

1 Introduction

This document will show users how to import and configure the Add-On Instructions (AOI). In addition, this document will describe the use of the AOI. There are several AOI files that can be imported into the controller software. Two of these files (AMC_StatusWord_Read and AMC_Drive_Enable) will be used as examples later in this document.

1.1 Project Layout

Once the controller and servo drive modules are selected, the input and output data will be mapped to the controller tags (see *Figure 1 [1]*). The controller tags are constantly updated. Information is sent from the drive to the controller (input) and information is sent from the controller to the drive (output). These inputs and outputs are mapped by the servo drive's EDS file. The tag names will depend on the name assigned to the module. In this example, the module's name is **FlexPro_Drive** (see *Figure 1 [2]*).



▲ Controller AOL/Help Name Alias For Base Tag Data Type Employed Lists Description Ext ▲ Controller Fault Handler ▶ Local:3:0 AB:Embedded_HSC1:0:0 Read ▲ Wain fask ▶ Local:3:1 AB:Embedded_HSC1:0:0 Read ▲ Main fask ▶ Local:3:0 AB:Embedded_HSC1:0:0 Read ▲ Main fask ▶ Local:3:0 AB:Embedded_Discrete101:0:0 Read ▲ Main fask ▶ Local:1:0 AB:Embedded_Discrete101:0:0 Read ▲ Mation Groups ▶ Local:1:0 AB:Embedded_Discrete101:0:0 Read ▲ Masters ▶ Local:1:0 AB:Embedded_Discrete101:0:0 Read ▲ Masters ▶ Local:1:0 AB:Embedded_Discrete101:0:0 Read ▲ Saets ▶ Local:1:0 AB:Embedded_Analog101:0:0 Read ▶ Local:2:0 AB:Embedded_Analog101:0:0 Read Read ▶ Local:2:1 AB:Embedded_Analog101:0:0 Read Read ▶ Local:2:1 AB:Embedded_Analog101:0:0 Read Read ▶ Local:2:1 AB:Embedded_Analog101:0:0 Read Read Fee/Pro_Drive:1 Read ▶ Goe26_000C_0210 FlexPro_Drive:	d 1	S	cope: 👰 AOI_Help 🗸 Show: Al	Tags				
 Controller Fault Handler Power-Up Handler Tasks Isaks Isaks<!--</th--><th>Controller AOI_Help</th><th></th><th>Name</th><th>Alias For</th><th>Base Tag</th><th>Data Type 🔠</th><th>Description</th><th>Externa</th>	Controller AOI_Help		Name	Alias For	Base Tag	Data Type 🔠	Description	Externa
 Power-Up Handler Power-Up Handler Stats MainTask MainTask MainTask MainTask MainTask MainTask MainTask MainTask Local:3:C AB:Embedded_HSC1:C:O AB:Embedded_Discrete101:c:O Rea Local:1:C AB:Embedded_Discrete101:c:O Rea Local:1:C AB:Embedded_Discrete101:c:O Rea Local:2:O AB:Embedded_Analog101:c:O Rea Local:2:C AB:Embedded_Analog101:c:O Rea Local:2:C AB:Embedded_Analog101:c:O Rea FlexPro_Drivel.ConnectionFaulted SINT[14] Rea FlexPro_Drive:Otaa SINT[14] Rea 	Controller Fault Handler		Local:3:0			AB:Embedded_HSC1:0:0		Read/W
A Distributed and a set of the program A Distributed and and and a set of the program A Distributed and and and and and and and and and an	📁 Power-Up Handler		Local:3:1			AB:Embedded_HSC1:I:0		Read/W
 ▲ MainTask ▶ LinkinProgram Unscheduled ▲ MainProgram ■ Unscheduled ▲ Mation Groups ■ Unscheduled ▲ Mation Groups ■ Unscheduled ▲ Local:1:0 ▲ ABErmbedded_DiscreteID1:0:0 Res > Local:1:1 ▲ Abermbedded_DiscreteID1:0:0 Res > Local:1:1 ▲ Abermbedded_DiscreteID1:0:0 Res > Local:1:1 ▲ Abermbedded_DiscreteID1:0:0 Res > Local:2:1 ▲ Bermbedded_AnalogID1:0:0 Res > FlexPro_Drive:1 ▲ Bermbedded_AnalogID1:0:0 Res > FlexPro_Drive:0 ▲ Bermbedded_DiscreteID1:0:0 A Bermbedded_DiscreteID1:0:0 Res > FlexPro_Drive:0 ▲ Bermbedded_DiscreteID1:0:0 A Bermbedded_DiscreteID1:0:0 Res > Flex	🔺 🛁 Tasks		Local:3:C			AB:Embedded_HSC1:C:0		Read/W
 ↓ Local:1:1 ▲ AB:Embedded_Discrete101:1:0 Rea ▲ Motion Groups ▲ Ungrouped Axes ▲ Local:1:C ▲ AB:Embedded_Analog/01:0:0 Rea > Local:2:O ▲ AB:Embedded_Analog/01:0:0 Rea > Local:2:C ▲ AB:Embedded_Analog/01:0:0 Rea > FlexPro_Drivel ← ▲ Stembedded_Analog/01:0:0 Rea > FlexPro_Drivel.ConnectionFaulted > FlexPro_Drive:0 ← → Gó26:000C_0210_5220560D::0:0 Rea > FlexPro_Drive:0 ← → Gó26:000C_0210_881C7CBA:0:0 > FlexPro_Drive:0 ← → Gó26:000C_0210_881C7CBA:0:0 > FlexPro_Drive:0 ← → Gó26:000C_0210_881C7CBA:0:0 >	A MainTask		▶ Local:1:0			AB:Embedded_DiscretelO1:0:0		Read/W
 ▲ Motion Groups ▲ Motion Groups ▲ Ungrouped Axes ▲ Assets ▲ Local:2:0 ▲ AB:Embedded_AnalogIO1:0:0 AB:Embedded_AnalogIO1:0:0 Rea ▲ Local:2:1 ▲ B:Embedded_AnalogIO1:0:0 Rea ▲ B:Embedded_AnalogIO1:0:0 Rea ▲ B:Embedded_AnalogIO1:0:0 Rea ▲ B:Embedded_AnalogIO1:0:0 Rea → B:Pro_Drive:1 AB:Embedded_AnalogIO1:0:0 Rea → B:Pro_Drive:1 AB:Embedded_AnalogIO1:0:0 Rea → FiexPro_Drive:1 AB:Embedded_AnalogIO1:0:0 Rea → FiexPro_Drive:0 AB:Embedded_AnalogIO1:0:0 AB:Embedded_Analo			▶ Local:1:1			AB:Embedded_DiscretelO1:I:0		Read/Wi
 Ungrouped Axes Ungrouped Axes Ungrouped Axes Ungrouped Axes Local:2:0 AB:Embedded_AnalogIO1:0:0 Rea Local:2:1 AB:Embedded_AnalogIO1:0:0 Rea FiexPro_Drivel< BOOL Rea FiexPro_Drivel.ConnectionFaulted SINT[14] Rea FiexPro_Drive:Oata SINT[14] 	G Motion Groups Gorgen Ungrouped Axes Gorgen Ungrouped Axes Logical Model Gorfiguration D Im 1769 Bus Sethemet Gorgen Ungrouped Ungrouped Ungrouped Ungrouped Gorgen Ungrouped Ungrouped Ungrouped		▶ Local:1:C			AB:Embedded_DiscretelO1:C:0		Read/Wi
P Assets AB:Embedded_AnalogIO1:E0 Res The Logical Model Local:2:1 AB:Embedded_AnalogIO1:E0 Res I/O Configuration Local:2:C AB:Embedded_AnalogIO1:E0 Res I/O Configuration Local:2:C Descence Descence Descence Descence Res I/O Configuration Local:2:C Descence Descence Descence Descence Res I/O Configuration FlexPro_Drive:L FlexPro_Drive:Local:2:C BOOL Res I/O Coc6_000C_0210 FlexPro_Drive FlexPro_Drive:LOata SINT[14] Res I/O Coc6_000C_0210 FlexPro_Drive:O-Data SINT[14] Res			Local:2:0			AB:Embedded_AnalogIO1:O:0		Read/Wi
I/C Configuration > □/C Configuration 2 AB:Embedded_AnalogI01:C:0 Res > □/D Configuration > □/C Configuration 2 _0626:000C_0210_A987E223:10 Res > □/D Configuration > □/C Configuration 2 _0626:000C_0210_A987E223:10 Res > □/D Configuration > □/C Configuration BOOL Res > □/D Configuration > □/C Configuration 0626:000C_0210_5220586D:C:0 Res > □/D Configuration □/C Configuration □/C Configuration 0/C Configuration < □/D Configuration			Local:2:1			AB:Embedded_AnalogIO1:1:0		Read/Wi
 			Local:2:C			AB:Embedded_AnalogIO1:C:0		Read/W
Image: Bit			▲ FlexPro_Drive:l ◀	2		_0626:000C_0210_A987E223:I:0		Read/W
1gi Troir CateRocarCut Lis AD/Flap FilexPro_Drivel.Data SINT[14] Rea 1gi 0626_000C_0210 FilexPro_Drive FilexPro_Drive:C			FlexPro_Drive:I.ConnectionFaulte	d		BOOL		Read/W
▶ FlexPro_Drive:C ←			FlexPro_Drive:I.Data			SINT[14]		Read/W
			▶ FlexPro_Drive:C			_0626:000C_0210_5220586D:C:0		Read/Wi
► FlexPro_Drive:O.Data SINT[14] Rea			▲ FlexPro_Drive:0 ◄			_0626:000C_0210_881C7CBA:0:0)	Read/W
			FlexPro_Drive:O.Data			SINT[14]		Read/W
		0		1				
			L	_				

Figure 1 Controller Tags Screen

The SINT[14] tags (shown in *Table 1*) send read and write messages via the User Datagram Protocol (UDP) to the following objects and are used for time critical information.

Inputs		Outputs			
Parameter	Instance	Parameter	Instance		
Status Word	912	Control Word	911		
Modes of Operation Display	914	Modes of Operation	913		
Actual Position	915	Target Position	925		
Actual Velocity	920	Target Velocity	938		
Actual Current	924	Target Current	923		

Table 1 SINT[14] Read and Write Messages



Add-On Instructions – FlexPro – Ethernet/IP Servo Drives

FP:O.Data[0]	Control Word [0]	FP:I.Data[0]	Status Word [0]
FP:O.Data[1]	Control Word [1]	FP:I.Data[1]	Status Word [1]
FP:O.Data[2]	Modes of Operation [0]	FP:I.Data[2]	Modes of Operation Display [0]
FP:O.Data[3]	Modes of Operation [1]	FP:I.Data[3]	Modes of Operation Display [1]
FP:O.Data[4]	Target Position [0]	FP:I.Data[4]	Actual Position [0]
FP:O.Data[5]	Target Position [1]	FP:I.Data[5]	Actual Position [1]
FP:O.Data[6]	Target Position [2]	FP:I.Data[6]	Actual Position [2]
FP:O.Data[7]	Target Position [3]	FP:I.Data[7]	Actual Position [3]
FP:O.Data[8]	Target Velocity [0]	FP:I.Data[8]	Actual Velocity [0]
FP:O.Data[9]	Target Velocity [1]	FP:I.Data[9]	Actual Velocity [1]
FP:O.Data[10]	Target Velocity [2]	FP:I.Data[10]	Actual Velocity [2]
FP:O.Data[11]	Target Velocity [3]	▶ FP:I.Data[11]	Actual Velocity [3]
FP:O.Data[12]	Target Current [0]	FP:I.Data[12]	Actual Current [0]
FP:O.Data[13]	Target Current [1]	FP:I.Data[13]	Actual Current [1]

Table 2 SINT[14] Read and Write Messages

Note: The descriptions for the tags in *Table 2* are not automatically created when the drive is added to the controller program. These descriptions are used as examples for this document.

2 Example 1 – AMC_StatusWord_Read

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The AOI file (AMC_StatusWord_Read) will map the first word (2 bytes) of the SINT[14] input tag (FlexPro_Drive:I.Data). This first word contains the StatusWord data (instance 912). This example will show users how to setup this AOI file correctly.

Once the controller and drive are selected, follow these steps:

1. From the Control Organizer screen, right-click Add-On Instructions (*Figure 2 [1]*) and select Import Add-On Instruction... (*Figure 2 [2]*).



Figure 2 Controller Organizer – Add-On Instructions – Import Add-On Instruction

From the Import Add-On Instruction screen, select AMC_StatusWord_Read.L5X (*Figure 3 [1]*). This file will also import the following data types used by the AOI to map drives input data: AMC_Input_Data (*Figure 4*) and AMC_StatusWord_Data (*Figure 5*).

Name Status Date modified Typ Image: AMC_ActualCurrent_Read.L5X Image: AMC_ActualCurrent_Read.L5X Image: AMC_ActualPosition_Read.L5X Image: AMC_Act	e ix Desigr ix Desigr
Image: AMC_ActualCurrent_Read.L5X Image: AMC_ActualCurrent_Read.L5X Image: AMC_ActualPosition_Read.L5X Image: AMC_Actual	ix Desigr ix Desigr
Quick access	ix Desigr
Image: AMC_ActualVelocity_Read.L5X Image: AMC_Actu	
Image: Base of the sector	ix Design
Desktop Image: AMC_Enable_Drive.L5X Image: AMC_ModeOfOperation_Write.L5X Image: AMC_ModeOfOperatio	ix Design
AMC_ModeOfOperation_Write.L5X 😔 4/22/2022 4:04 PM Log	ix Design
	ix Design
📊 🗄 AMC_ModeOfOperationDisplay_Read.L5X 🥥 4/22/2022 4:03 PM Log	ix Design
Libraries 🗄 AMC_StatusWord_Read.L5X 📀 4/22/2022 4:04 PM Log	ix Design
AMC_TargetCurrent_Write.L5X 😔 4/22/2022 4:04 PM Log	ix Design
AMC_TargetPosition_Write.L5X 🛛 📿 🧭 4/22/2022 4:04 PM Log	ix Design
This PC This PC AMC_TargetVelocity_Write.L5X 1 4/22/2022 4:04 PM Log	ix Desig

Figure 3 Import Add-On Instruction Screen



🔀 Data	Type: AM	C_Input_Data* ×			
Name	e: A	AMC_Input_Data			Data Type Size: ??
Descri	iption:			Contains the data assembly for the drive's input data.	
Memt	bers:				
	Name		Data Type	Description	
	Status_V	Vord	INT	Contains the status word (912)	<u>^</u>
	Mode_o	f_Operation_Display	INT	Displays the actual mode of operation (instance 914)	
	Actual_F	Position	DINT	Displays the actual position in counts (instance 915)	
	Actual_\	Velocity	DINT	Contains the measured velocity in DSI units (Instance 920)	
	Actual_(Current	INT	Contains the measured current in DC1 units (instance 924)	
	<mark>∗</mark> Add	Member			

Figure 4 AMC_Input_Data Screen

Type: AMC_StatusWord_	Data ×		
: AMC_StatusWo	ord_Data		Data Type Size: 4 bytes
ption:			
pers:			
Name	Data Type	Description	
Ready_To_Switch_On	BOOL	Drive is ready to switch on	^
Switch_On	BOOL	Drive is switched on	
Enabled	BOOL	Enabled	
Fault	BOOL	Fault is active	
Voltage_Enabled	BOOL	Voltage is enabled	
Quick_Stop	BOOL	Quick Stop is active	
Switch_On_Disabled	BOOL	Switch on disabled	
Warning	BOOL		~
	Type: AMC_StatusWord_ AMC_StatusWord_ AMC_StatusWord_ ption:	AMC_StatusWord_Data × AMC_StatusWord_Data	Type: AMC_StatusWord_Data × AMC_StatusWord_Data AMC_StatusWord_Data ption:

Figure 5 AMC_StatusWord_Data Screen

Once the AOI is imported, it can now be placed on a rung.

For help creating and mapping tags, with their correct data types, parameter information can be viewed under the AOI in the Controller Organizer.

The first parameter, AMC_StatusWord_Read (Figure 6), is the primary instance tag and holds input and output parameters.

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3. Right-click on the "?" (*Figure 6 [1]*) and create a new tag with any name. In this example, the data type will be named **AMC_StatusWord_Read** (*Figure 7 [1]*).



Figure 6 AMC_StatusWord_Read Screen

💰 Tag Proper	ties - StatusWord_Instance	×
General		
Name:	StatusWord_Instance	
Description:		
Usage:	<controller></controller>	1
Туре:	Base V Connection	
Alias For:		
Data Type:	AMC_StatusWord_Read	
Scope:	🕼 AOI_Help	
External Access:	Read/Write ~	
Style:	\sim	
Constant		
Open Para	ameter Connections	
	OK Cancel Apply	Help

Figure 7 Tag Properties – StatusWord_Instance Screen

4. Double-click the second "?" (*Figure 6 [2]*) and select **FlexPro_Drive:I.Data** (*Figure 8 –[1]*), from the list of controller tags.



	Reads	the drives ent state.			
AMC_St AMC_St Drive_In	atusWord_Read atusWord_Read_StatusW put_DataFlexPro_Drive:	ord_Instance 🗔 .Data 🗸	Ready_To_	Switch_On)—	
Enter Name Filter	~ S	how: All Tags			~
Name	=8	Data Type	Usage	Description	^
FlexPro_Drive:C FlexPro_Drive:I FlexPro_Drive:I.Cor	nectionFaulted	_0626:000C _0626:000C BOOL	<controller> <controller></controller></controller>		
FlexPro_Drive:I.Dat	а	SINT[14]			
FlexPro_Drive:O		_0626:000C	<controller></controller>		7~
Show controller tags	Name: FlexPro_Drive:I. Data Type: SINT[14] Description:	Data	1		
Show parameters from other pr	ogram:				
<none></none>	~				

Figure 8 FlexPro_Drive:1.Data Screen

5. Right-click the third "?" (*Figure 6 [3]*) and create a new tag. Select the data type and change it to AMC_StatusWord_Data (*Figure 9 [1]*).

💰 Tag Proper	ties - StatusWord_Bit_Field	\times
General		
Name:	StatusWord_Bit_Field	
Description:	^	
Usage:		
Type:	Rase Connection	
Alias For:		
Data Type:	AMC_StatusWord_Data	
Scope:	AOI_Help	- I
External Access:	Read/Write ~	
Style:	\sim	
Constant		
Open Para	ameter Connections	
	OK Cancel Apply H	lelp

Figure 9 Tag Properties – StatusWord_Bit_Field Screen



The ladder element has now been configured. This can be used to monitor the drives current state. The **StatusWord_Instance** (*Figure 10 [1]*) indicates more common drive states. The **StatusWord_Bit_Field** (*Figure 10 [2]*) contains the full word of Instance 912.



Figure 10 AMC_StatusWord_Read Screen

StatusWord_Instance (Figure 11 [1]) and StatusWord_Bit_Field (Figure 11 [2]) can be viewed in the list of Controller Tags.

ope: 💶 AOI_Help 🗸 Show: All	Tags			~	T. Enter
Name	Value	•	Style	Description	Constant
TargetCurrent_Instance		{}		Write to the Target Curren	
▲ StatusWord_Instance		{}		Reads the drives current st	
StatusWord_Instance.EnableIn		1	Decimal	Reads the drives current st	
StatusWord_Instance.EnableOut		1 1	Decimal	Reads the drives current st	
StatusWord_Instance.Ready_To_S	witch	0	Decimal	Reads the drives current st	
StatusWord_Instance.Switched_O	n	0	Decimal	Reads the drives current st	
StatusWord_Instance.Enabled		1	Decimal	Reads the drives current st	
StatusWord_Instance.Fault		0	Decimal	Reads the drives current st	
StatusWord_Instance.Switch_On_	Disabled	0	Decimal	Reads the drives current st	
▲ StatusWord_Bit_Field		{}			
StatusWord_Bit_Field.Ready_To_S	witch	1	Decimal	Drive is ready to switch on	
StatusWord_Bit_Field.Switch_On		h	Decimal	Drive is switched on	
StatusWord_Bit_Field.Enabled		Z 1	Decimal	Enabled	
StatusWord_Bit_Field.Fault		0	Decimal	Fault is active	
StatusWord_Bit_Field.Voltage_Ena	bled	1	Decimal	Voltage is enabled	
StatusWord_Bit_Field.Quick_Stop		1	Decimal	Quick Stop is active	
StatusWord_Bit_Field.Switch_On_	Disabled	0	Decimal	Switch on disabled	
StatusWord_Bit_Field.Warning		0	Decimal		
StatusWord_Bit_Field.Manufactur	er_Spe	0	Decimal		
StatusWord_Bit_Field.Remote		1	Decimal		
StatusWord_Bit_Field.Target_Reac	hed	1	Decimal		
StatusWord_Bit_Field.Internal_Lim	iit_Acti	0	Decimal		
StatusWord_Bit_Field.Homing_Co	mplete	0	Decimal		
StatusWord_Bit_Field.Reserved_1		0	Decimal		
StatusWord_Bit_Field.Reserved_2		0	Decimal		
StatusWord_Bit_Field.Reserved_3		0	Decimal		
ModeDisplay_Instance		{}		Displays the current mode	

Figure 11 Controller Tags – AOL_Help(controller) Screen



3 Example 2 – AMC_Enable_Drive

The AOI tag (AMC_Drive_Enable) is used to transition to "Operation Enabled" and to clear faults. To enable the drive, this AOI tag will transition from one state to another in a particular order using the ControlWord command instance (911). Figure 12 shows a graphical overview of the state machine.



Figure 12 Overview of the State Machine

Upon power-up, the drive will automatically step through the "Start" and "Not Ready to Switch On" states, arriving at the "Switch On Disabled" state. The AOI is used to transition from the "Fault" state to the "Switch On Disabled," and/or from this the "Switch On Disabled" state to "Operation Enabled."

To enable the drive, follow these steps:

1. From the Control Organizer screen, right-click Add-On Instructions (*Figure 13 [1]*) and select Import Add-On Instruction... (*Figure 13 [2]*).



Figure 13 Controller Organizer – Add-On Instructions – Import Add-On Instruction

2. From the Import Add-On Instruction screen, select AMC_Enable_Drive.L5X (Figure 14 [1]).

谢 Import Add-	On Instruction			×
Look in:	AMC AOI ~	G 🗊 🖻		
34	Name	Status	Date modified	Туре
×	The AMC_ActualCurrent_Read.L5X	\odot	4/22/2022 4:02 PM	Logix Designer
Quick access	AMC_ActualPosition_Read.L5X	\odot	4/22/2022 4:02 PM	Logix Designer
	AMC_ActualVelocity_Read.L5X	\odot	4/22/2022 4:03 PM	Logix Designer
	AMC_ControlWord_Write.L5X	\odot	4/22/2022 4:03 PM	Logix Designer
Desktop	AMC_Enable_Drive.L5X	\odot	4/22/2022 4:03 PM	Logix Designer
	AMC_ModeOfOperation_Write.L5X	\odot	4/22/2022 4:04 PM	Logix Designer
	AMC_ModeOfOperationDisplay_Rei	\odot	4/22/2022 4:03 PM	Logix Designer
Libraries	AMC_StatusWord_Read.L5X	\odot	4/22/2022 4:04 PM	Logix Designer
	AMC_TargetCurrent_Write.L5X	\odot	4/22/2022 4:04 PM	Logix Designer
_	AMC_TargetPosition_Write.L5X	\odot	4/22/2022 4:04 PM	Logix Designer
This PC	AMC_TargetVelocity_Write.L5X	\odot	4/22/2022 4:04 PM	Logix Designer
I Network				

Figure 14 Import Add-On Instruction Screen

- 3. Create and name the first instance tag, Enable_Instance (Figure 15 [1]), with any name. In this example, the data type will be named AMC_Enable_Drive.
- Map the Drive_Output_Data and Drive_Input_Data to the drive's controller tags (see step 2 in Example 1 AMC_StatusWord_Read).

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Figure 15 AMC_Enable_Drive Screen

5. Enter the RPI (Request_Packet_Interval_RPI) so the sequence of commands is sent with a delay between transitions. The units are in milliseconds. If the process skips steps, increase the interval time. Once configured, the **Enable_Instance** tag (*Figure 16 [1]*) will be placed in the list of controller tags.

Two input parameters (Enable_Instance.Enable and Enable_Instance.Clear_Fault) are mapped to the Enable_Instance tag. Setting the **Enable_Instance.Enable** (*Figure 16 [2]*) value to high (1) will transition the drive to "Operation Enabled." Setting the **Enable_Instance.Clear_Fault** (*Figure 16 [3]*) value to high (1) will clear latched faults.

Controller Tags - AOI_Help(controller) × 🖉 Ac	Id-On Instruction Parameters and L	ocal Tags - AMC_TargetCu	irrent_Write	
Scope: DAOI_Help V S ags			~	Enter Na
Name	Value 🗧	Style	Description	Constant
ModeWrite_Instance.Mode_Of_Operatio	16#0000	Hex	Write to this object to req	
Enable_Instance	{}		Transitions drive state to O	
Enable_Instance.EnableIn	1	Decimal	Transitions drive state to O	
Enable_Instance.EnableOut	1	Decimal	Transitions drive state to O	
Enable_Instance.Request_Packet_Interva	500	Decimal	Transitions drive state to O	
Enable_Instance.In_Progress	0	Decimal	Transitions drive state to O	
Enable_Instance.Enable_Sent	1	Decimal	Transitions drive state to O	
Enable_Instance Drive_Enabled	1	Decimal	Transitions drive state to O	
Enable_Instance.Enable	3 0	Decimal	Transitions drive state to O	
Enable_Instance.Clear_Fault	0	Decimal	Transitions drive state to O	
✓ ControlWord_Instance	{}		Sends data to the control	

Figure 16 Controller Tags – AOI_Help(controller) Screen



4 Additional AOI Examples

4.1 AMC_ModeofOperationDisplay_Read

AMC_ModeOfOperationDisplay_Read maps the second word of the FlexPro_Drive:I.Data to a local tag and outputs the current mode of operation.

	Displays the current mode of operation.	
AMC_ModeOfOperationDisp	lay_Read	
AMC_ModeOfOperationD Drive_Input_Data	ModeDisplay_Instance FlexPro_Drive:I.Data	-(Profile_Position_Mode)- -(Profile_Velocity_Mode)- -(Profile_Torque_Mode)- -(Homing_Mode)- -(CSP_Mode)- -(CSV_Mode)- -(CST_Mode)- -(CST_Mode)- -(Custom_Configuration)-

Figure 17 AMC_ModeOfOperationDisplay_Read Screen

The first parameter, AMC_ModeOfOperationDisplay_Read, is the instance parameter. The second parameter is mapped to FlexPro_Drive:I.Data.

4.2 AMC_ModeofOperationDisplay_Write

This AOI writes commands to the first word of the SINT[14] input tag, which contains the Mode Of Operation (instance 912).



Figure 18 AMC_ModeOfOperationDisplay_Write Screen

The first parameter, AMC_ModeOfOperation_Write, is the instance parameter. The second parameter is mapped FlexPro_Drive:O.Data. The instance tag contains the parameter Mode_Of_Operation_Value [INT], which is sent to the second word of FlexPro_Drive:O.Data (instance 912).

4.3 AMC_ControlWord_Write

This AOI writes commands to the first word of the SINT[14] output tag, which contains ControlWord (instance 911).



Figure 19 AMC_ControlWord_Write Screen

The ControlWord_Value parameter has a data type of INT (16-bit).



4.4 AMC_TargetPosition_Write

This AOI writes commands to the 3^{rd} and 4^{th} (32-bits) word of the SINT[14] output tag, which contains the Target Position (instance 925)



Figure 20 AMC_TargetPosition_Write Screen

The TargetPosition_Value parameter has a data type of DINT (32-bit).

4.5 AMC_ActualPosition_Write

This AOI writes commands to the 3^{rd} and 4^{th} (32-bits) word of the SINT[14] input tag, which contains the Target Position (instance 915)

Reads	actual
instance	915. Data
type is in	n counts.
AMC_ActualPosition_Rea	d
AMC_ActualPosition_R	ActualPosition_Instance
Drive_Input_Data	FlexPro_Drive:I.Data
ActualPosition_Value	16#0000_003f <

Figure 21 AMC_ActualPosition_Write Screen

The ActualPosition_Value parameter has a data type of DINT (32-bit).



5 All Add-On Instructions

This document gives two examples (AMC_StatusWord_Read and AMC_Drive_Enable) of importing and configuring AOI files into the Control Organizer. If necessary, users can import and configure other additional AOI files from the "AMC AOI" folder from the "Import Add-On Instruction" screen (Figure 3 or Figure 14).

The list below shows all AOI files that can be imported into the Control Organizer. To import and configure a desired AOI file, repeat steps 1 and 2 from *Example 1* or *Example 2* of this document. Select the desired AOI file to import and configure.

The full list of AOI files include...

AMC_StatusWord_Read (used in Example 1) AMC_Enable_Drive (used in Example 2) AMC_ModeOfOperationDisplay_Read AMC_ModeOfOperation_Write AMC_ControlWord_Write AMC_TargetPosition_Write AMC_ActualPosition_Read AMC_TargetVelocity_Write AMC_TargetCurrent_Write AMC_ActualVelocity_Read AMC_ActualCurrent_Read