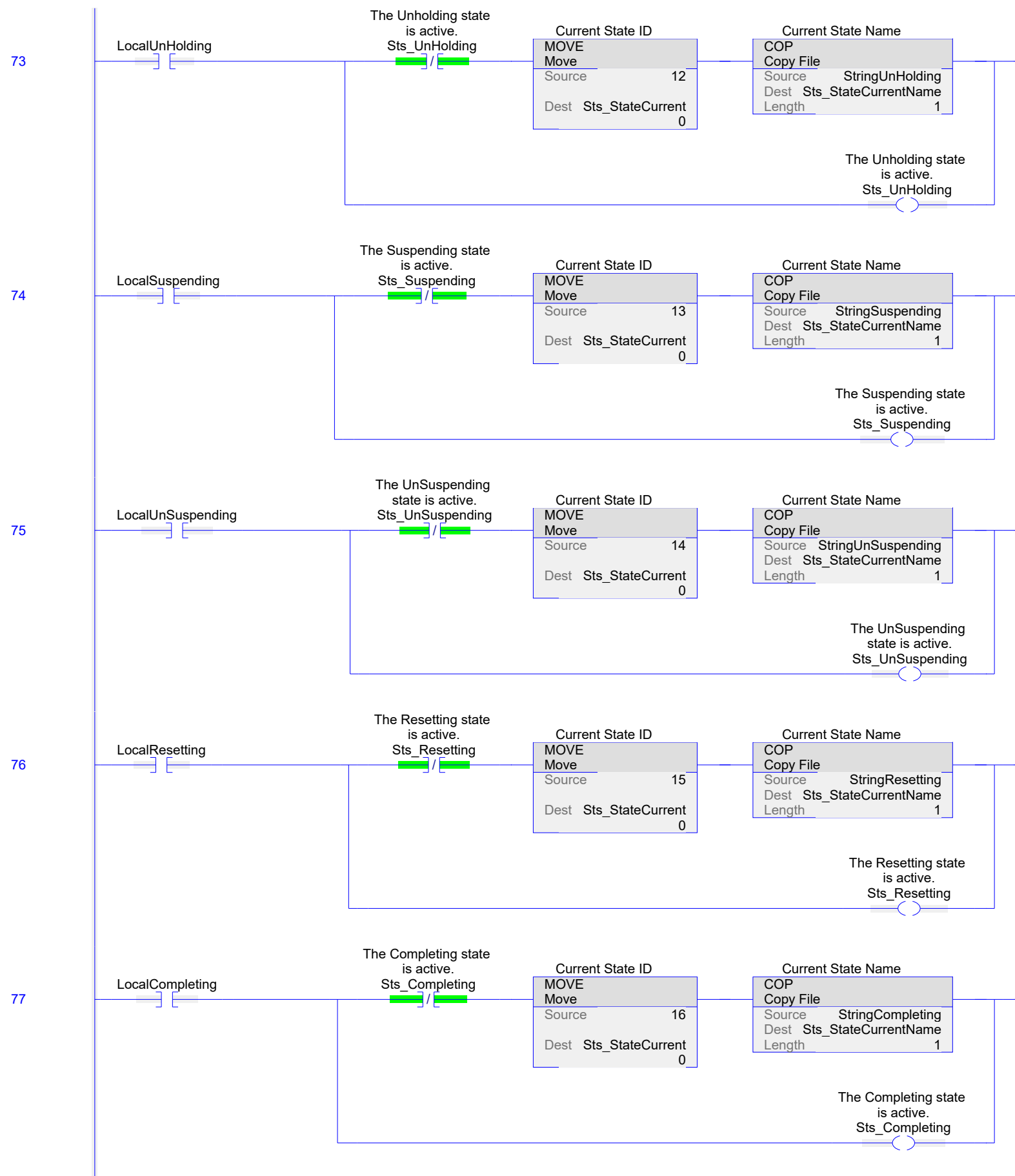


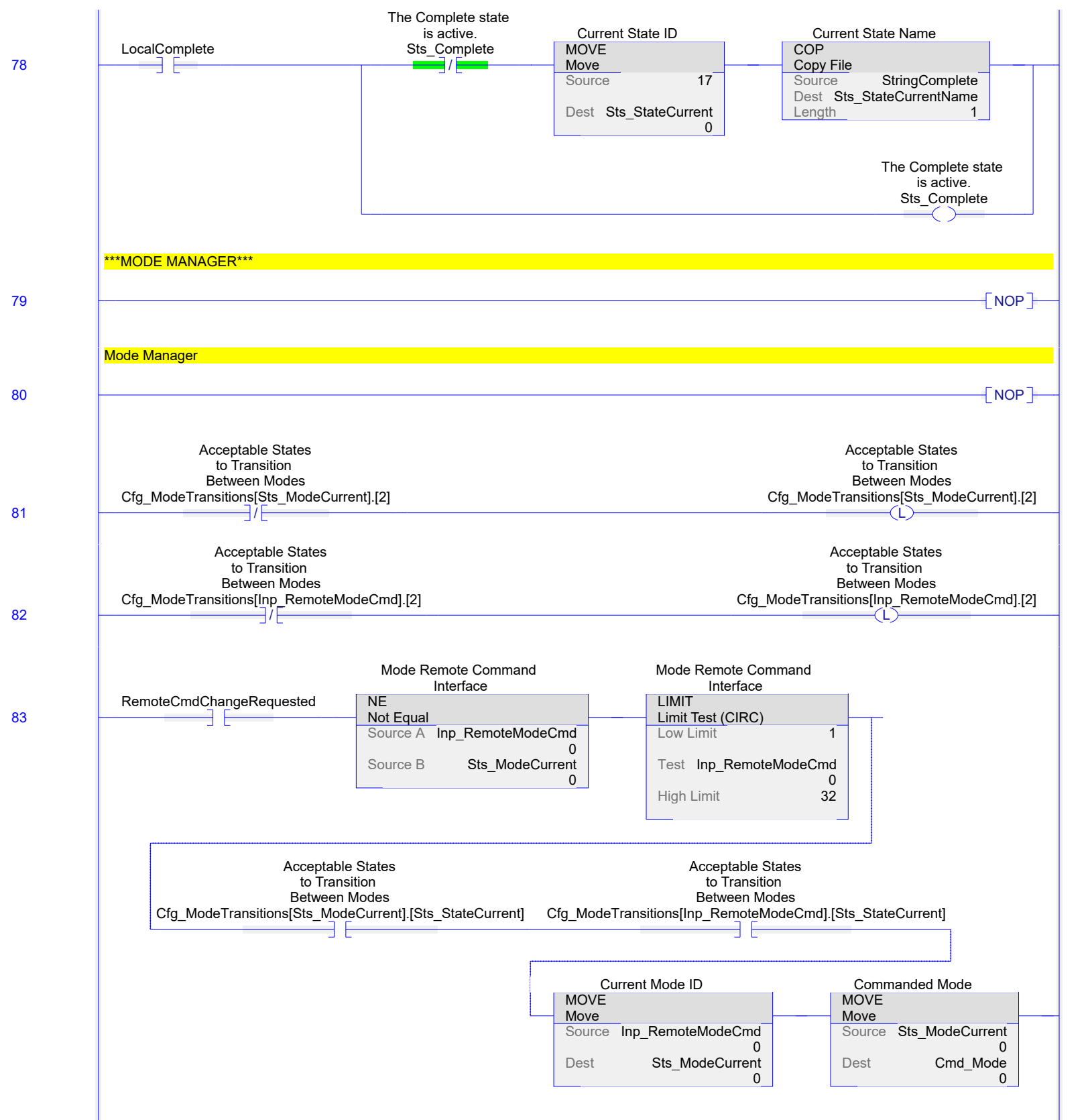


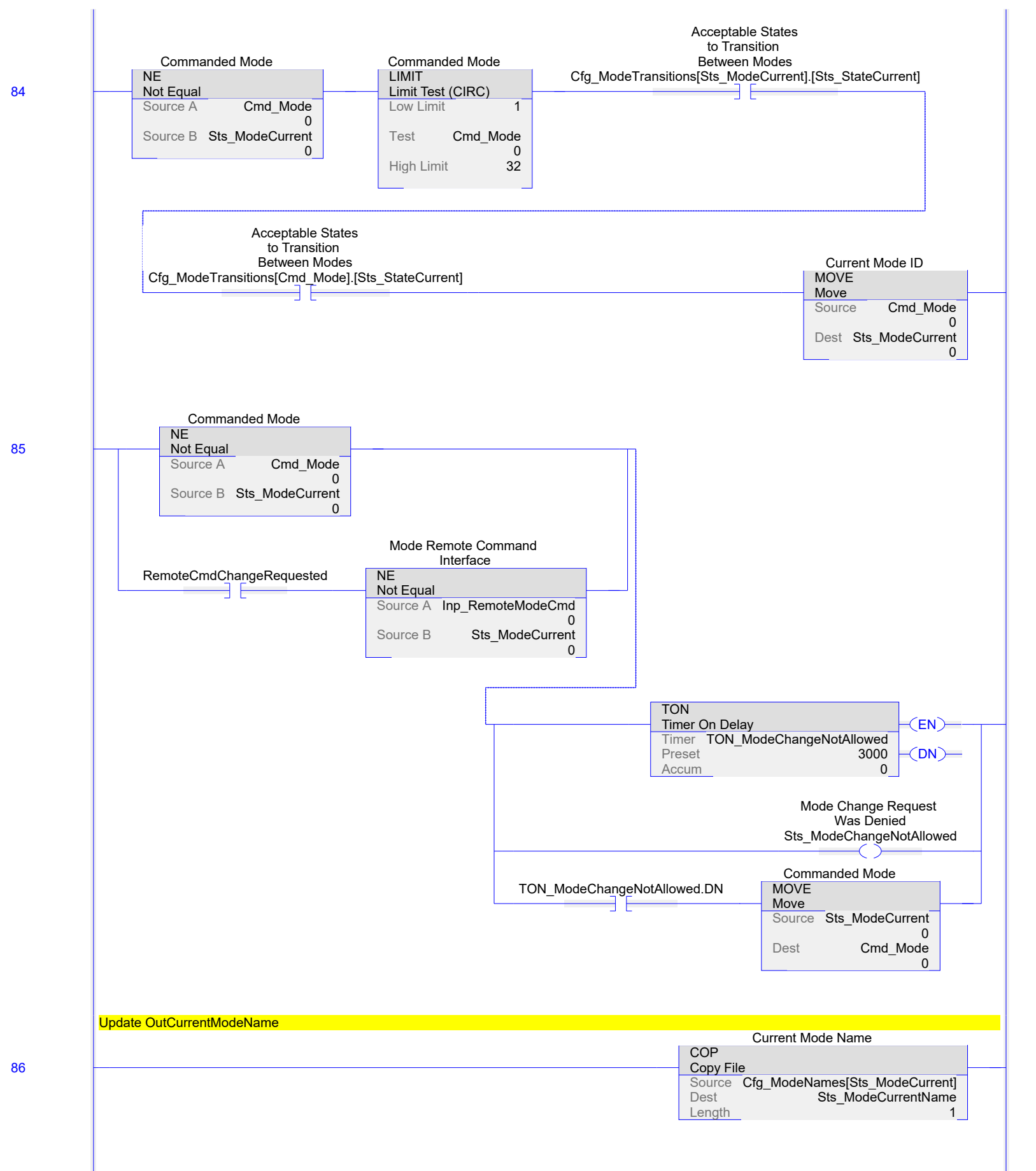




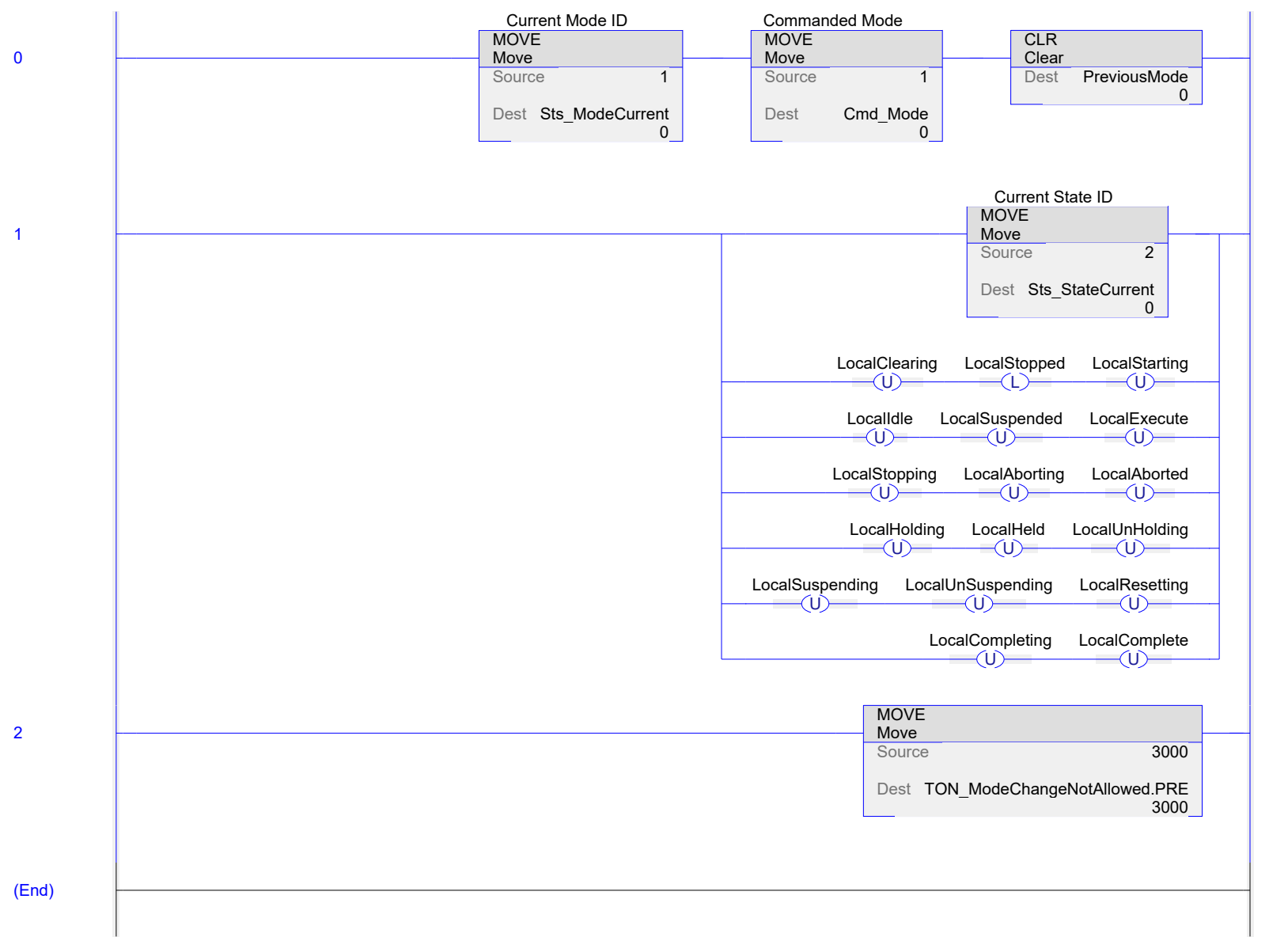








(End)



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