

Specialists in Information Displays

Electronic Displays, Inc. EDV111 Series LED Signs Allen Bradley AOI (Add on Instruction) Software Manual



Version Control

Version	Date	Author	Change Description
2.0	07/21/2019	c.elston	Updated for EDI ED-3500 Gateway
1.0	12/01/2012	c.elston	Initial release

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1 INTRODUCTION

This manual is provided as a guide for using EVD111 series LED Signs with RS Logix 5000 software by Allen Bradley. This manual provides detailed configuration instructions to configure Ethernet/IP and importing AOIs (add-on-instructions) to RS Logix 5000 software projects.

1.1 Supported PLC Controllers

At this time only Allen Bradley CompactLogix and ControlLogix PLC CPUs that use RS Logix 5000 software are supported. Sample projects can be downloaded from the Electronic Displays, Inc. website.

Allen Bradley Micrologix, SLC500 or PLC5 PLC CPUs are **NOT supported** using RS Logix 500 software. Please refer to the ASCII protocol manual for examples. Typically, you will need to connect the serial port from the PLC directly to the LED sign using the DF1 channel 0 port with these types of PLCs.

1.2 Add-On Instructions

Add-on instructions provided in this manual are used to make ladder logic based programming very easy. These set of AOIs can be imported into your project and reused in ladder flow.

1.3 Supported LED Signs

- EDV111-3280-IND, EDV111-16160-IND, EDV111-16128-IND
- EDV111-1680-IND, EDV11132340-IND, EDV111-16240-IND
- EDV111-24160-IND

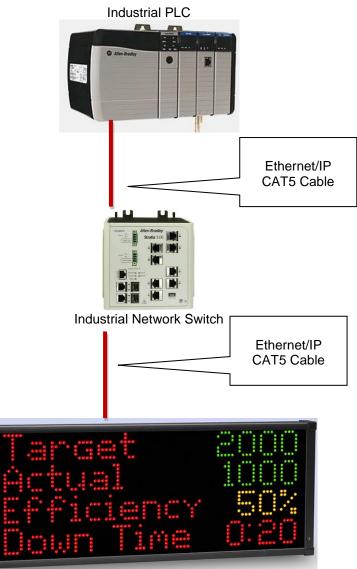
EDV111-1680-IND



2 SYSTEM BLOCK DIAGRAM

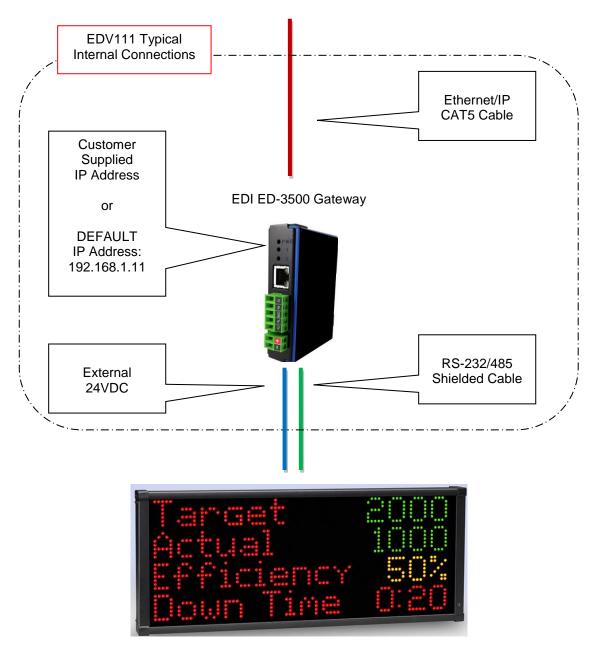
EDV111 LED signs come equipped with an Electronic Displays ED-3500 gateway device that exchanges the Ethernet/IP protocol into ASCII serial strings compatible with the LED signs. This allows for the LED signs to be connected via an Ethernet CAT5 cable and not limited to a short distance RS-232 cable typically connected to traditional LED signs displays.

2.1 Typical Connection Diagram



EDV111 Series LED Sign

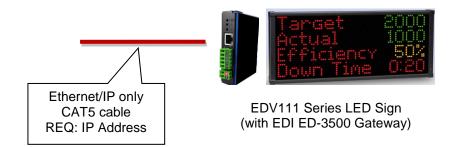
2.2 Internal EDV111 Connection Diagram



EDV111 Series LED Sign

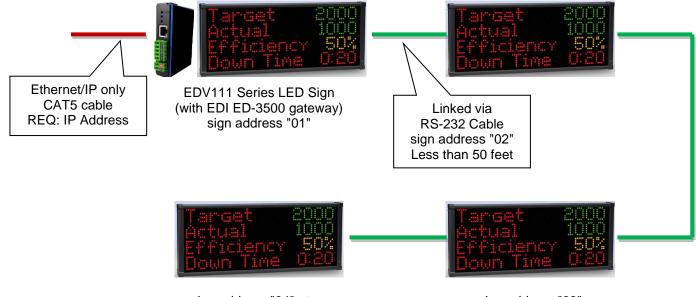
2.3 Single Sign Connection

Single sign connection must have an installed "Master" EDI ED-3500 gateway device.



2.4 Multiple Sign Connection (Less than 50 Feet apart)

At least one EDV111 sign must have an installed "Master" EDI ED-3500 Gateway device. This master can reproduce RS-232 signals in a repeater fashion to slave signs by linking multiple EDV111 series signs together using a standard RS-232 cable. Signs must not be mounted more than 50 feet apart. Downstream "slave" signs will not require internal EDI ED-3500 Gateway.

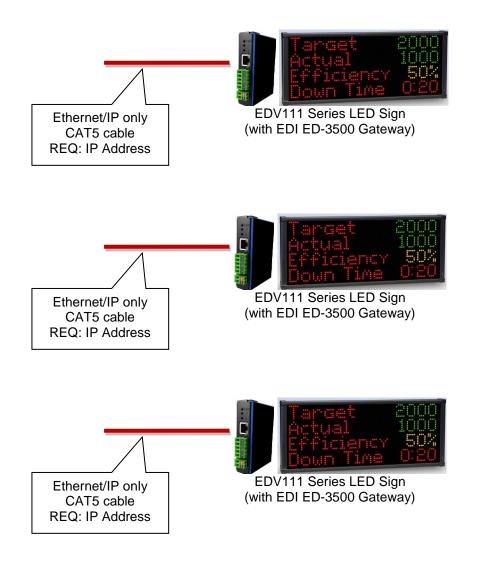


sign address "04" etc... (no internal EDI ED-3500 Gateway)

sign address "03" (no internal EDI ED-3500 Gateway)

2.5 Multiple Sign Connection (More than 50 Feet apart)

Each sign will require an EDV111 to be internally installed as a "Master" EDI ED-3500 Gateway device.



3 CUSTOMIZE THE IP ADDRESS EDI ED-3500 Gateway

Using Google Chrome or web browser. Type in ED-3500 IP address into URL bar.

192.168.1.11 (default IP)

ED				www.electronicdisplays.com
Specialists in I	nformation Disp	lays		MODE: RUNNING ED-3500
Configuration Mode Main Page CONFIGURATION Network Configuration		Device Description: Applica	n Page tion Description Parameters	
Port Configuration ASCII EIP Adapter DIAGNOSTICS -Select-	Network Status Ethernet Port	Link Status 100Mbps, Full Duplex	MAC Address 00:03:F4:0C:40:46	IP Address 192.168.1.11
OTHER -Select- ▼	ASCII Status Device Status: Queued Messages: Last Parsed Error: LED Status:	See Device Level	ected	
	Last I/O FwdOpen Error:	tus Connected and Running Connection already in use Connection Status: Conne		
		? - Support (800) 367-6056 - <u>1</u> 012-2019 Electronic Display:		<u>2007</u>

Press "Configuration Mode" to stop the Gateway.

192.168.1.11				() O C 😌
ED	192.168.1.11	·		www.electronicdisplays.com
Specialists in	communication	the gateway into Configuration M s from running. resume communication.	OK Cancel	MODE: RUNNING ED-3500
Configuration Mode				
Main Page]	Device Description: Applic	cation Description	
CONFIGURATION Network Configuration Port Configuration		Save	e Parameters	
ASCII	Network Status			
EIP Adapter		Link Status	MAC Address	IP Address
DIAGNOSTICS	Ethernet Port	100Mbps, Full Duplex	00:03:F4:0C:40:46	192.168.1.11
-Select-]			
OTHER Select- ▼	Queued Messag Last Parsed Err	es: See Device Level		
	Last I/O FwdOpen En	Status tus: Connected and Running ror: Connection already in us tus: Connection Status: Con	se	

Click on Network Configuration and change the IP Setting. "Restart Now" the Gateway.

ED		www.	electronicdisplays.com
	Information Displays	М	ODE: CONFIGURING ED-3500
Main Page CONFIGURATION Network Configuration Port Configuration ASCII EIP Adapter Restart Now DIAGNOSTICS -Select-	Network Configuration Ethernet Configuration Ethernet Configuration Ethernet MAC Address: 00:03:F4:0C:40:46 Ethernet Link: Auto-Negotiate IP Setting: Static IP ▼ IP Address: 192.168.1.11 Subnet: 255.255.05 Default Gateway: 192.168.1.1 DNS Gateway: 0.0.0		Help
OTHER -Select-	Save Parameters		

3.1 CUSTOMIZE SIGN COMMUNICATION SETTING RS232/485

Click on Port Configuration

Verify Serial Port is Enable

Verify RS-232 or RS485

Verify Serial Settings

Verify wiring on correct terminals as pictured.

Consult with Electronic Display Technical Support to confirm your sign model number serial settings.

Default setting for EV111 series signs are shown below

ED		www.electronicdisplays.com
	Information Displays	MODE: CONFIGURING ED-3500
	Comm Ports Configuration	
Main Page CONFIGURATION Network Configuration Port Configuration ASCII EIP Adapter Restart Now DIAGNOSTICS -Select- ▼ OTHER -Select- ▼	Enable Serial Port: Mode: RS232 Serial Baud: 9600 Parity: None Data Bits: Stop Bits: 1 RS232 RS232 RS232 Save Parameters	

3.2 CUSTOMIZE ASCII SETTING

Click on ASCII

Verify Port "Serial Port"

Verify Receive Data is Enabled and 32 chars (default)

Verify Transmit Data is Enable and 496 chars (default)

IMPORTANT: To make sure sign is updating as fast as possible, confirm delimiters as shown in picture below.

Start "1" and STX 2

End "1" and EXT 3

ED	/	www.elec	tronicdisplays.com
Specialists in	Information Displays		: CONFIGURING ED-3500
	ASCII Configuration		Help
Main Page	-Select-	Delete ASCII Device	
CONFIGURATION	<<	1 >>	
Network Configuration		1-1	
Port Configuration ASCII	✓ Enable ASCII	Device 1	
EIP Adapter			
Restart Now	Port Serial Port	Device Label ASCII01	
DIAGNOSTICS	LED Inactivity 0	0-60000 s	
-Select-	Receive Data (ASCII to 460ESA)	Transmit Data (460ESA to AS	SCII)
OTHER	Enable:	Enable:	
-Select-	Max Message Length: 32 1-1024 chars	Max Message Length: 496	1-1024 chars
	Receive Character Timeout: 0 0-60000 ms	Transmit Timeout: 0	0-60000 ms
		Delay Between Messages:0	0-60000 ms
	Delimiters	Add Delimiters to ASCII Message	
	Start 1 ▼ [STX] 2 0x02 ▼ [NUL] 0 0x00 ▼	Start 0 ▼ [NUL] 0 0x00 ▼	[NUL] 0 0x00 V
	End 1 • [ETX] 3 0x03 • [NUL] 0 0x00 • Remove Delimiters from ASCII Message:	End 0 ▼ [NUL] 0 0x00 ▼	[NUL] 0 0x00 V
	Remove Delimiters from ASCIT Message.		
	Save P	arameters	

3.3 VERIFY COMMUNICATION WITH SIGN (WITHOUT PLC LADDER)

The ED-3500 supports an easy troubleshooting method to confirm communication and wiring without using a PLC

After configuration of IP Address Configuration, Port Configuration and ASCII Configuration, while the Gateway is in run mode, confirm "Mode: Running" in upper right corner.

EDI				www.electronicdisplays.com
Specialists in I	nformation Disp	lays		MODE: RUNNING ED-3500
Configuration Mode Main Page CONFIGURATION		Device Description: Applica		
Network Configuration Port Configuration		Save	Parameters	
ASCII EIP Adapter	Network Status	Link Status	MAC Address	IP Address
DIAGNOSTICS -Select-	Ethernet Port	100Mbps, Full Duplex	00:03:F4:0C:40:46	192.168.1.11
-Select- OTH Diagnostic Info Logging	tus Device Status: ued Messages: Last Parsed Error: LED Status:	See Device Level	ected	
		Connected and Running Connection already in use		

Choose Diagnostics, then Diagnostic Info

Choose ASCII then View

ED	1		www.electronicdisplays.com
Specialists in I	MODE: RUNNING ED-3500		
Configuration Mode	Diagnostics		
Main Page	All Device Status View		Clear All Values
CONFIGURATION	All Device Status		
Network Configuration	System		
Port Configuration	ASCII		Help
ASCII	Ethernet/IP Adapter		Clear Buffers
EIP Adapter	Device Status		
DIAGNOSTICS	Connected and Running		
-Select-	LED Status		
OTUER	Connection Status:	Connected	
OTHER -Select-	Variables		
Colour	Successful Transmit Count:	158	
	Successful Receive Count:	0	
	Received due to Length:	0	
	Received due to Delimiters:	0	
	Received due to Timeout:	0	
	Received but Discarded:	0	
	Successful Parsed Messages:	0	
	Failed Parsed Messages:	0	
	Status Strings		
	Queued Messages: Last Parsed Error:	See Device Level	

Next Choose Serial Port then View

ED	/		www.electronicdisplays.com
Specialists in I	Information Displays		MODE: RUNNING ED-3500
Configuration Mode	Diagnostics		
Main Page	ASCII View		Clear All Values
CONFIGURATION Network Configuration	All ASCII View		
Port Configuration	Serial Port		Help
ASCII	Connected and Running		Clear Buffers
EIP Adapter	LED Status		
DIAGNOSTICS	Connection Status:	Connected	
-Select-	Variables		
	Successful Transmit Count:	205	
OTHER -Select-	Successful Receive Count:	0	
Colour	Received due to Length:	0	
	Received due to Delimiters:	0	
	Received due to Timeout:	0	
	Received but Discarded:	0	
	Successful Parsed Messages:	0	
	Failed Parsed Messages:	0	
	Status Strings		
	Queued Messages:	See Device Level	
	Last Parsed Error:		

At the bottom copy and paste this ASCII command:

^B01^ADAHELLO^C

	0064:	31 30	5E 43		10^C	11
Send Dat	ta from G	ateway	to ASCII (Used for Te	sting Only)		
	^ <u>B01</u> ^ADA	HELLO^C				
				Send ASCII Message		_//

Confirm sign says "HELLO" on the display

Sign should be ready for PLC ladder logic.

4 QUICK START USING TEMPLATE PLC PROGRAM

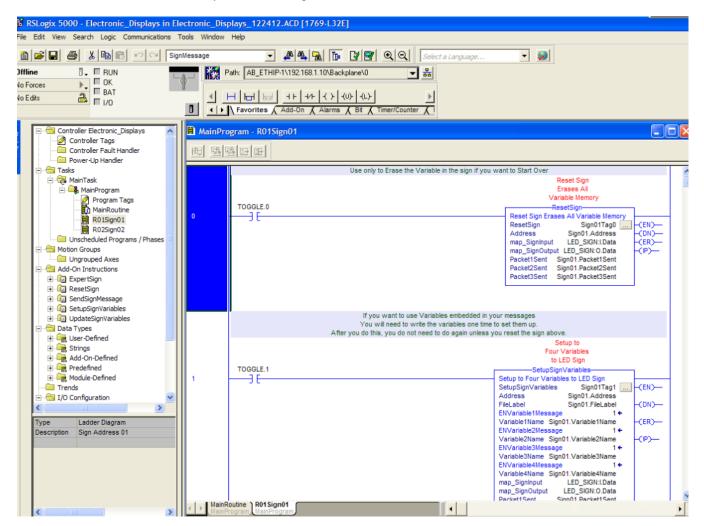
Download the sample PLC program from the Electric Displays website.

Electronic_Displays_122412.acd (or latest version supplied in ZIP file)

4.1 Quick Start with Template PLC Program

The purpose of the template sample program is provide a bases of settings and tags that are setup in the PLC along with sample ladder logic that can be written to send messages to the sign.

This template file is design to communicate with two signs. Sign #1 is a master sign which is connected via an RS-232 cable daisy chained to Sign #2.



4.2 Update Sign IP Address in Sample PLC Program

Open the Ethernet Module setting and update the IP Address of the sample program. The sample program is setup with the default sign IP address of 192.168.1.11. If you customized your IP, you will need to update this target address below.

Program Tags		AainProgram - R01Sign01 醫醫醫歷	
ROLDIGING T ROLDIGING T ROLDI		Use only to Erase the Variable in the sign if you want to Start C)ver
Add-On Instructions	0	Connection Module Info Type: ETHERNET-MODULE Generic Ethernet Module	
Data Types Data Types Add-On-Defined		Vendor: Allen-Bradley Parent: LocalENB Name: LED_SIGN Description: Anybus Communicator	t
Predefined Module-Defined Trends J/O Configuration Backplane, CompactLogix Syster		Input: 100 32 (8-bit) Output: 150 496 (8-bit) Comm Format: Data - SINT Configuration: 1 0 (8-bit)	00
□ 1769-L32E Electronic_Displar □ 1769-L32E Ethernet Port Loc □ □ Ethernet 1769-L32E Ethernet ETHERNET-MODULE	1	Address / Host Name	S pur to Sig
Module Defined Tags		Status: Offline OK Cancel Apply Help	
LED_SIGN:1 LED_SIGN:0 LED_SIGN:C Description Anybus Communicator Status Offline		ENVariable21 Variable2Na ENVariable3Na ENVariable41 Variable4Na	me Sig Messag me Sig Messag

4.3 Update Messages and Sign Format Tags

Open the Controller Tags and update the Sign01 and Sign02 tags with the message and formatting you desire. See the description or AOI help file to determine which options are available.

- Controller Electronic_Displays	Controller Tags - Elec	tronic_Displays(controller)		
Controller Tags	Scope: Display Electronic_Display	✓ Show Show All		
Controller Fault Handler	,-			
E Tasks	Name	△ Value	Style Data Type	Description
🖻 🤤 MainTask	OEEScore	99.82241	Float REAL	
🖹 😋 MainProgram	Sign01	{} {.	LEDSIGN	
- 🧟 Program Tags	🛨 Sign01 Address	'01' {.	STRING	"00"=all signs "01"=sign address 1 "02"=sign address 2 etc per protocol (must b
MainRoutine	E Sign01.CommandCod	e 'A' {.	STRING	"A"=write restart "B"=write variable "C"=special "D"=write no restart
R01Sign01	± Sign01.FileLabel	'A' {.	STRING	Default is = A
Unscheduled Programs / Phases	+ Sign01.Text1Messag	· Total ' {.	STRING	Actual Text Line 1
Motion Groups	+ Sign01.Text2Messag	Rejects ' (.	STRING	Actual Text Line 2
Ungrouped Axes	🛨 Sign01.Text3Messag	Cycle Time ' (.	STRING	Actual Text Line 3
Add-On Instructions	+ Sign01.Text4Messag	OEE Score ' (.	STRING	Actual Text Line 4
ExpertSign	+ Sign01.TextFont	·0· (.	STRING	"0"=SS7 "1"=SF7 "2"=SF10 "3"=SS16 "4"=SF16
ResetSign SendSignMessage	+ Sign01.TextColor	'1' (.	STRING	"0"=Red "1"=Green "2"=Yellow "3"=Rainbow
E SetupSignVariables	+ Sign01.TextAlign	'L' (.	STRING	"M"=middle line "T"=top line "B"=bottom line "F"=fill (best for variables) "L"=left "R
UpdateSignVariables	+ Sign01.TextAttribute	'5' (.	STRING	"0"=flashing off "1"=flashing on "2"=wide off "3"=wide on "4"=bold off "5"=bold o
🖃 📇 Data Types	+ Sign01.TextEffect	'H' (.	STRING	"S"=scrolls "H"=hold "F"=flash "A"=slide up "B"=slide down "C"=slide left "D"=slid
🕀 🛄 User-Defined 📃	+ Sign01.TextSpeed	'3' (.	STRING	Options = 1 - 8, 3:Default 1=Fast 8=Slow
E Strings	+ Sign01.TextPause	'02' (.	STRING	Options = 00 - 99, 02:Default defined in seconds [must be two digits] if not will not
Add-On-Defined Predefined	+ Sign01.Variable1Nam	e יטי (.	STRING	Name of variable Default is = U
H Module-Defined	+ Sign01.Variable2Nam	e '∀' {.	STRING	Name of variable Default is = V
Trends	+ Sign01.Variable3Nam	e 'W' {.	STRING	Name of variable Default is = W
🖃 🔄 I/O Configuration 🛛 🖌	+ Sign01.Variable4Nam	e 'X' (.	STRING	Name of variable Default is = X
	+ Sign01.Variable1Valu	· 10136' (.	STRING	Actual Variable1 to be Sent (text format)
	+ Sign01.Variable2Valu		STRING	Actual Variable2 to be Sent (text format)
	+ Sign01.Variable3Valu		STRING	Actual Variable3 to be Sent (text format)
	+ Sign01.Variable4Valu		STRING	Actual Variable4 to be Sent (text format)
	+ Sign01.VariableFont	'0' (.	STRING	"0"=SS7 "1"=SF7 "2"=SF10 "3"=SS16 "4"=SF16
	+ Sign01.VariableColor	101 6.	STRING	"0"-Red "1"-Green "2"-Yellow "3"-Rainbow
	+ Sign01.VariableAttribu		STRING	"0"=flashing off "1"=flashing on "2"=wide off "3"=wide on "4"=bold off "5"=bold of
	+ Sign01.Packet1Sent	*^B01^ABU10136^C^B (.	STRING	The actual packet sent to the sign. (Packet1)
			STRING	The actual packet sent to the sign (Packet2)
< >	Sign01 Packet2Sent Monitor Tags (Edit	Tags /		•

4.4 Create and Customize Ladder Logic

Create ladder logic to enable the rungs in sequence to send message to the sign. If this is the first time you have connect the PLC to the sign, enable the Reset Sign function block, which erases all variable date allocated in the sign, then enable the SetupSignVaribles which will allocated memory space in the sign to accept dynamic variables that can be written to the sign using the UpdateSignVarible AOI. Send message to the sign by enabling the SendSignMessage AOI.

围围	ogram - R01Sign01	
	Use only to Erase	the Variable in the sign if you want to Start Over
0	TOGGLE.0][Reset Sign Erases All Variable Memory Reset Sign Reset Sign Reset Sign Reset Sign Reset Sign Address Address Sign01Tag0 (EN)- Address Sign01.Address map_SignOutput LED_SIGN:Data map_SignOutput LED_SIGN:O.Data Packet1Sent Sign01.Packet2Sent Packet2Sent Sign01.Packet3Sent
	You will need	o use Variables embedded in your messages to write the variables one time to set them up. o not need to do again unless you reset the sign above. Setup to Four Variables to LED Sign SetupSignVariables
1		Setup to Four Variables to LED Sign Setup to Four Variables to LED Sign Setup SignVariables Sign01Tag1(EN) Address Sign01.Address FileLabel Sign01.FileLabel -(DN) ENVariable1Message 1 + Variable2Message 1 + Variable2Mame Sign01.Variable1Name -(IP) ENVariable3Message 1 + Variable3Mame Sign01.Variable3Name ENVariable4Message 1 + Variable4Message 1 + Variable5Message 1 +

5 IMPORTING WITH NEW PROGRAM OR EXISITING PLC PROGRAM

5.1 Start a new project with RS Logix 5000

Click File, New Project to start a new PLC project.

Choose PLC Type.

Choose PLC firmware revision.

Name your PLC Project.

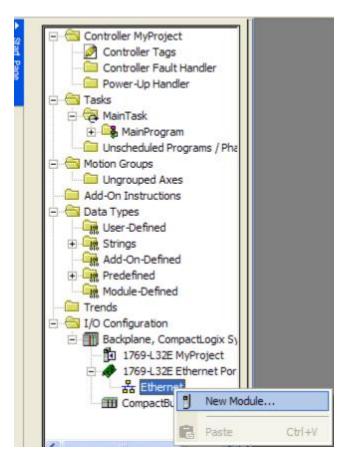
New Controlle	r	X
Vendor:	Allen-Bradley	
Туре:	1769-L32E CompactLogix5332E Controller	OK
Revision:		Cancel
	16 17 ancy Enabled	Help
Name:		
Description:		
	M	
Chassis Type:	<none></none>	
Slot:	0 Safety Partner Slot:	
Create In:	C:\RSLogix 5000\Projects	Browse

5.2 Create a New Ethernet Connection

In the controller tree view.

Right click the Ethernet ICON

Choose New Module



Choose Communication.

Choose ETHERNET-MODULE (Generic Ethernet Module)

Click OK

Module	Description	Vendor	
ETHERNET-BRIDG	1788 10/100 Mbps Ethernet Bridge, Twi 1788 10/100 Mbps Ethernet Bridge w/Er 1794 10/100 Mbps Ethernet Adapter, Tr 1794 10/100 Mbps Ethernet Adapter, Tr h 10/100 Mbps Ethernet Port on DriveLog E Generic EtherNet/IP CIP Bridge LE Generic EtherNet/IP CIP Bridge LE Generic EtherNet/IP CIP Bridge LE Generic EtherNet/IP Ethernet Adapter, Twisted-Pair Media	nhanced Web Serv. wisted-Pair Media wisted-Pair Media	Allen-Bradley Allen-Bradley Allen-Bradley Allen-Bradley Allen-Bradley Allen-Bradley Allen-Bradley Parker Hannif
•			•
		Find	Add Favorite
By Category By	Vendor Favorites	<u>.</u>	

Name the Ethernet Connection: **LED_SIGN** (This will be the prefix name of the tags in the controller.)

Enter the Anybus Communicator Default IP address or your custom IP address: **192.168.1.11** or **custom IP address** (xxx.xxx.xxx)

Choose Comm Format Data-SINT (Important)

Enter Required Assembly Instance Input: 100 and 32 bytes Output: 150 and 496 bytes Configuration: 1 and 0 bytes

Click OK

New Module						×
Type: Vendor: Parent: Name: Description:	ETHERNET-MODULE Generic Etherne Allen-Bradley LocalENB LED_Sign	Connection Para	Assembly Instance: 100	Size:	. (8-bit) . (8-bit)	
Comm Format Address / H IP Addre C Host Na	ost Name ess: 192 . 168 . 1 . 11	Output: Configuration: Status Input: Status Output:				
🔽 Open Mod	ule Properties	OK	Cano	el	Help	

Choose RPI interval:

Default 10.0 ms is ok

Click OK

Module Properties: LocalENB (ETHERNET-MODULE 1.1)
General Connection Module Info
<u>R</u> equested Packet Interval (RPI): 10.0 <u>+</u> ms (1.0 - 3200.0 ms) ☐ Inhibit Module ☐ Major Fault On Controller If Connection Fails While in Run Mode
Module Fault
Status: Offline OK Cancel Apply Help

Confirm Controller Tags

Confirm Ethernet Module is configured

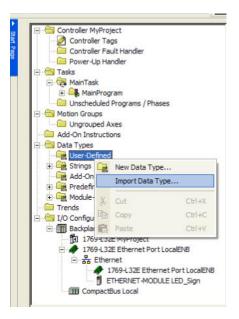
Controller MyProject	Scope: 🚺 MyProject	•].	Sh <u>o</u> w S	Show All			
Controller Tags	Name	۵	1	Value	+	F+	Style	Data Type
Power-Up Handler	+-LED_Sign:C		T		{}	{.		AB:ETHERNET
Tasks			1		{}			AB:ETHERNET
🗏 🖓 MainTask	+-LED_Sign:0		t		{}			AB:ETHERNET_
🗐 🕞 MainProgram	El ceb_olgrico			-	()	1.		Hoter menter_
Unscheduled Programs / Phases								
- G Motion Groups								
Ungrouped Axes								
Add-On Instructions								
🗐 🔂 Data Types								
🖳 🔙 User-Defined								
🕀 🙀 Strings								
🗄 🛄 Predefined								
🗈 🗔 Module-Defined								
Trends								
E I/O Configuration								
Backplane, CompactLogix System 1769-L32E MyProject								
□ # 1769-L32E Ethernet Port LocalENB								
Ethernet								
1769-L32E Ethernet Port LocalENB								
ETHERNET-MODULE LED_Sign								
CompactBus Local								

5.3 Importing Data-Types

In the controller tree view

Right click User-Defined under "Data Types"

Choose Import Data Type



Browse to the folder containing Data Type

Import LEDSIGN.L5X file

Click OK



Confirm no version conflicts

Click OK

Import Configuration					
문 또 Find:	• <u>46</u> 46	Find/Replace			
Find Within: Final Name					
Import Content:	Configure Data T	ine Properties			
Data Types LEDSIGN Errors/Warnings	Import Name:	LEDSIGN			
	Operation:	Create	-		
	Final Name:	LEDSIGN	✓ Properties		
	Description:		~		
			~		
		, s			
			OK	Cancel	Help
Ready					

Confirm Data Type "LEDSIGN"

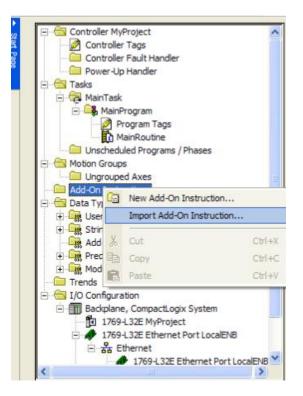
Controller MyProject Controller Tags Controller Fault Handler Power-Up Handler MainTask MainTask MainProgram Unscheduled Programs / Phases Motion Groups Motion Groups Add-On Instructions	Name: Description:	LEDSIGN	×
Data Types Jose - Defined	Members:		Data Type Size: 3080 byte(s)
100 LEDSIGN	Name	Data Type Style	e Description
🕀 💭 Strings	🕂 Address	STRING	Options = 00,01,02 "00"=all signs "01"=sig
	🛛 🕀 CommandCode	STRING	Options = A,B,C,D per protocol "A"=write t
Green Predefined Module-Defined	🕂 FileLabel	STRING	Default is = A
Trends	🛛 🕀 Text1Message	STRING	Actual Text Line 1
⊡ ·· 🔄 I/O Configuration	🕂 🕂 Text2Message	STRING	Actual Text Line 2
🖻 📶 Backplane, CompactLogix System	🕂 🕂 Text3Message	STRING	Actual Text Line 3
1769-L32E MyProject	🕂 🕂 Text4Message	STRING	Actual Text Line 4
□	🕀 TextFont	STRING	Options = 0,1,2,3,4 per protocol "0"=SS7 "
1769-L32E Ethernet Port LocalENB	E TextColor	STRING	Options = 0,1,2,3 per protocol 0=Red 1=G
ETHERNET-MODULE LED Sian	🕀 TextAlign	STRING	Options = 0,1,2,3,4,5,6,7,8 per protocol "0
< >	TextEffect	STRING	Options = S,H,F per protocol "S"=scrolls "
Description	TextSpeed	STRING	Options = 1 - 8, 3:Default per protocol 1=F
Size 3080 Bytes	🕀 TextPause	STRING	Options = 00 - 99, 02:Default per protocol
	🕀 Variable1Name	STRING	Name of variable Default is = U
	🕀 Variable2Name	STRING	Name of variable Default is = V
	🕀 Variable3Name	STRING	Name of variable Default is = W
	🕀 🕀 Variable4Name		Name of variable Default is = X
	🛛 🕀 Variable1Value		Actual Variable1 to be Sent (text format)
	🛛 🕀 Variable2Value	STRING	Actual Variable2 to be Sent (text format)
	🛛 🕀 Variable3Value	STRING	Actual Variable3 to be Sent (text format)

5.4 Importing Add-on Instructions

In the controller tree view

Right click Add-On Instruction

Choose Import Add-On Instruction



Browse to the folder containing Add-On Instructions

Import all files with .L5X extension.

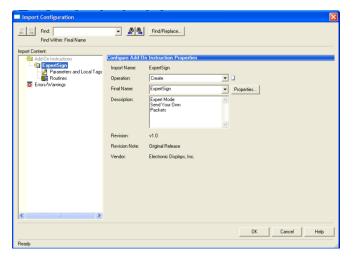
Do this process until all add-on instructions are imported.

Click OK

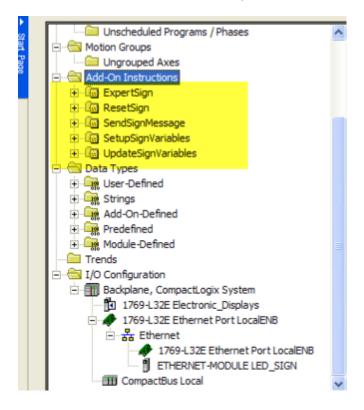
Import Instruct	ion					X
Look in:	exports		• +		* 📰 •	
My Recent Documents Desktop My Documents	영 ResetSign.L5X 영 SendSignMessa 영 SetupSignVariat 안 UpdateSignVaria	bles.L5X				
My Computer						
(File name:	ExpertSign.L5X		•	- I	Import
My Network Places	Files of type:	RSLogix 5000 XML Files (*.L5	X)	1		Cancel
1 Iduce	Files containing:	Instruction		•	·	Help
	Into:	Add-On Instructions				
						//

Confirm no version conflicts

Click OK



Confirm all Add-on Instructions are imported



		lessage			• 28 qq		juage
line		🔄 🌇 Path:	AB_ETHIP-	1\192.168.1.10\B	ackplane\0* 🗨	品	
Forces	D OK						
Edits		I I I	Hert hert	Expe Rese Send rtSiai tSian Sian	Setu Upda	▶	
	L 1/0				ns & Bit & Timer/Counter	7	
			avonies		SendSignMessage v1.0	A	
			vertices to				
	ller Electronic_Displays			5 🕒 🕀	SendSignMessa		1
	ntroller Tags				 Send up to Four Lines to SendSignMessage 		(EN)
	ntroller Fault Handler		e		Address	?	
	wer-Up Handler		0 e		CommandCode	2	-CDN)
🖻 🔄 Tasks			e		FileLabel	2	0.00
🖨 🤕 Ma			e	•	ENText1Message	??	-(P)-
	MainProgram		1 e		Text1Message	?	
	Program Tags				ENText2Message	??	(ER)
	MainRoutine		e		Text2Message	?	
🗀 Un	scheduled Programs / Phases	=	е		ENText3Message	??	
- G Motion			2 е		Text3Message	?	
	arouped Axes		e		ENText4Message	??	
Add-O			e		Text4Message ENTextFormats	??	
+ Ex			е		TextFont	2	
+ 🕒 Re			3 е		TextColor	?	
	ndSignMessage		e		TextAlian	2	
	tupSignVariables		e e		ENTextSpecials	??	
			4 e		TextEffect	?	
	dateSignVariables		- e		TextSpeed	?	
🖻 🖶 🔂 Data T			e		TextPause	?	
010	er-Defined		е		ENVariable1Message	??	
🕂 🖳 Str	-		5 e		Variable1Name	?	
010	d-On-Defined		е		ENVariable2Message	??	
🛨 🛄 Pre			e		Variable2Name ENVariable3Message	? ??	
🛨 🗐 🙀 Mo	dule-Defined	~	e		Variable3Name	?	
			6 e		ENVariable4Message	22	
Туре	Ladder Diagram (Main)		e		Variable4Name	2	
Description			e		ENVariableFormats	22	
			7 e		VariableFont	?	
			'e		VariableColor	?	
			e		map_SignInput	?	
			е		map_SignOutput	?	
			8 e		Packet1Sent	?	
			е		Packet2Sent Packet3Sent	?	
			e		Packet3Sent Packet4Sent	2	
			e		Packet5Sent	2	
			9 e e		Packet6Sent	2	

Confirm AOIs are added to Toolbar in RS Logix 5000

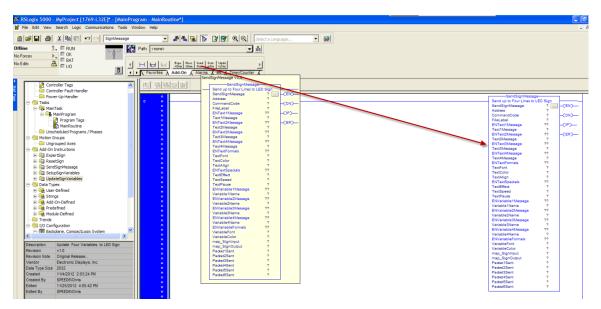
6 USING THE AOI INSTRUCTIONS IN THE PROJECT

6.1 Add AOIs to Ladder Programming via Drag and Drop

Click on the Add-On Toolbar

Drag and Drop the desired control AOI block to a new rung

TIP: You can also drag and drop from the Add-On Menu Tree on the left as well



6.2 Creating Unique Tags for AOI

Under the AOI "Tag" parameter, begin to type a desired tag name.

Best Practice here might be to name the tag with the sign address. In this case, the default sign address is "01". Sign01Tag1 might be an example.

Be sure you scope your tag properly.

			_
SendSignMess	-		
 Send up to Four Lines t SendSignMessage Sig Address 		-(EN)-	
CommandCode	2 Undefined	Tag: Sign01	Tag1
ENText1Message	??		<u> </u>
Text1Message	?		
ENText2Message	??	-(ER)	
Text2Message	?		
ENText3Message	??		
 Text3Message	?		
ENText4Message	??		
Text4Message	?		
ENTextFormats	??		
 TextFont	?		
TextColor	?		
TextAlign	?		
 ENTextSpecials	??		
TextEffect	?		
TextSpeed	?		
TextPause	?		
ENVariable1Message	??		

New Tag		
Name:	Sign01Tag1	OK
Description:		Cancel
		Help
	×	
Usage:	<normal></normal>	
Туре:	Base Connection	
Alias For:	_	
Data Type:	SendSignMessage	
Scope:	🚺 MyProject 🔽	
Style:	_	
🗖 Open Cor	nfiguration	

6.3 Creating Unique Tags for Sign Parameters

Each sign, needs a "parameter" file which it retrieves all information and settings from the PLC to the sign.

Best practice would be to create a tag with the name of your sign.

Choose LEDSIGN as the

▲ Start Page	Controller MyProject	rags ine		MyProject e ED_Sign:C ED_Sign:I ED_Sign:0 gn01Tag1 gn	
S	cope: MyProject	Show Show All			
	Name 🛆	Alias For	Base Tag	Data Type	Style
	LED_Sign:C			AB:ETHERNET	
				AB:ETHERNET	
	+-LED_Sign:0			AB:ETHERNET	
	±-Sign01Tag1			SendSignMessage	
×	Sign			DINT	Decimal
٦					



Map the DATA TYPE of your "Sign" tag to the LEDSIGN data type.

(This data type was imported earlier)

Scope: MyProject Show Show All					
Name	△ Alias For		Base Tag	Data Type	Style
				AB:ETHERNET	
				AB:ETHERNET	
		Select Data Ty	ре		
		Data Types:			
Sign		LEDSIGN			ОК
2					
		FUNCTION_GET HL_LIMIT IMC INT INTEGRATOR LEAD_LAG LEAD_LAG_SET LEDSIGN LIGHT_CHETAL Array Dimension Dim 2 0	C_ORDER	Dim 0	Cancel Help

Scope: MyProject Show Show All					
Name	△ Alias For	Base Tag	Data Type		
			AB:ETHERNET		
			AB:ETHERNET		
++LED_Sign:0			AB:ETHERNET		
			SendSignMessage		
⊞ -Sign			LEDSIGN		
A					

6.4 Setting up the Sign Tag

Sign tag will now need parameter information filled out.

Click the **III** ICON to begin filling in initial information.

Use the description column for "help".

Several of the parameters have "defaults" that can be used.

Hover mouse over description column to see details.

Name 2	Value 🔸	Force Mask*	Style	Data Type	Description
-Sign	{}	{}		LEDSIGN	Sign Parameters
+ Sign.Address		{}		STRING	Sign Parameters Options = 00,01,02
+ Sign.CommandCode		{}		STRING	Sign Parameters Options = A,B,C,D p
+ Sign.FileLabel		{}		STRING	Sign Parameters Default is = A
+ Sign.Text1Message		{}		STRING	Sign Parameters Actual Text Line 1
🛨 Sign. Text2Message		{}		STRING	Sign Parameters Actual Text Line 2
+ Sign.Text3Message		{}		STRING	Sign Parameters Actual Text Line 3
+ Sign. Text4Message		{}		STRING	Sign Parameters Actual Text Line 4
+ Sign. TextFont		{}		STRING	Sign Parameters Options = 0,1,2,3,4
+ Sign. TextColor		{}		STRING	Sign Parameters Options = 0,1,2,3 p
+ Sign. TextAlign		{}		STRING	Sign Parameters Options = 0,1,2,3,4
+ Sign. TextEffect		{}		STRING	Sign Parameters Options = S,H,F pe
+ Sign.TextSpeed		{}		STRING	Sign Parameters Options = 1 - 8, 3:D
+ Sign. TextPause		{}		STRING	Sign Parameters Options = 00 - 99,
+ Sign.Variable1Name		{}		STRING	Sign Parameters Name of variable D
+ Sign.Variable2Name		{}		STRING	Sign Parameters Name of variable D
+ Sign.Variable3Name		{}		STRING	Sign Parameters Name of variable D
+ Sign.Variable4Name		{}		STRING	Sign Parameters Name of variable D
+ Sign.Variable1Value		{}		STRING	Sign Parameters Actual Variable1 to
+ Sign.Variable2Value		{}		STRING	Sign Parameters Actual Variable2 to
+ Sign.Variable3Value		{}		STRING	Sign Parameters Actual Variable3 to

\$ Scope: 🚺 MyProject 💌	Show Show All				
Name 🛆	Value 🔸	Force Mask*	Style	Data Type	Description
⊟-Sign	{}	{}		LEDSIGN	Sign Parameters
+ Sign.Address	'01'	{}		STRING	Sign Parameters Options = 00,01,02 ''00''=all signs
+ Sign.CommandCode	'A'	{}		STRING	Sign Parameters Options = A,B,C,D per protocol "A
🛨 Sign FileLabel	'A'	{}		STRING	Sign Parameters Default is = A
🛨 Sign Text1Message	'Message1'	{}		STRING	Sig Source: (Type) <ledsign.commandcode></ledsign.commandcode>
🛨 Sign Text2Message	'Message2'	{}		STRING	Sig Sign Parameters Options = A,B,C,D
+ Sign Text3Message	'Message3'	{}		STRING	Sig per protocol
+ Sign. Text4Message	'Message4'	{}		STRING	Sig "A"=write text "B"=write variable
+ Sign. TextFont		{}		STRING	Sig "C"=special
+ Sign.TextColor		{}		STRING	Sig "D"=write text no
+ Sign TextAlign		{}		STRING	Sign Parameters Options = 0,1,2,3,4,0,6,7,8 per pr

Example shown below of Sign Tag with all parameters filled in.

Sign "01" will receive all these parameters when AOI instruction is executed.

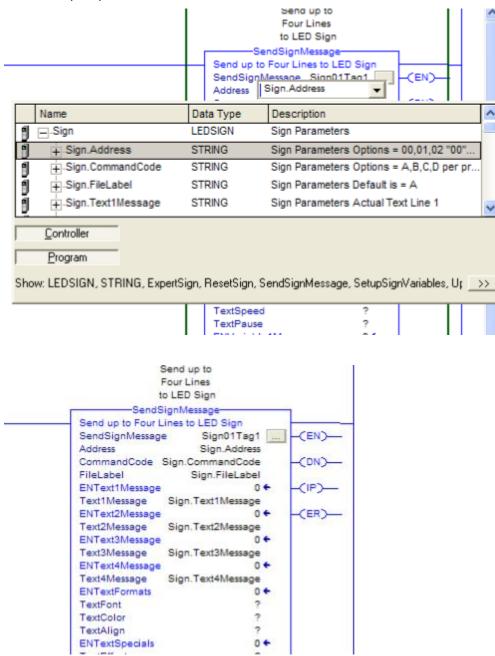
lame	∆ Value	← F+	Style	Data Type
Sign		{} {.		LEDSIGN
+ Sign.Address		'01' {.		STRING
+ Sign.CommandCod	le	'A' {.		STRING
+ Sign.FileLabel		'A' {.		STRING
+ Sign. Text1Messag	e	'Total : ' {.		STRING
🛨 Sign. Text2Messag	e	Rejects : ' {.		STRING
+ Sign. Text3Messag	e	'Cycle : ' {.		STRING
+ Sign. Text4Messag	e	'OEE : ' {.		STRING
+ Sign. TextFont		'1' {.		STRING
+ Sign.TextColor		'1' {.		STRING
🛨 Sign. TextAlign		'0' {.		STRING
 Sign. TextEffect 		'd' {.		STRING
+ Sign.TextSpeed		'3' {.		STRING
+ Sign. TextPause		'02' {.		STRING
+ Sign.Variable1Nan	ne	יטי {.		STRING
+ Sign.Variable2Nan	ne	'V' {.		STRING
+ Sign.Variable3Nan	ne	'W' {.		STRING
+ Sign.Variable4Nan	ne	'X' {.		STRING
🛨 Sign.Variable1Valu	le	'30990' {.		STRING
🛨 Sign.Variable2Valu	le	'30990' {.		STRING
🛨 Sign.Variable3Valu	le	'30990' {.		STRING
🛨 Sign.Variable4Valu	ie	'30990' {.		STRING
+ Sign.VariableFont		'1' {.		STRING
+ Sign.VariableColor		'0' {.		STRING
+ Sign.Packet1Sent	'^B01^AAA	F1^01^U0 {.		STRING
+ Sign.Packet2Sent	'^00^NW^F1	1^01^MOEE {.		STRING
+ Sign.Packet3Sent				STRING
+ Sign.Packet4Sent				STRING
+ Sign.Packet5Sent				STRING
+ Sign.Packet6Sent				STRING

6.5 Mapping Sign Tag to AOI Function Block in Ladder Logic

Begin mapping all the sign tags to the fields in the AOI function blocks.

Sign tag parameters are word for word matched.

Map all parameters.



7 ELECTRONIC DISPLAY AOI INSTRUCTIONS

7.1 Send Sign Message AOI

Instruction used to send up to four messages to a sign. (see video tutorials)

Send	SignMessage	1
Send up to Four L	ines to LED Sign	
SendSignMessage	Sign01Tag2	-(EN)
Address	Sign01.Address	South States
CommandCode	Sign01.CommandCode	-(DN)
FileLabel	Sign01.FileLabel	3000
ENText1Message	1+	-(IP)-
Text1Message	Sign01.Text1Message	s51-535
ENText2Message	1+	-(ER)
Text2Message	Sign01.Text2Message	10000
ENText3Message	16	
Text3Message	Sign01.Text3Message	
ENText4Message	16	
Text4Message	Sign01.Text4Message	
ENTextFormats	1 €	
TextFont	Sign01.TextFont	
TextColor	Sign01.TextColor	
TextAlign	Sign01.TextAlign	
TextAttribute	Sign01.TextAttribute	
ENTextSpecials	0 🗧	
TextEffect	Sign01.TextEffect	
TextSpeed	Sign01.TextSpeed	
TextPause	Sign01.TextPause	
ENVariable1Mess	age 1 🗲	
Variable1Name	Sign01.Variable1Name	
ENVariable2Mess	age 1 🗲	
Variable2Name	Sign01.Variable2Name	
ENVariable3Mess	age 1 🗲	
Variable3Name	Sign01.Variable3Name	
ENVariable4Mess	age 1 🗲	
Variable4Name	Sign01.Variable4Name	
ENVariableForma	ts 1 +	
VariableFont	Sign01.VariableFont	
VariableColor	Sign01.VariableColor	
VariableAttribute	Sign01.VariableAttribute	
map_SignInput	LED_SIGN:1.Data	
map_SignOutput	LED_SIGN:O.Data	
Packet1Sent	Sign01.Packet1Sent	
Packet2Sent	Sign01.Packet2Sent	
Packet3Sent	Sign01.Packet3Sent	
Packet4Sent	Sign01.Packet4Sent	
Packet5Sent	Sign01.Packet5Sent	
Packet6Sent	Sign01.Packet6Sent	

Operand	Type	Description
	. , , , , , , , , , , , , , , , , , , ,	
SendSignMessage	Tag	Unique Tag
Address	String	Two character sign address "00"
CommandCode	String	Protocol Command "A,B,C,D"
Filelabel	String	Protocol Command "A" typically
ENText1Message	Bool	Flag to send message 1=send 0=no
Text1Message	String	Actual message in string to send
ENText2Message	Bool	Flag to send message 1=send 0=no
Text2Message	String	Actual message in string to send
ENText3Message	Bool	Flag to send message 1=send 0=no
Text3Message	String	Actual message in string to send
ENText4Message	Bool	Flag to send message 1=send 0=no
Text3Message	String	Actual message in string to send
ENtextFormats	Bool	
TextFormats		Flag to format message 1=yes 0=no Protocol Command Font Size
	String	
TextColor Text Align	String	Protocol Command Color
Text Align	String	Protocol Command Text Align
TextAttribute	String	Protocol Command Text Styling
ENTextSpecials	Bool	Flag to format effects 1=yes 0=no
TextEffect	String	Protocol Command Text Special
TextSpeed	String	Protocol Command Text Speed
TextPause	String	Protocol Command Text Pause
ENVariable1Message	Bool	Flag to send variable 1=send 0 =no
Variable1Name	String	Protocol Command Variable Name
ENVariable2Message	Bool	Flag to send variable 1=send 0 =no
Variable2Name	String	Protocol Command Variable Name
ENVariable3Message	Bool	Flag to send variable 1=send 0 =no
Variable3Name	String	Protocol Command Variable Name
ENVariable4Message	Bool	Flag to send variable 1=send 0 =no
Variable4Name	String	Protocol Command Variable Name
ENVariableFormats	Bool	Flag to format variable 1=yes 0=no
VariableFont	String	Protocol Command Font Size
VariableColor	String	Protocol Command Color
VariableAtrribute	String	Protocol Command Text Styling
map_SignInput	I:Data	Ethernet/IP Input Data Mapping
map_SignOutput	O:Data	Ethernet/IP Output Data Mapping
Packet1Sent	String	82 Length String Debug of Packet
Packet2Sent	String	82 Length String Debug of Packet
Packet3Sent	String	82 Length String Debug of Packet
Packet4Sent	String	82 Length String Debug of Packet
Packet5Sent	String	82 Length String Debug of Packet
Packet6Sent	String	82 Length String Debug of Packet
EN	Bool	Instruction is enabled
DN	Bool	Instruction is done sending message
IP	Bool	Instruction is in progress sending
ER	Bool	Instruction failed to send message

7.2 Reset Sign AOI

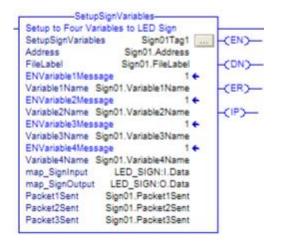
Instruction used to clean all variable data previously stored in sign. (see video tutorials)

Reset Sign Er	ases All Variable Memory	
ResetSign	Sign01Tag0	-(EN)
Address	Sign01.Address	(DN)
map_SignInpu	t LED_SIGN:LData	-(ER)
	out LED_SIGN:O.Data	-(P)-
Packet1Sent	Sign01.Packet1Sent	
Packet2Sent	Sign01.Packet2Sent	
Packet3Sent	Sign01.Packet3Sent	

Operand	Туре	Description
ResetSign	Tag	Unique Tag
Address	String	Two character sign address "00"
map_SignInput	I:Data	Ethernet/IP Input Data Mapping
map_SignOutput	O:Data	Ethernet/IP Output Data Mapping
Packet1Sent	String	82 Length String Debug of Packet
Packet2Sent	String	82 Length String Debug of Packet
Packet3Sent	String	82 Length String Debug of Packet
EN	Bool	Instruction is enabled
DN	Bool	Instruction is done sending message
IP	Bool	Instruction is in progress sending
ER	Bool	Instruction failed to send message

7.3 Setup Sign Variables AOI

Instruction to write the memory area in the sign for variables up to 4 memory spots. (see video tutorials)



Operand	Type	Description	
-		•	
SendSignMessage	Tag	Unique Tag	
Address	String	Two character sign address "00"	
Filelabel	String	Protocol Command "A" typically	
ENVariable1Message	Bool	Flag to send variable 1=send 0 =no	
Variable1Name	String	Protocol Command Variable Name	
ENVariable2Message	Bool	Flag to send variable 1=send 0 =no	
Variable2Name	String	Protocol Command Variable Name	
ENVariable3Message	Bool	Flag to send variable 1=send 0 =no	
Variable3Name	String	Protocol Command Variable Name	
ENVariable4Message	Bool	Flag to send variable 1=send 0 =no	
Variable4Name	String	Protocol Command Variable Name	
map_SignInput	I:Data	Ethernet/IP Input Data Mapping	
map_SignOutput	O:Data	Ethernet/IP Output Data Mapping	
Packet1Sent	String	82 Length String Debug of Packet	
Packet2Sent	String	82 Length String Debug of Packet	
Packet3Sent	String	82 Length String Debug of Packet	
EN	Bool	Instruction is enabled	
DN	Bool	Instruction is done sending message	
IP	Bool	Instruction is in progress sending	
ER	Bool	Instruction failed to send message	

7.4 Update Sign Variables AOI

Instruction to update variable memory space in the sign (see video tutorials)

UpdateSignVariables Update Four Variables to LED Sign	Operand	Туре	Description
UpdateSignVariables Sign01Tag3(EN)-			
Address Sign01 Address	UpdateSignVariables	Tag	Unique Tag
FileLabel Sign01.FileLabel -(DN)-	Address	String	Two character sign address "00"
ENVariable1Update 1 +	Filelabel	String	Protocol Command "A" typically
Variable1Name Sign01.Variable1Name -(ER)-	ENVariable1Update	Bool	Flag to update variable 1=send 0 =no
Variable1Value Sign01.Variable1Value	Variable1Name	String	Protocol Command Variable Name
ENVariable2Update 1 ← (IP)- Variable2Name Sign01.Variable2Name	Variable1Value	String	Actual variable data to send
Variable2Value Sign01.Variable2Value	ENVariable1Update	Bool	Flag to update variable 1=send 0 =no
ENVariable3Update 1 €	Variable2Name	String	Protocol Command Variable Name
Variable3Name Sign01.Variable3Name	Variable2Value	String	Actual variable data to send
Variable3Value Sign01.Variable3Value	ENVariable1Update	Bool	Flag to update variable 1=send 0 =no
ENVariable4Update 1 €	Variable3Name	String	Protocol Command Variable Name
Variable4Name Sign01.Variable4Name	Variable3Value	String	Actual variable data to send
Variable4Value Sign01.Variable4Value	ENVariable1Update	Bool	Flag to update variable 1=send 0 =no
map_SignInput LED_SIGN:I.Data	Variable4Name	String	Protocol Command Variable Name
map_SignOutput LED_SIGN:O.Data	Variable4Value	String	Actual variable data to send
Packet1Sent Sign01.Packet1Sent	map_SignInput	I:Data	Ethernet/IP Input Data Mapping
Packet2Sent Sign01.Packet2Sent	map_SignOutput	O:Data	Ethernet/IP Output Data Mapping
Packet3Sent Sign01.Packet3Sent	Packet1Sent	String	82 Length String Debug of Packet
	Packet2Sent	String	82 Length String Debug of Packet
	Packet3Sent	String	82 Length String Debug of Packet
	EN	Bool	Instruction is enabled
	DN	Bool	Instruction is done sending message
	IP	Bool	Instruction is in progress sending

7.5 Expert Sign AOI

Instruction to make your own packets and send to the sign. (see video tutorials)

ER

ExpertSign Expert ModeSend Your OwnPackets	Operand	Туре	Description
	N)—		· · · · ·
ExpertPacket1 Sign01.ExpertPacket1	ExpertSign	Tag	Unique Tag
	ExpertPacket1	String	82 Length String of Your Commands
ExpertPacket3 Sign01.ExpertPacket3	ExpertPacket2	String	82 Length String of Your Commands
	R)- ExpertPacket3	String	82 Length String of Your Commands
ExpertPacket5 Sign01.ExpertPacket5	ExpertPacket4	String	82 Length String of Your Commands
	ExpertPacket5	String	82 Length String of Your Commands
ExpertPacket6 Sign01.ExpertPacket6 -(IF	ExpertPacket6	String	82 Length String of Your Commands
map_SignInput LED_SIGN:LData	map_SignInput	I:Data	Ethernet/IP Input Data Mapping
map_SignOutput LED_SIGN:0.Data	map_SignOutput	O:Data	Ethernet/IP Output Data Mapping
Packet1Sent Sign01.Packet1Sent	Packet1Sent	String	82 Length String Debug of Packet
Packet2Sent Sign01.Packet2Sent	Packet2Sent	String	82 Length String Debug of Packet
Packet3Sent Sign01.Packet3Sent	Packet3Sent	String	82 Length String Debug of Packet
Packet4Sent Sign01.Packet4Sent	Packet4Sent	String	82 Length String Debug of Packet
Packet5Sent Sign01.Packet5Sent	Packet5Sent	String	82 Length String Debug of Packet
Packet6Sent Sign01.Packet6Sent	Packet6Sent	String	82 Length String Debug of Packet
Province and a second second second	EN	Bool	Instruction is enabled
	DN	Bool	Instruction is done sending message
	IP	Bool	Instruction is in progress sending

ER

Instruction failed to send message

Instruction failed to send message

Bool

Bool