



# Install Documentation E-Flo iQ Advanced Heat & Ambient

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## Document Revision History

Rev No.	Release Date	Released By	Release Notes
20210527.00	27 May 2021	A. Gascon	Initial Release
20210901	01 Sep 2021	A. Gascon	Updated for Motor and Valve Delays
20210901	01 Sep 2021	A. Gascon	Updated for Additional Temperature Alarm and Deviation Limits

## Software Version

Part No.	Version	Current As Of	Map Part No.	Map Version
18A920	2.03.007	29 Sep 2021	18E217	001.001
			18E223	001.001

## Introduction

The document provides the basic steps for the Integration of the E-Flo iQ into an Allen-Bradley ControlLogix Platform PLC and Panelview HMIs.

The intent of this document is to:

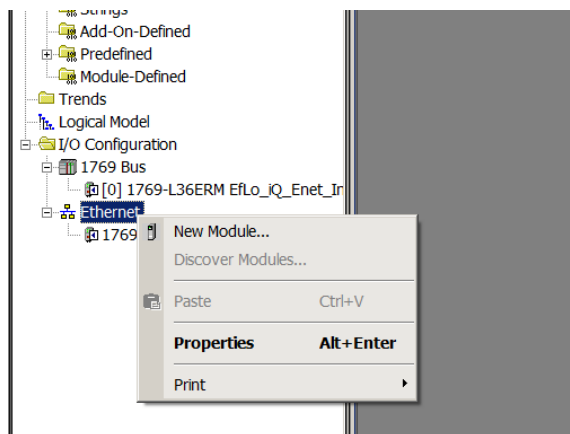
- Define and describe the signals in the E-Flo iQ that will be mapped to the Allen-Bradley PLC
- Define the files and steps to add the PLC logic into an Allen-Bradley PLC
- Define the files and steps to add the screens into an Allen-Bradley Panelview HMI.
- Define the functionality of the HMI screens.

## Allen-Bradley PLC Module Integration

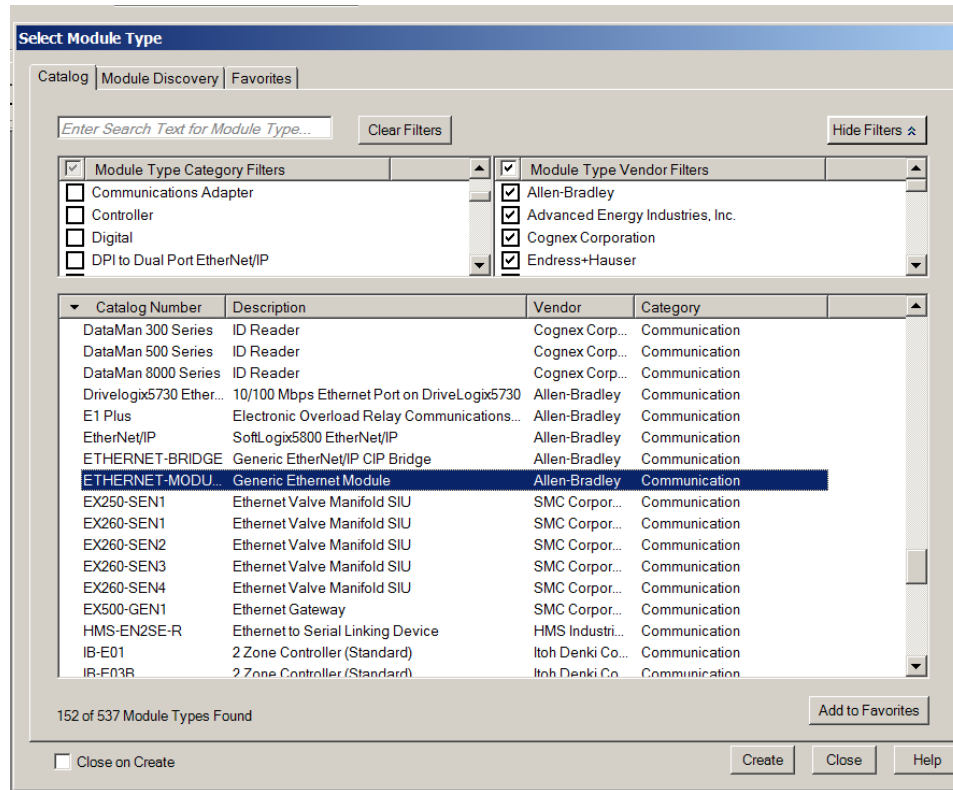
The Allen-Bradley PLC integration is based on L5X files and Add On Instructions (**AOI**). L5X files will be created to add the E-Flo iQ Input/Output Logic and control AOI's. This will integrate the E-Flow IQ into this system with minimum configuration and create the IO module PLC tags automatically. The AOIs will be created to integrate with the E-Flow IQ HMI Screens seamlessly to the PLC regardless of the communication platform below.

## E-Flo iQ Heat Ethernet PLC Logic Install

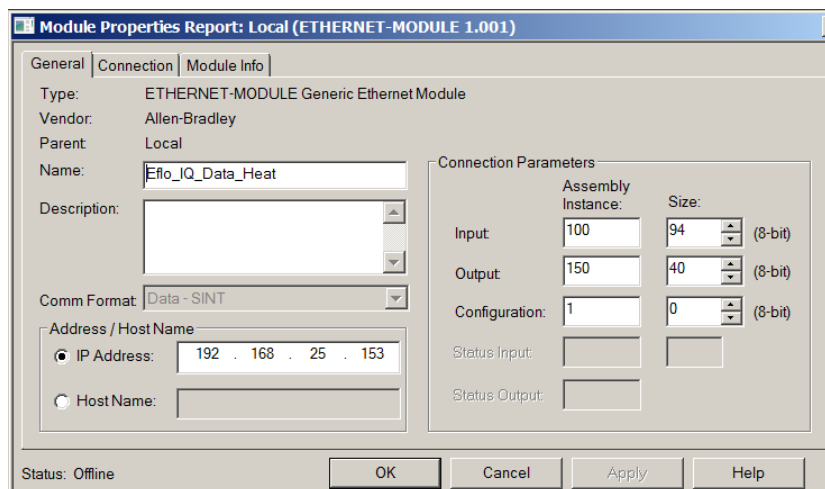
1. Create a New I/O Module.



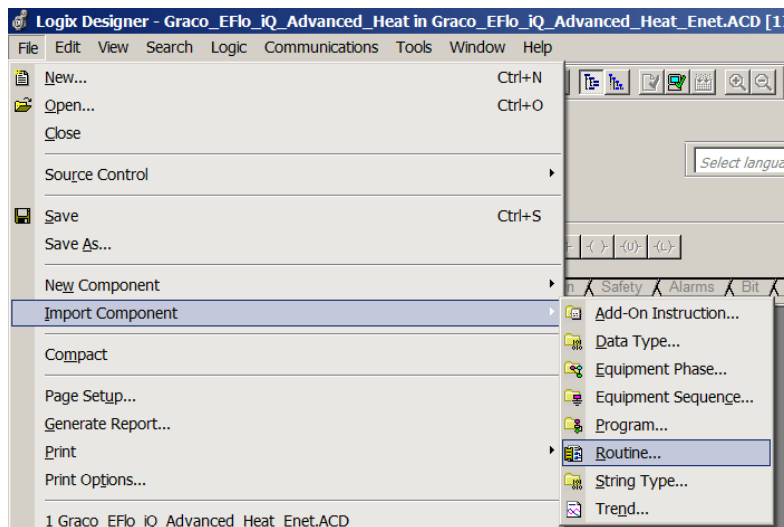
2. Select **Generic Ethernet Module**.



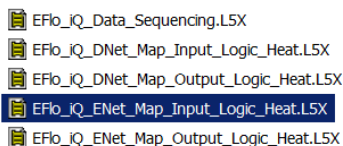
3. Set the Generic Ethernet Module Communication Properties **Note:** These must match the example below): Name, Comm Format, Assembly Instance, Assembly Size. IP Address should be set to the IP Address of the CGM Module, set in the E-Flo iQ ADM setup screen.



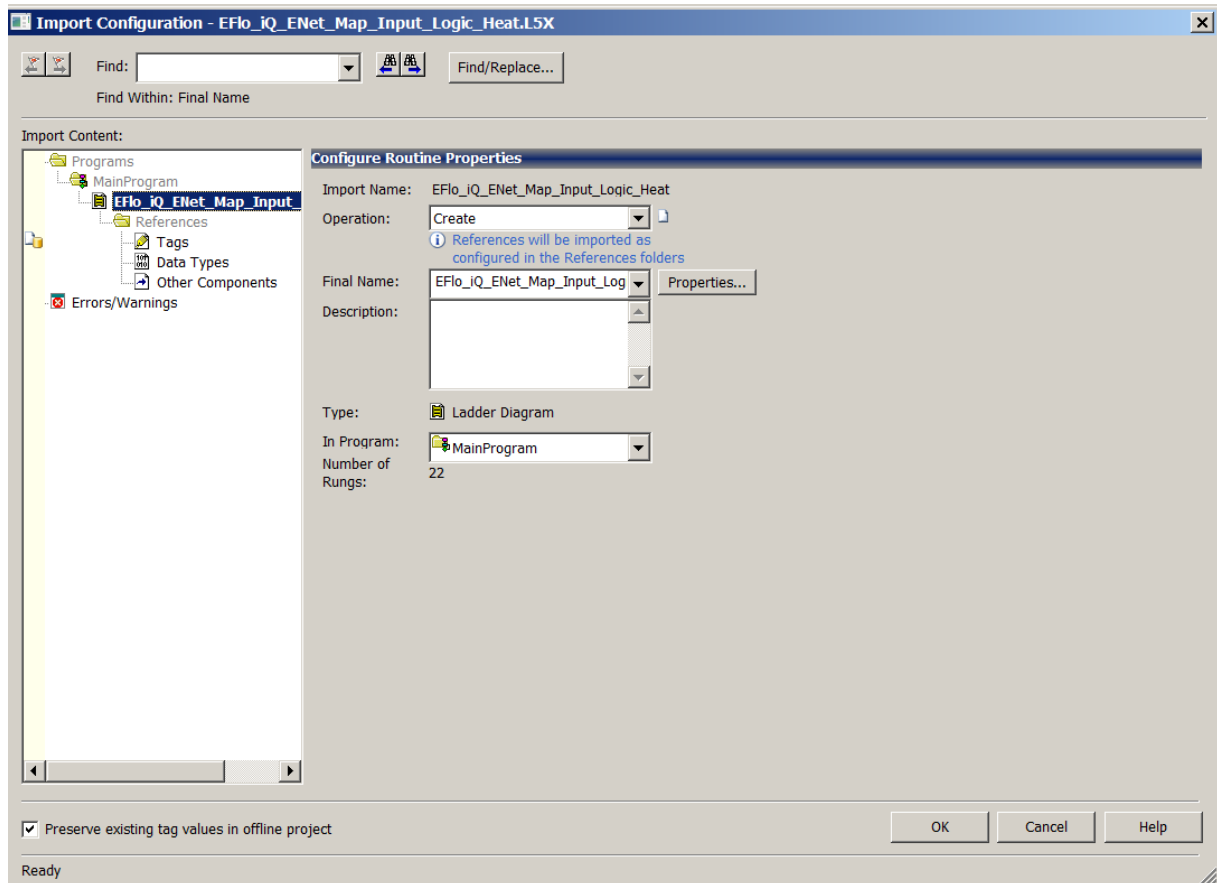
4. Create E-Flo iQ Ethernet Input Mapping Logic Routine.
  - a) Click **File** in Rockwell Logic Designer.
  - b) Select **Import Component | Routine**. This routine creates the E-Flo iQ Ethernet Input I/O to Program tags mapping.



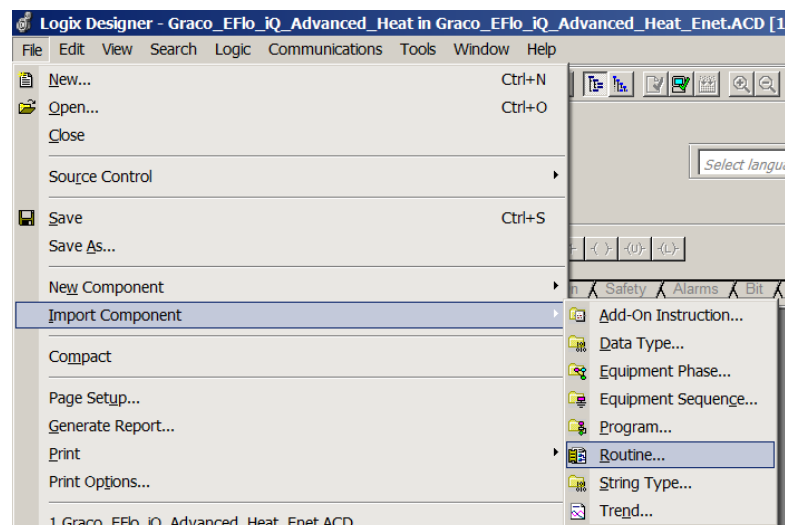
5. Select the **E-Flo\_iQ\_ENet\_Map\_Input\_Logic\_Heat.L5X** file.



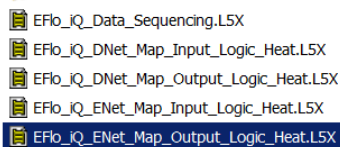
6. The following pop-up will display.
  - a) Under Type / Ladder Diagram, select the folder to insert the new routine into. In the example screen below, it is set to MainProgram.
  - b) Click **OK**.



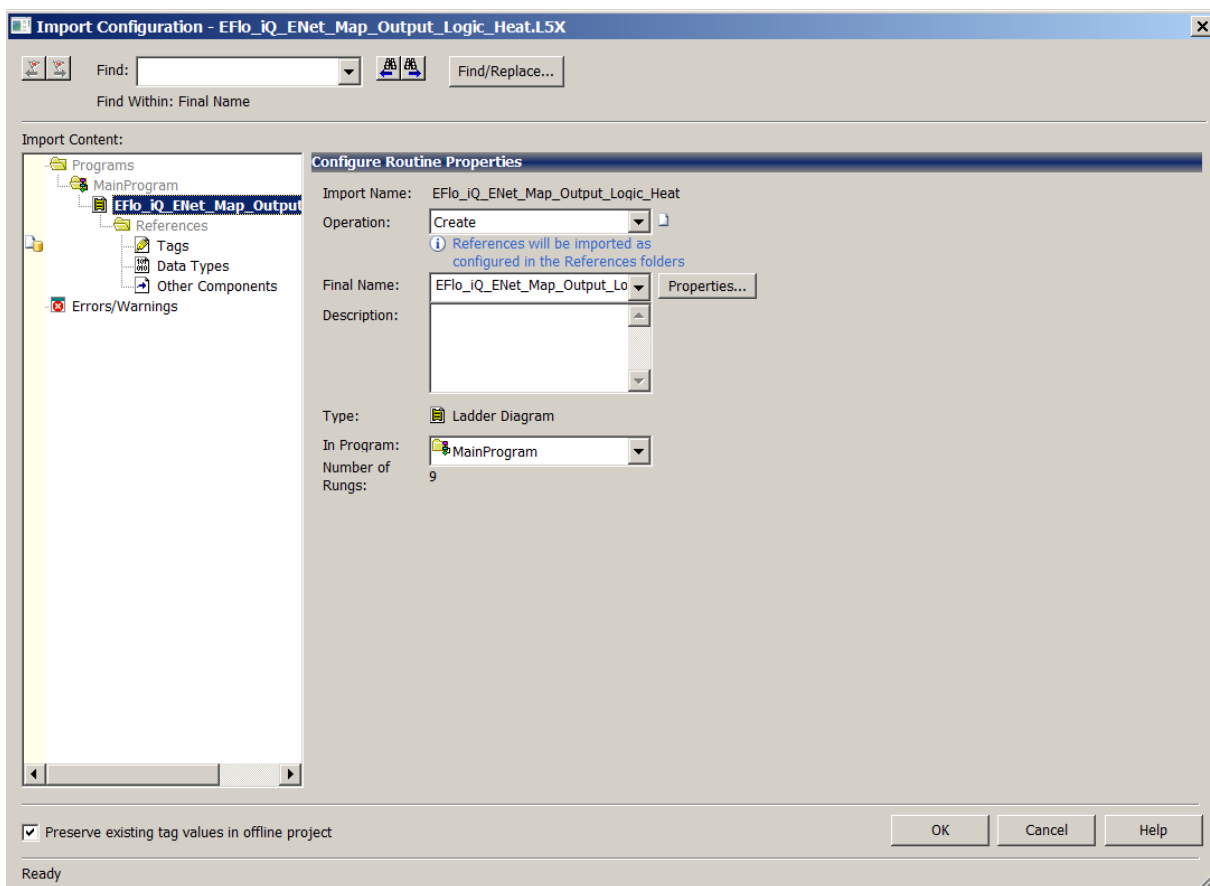
7. Create E-Flo iQ Ethernet Output Mapping Logic Routine
  - a) Click **File** in Rockwell Logic Designer.
  - b) Select **Import Component | Routine**. This routine creates the E-Flo iQ Ethernet Output I/O to Program tags mapping.



8. Select the **E-Flo\_iQ\_ENet\_Map\_Output\_Logic\_Heat.L5X** File.

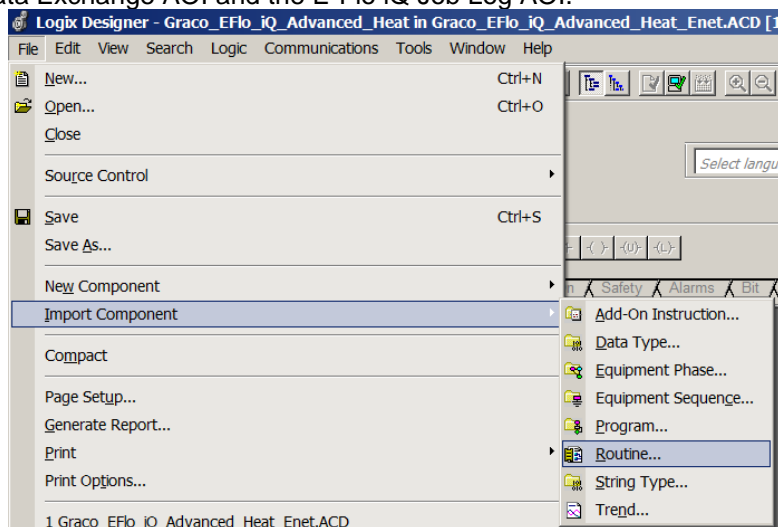


9. The following pop-up will display.
  - a) Under Type / Ladder Diagram, select the folder to insert the new routine into. In the example screen below it is set to MainProgram.
  - b) Click **OK**.

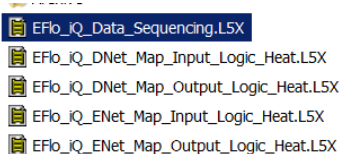


10. Create E-Flo iQ Data Sequencing Logic Routine

- Click **File** in Rockwell Logic Designer.
- Select **Import Component | Routine**. This routine creates the E-Flo iQ Pump Control AOI, E-Flo iQ Heat Data Exchange AOI and the E-Flo iQ Job Log AOI.

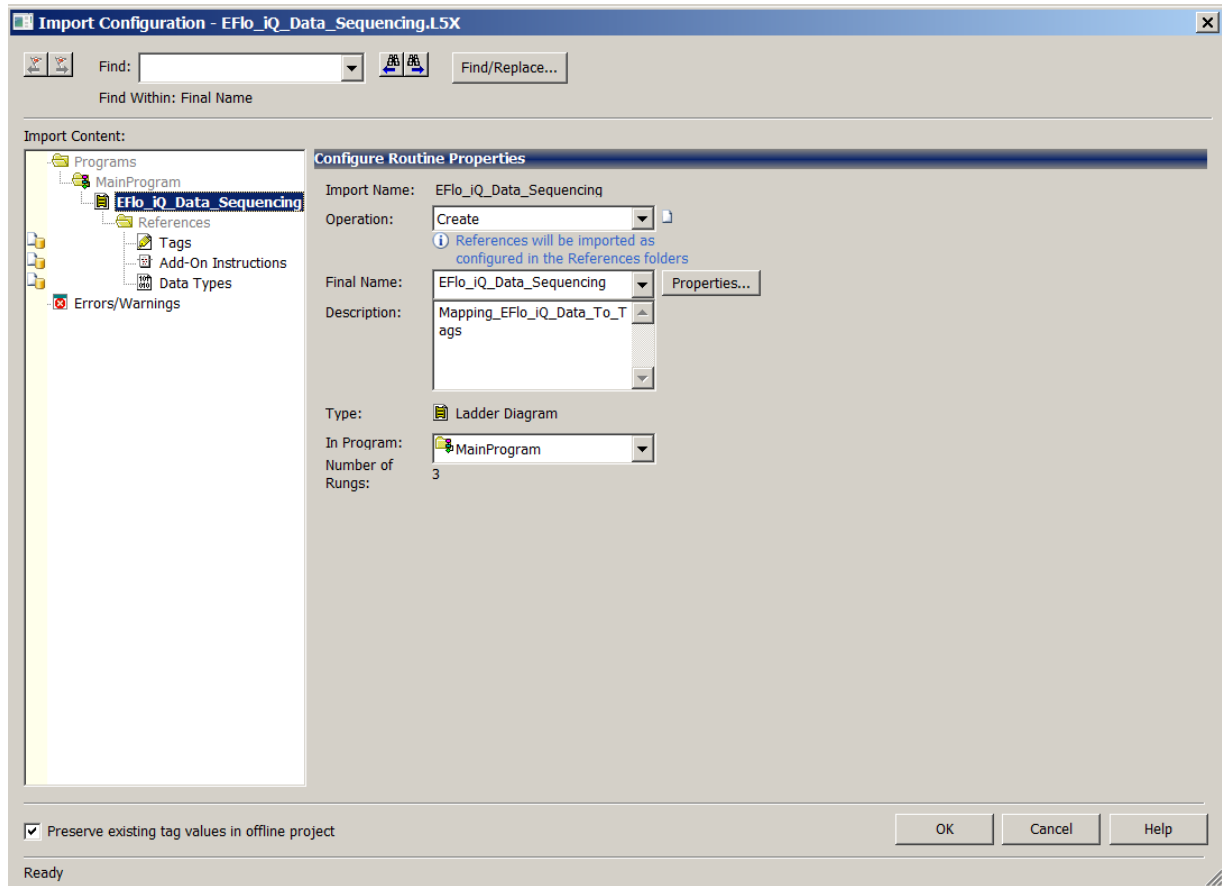


11. Select the **E-Flo\_iQ\_Data\_Sequencing.L5X** file.

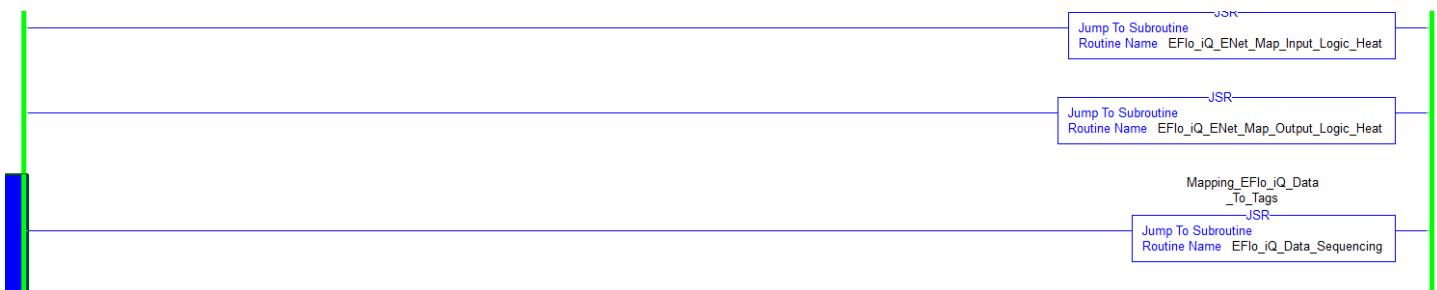


12. The following pop-up will display.

- Under Type / Ladder Diagram, select the folder to insert the new routine into. In the example screen below it is set to MainProgram.
- Click **OK**.

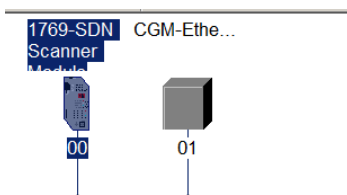


Each Routine Created above must have a Jump To Subroutine instruction communication platform below.



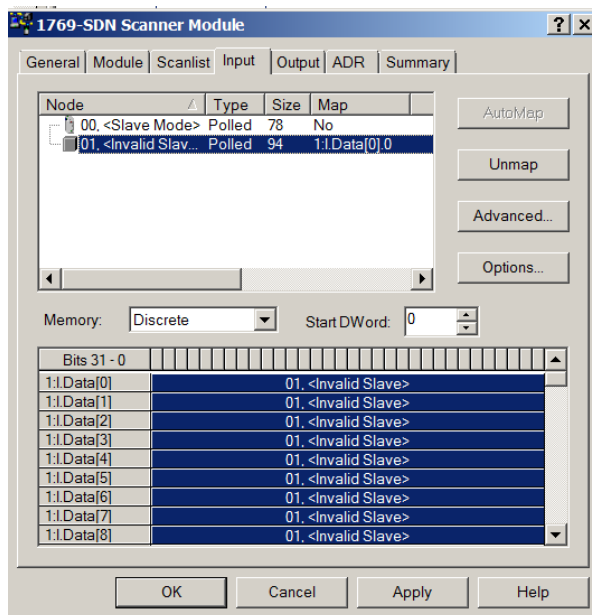
## E-Flo iQ Heat DeviceNet PLC Logic Install

1. Open RSNetworkx for DeviceNet program and open the Devicenet scanner properties.



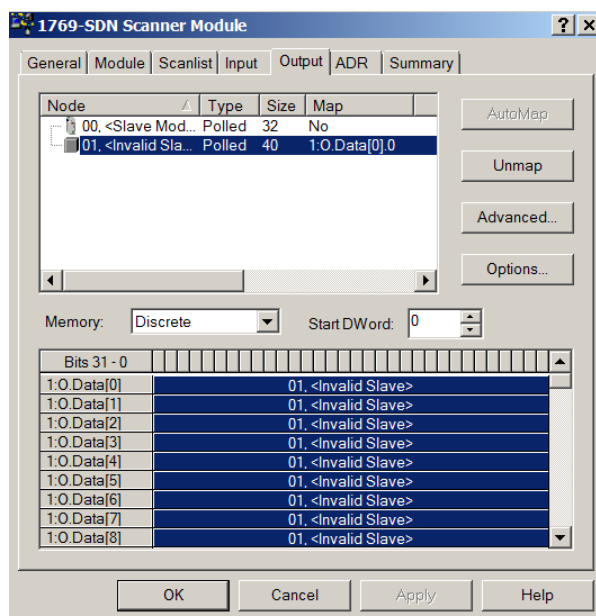
2. Add the CGM DeviceNet Inputs to the input mapping table. The inputs should be set for Size 94, Memory Discrete.

**NOTE:** The start word needs to be set for your existing application. In this example, the CGM is the only DeviceNet Device and there the start word is at 0.

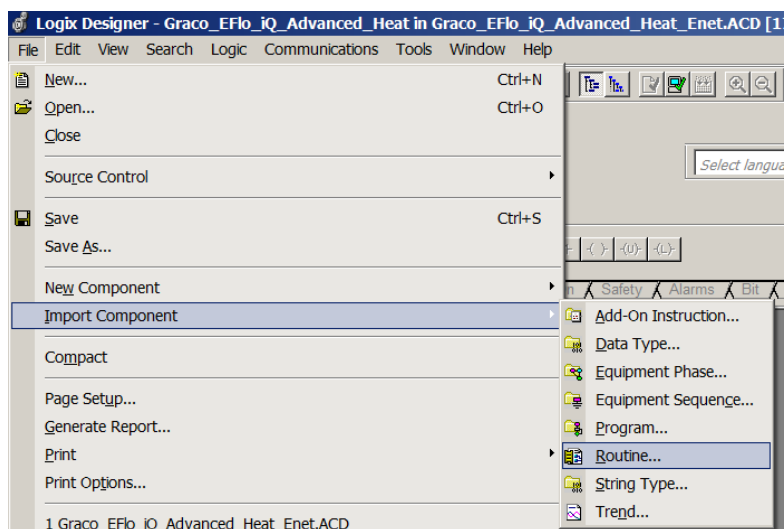


3. Add the CGM DeviceNet Outputs to the output mapping table. The inputs should be set for Size 40, Memory Discrete.

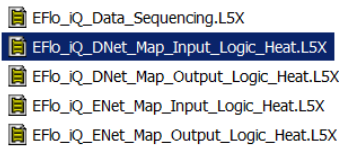
**NOTE:** The start word needs to be set for your existing application. In this example, the CGM is the only DeviceNet Device and there the start word is at 0.



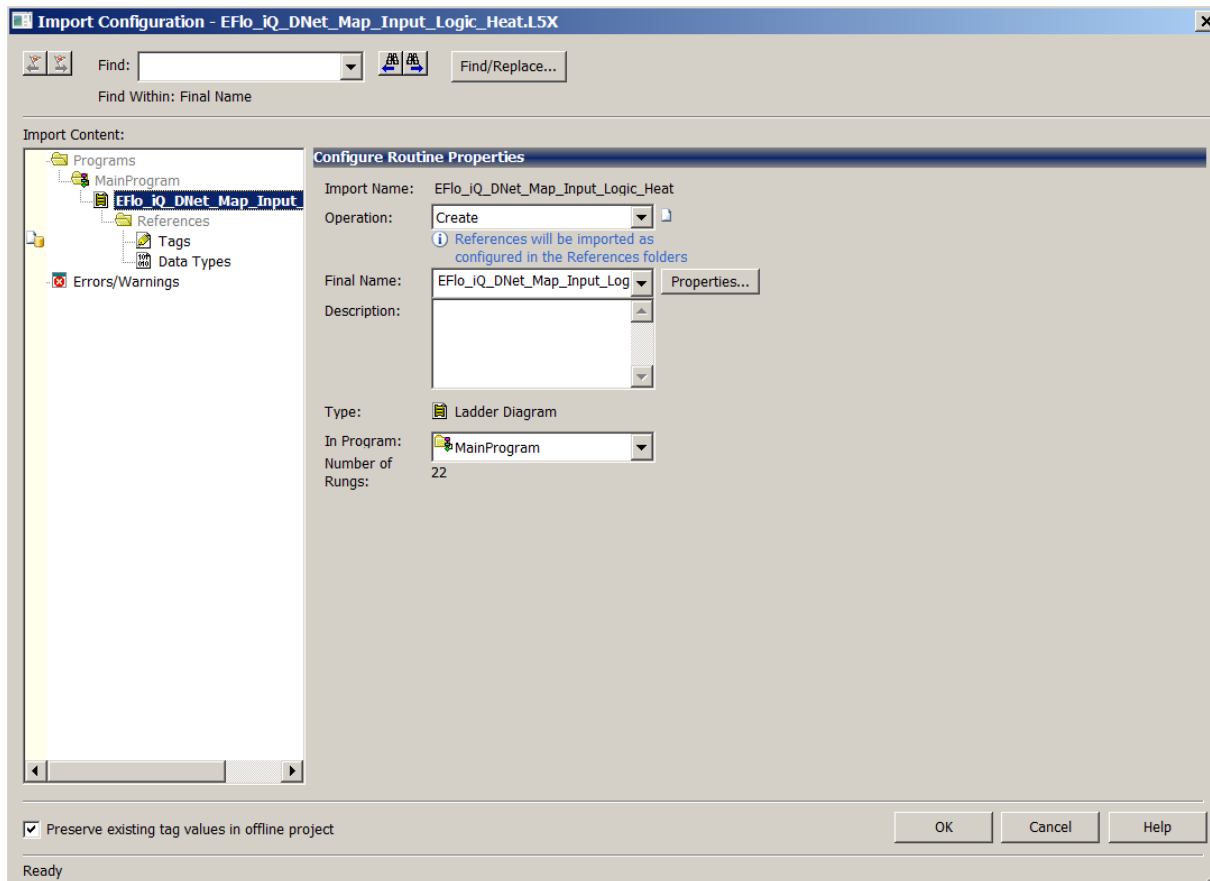
4. Create an E-Flo iQ DeviceNet Input Mapping Logic Routine.
  - a) Click **File** in Rockwell Logic Designer.
  - b) Select **Import Component | Routine**. This routine creates the E-Flo iQ DeviceNet Map Input I/O to Program tags mapping.



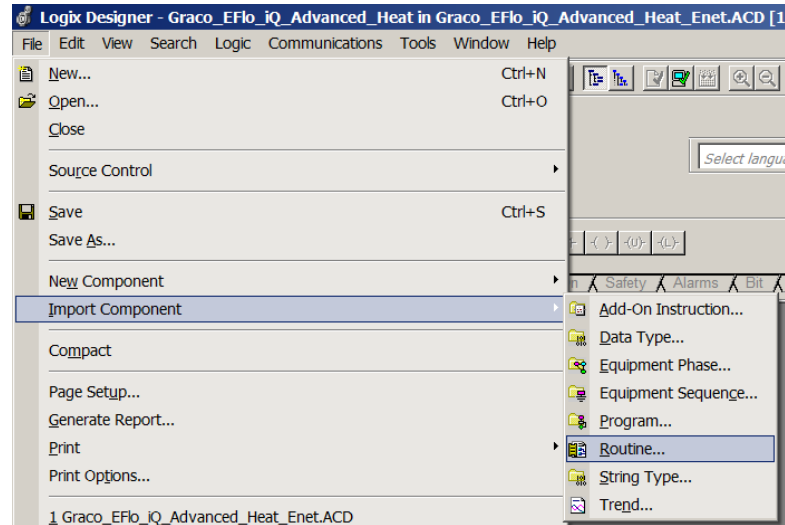
5. Select the **E-Flo\_iQ\_DNet\_Map\_Input\_Logic\_Heat.L5X** file.



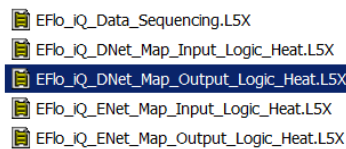
6. The following pop-up will display.
  - a) Under Type / Ladder Diagram, select the folder to insert the new routine into. (In the example screen below it is set to MainProgram.)
  - b) Click **OK**.



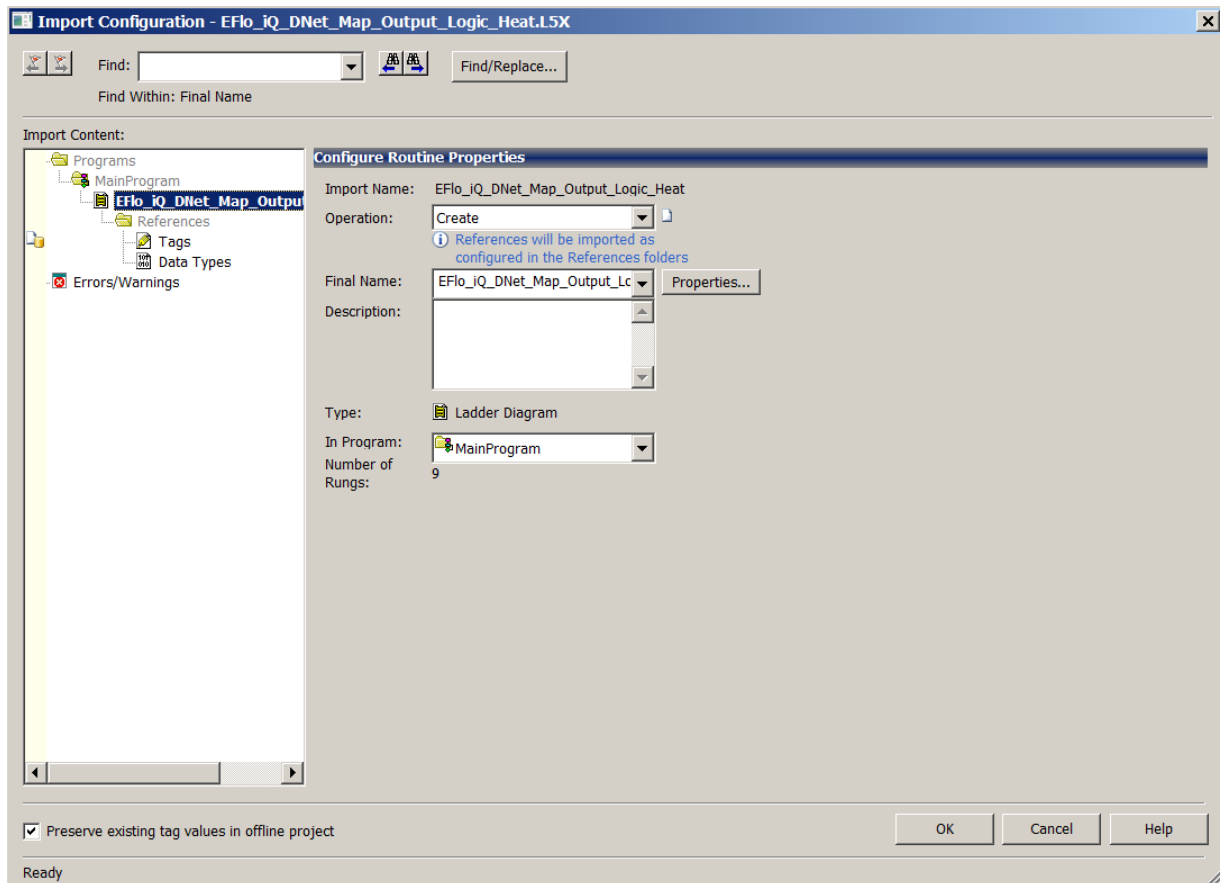
7. Create an E-Flo iQ DeviceNet Output Mapping Logic Routine.
  - a) Click **File** in Rockwell Logic Designer.
  - b) Select **Import Component | Routine**. This routine creates the E-Flo iQ DeviceNet Map Output I/O to Program tags mapping.



8. Select the **E-Flo\_iQ\_DNet\_Map\_Output\_Logic\_Heat.L5X** file.

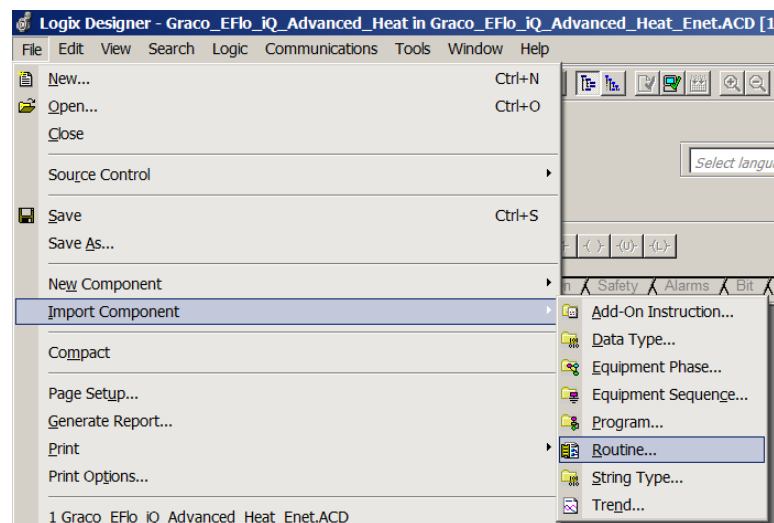


9. The following pop-up will display.
  - a) Under Type Type / Ladder Diagram, select the folder to insert the new routine into. In the example screen below it is set to MainProgram.
  - b) Click **OK**.

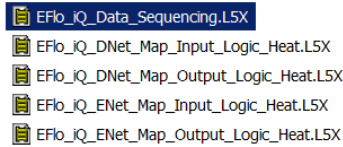


10. Create E-Flo iQ Data Sequencing Logic Routine.

- a) Click **File** in Rockwell Logic Designer.
- b) Select **Import Component | Routine**. This routine creates the E-Flo iQ Pump Control AOI, E-Flo iQ Heat Data Exchange AOI and the E-Flo iQ Job Log AOI.

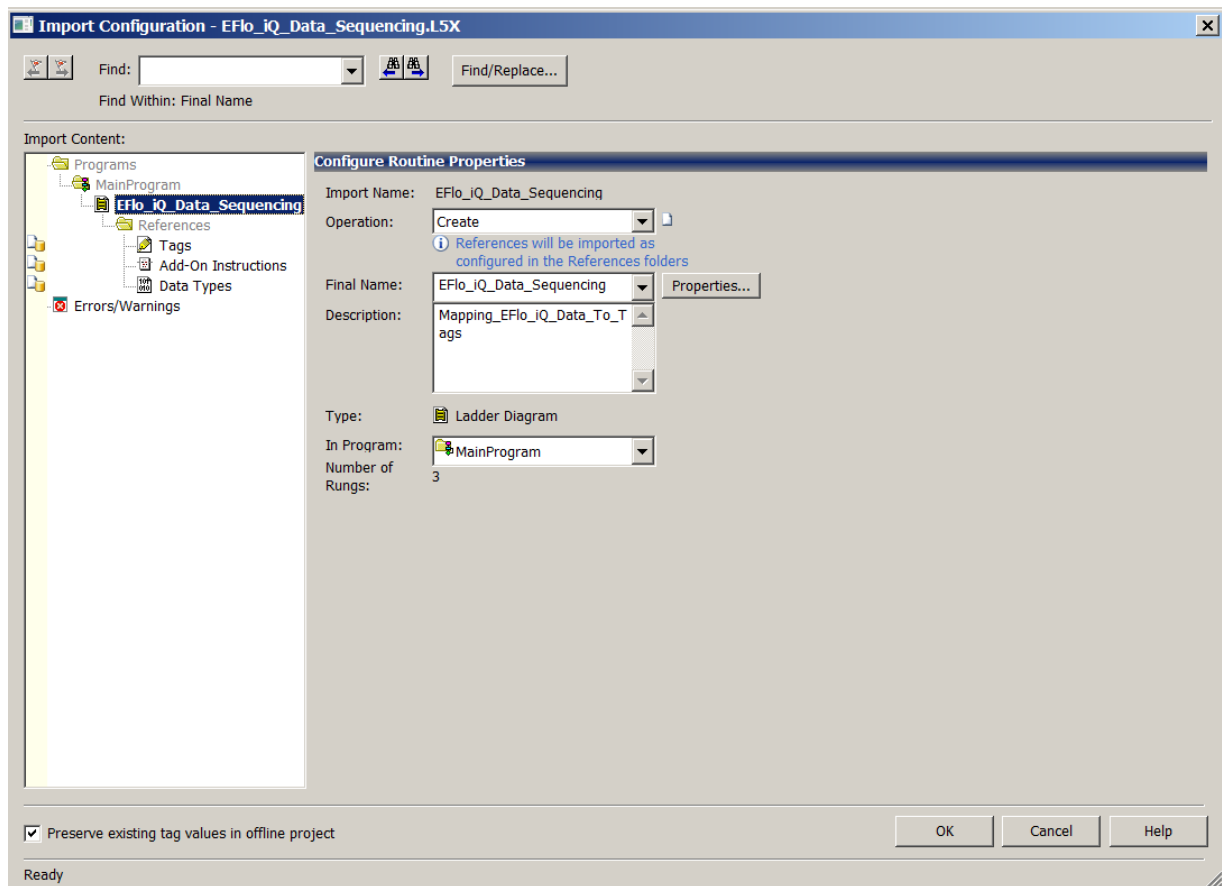


11. Select the **E-Flo\_iQ\_Data\_Sequencing.L5X** file.

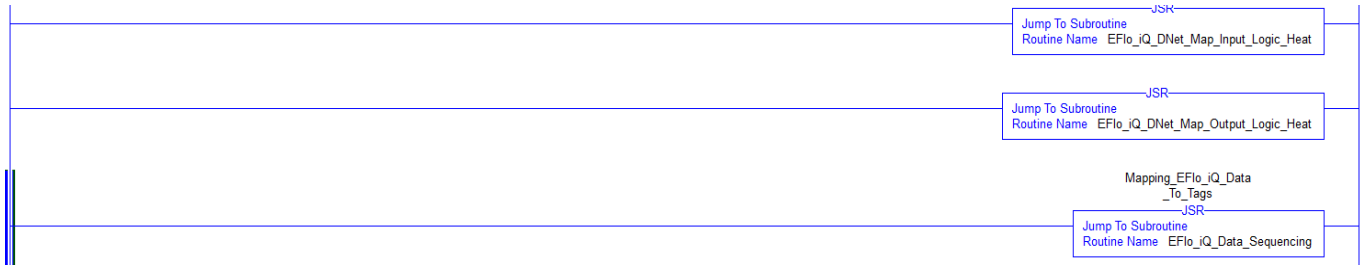


12. The following pop-up will display.

- a) Under Type Type / Ladder Diagram, select the folder to insert the new routine into. In the example screen below it is set to MainProgram.
- b) Click **OK**.

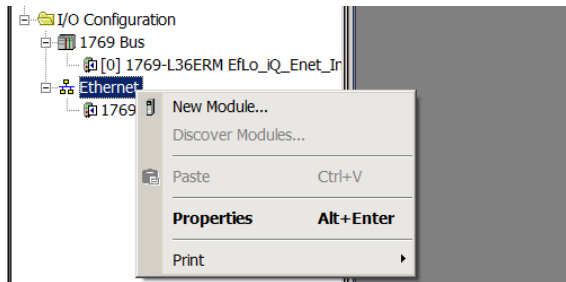


13. Each Routine Created above must have a Jump To Subroutine instruction

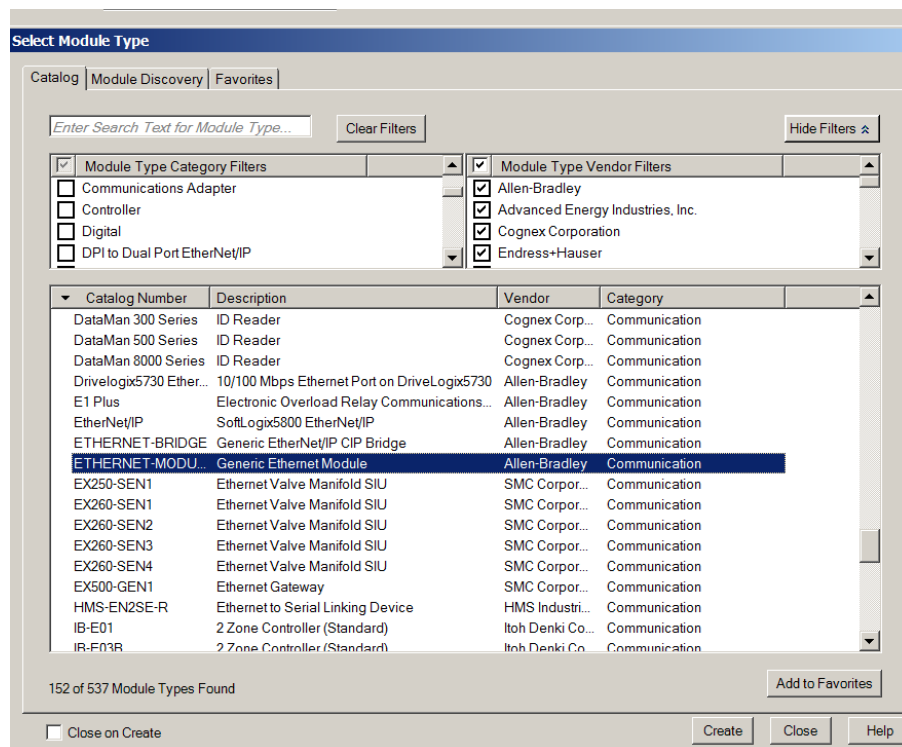


## E-Flo iQ Ambient Ethernet PLC Logic Install

1. Create a New I/O Module

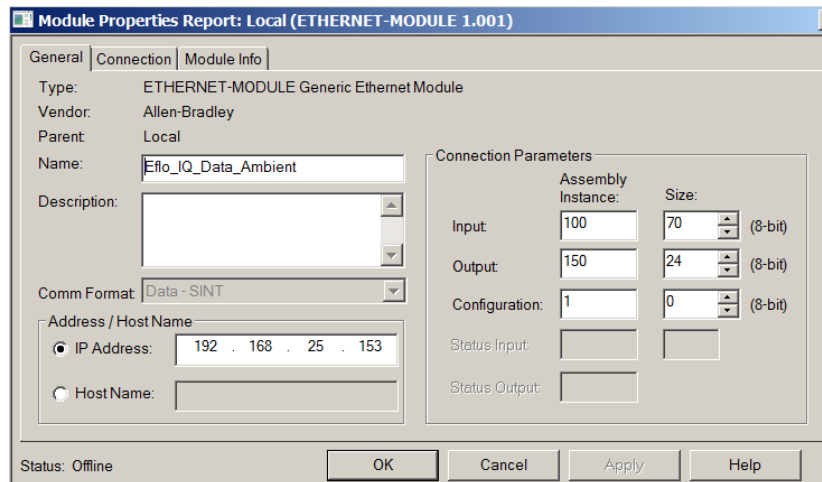


2. Select a Generic Ethernet Module

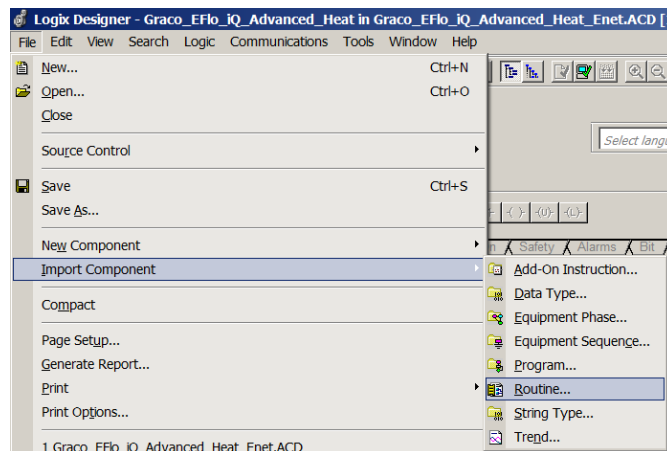


3. Set Generic Ethernet Module Communication Properties: Name, Comm Format, Assembly Instance, Assembly Size

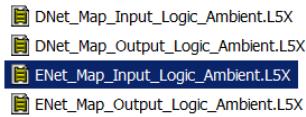
**NOTE:** These must match the example below. IP Address should be set to the IP Address of the CGM Module, configured in the E-Flo iQ ADM setup screen.



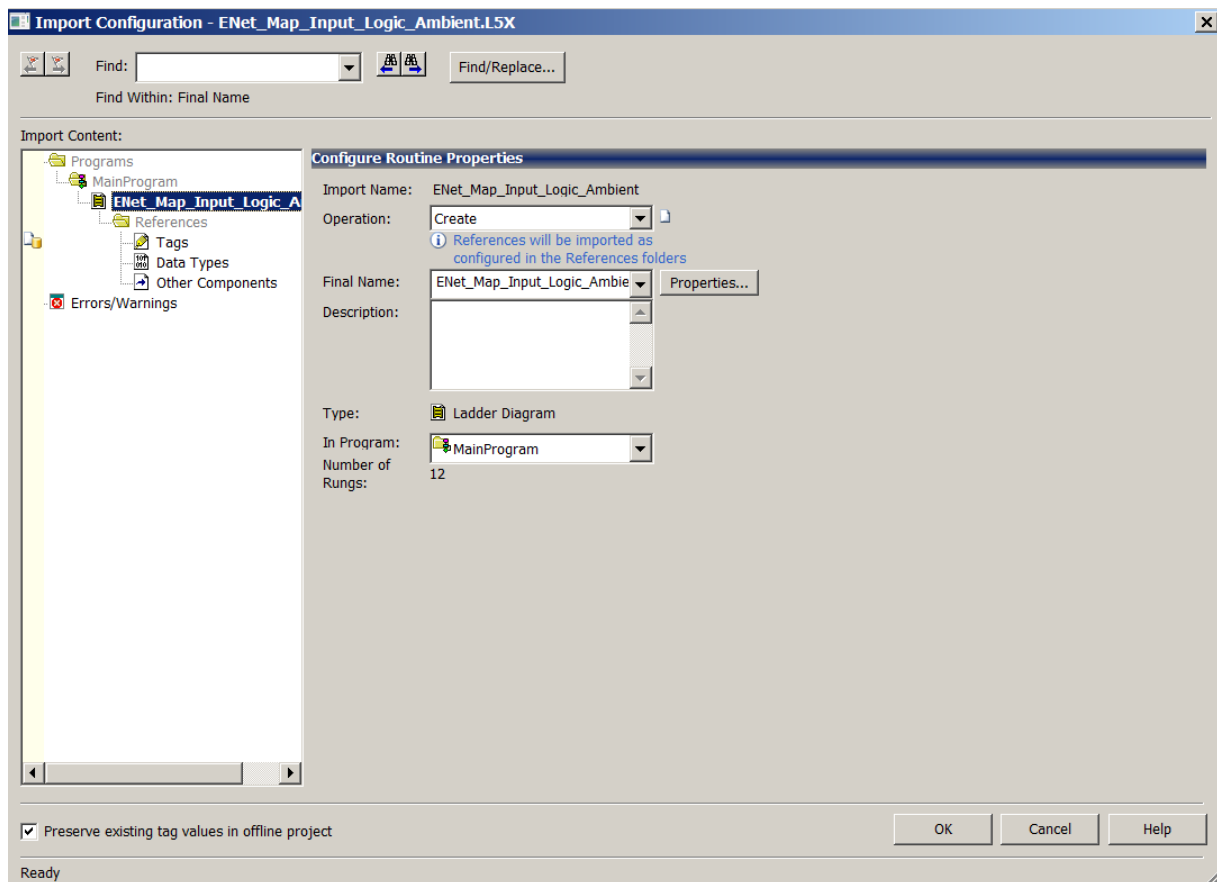
4. Create an E-Flo iQ Ethernet Input Mapping Logic Routine.
  - a) Click **File** in Rockwell Logic Designer.
  - b) Select **Import Component | Routine**. This routine creates the E-Flo iQ Ethernet Input I/O to Program tags mapping.



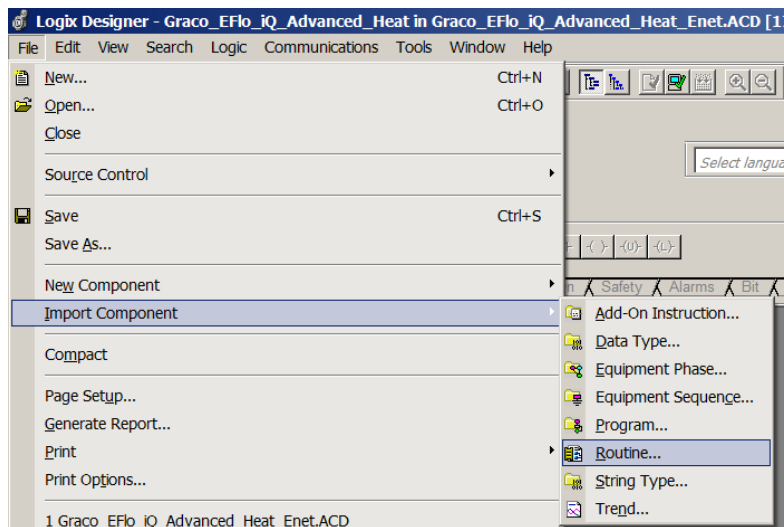
5. Select the **E-Flo\_iQ\_ENet\_Map\_Input\_Logic\_Ambient.L5X** file.



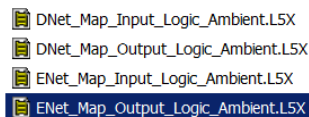
6. The following pop-up will display.
  - a) Under Type Type / Ladder Diagram, select the folder to insert the new routine into. In the example screen below, it is set to MainProgram.
  - b) Click **OK**.



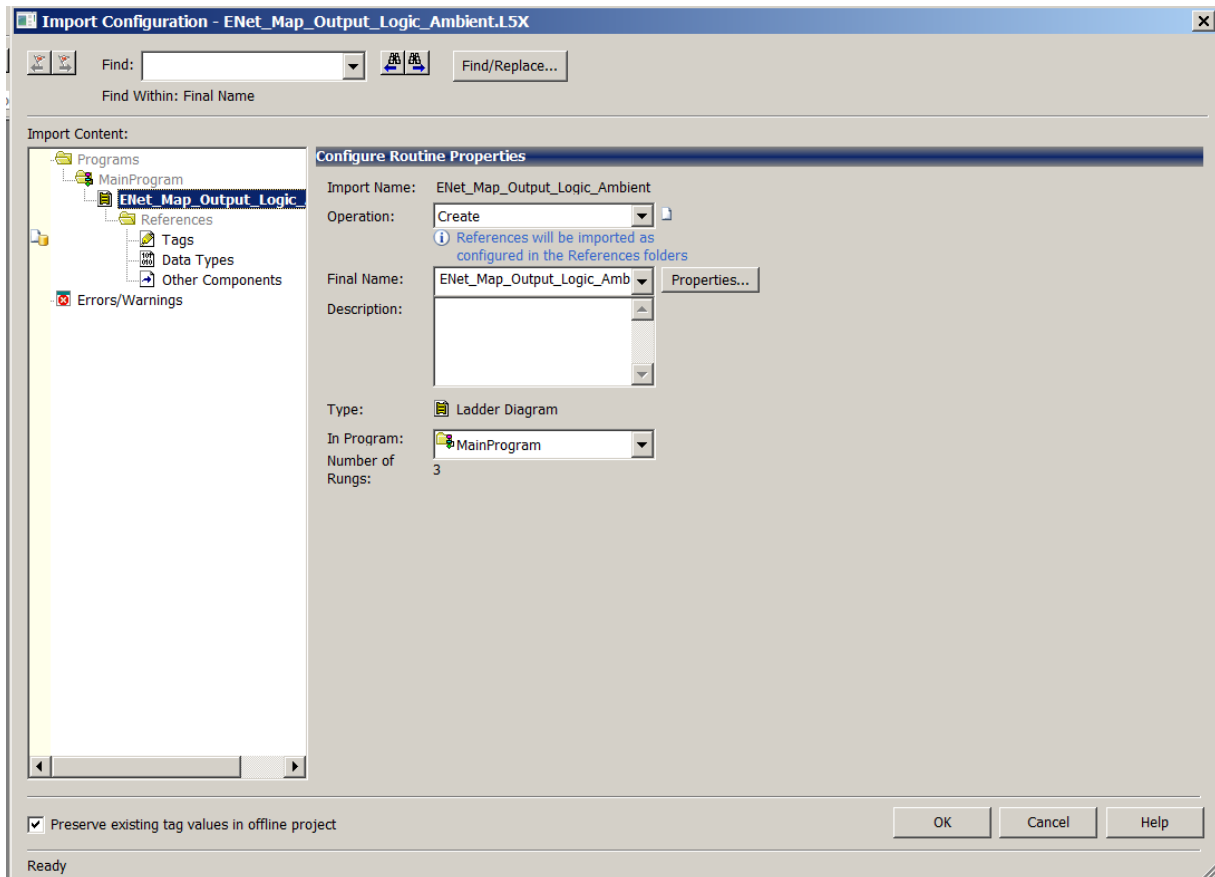
7. Create an E-Flo iQ Ethernet Output Mapping Logic Routine.
  - a) Click **File** in Rockwell Logic Designer.
  - b) Select **Import Component | Routine**. This routine creates the E-Flo iQ Ethernet Output I/O to Program tags mapping.



8. Select the **E-Flo\_iQ\_EtherNet\_Map\_Output\_Logic\_Ambient.L5X** File.

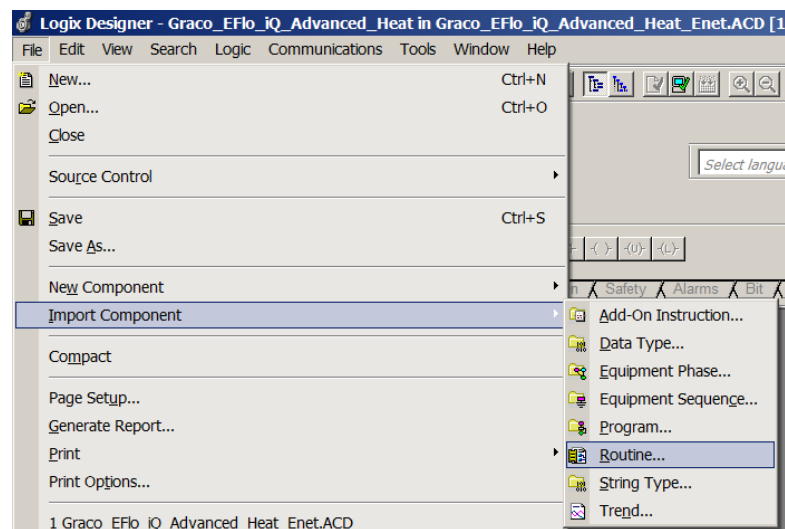


9. The following pop-up will display
  - a) Under Type Type / Ladder Diagram, select the folder to insert the new routine into. In the example screen below, it is set to MainProgram.
  - b) Click **OK**.

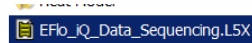


10. Create E-Flo iQ Data Sequencing Logic Routine

- Click **File** in Rockwell Logic Designer.
- Select **Import Component | Routine**. This routine creates the E-Flo iQ Pump Control AOI, E-Flo iQ and the E-Flo iQ Job Log AOI.

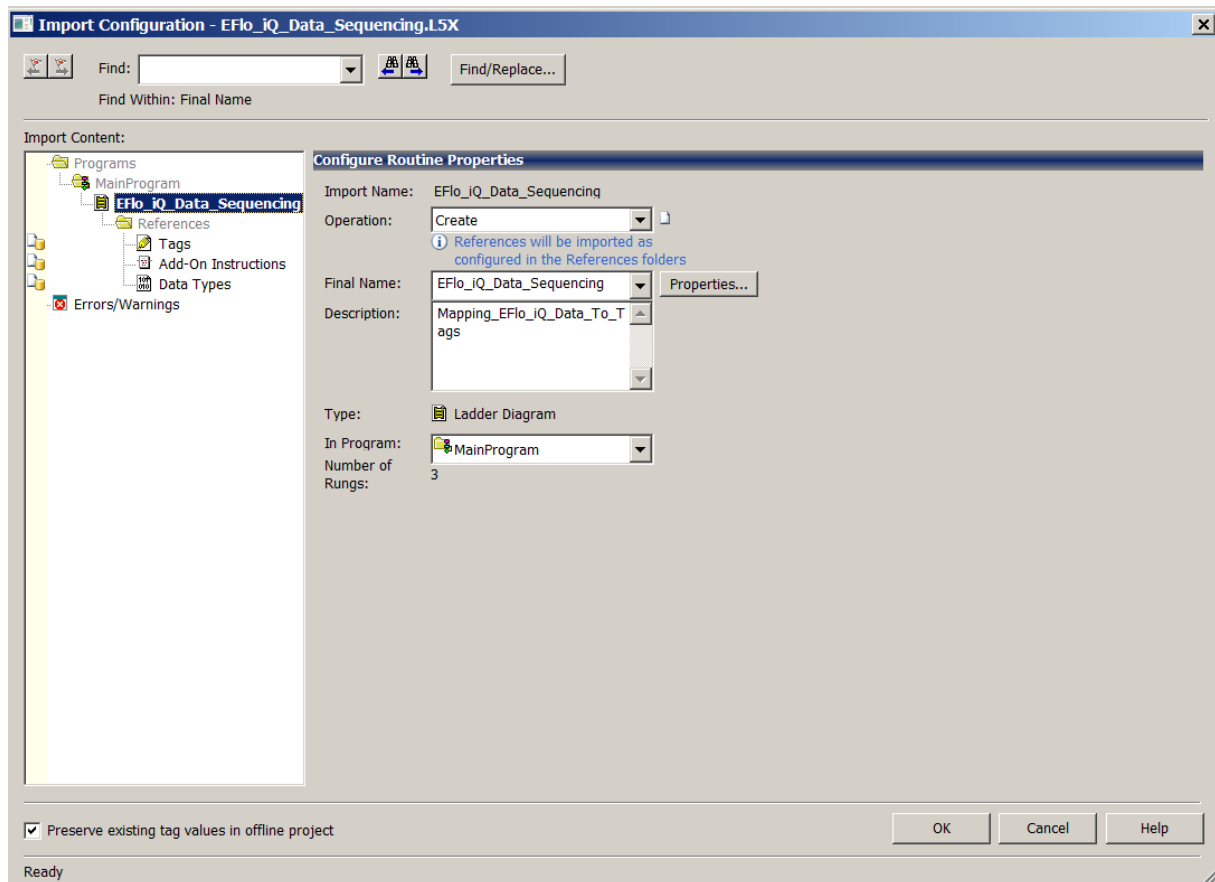


11. Select E-Flo\_iQ\_Data\_Sequencing.L5X File.

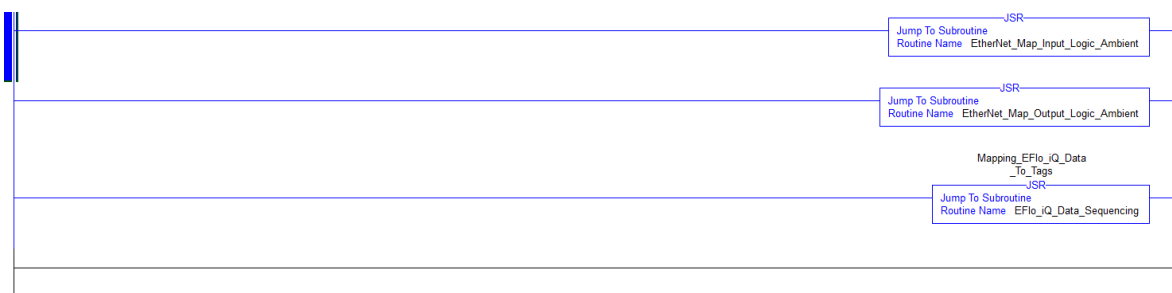


12. The following pop-up will display.

- Under Type / Ladder Diagram, select the folder to insert the new routine into. In the example screen below, it is set to MainProgram.
- Click **OK**.

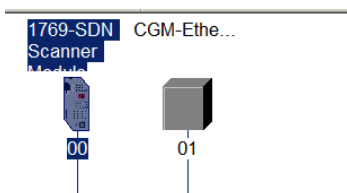


13. Each Routine Created above must have a Jump To Subroutine instruction.



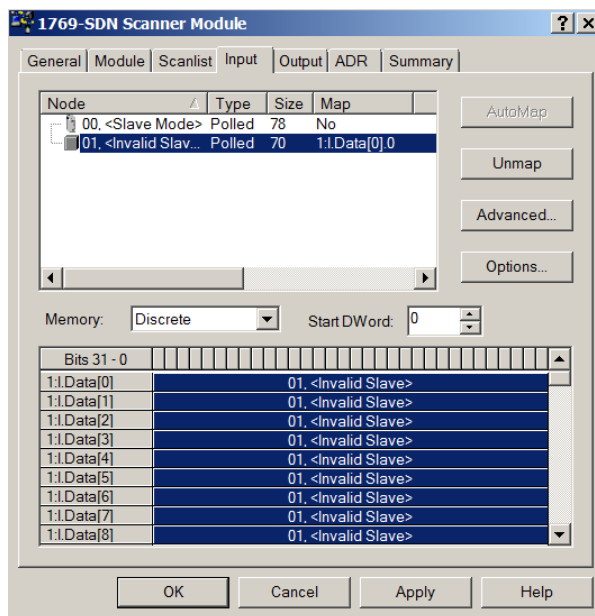
## E-Flo iQ Ambient DeviceNet PLC Logic Install

1. Open RSNetworkx for DeviceNet program and open the DeviceNet scanner properties.



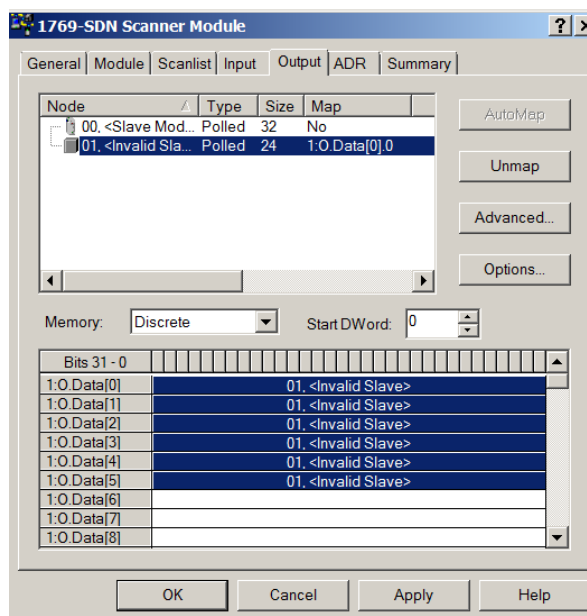
2. Add the CGM DeviceNet Inputs to the input mapping table. The inputs should be set for Size 70, Memory Discrete.

**NOTE:** The start word needs to be set for your existing application. In this example, the CGM is the only DeviceNet Device and there the start word is at 0.

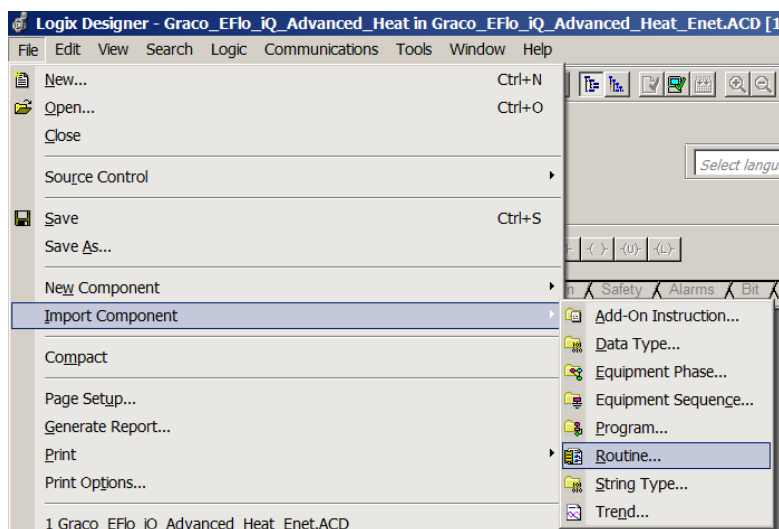


3. Add the CGM DeviceNet Outputs to the output mapping table. The inputs should be set for Size 24, Memory Discrete.

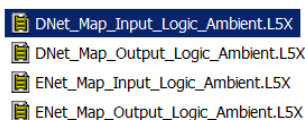
**NOTE:** The start word needs to be set for your existing application. In this example, the CGM is the only DeviceNet Device and there the start word is at 0.



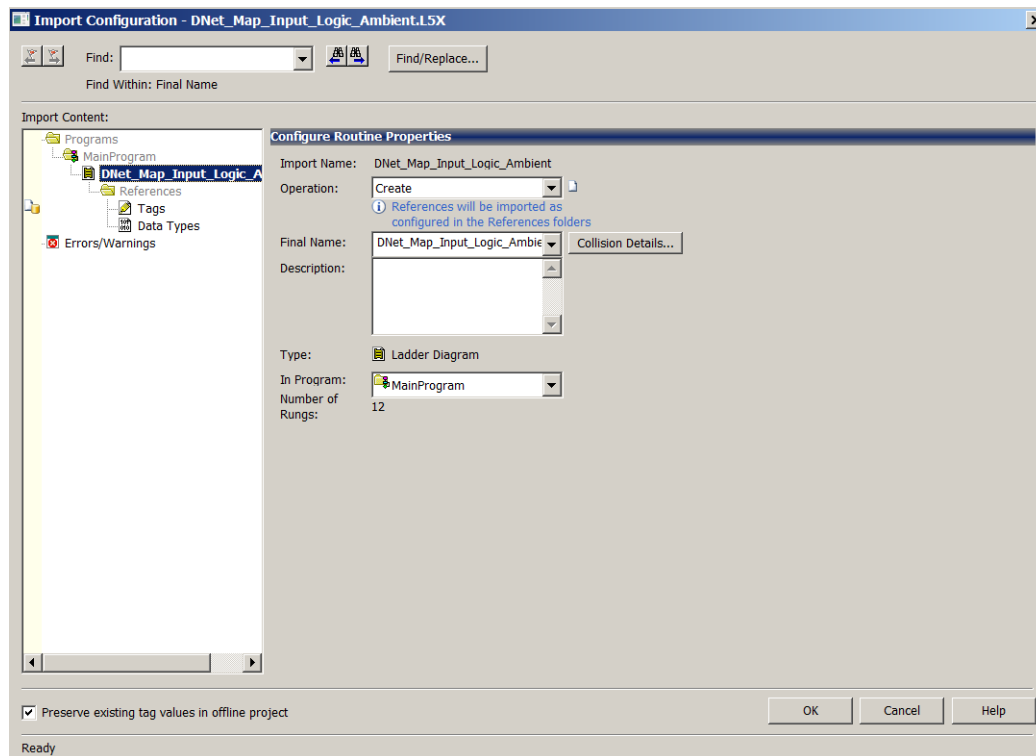
4. Create E-Flo iQ DeviceNet Input Mapping Logic Routine
  - a) Click **File** in Rockwell Logic Designer.
  - b) Select **Import Component | Routine**. This routine creates the E-Flo iQ DeviceNet Map Input I/O to Program tags mapping.



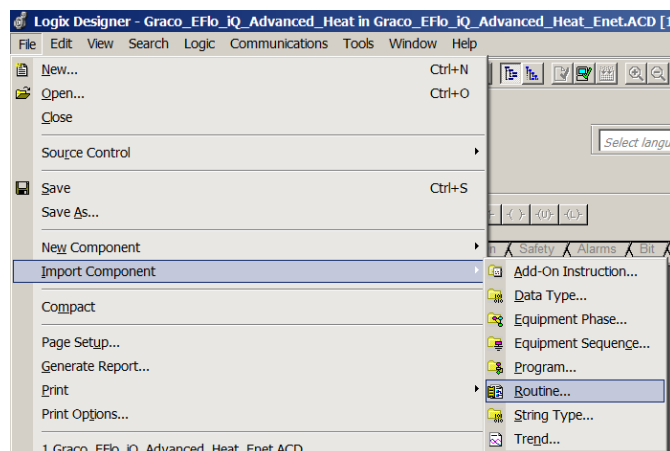
5. Select the **E-Flo\_iQ\_DNet\_Map\_Input\_Logic\_Ambient.L5X** file.



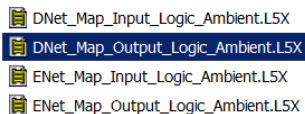
6. The following pop-up will display
  - a) Under Type, the following pop-up will display.
  - b) Under Type / Ladder Diagram, select the folder to insert the new routine into. In the example screen below, it is set to MainProgram.
  - c) Click **OK**.



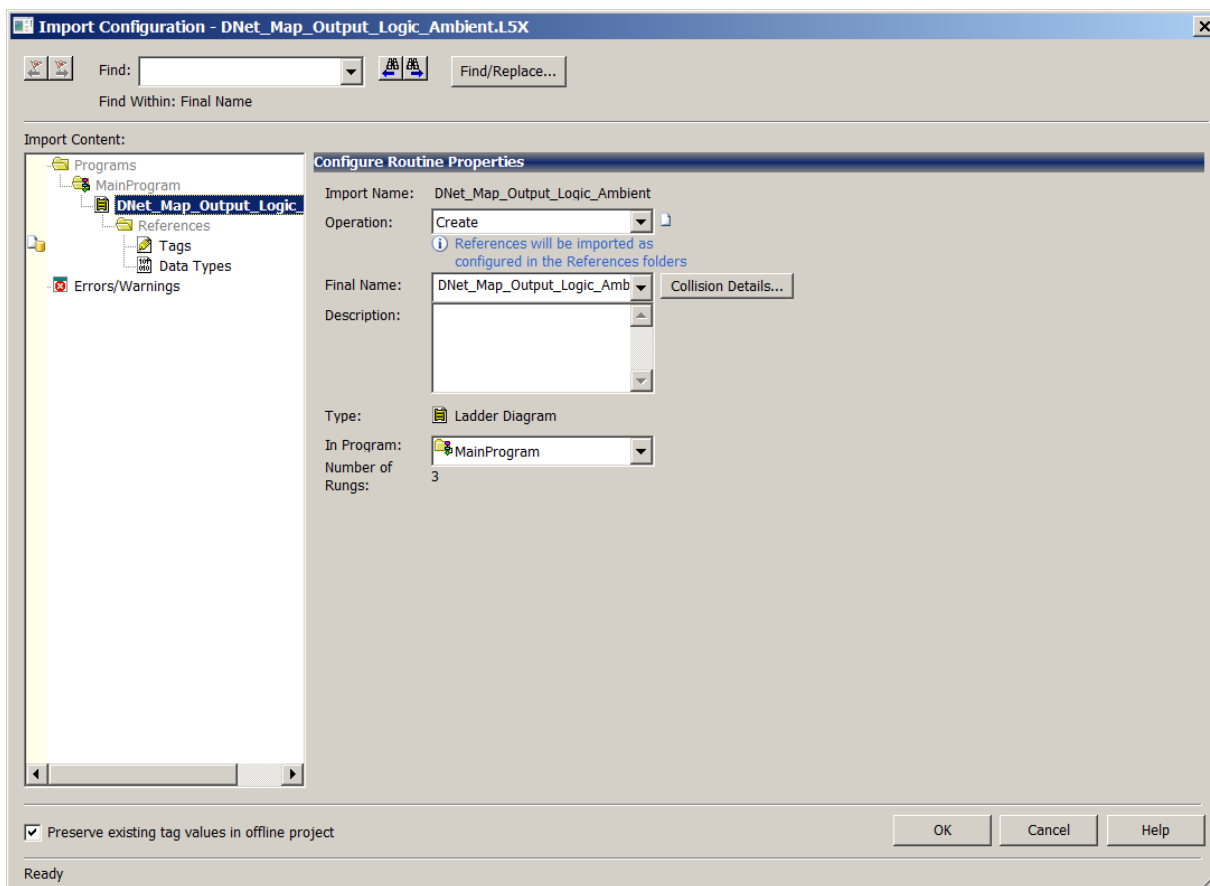
7. Create an E-Flo iQ DeviceNet Output Mapping Logic Routine
  - a) Click **File** in Rockwell Logic Designer.
  - b) Select **Import Component | Routine**. This routine creates the E-Flo iQ DeviceNet Map Output I/O to Program tags mapping.



8. Select the **E-Flo\_iQ\_DNet\_Map\_Output\_Logic\_Ambient.L5X** file.

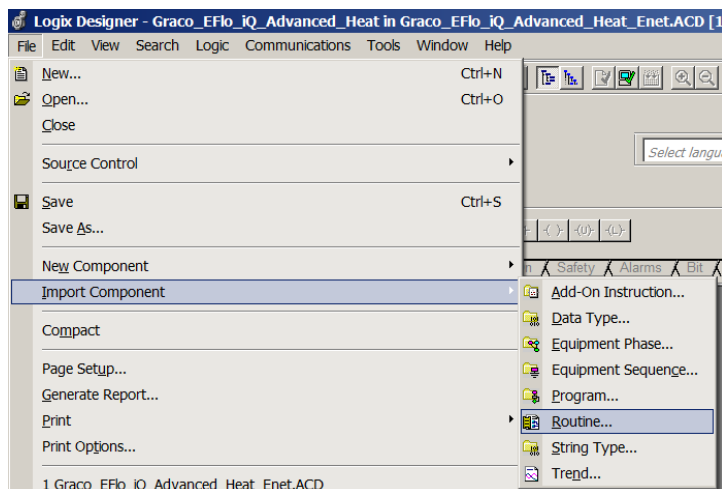


9. The following pop-up will display.
  - a) Under Type / Ladder Diagram, select the folder to insert the new routine into. In the example screen below, it is set to MainProgram.
  - b) Click **OK**.

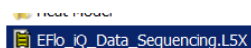


10. Create E-Flo iQ Data Sequencing Logic Routine

- a) Click **File** in Rockwell Logic Designer. Select **Import Component | Routine**. This routine creates the E-Flo iQ Pump Control AOI and the E-Flo iQ Job Log AOI.

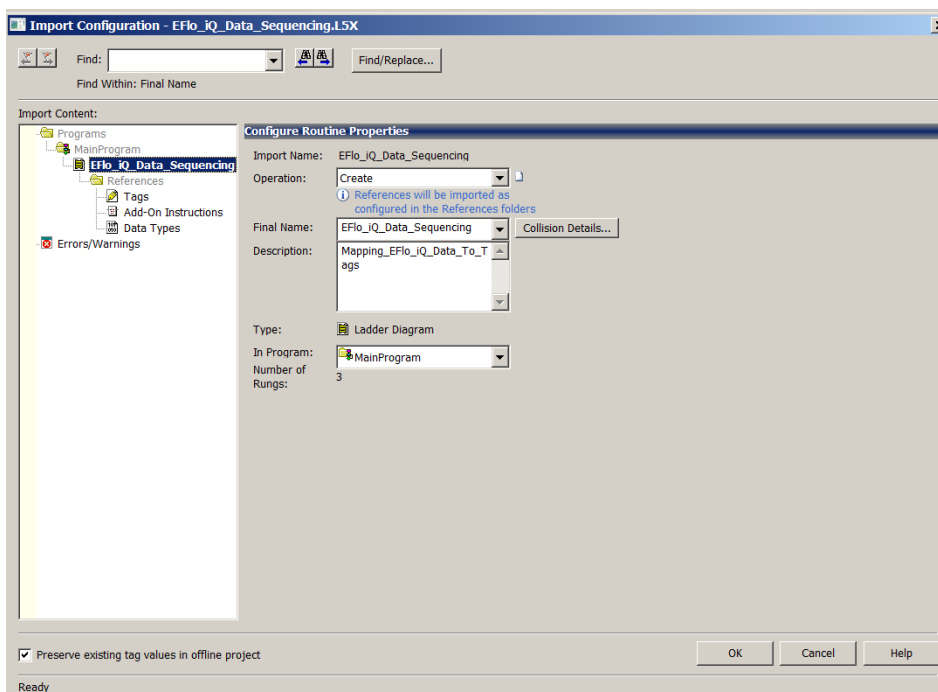


11. Select the **E-Flo\_iQ\_Data\_Sequencing.L5X** file.

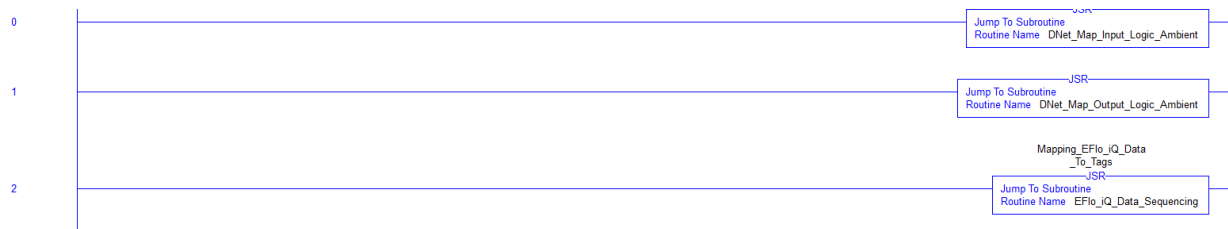


12. The following pop-up will display.

- a) Under Type / Ladder Diagram, select the folder to insert the new routine into. In the example screen below, it is set to MainProgram.
- b) Click **OK**.



13. Each Routine Created above must have a Jump To Subroutine instruction

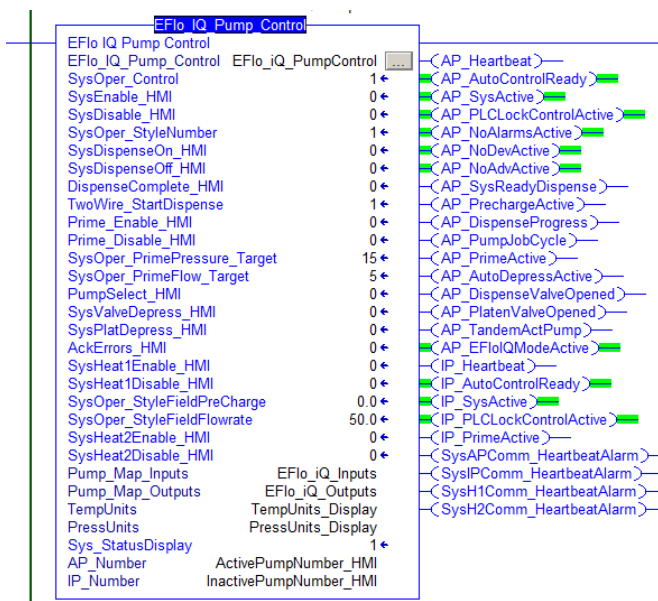


## E-Flo iQ PLC Add-On-Instruction (AOI) Description

The E-Flo\_iQ\_Pump\_Control AOI controls the function of the pump (Single Pump), Active Pump/Inactive Pump (Tandem Pumps) and the non-data exchange heat controls (Heat Model).

- Sys Inputs/Outputs – System signals not specific to the pumps or heat.
- \_HMI - Signals linked to and controlled by the Operator Interface, when the Operator Interface is in Operator Control Mode.
- \_PLC - Signals controlled by customer process logic when Operator Interface is in Program Control Mode.
- AP\_ - Feedback and control signals for active pump.
- IP\_ - Feedback and control signals for inactive pump.
- H1\_ - Feedback and control signals for heat 1 module.
- H2\_ - Feedback and control signals for heat 2 module.

**NOTE:** Selecting the AOI and pressing F1 in the Studio5000 software will display the instruction help for this AOI.



1. The E-Flo\_iQ\_Data\_Exchange AOI controls the function of the Data Exchange Pump and Data Exchange Heat (Heat Model).
  - Sys Inputs/Outputs – System signals not specific to the pumps or heat.
  - \_HMI - Signals linked to and controlled by the Operator Interface, when the Operator Interface is in Operator Control Mode.
  - \_PLC - Signals controlled by customer process logic when Operator Interface is in Program Control Mode.
  - AP\_ - Feedback and control signals for active pump.
  - IP\_ - Feedback and control signals for inactive pump.
  - H1\_ - Feedback and control signals for heat 1 module.

**NOTE: Selecting the AOI and pressing F1 in the Studio5000 software will display the instruction help for this AOI.**

EFlo iQ Data Exchange	
EFlo iQ Data Exchange	EFlo_iQ_DataExchange
MetricEnglishConv_In	EFlo_iQ_PumpControl.MetricEnglishConv_HMI
AP_PumpDirection	0
AP_AverageMtrCurrent	2
AP_PumpAlm_Status	0.2
H1_AMZActModAlm_Status	0
H1_AMZActiveZone1Alm_Status	0
I_PumpNumberString	InactivePumpNumber_HMI
A_PumpNumberString	ActivePumpNumber_HMI
H1_Zone1ActualTemp	89.78001
H1_Zone2ActualTemp	74.840004
H1_Zone3ActualTemp	0.0
H1_Zone4ActualTemp	0.0
H1_Zone5ActualTemp	0.0
H1_Zone6ActualTemp	0.0
H1_Zone8ActualTemp	79.880005
H1_Zone9ActualTemp	75.02
H1_Zone1SetpointTemp	89.78001
H1_Zone2SetpointTemp	74.840004
H1_Zone3SetpointTemp	74.840004
H1_Zone4SetpointTemp	74.840004
H1_Zone5SetpointTemp	74.840004
H1_Zone6SetpointTemp	74.840004
H1_Zone7SetpointTemp	74.840004
H1_Zone8SetpointTemp	74.840004
H1_Zone9SetpointTemp	74.840004
Pump_Map_Inputs	EFlo_iQ_Inputs
Pump_Map_Outputs	EFlo_iQ_Outputs
EditMode_In	EFlo_iQ_PumpControl.EditMode_In
SysType_In	EFlo_iQ_PumpControl.SysType_HMI

2. The E-Flo\_iQ\_Data\_Exchange\_Heat2 AOI controls the function of the Data Exchange Heat 2 (Heat Model).
  - Sys Inputs/Outputs – System signals not specific to the pumps or heat.
  - \_HMI - Signals linked to and controlled by the Operator Interface, when the Operator Interface is in Operator Control Mode.
  - \_PLC - Signals controlled by customer process logic when Operator Interface is in Program Control Mode.
  - H2\_ - Feedback and control signals for heat 1 module.

**NOTE: Selecting the AOI and pressing F1 in the Studio5000 software will display the instruction help for this AOI.**

EFlo IQ Data	
Exchange with Heat 2	
EFlo_IQ_Data_Exchange_Heat2	
EFlo IQ Data Exchange with Heat 2	EFlo_iQ_DataExchange_H2
EFlo_IQ_Data_Exchange_...	EFlo_iQ_PumpControl.MetricEnglishConv_HMI
MetricEnglishConv_In	0
ScreenDisplayNumber	EFlo_iQ_DataExchange.ScreenDisplayNumber
	1
H2_AMZActModAlm_Status	0
H2_Zone1ActualTemp	32.0
H2_Zone2ActualTemp	0.0
H2_Zone3ActualTemp	70.52
H2_Zone4ActualTemp	71.6
H2_Zone5ActualTemp	0.0
H2_Zone6ActualTemp	0.0
H2_Zone7ActualTemp	0.0
H2_Zone8ActualTemp	70.7
H2_Zone9ActualTemp	71.240005
H2_Zone1SetpointTemp	74.840004
H2_Zone2SetpointTemp	74.840004
H2_Zone3SetpointTemp	69.98
H2_Zone4SetpointTemp	69.98
H2_Zone5SetpointTemp	59.0
H2_Zone6SetpointTemp	59.0
H2_Zone7SetpointTemp	59.0
H2_Zone8SetpointTemp	69.98
H2_Zone9SetpointTemp	69.98
Pump_Map_Inputs	EFlo_iQ_Inputs
Pump_Map_Outputs	EFlo_iQ_Outputs
EditMode_In	EFlo_iQ_PumpControl.EditMode_In
	0
SysType_In	EFlo_iQ_PumpControl.SysType_Hmi
	3

- The E-Flo\_iQ-Advanced\_job\_Log AOI logs the job data for each dispense cycle to be displayed on the HMI.
  - \_HMI - Signals linked to and controlled by the Operator Interface, when the Operator Interface is in Operator Control Mode.
  - AP\_ - Feedback and control signals for active pump.
  - JobDataArray\_HMI – This is the PLC tags that contain the job data for each cycle. The instruction is capable of logging 20 cycles. The data logging buffer is circular and will over write data.

**NOTE: Selecting the AOI and pressing F1 in the Studio5000 software will display the instruction help for this AOI.**

EFlo IQ Job Log	
EFlo_IQ_Advanced_Job_Log	
EFlo IQ Job Log	EFlo_iQ_JobLog
EFlo_IQ_Advanced_Job_Log...	JobDataArray_HMI
JobData_Array	EFlo_iQ_PumpControl.AP_PumpJobCycle
AP_PumpInJobCycle_In	0
AP_PumpNumber_In	ActivePumpNumber_HMI
AP_PumpShotSizeReq_In	EFlo_iQ_PumpControl.AP_ActStyleShotSizeReq
	0.0
AP_PumpShotSizeAct_In	EFlo_iQ_PumpControl.AP_ActStyleShotSize
	-0.01
AP_PumpPressure_In	EFlo_iQ_PumpControl.AP_OutletPressure
	49.31292
AP_ValvePressure_In	EFlo_iQ_PumpControl.AP_ValvePressure
	250.91574
AP_DispenseValveOpen_In	EFlo_iQ_PumpControl.AP_DispenseValveOpened
	0
AP_StyleNumber_In	EFlo_iQ_PumpControl.SysOper_StyleNumber
	1

## Allen-Bradley HMI Screen Integration

The Allen-Bradley HMI integration is based on XML files that need to be imported into existing FactoryTalk View ME applications. XML files will be created to add the E-Flo iQ HMI Screens. The XML files may need to be edited using Notepad (or a similar program) to integrate into existing HMI applications.

### E-Flo iQ HMI Screen File List

The following is a list of screens that can be imported into a new or existing application:

#### Displays

- Administrative – This screen is used to setup the initial E-Flo iQ configuration and HMI usernames and passwords.
- Alarms – This screen is used to display the E-Flo iQ alarms.
- Heat 1 Setpoints - This screen is used to view and edit the Heat 1 Setpoints.
- Heat 1 Status – This screen is used to view actual status on Heat 1.
- Heat 2 Setpoints - This screen is used to view and edit the Heat 2 Setpoints.
- Heat 2 Status – This screen is used to view actual status on Heat 2.
- Job Log – This screen is used to view the job cycle dispense data.
- Main Single Ambient – This main screen is used for Single Ambient configurations.
- Main Single Heat – This main screen is used for Single Heat configurations.
- Main Tandem Ambient – This main screen is used for Tandem Ambient configurations.
- Main Tandem Heat – This screen is used for Tandem Heat configurations.
- Navigation – This screen is used to navigate to the screens listed above.
- Pump Active Status - This screen is used to monitor the Active Pump Status.
- Pump Inactive Pump Status – This screen is used to monitor the Inactive Pump Status.
- Style Edit – This screen is used to select the Style definition number and make edits to that style.

#### Global Objects

- Main Screen – This file contains the global objects used on the screens listed above.

#### Images

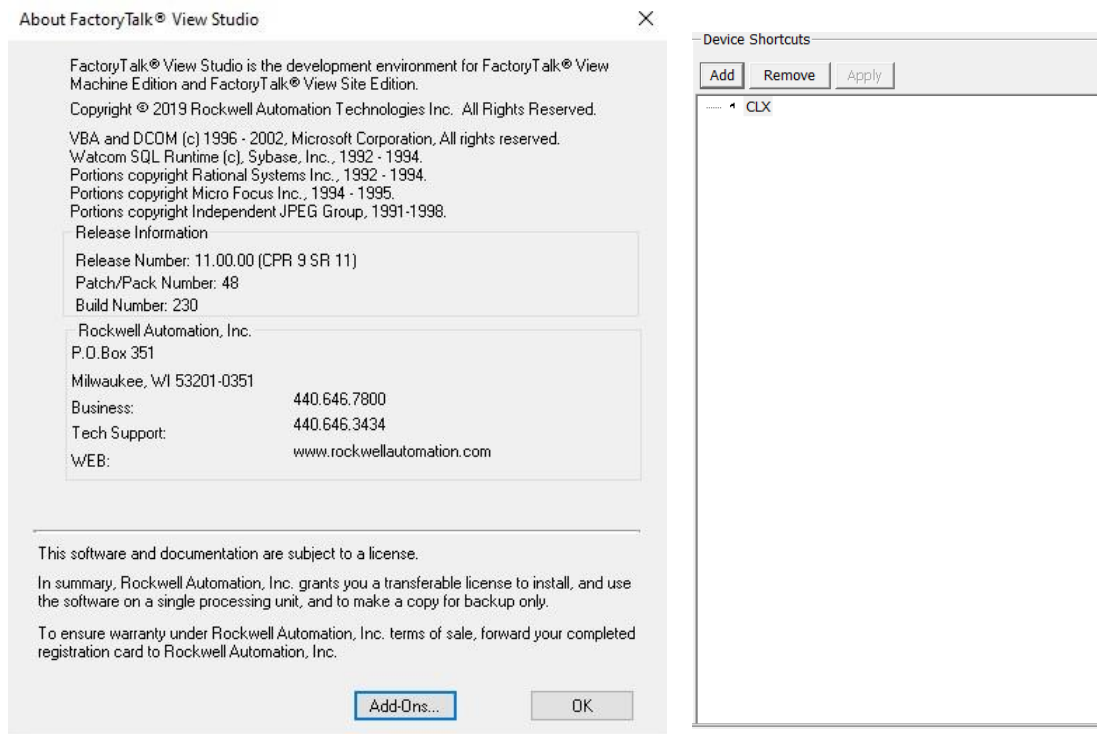
- Images – This file contains the background images of the E-Flo iQ for the HMI screens.

#### Alarms Setup

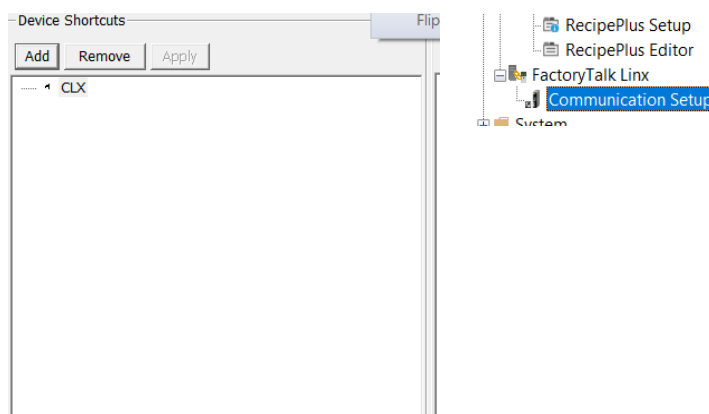
- Alarms – This file is used to import the alarms into the alarm setup.

## E-Flo iQ HMI Screen Install from version 11 to version 11

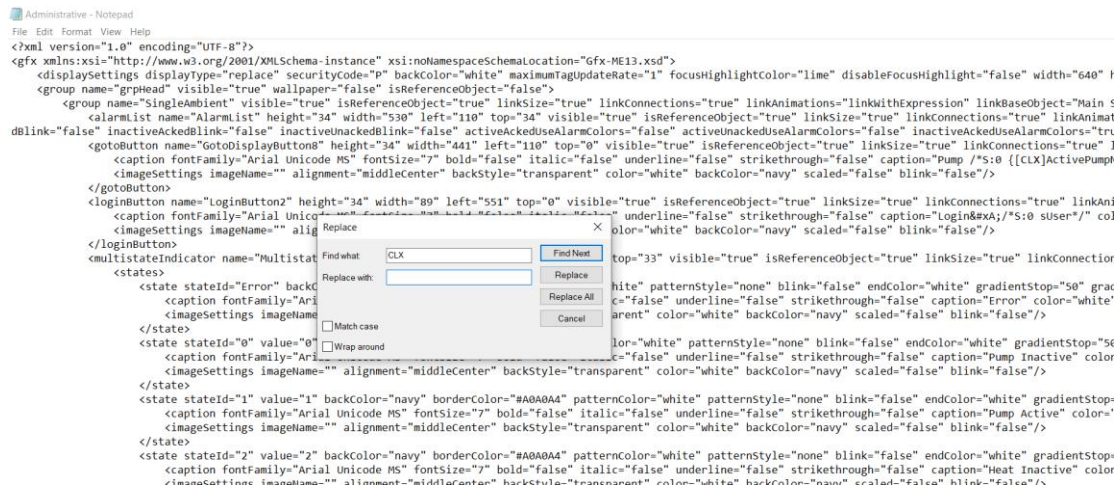
The following will describe how to bring the E-Flo iQ screens into a new and existing version 11 FactoryTalk Machine Edition applications. The screen XML files may need edited for a different communication Device Shortcut. The default version of the E-Flo iQ application is done in **FactoryTalk View ME version 11** and the default Device Shortcut is **CLX**



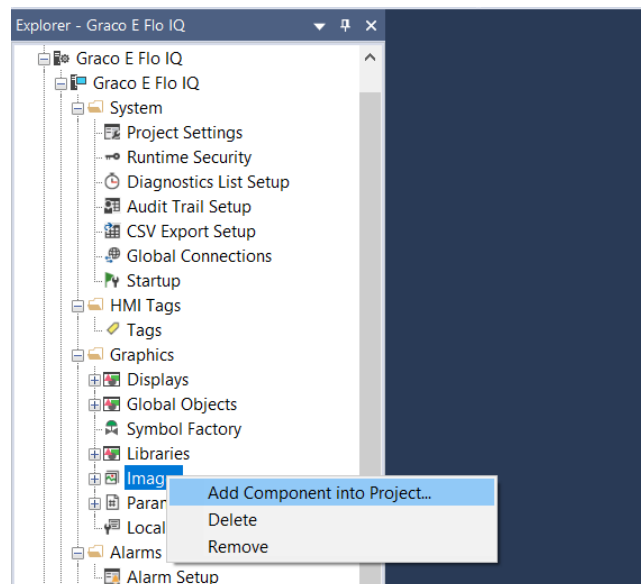
1. First the user must click the communication setup in FactoryTalk Me and create a Device Shortcut named **CLX**. This shortcut will have to be linked to the PLC processor.



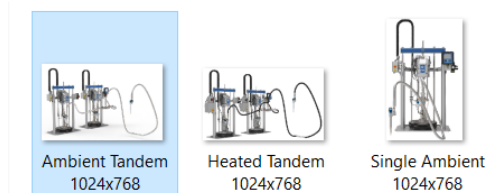
2. If the user has an existing HMI application and wants to use their current Device Shortcut to their PLC, the screen XML files will need to be edited using Notepad (or a similar program) to change the device shortcut name in the files before importing. This document assumes Notepad is the chosen application. The following steps describe how to edit the XML files.
  - Find the location where you stored the screen XML files.
  - Open the XML file using Notepad.
  - Click **Replace**.
  - Enter CLX in the **Find What** box.
  - Enter the name of your existing Device Shortcut in your HMI Application.
  - Click **Replace All**.
  - Save the XML file.
  - Repeat the above for all screens you are importing.



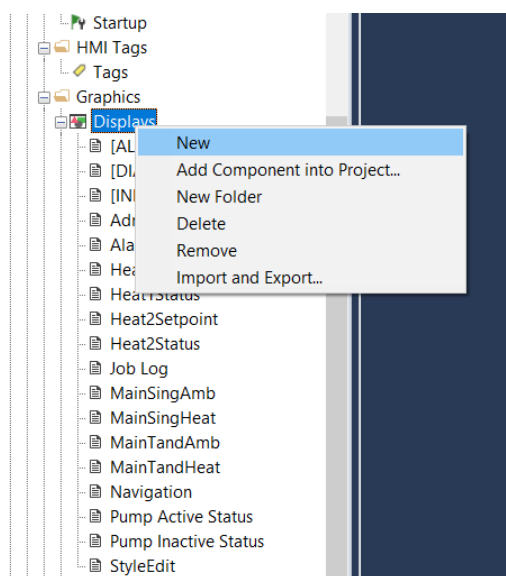
3. Right-click **Images** in the Factory Talk View ME HMI Application and select **Add New Component into Project**.



4. Select the E-Flo iQ images and import into the HMI project.

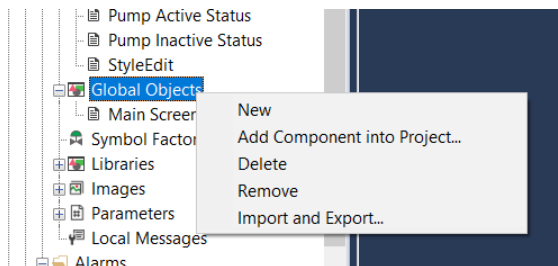


5. Right-click **Displays** in the Factory Talk View ME HMI Application, and then click **New**.

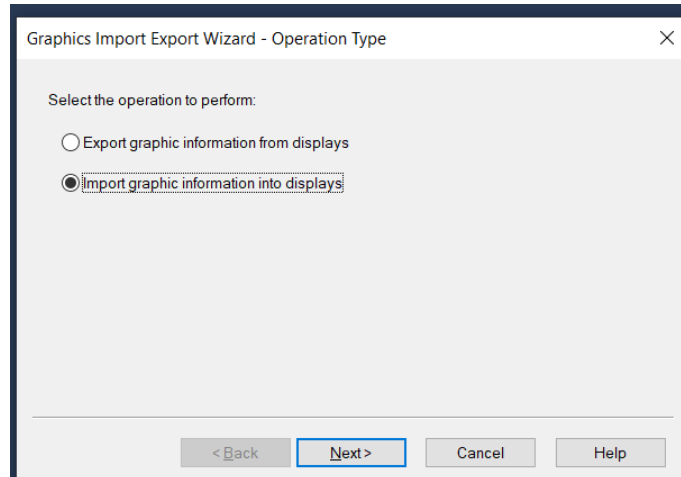


6. Create a new screen and name it to match any of the screens in the screen list above.
7. Once you have created new screens and named them to match the screen list above, you can start importing the screens.
8. Create the global object screen first. Right-click Global Objects and select **Import and Export**

**NOTE:** If your Device Shortcut in your HMI application is not CLX, you must edit the XML files to match your device shortcut before importing the screens.

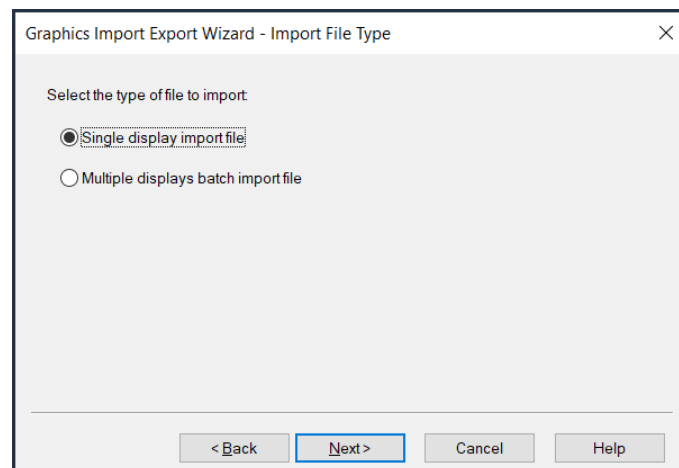


9. Select **Import Graphic Information Into Displays**.



10. You can choose to backup your existing display before modifying it with the import.

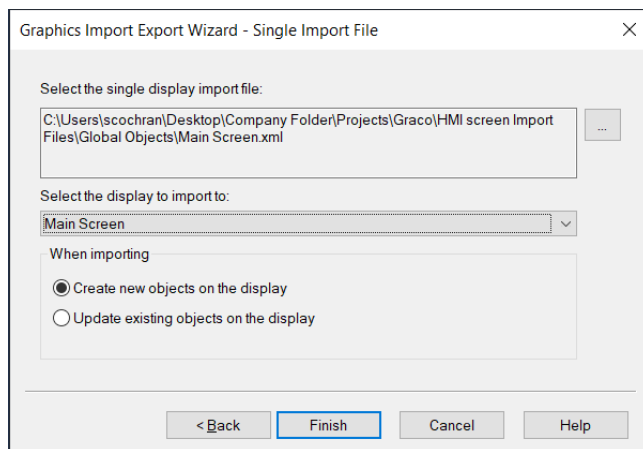
11. Select **Single Display Import**.



12. Select the location where you stored the Main Screen XML file.

 Main Screen	5/17/2021 11:44 A...	XML Document	215 KB
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13. Click the dropdown for **Select The Display to Import To:** and select **Main Screen**.

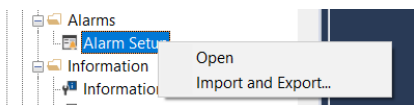


14. Click **Finish** and new objects will be created on your screen. Save the screen.
15. After your global object screen is imported, you can repeat the steps above for the display screens by right-clicking **Displays** and selecting **Import and Export**. You can import single screens or perform a multiple displays batch import.

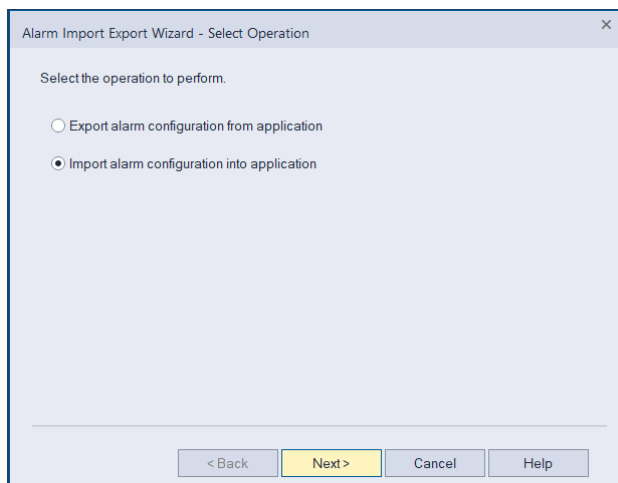
**NOTE:** If your Device Shortcut in your HMI application is not CLX, you must edit the XML files to match your device shortcut before importing the screens.

16. Right-click **Alarm Setup** in the HMI Application.

17. Select **Import and Export**.



18. Select **Import Alarm Configuration into Application**.



19. Choose whether you would like to backup your existing alarm configuration before importing.
20. Select the location of the Alarm configuration XML file.

**NOTE:** Make sure you have selected the Alarm Setup Configuration XML file and not the screen XML. If your Device Shortcut in your HMI application is not CLX, you must edit the XML files to match your device shortcut before importing the Alarm Configuration.

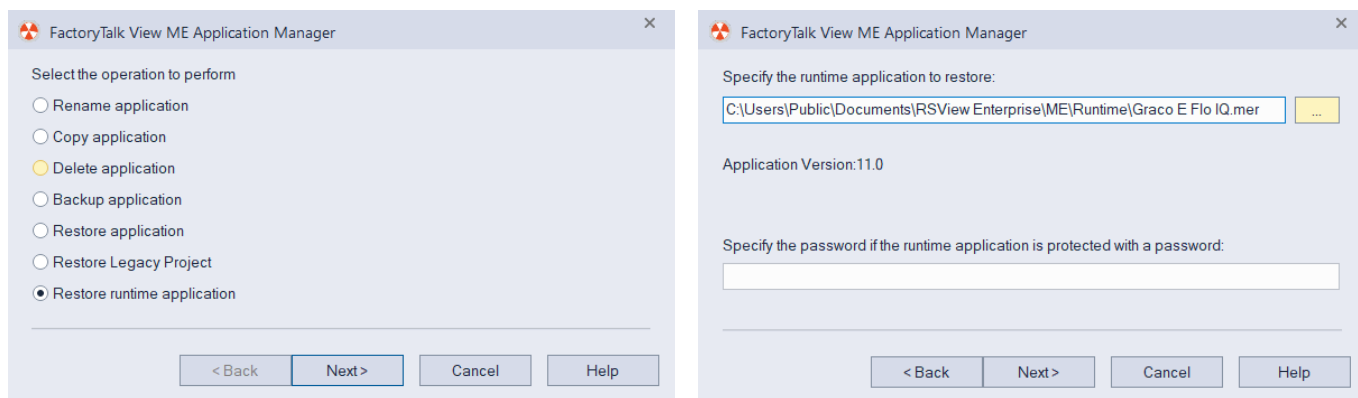
Name	Date modified	Type	Size
Alarms	5/17/2021 12:11 PM	XML Document	564 KB

21. Click **Finish** to create the alarms in the alarm setup.

## E-Flo iQ HMI Project Install to version 10 or 12.

The following will describe how to bring the E-Flo iQ screens into a new and existing version 10 or 12 FactoryTalk Machine Edition applications. The screen XML files may need edited for a different communication Device Shortcut. The default version of the E-Flo iQ application is done in **FactoryTalk View ME version 11** and the default Device Shortcut is **CLX**.

1. Restore the FactoryTalk View ME E-Flo iQ application from the .mer runtime file.



2. When the application is restored, the screens can be exported and imported into an existing application using the steps in Section 3.2
3. Optionally, the HMI application can be restored from the .apa backup file; however, this option will only allow you to restore in version 11 of FactoryTalk View ME.

## E-Flo iQ HMI Screen Description and Functionality

### Navigation Screen

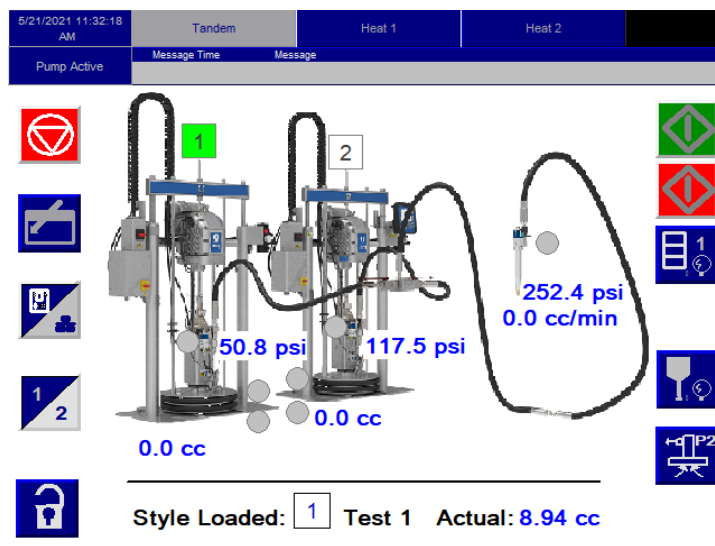
This screen is the main navigation to the other screens. Certain navigation buttons will only appear if the E-Flo iQ configuration in the advanced screen is set to the proper configuration. For example: The Heat 1 status and setpoint buttons only appear if either single or tandem heat is selected in the configuration. Additionally, some screens are not accessible unless the user has logged in higher than the default login. See *Section 11 Advanced Screen* for configuration of the Login Levels.



- Main – Login Level [Security Code A or Higher]
- Active Pump Status – Login Level [Security Code A or Higher]
- Inactive Pump Status – Login Level [Security Code A or Higher]
- Job Log – Login Level [Security Code A or Higher]
- Heat 1 Status – Login Level [Security Code A or Higher]
- Heat 2 Status – Login Level [Security Code A or Higher]
- Alarms – Login Level [Security Code A or Higher]
- Heat 1 Setpoints – Login Level [Security Code B or Higher]
- Heat 2 Setpoints – Login Level [Security Code B or Higher]
- Style Definitions – Login Level [Security Code B or Higher]
- Advanced – Login Level [Security Code P only]
- Login – Brings up a pop-up to enter username and password to log into the HMI for screen access.
- Logout – Logs out of HMI. The HMI Application is set to automatic logout with 5 minutes of inactivity.

## Main Screen

This screen is the main screen used to monitor pump status and pump controls.



The header bar displays pump status, new alarms, basic navigation, user and date/time.



Enables/Disables pumps.



Edit Mode for changing setpoints.



Operator/Program Control. In operator control the pumps can be controlled from the HMI. In program control the pumps can be controlled from the customers process logic.



Selects Pump 1 or Pump 2 for the active pump.



Goto to navigation screen.



Start pump and dispense.



Stop pump and dispense.



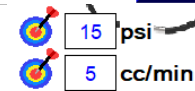
Depressurize Platen.



Depressurize Valve.



Prime Inactive Pump (Tandem).



Edit Prime Pressure Target & Prime Flow Target in Edit Mode.

Style Loaded:  Test 1

Display Style Definition loaded in Run Mode.

Style Selected:  Test 1

Display Style Definition Selected in Edit Mode.

### Active Pump Status Screen

This screen provides status on the active pump.

5/17/2021 2:56:55 PM		Tandem		Heat 1		Heat 2		Login	
Pump Active		Message Time		Message					
<b>ACTIVE PUMP STATUS</b>									
<input checked="" type="checkbox"/>	Status Heartbeat	<input type="checkbox"/>	System Ready to Dispense	<input type="checkbox"/>	Pump In Job Cycle				
<input checked="" type="checkbox"/>	Automation Ready	<input type="checkbox"/>	Drum Is Low	<input type="checkbox"/>	Priming Active				
<input checked="" type="checkbox"/>	System Active	<input type="checkbox"/>	Drum Is Empty	<input type="checkbox"/>	Valve Depress Active				
<input checked="" type="checkbox"/>	PLC Lockout/Control Active	<input type="checkbox"/>	Pump Not Primed	<input type="checkbox"/>	Platen Depress Active				
<input checked="" type="checkbox"/>	No Alarms Active	<input type="checkbox"/>	Pump Trying to Move	<input type="checkbox"/>	Auto Depress Active				
<input checked="" type="checkbox"/>	No Deviations Active	<input type="checkbox"/>	Pump Actually Moving	<input type="checkbox"/>	Auto Depress Completed				
<input checked="" type="checkbox"/>	No Advisory Active	<input type="checkbox"/>	Dispense Valve Opened	<input type="checkbox"/>	Platen Valve Opened				
<input type="checkbox"/>	Precharge Decharge Active	<input checked="" type="checkbox"/>	E-Flo IQ Mode Active	<input type="checkbox"/>	Tandem Active Pumps				
<input type="text" value="0.0"/>	Actual Pump Flowrate	<input type="text" value="1272.4"/>	Actual Amount Dispense	<input type="checkbox"/>	Changeover Occurred				
<input type="text" value="50.8"/>	Outlet Pump Pressure	<input type="text" value="0.0"/>	Precharge Requested						
<input type="text" value="255.3"/>	Valve Pressure	<input type="text" value="50"/>	Flowrate Requested						
<input type="text" value="1"/>	Active Style Loaded	<input type="text" value="-2.522"/>	Pump Position						
<input type="text" value="0.0"/>	Active Style Precharge								
<input type="text" value="50"/>	Active Style Flowrate								

### Inactive Pump Status Screen

This screen provides status on the inactive pump.

5/17/2021 2:58:03 PM		Tandem		Heat 1		Heat 2		Login	
Pump Active		Message Time		Message					
<b>INACTIVE PUMP STATUS</b>									
<input checked="" type="checkbox"/>	Status Heartbeat	<input checked="" type="checkbox"/>	No Deviations Active	<input type="checkbox"/>	Pump Trying to Move				
<input checked="" type="checkbox"/>	Automation Ready	<input checked="" type="checkbox"/>	No Advisory Active	<input type="checkbox"/>	Pump Actually Moving				
<input checked="" type="checkbox"/>	System Active	<input type="checkbox"/>	Drum Is Low	<input checked="" type="checkbox"/>	E-Flo IQ Mode Active				
<input checked="" type="checkbox"/>	PLC Lockout/Control Active	<input type="checkbox"/>	Drum Is Empty	<input type="checkbox"/>	Priming Active				
<input checked="" type="checkbox"/>	No Alarms Active	<input type="checkbox"/>	Pump Not Primed	<input type="checkbox"/>	Tandem Active Pumps				
<input type="text" value="0.0"/>	Actual Pump Flowrate								
<input type="text" value="117.5"/>	Outlet Pump Pressure								

## Job Log Screen

This screen gives detail data of dispense job cycles.

5/17/2021 2:58:46 PM

Tandem

Heat 1

Heat 2

Login

Pump Active

Message Time

Message

Job Log

Date Time	Style	Pump No.	Actual (cc)	Req. (cc)	Pump (psi)	Valve (psi)	Last
04/26/2021 16:46:48	1	P1	-0.0	0.0	0.0	0.0	
04/26/2021 16:47:17	1	P1	-0.0	0.0	50.8	250.9	
04/27/2021 15:18:31	1	P1	-0.0	0.0	50.8	250.9	
04/27/2021 15:26:34	1	P1	-0.0	0.0	50.8	252.4	
04/29/2021 09:10:27	1	P1	-0.0	0.0	50.8	250.9	
05/17/2021 14:32:03	1	P1	-0.0	0.0	50.8	250.9	X
04/23/2021 13:56:58	1	P1	-0.0	0.0	49.3	250.9	
04/26/2021 09:42:54	1	P1	-0.0	0.0	49.3	249.5	
04/26/2021 16:46:06	1	P1	-0.0	0.0	0.0	0.0	
04/26/2021 16:46:18	1	P1	-0.0	0.0	0.0	0.0	

## Heat 1 Status Screen

This screen provides status on Heat 1. The setpoints cannot be edited on this screen.

5/17/2021 2:52:49 PM	Tandem	Heat 1	Heat 2	Login
Heat At Temp	Message Time	Message		

### HEAT 1 STATUS

- Status Heartbeat
- Heat Enabled
- PLC Control Active
- Heats On
- Heats Warming Up
- Heats At Temperature
- Heats In Temperature Soak
- Heats In Setback
- Heats Off
- No Heat Alarm
- No Heat Deviations
- No Heat Advisories
- No Heat Zone Alarms
- No Heat Zones Deviations
- No Heat Zone Advisories
- Heat Idle Timeout

1 1 81 °F

1 2 75 °F

2

2

3

3

4

4 8 68 °F

5

Hose 81 °F

Manifold 75 °F

Pump 71 °F

0

Heat Soak Time Remain

81 °F

Heat 1 Setpoint temperature, not editable in this screen.



Heat 1 state status.

0 Heat Soak Time Remain

Heat 1 Soak time remaining



Heat 1 on/off.



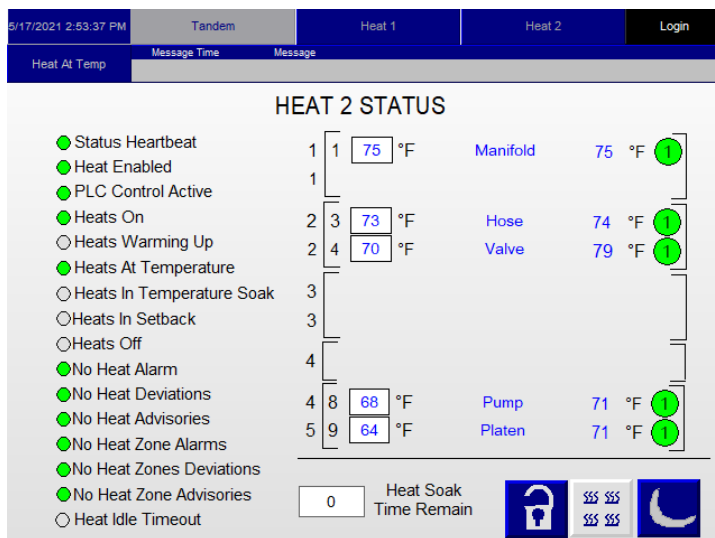
Heat 1 Temperature Setback On/Off.

This message will appear when first opening a heat status or setpoint screen. All data is updated on the screens when first opening the screen.

REFRESHING ALL SCREEN DATA  
PLEASE WAIT

### Heat 2 Status Screen

This screen provides status on Heat 2. The setpoints cannot be edited on this screen.



81 °F

Heat 2 Setpoint temperature, not editable in this screen.



Heat 2 state status.

0 Heat Soak Time Remain

Heat 2 Soak time remaining.



Heat 2 on/off.



Heat 2 Temperature Setback On/Off

This message will appear when first opening a heat status or setpoint screen. All data is updated on the screens when first opening the screen.

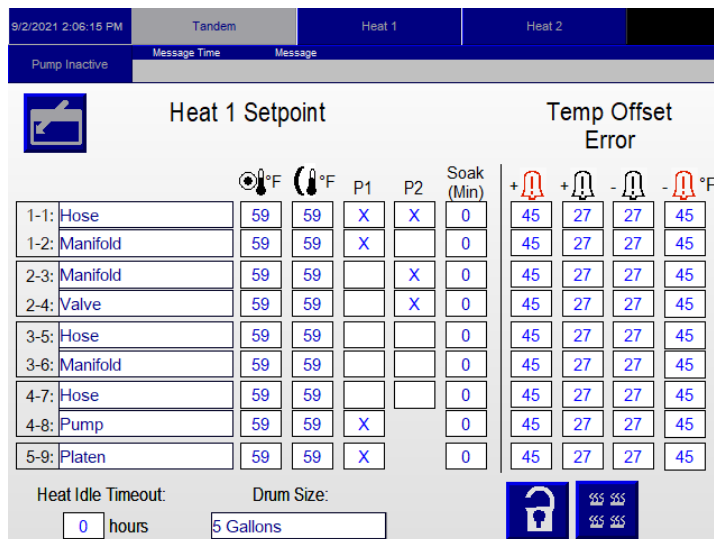
REFRESHING ALL SCREEN DATA  
PLEASE WAIT

## Heat 1[2] Setpoint Screens

This screen allows the user to view the heat 1 setpoints and configuration parameters when Edit Mode



is off. When the Edit Mode is on , the setpoints can be changed.



	°F	°F	P1	P2	Soak (Min)	+ °F	+ °F	- °F	- °F
1-1: Hose	59	59	X	X	0	45	27	27	45
1-2: Manifold	59	59	X		0	45	27	27	45
2-3: Manifold	59	59		X	0	45	27	27	45
2-4: Valve	59	59		X	0	45	27	27	45
3-5: Hose	59	59			0	45	27	27	45
3-6: Manifold	59	59			0	45	27	27	45
4-7: Hose	59	59			0	45	27	27	45
4-8: Pump	59	59	X		0	45	27	27	45
5-9: Platen	59	59	X		0	45	27	27	45

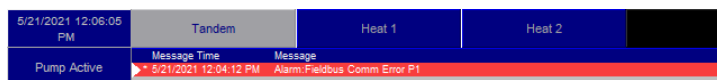
Heat Idle Timeout: 0 hours      Drum Size: 5 Gallons

1-1: Hose	Heat 1[2] Zone Type.
81	Heat 1[2] Zone Temperature Setpoint.
59	Heat 1[2] Zone Temperature Setback Setpoint.
P1 X P2 X	Heat 1[2] Zone installed In edit mode this setpoint will be entered as a 0=not installed or a 1=installed.
Soak (Min) 2	Heat 1[2] Zone Minimum Soak Time.
+ 45	Heat 1[2] Zone 1-9s High Temperature Offset.
+ 27	Heat 1[2] Zones 1-9 High Deviation Offset.
- 27	Heat 1[2] Zones 1-9 Low Deviation Offset.
- 45	Heat 1[2] Zones 1-9 Low Alarm Offset.
Heat Idle Timeout: 1 hours	Heat 1[2] Idle Timeout.
Drum Size: 5 Gallons	Pump 1[2] Drum Size.

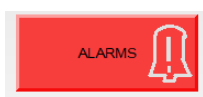
## Alarm Screen






This screen displays alarms, deviations and advisories. Alarms are displayed with a Red textbox background. Deviations and Advisories are displayed with a Blue textbox background.

The header across the top of each screens has an alarm banner that will display the most current alarm.




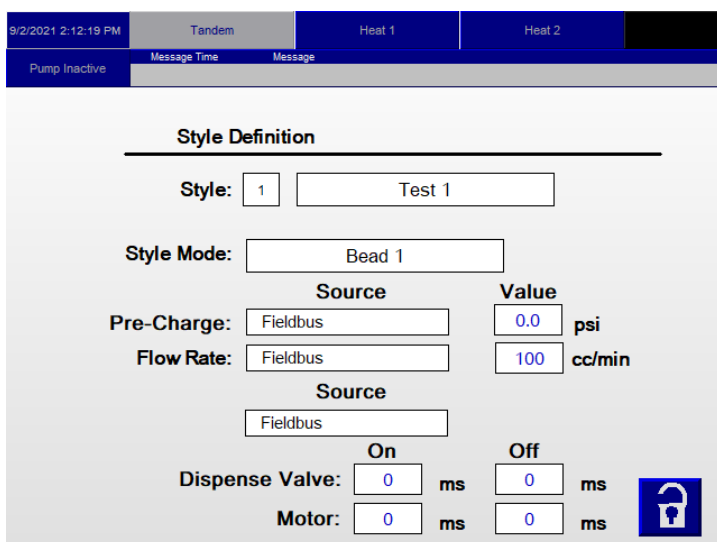
The Alarm navigation button flashes Red if there is a current alarm.



	Ack Alarm – Acknowledges selected alarm and does not reset.
	Ack All Alarms – Acknowledges all alarms and does not reset.
	Resets all alarms that do not still exist. Alarm condition must be cleared before alarm will reset.
	Scroll up through alarm list.
	Scroll down through alarm list.

## Style Definitions Screen

This screen is used to Edit the Style Definition parameters. The parameters can only be edited when the edit mode is on. 

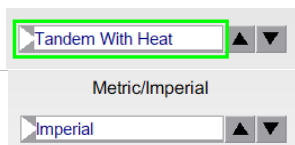
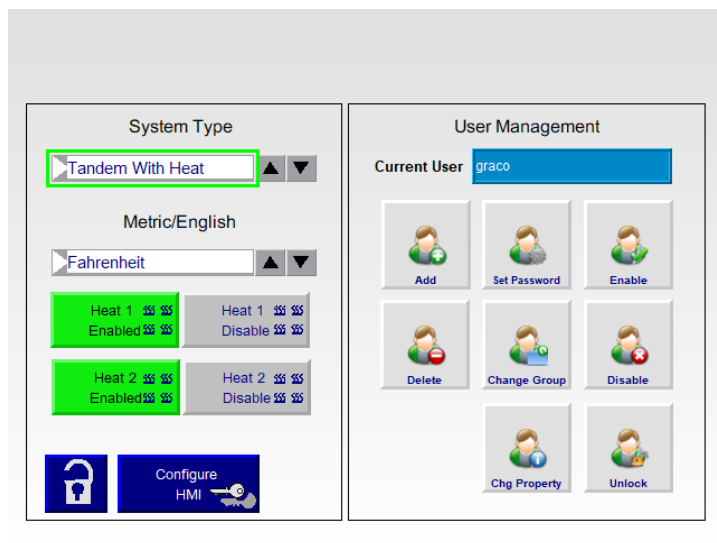


Style: <input type="text" value="1"/> <input type="text" value="Test 1"/>	Enter style definition number and name for the style. . <b>The name is not stored in the E-Flo iQ, this is stored in the PLC only.</b>
Style Mode: <input type="text" value="Bead 1"/>	Enter a name for the style mode. . <b>The mode is not stored in the E-Flo iQ, this is stored in the PLC only.</b>
Pre-Charge: <input type="text" value="Local"/>	The Pre-Charge Source indicates where this setpoint is configured. This is only configurable in the E-Flo iQ ADM.
Flow Rate: <input type="text" value="Fieldbus"/>	The Flow Rate Source indicates where this setpoint is configured. This is only configurable in the E-Flo iQ ADM.
<input type="text" value="0.0"/> psi	The Pre-Charge setpoint value can only be changed if the source is set to remote and the Edit Mode is on.
<input type="text" value="50"/> cc/min	The Flow Rate setpoint value can only be changed if the source is set to remote and the Edit Mode is on.
Source <input type="text" value="Fieldbus"/>	The Valve & Motor Delay source is only configurable in the E-Flo iQ ADM.
Dispense Valve: On <input type="text" value="0"/> ms Off <input type="text" value="0"/> ms Motor: <input type="text" value="0"/> ms <input type="text" value="0"/> ms	The Dispense valve and Motor On and Off delays can only be changed if the source is set to remote. Otherwise this only displays the local setting values of the active loaded style group.

**NOTE:** The Style Definition parameters are not stored in the E-Flo iQ ADM for remote source. The setpoints are stored in the PLC and loaded when a style is selected on the main screen.

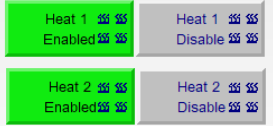
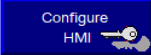
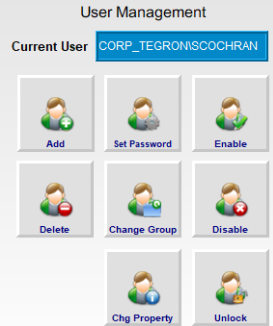
### Advanced Screen

This screen is used to configure the initial setup of the HMI for the E-Flo iQ configuration. It is also used to setup user names, passwords, login levels and shutdown the HMI application.



Selects System Type. Single Ambient, Single with Heat, Tandem Ambient and Tandem with Heat.

Selects between Metric or Imperial units on screens.

	Enables/Disables Heat 1 and Heat 2.
	Shutsdown HMI Runtime Application.
	<p>Add or modifies usernames, passwords and login levels on HMI screen access.</p> <p>ADMINISTRATOR PASSWORD:          USERNAME – graco          PASSWORD – Graco1          SECURITY CODE – A through P</p> <p>DEFAULT OPERATOR PASSWORD:          USERNAME – DEFAULT          PASSWORD –          SECURITY CODE – A</p> <p>Screen security codes are configurable in the HMI application for each screen.</p>