

**Title:** SigmaLogic Example Code Example Manual**Product(s):** MP3200iec, MP2300iec, MP2600iec,  
MP3300iec, MotionWorks IEC**Doc. No.** AN.SigmaLogic.01

## 1. Application Overview

SigmaLogic is an EtherNet/IP Indexer that was designed to work seamlessly with the CompactLogix and ControlLogix PLCs from Allen Bradley. Yaskawa has created Add-On Instructions (AOI) for easy import into the RSLogix programming environment. The AOIs as well as other documentation and videos can be found at [www.yaskawa.com/sigmaLogic](http://www.yaskawa.com/sigmaLogic). This application note highlights some key elements of the “EC.SigmaLogic.01\_RSLogix\_Example.ACD” code that is included in the SigmaLogic AOI zip file. This example code was created in RSLogix 5000 v20 to provide useful examples for RSLogix programmers. The code contains interlocking logic to help prevent alarms and faults from occurring when executing the AOIs.

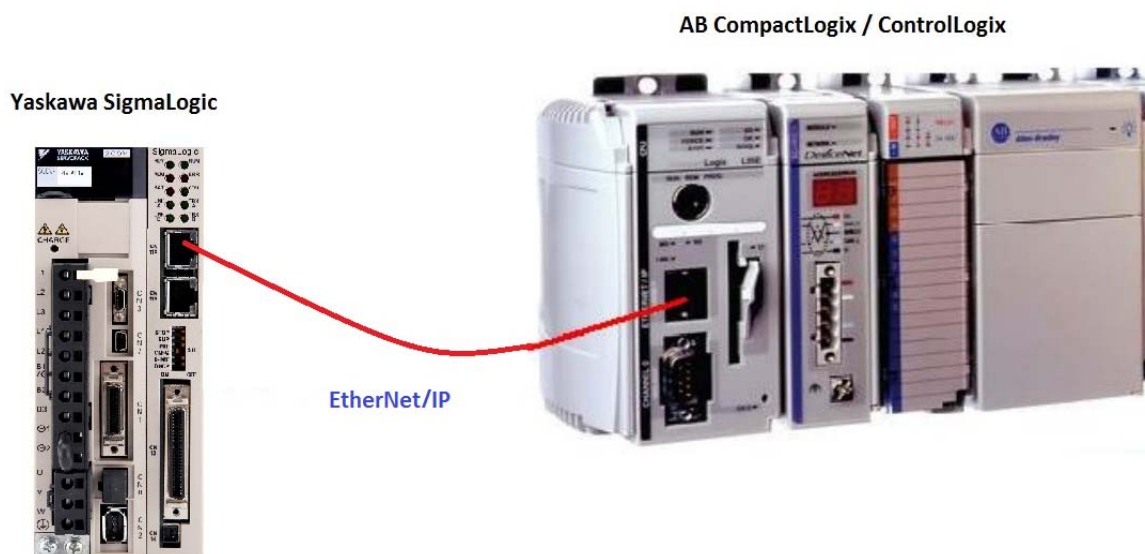


Figure 1: Required Components

Component	Product and Model Number
EIP Servo Indexer	SGDV-****E1A*****B00 (SigmaLogic) or SGDV-****E*A*****300 (MP2600)
Motor	Any Sigma-II, Sigma-III or Sigma-5 motor recognized by Sigma-5 amplifiers
PLC	CompactLogix, ControlLogix or SoftLogix with an EtherNet/IP Communications Adapter
Software	RSLogix v20 was used to create this code; v17 or higher works with SigmaLogic

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## 2. Application Solution and Benefits

The example code uses each AOI provided by Yaskawa and shows a suggested way to use these AOIs in the context of an RSLogix ladder program. There are only a couple of basic rules when using the AOIs. The first rule is that each SigmaLogic used needs to have its own MCFG AOI. This defines the Axis structures and provides a huge amount of diagnostic information. The other rule is that most motion-related AOIs cannot be executed if another AOI is already in progress. The interlocking logic used in this example will prevent the user from violating this rule which would generate a FLT\_RDY error in the AOI. The benefit to the RSLogix programmer is that this example code will help them avoid frustrating errors and alarms.

## 3. Initial Configuration

This application note assumes that the SigmaLogic has already been configured with LogicWorks and has been added to the RSLogix project. Yaskawa has produced several QuickStart videos available on Yaskawa's website and on YouTube. These QuickStart videos walk the user through setting up the SigmaLogic amplifier via LogicWorks, adding SigmaLogic to RSLogix and importing and using some of the popular AOIs. When searching these videos on Yaskawa's website, type "eLV.SigmaLogic" into the site search window. This will produce three QuickStart videos and any other eLearning Videos that Yaskawa has produced for SigmaLogic. The following link should bring up the search results:

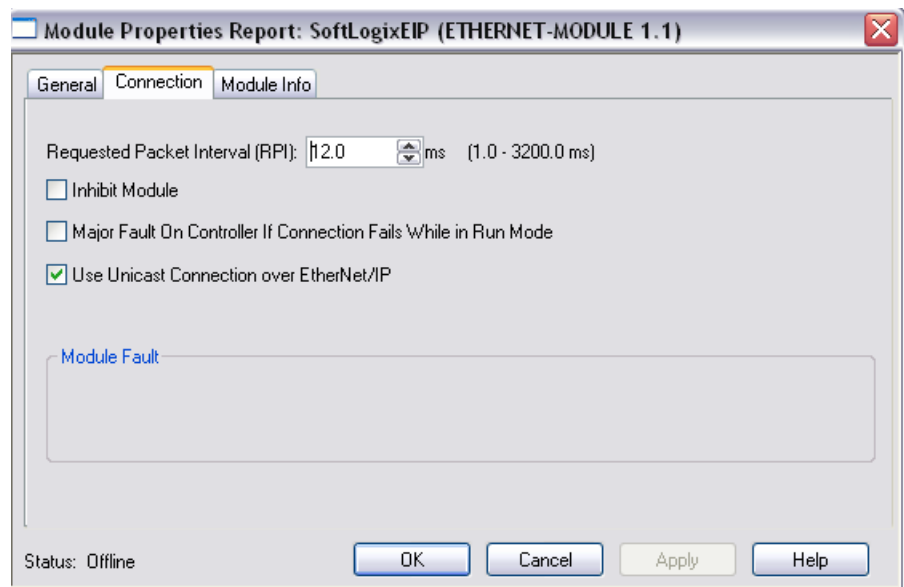
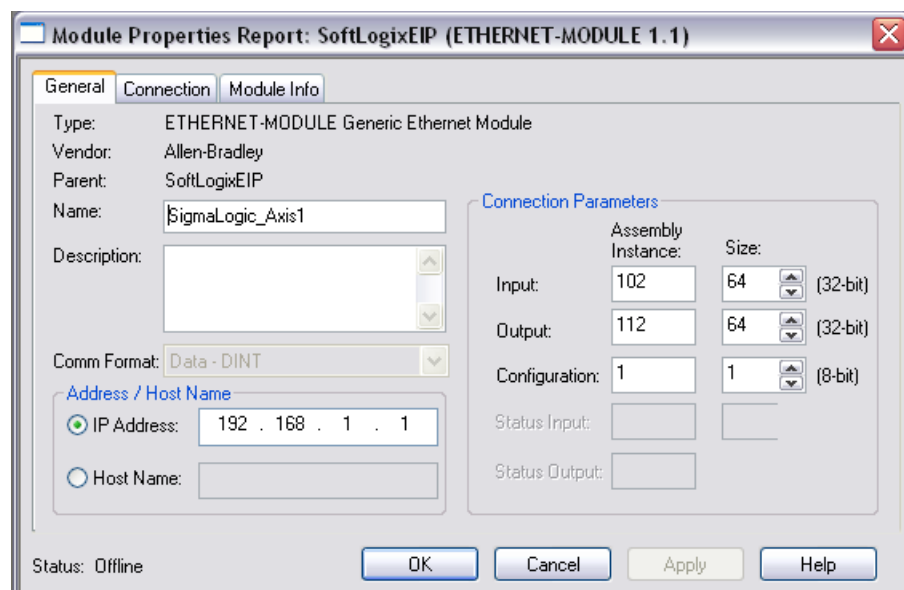
<https://www.yaskawa.com/pycprd/PYCSearch/PYCSearchResult?query=eLV.SigmaLogic&page=1&cname=pycprd-full&tabID=pycprd-full>

These same videos are also published to Yaskawa's YouTube channel. Typing "SigmaLogic" into a YouTube search will bring up several results including a playlist of training videos. The following link should bring up the SigmaLogic training section:

<https://www.youtube.com/watch?v=pkm3wVTe2-U&list=PLNAENlyEDCkwyKty6WKoekdBmELwBniQ9>

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From the RSLogix point of view, SigmaLogic is added as a Generic Ethernet Module with the following settings:

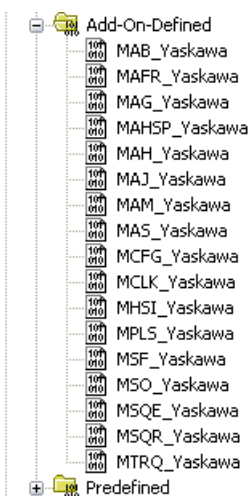


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All Add-On Instructions for RSLogix 5000 can be downloaded from Yaskawa's website at:

[www.yaskawa.com/sigmalogic](http://www.yaskawa.com/sigmalogic)

This will be a zip file containing all available AOIs and example code. QuickStart video #2 (Connection) guides the user through importing the AOIs into RSLogix. Once imported, they will show up in the Add-On-Defined Folder in the Controller Organizer.



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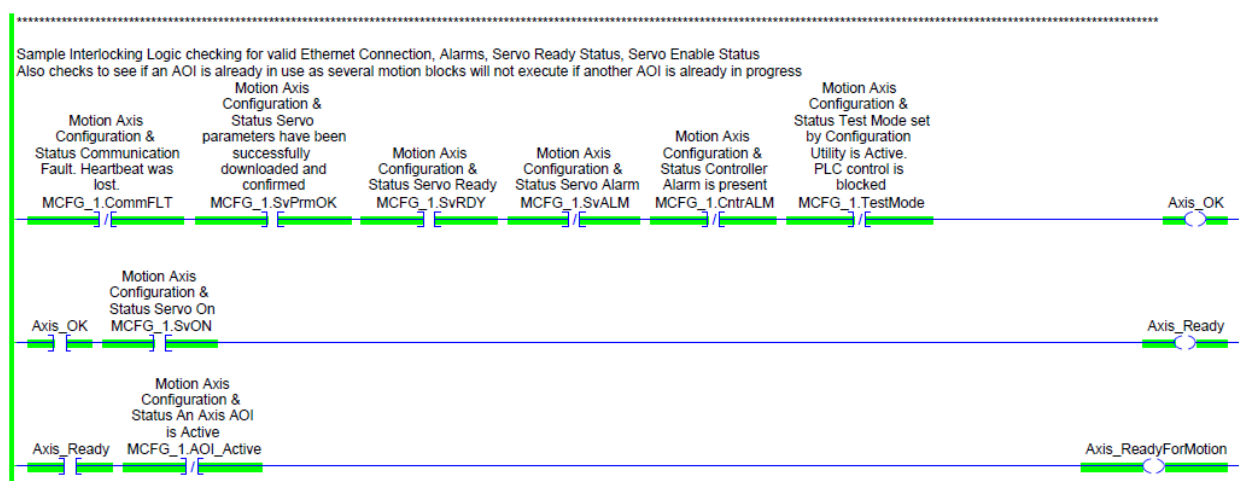
#### 4. MCFG\_Yaskawa (Configuration & Status)



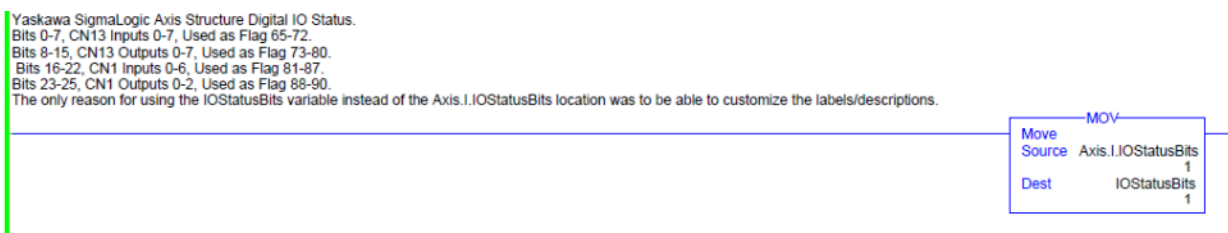
MCFG\_Yaskawa must be included in the RSLogix program in order to use SigmaLogic and should be always be enabled. The Axis\_IN and Axis\_OUT parameters link the AOI to the physical generic Ethernet module that was configured. The Axis parameter creates a User-Defined DataType called Yaskawa\_EIP\_Servo. The Axis structure is then used in all subsequent AOIs. For more information regarding the information available in the Axis structure, please refer to Appendix A&B in this document. There is a wealth of useful information that exists in this structure and is updated automatically as long as the MCFG\_Yaskawa AOI is enabled.

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## 5. Interlocks

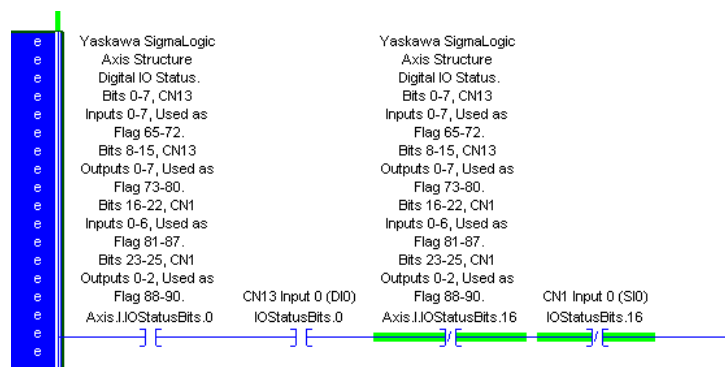


This section of logic was written to provide three Boolean variables for use further down in the code. **Axis\_OK** will be TRUE if the SigmaLogic axis has good communication, the amplifier has power and no alarms. **Axis\_Ready** further checks the servo enable status and will be TRUE when the servo motor is enabled. **Axis\_ReadyForMotion** takes it one step further and makes sure that no AOI is already in progress. Most of the motion-related AOIs cannot be executed if another AOI is active so **Axis\_ReadyForMotion** is used often to ensure that the conditions are acceptable to enable a new AOI.

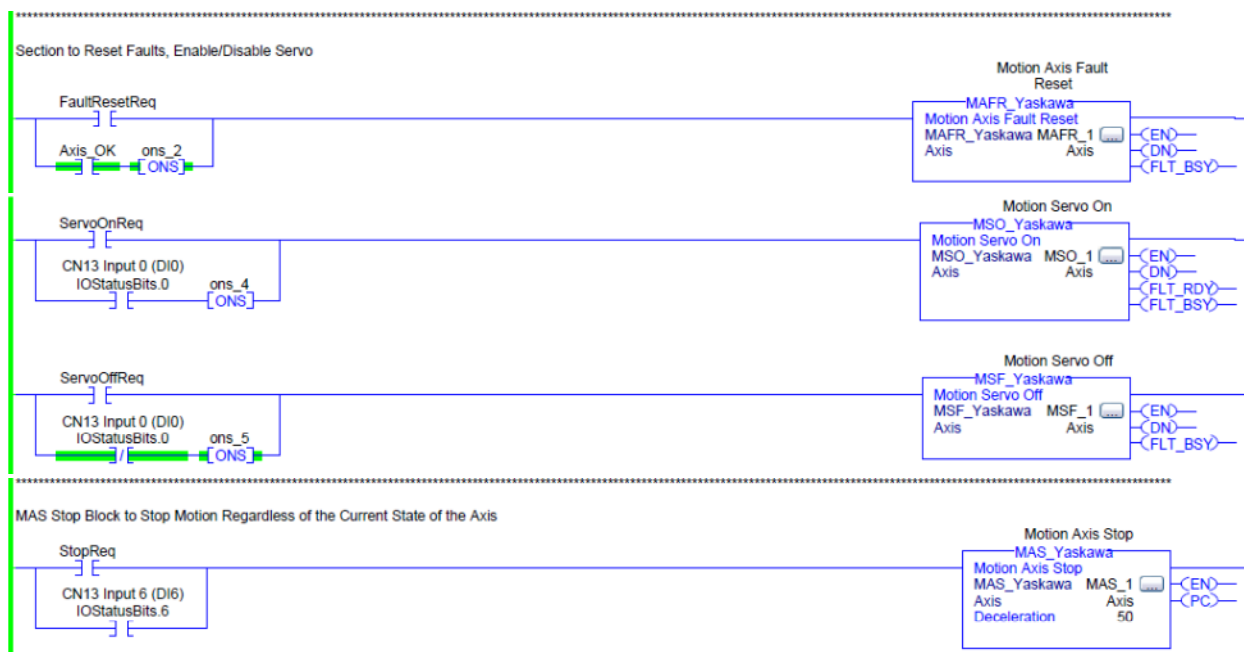
**Title:** SigmaLogic Example Code Example Manual**Product(s):** MP3200iec, MP2300iec, MP2600iec,  
MP3300iec, MotionWorks IEC**Doc. No.** AN.SigmaLogic.01**6. SigmaLogic Input/Output Status**

This part of the code is completely optional but can provide a good way to customize the descriptions of any Inputs or Outputs used with SigmaLogic. The status of all of the Digital Input and Output points available on the SigmaLogic controller (CN13) and the amplifier (CN1) are stored in Axis.IIOStatusBits. This rung simply copies this status into a DINT variable called IOStatusBits. The description for each bit of IOStatusBits can now be customized for display in ladder.

IOStatusBits		DINT		Read/Write	<input type="checkbox"/>	Decimal
IOStatusBits.0		BOOL	CN13 Input 0 (DI0)	Read/Write		Decimal
IOStatusBits.1		BOOL	CN13 Input 1 (DI1)	Read/Write		Decimal
IOStatusBits.2		BOOL	CN13 Input 2 (DI2)	Read/Write		Decimal
IOStatusBits.3		BOOL	CN13 Input 3 (DI3)	Read/Write		Decimal
IOStatusBits.4		BOOL	CN13 Input 4 (DI4)	Read/Write		Decimal
IOStatusBits.5		BOOL	CN13 Input 5 (DI5)	Read/Write		Decimal



The picture above shows the differences in descriptions between Axis.IIOStatus and IOStatus bits even though they display the same status.

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The Fault Reset (MAFR\_Yaskawa), Servo On (MSO\_Yaskawa), Servo Off (MSF\_Yaskawa) and Stop (MAS\_Yaskawa) AOIs are pretty straightforward and do not require much in the way of interlocking. The Stop and Fault Reset can all be executed even if other AOIs are in progress.



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**MAH Motion Axis Home Block Section**  
Consult help file for all the available homing methods and options  
Home Type 3 has been selected here  
(Search in Pos Direction, Search for SI3 (Flag 84), Stop and search for C-Pulse in the Neg direction, Perform an Offset Move in the Neg direction and Define Position)

The diagram illustrates the logic for the MAH Motion Axis Home Block Section. It starts with a 'HomeSearchStart' signal that triggers the 'ons\_8' coil, which sets the 'Axis\_ReadyForMotion' flag. Subsequently, the 'HomeSearchReq' signal initiates a sequence where the 'Motion Axis Home Homing Process is Complete MAH\_1.PC' and 'CN13 Input 6 (DI6) IOStatusBits.6' conditions are met, leading to the deactivation of 'HomeSearchReq'.

Motion Axis Home	
Motion Axis Home	MAH_Yaskawa
MAH_Yaskawa	MAH_1
Axis	Axis 3
AxisType	0
Direction	0
Use_CPulse	1
SetPosition	0
Speed	2
Accel_Decel	20
TorqueLimit	100
FlagNo	84
OffsetDistance	0.42
OffsetSpeed	1
BackoffDistance	0
CreepSpeed	0.25
Axis_FaultCode	0

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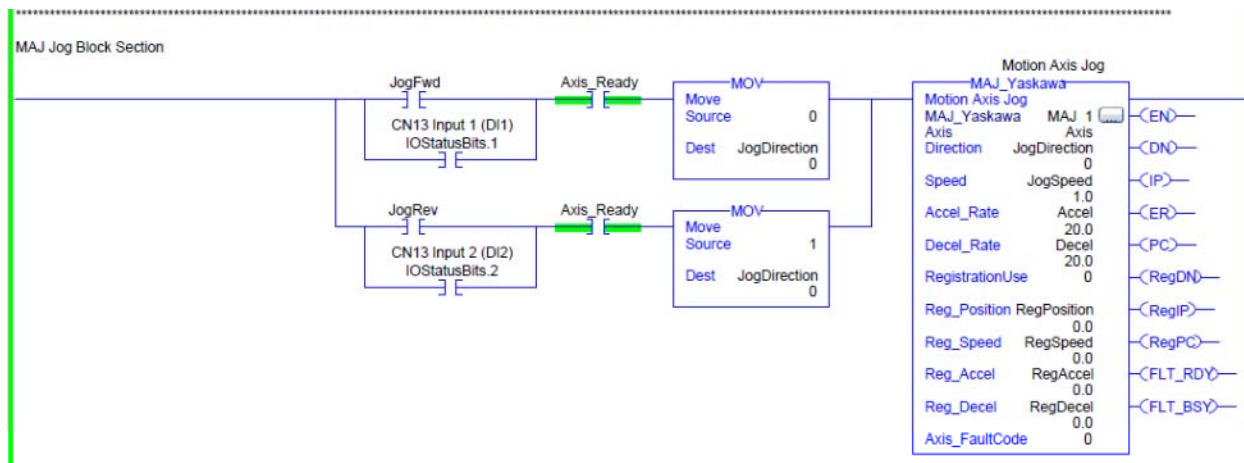
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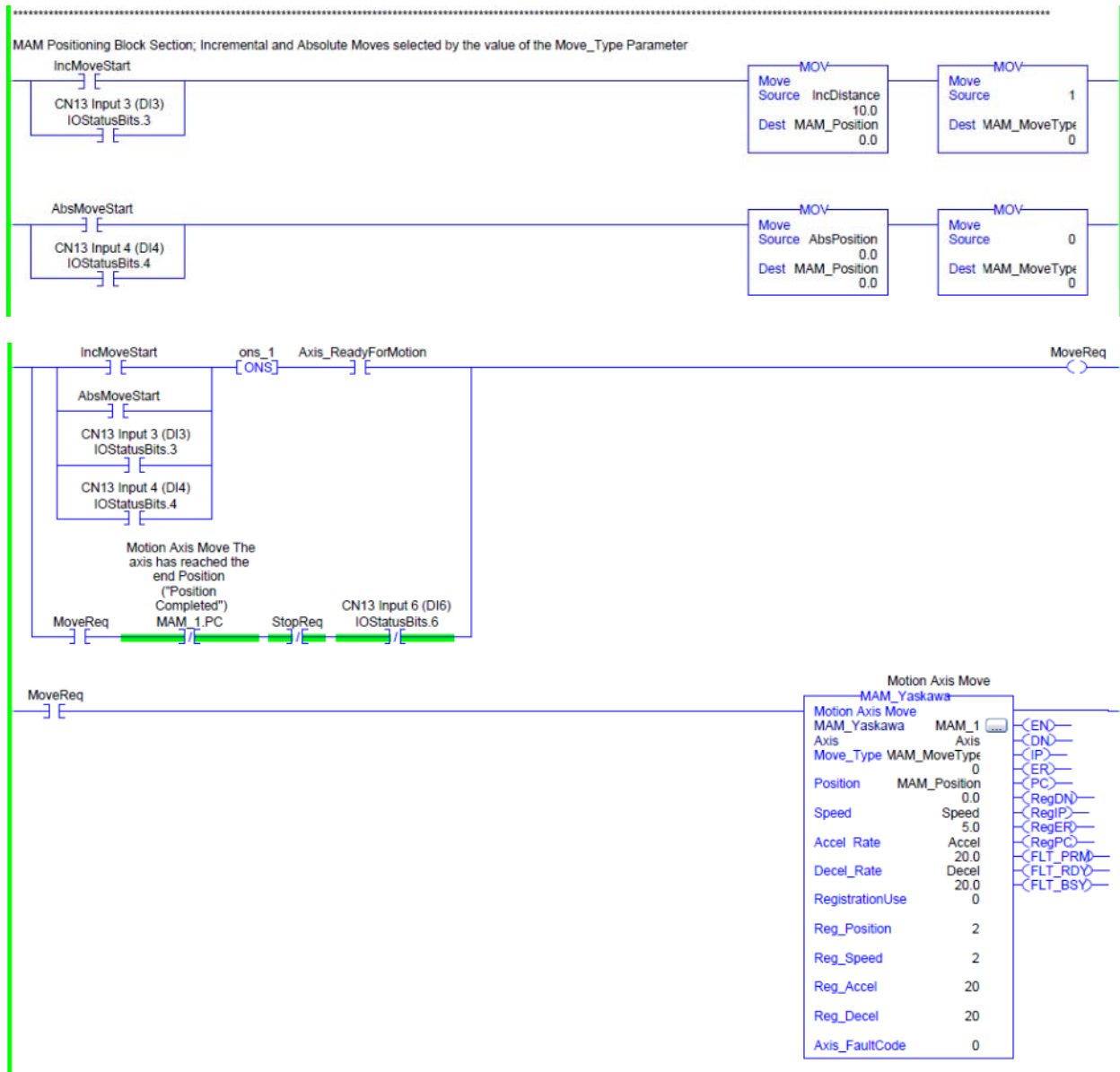
**Doc. No.** AN.SigmaLogic.01

The MAH\_Yaskawa AOI has many different options and configurations which define the type of home search being performed. The following table explains the different AOI inputs and resulting home search routines:

AOI Inputs			
HomeType	Direction	Use_Cpulse	Description
0	N/A	N/A	Set Position Directly
1	0	N/A	Home in Positive Direction to Hard Stop
1	1	N/A	Home in Negative Direction to Hard Stop
2	0	0	Home in Positive Direction to Limit Switch
2	1	0	Home in Negative Direction to Limit Switch
2	0	1	Home in Positive Direction to Limit Switch with C-Pulse
2	1	1	Home in Negative Direction to Limit Switch with C-Pulse
3	0	0	Home in Positive Direction to Flag
3	1	0	Home in Negative Direction to Flag
3	0	1	Home in Positive Direction to Flag with C-Pulse
3	1	1	Home in Negative Direction to Flag with C-Pulse

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MP3300iec, MotionWorks IEC**Doc. No.** AN.SigmaLogic.01**9. MAJ\_Yaskawa (Jog, Jog w/ Registration)**

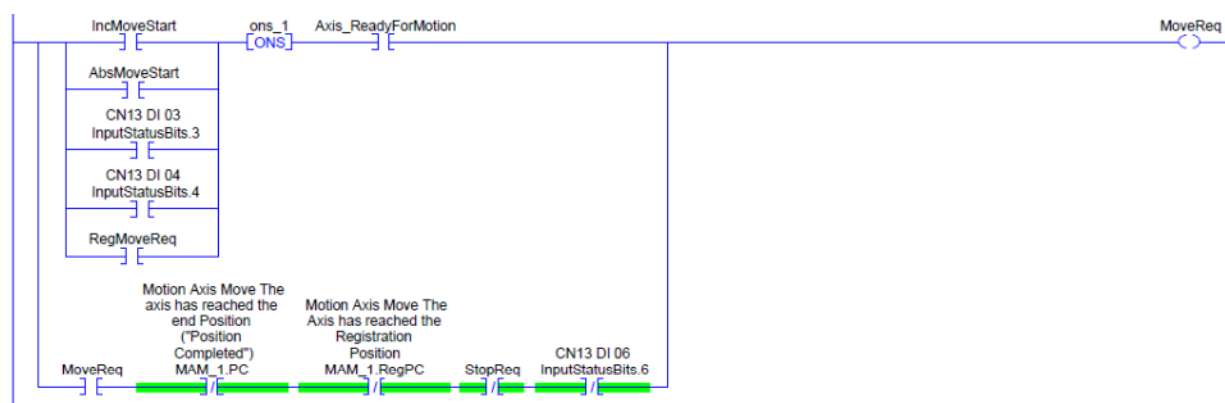
The MAJ AOI jogs the motor forward or reverse depending on the Direction input. As long as the enable is active, the motor will be jogging. When the enable turns off, the motor decelerates at the Decel\_Rate to a stop. If RegistrationUse is set to true, then the jog move will be interrupted and SigmaLogic performs a relative move when the registration latch input (Amplifier Input SI4) is activated. After a successful registration move has been completed, the enable must be cycled to start jogging once again. If the registration latch input is not activated, the motor will continue to jog.

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The MAM AOI performs either an incremental index move or a move to an absolute position. The Move\_Type input dictates which type of move is commanded. From the code above, the Position and Move\_Type inputs are loaded based on whether an incremental or absolute move is commanded. If Axis\_ReadyForMotion is true, a rising edge of either IncMoveStart, AbsMoveStart, Input 3 or Input 4 will latch in the MoveReq bit. This bit hold on the enable for the MAM AOI until the move is complete (PC) or a stop has been issued.

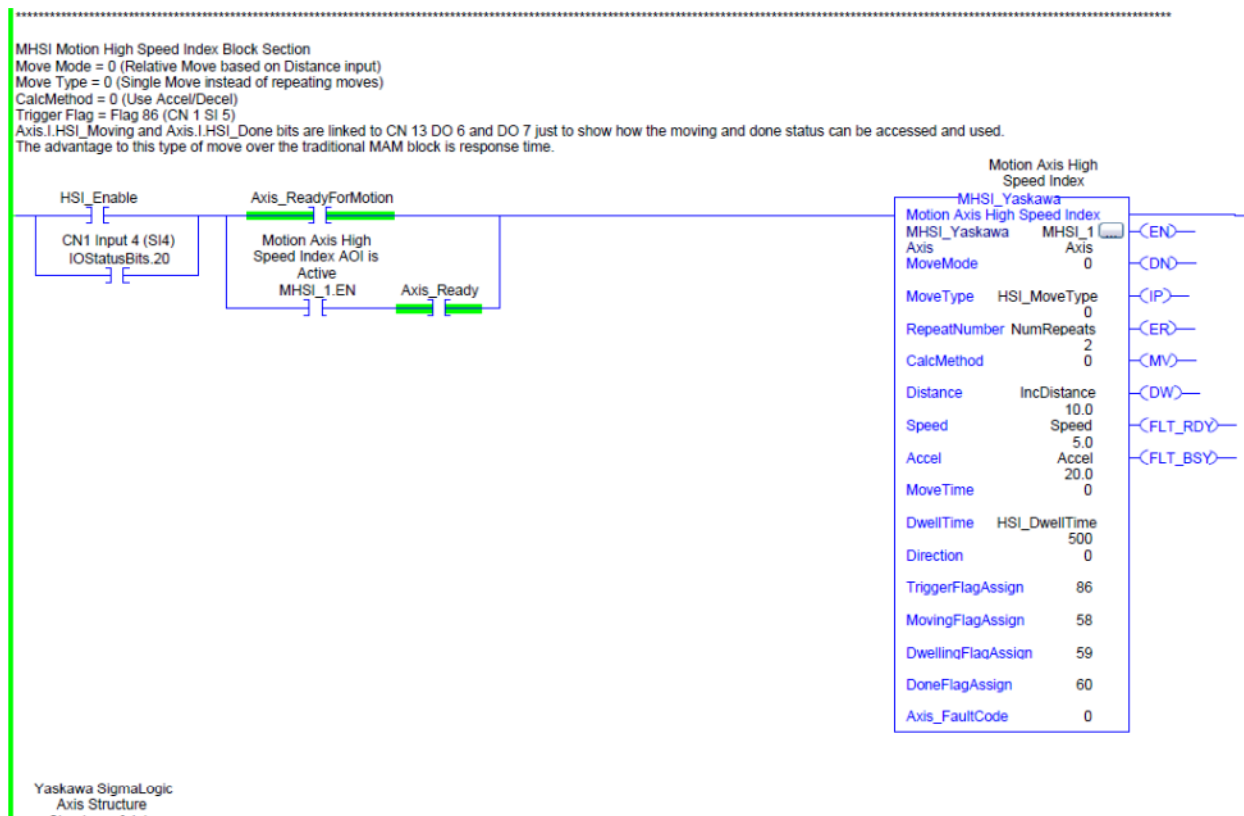
If RegistrationUse is set to true, then the move will be interrupted and SigmaLogic performs a relative move when the registration latch input (Amplifier Input SI4) is activated. If a registration move is triggered, then the RegIP output will be true and the RegPC output will be true once the registration move has completed. To use the same latching logic for the MAM enable when registration is used, the RegPC signal should also be added to logic as shown below.



If the registration latch input is not activated, the motor will complete the original incremental or absolute index move and the PC output will turn on.

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MP3300iec, MotionWorks IEC**Doc. No.** AN.SigmaLogic.01**11. MHSI\_Yaskawa (High Speed Index)**

The MHSI AOI is used primarily when the delays of the Ethernet/IP communication cycle could impact the desired performance. The MHSI function reacts to a physical input to start the move instead of a command over EIP which represents the fastest way to trigger motion. Additionally, if the profile is a repeating profile with a move and a dwell, the MSHI AOI would give the user the fastest response and save programming effort creating logic with MAM, TON and counters.

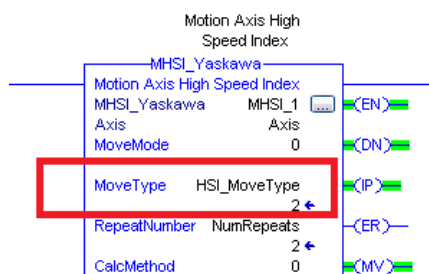


The code above uses a signal (HSI\_Enable or SI4) to enable the MHSI AOI. Using MHSI is a two-step process. It must be enabled for the trigger flag to start the index. There are many ways to adjust the move performed based on the inputs MoveMode, MoveType and CalcMethod.

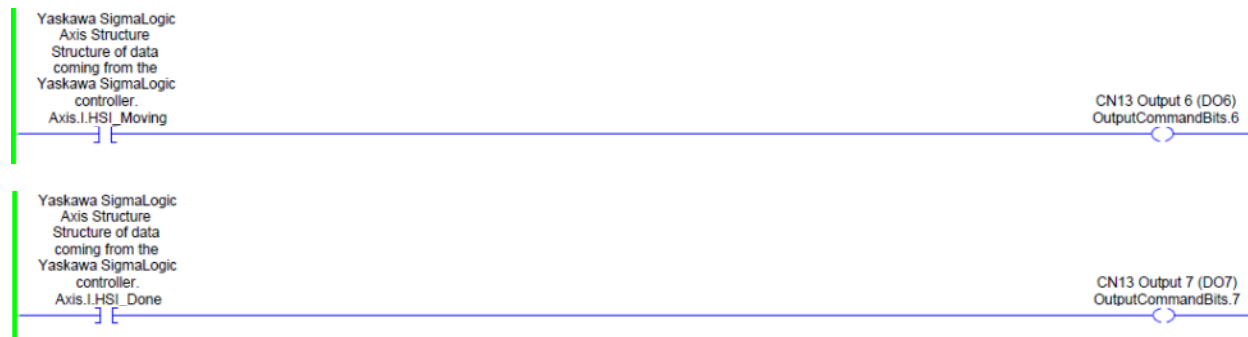
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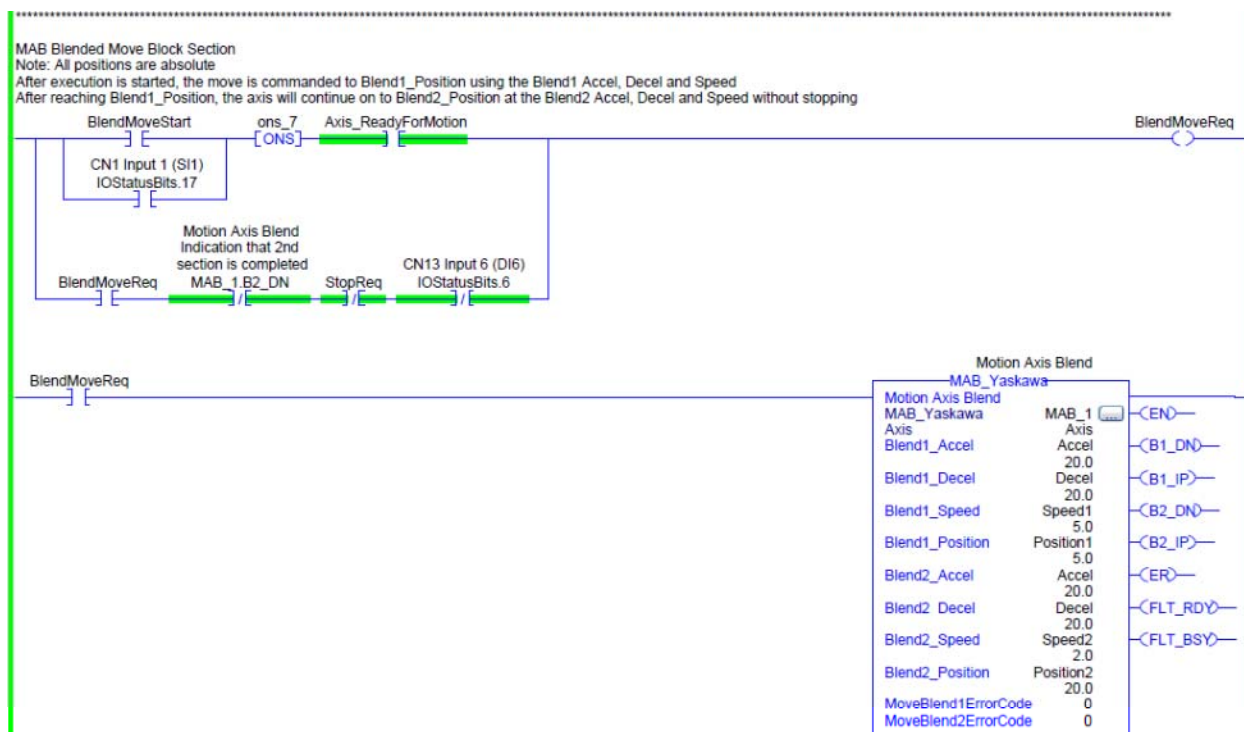
The embedded help file for the MHSI\_Yaskawa AOI describes these parameters in detail. The example shown on the previous page performs a relative move of 10 revs when the rising edge of the trigger flag (86 or CN1 SI5) is activated. The trigger flag can be assigned to any other physical Input signal from CN1 or CN13 by modifying the flag number.

If the MHSI parameter MoveType changes to a value of 2, then the trigger flag would start a repeating move for two cycles. A relative move of 10 revs followed by a dwell of 500ms would be repeated twice. For any repeating moves to run, the trigger flag must stay ON. If the trigger flag pulses, then the MHSI will perform one move and one dwell before finishing.

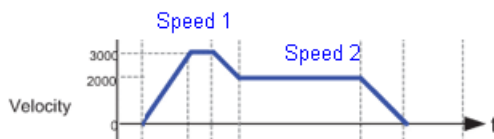


There are also two additional rungs used with this MHSI AOI example. These show how a programmer might choose to use the AOI status that is updated automatically and stored in the Axis structure. Each AOI has similar status information in the Axis structure. The code below turns on Output 6 when the MHSI index is in progress and turns ON Output 7 when the MHSI index is complete.



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The MAB\_Yaskawa AOI performs a two-stage absolute index. This is typically used when a move profile requires different speeds at the beginning and the end of the move. The position inputs to the AOI are absolute positions so the motor position when the MAB AOI is enabled will dictate motor direction.

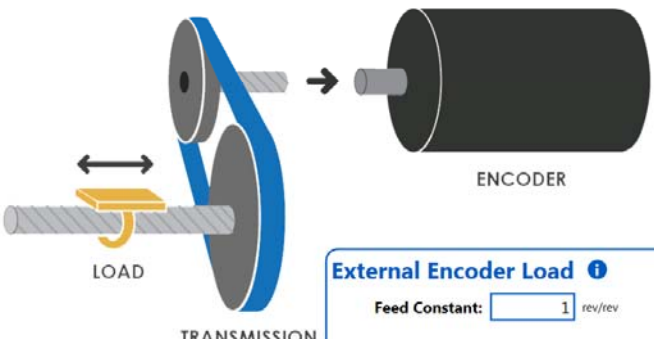


The picture above shows a sample move profile where the motor moves to Position1 at Speed1 and then decelerates down to Speed2 to finish moving to the final end position (Position2).

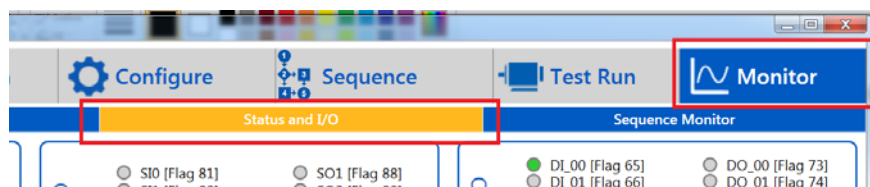


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MP3300iec, MotionWorks IEC**Doc. No.** AN.SigmaLogic.01**13. MAG\_Yaskawa (Electronic Gearing)**

For the MAG\_Yaskawa AOI to work properly, the external encoder must be set up first with LogicWorks. To avoid any errors in the MAG AOI, make sure that the “Enable External Encoder as a Gearing Master” is checked. Below is an example setup:

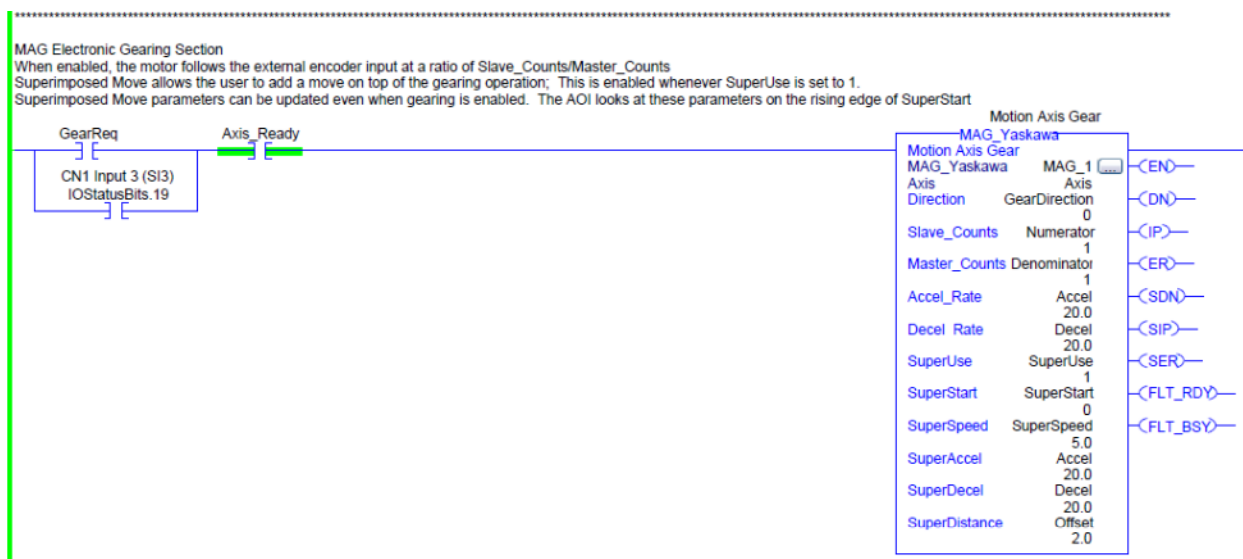
Ethernet Settings	Units	Options	External Encoder	Reboot	Update
<b>EXTERNAL ENCODER SETTINGS</b> <a href="#">Wiring Diagram</a>					
<input checked="" type="checkbox"/> Enable External Encoder as a Gearing Master					
Encoder Resolution		10000 lines/rev <a href="#">i</a>			
Encoder Forward Direction		CCW <a href="#">i</a> viewing motor shaft <a href="#">i</a>			
Encoder Pulse Train Type		ABQuadrature <a href="#">i</a>			
<b>Load Type:</b> <input checked="" type="radio"/> Linear (Finite) <input type="radio"/> Rotary (Infinite)					
Unit: <a href="#">Revolutions</a>					
<b>External Encoder Transmission</b> <a href="#">i</a> Load Shaft Revs: <input type="text" value="1"/> Encoder Revs: <input type="text" value="1"/>					

It is also recommended to check the feedback and scaling by going to the Monitor -> Status and I/O section.



In the bottom left corner, it is possible to see the current external encoder position

Commanded Pos:	<input type="text" value="50.000"/> rev
Actual Pos:	<input type="text" value="50.000"/> rev
Ext Enc Pos:	<input type="text" value="0.02"/> rev

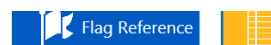
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When the MAG\_Yaskawa AOI is enabled, the SigmaLogic axis follows the external encoder wired into CN13. While the encoder resolution and scaling is part of the LogicWorks setup shown on the previous page, the gearing ratio is adjustable from RSLogix via the Slave\_Counts and Master\_Counts inputs. MAG also allows for a superimposed move to be commanded on top of the gearing relationship. This is typically used for phase shifting, registration corrections or other offsets. When the enable to MAG is turned off, the motor will decelerate at the Decel\_Rate to a stop.

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MP3300iec, MotionWorks IEC**Doc. No.** AN.SigmaLogic.01**14. MSQR & MSQE (Sequence Run and Edit)**

The MSQR\_Yaskawa and MSQE\_Yaskawa AOIs are used to execute and modify pre-programmed sequences in SigmaLogic. Those sequences must be created initially in LogicWorks. The picture below shows a simple two-step sequence:

## SUMMARY

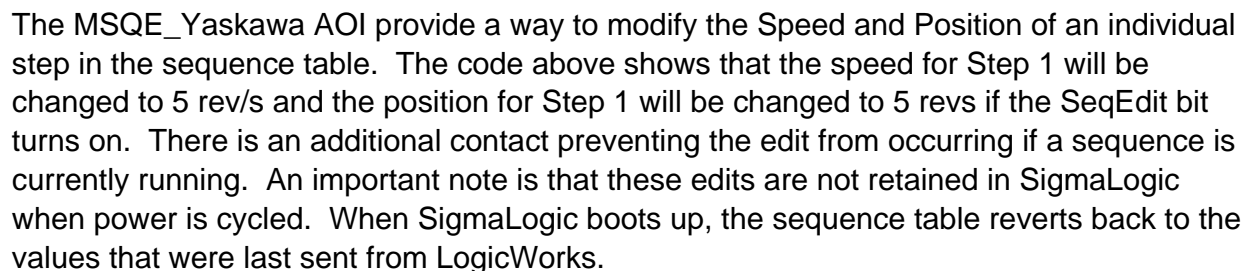


Step	Before The Move				The Move								After The Move								
	Wait		Set							Registration Data		Wait		Set		Time Delay	Branch		Wait		
	Flag	State	Flag	State	Move Type	Position	Accel.	Decel.	Speed	Direction	Reg. Distance	Reg. Speed	Flag	State	Flag	State	Milliseconds	Flag	State	True Jump	False Jump
1			64	Off	Relative	10	20	20	2								1000			END	2
2					Absolute	0	20	20	2				64	On						END	END

When the sequence is started on Step 1, the motor will go 10 revs in the positive direction, wait 1000ms and then return to the zero position. In this example, Flag 64 acts as a sequence complete bit since there is no other bit that would indicate that the sequence has finished. There are 64 user-defined flags for this type of handshaking and Flag 64 was chosen arbitrarily.

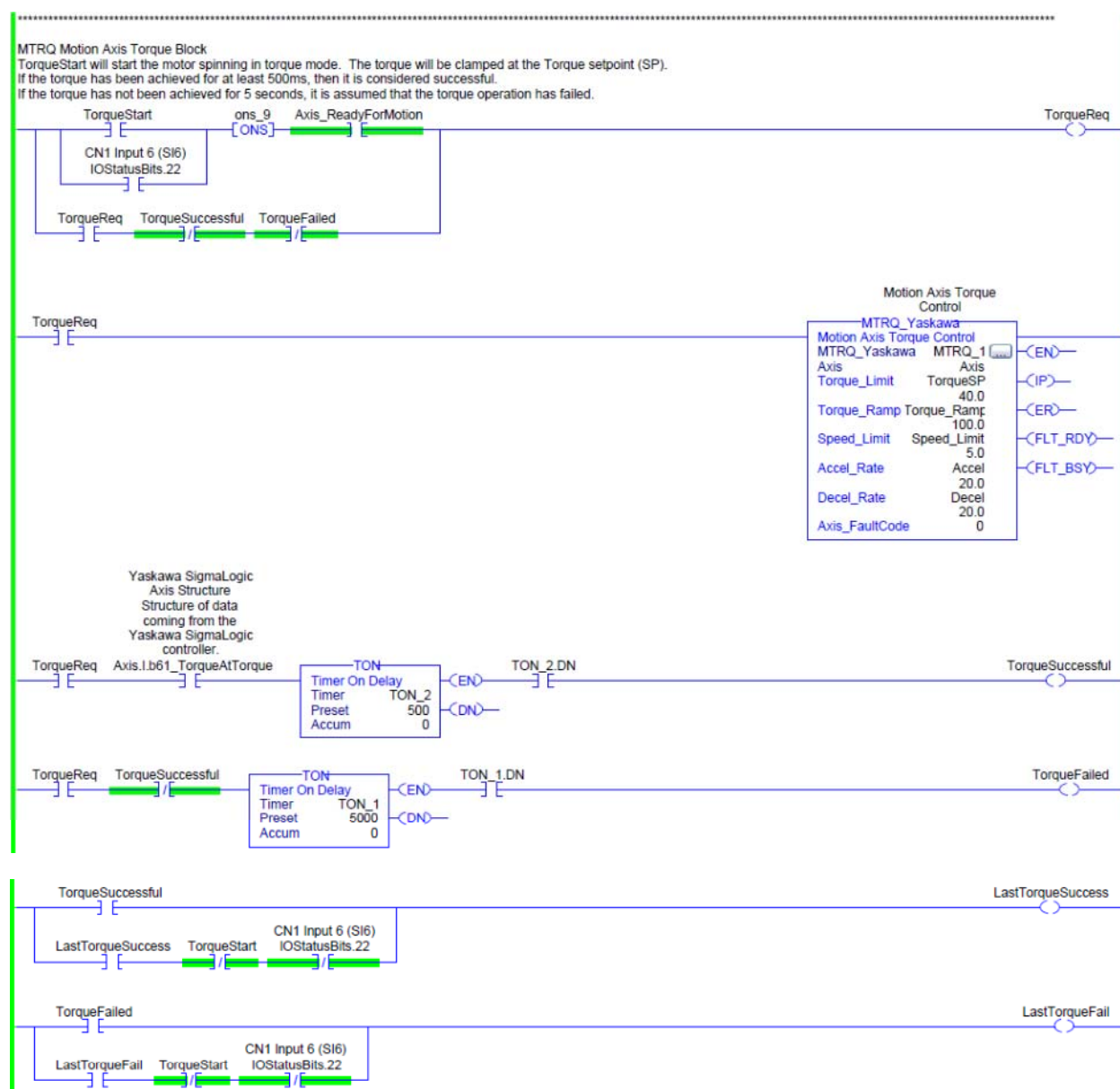
The example code on the next page shows one way to execute the sequence starting at Step 1 using the MSQR AOI. Once the rising edge of SeqStart or DI5 is detected, the SeqReq bit is latched in. This will keep the enable to MSQR on until Flag 64 (Axis.I.FlagStatusBit2.31) turns on or the move is aborted via Stop. There is an additional contact that will not allow the sequence to run if a sequence edit is in progress.

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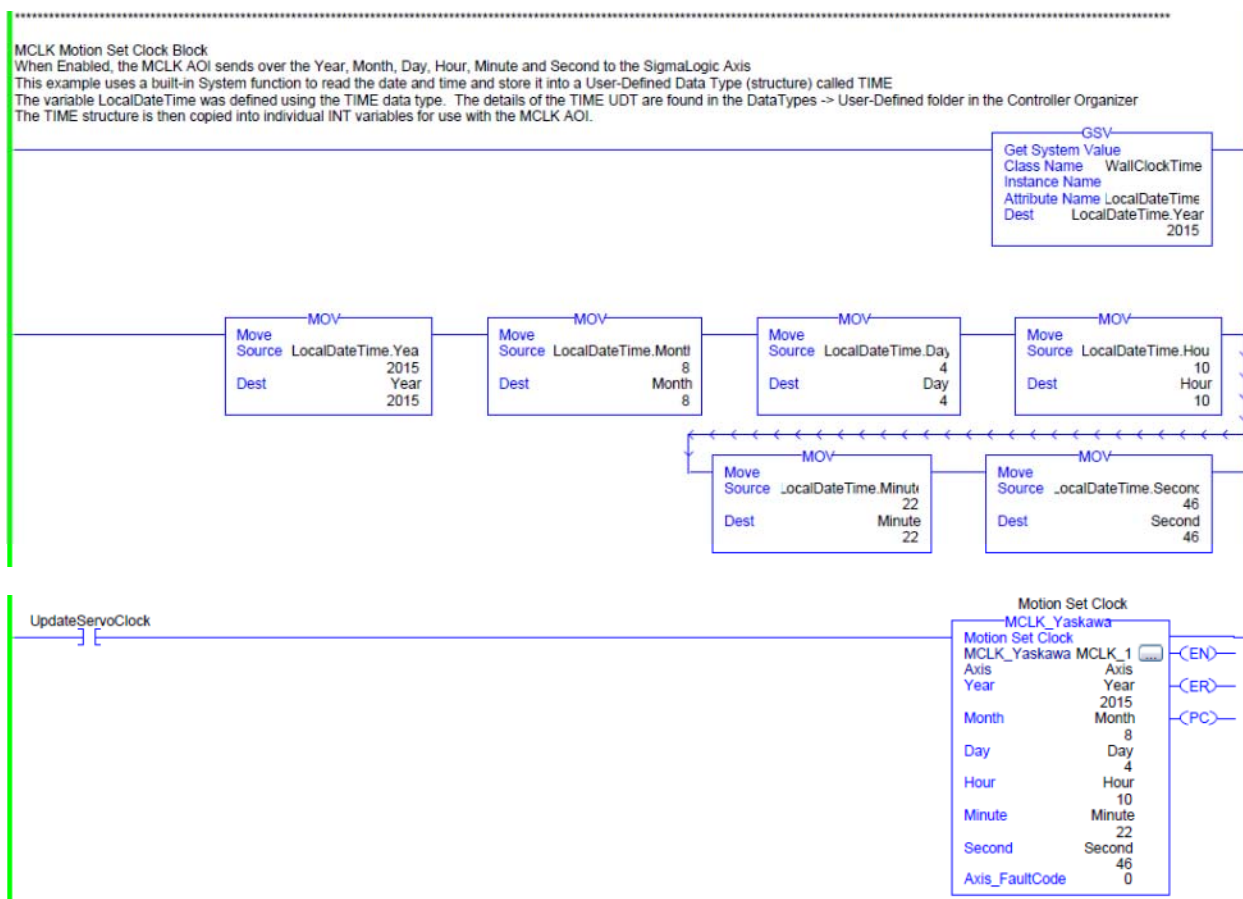
The following code shows an example of using MTRQ for a demo capping application:



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The MTRQ section of code has been written to show how the MTRQ AOI might be used in an application. The concept is that the motor starts spinning at a commanded torque setpoint. If the actual torque reaches the torque setpoint for at least 500ms, then the operation is considered successful (TorqueSuccessful). If five seconds passes without this condition being met, then the operation is considered a failure (TorqueFailed). Either signal (TorqueSuccessful, TorqueFailed) will unlatch the TorqueReq signal and the motor will decelerate to a stop.

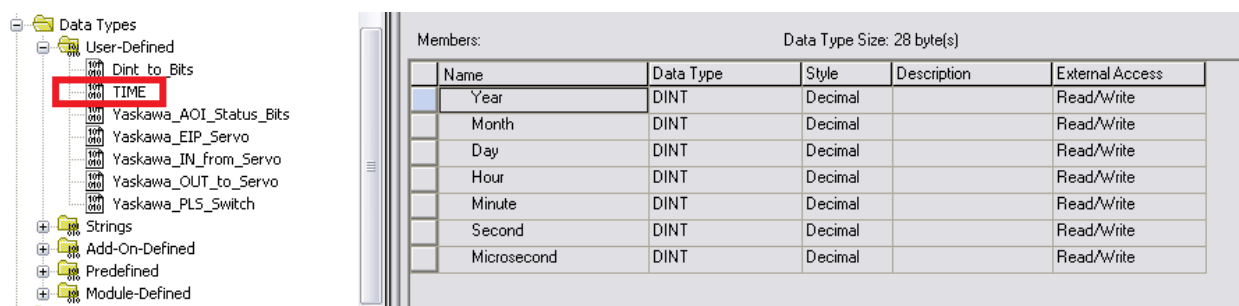
There are many ways to use the MTRQ\_Yaskawa AOI, however. The important features are that when enabled, the MTRQ AOI puts the servo in torque mode. The torque is limited by the Torque\_Limit input. The speed of the motor during the torque operation will be limited by the Speed\_Limit input. The actual speed and torque of the motor will vary depending on the resistance of the load but will not be allowed to exceed the torque or speed limits.

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MP3300iec, MotionWorks IEC**Doc. No.** AN.SigmaLogic.01**16. MCLK\_Yaskawa (Set Clock)**

The MCLK\_Yaskawa AOI was created to allow the SigmaLogic to be synchronized with the PLC clock. The benefit to using this AOI is so that the Alarm History in SigmaLogic matches any time stamping in the PLC. The PLC time and date is read from a System object called WallClockTime and stored into a structure called LocalDateTime. Then the individual elements from LocalDateTime are moved into the inputs of the MCLK AOI. When MCLK is enabled, the clock in SigmaLogic is updated. No power cycle is required on SigmaLogic.

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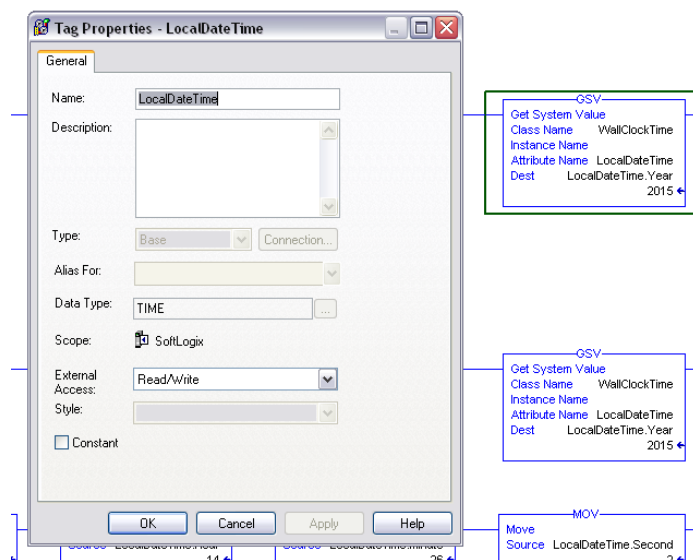
The structure LocalDateTime uses a user-defined data type (UDT) called TIME that was created in the User-Defined folder in the Controller Organizer. Once created, the TIME structure contains the following elements:



The screenshot shows the 'Data Types' folder in the Controller Organizer. Under 'User-Defined', the 'TIME' data type is highlighted. To the right, a table lists the members of the 'TIME' data type, which has a size of 28 bytes.

Name	Data Type	Style	Description	External Access
Year	DINT	Decimal		Read/Write
Month	DINT	Decimal		Read/Write
Day	DINT	Decimal		Read/Write
Hour	DINT	Decimal		Read/Write
Minute	DINT	Decimal		Read/Write
Second	DINT	Decimal		Read/Write
Microsecond	DINT	Decimal		Read/Write

Here is the definition of the LocalDateTime structure:



The screenshot shows the 'Tag Properties - LocalDateTime' dialog box. The 'General' tab is active, showing the following settings:

- Name: LocalDateTime
- Description:
- Type: Base
- Alias For:
- Data Type: TIME
- Scope: SoftLogic
- External Access: Read/Write
- Style:
- Constant: ☐

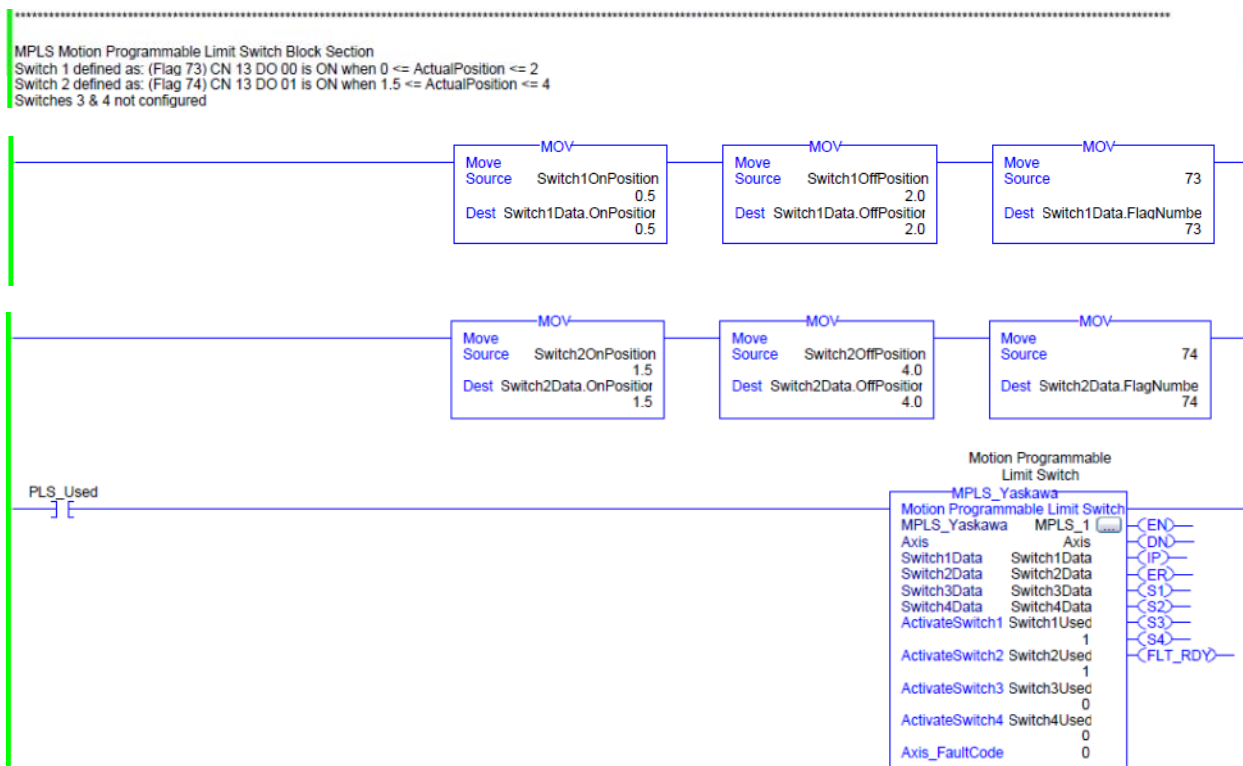
To the right of the dialog box, there are two ladder logic rungs. The top rung is a 'GSV' (Get System Value) instruction with the following parameters:

- Class Name: WallClockTime
- Instance Name:
- Attribute Name: LocalDateTime
- Dest: LocalDateTime.Year

The bottom rung is a 'MOV' (Move) instruction with the following parameters:

- Source: LocalDateTime.Second

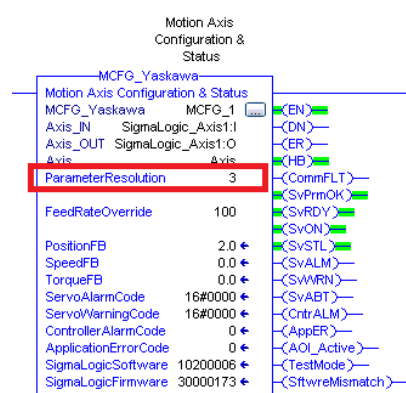


**Title:** SigmaLogic Example Code Example Manual**Product(s):** MP3200iec, MP2300iec, MP2600iec,  
MP3300iec, MotionWorks IEC**Doc. No.** AN.SigmaLogic.01**17. MPLS\_Yaskawa (Programmable Limit Switch Outputs)**

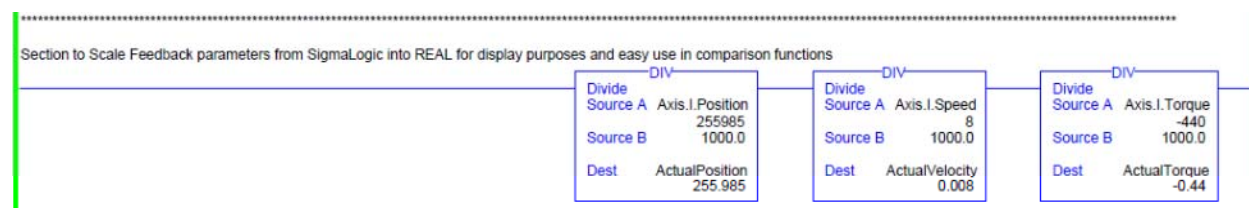
The MPLS\_Yaskawa AOI is used when outputs need to be triggered based on motor position. SigmaLogic can fire these position-based outputs faster than the PLC because the EIP communication cycle delays are cut out of the equation. The example above uses two of the available four PLS outputs. Switch1 is mapped to DO 00 (Flag 73) and Switch 2 is mapped to DO 01 (Flag 74). When MPLS is enabled, SigmaLogic will use the On Position and Off Position parameters of the SwitchData structure to trigger the outputs mapped by the Flag number. The On and Off Positions can be modified even while MPLS is enabled and those changes take effect immediately.

**Title:** SigmaLogic Example Code Example Manual**Product(s):** MP3200iec, MP2300iec, MP2600iec,  
MP3300iec, MotionWorks IEC**Doc. No.** AN.SigmaLogic.01**18. Scaling**

Position, Speed and Torque feedback values are included in the Axis structure but the elements of that structure are DINT. The ParameterResolution input of the MCFG AOI defines the number of decimal points of resolution included in those DINT values.



A clean way to take those DINT values and use them as REAL values in the program is to divide the DINT by the resolution and store into REAL variables like ActualPosition, ActualVelocity and ActualTorque.



**Title:** SigmaLogic Example Code Example Manual**Product(s):** MP3200iec, MP2300iec, MP2600iec,  
MP3300iec, MotionWorks IEC**Doc. No.** AN.SigmaLogic.01**Appendix A – SigmaLogic Status Registers included in Yaskawa\_IN\_from\_Servo**

Axis.I	{...}	{...}		Yaskawa_IN_from_Servo	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
Axis.I.AlarmText	'No Alarm'	{...}		STRING	Yaskawa SigmaLogic Axis Structure ServoPack Alarm Code plus Text Descrip...
Axis.I.b00_Heartbeat	0		Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
Axis.I.b01_Alarm	0		Decimal	BOOL	Yaskawa SigmaLogic Axis Structure ServoPack Alarm
Axis.I.b02_Warning	0		Decimal	BOOL	Yaskawa SigmaLogic Axis Structure ServoPack Warning
Axis.I.b03_Ready	1		Decimal	BOOL	Yaskawa SigmaLogic Axis Structure ServoPack Ready
Axis.I.b04_Enabled	0		Decimal	BOOL	Yaskawa SigmaLogic Axis Structure ServoPack Enabled ("Servo On")
Axis.I.b05_StopComplete	0		Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
Axis.I.b06_HomeComplete	0		Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
Axis.I.b07_HomeBusy	0		Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
Axis.I.b08_HomeActive	0		Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
Axis.I.b09_HomeAborted	0		Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
Axis.I.b10_HomeError	0		Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
Axis.I.b11_MoveAbsComplete	0		Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
Axis.I.b12_MoveAbsBusy	0		Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
Axis.I.b13_MoveAbsActive	0		Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
Axis.I.b14_MoveAbsAborted	0		Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
Axis.I.b15_MoveAbsError	0		Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
Axis.I.b16_MoveRelComplete	0		Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
Axis.I.b17_MoveRelBusy	1		Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
Axis.I.b18_MoveRelActive	1		Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
Axis.I.b19_MoveRelAborted	0		Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
Axis.I.b20_MoveRelError	0		Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
Axis.I.b21_JogHlSpeed	0		Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
Axis.I.b22_JogBusy	0		Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
Axis.I.b23_JogActive	0		Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
Axis.I.b24_JogAborted	0		Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
Axis.I.b25_JogError	0		Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
Axis.I.b26_GearInSync	0		Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
Axis.I.b27_GearBusy	0		Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
Axis.I.b28_GearActive	0		Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
Axis.I.b29_GearAborted	0		Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
Axis.I.b30_GearError	0		Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
Axis.I.b32_MoveSuperComplete	0		Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
Axis.I.b33_MoveSuperBusy	0		Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
Axis.I.b34_MoveSuperActive	0		Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
Axis.I.b35_MoveSuperAborted	0		Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
Axis.I.b36_MoveSuperError	0		Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
Axis.I.b37_PowerCycleRequired	0		Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...

**Title:** SigmaLogic Example Code Example Manual**Product(s):** MP3200iec, MP2300iec, MP2600iec,  
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	Axis.I.b38_MoveBlend1Complete	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.b39_MoveBlend1Busy	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.b40_MoveBlend1Active	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.b41_MoveBlend1Abort	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.b42_MoveBlend1Error	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.b43_MoveBlend2Complete	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.b44_MoveBlend2Busy	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.b45_MoveBlend2Active	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.b46_MoveBlend2Abort	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.b47_MoveBlend2Error	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.b48_RegComplete	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.b49_RegBusy	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.b50_RegActive	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.b51_RegAborted	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.b52_RegError	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.b53_ResetAbsEncoderActive	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.b54_ResetAbsEncoderBusy	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.b55_ResetAbsEncoderDone	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.b56_ResetAbsEncoderError	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.b57_SeqRunning	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.b58_RegSensorNotReached	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.b59_SeqEndError	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.b60_SeqEndDone	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.b61_TorqueAtTorque	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.b62_TorqueBusy	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.b63_TorqueActive	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.b64_TorqueAborted	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.b65_TorqueError	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.b66_ControllerAlarm	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.b67_ApplicationError	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.b68_AxisAtStandStill	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.b69_TestModeActive	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.b70_ServoParamsOK	1	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.Position	2	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.Speed	0	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...

	Axis.I.Torque	0	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.HomeErrorID	0	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.MoveAbsErrorID	0	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.MoveRelErrorID	0	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.JogErrorID	0	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.GearErrorID	0	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.MoveSuperErrorID	0	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.ServoAlarmID	0	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.ServoWarningID	0	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.ControllerAlarmID	0	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.AxisGenAlarmID	0	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.MoveBlend1ErrorID	0	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.MoveBlend2ErrorID	0	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.ResetAbsEncoderErrorID	0	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.FunctionBlockErrorID	0	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.TorqueErrorID	0	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.SeqCurrentStep	0	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.FlagStatusBit1	0	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Flag Status. 1..64 are General Flags. Bits ..
	Axis.I.FlagStatusBit2	0	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Flag Status cont. 1..64 are General Flags...
	Axis.I.IOSTatusBits	0	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Digital IO Status. Bits 0-7, CN13 Inputs 0-...
	Axis.I.HSL_Moving	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.HSL_Dwelling	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.HSL_Done	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.HSL_Busy	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.HSL_Error	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.HSL_ErrorCode	0	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.PLS_Running	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.PLS_SwitchStatus1	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.PLS_SwitchStatus2	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.PLS_SwitchStatus3	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.PLS_SwitchStatus4	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.PLS_Busy	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.PLS_Error	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.PLS_ErrorCode	0	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...

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	Axis.I.SetClock_Done	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.SetClock_Busy	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.SetClock_Error	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.SetClock_ErrorID	0	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.SoftwareVersion	10200006	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.FirmwareVersion	30000173	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.CommandedPos	2	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.CommandedPosNonCyc	2	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.CommandedSpeed	0	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.Clock_Year	2015	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.Clock_Month	7	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.Clock_Day	30	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.Clock_Hour	9	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.Clock_Minute	24	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.Clock_Second	1	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data coming from the Yaska...
	Axis.I.AnalogInput	2.0	Float	REAL	Yaskawa SigmaLogic Axis Structure CN13_AI_01 [v]
	Axis.AOI_SB	{...}	{...}	Yaskawa_AOI_Status_Bits	Yaskawa SigmaLogic Axis Structure Internal bits used to interlock Yaskawa A...

**Title:** SigmaLogic Example Code Example Manual**Product(s):** MP3200iec, MP2300iec, MP2600iec,  
MP3300iec, MotionWorks IEC**Doc. No.** AN.SigmaLogic.01**Appendix B – SigmaLogic Status Registers used in Yaskawa\_OUT\_to\_Servo**

	Axis 0	{...}	{...}	Yaskawa_OUT_to_Servo	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
	Axis 0.b00_ServoOn	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Servo On
	Axis 0.b01_Stop	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Stops All Current Motion in Progress
	Axis 0.b02_Home	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Start Homing Process
	Axis 0.b03_MoveStart1	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Start Current Motion
	Axis 0.b06_SuperImpose	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
	Axis 0.b07_ServoAlarmReset	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Servo Alarm Reset
	Axis 0.b08_ControllerAlarmReset	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure SigmaLogic Alarm Reset
	Axis 0.b09_MoveStart2	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Start Second Motion (Blended Move)
	Axis 0.b10_MoveAbort	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Abort Current Move
	Axis 0.b11_MovePause	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Pause Current Move
	Axis 0.b12_SeqPause	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Indexing Sequence Pause
	Axis 0.b13_SeqResume	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Indexing Sequence Resume
	Axis 0.b14_SeqCancel	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Indexing Sequence Cancel
	Axis 0.b15_AbsEncoderReset	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Absolute Encoder Reset
	Axis 0.b16_SeqStart	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Start Indexing Sequence
	Axis 0.b17_SeqEditSpeed	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Enter Edit Speed
	Axis 0.b18_SeqEditDistance	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Enter Distance Edit
	Axis 0.b19_PLSEnable	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Enable PLS execution
	Axis 0.b20_PLSActivateOutput1	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Activate PLS output1 switch logic
	Axis 0.b21_PLSActivateOutput2	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Activate PLS output2 switch logic
	Axis 0.b22_PLSActivateOutput3	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Activate PLS output3 switch logic
	Axis 0.b23_PLSActivateOutput4	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Activate PLS output4 switch logic
	Axis 0.b24_SetClock	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Set the remote controller clock with data ...
	Axis 0.b32_HeartbeatAnswer	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Heartbeat Answer
	Axis 0.TorqueLimit	0	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
	Axis 0.TorqueRamp	0	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
	Axis 0.HomeMethod	0	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
	Axis 0.HomeSpeed	0	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
	Axis 0.HomeAccDec	0	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Home Move Acceleration/Deceleration R...
	Axis 0.HomeBackOffDistance	0	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
	Axis 0.HomeCreepSpeed	0	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
	Axis 0.HomeCreepDistanceLimit	0	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
	Axis 0.HomeCreepTimeLimit	0	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
	Axis 0.HomeOffsetDistance	0	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
	Axis 0.HomeOffsetSpeed	0	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
	Axis 0.HomePosition	0	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
	Axis 0.HomeTorque	0	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
	Axis 0.HomeInputNo	84	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...

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+	Axis.O.HomeApproachTimeLimit	0	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
+	Axis.O.HomeApproachDistLimit	0	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
+	Axis.O.HomeDirection	0	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
+	Axis.O.HomeSwitchMode	0	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
+	Axis.O.MoveType	0	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
+	Axis.O.MoveDirection	0	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
+	Axis.O.MoveAccel1	0	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
+	Axis.O.MoveAccel2	0	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
+	Axis.O.MoveDecel1	0	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
+	Axis.O.MoveDecel2	0	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
+	Axis.O.MoveSpeed1	0	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
+	Axis.O.MoveSpeed2	0	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
+	Axis.O.MoveDistance1	0	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
+	Axis.O.MoveDistance2	0	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
+	Axis.O.MovePosition1	0	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
+	Axis.O.MovePosition2	0	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
+	Axis.O.RegistrationDistance	0	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
+	Axis.O.GearNumerator	0	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
+	Axis.O.GearDenominator	0	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
+	Axis.O.SuperImposeDistance	0	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
+	Axis.O.Resolution	3	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
+	Axis.O.RegistrationDirection	0	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
+	Axis.O.TuningLevel	0	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
+	Axis.O.SequenceStep	0	Decimal	INT	Yaskawa SigmaLogic Axis Structure Staring Sequence Step Number
+	Axis.O.SequenceEditStep	0	Decimal	INT	Yaskawa SigmaLogic Axis Structure Sequence Step Number to Edit
+	Axis.O.FlagCommandBits1	0	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Flag Commands: 1..64 are General Flags...
+	Axis.O.FlagCommandBits2	0	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Flag Commands cont. 1..64 are General F...
+	Axis.O.DigitalOutCommandBits	0	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Digital Output commands: Bits 0-7 corres...
+	Axis.O.SequenceEditSpeed	0	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
+	Axis.O.SequenceEditDistance	0	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...

+	Axis.O.FeedRateOverride	100	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
-	Axis.O.HSI_Enable	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
-	Axis.O.HSI_MoveMode	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure 0=Relative; 1=Moves per Cycle
-	Axis.O.HSI_CalcMethod	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure 0=Accel/Decel; 1=Time
-	Axis.O.HSI_MoveDirection	0	Decimal	BOOL	Yaskawa SigmaLogic Axis Structure 0 = Negative; 1 = Positive
+	Axis.O.HSI_TriggerFlag	0	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
+	Axis.O.HSI_MovingFlag	0	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
+	Axis.O.HSI_DwellingFlag	0	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
+	Axis.O.HSI_DoneFlag	0	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
+	Axis.O.HSI_MoveType	0	Decimal	INT	Yaskawa SigmaLogic Axis Structure 0=Single; 1=Repeat; 2=Repeat "X" times
+	Axis.O.HSI_RepeatNumber	0	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
+	Axis.O.HSI_Distance	0	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
+	Axis.O.HSI_Speed	0	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
+	Axis.O.HSI_Accel	0	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
+	Axis.O.HSI_MoveTime	0	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
+	Axis.O.HSI_DwellTime	0	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
+	Axis.O.PLS_OutputFlag1	0	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
+	Axis.O.PLS_OutputFlag2	0	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
+	Axis.O.PLS_OutputFlag3	0	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
+	Axis.O.PLS_OutputFlag4	0	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
+	Axis.O.PLS_OnPosition1	0	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
+	Axis.O.PLS_OffPosition1	0	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
+	Axis.O.PLS_OnPosition2	0	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
+	Axis.O.PLS_OffPosition2	0	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
+	Axis.O.PLS_OnPosition3	0	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
+	Axis.O.PLS_OffPosition3	0	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
+	Axis.O.PLS_OnPosition4	0	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
+	Axis.O.PLS_OffPosition4	0	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
+	Axis.O.PLS_OnCompensation1	0	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
+	Axis.O.PLS_OffCompensation1	0	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
+	Axis.O.PLS_OnCompensation2	0	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
+	Axis.O.PLS_OffCompensation2	0	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
+	Axis.O.PLS_OnCompensation3	0	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
+	Axis.O.PLS_OffCompensation3	0	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
+	Axis.O.PLS_OnCompensation4	0	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...
+	Axis.O.PLS_OffCompensation4	0	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...

**Title:** SigmaLogic Example Code Example Manual

**Product(s):** MP3200iec, MP2300iec, MP2600iec,  
MP3300iec, MotionWorks IEC

**Doc. No.** AN.SigmaLogic.01

	+	Axis.D.RTC_Year	0	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...	
	+	Axis.D.RTC_Month	0	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...	
	+	Axis.D.RTC_Day	0	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...	
	+	Axis.D.RTC_Hour	0	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...	
	+	Axis.D.RTC_Min	0	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...	
	+	Axis.D.RTC_Sec	0	Decimal	INT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...	
	+	Axis.D.StopDecel	50000	Decimal	DINT	Yaskawa SigmaLogic Axis Structure Structure of data sent out to the Yaskaw...	
	+	Axis.D.AnalogOutput	0	Decimal	INT	Yaskawa SigmaLogic Axis Structure CNT13_AQ_01 [mV]	