



Programmable Terminal NA Series

Practice Guide IAG Collection for NXR-D IO-Link Unit Monitor

NA5-15□101□
NA5-12□101□

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Practices
Guide

■ Introduction

This guide describes reference information to create and use IAG objects. It does not provide safety information for an entire system with a Programmable Terminal.

Be sure to obtain the manuals for NA Series Programmable Terminal, read and understand the safety points and other information required for use, and test sufficiently before actual use of the equipment.

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Thank you for your usage of products of Omron Corporation (“Omron”). Without any special agreements, these terms and conditions shall apply to all transactions regardless of who sells.

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- When you use Omron products, ensure the followings: (i) allowance in aspect of rating and performance, (ii) safety design which can minimize danger of the application when the product does not work properly, (iii) systematic safety measures to notify danger to users, and (iv) periodical maintenance of Omron products and the user application.
- Omron assumes no responsibility for any direct or indirect loss, damage and expense resulting from infection of our products, installed software, any computer devices,

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(d) Applications under conditions or environment which are not described in the catalogs

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(b) Free replacement of the malfunctioning Omron products with the same number of substitutes.

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(a) Usage in the manner other than its original purpose

(b) Usage out of the conditions

(c) Usage out of Note about Use in these conditions

(d) Remodeling/repairing by anyone except Omron

(e) Software program by anyone except Omron

(f) Causes which could not be foreseen by the level of science and technology at the time of shipment of the products.

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- Limitation of Liability

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Omron products and/or technical documents may not be provided to customers if they violate the laws and regulations.

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1 Related Manuals

No.	Model	Title
V117	NA5-15W□□□□ NA5-12W□□□□ NA5-9W□□□□ NA5-7W□□□□	Programmable Terminal NA Series Hardware USER'S MANUAL
V118	NA5-15W□□□□(-V1) NA5-12W□□□□(-V1) NA5-9W□□□□(-V1) NA5-7W□□□□(-V1)	Programmable Terminal NA Series Software USER'S MANUAL
V119	NA5-15W□□□□(-V1) NA5-12W□□□□(-V1) NA5-9W□□□□(-V1) NA5-7W□□□□(-V1) NA-RTLD□□	Programmable Terminal NA Series Device Connection USER'S MANUAL
V120	NA5-15W□□□□ NA5-12W□□□□ NA5-9W□□□□ NA5-7W□□□□	Programmable Terminal NA Series STARTUP GUIDE
V125	NA5-15□101□-V1 NA5-12□101□-V1 NA5-9□001□-V1 NA5-7□001□-V1	Programmable Terminal NA Series Hardware (-V1) USER'S MANUAL
W504	SYSMAC-SE2□□□□	Sysmac Studio Version 1 OPERATION MANUAL

2 Precautions

- (1) When building an actual system, check the specifications of the component devices of the system, use within the ratings and specified performance, and implement safety measures such as safety circuits to minimize the possibility of an accident.
- (2) For safe use of the system, obtain the manuals of the component devices of the system and check the information in each manual, including safety precautions, precautions for safe use.
- (3) It is customer's responsibility to check all laws, regulations, and standards that the system must comply with.
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- (5) The information in this guide is current as of March 2020. It is subject to change without notice because of product's update.
- (6) This IAG library has been tested with the system configuration in 3-2 "System Configuration." However, Omron does not guarantee screen operations after embedding the IAGs.

Special information in this document is classified as follows:



Precautions for Safe Use

Describes precautions on what to do and what not to do to ensure proper operation and performance.



Precautions for Correct Use

Describes precautions on what to do and what not to do to ensure proper operation and performance.



Additional Information

Additional information to read as required.

This information is provided to increase understanding or make operation easier.

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3 Overview

3-1 Overview

This document describes IAG collections that directly read the information from the IO-Link hub unit via IO-Link. The hub unit is connected to the IO-Link master unit that connected to the NA-series HMI.

Note: This IAG collection is for the IO-Link hub unit (NXR-D) that connected with the IO-Link master unit.

- IAG external specifications
- IAG installation on a screen

IAG	Icon	Description
IOStatus_Monitor		Monitors conditions of LEDs and ports of the IO-Link hub unit that connected to the IO-Link master unit via IO-Link.

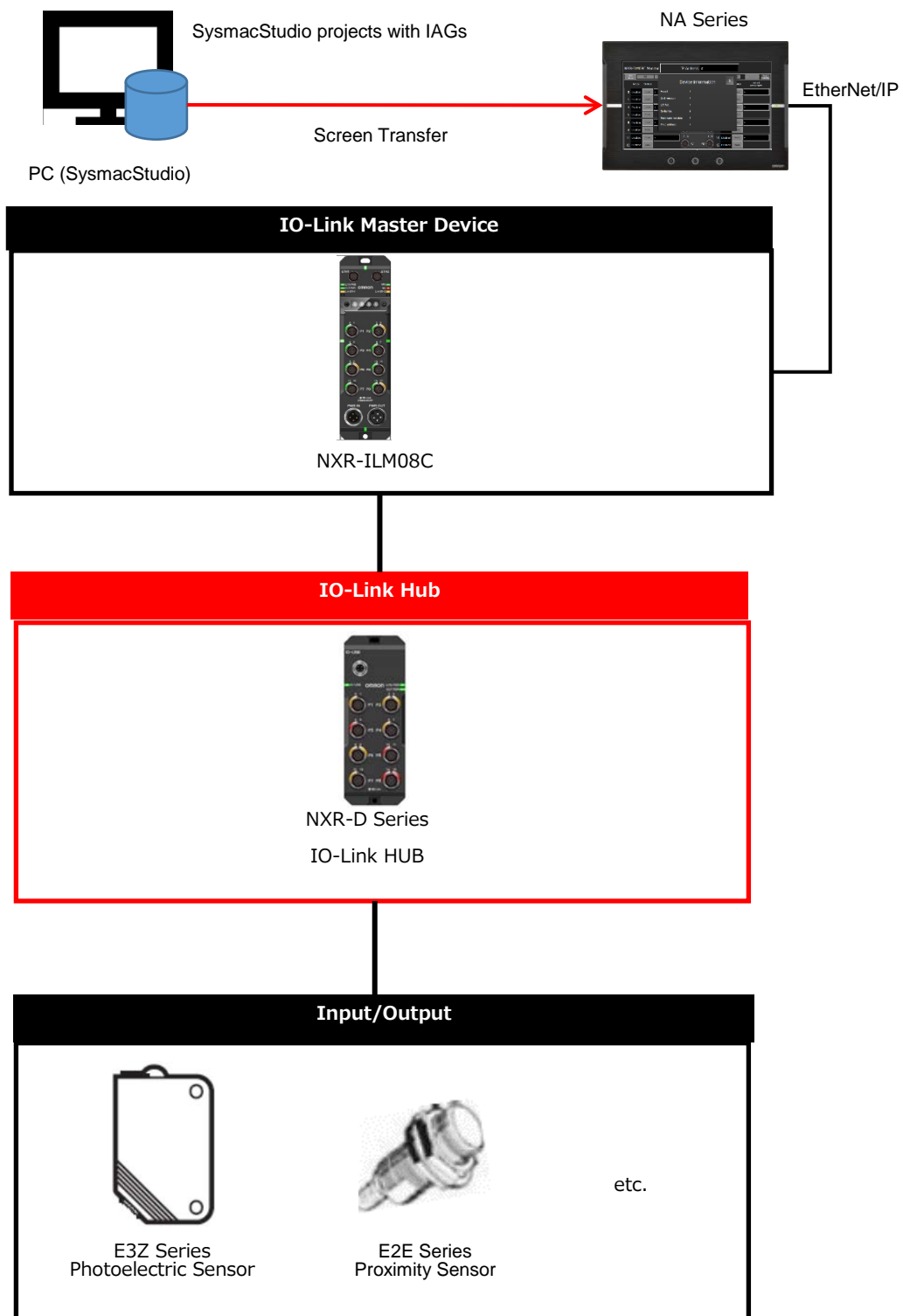
These IAGs are included in the IAG collection file below.

File name	Description
NXR_D_Monitor_12inch_*.iag	For 12 and 15-inch units. “**” stands for a version.

Ask the Omron sales representative for the file.

3-2 System Configuration

The IAG objects were tested with the system configuration and versions below.



4 Library Versions

This chapter describes the versions of the IAG library.

You must check versions of the items listed in the table below before using the library.

Item	Description	How to Check the Version
IAG Collection	The distributed IAG collection has library versions.	The version can be checked in the Sysmac Studio IAG Collections Manager pop-up.
IAG	Version of each IAG. It manages specification change, bug correction, and others.	The version can be checked as an IAG property in IAG Collections Manager. Also, in Properties after located as an object.
NA	The version of NA with which IAG has been created. IAG library is not applicable to older versions than that in this guide because supported functions depend on versions.	See Minimum supported HMI version in IAG Collections Manager.
NA OS	The version which NA runtime can operate. It differs according to NA's Runtime version.	System Menu of NA. It will be checked if necessary when you upgrade NA runtime version of a project in Sysmac Studio.

Versions of IAG collection, NA runtime, and OS in this guide

Item	Version	Remarks
IAG Collection	Ver1.00	Filename extension is ".iag".
IAG	Noted individually	Refer to Chapter5 "Properties."
NA	Ver. 1.12 and higher	
NA OS	Ver. 7.4.0 and higher	

EtherNet I/P devices that the IAG collection supports, and the versions



Supported Device	Version	Remarks
NX102□□□□	Ver. 1.31 and later	Operation tested with Ver. 1.31
NX102□□□□	Ver. 1.18 and later	Operation tested with Ver. 1.18
NX7□□□□	Ver. 1.18 and later	Operation tested with Ver. 1.18
NXR-ILM08C	Ver. 1.0 and later	Operation tested with Ver. 1.0
NXR-□D166C	Ver. 1.0 and later	Operation tested with Ver. 1.0

5 IAG Descriptions

5-1 IOStatus_Monitor

5-1-1 Specifications

- External Specifications

Object	IOStatus_Monitor																					
Category	NXR_D_Monitor																					
Functions	<ul style="list-style-type: none"> Reads and displays LED conditions of the IO-Link hub unit connected with the IO-Link master unit whose IP address has been notified from EtherNet/IP Monitor. Displays the device information on NXR-[]D166C, the IO-Link hub unit. 																					
Graphics	<p>This IAG consists of one screen and pop-up.</p> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;">IO Status Screen</div>  <div style="text-align: center; margin: 10px 0;">  </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Device Information</div> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2" style="text-align: center;">Device Information</td> <td style="text-align: right;">✕</td> </tr> <tr> <td>Model</td> <td>#</td> <td></td> </tr> <tr> <td>Unit version</td> <td>#</td> <td></td> </tr> <tr> <td>Lot No.</td> <td>#</td> <td></td> </tr> <tr> <td>Serial No.</td> <td>#</td> <td></td> </tr> <tr> <td>Hardware version</td> <td>#</td> <td></td> </tr> <tr> <td>MAC address</td> <td>#</td> <td></td> </tr> </table> </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;">Device Information Window</div>	Device Information		✕	Model	#		Unit version	#		Lot No.	#		Serial No.	#		Hardware version	#		MAC address	#	
Device Information		✕																				
Model	#																					
Unit version	#																					
Lot No.	#																					
Serial No.	#																					
Hardware version	#																					
MAC address	#																					

● Screen Specifications

IO-Link Master Status Screen

Displays the information of the IO-Link master unit whose IP address is notified externally.

User I/F Specifications		
No.	Part	Description
1	DataDisplay	Name of the displayed device.
2	DataDisplay	Displays the IP address of the IO-Link master unit.
3	DataDisplay	Port number of the selected device is displayed.
4	Button	Reads the configuration out.
5	Group	Units' information is shown. Refer to No. 10 and later for details.
6	Button	The LED that indicates the location of the IO-Link master unit on the screen is lit when this button is pressed. It is for expansion and not shown in the actual NA.
7	Button	Displays Device Information Window.
8	DataDisplay	Displays pin modes of Pin4 (upper) and Pin2 (lower) for each IO-Link port as the following. Pin4: Any of <i>DI</i> , <i>DO</i> , or <i>Failed to read</i> Pin2: Any of <i>Disabled</i> , <i>DI</i> , <i>DO</i> , or <i>Failed to read</i>
9	Button WordLamp	Displays statuses of Pin4 (upper) and Pin2 (lower) for each IO-Link port as the following. Pin4: Any of <i>ON</i> , <i>OFF</i> , <i>Error</i> , or <i>Failed to read</i> Pin2: Any of <i>ON</i> , <i>OFF</i> , <i>Error</i> , or <i>Failed to read</i> Pressing the button while <i>Error</i> is being displayed executes the event <i>ShowPortStatusEvent</i> .
10	Lamp	Displays IO-Link condition.
11	Lamp	Displays the condition of the input power supply voltage.
12	Lamp	Displays the condition of the output power supply voltage.
Layout		
Properties	Default	Description
Position (Left, Up)		Set in Property.
▼Size (Width, Height)		Set in Property.

Device Information Window

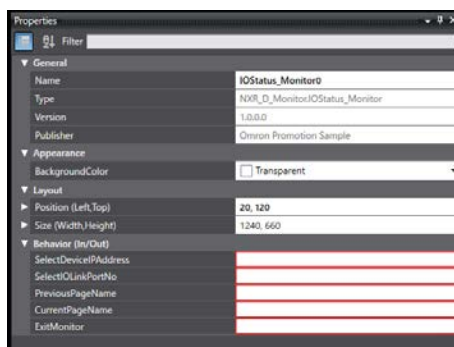
This window shows the device information.

User I/F Specifications		
No.	Part	Description
1	DataDisplay	Unit model is displayed.
2	DataDisplay	Unit version is displayed
3	DataDisplay	Lot number is displayed.
4	DataDisplay	Serial number is displayed.
5	DataDisplay	Hardware Version
6	DataDisplay	MAC address of the selected device is displayed.
7	Button	Closes this window..
Layout		
Properties	Default	Description
Position (Left, Up)		Fixed
▼Size (Width, Height)		Fixed

● Properties

Property	Description	Input Mode	Input Range Data Type	Default
General				
Name	Object name. Must not be overlapped in a screen.	Direct input	Character string (1 to 127)	IOStatus_Monitor0
Type	Object type. Not changeable.	-	-	NXR_ILM_Monitor.IOStatus_Monitor
Version	IAG version	-	-	1.0.0.0
Publisher	IAG publisher	-	-	Omron Promotion Sample
Appearance				
Background Color	Background color of a page	Item selection Direct input	Color pallet Character string	Transparent ¹
Layout				
▼Position (Left , Top)	Position setting of an object in a page. ²	Direct input Spin button	Numeric Numeric	-
Left	Horizontal position (X-axis) of the top-left corner of an object on a page	Direct input Spin button	Numeric Numeric	-
Top	Vertical position (Y-axis) of the to-left corner of an object on a page	Direct input Spin button	Numeric Numeric	-
▼Size (Width, Height)	Object size setting.	Direct input Spin button	Numeric Numeric	(1240,660)
Width	Width of object	Direct input Spin button	Numeric Numeric	1240
Height	Height of object	Direct input Spin button	Numeric Numeric	660
Input/Output				
SelectDeviceIPAddress	Variable to link the behavior with other monitoring IAG.	Variable specification	String	
SelectIOLinkPortNo	Variable to link the behavior with other monitoring IAG.	Variable specification	Byte	
PreviousPageName	Name of the page displayed next after this page is closed	Variable specification	String	
CurrentPageName	Page name of this IAG	Variable specification	String	
ExitMonitor	Flag to close this page	Variable specification	Boolean	

Image



1: Transparent

2: The origin of coordinates locates at the top left corner of NA screen.



Precautions for Correct Use

The use case in this guide does not require settings for IO variables *PreviousPageName*, *CurrentPageName* and *ExitMonitor*. Leave them blank; if not, the IAG may perform an unintended operation.

- Version History

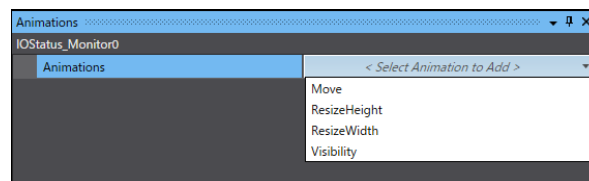
IAG version	Description	IAG collection version
1.0.0.0	First edition	Ver1.00

- Events & Actions

No event function available.

- Animations

Basic motions can be defined.



- Security

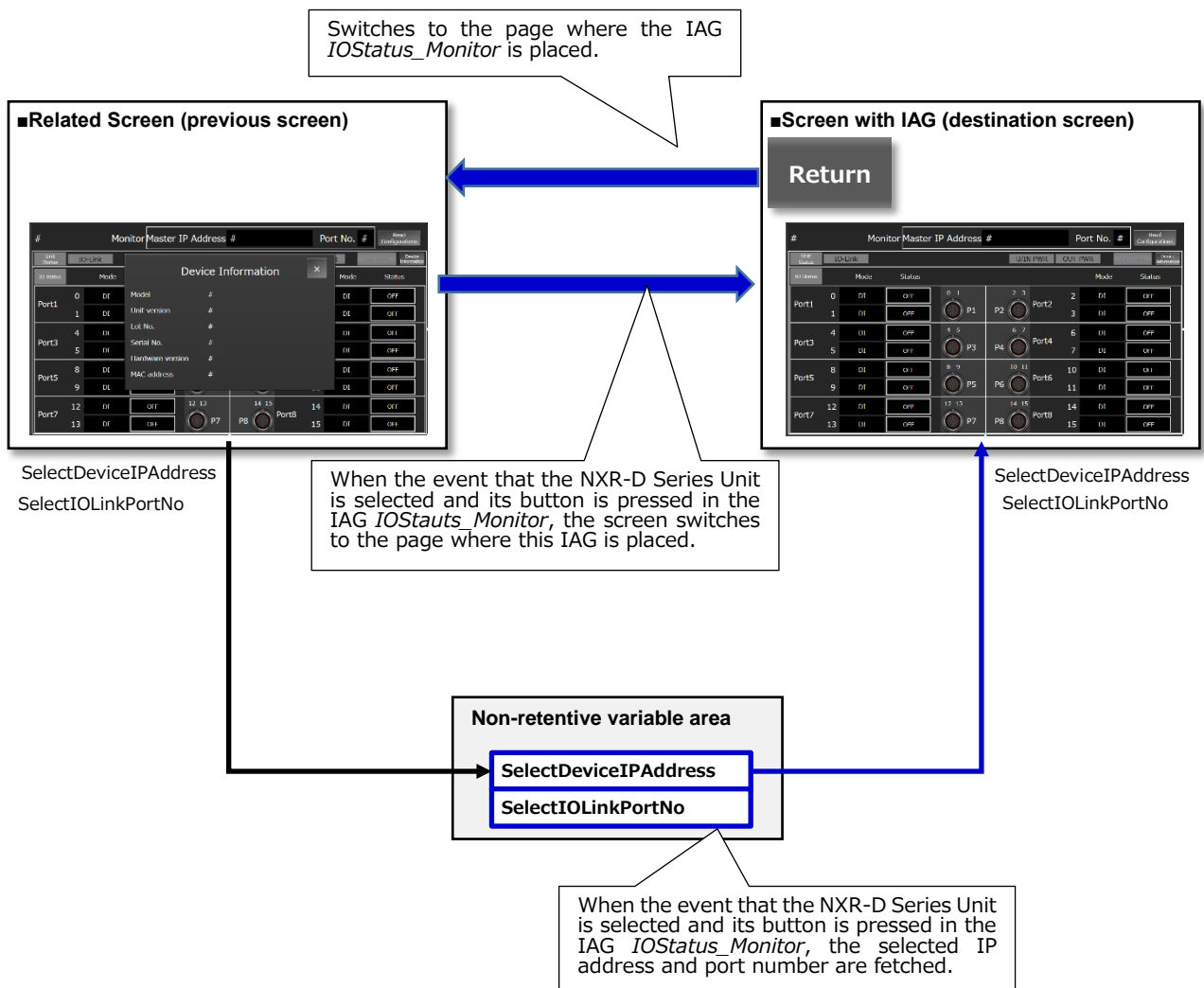
No security function available.

Screen Design Example

This IAG is intended to be used for the following screen design, for example.

The simplest screen design, a single page is linked with a single destination page, is described in this section.

- When the button for NXR-D Series Unit, which is displayed by the IAG *IOStatus_Monitor* (NXR-ILM Monitor category) located on the screen, is pressed, the currently displayed screen switches to the screen with this IAG and the IAG accesses to the Unit to receive the necessary information to display.
- Pressing the **Return** button placed in the page containing this IAG works as the trigger to back to the previously displayed screen.

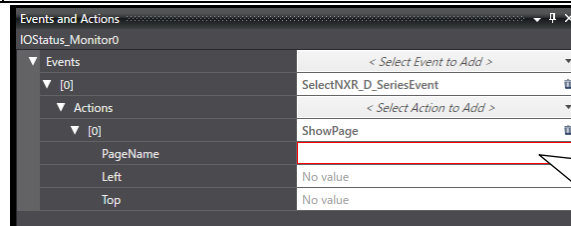


For this screen design, implement the settings described below.

● Events and Actions Settings for Previous Screen

Set the action *ShowPage* for the event *SelectNXR_D_SeriesEvent* of the IAG *IOStatus_Monitor* (NXR-ILM Monitor category). Then enter the page name in which this IAG is placed.

Event	Description
SelectNXR_D_SeriesEvent	Executed when an NXR-D Series Unit is selected.



Enter the name of the page where this IAG is placed.

● IAG Property Assignment (Previous Screen)

Assign the variables to the following properties (Input/Output) for *IOStatus_Monitor*.

Property (Input/Output)	Description	Variable	Variable Data Type
SelectDeviceIPAddress	IP address of the device to be displayed	SelectDeviceAddress	String
SelectIOLinkPortNo	Port number of the device to be displayed	SelectIOLinkPortNo	Byte

● Property Assignment (IAG)

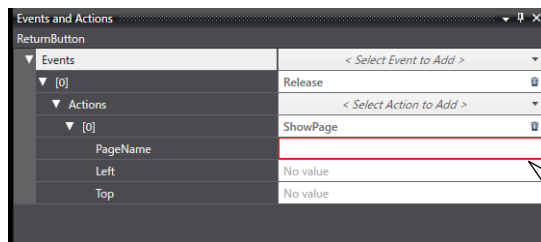
Assign the variables to the following properties.

Property (Input/Output)	Description	Variable	Variable Data Type
SelectDeviceIPAddress	IP address of the device to be displayed	SelectDeviceAddress	String
SelectIOLinkPortNo	Port number of the device to be displayed	SelectIOLinkPortNo	Byte

Now the information about IP address and port number are shared among screens.

● Screen Settings

Place the **Return** button on the page containing this IAG. Then set the action *ShowPage* for the button event *Release*. Next, enter the name of the previous page in which the IAG *IOStatus_Monitor* is placed.



Enter the name of the page where the IAG *IOStatus_Monitor* is placed.



Additional Information

The type of button is not specified.

Revision History

Revision Code	Date	Revision Description
01	March 2020	First edition

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